



Successfully Collaborate with Externals in Power BI

Thank you!



Many thanks to our sponsors, without whom such an event would not be possible.





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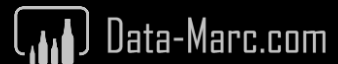
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Data-Marc.com



Data-Marc





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[Dragon's Data](#)





Intro to Our Use Case

- Fictive company “Data-Marc.com”
- Consultancy firm doing work for this company
- All following demos will use these personas



Power Bier



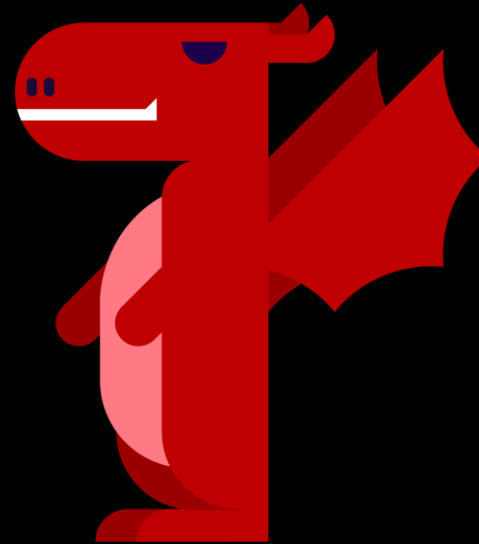
Power Bler

- Fictive company as part of “Data-Marc.com” concern selling beer.
- Short on staff, therefore hired a consultancy firm for Data Analysis

Personas



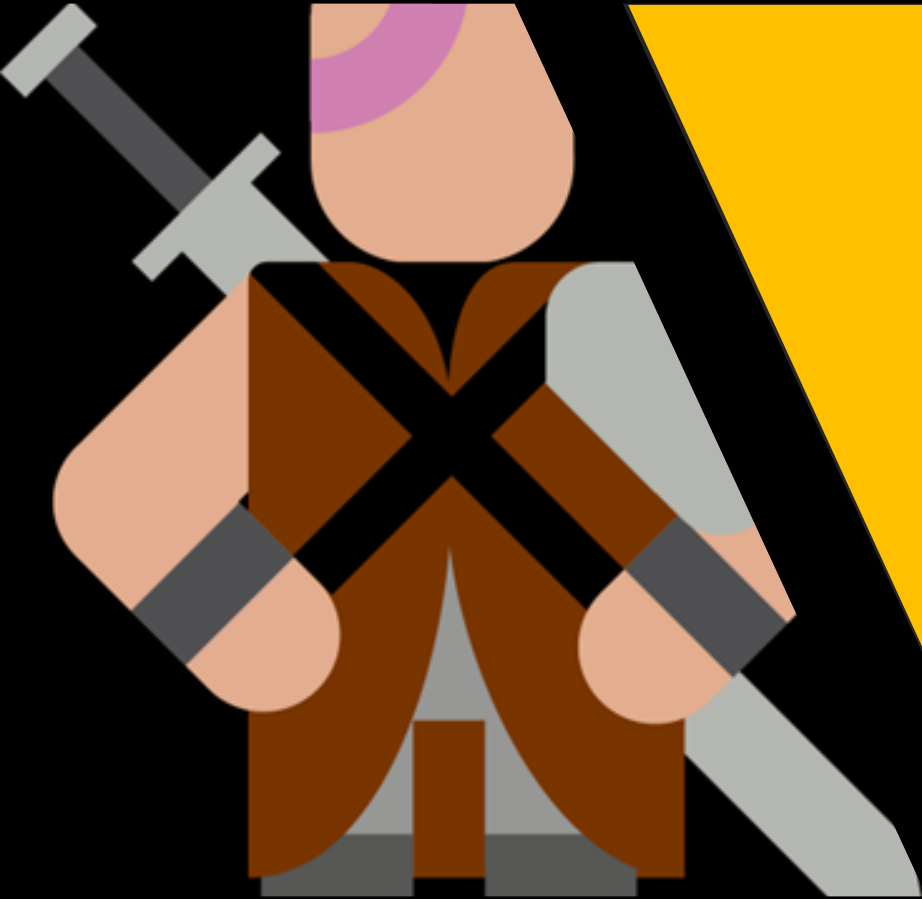
**Company
representative**



**Consulting company
representative**

Challenge

- Get accounts for my external consultants takes too long...
 - IT is slow
 - I don't want to pay their licenses (hey, I'm Dutch 💰💰)
- My project is in a rush, business needs insights!
- I want them to be able to start working on the solution RIGHT NOW!
- I want to share my supplier performance reports with the suppliers so they can review and improve their own services.
- I don't have premium, what other options do I have?



