



Govern your  
Power BI environment

Support Business Efficiency

Hylke Peek

# Hylke Peek



## Data Consultant



Peek Data Consultancy

 @hylkepeek

 [linkedin.com/hylkepeek](https://linkedin.com/hylkepeek)

 [github.com/hylkepeek](https://github.com/hylkepeek)

 [PeekData.nl/blogs](https://PeekData.nl/blogs)

I'm working on a lot of different stuff. Focus on **Azure** and **Power Platform**.

- Data Platform
- Data warehousing
- Analytics
- Azure data solutions
- Power Platform

# Agenda

5 minute breaks

9:00 - Introduction to concepts

9:15 - Power BI Administration

10:30 – 11:00 – Refreshment break

11:30 - Premium Capacity Management

12:00 – 13:00 - Lunch break

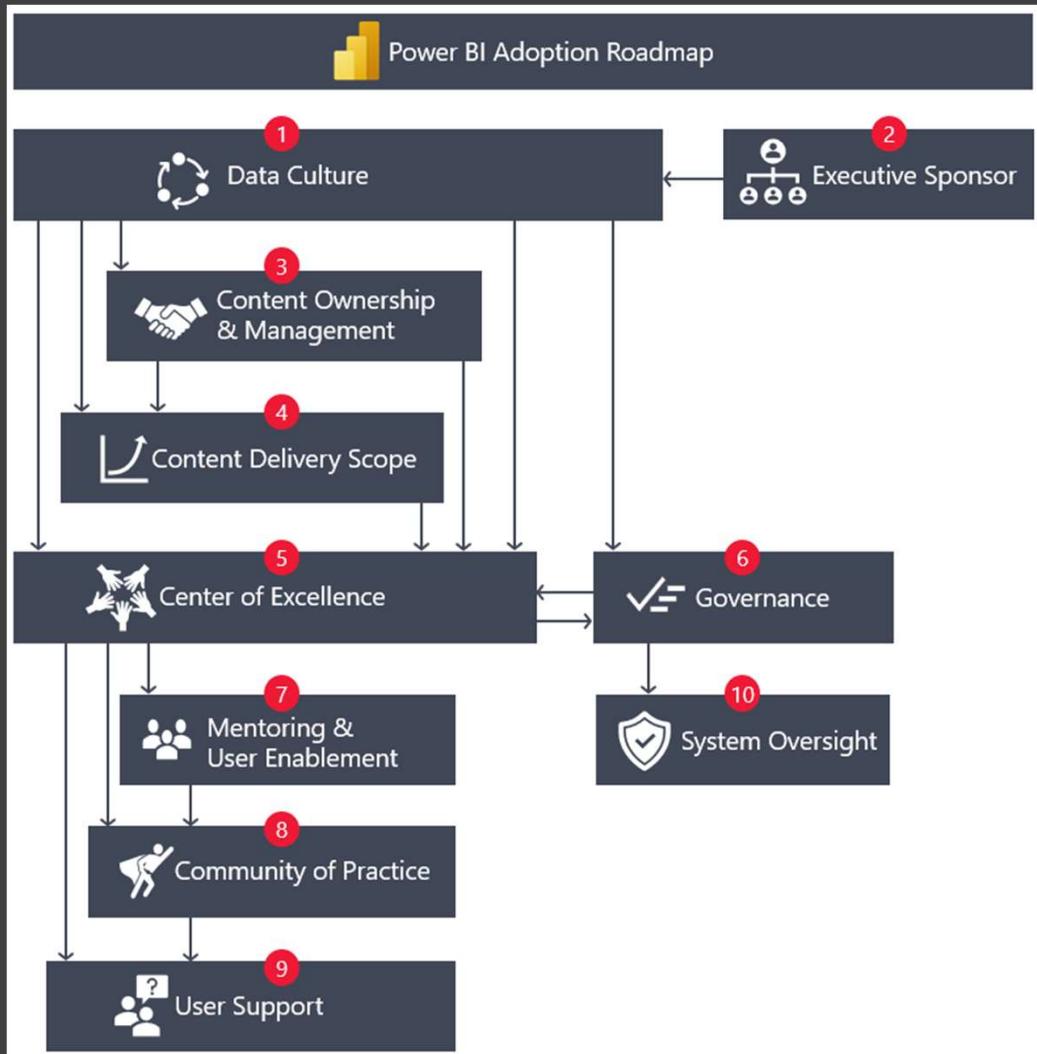
13:30 - Development

14:45 - Data Governance and Security

15:00 – 15:30 – Refreshment break

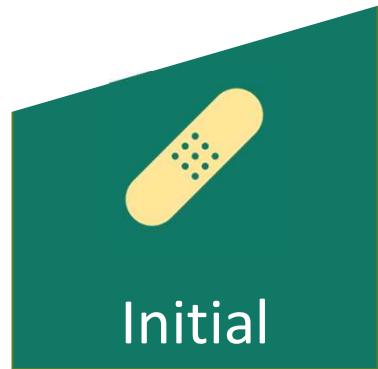
16:30 - Wrap-up

# Introduction to concepts



# Power BI Adoption Roadmap

# Maturity levels



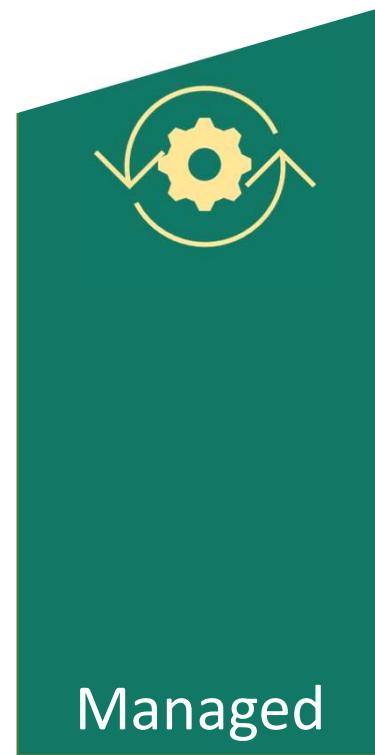
Initial



Repeatable



Defined



Managed



Optimized

# Maturity levels by topic

MATURITY LEVEL	GOVERNANCE	ORGANIZATION AND PEOPLE	PROCESSES	PROCESS EFFICIENCY	REQUIREMENT DEFINITION	METRICS AND DIMENSIONS	ARCHITECTURE, TOOLS AND TECHNOLOGIES	DATA STANDARDS
LEVEL 5: Optimized	Data management policies governs and drives improvements	Data management board oversees improvement activities	Processes for continuous improvement in place	Processes provides feed-back and feed-forward to support continuous improvement	Baseline established and improvements measured according to requirements	Metrics defines baseline to support continuous improvement	Tools support policy driven continuous improvement cycle	Standard compliance and domain models are subject to continuous improvement
LEVEL 4: Managed	Policies defined in relation to business objectives	Skillset extended to include risk analysis of quality issues aligned with business objectives	Processes for impact analysis and risk management in place	Monitoring is performed across enterprise and published as KPI's and trends	Requirements are linked to business impacts	Metrics are linked to business impacts and risk analysis	Tools are driven by business objectives and include support for root cause analysis and risk management	Standards are used actively to reduce risk for critical business operations
LEVEL 3: Defined	Policies defined at enterprise level	Roles and required skills defined at enterprise level	Processes are defined and implemented consistently across enterprise	Defined metrics are monitored in advance of business impact	Requirements defined and communicated at enterprise level	Framework for metrics and dimensions defined at enterprise level	Architecture in place at enterprise level supporting full stack data management	Standards, domain models and semantics used at enterprise level
LEVEL 2: Repeatable	Local initiatives address the requirement for policies	Locally defined roles and some basic skills	Best practices in place but not used consistently	Generic metrics are monitored at point of impact	Local initiatives define requirements	Metrics are reused locally in project	Tools and technologies used consistently in selected projects	Industry standards and domain models used selectively across projects
LEVEL 1: Initial	Only ad-hoc or temporal policies in place	No formally defined roles or skillset	Ad-hoc or reactive responses to quality issues	No baseline and no monitoring of quality issues	Re-engineering used to derive requirements	Project specific metrics	Tools are used ad-hoc per project	Ad-hoc and inconsistent use of standards

Power BI governance is continuously improved by measuring the governance and process feedback.

Power BI governance is supporting the changing business needs.

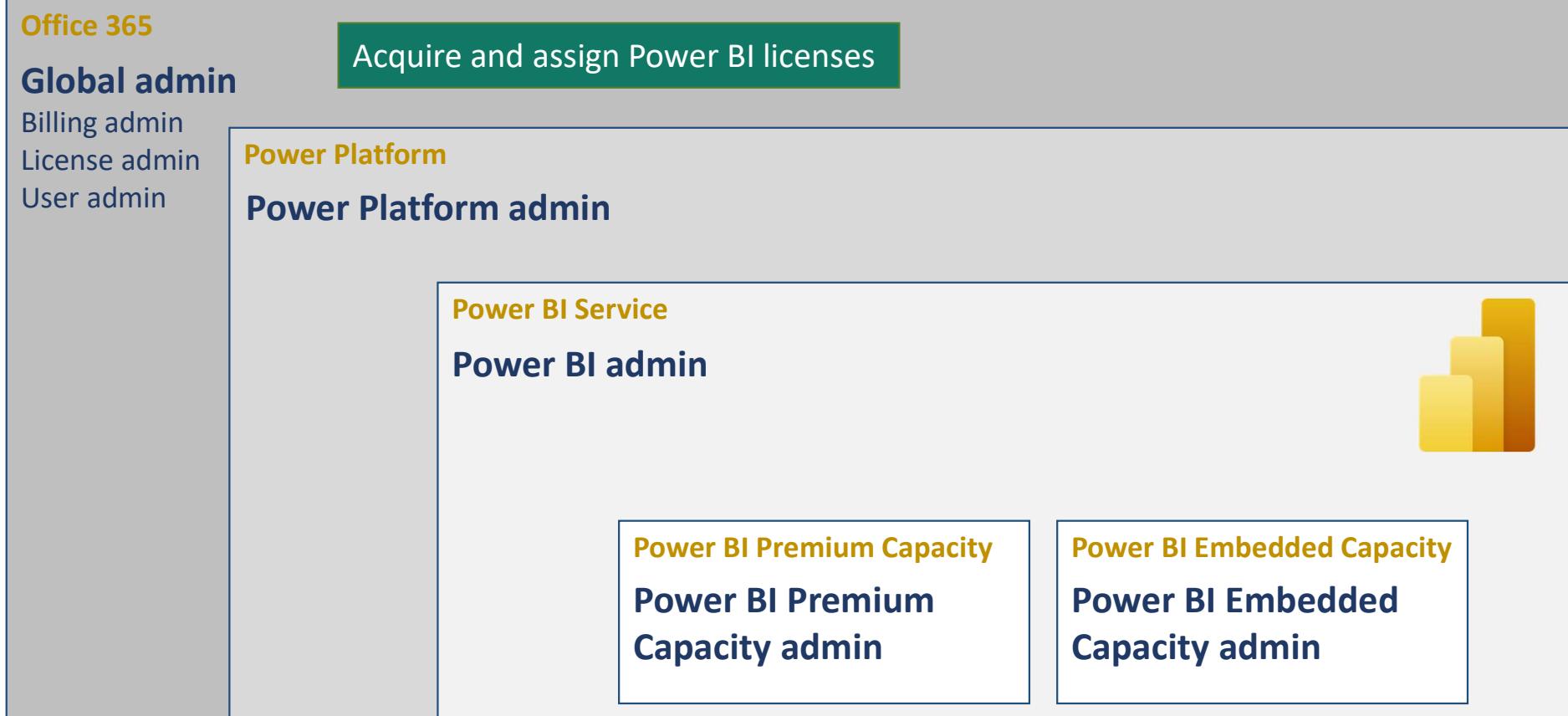
Power BI is governed centrally in the same way as other tooling.

Power BI is governed separate from other tools but consistent in different projects.

Power BI is just activated and maybe people thought about governance.

# Power BI Administration

# Relevant admin roles



# Roles to administer Power BI



Focus on Power BI Service  
Power BI Management tasks  
Governance insights like usage, performance and auditing

Power BI admin portal → Most stuff

Powershell → Automation of monitoring



See Power BI admin  
+  
Role and User Management  
Licensing  
Purchase Premium Capacity

Azure Portal (AAD) → Role and user management

Office 365 admin portal → Purchase licenses

# Steps in using Power BI within an organization



# Someone starts using Power BI

Licensing

Assignment

# Licensing

Free

Work on your own

New Power BI report creators or report viewers in Premium Capacity environment

---

Pro

Share your reports and collaborate

Small/medium scale business with standard analytic requirements

---

Premium per user

AI and development features

Small/medium scale business with advanced analytic and/or development requirements

---

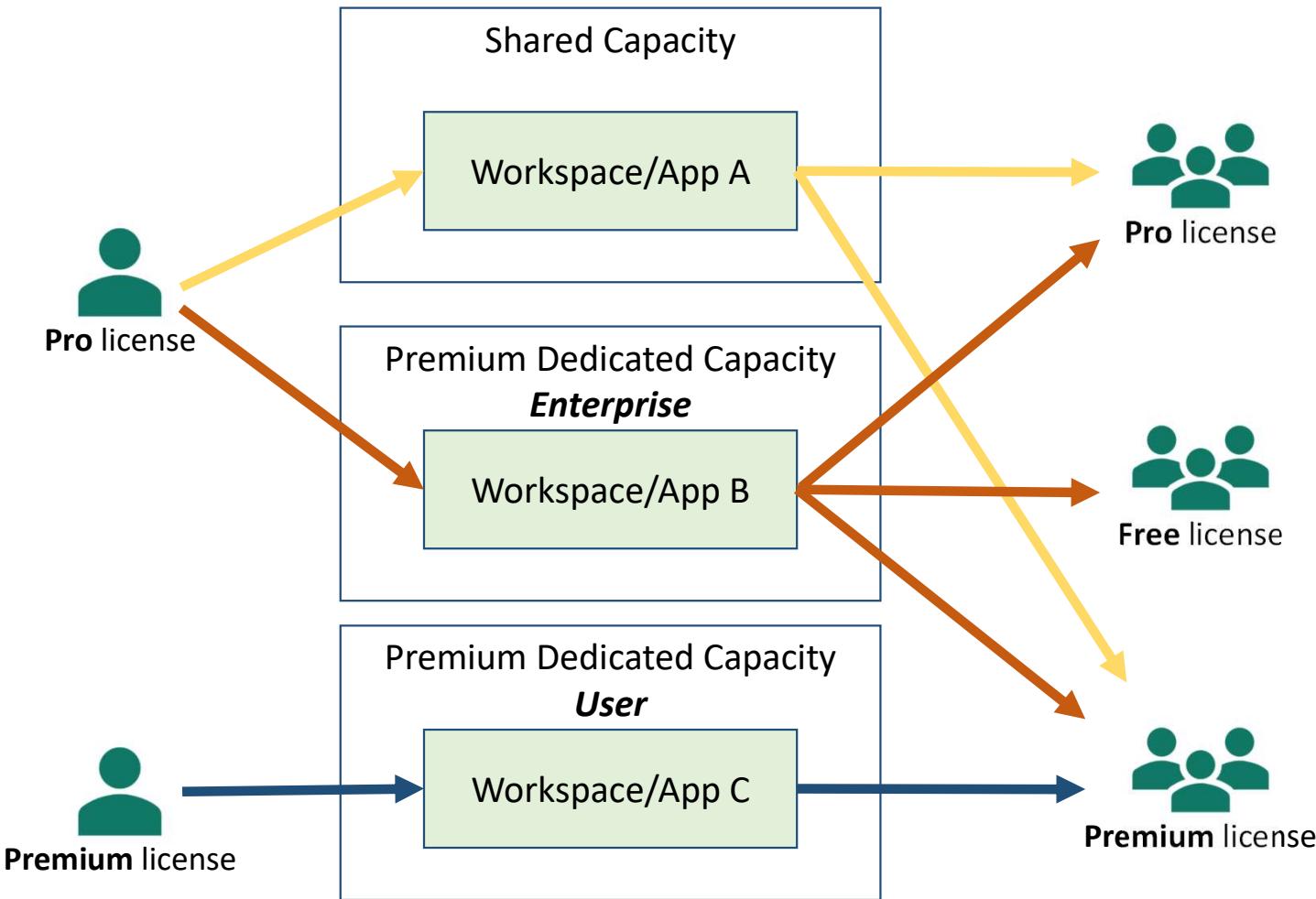
Premium Capacity

Advanced security, scalability options and many users (500+)

Enterprise scale business with advanced analytic and/or development requirements



# Who can share with who?



# Assign and Purchase licenses

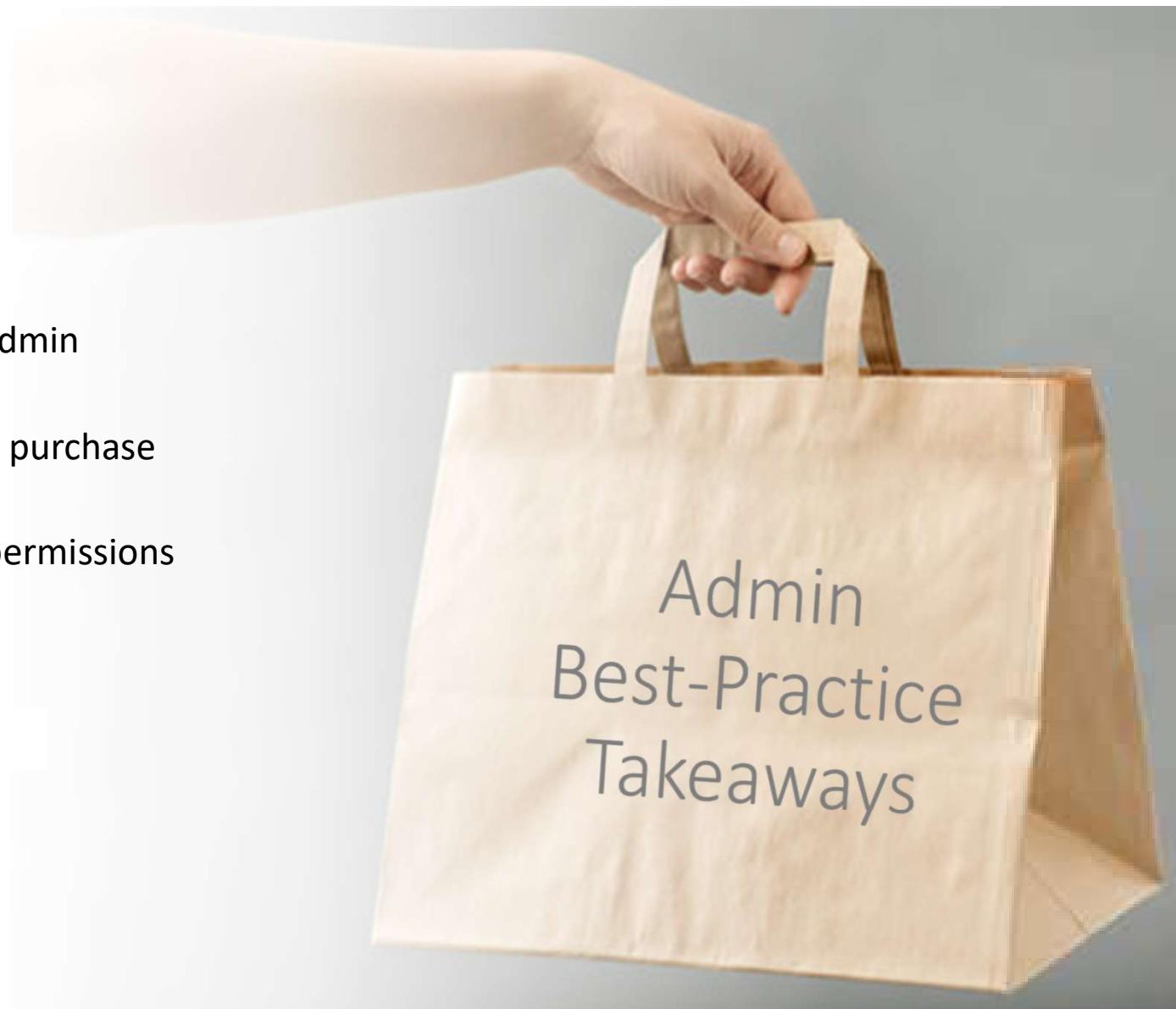
- Use the 365 admin center or Azure Portal
- Power BI Pro is part of Microsoft 365 E5
- Self-service sign-up, trials and purchasing

Setting: AllowSelfServicePurchase	Self-service purchase	Acquire trial
Enabled	Yes	Yes
OnlyTrialsWithoutPaymentMethod	No	Yes
Disabled	No	No

- Group based licensing
  - A new person to a group gets all the required licensing automatically
  - No double licenses
  - Depending on the acquired licenses
  - Available within Azure Portal



- Split roles Office Admin and Power BI admin
- Let people use trials but no self-service purchase
- Always use groups to assign roles and permissions

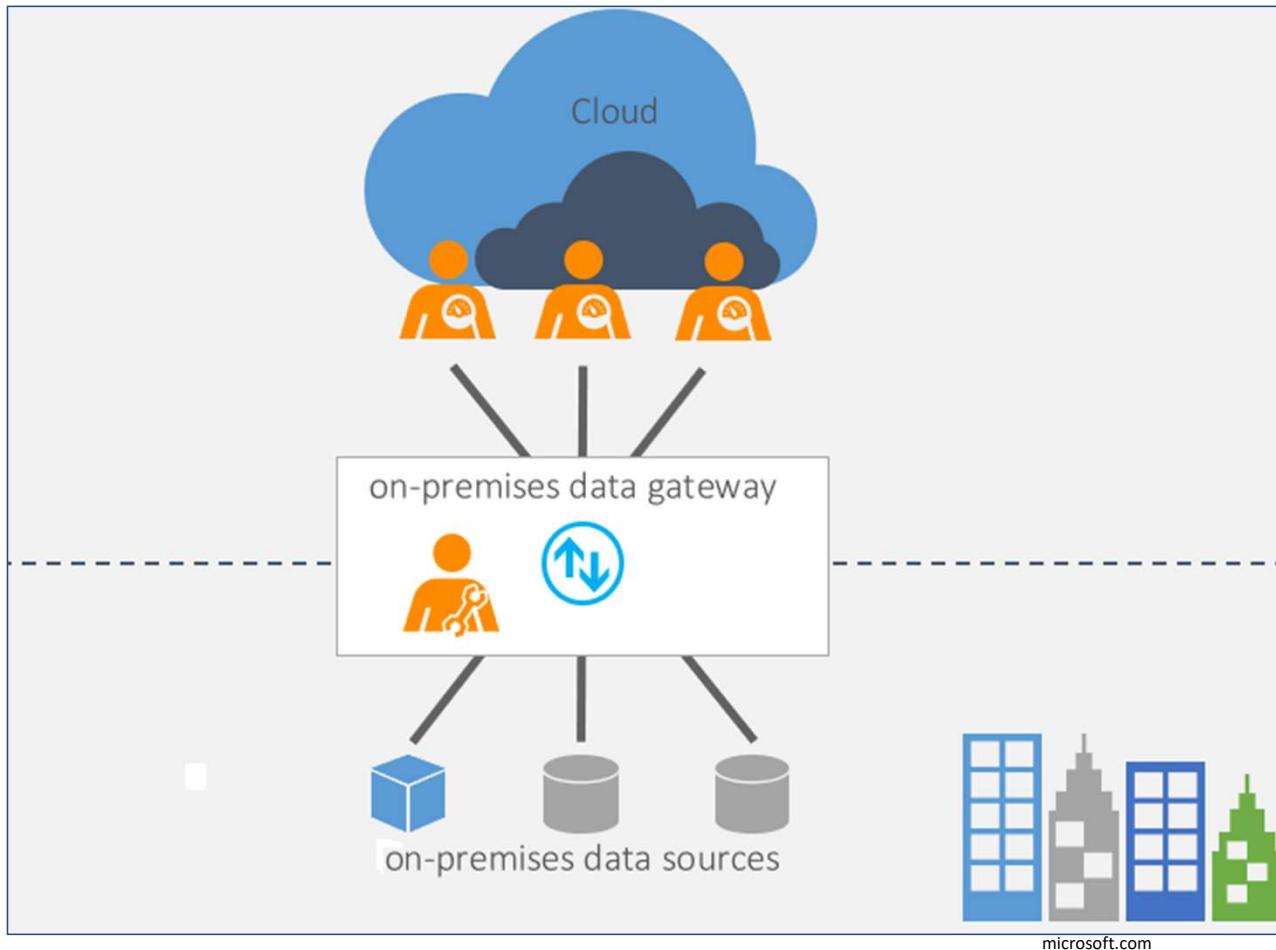


# Someone starts using company sources

On-premise gateway

Azure resources

# On-premise gateway



Install 1 gateway for all local sources

From this server you should be able to connect to all sources

2 nodes: Personal and Standard

You create a recovery key

You can have a cluster of gateways



# Using Azure Resources



No need for a gateway

Maintain in Power BI - Data Sources

Power BI permissions ≠ Data Source permissions

- Use standard gateways
- Monitor gateway from time to time
- Save the recovery key securely



# More people start using Power BI

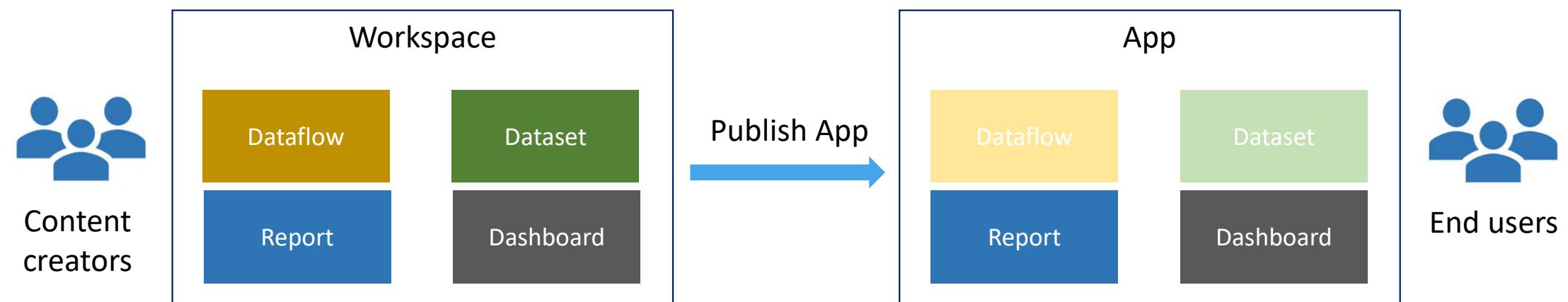
Workspace settings

Visuals

# Workspaces and Apps

*'Workspaces are places to collaborate with colleagues on specific content.'*

*'Apps are used to share content to others.'*



# Viewer

The screenshot shows the Power BI service interface. At the top, it displays "Power BI Synapse Fanshop". On the left is a navigation sidebar with icons for Home, Create, Browse, Data hub, Metrics, Apps, Knowledge center, Workspaces, and Synapse Fanshop (which is currently selected). The main area is titled "Synapse Fanshop" and contains a table with one item:

Name	Type	Owner	Refreshed	Next refresh	Endorsement	Sensitivity
Sales reporting	Report	Synapse Fanshop	9/8/22, 8:41:31 PM	—	—	—

At the bottom of the main area, there is a button labeled "View all reports (and dashboards)".

