dox42 for Finance and Operations

Documentation

05.10.2022

v.1.3.3

Cegeka / dox42

WHAT IS DOX42 FOR FINANCE AND OPERATIONS?

It is a tool which interacts with Microsoft Dynamics 365 Finance and Microsoft Dynamics 365 Supply Chain Management (previously, together, Microsoft Dynamics 365 for Finance and Operations, or "D365 FO" for short). dox42 for Finance and Operations can be used for creating special reports, documents or even etiquettes in different languages, this is possible because of the multiple data sources which can be integrate into one document at the same time.

dox42 for Finance and Operations is a supplementary package for dox42. dox42 for Finance and Operations is a Custom Data Source. It consists of two data sources:

- D365 FO Report - Uses data from standard SSRS reports.
- D365 FO Entity - Uses data from the OData API.

A dox42 Custom Data Source enables access to specific data sources or systems, additionally to the already predefined data sources.

INSTALLATION

Installation of the dox42 Office Add-Ins

The download files for the dox42 Enterprise Add-Ins are available on the dox42 website:

https://www.dox42.com/Modules/Download

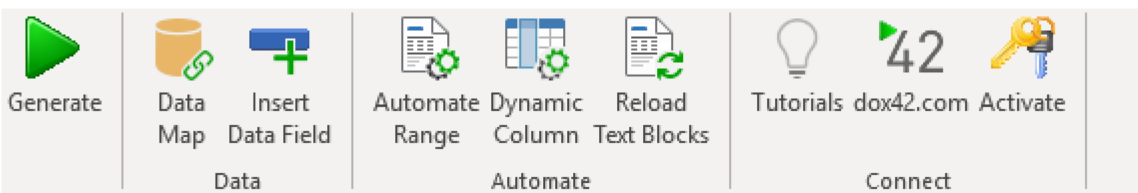
Install and setup dox42 Word Add-Ins according to the dox42 documentation.

Installation of the dox42 for Finance and Operations Office Add-Ins

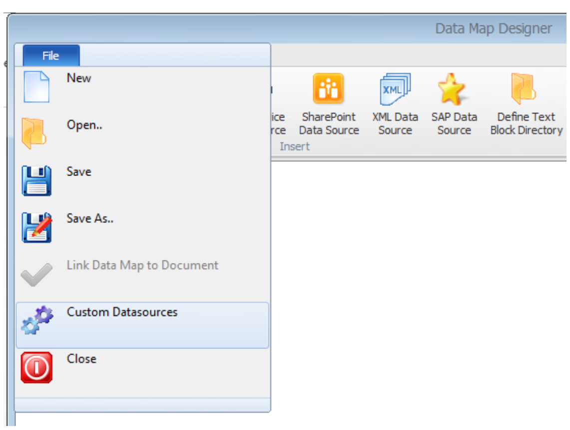
The download files for the dox42 Dynamics 365 for Finance and Operations are available on the dox42 website:

https://www.dox42.com/Modules/Download

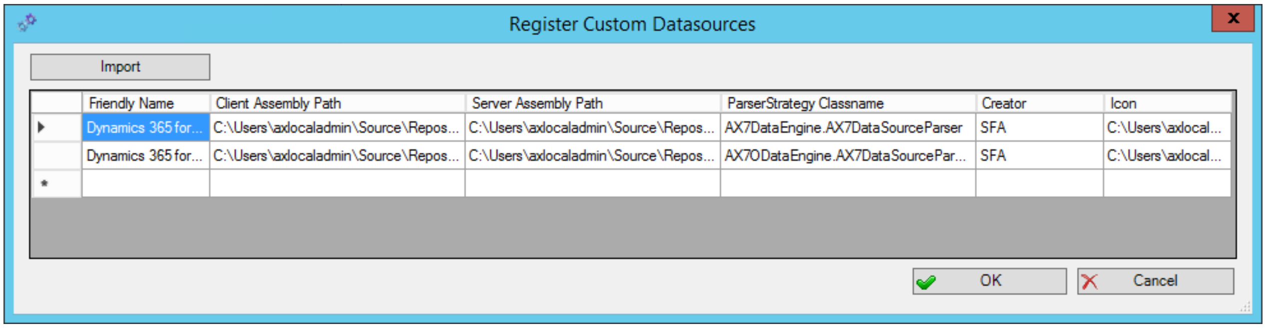
Save the dox42 for Finance and Operations files to a fixed directory on the computer, which will be used for dox42 report design. Unzip the file **dox42forOperations-<Version Number>.zip.** The files will not be copied during installation and need to remain on the selected path, otherwise dox42 won't be able to find the binaries of the new data sources.



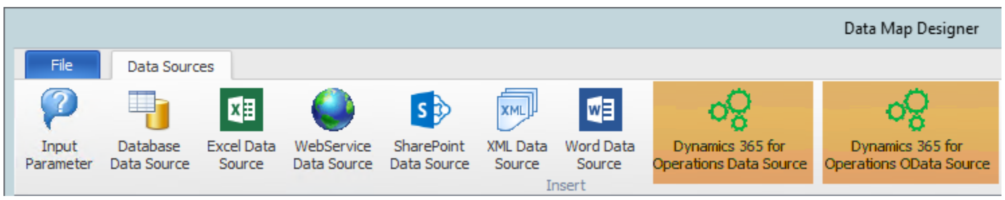
Start Word, activate the dox42-Ribbon and select **„Data Map"**. In the Data Map Designer select **„Data Map"**. Open the File-Menu and select **„Custom Datasources"**.



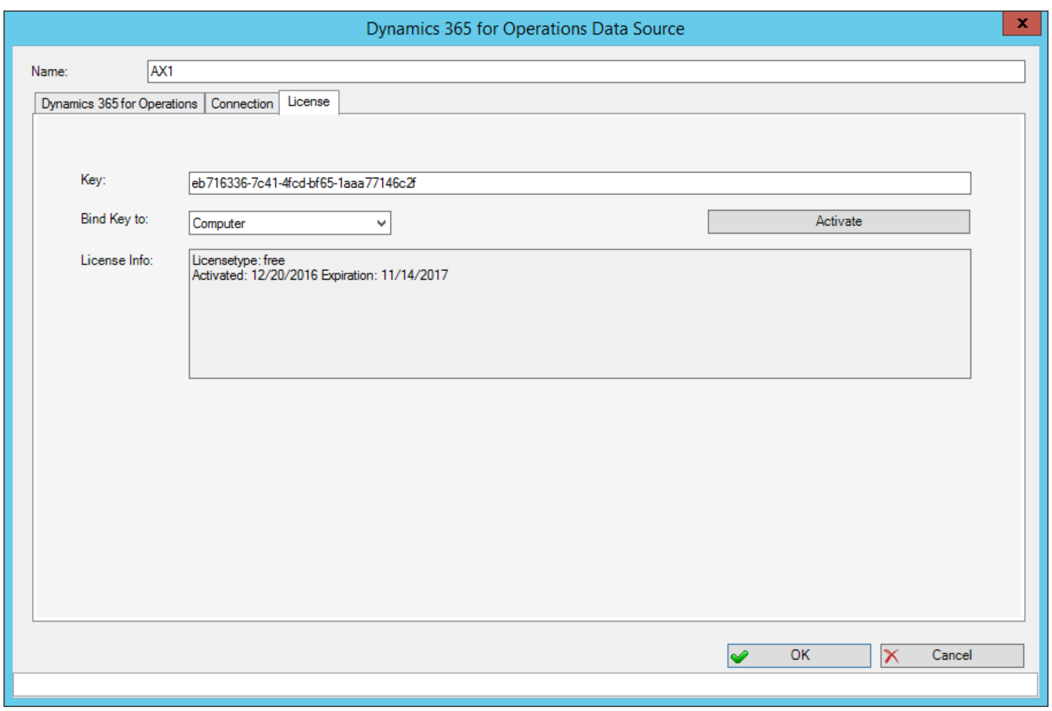
In the dialog **„Register Custom Datasources“**, import the configurations **(dox42OperationsDataSourceImport.config and dox42OperationsODataSourceImport.config)**. This way, the configurations will be defined in the Custom Data Source.



Now, the Custom Data Sources “D365 FO Report” and “D365 FO Entity” are ready for use as any other dox42 data source.

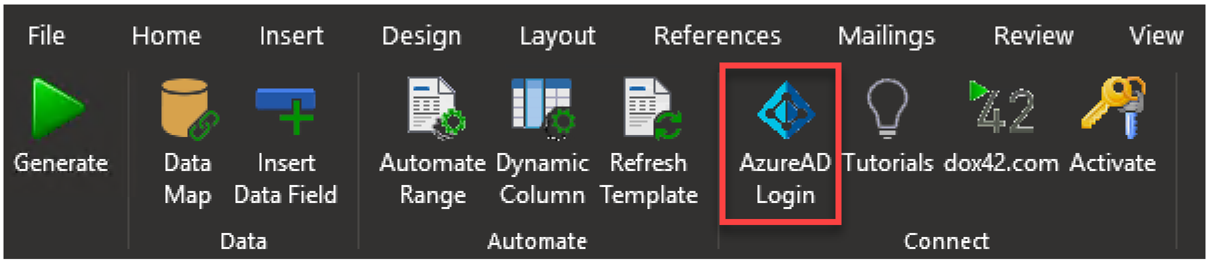


Next, the license key should be activated. To do that, simply click on “D365 FO Report” (or “Dynamics 365 for Finance and Operations Data Source” or “Dynamics 365 for Operations Data Source” in previous versions) and go to the tab called **“License”.** Insert the license key here and click “Activate”. After activating the license, the dialog can be closed with cancel or close button.
NOTE: The same key will also work for D365 FO Entity (the OData data source in previous versions).

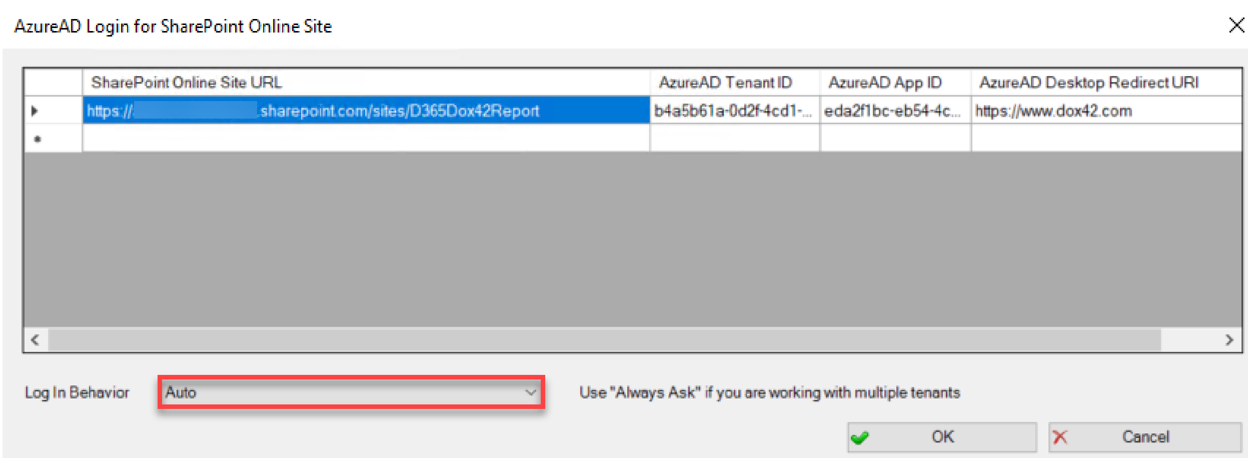


To design or generate templates that are stored in SharePoint you need to setup Azure AD Login for SharePoint Online Site:

In the dox42 tab click “Azure AD Login” button:



Then fulfill values as described below:



SharePoint Online Site URL: URL to SharePoint folder where templates are stored

AzureAD Tenant ID: tenant id

AzureAD App ID: application id used to interact with SharePoint (find in sections below setup guide)

AzureAD Desktop Redirect URI: https://www.dox42.com

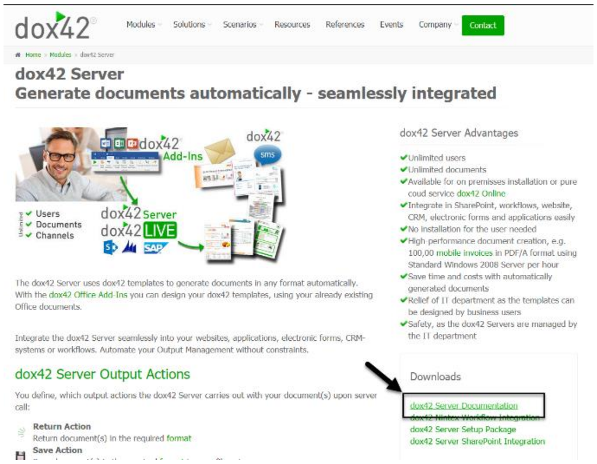
Log in Behavior: Auto

NOTE: all values can also be taken from “web.config” file on the dox42server (in SharePoint section if it was setup earlier)

Installation of the dox42 Server

How to install and setup the dox42 Server is documented on the dox42 Website:

https://www.dox42.com/Modules/dox42-Server

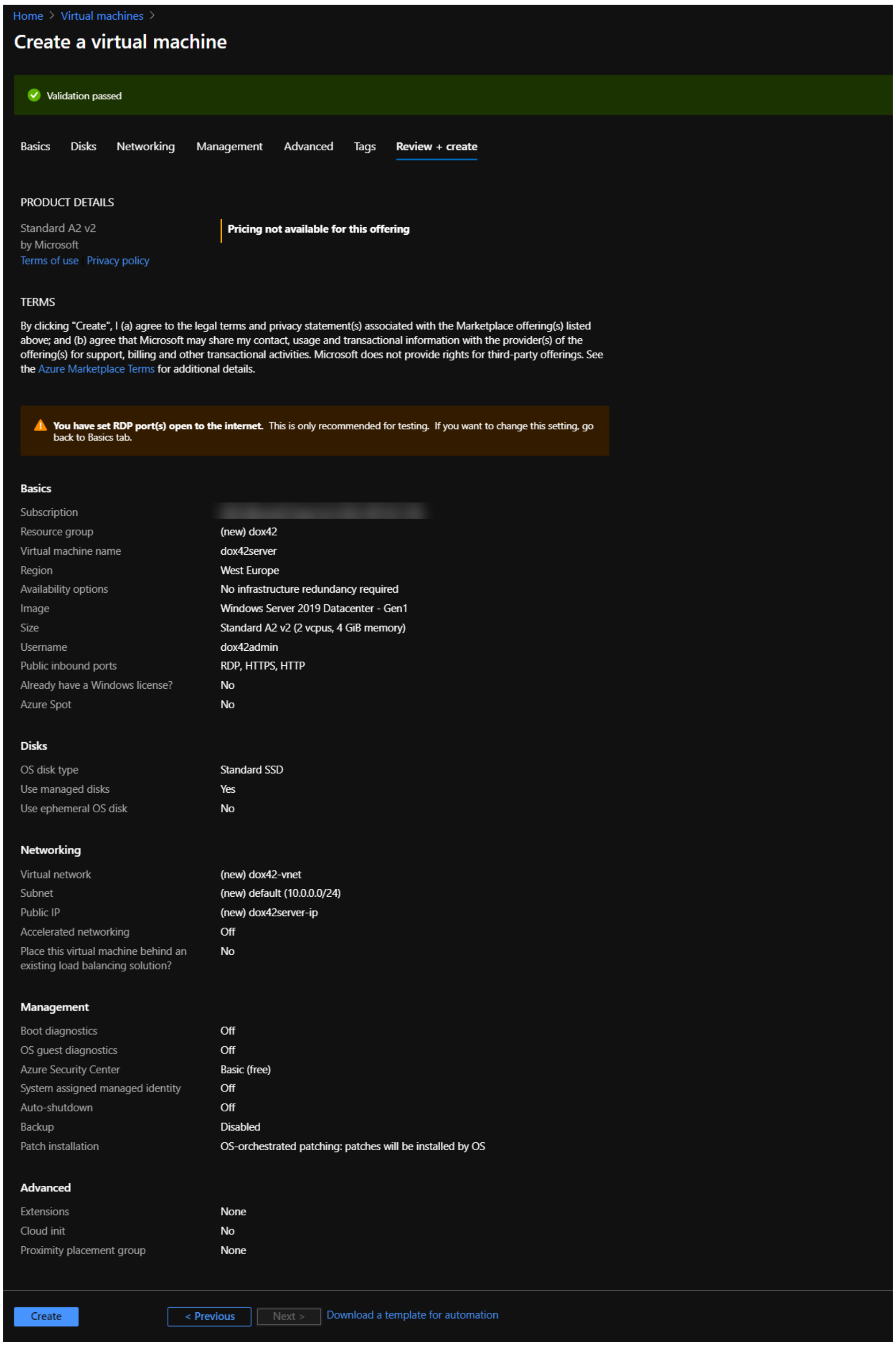


Installation of dox42 for Finance and Operations for dox42 Server (cloud)

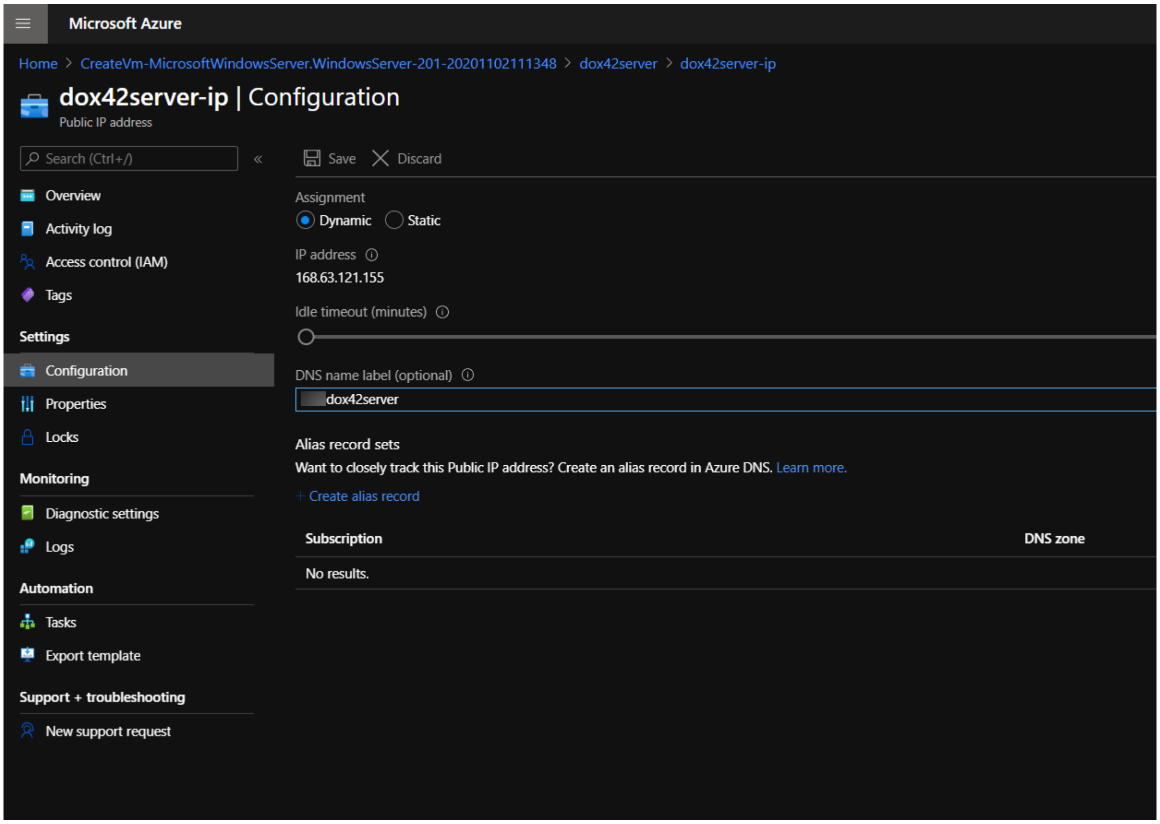
Please note: The dox42 Server behaves like any other web-service that is exposed through the internet. Therefore, the same considerations have to be applied against it, like any other web-service. Meaning, you SHOULD use *HTTPS* for transport encryption, as well as set up *authorization rules*, for incoming web requests. Configurations depend on your requirements and existing infrastructure. Therefore, the setup for your use-case might differ from the setup we provide below.

It is assumed, that you have already installed the deployable package for your D365 FO instance. The provided setup of the dox42 Server, which includes in-transit encryption, as well as template loading from SharePoint sites, has the following steps:

1. Create an Azure Virtual Machine (if it does not already exist) where the dox42 Server will be hosted. In our case we will select the SKU “A2_v2”. If you need more or less compute resource, you may scale the VM accordingly.



2. Configure a DNS name for the virtual machine in the Public IP resource. This name will be used for generating an SSL certificate.



3. To use the Custom Data Sources for D365 FO on the dox42 Server, please copy the following Assemblies in the /Bin directory on the dox42 Server:

   AX7DataEngine.dll
   AX7ODataEngine.dll

   The new Custom Data Sources must be registered in the **web.config** of the server.

```
<customDataSources>
<add key="AX7DataEngine.AX7DataSourceParser"  value="AX Custom DS;c:\dox42Server\bin\AX7DataEngine.dll;"/>
<add key="AX7ODataEngine.AX7DataSourceParser" value="AX OData Custom DS;c:\dox42Server\bin\AX7ODataEngine.dll;"/>
</customDataSources>
```

   Furthermore, please insert the license keys in the **web.config**. You have to insert both values, one for *LicenseKey* (dox42 Server for Documents) and another for *dox42AXLicenseKey* (dox42 for Finance and Operations Server or dox42 for AX Server):

```
<appSettings>
        <add key="LicenseFilePath" value="c:\dox42Server\License" />
        <add key="LicenseKey" value="…"/>
```

```
        <add key="dox42AXLicenseKey" value="..."/>
        <add key="MailServer" value="smtp.1und1.de"/>
        <add key="dox42ServerMail" value="mydox42server@dox42.com"/>
        <add key="MailServerPassWord" value="..."/>
        <add key="SendErrorsToMail" value="mymonitoring@dox42.com"/>
        <add key="Certificate" value="c:\ dox42Server\Certs\Certificate.pfx"/>
        <add key="CertificatePassWord" value="..."/>
        <add key="CheckServiceHeader" value="true"/>
        <add key="UserPermissionODBCConnectionString"
             value="Driver={SQL Server Native Client 10.0};Server=...;Database=...;Uid=...;Pwd=...;"/>
        <add key="CheckUserPermissionSQL"
             value="SELECT COUNT(*) FROM Users where Username =
             '%username%' and Password = '%password%'" />
        <add key="ThrowExceptionOnError" value="false"/>
</appSettings>
```

4. Create an Azure App registration, which allows access to receive data from D365 FO. It does not need any API permissions, however the Client ID has to be registered in the (System administration => Setup => Azure Active Directory applications) settings within D365 FO. Generate a secret for the app and take note of it. Both, the client id, as well as the client secret will be used to establish a data connection, when designing templates in Word with dox42.

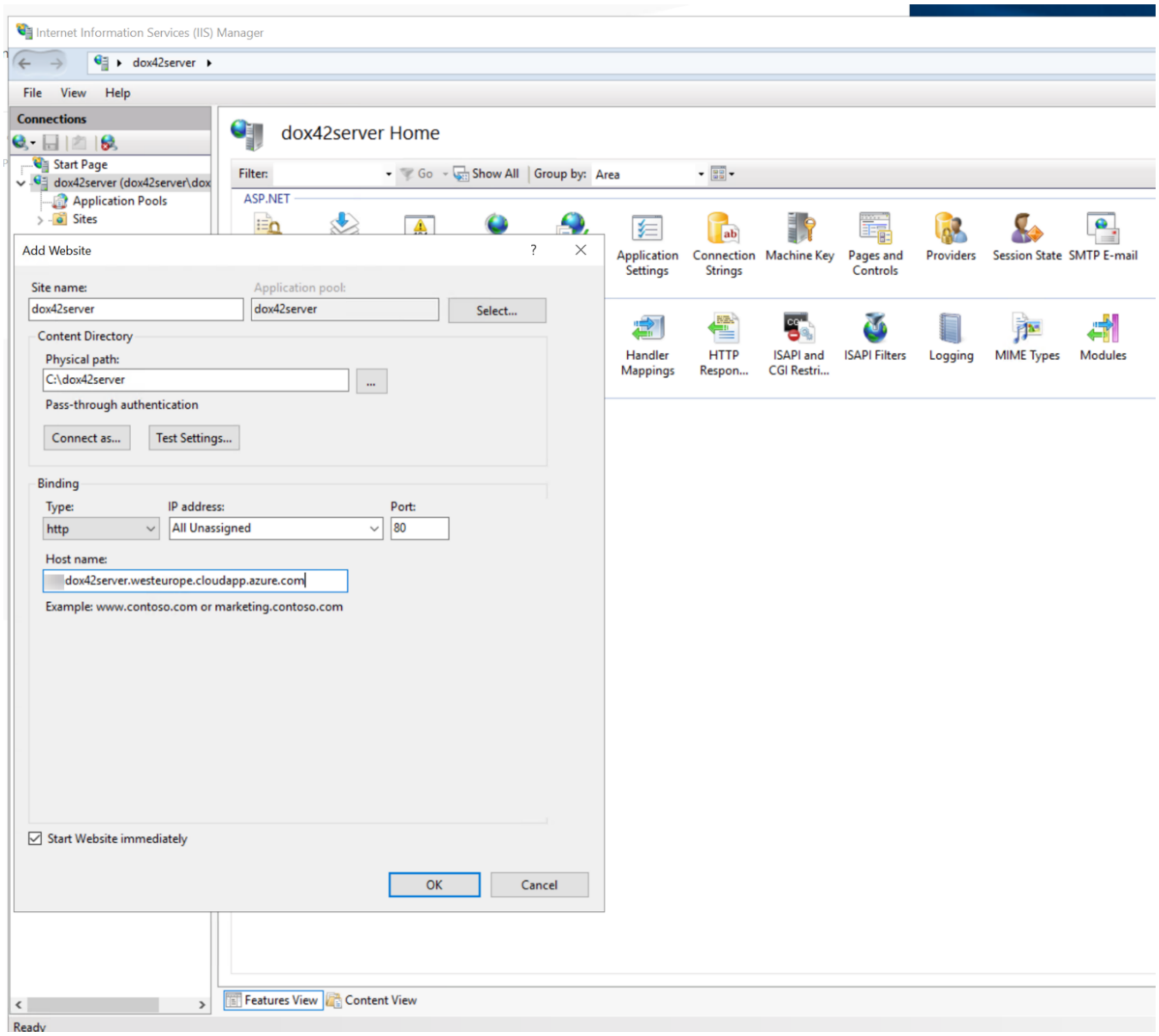
5. Encrypt traffic using the HTTPS protocol

   In our example, we will acquire a certificate from Let’s Encrypt. The subject name of the certificate has to match the endpoint name of the dox42 Server.

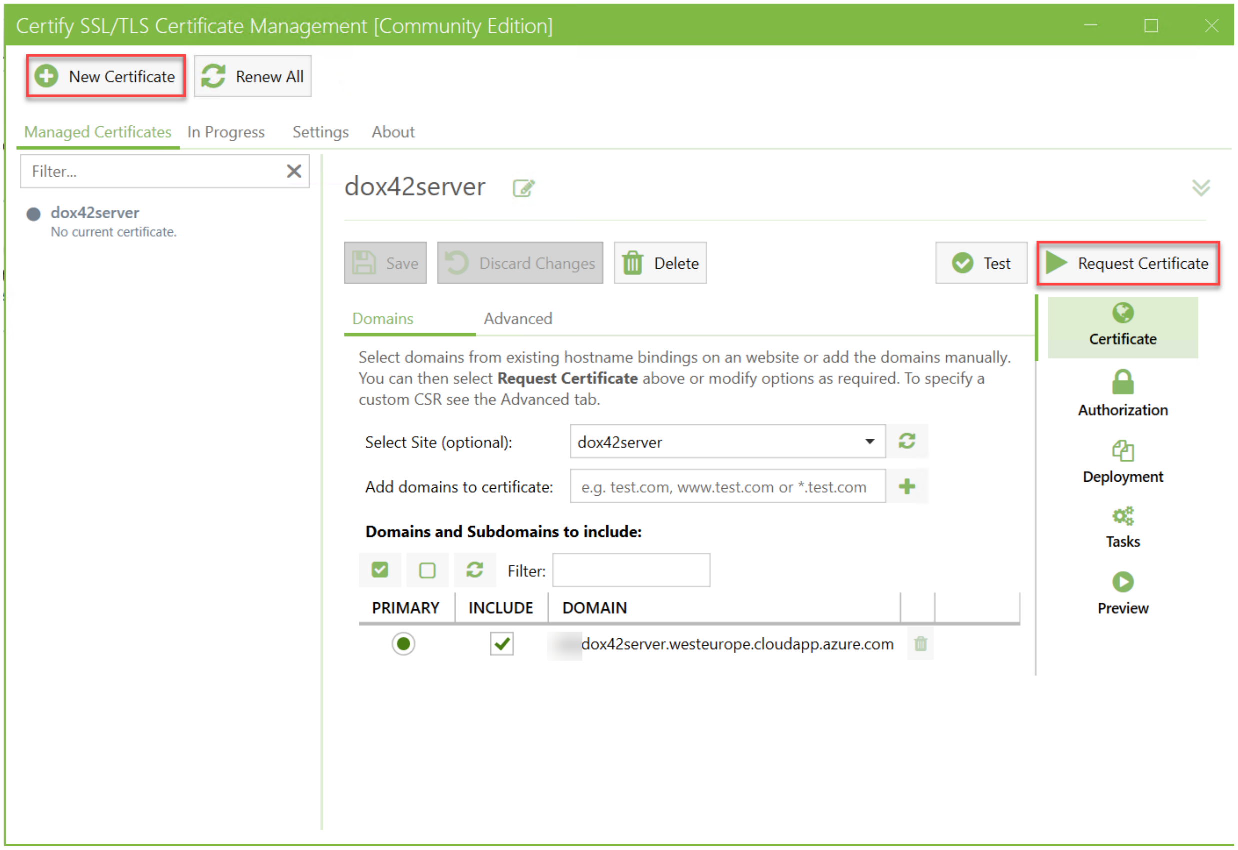
   In case of a default Azure Virtual Machine, it is going to be something like ***.northeurope.cloudapp.azure.com**. When the dox42 Server is hosted on-premises, you will have to setup the domain endpoint according to your requirements.

   For receiving the certificate we are using the tool “Certify the web”, which lets you issue certificate request within a nice user interface.

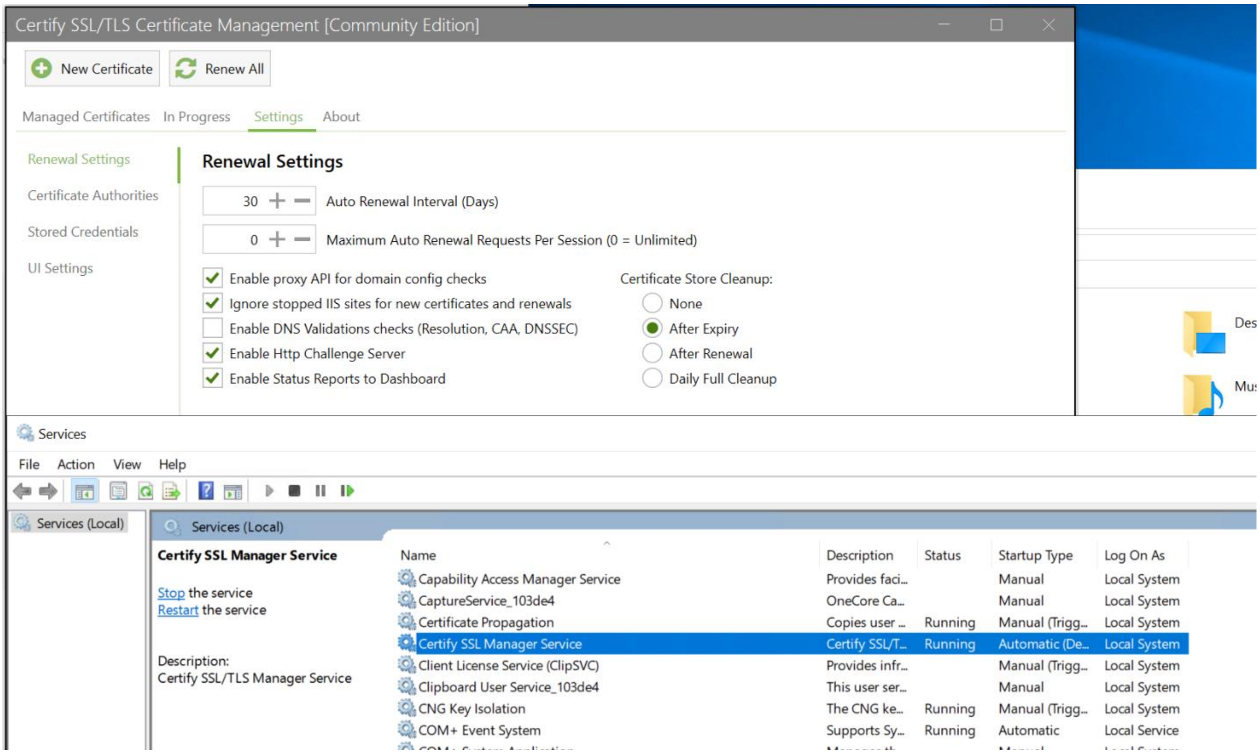
Change the hostname of the website:



When you request a new certificate, using the “Certify the web” tool, it will ask you for an e-mail to be used to notify about certificate expiration. So please enter a valid email to receive those notifications.

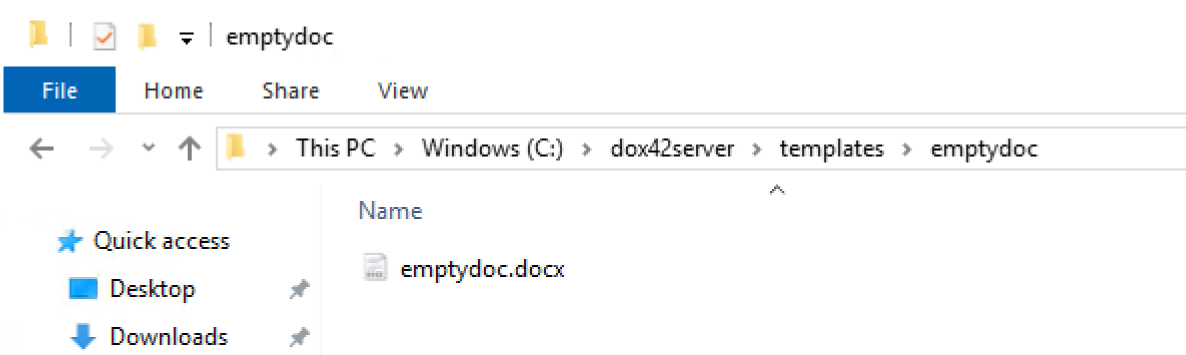


Once certificate is generated, you'll get a new service running in windows services – it will refresh a certificate after its expiration date:

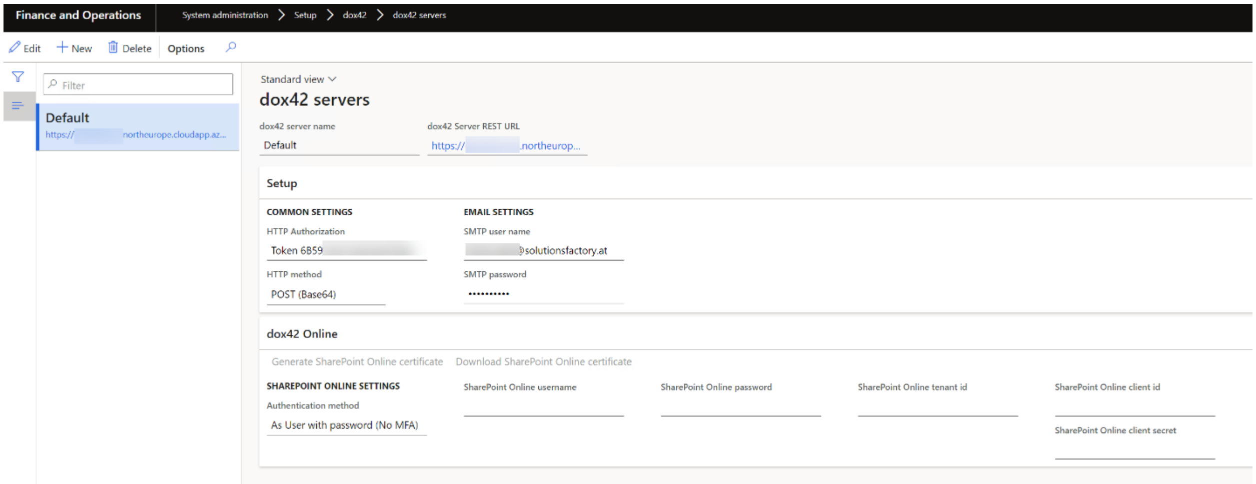


To check if you can reach the server from the test/dev D365 FO environment, do the following setup:

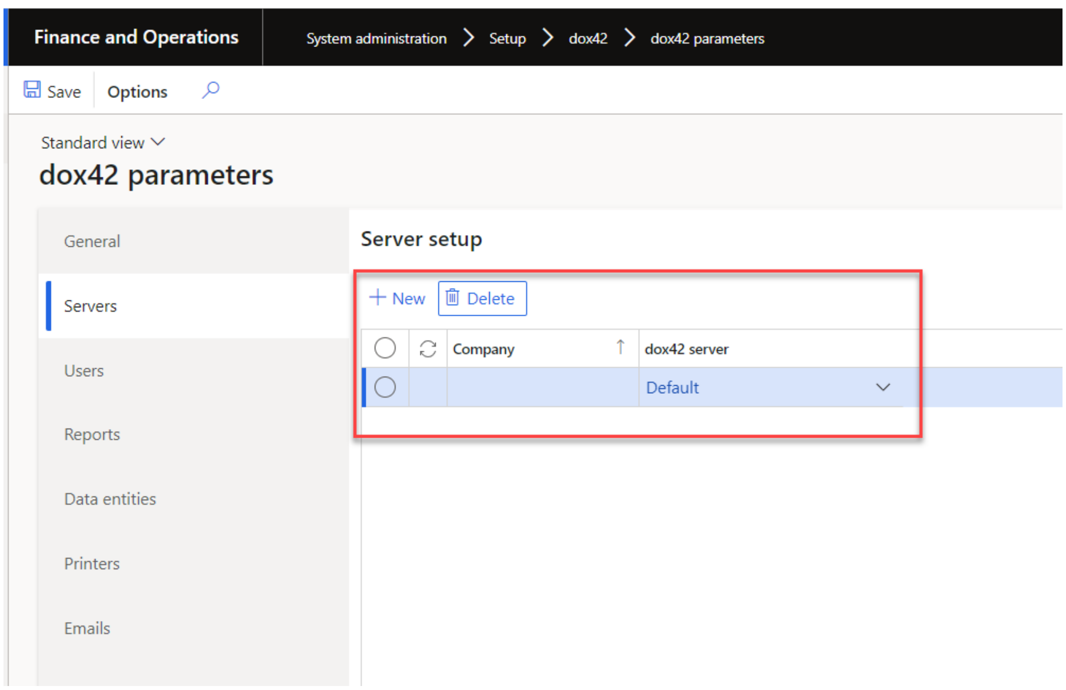
1. On dox42server create a new folder with and empty .docx file inside:



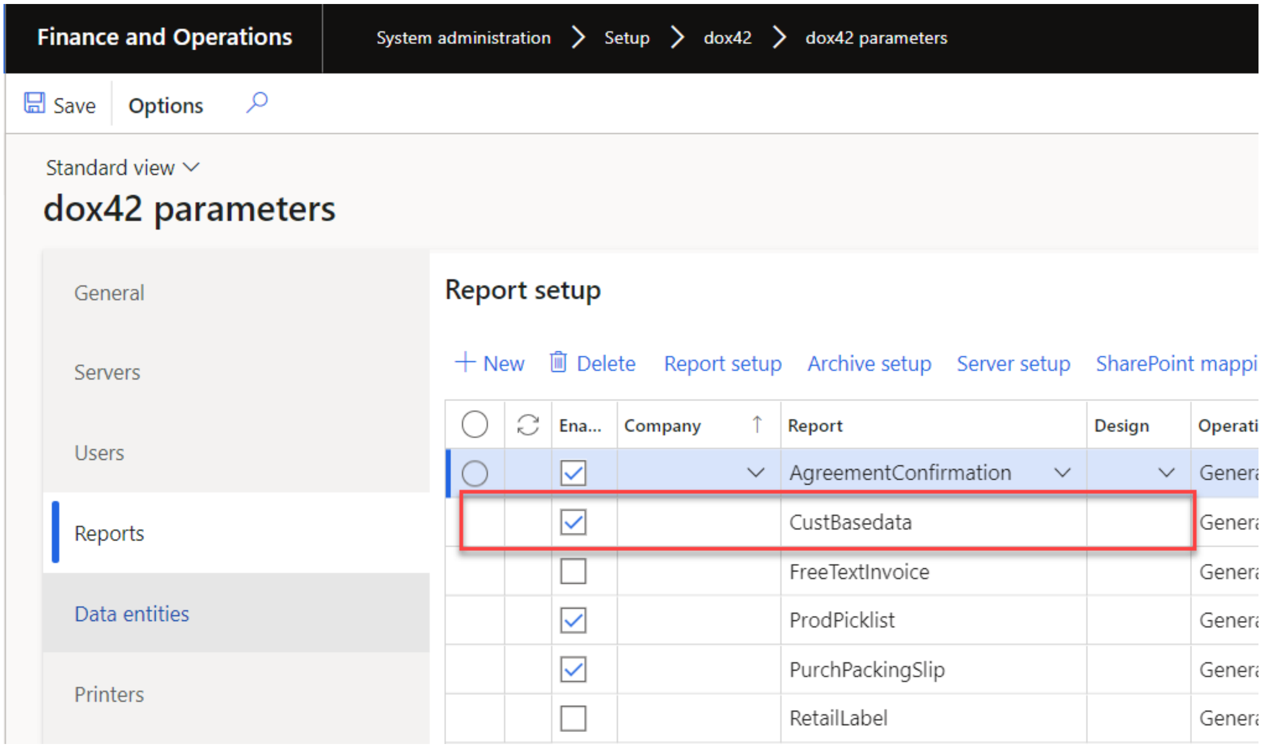
2. On test environment go to dox42 servers form and set up the dox42 server accordingly (it is recommended to use the "POST (Base64)" HTTP method):



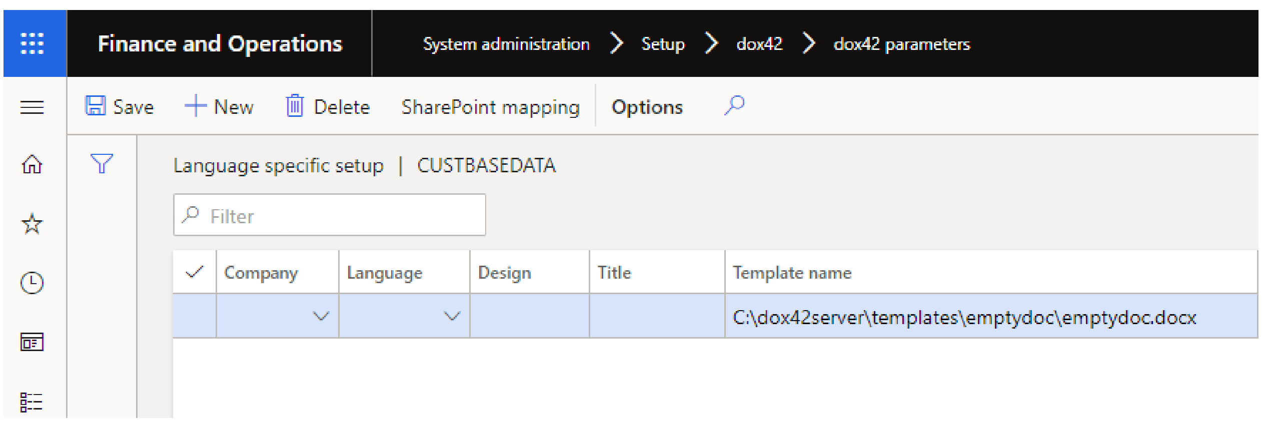
3. On test environment go to dox42 parameters form, tab “Servers” and set up the default dox42 server:



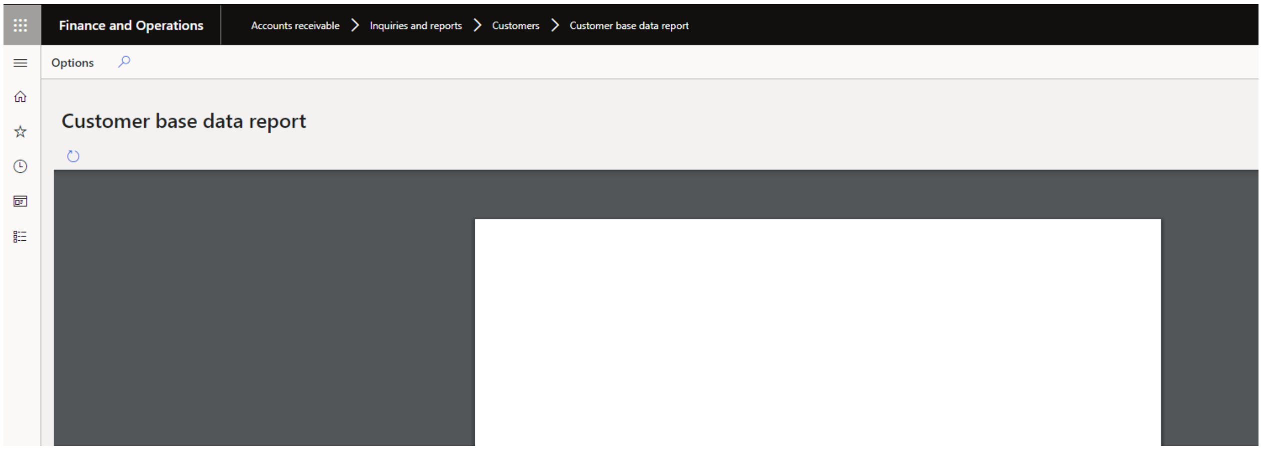
4. On “Reports” tab create a new report setup for (e.g.) the “CustBasedata” report:



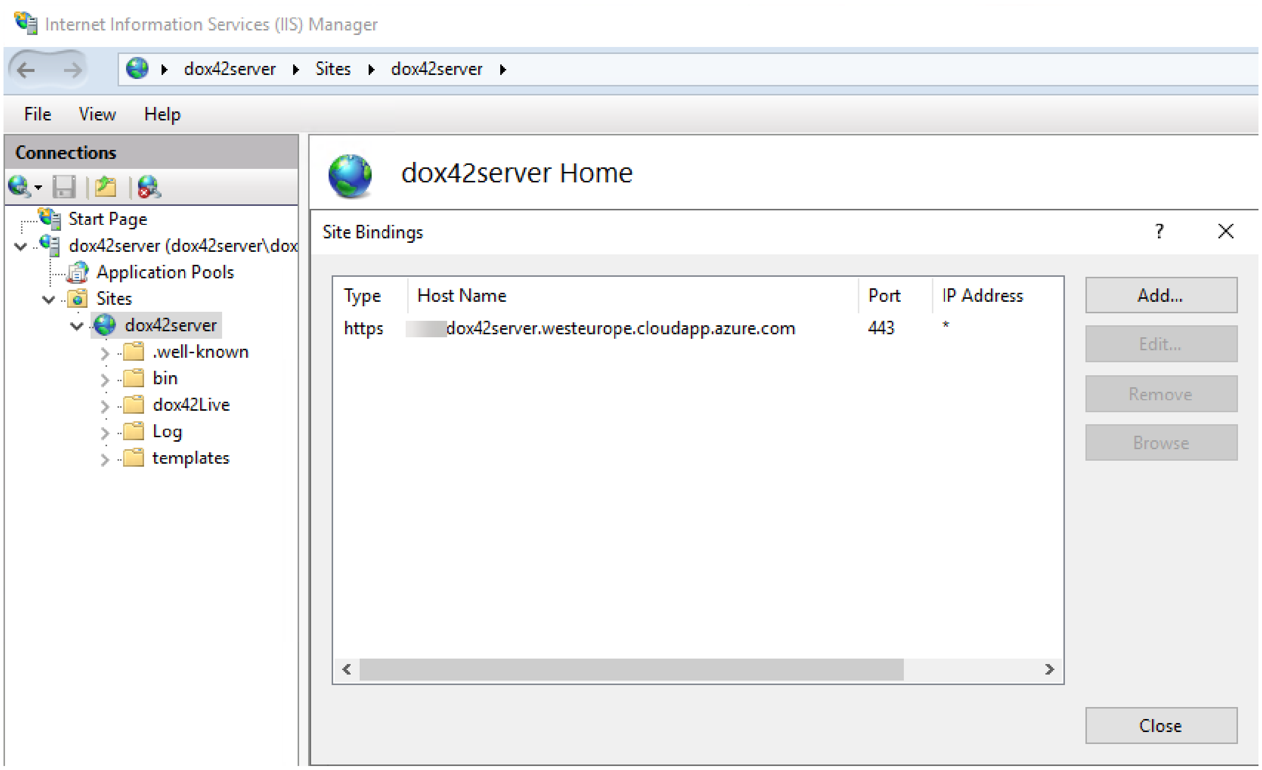
5. On the “Report setup” form specify the path to the template on the dox42server:



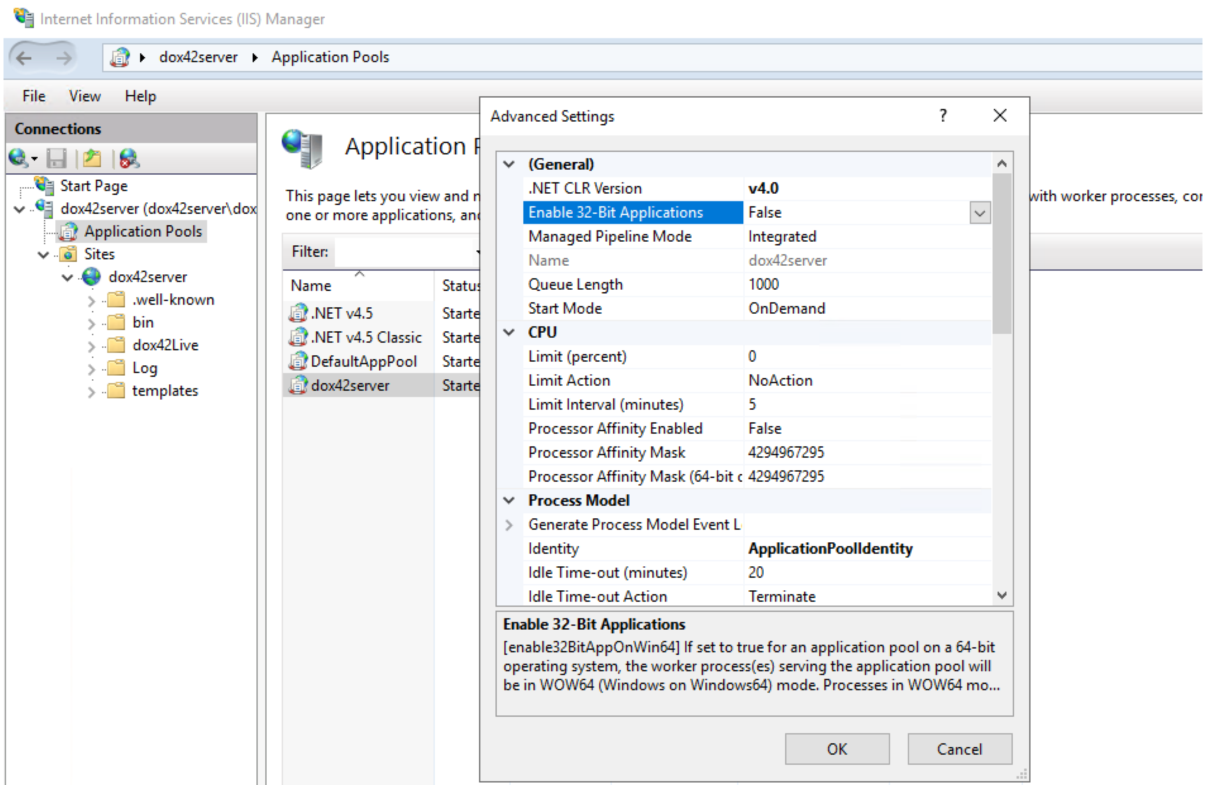
6. Finally print the report (Accounts receivable => Inquiries and reports => Customers => Customer base data report) to see if the server is reachable and the connection is secure. If you get a blank page, then you can reach the server:



7. Now you can remove http binding in IIS on the dox42server, leaving only https binding:

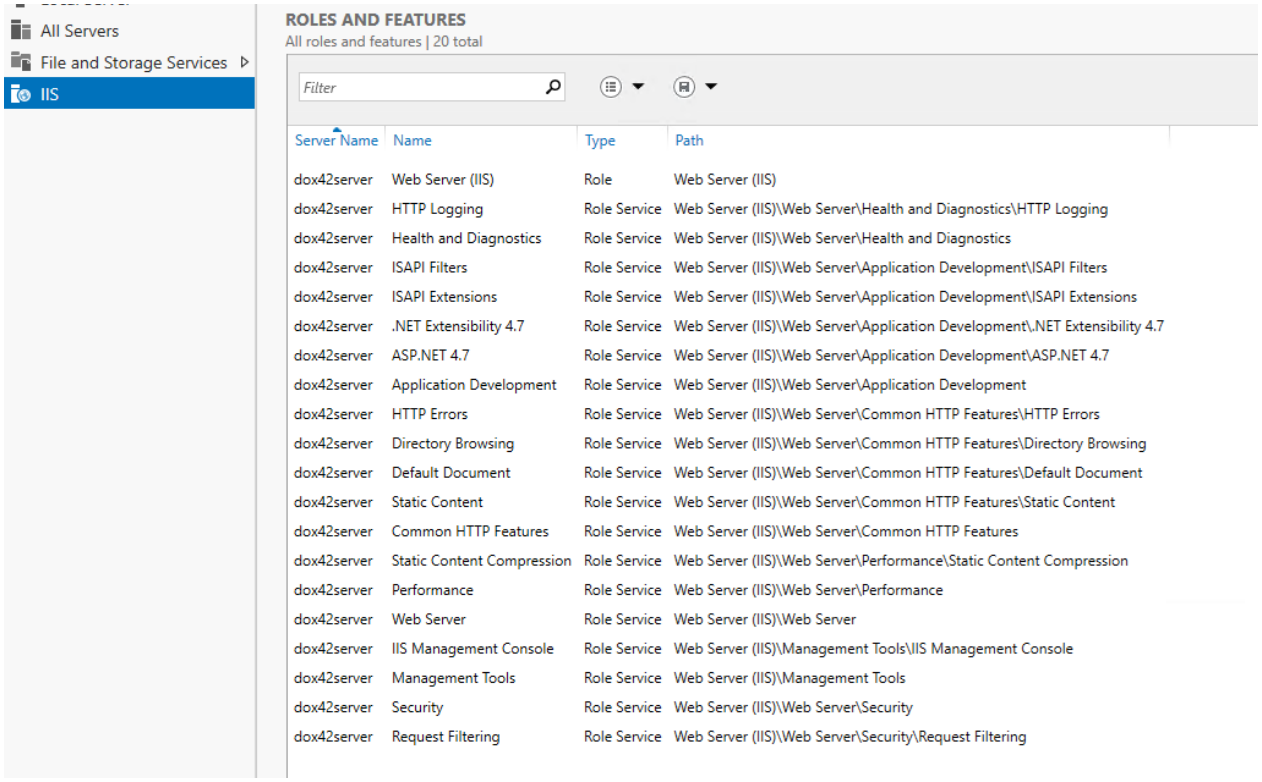


8. Finally check if the website is running as 64 bit process:



9. Configure a SharePoint site as a template resource for the dox42Server (for customers who will use SharePoint as a storage for templates).

In Server Manager ensure that the next roles and features are installed for IIS:

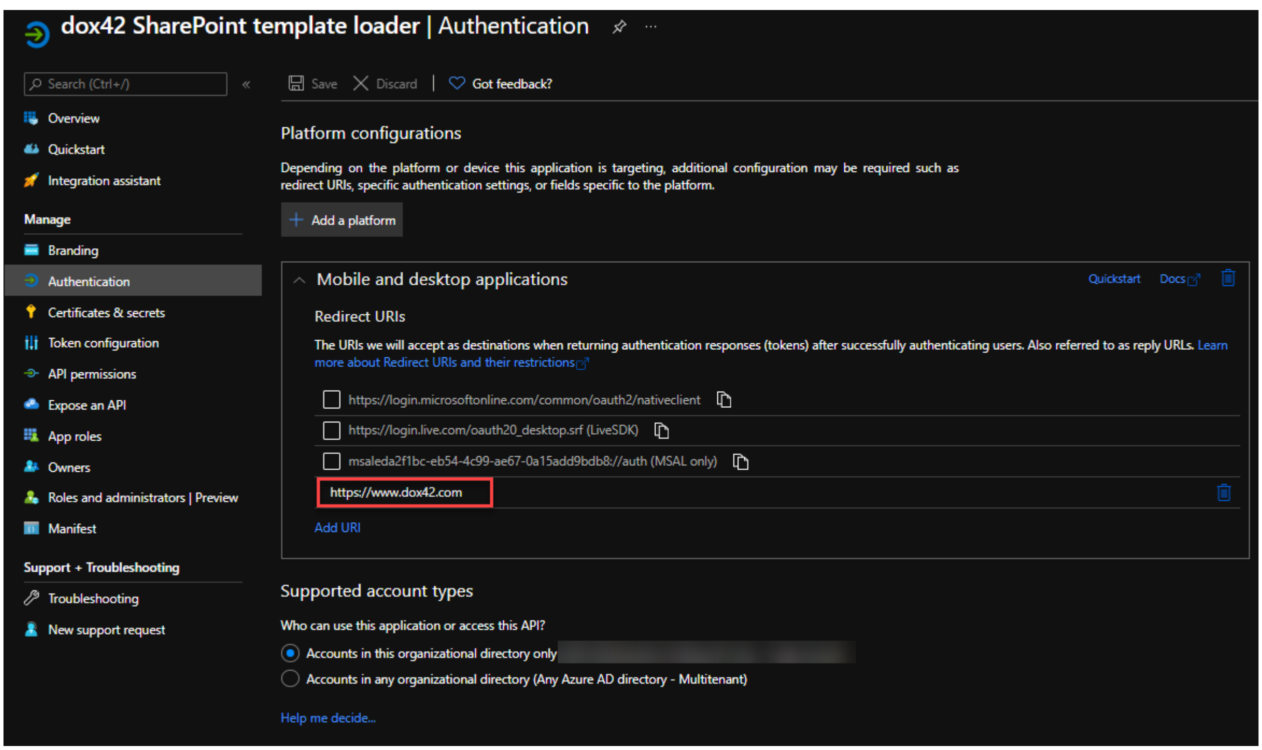


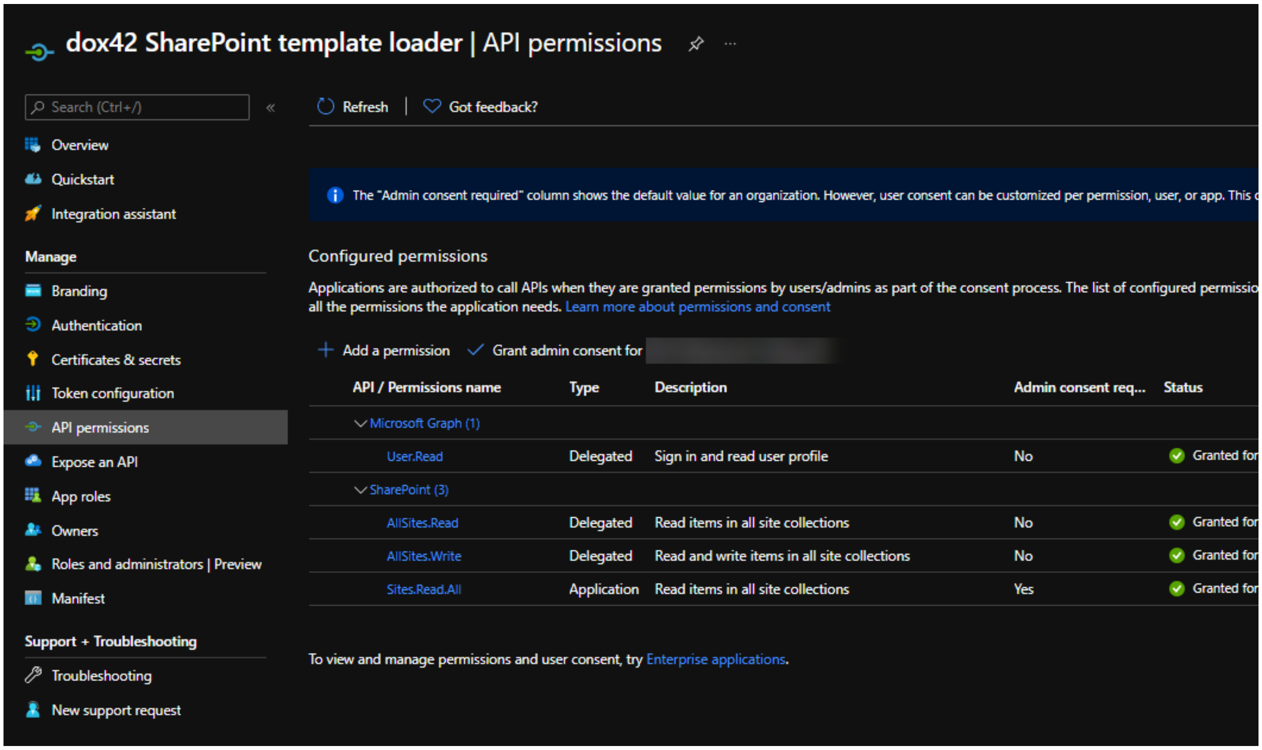
All Servers
File and Storage Services
IIS

ROLES AND FEATURES
All roles and features | 20 total

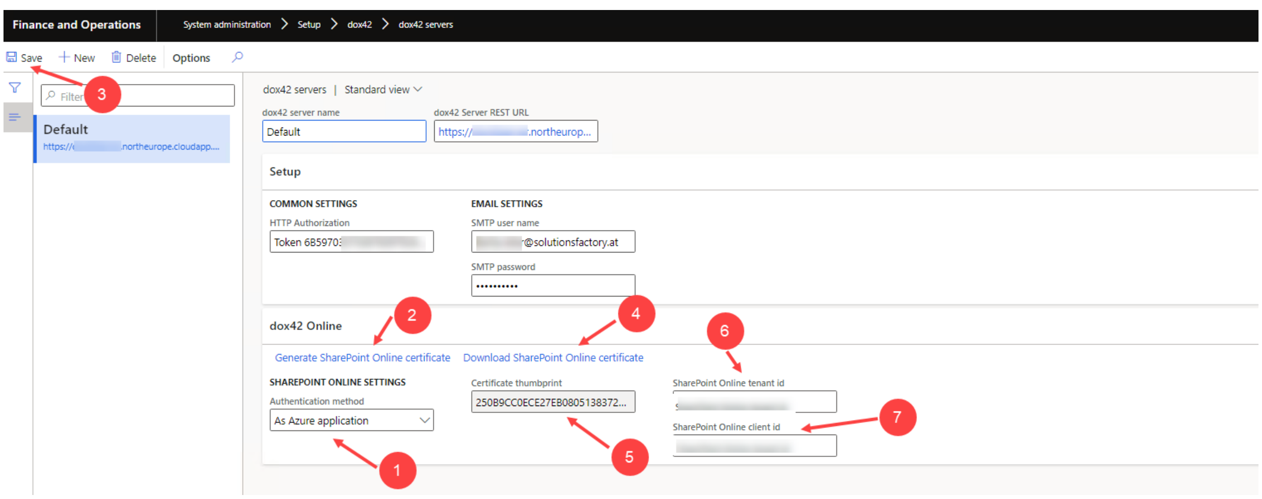
Server Name	Name	Type	Path
dox42server	Web Server (IIS)	Role	Web Server (IIS)
dox42server	HTTP Logging	Role Service	Web Server (IIS)\Web Server\Health and Diagnostics\HTTP Logging
dox42server	Health and Diagnostics	Role Service	Web Server (IIS)\Web Server\Health and Diagnostics
dox42server	ISAPI Filters	Role Service	Web Server (IIS)\Web Server\Application Development\ISAPI Filters
dox42server	ISAPI Extensions	Role Service	Web Server (IIS)\Web Server\Application Development\ISAPI Extensions
dox42server	.NET Extensibility 4.7	Role Service	Web Server (IIS)\Web Server\Application Development\.NET Extensibility 4.7
dox42server	ASP.NET 4.7	Role Service	Web Server (IIS)\Web Server\Application Development\ASP.NET 4.7
dox42server	Application Development	Role Service	Web Server (IIS)\Web Server\Application Development
dox42server	HTTP Errors	Role Service	Web Server (IIS)\Web Server\Common HTTP Features\HTTP Errors
dox42server	Directory Browsing	Role Service	Web Server (IIS)\Web Server\Common HTTP Features\Directory Browsing
dox42server	Default Document	Role Service	Web Server (IIS)\Web Server\Common HTTP Features\Default Document
dox42server	Static Content	Role Service	Web Server (IIS)\Web Server\Common HTTP Features\Static Content
dox42server	Common HTTP Features	Role Service	Web Server (IIS)\Web Server\Common HTTP Features
dox42server	Static Content Compression	Role Service	Web Server (IIS)\Web Server\Performance\Static Content Compression
dox42server	Performance	Role Service	Web Server (IIS)\Web Server\Performance
dox42server	Web Server	Role Service	Web Server (IIS)\Web Server
dox42server	IIS Management Console	Role Service	Web Server (IIS)\Management Tools\IIS Management Console
dox42server	Management Tools	Role Service	Web Server (IIS)\Management Tools
dox42server	Security	Role Service	Web Server (IIS)\Web Server\Security
dox42server	Request Filtering	Role Service	Web Server (IIS)\Web Server\Security\Request Filtering

Create a single-tenant app registration with permissions as on the screenshot:

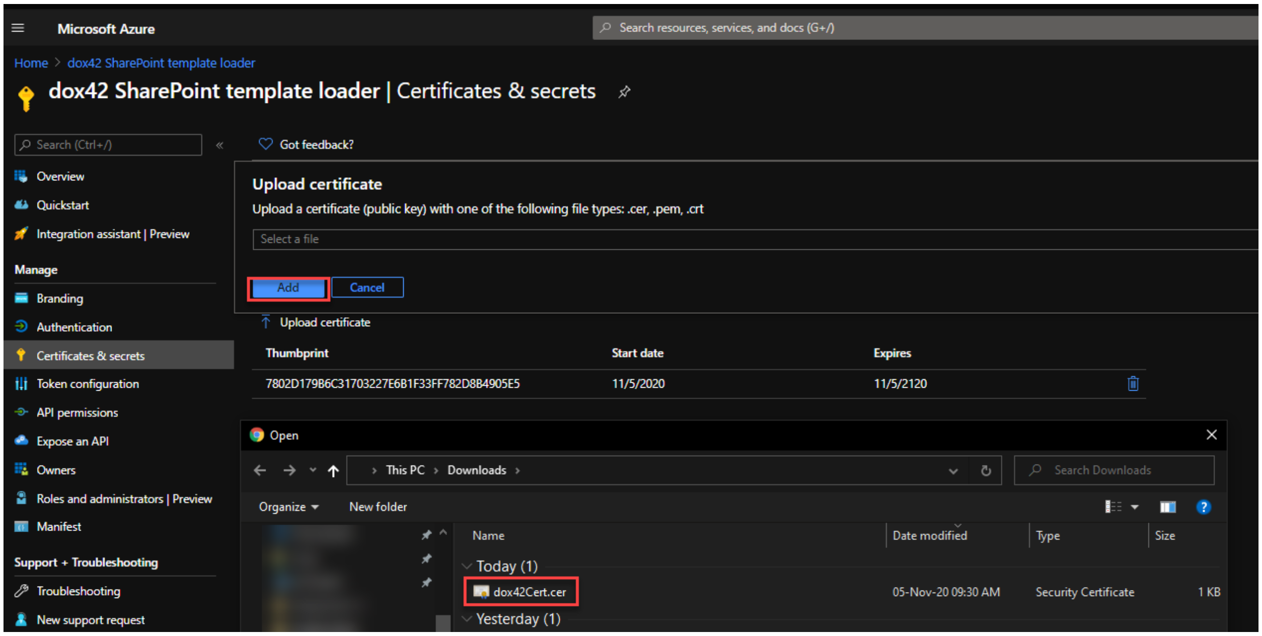




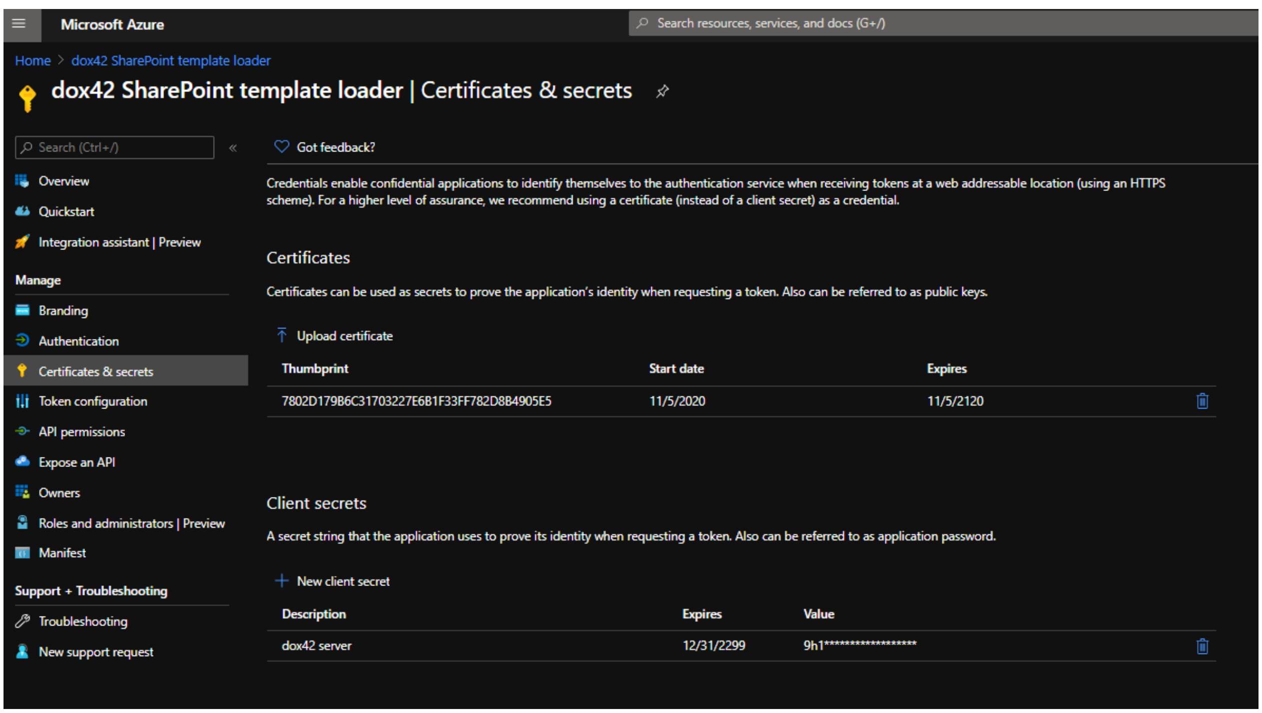
Fill the values in the order provided below using application registration parameters (take 6 and 7 from the created app registration):



Once you got the certificate downloaded (step 4 in the screenshot above), upload it to Azure AD application registration certificates.

