

Configuring OAuth in Azure AD and Business Central Cloud for NAVEKSA Shopfloor client 9.x

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General information

The NAVEKSA product suite consisting of ShopFloor, CadConnect, ItemPlanning and MakeToOrder are available through Microsoft App Source.

The ShopFloor Client must, however, be downloaded from our [Service desk portal](#).

It is required for you to login to the portal to get access to the software.

If you do not already have a login, please send an e-mail to Support@naveksa.com requesting this.

The ShopFloor Client v9.x supports OAuth, which is a requirement from October 1st, 2022, when accessing Microsoft Business Central Cloud.

This document describes the necessary steps setting up OAuth in Azure Active Directory and Microsoft Business Central for the ShopFloor Client but does not contain information about the configuration of the Client. The latter will appear in the standard Naveksa documentation which can found on [Naveksa.com](https://naveksa.com).

It is assumed that the reader has a certain level of knowledge of Microsoft Business Central Cloud and Microsoft Azure Active Directory.

Disclaimer

If you have any trouble setting up the app registration OR Authentication, please consult the Microsoft Documentation for further instructions.

This is standard Microsoft best practice and therefore we refer to Microsoft for troubleshooting.

Please note

The information in this setup guide is assumed to be correct at the time of publication. However, since it is our policy to continuously develop the product, the content might change without notice.

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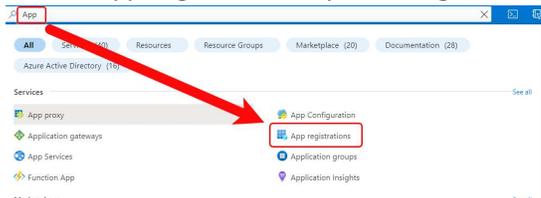
Version history

Version	Changes	Release date
1.0	Initial document	22/9 2022
1.1	Note added in BC section	XX/9 2022

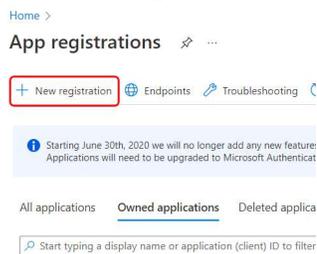
Microsoft Azure Portal

Step one – create App Registration

1. Open the [Microsoft Azure Portal](#).
2. Locate “App Registrations” by searching and selecting the option.

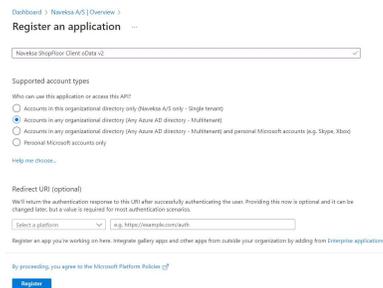


3. Click “New Registration”.



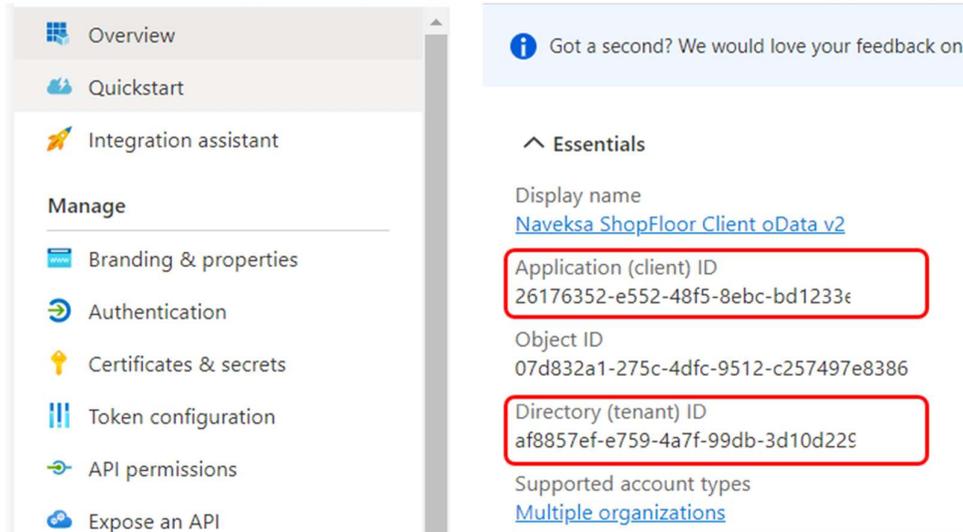
4. Enter a name, eg. “NAVEKSA ShopFloor”.
Check “Accounts in any organizational directory” if applicable.
Otherwise check “Accounts in this organizational directory only”.

