

# Establish Connectivity to Microsoft Power BI Cloud

This article describes how to connect to Microsoft Power BI in order to load data into Datasets and Reports in Metric Insights.

## PREREQUISITES

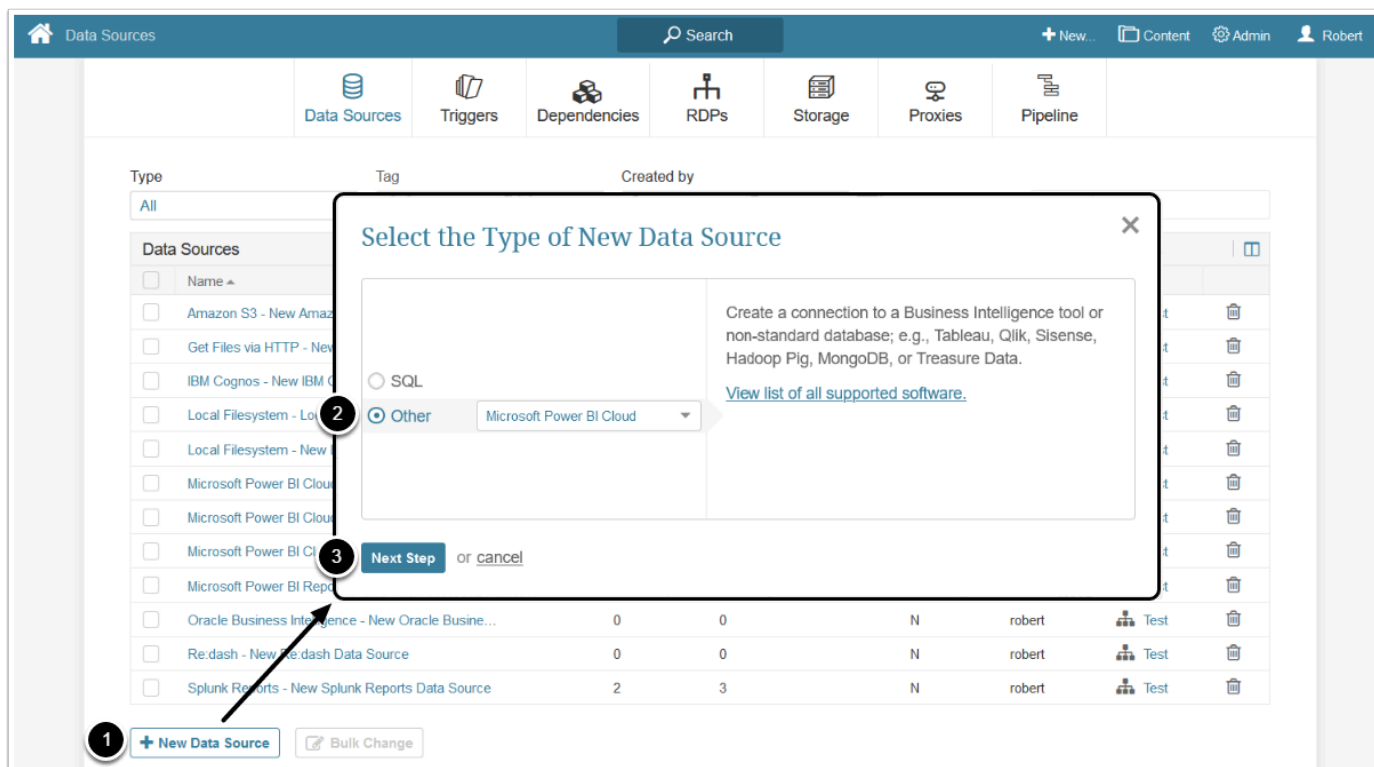
- Make sure all the [Prerequisites for connecting to Microsoft Power BI](#) have been met
- Refer to the [Power BI Plugin Capabilities](#) to understand for which type of Power BI Objects you can get data and images

The whole process comprises:

1. [Create New Data Source](#)
2. [Provide Required Parameters](#)
3. [Provide Optional Parameters](#)
  - [Object Filters Cheat Sheet](#)
4. [Advanced Configuration](#)
5. [Microsoft Power BI Cloud Elements and User Tokens](#)

## 1. Create New Data Source

Access **Admin > Collection & Storage > Data Sources**



1. [+ New Data Source]
2. Choose "Microsoft Power BI Cloud" from **Other** drop-down list
3. [Next Step]

## 2. Provide Required Parameters

The screenshot shows the 'New Microsoft Power BI Cloud Data Source' configuration page. The page has tabs for 'Info', 'Datasets', 'Microsoft Power BI Cloud Objects', 'Elements', and 'Associations'. The 'Info' tab is active. The page shows fields for 'Data Source Name', 'Tags', 'Auth Type', 'Application ID', 'Server', 'Username', and 'Plugin Password'. The 'Auth Type' is set to 'Password'. The 'Server' is set to 'https://app.powerbi.com'. There are checkboxes for 'Enable On-Demand Element Creation' and 'Enable Content Auto Synchronization'.

1. Select the **Auth Type**:

- **Password:** provide **Username** and **Plugin Password**, note that the username must be a cloud only Microsoft Power BI user, or if an AD user, the AD user must exist / be synced in Azure AD for Power BI authentication
    - If you choose the Password Auth Type, you will need to [enable row-level security \(RLS\)](#) in Metric Insights to be able to use RLS
  - **Identity Profile:** provide an [Identity Profile](#)
  - **OAuth:** enter **Client Secret** and click **[Get Token]** to grant permission to Office 365 API
    - You can enable **Client Secret** authorization for your Azure app. After the Client Secret has been generated, the Username/Password authorization **will no longer work**
2. Enter **Application ID** of the registered Azure app that represents Metric Insights (to connect to Power BI)
  3. **Server:** the URL of your Microsoft Power BI server (this is the same URL that you see when accessing Microsoft Power BI via your web browser)

**i** Enabling OAuth has the following benefits compared with the Username/Password authentication model:

- Ability to view content in iframes based on user account permissions rather than service account permissions
- Row-level security (RLS) without the need to use User Maps on MI side (you only have to enable RLS in Power BI)

See [Configure Microsoft Power BI OAuth in Azure AD](#) for details.

### 3. Provide Optional Parameters

**Optional Microsoft Power BI Cloud Parameters**

Variable	Value	Description
1 App filter		Use * for all available apps or use a comma separated list of app name.
To Check Client Expiration Date	Y	For OAuth only. Please, fill in Client secret (value), Client secret id, and Directory (tenant) ID.
Secret Id	*****	Client secret ID to check expiration date for
3 Collect objects as admin	false	Collect objects as admin
4 Power BI Premium: Collect native PDFs		If true, then plugin tries to get PDF documents for reports from Power BI (only work with Premium accounts). Otherwi...
5 Power BI Premium: Collect media using API	false	Collect images/pdf for paginated reports, reports and report tabs using REST API.
6 Get token from Plugin	Y	Get token from Plugin
7 Object types to collect	DASHBOARD, REPORT, DATASET, ...	comma separated list of object types to be returned (DASHBOARD, TILE, DATASET, TABLE, REPORT, APP, WORK...
8 Old table ID	true	Collect tables from OleDb connector with old ID format.
9 OleDb Data	false	Parameter for getting data from OleDb instead of DAX API.
Directory (tenant) Id	319fe55c-621a-42b9-a910-5fa500954...	Directory (tenant) Id for the Application to check expiration date
10 Workspace Filter	*	Use * for all available workspaces (except personal), use a comma separated list of workspace name, or leave blank t...

