Power BI Connector Guide

PV8.2.0 SV200

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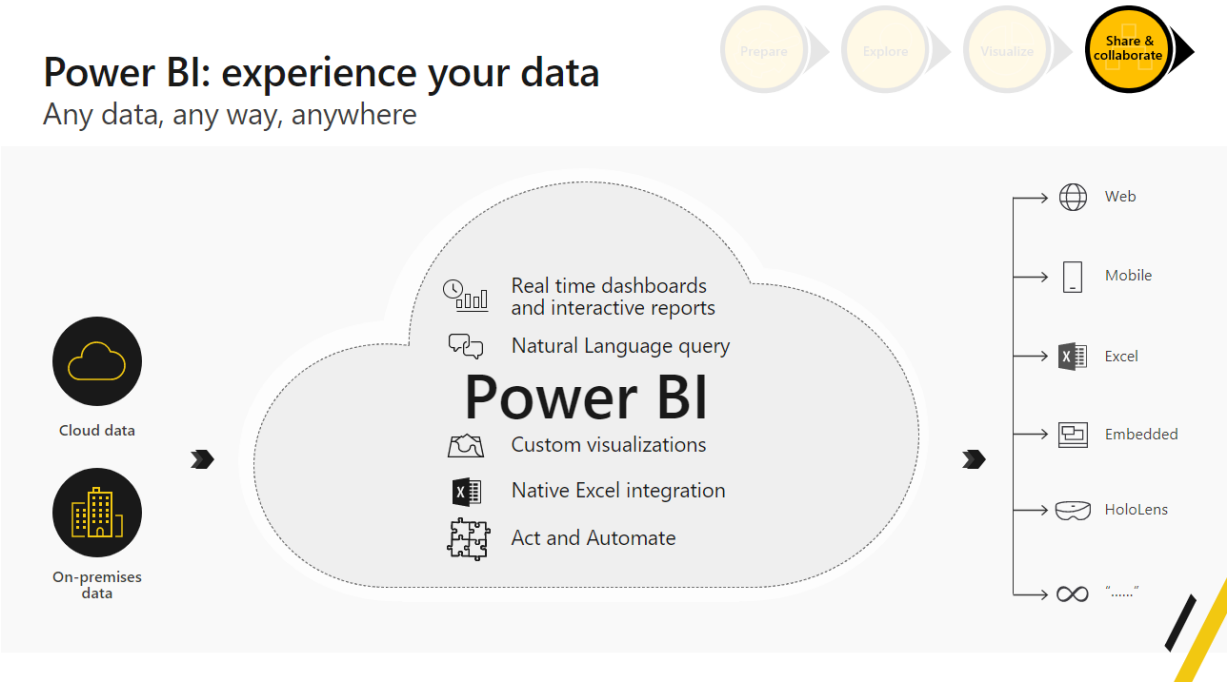
Power BI Overview

Power BI is a collection of software services, applications, and connectors that work together to turn your unrelated sources of data into coherent, visually immersive, and interactive insights.

Your data may be an Excel spreadsheet, or a collection of cloud-based and on-premises hybrid data warehouses. Power BI enables you to connect to your data sources, visualize, and discover what's important, and share that with anyone.

See source: *What is Power BI?*



Access all your DATA

Prepare → Explore → Visualize → Share & collaborate

Data sources

- **SaaS solutions** — *e.g. Marketo, Salesforce, GitHub, Google Analytics*
- **Organizational** — *Corporate data sources or external data services*
- **On-premises Data**
- **Azure services** — Azure SQL, Stream Analytics...
- **Excel files**
- **Power BI Desktop files** — *Data from files, databases, Azure, and other sources*

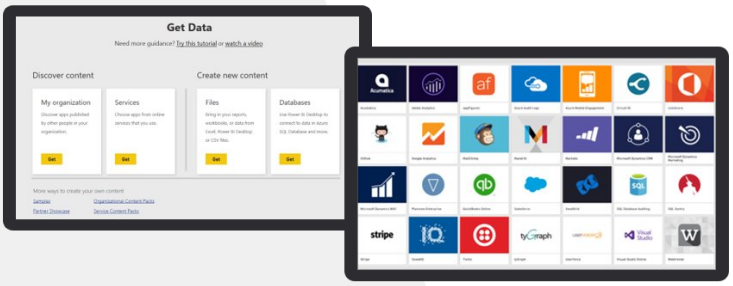
Connect to 115+ data sources, both on-premises and cloud

Data from Applications
- SaaS services that you already use

Data from your organization
- Content published by others in your org (Datasets and Dataflows)

Big data and more
- Azure data services, e.g. SQL DW, ADLS.
- On-premises data sources

Data from files
- Import data from Text, CSV, Excel and Power BI Desktop files



Power Platform

One connected platform that empowers everyone to innovate

Analyze
Make sense of your data through interactive, real-time dashboards and unlock the insights needed to drive your business forward

Act
Build apps in hours—not months—that easily connect to data, use Excel-like expressions to add logic, and run on the web, iOS, and Android devices

Automate
Include powerful workflow automation directly in your apps with a no-code approach that connects to hundreds of popular apps and services

Connect
Add a Virtual Agent to your organization, automate communication with virtual agents