5. Leave the redirect URI blank.



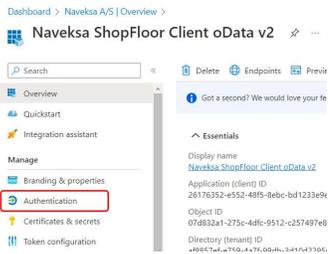
6. Click Register to create the App Registration.
7. You are taken back to the overview page.
Here there are two values which you must note.

The first one is the 'Application (client) ID' and the second one is 'Directory (tenant) ID'



Step two – create Authentication

1. Select "Authentication" in the left side menu.



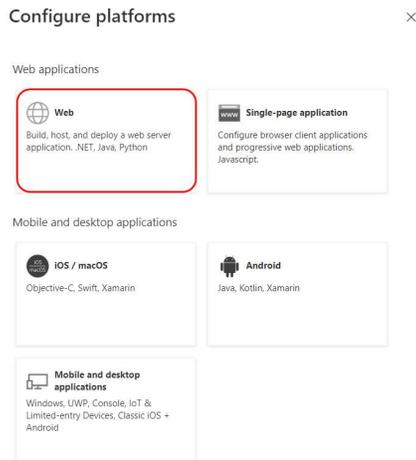
2. In the Authentication Screen click 'Add a platform'.

Platform configurations

Depending on the platform or device this application will have different redirect URIs, specific authentication settings, or fields



3. Select 'Web'.



4. Enter "Redirect URI"

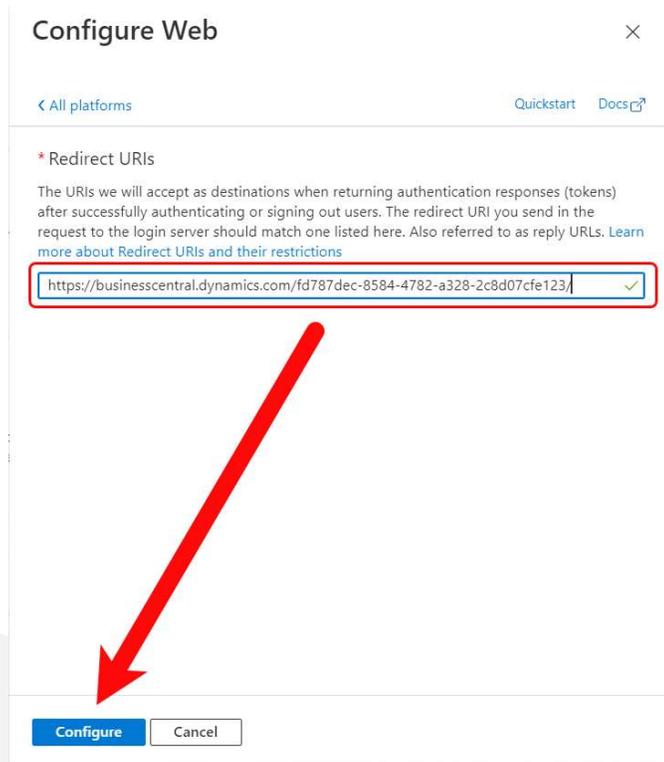
The Redirect URI is the full URL-path to you Microsoft Business Central.

