Microsoft

Business Analytics with Power BI

Microsoft Services

Module 2: Power BI Service

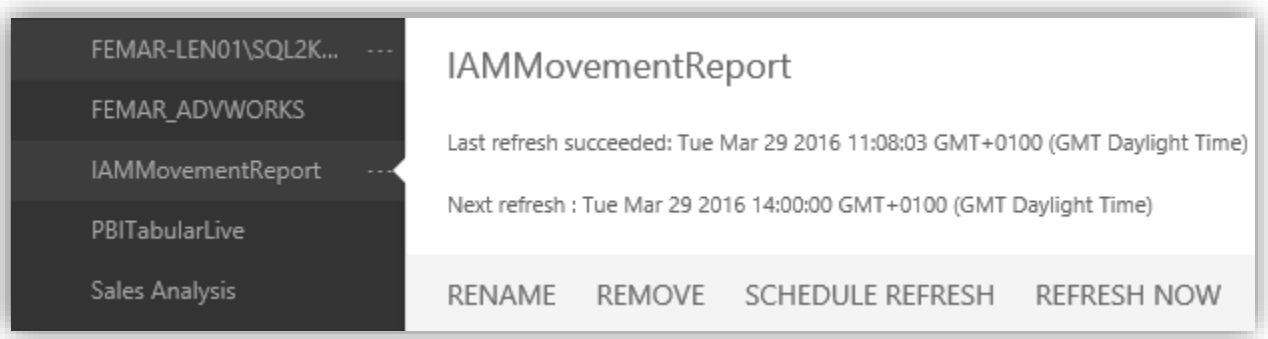
Lesson 3: Keeping Data Current

Keeping Data Current

- Get Data
- Pinning and Navigation
- **Keeping Data Current**
- Q&A and Quick Insights
- Sharing
- Connect from Excel
- Mobile Reports

Data Refresh

- When a **dataset** is created in Power BI it might have several **data sources**



- When you refresh data in Power BI, you're updating data in the dataset with new data from data sources
- Some data sources might be **live or self-updateable**
- **Refresh Now** performs the operation immediately based on the definition of the data sources

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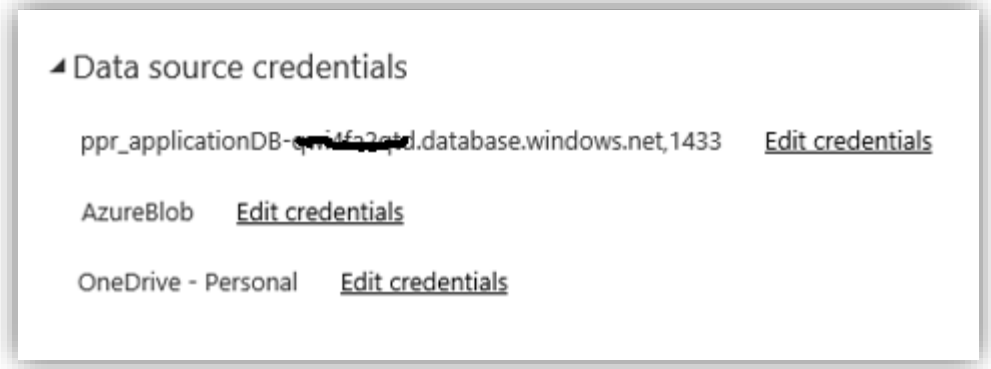
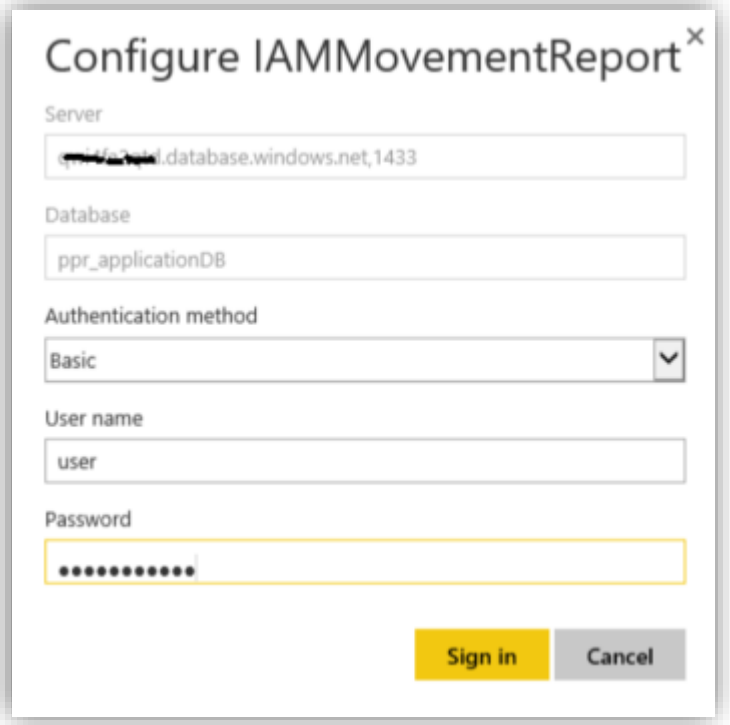
Data Refresh