Agenda

- Sharing mechanisms & purpose
- Security 101
- Things you need to set up
- Licensing

Overview of Power BI Service

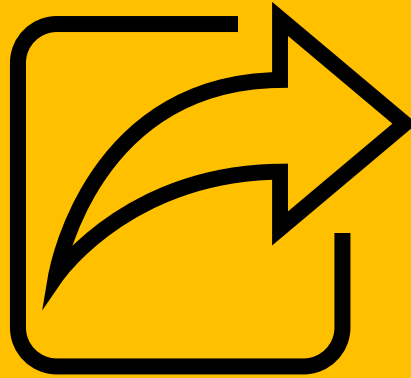
- Administrator settings
- Security
- Gateway connections
- Workspaces & its content



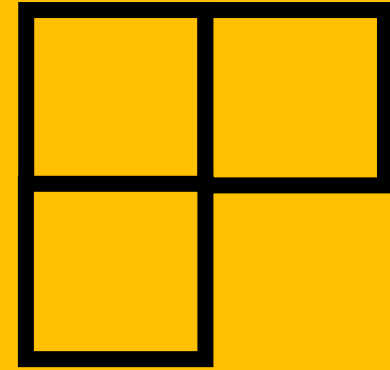
Sharing Mechanisms



Workspace level
Viewer permissions



Direct share items
from the workspace



Publish a
Power BI App

Sharing Purpose



View and interact
with data

- Share report, app, dashboard
- Publish to web
- Embed in a website or application



Collaborate or use
data for new content

- Share datasets
- Share workspaces
- Share dataflows

What about Working with Excel?



Analyze in Excel



Connected Excel Tables

Internal vs External – Prerequisites

• Internal User

- Have an AAD account
- Needs Power BI license
- Dataset access without additional settings

• External User

- Needs an AAD guest account
- Needs Power BI license or can use own*
- Additional Tenant settings
- Dataset access plus additional dataset settings (enable the **dataset external sharing** option)

