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

Document date: September 22, 2022 (version 1.1)

Table of Content

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.

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.

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.
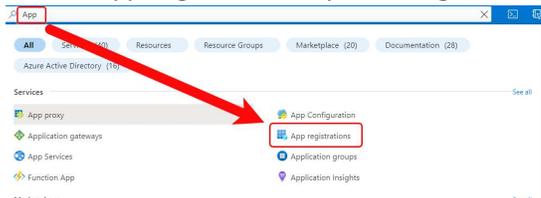
3. Click "New Registration".
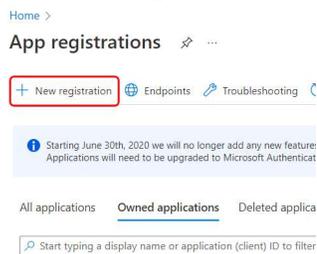
4. Enter a name, eg. "NAVEKSA ShopFloor".
    Check "Accounts in any organizational directory" if applicable.
    Otherwise check "Accounts in this organizational directory only".

5. Leave the redirect URI blank.
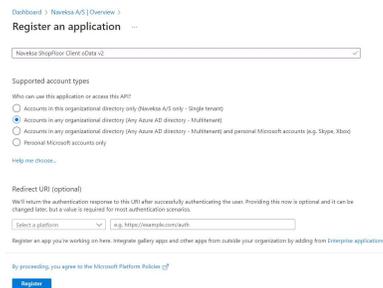
6. Click Register to create the App Registration.

7. You are taken back to the overview page.
    Here there are two values which you must note.

NAVEKSA

The first one is the 'Application (client) ID' and the second one is 'Directory (tenant) ID'
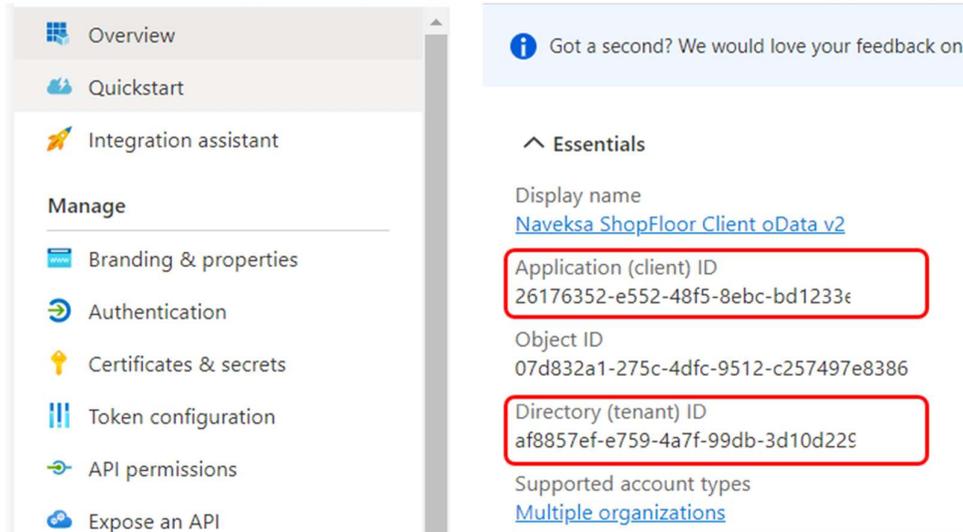
Step two – create Authentication

1. Select "Authentication" in the left side menu.
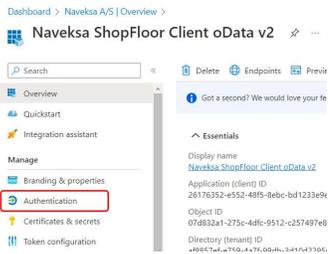
2. In the Authentication Screen click 'Add a platform'.