- The **Scheduled Refresh** option allows configuration of **credentials** and schedule





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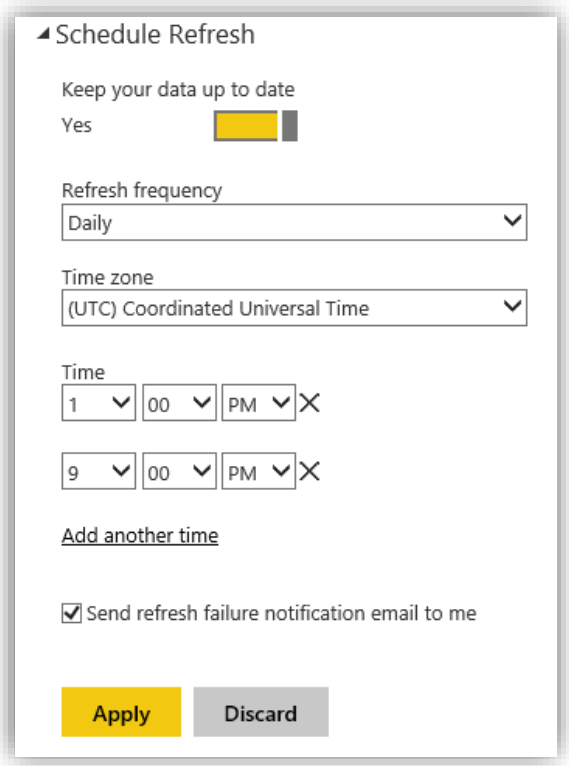

