

Power Platform World Tour

PowerBIUG PowerAppsUG FlowUG



EmPower your BI Architecture

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Think Big. Move Fast.

10 years in Microsoft «Data Realm»

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 **PowerBIUG**  **damag**

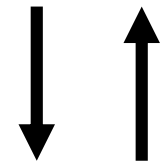
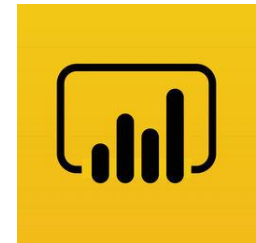
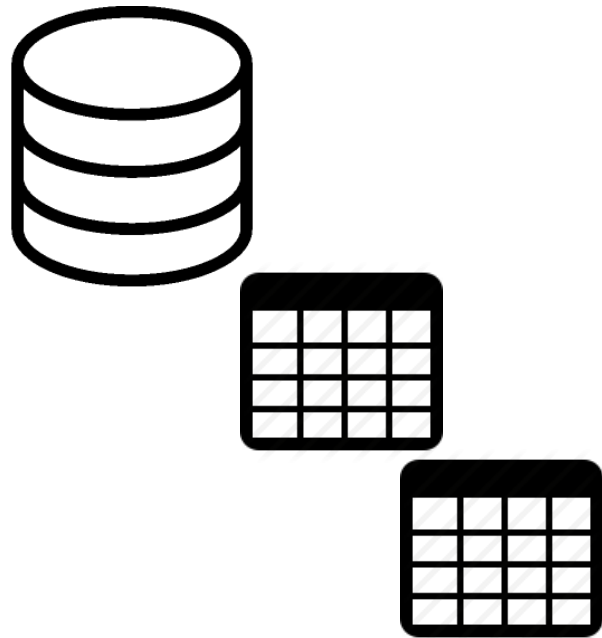


Agenda? The Right Questions

1. What's **Storage Mode** and which one best suits to me?
2. Do I need an On-premises Data **Gateway**?
3. How to **refresh** my data?
4. Is it **just on-cloud** solution?
5. Can I **«encapsulate»** PowerBI?
6. Do I need to care about **dataflows**?
7. Can I have some **advisable scenarios**?

What's Storage Mode and which one best suits to me?

Storage Mode: Import Mode

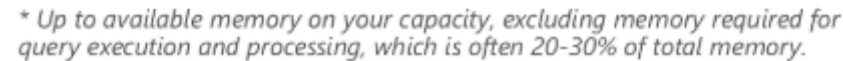


Data Model Cached into RAM

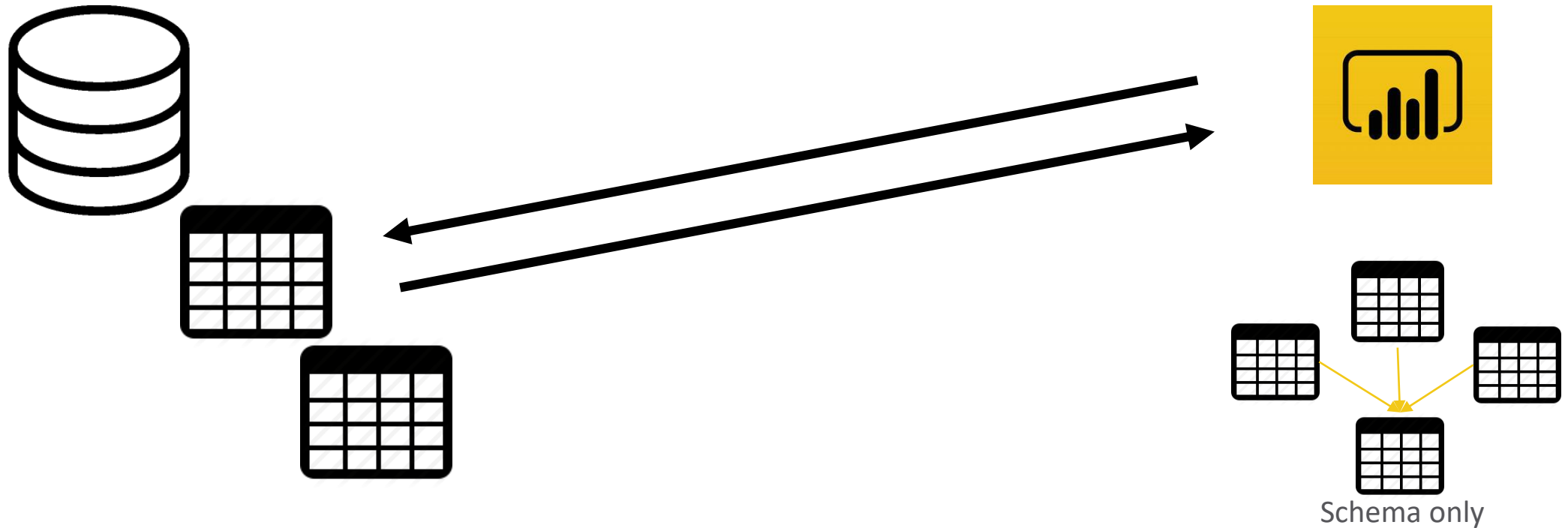
Storage Mode: Import Mode

- Model **Cached** inside Power BI Service
- High **Compression** thanks to VertiPaq (*)
- Full **Power BI functionalities and DAX** functions support
- **Multiple Data Sources** mashup (all available)
- **10 GB** model size for PREMIUM / **1 GB** for PRO