*unless the company has Premium

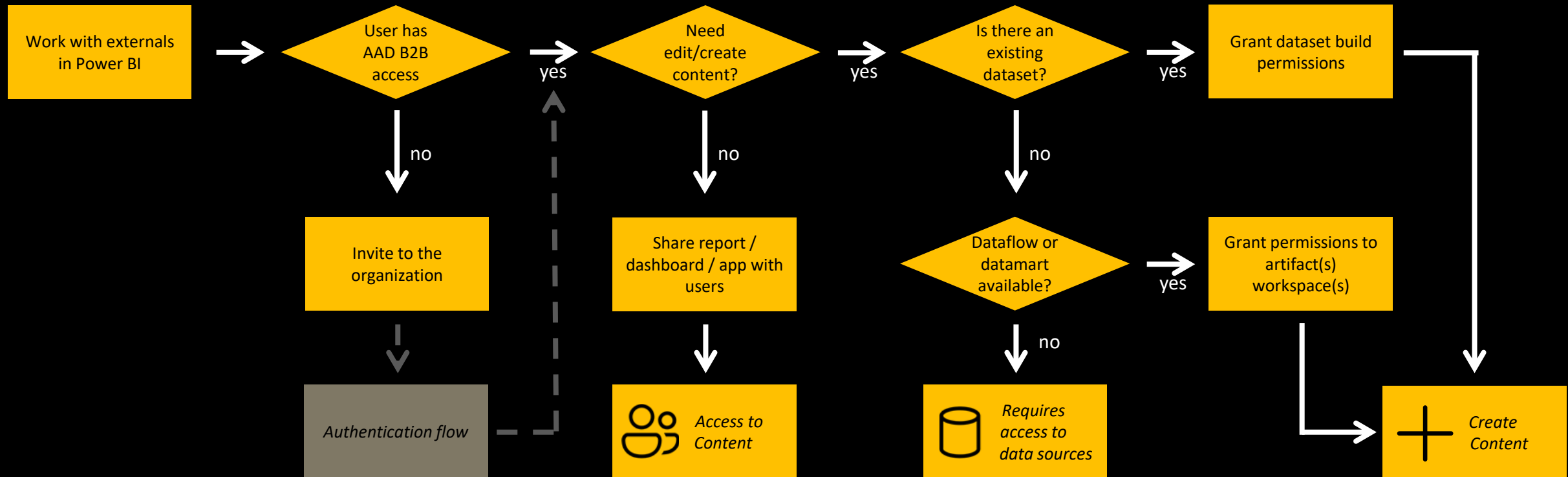
Internal vs External – Use Cases

Hired media agency brings together the company's financial data and the agency's social media campaign data to determine the effectiveness and efficiency of their campaigns.

Distributor and Vendor work together. The Distributor wants to see particular Vendor's data in order to know what would be the best ingredients to sell.



How to Work with Externals in Power BI



Considerations



Allow everyone to invite others or only a selected group of people managed via an AD group

The screenshot shows the Power BI Admin portal for 'Data-Marc.com'. The left sidebar lists various settings: Tenant settings (selected), Usage metrics, Users, Premium Per User, Audit logs, Capacity settings, Refresh summary, Embed Codes, Organizational visuals, Azure connections, Workspaces, Custom branding, Protection metrics, and Featured content. The main content area is titled 'Admin portal' and shows the 'Invite external users to your organization' settings. A red banner indicates 'Unapplied changes'. The 'Invite external users' toggle is turned on (Enabled). Under 'Apply to:', the radio button for 'Specific security groups' is selected. Below this is a text input field labeled 'Enter security groups'. There is also an unchecked checkbox for 'Except specific security groups'. A grey box contains a note: 'Only users who meet the criteria can share content externally. (All content previously shared with external users will remain shared.)'. At the bottom are 'Apply' and 'Cancel' buttons.