Microsoft Power Platform

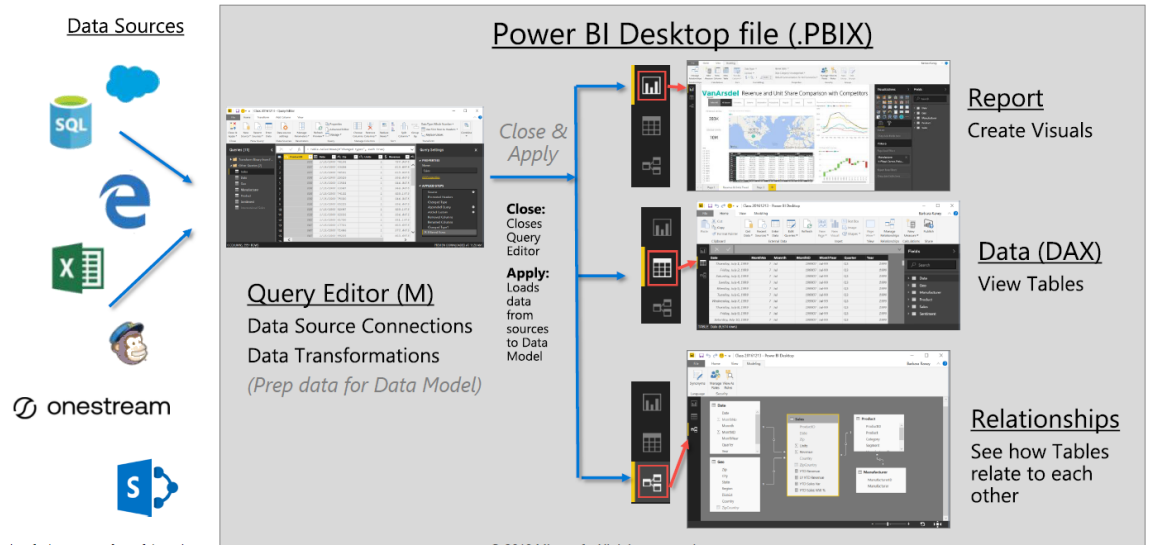
Power BI | Power Apps | Power Automate | Power Virtual Agents

Power BI Desktop

Power BI Desktop is a application you install on your local computer that lets you connect to, transform, and visualize your data. With Power BI Desktop, you can connect to multiple sources of data and combine them, often called modeling, into a data model. This data model lets you build visuals, collections of visuals, and you can share as reports with other people inside your organization. Users working on business intelligence projects use Power BI Desktop to create reports and then use the Power BI service to share their reports with others.

See source: *What is Power BI Desktop?*

Power BI Desktop Data Flow



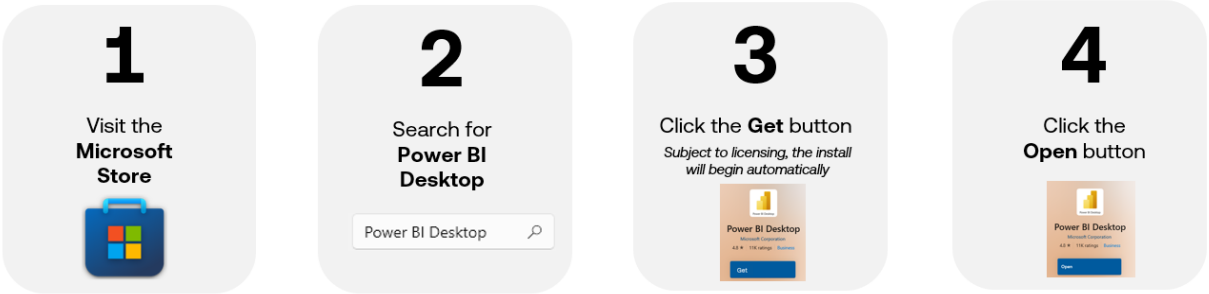
Setup and Installation

This section contains important details on downloading and installing Power BI Desktop from the Microsoft Store.

Dependencies

Component	Description
OneStream 8.2.0 or later	Minimum OneStream Platform version required to install this version of Power BI.
SaaS Offering	SaaS Cloud offering required to use Power BI Connector.
May 2024 Release of Power BI Desktop	Minimum Power BI Desktop release required to use OneStream Power BI Connector.
Environment APIs	Environment APIs must be enabled to use Power BI. Please contact your Account Executive.

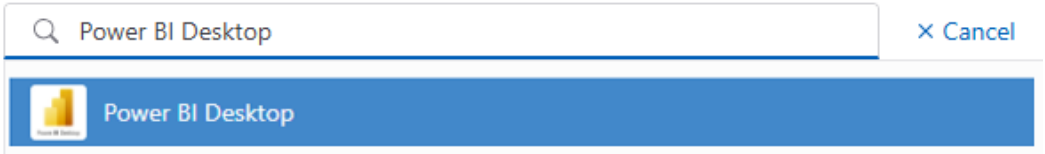
Install Power BI Desktop



Install Power BI Desktop using these steps:

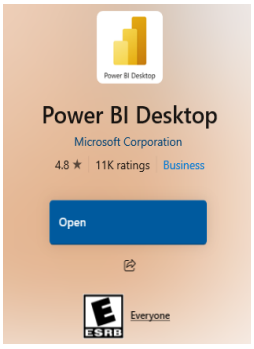
> **NOTE:** These are the standard installation steps from Microsoft. Before installing, refer to your company's IT department for specific guidelines on installation and licensing requirements.

1. Navigate to the Microsoft Store.
2. Type **Power BI Desktop** into the search bar. Select it from the drop-down menu.



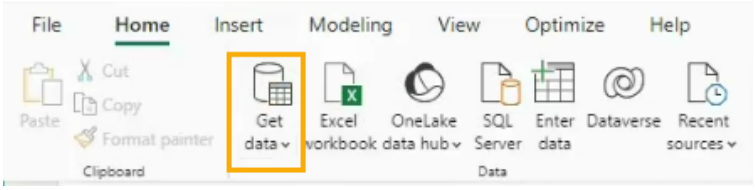
3. Click the **Get** button.