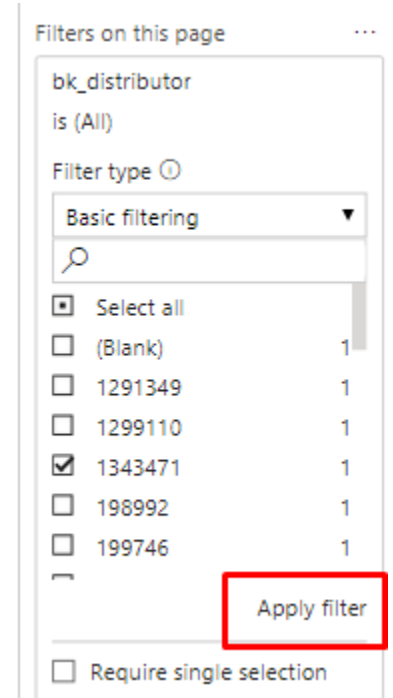
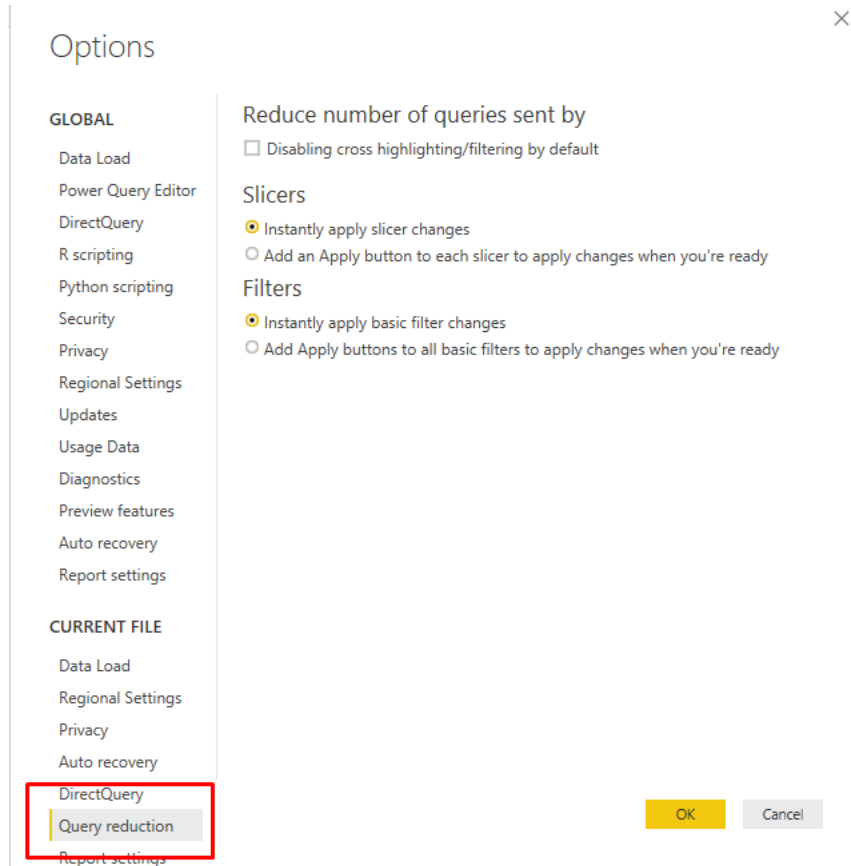
Storage Mode: Direct Query



Storage Mode: Direct Query

- **Limited data sources**
- Not full **Power Query** and **DAX** support
- Pay attention to **performance** (1 render = 1 query)
- Overcome model **size limits**
- **Real-time / Near Real-time** scenarios

Direct Query: Quick Tip



Storage Mode: Live Connection



PowerBI acts just like an interface

Storage Mode: Live Connection

- Data Sources: **AAS**, **SSAS** Tabular/Multidimensional and **PBI dataset**
- Data **Preparation** and Data **Modeling** done in the source
- Interaction with report = **DAX query sent to source**

- **Overcome** model size limits
- **Partitioned Load**
- Tends to be **faster than DQ**

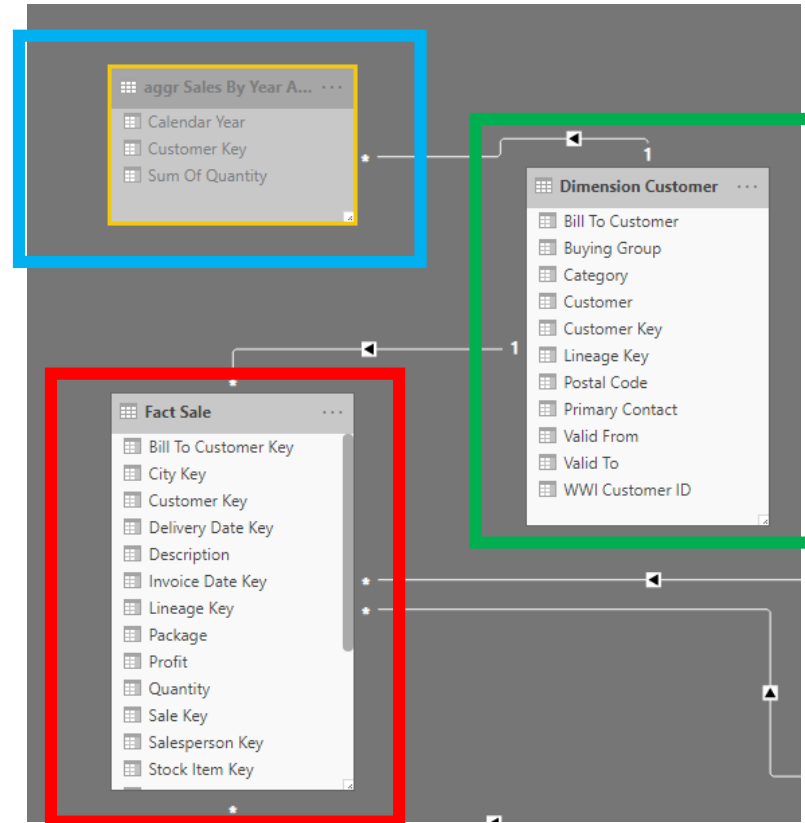
- **Never prefer «Import»** over «Live Connection» for supported sources