Security 101

Principle of least privilege as possible

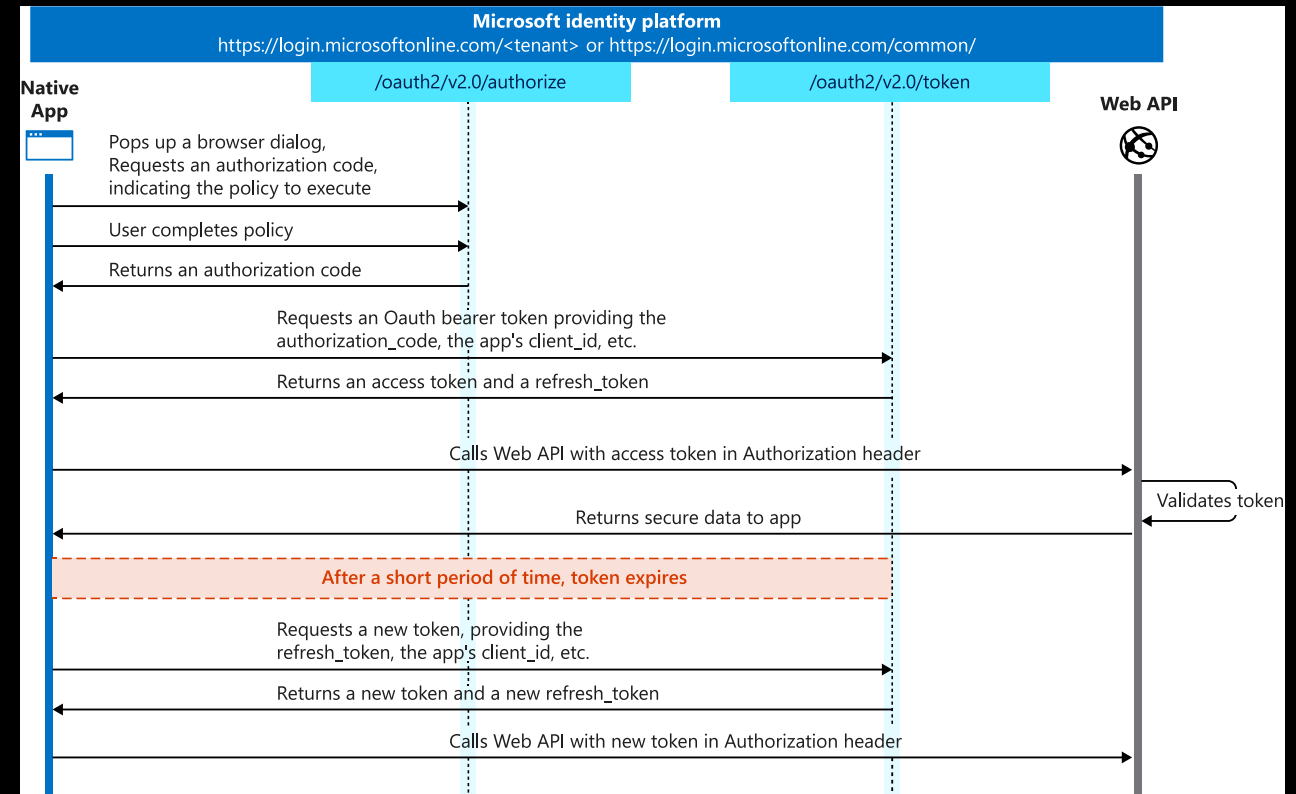


Authentication



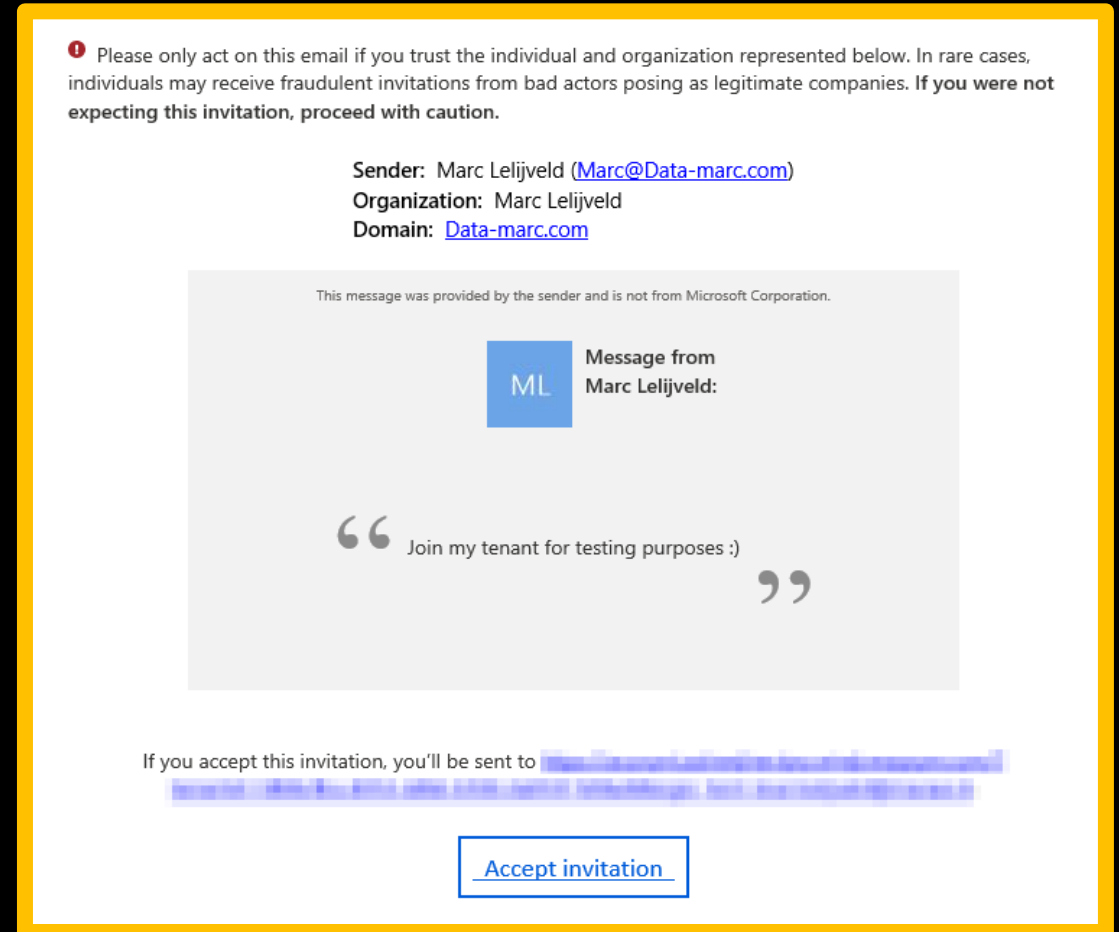
Power BI is part of the Microsoft cloud that runs on Azure.