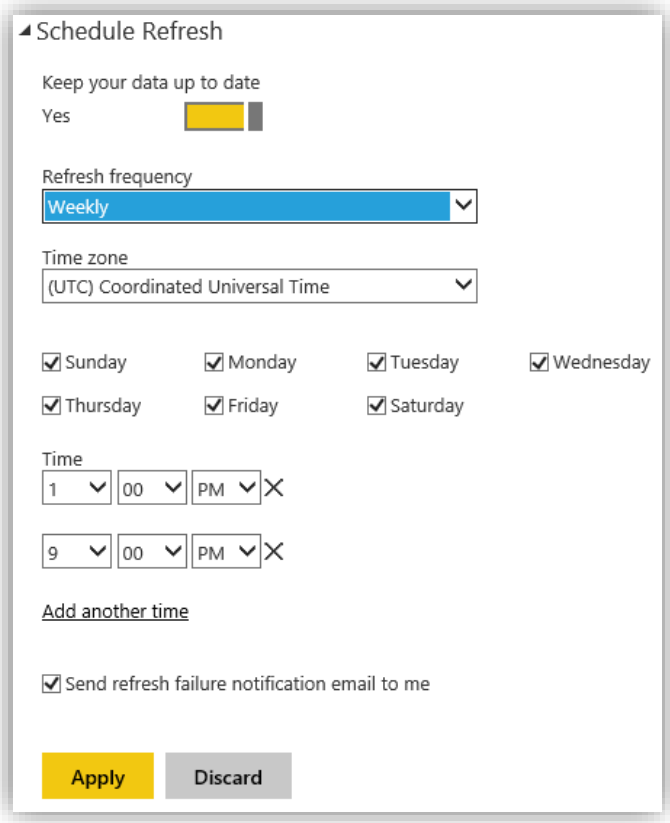

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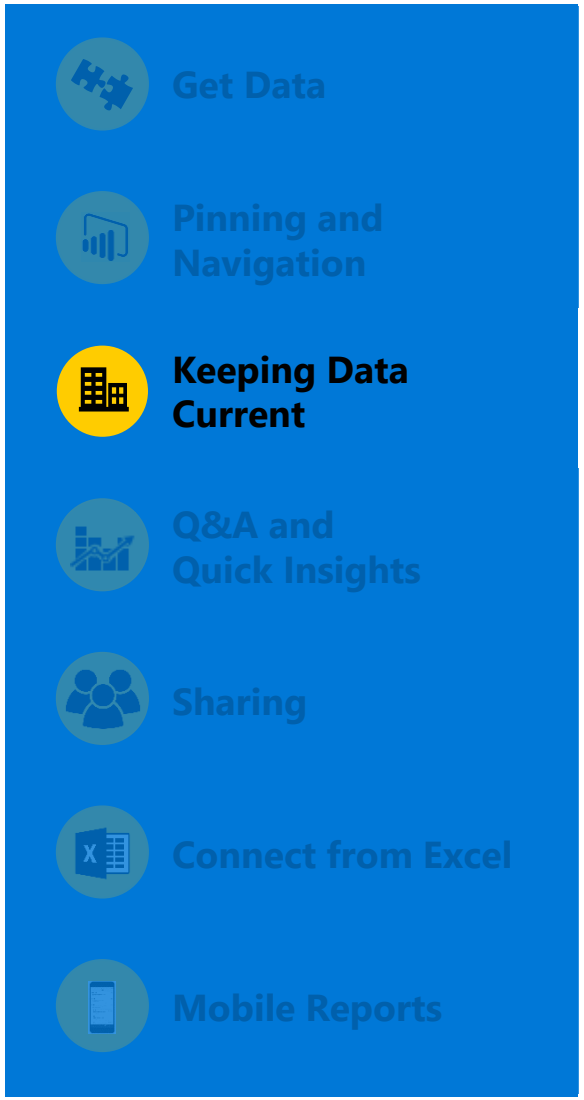
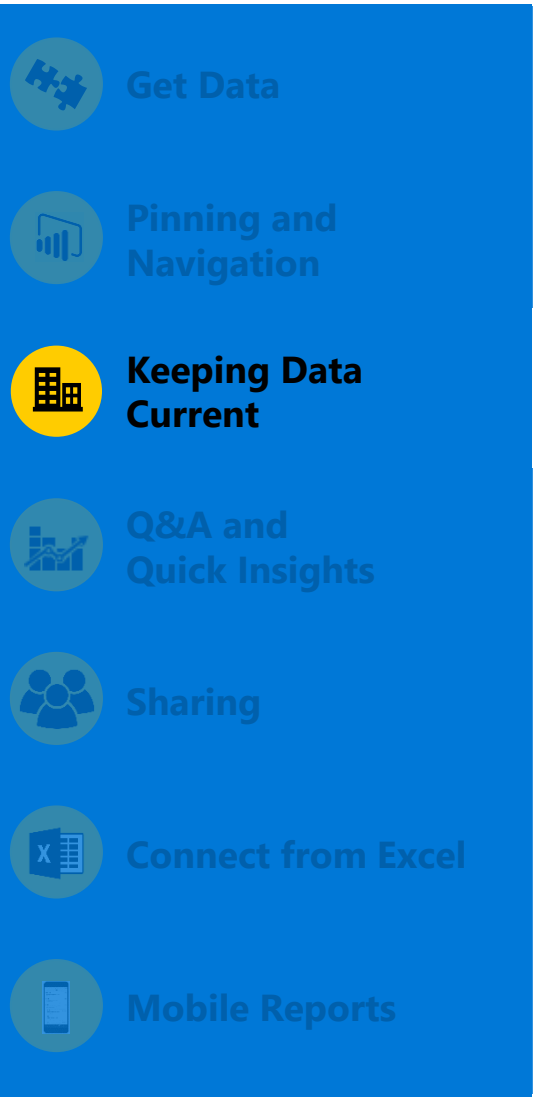