Storage Mode: Composite Mode


Import Mode

Direct Query

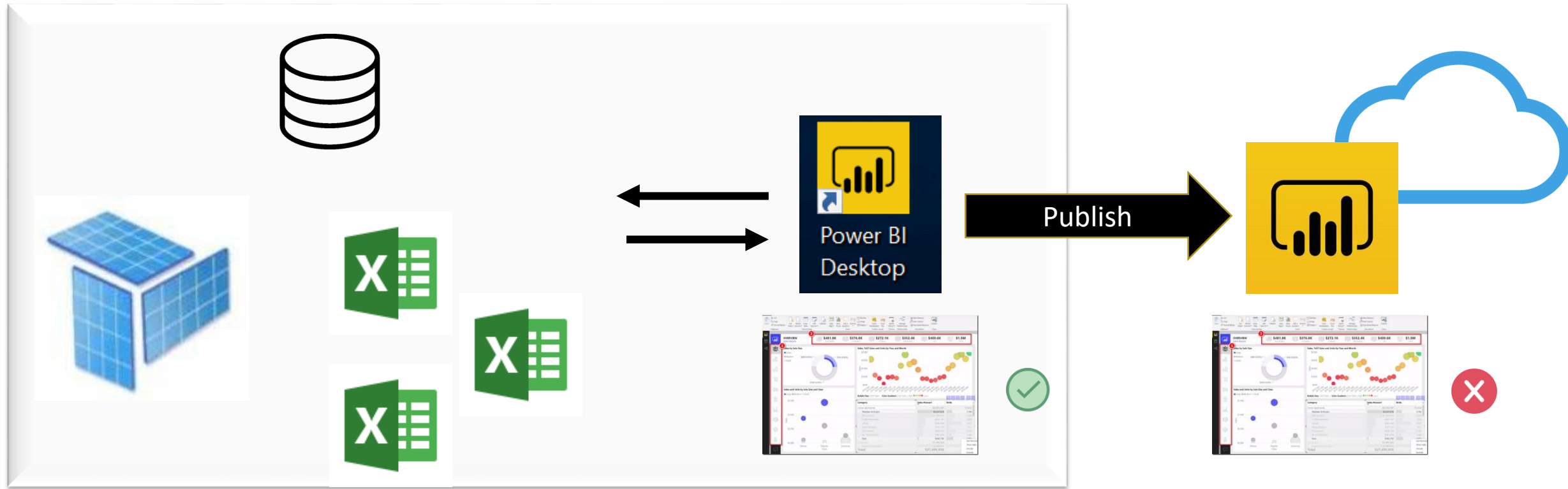
Dual Mode



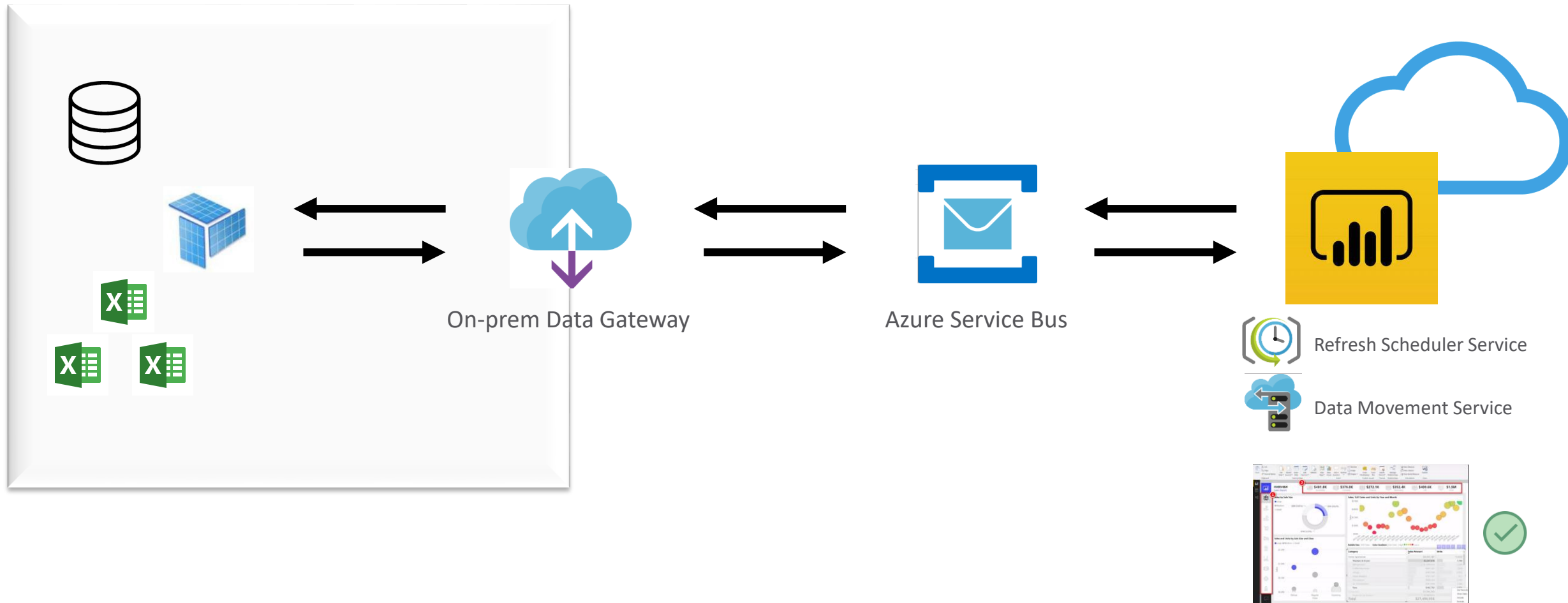
Do I need an On-premises Data Gateway?