4. Click the **Open** button.

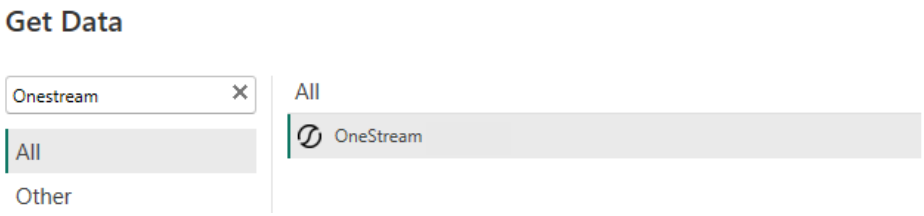


OneStream Authentication

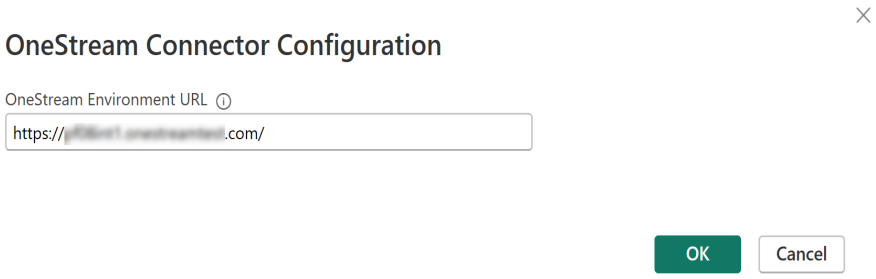
1. Open Power BI Desktop and select **Get data**.



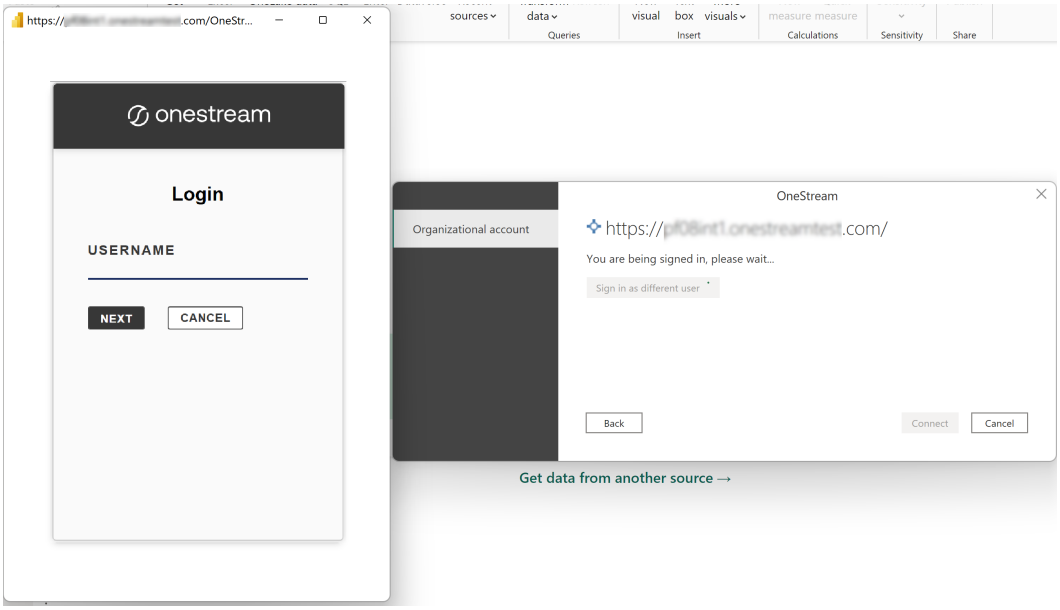
2. In the search box, type **OneStream** to locate the certified OneStream Connector.
3. Select **OneStream**, and click the **Connect** button.



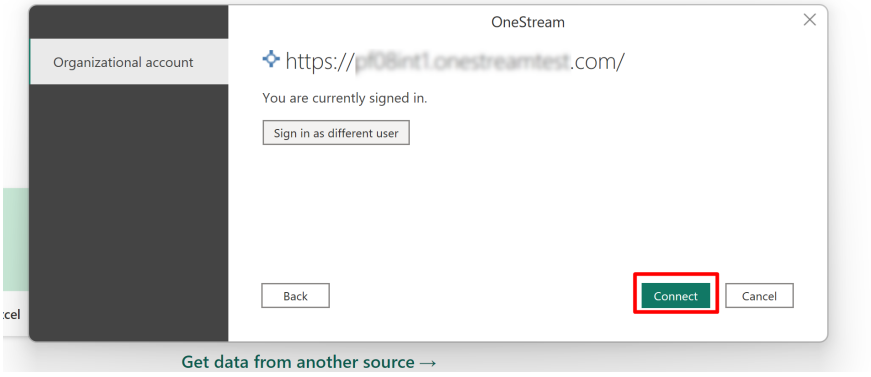
4. In the **OneStream Connector Configuration** dialog box, enter the **OneStream Environment URL**, pulled from your desktop or browser URL. Verify the URL leads with `https://<subdomain>.onestreamcloud.com`, otherwise connection attempts will fail.



5. Click the **OK** button to connect to theOneStream environment. After, it will redirect and open the default browser for login.
6. Log in to the OneStream Account.



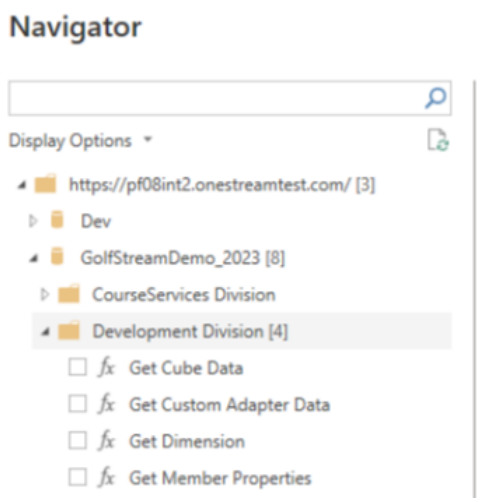
7. After logging in, click the **Connect** button.



