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Data Refresh in Power BI

TRANSFORM YOUR DATA INTO DECISIONS!

Data Refresh

Data refresh refers to the process of updating datasets in Power BI to reflect changes or additions made in the underlying data source. This ensures that reports and dashboards always show the most current and relevant information.

Why It Matters

✅ Keeps reports and dashboards up to date
✅ Reduces manual work for business users
✅ Supports data-driven decision-making
✅ Enables near real-time reporting for critical use cases


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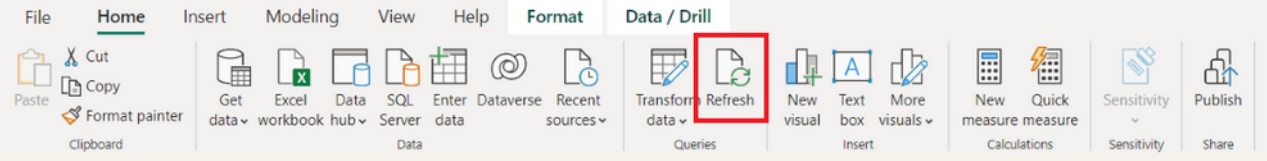
Types of Refresh

Type of Refresh	Description	Ideal For
Manual Refresh	Triggered manually by a user from Power BI Desktop or Service	One-time analysis, development
Scheduled Refresh	Automatically refreshes at specified intervals (daily, hourly, etc.)	Regular reporting
Live Connection	Data is never imported - always queried in real time	Real-time dashboards (e.g., SSAS, Azure Analysis Services)
DirectQuery	Queries the data source on the fly for each user interaction	Up-to-the-minute data, with some latency
Push/Streaming Data	External applications push data into Power BI using REST API	IoT, sensor data, live feeds

Manual Refresh

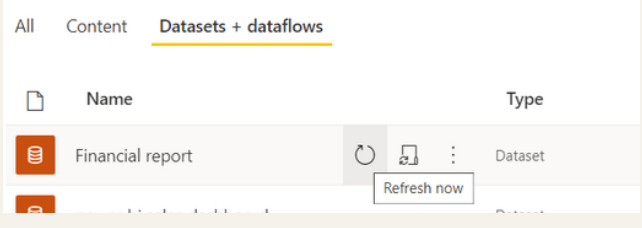
Power BI Desktop:

- Click on the "***Refresh***" button from the **Home** tab. All queries and tables will update based on the latest data from the sources. You can also use the "*Ctrl+Alt+R*" keyboard shortcut.



Power BI Service:

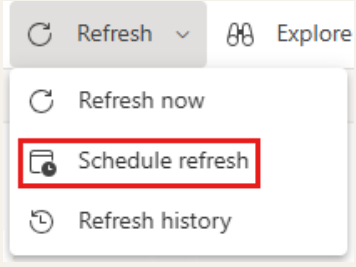
- Navigate to your Workspace
- Then go to Dataset+Dataflows
- Clicking on the Refresh Now icon, next to the name of the dataset.