A large audience is seated in a conference hall, facing a stage with presentation screens. The image is faded and serves as a background for the text.

Let's draw a typical scenario

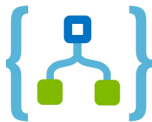
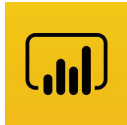


On-Prem Data Gateway is the way



2 Gateway types

On-premises data gateway
(Enterprise)



All Storage Mode Support
Scheduled Refresh Support

On-premises data gateway
(Personal mode)



Import Mode Support
Scheduled Refresh Support

Gateway: Architecture security

- **Credentials stored locally** and in Power BI Service
- **Data Source credentials encrypted** and stored in the cloud only gateway can decrypt
- **Gateway polling** → No inbound port to open
- **Outbound port** to open TCP: 443, 5671, 5672, 9530...9534

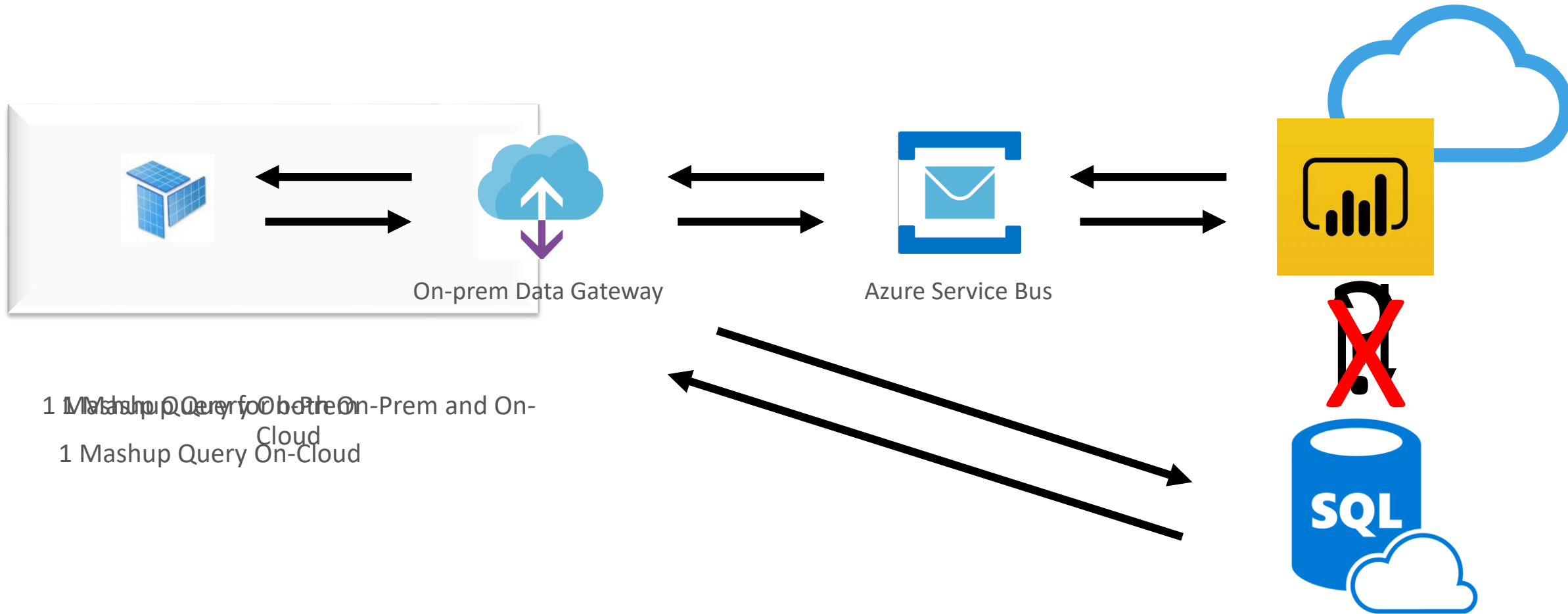
Gateway: Considerations

- Keep gateways' name/**recovery key** in a safe place (migration, take over and recovery)
- **Do not install Personal and then Enterprise**
- **Sometimes 2 gateways** are needed: Import + DQ/Live
- **Create a cluster for High-Availability**: round robin or balanced load
- **On-premises data gateway app** helps you
- New **Powershell 6 cmdlets** to manage Gateway

Demo Preview

A large audience is seated in a conference hall, facing a stage. Two large presentation screens are visible on the stage, displaying content. The room has a modern design with a high ceiling and large windows on the right side. The audience is diverse in age and appearance, and many are looking towards the stage.