OneStream Navigator

The OneStream Connector uses the Import method and offers you the following options to pull data and metadata:

- Get Cube Data
- Get Custom Adapter Data
- Get Dimension
- Get Member Properties



Each option has required and optional fields. Optional fields have a default value that might need to be changed based on the design of your OneStream application. After populating the fields, you can preview the data before importing into Power BI desktop.

To learn more about each of fields: See Get Cube, Get Custom Adapter, Get Dimension and Member Properties.

Details on OneStream Certified Connector

OneStream Connector fetches data from OneStream instance using Representational State Transfer (REST) APIs. For More information on REST APIs, see OneStream Documentation.

OneStream Connector performs all APIs calls under the permission boundary of the current, logged-in user. The Connector only uses READ scopes on behalf of Power BI report user to perform all operations. The following scopes are used: **'onestream.powerbi, offline_access'**.

OneStream Connector can only read data from OneStream, not write it.

Data Cache Time Limits

When data is retrieved from OneStream, the resulting query data is cached. The cached data expires after a set amount of time based on if the query is rerun. These are the current cache time limits:

- **Minimum lifespan**: Set to 40 minutes. Cached data from the query will expire after this time if the query was not rerun.
- **Maximum lifespan**: Set to 60 minutes. Cached data from the query will expire after this time if the query was rerun before the minimum lifespan.

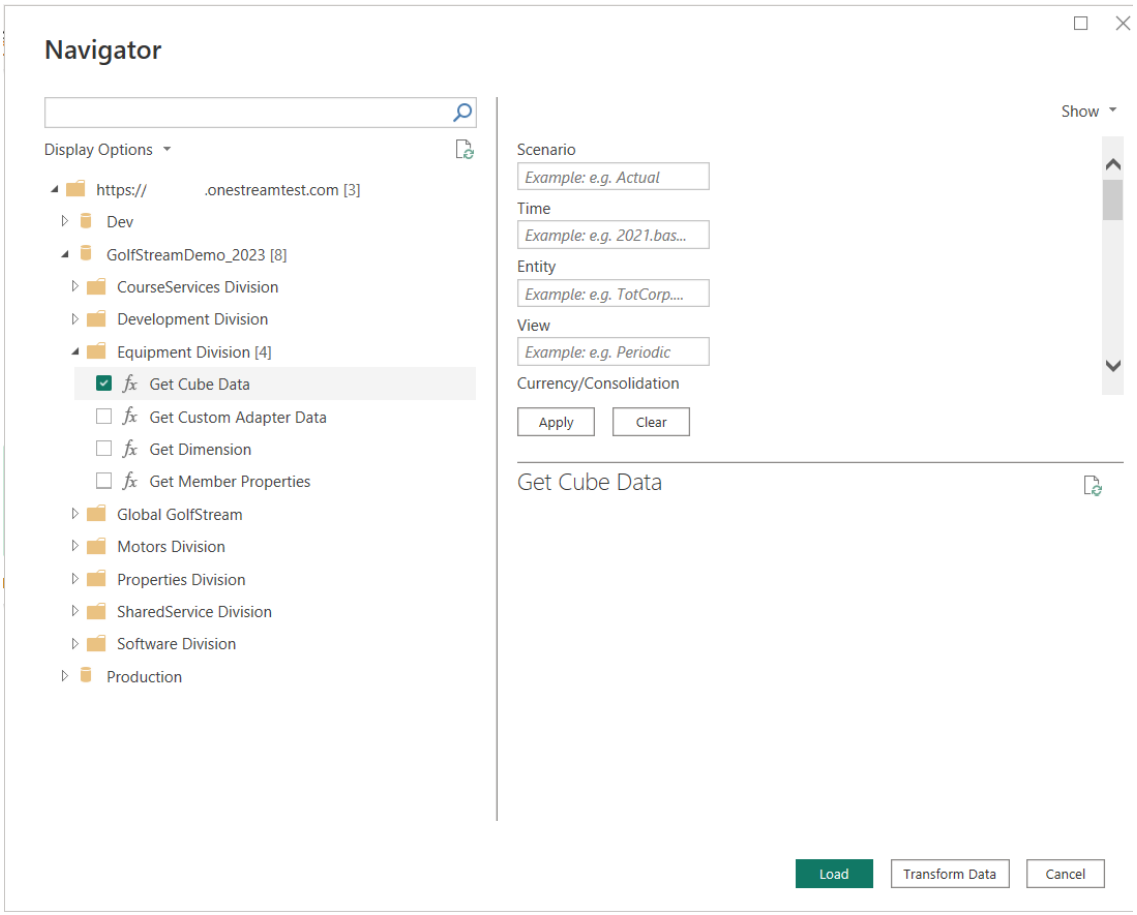
Get Cube

This function retrieves data from a OneStream Cube. Populate the data unit dimensions:

- Scenario
- Time
- Entity

- View
- Currency/Consolidation

> **NOTE:** Expansion members can be used for all inputs except View and Currency/Consolidation which require a single member. For example, the time dimension could use 2023.Base.



