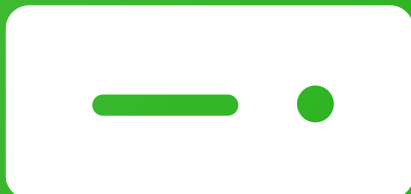


SHAREPOINT

DOCUMENTATION

Version 4.6.1.4



dox42 **SHAREPOINT**

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1 What is dox42 SharePoint Integration?

The dox42 SharePoint integration enables you to generate one or many documents directly from SharePoint. Technically, the dox42 Server and dox42 Online is a web service with REST and SOAP interface and can therefore be integrated into almost any button, workflow, or specialist application, independently of SharePoint.

The dox42 integration to SharePoint Online is an additional module for dox42, which we provide free of charge for customers. The dox42 SharePoint Online App enables you to use dox42 document automation within your Office 365, SharePoint online without any need of scripting or programming skills. It provides you with an interface to easily configure dox42 web service calls and lets you integrate them in form of buttons in chosen SharePoint libraries or lists. Easily create your own dox42 buttons and generate documents right from your SharePoint Online libraries or lists with a single click. Adding or editing dox42 calls yourself allows you to quickly adapt to changes or requirements. Scripting or editing with SharePoint Designer is not necessary for SharePoint Online, but described for on premise installation at the end of the documentation.

2 Requirements for dox42 SharePoint Online App

The requirements to use dox42 SharePoint Online App are listed below:

- ▶ SharePoint Online
- ▶ dox42 Online tenant
- ▶ Azure Active-Directory Application for dox42 Online (Azure Active Directory Application for dox42 Online)
- ▶ Azure Active-Directory Application “SharePoint Online Client Extensibility Web Application Principal”

3 Azure Active Directory Application for dox42 Online

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

- ▶ **Application ID** > is provided after the app registration in the Microsoft Admin Center
- ▶ **Redirect URLs**
- ▶ **Tenant ID**
- ▶ **Client Secret for dox42 Server**

For the AAD integration, you have to configure a few settings in the Microsoft **admin center**, in your dox42 Server and in the dox42 Add-In Datamap Designer.

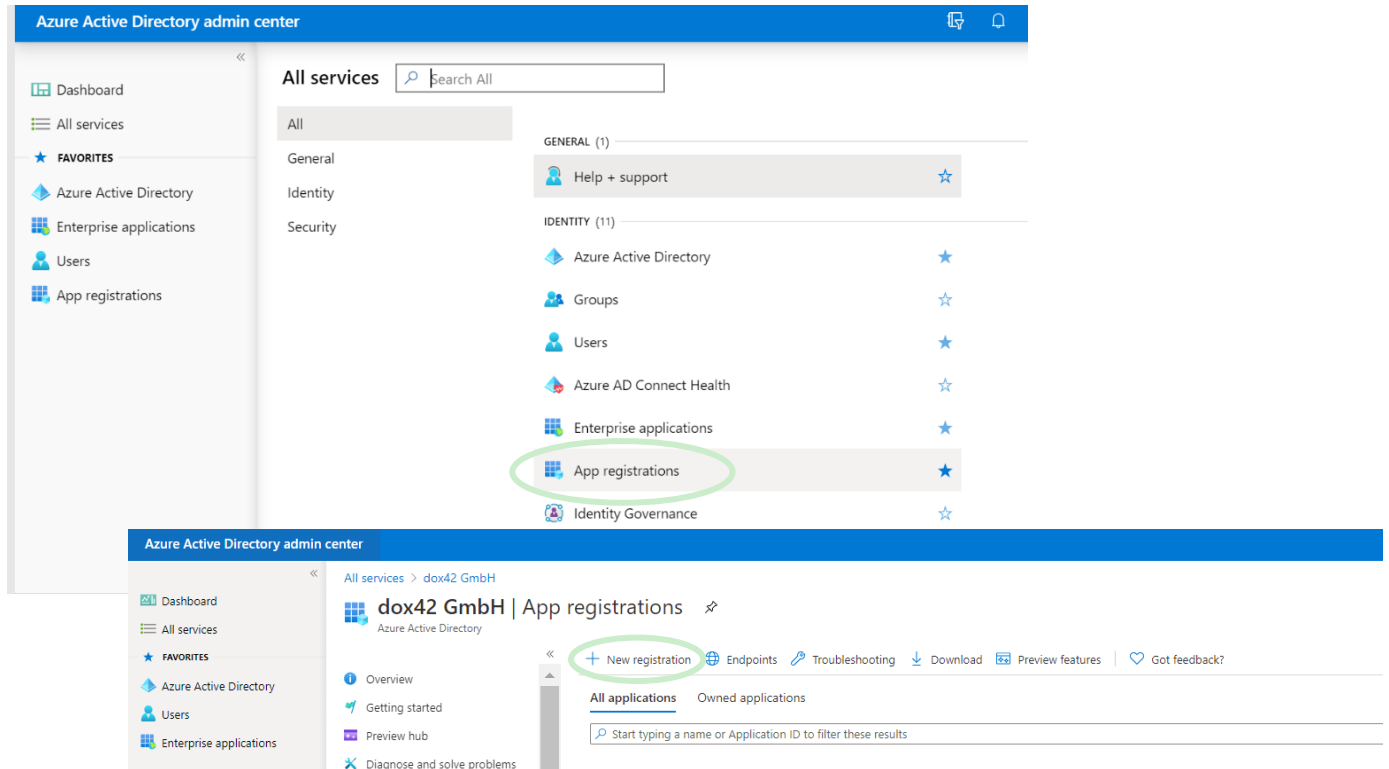
Please note that you need (global-) Admin rights for some of the following steps:

- ▶ App Registration
- ▶ Enabling required permissions
- ▶ Entering Redirect URL(s)

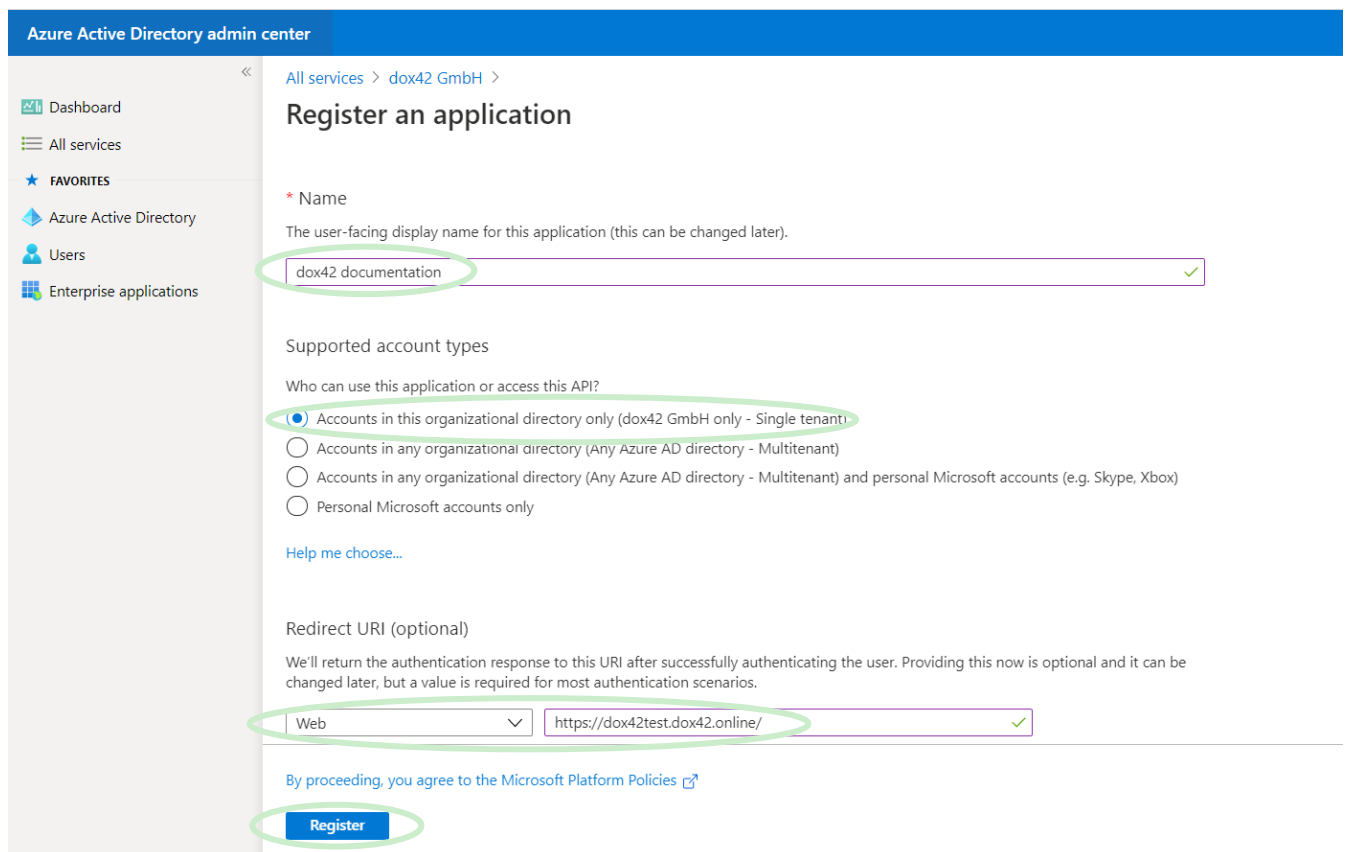
3.1 dox42 App Registration

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.

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



Now configure your dox42 application:



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”.

Note: In this documentation, we use the redirect URL of a dox42 Online server (SaaS):

<https://yourcompany.dox42.online/>

If you are registering a dox42 on-premise server, use the URL of your dox42 server:

<https://yourdox42server.yourcompany.com>

Now that you have registered your application, you can copy the Application (client ID) and Directory (tenant ID) and paste it into an Excel Config file. This allows you to manage your configuration details centralized. See Chapter 4.1.2 for more information on how to set up this config file.

3.1.1 Token permissions

The screenshot shows the Azure Active Directory admin center interface. The main content area displays the configuration for an application named "dox42 documentation". The "Essentials" section shows the following details:

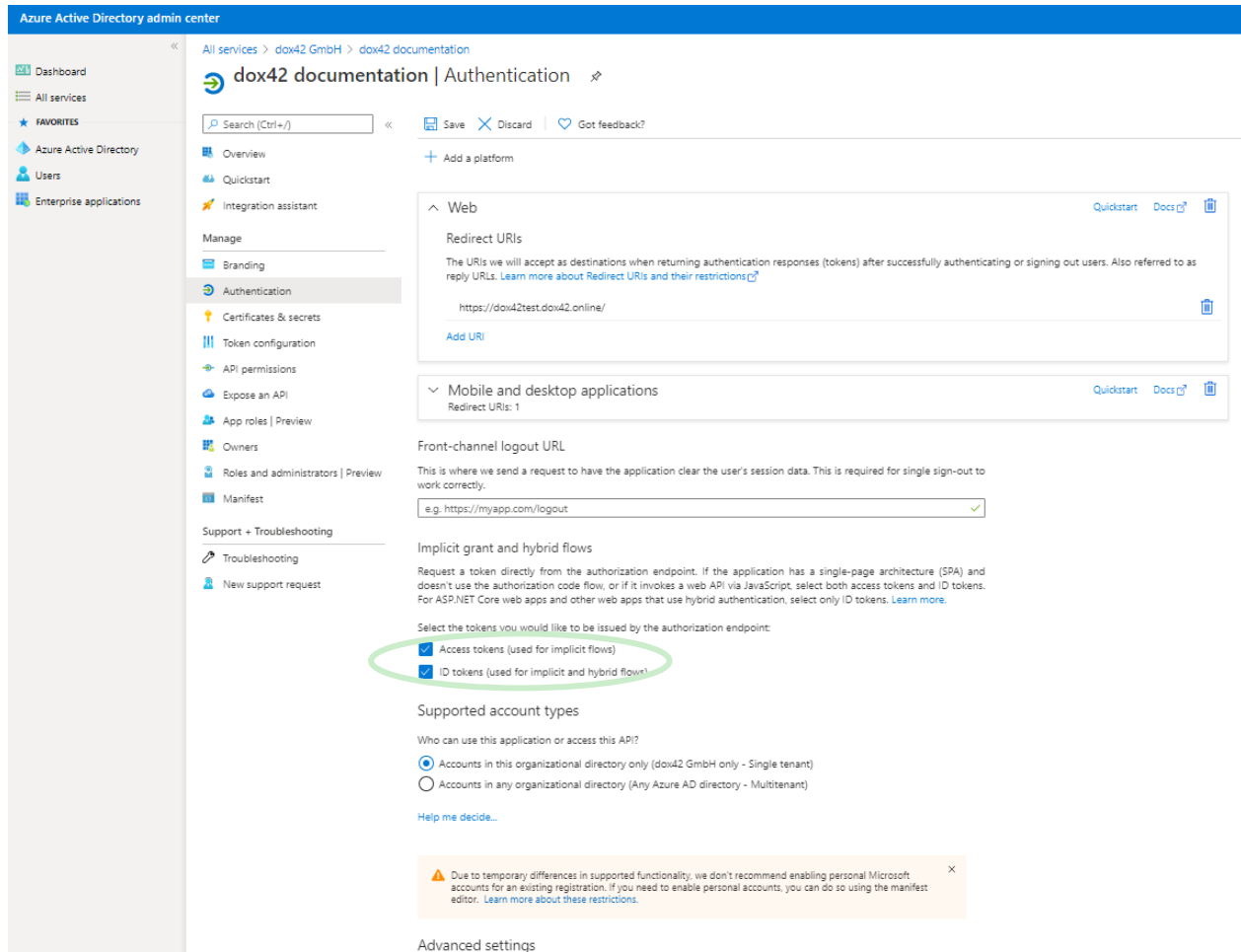
- Display name: dox42 documentation
- Application (client) ID: 4c372e73-eab8-42f5-XXXX
- Directory (tenant) ID: b3b67654-21fd-4d0c-XXXX
- Object ID: cbc38d13-ccb-4e2c-XXXX

The "Supported account types" section is circled in green and shows "My organization only". The "Redirect URIs" section shows "1 web, 0 spa, 1 public client". The "Application ID URI" section shows "Add an Application ID URI". The "Managed application in local directory" section shows "dox42 documentation".

The "Call APIs" section shows a collection of icons representing various Microsoft services and data sources. The "Documentation" section provides links to "Microsoft identity platform", "Authentication scenarios", "Authentication libraries", "Code samples", "Microsoft Graph", "Glossary", and "Help and Support".

Next, you need to grant token permissions for your app. Within your newly added application, click on “Redirect URLs”.

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



Azure Active Directory admin center

All services > dox42 GmbH > dox42 documentation

dox42 documentation | Authentication

Search (Ctrl+F) Save Discard Got feedback?

+ Add a platform

Web

Redirect URIs

The URIs we will accept as destinations when returning authentication responses (tokens) after successfully authenticating or signing out users. Also referred to as reply URIs. [Learn more about Redirect URIs and their restrictions](#)

https://dox42test.dox42.online/

Add URI

Mobile and desktop applications

Redirect URIs: 1

Front-channel logout URL

This is where we send a request to have the application clear the user's session data. This is required for single sign-out to work correctly.

e.g. https://myapp.com/logout

Implicit grant and hybrid flows

Request a token directly from the authorization endpoint. If the application has a single-page architecture (SPA) and doesn't use the authorization code flow, or if it invokes a web API via JavaScript, select both access tokens and ID tokens. For ASP.NET Core web apps and other web apps that use hybrid authentication, select only ID tokens. [Learn more](#).