On-prem & On-Cloud Mashup







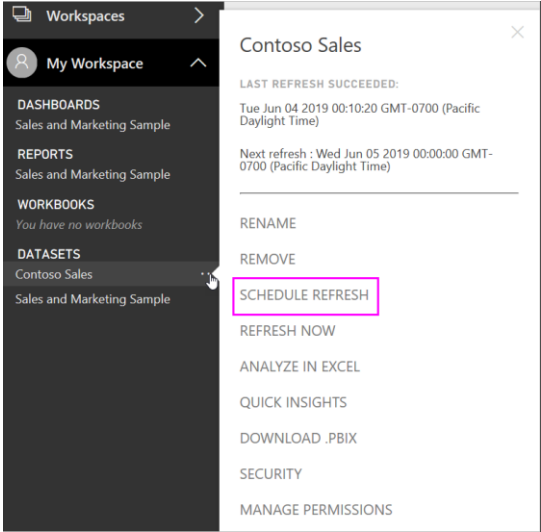
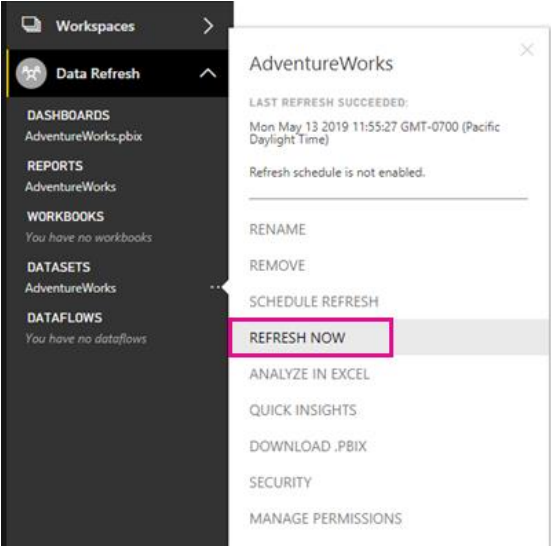
Demo: Mashup and Gateway

A large audience is seated in a modern conference hall, facing a stage with multiple projection screens. The room has a high ceiling with recessed lighting and large windows on the right side. The audience is diverse in age and appearance, and many are looking towards the stage. The overall atmosphere is professional and focused.

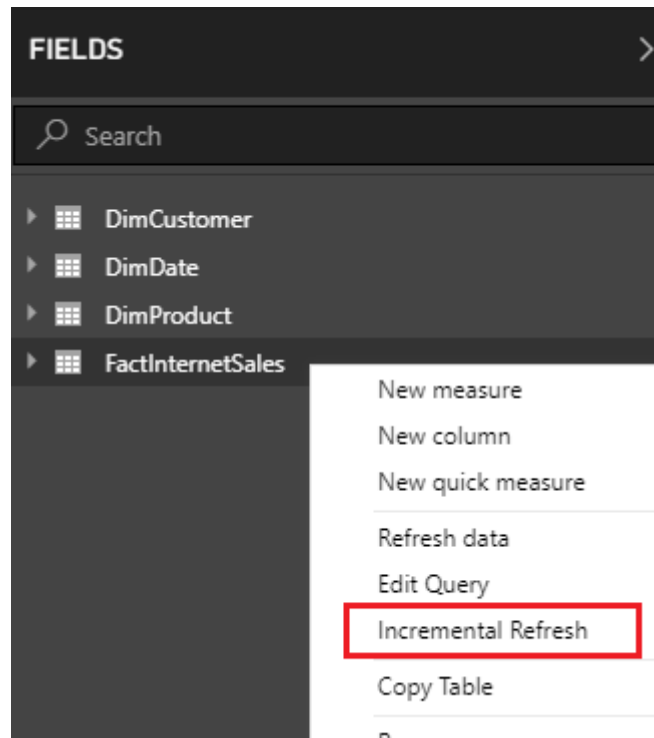
How to refresh my data?

Data are old... let's refresh!

Storage Mode	Refresh Needed	Max Refresh Per Day	Max Refresh Time
Import Mode Pro		8	2 hours
Import Mode Premium		48	5 hours
Direct Query			-
Live Connection			-



Too much data?



Incremental Refresh

You can improve the speed of refresh for large tables by using incremental refresh in Premium workspaces. This setting will apply once you've published a report to the Power BI service.

① Once you've deployed this table to the Power BI service, you won't be able to download it back to Power BI Desktop. [Learn more](#)

Table Incremental Refresh

FactInternetSales ☒ On

Store rows in the last:

5 Year

Refresh rows in the last:

10 Day

☒ Detect data changes [Learn more](#)

Only refresh data in the last 10 days if the maximum value of this datetime column changes:

LastUpdateDate

☒ Only refresh complete days [Learn more](#)