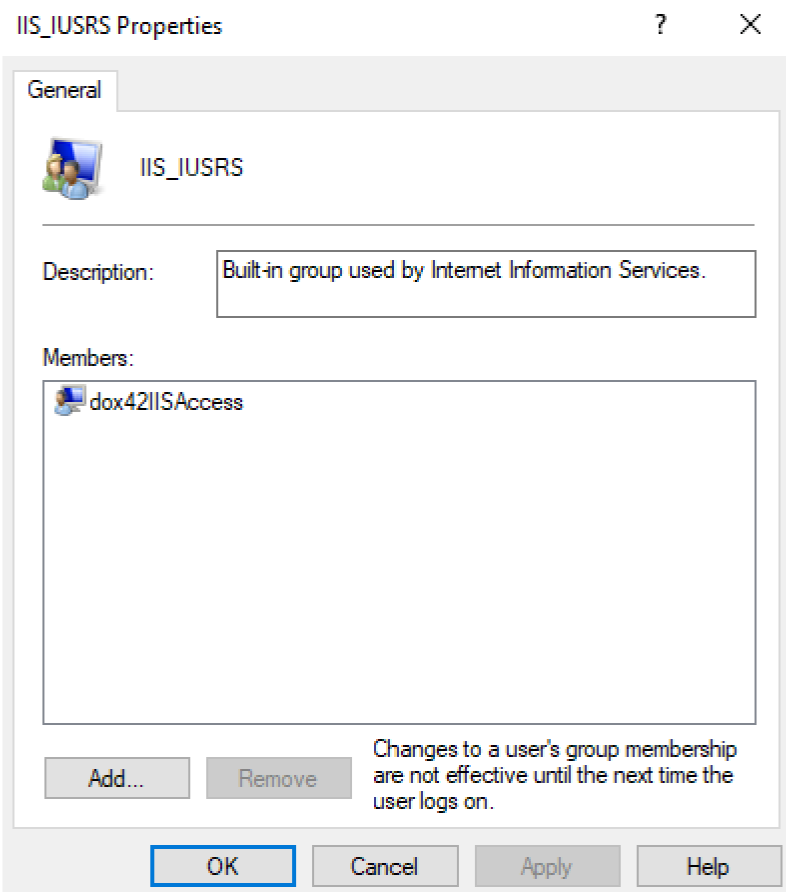


Here's how it should look like:

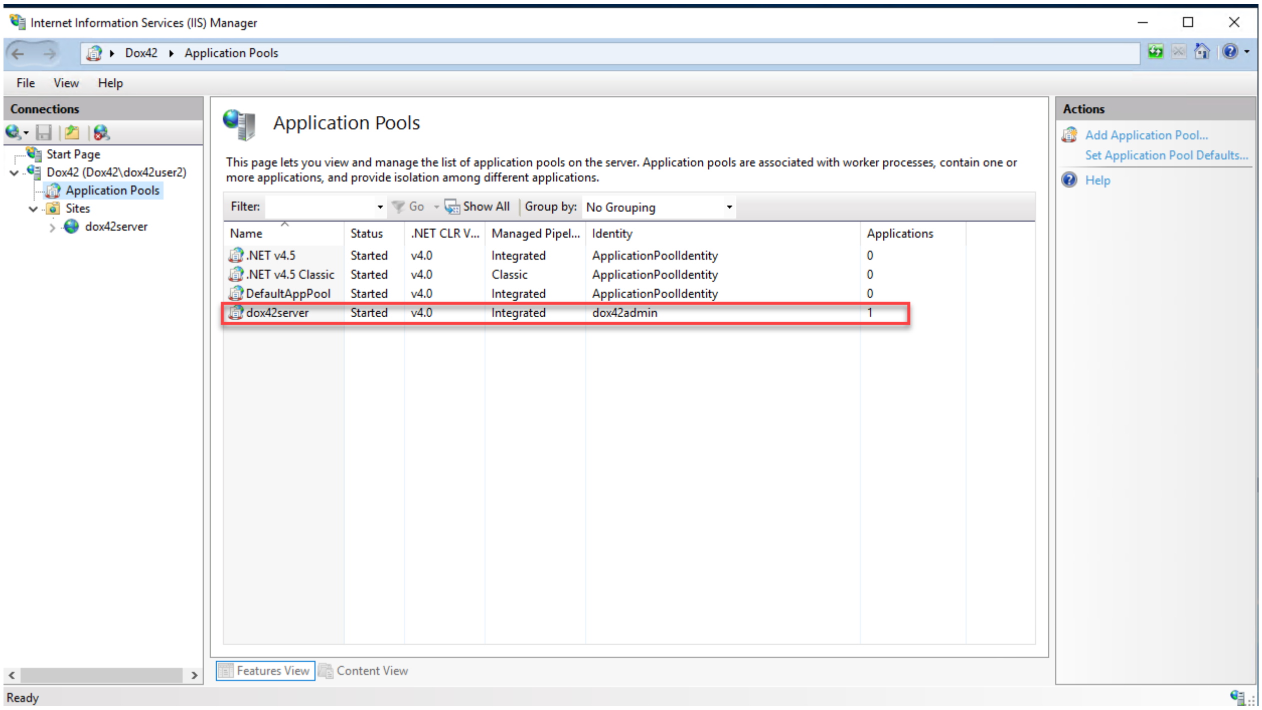


10. For customers who store templates NOT on Sharepoint (who already takes care of authentication) BUT on the dox42server itself, the dox42 server need to be set up in a different way – we need to ensure that only authenticated requests are allowed to generate documents out of templates.

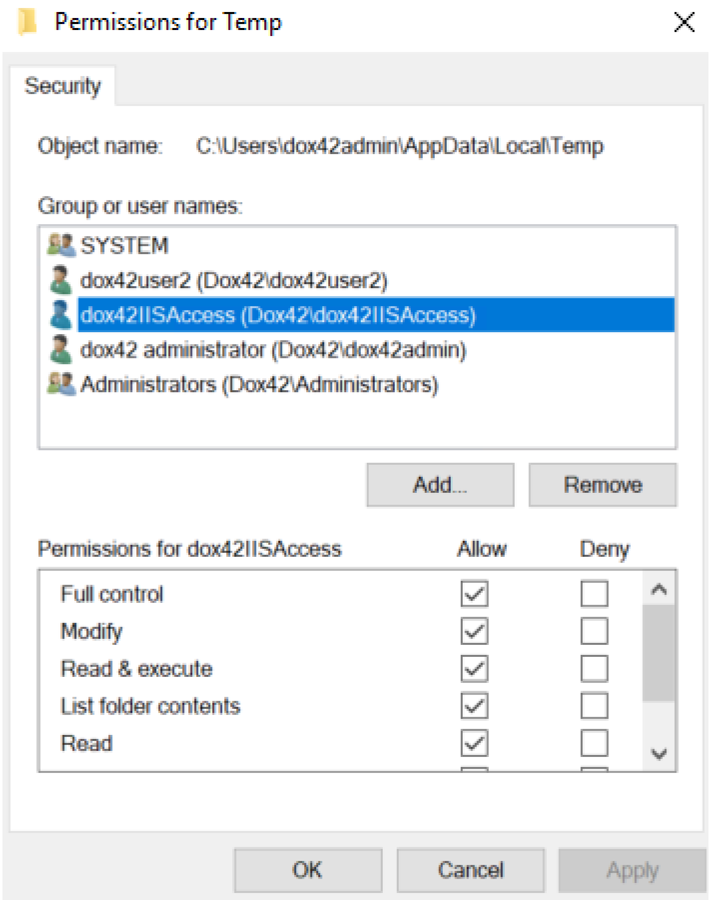
On dox42server, create a user called dox42IISAccess and place him in a group called IIS_IUSRS (create if doesn’t exist), remove user from any other groups (if assigned):



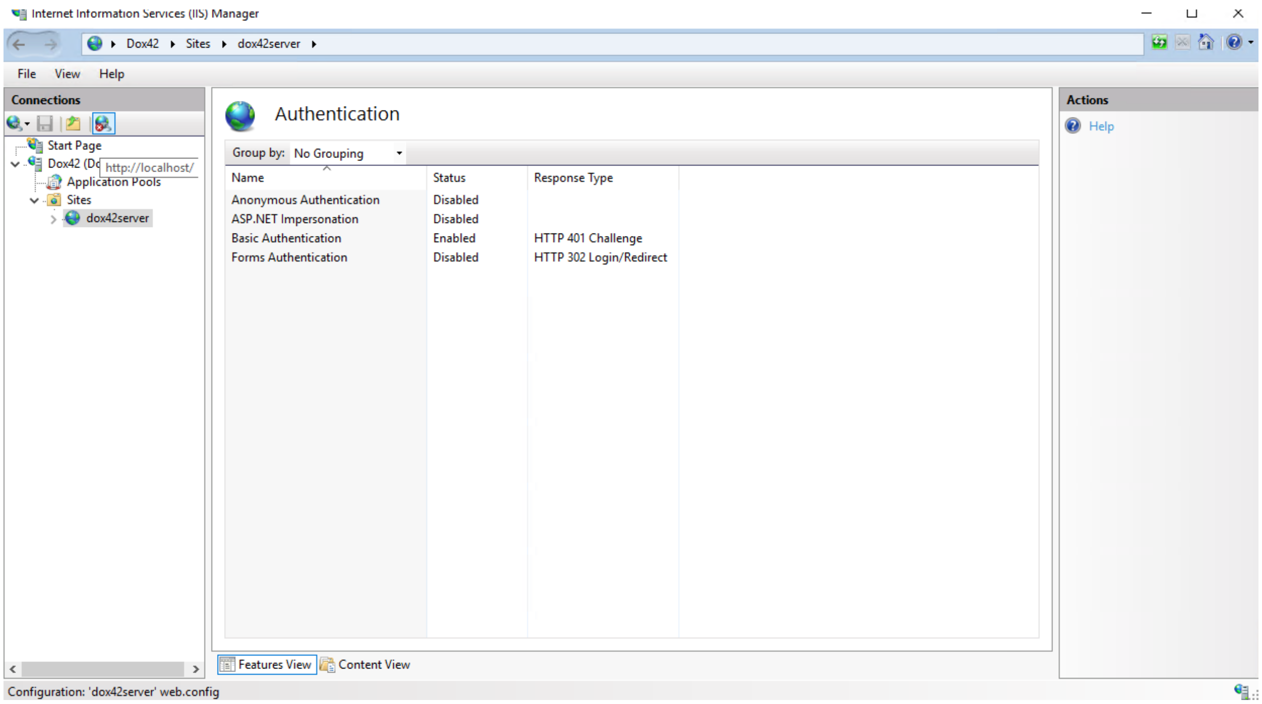
In IIS settings check the identity that dox42server web site is using (dox42admin on the screenshot):



You will need to provide full access to dox42IISAccess user for the Temp folder (path as on the screenshot, if identity is ApplicationPoolIdentity then the path would be C:\Temp):

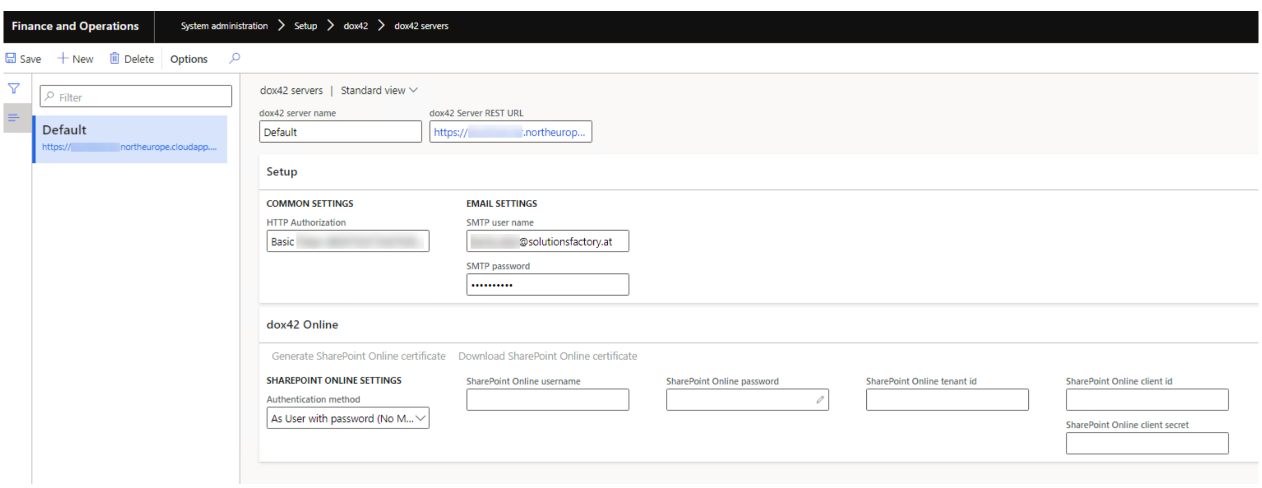


In Authentication settings of the web site, disable anonymous authentication, and enable basic authentication (you might need to install this feature first using Server Manager tool):



Finally encode username and password of the dox42IISAccess user. In order to encode you can use command line for instance with the following syntax: $ echo -n "username:password" | base64

Paste the encoded value into HTTP Authorization, field with the preceding “Basic” word on dox42 server page, set other fields accordingly as on the screenshot below (note that encoding is not encryption and credentials can be easily decoded but in pair with https protocol it makes connection secure and encrypted):



Now you can setup a report and try printing it.

In case you get any errors, you can troubleshoot using curl and logs on the dox42 server.

For further details also take a look at the dox42 Server Documentation: www.dox42.com/dox42Server.aspx.

Installation of dox42 for Finance and Operations for dox42 Server (on-premises)

In general, on-premises installation of “dox42 for Finance and Operations” for dox42 server is similar to its cloud approach, although there are several differences:

1. We need to register an application in Active Directory Federation Services (ADFS - an “onprem” analog of Azure Active Directory) to be able to link a new data source during report template setup to D365 FO instance.

   In most cases application registration that allows users/apps to interact with Dynamics environments should already exist. In that case you only need to add a new native client application role by logging in to ADFS server and running the following PowerShell command:

   Add-AdfsNativeClientApplication -Name Dox42 -Identifier “aeff3b71-25b8-4b4b-b7e5-3d13ab83c006” -RedirectUri http://dox42foroperations/ -PassThru

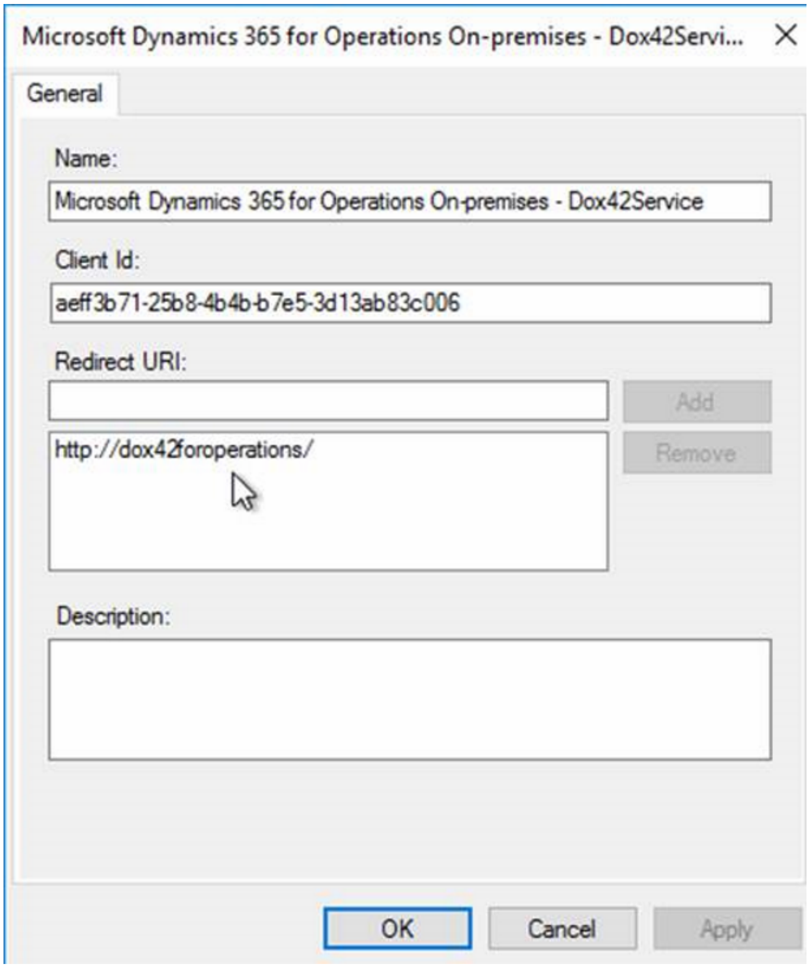
   Note: you must use the same Identifier value as is provided in command (aeff3b71-25b8-4b4b-b7e5-3d13ab83c006)

   Now we want to grant permission to the application, use the following PowerShell command:

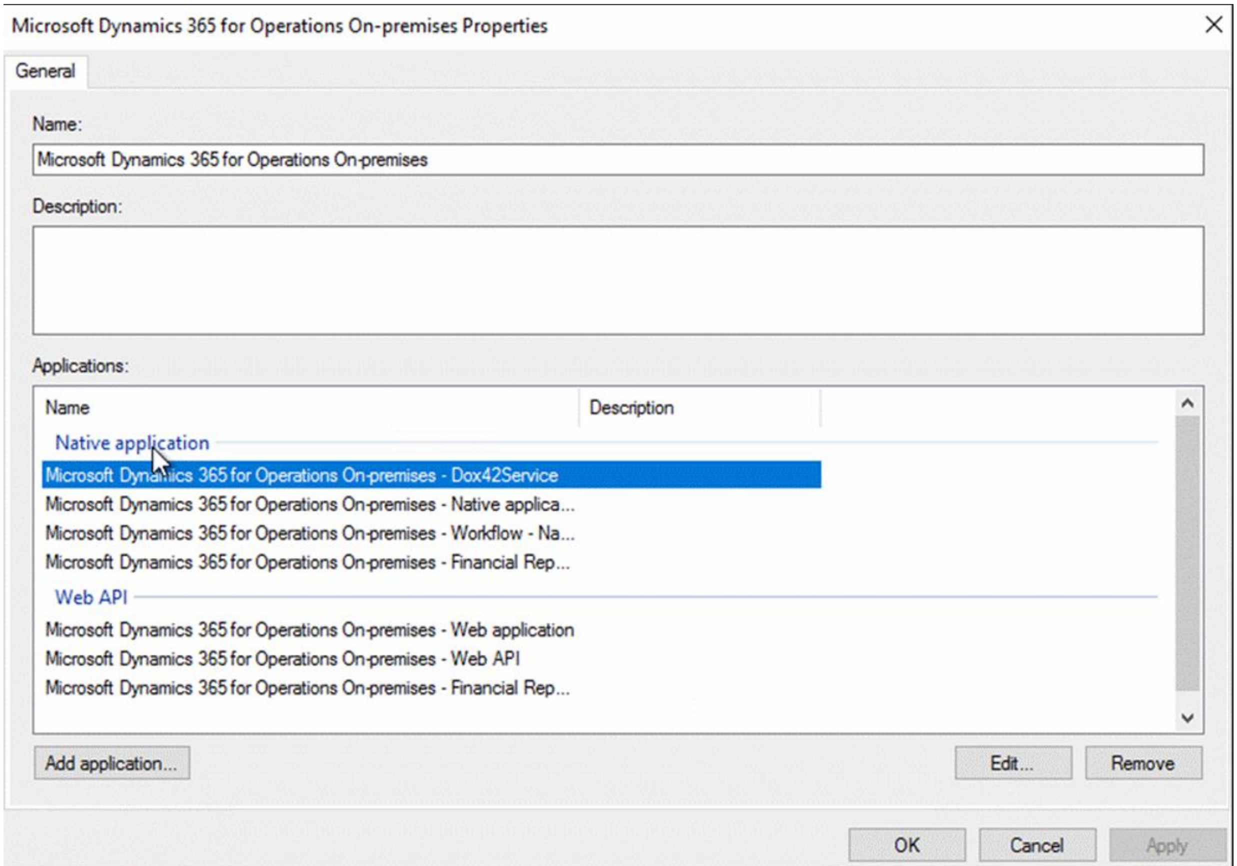
   Grant-AdfsApplicationPermission -ClientRoleIdentifier “aeff3b71-25b8-4b4b-b7e5-3d13ab83c006” -ServerRoleIdentifier "D365_Instance_URL_Here"

   If an application, that allows interaction with D365 FO environment, is not registered in ADFS, the system administrator should create it first, in case you have to create it:

   1. In ADFS expand Application Groups folder and open existing group. There you have to create a new Native Application with the properties as on the screenshot:



2. Click “OK” - a new application is added:

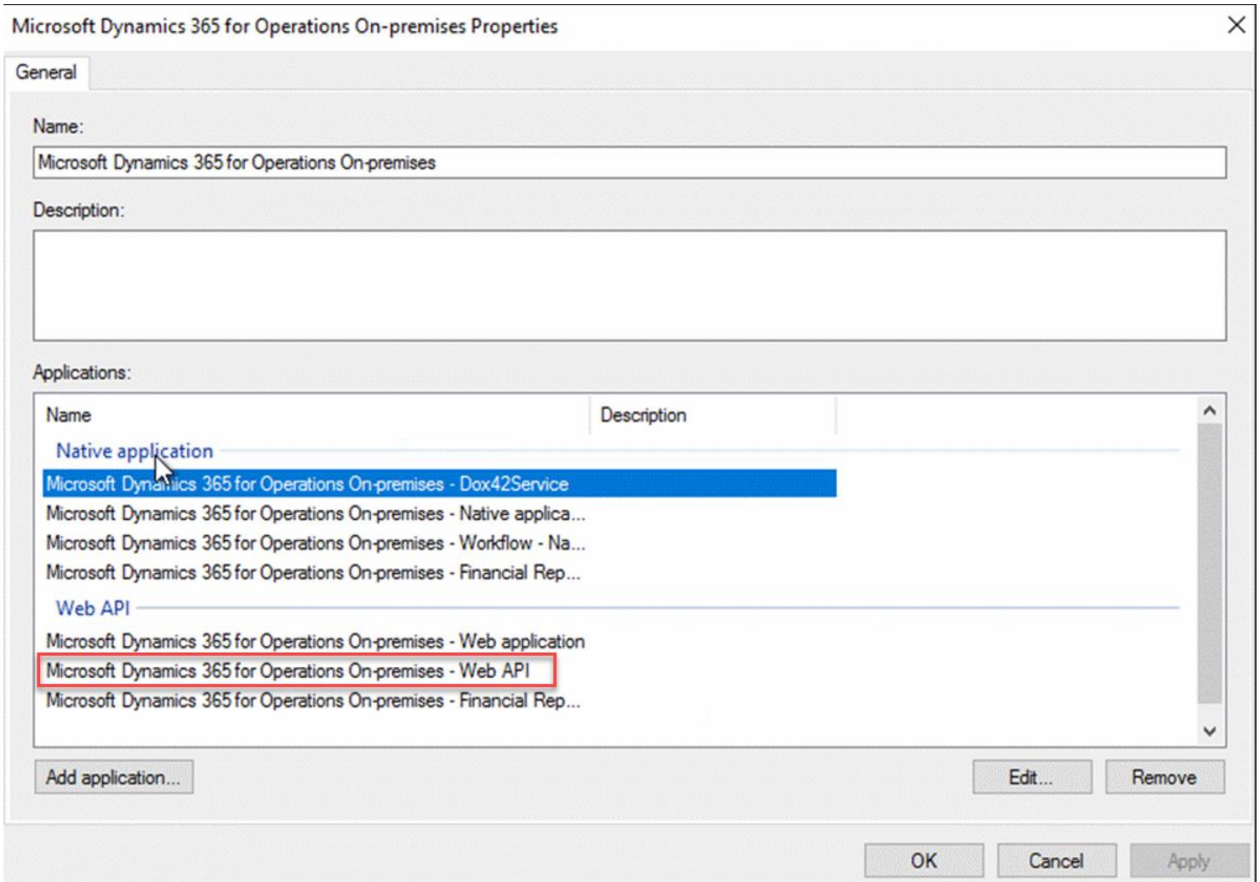


3. Grant permission by running the following PowerShell script (as admin):

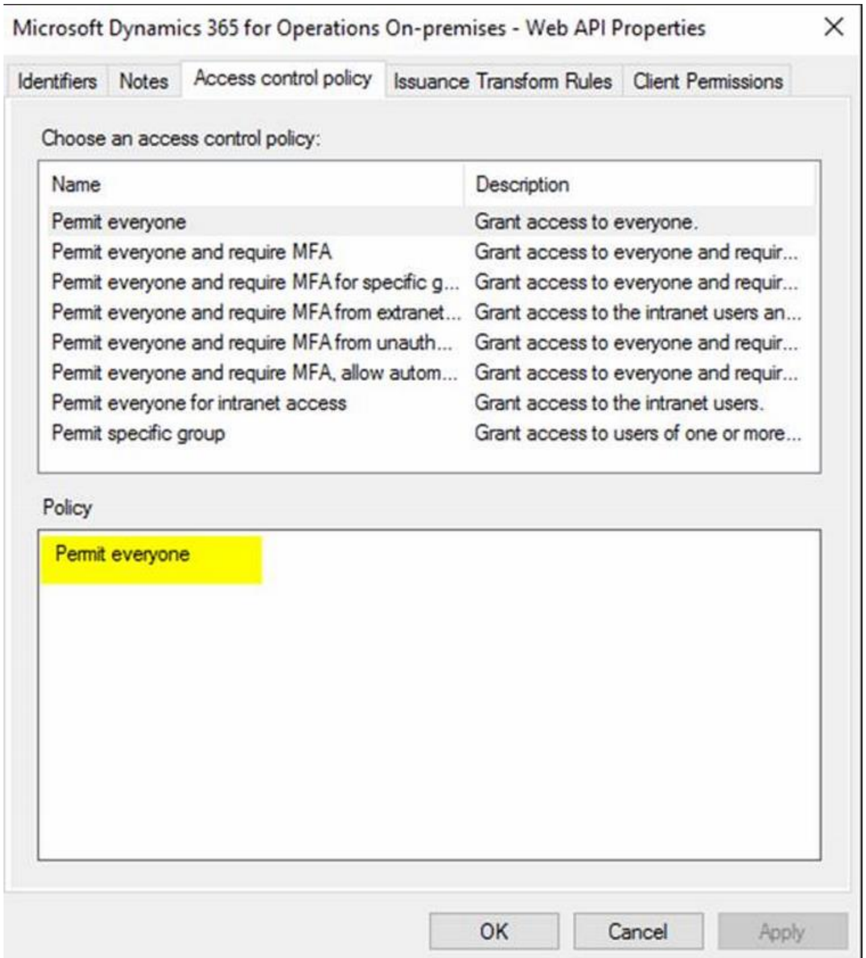
   Grant-AdfsApplicationPermission -ClientRoleIdentifier "aeff3b71-25b8-4b4b-b7e5-3d13ab83c006" -ServerRoleIdentifier "**Error! Hyperlink reference not valid.**"

4. Now you have to properly set properties for the Web API app:

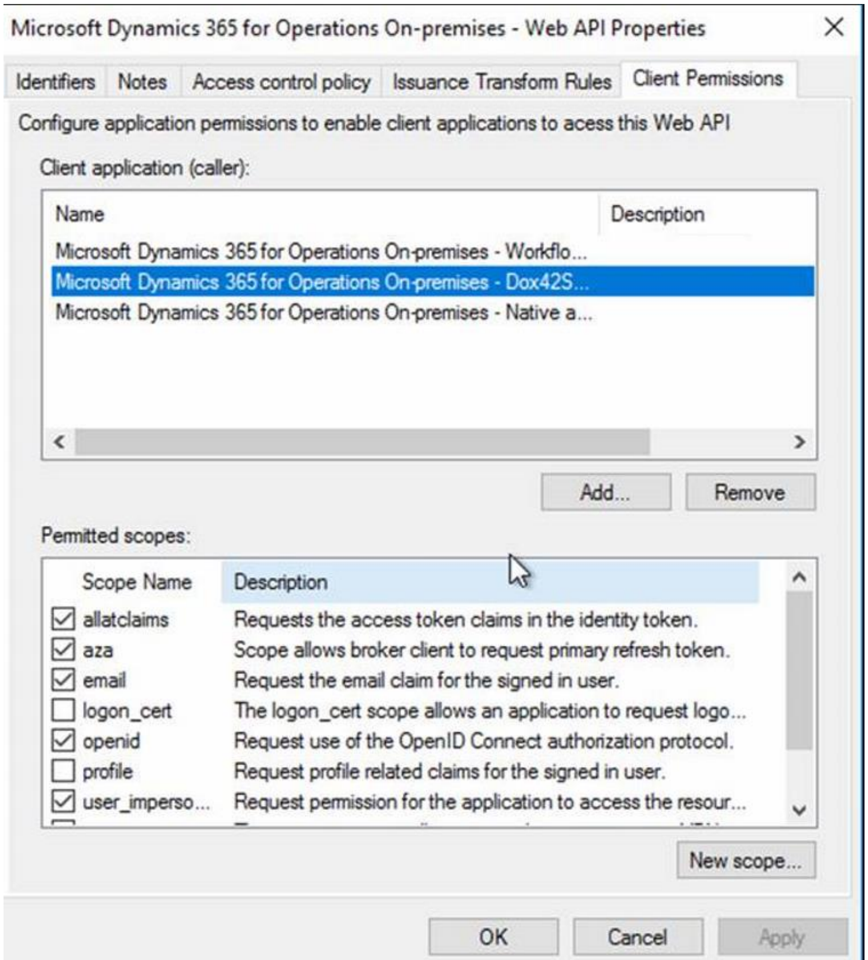
   Double click Web API app from the existing applications list in ADFS group

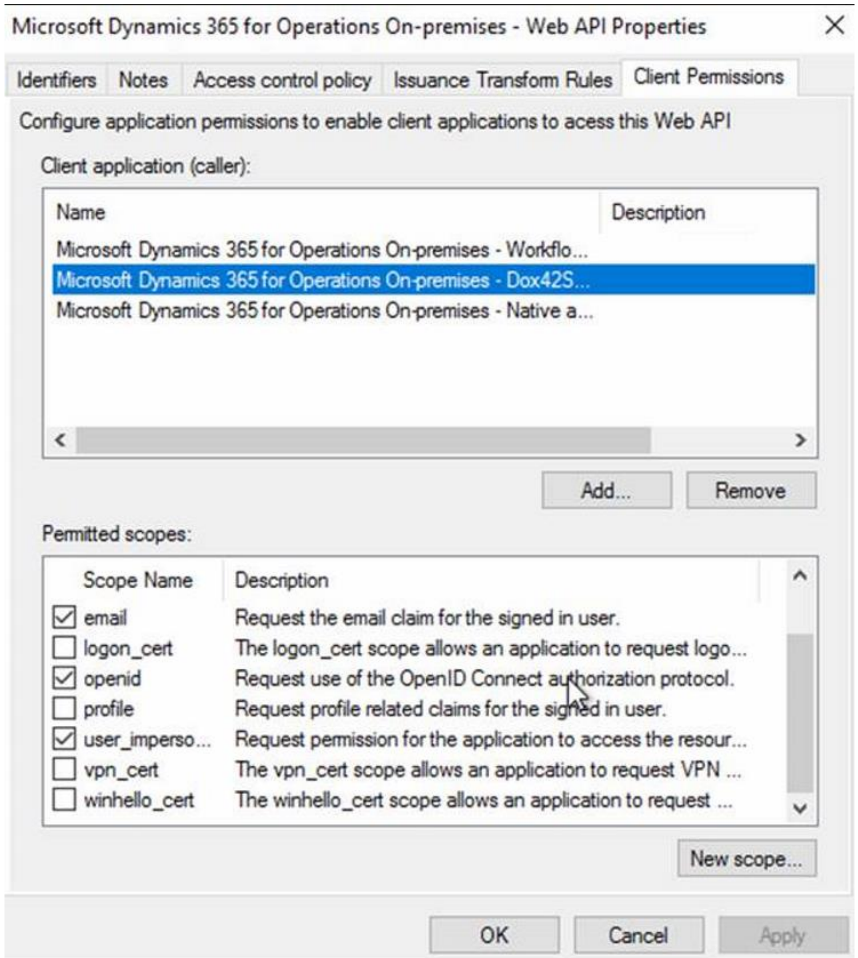


On the “Access control policy” tab choose “Permit everyone” policy:



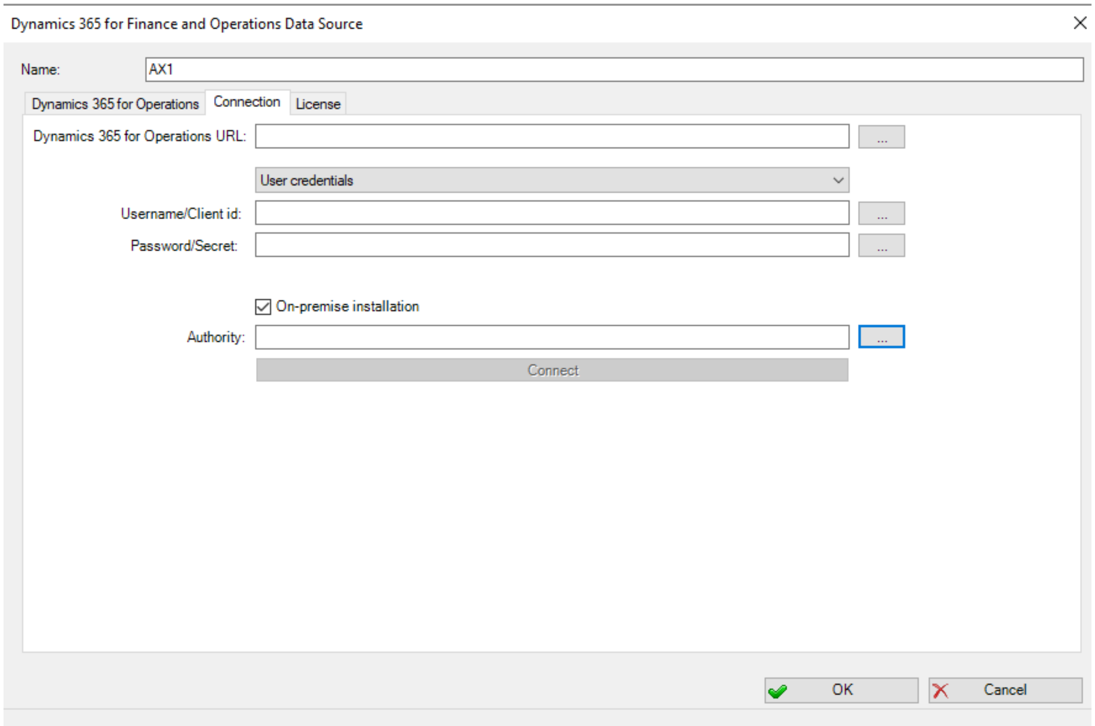
On the “Client permissions” tab check the same permitted scopes as are set for the Workflow app:


Microsoft Dynamics 365 for Operations On-premises - Web API Properties
Identifiers
Notes
Access control policy
Issuance Transform Rules
Client Permissions
Configure application permissions to enable client applications to acess this Web API
Client application (caller):
Name
Description
Microsoft Dynamics 365 for Operations On-premises - Workflo...
Microsoft Dynamics 365 for Operations On-premises - Dox42S...
Microsoft Dynamics 365 for Operations On-premises - Native a...
Add...
Remove
Permitted scopes:
Scope Name
Description
allatclaims
Requests the access token claims in the identity token.
aza
Scope allows broker client to request primary refresh token.
email
Request the email claim for the signed in user.
logon_cert
The logon_cert scope allows an application to request logo...
openid
Request use of the OpenID Connect authorization protocol.
profile
Request profile related claims for the signed in user.
user_imperso...
Request permission for the application to access the resour...
New scope...
OK
Cancel
Apply



5. Click “OK” to apply and save changes.

Once the app is created and set up and PowerShell commands were successfully executed, we can connect data source. On connection tab select “On-premise installation” checkbox:



Now populate field values taking into consideration the following descriptions:

Dynamics 365 for Operations URL – URL of the target Dynamics environment

Username/Client id – e-mail address of the user that has access and is enabled in D365 FO instance that we are connecting to

Password/Secret - password of that valid user

Authority – ADFS server URL (normally is *https://hostname/adfs/ can be taken from user settings page in D365 FO: System administration => Users => any valid user settings*)

Installation of dox42 for Finance and Operations for dox42 Online

Using dox42 with AAD and/or with **dox42 Online** (Saas), requires the following properties:

- Application ID / Client ID **>** is provided after the app registration in the Microsoft Admin Center
- Redirect URL
- Tenant ID
- Client Secret for dox42 Online

For the AAD integration, you have to configure a few settings in the Microsoft ***admin center*** and in dox42 Online.

Please note: for some of the following steps you need (global-) Admin rights:

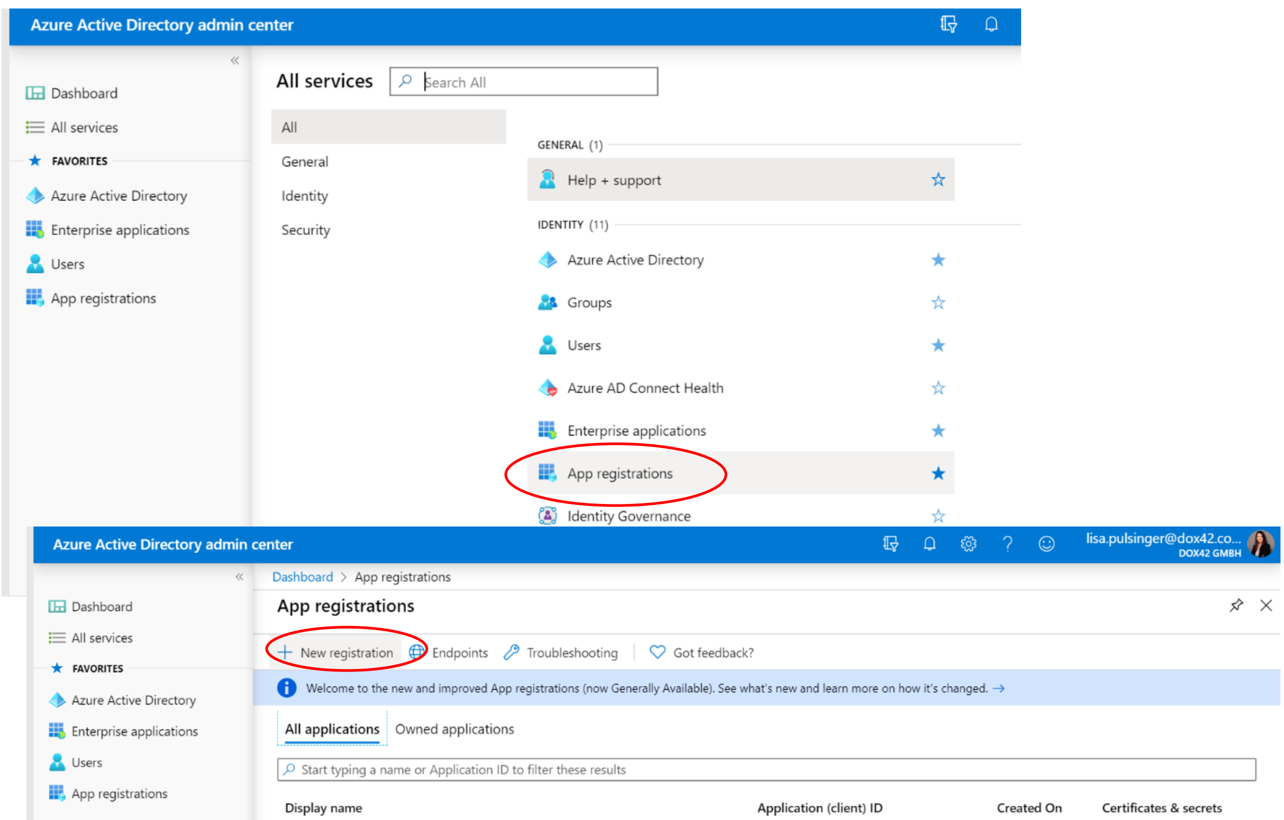
- App Registration

- Enabling required permissions
- Entering Redirect URL(s)

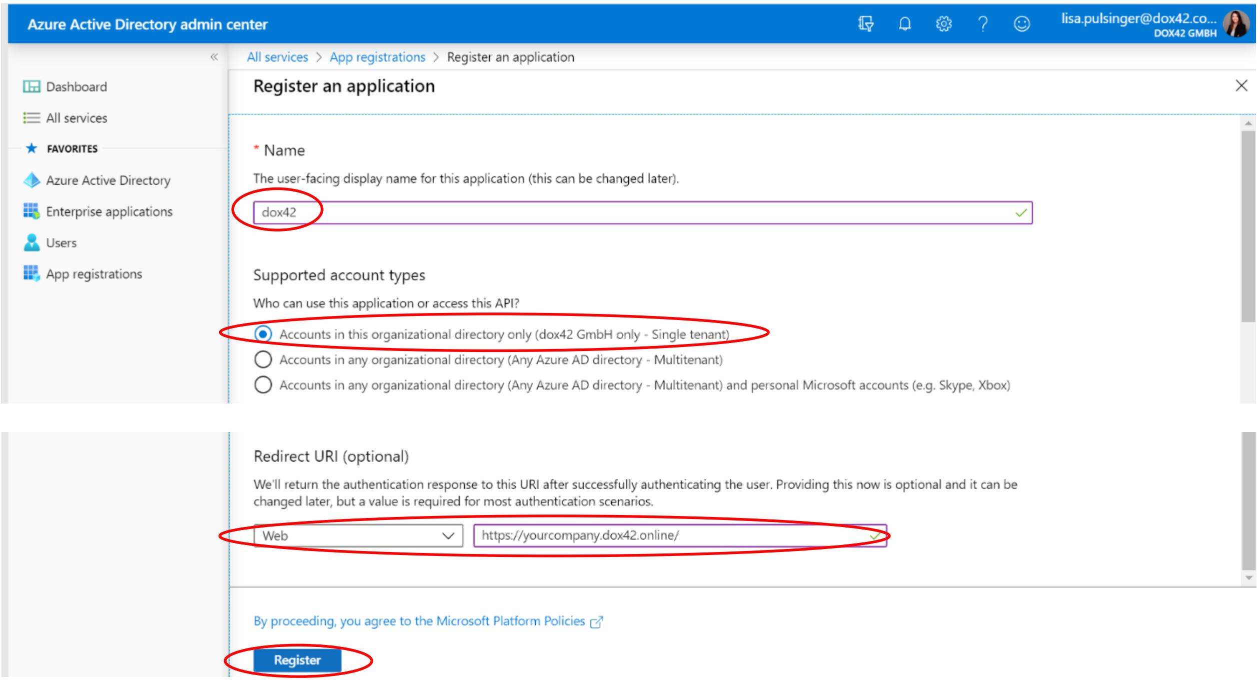
Azure Active Directory App Registration

Firstly, you need to create an application in the Microsoft Azure AD admin center to set the AAD permissions for the dox42 Add-in and Server.

- Open the Office 365 Admin Center
- Go to -> **Admin centers** -> **Azure AD,** or click here in order to log in immediately: https://aad.portal.azure.com
- Click on **All services -> App registrations**
- **Click on New Registration**

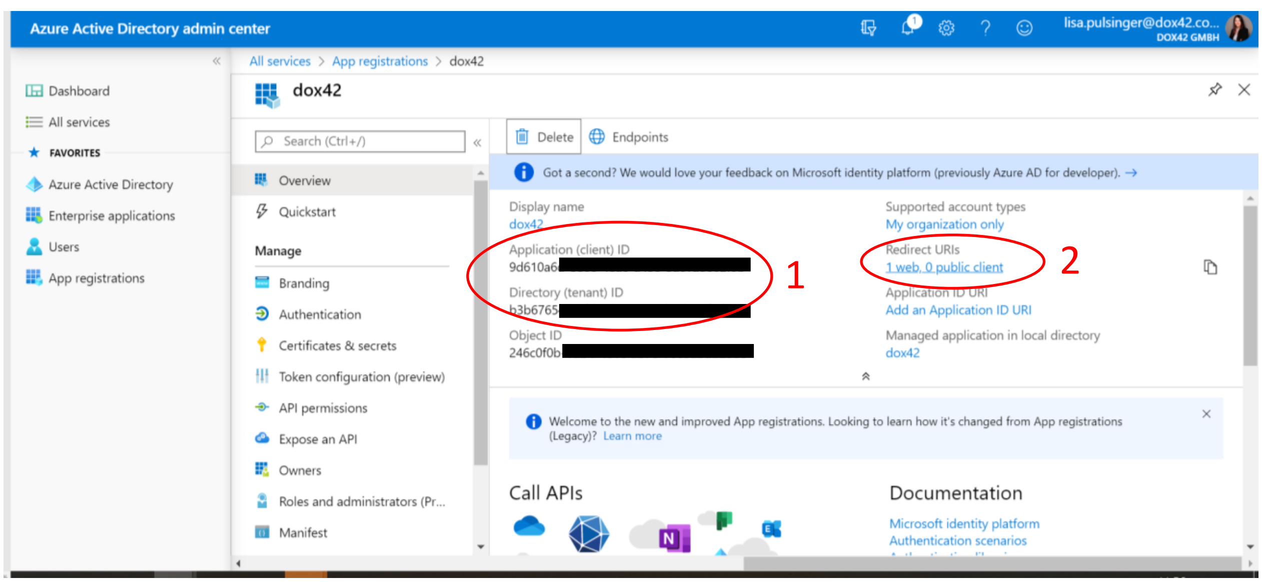


Name your application accordingly and choose which accounts should have access to your application. Also add a Web Redirect URI containing the link to your dox42 Server instance and click on Register:

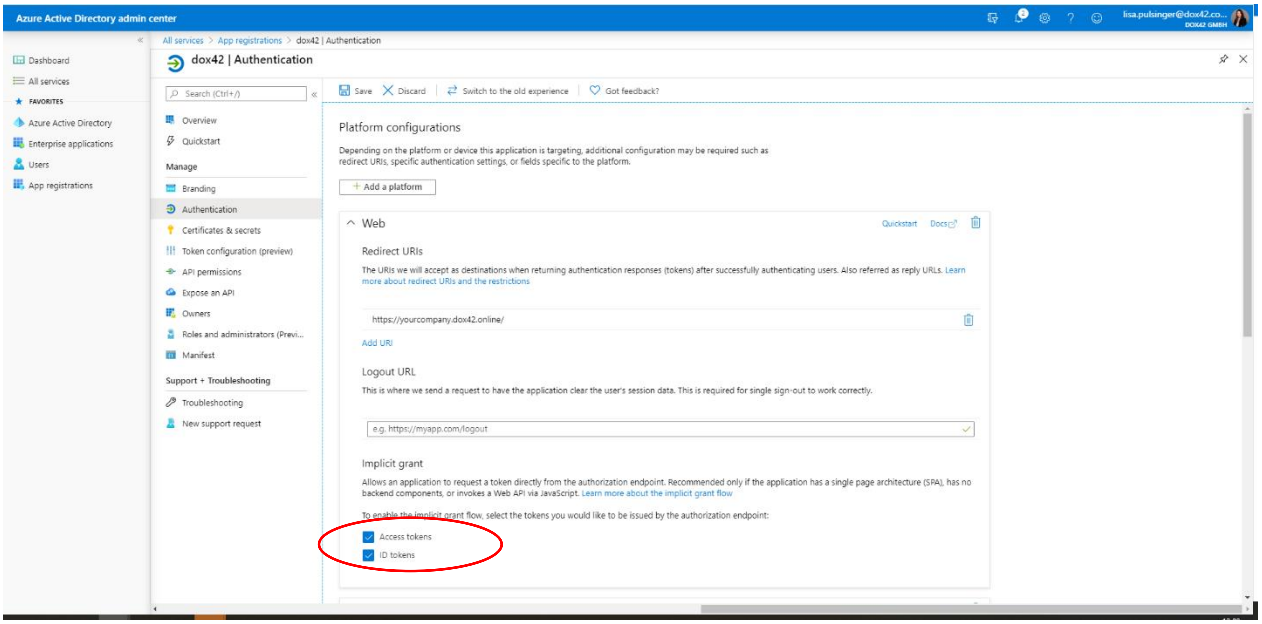


Token Permissions

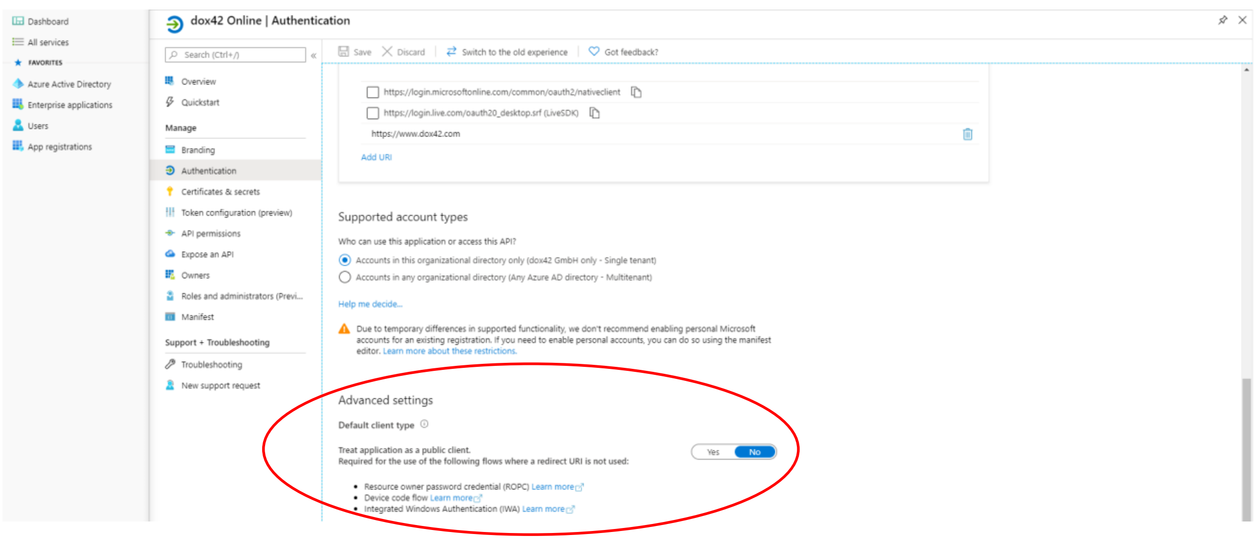
Next, you need to grant token permissions for your app. Within your newly added application, click on Redirect URIs (2).



Now, on the In the Implicit grants section of the Authentication register, tick both “Access tokens” and “ID tokens”:



Scroll down further to find additional settings. Under Advanced Settings keep “Treat application as a public client” set on No.



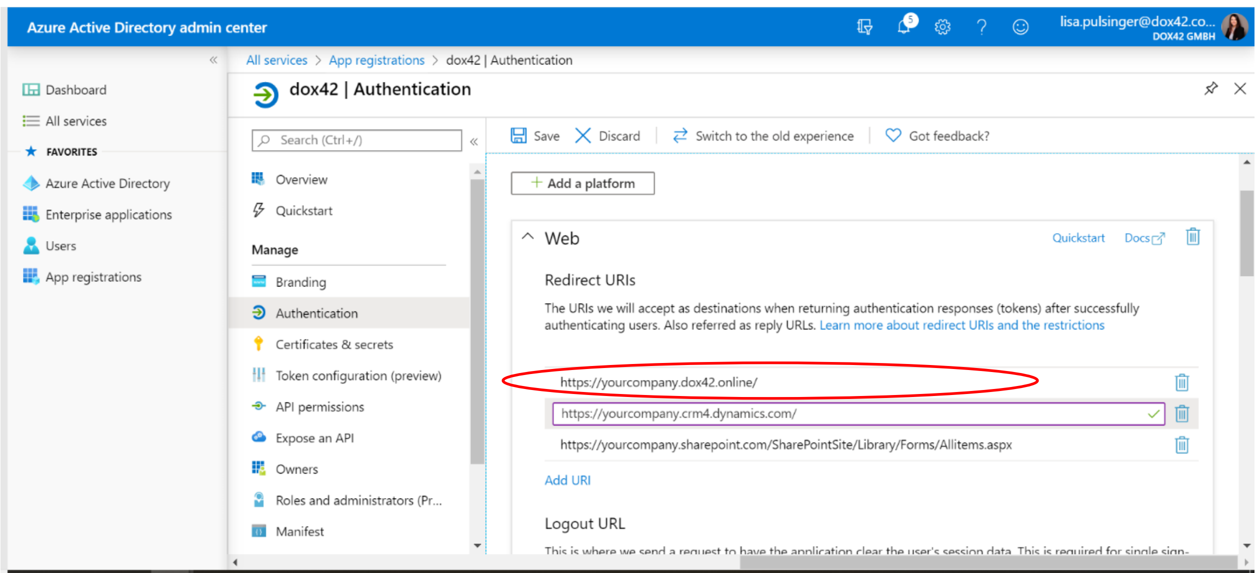
Enter Redirect URIs

Now scroll up again to the beginning of your Authentication page. You need to add Redirect URIs next. Please specify the following:

- your dox42 Online URL:
  https://yourcompany.dox42.online/
- any additional URLs for applications you want to call the dox42 server from, e.g. Dynamics 365 CE/CRM. Please add the exact URLs where the dox42 Server will be called from. (e.g. https://Yourcompany.crm4.dynamics.com/

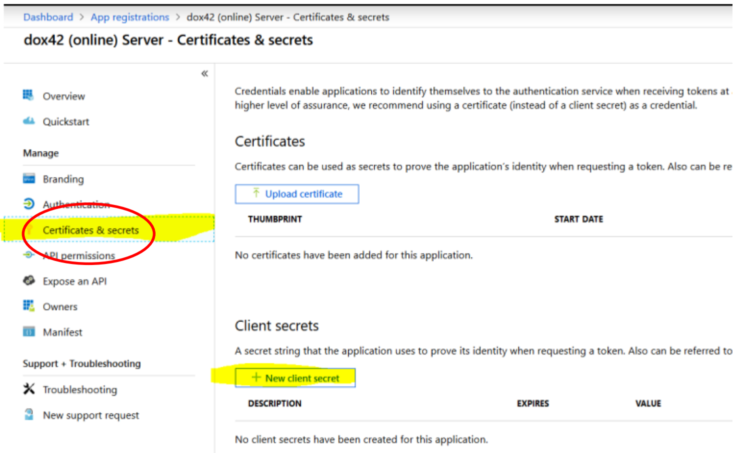
Note: You may NOT use wildcards (*). Microsoft changed this behavior during 2018, so you may find older working App registrations using wildcards, but new App registrations will not work with wildcards.

To use dox42 Online with D365 FO you will only need the dox42 Online URL like indicated in the red circle below:

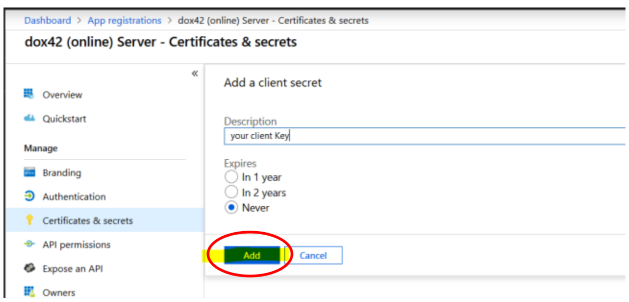


Add a Client Secret

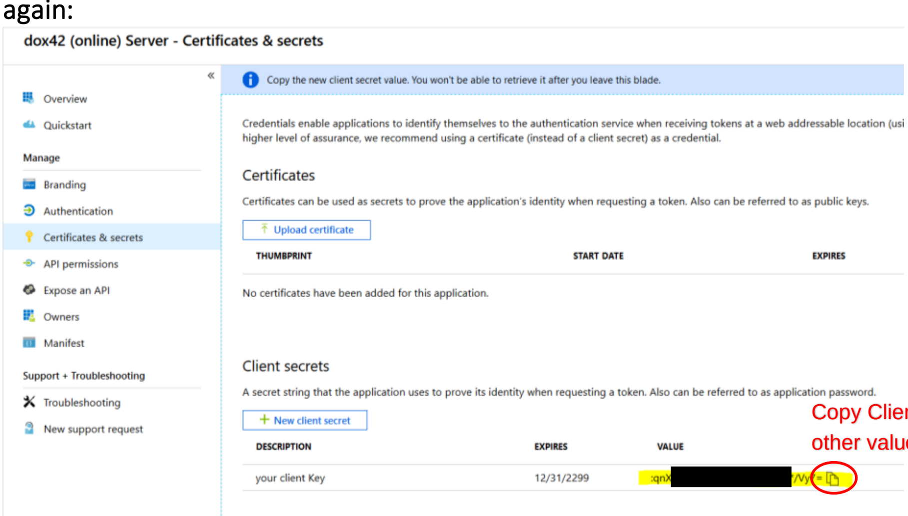
In the register **Certificates & secrets**, you need to add a new client secret.



Select your required expiry date (we recommend using "Never") and click Add.



Make sure to COPY the Client Key, as it will be hidden afterwards and you will <u>not</u> be able to retrieve it again:

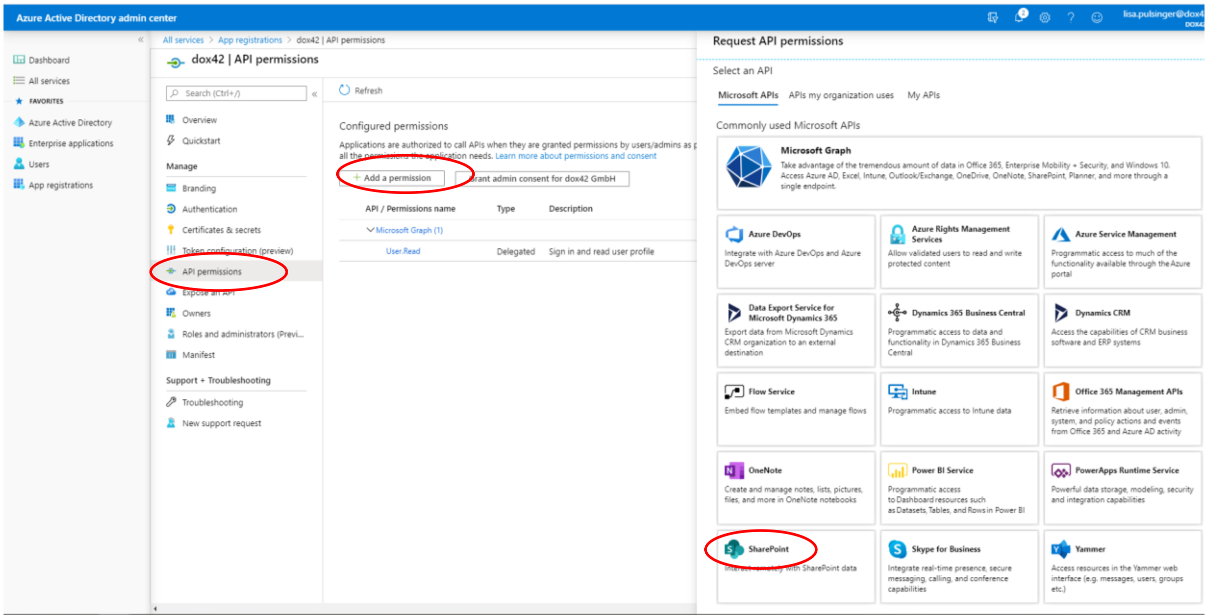


Copy Client Key and add it to your list with the other values (AppID, Tentant ID, etc.)

We will need the client secret in the dox42 Finance and Operations Configuration later on.

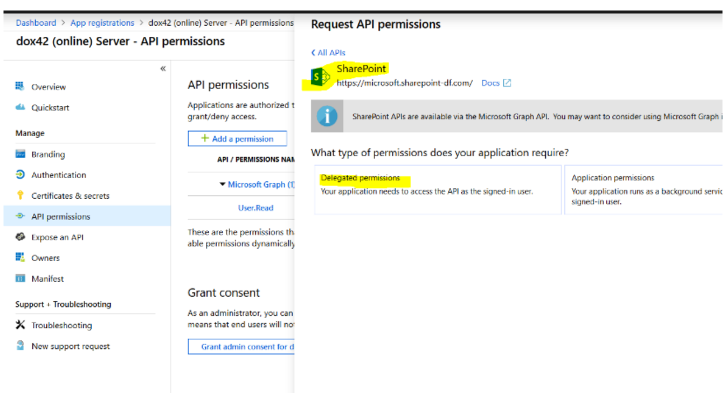
Add API Permissions

Move to the register API Permissions and click “Add a permission”. You need to grant the application delegated permissions for SharePoint Online.

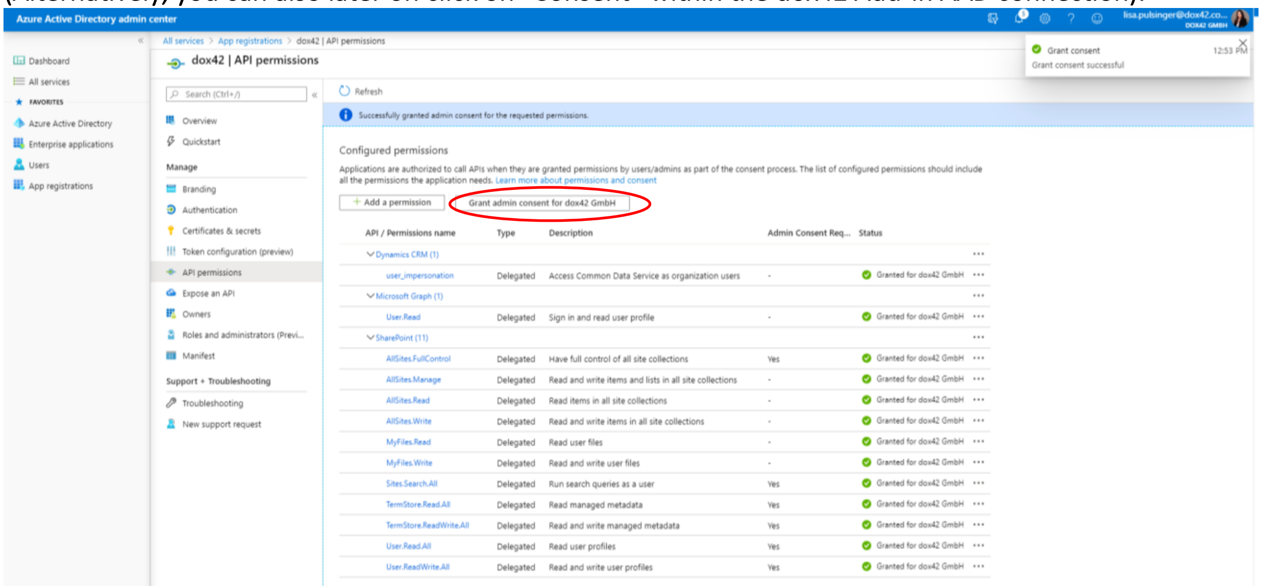


Please select the permissions according to your requirements and systems you are using dox42 with.