`https://businesscentral.dynamics.com/<TenantID>/`

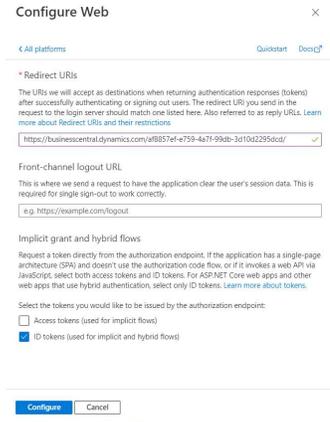
Example

<https://businesscentral.dynamics.com/fd787dec-8584-4782-a328-2c8d07cfe123/>

Hit Configure when done.



5. Check the box with 'ID tokens (used for implicit and hybrid flows)' and click Configure:



Configure Web

← All platforms Quickstart Docs

*** Redirect URIs**

The URIs we will accept as destinations when returning authentication responses (tokens) after successfully authenticating or signing out users. The redirect URI you send in the request to the login server should match one listed here. Also referred to as reply URLs. [Learn more about Redirect URIs and their restrictions](#)

<https://businesscentral.dynamics.com/a1f857ef-e759-4a7f-99db-3d10d2295dcd/>

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.

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 about tokens](#).

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)

Configure Cancel

6. Enter an additional Redirect URI:

<https://businesscentral.dynamics.com/OAuthLanding.htm>



Web Quickstart Docs

Redirect URIs

The URIs we will accept as destinations when returning authentication responses (tokens) after successfully authenticating or signing out users. The redirect URI you send in the request to the login server should match one listed here. Also referred to as reply URLs. [Learn more about Redirect URIs and their restrictions](#)

<https://businesscentral.dynamics.com/a1f857ef-e759-4a7f-99db-3d10d2295dcd/>

<https://businesscentral.dynamics.com/OAuthLanding.htm>

Add URI

Note:

We have seen different behavior in different Business Central environments. In some cases it has been required and other cases it has not been needed. Please skip this step for a start and if an error occurs later in the process in regards to OAuthLanding.htm please go back to this step and insert the URI. We will investigate the matter further.

7. Add an additional platform.



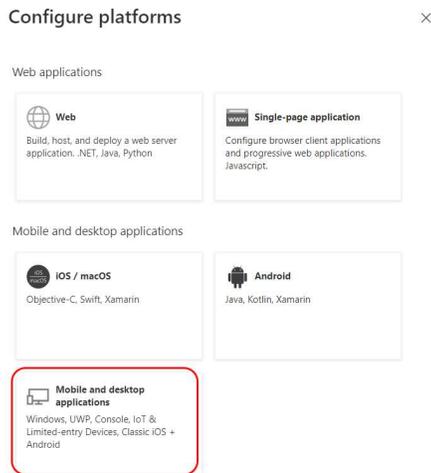
Platform configurations

Depending on the platform or device this application redirect URIs, specific authentication settings, or fields

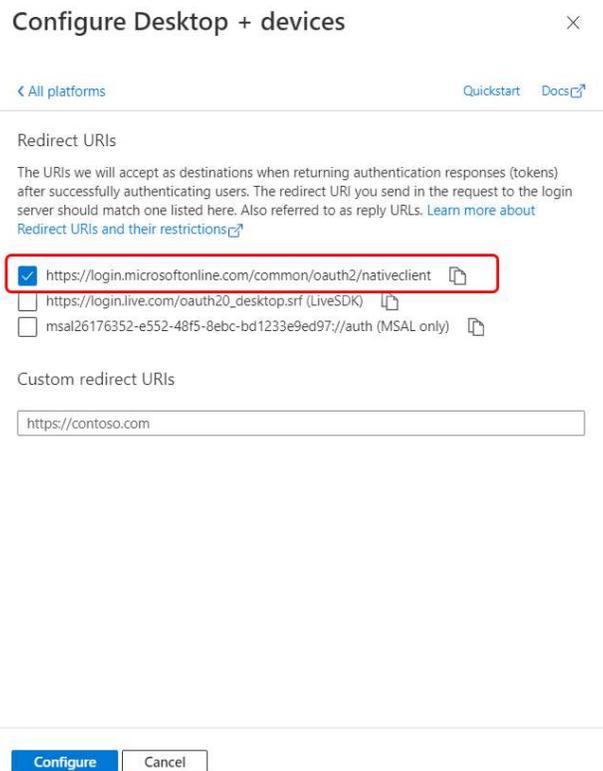
+ Add a platform

Add a platform

8. Select “Mobile and desktop applications”.



9. Select the “Redirect URI” <https://login.microsoftonline.com/common/oauth2/nativeclient> amongst the default options.



Click Configure

10. Back on the main Authentication screen leave the value in “Front-channel logout URL” blank.

- In the section 'Implicit grant and hybrid flows' check the value 'ID tokens (used for implicit and hybrid flows)'.
- For "Supported account types" check the applicable value.