View all reports (and dashboards)

# Contributer

The screenshot shows the Power BI workspace interface for 'Synapse Fanshop'. On the left is a vertical navigation bar with icons for Home, Create, Browse, Data hub, Metrics, Apps, Knowledge center, Workspaces, and Synapse Fanshop. The main area displays a list of content items. At the top, there are buttons for 'New' and 'Upload', and tabs for 'All', 'Content', and 'Datasets + dataflows', with 'Content' being the active tab. Below this is a table with columns for Name, Type, Owner, Refreshed, Next refresh, Endorsement, and Sensitivity. Two items are listed: 'Sales reporting' (Report, owner Synapse Fanshop, refreshed 9/8/22, 8:41:31 PM) and 'Sales reporting' (Dataset, owner Hylke Peek, refreshed 9/8/22, 8:41:31 PM). The second dataset row is highlighted with a yellow box.

Name	Type	Owner	Refreshed	Next refresh	Endorsement	Sensitivity
Sales reporting	Report	Synapse Fanshop	9/8/22, 8:41:31 PM	—	—	—
Sales reporting	Dataset	Hylke Peek	9/8/22, 8:41:31 PM	N/A	—	—

Create, edit, and delete all content in the workspace  
Manage access for all content in the workspace

# Member

The screenshot shows the Power BI workspace interface for 'Synapse Fanshop'. On the left is a navigation bar with icons for Home, Create, Browse, Data hub, Metrics, Apps, Knowledge center, Workspaces, and Synapse Fanshop (the current workspace). The main area displays two items: 'Sales reporting' (Report) and 'Sales reporting' (Dataset). At the top right are buttons for 'Create app' (highlighted with a yellow box), 'Access' (highlighted with a yellow box), and search. A modal window titled 'Access' is open, showing the 'Synapse Fanshop' workspace. It includes fields for adding users ('Add admins, members, or contributors. [Learn more](#)') and a dropdown menu for selecting roles ('Member' is selected, highlighted with a yellow box). Below the dropdown is a search bar and a table of users with their names and permissions:

NAME	PERMISSION
Hylke Peek	Admin
Sven Williams	Member

Manage apps  
Manage some access for the workspace

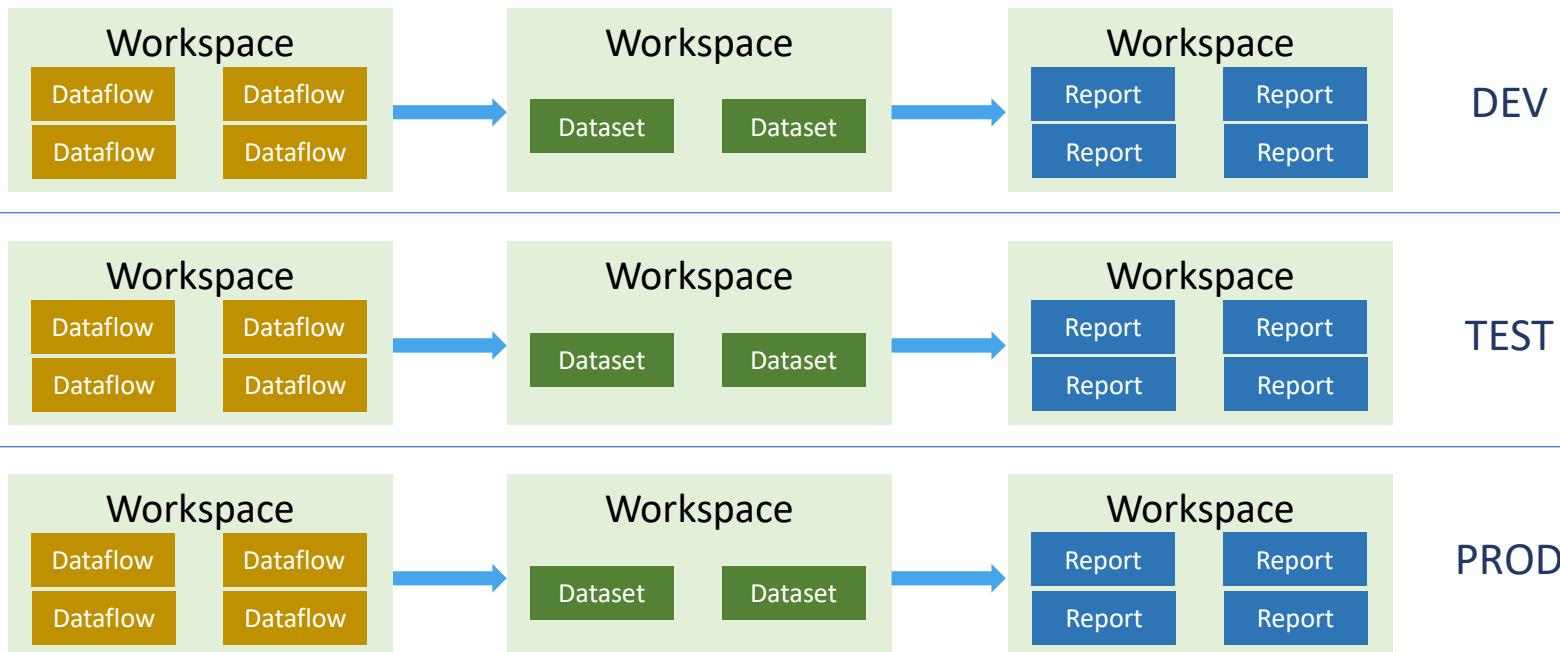
# Admin

Manage workspaces  
Manage all access for the workspace

The screenshot shows the Power BI workspace management interface for the 'Synapse Fanshop' workspace. On the left, a sidebar lists various workspace categories: Home, Create, Browse, Data hub, Metrics, Apps, Deployment pipelines, Knowledge center, Workspaces, and Synapse Fanshop (which is selected). The main content area displays two items: 'Sales reporting' (Report) and 'Sales reporting' (Dataset). A modal window titled 'Access' is open, showing the 'Synapse Fanshop' workspace settings. It includes fields for 'Enter email addresses' and a dropdown menu for selecting 'Member'. Below this, a table lists users with their names and current permissions: Hylke Peek (Admin) and Sven Williams (Member). A context menu for Sven Williams is open, showing options: Admin, Contributor, Viewer, and Remove. Another modal window titled 'Settings' is also open, showing workspace details like 'About', 'Premium', and 'Azure connections'. The 'Workspace name' field is highlighted with a yellow box. At the bottom right of the 'Settings' modal, there are buttons for 'Delete workspace', 'Save', and 'Cancel'.

# Workspace best-practise

Each workspace has it's own purpose



# Workspace Settings

Power BI Admin portal

Admin portal

- Home
- Create
- Browse
- Data hub
- Metrics
- Apps
- Deployment pipelines
- Knowledge center
- Workspaces
- My workspace

Tenant settings

Workspace settings

- >Create workspaces (new workspace experience)  
*Enabled for the entire organization*
- Use datasets across workspaces  
*Enabled for the entire organization*
- Block scheduled upgrade of empty workspaces  
*Enabled for the entire organization*
- Block notifications for scheduled workspace upgrades  
*Disabled for the entire organization*

Information protection

- Allow users to apply sensitivity labels for content  
*Disabled for the entire organization*
- Require users to apply sensitivity labels to Power BI content (preview)  
*Disabled for the entire organization*
- Apply sensitivity labels from data sources to their data in Power BI

## Create workspace

Create workspaces (new workspace experience)  
*Enabled for the entire organization*

Users in the organization can create app workspaces to collaborate on dashboards, reports, and other content. Even if this setting is disabled, an upgraded workspace will be created when a template app is installed.

Enabled

Apply to:

The entire organization

Specific security groups

Except specific security groups

Apply Cancel

# Workspace Settings

Power BI Admin portal

Admin portal

- Home
- Create
- Browse
- Data hub
- Metrics
- Apps
- Deployment pipelines
- Knowledge center
- Workspaces
- My workspace

Tenant settings

Workspace settings

- >Create workspaces (new workspace experience)  
*Enabled for the entire organization*
- Use datasets across workspaces  
*Enabled for the entire organization*
- Block scheduled upgrade of empty workspaces  
*Enabled for the entire organization*
- Block notifications for scheduled workspace upgrades  
*Disabled for the entire organization*

Information protection

- Allow users to apply sensitivity labels for content  
*Disabled for the entire organization*
- Require users to apply sensitivity labels to Power BI content (preview)  
*Disabled for the entire organization*
- Apply sensitivity labels from data sources to their data in Power BI

## Use datasets across workspaces

Use datasets across workspaces  
*Enabled for the entire organization*

Users in the organization can use datasets across workspaces if they have the required Build permission.

Enabled

Apply to:

The entire organization

Specific security groups

Except specific security groups

Apply Cancel

# Workspace Settings

The screenshot shows the Power BI Admin portal interface. On the left is a sidebar with various navigation options: Home, Create, Browse, Data hub, Metrics, Apps, Deployment pipelines, Knowledge center, Workspaces, and My workspace. The 'Workspaces' option is highlighted with a yellow box. The main content area is titled 'Admin portal' and contains a 'Tenant settings' section. This section includes several configuration items, each with a small icon and a description. One item, 'Block scheduled upgrade of empty workspaces', is also highlighted with a yellow box. Below this is another section titled 'Information protection'.

- Home
- Create
- Browse
- Data hub
- Metrics
- Apps
- Deployment pipelines
- Knowledge center
- Workspaces**
- My workspace

Power BI Admin portal

Admin portal

Tenant settings

Workspace settings

- >Create workspaces (new workspace experience)  
*Enabled for the entire organization*
- Use datasets across workspaces  
*Enabled for the entire organization*
- Block scheduled upgrade of empty workspaces**  
*Enabled for the entire organization*
- Block notifications for scheduled workspace upgrades  
*Disabled for the entire organization*

Information protection

- Allow users to apply sensitivity labels for content  
*Disabled for the entire organization*
- Require users to apply sensitivity labels to Power BI content (preview)  
*Disabled for the entire organization*
- Apply sensitivity labels from data sources to their data in Power BI

## Some features in V2:

- Assign groups to workspace role
- Share datasets
- Templates apps (instead of organizational content packs)
- Contact lists to receive notifications

Block scheduled upgrade of empty workspaces  
Block notifications for scheduled workspace upgrades

Block scheduled upgrade of empty workspaces

*Enabled for the entire organization*

Enable this setting to prevent classic workspaces with no content from being upgraded when an upgrade is triggered by either a Power BI admin or by the Power BI service. [Learn more](#)



Enabled

Apply

Cancel

ⓘ This setting applies to the entire organization

Block notifications for scheduled workspace upgrades

*Disabled for the entire organization*

Enable this setting to prevent email notifications from being sent when classic workspaces are upgraded by either a Power BI admin or by the Power BI service. [Learn more](#)



Disabled

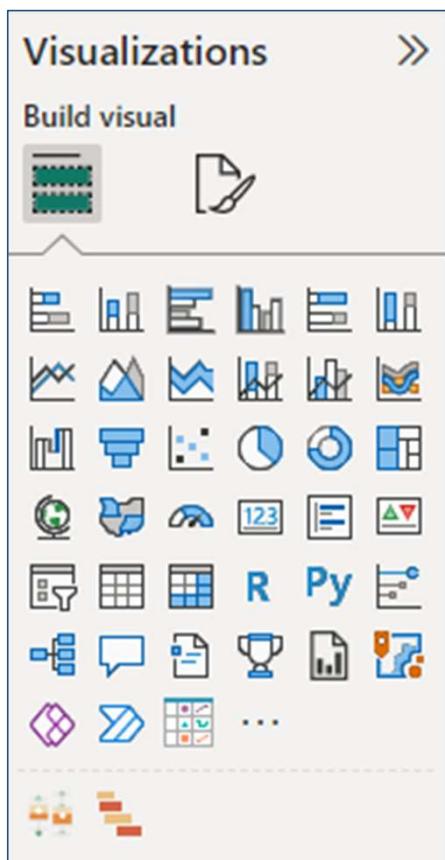
Apply

Cancel

ⓘ This setting applies to the entire organization



# Visuals Settings



- How to deal with custom visuals?
  - Allow people to use them
  - Disallow downloads from custom visuals
  - Allow uncertified if policies allows you to
- Do we allow R and Python visuals?
- Which visuals can people see by default?
  - Make it easier for your end users to find the right visual

**Power BI visuals**

- ▷ Allow visuals created using the Power BI SDK  
*Enabled for the entire organization*
- ▷ Add and use certified visuals only (block uncertified)  
*Disabled for the entire organization*
- ▷ Allow downloads from custom visuals  
*Disabled for the entire organization*

---

**R and Python visuals settings**

- ▷ Interact with and share R and Python visuals  
*Enabled for the entire organization*

# Organizational Visuals

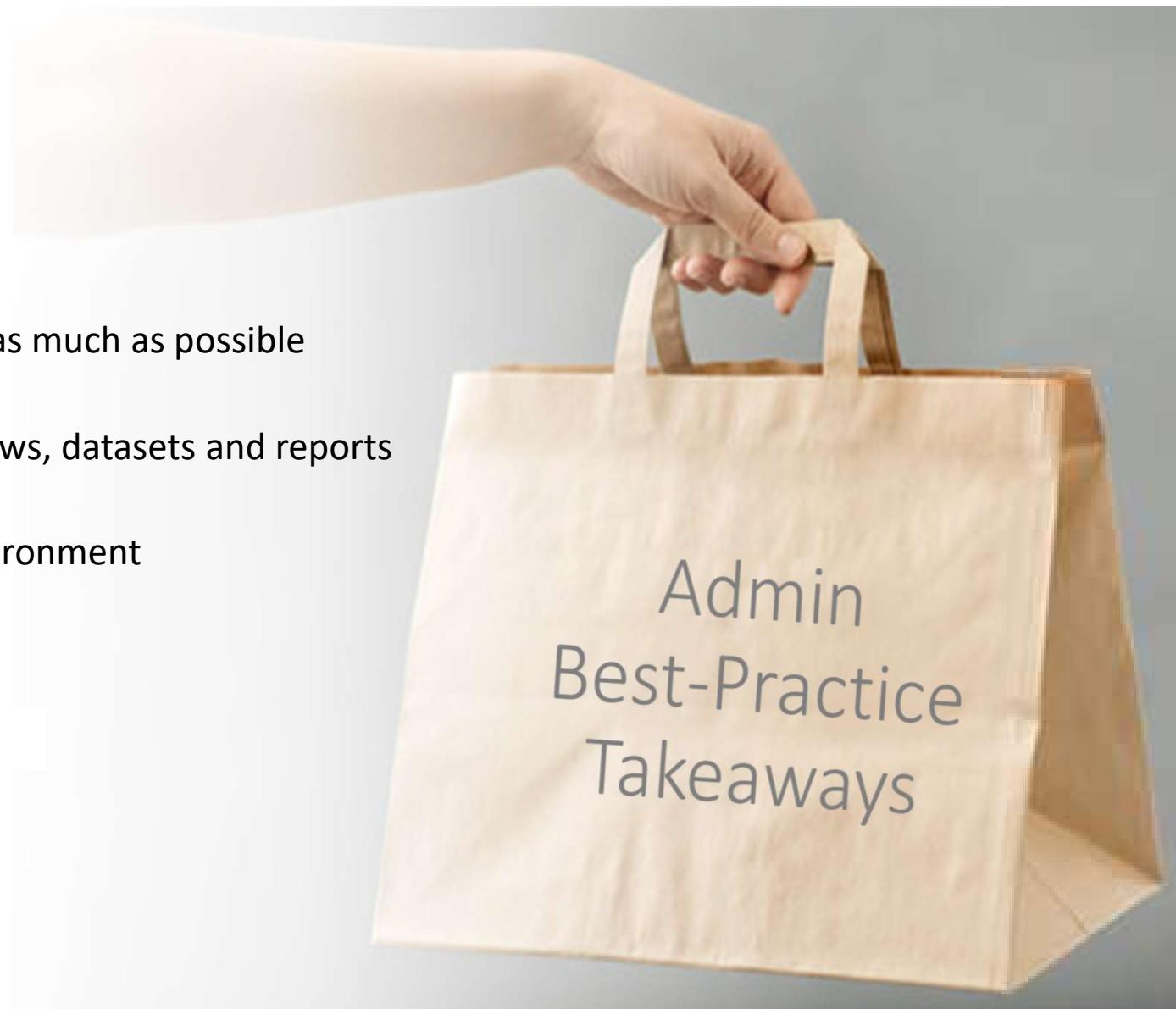
Add custom visuals and make them easy to use

The screenshot shows the Power BI Admin portal interface. On the left, there's a navigation sidebar with various options like Home, Create, Browse, Data hub, Metrics, Apps, Deployment pipelines, Knowledge center, Workspaces, and Synapse Fanshop. The 'Organizational visuals' option is selected and highlighted with a blue arrow pointing from the main content area.

The main content area is titled 'Organizational visuals' and contains the following information:

- Add and manage Power BI visuals for your organization. [Learn more](#)
- Buttons for '+ Add visual', 'Refresh', and 'Export'.
- A table with columns: Visual, Source, Changed, and Visualization Pane.
- In the table, there is one item: 'Power KPI Matrix' (Source: AppSource, Changed: Jan 4, 2023), which is marked as 'Enabled'.
- Pagination controls: 'Items per page: 10', '1 - 1 of 1'.

To the right of the main content area is a 'Visualizations' catalog window. It includes a 'Build visual' section with icons for a grid and a pencil, and a large grid of various visualization icons. One specific icon, a matrix or grid icon, is highlighted with a yellow box and has a blue arrow pointing towards it from the bottom right.



- Use admin role carefully, use member as much as possible
- Create separate workspaces for dataflows, datasets and reports
- Create a set of workspace for each environment

# People start sharing reports

Sharing options

Build permissions

# Sharing options

Workspace



Use for collaboration only. Not for end users!

Individual content

App

Teams

Mobile App

Embedded

The screenshot shows the Power BI workspace sharing interface. At the top, it says "Power BI United FC [Development]". On the left, there's a sidebar with icons for Home, Create, Browse, Data hub, Metrics, Apps, Deployment pipelines, Knowledge center, and Workspaces. The "United FC [Development]" workspace is selected. In the main content area, there's a table listing four items: "Datamodel Sales" (Report), "Datamodel Sales" (Dataset), "Fanshop Sales Data" (Dataflow), and "Reporting Sales" (Report). To the right, under the "Access" tab, there's a section for adding admins, members, or contributors. It has a text input field "Enter email addresses", a dropdown "Member", and a large green "Add" button. Below that, there's a table showing existing permissions:

NAME	PERMISSION	...
External users ⓘ	Member	...
Hylke Peek ⓘ	Admin	...
PowerBI_Access ⓘ	Admin	...

# Sharing options

Workspace

Individual content

App

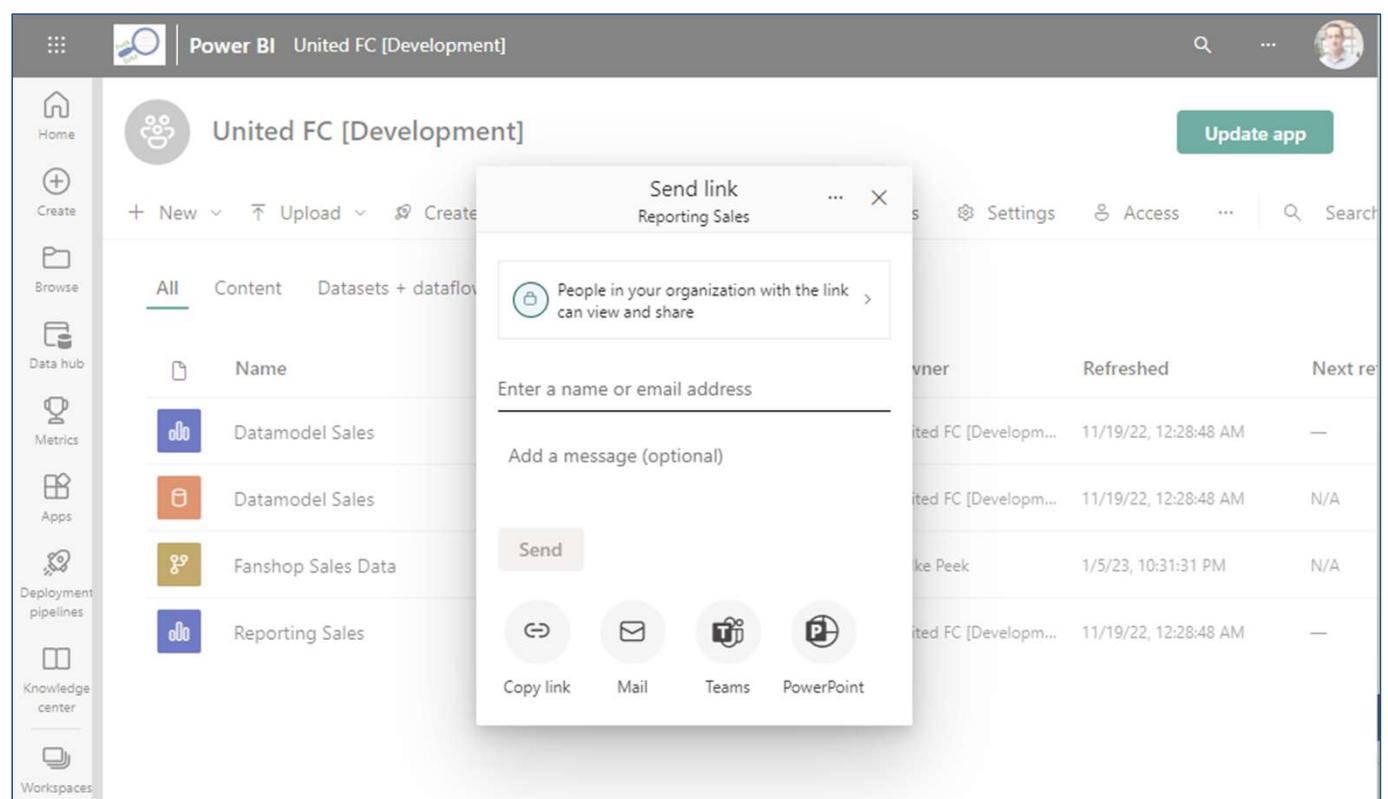
Teams

Mobile App

Embedded



Use for incidental sharing only. Maintaining permissions will be hard.