- Power BI makes use of the generic centralized identity access platform – Microsoft Identity platform and OAuth 2.0 code flow.
- If you're already using anything in M365, access is handled in the same way.
- If you're maintaining Active Directory on-premises, you can setup AD sync to Azure to get one centralized security mechanism.



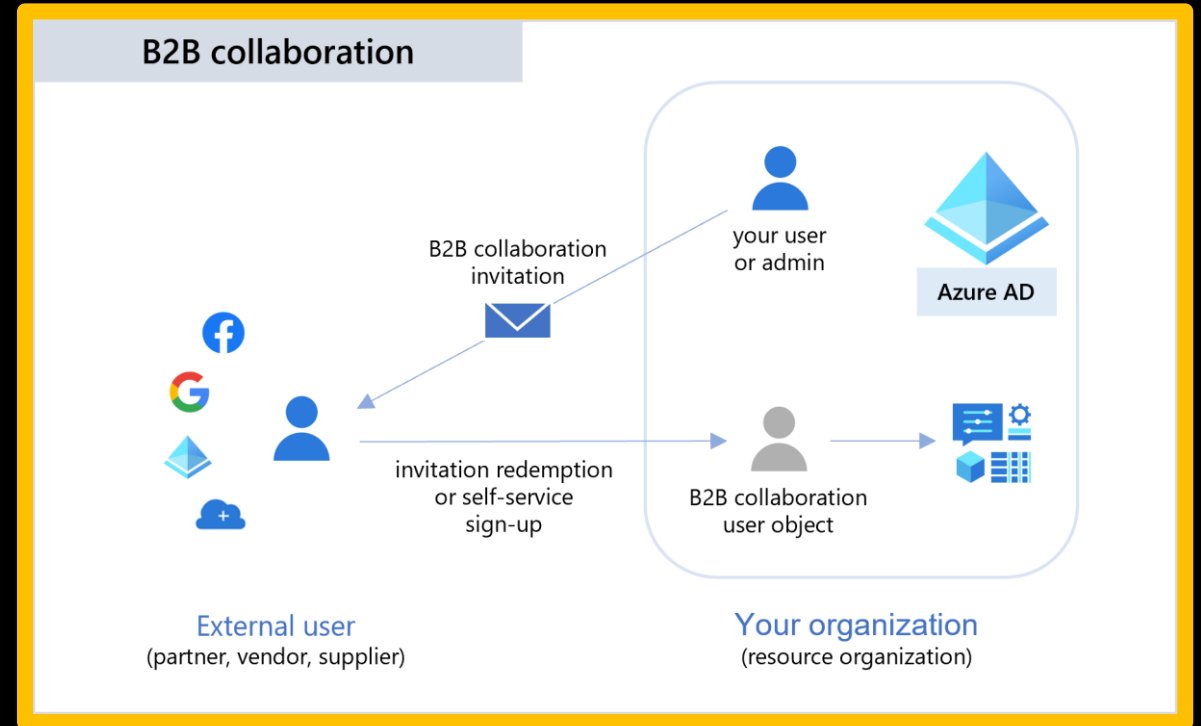
Invitation to Join a Tenant

You must be invited to join another tenant first, before you can start sharing with externals, or start collaborating.