The dox42 server requires SharePoint read and write rights for Templates and SharePoint Archive, therefore in this documentation we granted full rights to SharePoint.



Next click on “Grant Admin Consent” for your company, to give your application the full permissions (Alternatively, you can also later on click on “Consent” within the dox42 Add-in AAD connection):

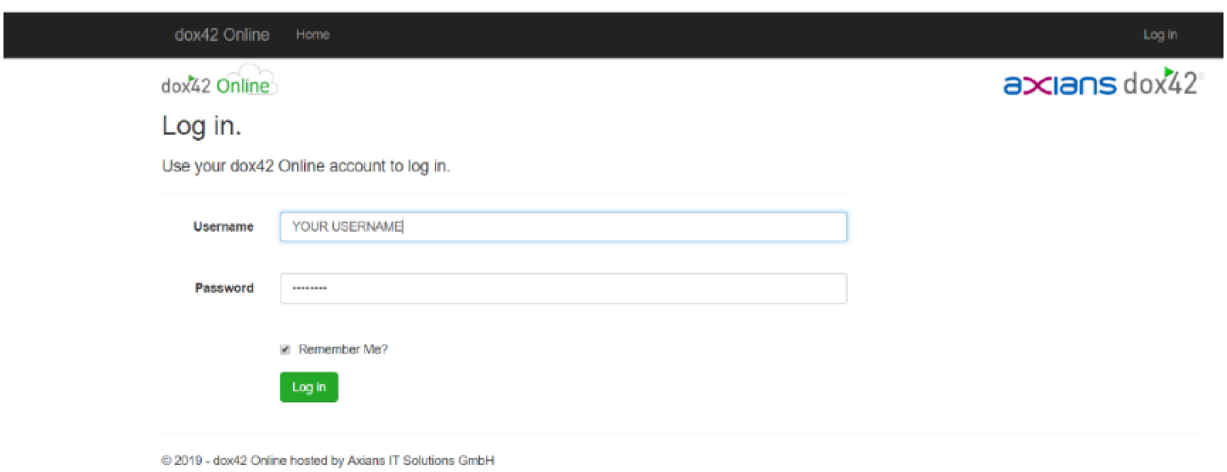


Your app registration is complete now, next you need to configure your dox42 Online accordingly.

dox42 Online Configuration

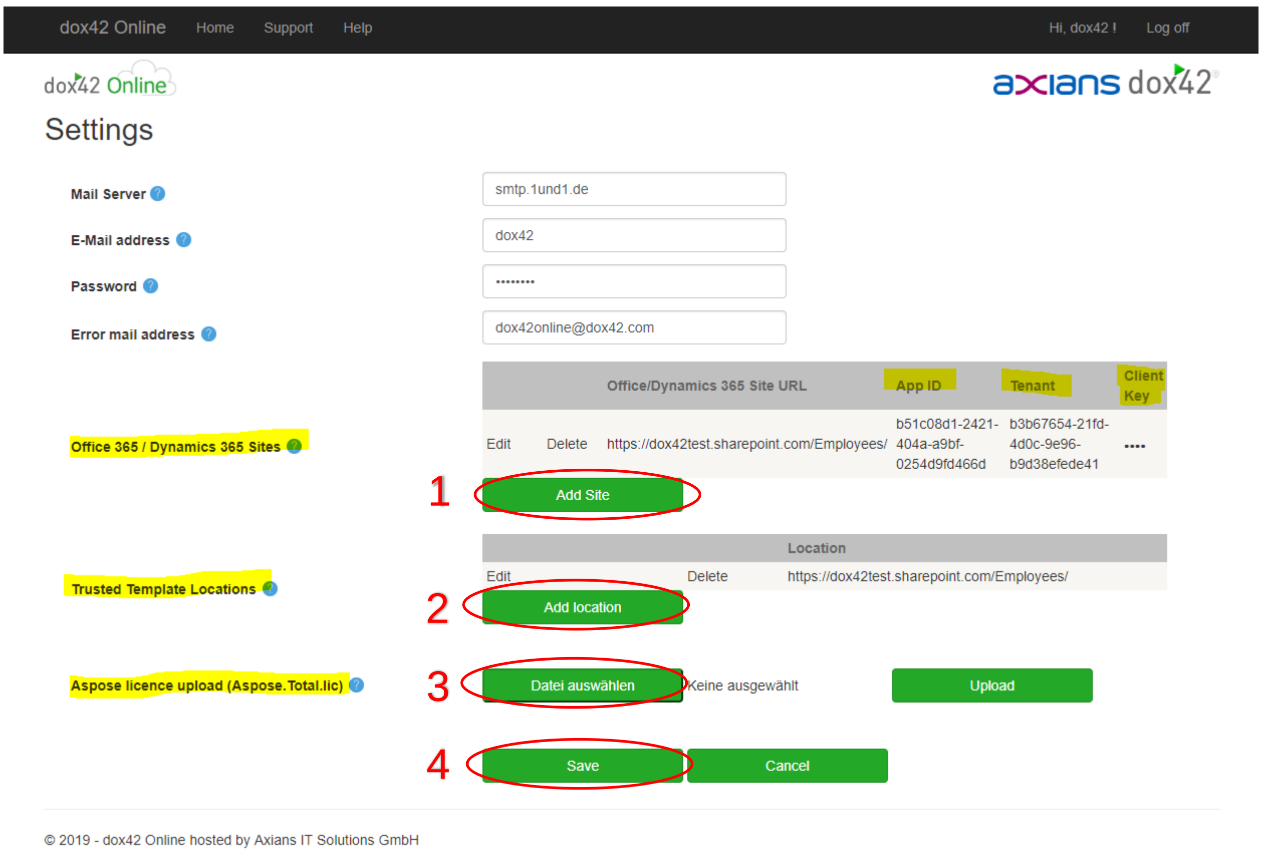
Once your set-up for your AAD app is finalized, you need to complete the configurations in your dox42 Server. If you work with dox42 Online, follow this chapter.

Please log into your dox42 Online management app with the user name and password received from dox42. The URL for your management app look similar to this: https://yourcompany.dox42.online/admin



Add your AAD registration settings

1. Click on “Add Site” and enter your SharePoint Online URL in this format: https://yourcompany.sharepoint.com/site/ Each URL needs to be added with the App ID, Tenant ID and the generated Client Secret of the App registered in the Azure AD Admin Center like in this documentation above.
2. Configure your trusted template locations (Your templates have to be stored on SharePoint Online)
3. Upload your Aspose license (not applicable for trial installations)
4. Click on “Save” at the bottom of the page



Installation of dox42 in D365 FO

dox42 for Finance and Operations adds a “dox42” package to D365 FO. The package contains all the integration components needed to seamlessly create documents directly from the Dynamics web client.

You could either install the Deployable Package or the Source Code (available on request from support@dox42.com). The Deployable Package contains the binaries only, the Source Code can be useful in case you want to develop your own extensions or if you want to debug something.

Regardless of which option you chose, we recommend integrating the solution into your Azure Dev Ops Repository. This allows to deploy the dox42 package as part of your regular build and release process.

You will find further information on https://docs.microsoft.com/en-us/dynamics365/unified-operations/dev-itpro/deployment/apply-deployable-package-system as well as https://docs.microsoft.com/en-us/dynamics365/unified-operations/dev-itpro/dev-tools/manage-runtime-packages.

After successfully installing the deployable package, the next step is to configure D365 FO to work with the dox42 Server.

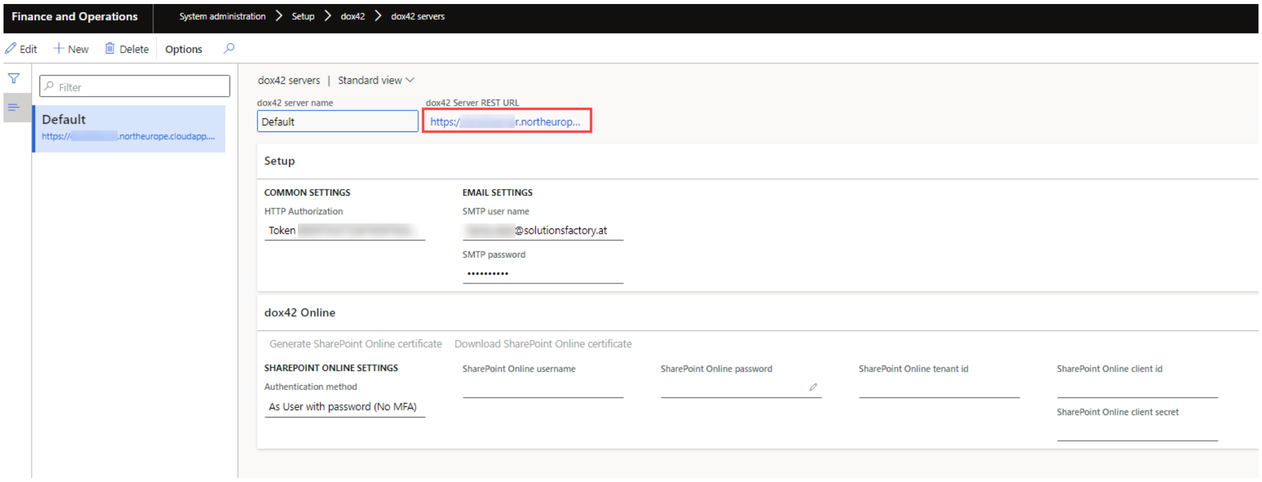
Under **System administration > Setup > dox42 > dox42 servers**, setup the dox42 server settings.

Under **System administration > Setup > dox42 > dox42 parameters**, select the **General** tab page.

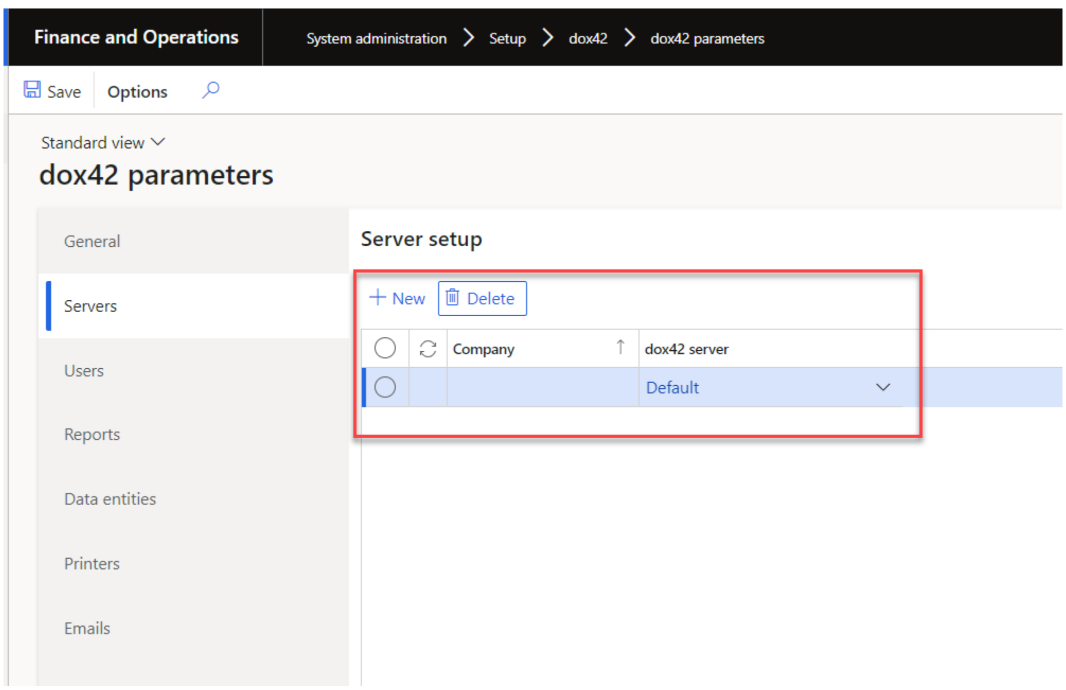
Create a new default server setup record by clicking on **New**.

Installation for dox42 Server

Enter the path to the dox42 server service to the field **dox42 Server REST URL**.

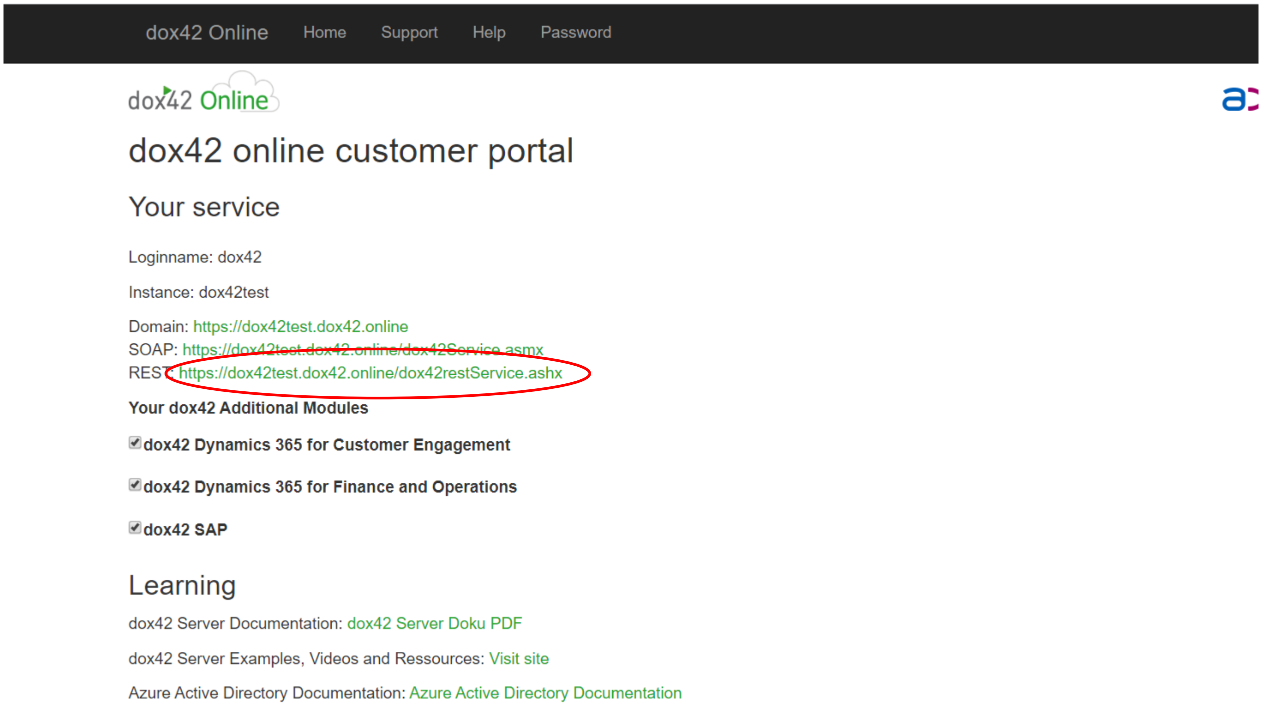


Set up default dox42 server.



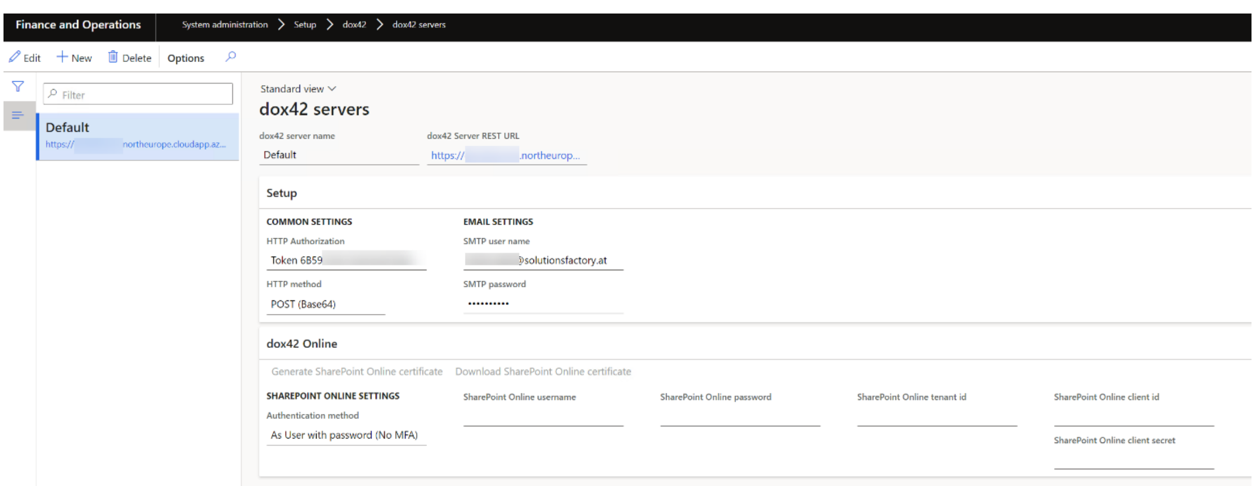
Installation for dox42 Online

Go to dox42 Online > Help and Copy the dox42 REST Service.



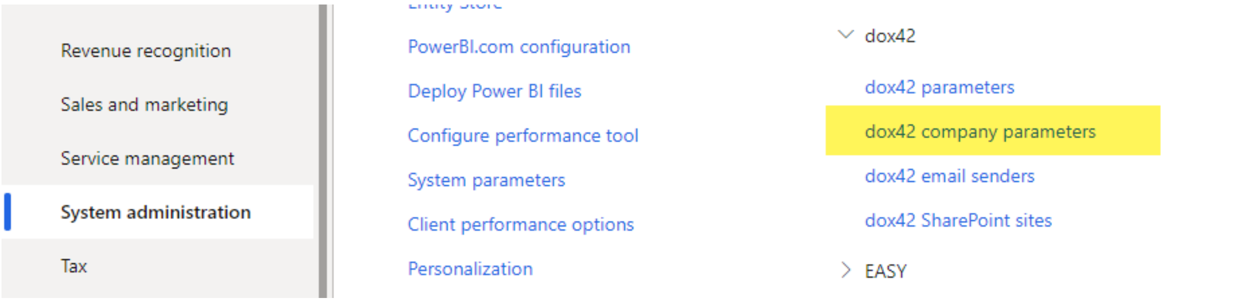
Include all previously configured parameters in the dox42 servers (it is recommended to use the "POST (Base64)" HTTP method):

- REST URL
- dox42 Online Username / Password > The Microsoft 365 User that has access to the template
- dox42 Online Tenant ID
- dox42 Online Client ID
- dox42 Online Client Secret

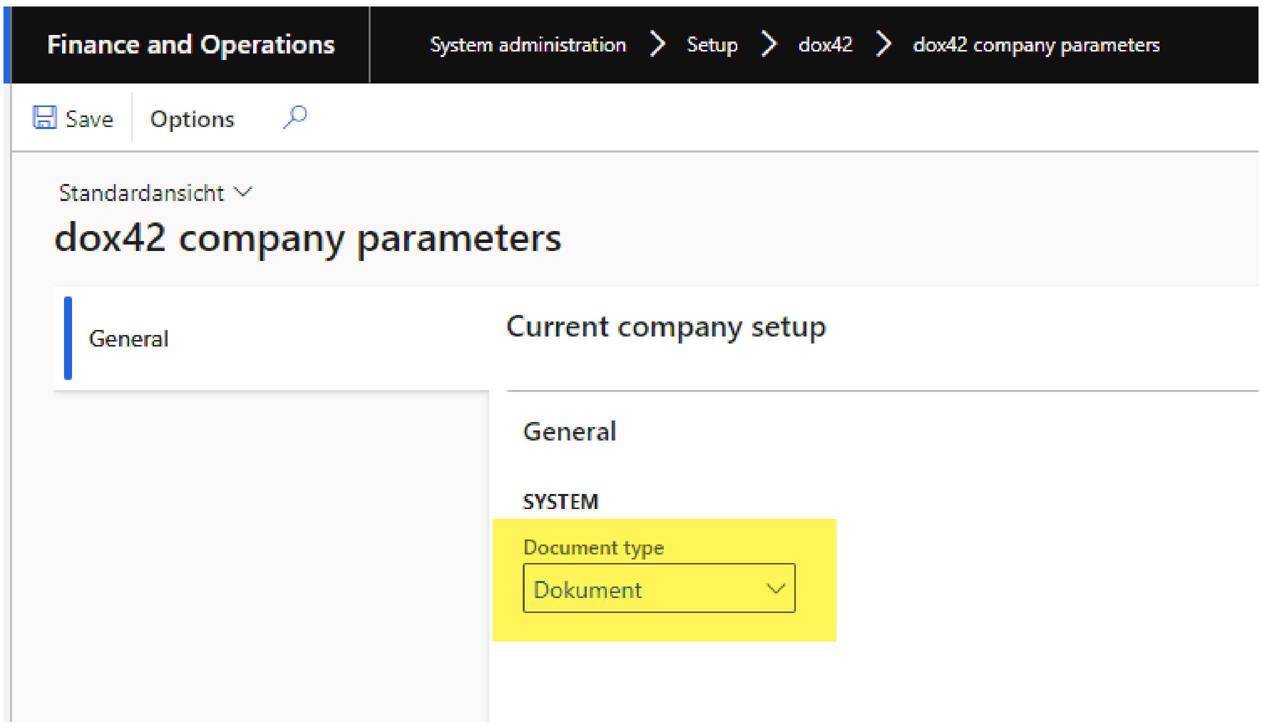


Document type

For registration the document type, which dox42 should use, a setup in the "dox42 company parameters" is needed.



In the drop down menu, which displays all needed document types are available.

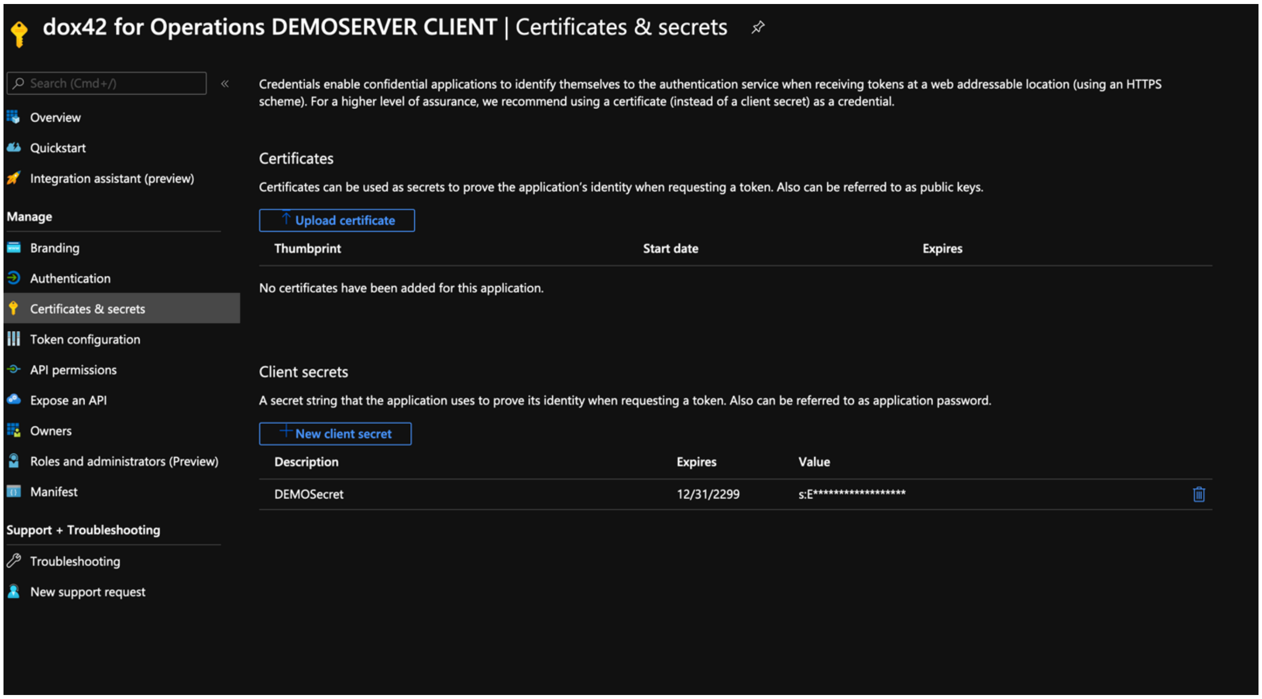


We recommend using type MS Azure blob storage for the document type.

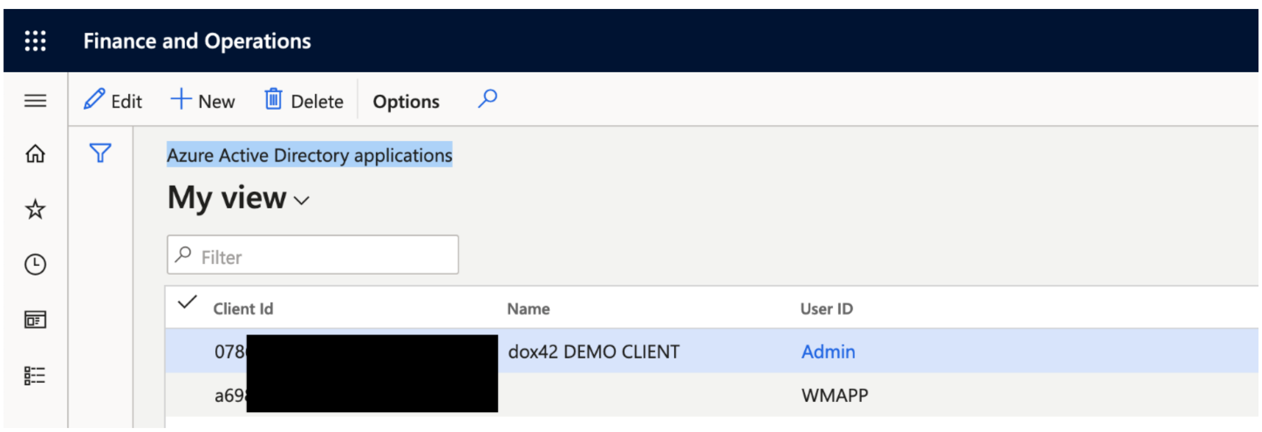
Reading data with Service User or AzureAD App (required for multifactor authentication)

For the multifactor authentication a new app in Azure is necessary. You can also use your dox42 Online app. The app will be mapped inside D365 FO to a specific (service) user and claim its roles and rights.

Create a new App Registration and Secret like in the dox42 Online Setup. These will be your sign-in credentials in the Word Add-in.



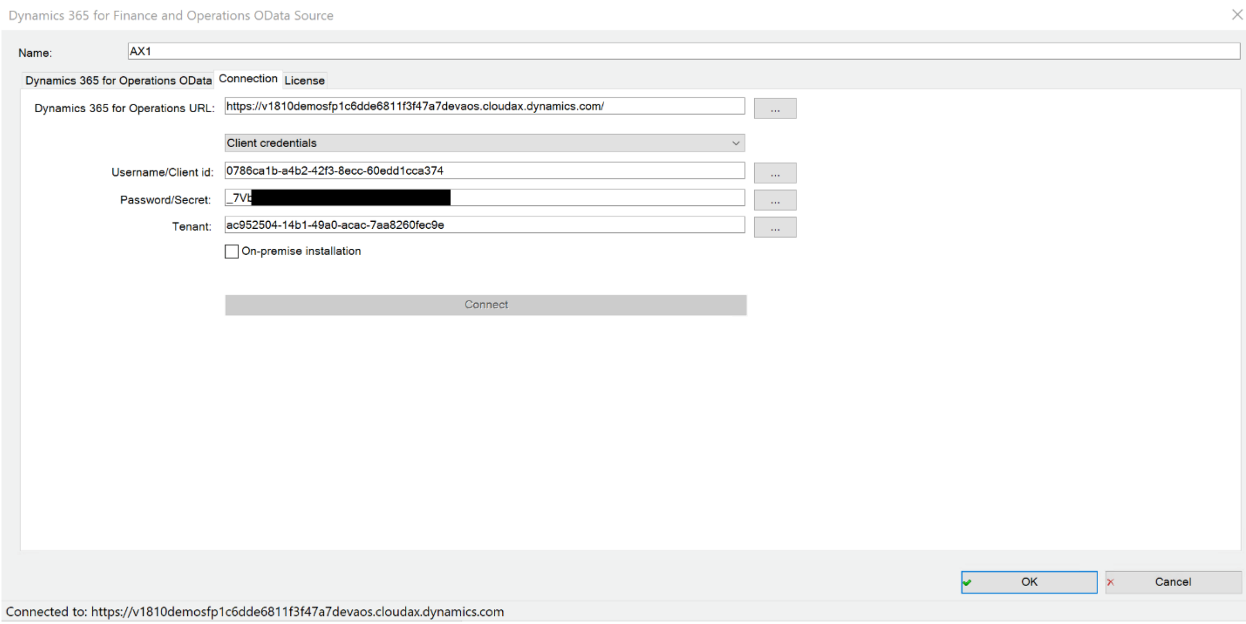
Next, add your Client ID to the D365 FO mapping configuration. The table can be found under System Administration -> Setup -> Azure Active Directory applications. Fill in your Client ID, give it a name optionally and map it to a specific (service) user inside of D365 FO.



A connection Excel file with the following components should then be created. For more details on this please see the chapter Creating a dox42 report below.

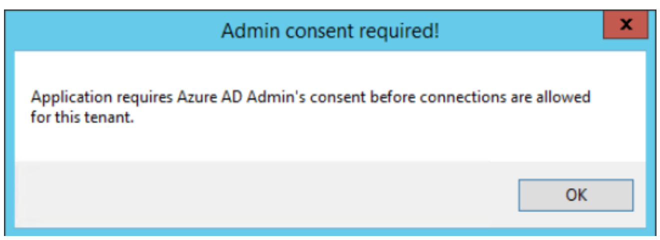
- URL
- Client ID
- Secret from the azure app
- TenantId

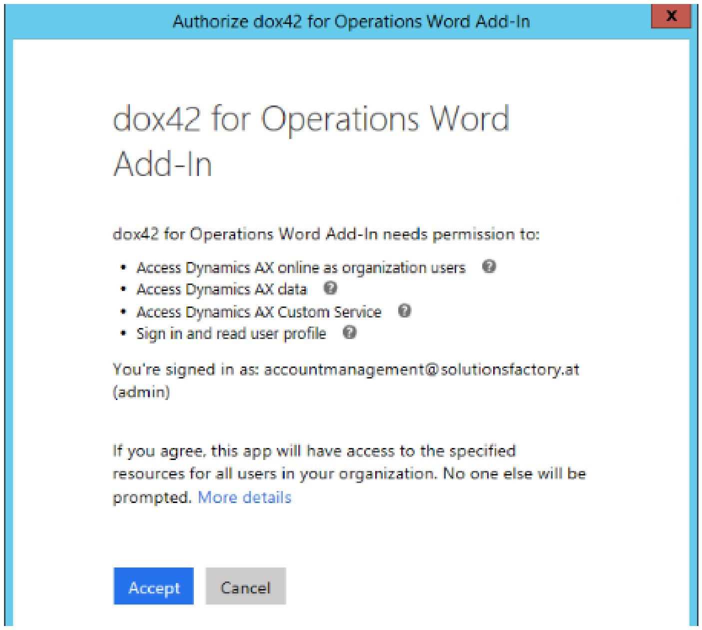
Use those newly created credentials to connect to your D365 FO instance, by either filling them in directly, or - the more recommended approach – by using your created Credentials Excel sheet.



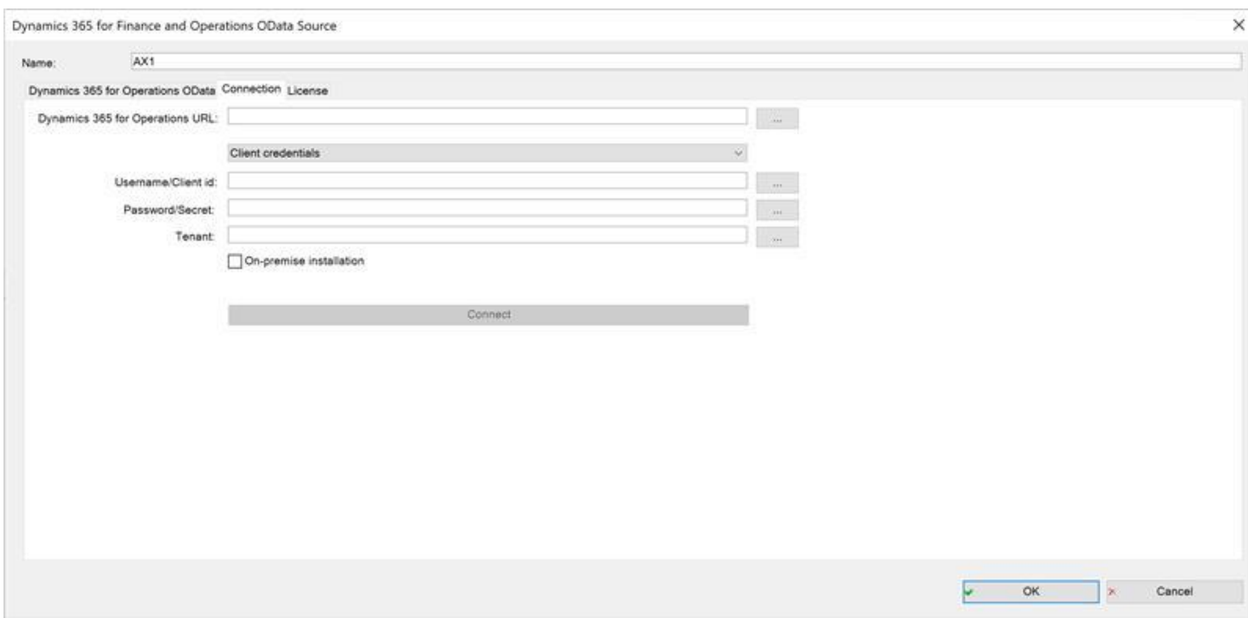
dox42 for Finance and Operations Setup Connection to D365 FO

To establish a new connection to your dox42 for Finance and Operations instance, simply fill out the form in the “Connection” tab. Please note, that on the first run through of the authentication process, an Azure AD Admin must approve/consent the application, to allow the sign in of users and access to the data.





You can use data fields of another data source for every value in the "Connections" tab. This way, you can enter username and password once in a central place and use it for different connection, more is described in later chapters. If a multi factor authentication is setup the "Connection" tab contains additional information, therefore the created excel from the chapter above must be used.



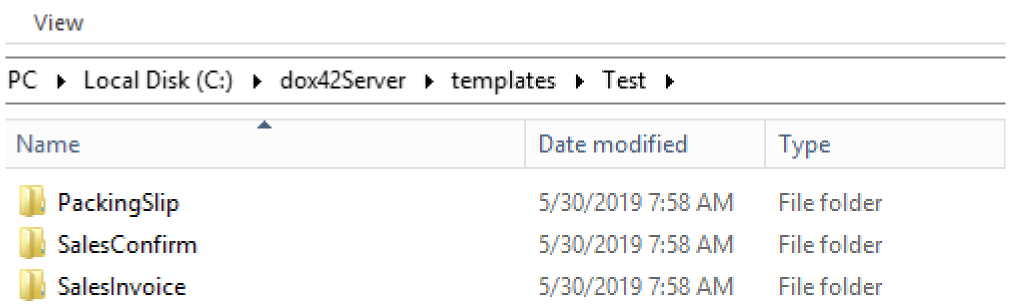
WORKING WITH DOX42 REPORTS

Basic setup

Creating a folder structure for efficient working

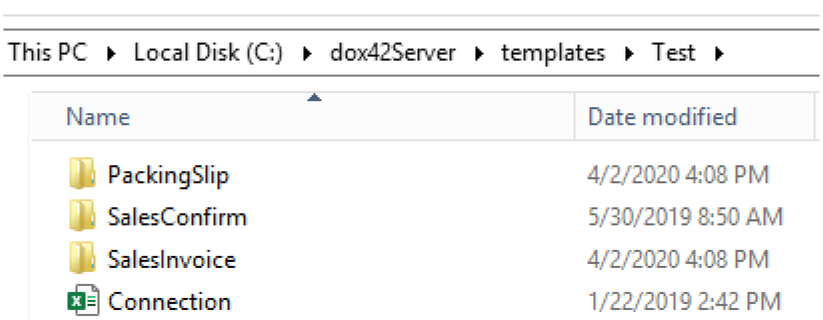
1 Create one folder for each environment

2 Create a folder for each report which should be designed in dox42



3 Insert a Word document into the report folder which will be used as a template to design the report.

4 Create an Excel document and save it on the root folder above the system folder, this file will be used for saving the connection information (in this case it is named “Connection”)



Components of a report

A report consists of the following components:

- Word document with a Add In
  This Word document shows the basic structure of the report, it contains all design components which are later represented in the finished report.

- Connection Excel file:
  The connection file stores all the information which are needed to create a connection to the D365 FO

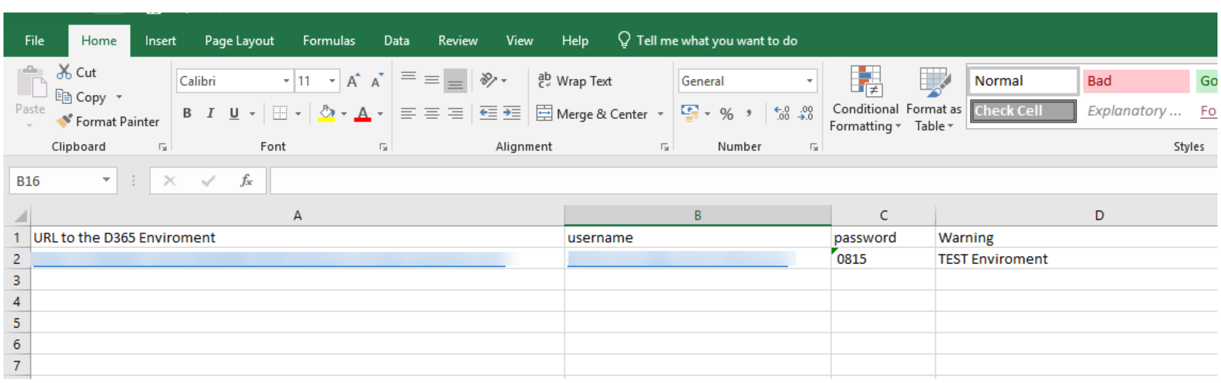
- Data Map
  The Data Map is necessary to get access to all required information like the connection Excel file or the data sources.

Setup of the connection Excel file

The connection Excel file is a file which stores all needed information to create a connection to D365 FO environment. How to use it will be described in the chapter below.

Setup the connection Excel file with the columns. If you decide to go for AzureAD App Login please use the same configuration and just name the parameters accordingly (URL, Client ID, Secret, Tenant ID).

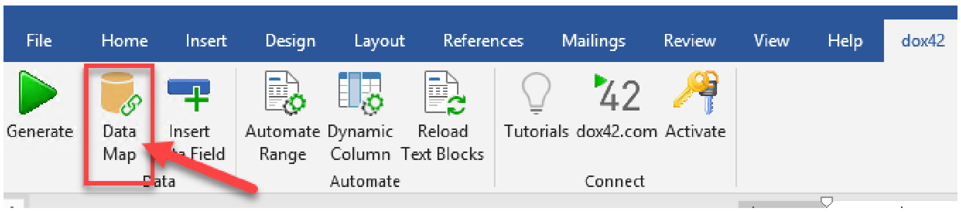
  - **URL**: D365 FO URL
  - **Username**: The AAD User
  - **Password**: password (we recommend using an encrypted password as described later in the document)
  - **Warning message**: warning message (will be shown as a watermark).
    Usage: e.g. if the sales invoice is printed from the test environment, to clearly show it is not an original sales invoice from a live environment



Creating a standard Data Map

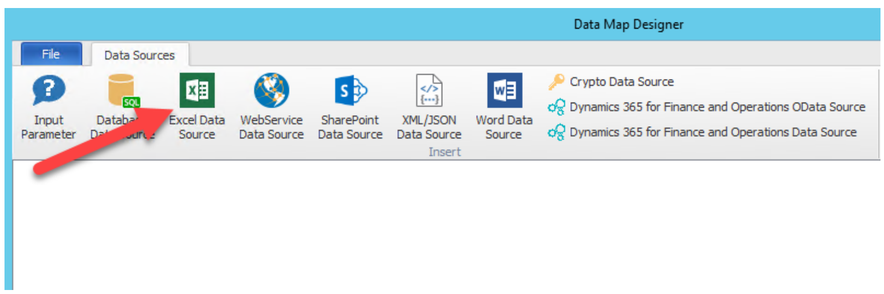
The advantage of having a standard Data Map is that it can be copied and used for other reports with minimal effort.

Open the Data Map of a template by going to the tab “dox42” and clicking on the button “Data Map”.



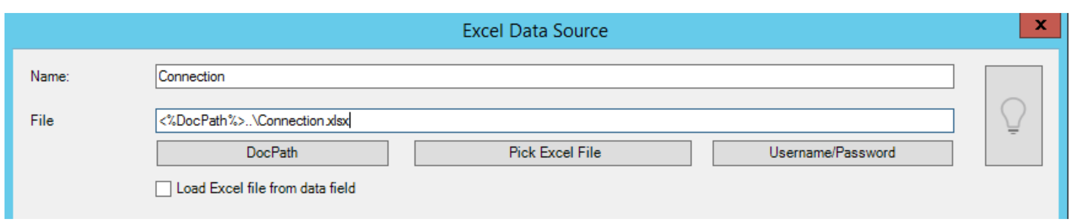
1 Setting up the connection Excel file

a. Click on the “Excel Data Source”



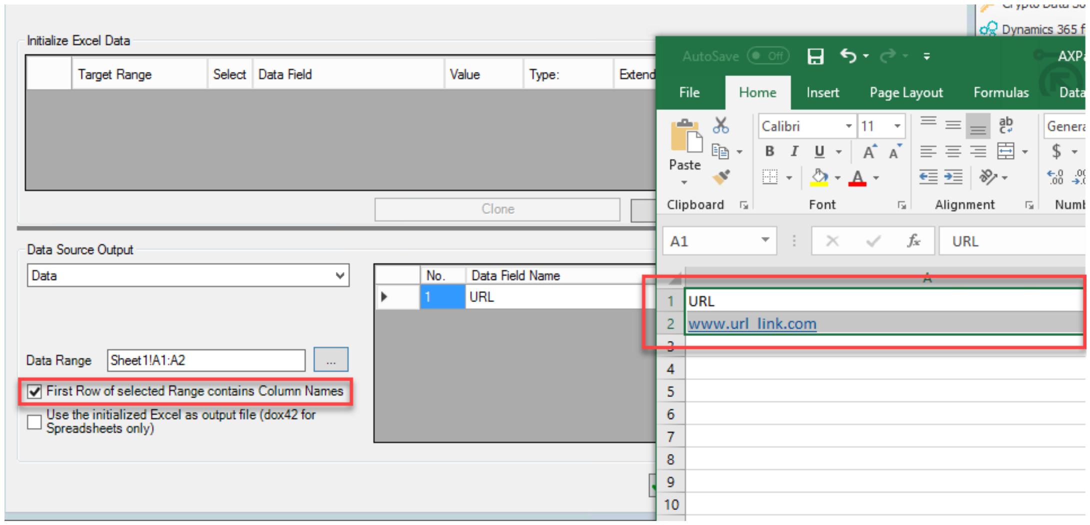
b. Insert a name for the connection file

c. Insert the path from the connection file, always using the “<%DocPath%>“. The “..\” tells the system to look a level above in the folder structure and there it will find an Excel file named “Connection.xlsx”. Using the “DocPath” makes it possible to copy the data map and insert it to another report folder without the need of changing the path.



d. Mark the checkbox “First Row of selected Range contains Column Names”

Click on the button with the three dots to select the fields from the Excel file. Mark the area with all the data. An example is displayed on the picture below.



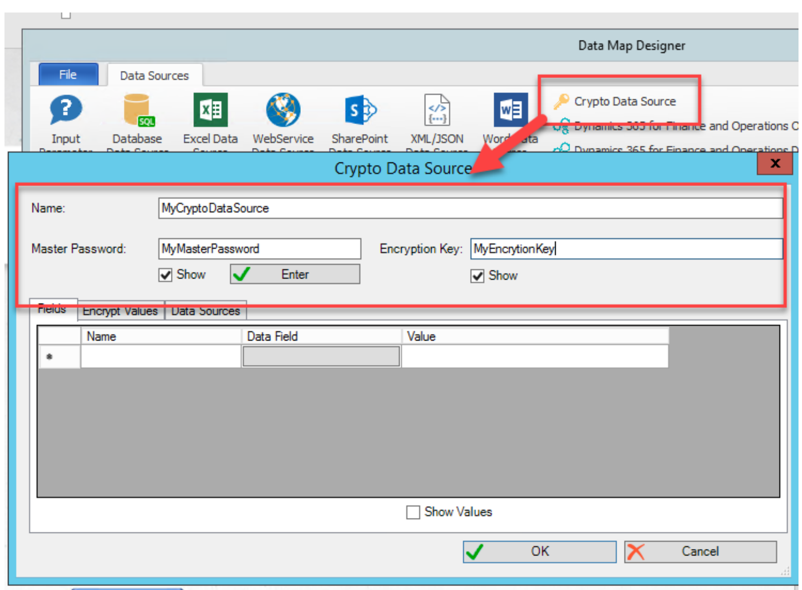
e. Click the button “ok”, now the connection file is setup.

2 Creating a **Crypto Data Source**

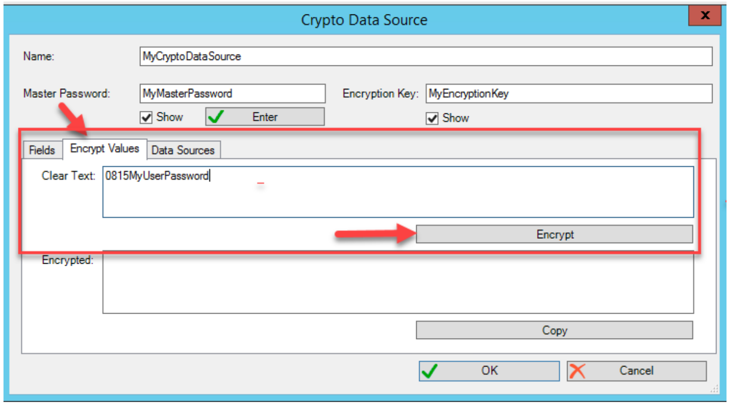
a. Click on the button “Crypto Data Source” in the Data Map

b. Insert a name for the Crypto Data Source

c. Enter a “Master Password” and an “Encryption Key”, which will be used to encrypt the password

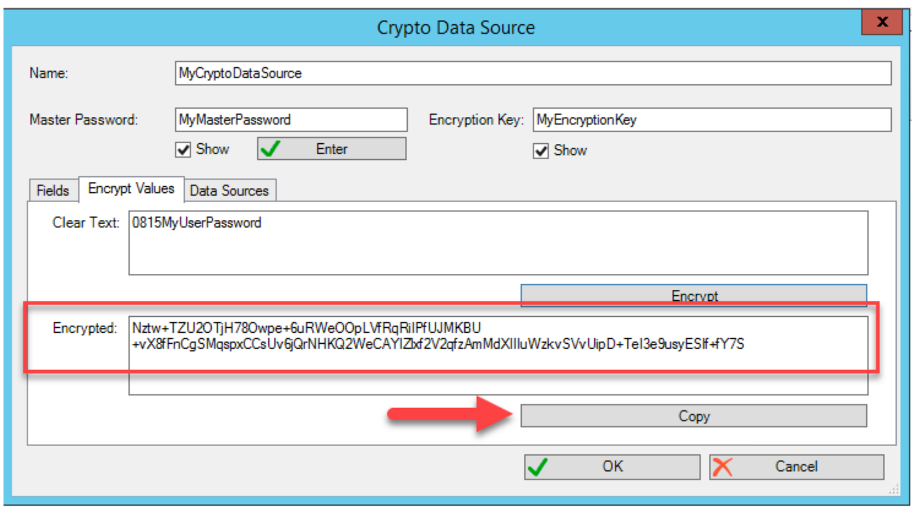


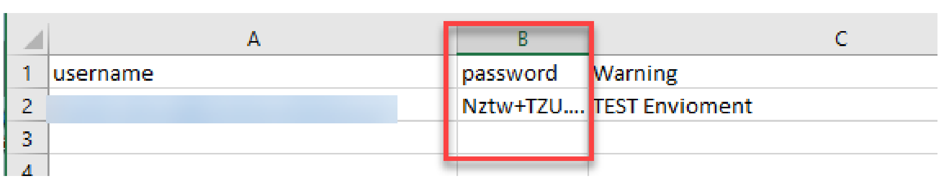
d. Click on the tab “Encrypt Values” and insert the password from the ADD User inside the field “Clear Text”.



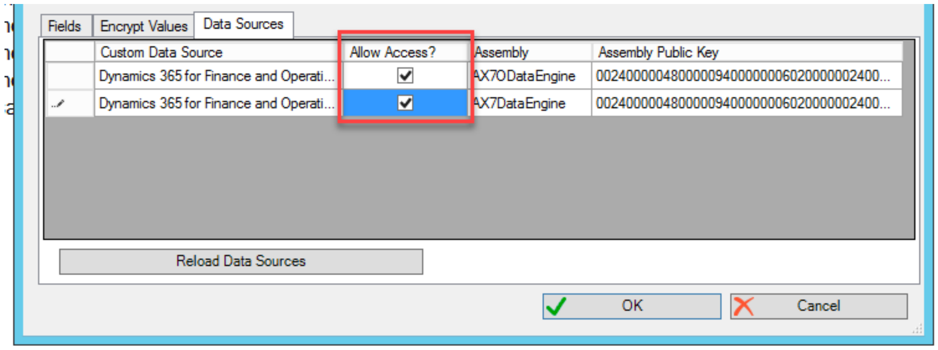
e. Click on the button “Encrypt”

f. Copy the displayed result in the area “Encrypted” and insert it in the connection Excel file instead of the cleartext password





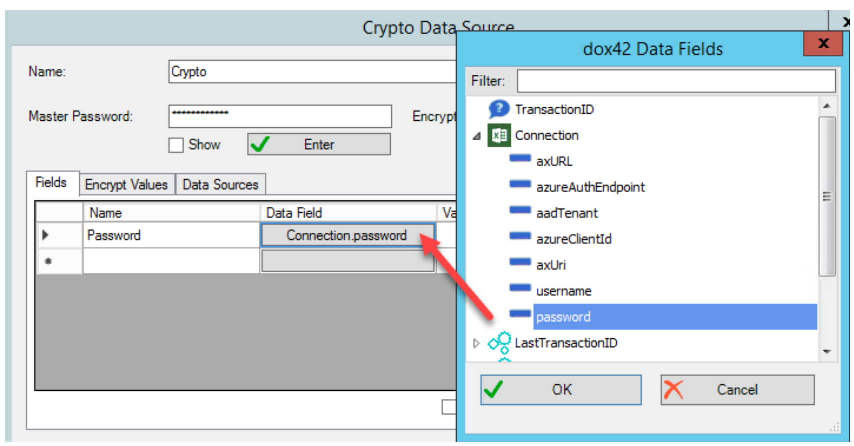
g. Click on the tab “Data Sources” and allow access to the Customer Data Sources like in the picture below.



h. Click the button “OK”

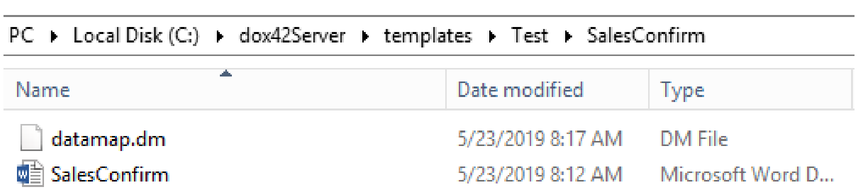
i. Open the new Crypto Data Source and click on the tab “Fields”

j. Insert a password field, with a double click on the field “Data Field”, a lookup window will appear, illustrated in the picture below. Select the password field from the connection Excel file.



k. With a click on the button “ok” the Crypto Data Source is setup

Save the Data Map in the same folder as the template. This Data Map can be copied and used in every template which works with the same D365 FO environment. Each report needs a Data Map. Copy the standard Data Map and insert it into each report folder.



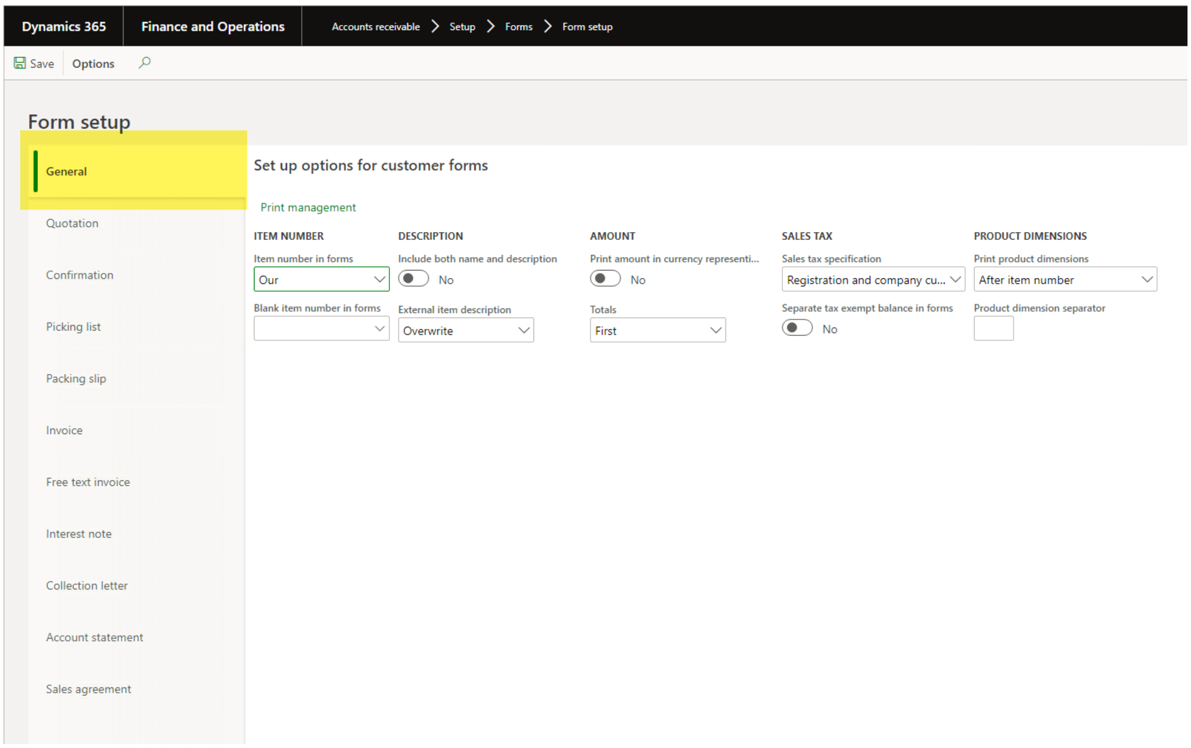
Create your first dox42 report

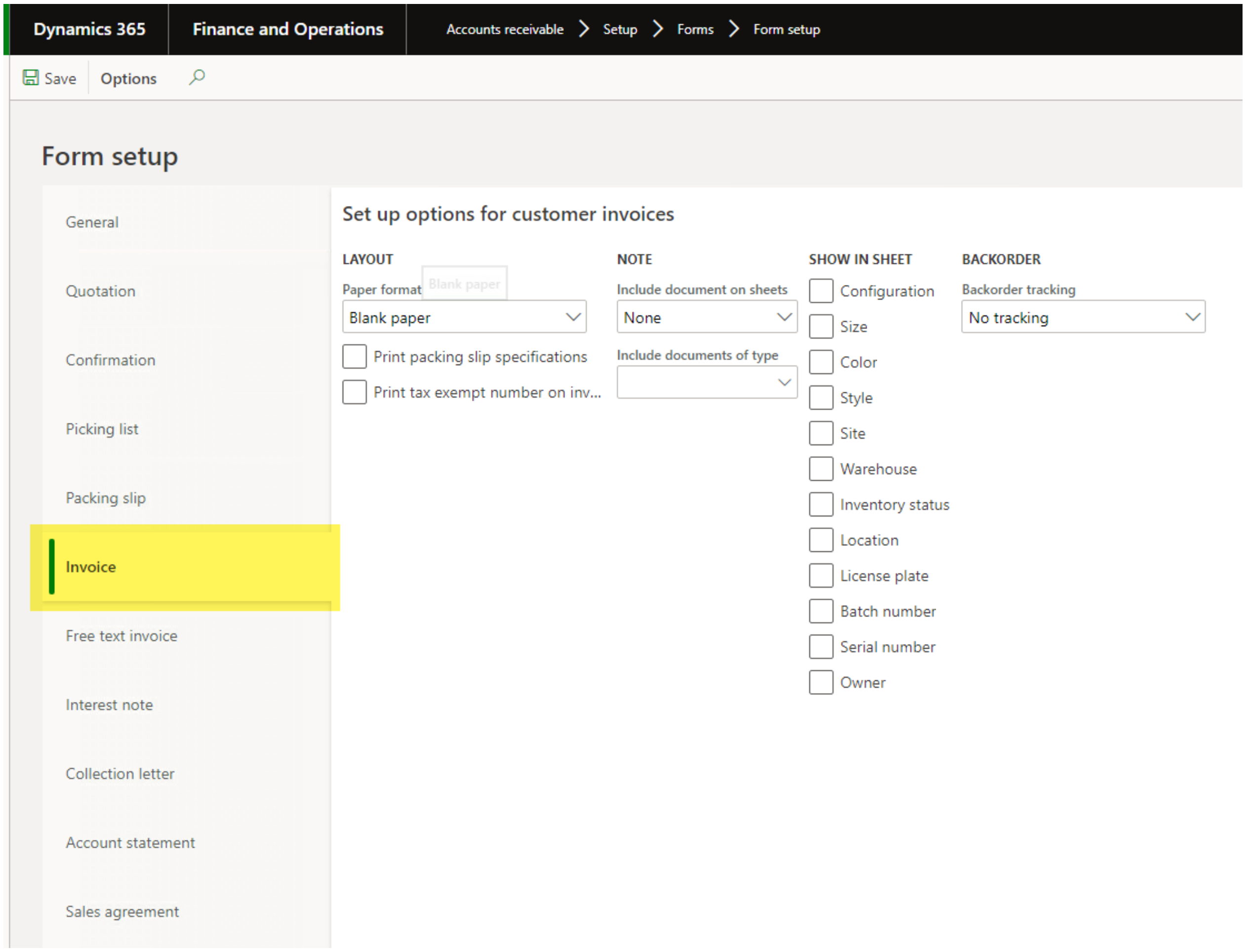
This chapter will describe how to setup a report from copying the standard Data Map to display it in D365 FO.

General facts about the DataProvider of dox42

dox42 uses the same DataProvider as a SSRS report, therefore all the necessary setup which are influencing the DataProvider from the D365 FO side are also influencing the DataProvider of dox42. An example would be the form setup in the “Accounts receivable”. (Accounts receivable > Setup > Forms > Form setup).

The form setup contains the general setup (Tab “General”) of a report as well as a specific one.



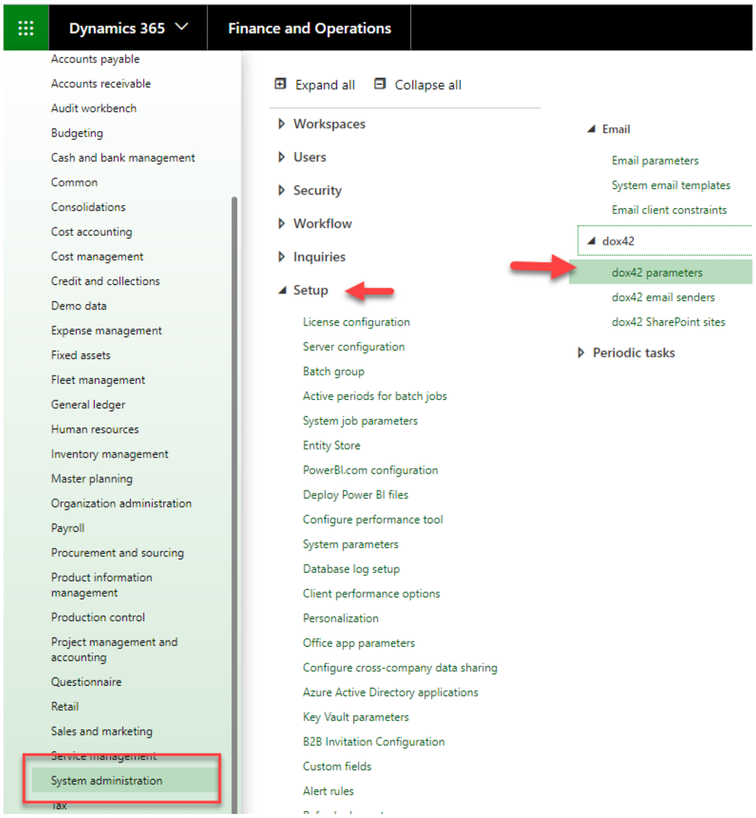

Dynamics 365
Finance and Operations
Accounts receivable > Setup > Forms > Form setup
Save
Options
Form setup
General
Quotation
Confirmation
Picking list
Packing slip
Invoice
Free text invoice
Interest note
Collection letter
Account statement
Sales agreement
Set up options for customer invoices
LAYOUT
Paper format
Blank paper
Print packing slip specifications
Print tax exempt number on inv...
NOTE
Include document on sheets
None
Include documents of type
SHOW IN SHEET
Configuration
Size
Color
Style
Site
Warehouse
Inventory status
Location
License plate
Batch number
Serial number
Owner
BACKORDER
Backorder tracking
No tracking

The basic steps for creating any dox42 report in D365 FO

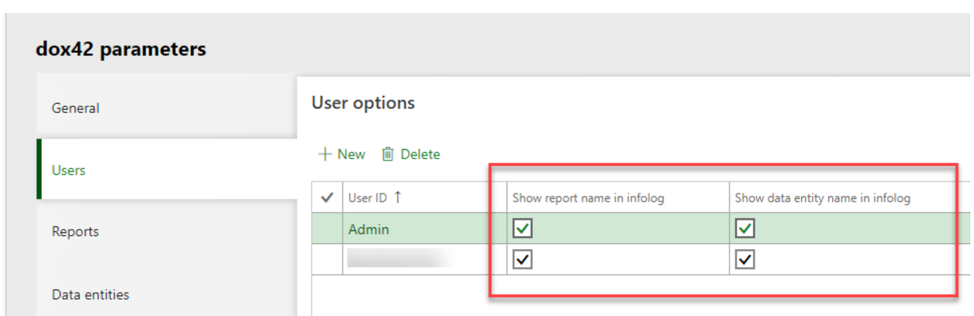
This chapter describes the presetting which are required for designing a new dox42 report, in the D365 FO environment.

1. Get to know which report is called

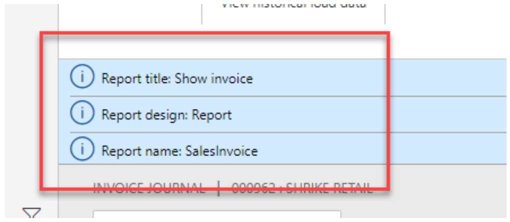
   a. Go to **System administration > Setup > Business intelligence > dox42 > dox42 parameters**



   b. In the tab “Users” add a new entry with the currently signed in User ID and check the **“Show report name to Infolog”** and **“Show data entity name in Infolog”** checkbox.



c. Switch back to the report (in D365 FO) which should be designed in dox42 and print the report. An Infolog will appear with the name and the design name of the report. This information will be needed in the next step.

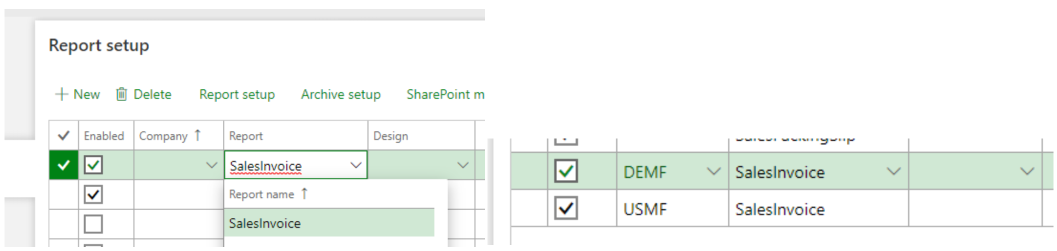


2 Setup the report

a. In the **dox42 parameters**, select the tab "Reports"

b. Create a new record.

c. Select the report name which was displayed in the first step. D365 FO provides to possibility to set up the same report multiple times and divide it by the company like in the second picture below.

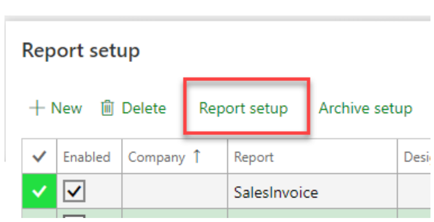


d. The "Serialization type" parameter defines how the report data will be serialized during the report execution:

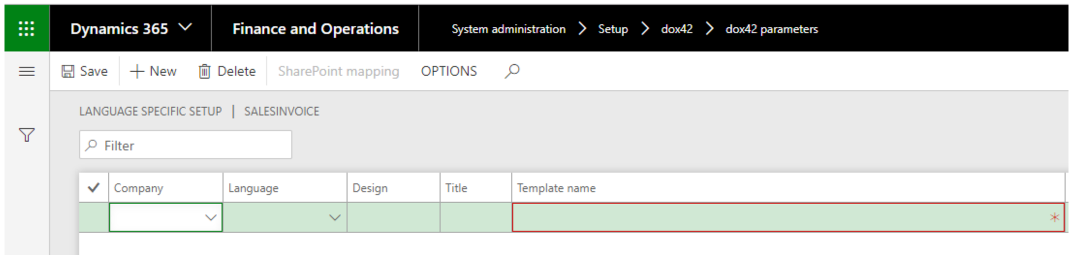
i. "Web service" – recommended value (by default, since version 1.3.1)

ii. "Web service (compatibility mode)" – this value is used to provide a backward compatibility with the older version report templates. Be careful changing this parameter for the existing templates, because the linked report templates may stop working after that. To restore functionality, you must set back the original value of the serialization type or regenerate the report metadata and recreate the data sources in the report template data map.

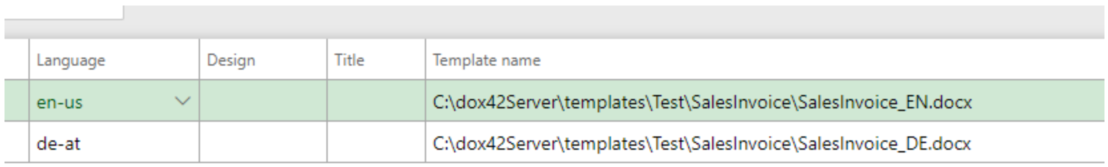
e. Mark the report and click on the button "Report setup" and create a new record



f. Insert the path of the template e.g.
C:\dox42Server\templates\Test\SalesInvoice\SalesInvoice.docx



It is possible to create more than one template for the same report and divide it by company and/or by language.