The screenshot shows the Power BI service interface for a workspace named "United FC [Development]". On the left, there's a sidebar with navigation links: Home, Create, Browse, Data hub, Metrics, Apps, Deployment pipelines, Knowledge center, and Workspaces. The main content area displays a list of datasets: "Datamodel Sales", "Datamodel Sales", "Fanshop Sales Data", and "Reporting Sales". A modal window titled "Send link" is open over the list, showing the sharing details for "Reporting Sales". The modal includes a recipient input field ("People in your organization with the link can view and share"), a message input field ("Enter a name or email address"), a "Send" button, and sharing options like "Copy link", "Mail", "Teams", and "PowerPoint". The background shows a history of sharing activities.

# Sharing options

Workspace

Individual content

App

Teams

Mobile App

Embedded

Default and the best way to share content within the organization.

The screenshot shows the 'Power BI Apps' interface. On the left is a navigation sidebar with icons for Home, Create, Browse, Data hub, Metrics, Apps (which is selected), Deployment pipelines, and Knowledge center. The main area has a green header bar with the text 'Default and the best way to share content within the organization.' The main content area is titled 'Apps' and contains the following information:

Name	Publisher	Published	App type	Version	Endorsement
United FC [Development]	Hylke Peek	1/6/23, 10:23:38 AM	Org app	—	—
Synapse Fanshop	Hylke Peek	1/5/23, 9:48:06 PM	Org app	—	—

# Sharing options

Workspace

Individual content

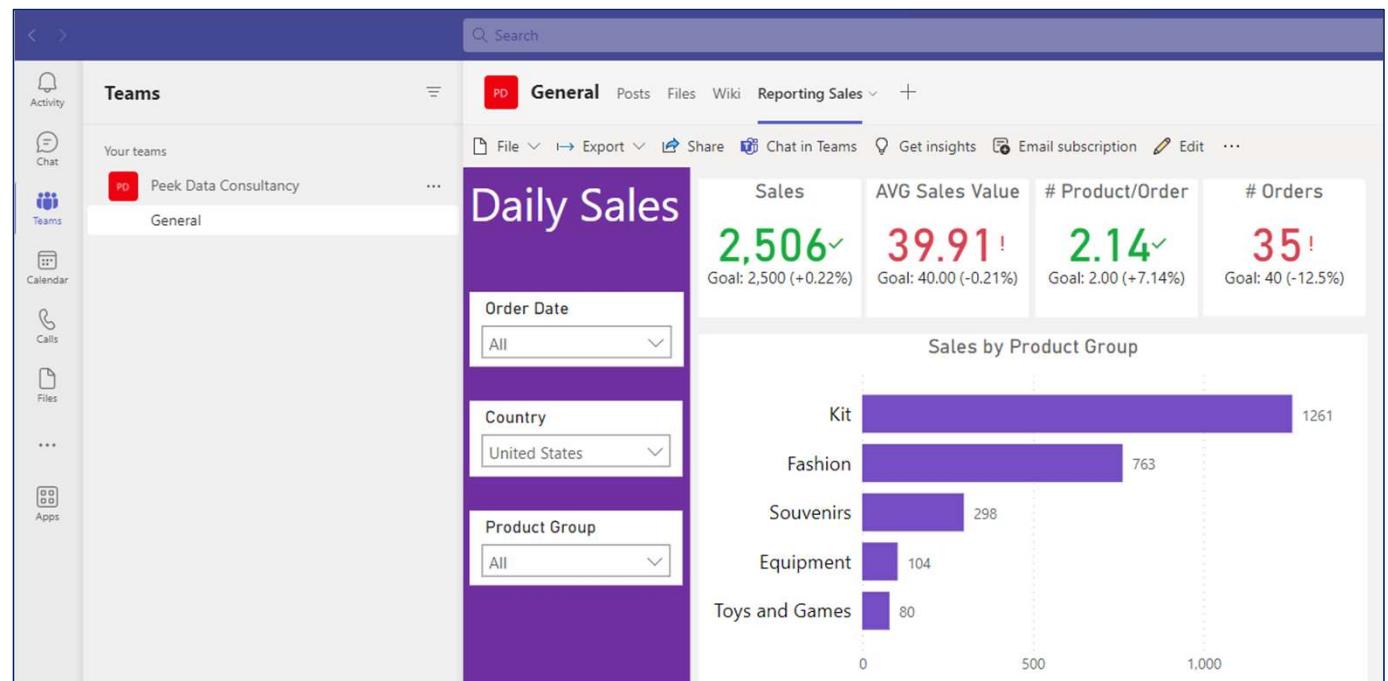
App

Teams

Mobile App

Embedded

Really good option to share content within the organization. Default enabled.



# Sharing options

Workspace

Individual content

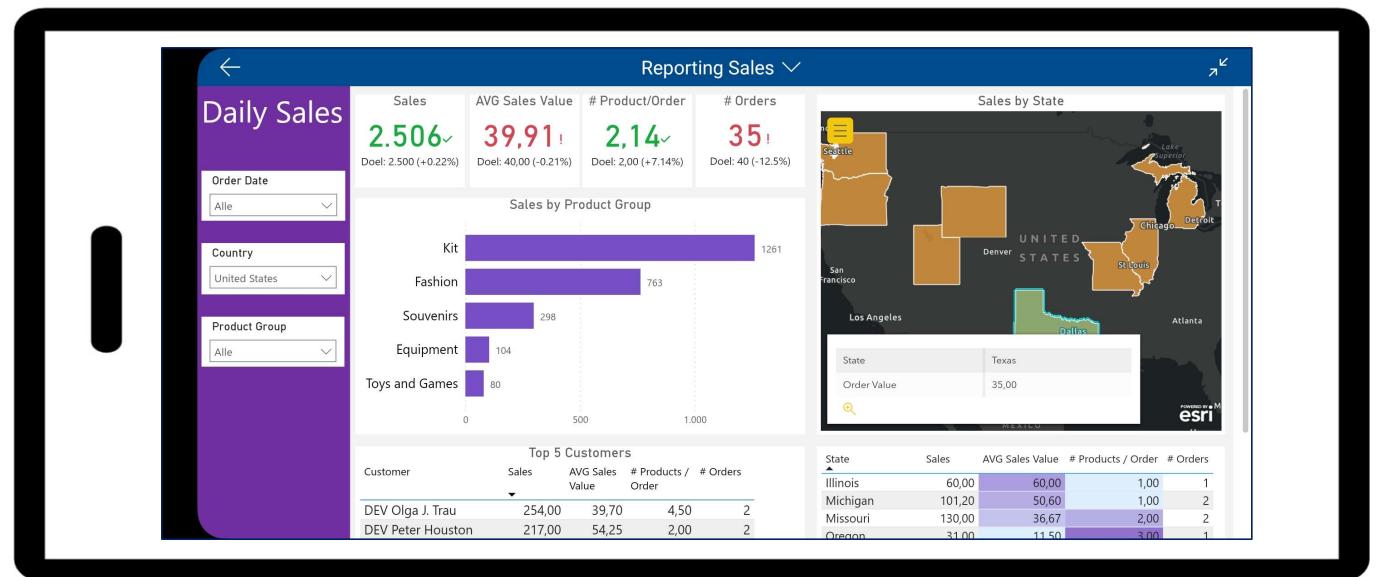
App

Teams

Mobile App

Embedded

Automatically available. You can build mobile optimized views.





# Sharing options

Workspace

Individual content

App

Teams

Mobile App

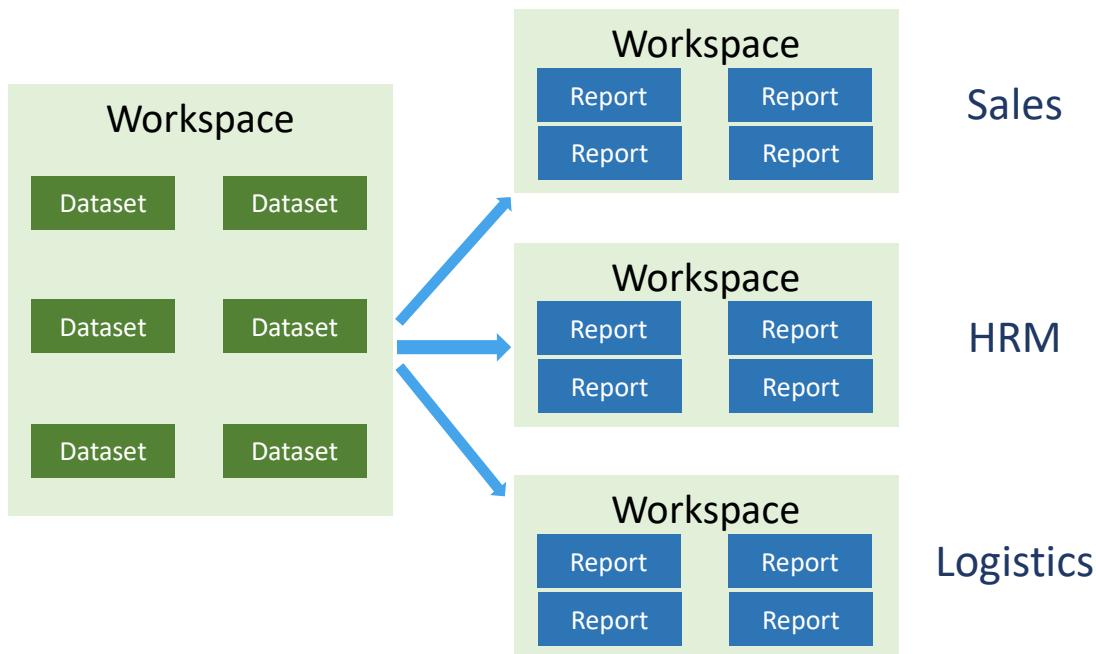
Embedded

Integrate reports in other applications.

The screenshot shows the Power BI interface with the title "Power BI United FC [Development]". On the left, there's a sidebar with icons for Home, Create, Browse, Data hub, Metrics, Apps, and Deployment pipelines. The "File" menu is open, showing options like Save a copy, Download this file, Print this page, Embed report, Generate a QR code, Settings, SharePoint online, Website or portal, Publish to web (public), and Developer Playground. A blue arrow points from the "Embedded" box on the left towards the "Embed report" option in the sharing menu.

# Build Permission – Shared Datasets

Re-use a dataset for multiple reports across workspaces.



# Build Permission - Options

Workspace

App

Share report

Dataset

Request permission



Default permissions for Contributor, Member and Admin.

The screenshot shows the Power BI workspace settings for 'United FC [Development]'. On the left, there's a sidebar with options like Home, Create, Browse, Data hub, Metrics, Apps, Deployment pipelines, Knowledge center, and Workspaces. The 'Workspaces' section lists 'United FC [Development]' and 'United FC [Development]'. The main area shows a table of content items: 'Datamodel Sales' (Report), 'Datamodel Sales' (Dataset), 'Fanshop Sales Data' (Dataflow), and 'Reporting Sales' (Report). To the right, the 'Access' tab is open, showing a list of users and their permissions. A search bar at the top right says 'Search' and has a user icon. Below it, a button says 'Add'.

NAME	PERMISSION	...
External users ⓘ	Member	...
Hylke Peek ⓘ	Admin	...
PowerBI_Access ⓘ	Admin	...

# Build Permission - Options

- Workspace
- App
- Share report
- Dataset
- Request permission



Set permissions through audiences during app publication.

The screenshot shows the 'Power BI Apps' interface with the 'Audience' tab selected. A specific audience named 'United FC [Development]' is highlighted. On the left, there's a sidebar with various navigation options like Home, Create, Browse, Data hub, Metrics, Apps, Deployment pipelines, Knowledge center, and Workspaces. The main area displays a 'Daily Sales' report card with metrics: Sales (2,506), AVG Sales Value (39.91), # Product/Order (2.14), and # Orders (35). Below the card is a bar chart titled 'Sales by Product Group' showing sales for Kit, Fashion, Souvenirs, Equipment, and Toys and Games. At the bottom is a table titled 'Top 5 Customers' with rows for DEV Olga J. Trau and DEV Peter Houston. On the right, there's a 'Manage Audience Access' section where 'Specific users or groups' is selected, and checkboxes for 'Allow people to share the datasets in this app audience' and 'Allow people to build content with the datasets in this app audience' are checked. A note says 'The advanced settings above are applicable to the audience including your workspace users.' At the bottom are 'Update app' and 'Cancel' buttons.

# Build Permission - Options

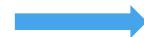
Workspace

App

Share report

Dataset

Request permission



Set permissions when sharing individual reports.

The screenshot shows the Power BI workspace interface. A modal dialog titled "Send link Reporting Sales" is open, prompting the user to "Who would you like the link to work for?". It lists three options: "People in your organization" (selected), "People with existing access", and "Specific people". Below the list is a "Settings" section containing two checkboxes: "Allow recipients to share this report" (unchecked) and "Allow recipients to build content with the data associated with this report" (checked). The second checkbox is highlighted with a yellow border. At the bottom of the dialog are "Apply" and "Cancel" buttons.

# Build Permission - Options

Workspace

App

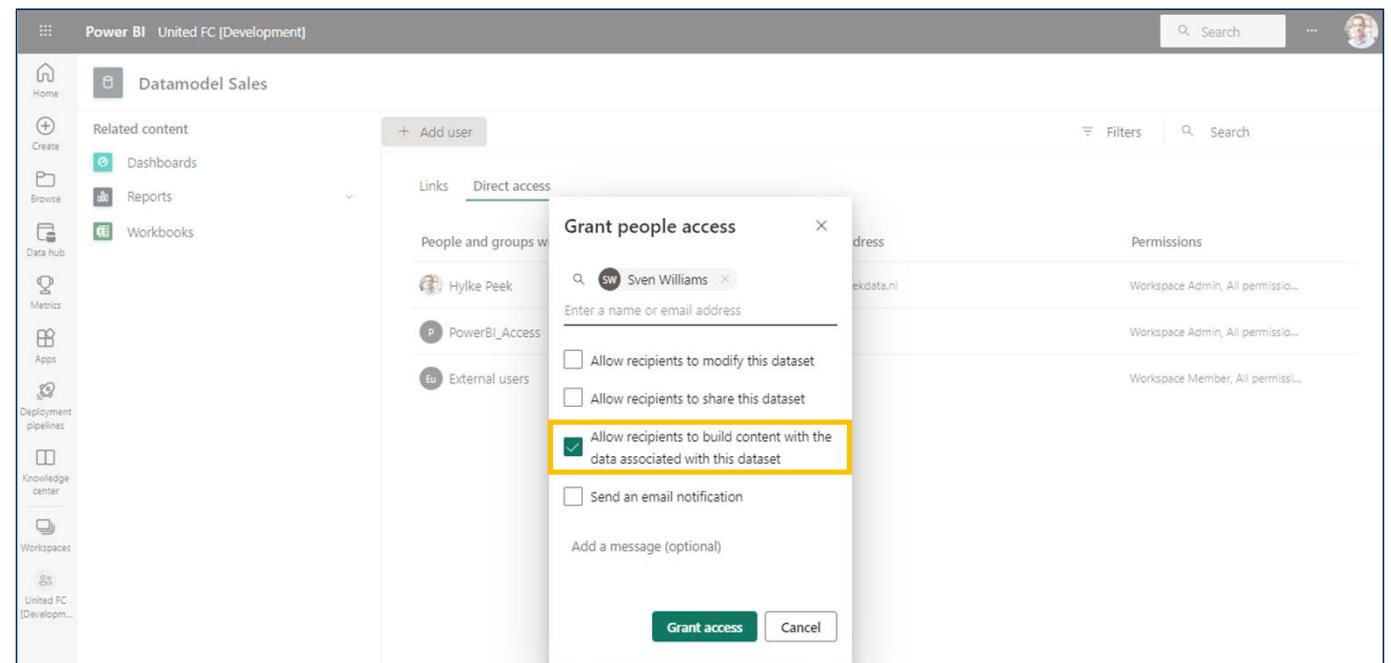
Share report

Dataset

Request permission



Set permissions to people who need access to this specific dataset.



Power BI - United FC [Development]

Datamodel Sales

Related content

- Home
- Create
- Browse
- Data hub
- Metrics
- Apps
- Deployment pipelines
- Knowledge center
- Workspaces
- United FC [Development]

Links Direct access

People and groups w...

+ Add user

Search

Filters

Search

Grant people access

Sven Williams

Enter a name or email address

Allow recipients to modify this dataset

Allow recipients to share this dataset

Allow recipients to build content with the data associated with this dataset

Send an email notification

Add a message (optional)

Grant access Cancel

# Build Permission - Options

Workspace

App

Share report

Dataset

Request permission



A user requesting permission to the dataset.

The screenshot shows the Power BI Data hub interface. On the left, there's a sidebar with various navigation options like Home, Create, Browse, Data hub, Metrics, Apps, Knowledge center, Workspaces, and My workspace. The main area is titled 'Data hub' with the sub-section 'Recommended'. It lists three datasets: 'Datamodel Sales Dataflows', 'Sales reporting', and 'Datamodel Sales'. A modal window titled 'Request Build permissions' is open over the datasets. It contains the text: 'An email will be sent to the dataset owner requesting Build permission for this dataset.' Below this is a text input field with the placeholder 'Add a message (optional)' containing the text 'I need permission!'. In the bottom right corner of the main area, there's a table showing dataset details:

Name	Type	Endorsement	Owner
Sales reporting	Dataset	-	Hylke Peek
Datamodel Sales Dataflows	Dataset	-	Sven Williams
Datamodel Sales	Dataset	Certified	(Hidden)

To the right of the main area, there's a Microsoft Teams-style message card. The card has a green header with the text 'Sven Williams (sven@peekdata.nl) has requested Build access to the Power ...'. The message body says 'Microsoft Power BI <no-reply-powerbi@microsoft.com> To Hylke Peek'. It also includes a note: 'If there are problems with how this message is displayed, click here to view it in a web browser.' At the bottom of the message card, there's a yellow button labeled 'Grant access >'.





What would be the best way to share content in your organization? And why?



- Don't share reports to end-users through a workspace
- Keep control over people who have build permissions

# People want to share with external users

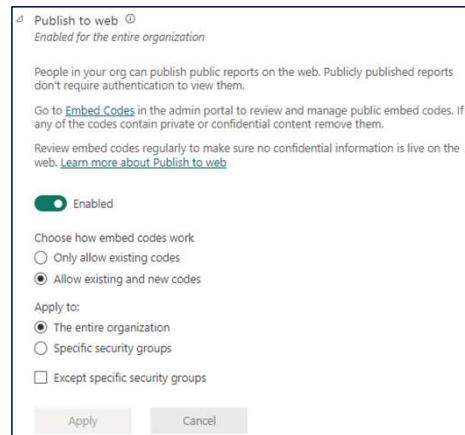
Few number of users

Power BI Embedded

Custom Branding

# Few number of Users – Public Sharing

## 1. Enable setting in admin portal



## 2. Publish report or dashboard to Web

The screenshot shows the Power BI service interface. A context menu is open over a report, with the 'Publish to web (public)' option highlighted. A modal window titled 'Embed in a public website' provides instructions and a 'Create embed code' button.

## 3. Copy the url or html

The screenshot shows the 'Success! Your report is ready to share' dialog. It displays the URL (https://app.powerbi.com/view?r=eyJrIjoiMTdiNzcoI), an iframe code, and a placeholder image section. The report preview shows a 'Daily Sales' dashboard with various charts and tables.

## 4. A new embed code has been created!

The screenshot shows the Power BI Admin portal's 'Embed Codes' page. It lists a single embed code for the 'Reporting Sales' report, published by 'United FC [Development]' and 'Hylke Peek', with a status of 'Active'. The page includes filters for Report name, Workspace name, Published by, and Status.

# Few number of Users – View content (B2B)

## 1. Enable setting(s) in admin portal

The screenshot shows two sections of the Azure Admin Portal:

- Allow Azure Active Directory guest users to access Power BI**: Enabled for the entire organization. Apply to: The entire organization.
- Invite external users to your organization**: Enabled for the entire organization. Apply to: The entire organization.

## 2. Invite user in AAD

The screenshot shows the 'New user' creation page in the Microsoft Azure Active Directory (AAD) portal. The 'Select template' section has 'Invite user' selected. The 'Identity' section contains the following fields:

- Name: Hylke Peek
- Email address: hylke@denofdata.com
- First name: (empty)
- Last name: (empty)

## 3. User receives an email (and accepts)

The screenshot shows an email invitation from Microsoft. The subject is "Hylke Peek heeft u uitgenodigd voor toegang tot toepassingen in de organisatie". The message body includes:

- From: Microsoft-uitnodigingen namens Peek Data Consultancy
- To: Hylke Peek | Den of Data
- Date: di 20-9-2022 10:09
- Text: "Onderneem alleen actie naar aanleiding van deze e-mail als u de persoon en organisatie vertrouwt die hieronder worden weergegeven. In zeldzame gevallen kunnen individuele personen frauduleuze uitnodigingen ontvangen van kwadevinden gebruikers die zich voordoen als legitime bedrijven. Als u deze uitnodiging niet verwacht, ga dan voorzichtig te werk."
- Sender: Hylke Peek ([hpeek@peekdata.nl](mailto:hpeek@peekdata.nl))
- Organization: Peek Data Consultancy
- Domain: [peekdata.nl](http://peekdata.nl)
- Link: [https://account.activedirectory.windowsazure.com/?tenantid=66f234c2-67f5-4a27-be3c-5d495c2c989&login\\_hint=hylke@denofdata.com](https://account.activedirectory.windowsazure.com/?tenantid=66f234c2-67f5-4a27-be3c-5d495c2c989&login_hint=hylke@denofdata.com)

A button at the bottom right says "Uitnodiging accepteren".

## 4. Add user to an audience

The screenshot shows the 'Manage Audience Access' interface for the 'United FC [Development]' audience. Under 'Grant access to':

- Entire organization (radio button is off)
- Specific users or groups (radio button is on):
  - Search bar: hylke\_
  - Suggestion: Hylke Peek | Den of Data hylke\_denofdata.com#EXT#@peekdata

At the bottom, there is a 'Workspace users' section.

Data security is possible for these external users!

# Few number of Users – Manage content (B2B)

## 1. Enable setting(s) in admin portal

Allow Azure Active Directory guest users to edit and manage content in the organization  
Enabled for a subset of the organization

Users can invite Azure Active Directory business-to-business (B2B) guest users to have the browse experience and request access to content. [Learn more](#).

Enabled

Apply to:

The entire organization  
 Specific security groups

External users  Enter security groups

Except specific security groups

Only guest users who meet the criteria can edit and manage content in the organization

## 2. Copy and share link

App link

United FC [Development]

Give people the link below, or direct them to Apps > Get apps in the Power BI service.

<https://app.powerbi.com/Redirect?action=OpenApp&appid=e8d45a8e->

## 3. Add user to workspace

Access

United FC [Development]

Add admins, members, or contributors. [Learn more](#)

Enter email addresses

Member

Search

NAME	PERMISSION	...
External users	Member	...
Hylke Peek	Admin	...
PowerBI_Access	Admin	...

The external users should use the link provided!

# Power BI Embedded

The screenshot shows a Power BI dashboard titled "Peek Data Consultancy" set against a background of a cloudy sky over a field with wind turbines. The dashboard includes the following components:

- Daily Sales:** A summary card showing Sales (2,506), AVG Sales Value (39.91), # Product/Order (2.14), and # Orders (35). It also displays a goal for each metric.
- Order Date:** A dropdown menu set to "All".
- Country:** A dropdown menu set to "United States".
- Product Group:** A dropdown menu set to "All".
- Sales by Product Group:** A horizontal bar chart showing sales for Kit (1,261), Fashion (763), Souvenirs (298), Equipment (104), and Toys and Games (80).
- Sales by State:** A map of the United States where states are colored orange based on sales volume.
- Top 5 Customers:** A table listing customer details: DEV Olga J. Trau, DEV Peter Houston, DEV Janaina Barreiro, DEV Chad J. Tedford, and DEV Lee J. Chapla.
- State Performance:** A table showing state-wise performance metrics: Illinois, Michigan, Missouri, Oregon, Texas, Utah, Washington, and Wyoming.

Embed reports, dashboards, and tiles in a custom application

Can be used for internal and/or external users.

# Embed your content for customers



*'App owns data'*



Use your own authentication method



App users don't need a Power BI license



The app doesn't use the client credentials to authenticate to Power BI but a service principal

# Setup

## 1. Get Power BI Embedded or Premium

The screenshot shows the Microsoft Azure Marketplace page for 'Power BI Embedded'. It includes the service summary, user reviews (3.9 rating), and a 'Create' button.