3. Select 'Web'.
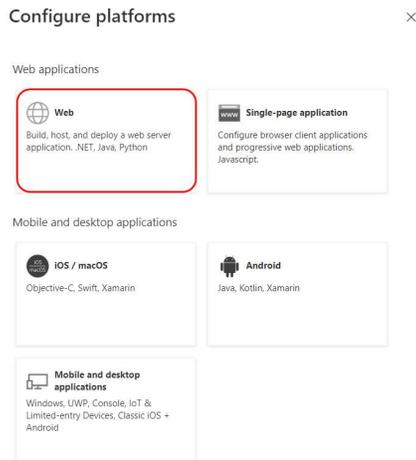
4. Enter "Redirect URI"
The Redirect URI is the full URL-path to you Microsoft Business Central.

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

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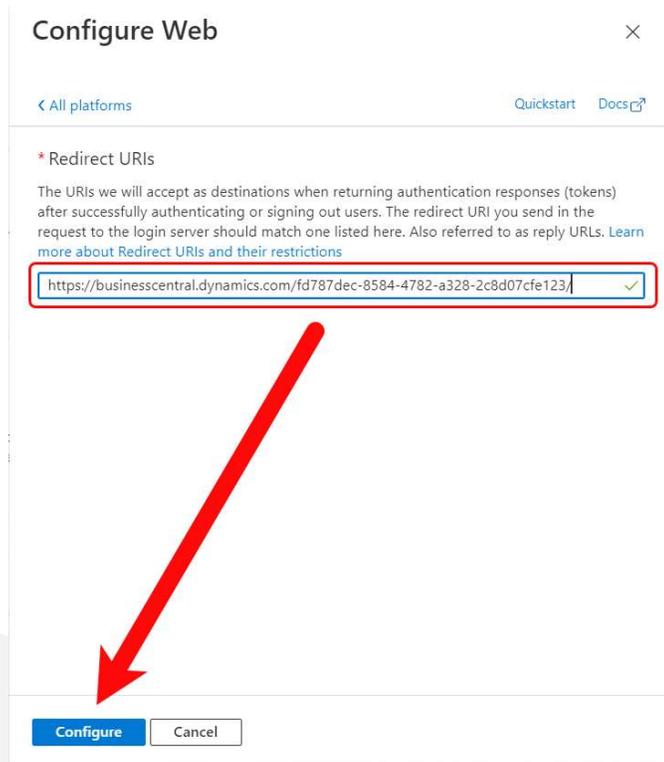
5. Check the box with 'ID tokens (used for implicit and hybrid flows)' and click Configure:

6. Enter an additional Redirect URI:
    https://businesscentral.dynamics.com/OAuthLanding.htm

    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.

8. Select "Mobile and desktop applications".

Configure platforms ✕

Web applications

⊕ **Web**
Build, host, and deploy a web server application. .NET, Java, Python

www **Single-page application**
Configure browser client applications and progressive web applications. Javascript.

Mobile and desktop applications

iOS/macOS **iOS / macOS**
Objective-C, Swift, Xamarin

🤖 **Android**
Java, Kotlin, Xamarin

🖥 **Mobile and desktop applications**
Windows, UWP, Console, IoT & Limited-entry Devices, Classic iOS + Android

9. Select the "Redirect URI" https://login.microsoftonline.com/common/oauth2/nativeclient amongst the default options.

Configure Desktop + devices ✕

‹ All platforms   Quickstart   Docs ↗

Redirect URIs

The URIs we will accept as destinations when returning authentication responses (tokens) after successfully authenticating 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://login.microsoftonline.com/common/oauth2/nativeclient 📋
☐ https://login.live.com/oauth20_desktop.srf (LiveSDK) 📋
☐ msal26176352-e552-48f5-8ebc-bd1233e9ed97://auth (MSAL only) 📋

Custom redirect URIs

https://contoso.com

Configure   Cancel

Click Configure

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

11. In the section 'Implicit grant and hybrid flows' check the value 'ID tokens (used for implicit and hybrid flows)'.

12. For "Supported account types" check the applicable value.

13. 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.