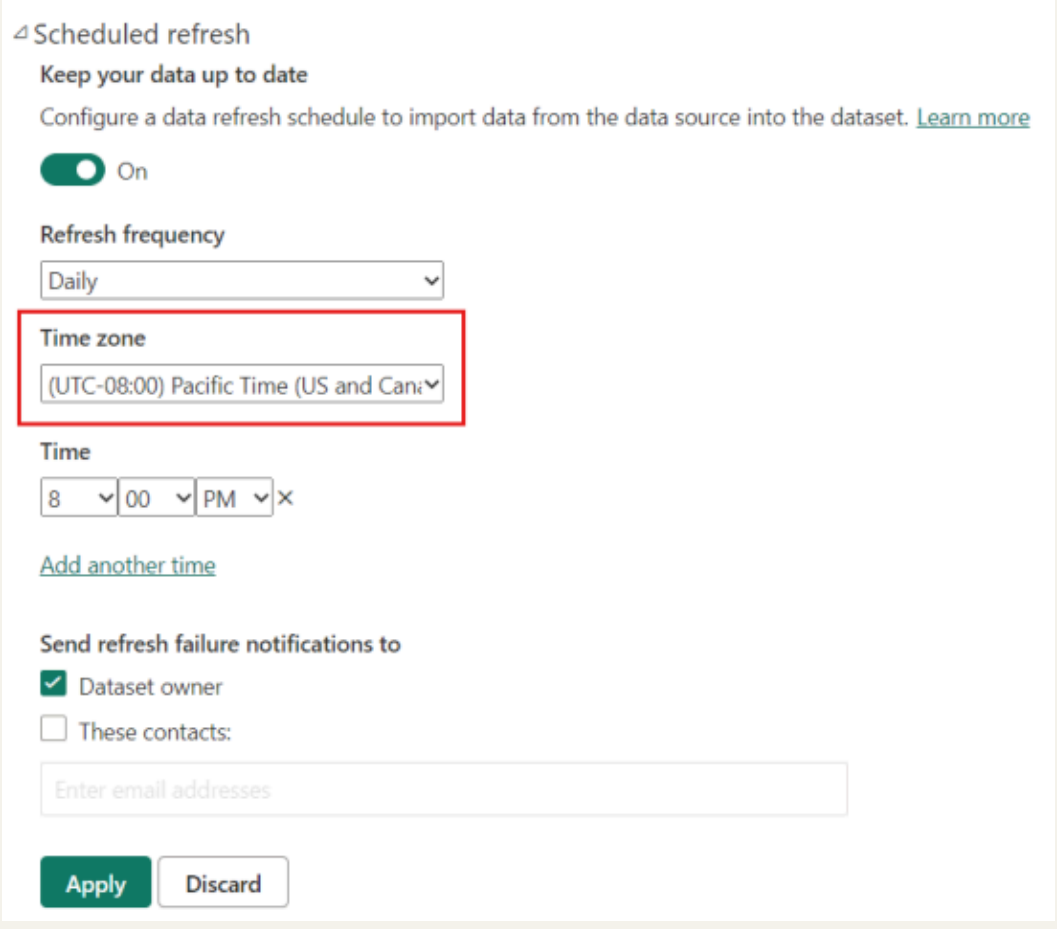


Scheduled Refresh

In Power BI Scheduled Refresh means your data gets updated automatically at set times without you needing to do anything. You can choose when and how often Power BI should pull the latest data like daily or multiple times a day.

- In Power BI Service, go to the workspace and select a semantic model from the workspace content list.
- On the semantic model details page, select **Refresh > Schedule refresh**.
- In the Schedule Refresh settings, you can configure
  - Frequency (Daily or Weekly)
  - Time zone and refresh time
  - Data source credentials
- Power BI Service provides notifications for refresh failures. You can also set up email notifications on refresh failure.


Refresh
Explore
Refresh now
Schedule refresh
Refresh history


Scheduled refresh
Keep your data up to date
Configure a data refresh schedule to import data from the data source into the dataset. Learn more
On
Refresh frequency
Daily
Time zone
(UTC-08:00) Pacific Time (US and Can
Time
8
00
PM
Add another time
Send refresh failure notifications to
Dataset owner
These contacts:
Enter email addresses
Apply
Discard

Power BI Gateway

A **Power BI Gateway** is a bridge that connects **on-premises data** to the **Power BI service** (cloud). It allows cloud-based Power BI reports to access local databases securely.

There are two types:

- **Personal Mode:** Best for single-user, personal projects. Only works when your computer is on. No central management is required.
- **Standard Mode:** Recommended for enterprise, shared data scenarios. Supports multiple users & data sources.

Step-by-Step: Installing the Gateway

🔹 **Step 1: Download the Gateway**

- Go to: *https://powerbi.microsoft.com/gateway*
- Click on Download gateway
- Choose mode: *Personal* or *Standard*

🔹 Step 2: Run the Installer

- Double-click the downloaded installer.
- Choose the installation path and click Install.

🔹 Step 3: Sign in to Power BI

- After installation, sign in with your Power BI (Microsoft 365) account.
- If you're using Standard Mode, you can:
  - Register a new gateway
  - Restore an existing one if needed

🔹 Step 4: Configure the Gateway

- Set a name for your gateway.
- Create a recovery key (used if you need to move or restore the gateway).
- The gateway will now register with Power BI Service.

How to Use the Gateway in Power BI

Once installed, you need to connect it with your dataset:

🔹 **Step 1: Publish Report to Power BI Service**

- In Power BI Desktop: File > Publish > Publish to Power BI > Select your workspace