## 2. Admin settings

The screenshot shows the 'Developer settings' section of the Power BI Admin settings. It lists two items: 'Embed content in apps' (Enabled for the entire organization) and 'Allow service principals to use Power BI APIs' (Enabled for a subset of the organization).

## 3. Service Principal

The screenshot shows the 'API permissions' section for a service principal named 'Peek Data Embedded App'. It lists permissions granted to the 'Azure Active Directory Graph' and 'Power BI Service'.

API / Permissions name	Type	Description
App.Read.All	Delegated	View all Power BI apps
Content.Create	Delegated	Create content
Dashboard.Read.All	Delegated	View all dashboards
Dashboard.ReadWrite.All	Delegated	Read and write all dashboards

## 4. Workspace settings

The screenshot shows the 'Settings' dialog box for a workspace named 'United FC Embedded'. It includes sections for 'About', 'Premium' (selected), and 'Azure connections'. Under 'Premium', it shows license mode (Embedded selected), capacity selection (pbepeekdatashopsales - West Europe), and workspace connection (powerbi://api.powerbi.com/v1.0/myorg/United%20FC%20Embedded). A 'Copy' button is at the bottom.

# Custom branding

## Custom branding

Customize the look of Power BI for your whole organization. Learn more

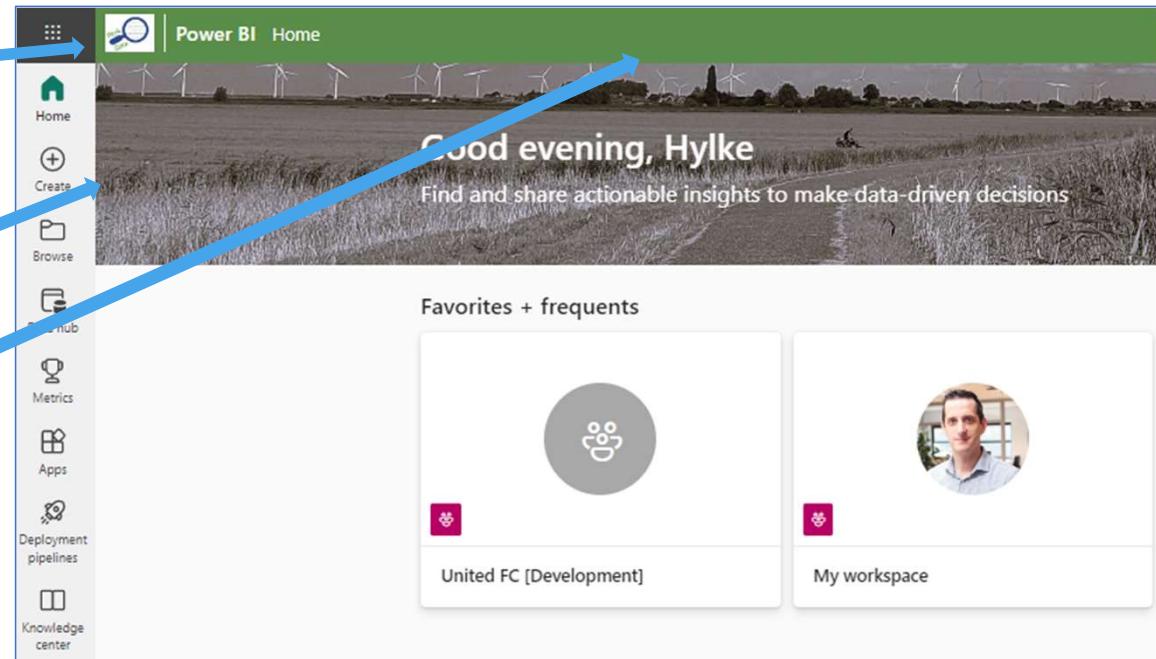
**Logo**  
For best results, upload a logo that's saved as a .png or .jpg, 1 MB or smaller, and at least 200 x 30 pixels.



**Cover image**  
For best results, upload a cover image that's saved as a .jpg or .png, 1 MB or smaller, and at least 1920 x 160 pixels.



**Theme color**  
 #5B8E4A

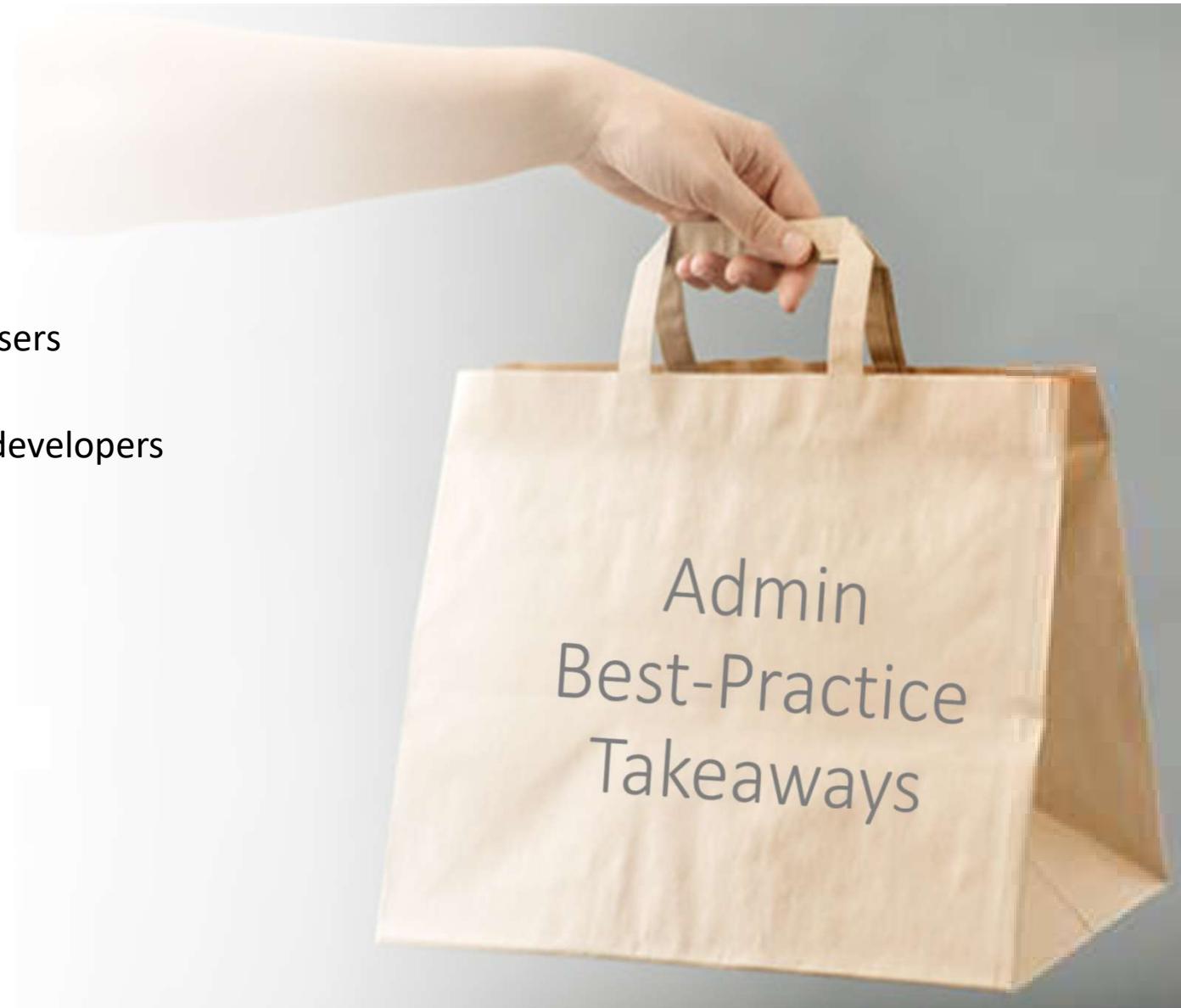


The screenshot shows the Power BI Home page with a green header and sidebar. The sidebar on the left has a dark blue background with white icons and text: Home, Create, Browse, Content hub, Metrics, Apps, Deployment pipelines, and Knowledge center. The main content area has a green header bar with the text "Good evening, Hylke" and "Find and share actionable insights to make data-driven decisions". Below the header is a large image of a field with wind turbines. To the right of the image are two cards: "Favorites + frequents" featuring a video camera icon and "United FC [Development]", and another card for "My workspace" featuring a profile picture of a man.

This is visible for everyone and can't be overwritten.



- Create separate group(s) for external users
- Discuss different sharing options with developers





# Premium

# When is Power BI Premium relevant?



500+ users



Enterprise scale:

- Multiple large models (100 GB+)
- Geographic distribution



Development requirements

- Deployment pipelines
- XMLA-endpoint
- Dataflows



Advanced Analytics

# Power BI Premium Features

Platform	Data	Development	End-user
Capacity	Automatic aggregations	Deployment pipelines	Datamarts
Auto scale V-Cores	Asynchronous refresh	Dataflows	Insights
BYOK	Hybrid tables	XMLA endpoint	Advanced AI
Multi-geo deployment	Query caching	Power BI embedded	
Back-up and restore	Model size limit		

# Power BI Premium Features

Platform	Data	Development	End-user
Capacity	Automatic aggregations	Deployment pipelines	Datamarts
Auto scale V-Cores	Asynchronous refresh	Dataflows	Insights
BYOK	Hybrid tables	XMLA endpoint	Advanced AI
Multi-geo deployment	Query caching	Power BI embedded	
Back-up and restore	Model size limit		

# Capacity – Embedded vs Premium

	Embedded	Premium
Use case	Embed visuals into their own applications for external users.	Same as Embedded. And share content within your organization at enterprise level.
Licensing	Same as Premium, but using A SKUs	Same as Embedded, but using EM and P SKUs
Billing	Hourly	Monthly / Yearly
Other	Missing some features like Power BI Report server and Unlimited content sharing	All features

# Capacity - Licensing

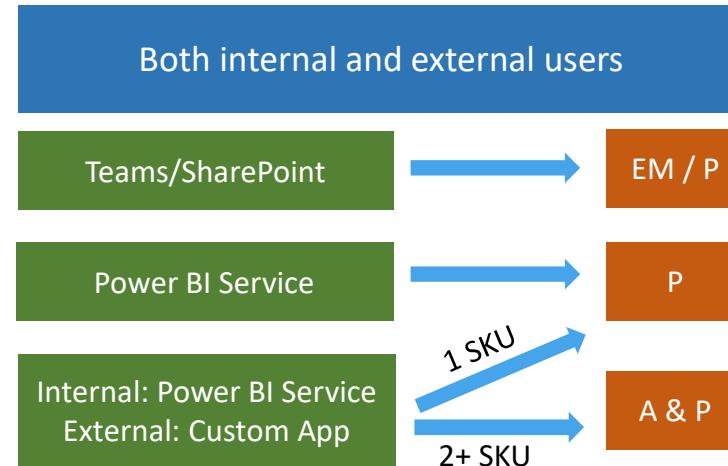
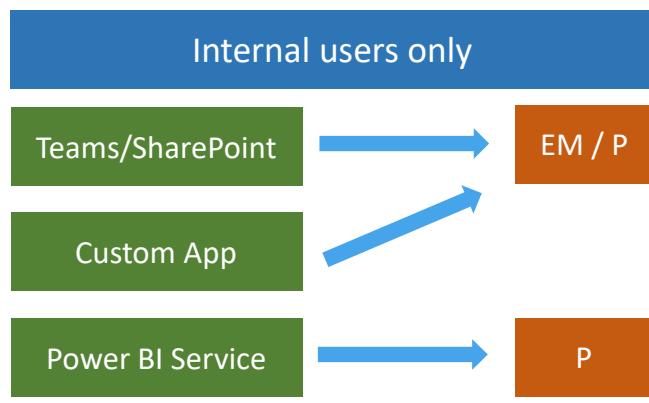
A set of resources for exclusive use. Previously known as '*Dedicated Capacity*'.

Capacity SKUs	Dataset				Dataflow		Export API
	V-cores	Max memory (GB)	DirectQuery/Live connection (per second)	Max memory per query (GB)	Model refresh parallelism	Dataflow parallel tasks	
EM1/A1	1	3	3.75	1	5	4	20
EM2/A2	2	5	7.5	2	10	8	25
EM3/A3	4	10	15	2	20	16	35
P1/A4	8	25	30	6	40	32	55
P2/A5	16	50	60	6	80	64	95
P3/A6	32	100	120	10	160	64	175
P4/A7	64	200	240	10	320	64	200
P5/A8	128	400	480	10	640	64	200

Microsoft.com

You can have multiple SKUs.

# Which capacity do I need?



# Assign workspaces to a capacity

High workloads

Premium Capacity P3 (32 vCores)

App and Workspace  
Sales

App and Workspace  
Finance

App and Workspace  
Production

Low workloads

Shared Capacity

Personal  
Workspaces

App and Workspace  
Inventory

# Multiple capacities

You buy a total capacity size, not just 1 capacity.

Premium Capacity P3 (32 vCores)

App and Workspace  
Sales

App and Workspace  
Finance

App and Workspace  
Production



Premium Capacity P2 (16 vCores)

App and Workspace  
Sales

Premium Capacity P1 (8 vCores)

App and Workspace  
Finance

Premium Capacity P1 (8 vCores)

App and Workspace  
Production

# Capacity settings

Power BI Premium   Power BI Embedded

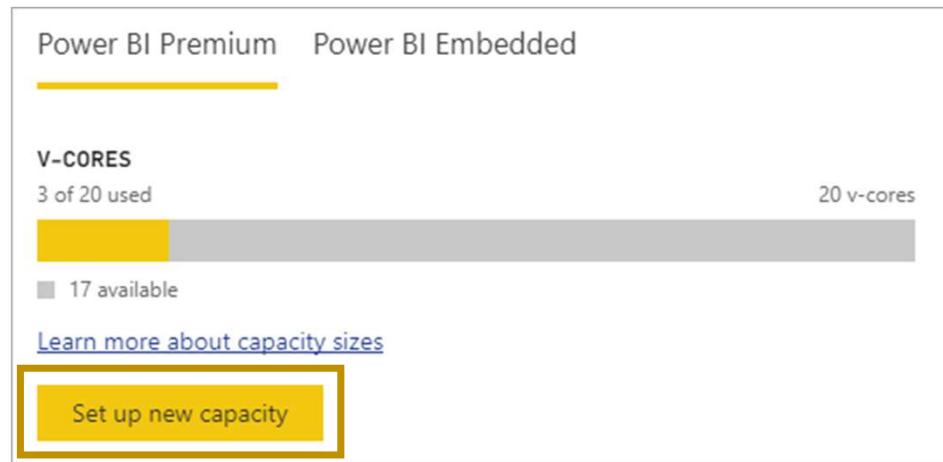
V-CORES

3 of 20 used      20 v-cores

17 available

[Learn more about capacity sizes](#)

**Set up new capacity**



Power BI Premium > Set up new capacity

Please take a minute to set up your new Premium capacity.

\* Required

Capacity name

Peekdata Sales

Capacity admins \*

Hylke Peek    Enter email addresses

CAPACITY SIZE

Available v-cores

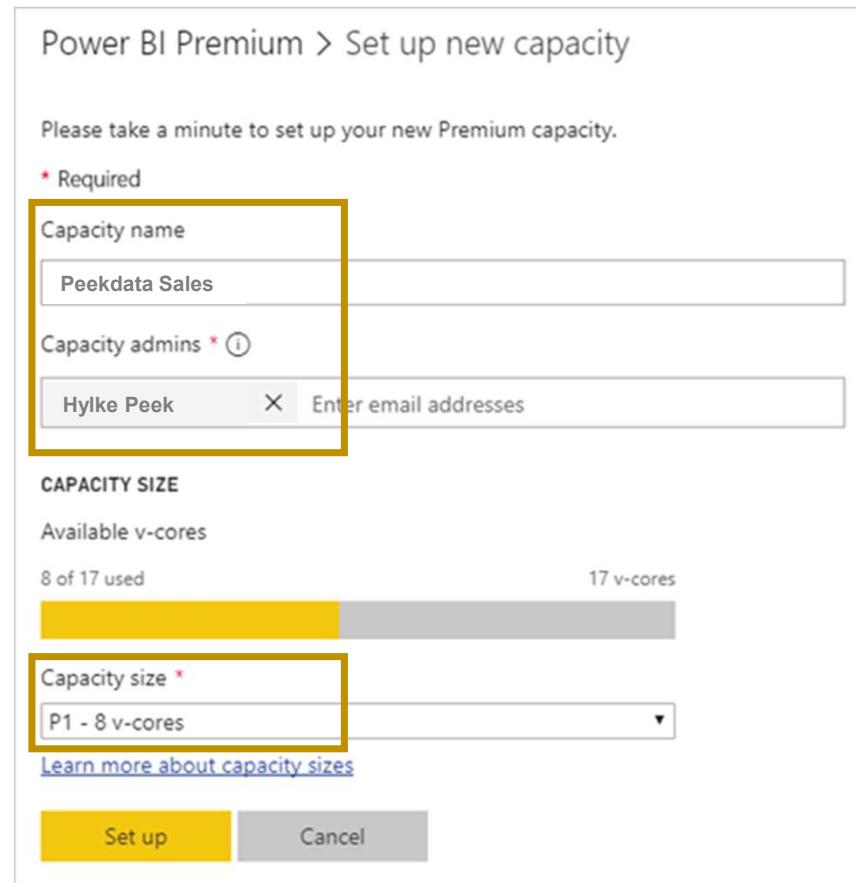
8 of 17 used      17 v-cores

Capacity size \*

P1 - 8 v-cores

[Learn more about capacity sizes](#)

**Set up**   **Cancel**



# Configure workloads

## Admin portal

The screenshot shows the 'Capacity settings' section of the Admin portal. Under 'DATASETS', 'On' is selected for 'Observe XMLA-based workspace settings (which may override capacity settings)'. 'Query Memory Limit (%)' is set to 0, 'Query Timeout (seconds)' is set to 3600, 'Max Intermediate Row Count' is set to 1000000, 'Max Result Row Count' is set to 2147483, and 'Max Offline Dataset Size (GB)' is set to 0. Under 'Automatic page refresh', 'On' is selected. 'Minimum refresh interval' is set to 5 Minutes. Under 'Change detection measure', 'On' is selected. 'Minimum execution interval' is set to 30 Seconds. Under 'XMLA Endpoint', 'Read Only' is selected. Under 'PAGINATED REPORTS', 'Block Outbound Connectivity' is set to Off. Under 'AI', 'Allow usage from Power BI Desktop' is set to On. At the bottom are 'Apply' and 'Discard' buttons.

Keep control of overall performance

## Possible challenges

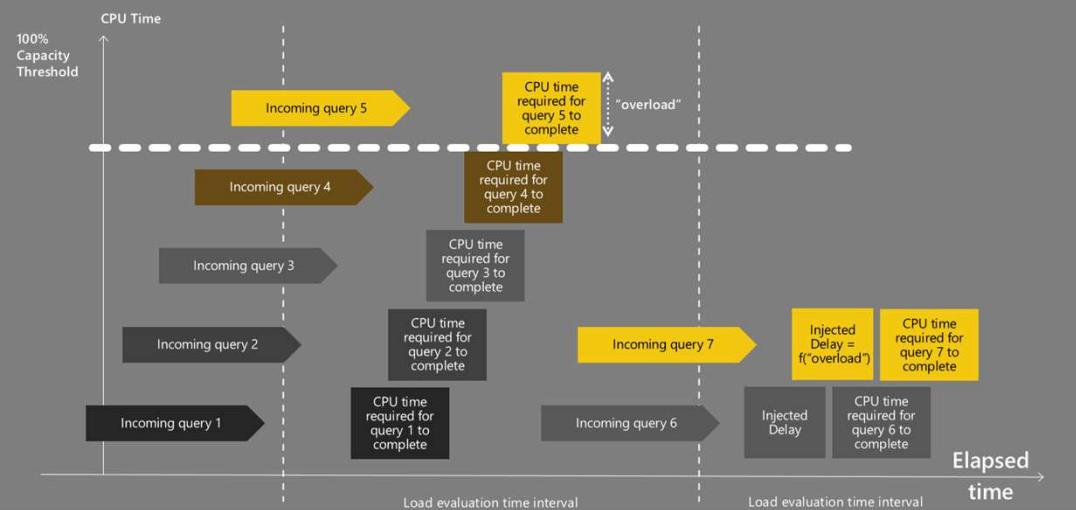
- Resource intensive workloads (long running, slow queries)
- Bad designed datasets and reports
- Optimizing dataflow workloads
- Automated Page Refresh for reports using Direct Query
- Fetching external resources like images and API-calls

## Tuning resource allocations with

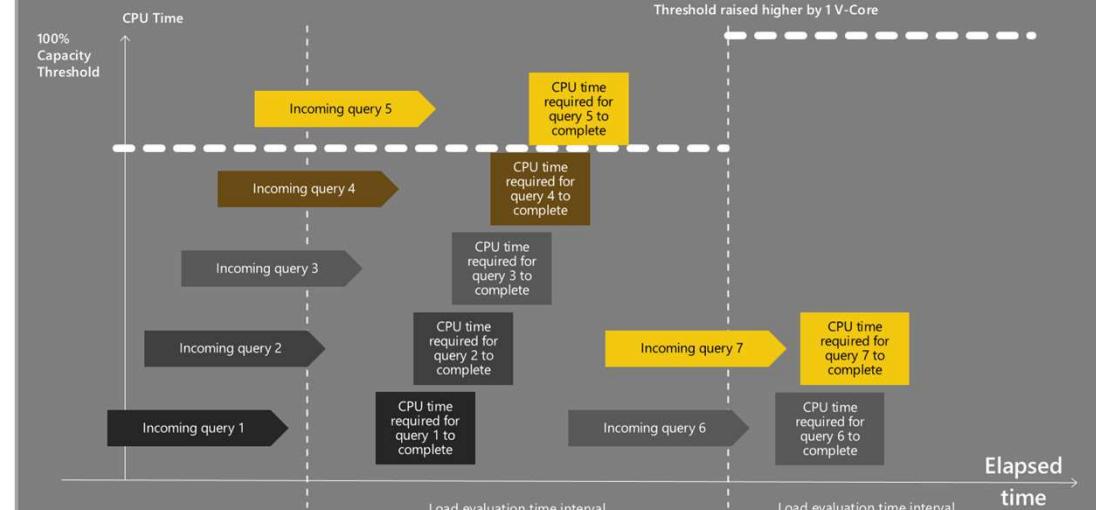
- Memory allocation
- Forcing limited throughput by number of rows
- Set Query timeouts
- Control page refresh intervals
- Block outbound connectivity

# Auto-scale V-Cores

Overload



Autoscale



Microsoft.com

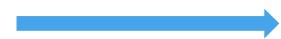
Microsoft.com

Capacity needed is calculated by:

- Calculations completed within the 30 seconds interval
- Average of background processes over the last 24 hours (Data refreshes, subscriptions, XMLA-writes)

# Configure Autoscale

Resourcegroup in azure



Create a new resourcegroup or use an existing one.

Microsoft Azure Search resources, services, and docs (G+/-) ...