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.

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 about tokens.](#)

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 (Naveksa A/S only - Single tenant)

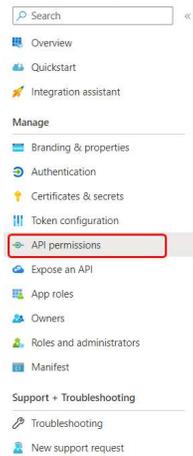
Accounts in any organizational directory (Any Azure AD directory - Multitenant)

[Help me decide...](#)

- If any changes have been made press Save. If no changes have been made the Save-button will be greyed out.

Step three - API permissions.

- Click "API permissions" in the left side menu.



- Click "Add a permission".

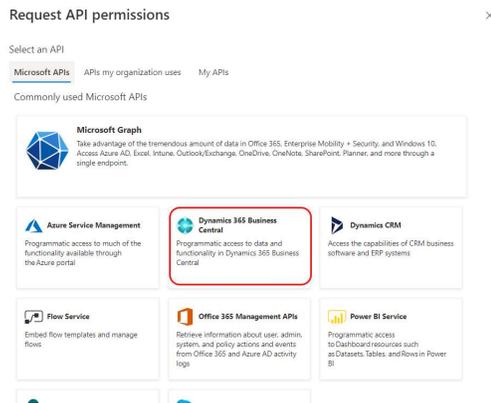
Configured permissions

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.](#)

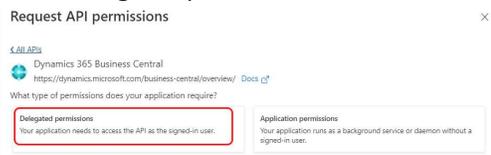
Grant admin consent for Naveksa A/S

API / Permissions name	Type	Description	Admin consent requ...	Status
Microsoft Graph (1)				...
User.Read	Delegated	Sign in and read user profile	No	...

3. Select “Dynamics 365 Business Central”.



4. Click “Delegated permissions”



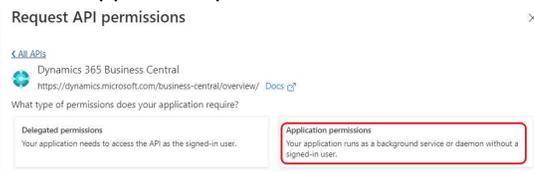
5. Make sure the Permissions ‘user_impersonation’ and ‘Financials.ReadWrite.All’ are checked and click ‘Add permissions’



6. Click “Add a permission” again

7. Select “Dynamics 365 Business Central”.

8. Select “Application permissions”.



9. Check “app_access” and “API.ReadWrite.ALL and click ‘Add permissions’

Select permissions expand all

Start typing a permission to filter these results

Permission	Admin consent required
<input checked="" type="checkbox"/> Other permissions (1) <ul style="list-style-type: none"> <input checked="" type="checkbox"/> app_access <ul style="list-style-type: none"> Access according to the application's permissions in Dynamics 365 Business Central Yes <input checked="" type="checkbox"/> API (1) <ul style="list-style-type: none"> <input checked="" type="checkbox"/> API.ReadWrite.All <ul style="list-style-type: none"> Full access to web services API Yes 	
<input type="checkbox"/> Automation <ul style="list-style-type: none"> <input type="checkbox"/> Automation.ReadWrite.All <ul style="list-style-type: none"> Full access to automation Yes 	

10. In the overview Screen click “Grant admin consent for <Your domain>”.

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 Naveksa A/S

API / Permissions name	Type	Description	Admin consent requ...	Status
▼ Dynamics 365 Business Central (4)				
API.ReadWrite.All	Application	Full access to web services API	Yes	⚠ Not granted for Naveksa...
app_access	Application	Access according to the application's permissions in Dyna...	Yes	⚠ Not granted for Naveksa...
Financials.ReadWrite.All	Delegated	Access Dynamics 365 Business Central as the signed-in user	No	...
user_impersonation	Delegated	Access as the signed-in user	No	...
▼ Microsoft Graph (1)				
User.Read	Delegated	Sign in and read user profile	No	...