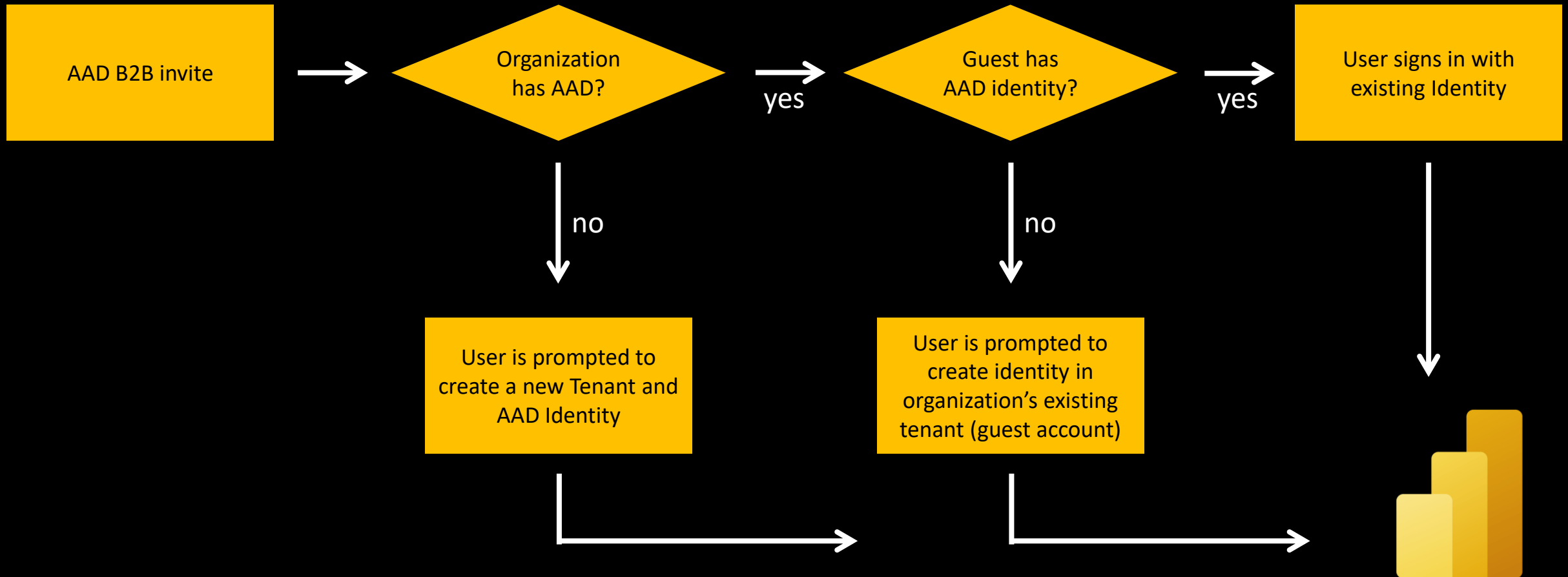
Authentication

For B2B access, an AAD connection between both collaborative Active Directories is preferable.