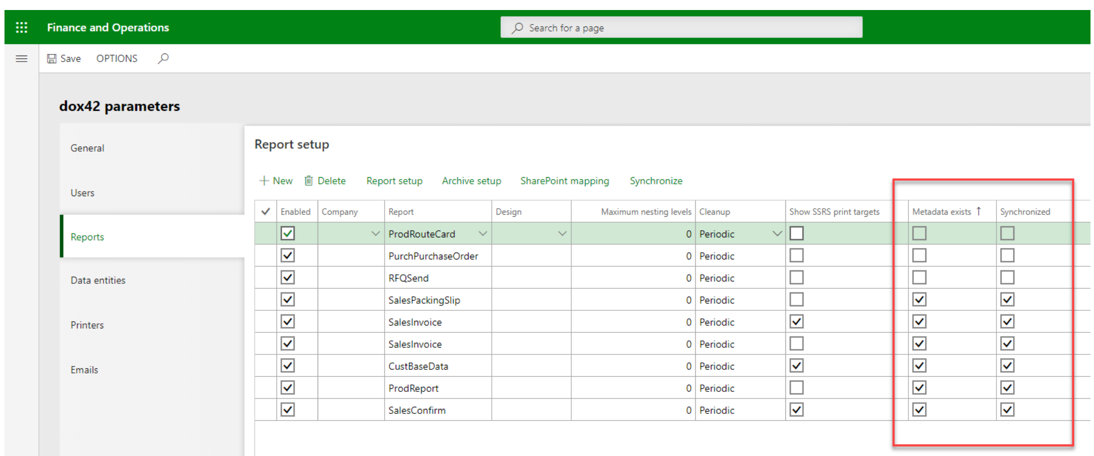


Language	Design	Title	Template name
en-us			C:\dox42Server\templates\Test\SalesInvoice\SalesInvoice_EN.docx
de-at			C:\dox42Server\templates\Test\SalesInvoice\SalesInvoice_DE.docx

3 Get the Metadata for the report

a. Print the report

b. Check if the checkboxes by the report setup are marked like in the picture below, the system will automatically synchronize the report.



Now the report is available for the templates on the dox42 Server, which are needed below.

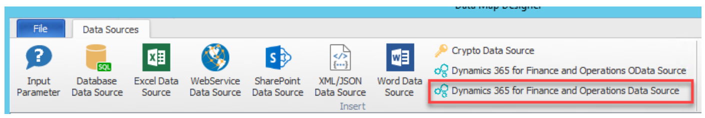
Setup the Data Source

This chapter will describe the basic steps to setup a Data Source as well as the first steps of designing a report. Data Sources are always setup the same way. For each table of the report is a new Data Source needed. In a chapter before a standard Data Map was created and copied into the folder of the reports.

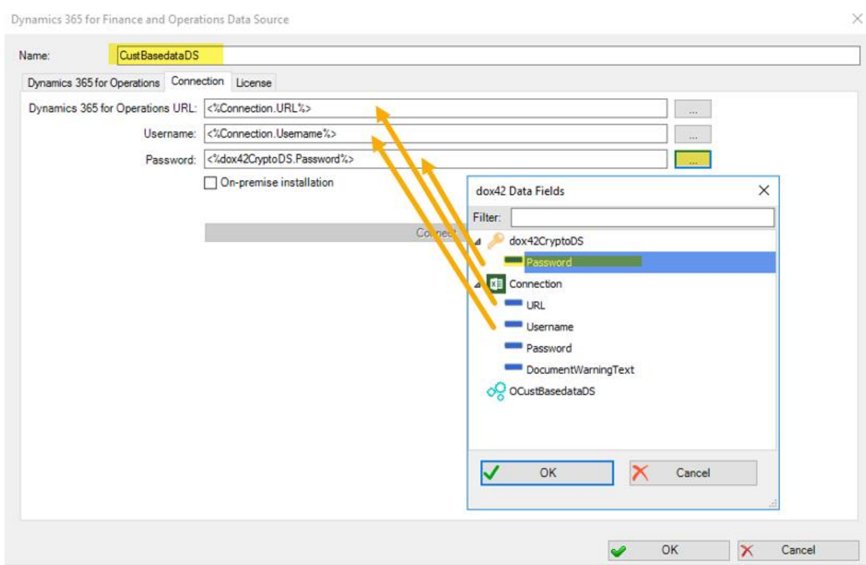
1 Setting up the Data Source

a. Open the standard Data Map of the template which should be designed

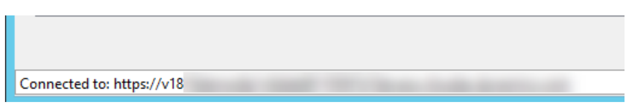
b. Choose the "D365 FO Report" ("Dynamics 365 for Finance and Operations Data Source" in previous versions)



c. Choose the tab "Connection". Click on the button with the three dots and choose the fields from the connection file for URL and Username, for the password choose the Crypto Data Source as illustrated in the picture below.

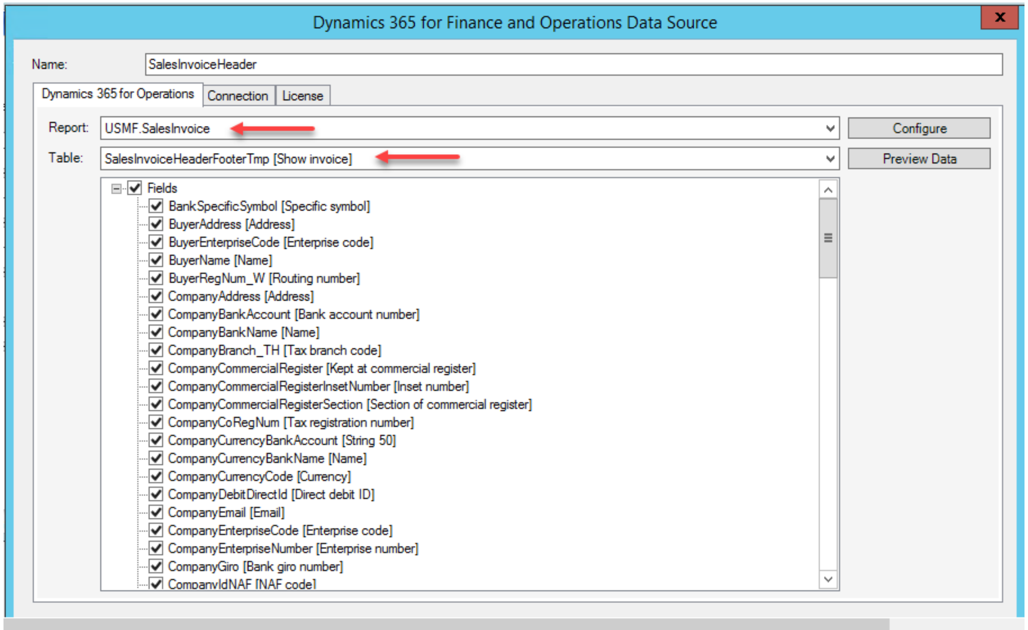


d. Check the connection by clicking on the button "Connect", the connected D365 FO environment will be displayed at the end of the form.



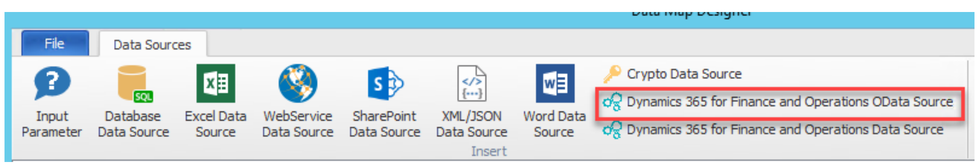
e. Click on the tab "D365 FO Report" ("Dynamics 365 for Operations" in previous versions) and choose the desired report. Select the needed table and mark all the fields as displayed in the picture below. The fields of the table will be displayed in the box "dox42 Data Fields", described in the third step.

Note: a report contains often more than one table, e.g. a SalesInvoice has a SalesInvoiceHeader table and SalesInvoiceLines table, for each table is a new Data Source needed.



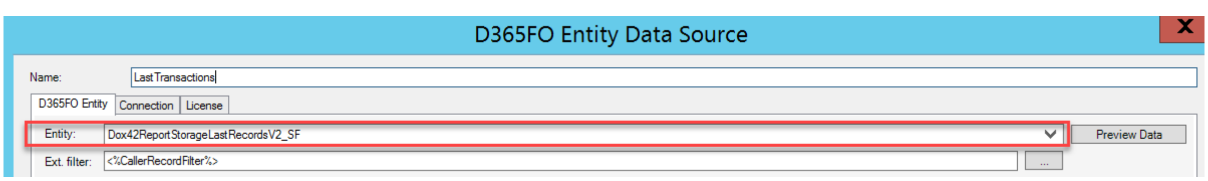
2 Getting always the last transaction ID, if the generate button is clicked (the generate button is described in the chapter below).

a. Create an Entity Data Source by clicking on the Data Source "D365 FO Entity" ("Dynamics 365 for Finance and Operations OData Source" in previous versions)

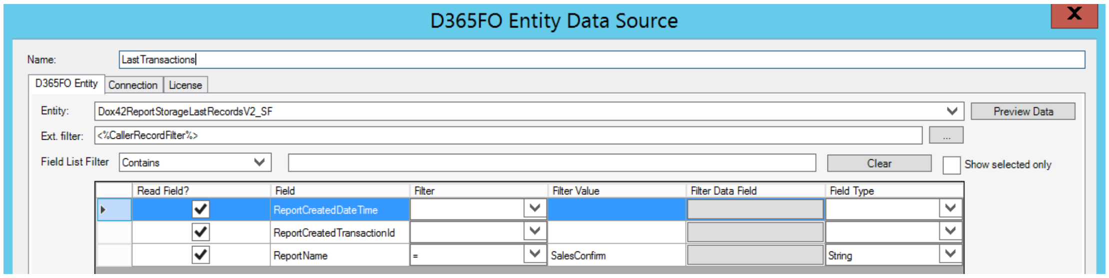


b. Insert a name and click on the tab "Connection", setup the connection like before by the "D365 FO Report" data source.

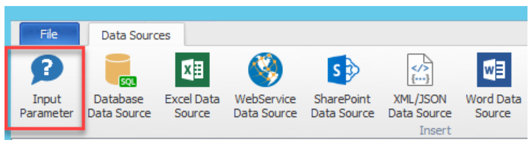
c. Search in the entity drop-down menu for the entity "Dox42ReportStorageLastRecordsV2_SF" (Dox42ReportStorageLastRecords_SF entity is obsolete, and its use since version 1.3.3 is no longer recommended)



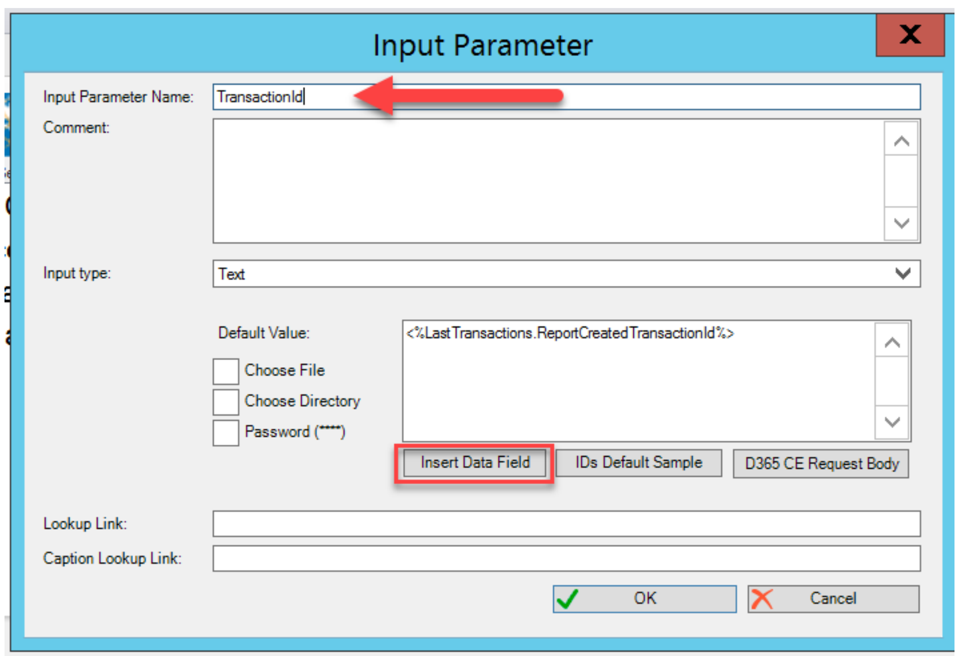
d. Setup the fields like in the picture below.



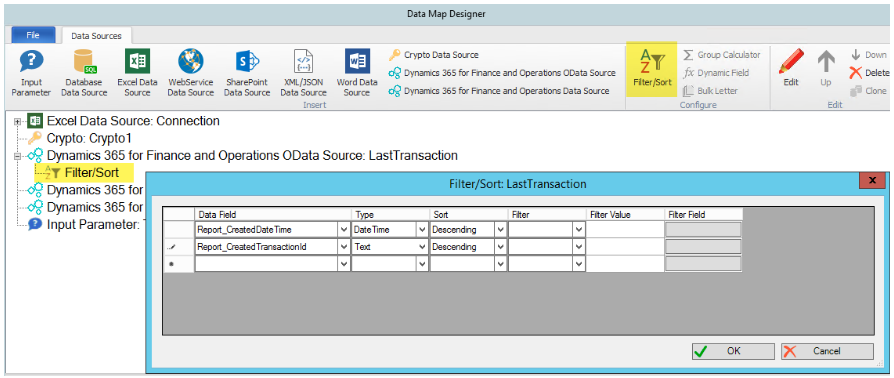
e. Click on the button "Input Parameter"



f. Insert a name. Click on the button "Insert Data Field" and choose from the "D365 FO Report" Source the field "ReportCreatedTransactionId". The result is displayed in the "Default Value" field.



g. Mark the "D365 FO Entity" data source (previously named OData data source) and click on the button "Filter/Sort", displayed in the picture below. A lookup window will appear. Insert the data which are shown in the picture below. The data in the "D365 FO Entity" data source have to be sorted, that the report always uses the last transaction ID when generating a report.

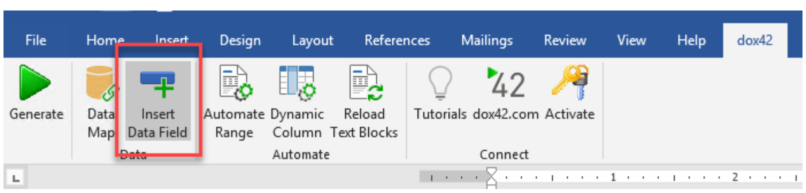


3 Insert placeholders into the template with the button “Insert Data Field”

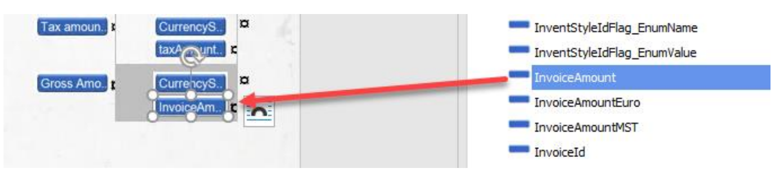
Those placeholders represent the data fields which were marked in the first step while creating the “D365 FO Report” (“Dynamics 365 for Finance and Operations Data Source” in previous versions).

a. Create e.g. a simple table in the template.

b. Click on the button “Insert Data Field”, a data box will appear with all the components of the Data Map.



c. Choose one field and drag it to the desired place.

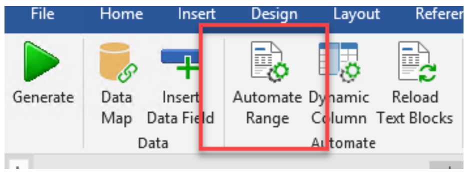


d. Select the desired data format for the selected field, further details are described in the “Data formats” chapter.

4 Setting an automatic range to show e.g. invoice lines in a table

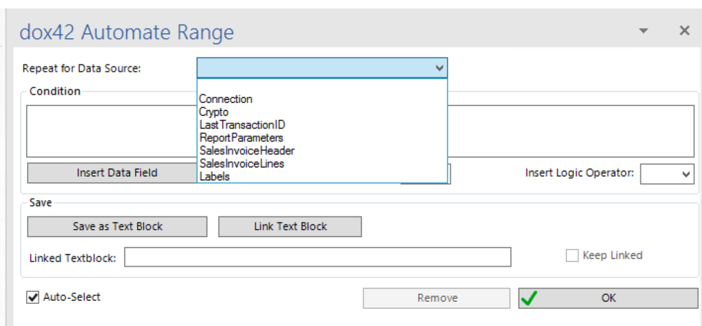
a. Mark the field with the placeholder, which should be in the range.

b. Click on the button "Automate Range"



c. Select the required data source from the drop-down menu "Repeat for Data Source"

If only one condition is required and no loop with condition, no data source needs to be selected.

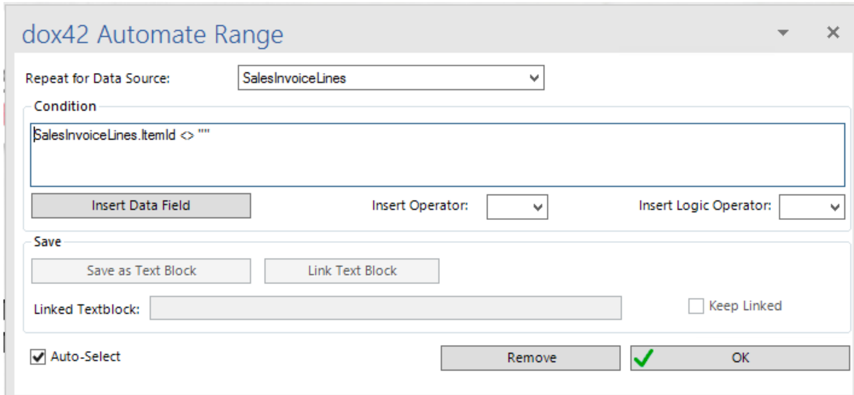


d. Click on the button "Insert Data Field" and choose the field which are required for the condition.

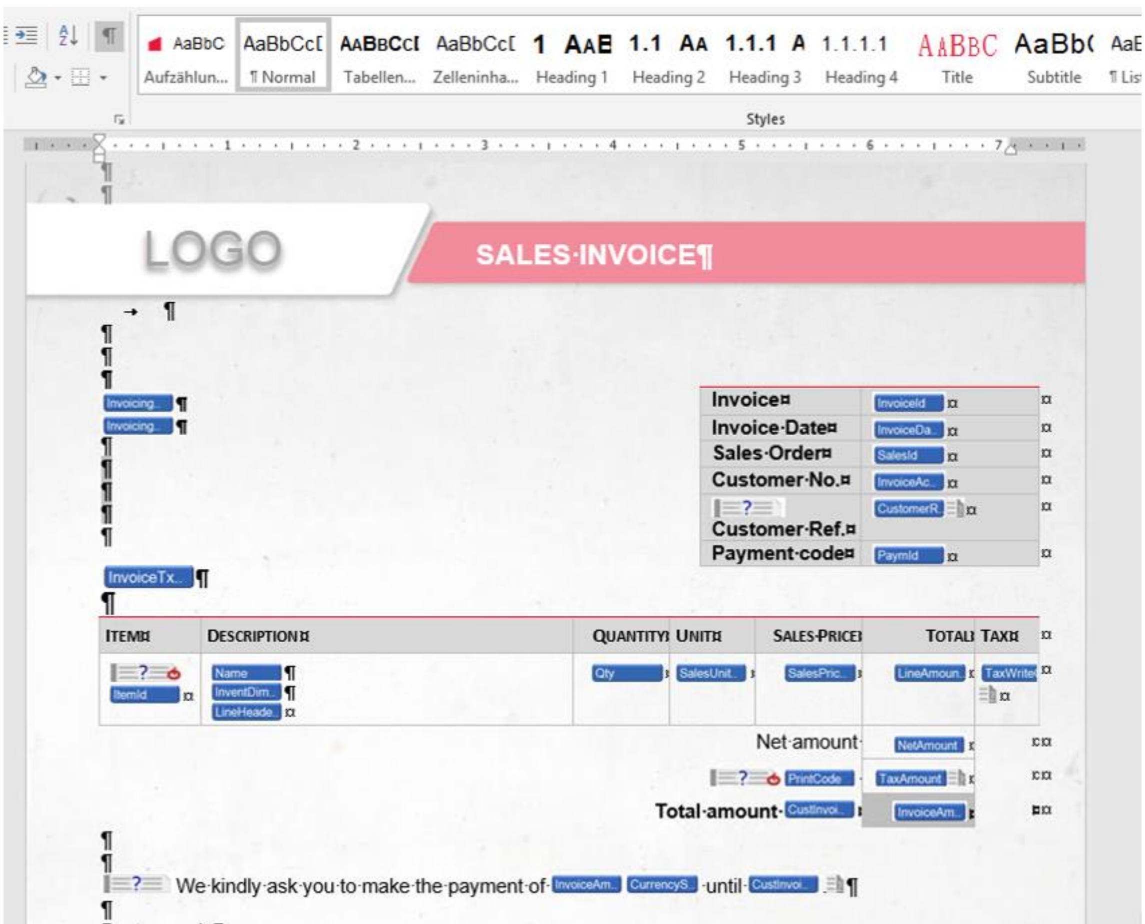
e. Select an operator from the drop-down menu "Insert Operator".

If more than one condition is need, it is possible to combine the condition with the operators from the drop-down menu "Insert Logic Operator".

The picture below is an example for a condition loop in a SalesInvoice template, which has the meaning “as long as the ItemId is not empty, print the next line”.



A finished SalesInvoice template could look like the image below:

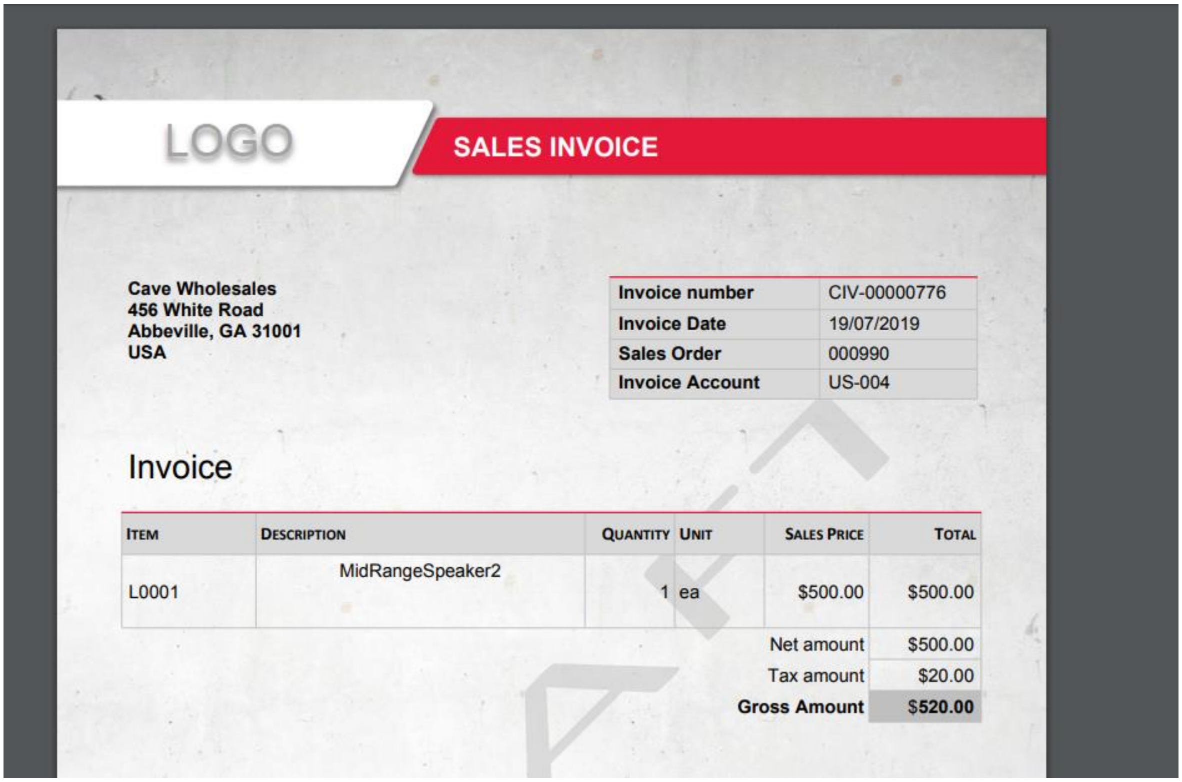


5 Switch to the D365 FO and print the report to the screen.

a. Go to the report which should be printed for example the sales invoice

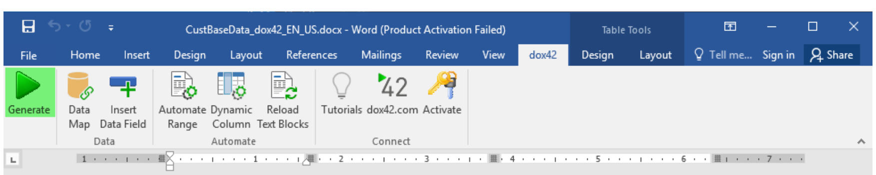
b. Mark the sales invoice which should be posted

c. D365 FO will automatically choose the dox42 report, if it is setup and activate in the dox42 parameters.

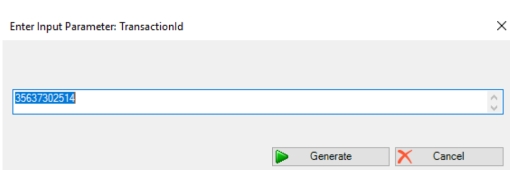


The button "Generate"

Word as many design tools that makes is easy to design a perfectly looking report, but it is necessary that changes are shown as quickly as possible to save time while for example testing a new layout. Therefore, dox42 provides the generate button, which will demonstrate how the report will look like in D365 FO.

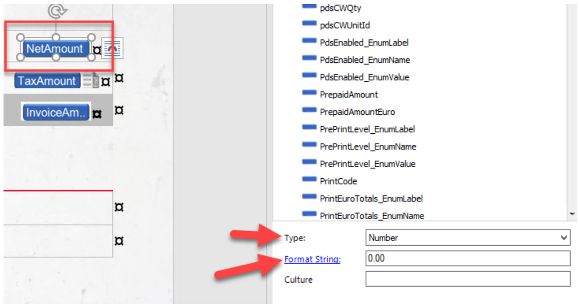


If the generate button was clicked a transaction Id appears, in this case it is the last transaction id because of the setup in the chapter before. The data from the last printed report can be reused, which allows to check changes to the layout with the same data.



Data formats

There are different types and formats you can select for the placeholder. The picture below illustrates where the format of the placeholder is determined.



The "Format String" is colored blue, because it is a link to a website which describes all available data formats.

Define a format

1. Choose the type which the placeholder should have by selecting it from the drop-down menu "Type"
    a. If the placeholder is a simple text, there is no need for a type
2. Decide in which format the placeholder should be displayed
    a. Hard-coded like "0.00" or "dd/MM/yyyy"
    b. Predefined formats like "C", it is used to format a currency field. A detailed description can be found in the link above.

The AX_RenderingCultureParameter

There is a special parameter for different formatting preferences for example the English format with a dot and the German format with a comma, it called "AX_RenderingCulture". Possible values are en-us, de-at, ….

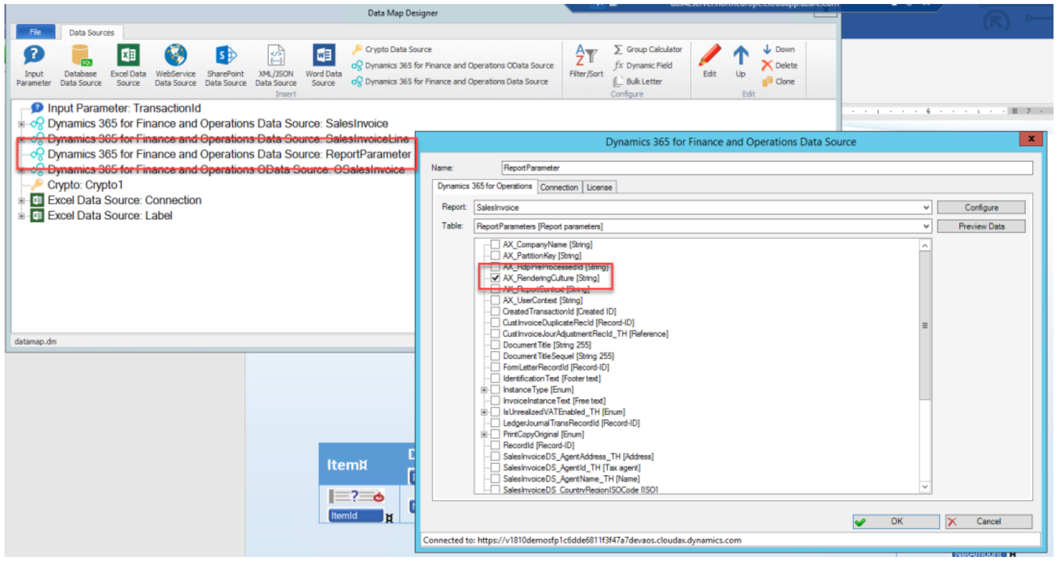
The rendering culture can be used to format data fields according to the report language. To do so, it is necessary to include the ReportParameter table in the Data Map.

The best way is to clone one of the data sources, because there is no need to fill out the connection setup again.

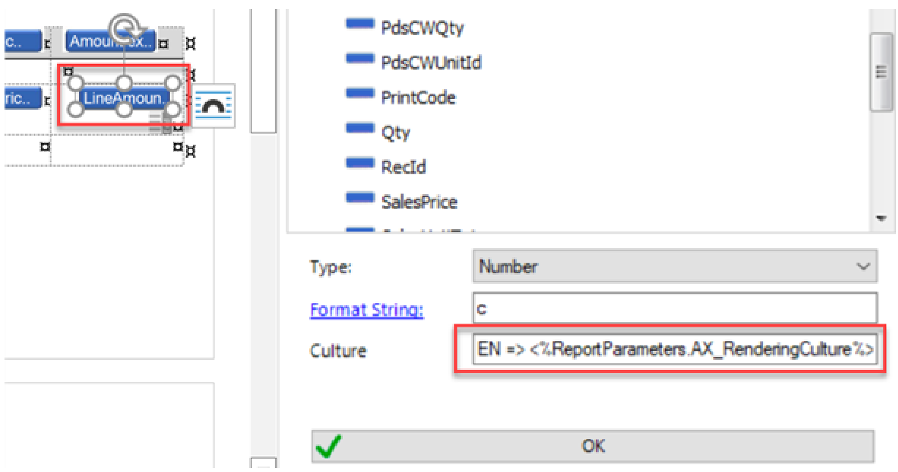
Clone a Data Source (e.g the SalesInvoice)

a. Mark the Data Source and click on the button "Clone" (on the right side of the Data Map)
b. Rename the Data Source and search in the drop-down menu "Table" for the ReportParameter.

c. Mark the field “AX_RenderingCultureParameter”.



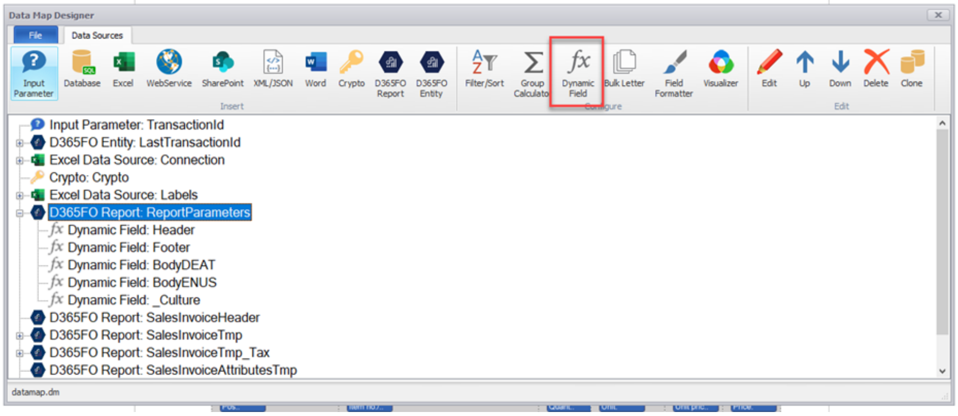
d. Mark a placeholder with the format “Number” and insert into the field “Culture” the following text: “EN => <%ReportParameters.AX_RenderingCulture%>”. The picture below illustrates it.



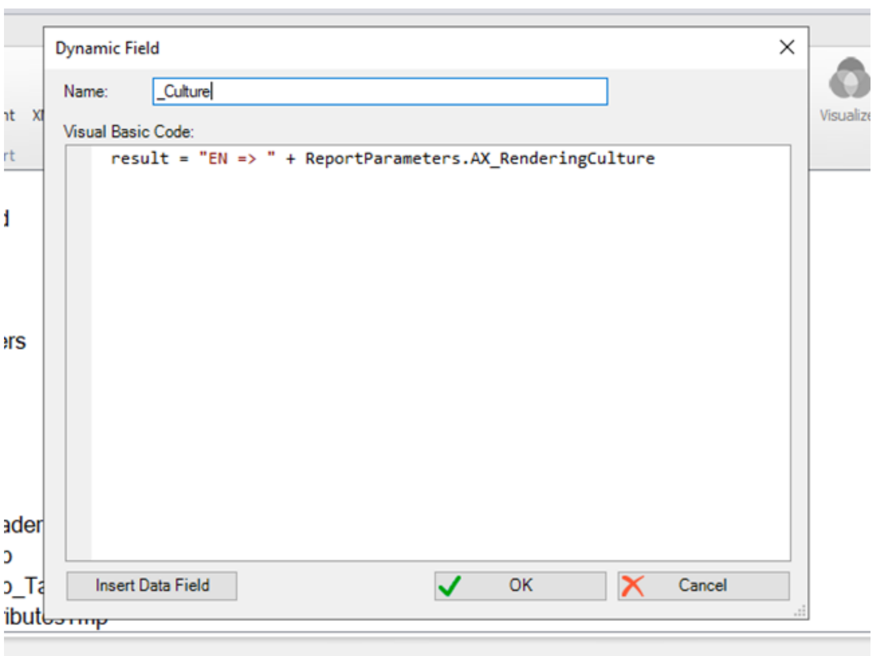
e. Make sure you click the button “OK”, because only then the parameter gets activated.

The best practice shows that it can be useful to create a separate dynamic field for “Culture” in the data source “ReportParameters” and further use this dynamic field in all other places of a template. Therefore, if you need to make any changes in the format of data fields, you will need to modify only one field.

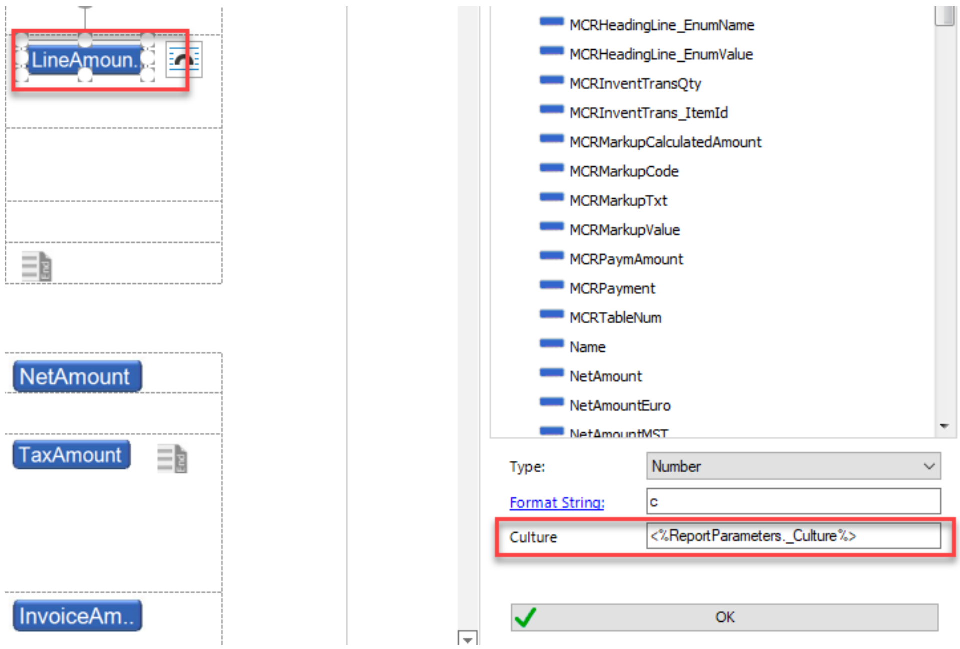
a. In the Data Map click on the button “Dynamic Field”.



b. Write the name of the field and insert into the field “Visual Basic Code” the following text: “result = "EN => " + ReportParameters.AX_RenderingCulture””. The picture below illustrates it.



c. Mark a placeholder with the format “Number” and insert into the field “Culture” the following text: “<%ReportParameters._Culture%>”. The picture below illustrates it.



d. Make sure you click the button “OK”, because only then the parameter gets activated.

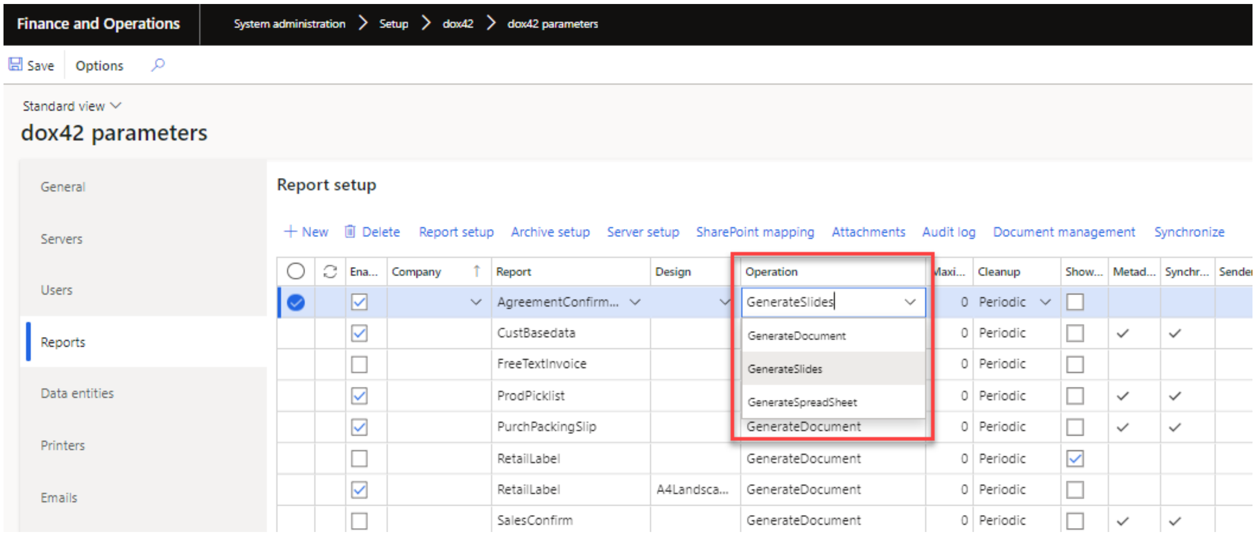
Creating Word, Excel and PowerPoint templates

There is a possibility to choose an operation while creating a template:

- GenerateDocument – for Word template
- GenerateSlides – for PowerPoint template
- GenerateSpreadSheet – for Excel template

You can setup the operation in “General” tab (System administration > Setup > dox42 > dox42 parameters), “Reports” tab or in “Report setup”. By default, the value is set to “GenerateDocument”.

For the operation “GenerateSpreadSheet” you should put in a “Template name” in Report setup the path to the DataMap of your Excel template.



For every type of a report template, you can add an email body template in a Word format only.

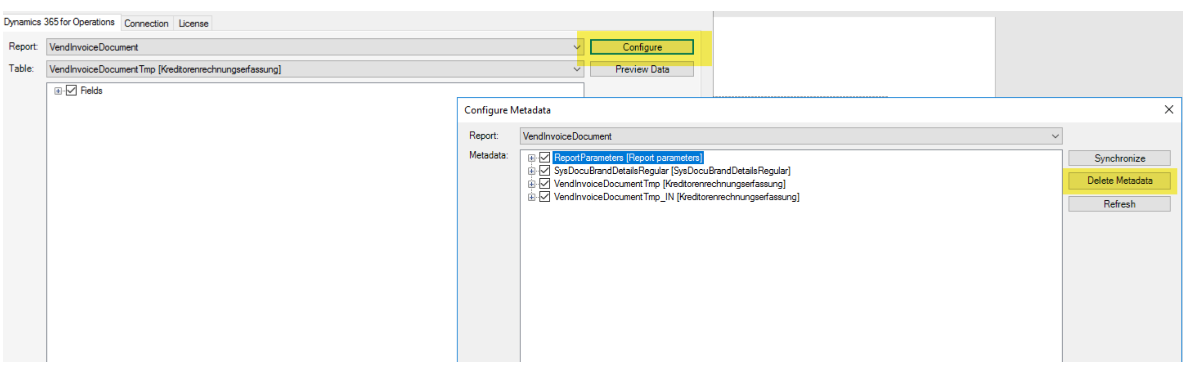
Handling changes to the DataProvider and transferring the report to production

Handling new adjustments in the DataProvider

If e.g. a new field was added to the DataProvider the following steps are required:

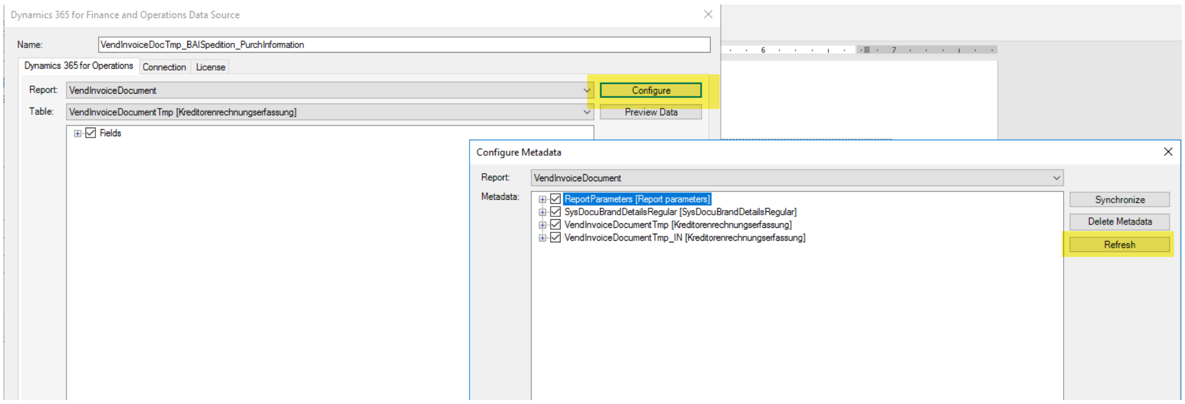
1. Deleting old metadata

   The configuration setup of a DataSource in the DataMap contains the button “Delete Metadata”, which will delete the metadata of the report.



2. Creating new metadata

   For creating new metadata, the report must be reprinted in the D365 FO. After printing the report in the D365 FO System, the button “Refresh” must be clicked for refreshing the metadata.



3. The last step is to click the button “Synchronize” (optional) and closing the configure setup.

The new fields or adjustments are now available in the DataProvider.

Transferring the report from the test environment to the productive environment

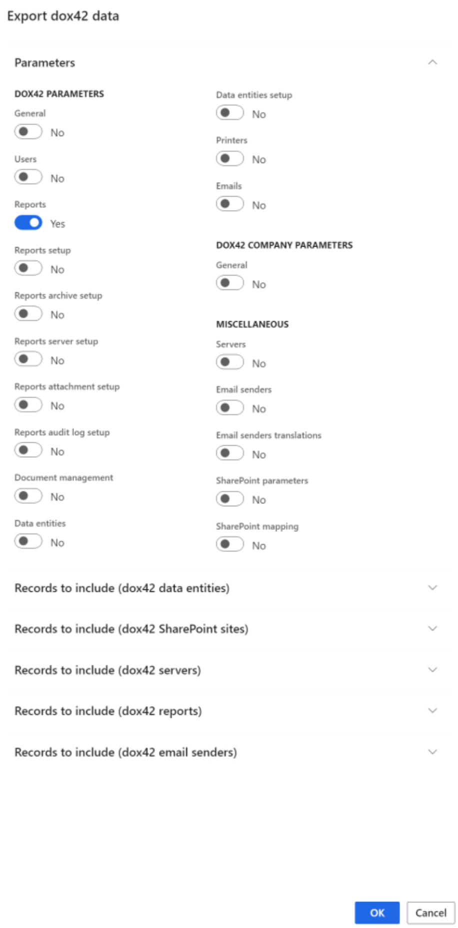
For transferring a report from the test environment to the productive environment the following steps are required:

1. Saving the current productive environment DataMap and Word template in an archive (could be a simple folder), to provide a certain kind of traceability.

2. Replace the currently used DataMap and Word template in the productive environment with the new versions from the test environment.

3. Export the needed dox42 setup from the test environment and import it to the productive environment.

   a. Go to **System administration > Periodic tasks > dox42 > Export dox42 data** in the test environment and run the export of the needed dox42 setup to a file. Important, that the report metadata (metadata is set up in the template) is saved and exported together with the report settings (tab page “Reports” of the dox42 parameters form), therefore the checkbox “Reports” should be set to “Yes” if the report metadata has been changed or newly created. If you need to export only specific parameters to a file, use filters to define export parameters.



i. dox42 parameters: **System administration > Setup > dox42 > dox42 parameters**

1. Checkbox “General” – tab page “General”
2. Checkbox “Users” – tab page “Users”
3. Checkbox “Reports” – tab page “Reports”
4. Checkbox “Reports setup” – tab page “Reports” > button “Report setup”
5. Checkbox “Reports archive setup” – tab page “Reports” > button “Archive setup”
6. Checkbox “Reports server setup” – tab page “Reports” > button “Server setup”
7. Checkbox “Reports attachment setup” – tab page “Reports” > button “Attachments”
8. Checkbox “Reports audit log setup” – tab page “Reports” > button “Audit log”

9. Checkbox “Document management” – tab page “Reports” > button “Document management”
10. Checkbox “Data entities” – tab page “Data entities”
11. Checkbox “Data entities setup” – tab page “Data entities” > button “Data entity setup”
12. Checkbox “Printers” – tab page “Printers”
13. Checkbox “Emails” – tab page “Emails”
14. Checkbox “SharePoint mapping” (checkbox “SharePoint parameters” should be activated)
    a. tab page “Reports” > button “SharePoint mapping”
    b. tab page “Reports” > button “Report setup” > button “SharePoint mapping”
    c. tab page “Data entities” > button “SharePoint mapping”
    d. tab page “Data entities” > button “Data entity setup” > button “SharePoint mapping”

ii. dox42 company parameters: **System administration > Setup > dox42 > dox42 company parameters**

1. Checkbox “General” – tab page “General”

iii. dox42 servers: **System administration > Setup > dox42 > dox42 servers**

1. Checkbox “Servers” – form data

iv. dox42 email senders: **System administration > Setup > dox42 > dox42 email senders**

1. Checkbox “Email senders” – form data
2. Checkbox “Email senders translations” – button “Translations”

v. dox42 SharePoint sites: **System administration > Setup > dox42 > dox42 SharePoint sites**

1. Checkbox “SharePoint parameters” – form data

b. Go to **System administration > Periodic tasks > dox42 > Import dox42 data** in the productive environment and run the import of the previously exported file.

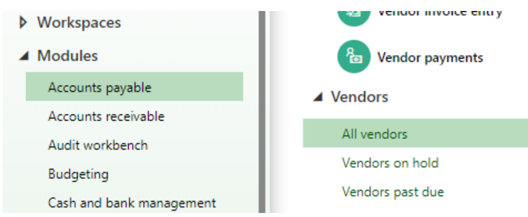
Note: During this process the report cannot be printed in the productive system.

Create your first Data Entity based (OData) report

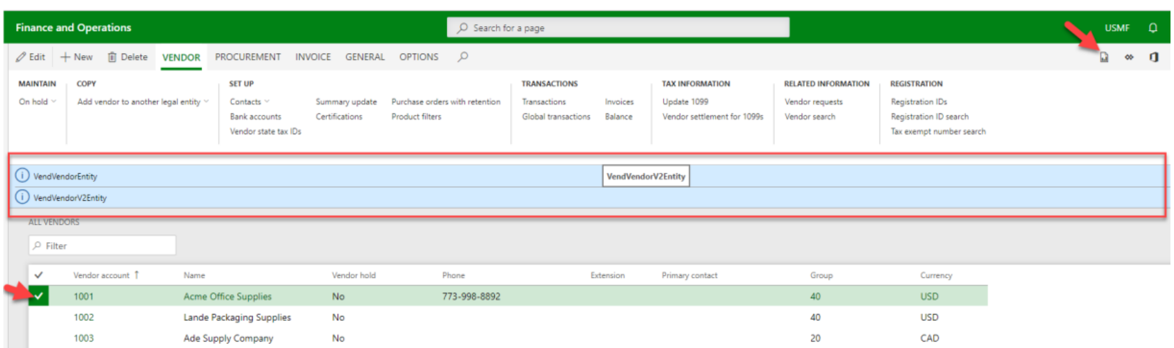
The difference between a “D365 FO report” based report and a “D365 FO entity” report is that the latter is built up by data entities retrieved via OData. Setting up an “D365 FO entity” based report is like setting up a “normal” report. A “Data Source” report can use all data which is sent to SSRS. If you require additional information you can extend the data source. However, you can also use an “D365 FO entity” data source to add information without changing the SSRS data provider. It is possible to mix data from “D365 FO entity” (OData) and SSRS data sources and use them in one template. On the other hand, for some reports it is not required to create the SSRS data source, you can just use a data entity to create a report without SSRS data provider.

Setup the “D365 FO entity” (OData) report in D365 FO

1. Switch to the desired information like “All vendors”



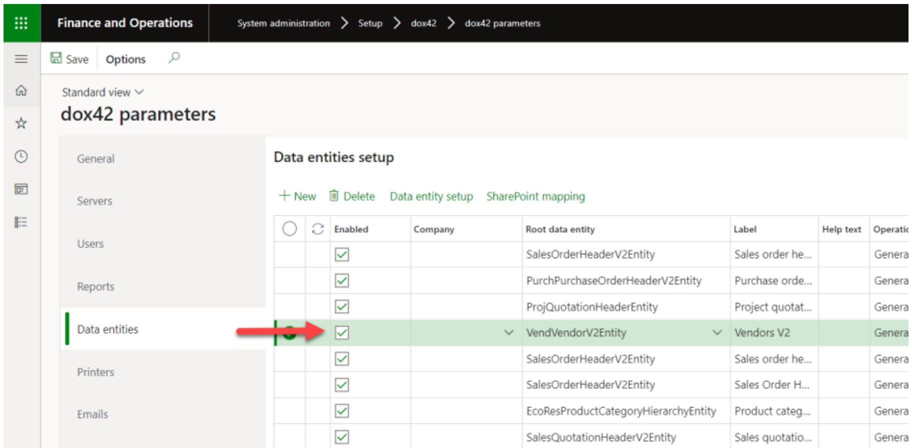
2. Mark one vendor and click the button “dox42” (on the right side), shown on the picture below. The name of the entity will be shown also illustrated on the picture below.



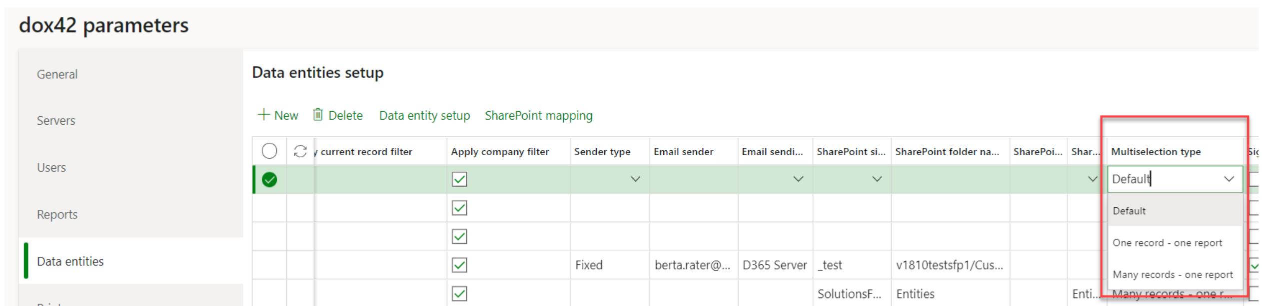
3. Switch to the dox42 parameters

4. Click on the tab “Data entities“

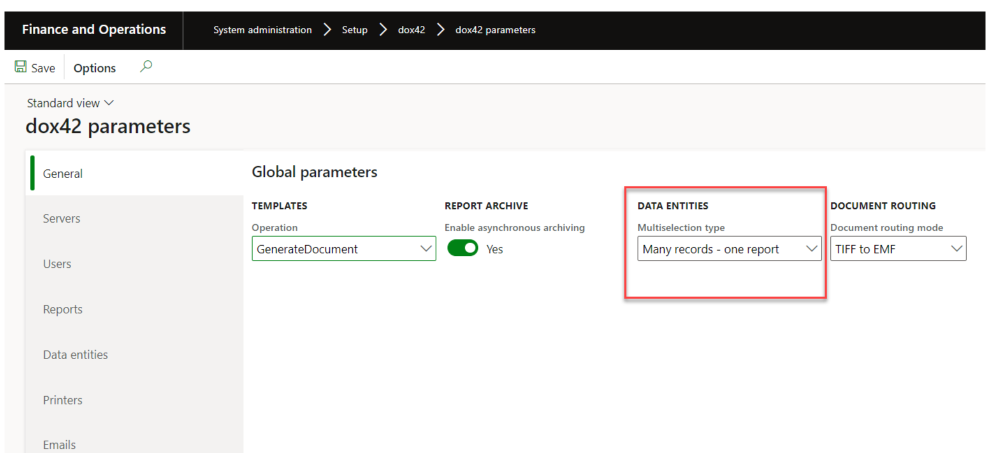
5. Choose the Root data entity (which was shown before)



6. Choose the desired report behavior in the field “Multiselection type”:



a. “Default” – global setup applied.



b. “One record – one report” – one report is printed for each selected record.

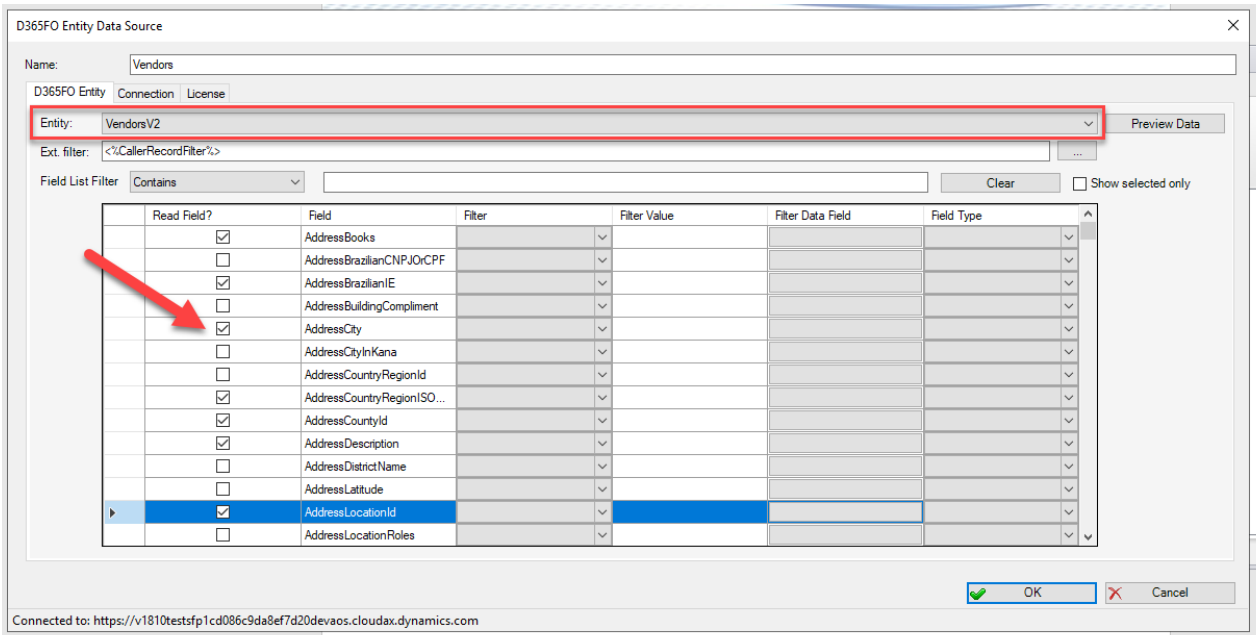
c. “Many records – one report” – one report is printed for all selected records.

When using this option, the entity key data of the selected records is packed into the html request string used to call dox42. This is a limiting factor in the number of records that can be selected and sent - especially if the key data for each record is large in size.

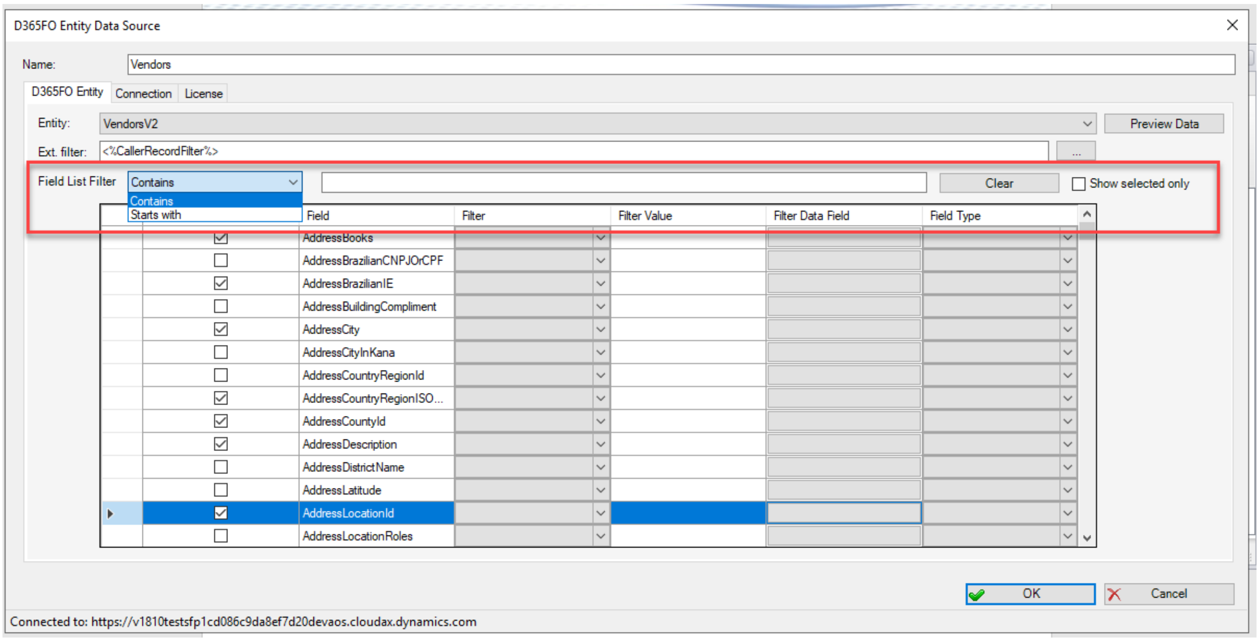
7. Click on the button “Data entity setup” and insert the path to the template.

Building a D365 FO Entity vendor factsheet

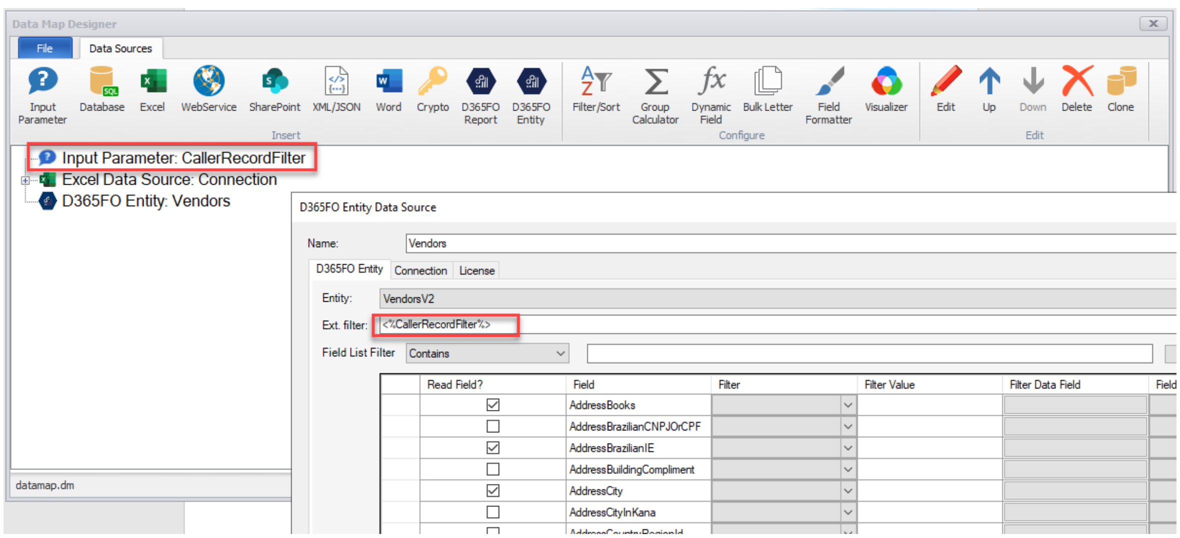
1. Create a new Word template and insert into it the Data Map a “D365 FO Entity” data source (“Dynamics 365 for Finance and Operations OData Source” in previous versions).
2. Select from the drop-down menu the entity “Vendor2”, in the D365 FO Entity data source and mark the fields which are required for the report.



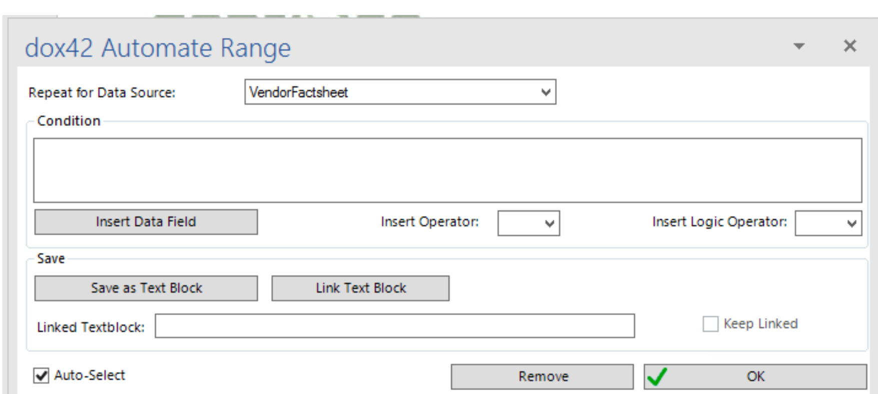
There is special Field list filter which allows you to filter the fields in your Entity data source. You can clear all the text in the text field by clicking the button “Clear”.
The checkbox “Show selected only” allows you to display only selected fields.



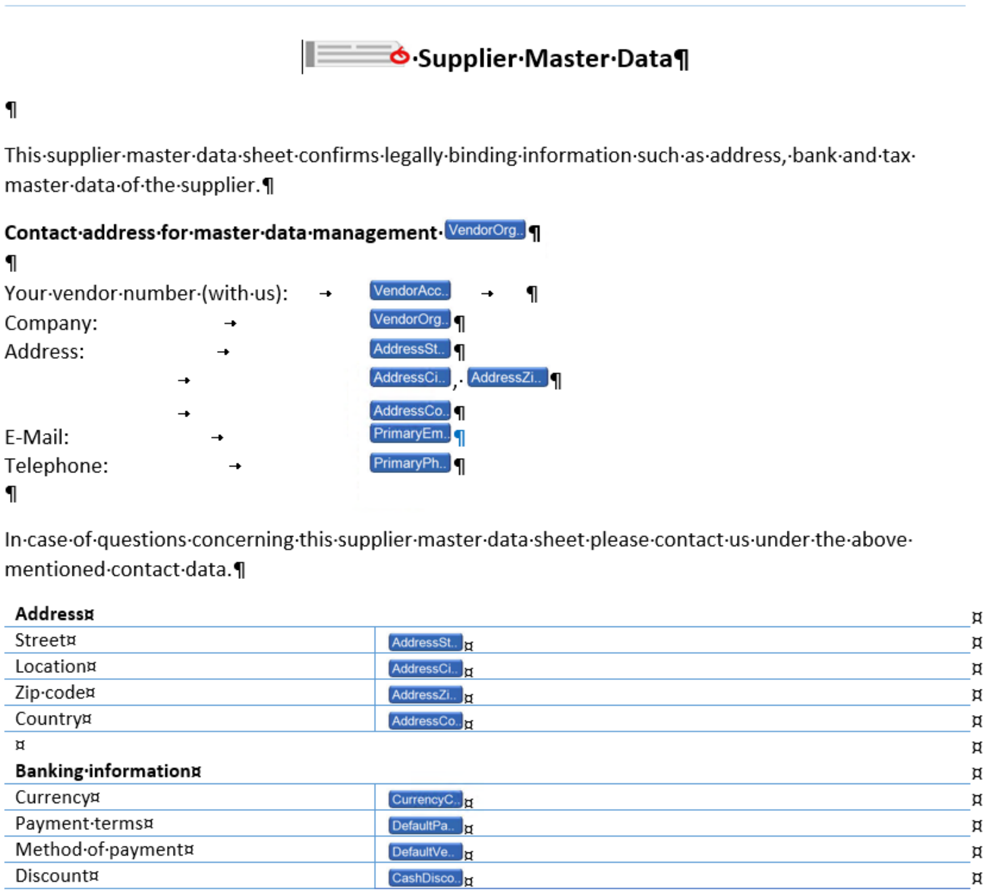
3. Insert a filter for the ODataSource.



4. Design the template and define a loop like in the picture below.



Complete the template by inserting all required placeholders.


Supplier Master Data

This supplier master data sheet confirms legally binding information such as address, bank and tax master data of the supplier.

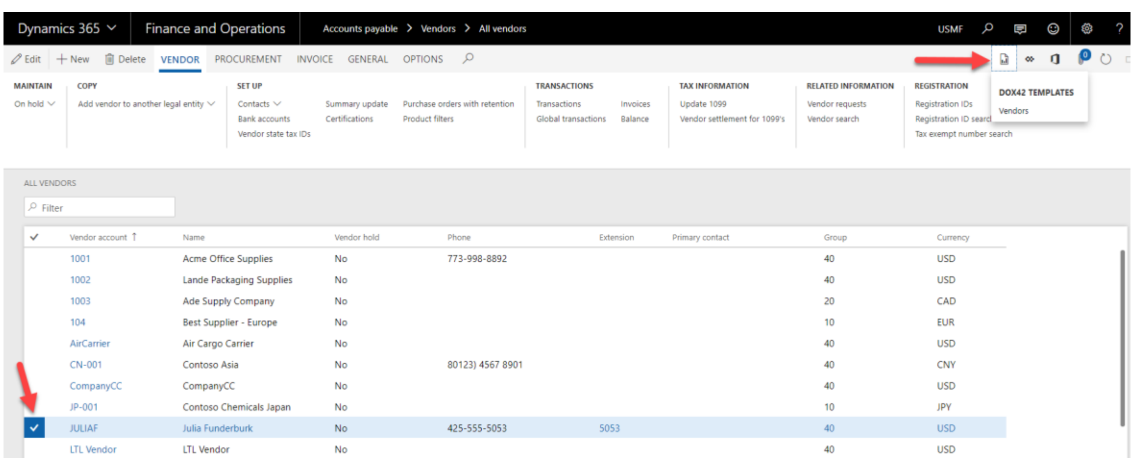
Contact address for master data management VendorOrg..