Select the tokens you would like to be issued by the authorization endpoint:

- Access tokens (used for implicit flows)
- ID tokens (used for implicit and hybrid flows)

Supported account types

Who can use this application or access this API?

- Accounts in this organizational directory only (dox42 GmbH only - Single tenant)
- Accounts in any organizational directory (Any Azure AD directory - Multitenant)

[Help me decide...](#)

Due to temporary differences in supported functionality, we don't recommend enabling personal Microsoft accounts for an existing registration. If you need to enable personal accounts, you can do so using the manifest editor. [Learn more about these restrictions](#).

Advanced settings

Scroll down further to find additional settings. Under Advanced Settings keep "Allow public client flow" set on "No".

The screenshot shows the Azure Active Directory admin center interface. The left sidebar contains navigation options like Dashboard, All services, and Favorites. The main content area is titled 'dox42 documentation | Authentication'. It includes a search bar, save/discard buttons, and a 'Got feedback?' link. The 'Authentication' page has several sections: 'Overview', 'Quickstart', 'Integration assistant', 'Manage' (with sub-sections like Branding, Authentication, Certificates & secrets, etc.), and 'Support + Troubleshooting'. The 'Advanced settings' section is highlighted with a green circle and contains the following options:

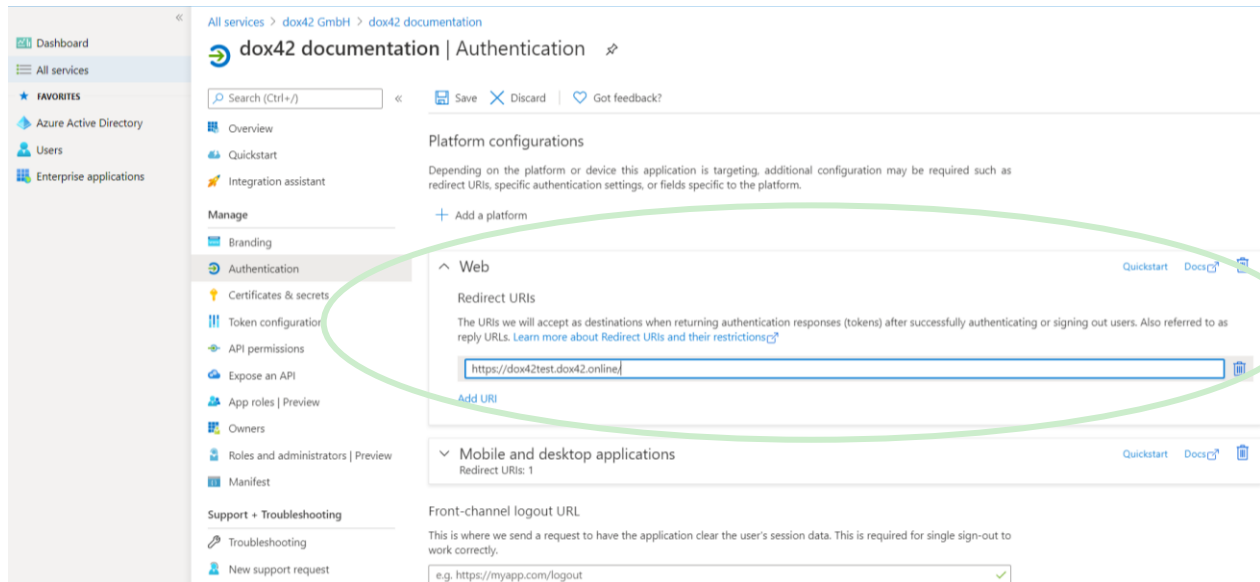
- Allow public client flows**: Set to **No**.
- Enable the following mobile and desktop flows**: Set to **No**.
- App collects plaintext password (Resource Owner Password Credential Flow) [Learn more](#)
- No keyboard (Device Code Flow) [Learn more](#)
- SSO for domain-joined Windows (Windows Integrated Auth Flow) [Learn more](#)

3.1.2 Enter redirect URLs

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 Server URL:
 - <https://yourcompany.dox42.online/>
 - (in our example: <https://dox42test.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/>)

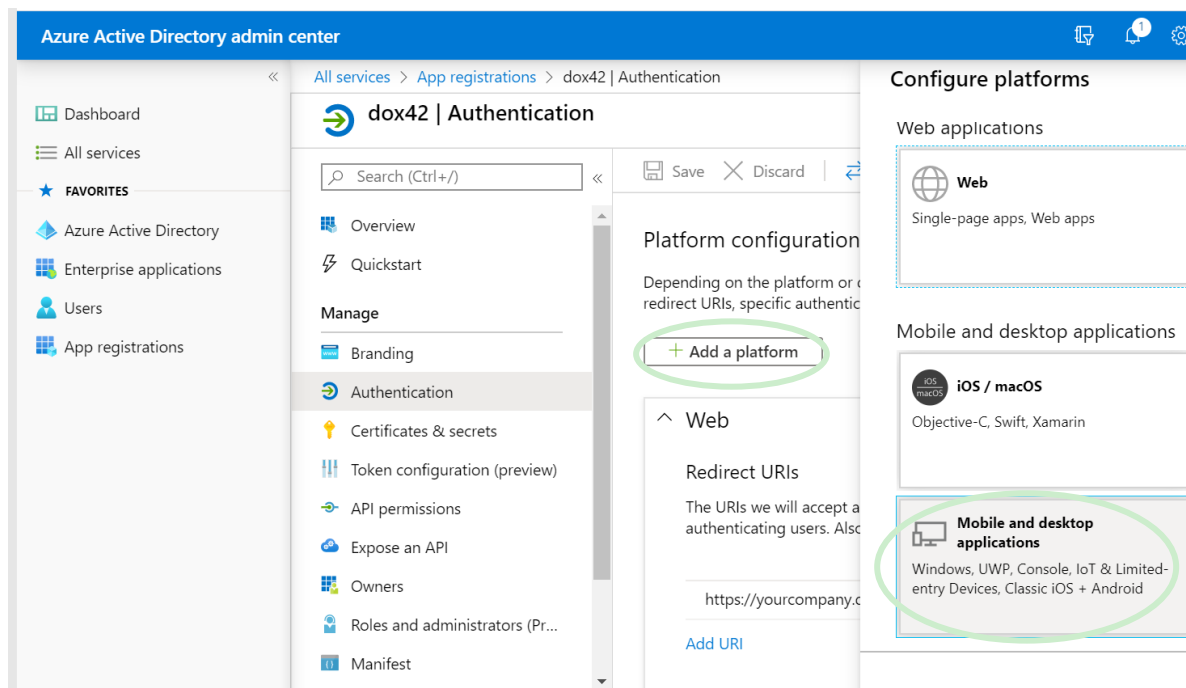
The URL that you include as the Server URL (<http://.....dox42.online/>) is the one you will need to include in the dox42 Server Configuration in the dox42 Datamap.



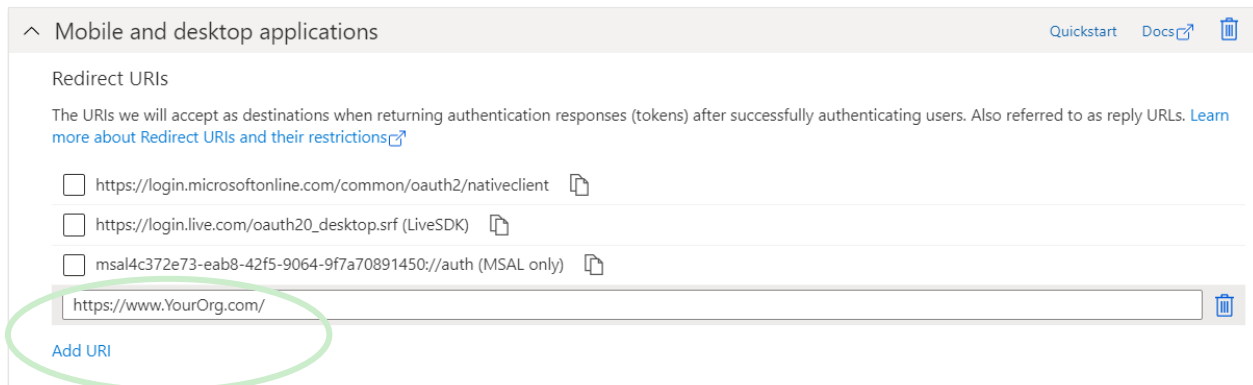
Note: You may NOT use wildcards (*). Microsoft changed this behavior during 2018, so you may find older working App registrations using wildcards, but new App registrations will not work with wildcards.

3.1.3 Add a mobile and desktop application for your dox42 Add-In

Now you need to add your dox42 Add-in as a “mobile and desktop application” to your app. On the top of the Authentication page, click on “Add a platform” and then on “Mobile and desktop application”.

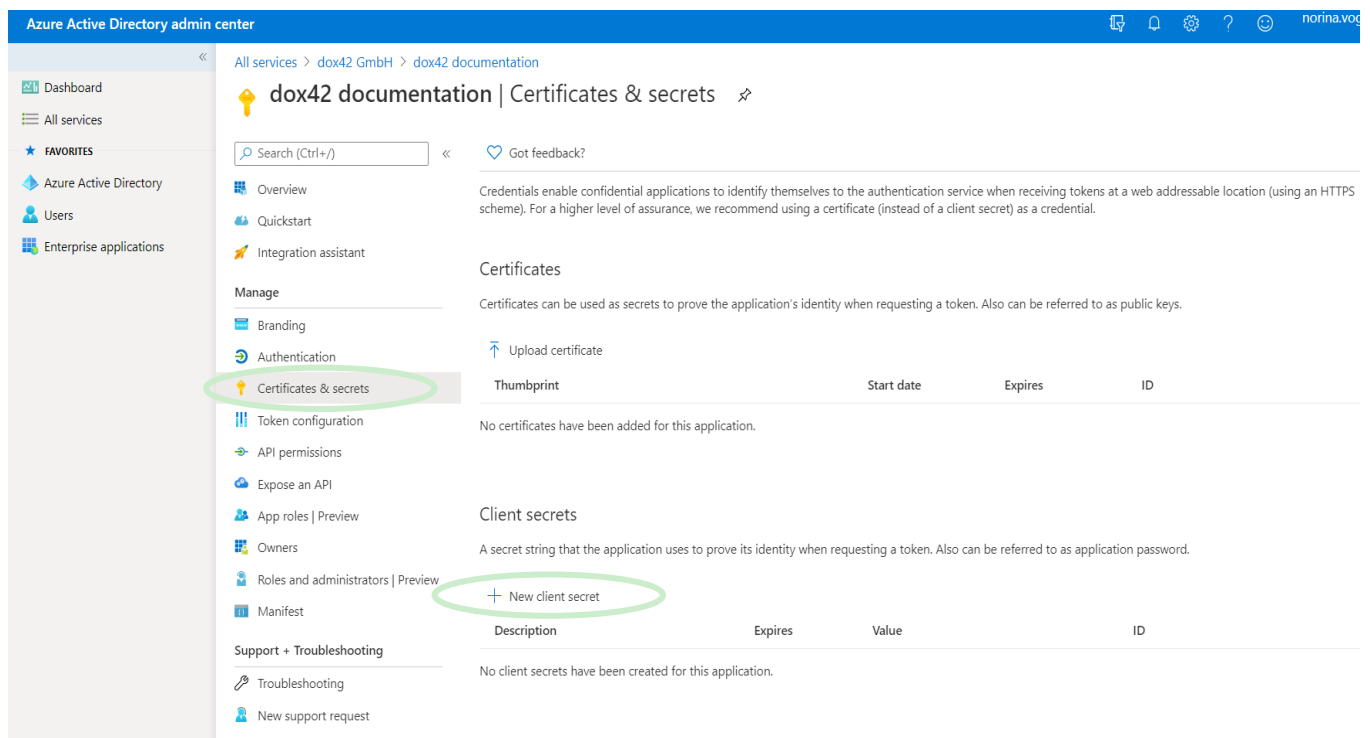


Add a custom redirect URI for your dox42 Add-in – we are using <https://www.YourOrg.com>. Then click on “Configure”.



3.1.4 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”.

Add a client secret

Description

Expires

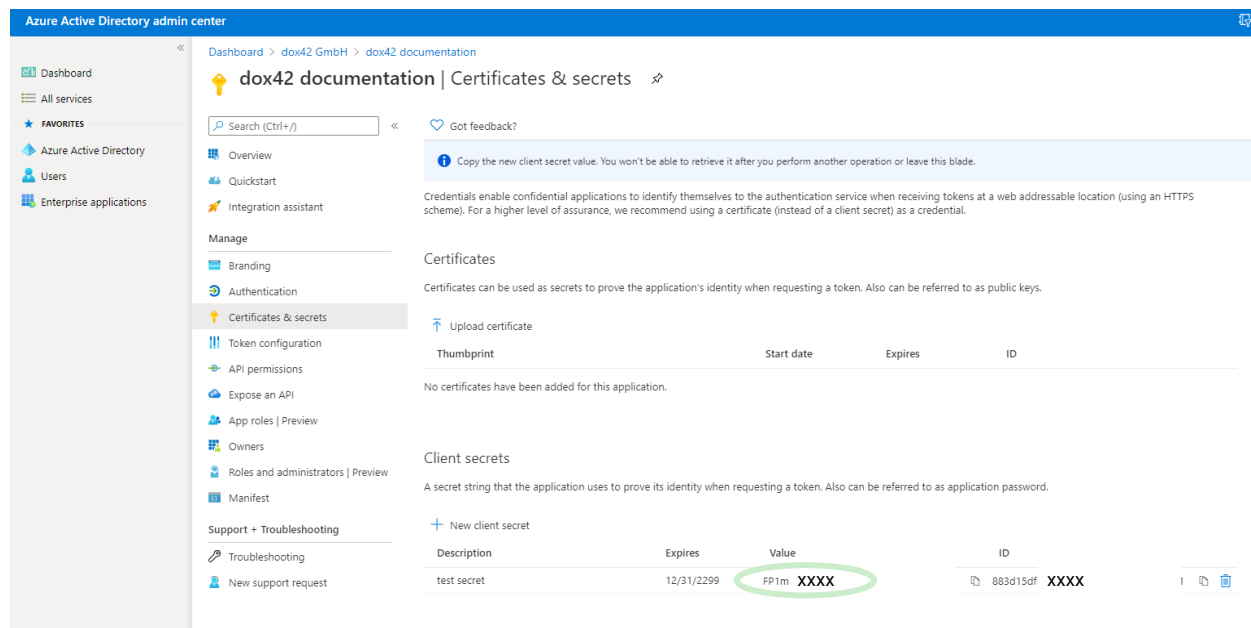
In 1 year

In 2 years

Never

Add Cancel

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



Azure Active Directory admin center

Dashboard > dox42 GmbH > dox42 documentation

dox42 documentation | Certificates & secrets

Search (Ctrl+ /) Got feedback?

Copy the new client secret value. You won't be able to retrieve it after you perform another operation or leave this blade.

Credentials enable confidential applications to identify themselves to the authentication service when receiving tokens at a web addressable location (using an HTTPS scheme). For a higher level of assurance, we recommend using a certificate (instead of a client secret) as a credential.

Certificates

Certificates can be used as secrets to prove the application's identity when requesting a token. Also can be referred to as public keys.