## 1. App filter:

- **"\*":** the plugin will collect Power BI objects from all available Apps
- **App names (comma-separated, or wildcard patterns):** the plugin will collect Power BI objects from the specified Apps

## 2. These three parameters work only with OAuth and configure the display of Client Secret expiration date. Note that the values for all three parameters must be provided in order to display Client Secret expiration date:

- **To Check Client Expiration Date:** whether or not the expiration date is displayed. If the expiration date has been retrieved and this parameter is then set to "N", the expiration date will disappear after the next Test Connection
- **Secret Id** can be found on the *Certificates & secrets* tab of the Azure app
- **Directory (tenant) Id** can be found on the *Overview* tab of the Azure app

## 3. Collect objects as admin: Set to "true" to allow the User who created the Data Source with Power BI admin account to pull all Workspaces and their objects into Metric Insights without having to explicitly grant Admin access to each workspace.

- **NOTE:** If this parameter is set to "true", App filter is not available, Workspace Filter can filter Workspaces by name.

## 4. Power BI Premium: Collect native PDFs: set to "true" to get native PDFs from Power BI

- **NOTE:** Native PDFs can be generated only with Power BI Premium accounts, otherwise, PDFs are generated using collected images

## 5. Power BI Premium: Collect media using API: set to "true" to extract images and PDFs from

## 6. Get token from Plugin: specify whether the token used to display External Report images in iframes is fetched from plugin ("Y") or in the UI ("N")



**Note:** It is recommended to set the parameter to "Y".

- If the parameter is set to "N", a new token is fetched in the UI for each embedding and image collection. The same applies for External Reports with *Drill-Down Authentication* parameter set to "Power BI OAuth" in the Report type.

## 7. Object types to collect: by default the plugin is configured to collect Dashboards, Reports, Datasets, Tiles and Tables (you may remove any object type you do not need to fetch)

- Enter "Workspace" and "App" to be able to collect objects from Workspaces and Apps

## 8. Old table ID: specify whether or not to collect tables from OLE-DB connector with old ID format.

## 9. OleDB Data:

- "true": get data from OleDB instead of DAX API, an RDP is required
- "false": get data using DAX API **without** using an RDP




**Note:** If data is fetched using DAX API:

- Only data from V2 Workspaces can be fetched
- The returned Dataset data is limited by 100,000 rows

#### 9. **Workspace Filter:**

- **"\*"**: the plugin will collect Power BI objects from all Workspaces the associated user has access to, **except for** My Workspace
- *Workspace names (comma-separated or wildcard patterns)*: the plugin will collect Power BI objects from the specified Workspaces

#### 10. **[Test Connection]**

 See [Object Filters Cheat Sheet](#) for details on configuring the **App filter**, **Workspace filter**, and **Object types to collect** parameters.

## Object Filters Cheat Sheet

App filter	Empty	Empty	Empty	"*" or App name(s)	"*" or App name(s)	"*" or App name(s)
Workspace filter	"*" or Workspace name(s)	"*" or Workspace name(s)	Empty	"*" or Workspace name(s)	Empty	"*" or Workspace name(s)
Object types to collect	Neither "Workspace" nor "App" are listed <b>OR</b> "Workspace" is listed	"App" is listed	Both "Workspace" and "App" are listed	Neither "Workspace" nor "App" are listed	"App" is listed	Both "Workspace" and "App" are listed
Result	Objects from the specified Workspace(s) are collected	Object filtration error	Object filtration error	Object filtration error	Objects from the specified App(s) are collected	Objects from the specified App(s) and Workspace(s) are collected

## 4. Advanced Configuration

❗ If you have set **OleDB Data** to "true" on the [previous step](#) and want to be able to get Data from Power BI Datasets (to create Metrics, Reports, and Datasets in Metric Insights), you must utilize the Metric Insights *Remote Data Processor* to connect to Power BI directly.

- For more information on how to install and use the RDP, consult [Configuring Remote Data Processors](#)

If you are using AD, you may want to run the RDP service as an AD service account:

- Access **Services > Metric Insights Data Processor Daemon > Properties > Log On**, select AD service account

Plugin Data Sources / New Microsoft Power BI Cloud Data Source

Search

0 Docs (2) + New... Content Admin Robert

Info Datasets Microsoft Power BI Cloud Objects Elements Associations

Save Test Connection Permissions

▼ Advanced Data Source Configuration

Use Remote Data Processor ☒ yes ☐ no

Generate Object List ☒ automatically ☐ manually

Object List Refresh Trigger  + ⚙️ We strongly recommend avoiding Triggers that run more than once per day.