Your vendor number (with us): VendorAcc..
Company: VendorOrg..
Address: AddressSt..
AddressCi.., AddressZi..
AddressCo..
E-Mail: PrimaryEm..
Telephone: PrimaryPh..

In case of questions concerning this supplier master data sheet please contact us under the above mentioned contact data.

Address	
Street	AddressSt..
Location	AddressCi..
Zip code	AddressZi..
Country	AddressCo..
Banking information	
Currency	CurrencyC..
Payment terms	DefaultPa..
Method of payment	DefaultVe..
Discount	CashDisco..

5. Call the report from the D365 FO environment, the picture below illustrates it.



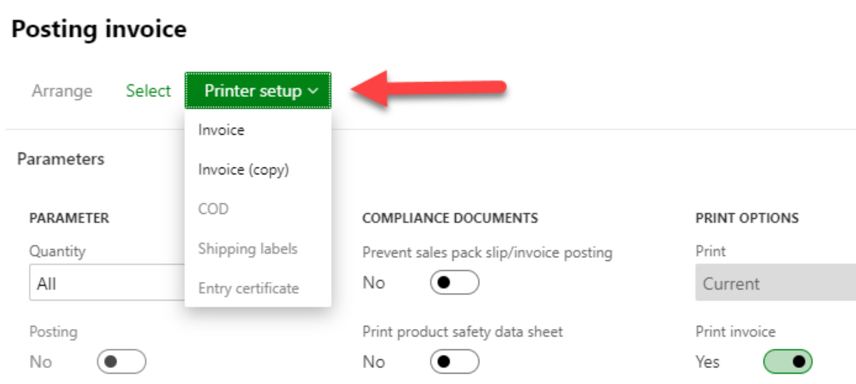
For entity-based reports, the dox42 consumer security role is sufficient.

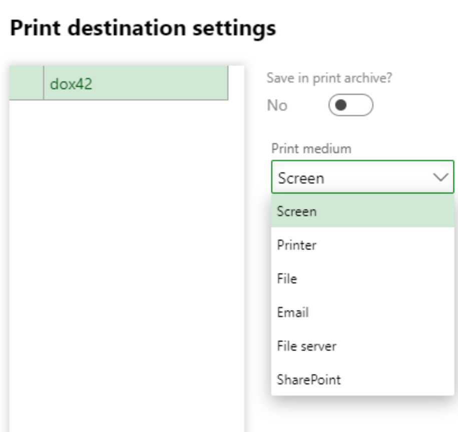
D365 FO INTEGRATION

Seamless integration – Regular Report, Data Entity Based report

Configure report destinations

If e.g. a sales invoice is posted there is the possibility to select different print destinations, by clicking on the button "Printer setup" as displayed in the picture below.





The behavior of the different print medium options is described below.

Screen

The report will be printed on the screen. This option will always be selected, if no other setup is done.

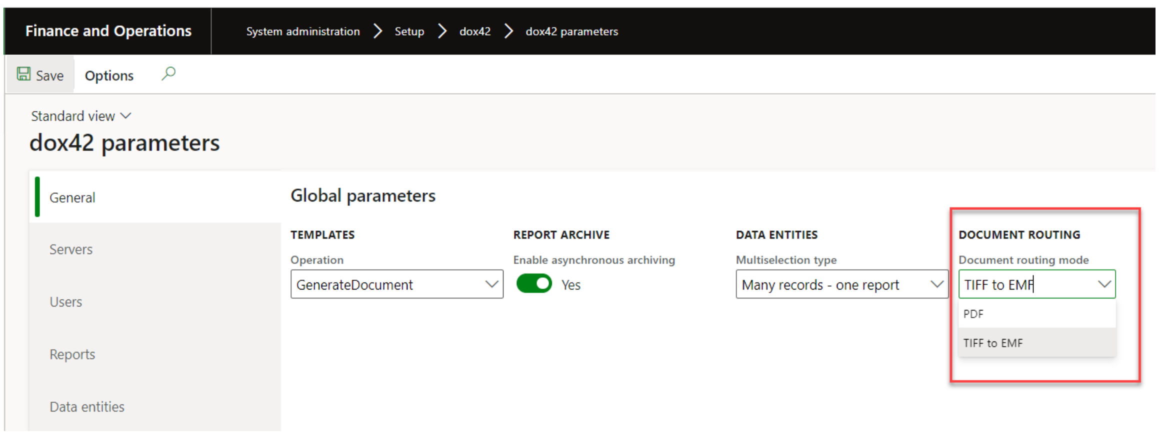
Printer

This option sends the document to the printer if the following printer setup was performed. As a prerequisite for using physical printers, the Document Routing Agent (DRA) is required. The setup is documented on a Microsoft docs site.

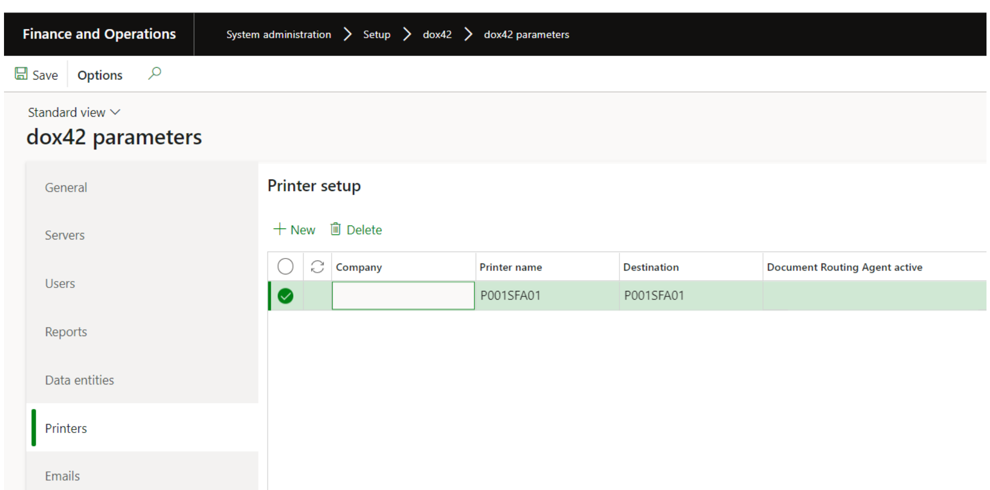
https://docs.microsoft.com/en-us/dynamics365/unified-operations/dev-itpro/analytics/install-document-routing-agent

Additional steps to setup the document routing for dox42

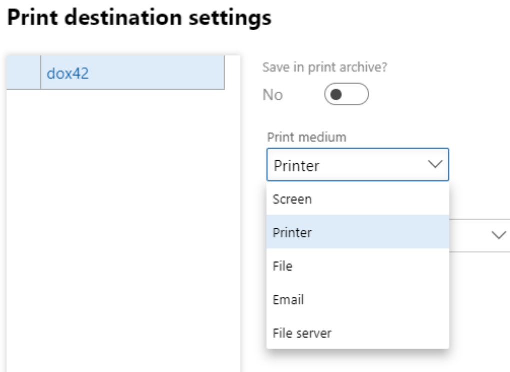
- Setup the document routing mode:
  - PDF – the system will generate a pdf document and send it to the document routing agent (in this case the DRA capabilities can be limited, for example the DRA cannot be used as a service)
  - TIFF to EMF **(recommended)** – the system will generate a tiff document, then convert it to the emf format and send the emf to the document routing agent

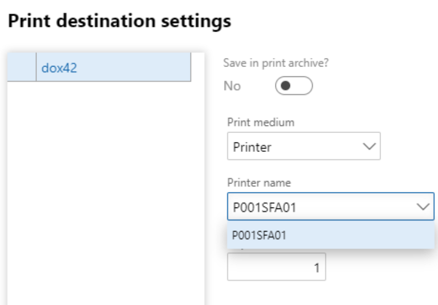


- Register the printer in the tab "Printers", which were defined during the setup of the document routing agent:



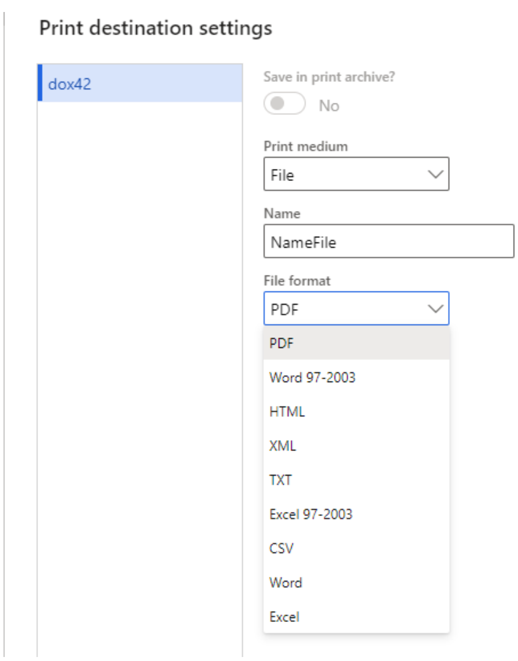
- Select the printer as the Print medium and then select the desired printer from the drop-down menu “Printer name”.





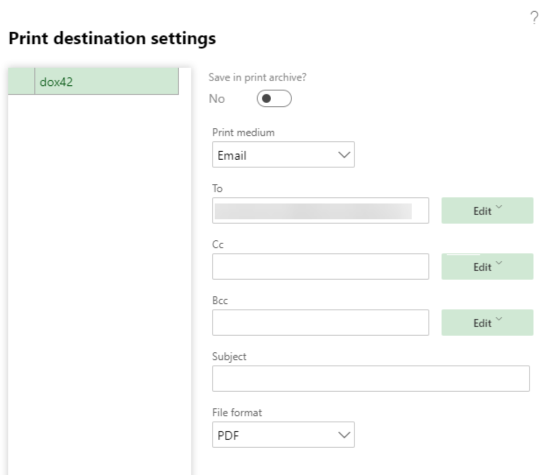
File

If this option is selected, the report will be downloaded in the predefined format. Select “File” as print medium and enter a name as well as a format.



E-Mail

D365 FO provides the feature to send reports via email. If this option was chosen a window like in the picture below appears.

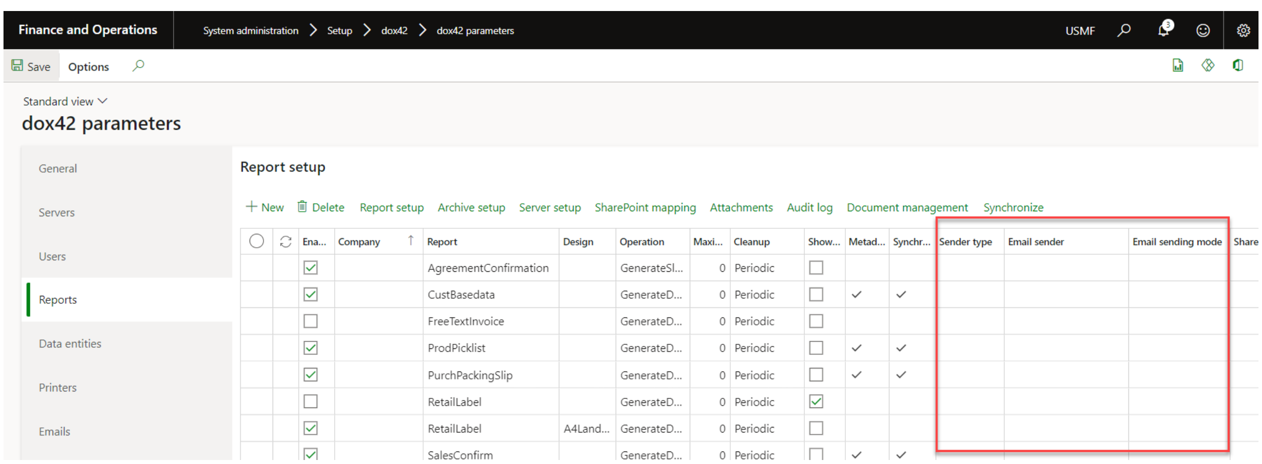


How to setup the email parameters is explained this section. Switch to the dox42 parameters.

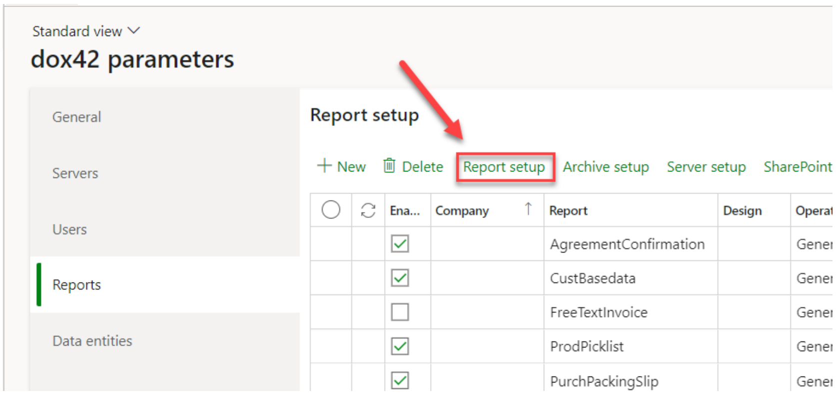
Module "System administration" > "Setup" > "dox42" > "dox42 parameters" > tab "Reports"

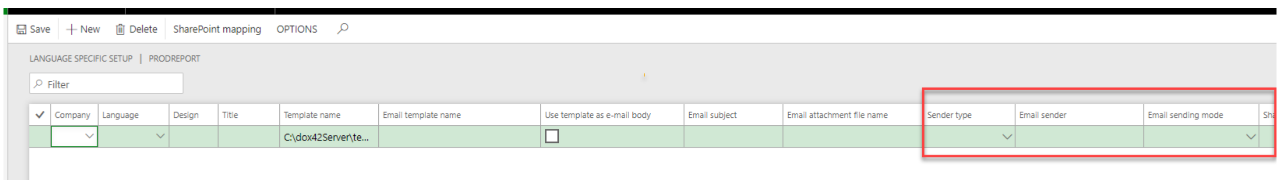
There are two ways to setup emailing parameters for a report.

The first option is to setup the emailing in the general report setup, illustrated in the picture below.

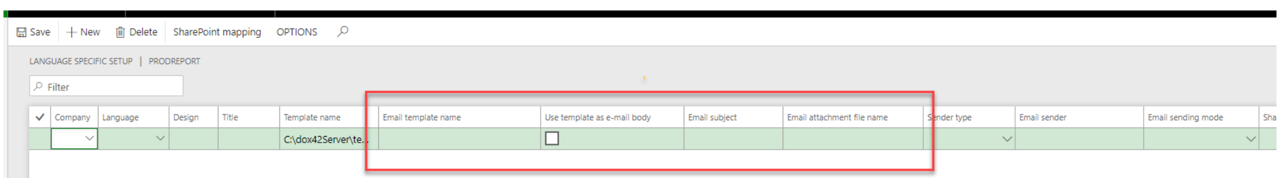


The second option is to setup the sending of emails in the report specific setup. The form of the specific report setup can be accessed by marking a report and clicking on the button “Report setup”, illustrated on the picture below.



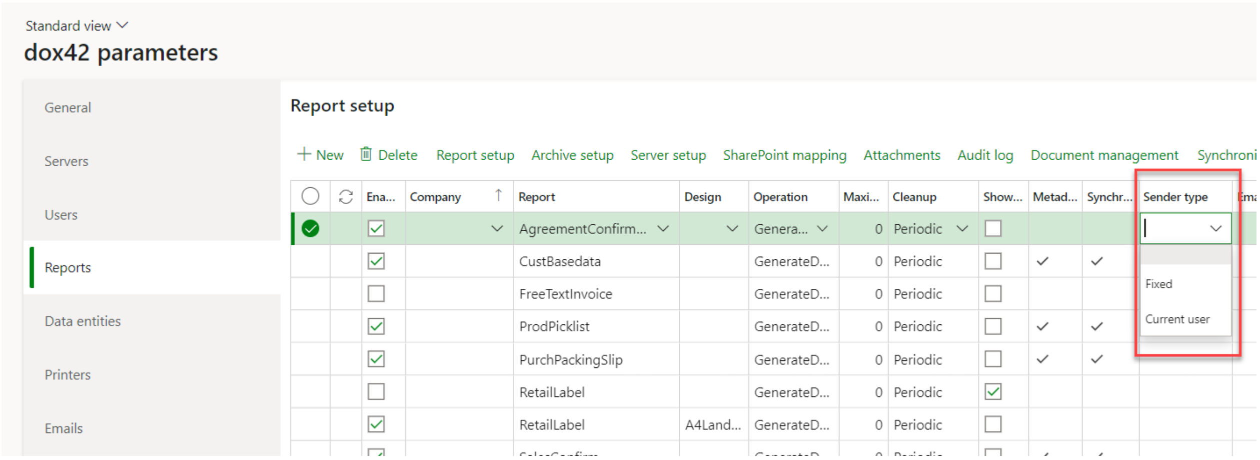


The difference between the two ways of setting up the emailing is that in the general report setup is it not possible to insert a “Email template”, “Email subject” or an “Email attachment file”. Those fields are only available in the specific report setup (displayed in the picture below).



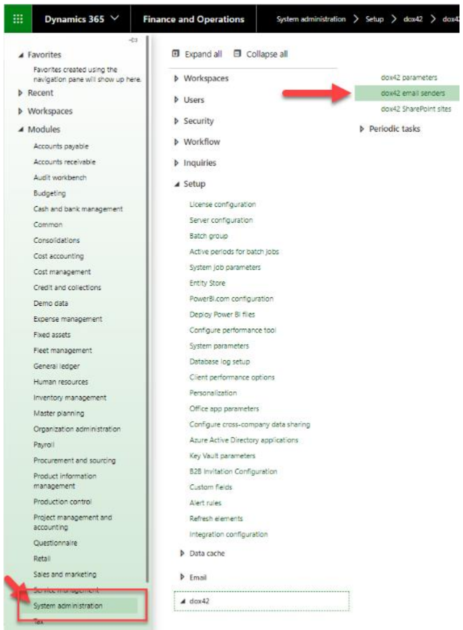
The different setups of the fields “Sender type”, “Email sender” and “Email sending mode” are explained in this section. It does not matter if the setup of those fields is in the general report setup area or in the specific report setup area.

The field “Sender type”

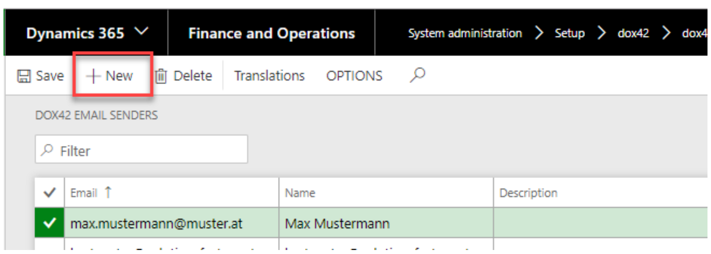


There are two types available “Fixed” and “Current user”. If the “fixed” option was selected, then a fixed email must be selected in the field “Email sender”. The available email addresses are registered in the “dox42 email senders”. How an email address is registered in the “dox42 email senders” is illustrated in the following screenshots.

Module “System administration” > “Setup” > “dox42 email senders”



With a simple click on the button “+New” it is possible to register a new email address.

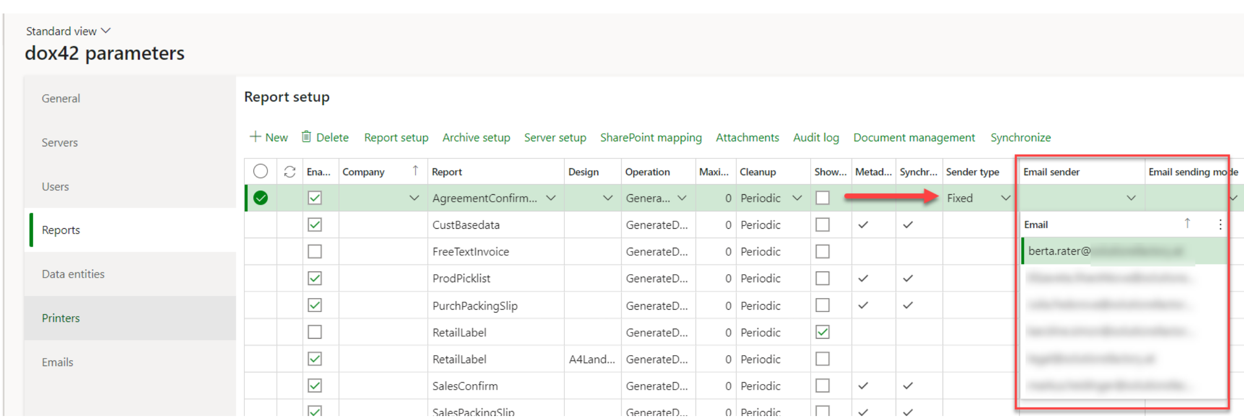


This email address will be used as sender.

If the “current” option was selected the email of the currently logged in user will be used.

The field “Email sender”

The field “Email sender” will only be used, if the field “Sender type” has the value “Fixed”.



The field “Email sending mode”

The field “Email sending mode” defines which of the setups is used for sending the email. In order to decide which value should be set in the field “Email sending mode”, it is necessary to know how each sending mode behaves. There are three sending modes/transmitter types:

- EML – A file is downloaded in EML Format, which can then be sent via email.
- SMTP – just sends the email
- Exchange – just sends the email

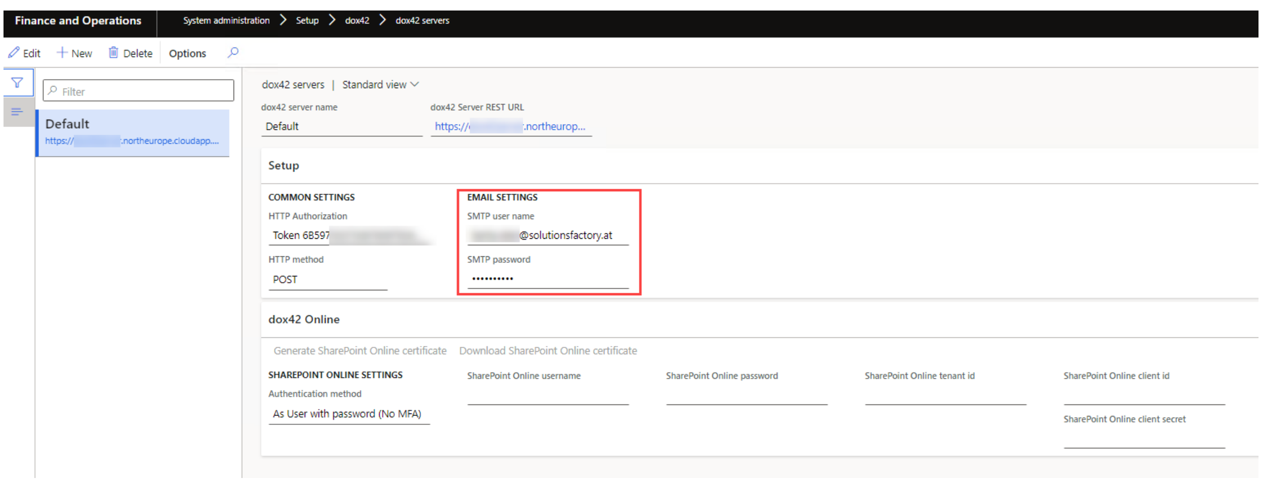
The options for the field “Email sending mode” are:

- dox42 Server
- D365 Server
- D365 User

The “**dox42 Server**” uses SMTP to send emails, the setup for SMTP parameters are on the dox42 parameters. How to get to the dox42 parameters is illustrated below.

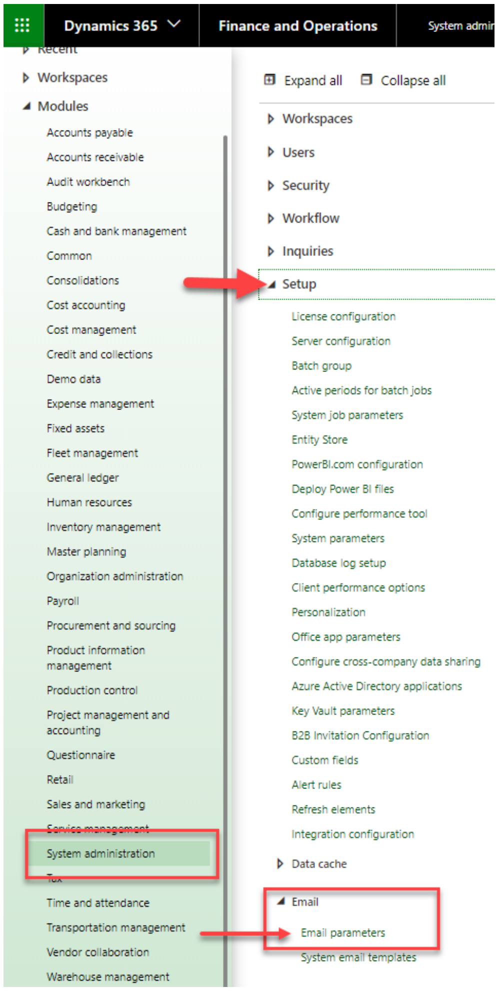
“System administration” > “Setup” > “dox42” > “dox42 servers”

Insert the email address in the field “SMTP user name” and insert the password in the field “SMTP password” as displayed in the image below.

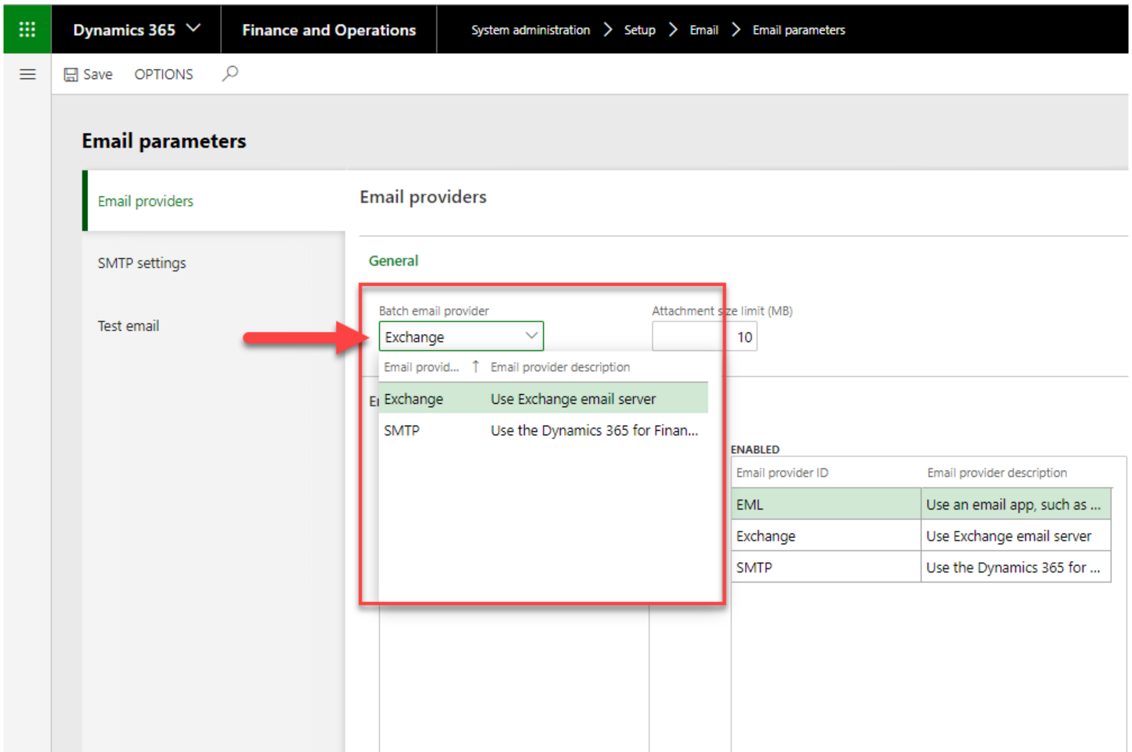


If the option “**D365 Server**” is chosen, the D365 FO uses the setup which is defined in the “Email parameters”.

The form of the “Email parameters” is in the module “System administration” > “Setup” > “Email” > “Email parameters”, illustrated in the picture below.



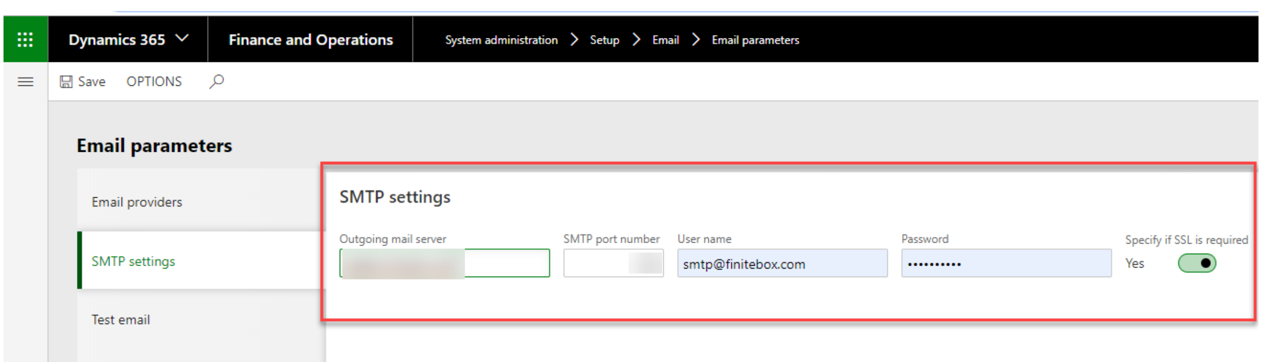
There are two options available “Exchange” and “SMTP”, displayed in the picture below.



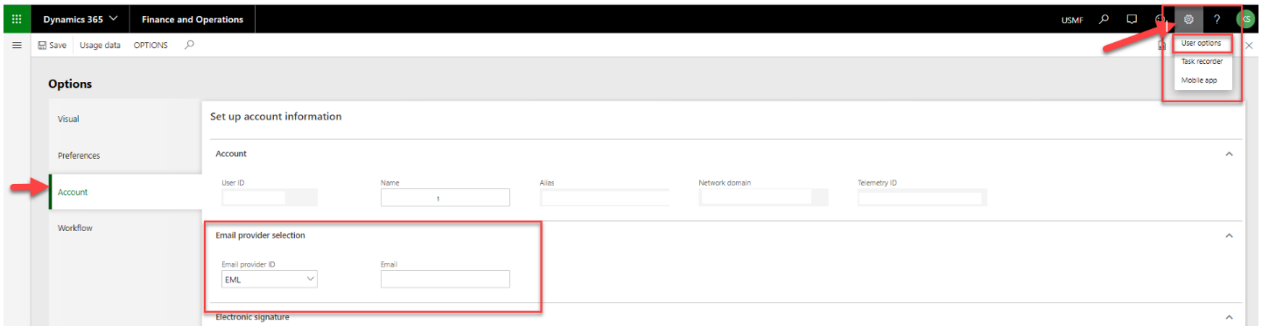
If SMTP is selected, a correct setup in the Email parameters is needed as described below, this is valid for the “D365 Server” as well as for the “D365 User” Email sending mode.

Switch to the module “System administration” > “Setup” > “Email” > “Email parameters”

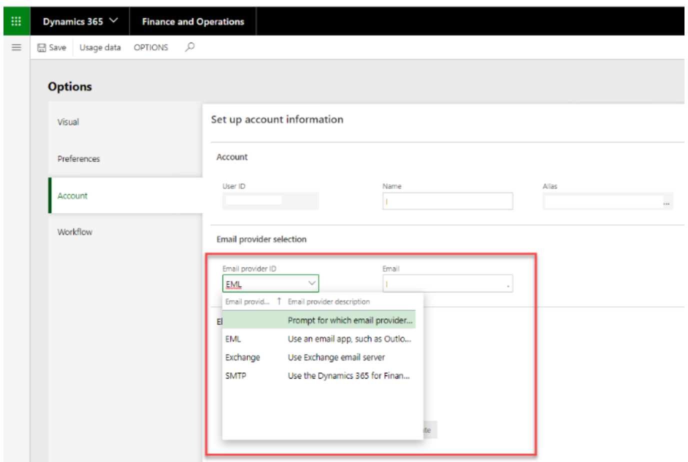
Click on the tab “SMTP settings” and fill in all parameters. Make sure the checkbox “Specify if SSL is required” is set to true.



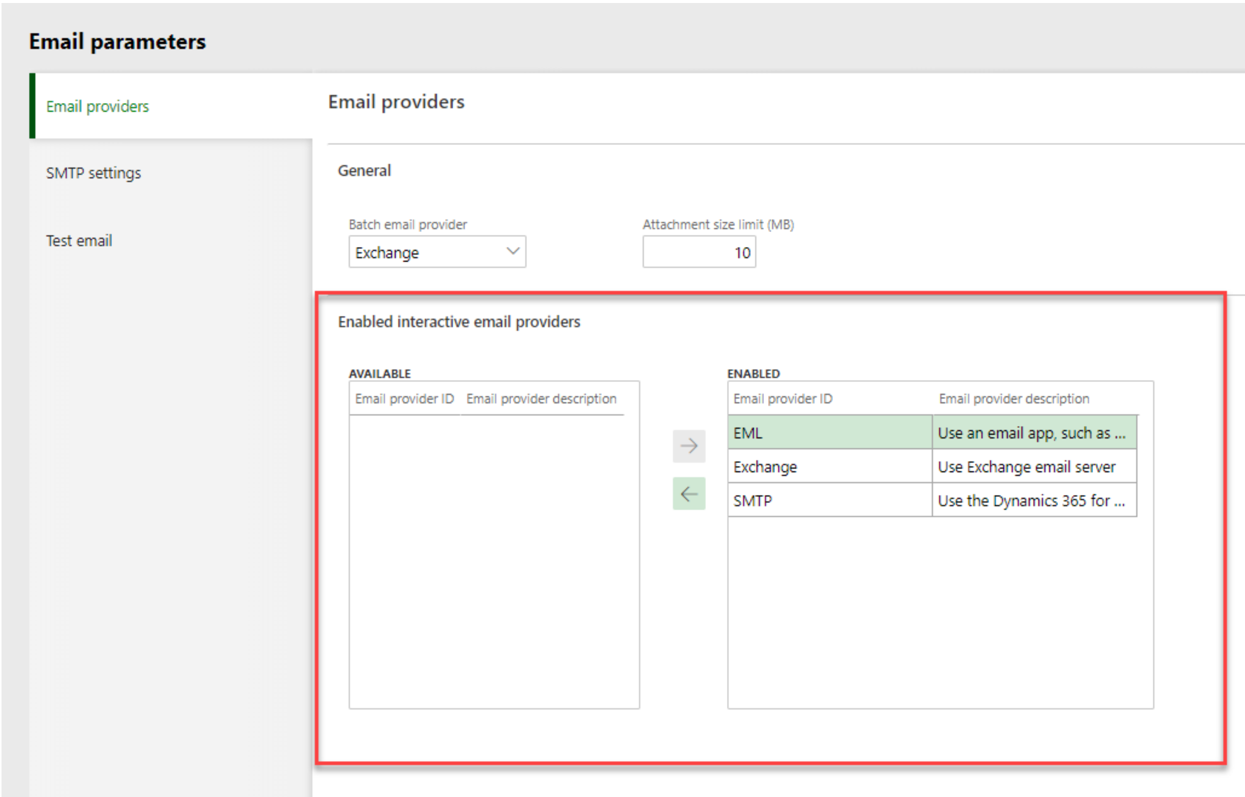
If the option “**D365 User**” is chosen, then D365 FO will use the setup at the D365 FO user account. How to get to the mask of the user account is illustrated in the picture below.



The drop-down menu “Email provider ID” displays all available option.



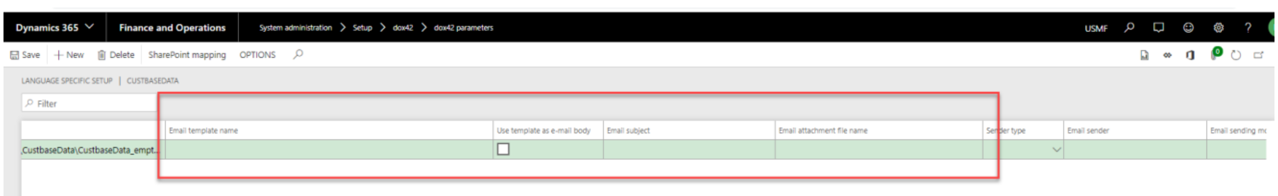
Which options are displayed is predefined in the “Email parameters” in the area “Enabled interactive email providers”.



Everything that is moved to the “ENABLED” side will be displayed at the user options.

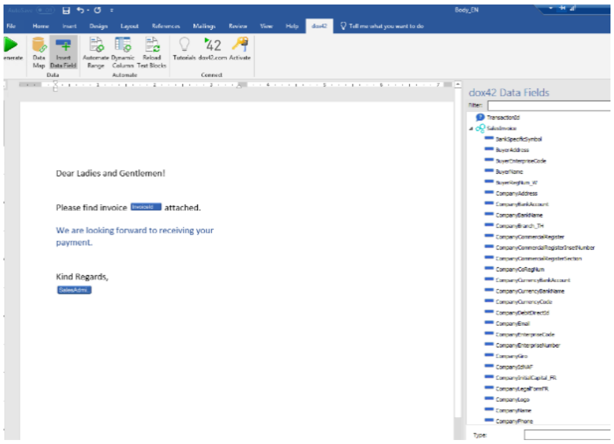
Setting up the additional parameters in the specific report setup

As mentioned before, there are additional fields in the specific report setup.



In the field "**Email template name**" it is possible to setup a body for the email. How to do that is explained below:

Create a simple report like in the picture below. How to setup dox42 templates is illustrated in the chapter "Create your first dox42 report".



Save it in the same folder as the template of the report and insert the path in the field "Email template name". An example is illustrated below.

Template name	Email template name	Use template as e-mail body
C:\dox42Server\templates\TEST\SalesInvoice\SalesInvoiceTemplate.docx	C:\dox42Server\templates\TEST\SalesInvoice\EMailBody_EN.docx	☐

In the field "**Email subject**" it is possible to setup a subject for the email, mixing hard-coded texts with fields from the data provider (<%DataSource.Field%>):

Email subject
Invoice <%SalesInvoiceLines.InvoiceId%>

The field "**Email attachment file name**" provides the option to name the attachment file, which will be sent via Email.

Setup the field:

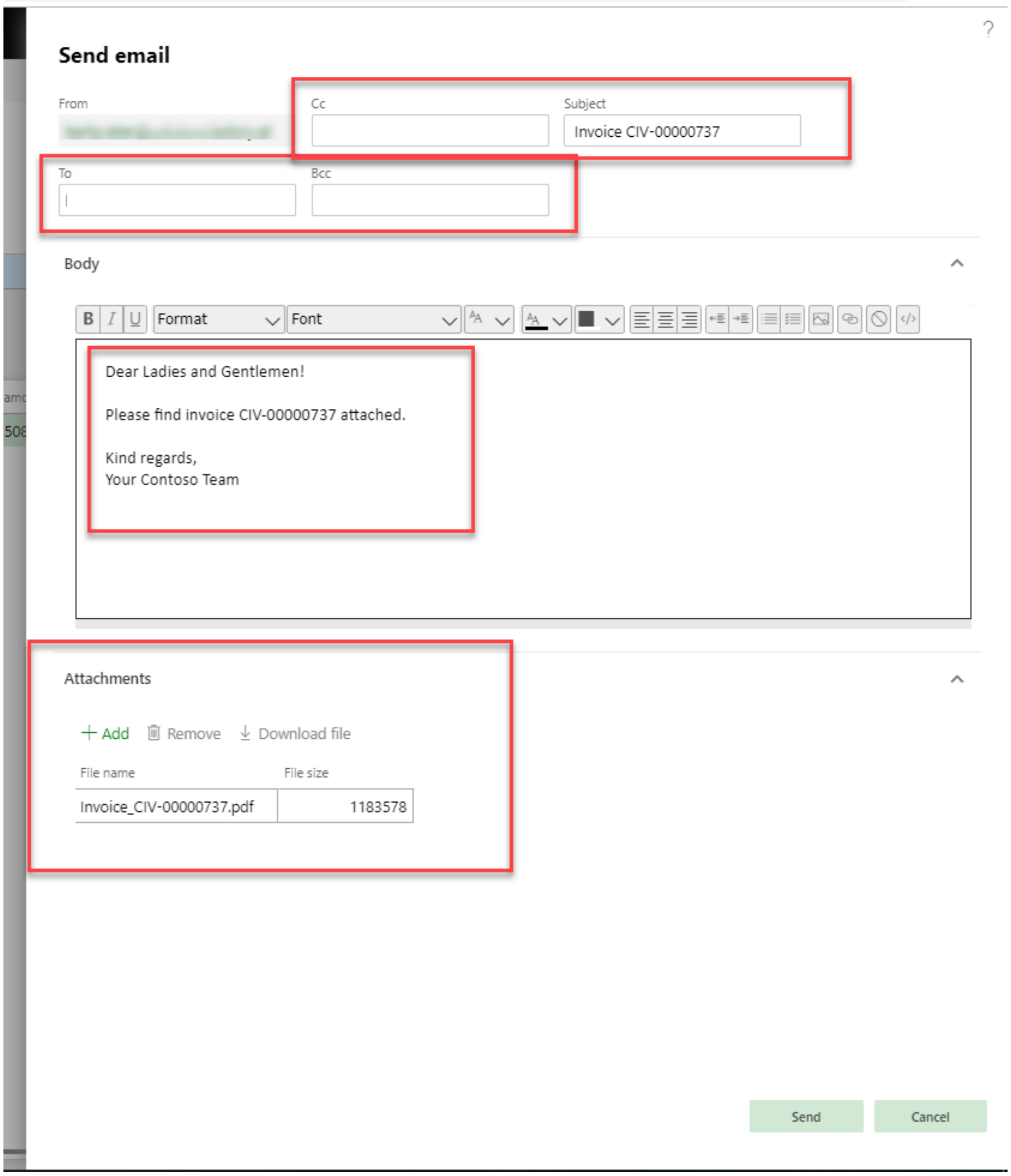
Insert the desired name for the e.g. invoice report. All formats, which are explain by the email subject, can be use by the email attachment file name as well. -coded text.

Email attachment file name
<%SalesInvoiceLines.InvoiceId%>.pdf

This will result in an attachment filename like this:

The difference, for the user, between the option “D365 Server” and the option “D365 User”

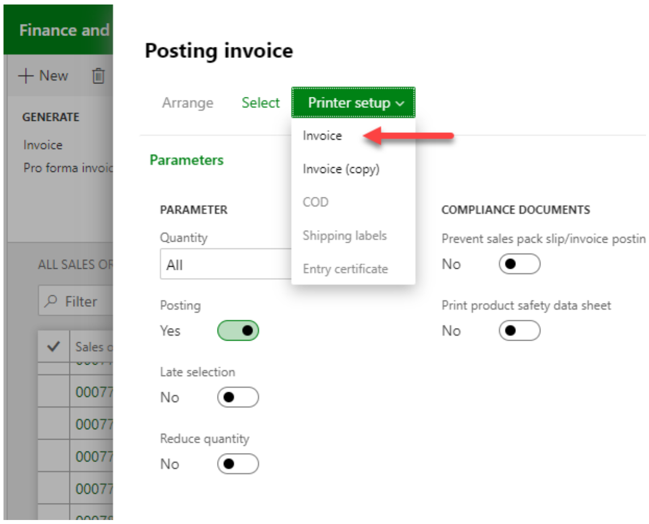
If the “D365 User” is selected it is possible for the user to customize each email. The picture below displays which areas are possible to modify.



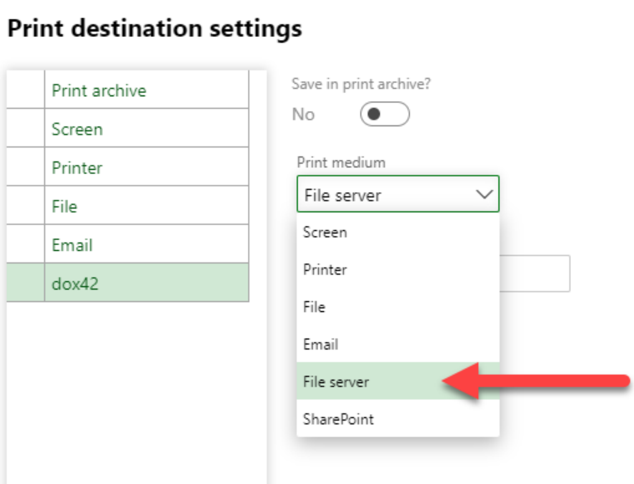
If the “D365 Server” option is selected, D365 FO simply sends the email, there is no possibility to change the email.

File Server

If this option is selected, the report will be archived in the predefined format. If a sales invoice is posted, it is possible to select the option "File Server" in the Printer setup. The report is then archived in the specified path. The setup to save a report in multiple formats in the background is described in the chapter "Archiving of documents".

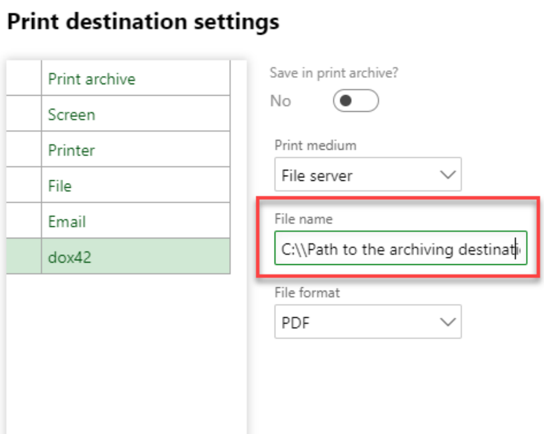


In the drop-down menu "Print medium" choose the "File Server".

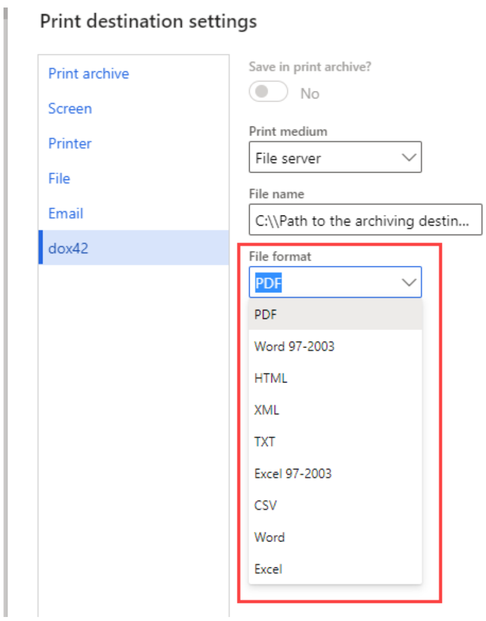


Insert the path to the folder in which the report should be archived, at the end of the path write the name which the report should get.

Example: C:\\Path to the archiving destination\ <% SalesInvoiceLines.InvoiceID%>



Next step is to choose a format from the drop-down menu “File format”.



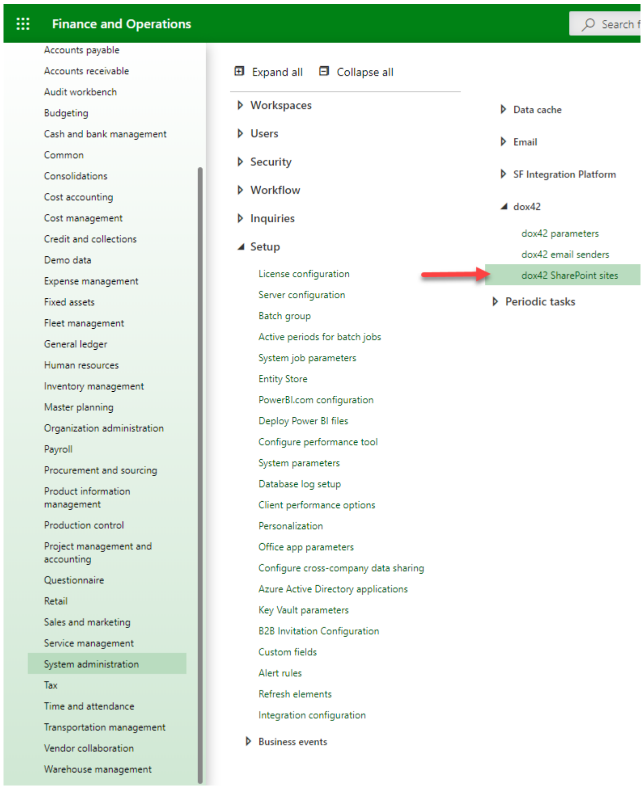
That's all you need, the report is now available in the specified folder, but is not displayed on the screen.

SharePoint

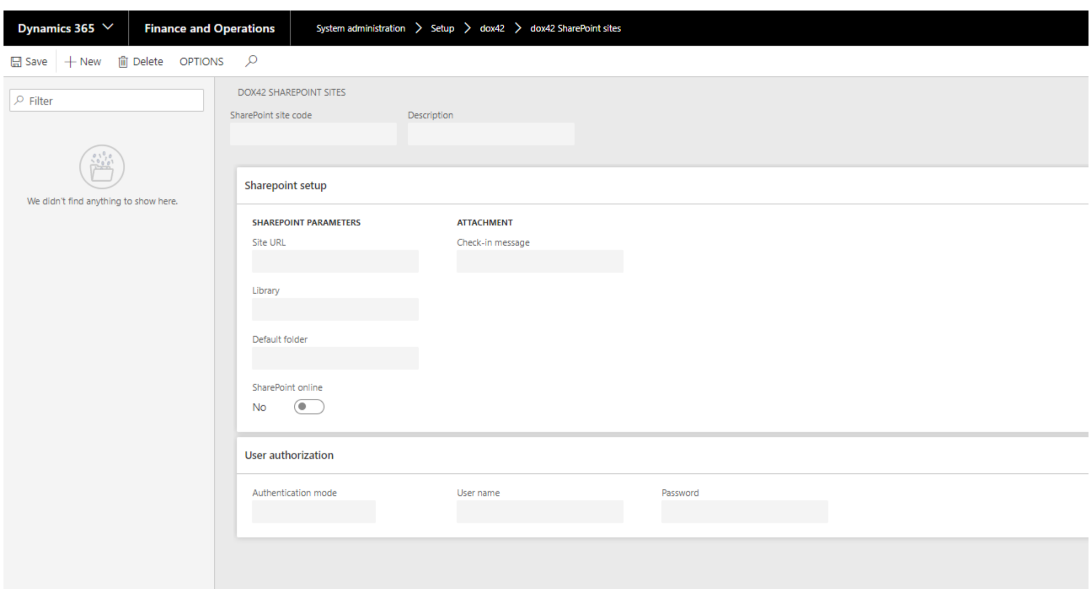
The option SharePoint provides the possibility to archive the reports on the SharePoint. The required setup steps are described below.

Note: It is not possible to use it as a regular print destination, the following setup must be done.

Determine library and folder in Sharepoint. Open dox42 Sharepoint sites in D365 FO. Module “System administration” > “Setup” > “dox42” > “dox42 SharePoint sites”



The mask displayed in the image below opens.



Switch to the Sharepoint folder where the report should be saved and copy the link.

The link will look similar to this example:

https:// company.sharepoint.com/SPlayground/dox42%20Sharepoint%20Archiving%20V1810DemoSF1Eins

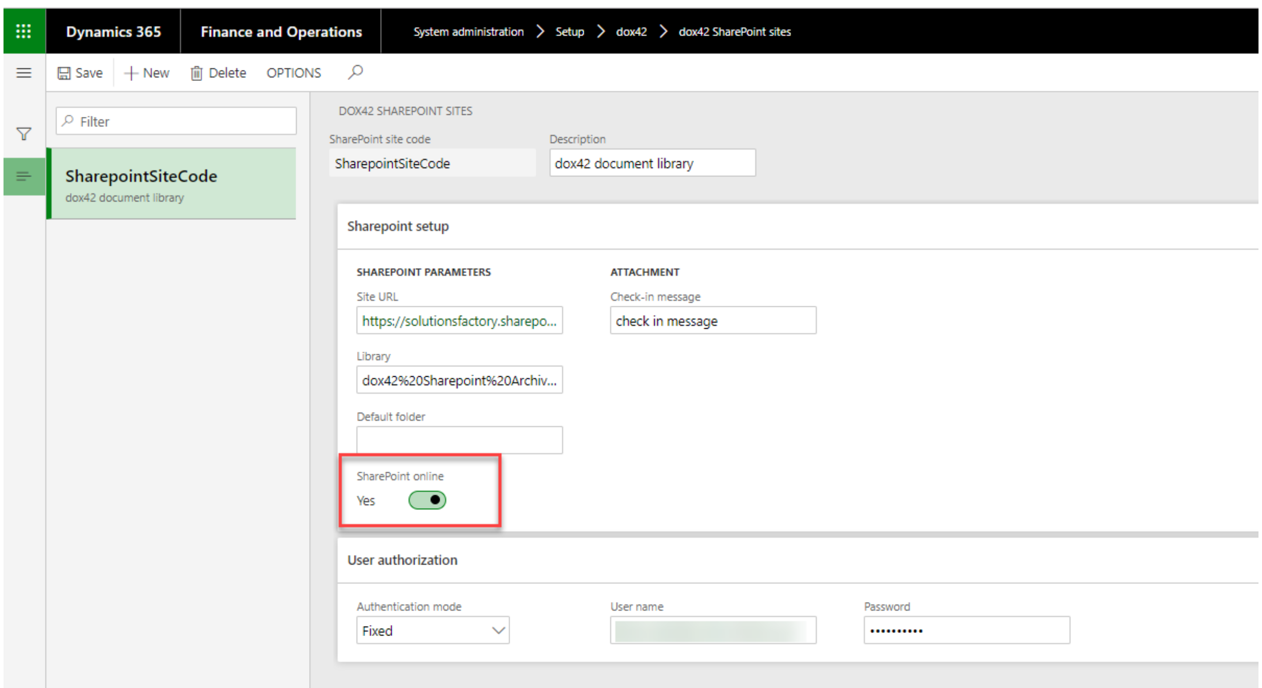
The link consists of the following components:

- Link to the Sharepoint: *https://company.sharepoint.com*
- Name of the Site: */SPlayground*
- Name of the Library: *dox42%20Sharepoint%20Archiving%20V1810DemoSF1Eins*

Now create a new Sharepoint site in D365 FO by clicking on the button "New" and fill in the parameters as follows:

- Site URL: *https://company.sharepoint.com/SPlayground/*
- Library: *dox42%20Sharepoint%20Archiving%20V1810DemoSF1Eins*
- Check-in message: just an information
- User authorization: User parameters of a user with is authorized to write on the SharePoint. We recommend the authentication mode "Inherit".

Make sure that the field "SharePoint online" is set to "Yes".

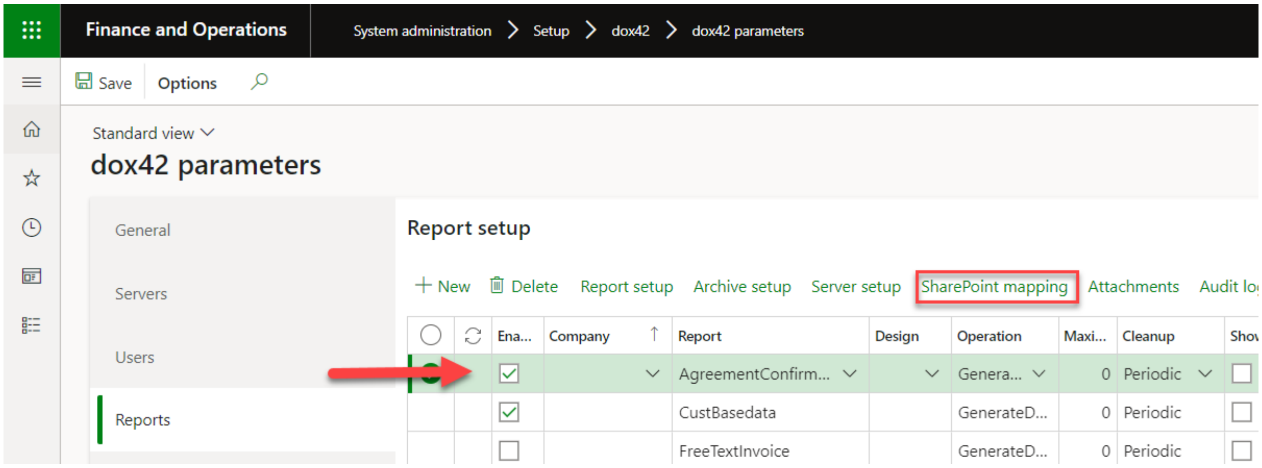


NOTE: There is no " - " allowed in the Libraryname

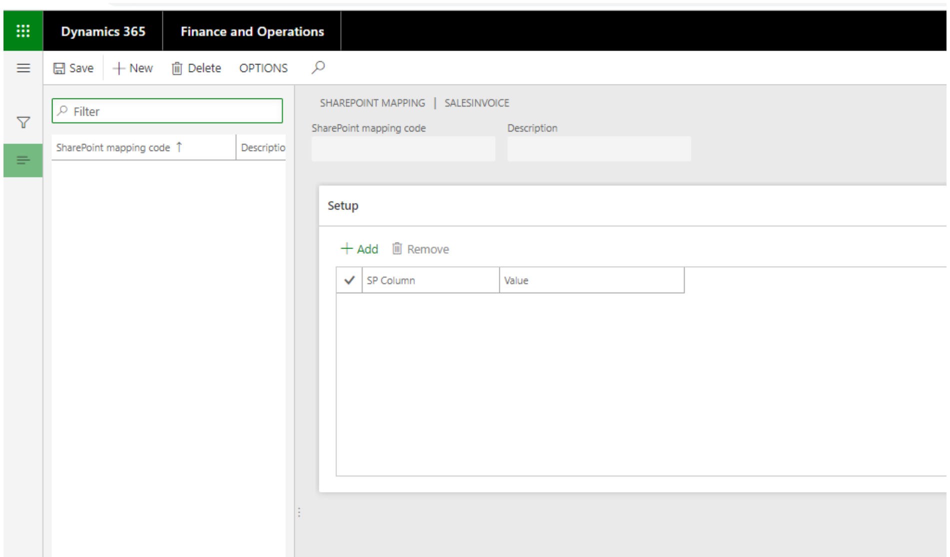
Switch to the dox42 parameters to setup a SharePoint mapping.

(System administration > dox42 > dox42 parameters)

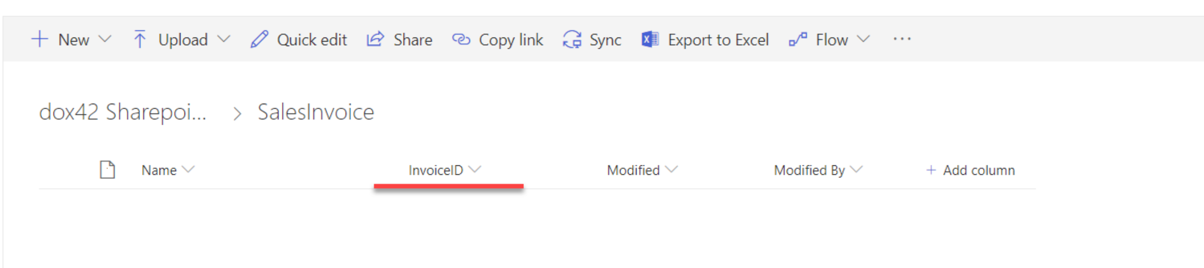
Mark the desired report and click on the button “SharePoint mapping”.

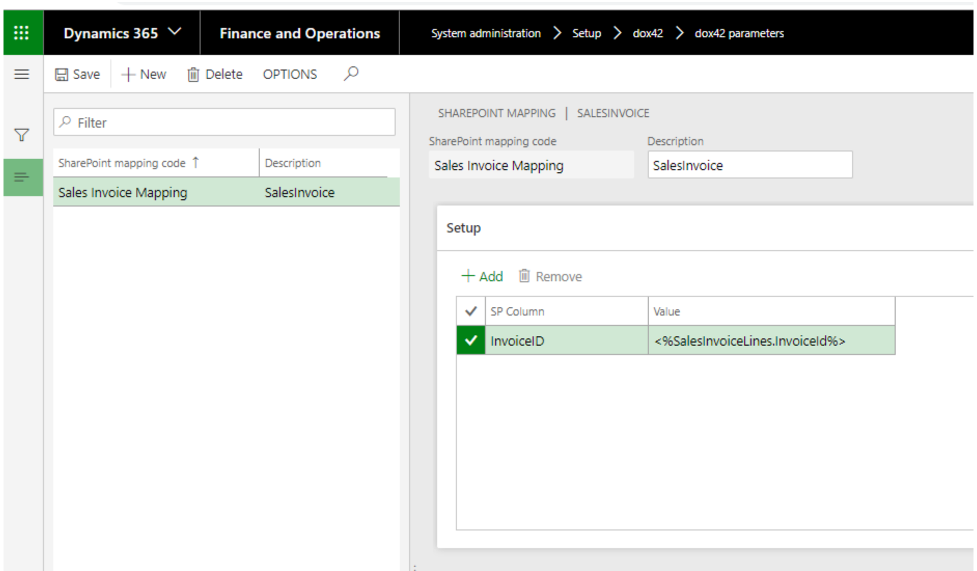


The mask displayed in the image below opens.



Add the columns which should be filled on the Sharepoint, in the “Setup” area. The column “Name” on the Sharepoint will be automatically filled, but for example the columns “InvoiceID” have to be inserted at the setup-area in the Sharepoint mapping.

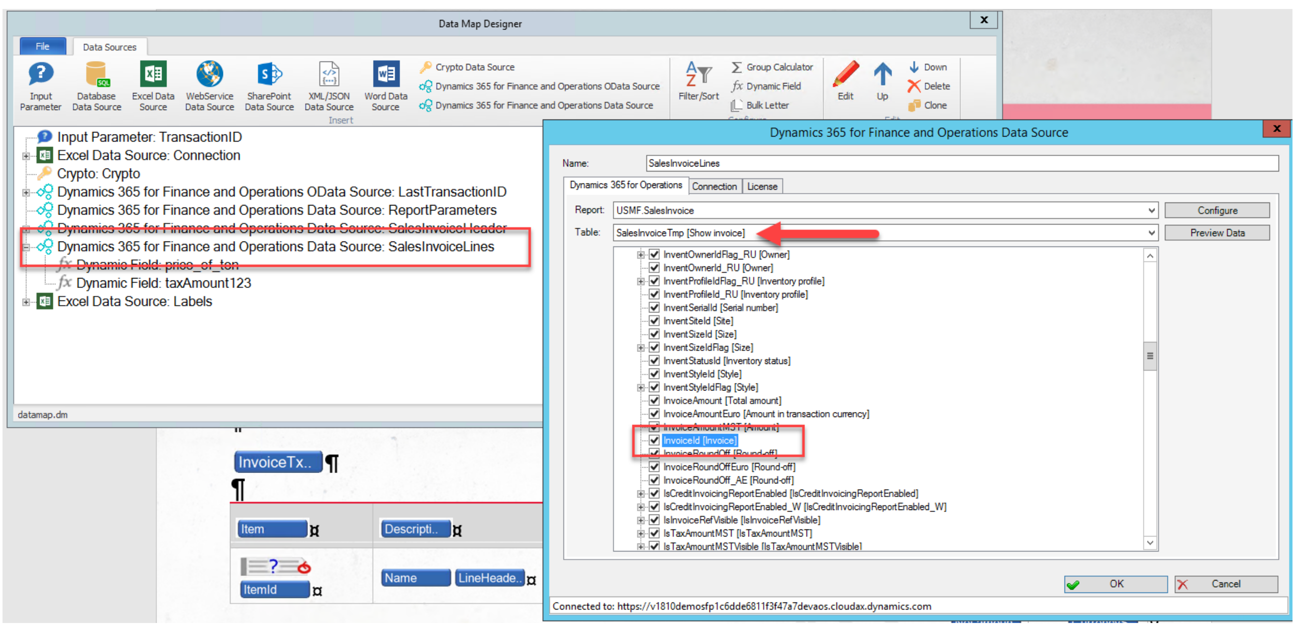




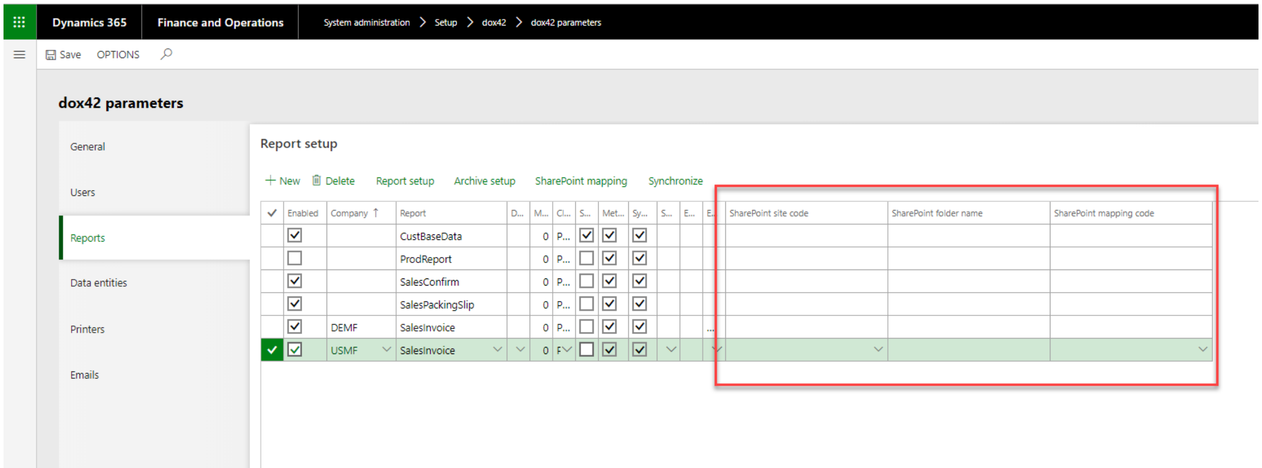
If the column “InvoiceID” on the Sharepoint should be filled, the value field looks like this:

<%SalesInvoiceLines.InvoiceId%>

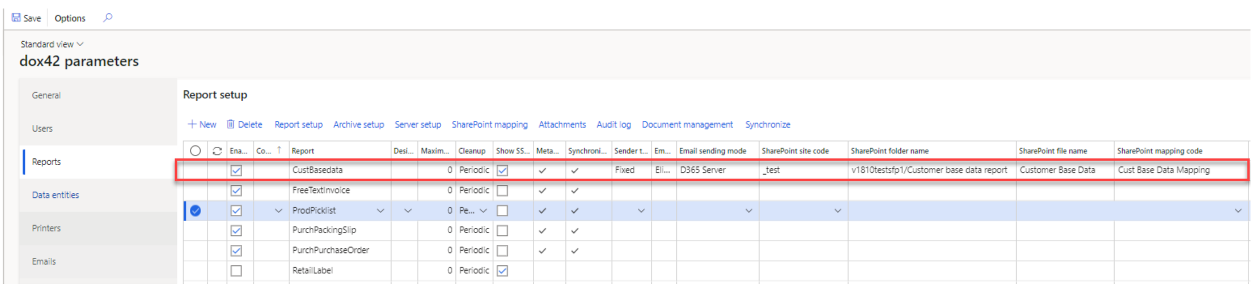
“SalesInvoiceLines” is the table in which the “InvoiceId” is stored. The name of the table as well as the name of the field can be looked up in the Datamap of the report.