Data Refresh – Data Source Types

- **Automatic Refresh** – no user configuration is required
  - **Content packs from SaaS providers** – Typically, once a day
  - **Files loaded from Microsoft OneDrive/ Microsoft SharePoint Online** – refreshes every hour (can be overridden)
- **Live with Direct Query** – Data is always in sync with the data source. No schedule can be defined
  - Microsoft Azure SQL Database
  - Microsoft Azure SQL Data Warehouse
  - Spark on Microsoft Azure HDInsight
  - SSAS (Multidimensional and Tabular) – requires a Gateway and allows row-level-security
- **Real-time data coming from Power BI API or Microsoft Stream Analytics or PubNub**
- **Refreshable Data Sources** – a schedule can be defined in Power BI service
  - SQL Azure Database
  - SQL Server On-Premises – requires a Gateway
  - File stored in OneDrive
  - …

Keeping Data Current



Data Refresh – Using Power BI REST APIs

- **Programmatically refresh datasets** in Power BI Service **using APIs**.
- **Retrieve refresh history** for any dataset that you own.
- Easily **automate** and **scale out** Power BI data refresh management.
- **Integrate data refresh** into your existing ETL or deployment processes:
  For e.g. trigger Power BI data refresh as the last step in your Azure Data Factory ETL pipeline

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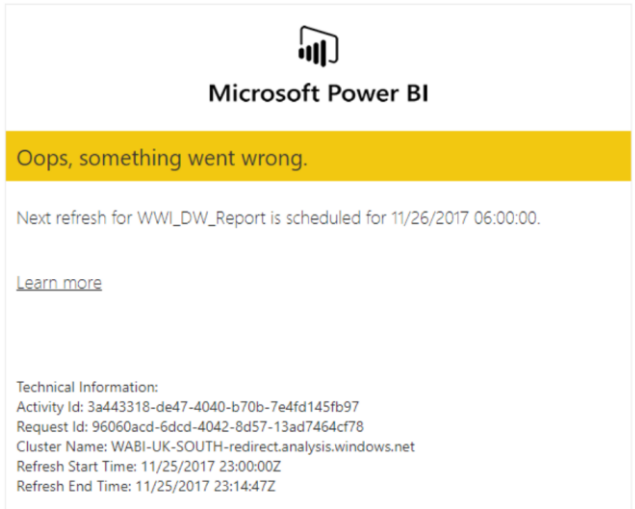
Managing Power BI Dataset Refresh Failures

- Not for DQ, but when at least one report that relies on an on-premises database or file source and you need to schedule it to refresh regularly to get up to date data

Built-in Failure Notifications



BUT, what if you have the same dataset across several workspaces, maybe in a DEV, QA, PROD scenario?