Threads to utilize during data and/or image fetch

Multiple dimension values delimiter

Use Proxy ☒ yes ☐ no

Proxy

Certified ☐ yes ☒ no

Remote Processors

There are no Remote Processors

+ New Remote Processor

- Advanced Configuration settings can be set to default values unless Data Source requires more precise tuning
  - See [Advanced Data Source Configuration](#) for more details
- Use Proxy:** set to "Yes" and choose a Proxy if your Data Source connection requires a proxy server
  - See [Create a Proxy](#) for more details
- [Test connection]** (this will also save your entries)

## 5. Microsoft Power BI Cloud Elements and User Tokens

The screenshot displays the Microsoft Power BI Cloud interface. At the top, there's a navigation bar with 'Plugin Data Sources / Robert Data Source OAuth', a search bar, and user information 'Robert'. Below this, a tabbed interface shows 'Info', 'Datasets', 'Microsoft Power BI Cloud Objects', 'Elements', and 'Associations'. The 'Datasets' tab is active, showing a list of datasets with columns for ID, Name, Source, and Test Embed. A red circle '1' highlights the 'Datasets' tab. To the right, a 'Permissions' button is highlighted with a red circle '2'. Below the datasets list, there are 'Refresh List' and 'Run History' buttons. At the bottom, the 'User Tokens' section is visible, showing a table with columns for User, Expires, and a trash icon. A red circle '3' highlights the 'User Tokens' section. The table lists two users: Robert Isaenko and John, both with expiration times around 2022-05-19.

ID	Name	Source	Test Embed
/groups/db8ab3f5-4278-4ef3-8a3c-5e2c3...	500000 Sales Records	Source	Test Embed 2
/groups/1f8dfc6b-097e-4277-8a55-8b6de...	500000 Sales Records (Page 1)	Source	REST_API_DAX_QUERIE...
/groups/db8ab3f5-4278-4ef3-8a3c-5e2c3...	500000 Sales Records.csv	Source	Test Embed 2
/groups/1f8dfc6b-097e-4277-8a55-8b6de...	500000 Sales Records.csv	Source	REST_API_DAX_QUERIE...
/groups/1f8dfc6b-097e-4277-8a55-8b6de...	500000 Sales Records.csv	Source	REST_API_DAX_QUERIE...
/groups/db8ab3f5-4278-4ef3-8a3c-5e2c3...	500000 Sales Records.csv	Source	Test Embed 2
/groups/1f8dfc6b-097e-4277-8a55-8b6de...	5m Sales Records	Source	REST_API_DAX_QUERIE...
/groups/1f8dfc6b-097e-4277-8a55-8b6de...	5m Sales Records.csv	Source	REST_API_DAX_QUERIE...
/groups/1f8dfc6b-097e-4277-8a55-8b6de...	5m Sales Records.csv	Source	REST_API_DAX_QUERIE...
/groups/1f8dfc6b-097e-4277-8a55-8b6de...	5m Sales Report	Source	REST_API_DAX_QUERIE...
/groups/3bebbfdf-ef57-4c07-88e5-f74889...	Account Analysis	Source	Sales Analytics for Dynami...

User	Expires	
Robert Isaenko	2022-05-19 13:13:52	
John	2022-05-19 13:21:36	

1. You can create Datasets and view all the elements or Datasets using this Data Source from the respective tabs
2. Click **Permissions** to assign Data Source access to Groups or Power Users
3. **User Tokens** are displayed in the corresponding menu and can be deleted by clicking the trashcan icon. The lifetime of each token is 45 minutes

## What's Next?

[Create a Dataset from Microsoft Power BI Cloud](#)