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

2. Click "Add a permission".

3. Select "Dynamics 365 Business Central".

4. Click "Delegated permissions"
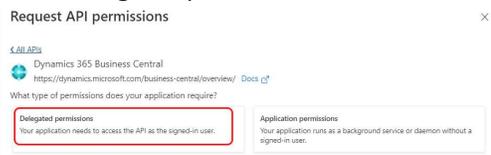
5. Make sure the Permissions 'user_impersonation' and 'Financials.ReadWrite.All' are checked and click 'Add permissions'

6. Click "Add a permission" again

7. Select "Dynamics 365 Business Central".

8. Select "Application permissions".
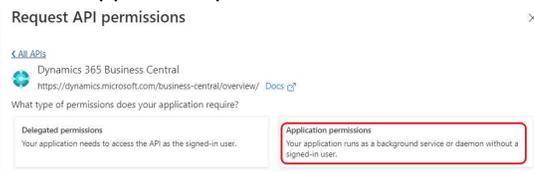
9. Check "app_access" and "API.ReadWrite.ALL and click 'Add permissions'

10. In the overview Screen click "Grant admin consent for *<Your domain>*".

11. Click "Yes" when prompted to verify consent

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

Step four – Certificates & Secrets

1. Click "Certificates & secrets"
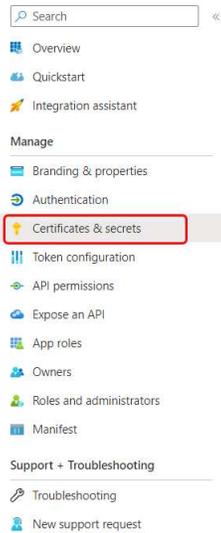
2. Click "New Client secret"

3. Enter a name and expiration date and click 'Add'
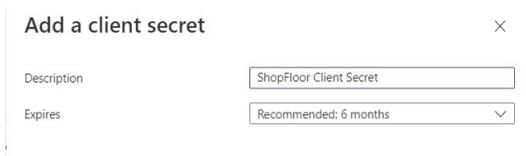
Note:
Remember to put a reminder in your calendar to create a new secret and update the ShopFloor app before the Client Secret expires.
Otherwise, the ShopFloor Client will not be able to access Business Central.

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'
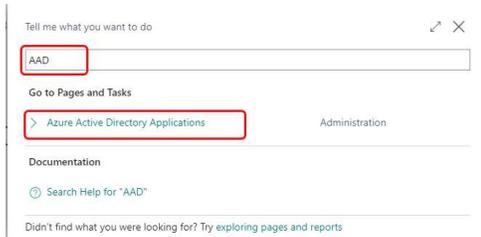
3. Click "New".
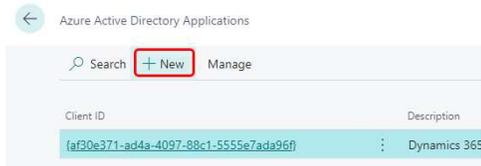
4. Enter the client ID from the Azure Portal application and a Description.
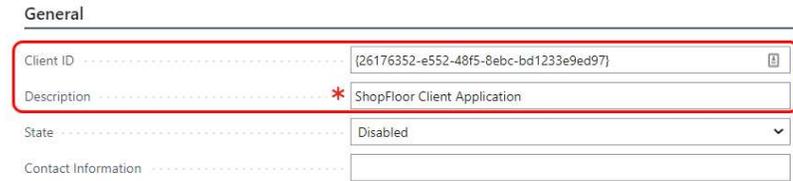
5. In App ID, browse to 'Naveksa ShopFloor 365' by clicking the 'three dots':
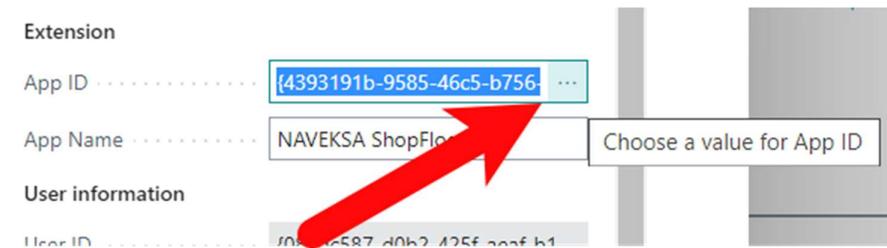
Note:
If Business Central v21.x has already been implemented the above step is not necessary.