Home > Resource groups > Create a resource group X

Basics Tags Review + create

Resource group - A container that holds related resources for an Azure solution. The resource group can include all the resources for the solution, or only those resources that you want to manage as a group. You decide how you want to allocate resources to resource groups based on what makes the most sense for your organization. [Learn more](#)

Project details

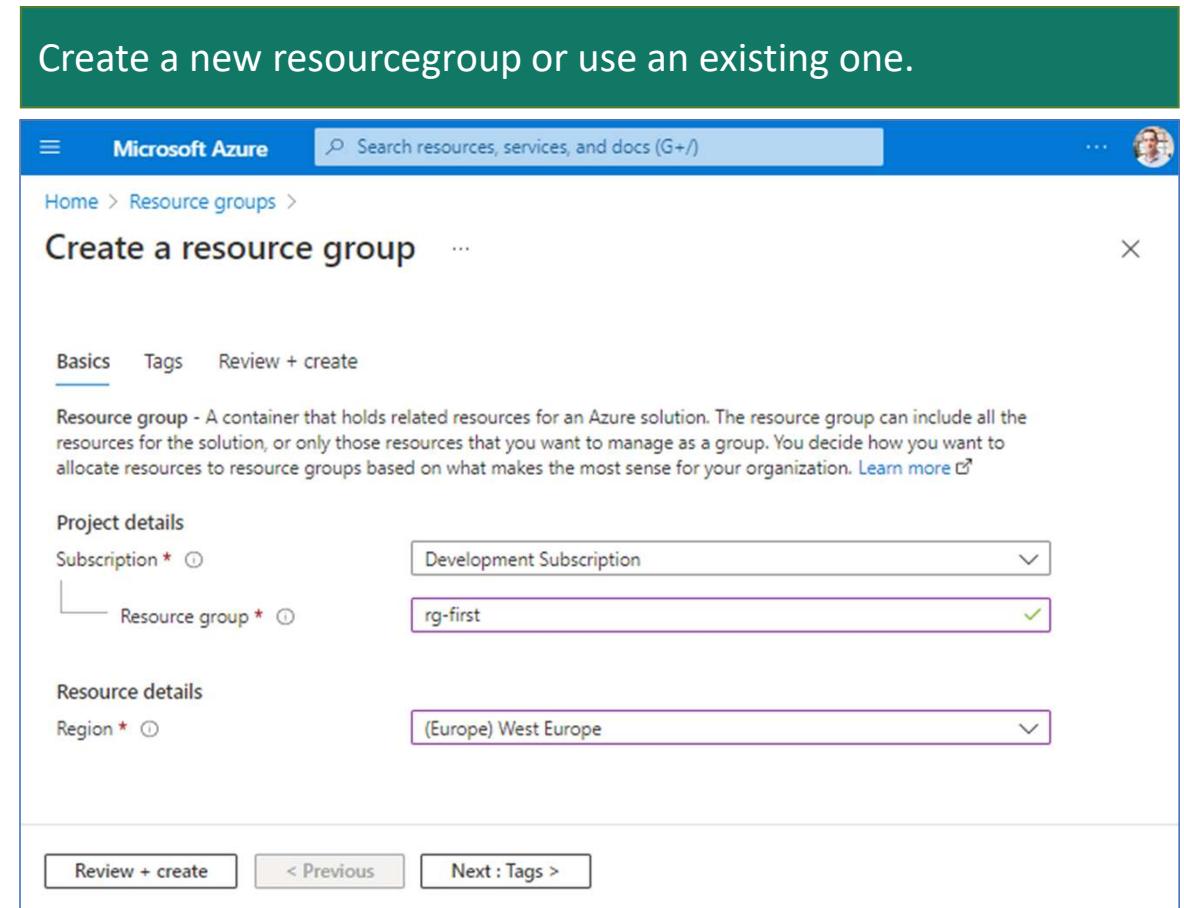
Subscription \* Development Subscription

Resource group \* rg-first ✓

Resource details

Region \* (Europe) West Europe

Review + create < Previous Next : Tags >

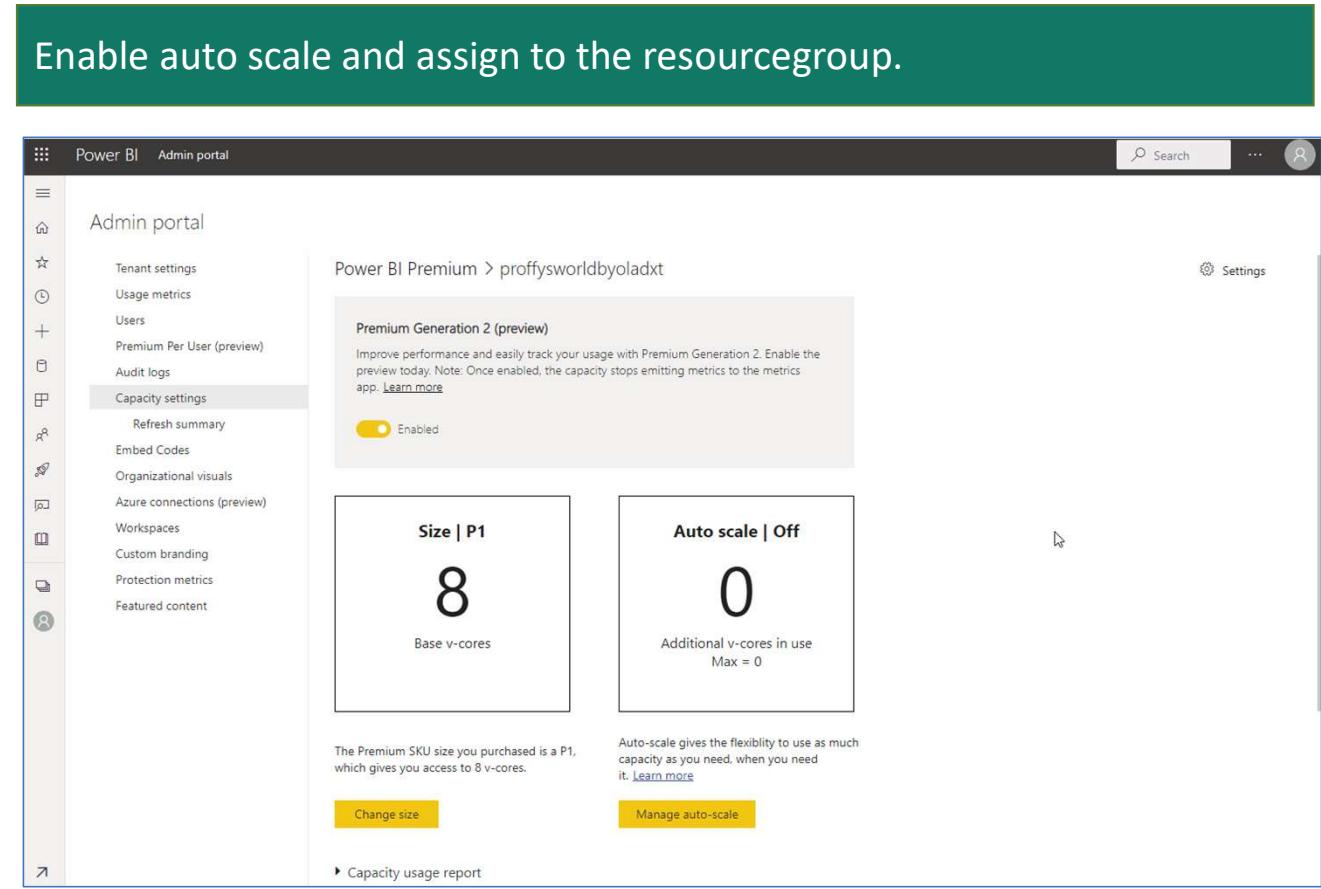


# Configure Auto-scale

Enable Auto-scale



Enable auto scale and assign to the resourcegroup.



Power BI Admin portal

Admin portal

Tenant settings

Usage metrics

Users

Premium Per User (preview)

Audit logs

**Capacity settings**

Refresh summary

Embed Codes

Organizational visuals

Azure connections (preview)

Workspaces

Custom branding

Protection metrics

Featured content

Power BI Premium > proffysworldbyoladxt

Premium Generation 2 (preview)

Improve performance and easily track your usage with Premium Generation 2. Enable the preview today. Note: Once enabled, the capacity stops emitting metrics to the metrics app. [Learn more](#)

**Enabled**

**Size | P1**

8

Base v-cores

The Premium SKU size you purchased is a P1, which gives you access to 8 v-cores.

[Change size](#)

**Auto scale | Off**

0

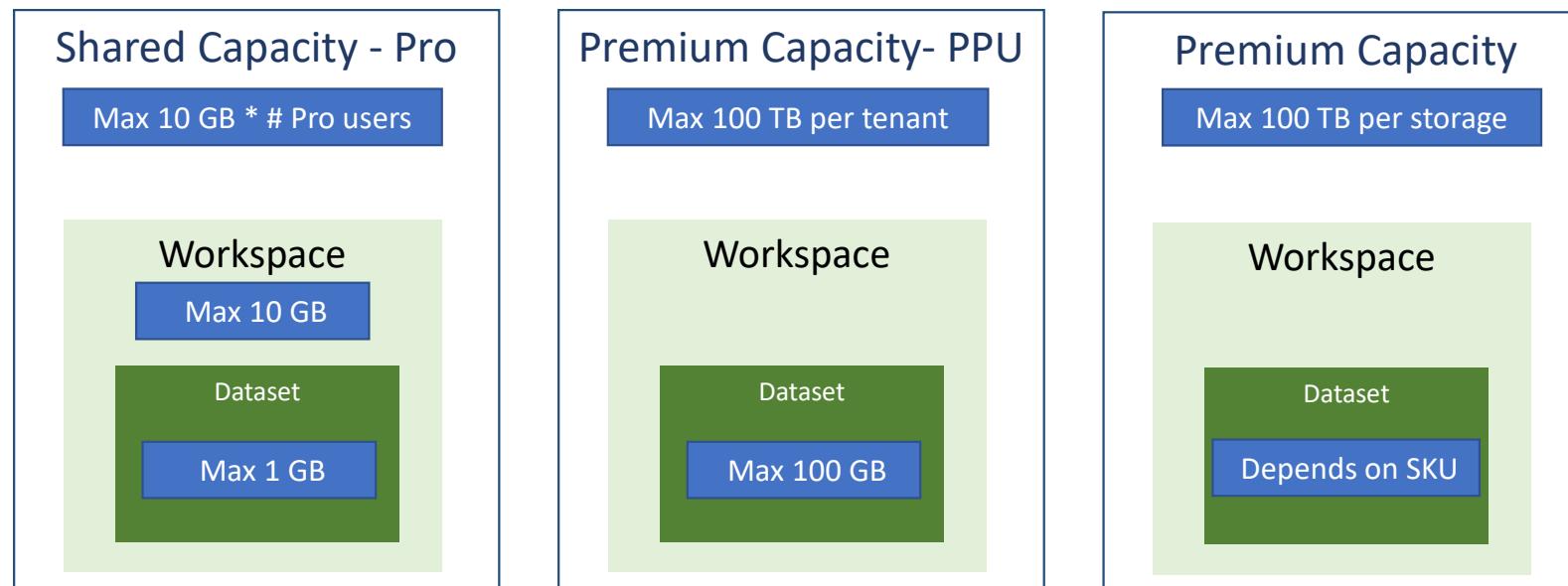
Additional v-cores in use  
Max = 0

Auto-scale gives the flexibility to use as much capacity as you need, when you need it. [Learn more](#)

[Manage auto-scale](#)

Capacity usage report

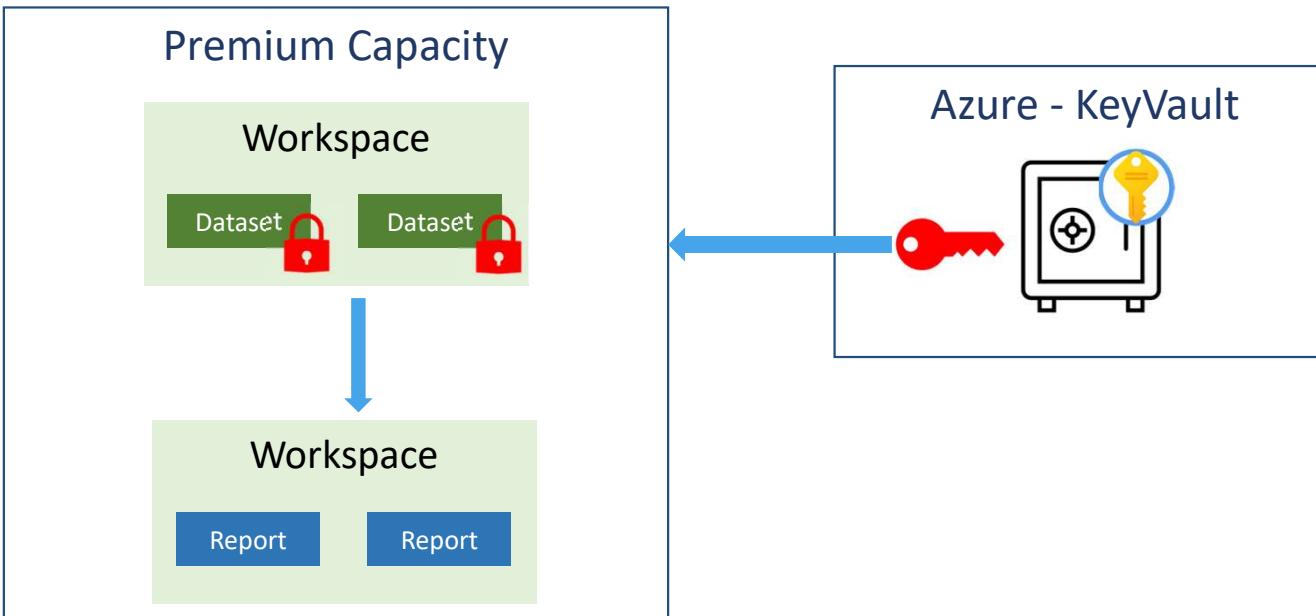
# Capacity and Model size limit



P1 → +- 25 GB  
P2 → +- 50 GB  
P3 → +- 100 GB  
P4 → +- 200 GB  
P5 → +- 400 GB

# BYOK

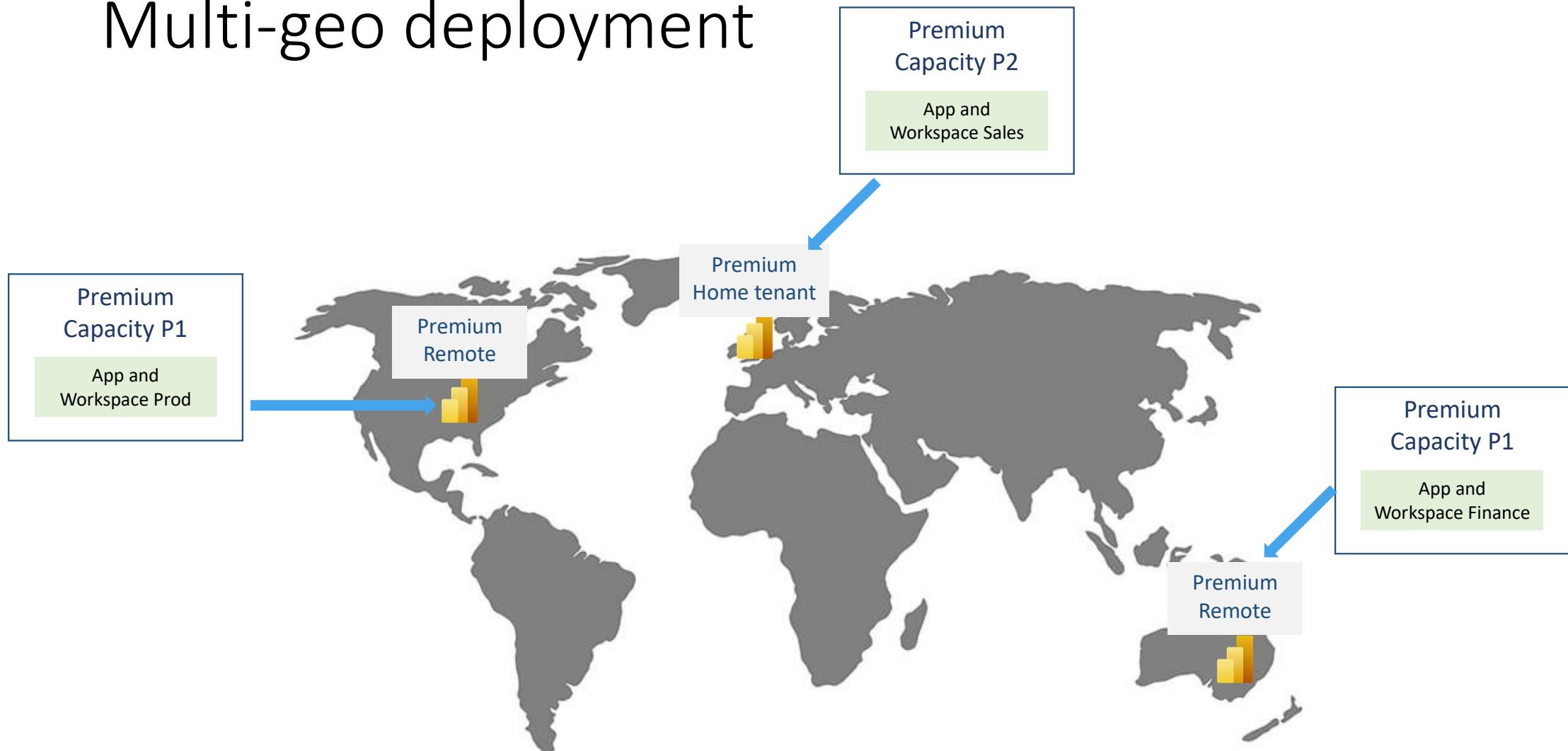
Use your own key to encrypted data at rest for imported datasets



Not available for:

- Live connections
- Other objects like reports, streaming datasets, and Excel-workbooks.
- Power BI Goals

# Multi-geo deployment



# Multi-geo deployment

Supports residency requirements

Region is not 1 location

All workspace content resides in that region

You can change regions for capacities

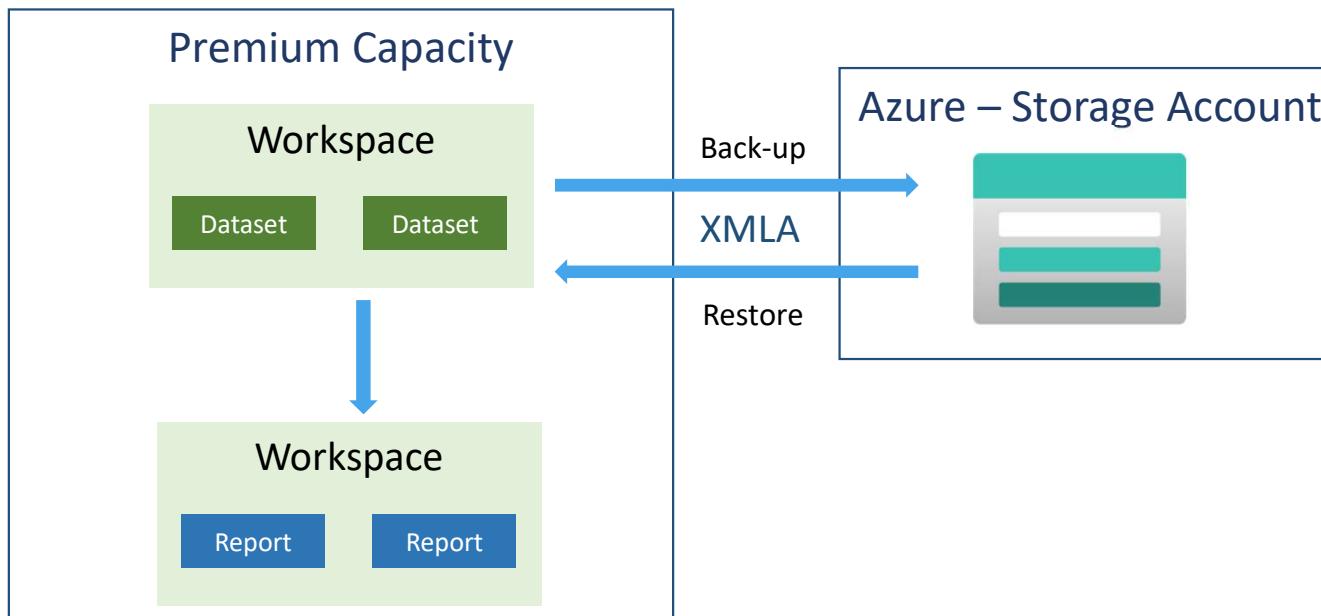
Dataflows isn't supported on remote regions



Stored in Capacity Region	Always stored in Home Region
Data models	Excel Workbooks
Query cache	Metadata like tile names, permissions and credentials

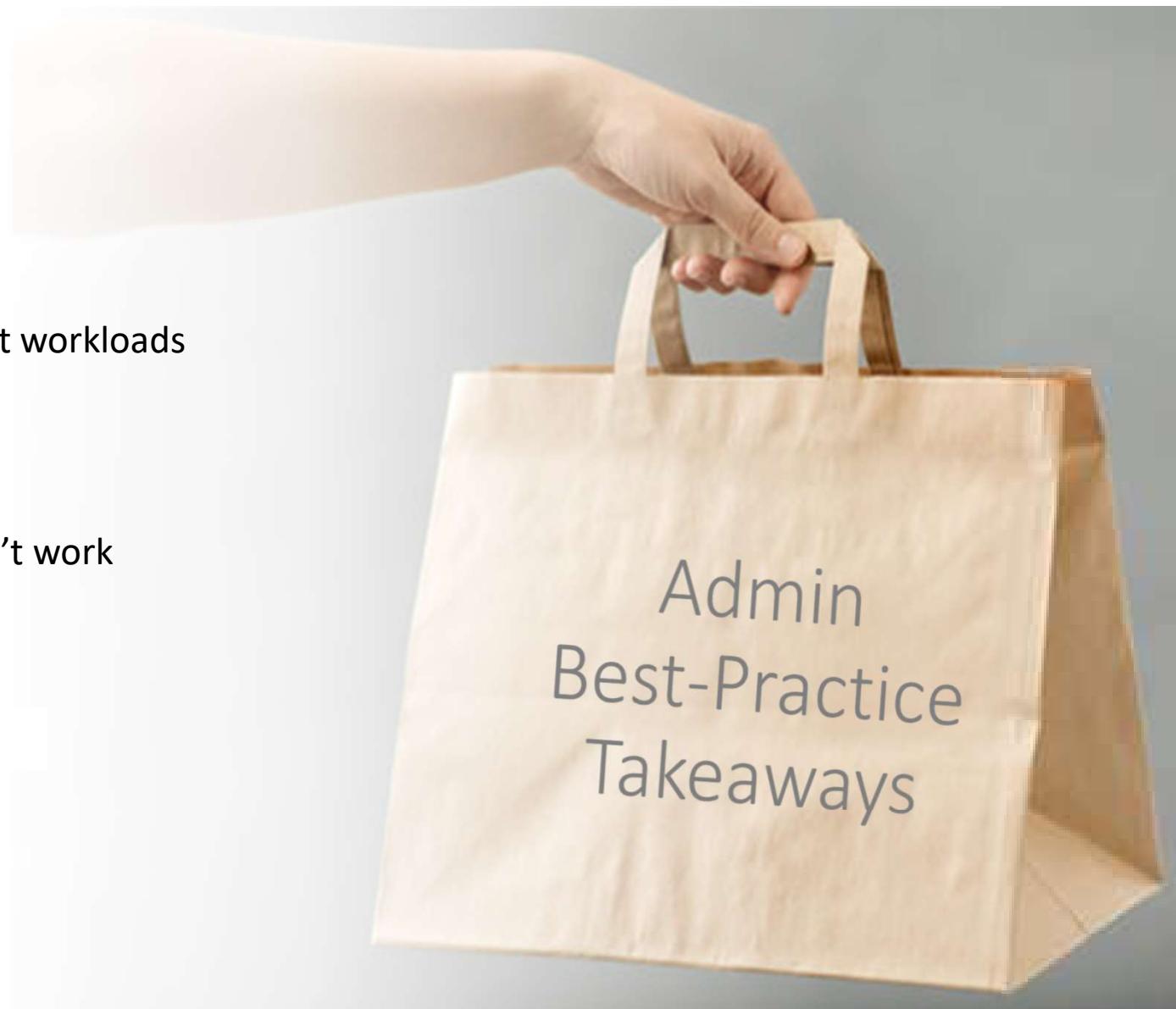
# Back-up and restore

Back-up and restore dataset using your storage account



Use SQL Server Management Studio (**SSMS**), **PowerShell** or any other tool that can handle XMLA-endpoints.