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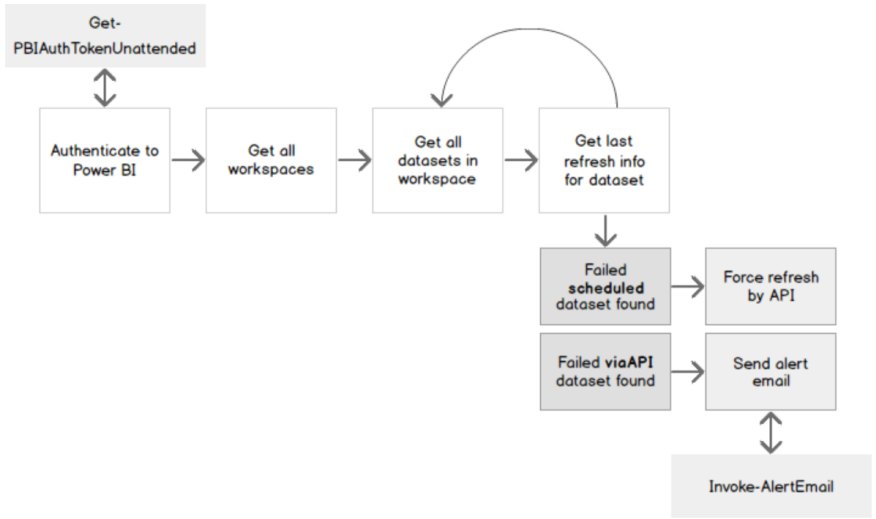
Managing Power BI Dataset Refresh Failures PowerShell Alerting

Custom Script on GitHub



Sample Schedule For the Script:

- Run every 15 minutes.
- This means, at the longest interval, it would take up to **14 minutes to detect a failed dataset**, force a **manual refresh**, then another 15 minutes before it would **email out to warn of the failure.**

What the Email Contains:

- A relevant **title**, (in this case, the name/purpose of the script)
- The name of the **parent workspace & a hyperlink to that workspace**
- The **name** & a **link** to the **failing dataset's settings page** so you can diagnose the failure easily

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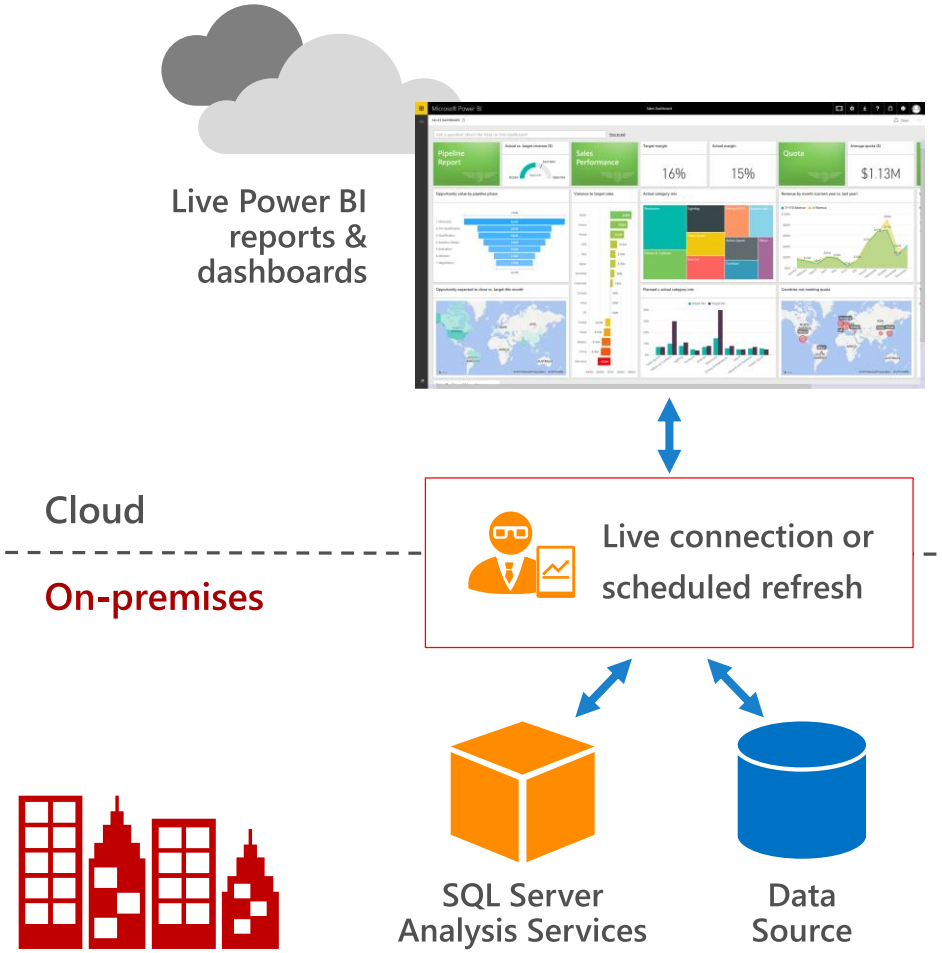
Gateways