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

Verify the creation

6. Set the following User Group: D365 BUS Premium

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

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

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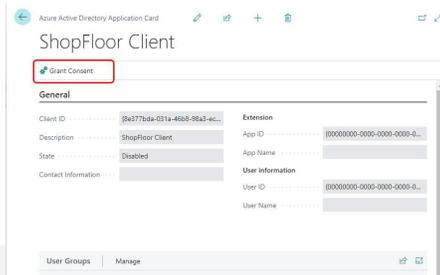
When clicking 'Grant consent' you will be prompted for your credentials.

Accept the permissions for the App.

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
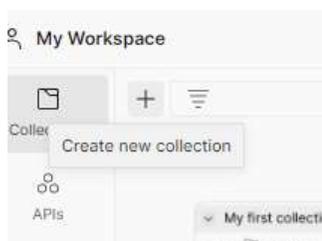
3. Choose OAuth 2.0 from the Type

4. Add a request to the Collection

5. Change the type from GET to POST
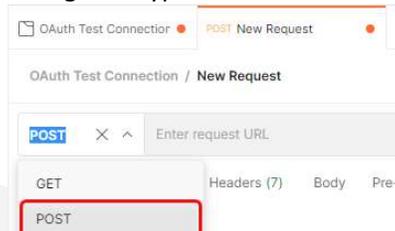
6. Enter the following URL in the field 'Enter request URL'
   https://login.microsoftonline.com/<Tenant ID>/oauth2/v2.0/token

Example
https://login.microsoftonline.com/af8857ef-e759-4a7f-99db-3d10d2295123/oauth2/v2.0/token
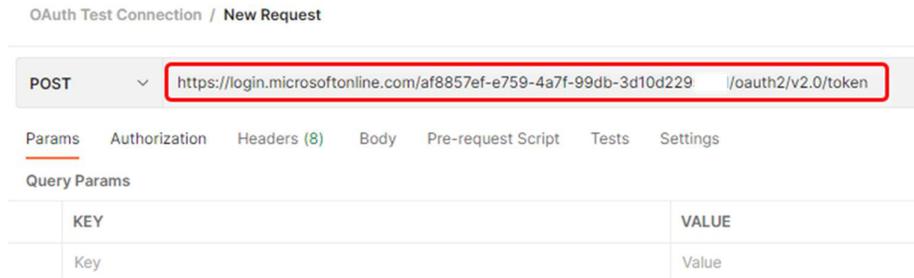
7. Select Body and then then 'x-www-form-url-encoded'
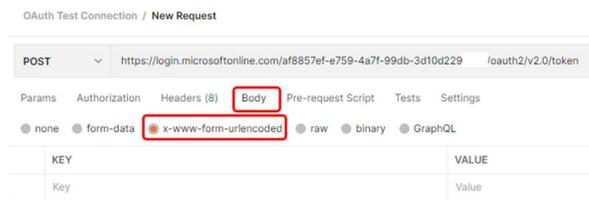
8. Create the following keys:

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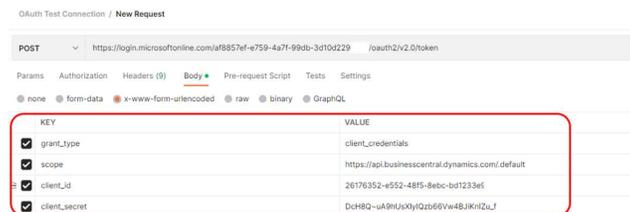
9. When keys and values has been entered click the Send-button

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:

NAVEKSA

Body   Cookies (3)   Headers (15)   Test Results

Pretty   Raw   Preview   Visualize   JSON

Status: 200 OK   Time: 376 ms   Size: 2.12 KB   Save Response

```
1
2    "token_type": "Bearer",
3    "expires_in": 3599,
4    "ext_expires_in": 3599,
5    "access_token": "eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiIsImtpZCI6IjJaaUXBKM1VwYmpBWVhZR2FYRUpsOGxWTFRPSSIsImtpZCI6IjJaaUXBKM1VwYmpBWVhZR2FYRUpsOGxWTFRPSSJ9...
```

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.	06666666666	
Address	Ringen 5	VAT Registration No.	DK77777777	...
Address 2	Westminster	GLN		
City	Kugleby	Use GLN In Electronic ...		
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
BC2022W2	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:

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.