Apply all

Cancel

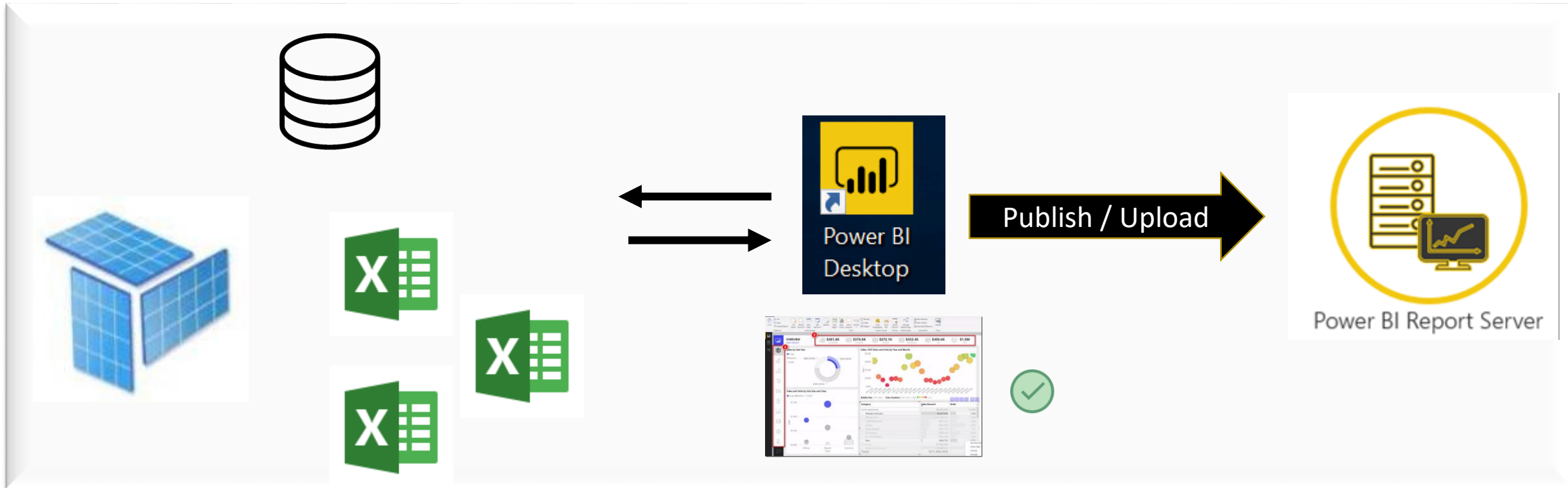
FOR PRO IS COMING



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Is it just on-cloud solution?

Cloud is not the only option



PBI Service Vs PBI Report Server

[illegible]

Can I «encapsulate» PowerBI?

Encapsulate Power BI: 2 options



Opt. 1: Embedded in SharePoint Online

Pros

- Centralized UX
- Easy setup

Cons

- Only reports
- Users won't use service
- Permissions management

Opt. 2: Power BI Embedded

Pros

- Full custom application
- Reports, Dashboards, Datasets and also Q&A
- End user do not need a Power BI Pro License

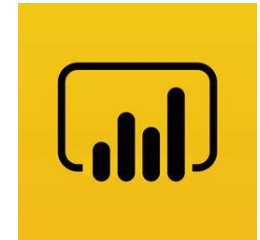
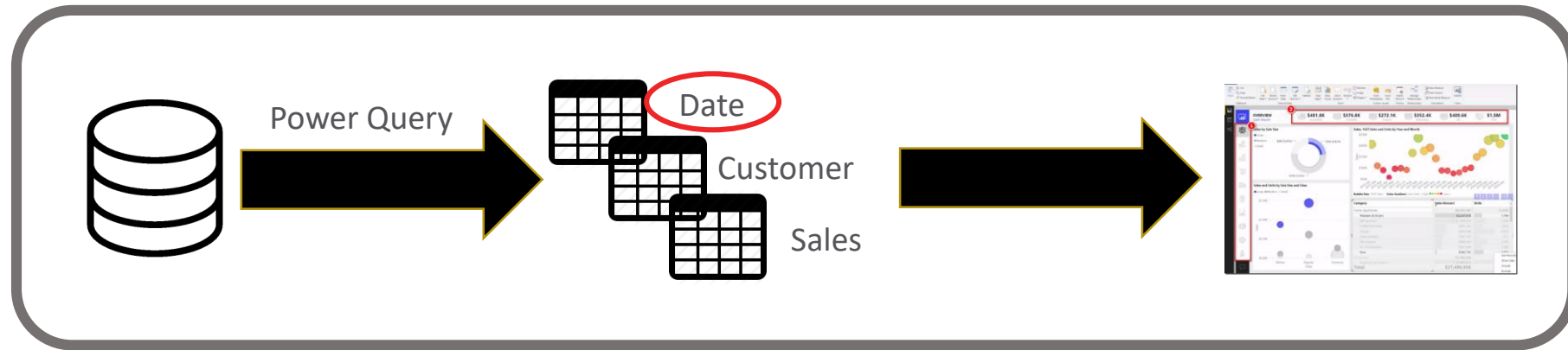
Cons

- Licensing: buckets of range renders
- Registration and management
- Not all service's features
- Web developer needed

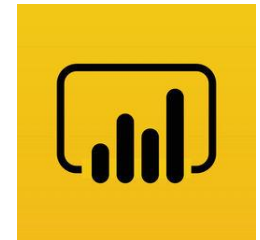
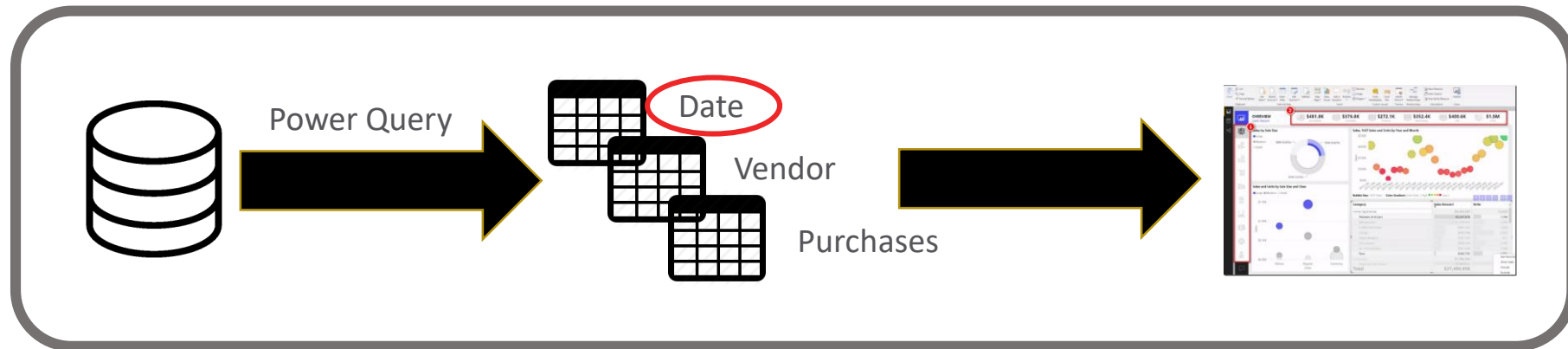
Do I need to care about dataflows?