Upload certificate

Thumbprint	Start date	Expires	ID
No certificates have been added for this application.			

Client secrets

A secret string that the application uses to prove its identity when requesting a token. Also can be referred to as application password.

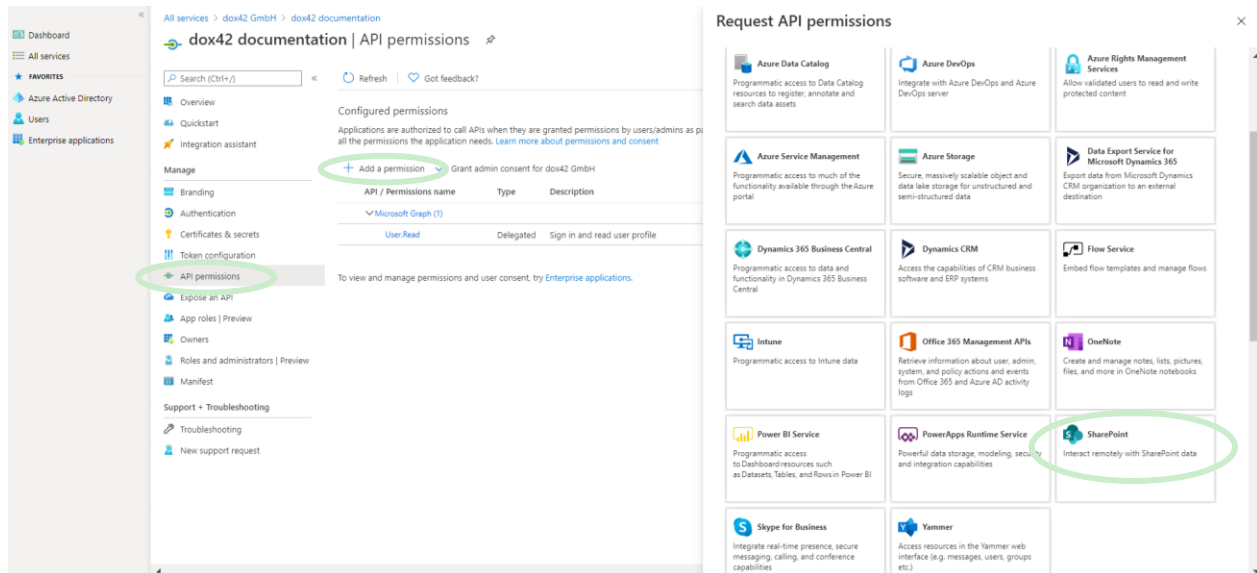
+ New client secret

Description	Expires	Value	ID
test secret	12/31/2299	FP1m XXXX	883d15df XXXX

We copied the key into our Excel Config File, together with the other values of the app registration. When working with an Excel config file, we recommend encrypting the values of the client key by using the dox42 Crypto Data source. **A template for this config file is included in your SharePoint app package. You find this “Connection.xlsx” file in the SP_app_template folder.** Please see Chapter 4.1.2 to get more details on how to set up this config file.

3.1.5 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 a couple of output actions (SharePoint Action), therefore grant delegated SharePoint Read & Write rights.

Request API permissions

< All APIs

SharePoint
<https://microsoft.sharepoint-df.com/> Docs

i SharePoint APIs are available via the Microsoft Graph API. You may want to consider using Microsoft Graph instead.

What type of permissions does your application require?

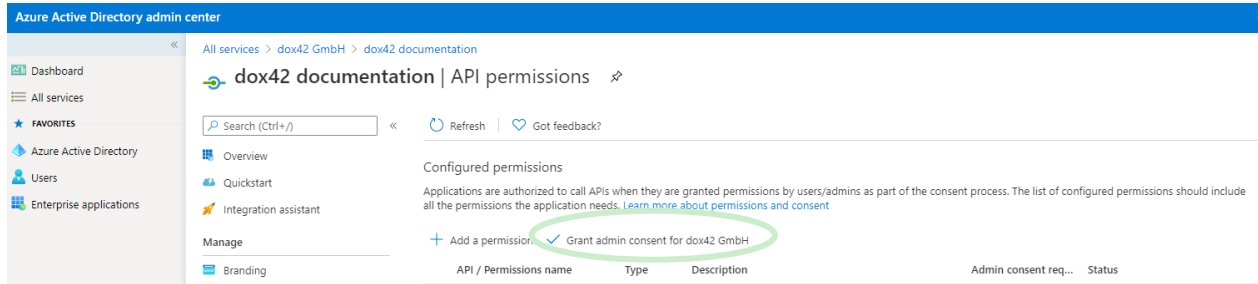
Delegated permissions

Your application needs to access the API as the signed-in user.

Application permissions

Your application runs as a background service or daemon without a signed-in user.

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 Server accordingly.

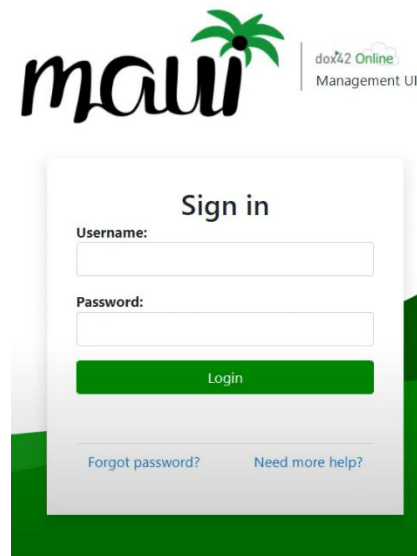
3.1.6 Further information AAD app registration

<https://docs.microsoft.com/en-us/azure/active-directory/develop/quickstart-register-app>

3.2 dox42 Online Configuration

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

Please log into your dox42 Online management UI with the username and password received from dox42. The URL for your management UI looks like this: <https://yourcompany.dox42.online/MAUI>





Welcome to the dox42 Management UI

Welcome Lisa! 

The brand new dox42 MAUI (Management UI) is your central portal for all dox42 Online and Server settings. Enjoy your time on MAUI and let's get started...



In this dox42 Class tutorial video, we give a detailed explanation of the dox42 Online Management UI (MAUI): <https://www.dox42.com/Resources?search=/maui/i&>

3.2.1 Add your Azure AD App registration settings

1. To complete the dox42 Online set-up, click on the Settings page on your MAUI home screen.
2. Then click on "Add" in the "SharePoint Online Sites for dox42 Templates" section and enter your SharePoint Online sites, where you call your dox42 templates from. Please make sure to add a Slash (/) in the end of the site URL. If you call templates from various SharePoint sites, please add all of them. E.g.
<https://yourtenant.sharepoint.com/yoursite/>

Each SharePoint site needs to be added with the App ID, Tenant ID and the generated Client Secret value of the dox42 App registered in the Azure AD Admin Center (see chapter **Error! Reference source not found.**). **Don't forget to click on Save & Deploy after each site you add to the list.**

3. Configure your trusted template locations. Click on "Add" in the "Trusted Template Locations" sections of your settings page. Your templates have to be stored on SharePoint Online, hence your trusted template location could be <https://yourcompany.sharepoint.com/>, or you could also specify a specific SharePoint site. **Don't forget to click on Save & Deploy after every Trusted Template Location you add.**
4. Upload your Aspose (dox42 OEM Developer) license (not applicable for trial installations)
5. If you want to send emails via dox42 online, also add the email server, address and password at the top section of the page. Again, **don't forget to click on Save & Deploy after you've added the email configuration.**

Settings

Save and Deploy | Cancel

Last deployed: 05.07.2022 15:17:30 CUT (UTC)

5 E-mail server

E-mail address
Password
SharePoint Online Sites for dox42 Templates

Sharepoint Online Sites for dox42 Templates

2 Add +

	Sharepoint Online URL	App ID	Tenant	Client Key
Edit Delete	https://[redacted]sharepoint.com/Dynamics365/	b51c0254[redacted]	b3b6b9d3[redacted]	6-....
Edit Delete	https://[redacted]sharepoint.com/Employees/	b51c0254[redacted]	b3b6b9d3[redacted]	5-....

Trusted Template Locations

3 Add +

	Location
Edit Delete	https://[redacted]sharepoint.com
	https://[redacted]dox42.online/
Edit Delete	https://[redacted]demo.d-velop.cloud/

4 Aspose license upload (Aspose.Total.lic)

Drop your file here

4 Configure a SharePoint Data Source in the dox42 Add-In

4.1 Configure Azure AD in dox42 Datamap Designer (AAD impersonation)

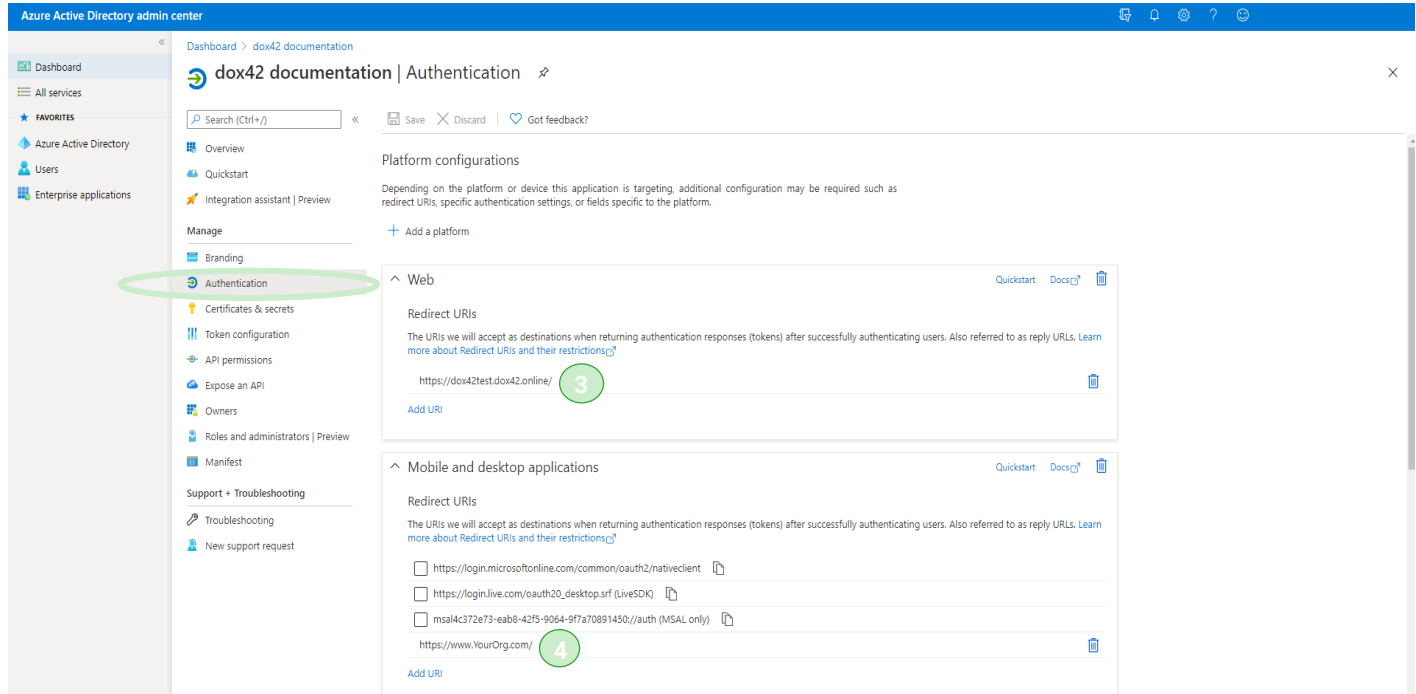
The information from the AAD admin center (see Chapter 3) must be used for the AAD configuration of the SharePoint data source in the dox42 Add-In.

Access the required data in the AAD Admin Center:

The screenshot shows the Azure Active Directory admin center interface. The left sidebar contains navigation options like Dashboard, All services, and Favorites. The main content area displays the configuration for the 'dox42 documentation' application. The 'Essentials' section is expanded, showing the following details:

- Display name: dox42 documentation
- Application (client) ID: 4c372e73-eab8-42f5-xxxx (1)
- Directory (tenant) ID: b3b67654-21fd-4d0c-xxxx (2)
- Object ID: cbc38d13-ccbb-4e2c-xxxx

The 'Call APIs' section is also visible, with a green arrow pointing from the 'Object ID' field in the 'Essentials' section to the 'Object ID' field in the 'Call APIs' section.



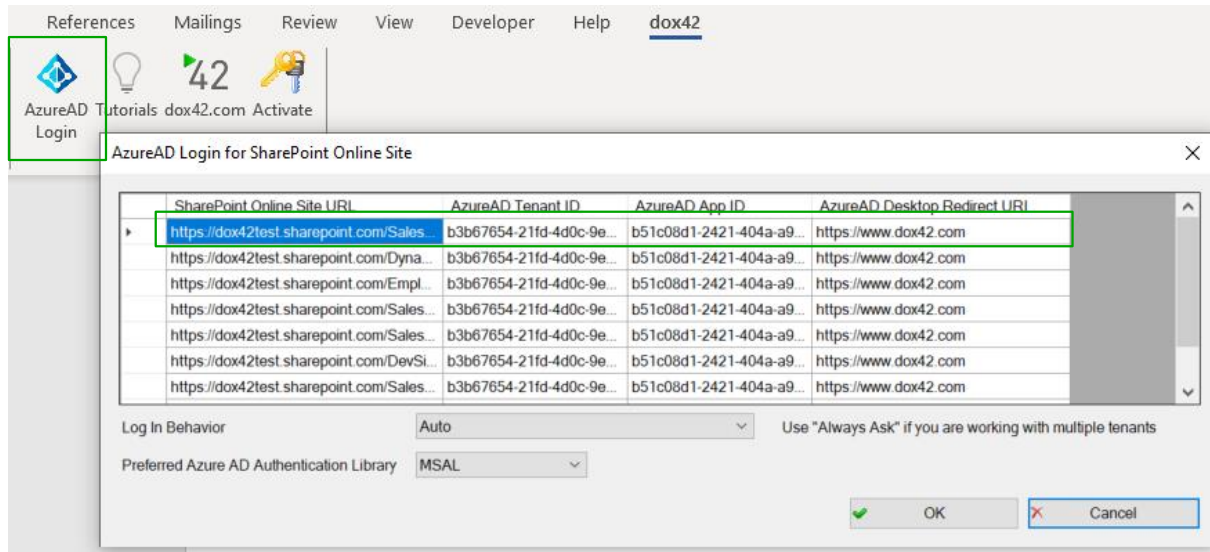
4.1.1 AzureAD /Entra ID Login

If you are using multi-factor authentication and SharePoint Online as template storage, you need to provide information in the AzureAD Login/Entra ID Login window, to open templates directly from SharePoint Online.

Click on “Azure AD Login” in the dox42 ribbon and provide the SharePoint Site URL you manage your templates on, the AzureAD Tenant ID, App ID as well as the Desktop Redirect URI of the dox42 App registration you have previously added to your Azure Active Directory.

Change the Log-in Behaviour from Auto to Always Ask, if you are a dox42 partner and working with Microsoft Accounts from multiple Azure tenants on your machine.

You can find an example in the screenshot below.