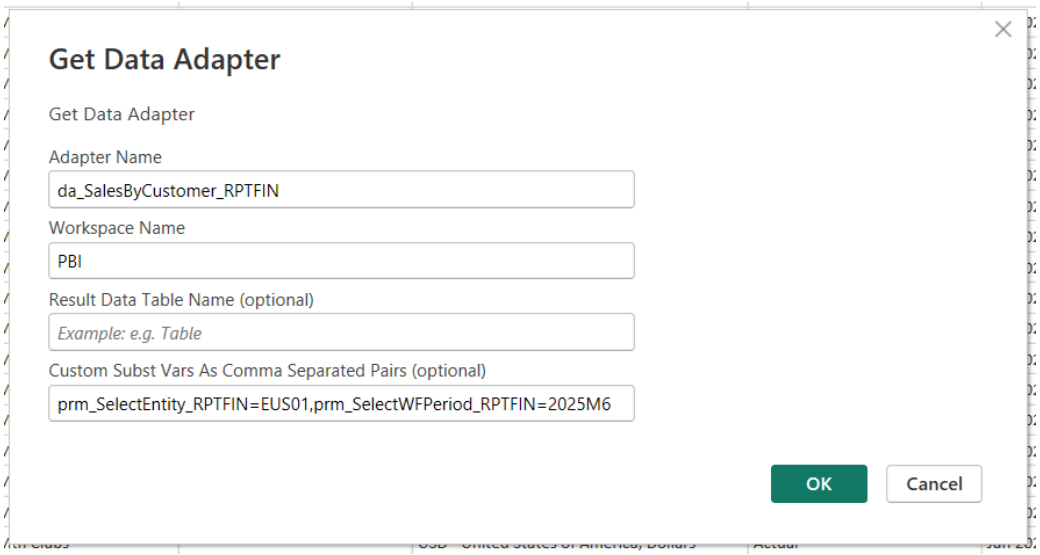
Video Use Case Series

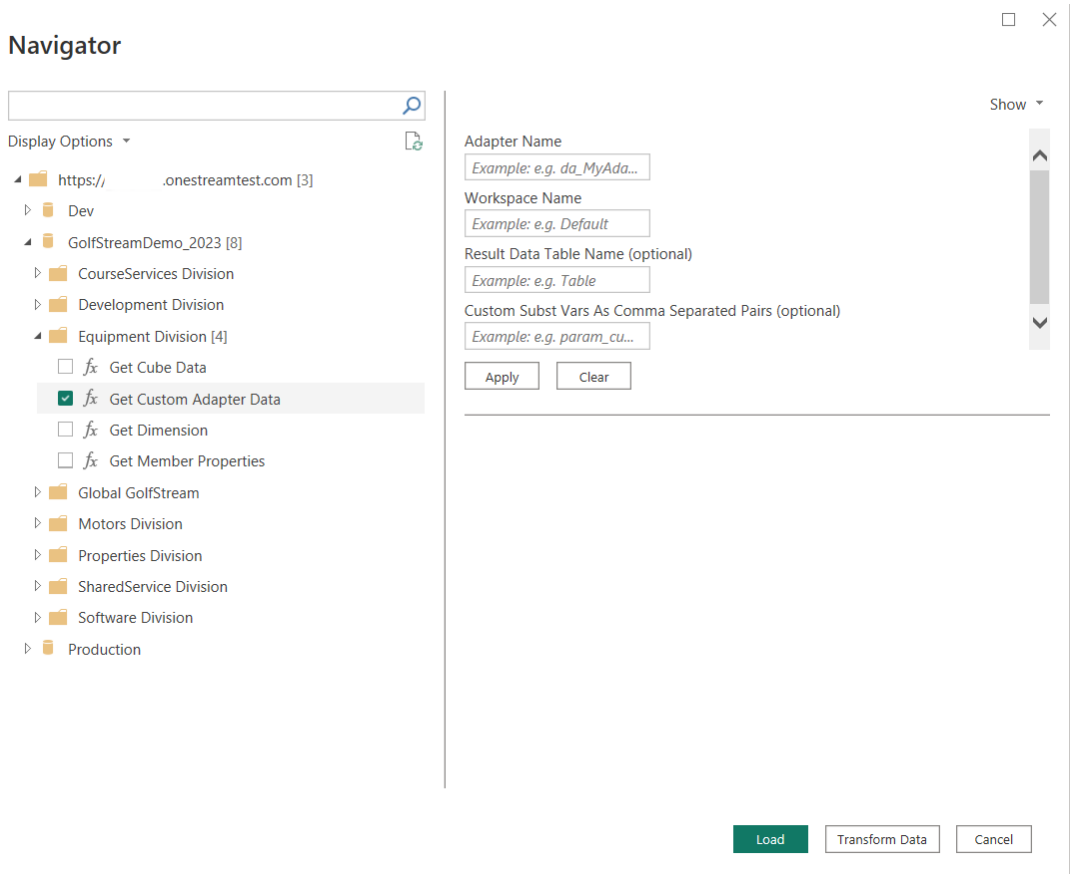
This video series demonstrates how to connect to your OneStream data using Get Cube Data in Power BI. Watch now.

Get Custom Adapter

Populate the following fields:

- **Adapter Name** (required): The name of the adapter you are calling.
- **Workspace Name** (required): The Workspace where the adapter resides.
- **Result Data Table Name**: Enter the name of the table to include in your query when multiple tables exist. This field is optional if only one table exists.
- **Custom Subst Vars As Comma Separated Pairs** (optional): If the data adapter contains custom substitution variables, use this field to set the substitution variables from the Power BI interface. If passing more than one substitution variable, separate using a comma. See example below.


Get Data Adapter
Get Data Adapter
Adapter Name
da_SalesByCustomer_RPTFIN
Workspace Name
PBI
Result Data Table Name (optional)
Example: e.g. Table
Custom Subst Vars As Comma Separated Pairs (optional)
prm_SelectEntity_RPTFIN=EUS01,prm_SelectWFPeriod_RPTFIN=2025M6
OK
Cancel


Navigator
Display Options
https:// .onestreamtest.com [3]
Dev
GolfStreamDemo_2023 [8]
CourseServices Division
Development Division
Equipment Division [4]
Get Cube Data
Get Custom Adapter Data
Get Dimension
Get Member Properties
Global GolfStream
Motors Division
Properties Division
SharedService Division
Software Division
Production
Show
Adapter Name
Example: e.g. da_MyAda...
Workspace Name
Example: e.g. Default
Result Data Table Name (optional)
Example: e.g. Table
Custom Subst Vars As Comma Separated Pairs (optional)
Example: e.g. param_cu...
Apply
Clear
Load
Transform Data
Cancel

Use Parameters

Get Custom Adapter connection gives you the option to populate the optional and required fields using OneStream member scripts to pull in your data. Multiple dimension members can be used as parameters.