- Use multiple capacities to split different workloads
- Use large data format as default
- Use auto scale when other options don't work

# Development

XMLA-endpoint

Dataflows

Incremental Refresh

Power BI Rest API

Query Caching

Deployment

External Tools



# XMLA-endpoint

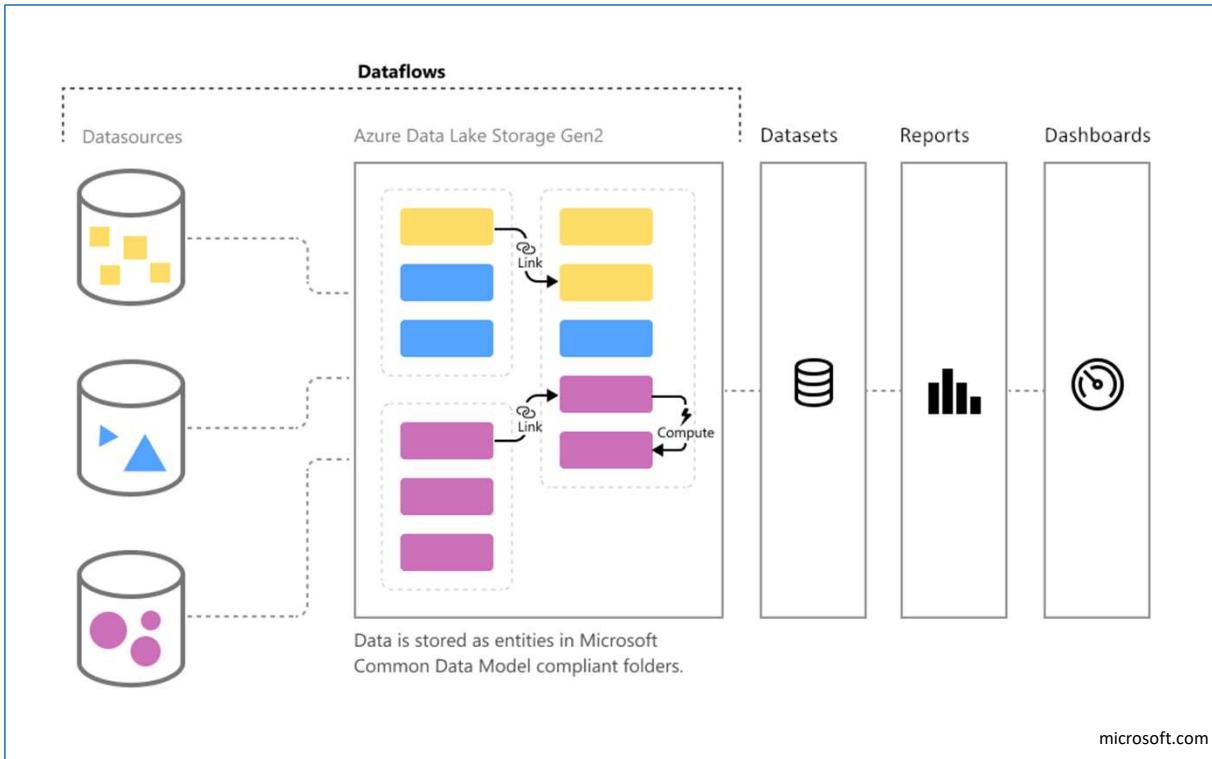
A connectivity channel between applications and the SSAS engine running Power BI datasets



## Why use this?

- Using other tools for development
- Querying for monitoring
- Automated deployment

# Dataflows



## Use cases

Reuse integration and transformation

Reuse output in other applications

Deliver a defined set of entities to analysts who can build their own models

Perform ETL at scale in Power BI

It's not a replacement for a datamart or datamodel!

# Dataflows and ADLS Gen2

## 1. Set Tenant-assigned ADLS Gen2 account

Admin portal

Tenant settings  
Usage metrics  
Users  
Premium Per User  
Audit logs  
Capacity settings  
  Refresh summary  
Embed Codes  
Organizational visuals  
**Azure connections**  
Workspaces  
Custom branding  
Protection metrics  
Featured content

**Connect to Azure resources**

▫ Tenant-level storage  
  Connect an Azure Data Lake Gen2 storage account. [Learn more](#)  
  Subscription 5adfc066-d6af-41ab-b19f-7451f9a75ba1  
  Resource group rg-peekdata-unitedfc  
  Storage account saapeekdatashopsales  
  Configured by Hylke Peek on 2023-01-23T12:00:00Z  
    Disconnect from Azure

▫ Workspace-level storage permissions  
   Allow workspace admins to connect their own storage account

**Save**   **Cancel**

First assign a storage before creating a dataflow

Unassign ADLS involves manual recreation

## 2. Assign storage to workspace

**Settings**

United FC [Development]

About   Premium   **Azure connections**

▫ Storage  
  Connect an Azure Data Lake Gen2 storage account. [Learn more](#)  
    **Connect to Azure**  
   Use the default Azure connection

## 3. Create dataflow

Power BI United FC [Production]   Fanshop Sales Data | ...

Tables   Machine learning models

TABLE NAME	TABLE TYPE	ACTIONS
Customer	Custom	
Product	Custom	
Productgroup	Custom	
SalesorderDetail	Custom	
SalesorderHeader	Custom	

## 4. Check-out your data in ADLS

Search for resources   Refresh All

Upload   Download   Open   Preview   New Folder   Select All   Copy   Paste

powerbi > United FC [Production] > Fanshop Sales Data

Name	Access Tier	Last Modified
Customer.csv.snapshots		
Product.csv.snapshots		
Productgroup.csv.snapshots		
SalesorderDetail.csv.snapshots		
model.json.snapshots		
SalesorderHeader.csv	Hot (inferred)	
model.json	Hot (inferred)	



# Dataflows: Enhanced compute engine

## Optimize the use of dataflows

Perform direct queries over dataflow entities

Reduce refresh time of long-running dataflows using joins, distinct, filters, and group by

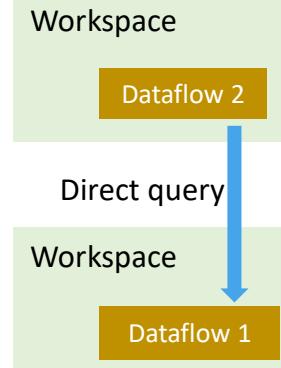
Disabled

Enabled

Optimized

Default disabled. Enables when dataflow is referenced by a table or other dataflow

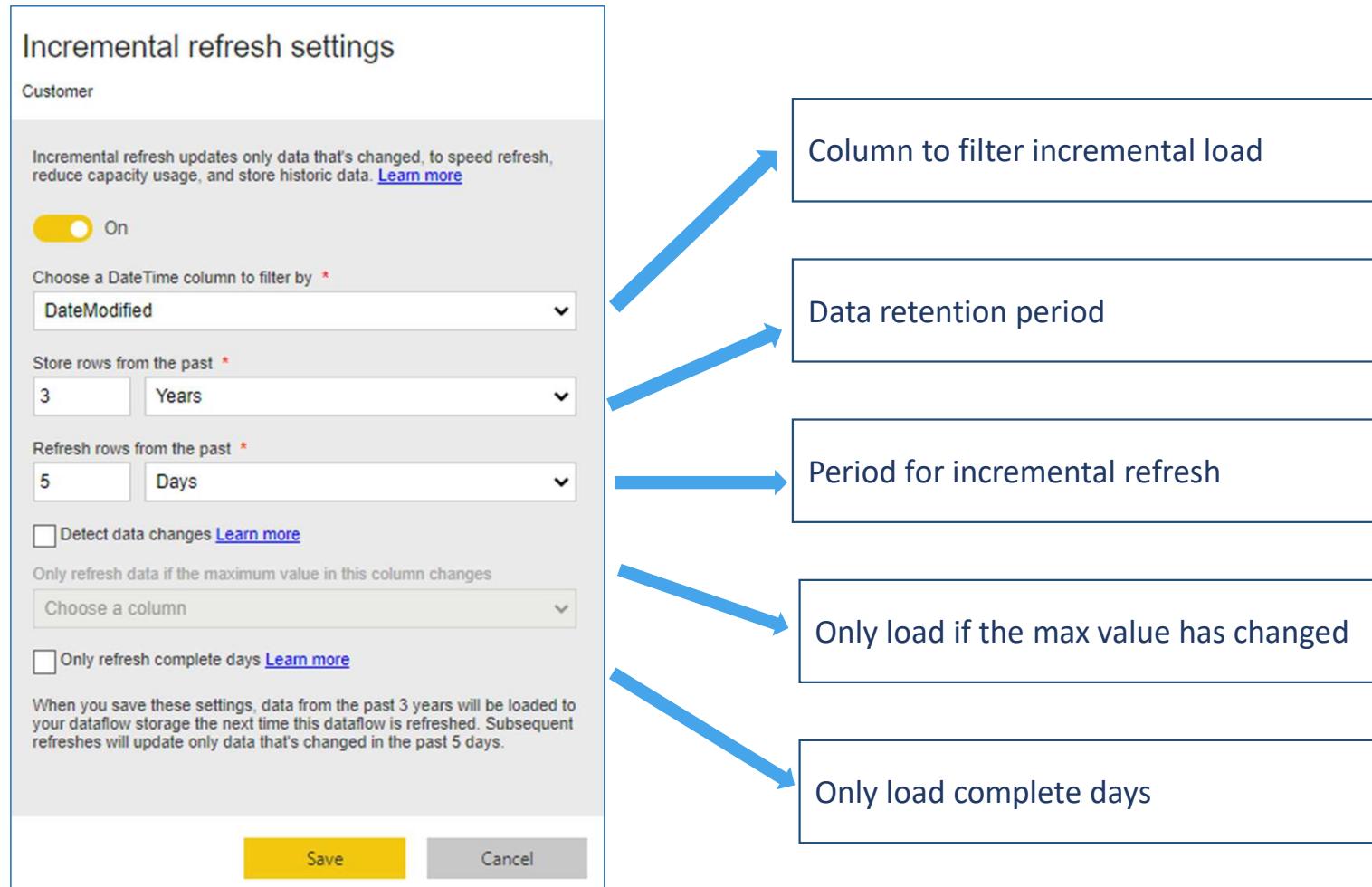
## Premium Capacity



It only works on top of a dataflow and within the capacity!



# Incremental Refresh



# Power BI Rest Api

A (huge) set of web services that can work with Power BI objects



Automate deployment



Monitoring



Automate management tasks



Embed reports in custom apps



Refresh datasets



Back-up scenarios

# Power BI Rest Api - Setup

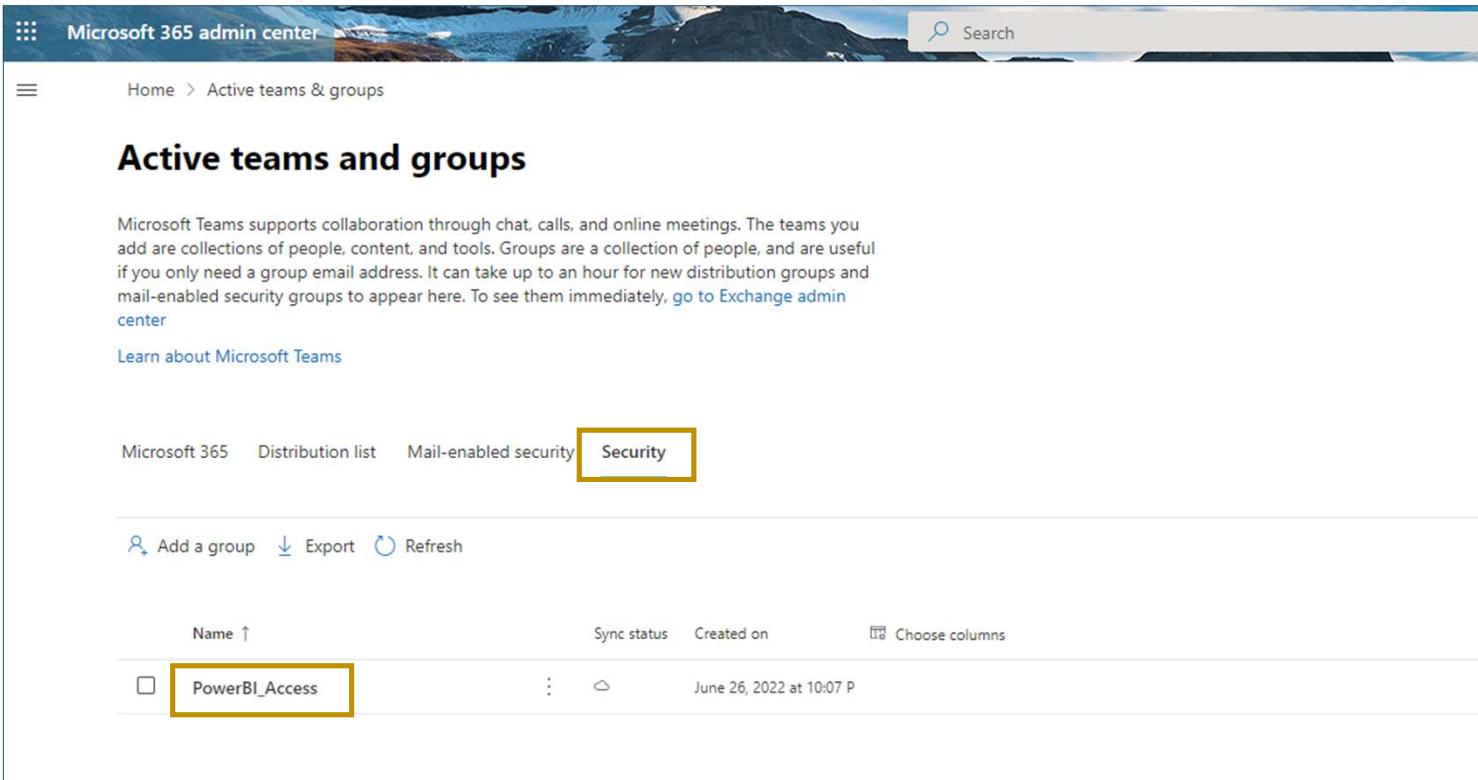
## Create a Service Principal (SPN) in Azure portal

The screenshot shows the Azure Active Directory App registrations page. The top navigation bar includes 'Home > Peek Data Consultancy' and the current section 'App registrations'. A yellow box highlights the 'App registrations' tab. Below the tabs are buttons for 'New registration', 'Endpoints', 'Troubleshooting', 'Refresh', 'Download', 'Preview features', and 'Got feedback?'. The main area shows a table of applications. The table has columns for 'Display name', 'Application (client) ID', 'Created on', and 'Certificates & secrets'. One application is listed: 'PowerBI\_App\_User' with the client ID 'af7f3a8a-0e25-477b-b35b-0acdbea0cb8c', created on '6/25/2022', and no certificates or secrets. A yellow box highlights the application name 'PowerBI\_App\_User'.

Display name	Application (client) ID	Created on	Certificates & secrets
PowerBI_App_User	af7f3a8a-0e25-477b-b35b-0acdbea0cb8c	6/25/2022	-

# Power BI Rest Api - Setup

**Create a Security Group and add the SPN to the group in Microsoft 365 Admin center or Azure Portal**



The screenshot shows the Microsoft 365 Admin center interface. The top navigation bar includes the Microsoft 365 logo, a search bar, and a 'Search' button. Below the navigation, the breadcrumb path 'Home > Active teams & groups' is visible. The main title 'Active teams and groups' is displayed in bold black text. A descriptive paragraph about Microsoft Teams collaboration follows. Below the paragraph, there are links to 'Learn about Microsoft Teams' and other tabs: 'Microsoft 365', 'Distribution list', 'Mail-enabled security', and 'Security'. The 'Security' tab is highlighted with a yellow box. At the bottom of the screen, there are buttons for 'Add a group', 'Export', and 'Refresh', along with a 'Choose columns' option. The table below lists a single item: 'PowerBI\_Access'.

Name ↑	Sync status	Created on	Choose columns
<input type="checkbox"/> PowerBI_Access	:	June 26, 2022 at 10:07 P	

# Power BI Rest Api - Setup

## Allow service principals to use Power BI APIs in Power BI Admin Portal

The screenshot shows the Power BI Admin portal interface. The left sidebar includes options like Home, Create, Browse, Data hub, Metrics, Apps, Deployment pipelines, Learn, Workspaces, and My workspace. The main area is titled 'Admin portal' and has a sub-section 'Tenant settings'. Under 'Developer settings', there is a section titled 'Allow service principals to use Power BI APIs' which is currently set to 'Enabled'. A note below explains that service principals can use APIs to access tenant-level features controlled by Power BI service admins. The 'Apply to:' section shows 'Specific security groups (Recommended)' selected, with a text input field containing 'PowerBI\_Access'. There are 'Apply' and 'Cancel' buttons at the bottom.

Power BI Admin portal

Admin portal

Tenant settings

Developer settings

Allow service principals to use Power BI APIs

Enabled

Service principals can use APIs to access tenant-level features controlled by Power BI service admins and enabled for the entire organization or for security groups they're included in. You can control access of service principals by creating dedicated security groups for them and using these groups in any Power BI tenant level-settings. [Learn more](#)

PowerBI\_Access

Apply to:

The entire organization

Specific security groups (Recommended)

Except specific security groups

Apply Cancel

# Power BI Rest Api - Setup

Assign security group as member to the workspace

Access  
United FC [Development]

Add admins, members, or contributors. [Learn more](#)

Enter email addresses

Member

Add

Search

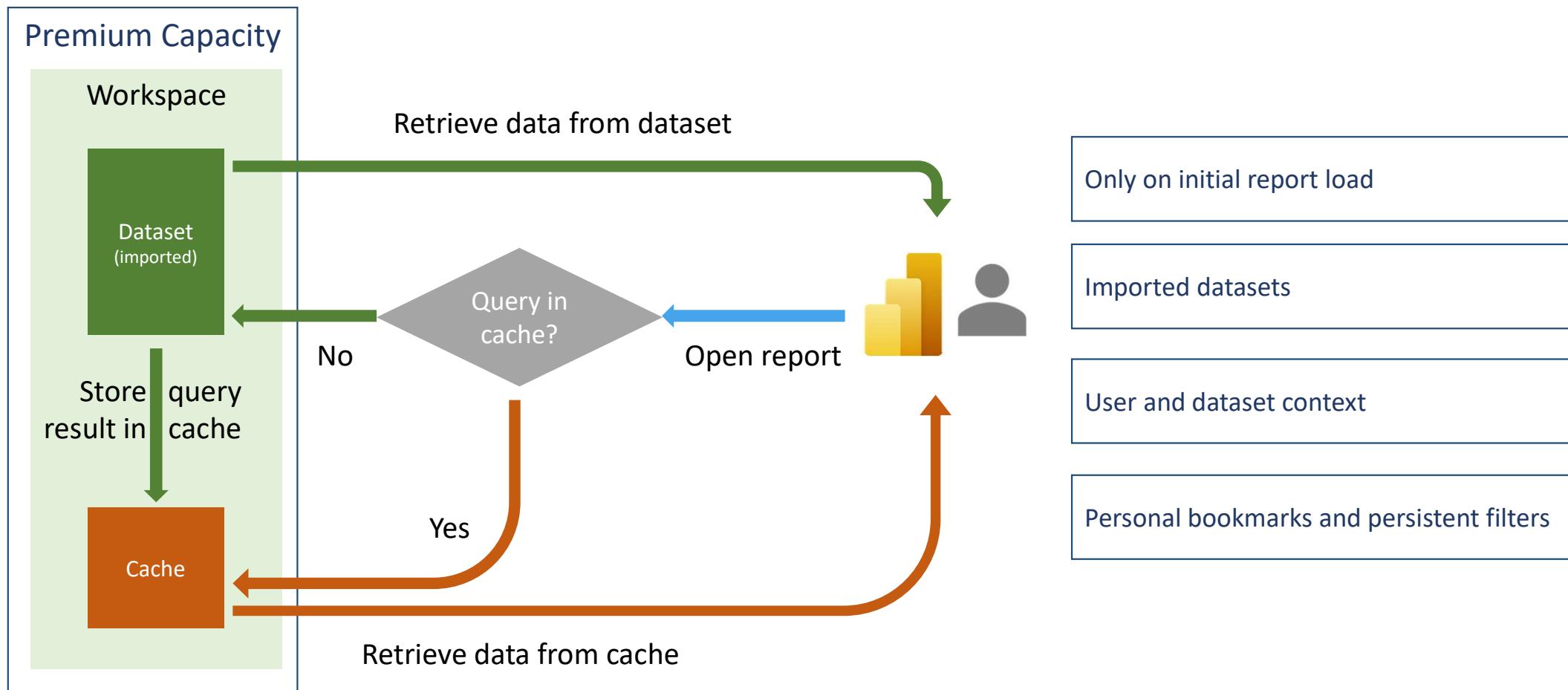
NAME	PERMISSION	...
Hylke Peek ⓘ	Admin	...
PowerBI_Access ⓘ	Admin	...

Close

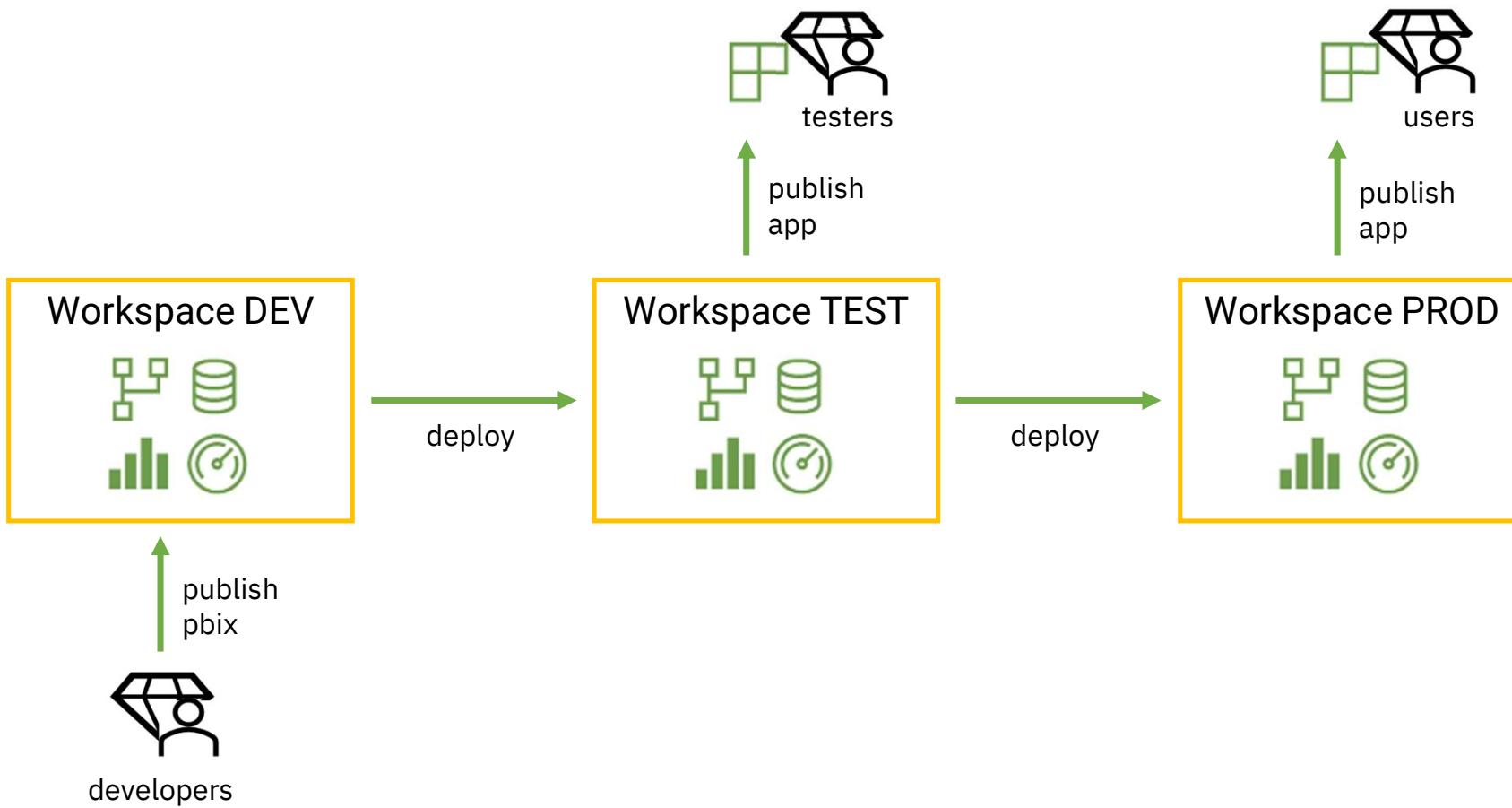
The screenshot shows the 'Access' dialog for a workspace named 'United FC [Development]'. It includes fields for entering email addresses, selecting a role (set to 'Member'), and an 'Add' button. Below this is a search bar. A table lists workspace members: 'Hylke Peek' is listed with 'Admin' permission and an ellipsis button. 'PowerBI\_Access' is listed with 'Admin' permission and is highlighted with a yellow border, also with an ellipsis button. At the bottom right is a 'Close' button.