You can find more information about dox42 Azure AD App registrations in our SharePoint and D365 documentations, as well as the dox42 Class of AAD login: <https://www.dox42.com/Resources>

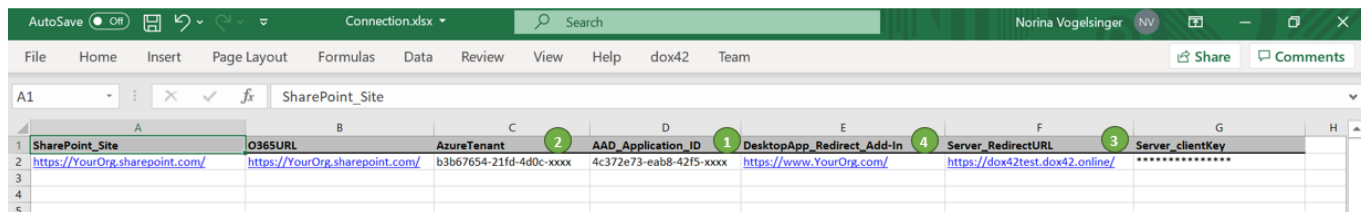
You then have two options to configure your connections using AAD in the SharePoint Data source:

4.1.2 Option 1: Using an Excel config file filling in the information dynamically.

We recommend using this file to integrate all the information dynamically in your dox42 Add-In while connecting to SharePoint Online using AAD. That saves a lot of time during the template design process and avoids copy & pasting. Please make sure to encrypt your Client Secret with the dox42 Crypto Data Source, before storing it there.

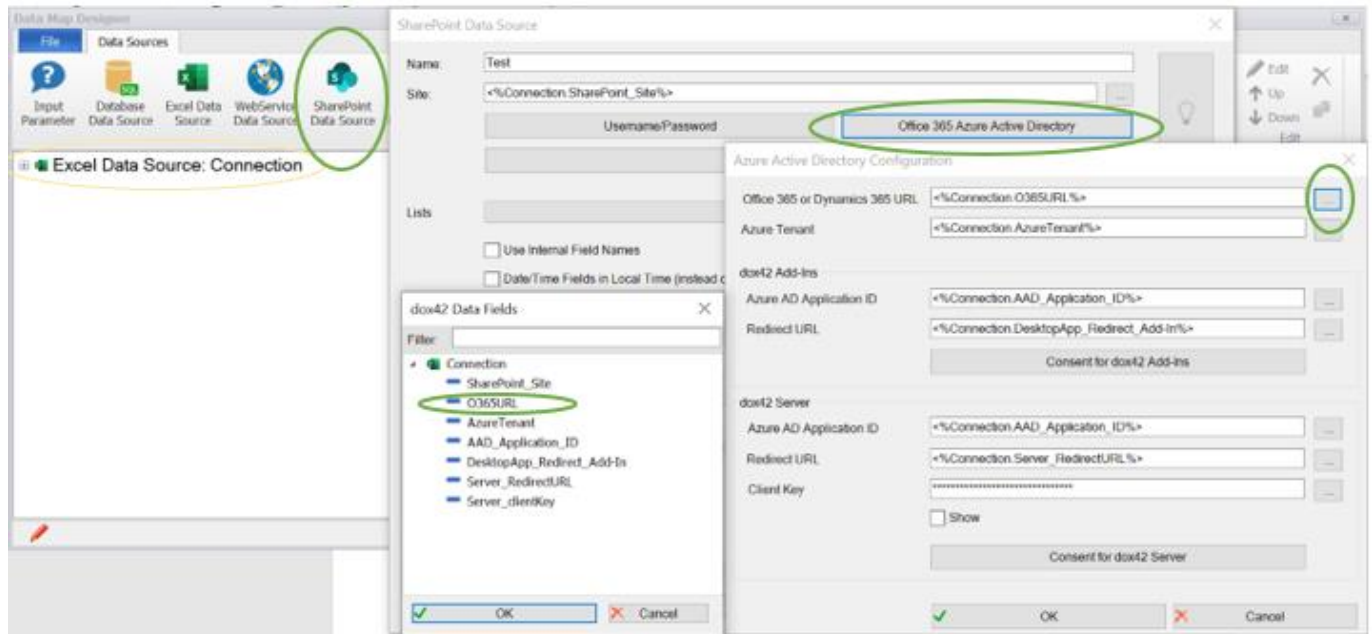
A template for this config file is included in your SharePoint app package. You find this "Connection.xlsx" file in the SP_app_template folder.

Insert the information from your AAD Admin Center into the respective fields in the config-Excel file:



We recommend encrypting your Client Key with the dox42 Crypto Data source.

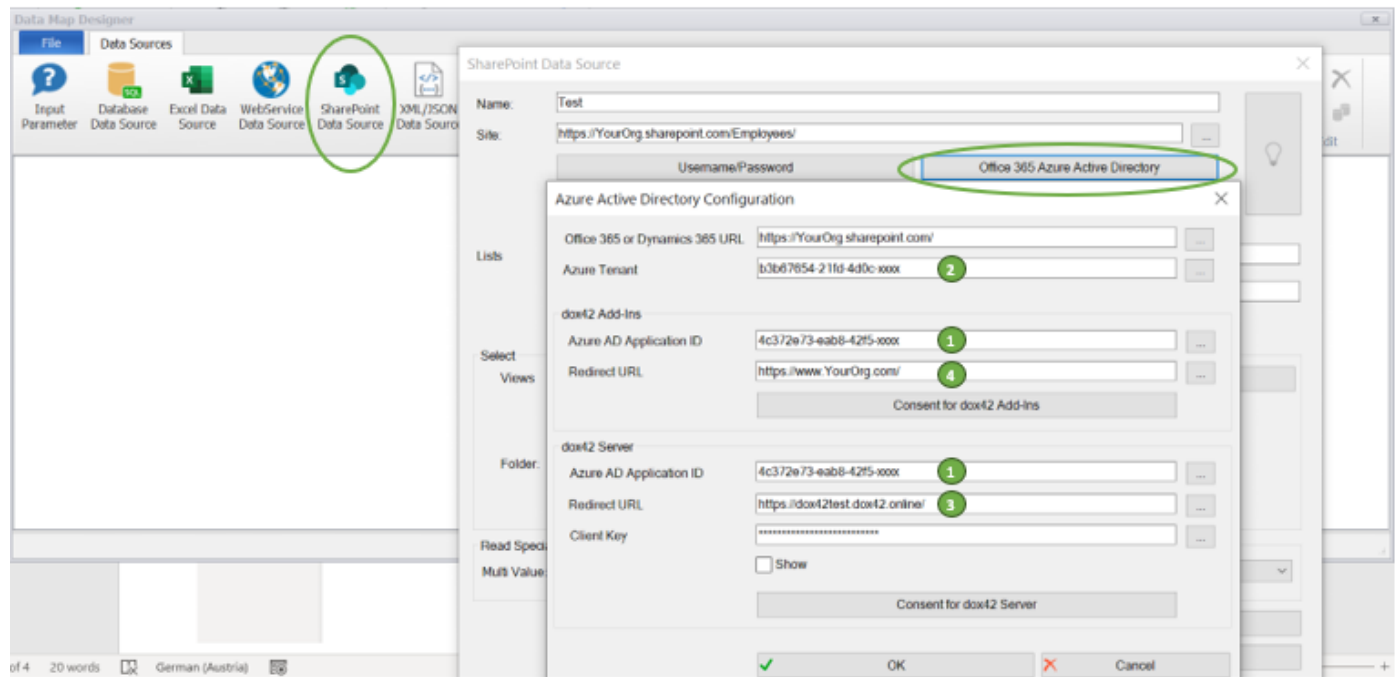
Connect this config-Excel file with the Data Map Designer. Then you can insert the information dynamically from the Excel data fields to the AAD configuration dialogue:



After completing the fields, do not forget to click on Consent for both the Add-in and Server. SharePoint admin rights are required. This step can be skipped, if you clicked on "Grant Admin Consent" within the AAD admin center already (see Chapter 3.1.5).

4.1.3 Option 2: Using copy/paste

Paste the information from the AAD center into the respective fields within the AAD Configuration in the Add-In:

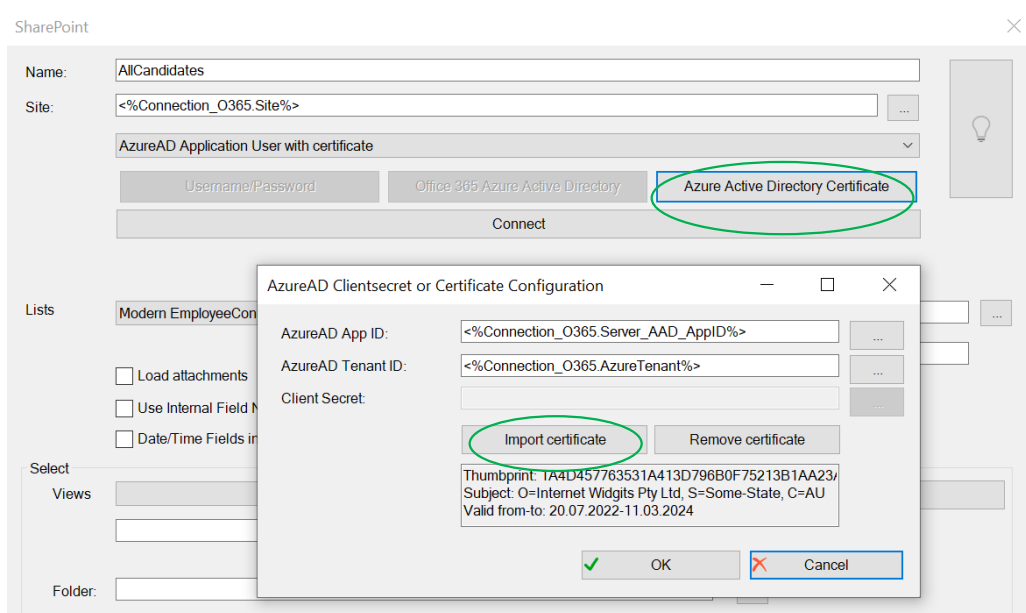


Also, we recommend encrypting your Client Key with the dox42 Crypto Data source in this case. If you have not clicked on “Grant Admin Consent” within the AAD admin center already (see Chapter 3.1.5), please consent for both the Add-In and Server here.

4.2 Configure Azure AD with AAD Application User and Certificate

Since dox42 Version 4.5, you can also connect to your SharePoint Online data sources with an application user and a certificate, that has been added to Azure AD.

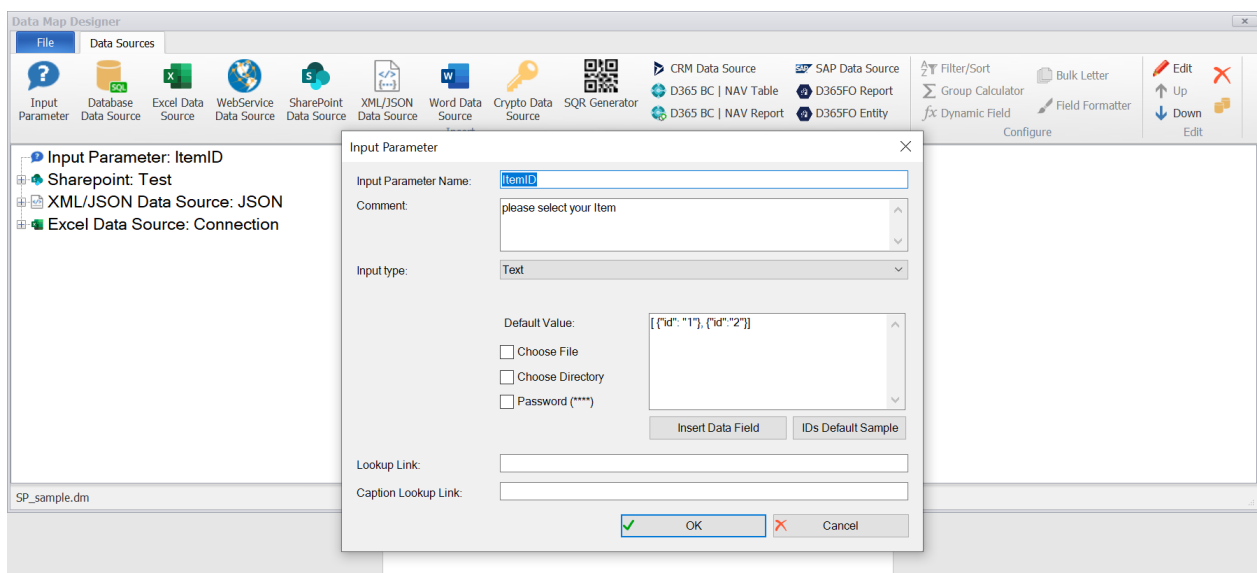
To configure, click on “Azure Active Directory Certificate” in the SharePoint data source, add your App ID and Tenant ID and click on Import certificate. The certificate needs to be uploaded to your Azure AD app registration beforehand and needs to be password protected.



4.3 Configure Input Parameters in the dox42 Add-In

The dox42 SharePoint App needs an input parameter to generate your documents, which must be configured in the Add-In. You find one sample template in your SharePoint App Package folder:
SP_app_template

1. Please configure an Input Parameter and name it for example *ItemID*

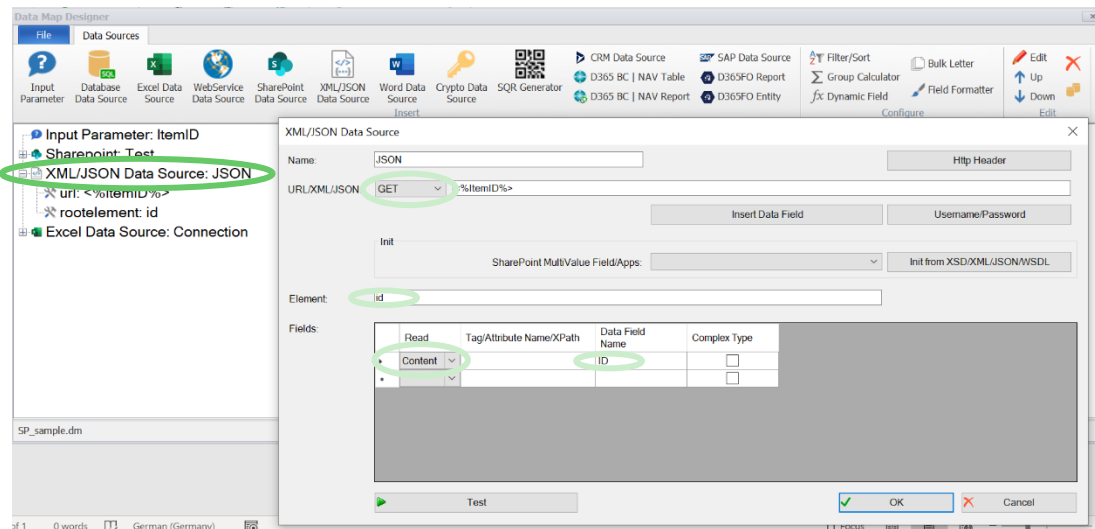


For testing your documents easier with the dox42 Word Add-In enter a Default Value for example:

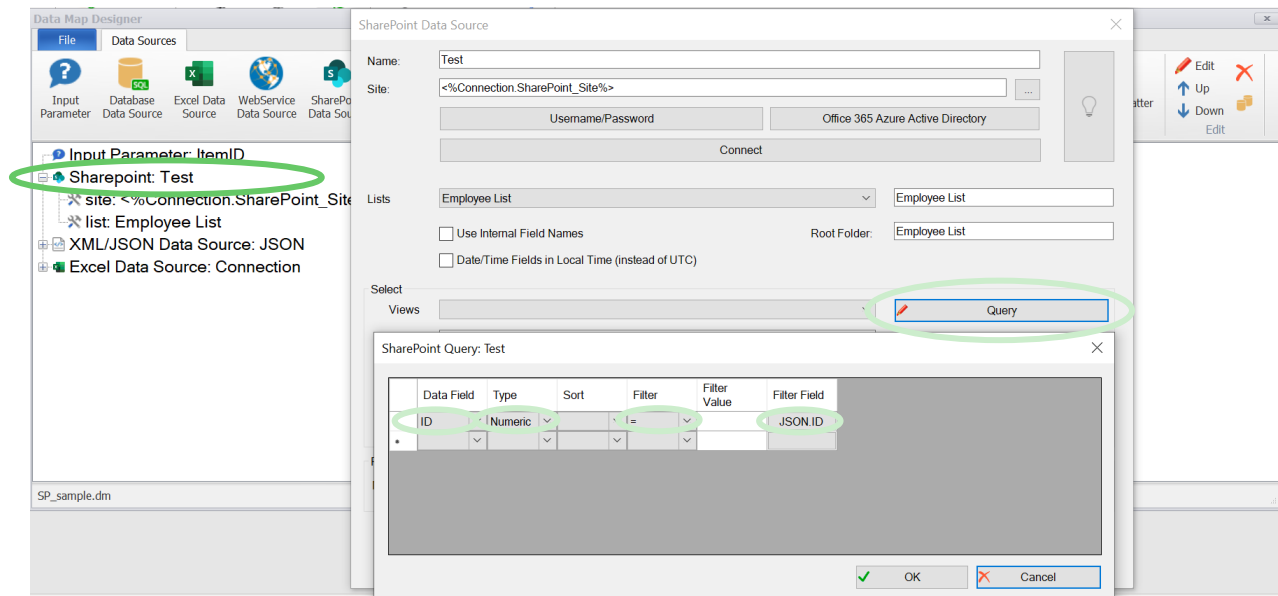
```
[{"id": "1"}, {"id": "2"}]
```

2. Add a XML/JSON data source and call it for example *JSON*. The JSON data Source parses the ID, which is important for the SharePoint App:

- Click on **Insert Data Field** and select your created Input Parameter: ItemID
- **Element:** id
- **Fields:** Read Dropdown: Content; Data Field Name for Example ID



3. Add your SharePoint Data Source and enter a query in your SharePoint Data Source: Filter the ID with your previous created JSON.ID data field:



You can use the provided template to test if everything is set up correctly after you have entered your AAD information and the site links in the excel connection file (see Chapter 4.1.2).

4.4 Integration of Multi Value Fields

To start the integration please connect to your SharePoint or Office 365 environment and select the desired list/library that contains multi value fields. When integrating multi value fields you have two options – values or xml.

4.4.1 Integration of multi value fields using “values”

- a. If you want all data from the multi value field to be inserted as one data field that adds up the fields with a separator, please use the option Multi Value = “values” and type in your separator.

SharePoint Data Source

Name: TestSharepoint

Site: https://dox42test.sharepoint.com/Downloads/

Username/Password | Office 365 Azure Active Directory

Connect

Lists: Norina_Sharing | Norina_Sharing

Use Internal Field Names | Root Folder: Norina_Sharing

Date/Time Fields in Local Time (instead of UTC)

Select

Views: All Documents | Query

All Documents | Recursive

Folder: Demo_Folder | Fields

Read Special Fields

Multi Value: values | Separator: , | Single Value Lookup/Person/Group/Hyperlink: [dropdown]

Test

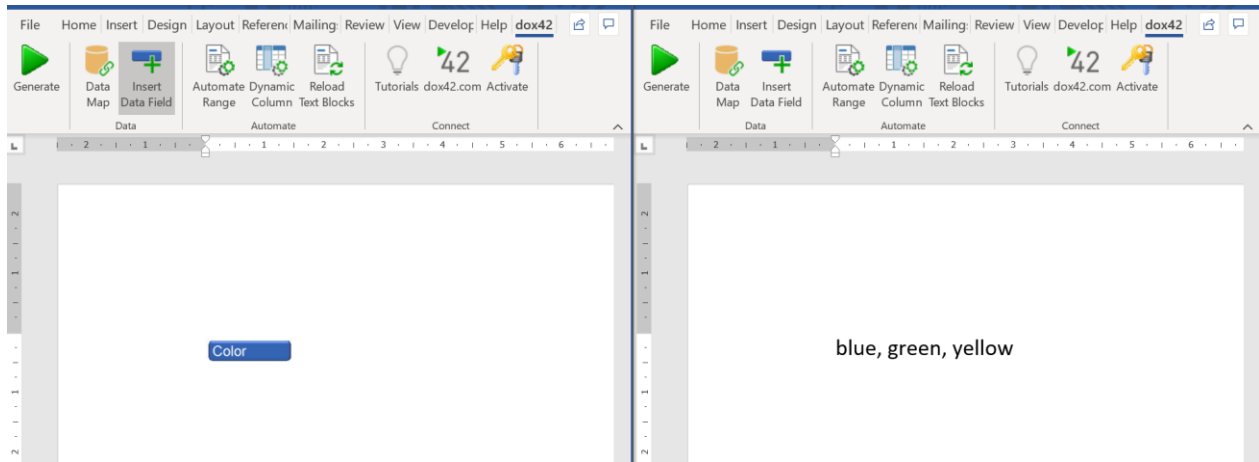
OK | Cancel

- b. The multi value field “Color” will return the following when clicking on “Test”.

TestSharepoint (1 records)

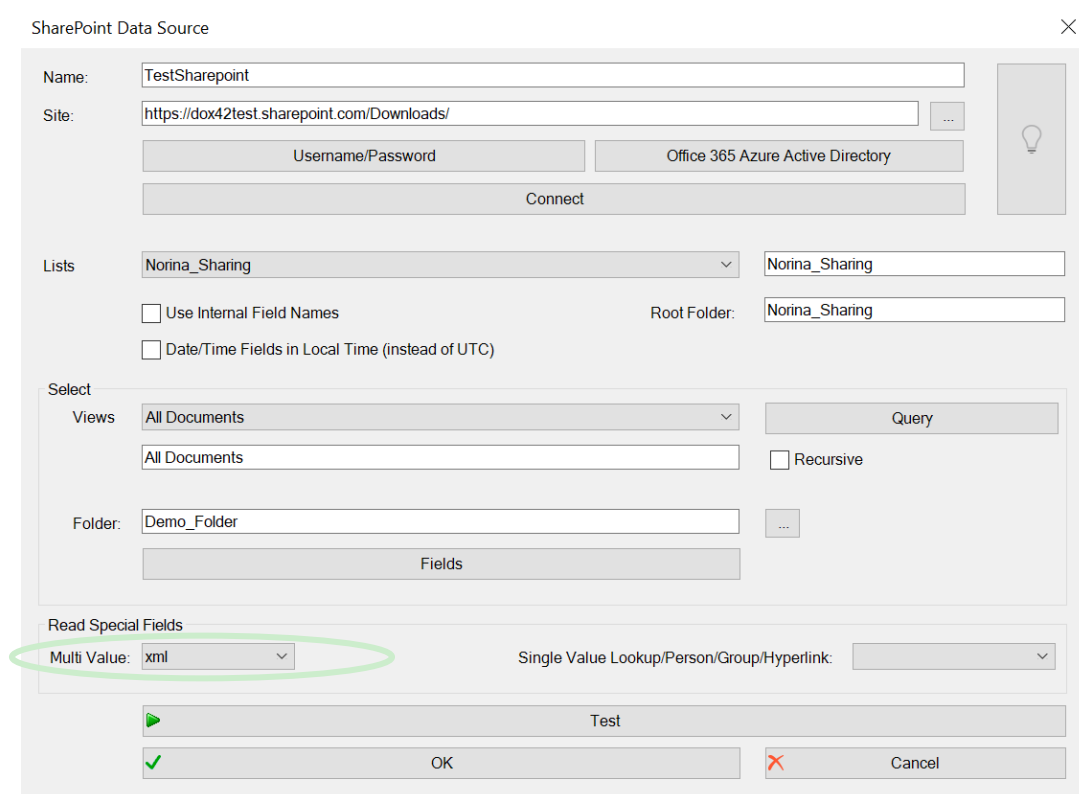
Name	ComplianceA	Title	Color	ID	Created
Document.docx			blue, green, yellow	6	14.01.202...

c. Insert the multi value data field and generate the document.



4.4.2 Integration of multi value fields using “xml”

a. If you want to have all data from the multi value fields to be separated into individual data fields please select the option Multi Value = “xml”



b. The multi value field “MetaData_Test” will return the following when clicking on “Test”.

Name	Compliance#	Title	Color	KeyPoints	Test	Metadata_Test
Document...			<Color>v...			<MetaData><Value><Label><![CDATA[Accounting]]></Label><TermGuid>e91f403d-d62e-443c-959a-f372cc3...

- c. Add a new XML Data Source and select the multi value field using “Insert Data Field”. Initialize the “SharePoint MultiValue Field” as “Managed Metadata”, “Lookup” or “Person

XML/JSON Data Source

Name: XML_Test

URL/XML/JSON: GET <%TestSharePoint.Metadata_Test%>

Init: SharePoint MultiValue Field/Apps: Managed Metadata

Element: Value

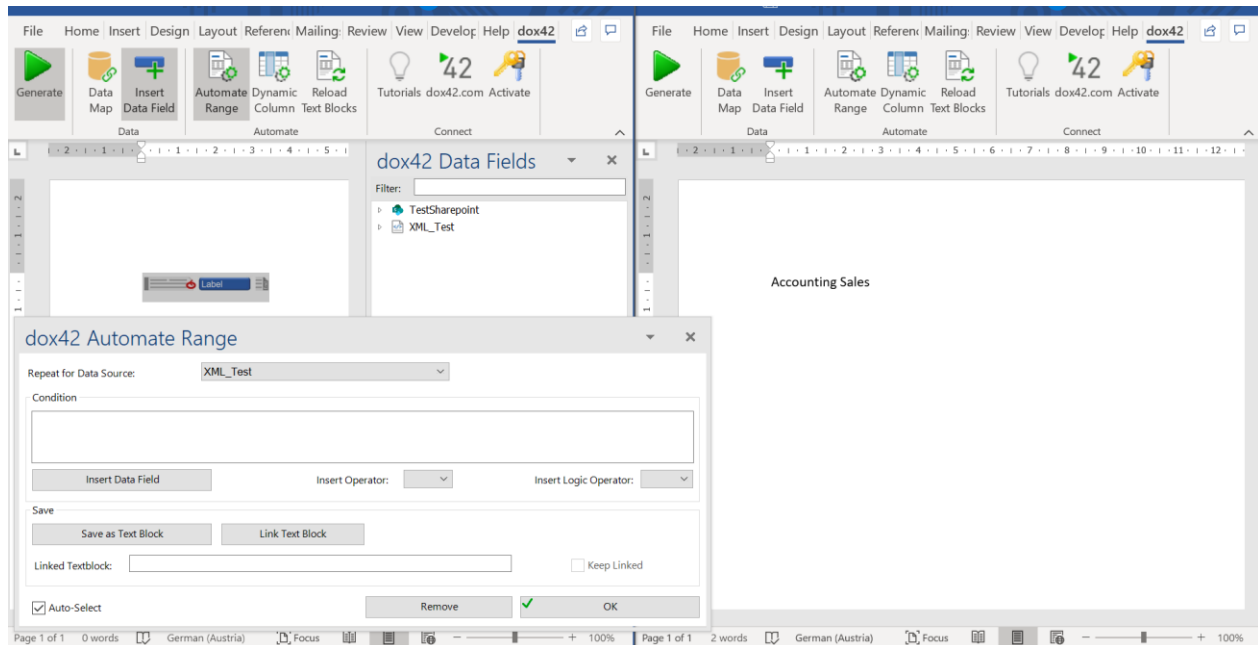
	Read	Tag/Attribute Name/XPath	Data Field Name	Complex Type
▶	SubEI...	Label	Label	<input type="checkbox"/>
	SubEI...	TermGuid	TermGuid	<input type="checkbox"/>
	SubEI...	WssId	WssId	<input type="checkbox"/>
*				<input type="checkbox"/>

Test

OK Cancel

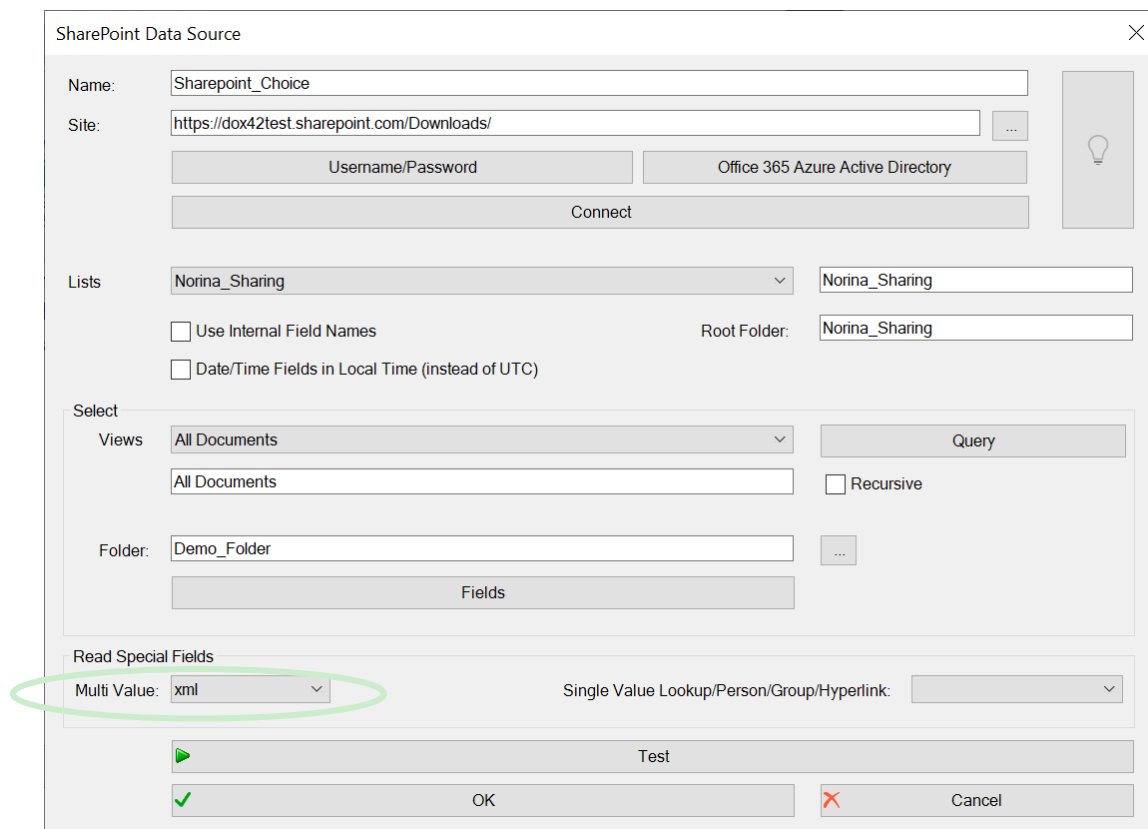
Group”.

- d. Click on “Insert Data Field” in the dox42 Ribbon and insert the “Label” data field for managed metadata from the XML Data Source. Then create an “Automated Range”, repeat for the XML Data Source and generate the document.