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dataflows: as-is

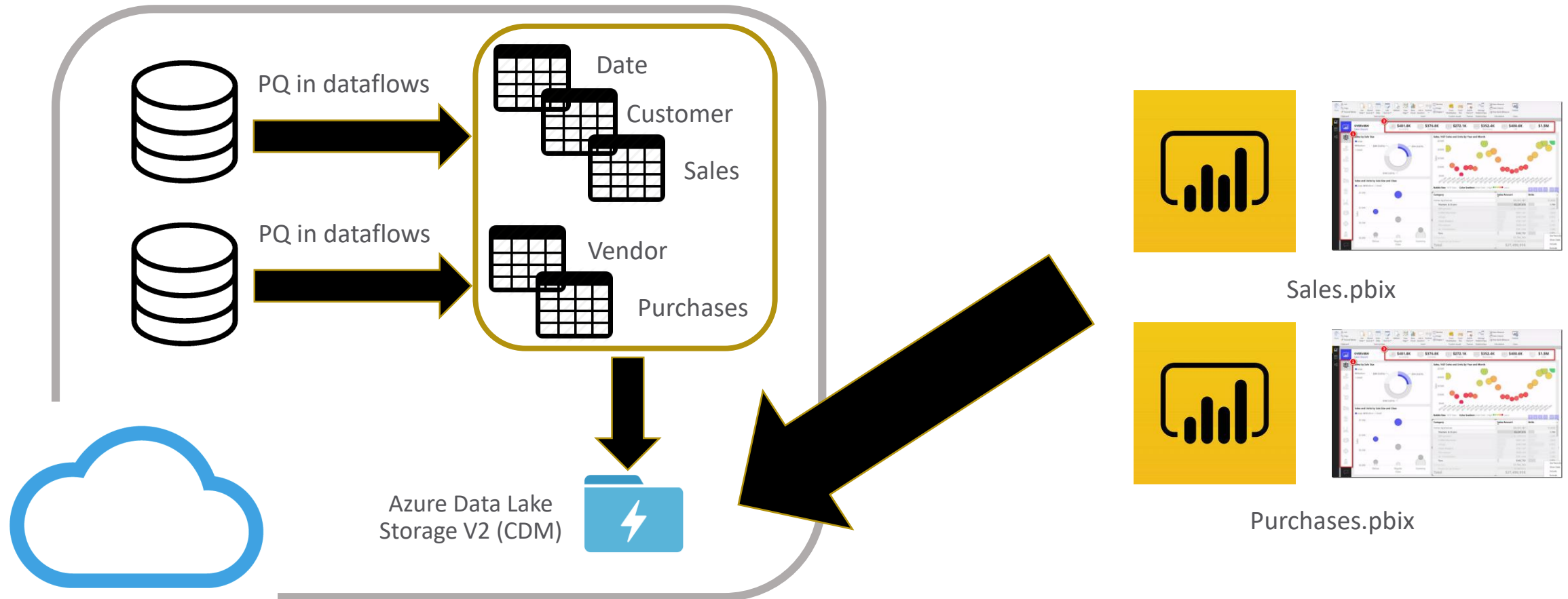


Sales.pbix

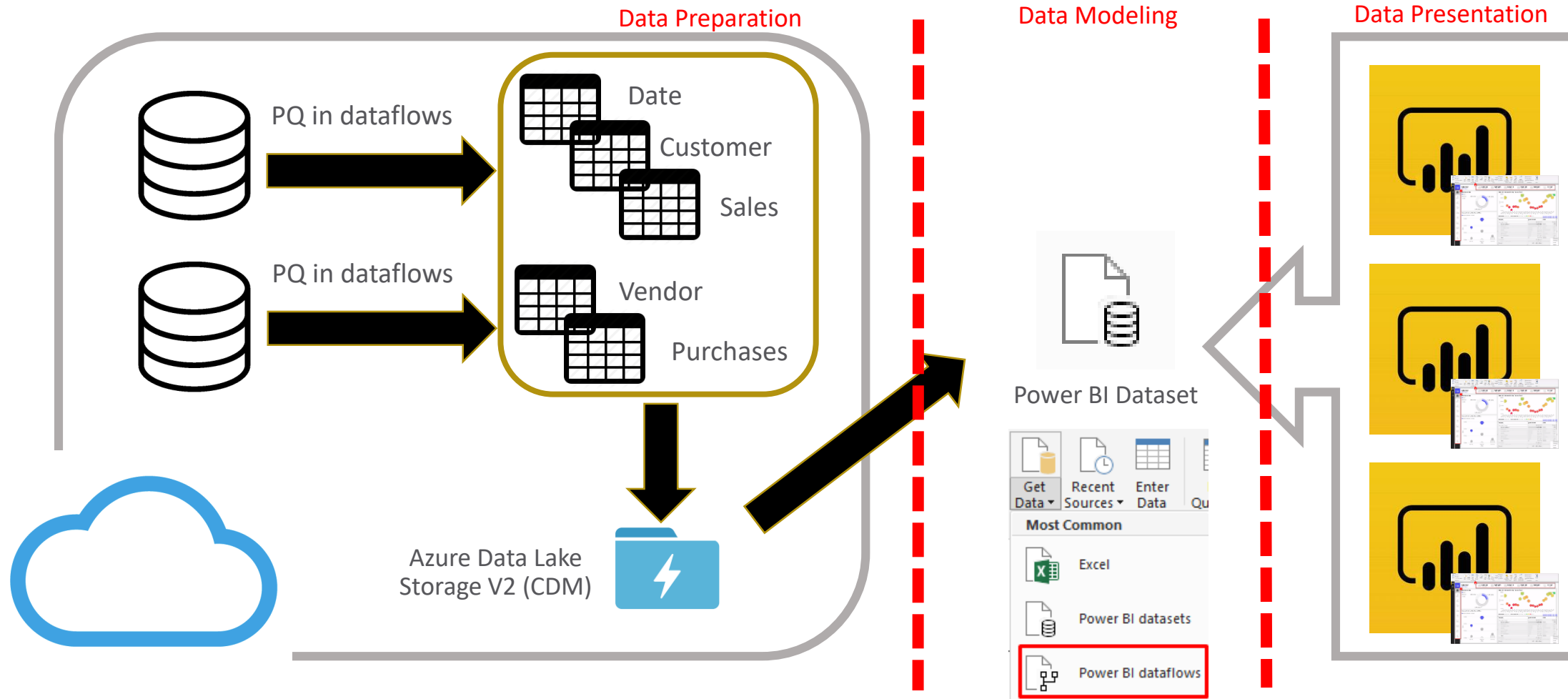


Purchases.pbix

dataflows: a new paradigm



dataflows: 2 steps forward



dataflows: pros

- Centralization of data preparation (reusability and standardization)
- Isolating refresh (1 table a time)
- Attach an existing ADLS v2 (preview)
- Speed up dataset refresh

dataflows: summary pt. 1

Power BI dataflows FAQ

- ✓ A new capability for self-service data preparation in Power BI
- ✓ Delivered in a familiar Power Query experience
- ✓ Built on the foundation of Azure Data Lake Storage gen2
- ✓ Utilize the CDM folder format for data storage
- ✓ A tool for business users to drive data reuse without requiring IT involvement
- ✓ Enable Excel-like data lineage and orchestration
- ✗ NOT a replacement for datasets
- ✗ NOT a replacement for a data warehouse
- ✗ NOT a replacement for Azure Data Factory or SSIS
- ✗ NOT a Premium-only feature
- ✗ NOT an additional cost or fee
- ✗ NOT spelled with a space or any capital letters

Power Platform
Summit
EUROPE

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Storage Mode: Live Connection

	Power BI dataflows	Power BI datasets
Implementation	CDM folder	Analysis Services tabular model
Storage ^[2]	CSV files	Vertipaq
Metadata ^[3]	Common Data Model – model.json	BISM
Development	Power Query Online	Power Query in Power BI Desktop
Primary purpose ^[4]	Data reuse	Data analysis
Reuse ^[5]	Acts as data source in multiple datasets	Shared datasets across workspaces
Scope of reuse ^[6]	Entity level reuse	Dataset level reuse
Mashup with other data sources ^[7]	Yes	No
Used for reporting ^[8]	Not directly	Yes
Reuse outside Power BI ^[9]	Yes, through ADLSg2	Yes, through XMLA
Data access methods ^[10]	Import	Import, DirectQuery
Connection methods ^[11]	Import	Live Connection
What else am I missing?	Please let me know!	Seriously, you should let me know.