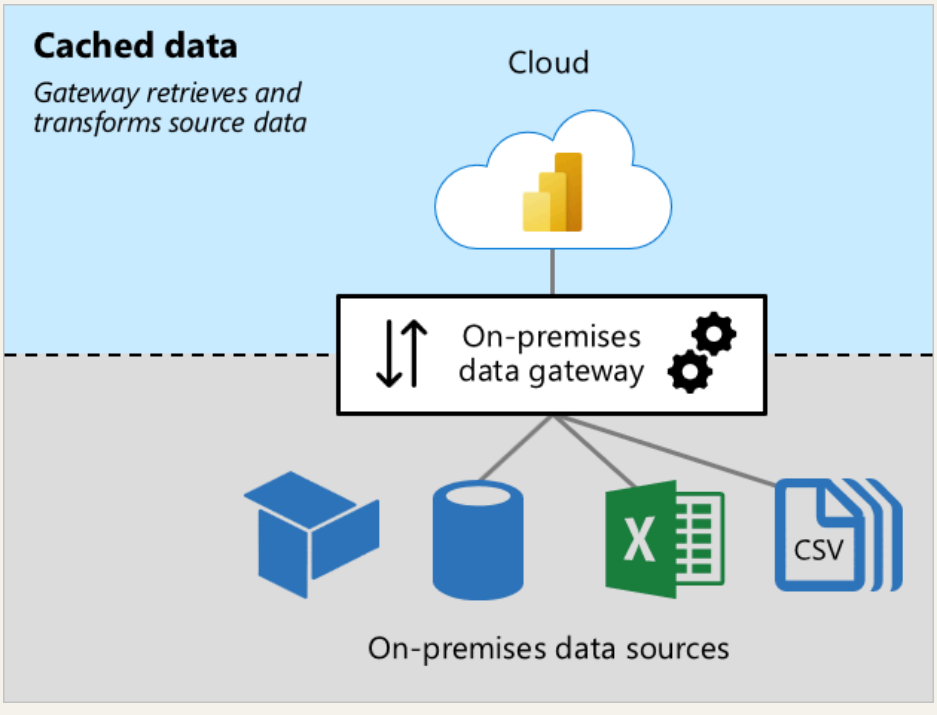
🔹 **Step 2: Add Data Source in Power BI Service**

- Go to Power BI Service
- Navigate to Settings > Manage gateways
- Click on your gateway name
- Add a new data source
  - Choose the correct data source type (e.g., SQL Server, File, etc.)
  - Provide the server path or file location
  - Enter credentials and authentication method

💡 Ensure the data source settings in Desktop match exactly (server name, database, file path, etc.)

🔹 Step 3: Link Dataset with Gateway

- Go to Workspace > Datasets
- Click Settings on your dataset
- Under Gateway connection, select the available gateway
- Ensure the dataset uses the correct mapped data source
- Set up **Scheduled Refresh** as needed



Incremental Refresh

Refreshing large datasets daily can be resource-heavy and time-consuming. Incremental Refresh solves this by only refreshing new or changed data.

Why to Use Incremental Refresh?

If you have ever had to wait for a large dataset to refresh, you already know the pain. Here is why incremental refresh is worth setting up:

- **Saves Time:** Refreshes just the data that changed, not the whole thing.
- **Improves Performance:** Reports load quicker and run smoother.
- **Scales with you:** Handles massive datasets like a pro.

Steps to Set Up:

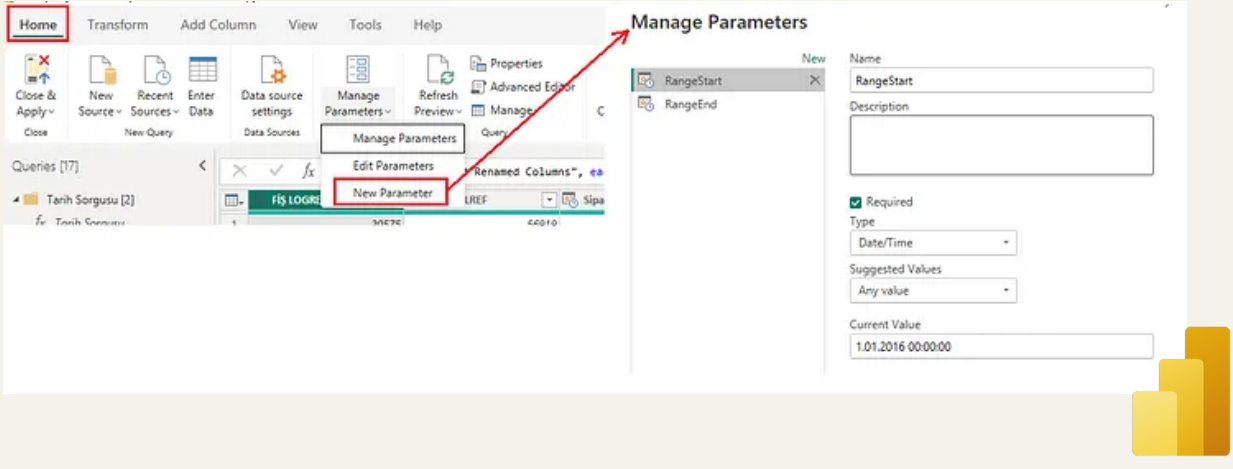
Step 1 - Make sure your data source supports Query Folding: Your data source and all of your applied steps in Power Query must support Query Folding. SQL Server, Azure SQL, Snowflake and similar databases are all good candidates

- Also, make sure your table has a **Date or Date Time column**. So, PowerBI figures out what data needs refreshing.