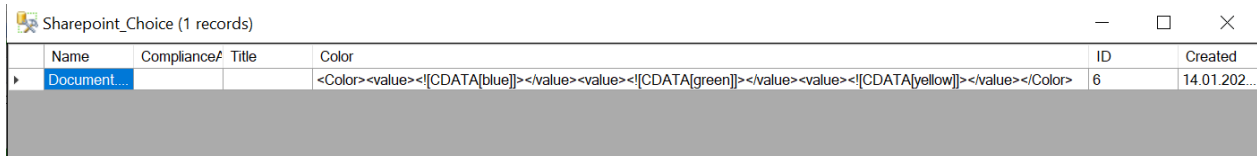


4.4.3 Integration of choice fields using “xml”

- a. If you want to have all data from the choice fields to be separated into individual data fields please select the option Multi Value = “xml”.

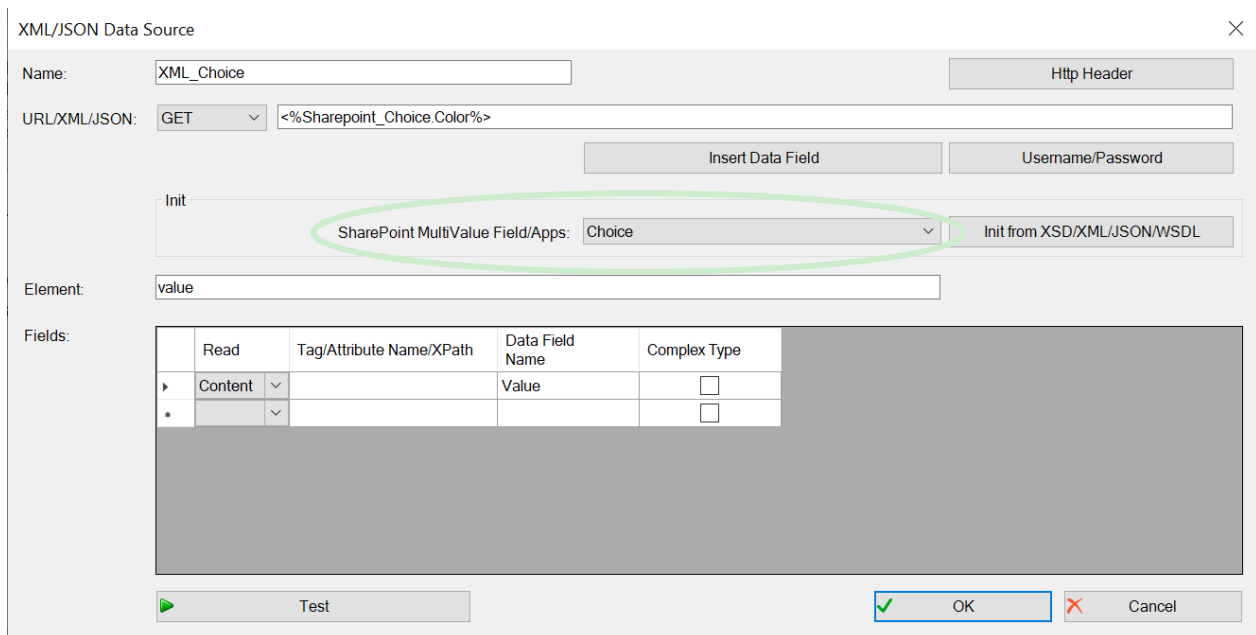


b. The choice field “Color” will return the following when clicking on “Test”.



Name	Compliance#	Title	Color	ID	Created
Document...			<Color><value><![CDATA[blue]]></value><value><![CDATA[green]]></value><value><![CDATA[yellow]]></value></Color>	6	14.01.202...

c. Add a new XML Data Source and select the choice field using “Insert Data Field” and initialize the “SharePoint MultiValue Field” as “Choice”.



XML/JSON Data Source

Name: XML_Choice Http Header

URL/XML/JSON: GET <%=Sharepoint_Choice.Color%> Insert Data Field Username/Password

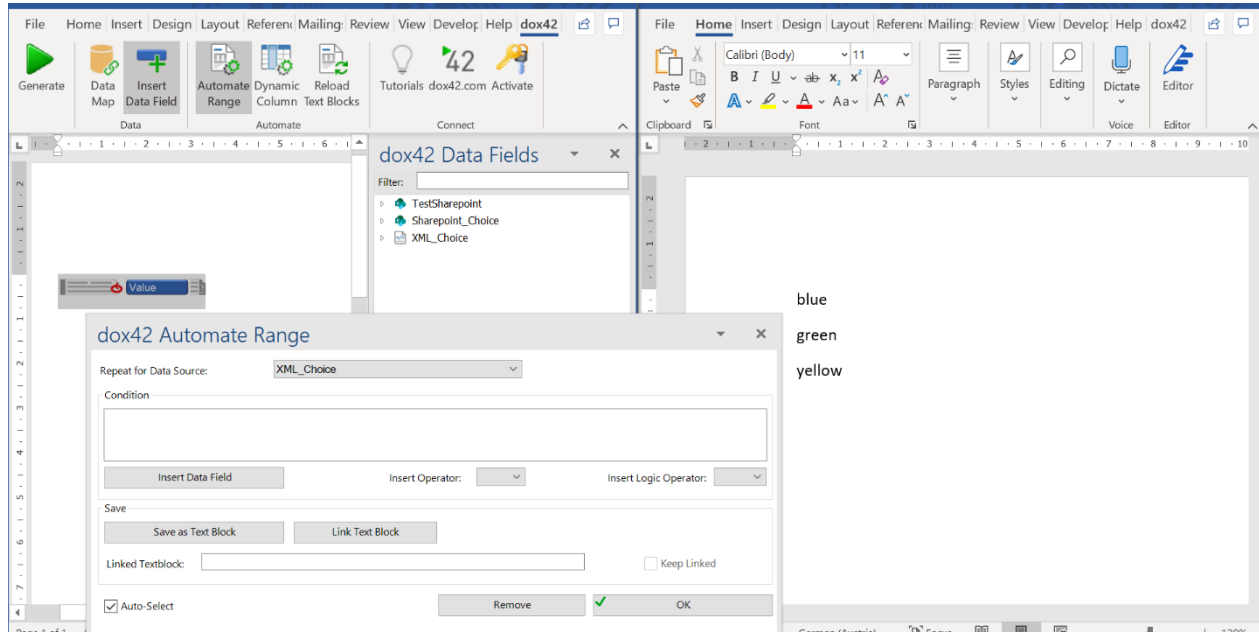
Init: SharePoint MultiValue Field/Apps: Choice Init from XSD/XML/JSON/WSDL

Element: value

Read	Tag/Attribute Name/XPath	Data Field Name	Complex Type
Content		Value	<input type="checkbox"/>
*			<input type="checkbox"/>

Test OK Cancel

d. Click on “Insert Data Field” in the dox42 Ribbon and insert the “Value” data field for choice data from the XML Data Source. Then create an “Automated Range”, repeat for the XML Data Source and generate the document.



4.5 Integration of Single Value Lookup or Person/Group Fields

To start the integration please connect to your SharePoint or Office 365 environment and select the desired library that contains single value lookup or person/group fields. When importing lookups you have three options – values, id or xml.

4.5.1 Integration of single value lookup or person/group fields using “values” or “id”

- a. In Single Value Lookup/Person/Group you can select either “values” or “id” to be returned from the SharePoint Data Source directly.

SharePoint Data Source

Name:

Site:

Lists:

Use Internal Field Names

Date/Time Fields in Local Time (instead of UTC)

Select

Views:

Recursive

Folder:

Read Special Fields

Multi Value:

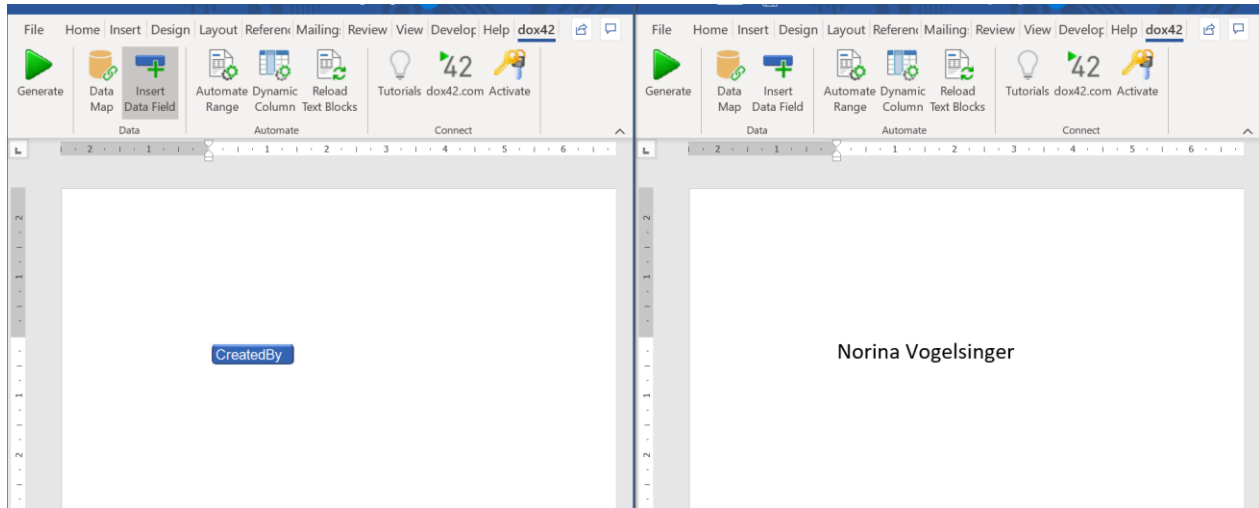
Single Value Lookup/Person/Group/Hyperlink:

- b. The lookup field “CreatedBy” will return the following “value” when clicking on “Test”.

Sharepoint_Lookup (1 records)

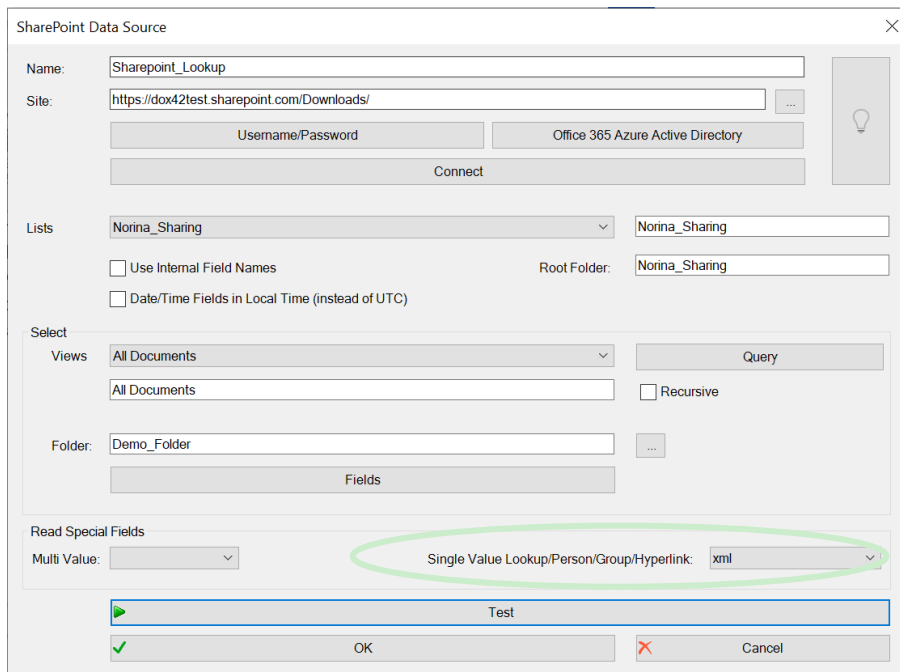
Name	Compliance#	Title	Color	KeyPoints	ID	Created	CreatedBy	Modified
Document...			<Color><v...		6	14.01.202...	Norina Vogelsinger	14.01.202...

c. Insert the lookup data field and generate the document.

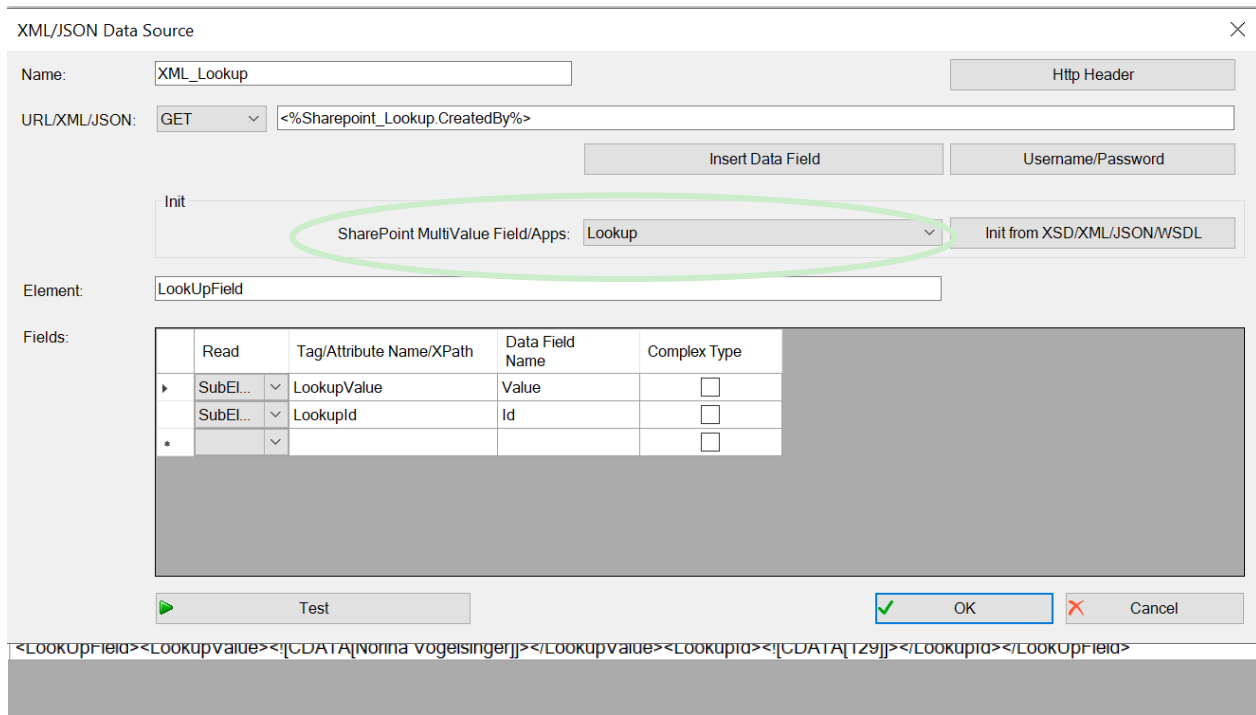


4.5.2 Integration of single value lookup or person/group fields using “xml”

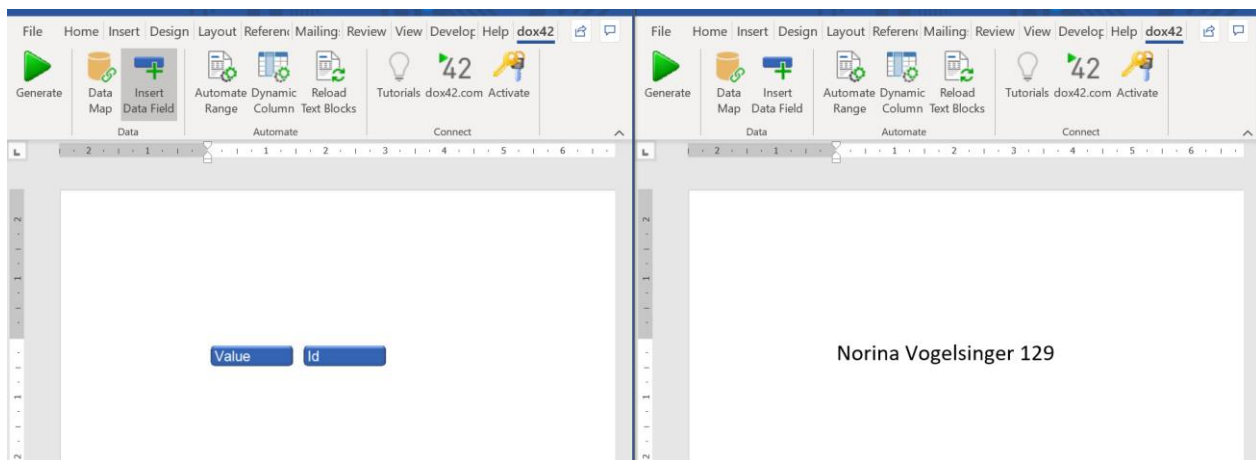
a. If you want to have both “value” and “id” from the lookup or person/group field please select the option Single Value Lookup/Person/Group = “xml”



- b. The lookup field “CreatedBy” will return the following “xml” when clicking on “Test”.
- c. Add a new XML Data Source and select the lookup or person/group field clicking on “Insert Data Field”. Then initialize the “SharePoint MultiValue Field” as “Lookup” or “Person/Group”.