# Query caching



# Deployment Pipelines



# Azure DevOps deployment



Central source location



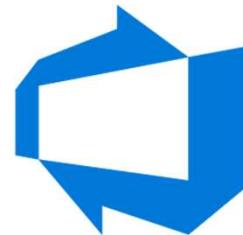
Versioning



Track and merge changes



Easy deployment



## Azure DevOps

# External Tools



PBI Tools



POWER BI SENTINEL





- Enhanced Compute Engine: It takes memory which other dataflows cannot use. So, if you don't need this, don't turn it on.
- If you're not using Rest API yet, start with it.
- Ensure good management of Service Principals

# Data Governance and Security

Storage Location

Privacy Levels

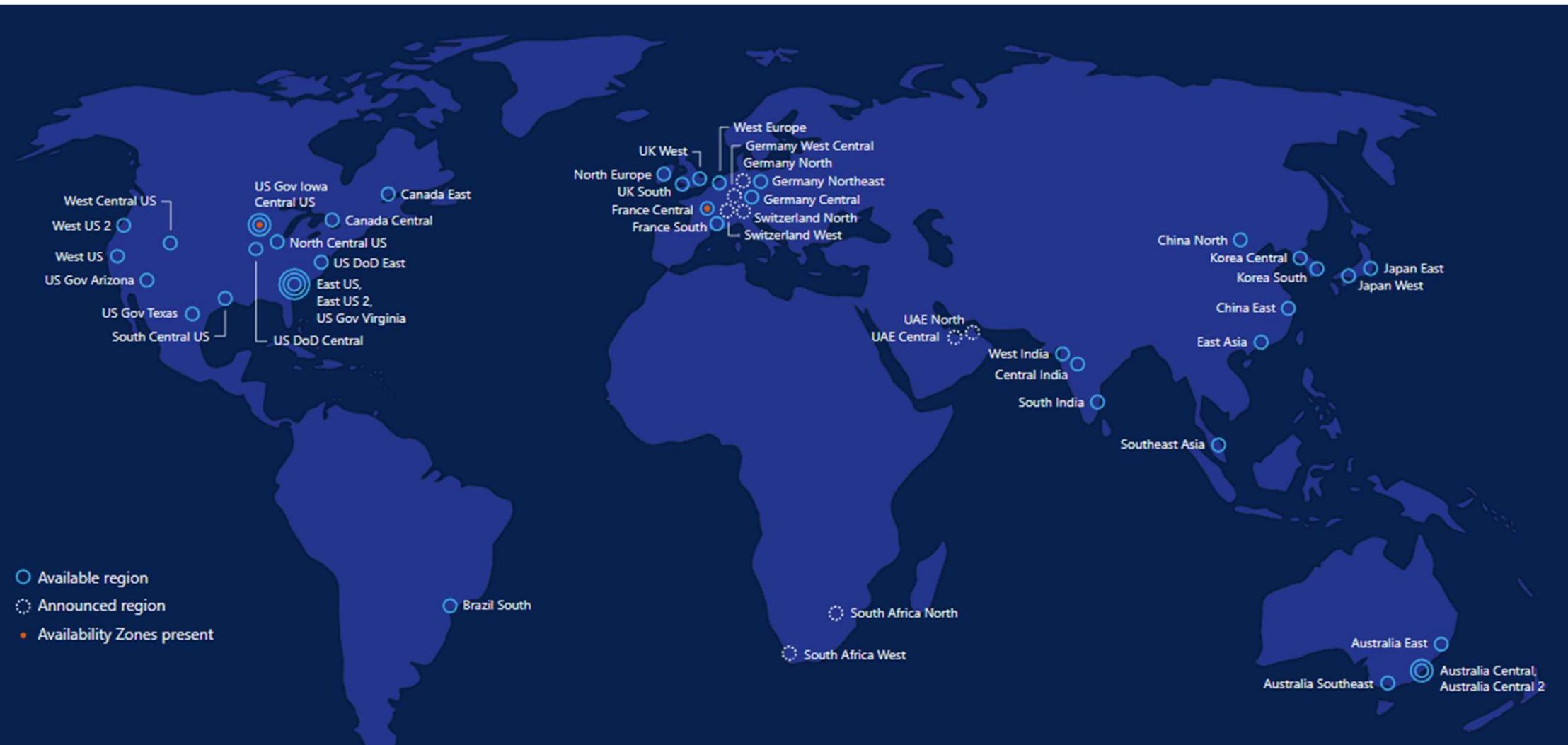
Data Security

Endorsement

Monitoring and auditing

Purview

# Storage location



# What does Power BI store?

**Daily Sales**

Sales: 2,506 ✓ Goal: 2,300 (+0.22%)

Avg Sales Value: 39.91 ✓ Goal: 40.00 (-0.21%)

# Product/Order: 2.14 ✓ Goal: 2.00 (+7.14%)

# Orders: 35 ✓ Goal: 40 (-12.5%)

Order Date: All

Country: United States

Product Group: All

**Sales by State**

**Sales by Product Group**

Category	Sales
Kit	1,261
Fashion	763
Souvenirs	296
Equipment	164
Toys and Games	80

**Top 5 Customers**

Customer	Sales	Avg Sales Value	# Products / Order	# Orders
DEV Olga J. Trujillo	254,00	39.70	4.50	5
DEV Peter Houston	217,00	54.26	2.00	2
DEV Janaina Barreiro	215,00	46.67	6.00	1
Gambino Bueno	35,00	17.50	1.00	1
DEV Chad J. Tedford	210,50	39.70	2.33	3
DEV Lee J. Chapla	173,50	51.50	4.00	1
<b>Total</b>	<b>1,070,00</b>	<b>45.73</b>	<b>3.33</b>	<b>9</b>

United FC

Reports

**Book1 - Microsoft Excel**

A	B	C	D	E	F	G	H	I	J
NAME	DESC	ASSOCDSP	PVEUH	PVEUL	EU	PVFORMAT	PARENTSET		
1 FFC011	MEROX PREWASH LEAN CAUSTIC	005_S173	100.00	0.00	GPM	D2			
2 FFC013	MEROX PREWASH TAN CAUSTIC	005_S173	20.00	0.00	GPM	D2			
3 FFC020	CAUSTIC CIRC TO SETTLER	005_S182	57.00	0.00	GPM	D2			
4 FFC022	STEAM COOL FR NAOH HTR	005_S182	2.00	0.00	GPM	D8			
5 FFC027	PLANT AIR TO OXIDIZER	005_S182	8,850.00	0.00	SCFH	D0			
6 FFC031	WASH OIL TO PU70/71	005_S182	6.00	0.00	GPM	D3			
7 FFC032	CAUSTIC CIRC TO SETTLER	005_S182	50.00	0.00	GPM	D2			
8 FFC034	WASH OIL TO PU70/71	005_S182	3.40	0.00	GPM	D8			

Excel Workbooks

**Fields**

- KPI's
- Customer
- Address
- City
- Country
- State
- Postalcode
- Customer
- Address
- City
- Country
- State
- Postalcode
- KPI's
- Customer
- Product
- Product Group
- Sales Order Details
- Sales Order Header

Data inside the model

**Data source settings**

Manage settings for data sources that you have connected to using Power BI Desktop.

Data sources in current file  Global permissions

Search data source settings

srv-shopsales.database.windows.net;sqlShopSales\_dev

Connection information

**Properties**

Customer

Sales Order Header

Sales Order Details

Product

Datamodel

# Data location

The first user signing up for Office365 selects a country.



Microsoft Power BI

Create your account

First name  Last name

Create password

Confirm your password

We sent a verification code to [malcolm@brainsells.com.au](mailto:malcolm@brainsells.com.au). Enter the code to complete signup.

Verification code

Where's your company located?  Not seeing your country or region?

By choosing [Start](#), you agree to our [terms and conditions](#) and understand that your name and email address will be visible to other people in your institution. [Microsoft Privacy Policy](#)

[Start](#)

Azure region

Organization (tenant)



# Data Source privacy levels

Privacy levels define how data sources within a datamodel are isolated from each other.

**Desktop**

**Edit Permissions**

srv-shopsales.database.windows.net;sqlShopSales\_dev

Credentials  
Type: Not Specified  
[Edit...](#) [Delete](#)

Encryption  
 Encrypt connections

Privacy Level  
[None](#) [None](#) [Public](#) [Organizational](#) [Private](#)  
[Revoke Approvals](#)

Queries for this

[OK](#) [Cancel](#)

**Service**

Data source type: SQL Server

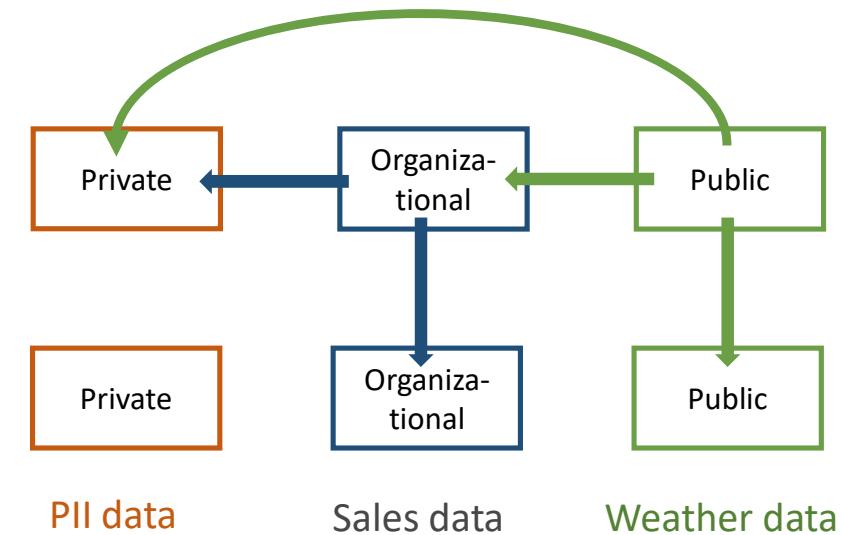
Server: srv-peekdata-shopsales.database.windows.net

Database: sql\_peekdata\_shopsales\_dev

Authentication  
Authentication method \*  
Basic  
Username \*  
Password \*

None  
Private  
Organizational  
Public  
Organizational

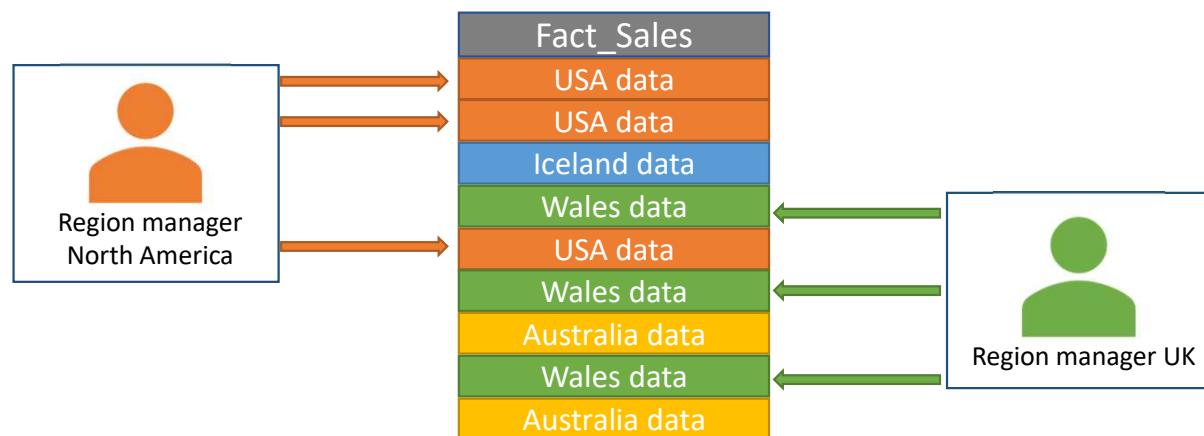
[Save](#) [Close](#)



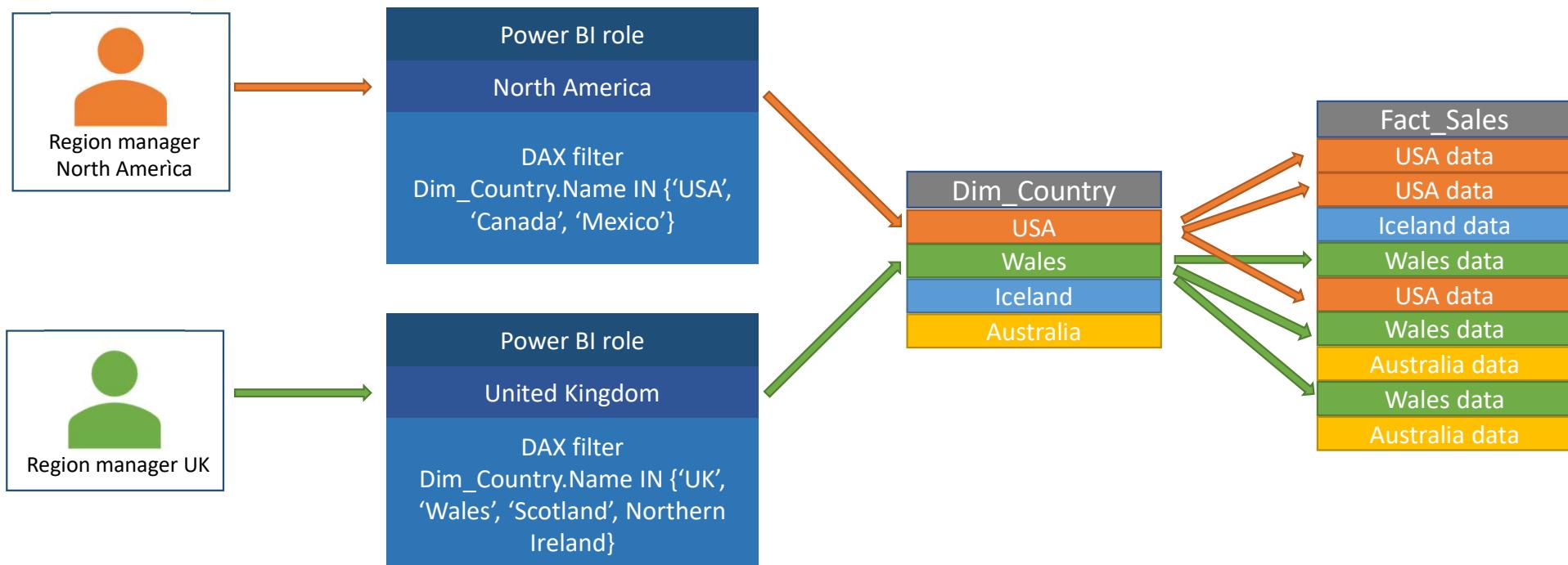
Privacy levels in Power BI Desktop and Power BI Service are set separately!

# Row-Level-Security

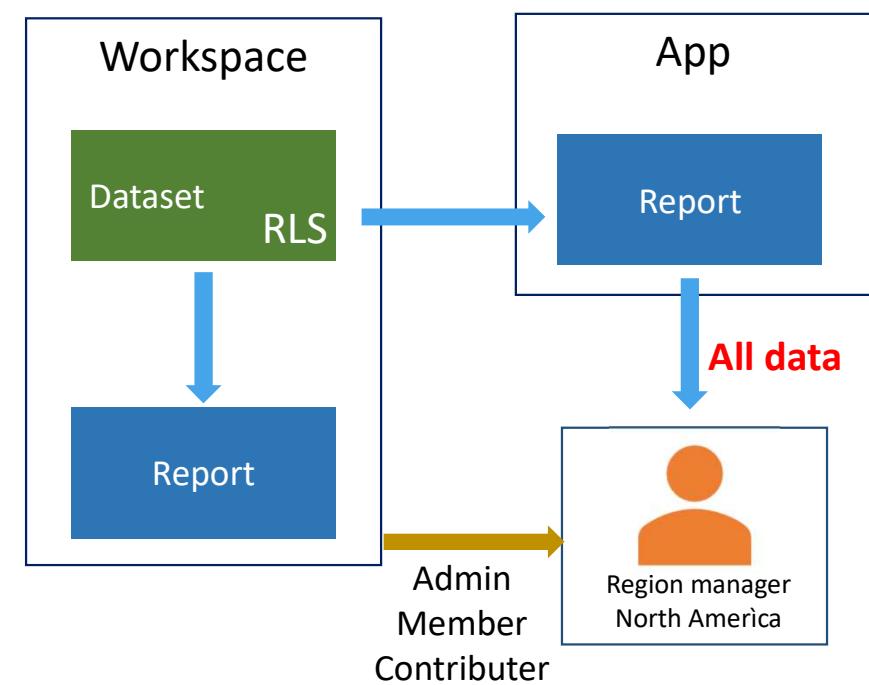
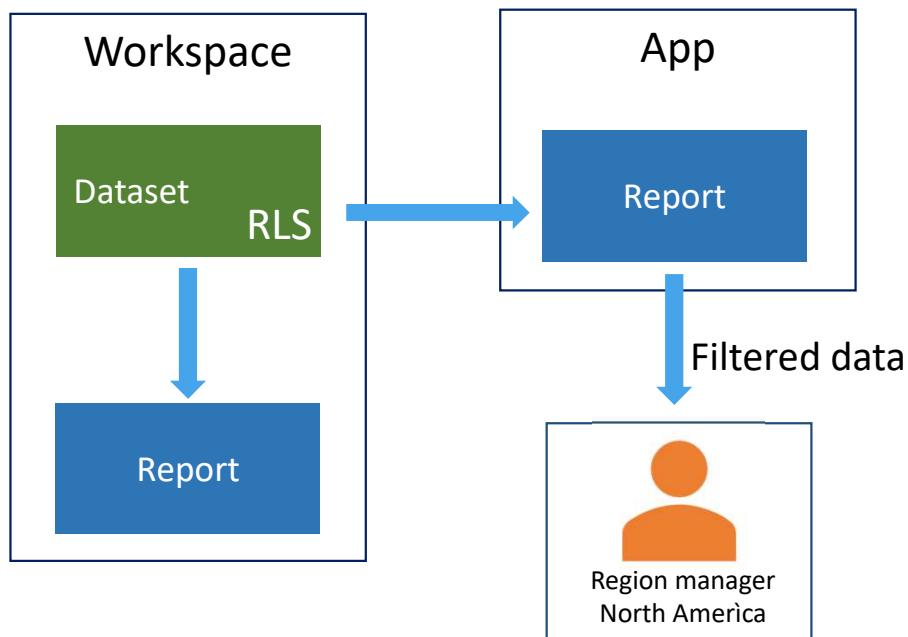
Restrict data access for given users.



# Row-Level-Security



# Workspace permissions ignores RLS



# Object-Level-Security

This doesn't apply to Workspace Admin, Member and Contributer.

Restrict tables and columns for given users.

File Edit View Model Role Tools

Perspective: (All objects) Translation: (No translation)

Model Data Sources Perspectives Relationships Roles > OLS role Shared Expressions Tables Customer Product Product Group Sales Order Details Sales Order Header KPI's Translations

Expression Editor Advanced Scripting

Property: 1

OLS - Table

Basic Description Name OLS role

Metadata Annotations 0 annotations

Extended Properties 0 extended properties

Object Type Role

Security Row Level Security RLS enabled on 0 out of 6 tables

Table Permissions OLS enabled on 6 out of 6 tables

Customer None

KPI's Read

Product Read

Product Group Read

Sales Order Details Read

Sales Order Header Read

Translations, Perspectives, Security

Table Permissions

Connected successfully. 0 BP issues

OLS - Column

File Edit View Model Column Tools

Perspective: (All objects) Translation: (No translation)

Model Data Sources Perspectives Relationships Roles > OLS role Shared Expressions Tables Customer Product Product Group Sales Order Details Sales Order Header KPI's Translations

Expression Editor Advanced Scripting

Property: 1

OLS - Table

Encoding Hint Default

Group By Columns 0 columns

Keep Unique Rows False

Key False

Lineage Tag 4d209467-1818-4906-bda3-18832d9e

Nullable True

Source Lineage Tag

Source Provider Type

Table Detail Position -1

Unique False

Variations 0 variations

Translations, Perspectives, Security

Object Level Security Value assigned to 1 out of 1 Model R OLS role None

Synonyms 1 linguistic schema defined

Translated Descriptions 1 empty, 0 translated, 1 default

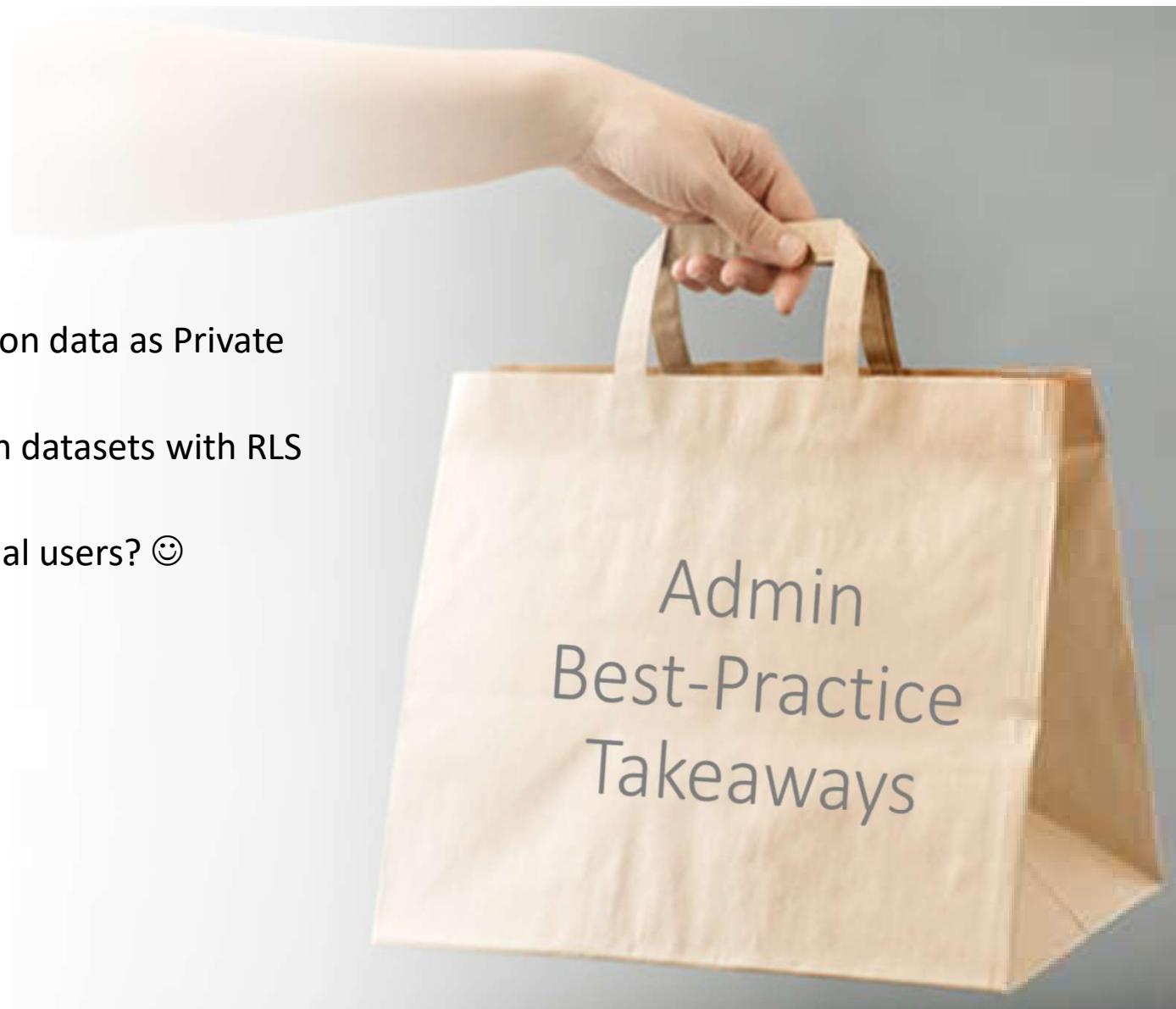
Translated Display Folders 1 empty, 0 translated, 1 default

Translated Names 1 empty, 0 translated, 0 default

Object Level Security

Connected successfully. 0 BP issues





- Assign Personally Identifiable Information data as Private
- Monitor performance more carefully on datasets with RLS
- Did I say to use groups and not individual users? 😊

# Endorsement

## Settings for Reporting Sales

\* Required

Report name

Reporting Sales

Description

Hylke Peek  Enter email addresses

Snapshot

### Endorsement

Help coworkers find your quality content by endorsing this report. [Learn more](#)

None

The report will appear in search results but isn't endorsed.

Promoted

When you're ready to distribute the report to your coworkers, promote it to let them know.

Certified

Certify your report to show coworkers that it's been reviewed and meets your org's certification criteria. [How do I get my report certified?](#)

Feature on Home

Display this report in the Featured section on Power BI Home for people with access to it.

The screenshot shows the Power BI interface with the title 'United FC [Development]'. On the left, there's a sidebar with icons for Home, Create, Browse, Data hub, Metrics, Apps, Deployment pipelines, and Knowledge center. The main area displays a table with columns: Name, Type, Owner, Refreshed, Next refresh, and Endorsement. There are five items listed:

Name	Type	Owner	Refreshed	Next refresh	Endorsement
Datamodel Sales	Report	United FC [Development]	11/19/22, 12:28:48 AM	—	—
Datamodel Sales	Dataset	United FC [Development]	11/19/22, 12:28:48 AM	N/A	—
Fanshop Sales Data	Dataflow	Hylke Peek	1/5/23, 10:31:31 PM	N/A	—
Reporting Sales	Report	United FC [Development]	11/19/22, 12:28:48 AM	—	<input checked="" type="radio"/> Promoted

Promotion

Certification

Featured content

Highlight content that might be valuable to others.  
Can't be disabled.  
Either be a contributor, member or admin.