To insert parameters, enclose them in square brackets. For example:

- **CubeView data adapter**: ParameterX = [S#Actual,S#Budget] when the parameter is connected to a CubeView.
- **SQL Query data adapter**: ParameterY = [('Actual','Budget')] where ParameterY is used with a SQL WHERE...IN statement.

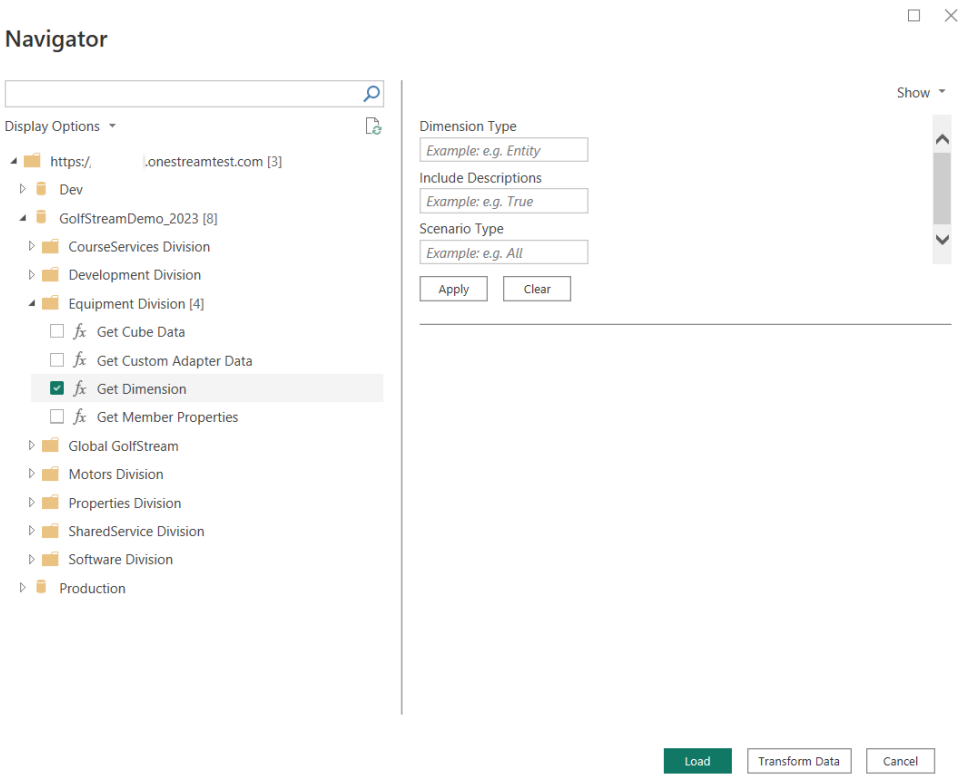
See *Parameter Types* in the *Design and Reference Guide*.

Get Dimension and Get Member Properties

Populate the following fields:

- **Dimension Type**: Specify the OneStream Dimension Type to retrieve.
- **Include Descriptions**: Can be set to **True** or **False**. When True, dimension and member property descriptions are included.
- **Scenario Type**:. Use Default or All to use the selected cube default dimensions and

retrieve the default properties.



Load and Transform

After providing the parameters select one of the following buttons:

- **Load**: To load the table into the internal Power BI Desktop data model.
- **Transform data**: To make changes in the table before loading it into the internal Power BI Desktop data model. This option will launch Power Query Editor in a new window with a representative view of the table.

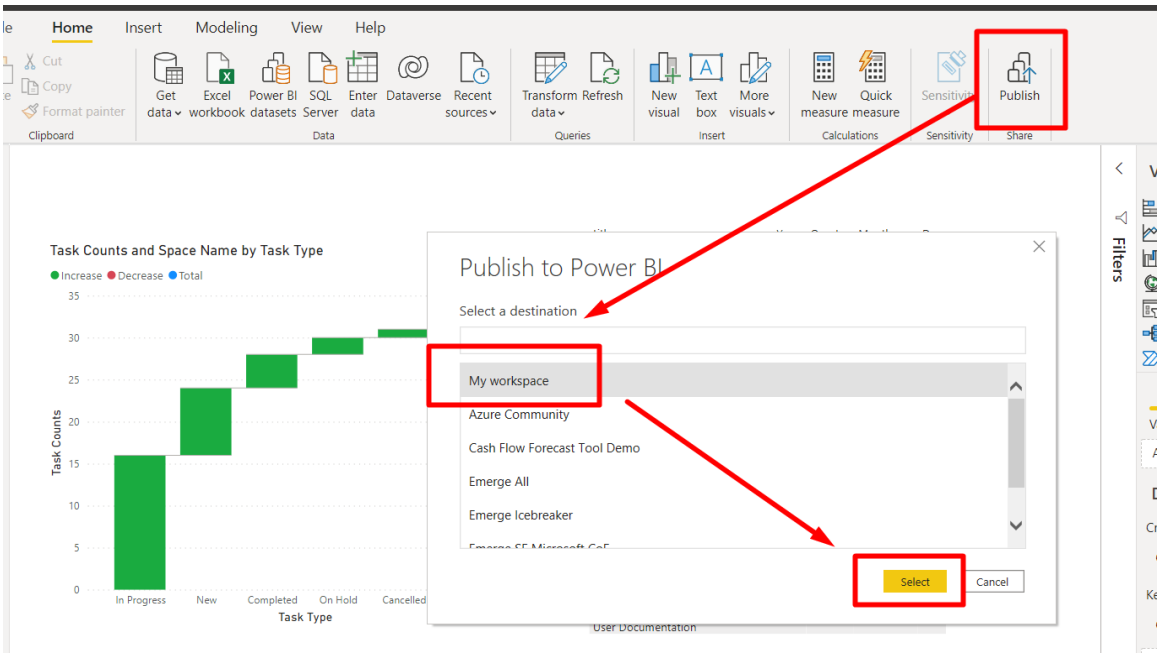
> **NOTE:** If you see the Load button and the Transform Data button grayed, check the checkbox on the left-hand side.