Access on-premises data any way you like

- Scheduled refresh
- Live connection

Connect to on-premises SQL Server and Analysis Services models

- Tabular and multidimensional

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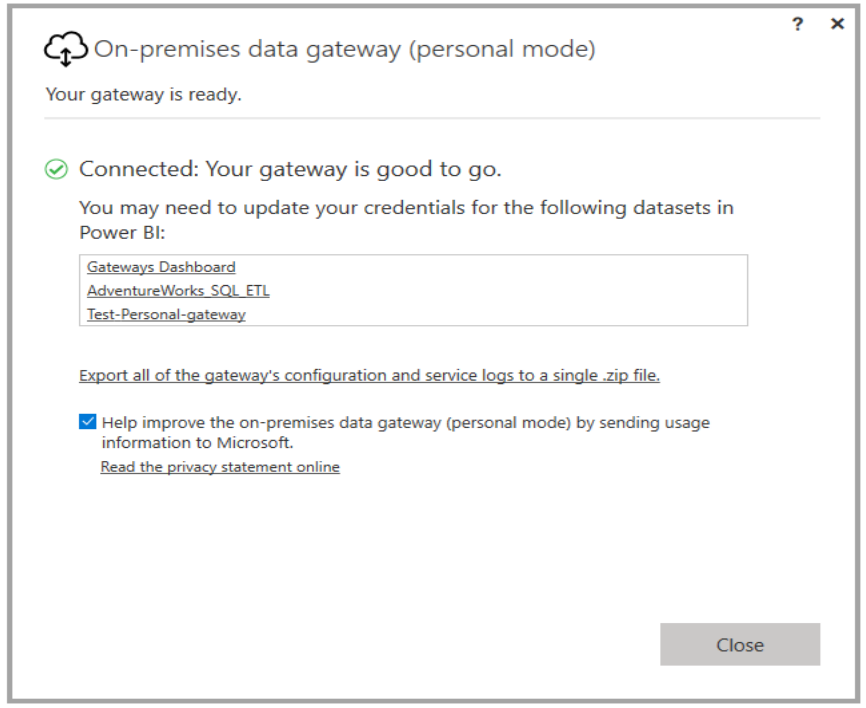
Gateways – On-premises data gateway (personal mode)

- Allows datasets on the service to **access data on-premises on a scheduled refresh**
- Runs as a **service or application** on a **computer**, typically from a **business user,** and can serve **multiple sources**
- **No** need for **IT intervention** but **computer has to be online**
- When a gateway is installed, **a status is shown in Scheduled Refresh**