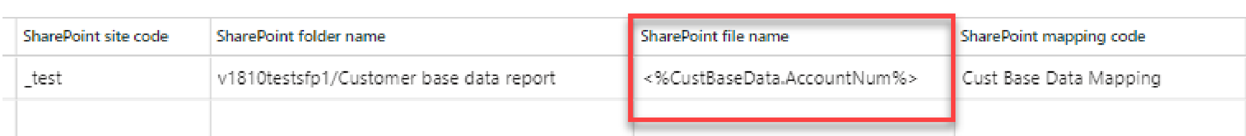
Save the Sharepoint mapping and switch to the dox42 parameters. The linking of the report with the Sharepoint setup is done in the dox42 parameters.



Insert the “SharePoint site code”, which contains the location as well as the library of the SharePoint. The field “SharePoint folder name” defines in which folder, on the SharePoint, the report should be saved. The SharePoint mapping code contains the information how the columns on the SharePoint are filled. The SharePoint file name contains the name you want to give to the report file.

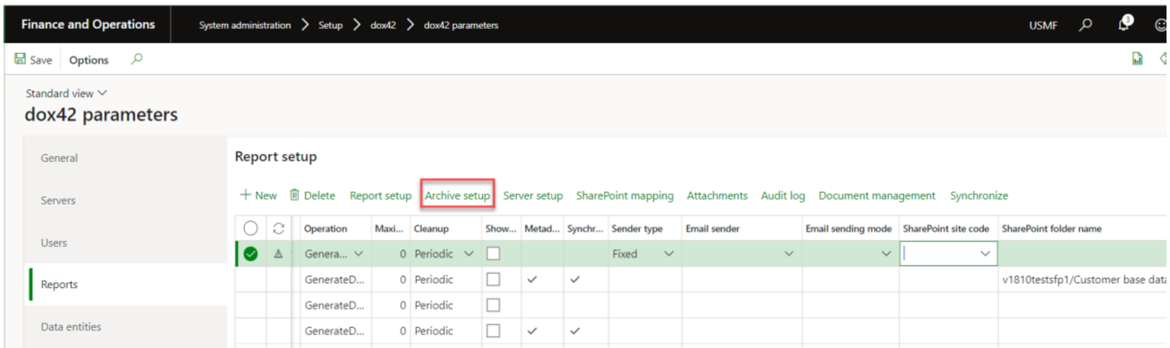


It is possible to setup the file name mixing a hard-coded text with the fields from the data provider using placeholders (e.g. <%YourDataSourceName.YourFieldName%>). An example of how the dynamic name of a SharePoint file name can look like is illustrated in the screenshot below.

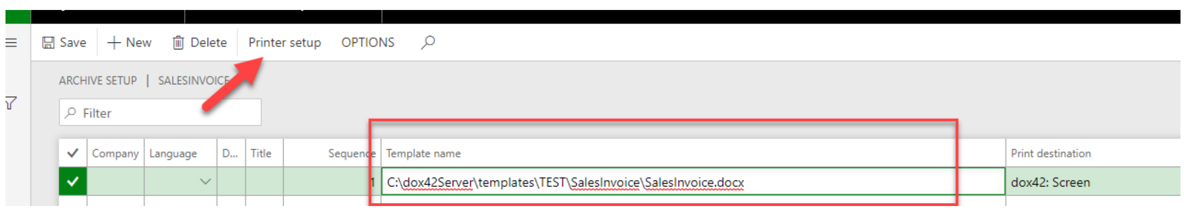


The next step is to setup the printer management for the SharePoint.

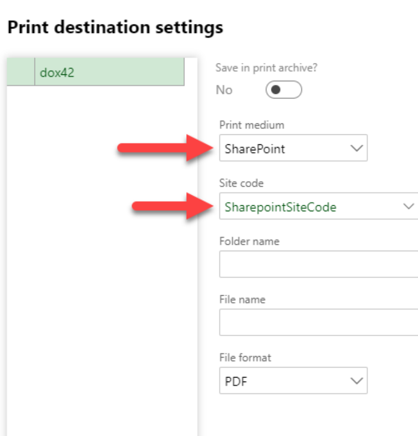
- Mark the desired report and click on the button “Archive setup”



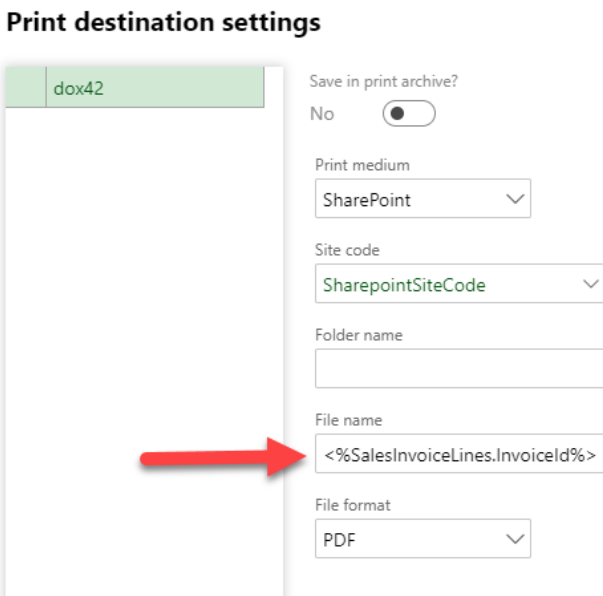
- Click on the button “new” and insert the path of the template in the field “Template name”, then click on the button “Printer setup”



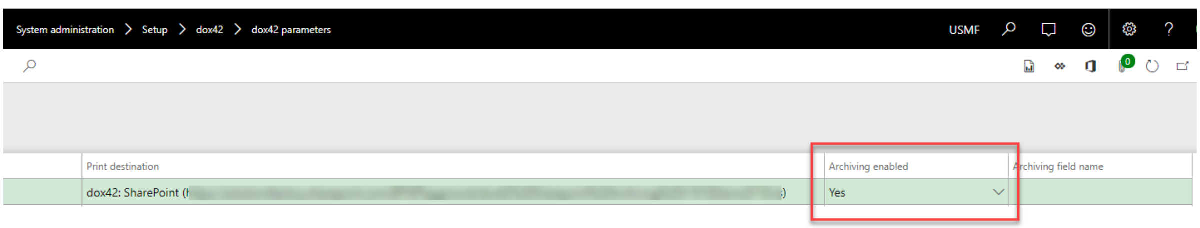
- Select the option “SharePoint” in the drop-down menu “Print medium” and fill in the field “site code”.



The field “File name” provides the possibility to give the files a dynamic name (e.g. the InvoiceID).



Set the value of the field “Archiving enabled” to “yes”, in the “Archive setup”.



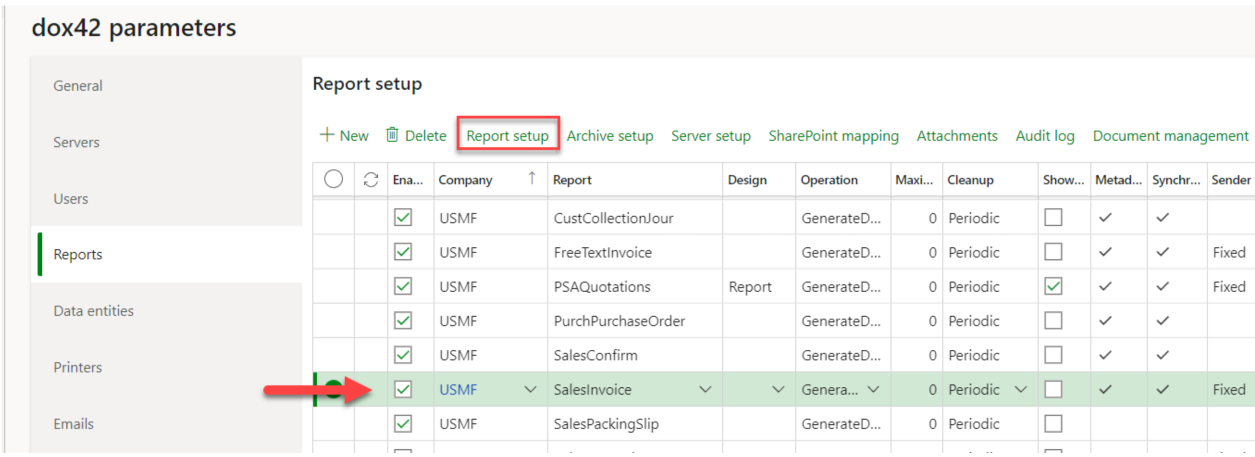
Now the setup for the archiving on the Sharepoint is finished. If a sales invoice is printed it will automatically be archived on the SharePoint.

Note: If side code and report setup have different folders, D365 FO chooses the folder from report setup

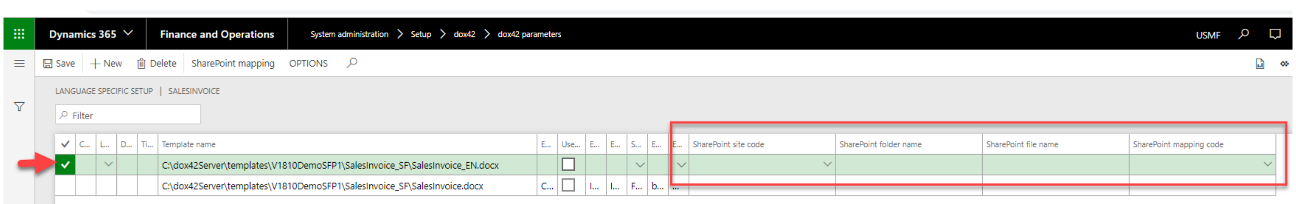
Setting up the SharePoint archiving for different templates

In the specific setup form of a report it is possible to create several templates for different companies/languages and setup different site codes, folders and mappings for archiving. The images below illustrate how to get to the specific report setup.

Mark the desired report and click on the button "Report setup".



The setup in the report itself has the highest priority and will used even if outside the report is also a SharePoint setup:



Archiving an "D365 FO entity" report (OData report)

There is not really a different between archiving reports based on "D365 FO entity" and "normal" reports based on "D365 FO report". Everything is available at the Data entities setup.

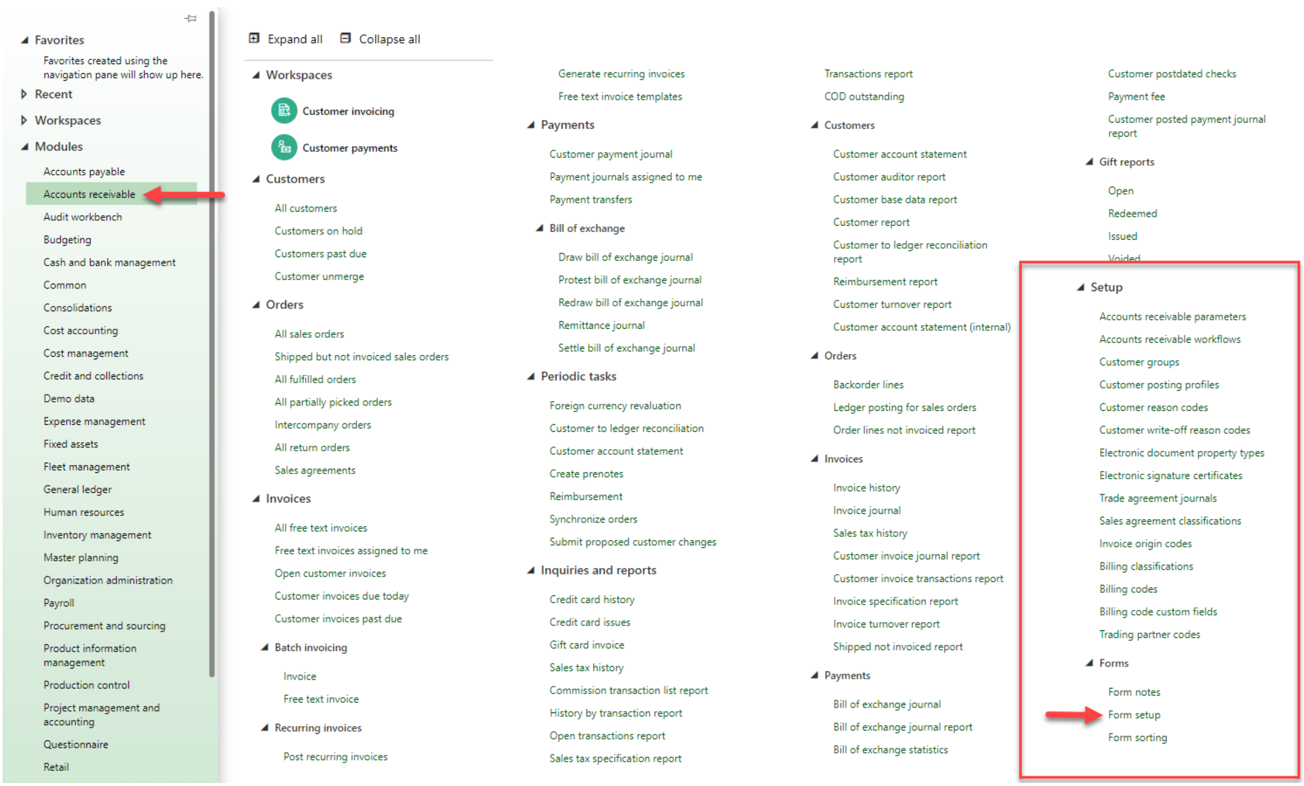
Note: It is unavailable to show data entity report on screen and archive it in SharePoint. It only possible to archive it or show it on the screen.

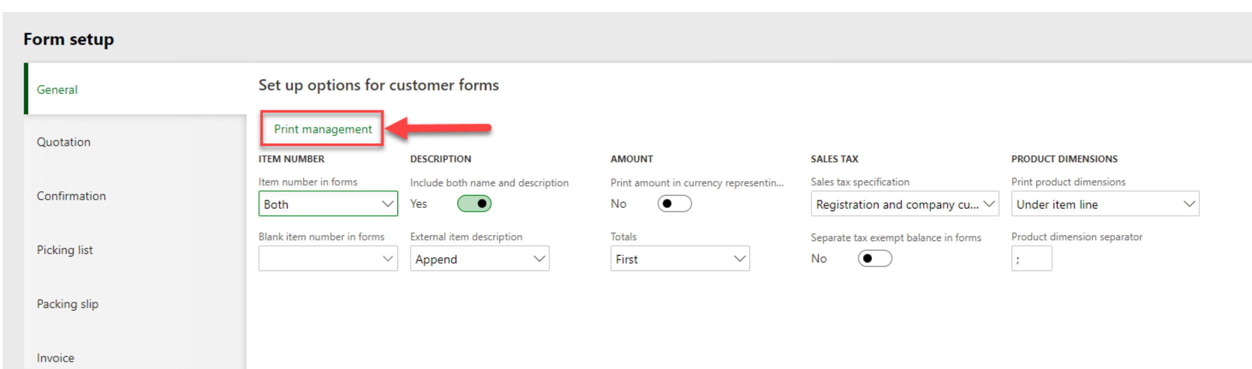
Print management

The print management is an important feature, it is one way to define how the report will be handled.

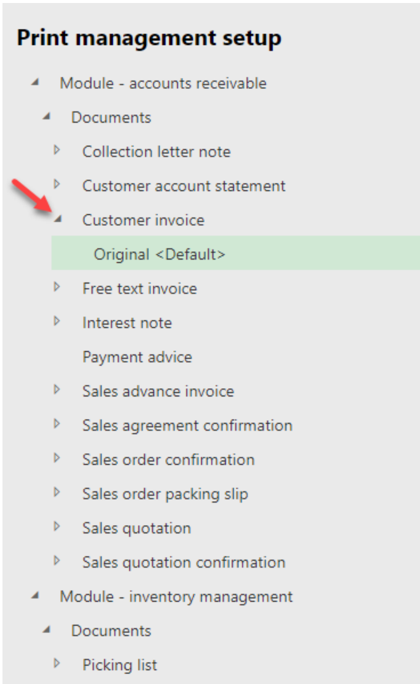
How to get there?

In every module with a form setup it is possible to use the print management. How to get to the print management is illustrated in the pictures below.

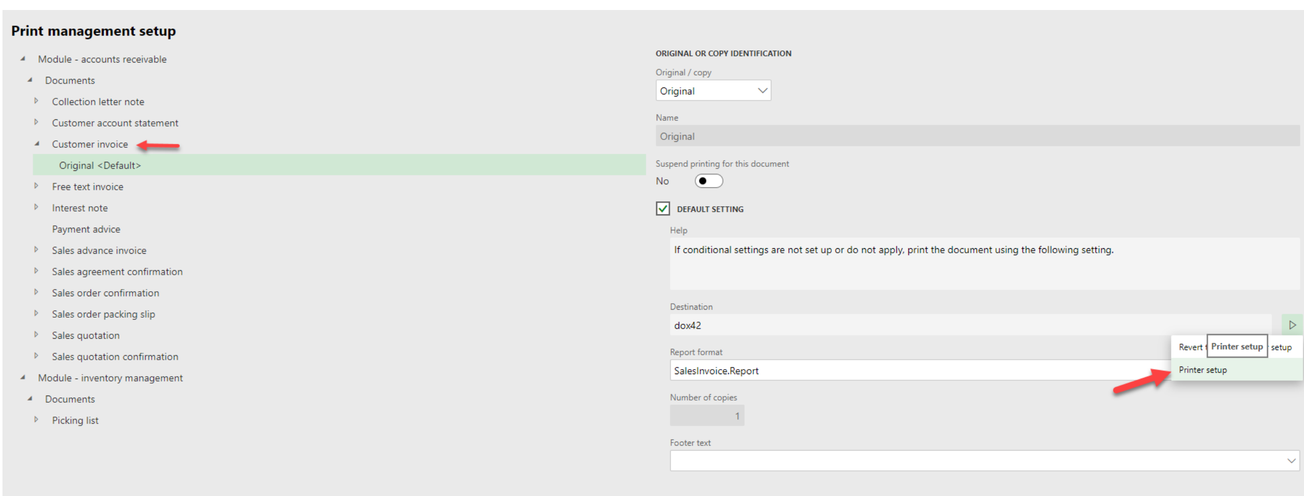


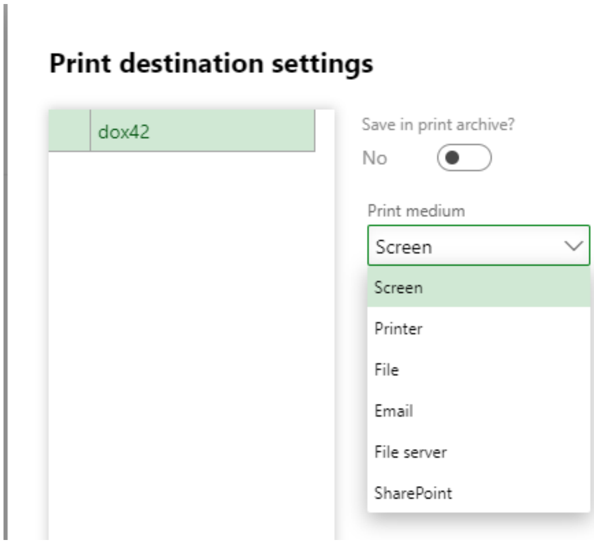


A form like in the picture will appear, it displays all the reports which are available for the printer setup. A click on the little triangle will display the different instances of the reports.



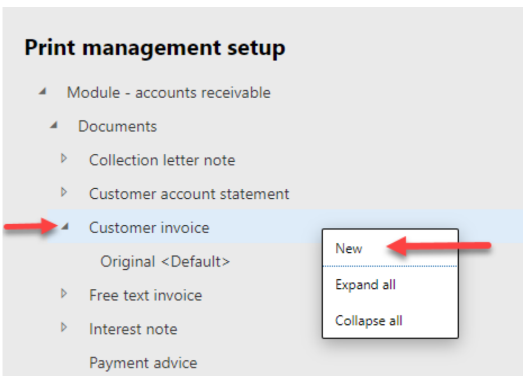
A click on the “Printer setup” button will lead to the printer destination settings, in which it is possible to decide how the report should be processed.





The behavior of the different print mediums is explained below.

D365 FO provides the functionality to add more than one instance (right click on the report name, the report will be processed in all the defined ways.



Possible print mediums in the print management:

- Printer

  If the “printer” is selected, a printer must be chosen on which the report should be printed.

- Screen

  The report will be printed on the screen in D365 FO.

- File

  The report will be downloaded in the chosen format.

- Email

  This setup is needed for the feature of sending reports via email. Sending reports via email is described in the chapter “Send documents via email”.

- **File server**

  The file server setup is required if the report should be stored in a folder, described in the chapter "Configure report destination".

- **SharePoint**

  To store reports on the SharePoint the SharePoint setup is needed, described in the chapter "Configure report destination".

Emails

D365 FO provides the feature to send reports via Email. In this section the following parts will be explained:

- the ways of defining a recipient
- send emails via print management

Defining a recipient

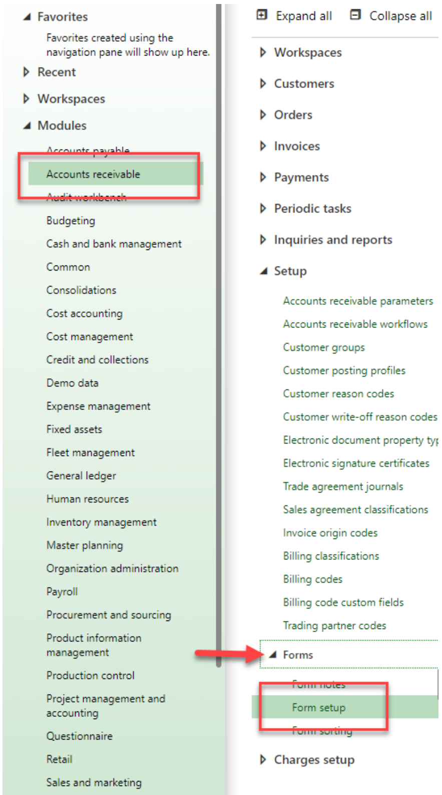
There are two different ways to setup the recipient of an email, the manual way and the dynamic way.

The manual way – using a fixed email address as the recipient

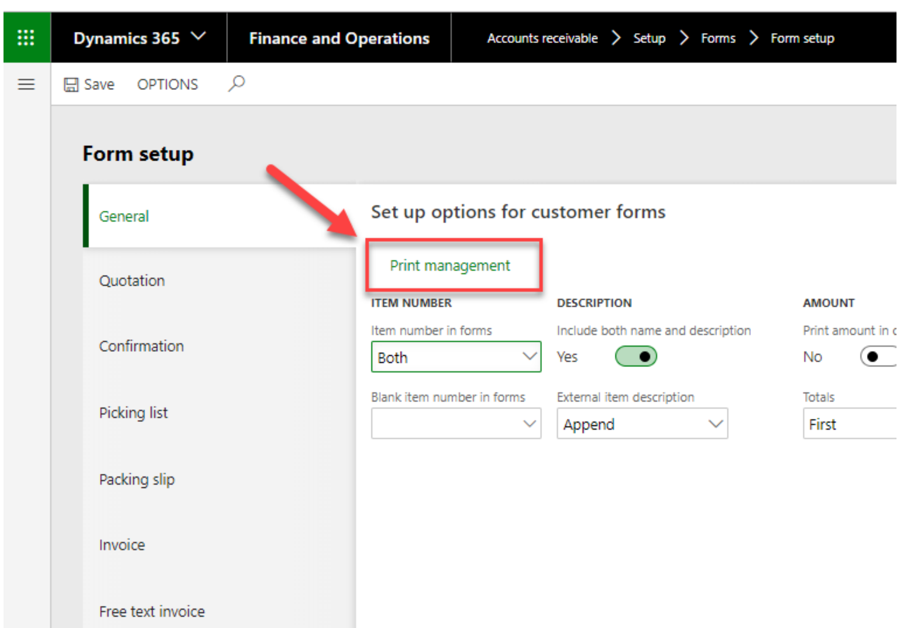
The recipient of the email is always specified in the print management, regardless of whether the manual or dynamic way is selected.

Switch to the print management of the desired report (e.g. SalesInvoice):

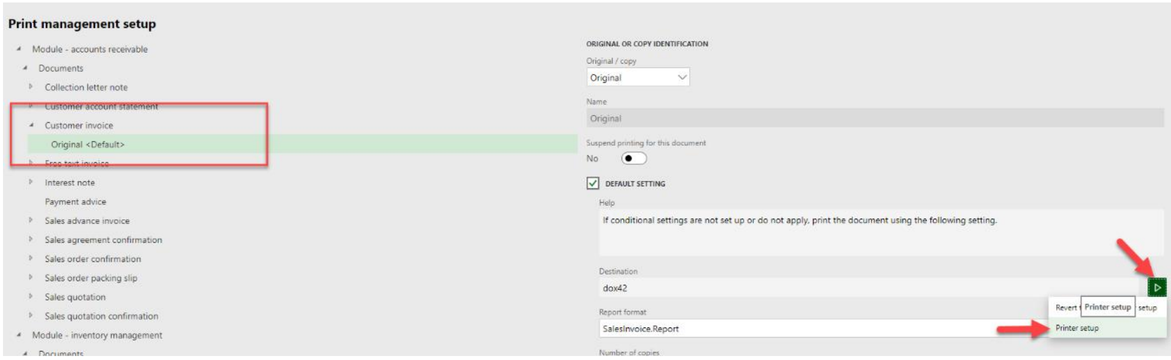
- Choose the module e.g. “Accounts receivable” > “Setup” > “Forms” > “Form setup”



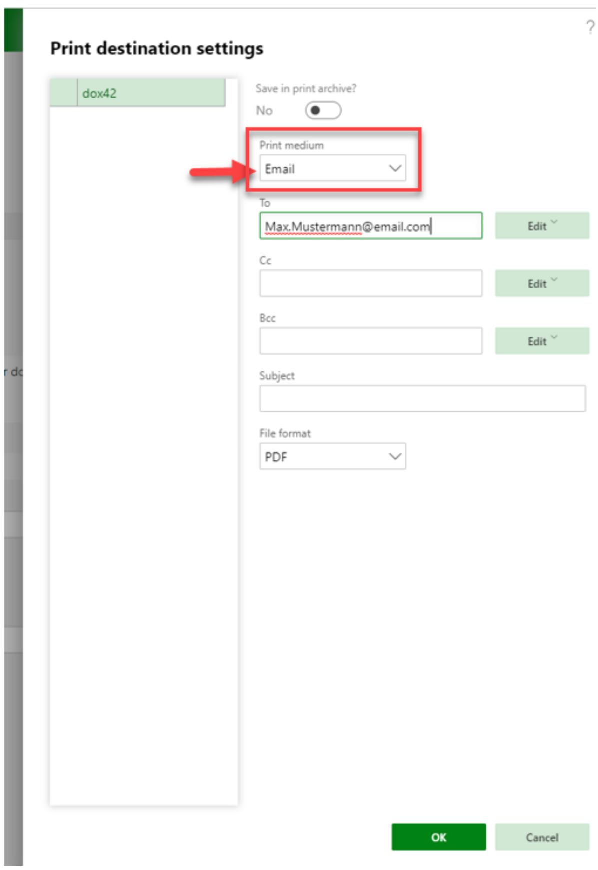
- Select the desired report and click on the button “Print Management”



- Select the desired report and click on the “Arrow” button. Select the option “Printer setup”



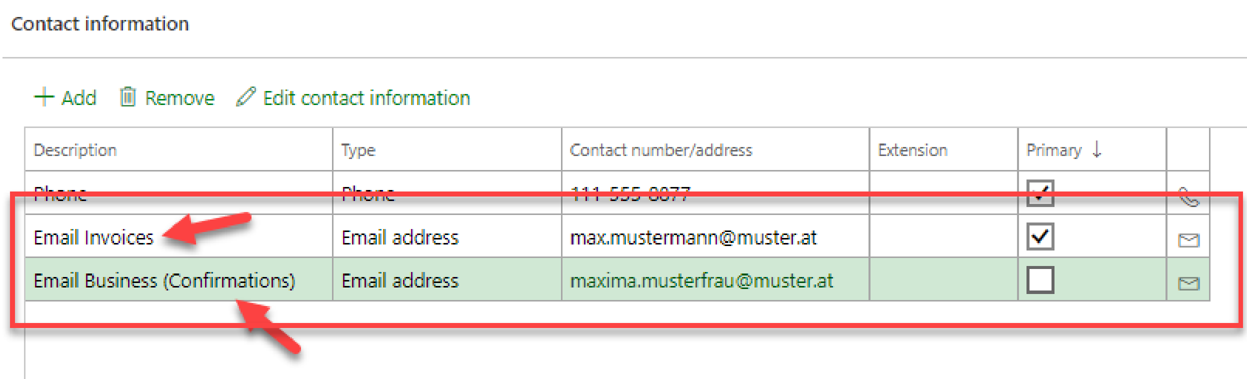
- Select from the drop-down menu “Print medium” the element “Email” and insert the email addresses.



D365 FO will now send every email to this email address.

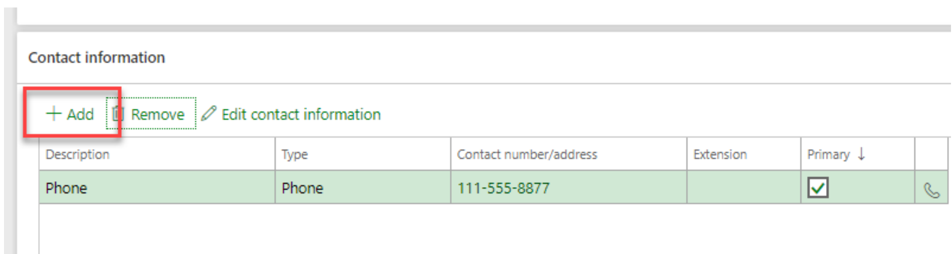
The dynamic way – using different purposes (best practice for form letters)

D365 FO provides the feature to set different purposes in the email address setup. Those purposes are used to decide to which email address the report will be sent. For example, there might be an email address for sales invoices and an email address for confirmations, as shown in the picture below. This setup is ideal for form letters like the sales invoice.

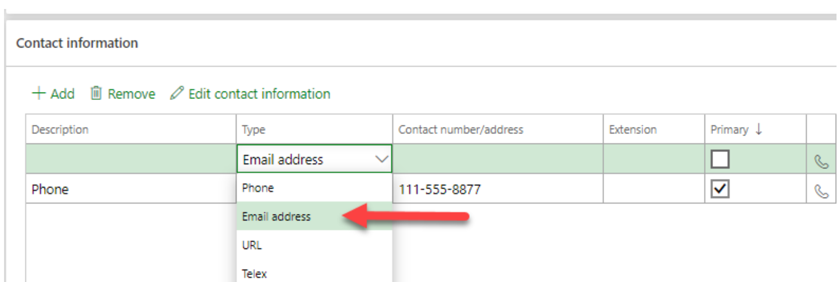


Setup the purpose of an email address:

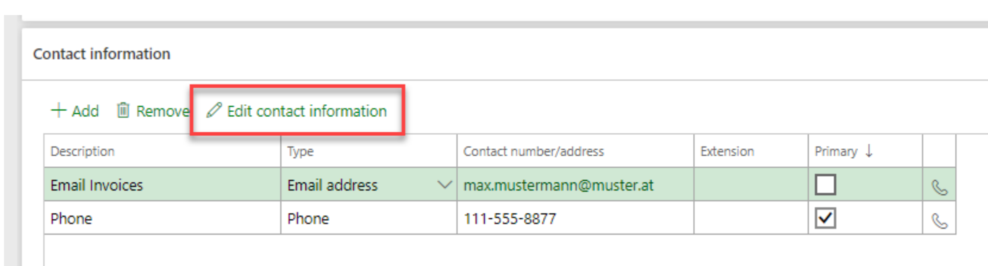
- switch to the contact information of a customer or vendor
- click on the “Add” button



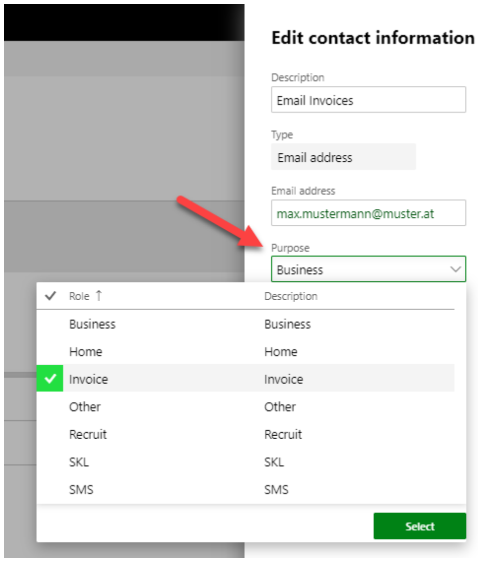
- Insert all required information (description, type, email address)



- Click on the button “Edit contact information”



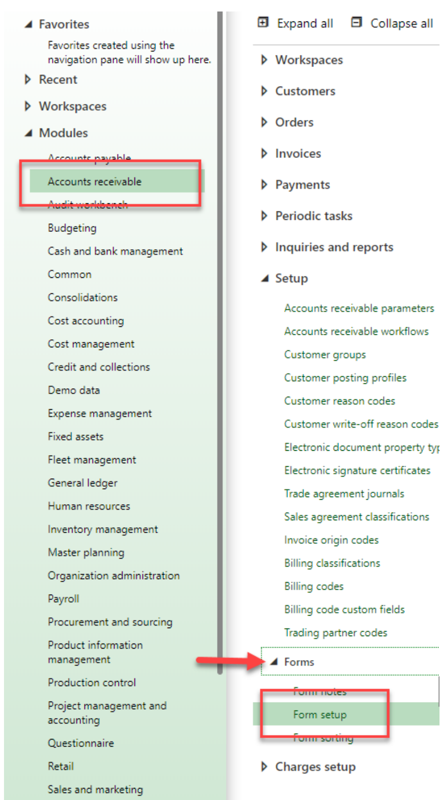
- Select the desired purpose for the email address (in this case “Invoice”)



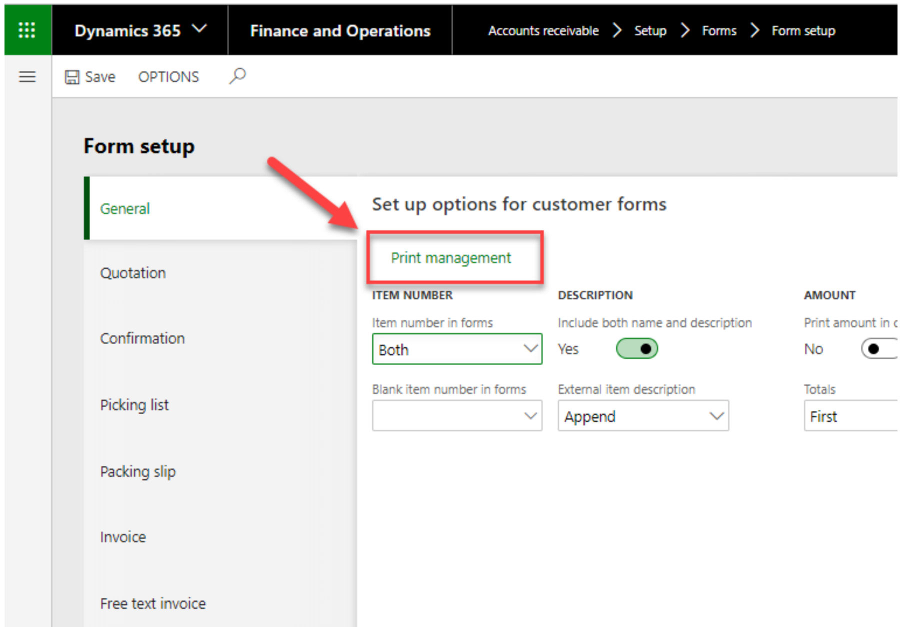
Note: it is possible to select multiple purposes for one email address.

Setting up the print management for using the purposes of the email addresses:

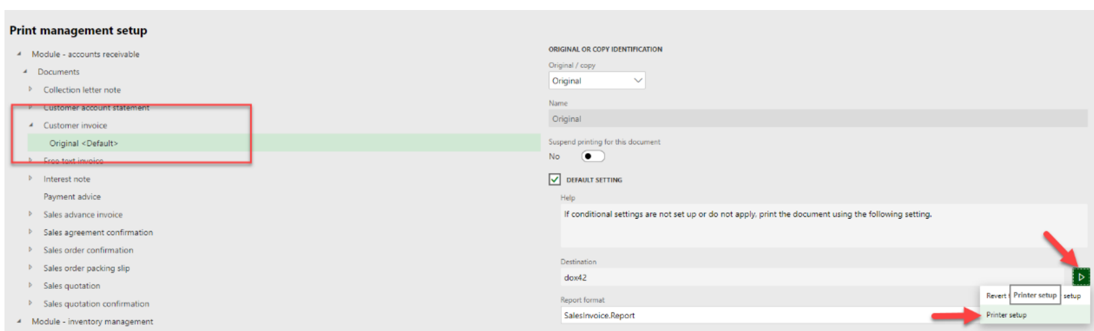
- Switch to the form setup of the desired report (e.g. SalesInvoice)



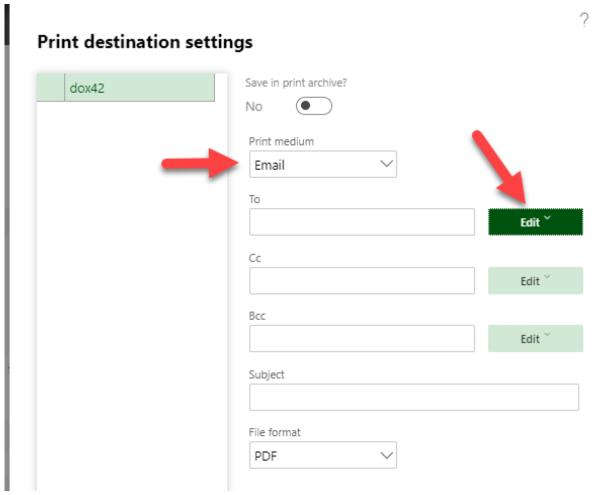
- Click on the button “Print management”



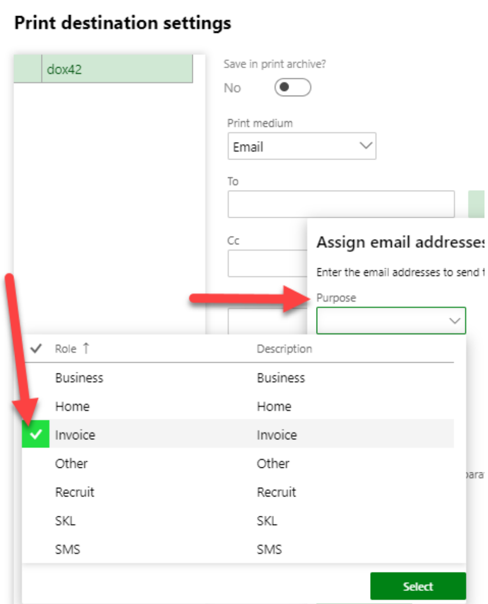
- Select the desired report and click on the “Arrow” button. Select the option “Printer setup”.



- Choose the print medium “Email” and click on the button “Edit”.



- Select the desired purpose



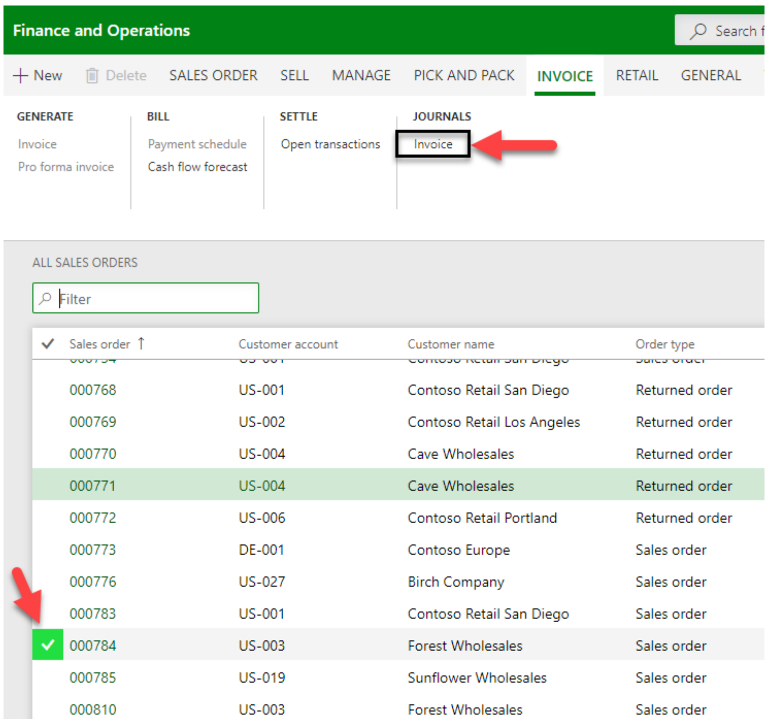
If an email is sent, then the D365 FO will check which email addresses are assigned to this purpose. How to send emails will be explained at the end of this chapter.

Using the print management as print destination

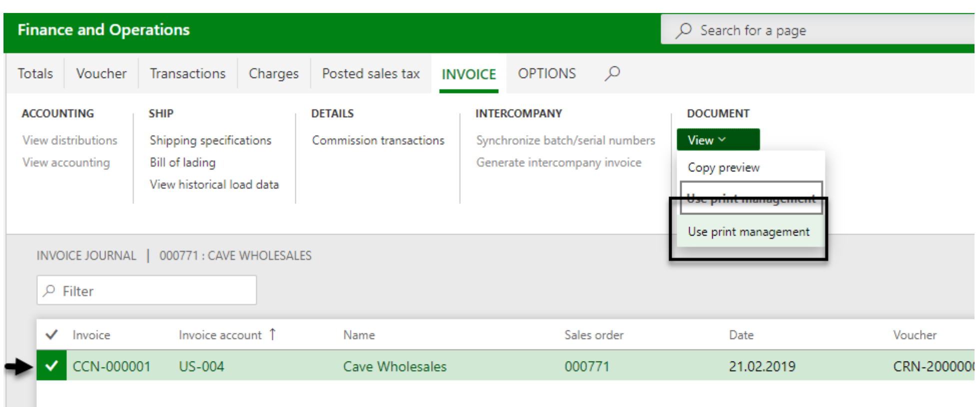
The next section describes how to use the print management as print destination while e.g. posting a sales invoice.

Journals

Mark e.g. the sales invoice which should be printed to the print destination which is setup in the print management.

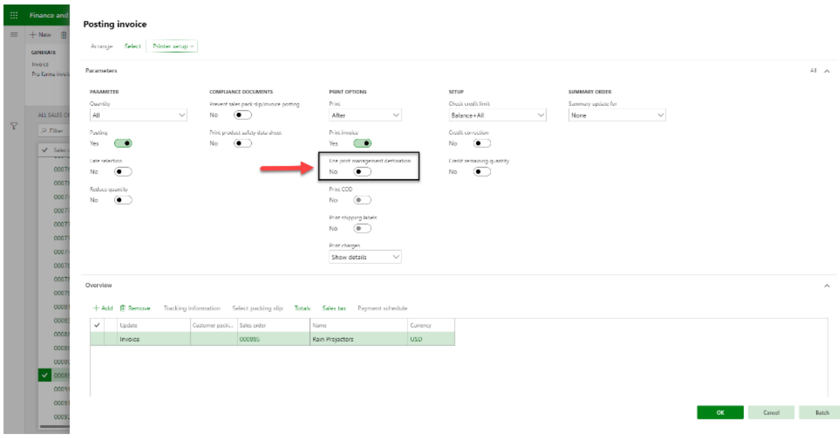


Click on the drop-down menu "View" and choose the "Use print management"



Using the print management while posting

Mark the invoice which should be posted and click on the button “Invoice”. Set the checkbox “Use print management” to yes.



Archiving of documents

D365 FO provides the feature to archive a dox42 report, in folders or on SharePoint.

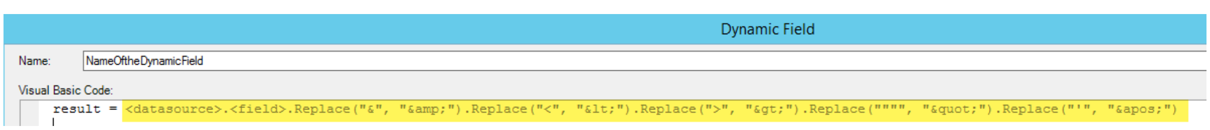
Archiving means to save a report to an additional destination to have the original printout available in the future. E.g. if a document is usually not required on paper, it can be printed to the screen and additionally archived as a file.

There are two ways to archive a dox42 report, both are described below.

Note: If an XML file with special character is archived, these special characters must be replaced. A dynamic field provides the functionality to replace these special characters. Insert the following in the dynamic field:

“<datasource>.<field>.Replace("&", "&").Replace("<", "<").Replace(">", ">").Replace("""", """).Replace("'", "'")”

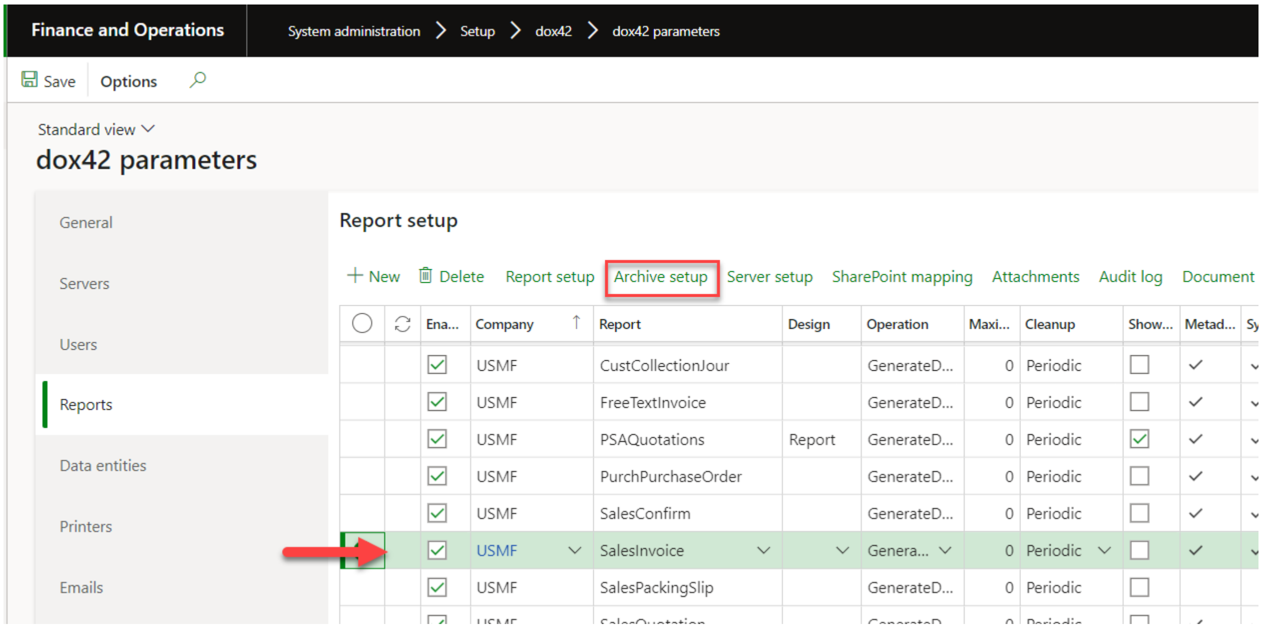
The result is illustrated in the picture below:



How to create a dynamic field is described in the chapter “Advanced dox42 features”.

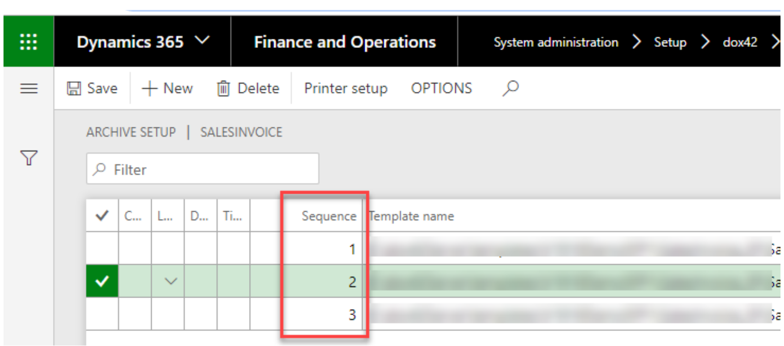
Folder (File Server)

This part describes how to archive reports in the background in different formats in a folder while posting a e.g. a sales invoice. Switch to the dox42 parameters and mark the report which should be archived. Click on the button “Archive setup”.



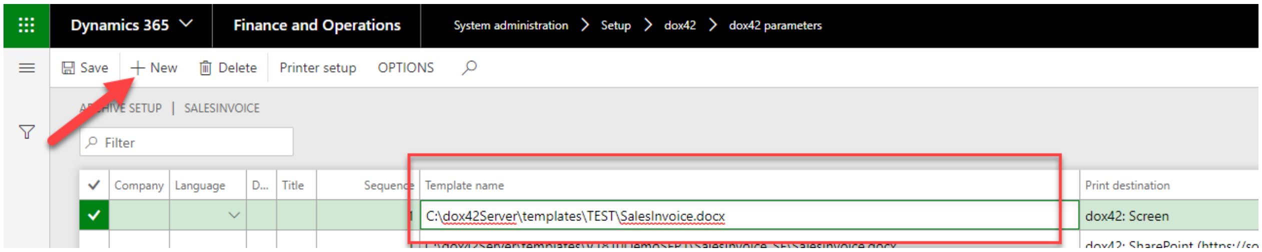
Create a new line in the “Archive setup” by clicking on the button “new”.

The field “Sequence” determines which archiving setup will be executed first.

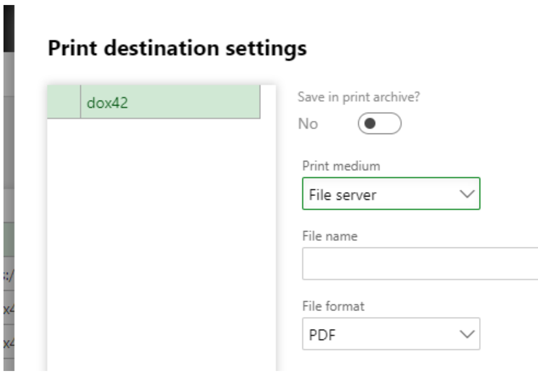


Note: It is always an advantage to have the XML-file also, it is created the same way., but make sure the ranking of the lines is right. The ranking is determined with the sequence number in the picture. The PDF-file should always be the first row.

Insert the path of the template.



Click on the button “Printer setup” and select from the drop-down menu “Print medium” the “File server”.



Insert the path of the storage folder and add at the end of the path, how the file should be named, e.g.:

C:\dox42Server\templates\TEST\SalesInvoice\Storage\Invoice <%SalesInvoiceLines.InvoiceID%>

The field “File format” defines in which format the file will be saved. Click on the button “ok”.

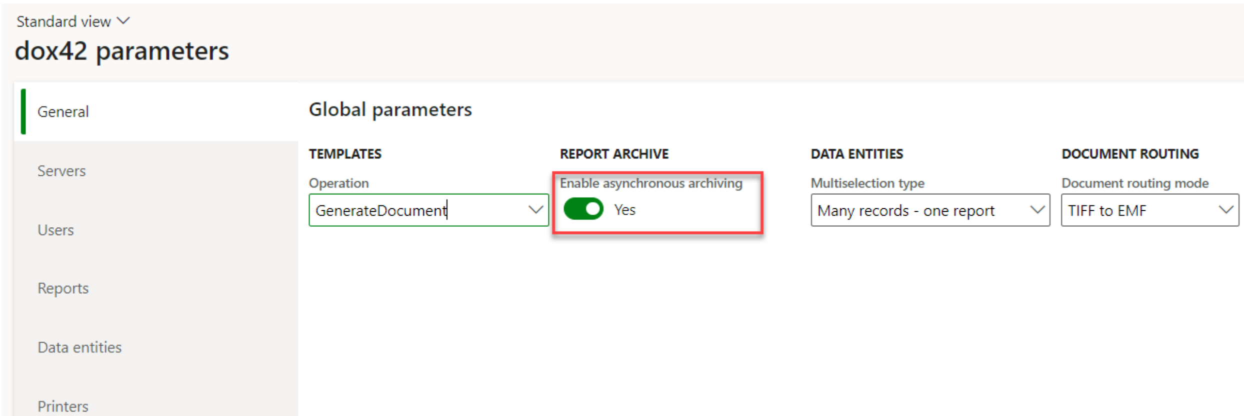
Scroll to the right and setup the fields “Archiving enabled” and “Archiving field name” as followed. If the value of the field “Archiving enabled” is set to “Yes”, then the report will always be archived. If the value of the field “Archiving enabled” is set to “Depending on the field value” then D365 FO will check the value of the field “Archiving field name”. For example, only a posted sales invoice should be archived, the setup would look like this:

	Archiving enabled	Archiving field name
...	Depending on the field value	SalesInvoiceLines.InvoiceId

There are no “<% %>” required, because the value is processed via D365 FO and not via dox42.

Set the checkbox “Asynchronous archiving” to “Yes” if you like this archiving setup to be executed asynchronously. This feature can speed up processing in some scenarios.

Note: Asynchronous archiving is only applied when it is activated in the global parameters:



SharePoint

There is also the possibility to archive reports on the SharePoint, the required setup is described in the SharePoint setup section.

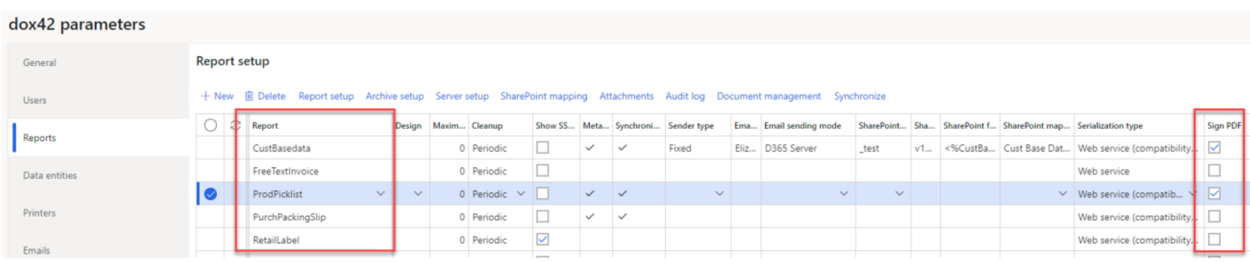
Signing pdf documents

There is possibility to sign dox42 pdf reports with digital signature.

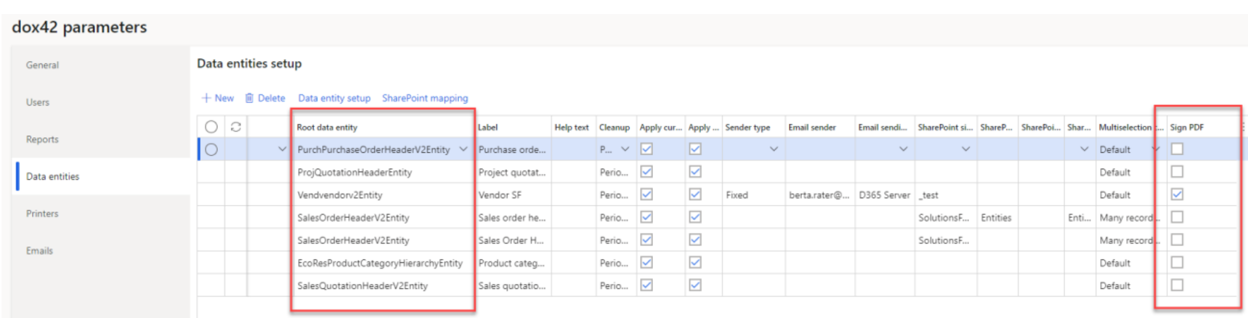
The description of how you can setup the signature you can find in Adobe Acrobat documentation: https://helpx.adobe.com/acrobat/using/certificate-based-signatures.html

In dox42 parameters you need to activate checkbox "sign pdf" for your report or Entity data source.

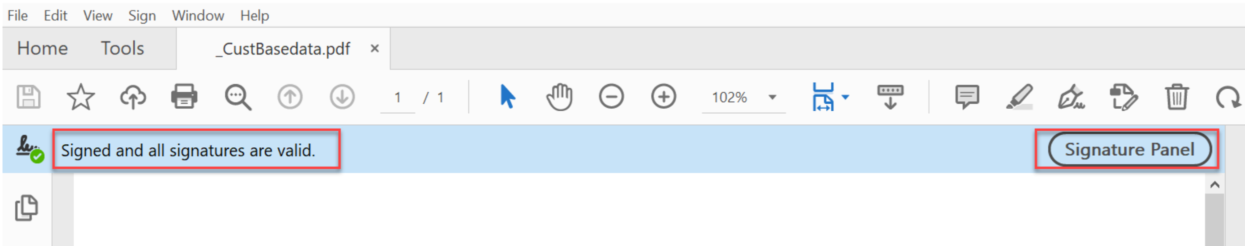
Report:



Entity:



When opening the pdf document in Adobe Acrobat, it will be shown that this file is signed and verified, and it will be possible to see the details of whom signed this document.

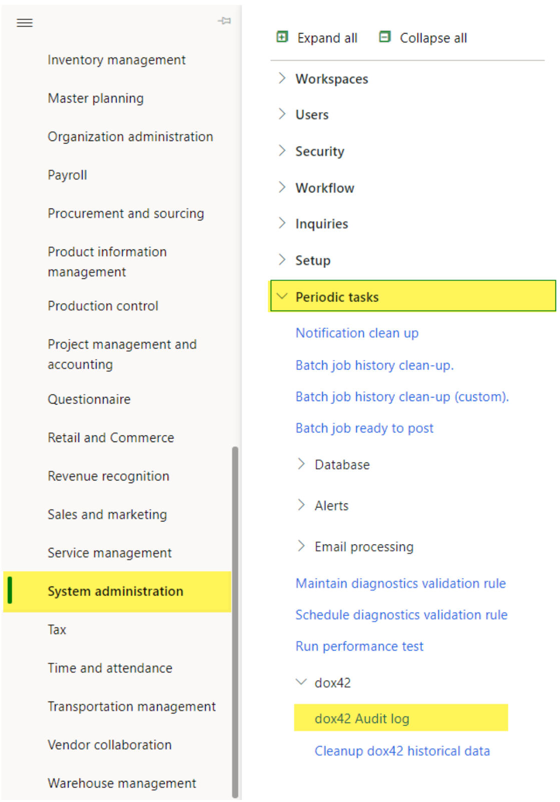


The functionality is available for different print mediums: screen, file, email, file server.

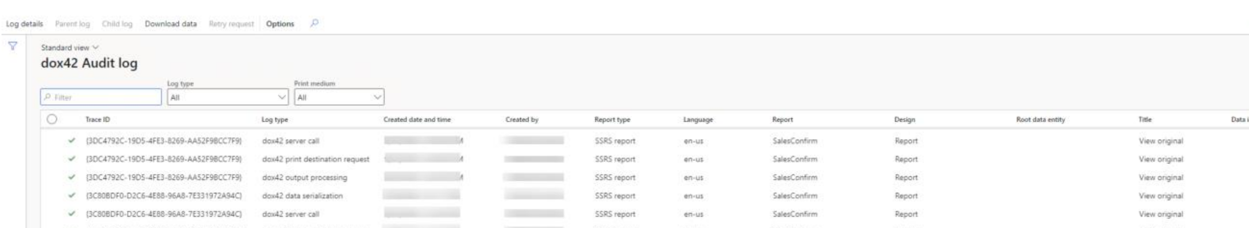
TRACEABILITY – DOX42 AUDIT LOG

It is important to know how the reports have been processed. The dox42 Audit Log register all processed dox42 reports.

The “dox42 Audit Log” can be found in the module “System administration” > “Periodic tasks” > “dox42“, as illustrated in the picture below.

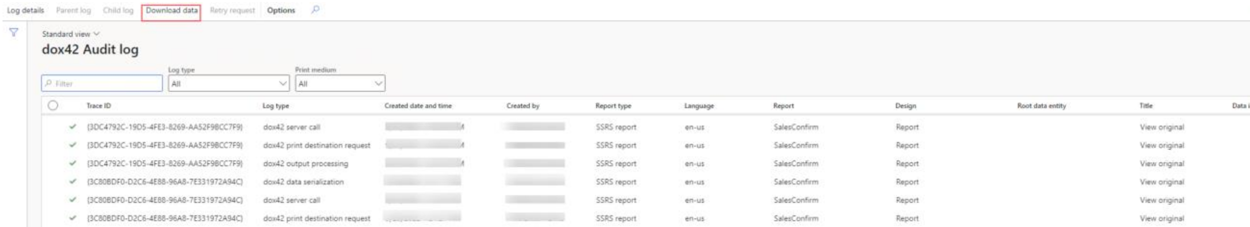


The most important information of a processed report will be registered in the dox42 Audit log, shown in the picture below.



Preview serialized report data

In D365 FO, it is possible to see the raw report data in JSON-format regardless of whether the report design was successfully generated or not. To do this, click the button “Download data”.



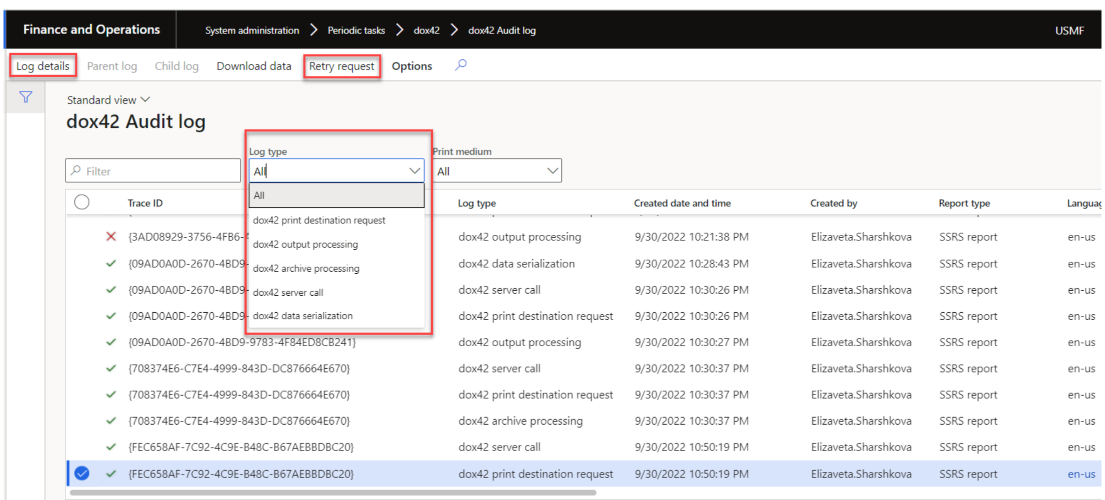
One Report/Entity run creates several lines with the same Trace ID which are divided into different Log types.

Sequence of processes for SSRS report:

- dox42 output processing – total execution of dox42 logic
- dox42 data serialization – runs only for OData sources
- dox42 print destination request – query to print destination (screen, file, printer, etc.)
- dox42 server call

Sequence of processes for Data Entity:

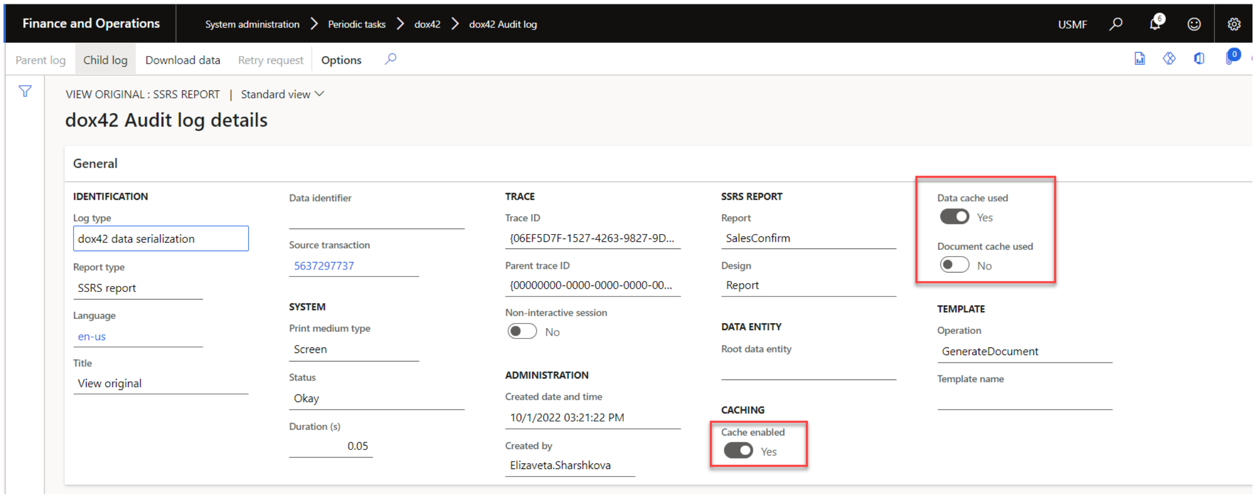
- dox42 output processing – total execution of dox42 logic
- dox42 print destination request – query to print destination (screen, file, printer, etc.)
- dox42 server call



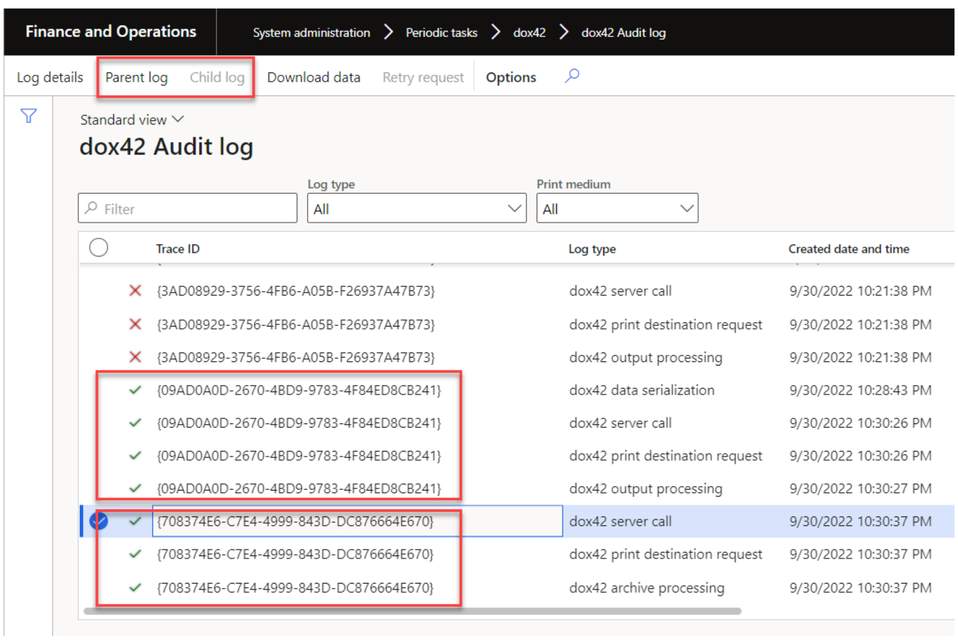
Clicking on the button **Log details** in dox42 Audit log form you can see detailed audit log entry view.