After data loads to Power BI Desktop data model, you can create relationships between tables as well as create reports.

Publish Power BI Reports to Power BI Service

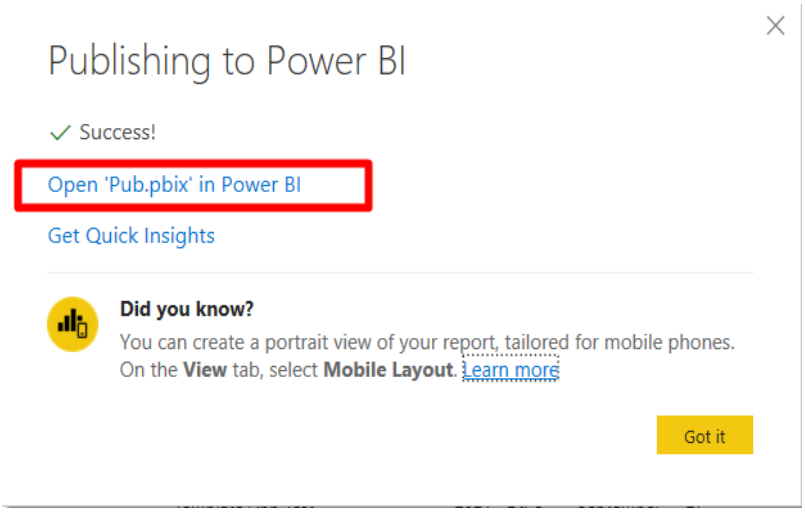
Publish data, reports, and data models to the cloud-based Power BI Service by following these steps:

1. Click the **Publish** button.
2. In the **Publish to Power BI** dialog box, choose the appropriate Power BI workspace.



3. Click the **Select** button. After a successful publication, a message with a link to navigate to the Power BI Service will load.

4. Click on the **Open** link to view all reports from the Power BI Desktop in the Power BI Service, as well as create dashboards in the Power BI Service.



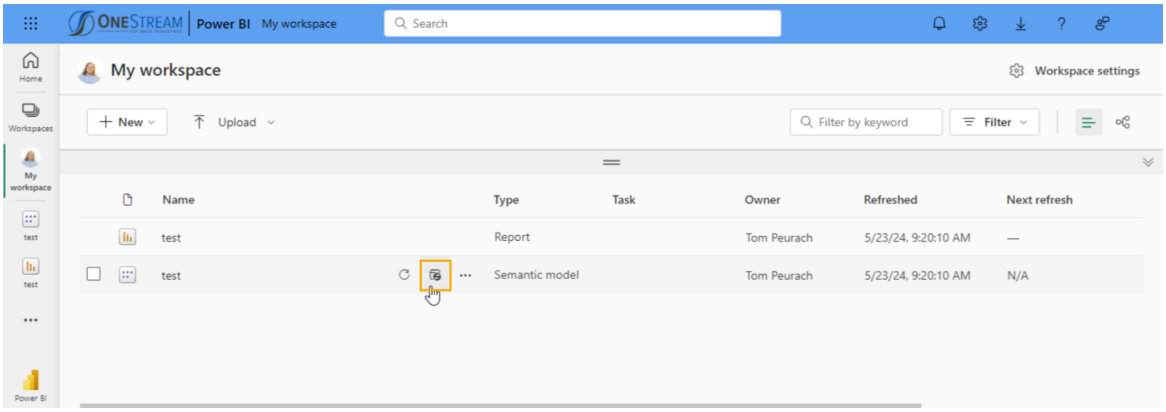
Create a Scheduled Refresh from Power BI Service

Save time by using the Schedule Refresh feature in the Power BI Service to have your data automatically update without having to manually authenticate and retrieve the updated data.

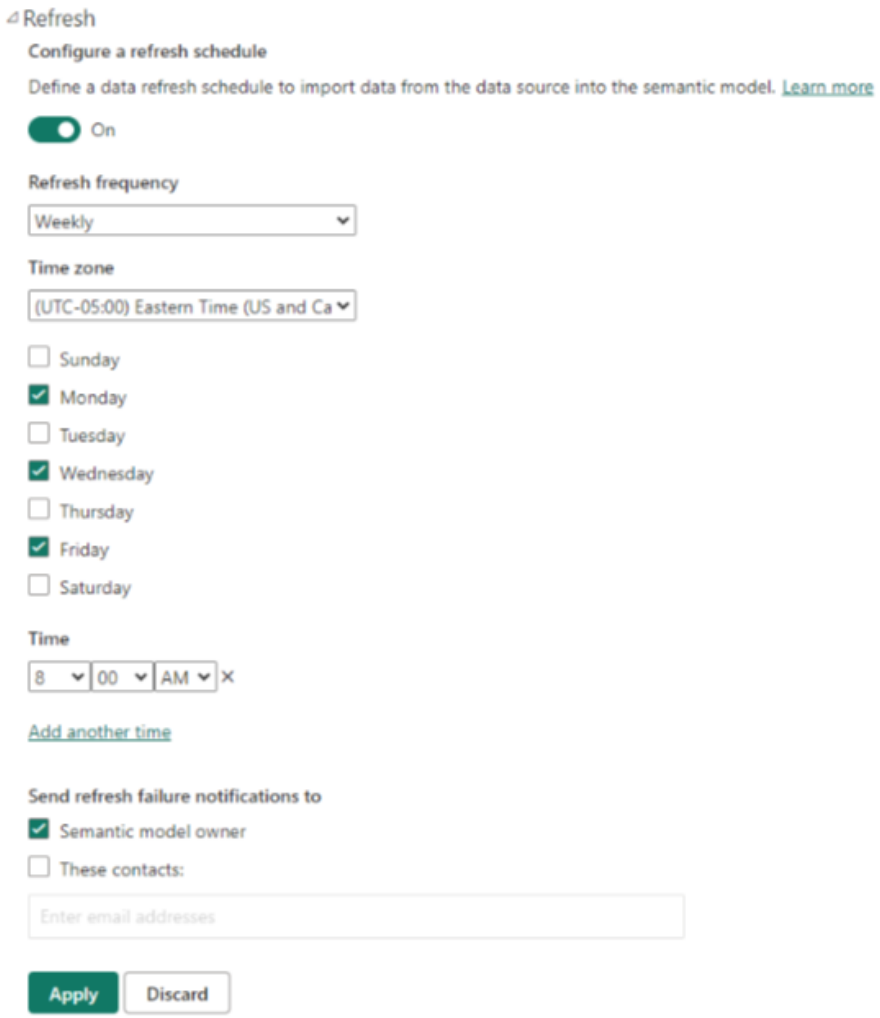
> **NOTE:** The first time a scheduled refresh occurs, you must enter login credentials.