11. Click “Yes” when prompted to verify consent

Grant admin consent confirmation.

Do you want to grant consent for the requested permissions for all accounts in Naveksa A/S? This will update any existing ad listed below.

12. The “Status” column will be updated with “Granted for Your Domain”.

Configured permissions

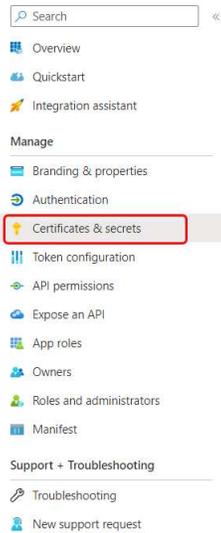
Applications are authorized to call APIs when they are granted permissions by users/admins as part of the consent process. The list of configured permissions should include all the permissions the application needs. [Learn more about permissions and consent](#)

+ Add a permission Grant admin consent for Naveksa A/S

API / Permissions name	Type	Description	Admin consent requ...	Status
▼ Dynamics 365 Business Central (4)				
API.ReadWrite.All	Application	Full access to web services API	Yes	✔ Granted for Naveksa A/S
app_access	Application	Access according to the application's permissions in Dyna...	Yes	✔ Granted for Naveksa A/S
Financials.ReadWrite.All	Delegated	Access Dynamics 365 Business Central as the signed-in user	No	✔ Granted for Naveksa A/S
user_impersonation	Delegated	Access as the signed-in user	No	✔ Granted for Naveksa A/S
▼ Microsoft Graph (1)				
User.Read	Delegated	Sign in and read user profile	No	✔ Granted for Naveksa A/S

Step four – Certificates & Secrets

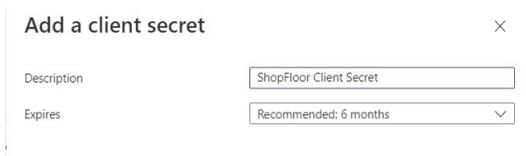
1. Click “Certificates & secrets”



2. Click “New Client secret”



3. Enter a name and expiration date and click ‘Add’



Note:

Remember to put a reminder in your calendar to create a new secret and update the ShopFloor app before the Client Secret expires.

Otherwise, the ShopFloor Client will not be able to access Business Central.

4. In the “Certificates & Secrets” screen copy the “Value” for later use.



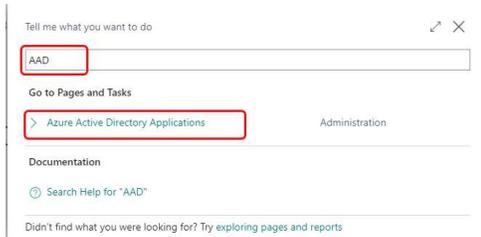
Note:

This is the only time you have the possibility to see this value in its entirety.
After you leave the screen, the value will be unretrievable.

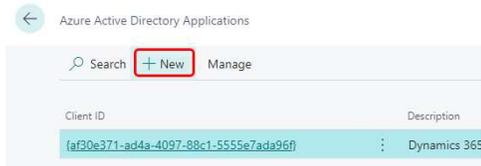
Dynamics 365 Business Central

Step one – Create AAD Application

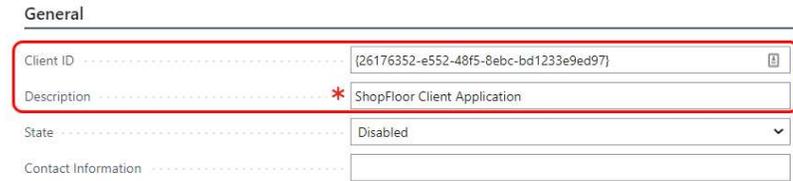
1. Log into the relevant Business Central environment and use the magnifying glass to search for Azure Active Directory Applications or AAD.
2. Select 'Azure Active Directory Applications'