<https://ssbipolar.com/2019/10/14/power-bite-dataflows-vs-datasets/>

A large audience is seated in a conference hall, facing a stage with presentation screens. The room has a modern design with large windows and recessed lighting. The audience is diverse in age and appearance, and many are looking towards the stage. The text "Demo: dataflows, datasets, refresh... all in!" is overlaid on the image in a large, black, sans-serif font.

Demo: dataflows, datasets, refresh... all in!

A large audience is seated in a conference hall, facing a stage with multiple projection screens. The audience is diverse in age and appearance, and many are looking towards the stage. The room has a modern design with large windows and recessed lighting. The text "Can I have some advisable scenarios?" is overlaid on the image in a large, black, sans-serif font.

Can I have some advisable scenarios?

Some guidelines

Relational DWH	AAS/SSAS	Model Size	Advice
Yes	No	Under 1 GB	Storage Mode: Import Data License: Pro Data Preparation: Power Query or dataflows
No	No	Under 1 GB	Storage Mode: Import Data (also shared dataset) License: Pro Data Preparation: dataflows
Yes	Yes	-	Storage Mode: Live Query Connection License: Pro
Yes/No	No	Over 1 GB	Storage Mode: Import Data License: Premium Data Preparation: Power Query or dataflows
Yes/No	No	Over 1 GB	Storage Mode: Direct Query or Dual Mode with Aggregations License: Pro Data Preparation: Power Query

Useful Links

- Live or Import? <http://tiny.cc/fa9uaz>
- Gateway <http://tiny.cc/lb9uaz>
- PowerShell Cmdlets for data gateway: <http://tiny.cc/ebia1>
- Incremental Refresh: <http://tiny.cc/4c9uaz>
- dataflows & CDM: <http://tiny.cc/5d9uaz>
- Dataflows best practices: <http://tiny.cc/dmgebi>
- Shared Datasets replace SSAS: <http://tiny.cc/8imtbz>

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Q&A

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Thank You

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