To schedule a refresh, follow the below steps:

1. Navigate to the workspace in Power BI Service holding the report you want to schedule a refresh.
2. Hover over the Semantic model for the report and click the **Schedule refresh** icon.



3. Expand the **Refresh** drop-down on the **Semantic Models** page.
4. Turn on **Configure a refresh schedule** and specify the following settings:



a. **Refresh frequency**: Set the refresh frequency to either **Weekly** or **Daily**. Selecting Weekly enables you to select your preferred days.

b. **Time Zone**: Select your preferred refresh time zone.

c. **Time**: Set the time of the refresh. Click **Add another time** to have the report refresh more than once.

   d. **Send refresh failure notifications to**: Choose to send failure notifications to the Semantic model owner, custom contacts, or both. Leave both fields blank if notifications are not required.

5. Click the **Apply** button to save your settings.

Best Practices and Functions Help

Keep in the mind the following best practices to make the most of the OneStream Connector:

- Load only the necessary grain of data. Meaning, if you only need aggregated data at the month level, don't load data at the daily level. While Power BI can handle hundreds of millions of rows, if not more, the smaller the model, the more performant it will be.
- Limit the number of transformations you make. The more complicated the query, the higher chance there is for the query to fail.
- Leverage OneStream's financial logic, Cube Views, and Data Adapters to create the tables that will then be loaded into Power BI.

  > **Example:** Consolidations involve the parent entity only taking 40% of one of the child entities' values. Ensure that this logic is done in OneStream, and you load the data adapter in Power BI which already has the values populated. Replicating the logic in Power BI is inefficient and would be better performed in the source system.

- When providing All for ScenarioType, the results will return the ScenarioType of default that has been configured in OneStream.

Frequently Asked Questions

Is the connector certified by Microsoft?

Yes, Microsoft has completed their certification process. Our Power BI Connector is the only OneStream to Power BI Connector that has completed the Microsoft certification process.

Do I need to be a SaaS cloud customer to use the Power BI Connector?

Yes, customers need to be on our SaaS offering.

What version of the OneStream platform do I need to be on to use the OS Power BIConnector?

Customers must be on platform version 8.2 or later for the Power BI Connector to work.

What version of Power BI is required to use the OneStream Power BI Connector?

The connector will work with the May 2024 release of Power BI Desktop and all subsequent releases.

What type of data can be pulled from OneStream?

- **Get Cube Data**: Retrieves cube data based on parameters you specify.
- **Get Custom Connector Data**: Retrieves OneStream data according to a specific dashboard data connector.
- **Get Dimension Data**: Retrieves a list of dimension members for a specific scenario and dimension type. The list is leveled, meaning there will be as many columns as the number of levels in the dimension.
- **Get Member Properties**: Retrieves member attributes for a specific scenario and dimension type, including formulas used to calculate the member.

Are dynamic values exported into Power BI?

Yes, if you are using a Cube View through a custom data adapter. They are not exported using the Get Cube Data method.

Can I use a service account to run the Power BI Service?

Yes, it is possible to substitute service account credentials for OneStream user credentials in the Power BI Service. The service account must be added as a user to the OneStream platform.

Can I use an OneStream Power BI Connector connection to pull data from Excel?

Yes. The semantic model for the connection must first be saved to the Power BI Service. After it is there, Excel users can use the **Get Data** > **From Power Platform** to access the connections and pull data into either a table or a pivot table. You must also be on Microsoft 365.

What is the syntax for parameters?

Syntax for parameters is very minimalist. It follows the form: ParamterName1=[Value1], ParamterName2=[Value2].

> **NOTE:** Besides comma separators, there are no delimiters or other special character such as single quotes, double quotes, exclamation points, or pipes.

> **IMPORTANT:** There are no spaces on either side of the commas used to separate parameter/value pairs.

> **IMPORTANT:** Use the name of the parameter and not the user prompt and use the name of the value and not its description.

Can I use multiple dimensional members as parameters in the Power BI Connector with the Custom Data pull method?

Yes, but they must be enclosed in square brackets.

> **Example:** ParameterX = [S#Actual,S#Budget] when used in a data adapter connected to a CubeView.

> **Example:** ParameterY = [('Actual','Budget')] where ParameterY is used with a SQL WHERE...IN statement and used in a data adapter connected to an SQL Query.

Can I pull annotations and comments made in cubes?

Yes, it is possible using the Cube View data adapter. Cube View MD does not include comments or annotations.

Are there any settings we can change in Power BI Desktop to improve performance when pulling large sets of data or several pulls at once?

Yes, we recommend setting the maximum number of parallel jobs to eight.

Can I use member expansion functions when pulling data using the Get Cube Data pull method?

Yes, the standard expansion functions, like base, parents, or children, can be used to specify the level of granularity of the data to pull from OneStream.

I am pulling data using a SQL custom data adapter. Which cube should I choose for my connection?

It doesn't matter. You can choose any cube and it will work.