Retry request button is available for log type - dox42 print destination request.

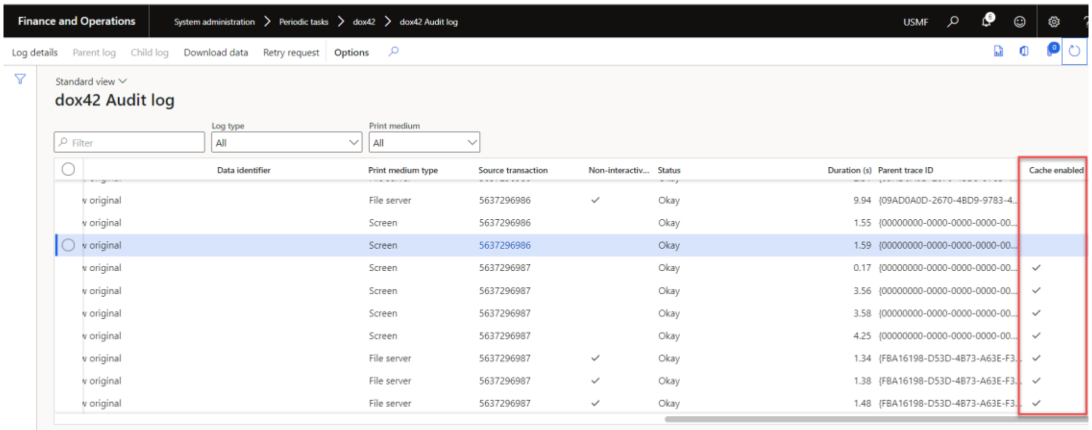
Enabled **Data cache used** for “dox42 data serialization” log type means that the data was not generated newly while report running but was taken from the cache. **Document cache used** checkbox is used for “dox42 server call” log type means the document was taken from the cache instead of sending a request to the dox42 server.



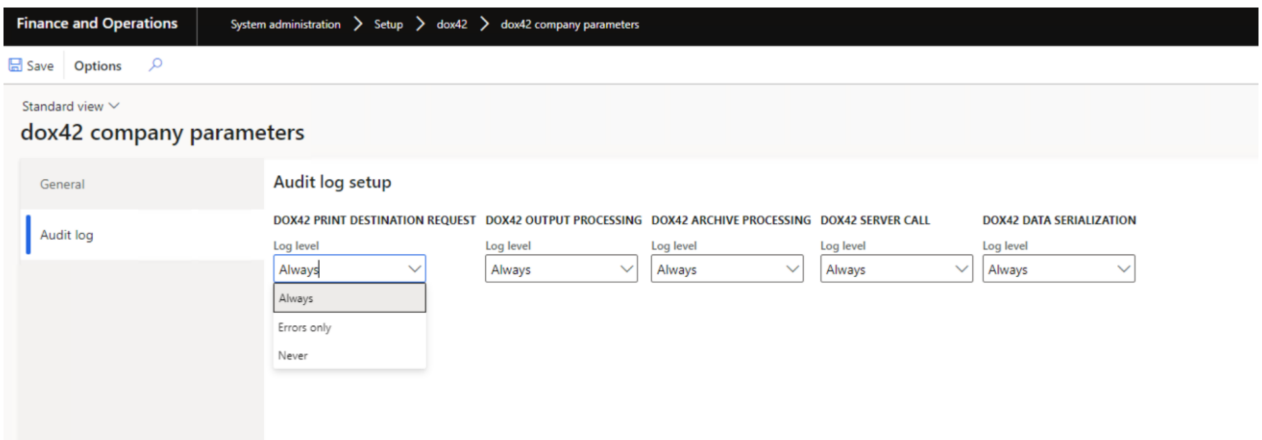
If you do the setup of “Archive setup” (File server or SharePoint) in dox42 parameters for the report, extra lines per each archive process will be added in dox42 audit log. **Trace ID** will be different in case of asynchronous archiving is enabled. Clicking on **Parent log** button you will find the **Trace ID** of the initial run of the report (output processing). The same works vice versa with checking the **Child log** of the output processing.



The column **Cache enabled** shows if the caching function was enabled for the Report/Entity run.



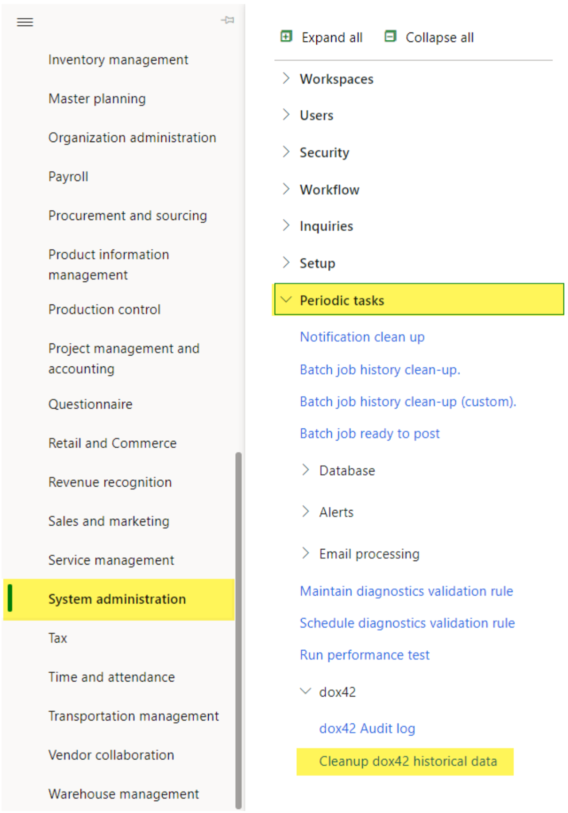
Additionally, you can set up log levels for each log type in the dox42 company parameters form:



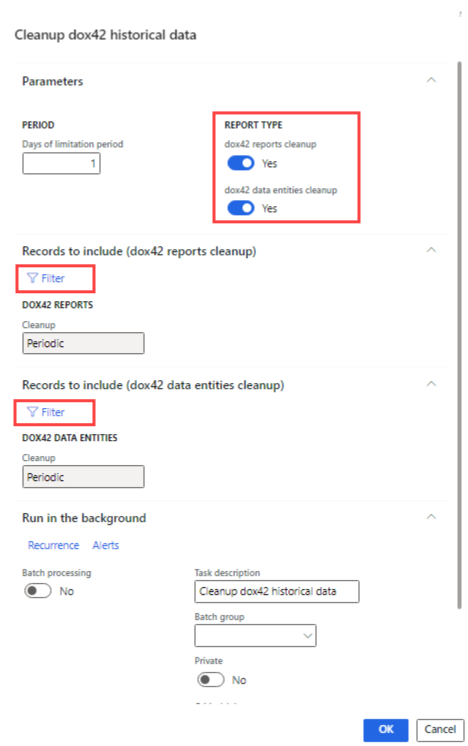
Keep it lean and clean

D365 FO provides a function to clean up the dox42 audit log. This function can be found in the “System administration” > “Periodic tasks” > “dox42” > “Cleanup dox42 historical data”. The “Cleanup dox42 historical data” will open the form which is illustrated in the picture below. This function makes it possible to delete data from the dox42 audit log in your current company until a specific date.

It is recommended to set up this function in the batch processing mode (run once a day), with a days of limitation period > 0 (e.g. 30)

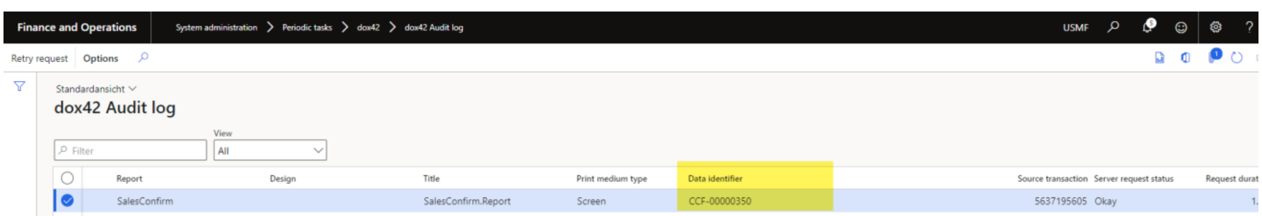


There is a possibility to select reports and/or data entities to be cleaned up and set up additional filters.



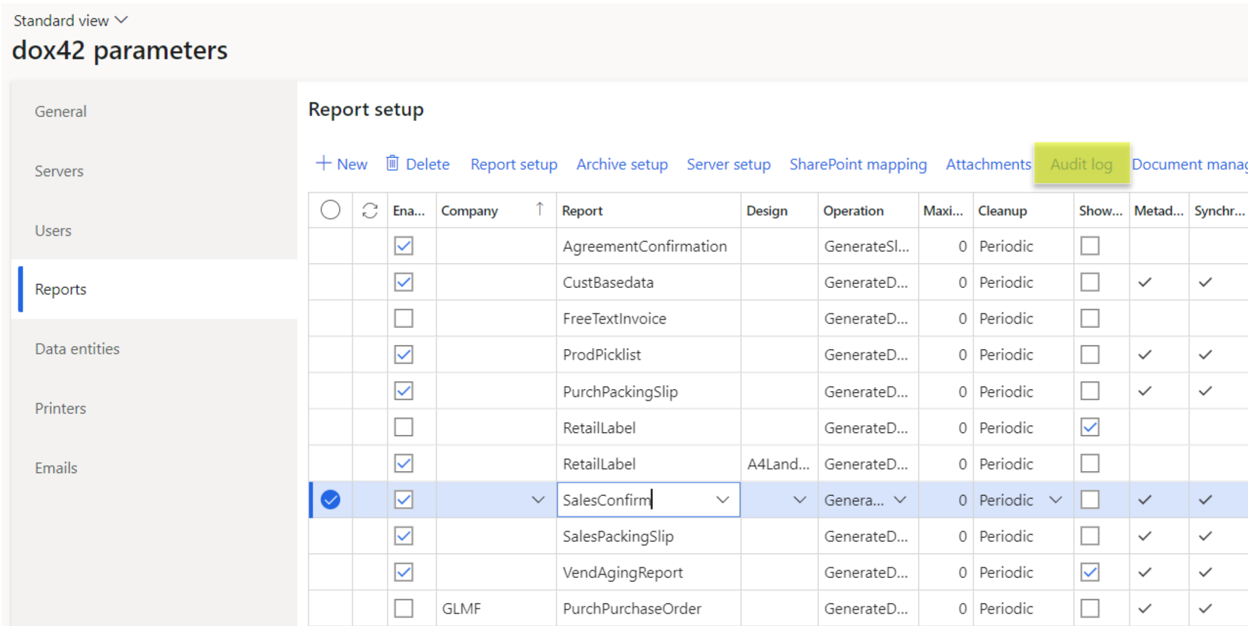
Identifying the right audit log entry

For a better understanding which entry in the dox42 audit log is the correct document in the D365 FO, a identifier setup can be done.

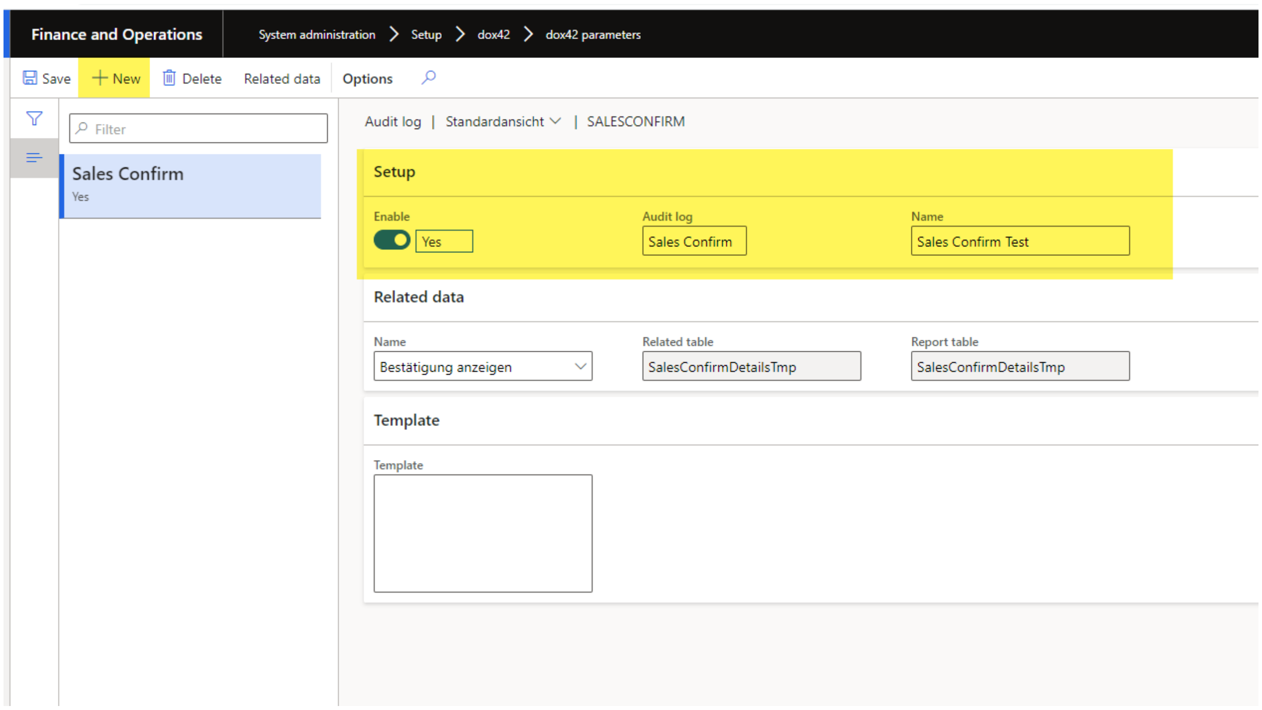


Setting up the identifier

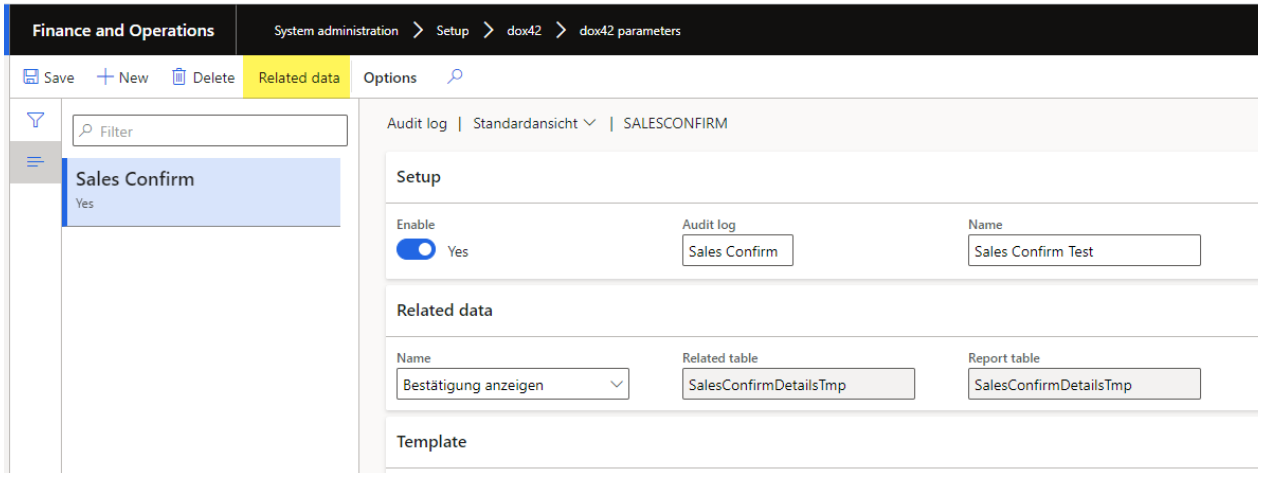
1. Mark the desired report and click on the button “Audit log”



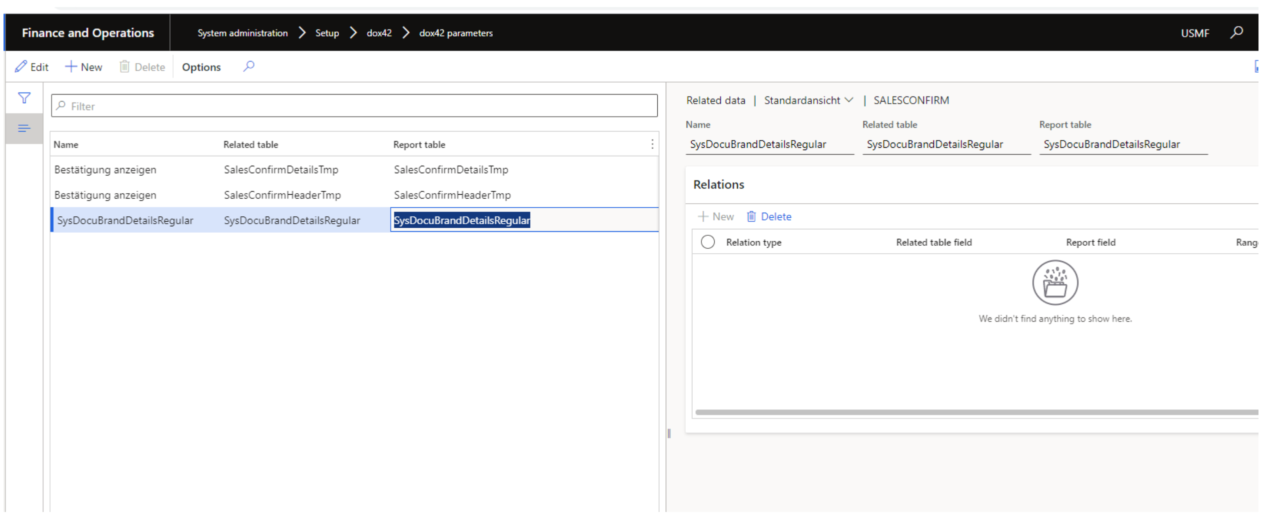
2. Create a new record.



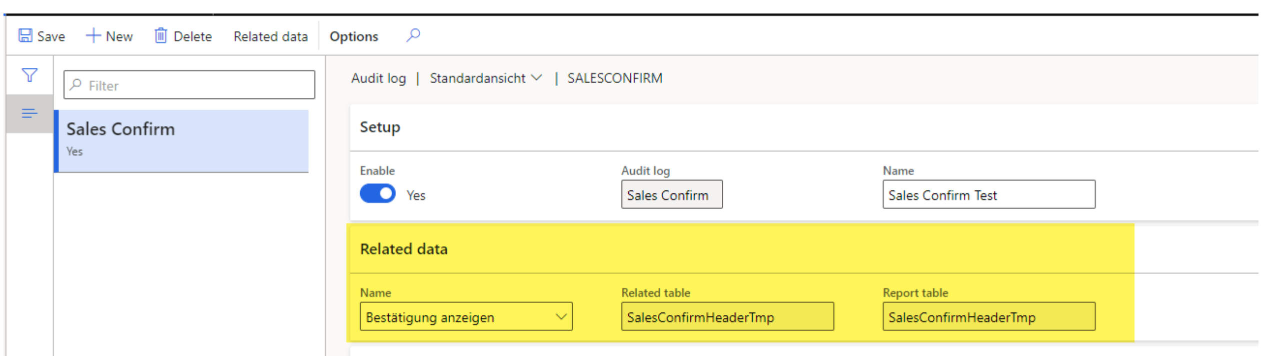
3. Next step is to click on the “related data” button and



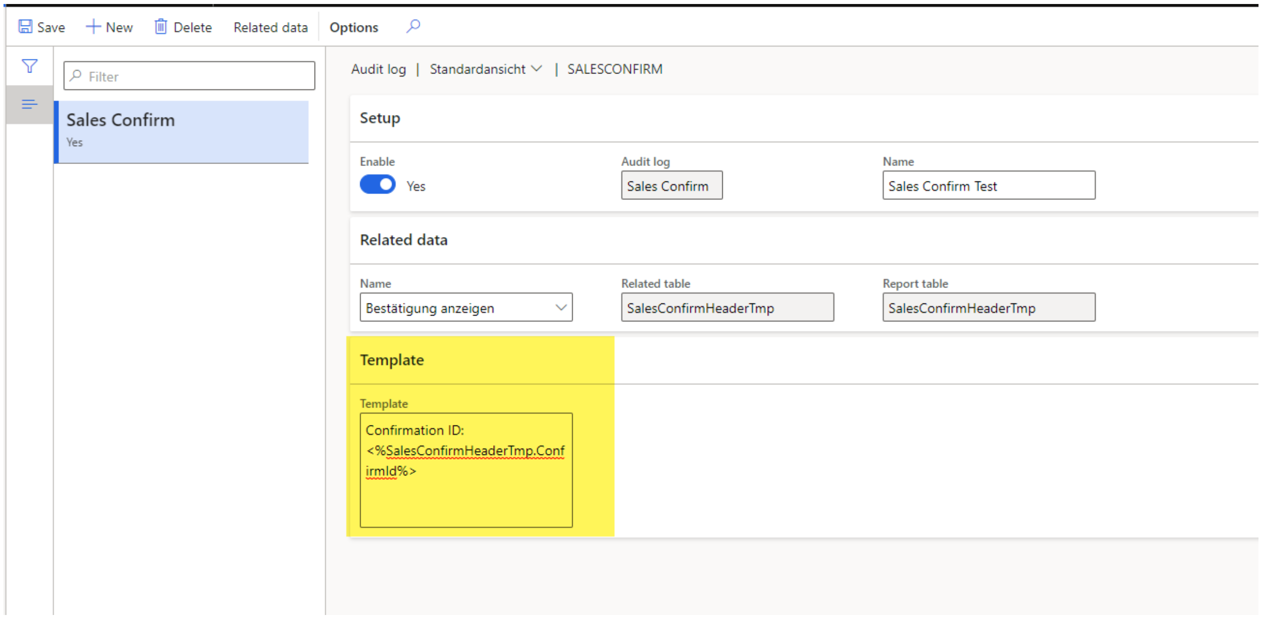
The related data are displaying the relationships between the tables and the reports tables. It is also possible to create a new relationship, if needed (if there are no records by default, see FAQ)



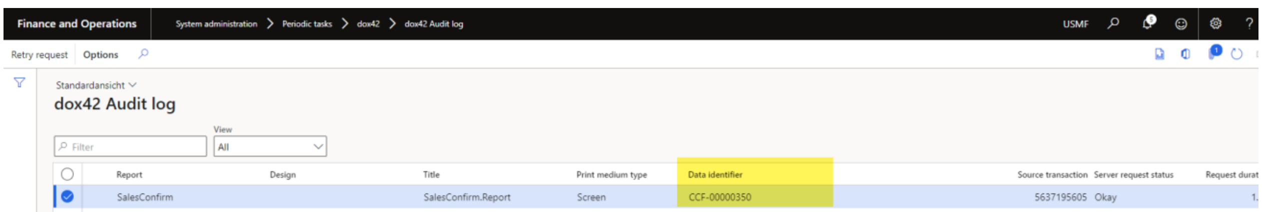
4. The desired relationship should be selected in the setup form



The data identifier is set up in the area “Template” and contains of the following components: <% *related table*.*Desired field* %>



If a document is generated the column “data identifier” in the audit log will be filled with the previously set up data.



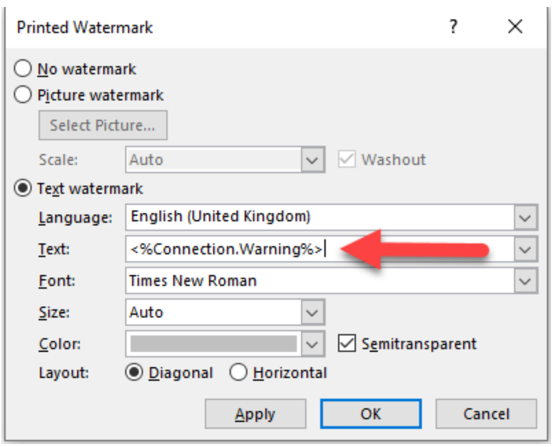
TIPPS & TRICKS

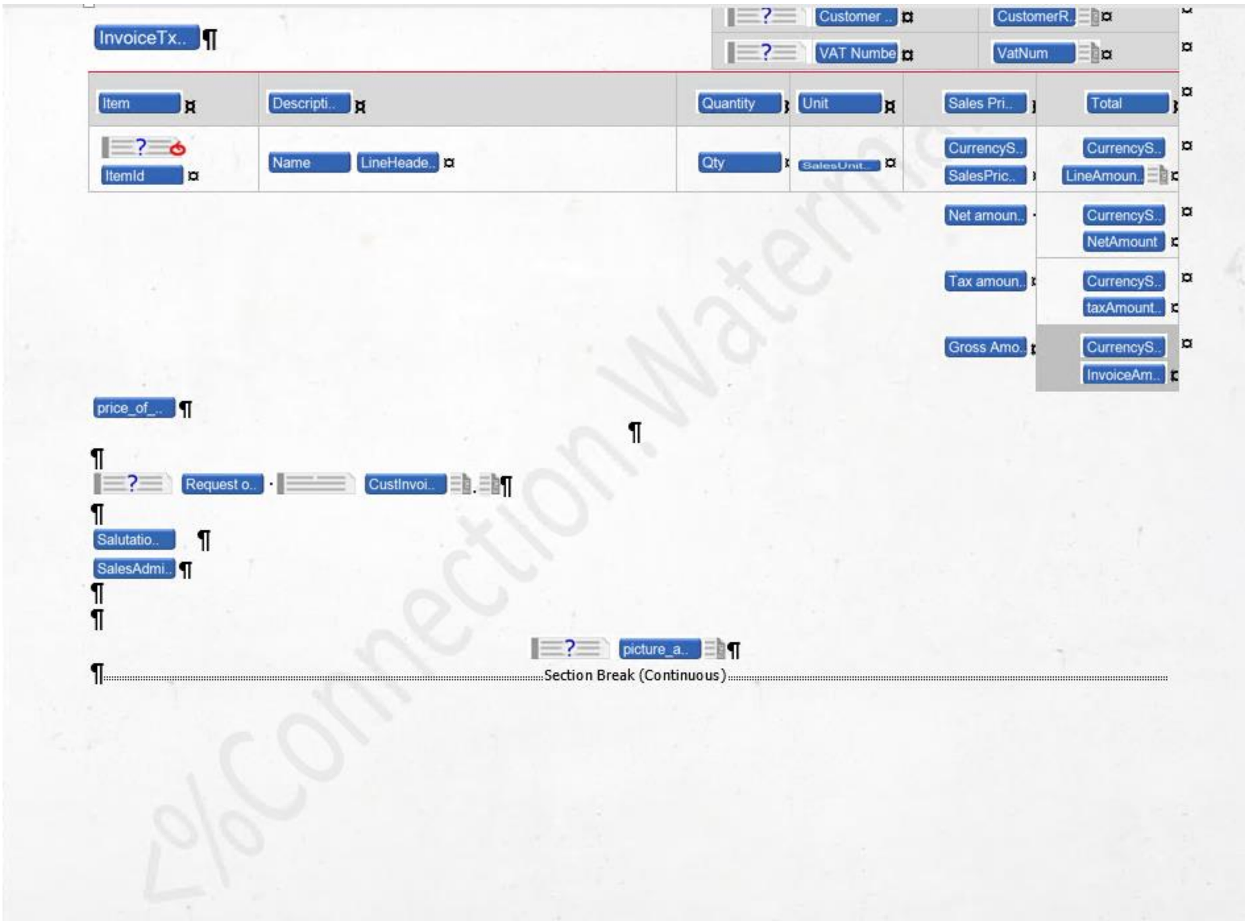
Creating the warning text as a watermark

Create a normal Word “Custom_Watermark”.

Insert into the text field the following: “<%Connection.Warning%>” and click “ok”.

“Connection” stands for the name of the connection Excel file and “Warning” for the column.





Use Labels from an Excel document

Normally the headlines of the placeholders are written hard-coded into the report. This has the big advantage of the template being easy-to-read. However, if you need to support multiple language that has the disadvantage of needing a separate report for each language. The solution is to use labels instead of hard-coded text.

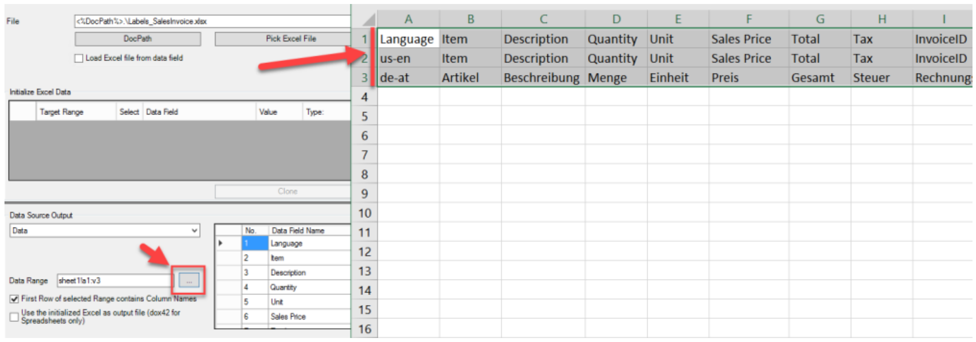
1. Create an Excel file with the required languages like in the picture below. Make sure the Excel file has a column "Language" with the abbreviation.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
1	Language	Item	Description	Quantity	Unit	Sales Price	Total	Tax	InvoiceID	Invoice Date	Sales Order	Invoice Account	VAT Number	Customer Referenz	Net
2	us-en	Item	Description	Quantity	Unit	Sales Price	Total	Tax	InvoiceID	Invoice Date	Sales Order	Invoice Account	VAT Number	Customer Referenz	Net
3	de-at	Artikel	Beschreibung	Menge	Einheit	Preis	Gesamt	Steuer	Rechnungs	Rechnungsdatum	Verkaufsauftrag	Rechnungskonto	UID Nummer	Kundennummer	Net

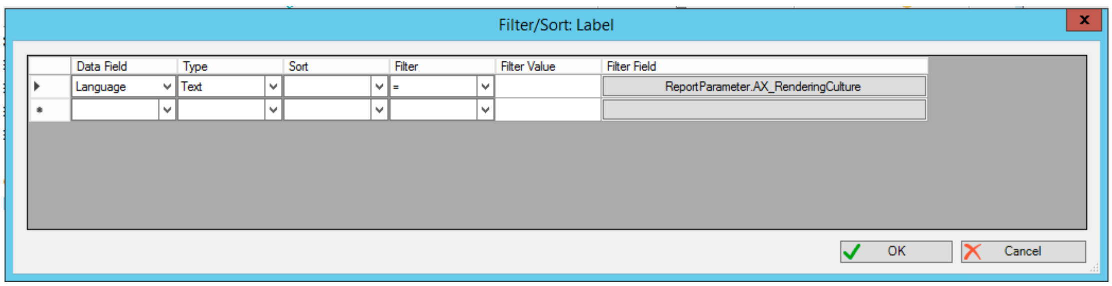
2. The Excel language file is integrated to the Data Map the same way as the connection file
   a. Click on the button "Excel Data Source"
   b. Name the file and use the DocPath

c. Mark the checkbox “First Row of selected Range contains Column Names”

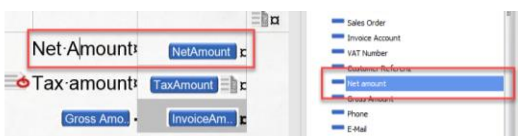
d. Click on the button with the three dots and select the data like in the picture below.



e. Filter the Excel language file like in the picture below.



f. Change the hard-coded text label in the report with the label placeholder.

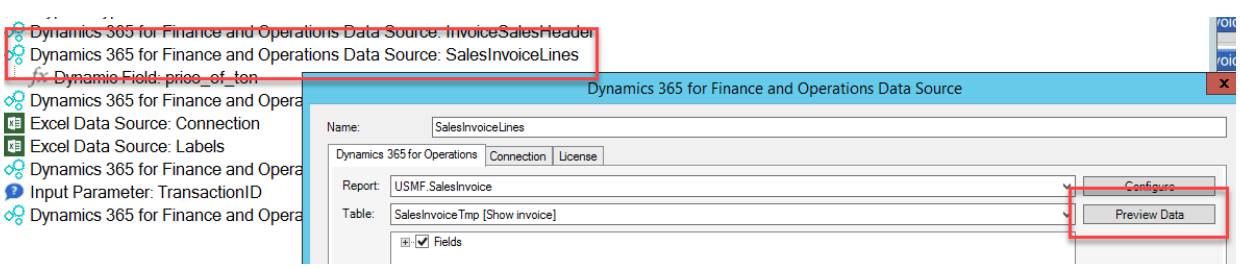


Display the tax groups in a sales invoice

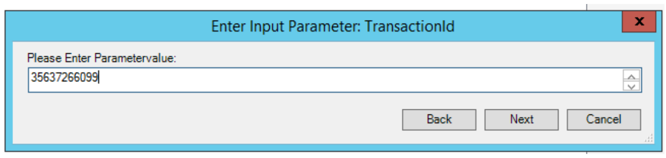
This chapter will describe how to display the tax groups on the sales invoice. Therefore, its needed to look at the data which are sent by D365 FO to dox42. This is possible with the button “Preview data”.

1. Take a look at the data last printed

   a. Double click on the Data Source, tab “D365 FO Report” (“Dynamics 365 for Operations” in previous versions)



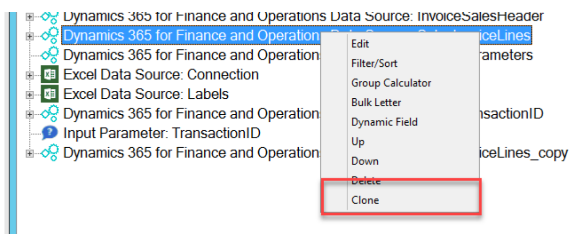
b. Click the button “Preview Data” and then click the button “next”. The data of the next report will be shown.



c. Look for the field which contains the tax group

2. Clone the Data Source

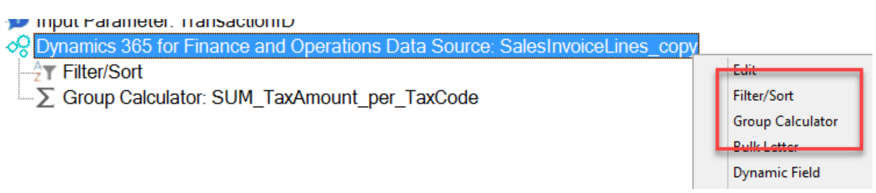
a. Right click on the Data Source



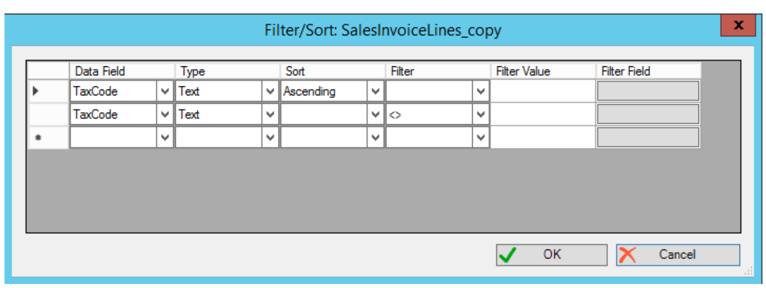
The reason why the Data Source have to be cloned is, that a special filter is needed which will then only displays the tax groups.

3. Filtering the Data Source

a. Right click on the Data Source, select the “Filter/Sort” button



b. Insert the values which are shown on the picture below. The “<>” stands for the filter value of “not empty”.



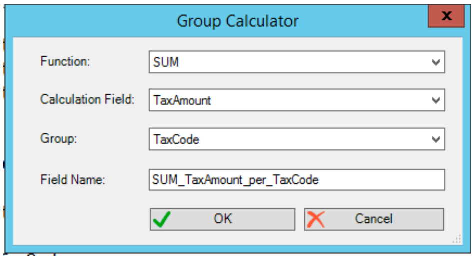
Picture 1: Setup the filter of the Data Source

4. Create a group calculator to sum up the amount of every tax group

a. Right click on the Data Source

b. Select the group calculator

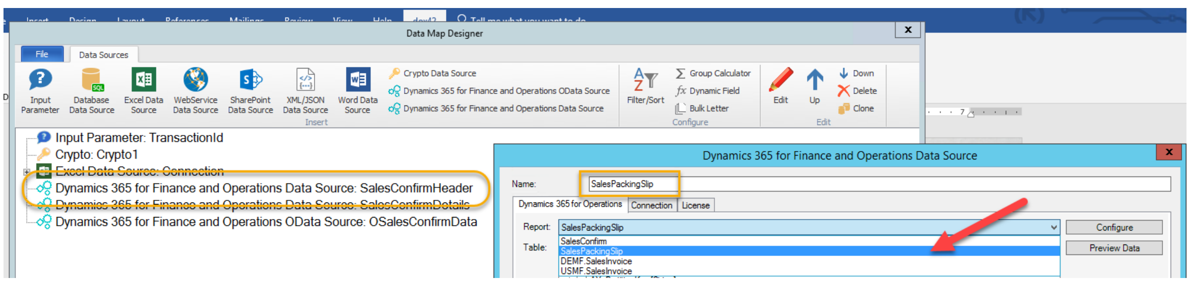
c. Insert the values like in the picture below



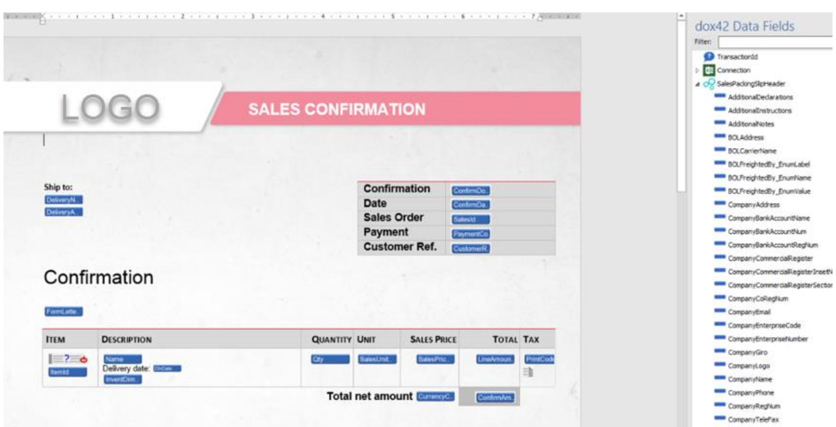
Reuse a layout for a different report

This chapter is an illustration on how easy it is to adapt a e.g. sales confirmation to a packing slip.

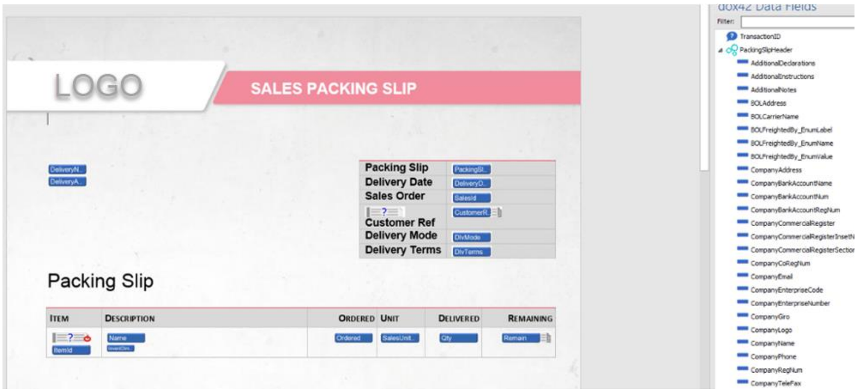
1. Copy the template and the Data Map
2. Change the Data Sources of the template



3. Replace the components from the sales confirm with the components of the sales packing slip components



4. Redefine the layout of the template



Additional table to existing form letter reports

Typically, form letter reports are using the Preprocessing logic in their data providers, extending the SrsReportDataProviderPreProcess class. Example – SalesPackingSlip:

```
/// <summary>
/// The <c>SalesPackingSlipDP</c> class is the report Data Provider class
/// <c>SalesPackingSlip</c>Microsoft SQL Server Reporting Services report.
/// </summary>
[SRSReportParameterAttribute(classStr(SalesPackingSlipContract))]
public class SalesPackingSlipDP extends SrsReportDataProviderPreProcess
{
```

As one result of this, all changes in temporary data source tables in the data provider class should be carried out with a separate database connection – just as in standard code.

This separate database connection object is defined in the preprocessing base class and is used by the stanard code for each report table. Example – SalesPackingSlip:

```
SalesPackingSlipDP
    /// </param>
    /// <returns>
    /// The initialized <c>SalesPackingSlipDetailsTmp</c> sales packing slip line record.
    /// </returns>
    protected SalesPackingSlipDetailsTmp initializeSalesPackingSlipLine(
        0 references
        SalesPackingSlipHeaderTmp                       _salesPackingSlipHeaderTmp,
        SalesPackingSlipDPPackingSlipLineQuerySelection _packingSlipLineSelection)
    {
        const RefTableId CustPackingSlipTransTable = 1;

        SalesPackingSlipDetailsTmp salesPackingSlipTmp;

        this.setTransactionConnection(salesPackingSlipTmp);

        salesPackingSlipTmp.clear();
```

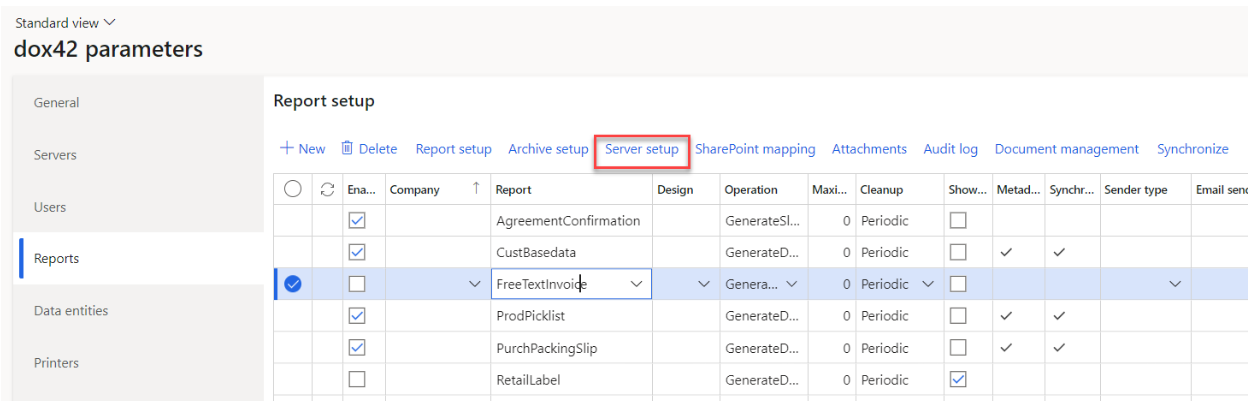
If this concept is not used for extensions to the data providers, several issues (especially around bocking) can arise.

Advanced dox42 Features

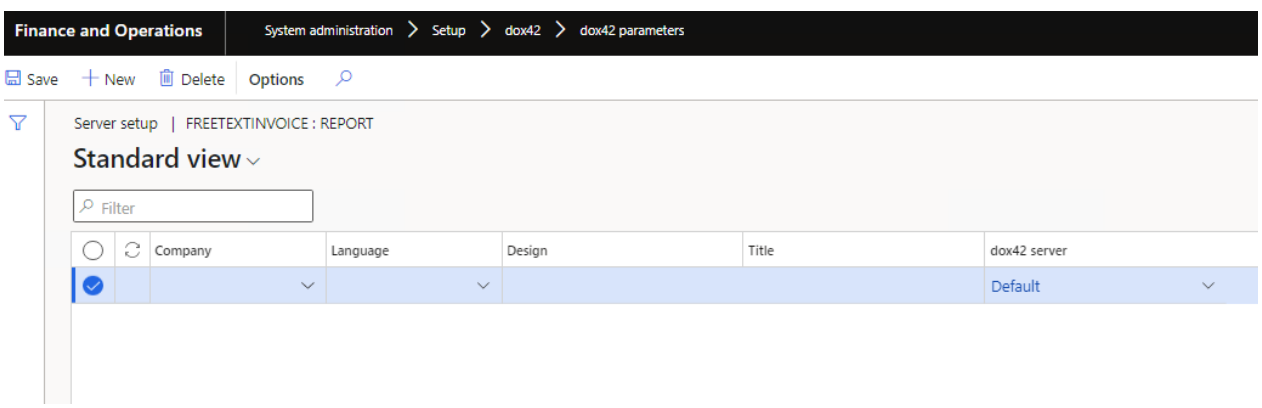
Generate report on a specific dox42 server

Report-specific dox42 server

It is possible to assign the dox42 server on the report level. To override the default setup and define the dox42 server where the report should be generated, click the button “Server setup” for the report needed:

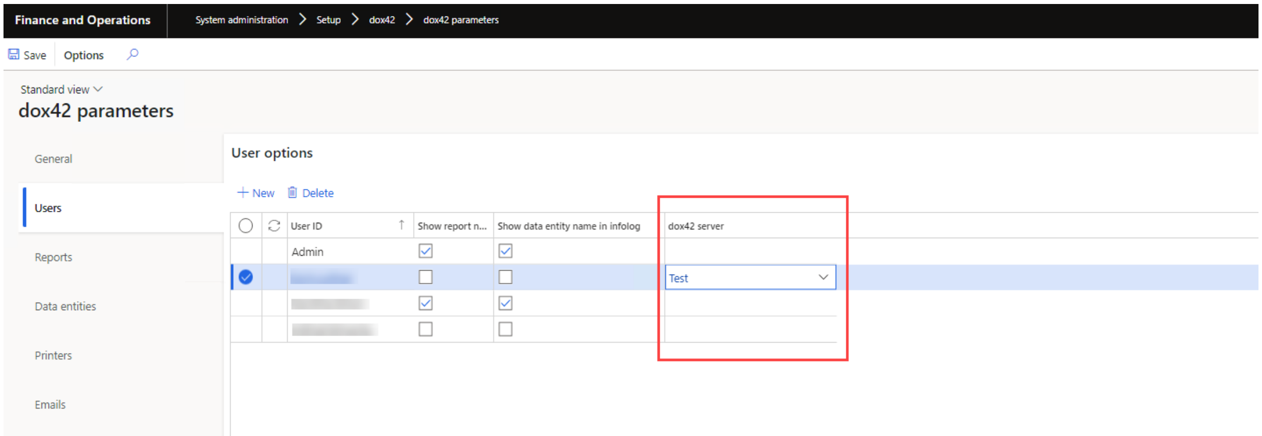


Assign the dox42 server which should be used to generate the report:



User-specific dox42 server

It is possible to assign the dox42 server to a specific user. If this assignment is done, then the system will ignore the default dox42 server assignment and the dox42 server assignment on the report level. The user-specific assignment has the highest priority to find the dox42 server to generate the report (it is valid for reports as well as for data entities).

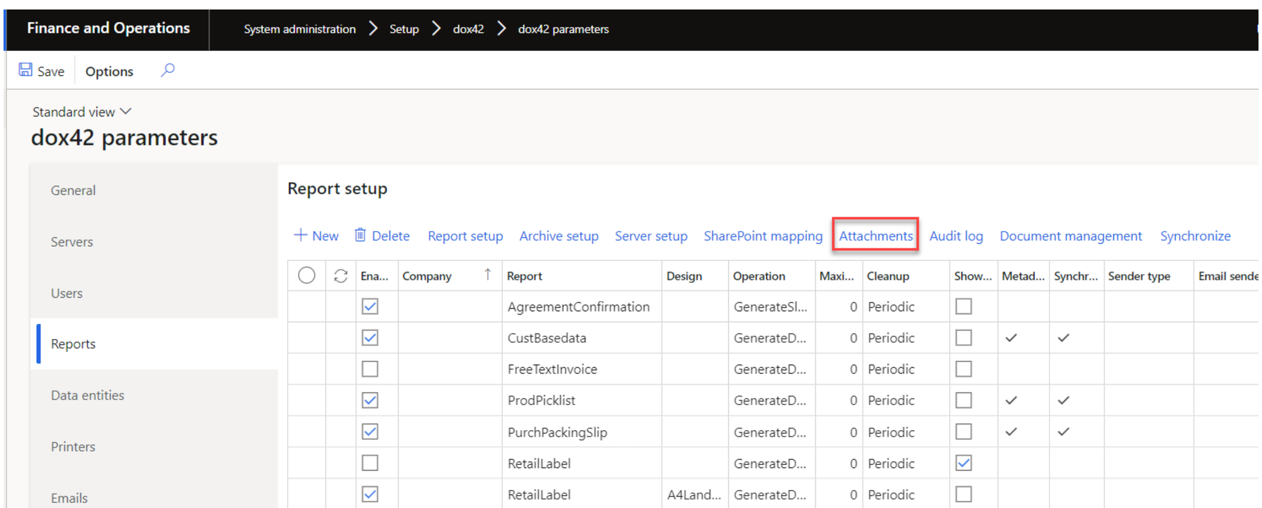


Attach files to dox42 report

It is possible to attach a document or an image, for example to a sales order in D365 FO. This attachment can then be printed on the dox42 report or added to a generated email. To do this, the following setup is needed:

D365 FO Setup

1- Mark the desired dox42 report and click on the button “Attachments”.



2- Create a new attachment and fill out the following fields:

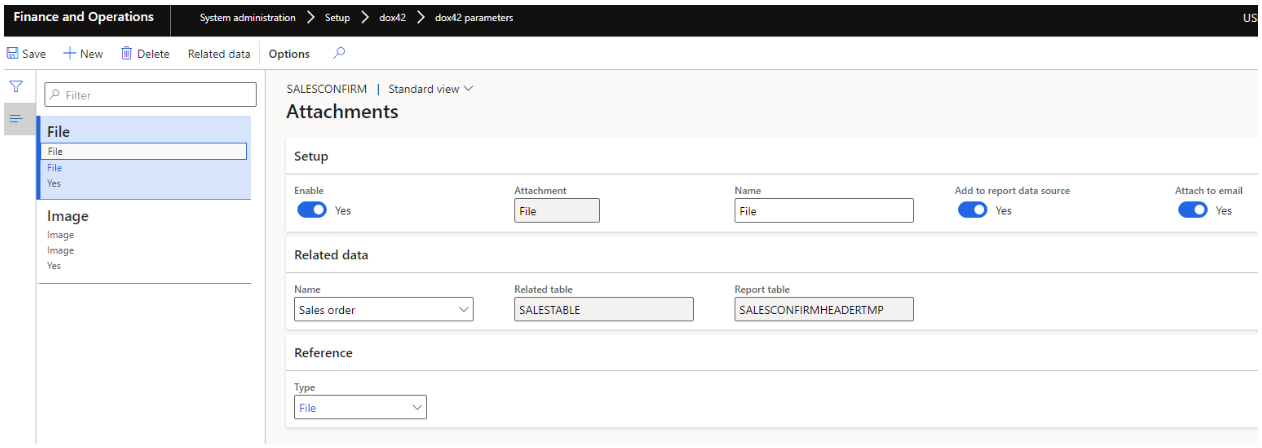
a. It is possible to enable and disable an attachment type.

b. The related data defines where the attachment will be attached. For example, in this case on the header (to setup the related tables, use the button “Related data”. If there are no records by default, see FAQ).

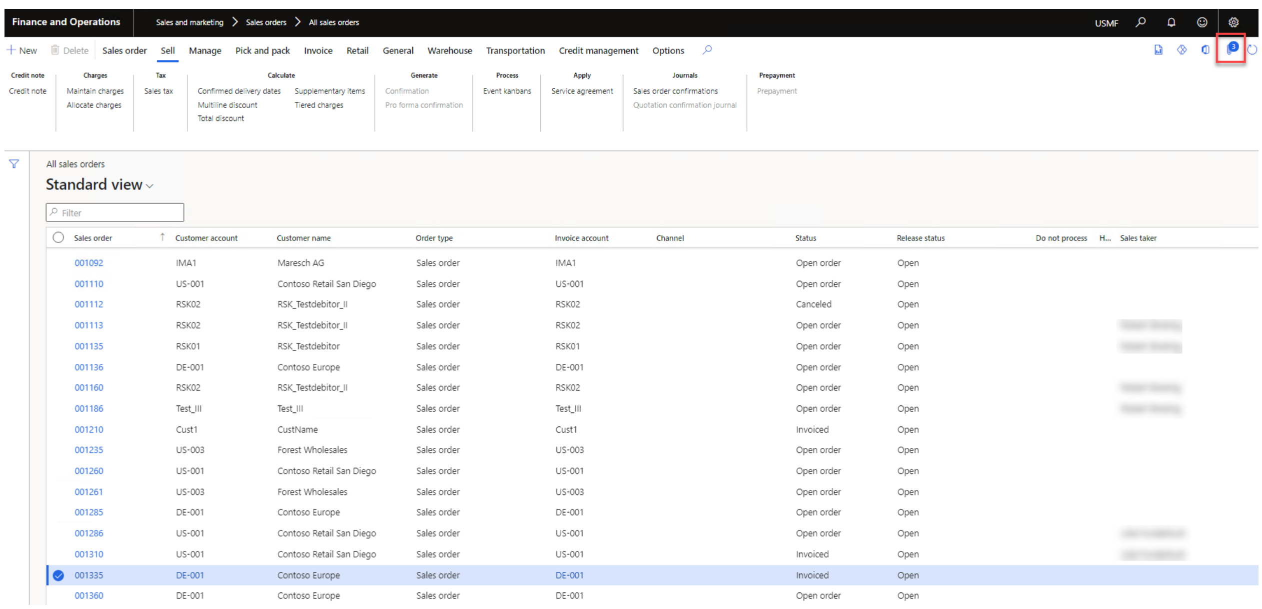
c. The file type defines the file type of the attachment.

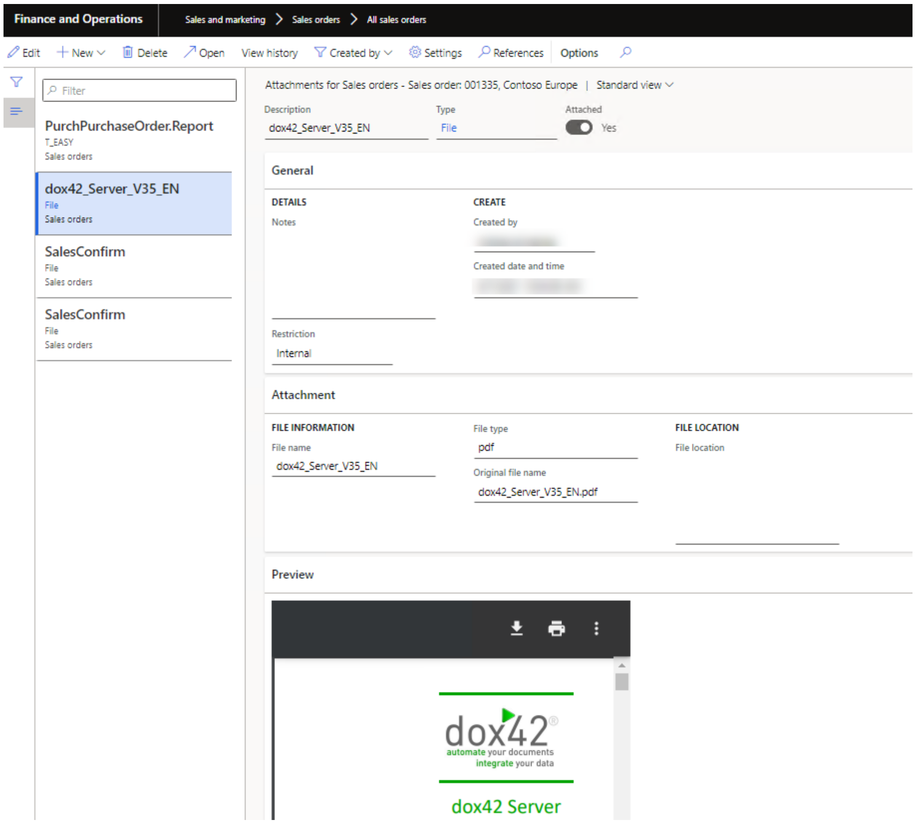
d. If the checkbox “Add to report data source” is set to “Yes”, the files will be available in the report data source.

e. If the checkbox “Attach to email” is set to “Yes”, the files will be attached to a generated email when using the “Email” printing destination.



3- Create an attachment.

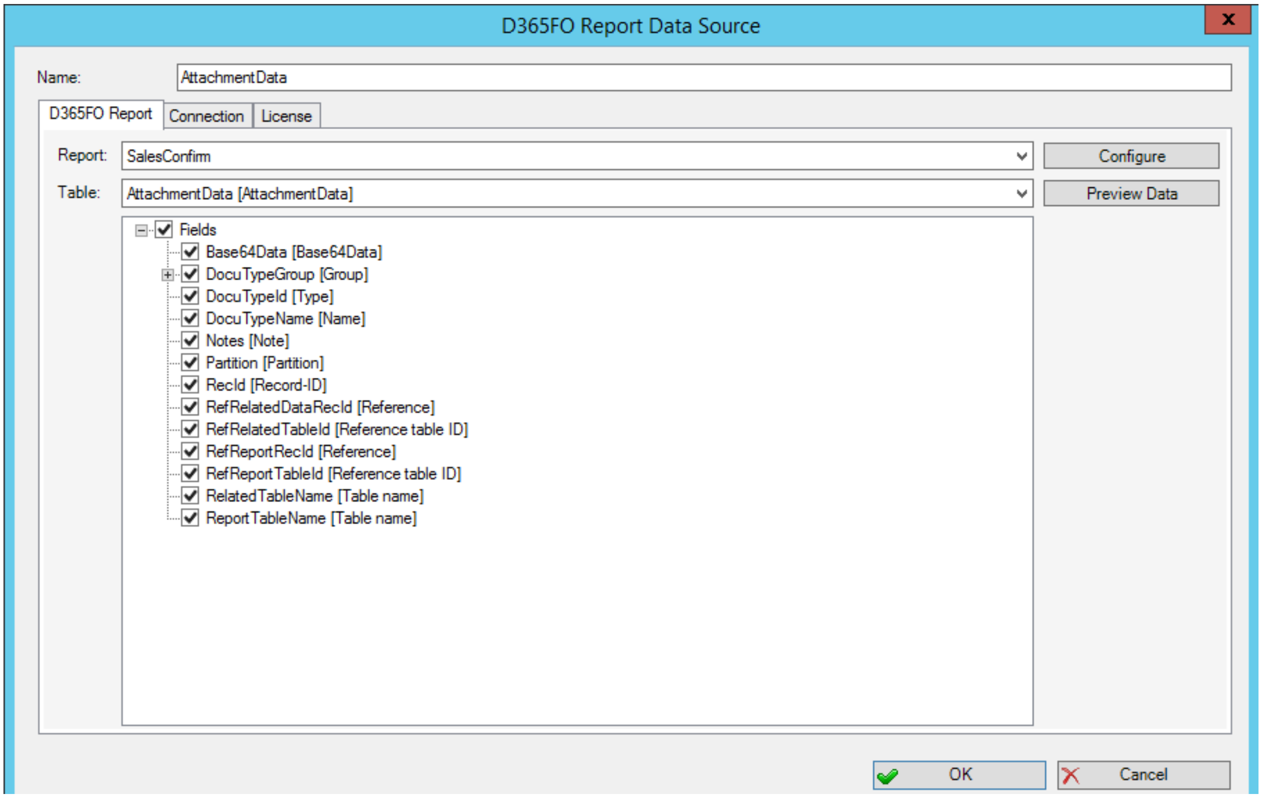




4- If the report is now printed, the attachment will be shown in the dox42 report.

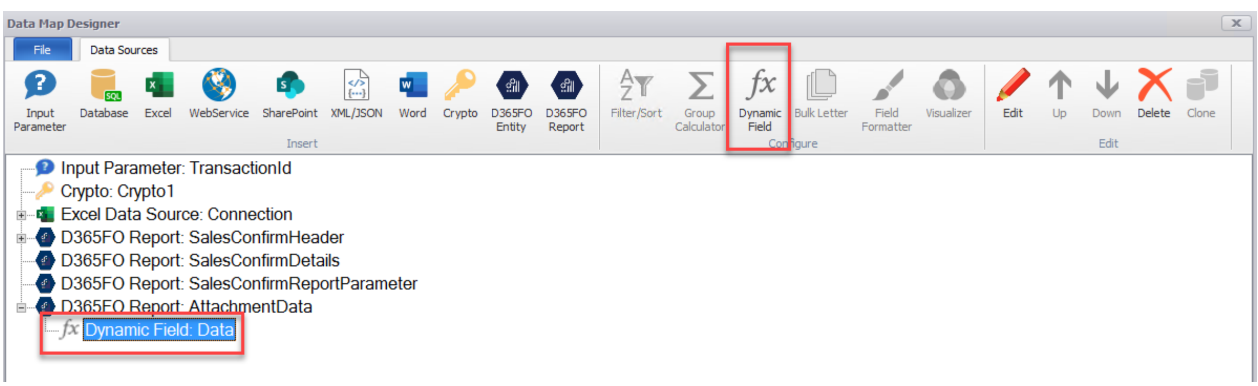
Dox42 setup

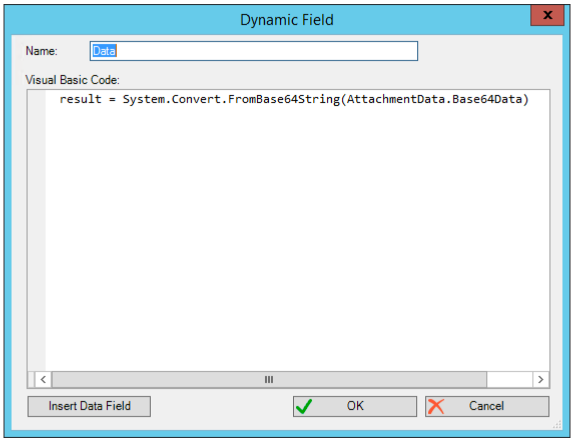
A new data source will be available for the report, named “Attachment data”.



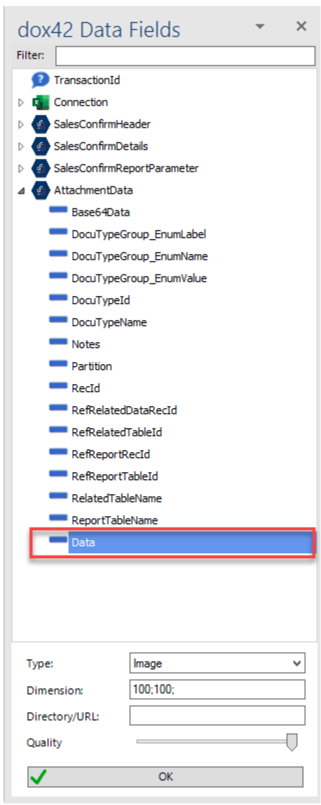
The field "Base64Data" contains the attached file for the report as a Base64 encoded string.

To show the file in the report design, the new dynamic field should be added to the data source as following:

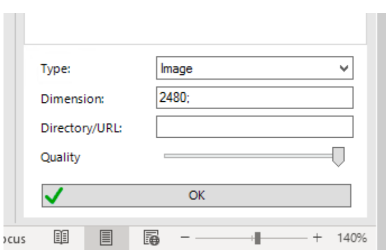




Then, the dynamic field can be handled as a “normal” dox42 field.



The format for the field should be aligned with the report design, for example:

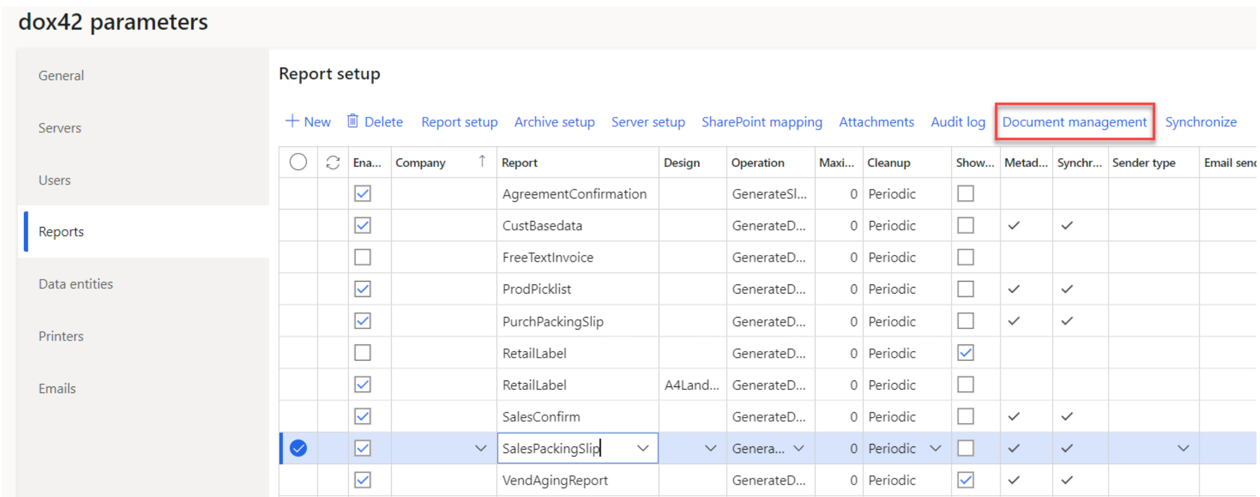


Save printed report in Document Management

It is possible to save the printed document in D365 FO. The printed document can be attached to the record and then can be accessed in D365 FO at any time. The following setup is needed:

D365 FO Setup

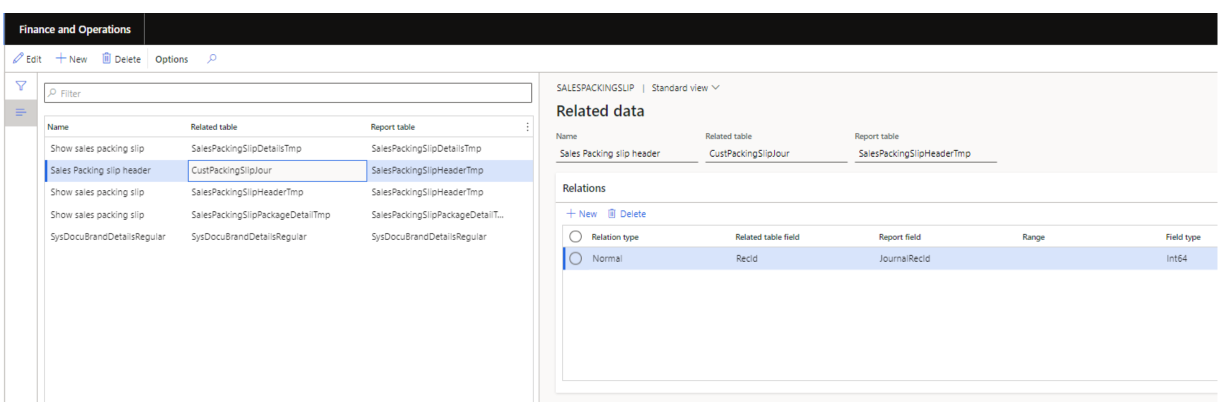
1- Mark the desired dox42 report and click on the button “Document management”.