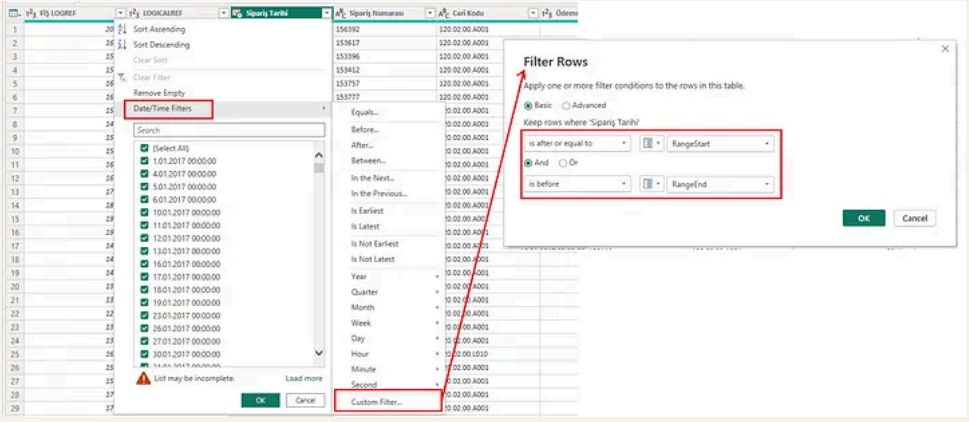
Step 2 - In Power Query, define two parameters:

RangeStart and **RangeEnd.**

- To set them up: Go to **Home > Manage Parameters > New Parameter**. Create both with the date time and create two parameters of datetime type and give them default date values

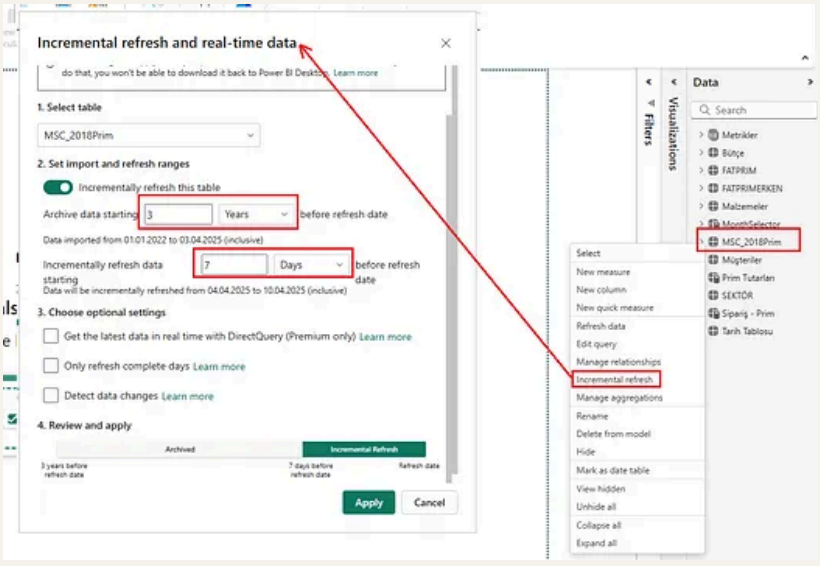


Step 3 - Filter Your Data Using the Parameters.



Step 4 - Turn On Incremental Refresh

- Go back to Power BI Desktop.
- Right-click on the table in the **Fields** Pane.
- Choose **Incremental Refresh** and turn it on.
- Define your refresh settings:



Step 5 - Publish the report to Power BI Service and set up **Scheduled Refresh**.

Best Practices for Managing Data Refresh

Here are some tips to ensure your refresh process runs smoothly:

✅ Use Incremental Refresh for large datasets to improve efficiency

✅ Minimize refresh frequency when data doesn't change often

✅ Monitor failures using Power BI refresh history

✅ Optimize data models and queries for better performance

✅ Avoid complex transformations in Power Query that slow refresh time

✅ Set up alerts for failed refreshes

THANK YOU!!!

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SAVE FOR LATER

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