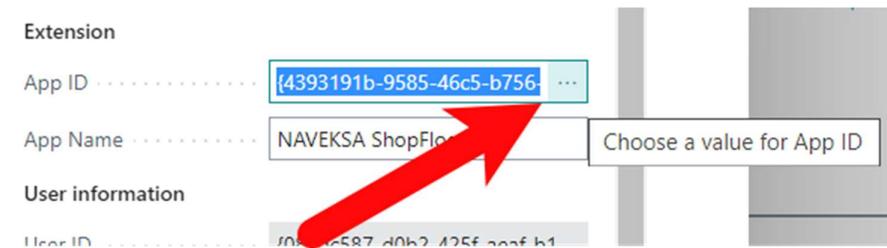
3. Click "New".



4. Enter the client ID from the Azure Portal application and a Description.



5. In App ID, browse to 'Naveksa ShopFloor 365' by clicking the 'three dots':



Note:
If Business Central v21.x has already been implemented the above step is not necessary.

Yes	Intelligent Cloud Base	Microsoft	v. 20.4.44313.45661	Global
Yes	Late Payment Prediction	Microsoft	v. 20.4.44313.44629	Global
Yes	NAVEKSA CadConnect 365	NAVEKSA	v. 20.8.9.13	Global
Yes	NAVEKSA ItemPlanning 365	NAVEKSA	v. 20.8.9.14	Global
Yes	NAVEKSA MakeToOrder 365	NAVEKSA	v. 19.0.1.10	Global
Yes	NAVEKSA ShopFloor 365	NAVEKSA		Global
Yes	OIOUBL	Microsoft	v. 20.4.44313.44629	Global
Yes	Payment and Reconciliation Fo...	Microsoft	v. 20.4.44313.44629	Global
Yes	Payment Links to PayPal	Microsoft	v. 20.4.44313.44629	Global

Note:

Set the application to Enabled before proceeding with the next step.



Verify the creation

A user named ShopFloor Client Application will be created. Do you want to continue?

6. Set the following User Group: D365 BUS Premium

User Groups | Manage

Code T	Name
→ D365 BUS PREMIUM	D365 Premium Business-adpang

7. Set the following User Permission Sets: D365 BUS Premium and SUPER (DATA)

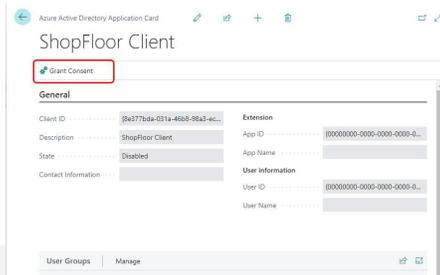
User Permission Sets | Manage

Permission Set T	Description	Company T
D365 BUS PREMIUM	Dyn. 365 Prem. Bus. Full Acc.	CRONUS Danmark A/S
→ SUPER (DATA)	Superuser of data	CRONUS Danmark A/S

Note:

Remember to set the Company correctly if not set by the system.

8. Click 'Grant consent'



When clicking 'Grant consent' you will be prompted for your credentials.

Accept the permissions for the App.



Tilladelser, der er anmodet om

Gennemse for din organisation

Naveksa ShopFloor Client oData v2

[Ikke bekræftet](#)

Denne applikation er ikke udgivet af Microsoft.

Denne app vil gerne:

- ✓ Access as the signed-in user
- ✓ Access Dynamics 365 Business Central as the signed-in user
- ✓ Full access to web services API
- ✓ Access according to the application's permissions in Dynamics 365 Business Central
- ✓ Sign in and read user profile

Hvis du accepterer dette, får appen adgang til de angivne ressourcer for alle brugere i din organisation. Ingen andre bliver bedt om at gennemgå disse tilladelser.