- d. Click on “Insert Data Field” in the dox42 ribbon, insert the “Value” and “Id” data field from the XML Data Source and generate the document



5 Integrating the dox42 SharePoint App into SharePoint Online

5.1 Set-up of “SharePoint Online Client Extensibility Web Application Principal”

First, you will need to set up the “SharePoint Online Client Extensibility Web Application Principal”, if not already existent. With the commands below you can log in and then add the app using PowerShell:

```
Connect-SPOService -Url "https://[Tenant]-admin.sharepoint.com"  
Enable-SPOTenantServicePrincipal1
```

In order to execute the command above, a SharePoint Online PowerShell-Module is required. You can test if it already exists by executing the following command:

```
Import-Module -Name Microsoft.Online.SharePoint.PowerShell
```

A red error message means the module does not exist and needs to be installed. With Windows 10 this can be done using the following command:

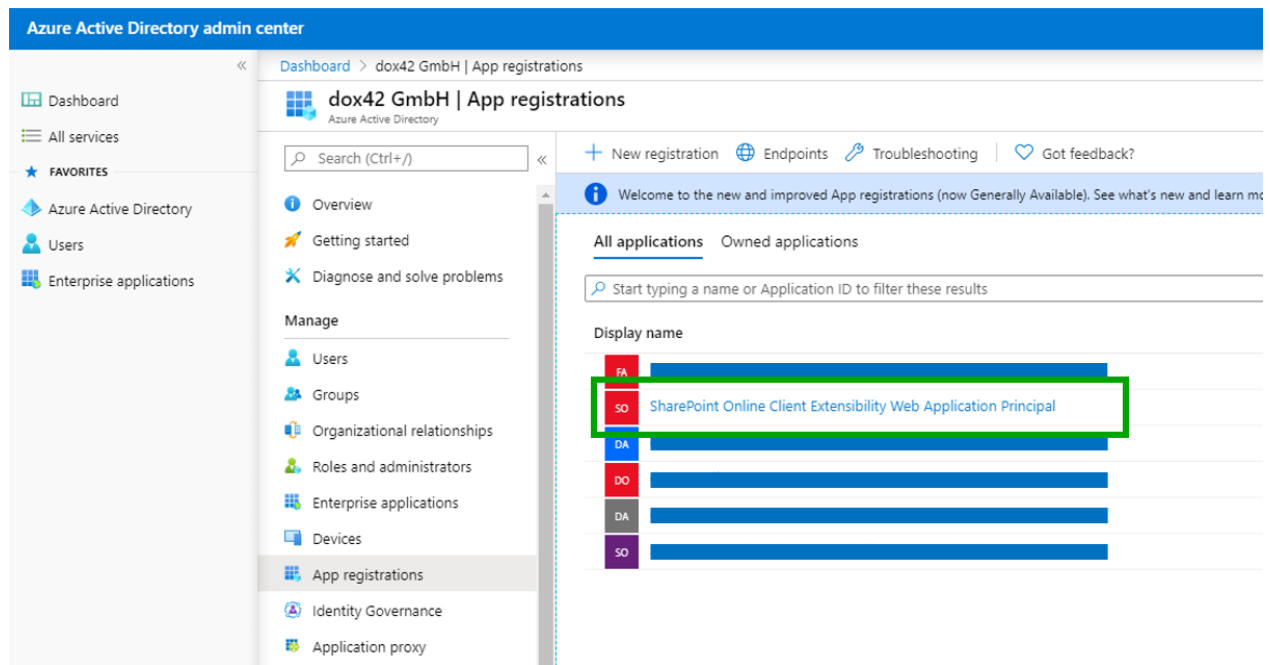
```
Install-Module -Name Microsoft.Online.SharePoint.PowerShell -RequiredVersion 16.0.8212.0
```

Subsequently, log into your SharePoint Online admin tenant and activate the tenant service principal with:

```
Connect-SPOService -Url "https://[Tenant]-admin.sharepoint.com"  
Enable-SPOTenantServicePrincipal
```

By executing the command above “SharePoint Online Client Extensibility Web Application Principal” is being added to App registrations in your Azure Active Directory admin center as you can see in the screen capture below. This may take a few minutes.

¹ <https://docs.microsoft.com/en-us/powershell/module/sharepoint-online/enable-spotenant-serviceprincipal?view=sharepoint-ps>



5.2 Expose API for dox42 Online App

Next, you need to expose a new scope within your dox42 Online App in order to be available to select for API permissions of "SharePoint Online Extensibility Web Application Principal".

1. Go to **App registrations > dox42 Online > Expose an API**
2. Select **Add a scope**
3. If you have not set an Application ID URI, you will see a prompt to enter one. Enter your application ID URI or use the one provided (in this format: <https://yourcompany.com/fb04c99e-.....>) and then select Save and continue. The Application ID URI must be globally unique.
4. When the **Add a scope** page appears, enter your scope's information:

Edit a scope

Save Discard Delete

Scope name * ⓘ

 https://dox42.com/fb04c99e-.../user_impersonation

Who can consent? ⓘ
 Admins and users Admins only

Admin consent display name * ⓘ

Admin consent description * ⓘ

User consent display name ⓘ

User consent description ⓘ

State ⓘ
 Enabled Disabled

5.3 Permissions of AAD App “SharePoint Online Extensibility Web Application Principal” and Admin Consent

Permissions must be granted to Azure Active Directory App “SharePoint Online Extensibility Web Application Principal” to **access dox42 Online AAD Application**.

To do so please follow these steps:

1. Open Microsoft 365 admin center and go to “Azure Active Directory” (<https://aad.portal.azure.com/>)
2. Open “App registrations” and search for “SharePoint Online Extensibility Web Application Principal”
3. Choose to manage the app and go to “API permissions” and click on “Add a new permission”
4. Search for your dox42 online tenant from “APIs my organization uses” and select it

5. Go to “delegated permissions” and accordingly select permissions and click “Add permission”
6. Grant your organization with admin access to facilitate usage of the app:

Dashboard > dox42 GmbH | App registrations > SharePoint Online Client Extensibility Web Application Principal | API permissions

SharePoint Online Client Extensibility Web Application Principal | API permissions

Search (Ctrl+/) Refresh

Overview
Quickstart
Manage
Branding
Authentication
Certificates & secrets
Token configuration (preview)
API permissions
Expose an API
Owners
Roles and administrators (Previ...
Manifest
Support + Troubleshooting

Configured permissions

Applications are authorized to call APIs when they are granted permissions by users/admins as part of the consent process. The list of configured permissions should include all the permissions the application needs. [Learn more about permissions and consent](#)

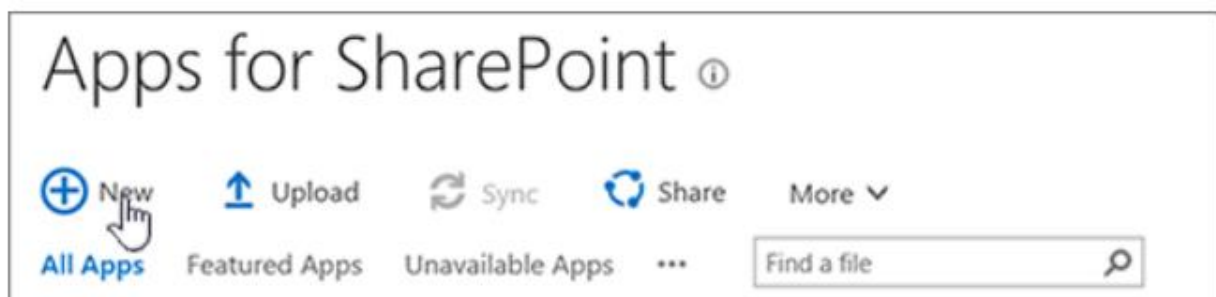
+ Add a permission Grant admin consent for dox42 GmbH

API / Permissions name	Type	Description	Admin consent req...	Status
dox42 Azuro Server (1)				
user_impersonation	Delegated	Access TestADAL_WS	-	Granted for dox42 GmbH
dox42 Online (1)				
user_impersonation	Delegated	Access dox42 Online Test Johannes	-	Granted for dox42 GmbH
Microsoft Graph (1)				
openid	Delegated	Sign users in	-	Granted for dox42 GmbH

5.4 Upload Solution “dox42-cmd.sppkg” to SharePoint App-Catalog

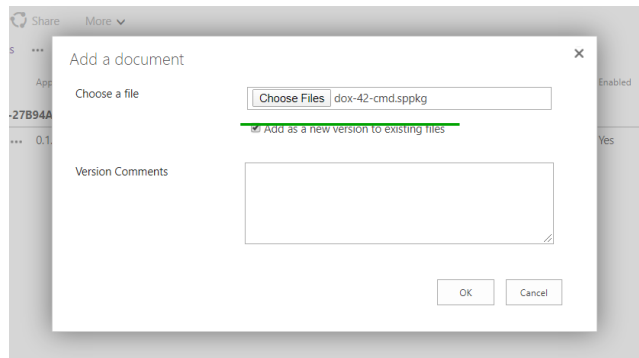
To use dox42 SharePoint Online App on your sites, you need to upload the solution to your SharePoint Online App-Catalog. To do so, you first need to create the App Catalog site collection (it may already be existent). (instructions can be found [here](#))

When the site collection App Catalog was created, go to Microsoft 365 admin center > Show all > SharePoint > more features > Apps > App Catalog > Apps for SharePoint > Select New and browse for dox42-cmd.sppkg file, or drag the app into the library. To successfully upload the app you must have Admin permissions for the Site Collection AppCatalog.



To upload a **new version** of the app, simply upload the new version (make sure it has the same name as the existing app).

Make sure to mark “Add as new version to existing files”.



5.5 Add App to Site Collection

Within the site collection of your site select **New > App** and find “**dox42 command extension**” within Apps from your organization. The app will be added by clicking on it. After the new button appears in your lists please click on it once → A list called “dox42CommandBar Config” will be created afterwards.

Open “Site contents” to find the list. This needs to be done by a user with permissions to manage the site. Within this list you will be able to configure dox42 calls.

To **deploy updates**, go to site contents, open the context menu of “dox42 command extension” and select Details. The button “Get it” will be available whenever a new version was uploaded. Click on the button for updating to a new version. This needs to be done for each site separately. Updates have no effect on already configured dox42 calls.

Employees > Add Apps >



dox42 command extension

Details

DESCRIPTION

There is no description available.

SUPPORTED LANGUAGES

Deutsch (Deutschland), English (United States)

ADD IT

There is a new version of this app. Get it now.

GET IT

VERSION 0.1.0.5326
RELEASE DATE March 2020

5.6 Configure dox42 Actions in dox42CommandBar Config

You can **configure dox42 calls** within the list “**dox42CommandBar Config**”, which you can find in site contents. It was created during deployment of the app. To configure a dox42 call, create a new item filling in the following parameters.

Parameter name	Requirement	Effect
Title	mandatory	Name of action displayed in list or library
Active	mandatory	Yes/No – whether to be shown or not
List-Name	mandatory	Name of list/library in which actions will be shown
dox42 tenant	mandatory	Name of dox42 Online tenant, full name (FQDN) without protocol, example: <i>demo.dox42.online</i>
Client-ID	mandatory	Client-ID (GUID) of AAD application for access to dox42 online tenant
Operation	mandatory	Choose from GenerateDocument, GenerateSpreadSheet and GenerateSlides according to the format of your template
Template	mandatory	Complete path of template location (only for GenerateDocument and GenerateSlides)
Datamap	optional	Complete path of template location (only for GenerateSpreadSheets)
Parameter Element-ID	optional	Name of input parameter (without 'InputParam. ') to which the element ID of selected items are given to in the DataMap for example <i>ItemID</i> (Configure Input Parameters in the dox42 Add-In)
Query-String	Optional	Additional optional parameters/output actions to give to dox42 Server e.g. ReturnAction.Format=pdf&ReturnAction.FileName=Document.pdf (more info: dox42 Server Documentation)
Send by Post	Optional	Yes/No – whether to make the Server Call via POST instead of GET. Adds the Lisa-Item-IDs to the request body.

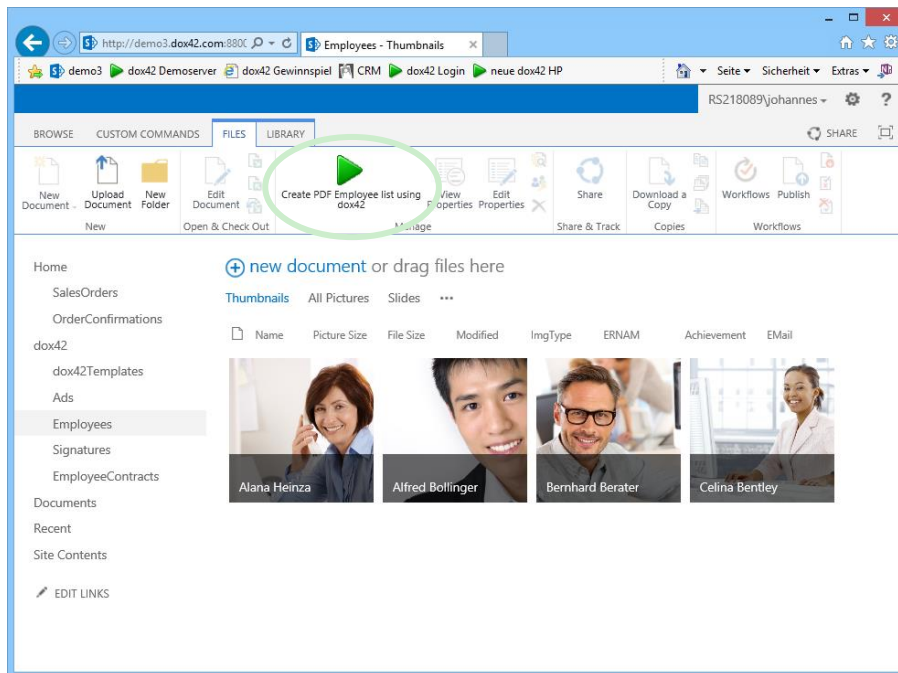
Configured calls will be available when clicking on the dox42 button above the list/library items or within the context menu of an item.