# Endorsement

## Settings for Reporting Sales

\* Required

Report name

Reporting Sales

Description

Hylke Peek  Enter email addresses

Snapshot

### Endorsement

Help coworkers find your quality content by endorsing this report. [Learn more](#)

None

The report will appear in search results but isn't endorsed.

Promoted

When you're ready to distribute the report to your coworkers, promote it to let them know.

Certified

Certify your report to show coworkers that it's been reviewed and meets your org's certification criteria. [How do I get my report certified?](#)

Feature on Home

Display this report in the Featured section on Power BI Home for people with access to it.

The screenshot shows the Power BI interface with the title 'United FC [Development]'. On the left, there's a sidebar with icons for Home, Create, Browse, Data hub, Metrics, Apps, Deployment pipelines, and Knowledge center. The main area is titled 'Content' and shows a list of items:

Name	Type	Owner	Refreshed	Next refresh	Endorsement
Datamodel Sales	Report	United FC [Development]	11/19/22, 12:28:48 AM	—	
Datamodel Sales	Dataset	United FC [Development]	11/19/22, 12:28:48 AM	N/A	
Fanshop Sales Data	Dataflow	Hylke Peek	1/5/23, 10:31:31 PM	N/A	—
Reporting Sales	Report	United FC [Development]	11/19/22, 12:28:48 AM	—	

## Promotion

## Certification

## Featured content

Content meets company standards.  
Default disabled.  
Enable this for a subset of users!

# Endorsement

## Settings for Reporting Sales

\* Required

Report name

Reporting Sales

Description

Contact

 Hylke Peek X Enter email addresses

Snapshot

Upload  Delete

### Endorsement

Help coworkers find your quality content by endorsing this report. [Learn more](#)

None

The report will appear in search results but isn't endorsed.

Promoted

When you're ready to distribute the report to your coworkers, promote it to let them know.

Certified

Certify your report to show coworkers that it's been reviewed and meets your org's certification criteria. [How do I get my report certified?](#)

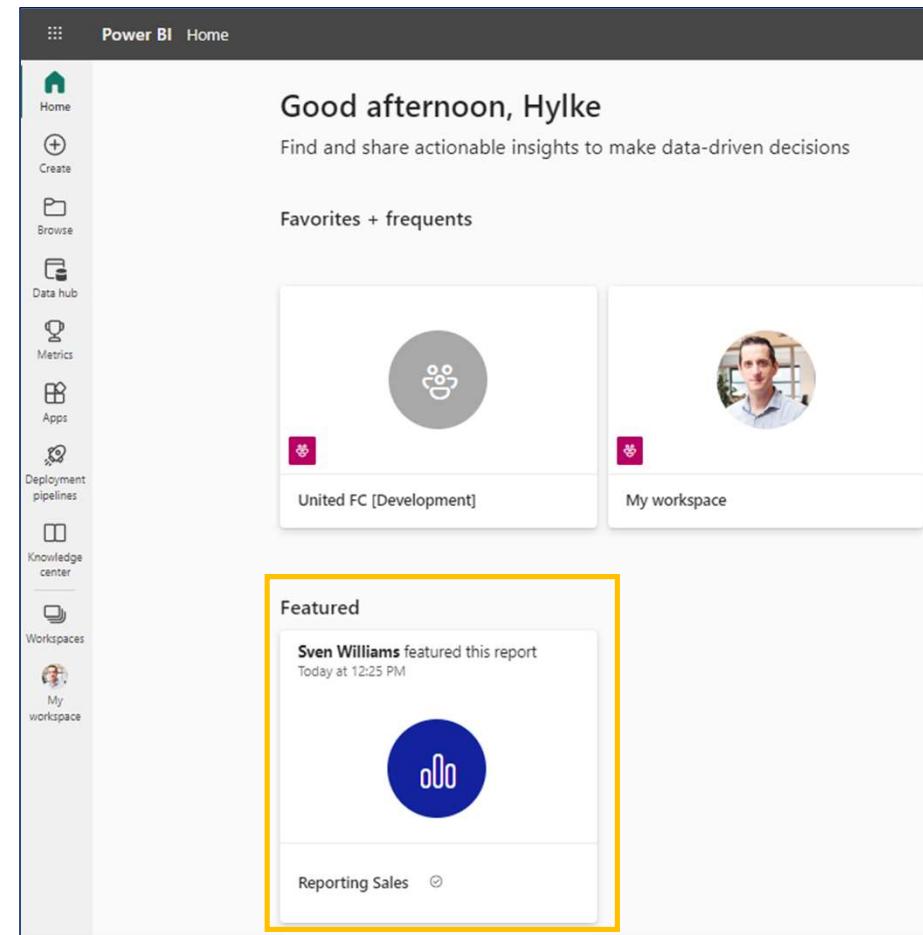
Feature on Home

Display this report in the Featured section on Power BI Home for people with access to it.

## Promotion

## Certification

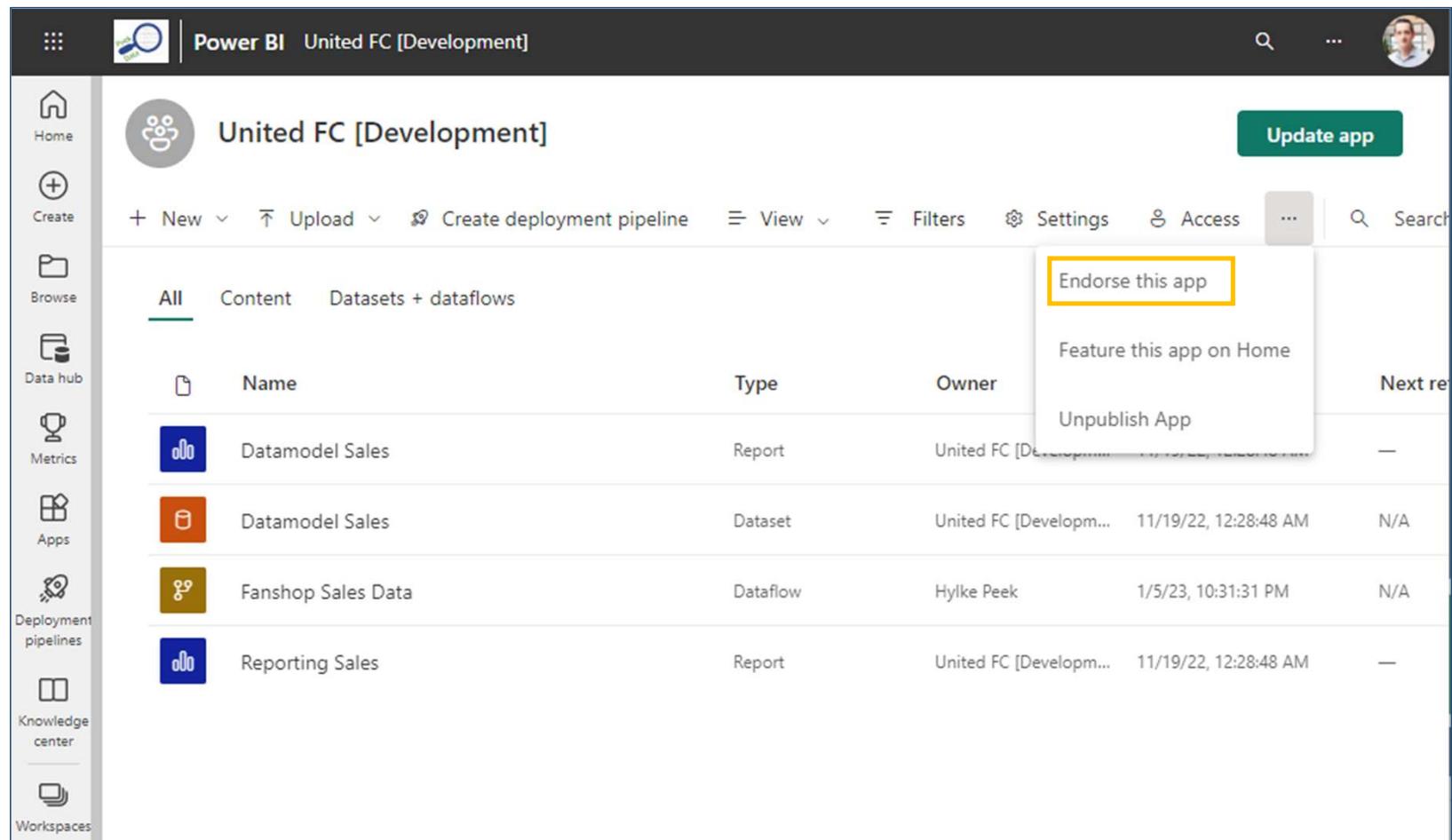
## Featured content



The screenshot shows the Power BI Home page. On the left is a sidebar with navigation links: Home, Create, Browse, Data hub, Metrics, Apps, Deployment pipelines, Knowledge center, Workspaces, and My workspace. The main area starts with a greeting: "Good afternoon, Hylke". Below it is a section titled "Favorites + frequents" with two items: "United FC [Development]" and "My workspace". The "Featured" section is highlighted with an orange border. It contains a message from "Sven Williams": "Sven Williams featured this report Today at 12:25 PM". Below the message is a blue circular icon with a white "000" and the text "Reporting Sales".

Show on home page for people with access to it.  
Independent of other settings.  
Default enabled.

# Endorsement - App

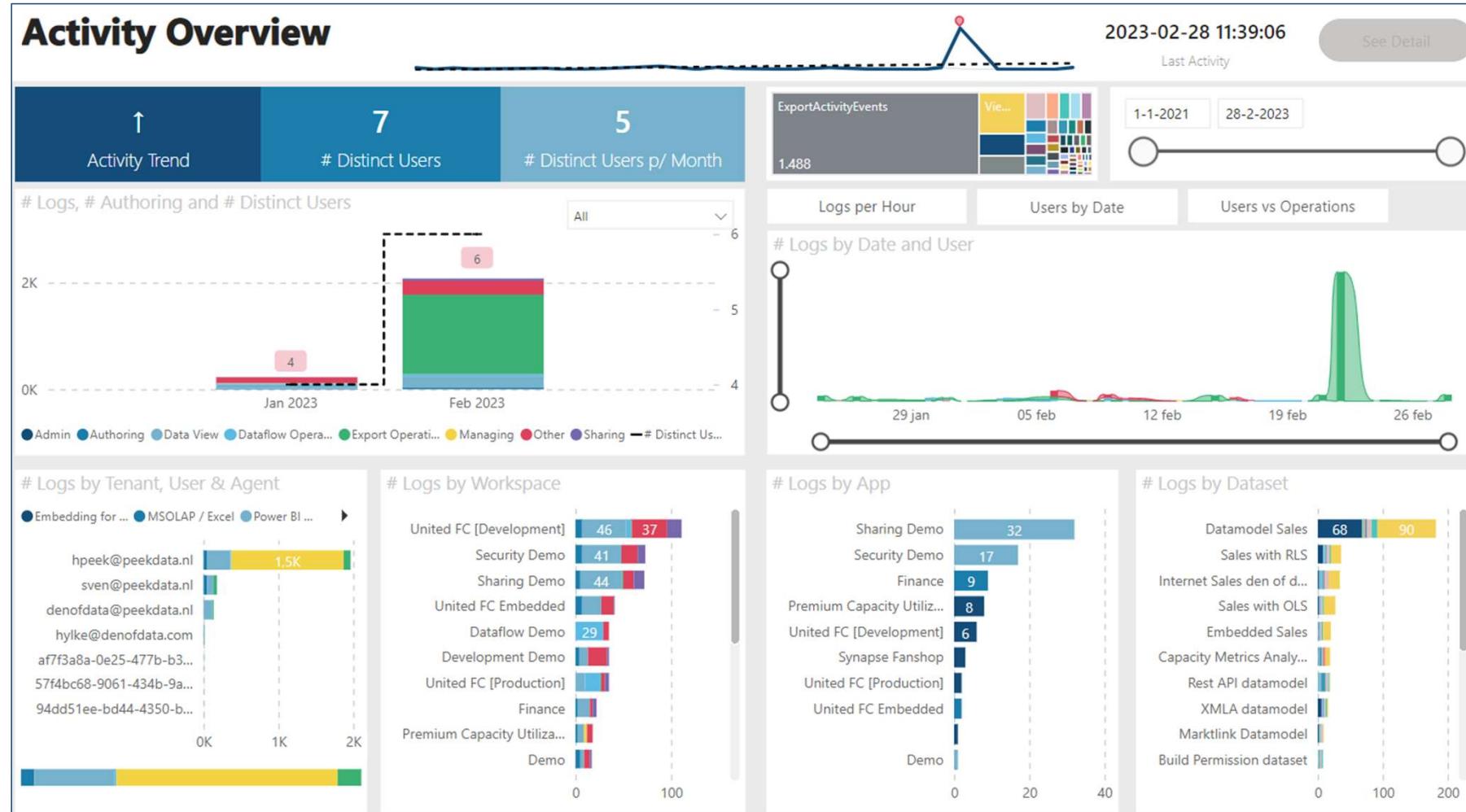


The screenshot shows the Power BI application management interface for the "United FC [Development]" app. On the left is a vertical navigation bar with icons for Home, Create, Browse, Data hub, Metrics, Apps, Deployment pipelines, Knowledge center, and Workspaces. The main area displays the app's name, a "Update app" button, and a search bar. Below these are buttons for "New", "Upload", "Create deployment pipeline", "View", "Filters", "Settings", "Access", and a three-dot menu. The "Content" tab is selected, showing a list of items: "Datamodel Sales" (Report, Owner: United FC [Development]), "Datamodel Sales" (Dataset, Owner: United FC [Development], Last modified: 11/19/22, 12:28:48 AM), "Fanshop Sales Data" (Dataflow, Owner: Hylke Peek, Last modified: 1/5/23, 10:31:31 PM), and "Reporting Sales" (Report, Owner: United FC [Development], Last modified: 11/19/22, 12:28:48 AM). A context menu is open over the first "Datamodel Sales" item, with the "Endorse this app" option highlighted by a yellow box.

Name	Type	Owner	Last modified	Actions
Datamodel Sales	Report	United FC [Development]		—
Datamodel Sales	Dataset	United FC [Development]	11/19/22, 12:28:48 AM	N/A
Fanshop Sales Data	Dataflow	Hylke Peek	1/5/23, 10:31:31 PM	N/A
Reporting Sales	Report	United FC [Development]	11/19/22, 12:28:48 AM	—

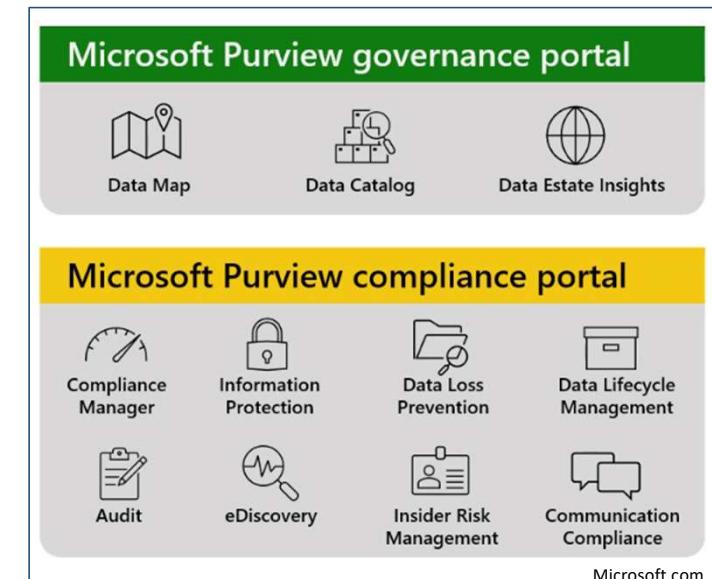
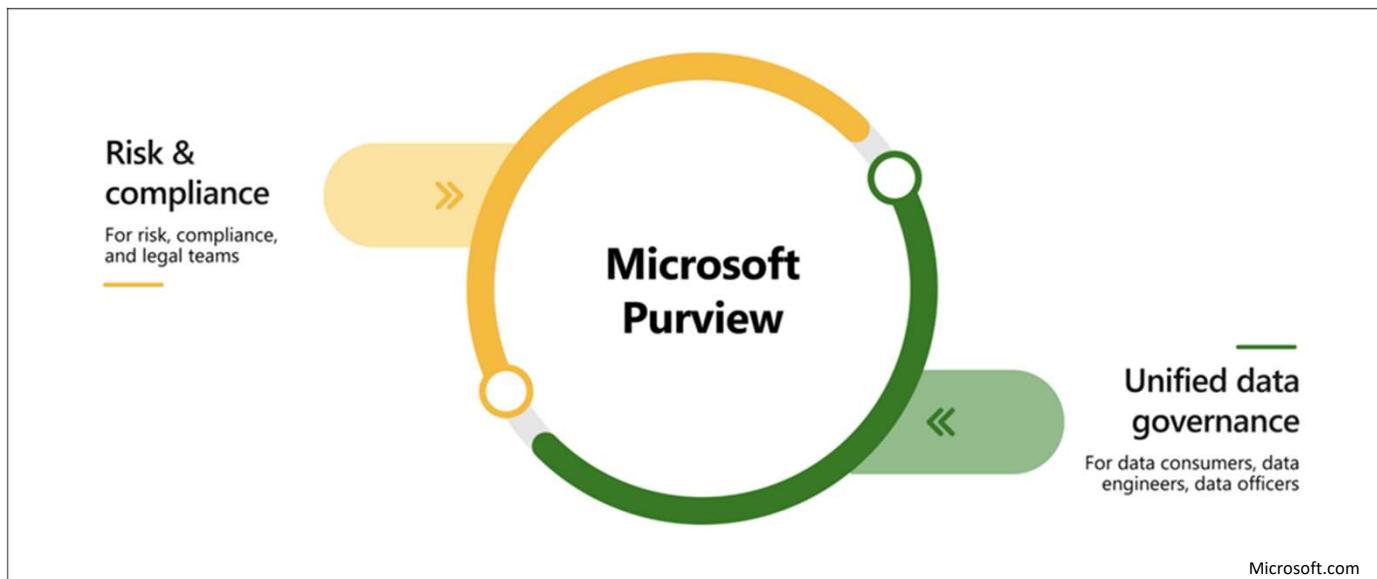


# Monitor and auditing Power BI Environment





# Microsoft Purview (high level)



Data Catalog and Discovery

Gain visibility into data assets across the entire organization ('data estate')

Data Labeling and Classification

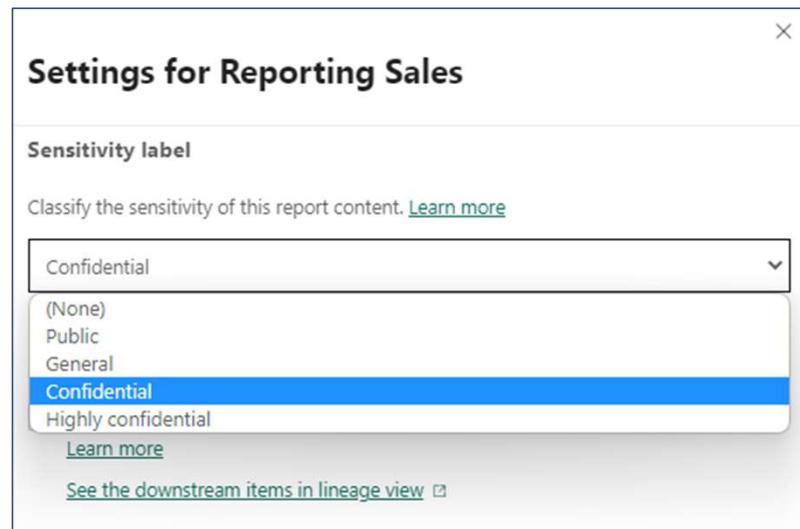
Protect sensitive data across different data sources like ALDS, SQL, Power BI etc.

Data Lineage

Understand the relation between different types of data assets

# Sensitivity labels

Classify critical data, not restrict data.



The screenshot shows a dark header bar with the text "Reporting Sales | Confidential" followed by a dropdown arrow. Below the header is a dashboard with three metrics: "AVG Sales Value", "# Product/Order", and "# Orders".

Tag an object to a label

Dashboard, Report, Dataset, and Dataflow

Downstream inheritance

Data protection metrics report



## Always start with

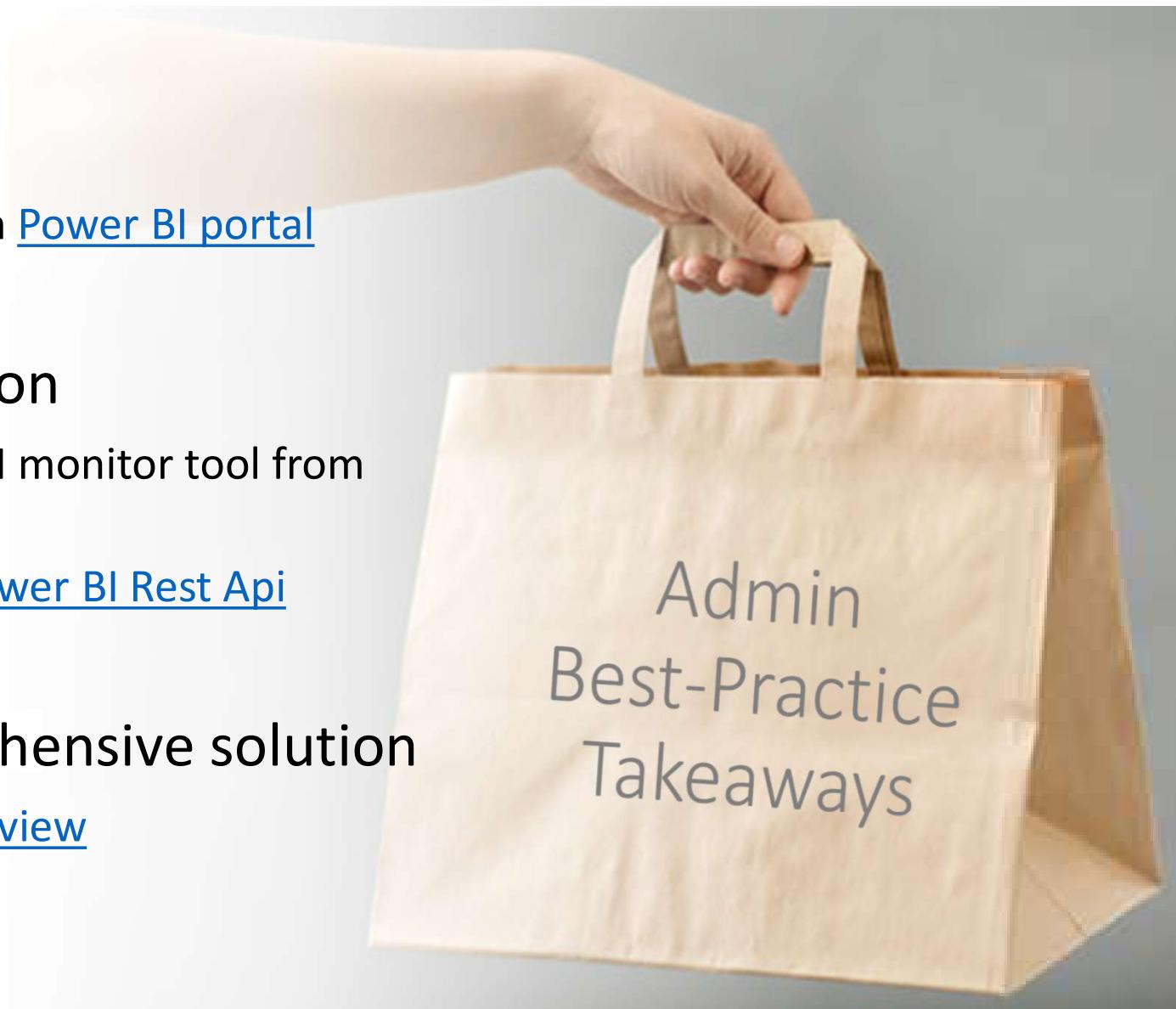
- Reports for usage and lineage in [Power BI portal](#)

## You need more information

- Start with open source Power BI monitor tool from [Rui Romano](#) or other tools
- Write your own scripts using [Power BI Rest Api](#)

## You need a more comprehensive solution

- Keep your eye on [Microsoft Purview](#)
- Dive into [Azure Log Analytics](#)
- Check out [Power BI Sentinel](#)





What are you going to change about Power BI governance from tomorrow and who are you going to talk to about this?



Govern your  
Power BI environment

Thank you!

Hylke Peek