Accept af disse tilladelser betyder, at du giver denne app tilladelse til at bruge dine data som angivet i deres vilkår for anvendelse og erklæring o beskyttelse personlige oplysninger. **Udgiveren har ikke angivet link til deres vilkår, du kan gennemgå.** Du kan ændre disse tilladelser på <https://myapps.microsoft.com>. [Vis detaljer](#)

Ser denne app mistænkelig ud? [Rapportér det her](#)

Annuller

Acceptér

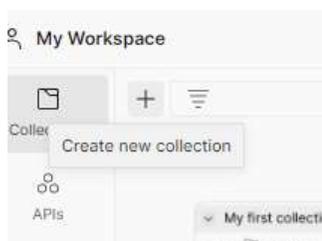
9. Go back to the Azure Active Directory Applications page and ensure that the added application is enabled.

Verify the connection using Postman

Postman is a free tool used for testing REST API's.

There are more tools available that can verify the connection to a REST API. Postman is just the tool we selected internally for this type of testing.

1. Download Postman from this [link](#) and install it subsequently. You will need to create a free account.
2. Open Postman and create a new collection by clicking the 'plus' sign. Name the collection eg. Oauth Test Connection



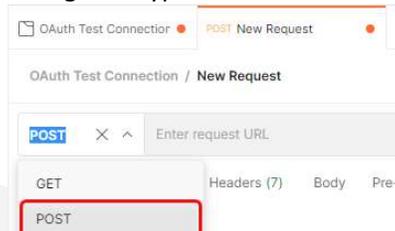
3. Choose OAuth 2.0 from the Type



4. Add a request to the Collection



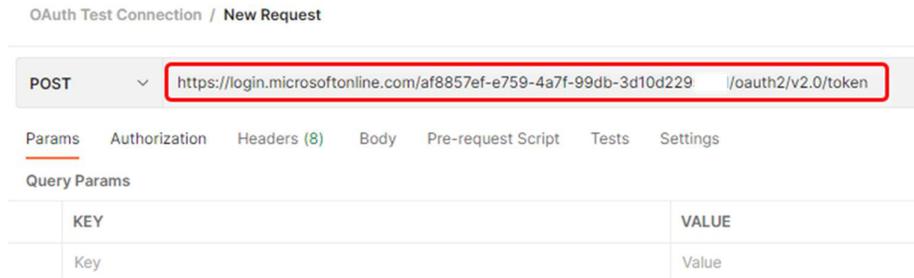
5. Change the type from GET to POST



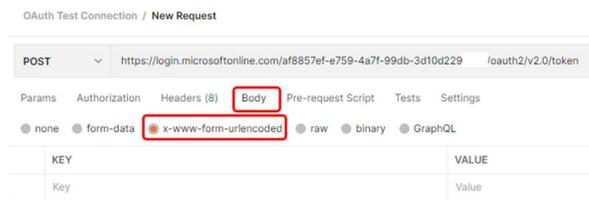
6. Enter the following URL in the field 'Enter request URL'
<https://login.microsoftonline.com/<Tenant ID>/oauth2/v2.0/token>

Example

<https://login.microsoftonline.com/af8857ef-e759-4a7f-99db-3d10d2295123/oauth2/v2.0/token>



7. Select Body and then then 'x-www-form-urlencoded'

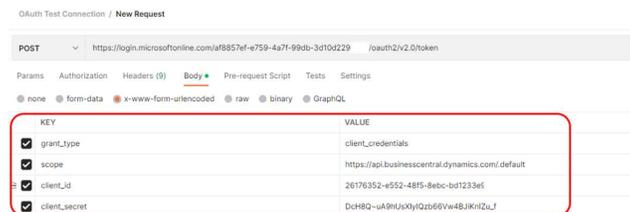


8. Create the following keys:

grant_type: client_credentials
 scope: https://api.businesscentral.dynamics.com/.default
 client_id: <Application (client) ID>
 client_secret: <Client Secret Key (value)>

Note:

The keys and values are case-sensitive!