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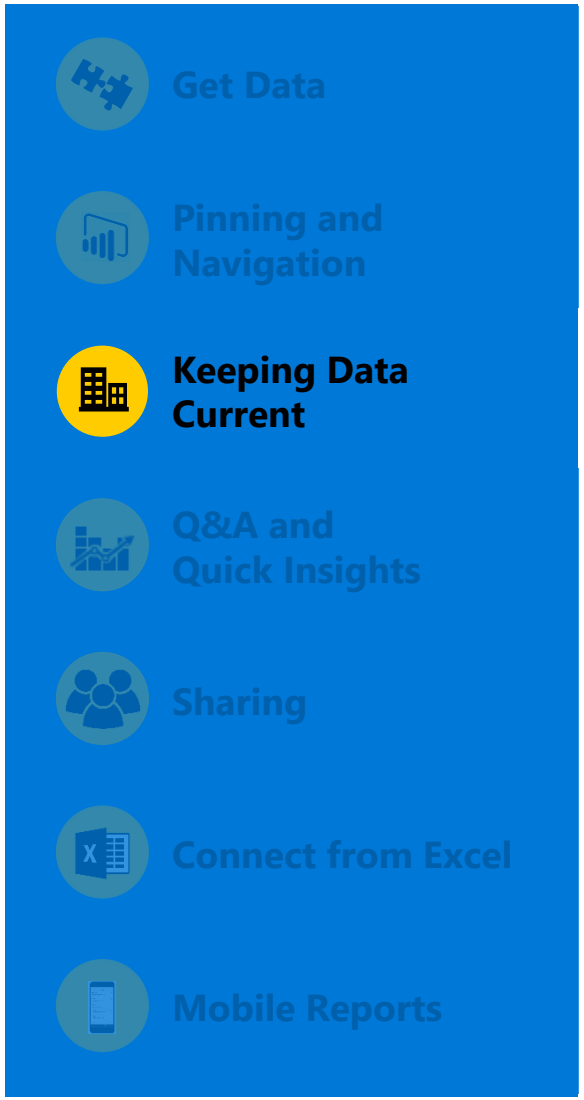

Gateways – On-premises data gateway

- Allows datasets on the service to **access data on-premises on a scheduled refresh or live**
- Runs as a **service** on a **server** and can serve multiple users and sources
- **Typically set up by IT** allows **access segregation and monitoring**
- **Supported data source types** (via Excel Data Model or PBI Desktop)
  - **SQL Server** (Live also)
  - **Analysis Services** (Live also and with Row-Level-Security)
  - **SAP HANA** (Live also)
  - **File**
  - **Folder**
  - **Oracle** (Live also) **/ DB2 / MySQL / Sybase**
  - **Teradata** (Live also)
  - **SharePoint list (on-premises)**
  - **Web/Odata**
  - **…**

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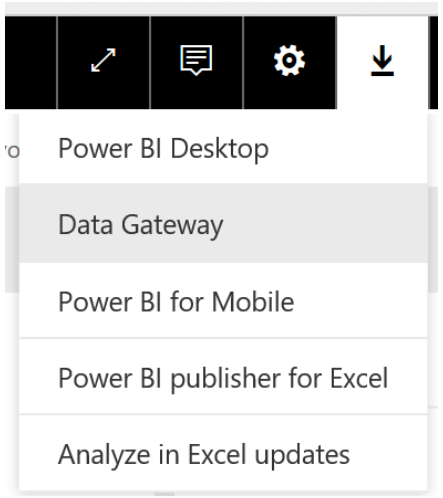
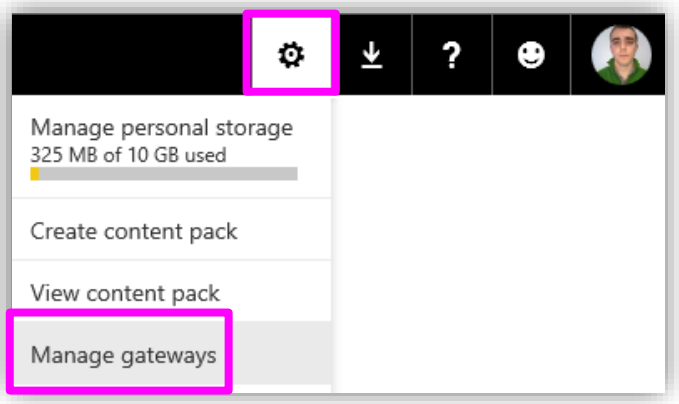
Gateways

- Can be **downloaded** from powerbi.com and **installed** on-prem



- The data gateway is managed from the service



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Gateways – Manage Data Gateway

- **Data Sources** are added here
- **Security** is also defined centrally
- Some data sources are supported **Single Sign-on**
- **Users with access** can use this connection in their Power BI Desktop **reports**
- Users can create **schedules** to update their data
- For **SSAS, UPN Mapping** can be defined in the service, per data source.