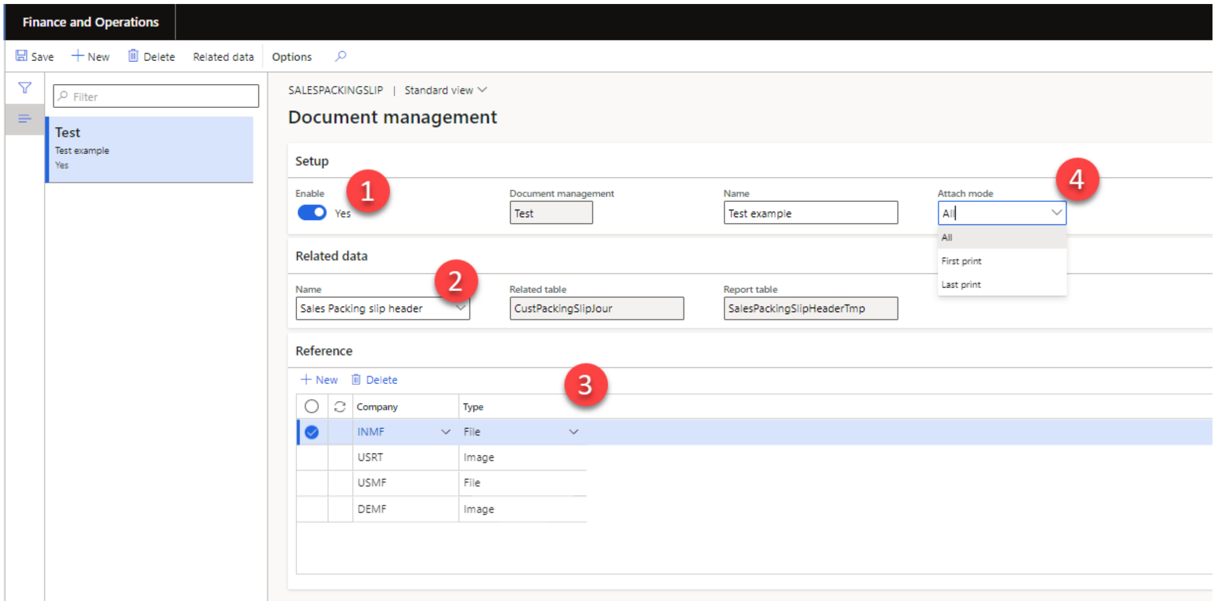
2- Create a new document management record and fill out the following fields:

a. It is possible to enable and disable a document management setup record.

b. The related data defines where the printed report will be attached. For example, in this case on the header (to setup the related tables, use the button “Related data”. If there are no records by default, see FAQ).



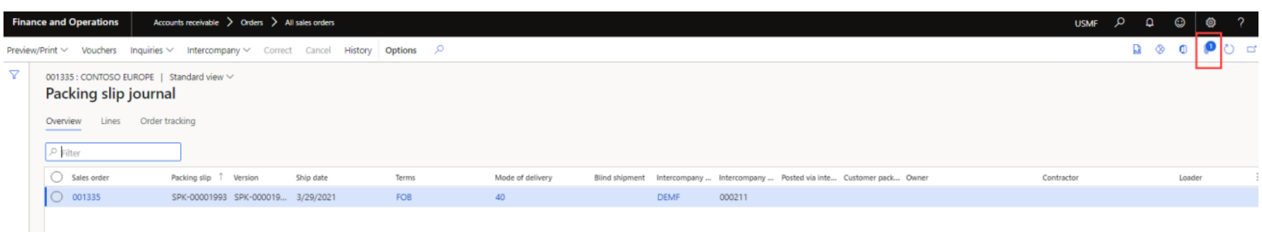
c. The file type defines the file type of the attachment. It is possible to define different file type for each company.



d. Attach mode defines which printed report will be attached:

- All printed reports will be attached to the record
- Only the first one printed report will be attached to the record
- Only the last one printed report will be attached to the record

3- Print the report. The generated document will be attached to the record and available in document management form.



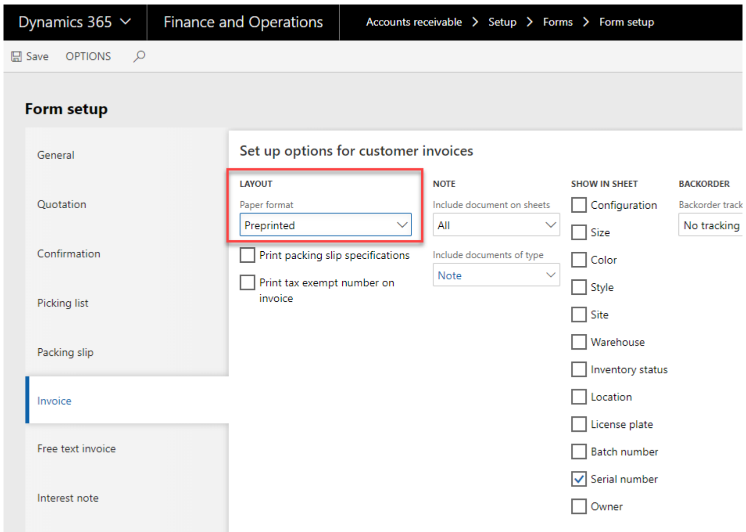
Printing with and without a blank paper

Often there is a problem with printing on preprinted paper, for example some printing papers contain the logo and some printing papers are blank. It should be decided automatically if the e.g. the logo will be printed on the report or not. D365 FO provides the possibility to define on which paper the report should be printed, it is decide by using the parameter "PrePrintLevel_Enum".

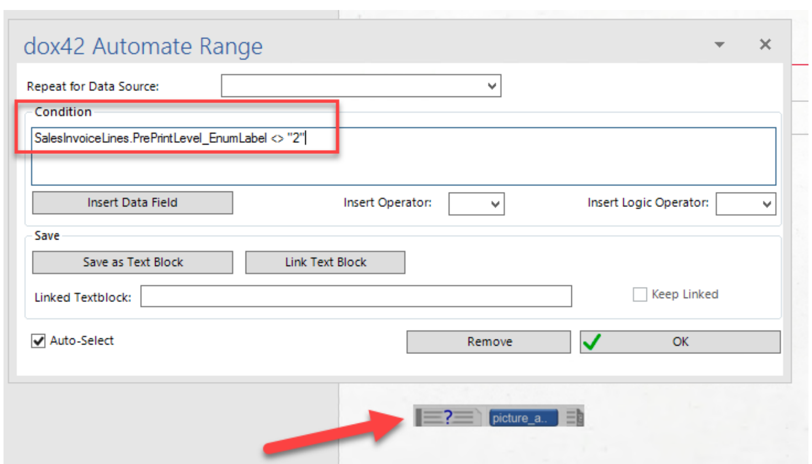
- Blank paper has the value "0"
- Partly preprinted has the value "1"
- Preprinted has the value "2"

Printing the sales invoice on a preprinted paper

1. Click on the module “Accounts receivable” then on the submodule “Setup”, in this submodule is the forms setup.
2. Choose the tab “Invoice” and decide on which paper format the invoice should be printed, illustrated in the picture below.



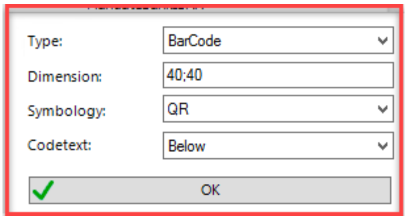
3. Switch to the template and define a condition on the element which should only be printed if the paper is partly printed or blank.



Creating a Barcode

There is also the option to display the placeholder as a barcode by simple inserting the type “BarCode” in the type-definition field. How the barcode is displayed can be determined in the fields below, an example is illustrated on the picture below.

The dimension of the barcode is determined in the field “Dimension” make sure a “;” is used to separate the dimension numbers.

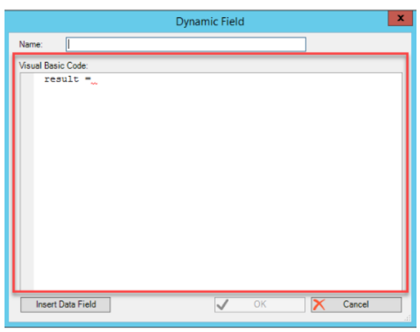


Dynamic field

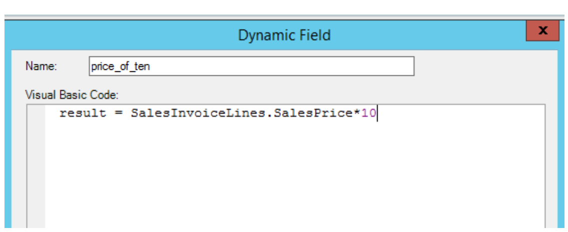
A dynamic field in which it is possible to program e.g. some conditions or add a link. The programming language used in the “Visual Basic Code” field is VB.net.

Note: D365 FO and dox42 have different rounding setups. D365 FO has the standard rounding setup, always using D365 FO for business calculations.

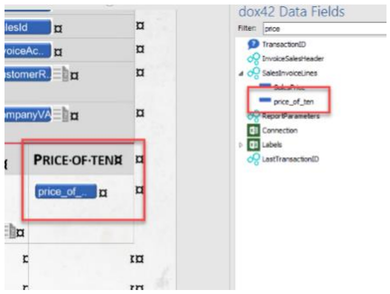
1. Creating a dynamic field
    a. Right click on the Data Source
    b. Selecting the field “Dynamic Field”, a window will pop up like displayed in the picture below.



    c. Insert a name. Select a data field from the Data Sources with the button “Insert Data Field” e.g. the sales price and multiple it with 10.

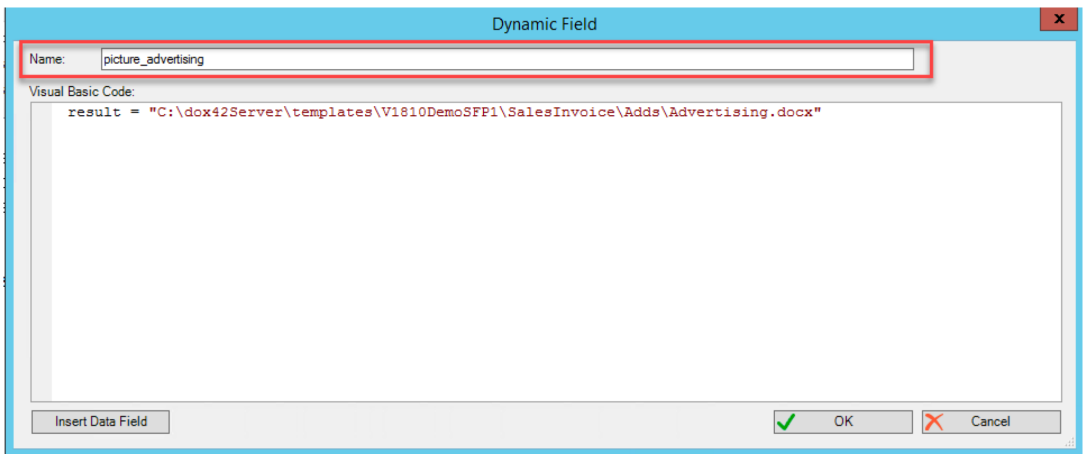


d. Select the dynamic field from the data box and drag it in the desired place.

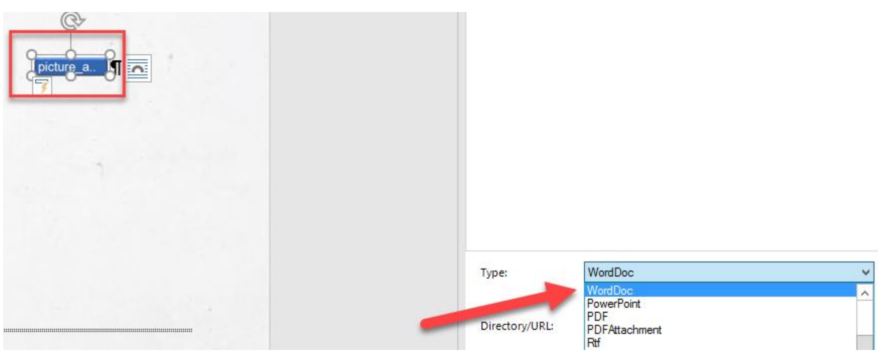


Adding a picture with a dynamic field

1. Create a Word document and add a picture, which should be shown later in the report
2. Copy the link of the path
3. Create a dynamic field. Name it and insert the link of the field



4. Select the dynamic field from the data box and define the type "WordDoc".

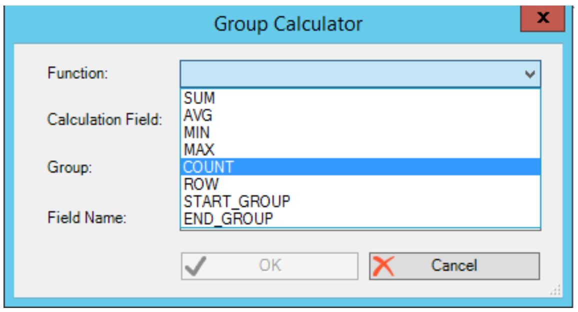


A dynamic field is like a normal placeholder, there is for example also the possibility to set conditions.

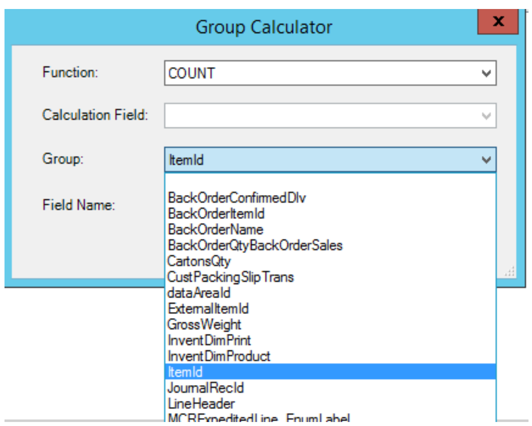
Group calculator

It is a feature with provides different kinds of calculations tools.

1. Creating a Group Calculator field
   a. Right click on a Data Source.
   b. Selecting the desired function for example “COUNT” for counting



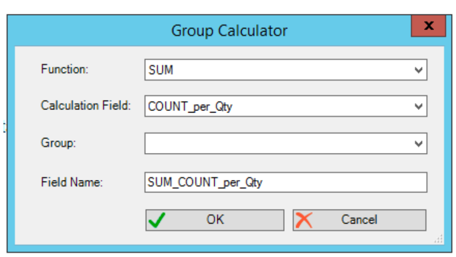
   c. Decide which field should be counted.



   d. Insert a field name.

Count the lines of a packing slip

1. Create a group calculator which counts the ItemID
2. Create a second group calculator and insert in the field “Calculation Field” the before created group calculator field like in the picture below.



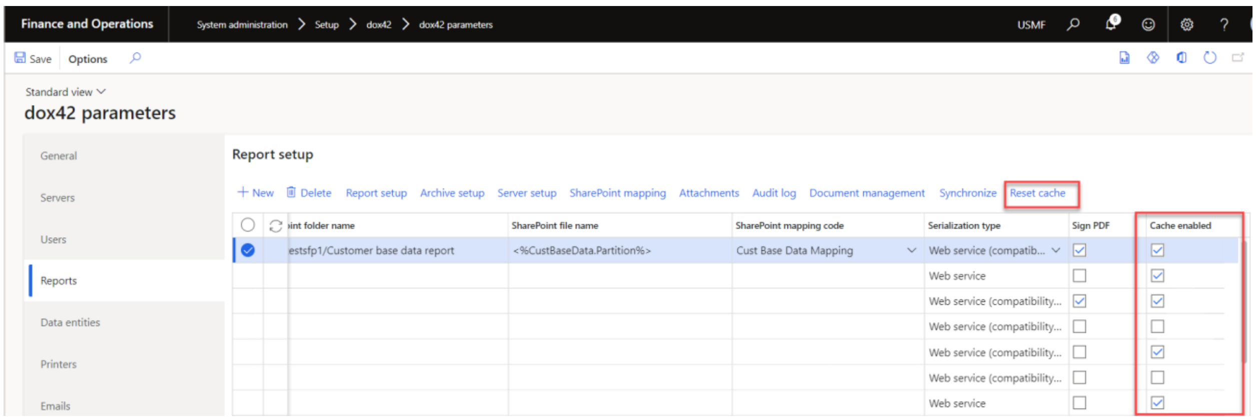
3. Insert the group calculator field in the desired place on the report.

Caching printed reports (optional) [BETA]

There is a possibility to reprint already printed documents without generating them newly on the dox42 server. It can significantly speed up the document printing process in some business-critical scenarios. If the report with the same set of the report parameters has once been printed, this report serialized data and/or generated report files can be taken from the cache when the report is printed next time.

For being able to reprint already printed documents you should open System administration > Setup > dox42 > dox42 parameters and activate the checkbox for the Report/Entity in the column **Cache enabled**.

If you click on **Reset cache** the existing cache will be cleared.



Important: This is a beta version of the caching functionality. It is not guaranteed that the caching works properly out of the box for absolutely all the reports (standard or custom). You can test and use this feature at your own risk – but at the same time, using this feature can be very powerful, you can achieve a significant performance boost in your business-critical scenarios where standard performance does not meet your requirements. Nevertheless, the use of standard performance (cache disabled) remains recommended. This feature should only be used as a last resort when all other possible optimizations have already been implemented. If you face issues with this feature getting wrong cached reports, you can check and adjust the report caching key (used to search and extract report serialized data and generated report files from the cache) subscribing to this delegate (development needed):

```
Dox42SerializationDelegates_SF          buildReportCacheKey(Map _cacheKeyMap, Object _reportDataContract)
public final class Dox42SerializationDelegates_SF
{
    /// <summary>
    /// subscribe to this delegate to change cache key
    /// </summary>
    /// <param name = "_cacheKeyMap"> map containing cache key components </param>
    /// <param name = "_reportDataContract"> report contract class </param>
    delegate void buildReportCacheKey(Map _cacheKeyMap, Object _reportDataContract)
    {

    }

    public void onBuildReportCacheKey(Map _cacheKeyMap, Object _reportDataContract)
    {
        this.buildReportCacheKey(_cacheKeyMap, _reportDataContract);
    }

    private void new()
    {
    }
```

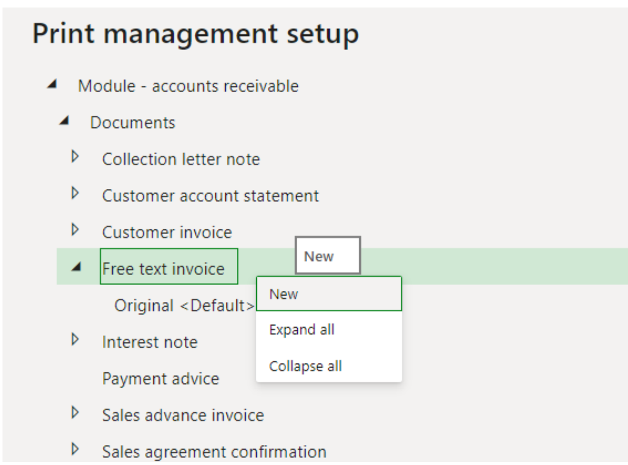
FAQ

Using different print mediums with a single call

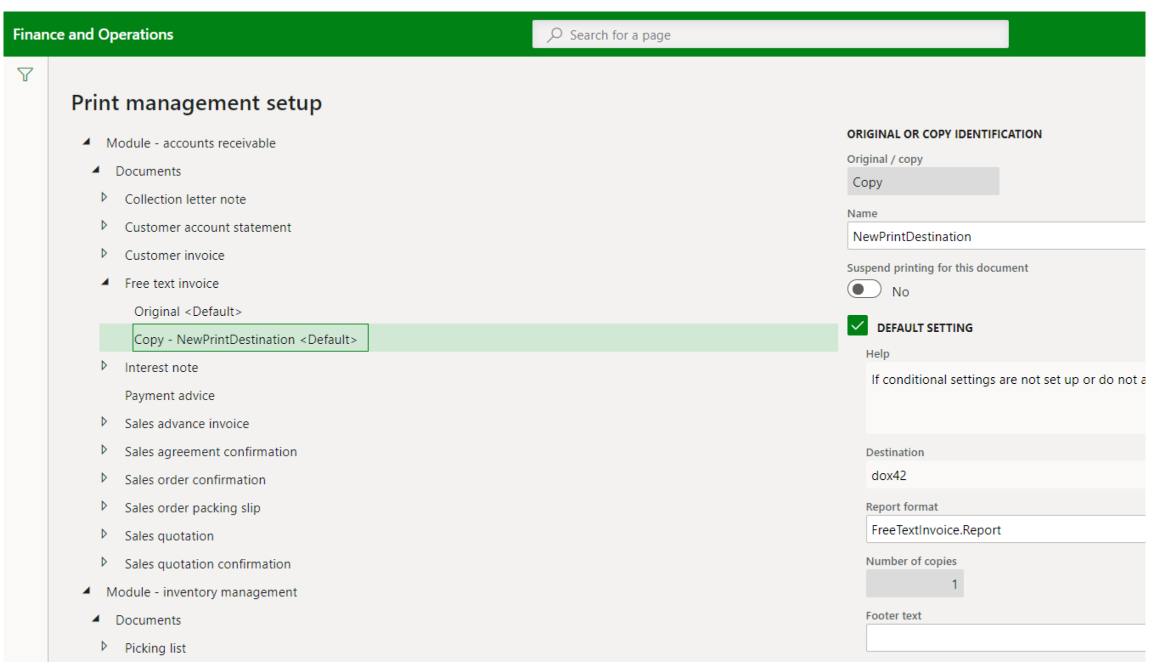
Scenario: The report should be sent as email, printed and displayed on the screen.

The print management provides the possibility to register not only one but as many print destinations as desired.

Right click on the report name will display a menu which provides the button “new”, this button creates a new print destination setup.



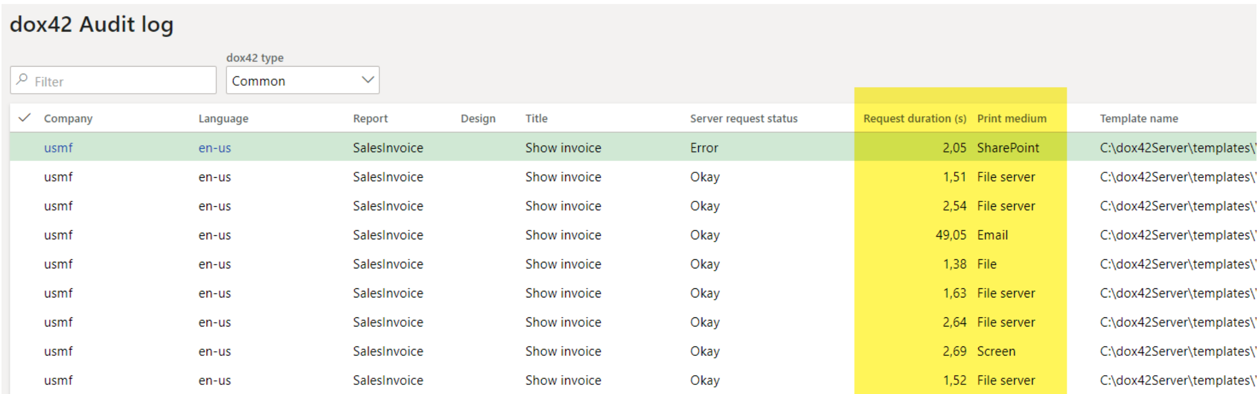
The D365 FO will sequentially process all the lines (print destinations) which are registered.



Performance

Scenario: Generating a report takes a long time.

In this scenario the first step would be to check the request duration time in the "dox42 Audit log", to know the printing time of each print medium and which report has a bad performance.



dox42 Audit log

Filter | dox42 type: Common

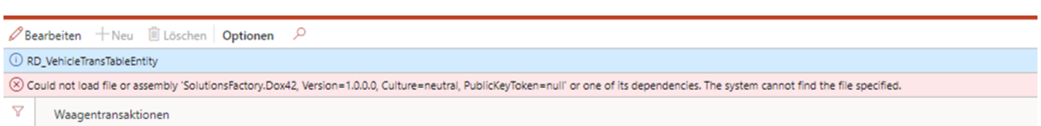
Company	Language	Report	Design	Title	Server request status	Request duration (s)	Print medium	Template name
usmf	en-us	SalesInvoice		Show invoice	Error	2,05	SharePoint	C:\dox42Server\templates\
usmf	en-us	SalesInvoice		Show invoice	Okay	1,51	File server	C:\dox42Server\templates\
usmf	en-us	SalesInvoice		Show invoice	Okay	2,54	File server	C:\dox42Server\templates\
usmf	en-us	SalesInvoice		Show invoice	Okay	49,05	Email	C:\dox42Server\templates\
usmf	en-us	SalesInvoice		Show invoice	Okay	1,38	File	C:\dox42Server\templates\
usmf	en-us	SalesInvoice		Show invoice	Okay	1,63	File server	C:\dox42Server\templates\
usmf	en-us	SalesInvoice		Show invoice	Okay	2,64	File server	C:\dox42Server\templates\
usmf	en-us	SalesInvoice		Show invoice	Okay	2,69	Screen	C:\dox42Server\templates\
usmf	en-us	SalesInvoice		Show invoice	Okay	1,52	File server	C:\dox42Server\templates\

The following factors can influence the performance of a report:

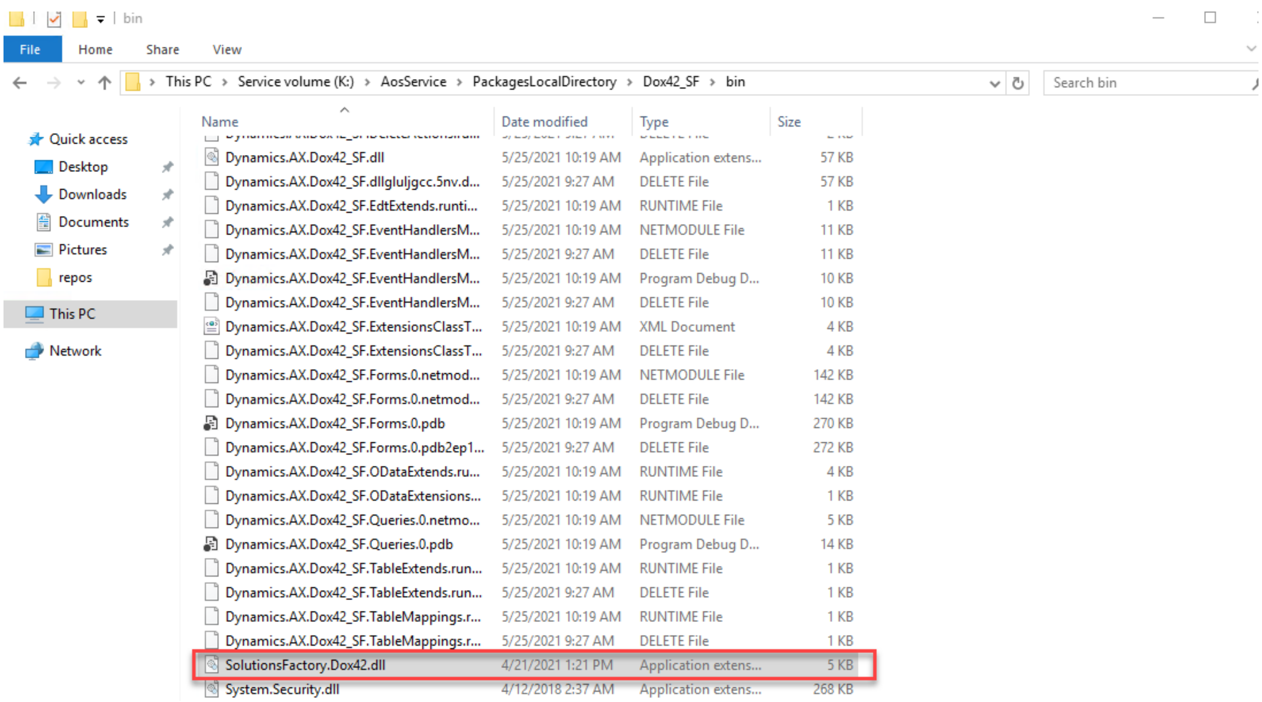
- Using "D365 FO Entity" data sources (previously named OData data sources), the responding time from D365 FO is longer than for "D365 FO Report". Ideally, data providers or queries in D365 FO are enhanced instead of using a "D365 FO Entity" data source.
- Parallelism: The dox42 server processes all requests sequentially.
- Nested filtering of DataSources like filtering one DataSource and using the output of the filtered DataSource to filter another DataSource.
- Deactivating unnecessary fields in the "Configure Metadata" window of the dox42 Data Map in the template resulted in noticeable performance gains in several tests.
- It is also a good approach to extend the report logic in D365 FO as much as possible instead of using any grouping, transformation or calculation logic in the dox42 template.
- In case of timeouts, please refer to the dox42 server documentation on timeout settings of the IIS.
- Ensure that the "Cleanup dox42 historical data" batch job is set up.

Could not load file or assembly "SolutionsFactory.Dox42"

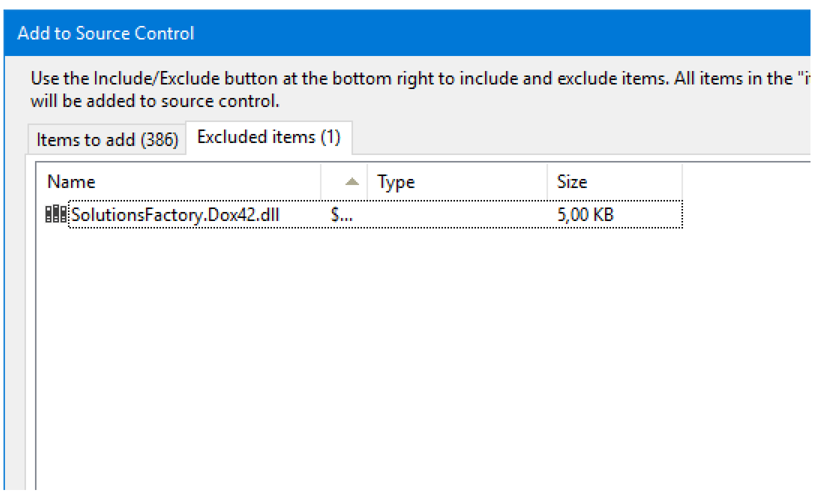
Scenario: Generating a report is aborted with the error message on the screenshot below.



Check that the folder contains the specified DLL and the DLL is checked in.



Reinstall the package if needed and check in the DLL.



No records in related data for dox42 reports

Scenario: It can happen, that after upgrading to a newer version (D365 FO X++ 1.2.13 or latest), there are no records in the related data form for the existing reports:

- System administration -> Setup dox42 dox42 parameters -> button “Attachments” -> button “Related data”
- System administration -> Setup dox42 dox42 parameters -> button “Audit log” -> button “Related data”

- System administration -> Setup dox42 dox42 parameters -> button “Document management” -> button “Related data”).

Run the job Dox42FillReportDataSourcesJob_SF to fix the issue. The job fixes the problem immediately for all legal entities once it has been executed.

https://**<AXURL>**/?mi=SysClassRunner&cls=Dox42FillReportDataSourcesJob_SF

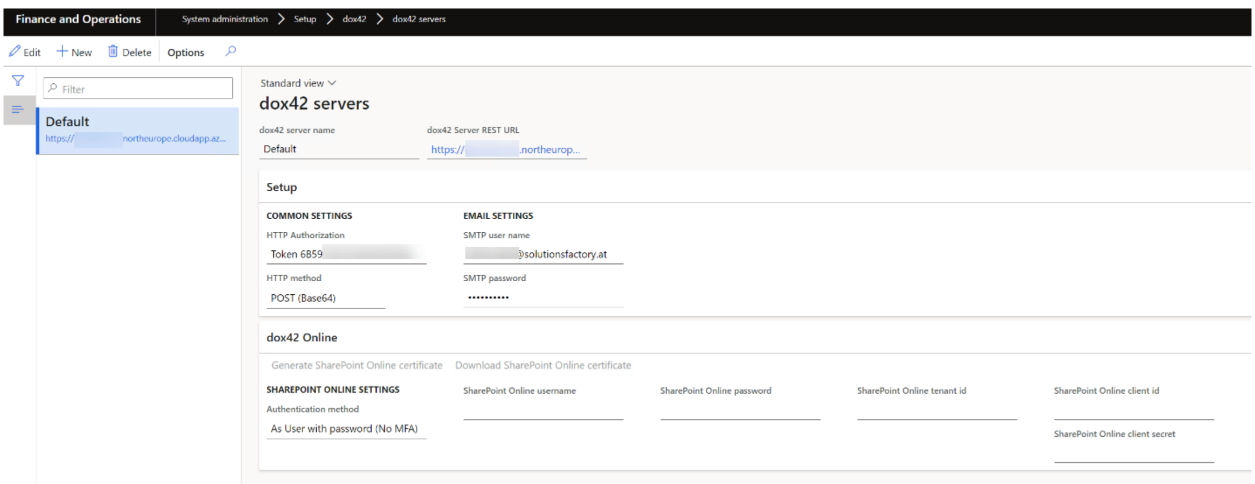
Throttling issues

Scenario: Sometimes requests from dox42 server can be throttled by D365 FO server:

https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/data-entities/priority-based-throttling

https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/data-entities/throttling-faq

It is possible to avoid most of the calls from dox42 server to D365 FO server while generating reports by using HTTP method “POST” or ”POST (Base64)”. HTTP method “POST (Base64)” is recommended. It should be defined in the dox42 server parameters.

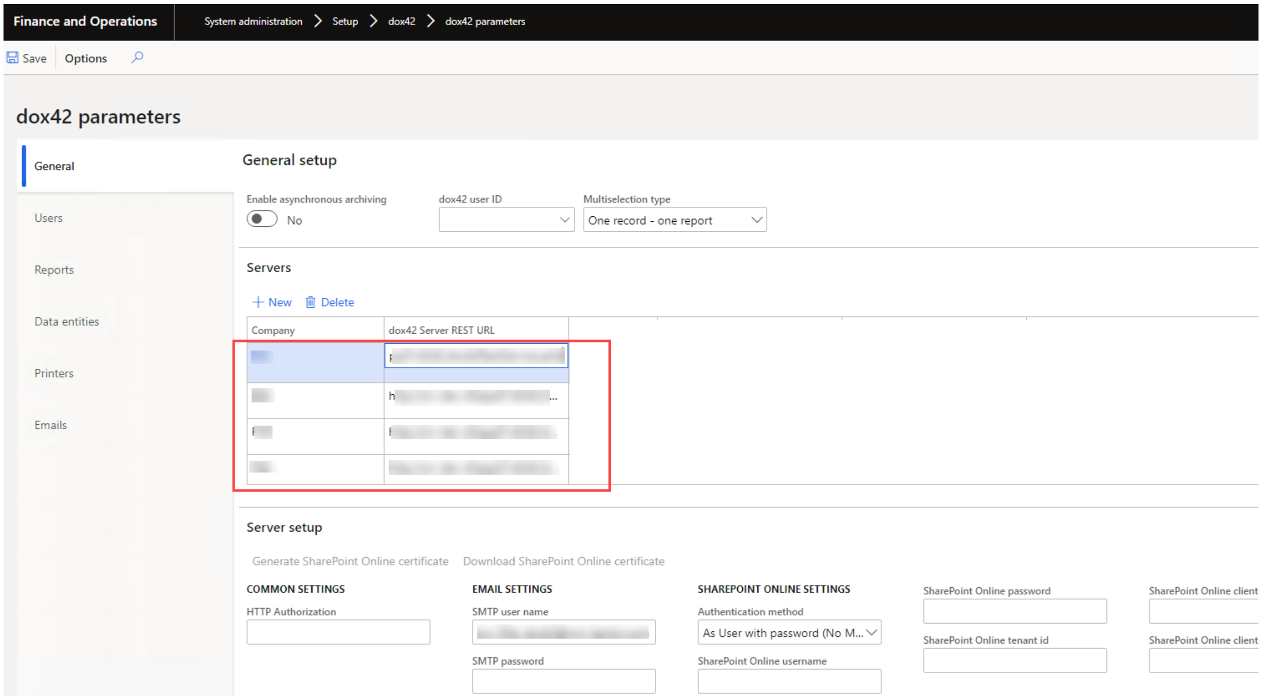


DB synchronization issue installing D365 FO X++ 1.2.14 or D365 FO X++ 1.2.14.1

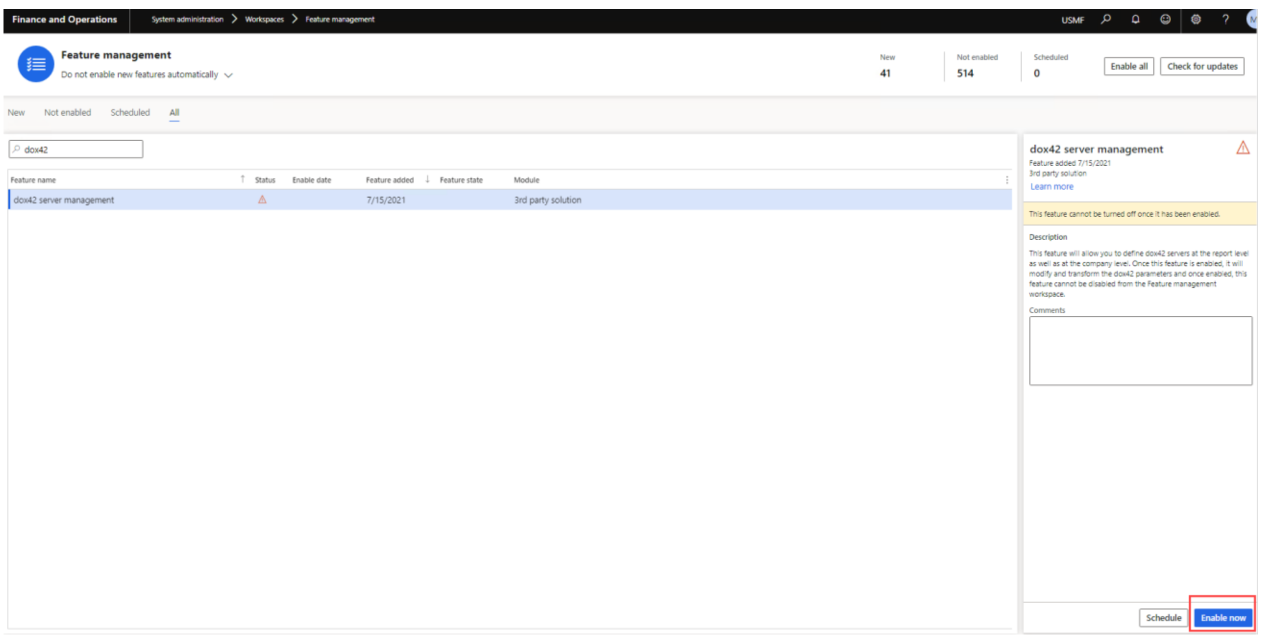
Scenario: There can happen a DB synchronization issue on some environments upgrading to D365 FO X++ 1.2.14.

There is a data transformation script running automatically while upgrading from older version to D365 FO X++ 1.2.14 or D365 FO X++ 1.2.14.1. There are 2 options how to solve it:

Option 1: It is needed to delete dox42 general parameters records (“Servers” tab as it is shown on the screenshot) before installing the new dox42 model. After the new dox42 model is installed, you should newly create them.



Option 2: It is needed to install D365 FO X++ 1.2.14.2 or newer. After the installation you should activate the new “dox42 server management” feature manually in the “Future management” form. It can be done at any time later after the delivery of the new version.



dox42 server log grows too fast

Scenario: In some cases, dox42 server log can grow too fast and it can take too much disk space.

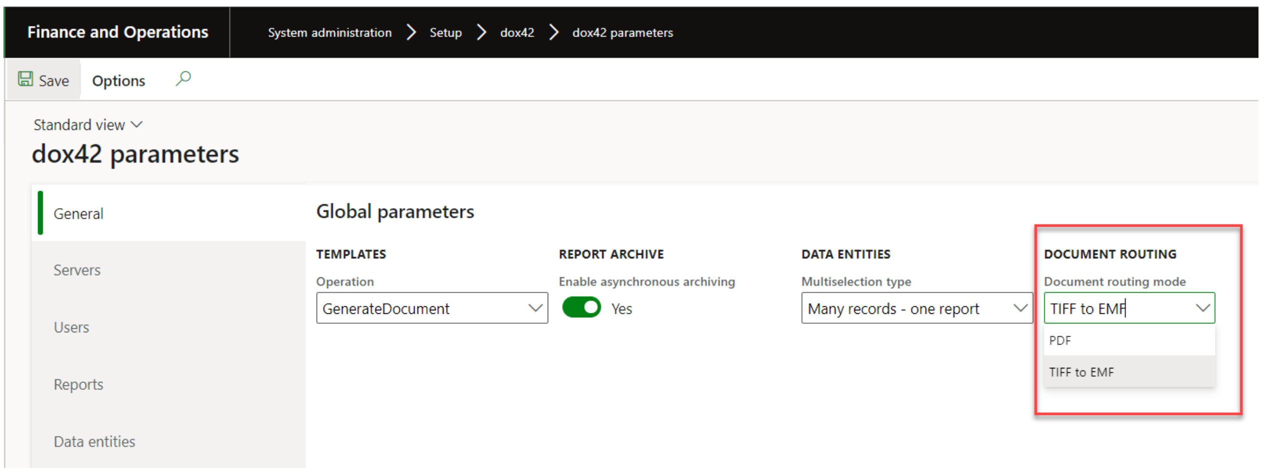
Most likely, the reason is that the logging is set up in the way to be too detailed which is most often not really needed.

For example, when switching to “POST” or “POST (Base64)” HTTP mode, ensure that the dox42 server trace mode is not set to “debug” or “trace”. If it is set to “debug” or “trace”, the log can grow fast, and it can contain some sensitive data.

Configure log settings in the file NLog.config. For further details also look at the dox42 Server Documentation: https://www.dox42.com/Modules/dox42-Server.

Issues with Document Routing Agent (DRA)

If you run into issues using the DRA (running as a service, using redirected printers, etc.), check that the document routing mode parameter is set to “TIFF to EMF”. When the parameter is set to “PDF” the DRA has only limited functionality supported.

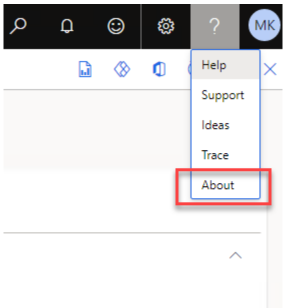


How to check my dox42 for Finance and Operations version

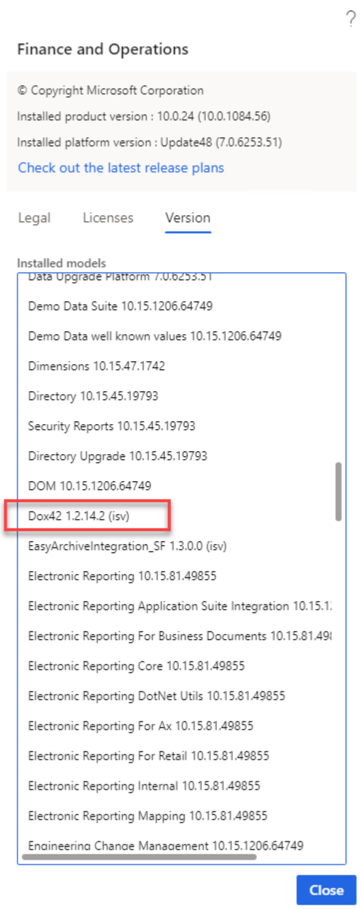
Ensure that, the build numbers of all dox42 for Finance and Operations solution components you use match against your product version. Version history contains the correspondence between the build numbers and the product version.

D365 FO X++ build number

Enter D365 FO and click *"Help & Support"* > *"About"*.

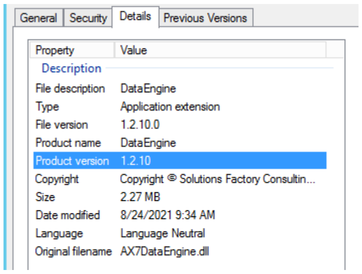


Then open the *"Version"* tab page and check the version of your dox42 model installed.



dox42 Data Source build number

Find the file AX7DataEngine.dll in the dox42 server /Bin directory and check its version in the file properties.



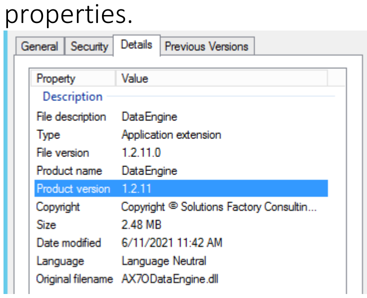
The same should be checked for the dox42 for Finance and Operations Office Add-Ins files:

AX7ConfigDialog.dll

AX7DataEngine.dll

dox42 OData Source build number

Find the file AX7ODataEngine.dll in the dox42 server /Bin directory and check its version in the file properties.



The same should be checked for the dox42 for Finance and Operations Office Add-Ins files:

AX7ODataConfigDialog.dll

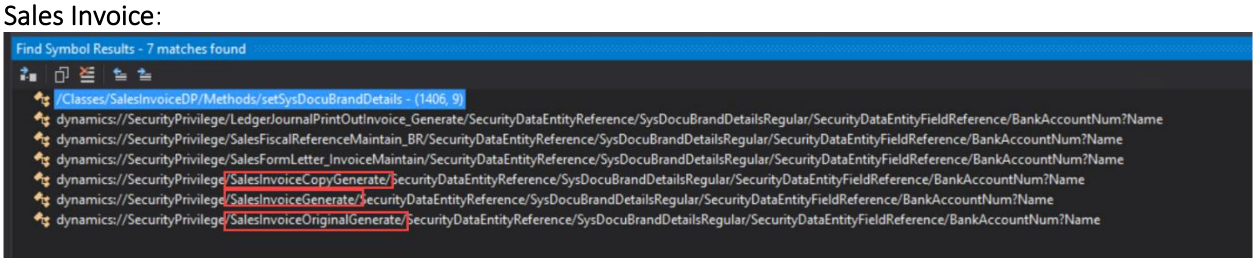
AX7ODataEngine.dll

Error accessing a table field while generating a report after D365 FO update

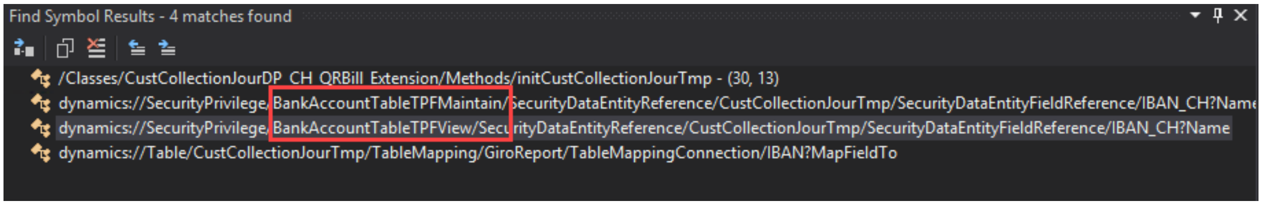
Scenario: Generating a report is aborted with the error message on the screenshot below.

Check standard D365 security privileges related to the field. These privileges should be considered in the user role to be able to print the report.

Sales Invoice:

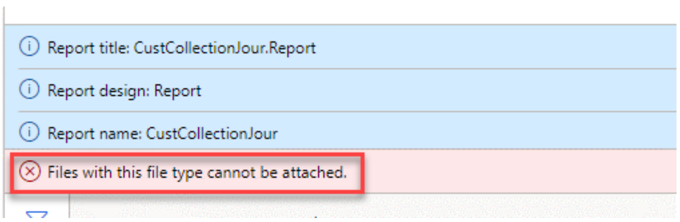


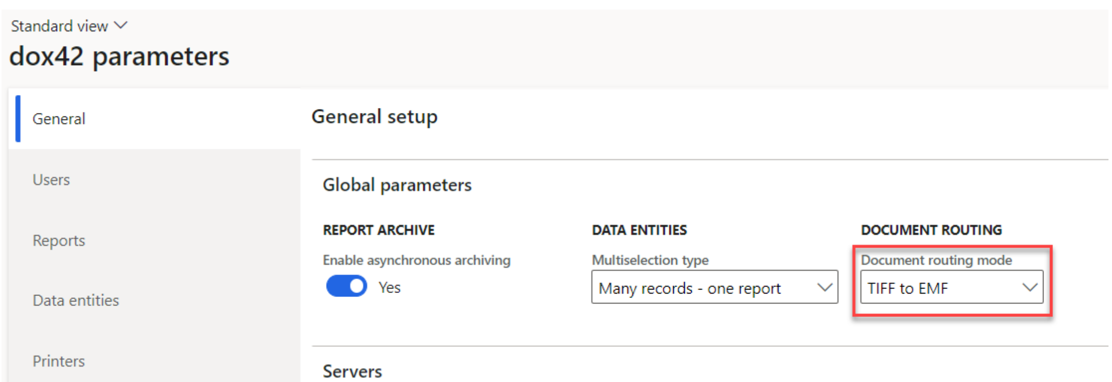
Collection Letter:



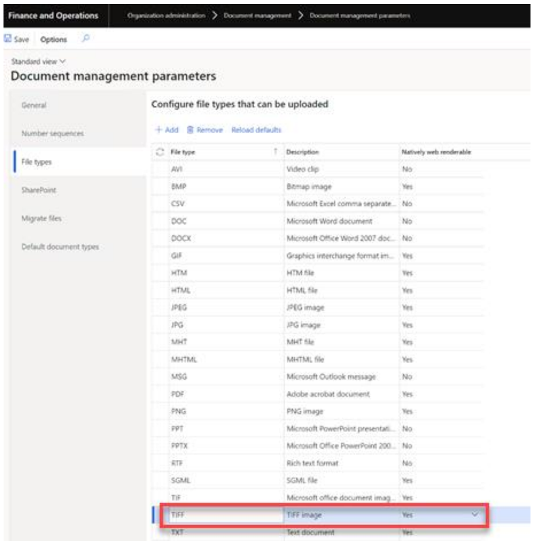
Error while posting the report via print medium “printer”

Scenario: Generating a report is aborted with the error message “File with this file type cannot be attached” and document routing mode is set to “TIFF to EMF” in dox42 parameters.





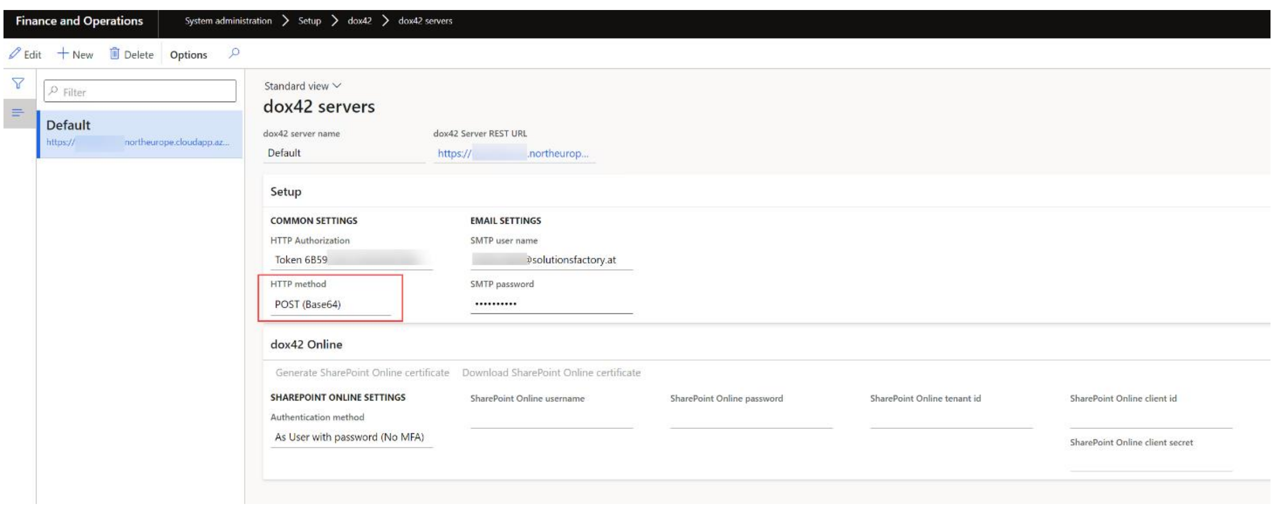
Check in the document management parameters (Organization administration -> Document management -> Document management parameters) that “TIFF” is added in the file types.



Potentially dangerous values when using HTTP method POST

Scenario: Generating a report is aborted with the error message "...A potentially dangerous Request.Form value was detected from the client..." in the dox42 server logs and the HTTP method is set to "POST" for the dox42 server in the "dox42 servers" form.

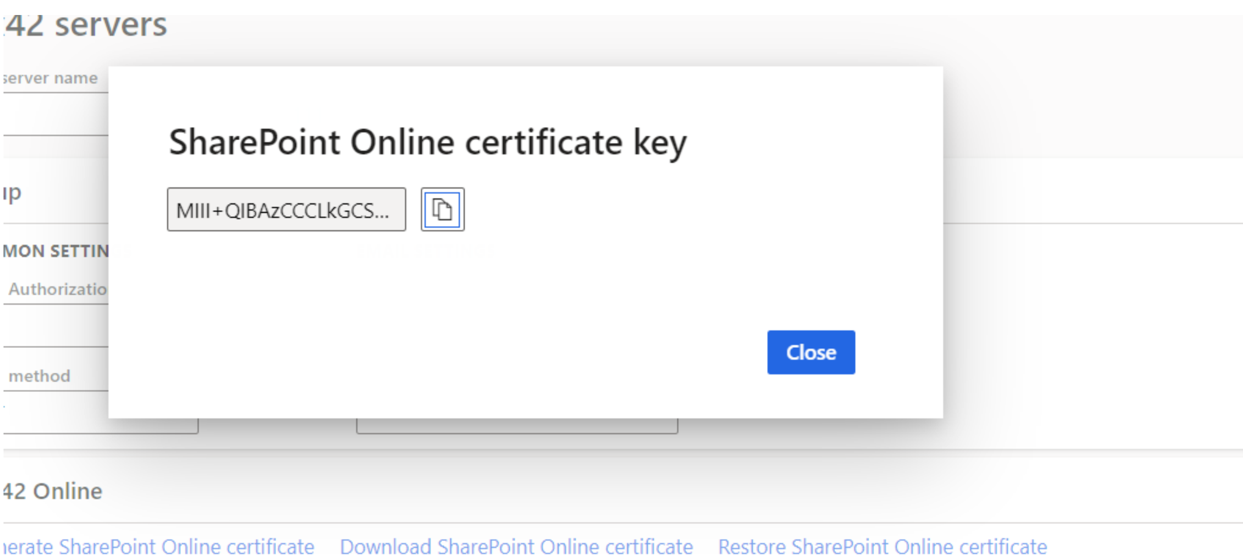
Switch to the HTTP method "POST (Base64)". Available since version 1.3.2.



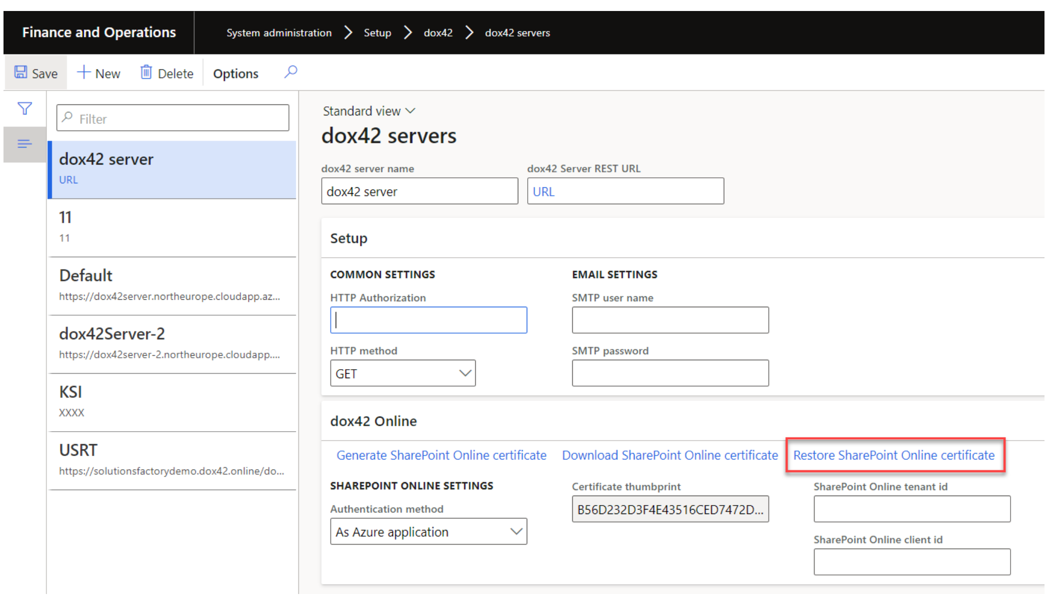
Invalid dox42 Online certificate after database copy

Scenario: After an update of the environment (restoring the database from a different environment) an error occurs while generating a report "Client assertion contains an invalid signature. The key was not found".

1. When setting up the environment, you click on “Generate SharePoint Online certificate” in System administration > setup > dox42 > dox42 servers. After that, you should copy this certificate key and securely save it somewhere for being able to use the key further.

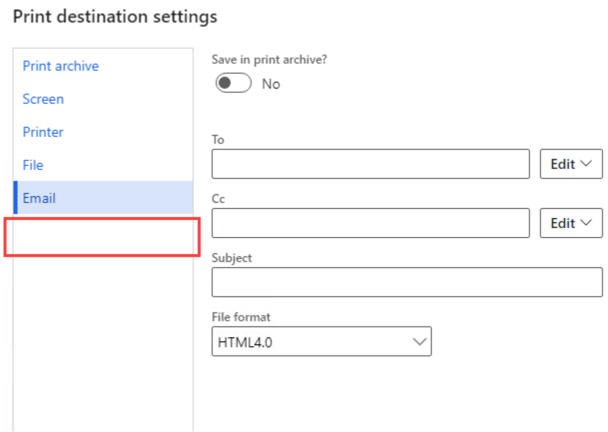


2. After the database is restored, you should click on “Restore SharePoint Online Certificate” in dox42 servers (System administration > setup > dox42 > dox42 servers) and apply there the certificate key that you copied before.



No dox42 output in print destination settings dialog for custom report

Scenario: There is no dox42 output visible in the print destination settings dialog for the custom report.



Make sure that the following variables initialized properly in the “SRSPrintDestinationSettings” class with your custom code when you call the print destination settings dialog:

1. dox42ReportName – report name
2. dox42ReportDesignName – report design name

```
SRSPrintDestinationSettings printDestinationSettings = new SRSPrintDestinationSettings(printerSettings);

if (!printDestinationSettings.dox42ReportName)
{
    [printDestinationSettings.dox42ReportName, printDestinationSettings.dox42ReportDesignName] =
        SrsReportRunUtil::getReportAndDesignName(ssrsReportStr(CustomReportName, CustomReportDesignName));

    printerSettings = printDestinationSettings.pack();
}
```

VERSION HISTORY

Product version	Availability	Build number			What's new
		D365 FO X++	dox42 Data Source	dox42 OData Source	
1.3.3	05.10.2022	1.3.3	1.2.15	1.2.15	D365 FO: • Excel and PowerPoint report templates • Expanded and enhanced audit log capabilities • Ability to use/restore existing SharePoint Online certificates • Caching printed reports (optional) [BETA] • Various improvements, bug fixes and technical updates dox42 server/client: • Migration from the Azure Active Directory Authentication Library (ADAL) to the Microsoft Authentication Library (MSAL)
1.3.2	07.07.2022	1.3.2	1.2.14	1.2.14	D365 FO: • Sign PDF documents • Save printed report in document management enhancements • Cleanup historical data function improved • Audit log form improved • Potential errors when using HTTP method POST • Various improvements, bug fixes and technical updates dox42 server/client: • Add-Ins: Filtering entity columns on the entity data source setup form • Potential errors when using HTTP method POST • Various improvements, bug fixes and technical updates
1.3.1	22.04.2022	1.3.1	1.2.13	1.2.13	D365 FO: • Full support of Document Routing Agent (DRA) • Save printed report in document management enhancements • Set up SharePoint file names on the report level • "nl-be" and "da" labels • Various improvements, bug fixes and technical updates dox42 server/client: • Caching bug fix • Bug fix for using "#" in OData filters
1.3.0	19.01.2022	1.3.0	1.2.12	1.2.12	D365 FO: • Attach files to dox42 report (adding to layout / sending per email) • Preview serialized report data directly in D365 FO • Various improvements, bug fixes and technical updates
1.2.14.2	18.10.2021	1.2.14.2	1.2.12	1.2.12	D365 FO: • Fix for deployable package error • "de-ch" labels
1.2.14.1	07.10.2021	1.2.14.1	1.2.12	1.2.12	D365 FO: • Improvements to save printed report in document management • Various improvements, bug fixes and technical updates
1.2.14	01.10.2021	1.2.14	1.2.12	1.2.12	D365 FO: • Improvements of roles and permissions
1.2.13.3 [BETA]	08.09.2021	1.2.13.3	1.2.12	1.2.12	D365 FO: • Improvements of advanced dox42 server management
1.2.13.2 [BETA]	30.08.2021	1.2.13.2	1.2.12	1.2.12	D365 FO: • Save printed report in document management • Advanced dox42 server management • Push report data to dox42 server • Allow start email subject with backslash • Special characters in email subject • Allow to print report if e-mail password cannot be decrypted

					• Lookup to select report design
1.2.13.1	04.08.2021	1.2.13	1.2.11	1.2.12	dox42 server/client: • Throttling handling
1.2.13	18.06.2021	1.2.13	1.2.10	1.2.11	D365 FO: • Print to “docx” files • Use Excel templates to print reports to “xlsx” files • Improvements to multiselect on forms for OData reports • Improvements to attach files to dox42 report (adding to layout) [BETA]
1.2.12	31.05.2021	1.2.12	1.2.9	1.2.11	D365 FO: • Manage document type for attachments • Attach files to dox42 report (adding to layout) [BETA] • Reference to report source in dox42 audit log • Print to “csv” files • Multiselect on forms for OData reports (print one report) • Increased report printing timeout • Performance - parallel dox42 calls when archiving dox42 server/client: • Performance optimization through caching for dox42 Data Source
1.2.11	30.03.2021	1.2.11	1.2.8	1.2.11	D365 FO: • Bug fixes for email subject
1.2.10	05.02.2021	1.2.10	1.2.8	1.2.11	D365 FO: • Multiselect on forms for OData reports (print multiple reports) • Bug fixes for email subject • Various improvements, bug fixes and technical updates
1.2.9	22.01.2021	1.2.9	1.2.8	1.2.11	D365 FO: • Reversed packing slips printing • Print multiple copies • Bug fixes for email subject
1.2.8	17.12.2020	1.2.8	1.2.8	1.2.11	D365 FO: • Skip downloaded file when not in GUI • Print picking list from transfer order • Improvements for roles and permissions
1.2.7	30.11.2020	1.2.7	1.2.8	1.2.11	D365 FO: • Use Excel templates to print reports to “xls” files • Provide additional extensibility in D365 FO X++ code • Various improvements, bug fixes and technical updates dox42 server/client: • Add “Show/Hide” checkbox for secrets • Performance improvements for dox42 OData Source • Various improvements, bug fixes and technical updates
1.2.6	26.06.2020	1.2.6	1.2.5	1.2.5	--
1.2.5	01.04.2020	1.2.5	1.2.5	1.2.5	--
1.2.4	12.03.2020	1.2.4	1.2.3	1.2.3	--
1.2.3	01.07.2019	1.2.3	1.2.3	1.2.3	--
1.2.1	17.05.2018	1.2.0	1.2.2	1.2.2	--
1.2.0	04.04.2018	1.2.0	1.2.0	1.2.0	--
1.1.3	30.10.2017	1.1.4	1.1.1	1.1.2	--
1.1.2	12.06.2017	1.1.1	1.1.0	1.1.1	--
1.1.1	02.06.2017	1.1.1	1.1.0	1.1.0	--
1.0.1	20.12.2016	1.0.1	1.0.1	1.0.1	--

UPGRADE

It is strongly recommended to upgrade dox42 server and client components first and only after that to start upgrading D365 FO. This is because the dox42 server and client libraries are usually guaranteed to be backwards compatible. In case of exceptions to the rule, there will be further announcements.

Upgrade of the dox42 Office Add-Ins

The download files for the dox42 Enterprise Add-Ins are available on the dox42 website:

https://www.dox42.com/Modules/Download

Upgrade dox42 Word Add-Ins according to the dox42 documentation.

Upgrade of the dox42 for Finance and Operations Office Add-Ins

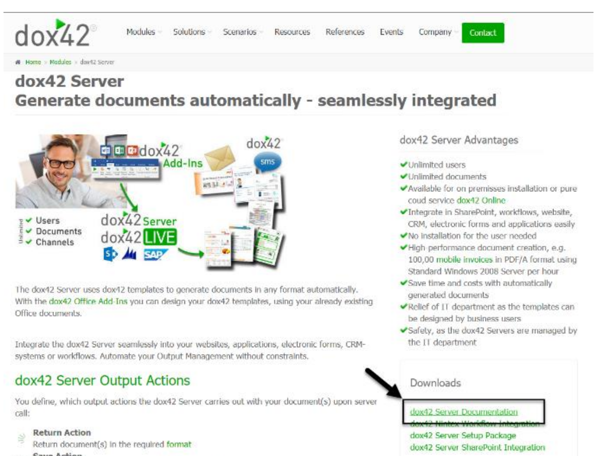
Replace the files in the directory, where the dox42 for Finance and Operations Office Add-Ins is installed, with the new version:

AX7ConfigDialog.dll
AX7DataEngine.dll
AX7DataSourceImport.config
AX7ODataConfigDialog.dll
AX7ODataEngine.dll
AX7ODataSourceImport.config
D365O_logo.png

Upgrade of the dox42 Server

Upgrade the dox42 Server according to the documentation on the dox42 Website:

https://www.dox42.com/Modules/dox42-Server



Upgrade of dox42 for Finance and Operations for dox42 Server

Replace the dox42 for Finance and Operations files in the /Bin directory on the dox42 Server with the new version:

AX7DataEngine.dll
AX7ODataEngine.dll

Upgrade of dox42 in D365 FO

Upgrade D365 FO with the new version of the “dox42” package. You could either install the Deployable Package or the Source Code (available on request from support@dox42.com). The Deployable Package contains the binaries only, the Source Code can be useful in case you want to develop your own extensions or if you want to debug something.

You will find further information on https://docs.microsoft.com/en-us/dynamics365/unified-operations/dev-itpro/deployment/apply-deployable-package-system as well as https://docs.microsoft.com/en-us/dynamics365/unified-operations/dev-itpro/dev-tools/manage-runtime-packages.

After successfully upgrading the “dox42” package, the next step is to configure D365 FO to work with the dox42 Server.

SUPPORT

Should you have any questions, please do not hesitate to contact support@dox42.com. We are happy to help you!

Good luck with dox42!

Your dox42 Team