9. When keys and values has been entered click the Send-button



10. If OAuth has been setup correctly Postman will return an Access-token verifying the connection to the specified Business Central Environment.
 A message like the below must appear:

ShopFloor Client configuration

Prerequisites

You will need the following information ready before configuring the ShopFloor Client:

[Tenant ID](#) e.g., af8857ef-e759-4a7f-99db-3d10d2295123

Instance Name e.g., Sandbox

Company Name e.g., CRONUS Danmark A/S

[Client ID](#) e.g., 26176352-e552-48f5-8ebc-bd1233e9e123

[Client Secret](#) e.g., 5-d8Q~osauq8az.dpn-vDH32bA_SQV5fwBbXh123

Service Root: <https://api.businesscentral.dynamics.com/v2.0/>

Notes:

- Service Root is static and is the same for all environments
- .NET Framework 6.x must be installed on the Client computer

Company Name can be retrieved by clicking the cogwheel in the upper right corner and choosing the option 'Company information':

Company Information



General		Show more	
Name	CRONUS Danmark A/S	Phone No.	0666666666
Address	Ringen 5	VAT Registration No.	DK7777777
Address 2	Westminster	GLN	
City	Kugleby	Use GLN in Electronic ...	<input checked="" type="checkbox"/>
Post Code	9900	EORI Number	

Instance Name can be retrieved by clicking the cogwheel in the upper right corner and choosing the option 'Admin Center':

Environments

Name	Application Family	Type	State	Country/region
Production ⌵	Business Central	Production	Active	DK
BC6002012 ⌵	Business Central	Sandbox	Active	DK
Sandbox ⌵	Business Central	Sandbox	Active	DK

Configuring the ShopFloor Client

When all the information is available go to the ShopFloor Client folder and execute SFSSetup.exe:

Navn	Ændingsdato	Type	Størrelse
Config Files	05-10-2022 09:19	Filmappe	
Help Files	05-10-2022 09:19	Filmappe	
Language	05-10-2022 09:19	Filmappe	
App.config	19-09-2022 23:26	COHFG-Fil	5 KB
log.js	28-08-2012 15:15	JPG-Fil	10 KB
Microsoft.Bcl.AsyncInterfaces.dll	19-10-2020 20:47	Programmulddato	15 KB
Microsoft.Identity.Client.dll	29-08-2022 01:13	Programmulddato	1.417 KB
Microsoft.IdentityModel.Abstractions.dll	27-07-2022 05:08	Programmulddato	19 KB
Microsoft.OData.Client.dll	10-08-2022 14:31	Programmulddato	764 KB
Microsoft.OData.Core.dll	10-08-2022 14:31	Programmulddato	2.082 KB
Microsoft.OData.Edm.dll	10-08-2022 14:31	Programmulddato	545 KB
Microsoft.Spatial.dll	10-08-2022 14:31	Programmulddato	139 KB
Navex.ico	29-01-2019 14:43	Ikoon	4 KB
NMModel.dll	04-10-2022 20:51	Programmulddato	188 KB
NMModel.pdb	04-10-2022 20:51	Demo Bygler	562 KB
Newtonsoft.Json.dll	17-03-2021 21:03	Programmulddato	680 KB
SFSClient.deps.json	03-10-2022 13:04	JSON Source File	13 KB
SFSClient.dll	05-10-2022 09:19	Programmulddato	1.283 KB
SFSClient.dll.config	27-09-2022 08:36	COHFG-Fil	5 KB
SFSClient.exe	05-10-2022 09:19	Program	145 KB
SFSClient.pdb	05-10-2022 09:19	Demo Bygler	230 KB
SFSClient.runtimeconfig.json	19-09-2022 23:23	JSON Source File	1 KB
SFSSetup.exe	19-09-2022 07:49	Program	346 KB
System.Text.Json.dll	17-05-2022 19:22	Programmulddato	462 KB

Insert the information previously gathered:

The ShopFloor Client is started by executing SFSClient.exe.
 The ShopFloor Client folder can be located either on a network share or locally on the client computer.
 For the best performance it is recommended that the folder is copied to the client and computer.