5.7 Custom Button Name

Since dox42 SharePoint Online App Version (0.1.0.7915) you can rename the dox42 button that appears in the command bar. This can be done via Site Contents > “dox42CommandBar UI Settings” Add a new Item with the title “Button Title”. In the “value” field write the name you want to assign to your buttons.

6 Integrating dox42 into SharePoint On Premise with SharePoint Designer

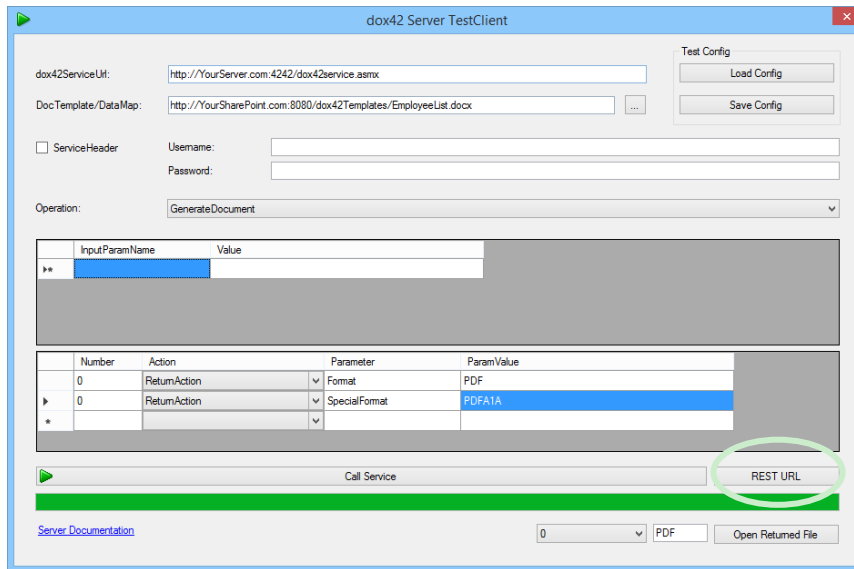
6.1 How to Call dox42 Using a Button in the List/Library Ribbon



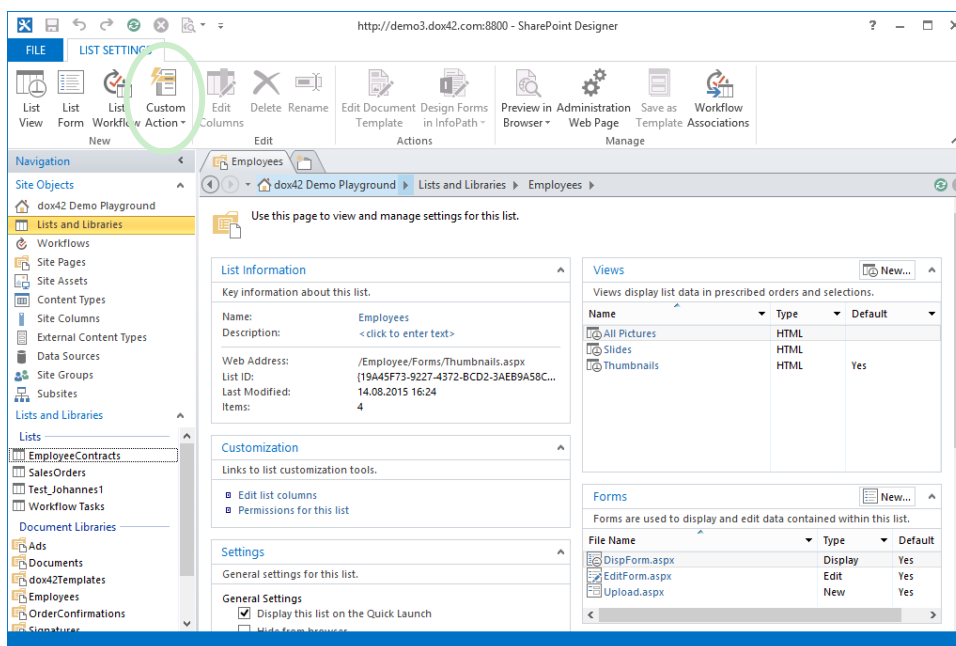
We have created a document locally that generates a list of all employees based on data from a Microsoft SharePoint list. Our goal is to generate this document directly from SharePoint using a button in the SharePoint list/library ribbon following these steps:

1. Upload your document template and datamap to a SharePoint document library (e.g. dox42Templates). Alternatively you can also put the document template and data map directly on your dox42 Server in the file system.

2. Create the REST link for the dox42 Return Action. Please make sure that you have installed the dox42 Server properly and that the dox42 Server is allowed to read data from SharePoint. To create the REST link please see the dox42 Server Documentation. (Hint: You can also create the REST link using the dox42 Server Client and clicking the “REST URL” Button in the bottom right corner.)



3. Open the list/library for which you want to create the button in SharePoint Designer.
4. The dox42 REST Call will be integrated using “Custom Actions”. In the “List Settings” ribbon click on “Custom Action” > “View Ribbon”. The “Create Custom Action” dialog will



open up.

- In the “Create Custom Action” dialog you can add a name and a description. In “Select the type of action” select “Navigate to URL” and use the dox42 REST Link. You can also add a button image URL in the “Advanced custom action options”.

- The Button will now show up in the SharePoint “Files” ribbon.

Security Advice

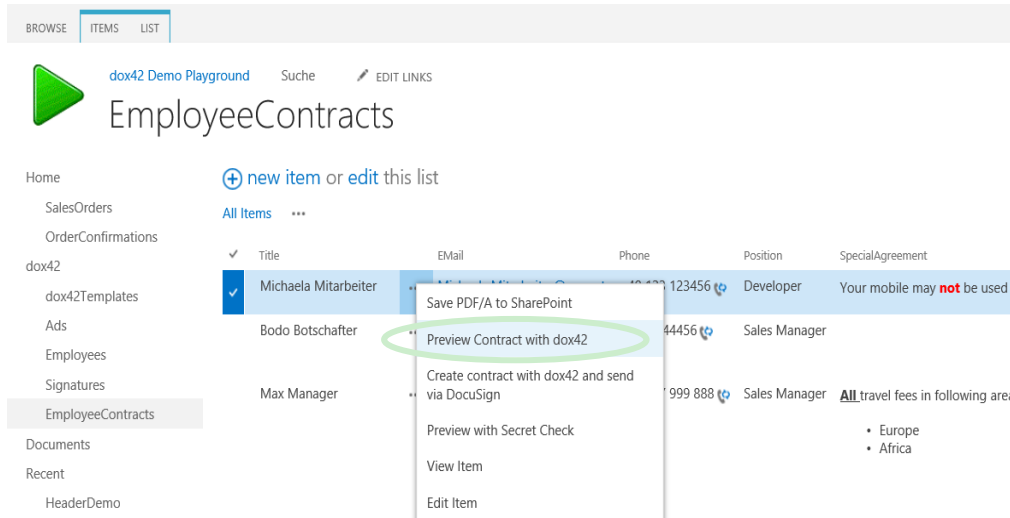
The best way to secure dox42 calls in SharePoint Online is to use dox42 Azure Active directory integration.

Please note that without configuring AAD integration the SharePoint user login, authentication and permissions are not used for the dox42 call as this REST call is simply a URL. If someone knows your dox42 Server URL, templates, and input parameters, and has got permission to call the dox42 Server he/she will be able to call this or a modified URL using any browser independently from SharePoint. So, if your SharePoint list contains sensitive data, be careful!

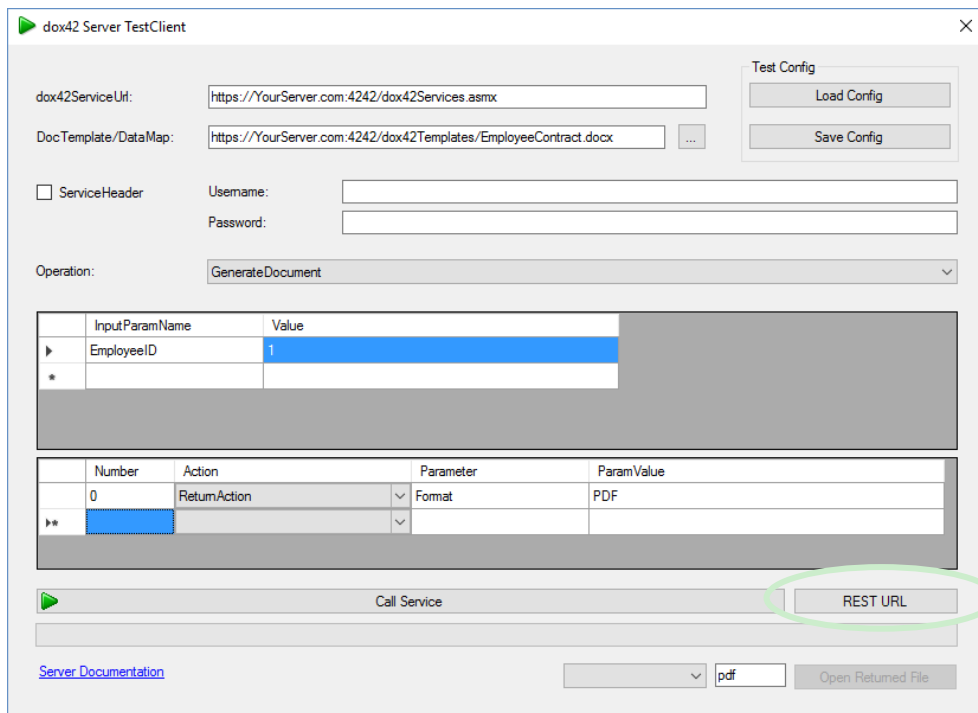
A simple way to get more security is to add an additional input parameter to your data map to send some kind of pass phrase. Check the pass phrase in your dox42 data map using a dynamic field and throw an exception if not correct. You can even make the pass phrase dynamic using some JavaScript in the dox42 REST link. This method is obviously not bulletproof but easy to realize and offers a reasonable level of protection.

6.2 How to Call dox42 in the List/Library Context Menu

In this sample we are going to generate a PDF SharePoint list item using a dynamic REST Link based on our selected list or library item. We are only going to use the dox42 ReturnAction.



1. Create the REST Link for the dox42 Return Action. Please make sure that you have installed the dox42 Server properly and that the dox42 Server is allowed to read data from SharePoint. To create the REST Link please see the dox42 Server Documentation. (Hint: You can also create the REST Link using the dox42 Server Client and clicking the "REST URL" Button in the bottom right corner.)



2. Based on the static REST link in our sample we are going to make it dynamic for the context menu link. The static link is:

<https://yourserver.com:4242/dox42services.asmx?Operation=GenerateDocument&DocTemplate=https%3a%2f%2fYourServer.com%3a4242%2fdox42Templates%2fEmployeeContract.docx&InputParam.EmployeeID=1&ReturnAction.Format=PDF>

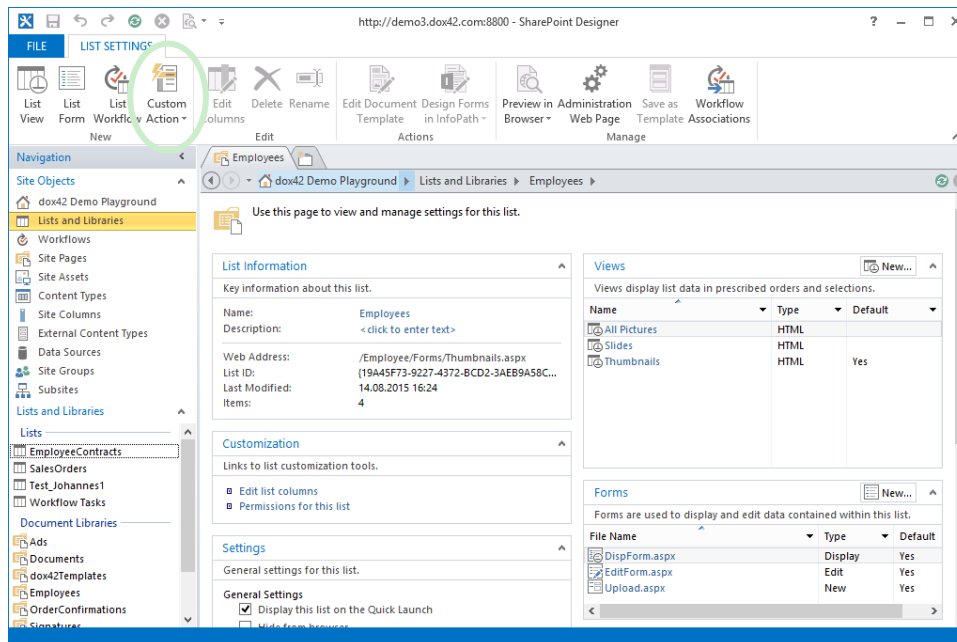
The input parameter "EmployeeID" needs to be dynamic based on the list item. We are going to use the function {ItemId}, which gets the ID of the list item:

Overall the REST Link will look as follows:

<https://yourserver.com:4242/dox42services.asmx?Operation=GenerateDocument&DocTemplate=https%3a%2f%2fYourServer.com%3a4242%2fdox42Templates%2fEmployeeContract.docx&InputParam.EmployeeID={ItemId}&ReturnAction.Format=PDF>

BTW: {ItemId} is case sensitive, be sure to use the correct casing.

3. Open the list/library in SharePoint Designer.
4. The next step is to integrate the dynamic link into the SharePoint context menu. The dox42 REST Call will be integrated using "Custom Actions". In the "List Settings" ribbon click on "Custom Action" > "List Item Menu". The "Create Custom Action" dialog will open



up.

5. In the "Create Custom Action" dialog you can add a name and a description. In "Select the type of action" select "Navigate to URL" and paste the dynamic dox42 REST link that we have created earlier.

6. The context menu will now have the option to “Preview Contract with dox42”.

6.3 How to Call dox42 from a SharePoint Workflow

You can call the dox42 WebService from a SharePoint Workflow.

Please be sure to use SharePoint 2013 Workflow Platform as you need the “call HTTP WebService Action” which is not available in earlier versions.

1. Create a Workflow Variable e.g. “dox42Request”
2. Store the dox42 REST link to this Workflow Variable. You can use the String Builder to create dynamic parts of the link e.g. input parameters.
3. Create a “call HTTP WebService Action” and use the Workflow Variable “dox42Request” as WebService URL

Security Advice

To use a SharePoint Workflow with SharePoint on premises to call dox42 allows for a very simple but effective security configuration. You can restrict the access to the dox42 WebService to the IP of your SharePoint Server. That way your dox42 Server can only be called from your SharePoint Server, thus the SharePoint user permissions are enforced.

7 Support

In addition to this documentation, please refer to the following tutorial videos:

- dox42 Class of dox42 **SharePoint App Configuration**



- dox42 Class of **SharePoint Data Source – Advanced**



Visit <https://www.dox42.com/Resources> to find more dox42 classes, video tutorials, up-coming webinars, documentation and much more on dox42.

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

We wish you a successful implementation of dox42!