Authorization flow



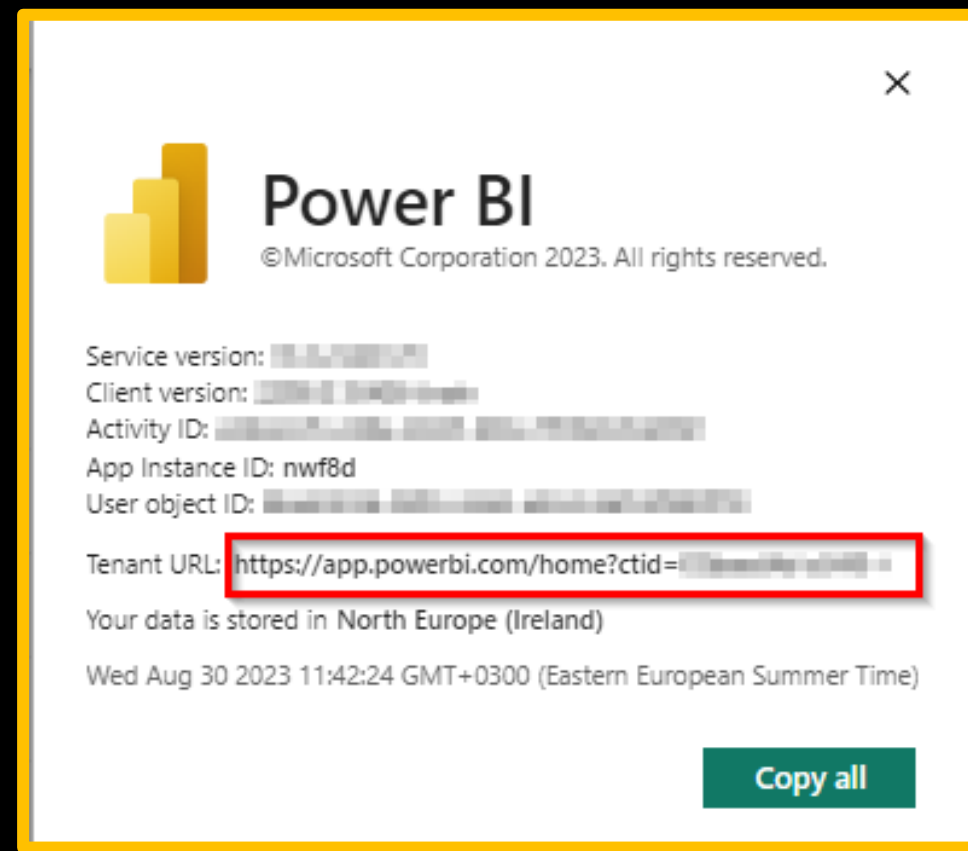
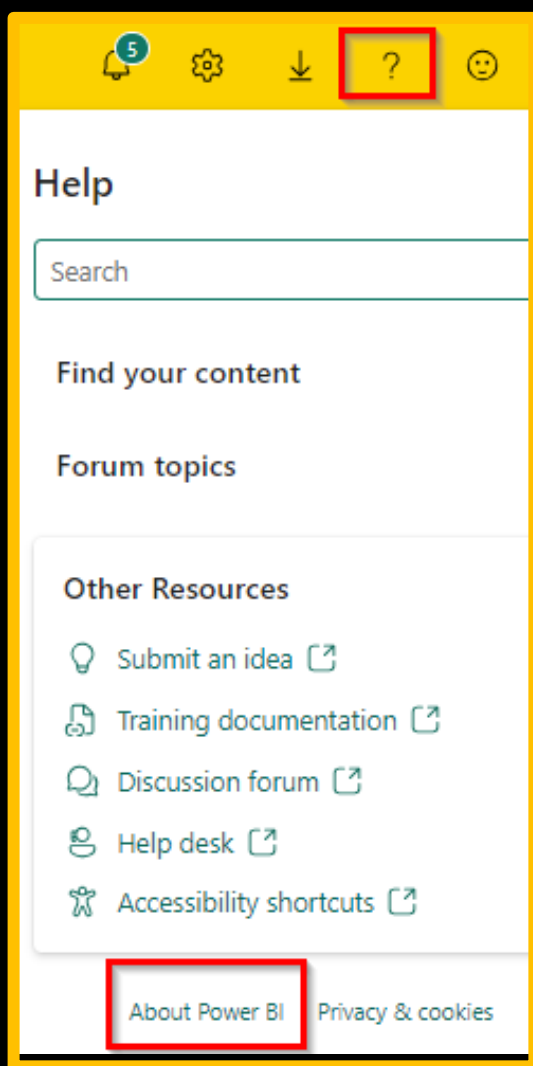


Demo

Join external organization and view external content



Share Power BI Link with Your Tenant ID





Can Externals Get Data out of Power BI?

It depends on your tenant settings in Power BI.
Use the except function, or setup only for internal users.

Export to Excel

Enabled for a subset of the organization

Users in the organization can export the data from a visualization or paginated report to an Excel file. [Learn more](#)

Enabled

Apply to:

The entire organization

Specific security groups

AAD-AllUsers-Internal

Enter security groups

Except specific security groups

AAD-PBI-ExternalGuestEditing

Enter security groups

Apply

Cancel

Download reports

Enabled for a subset of the organization

Users in the organization can download .pbix files and paginated reports. [Learn more](#)

Enabled

Apply to:

The entire organization

Specific security groups

AAD-AllUsers-Internal

Enter security groups

Except specific security groups

AAD-PBI-ExternalGuestEditing

Enter security groups

Apply

Cancel

Monitoring

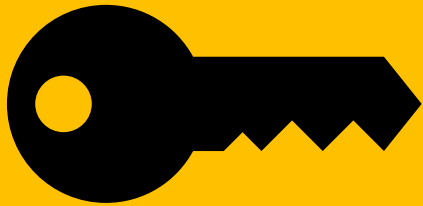
- Regularly review if they still need access (solution owners)
- Monitor Audit Logs to see what they're doing (admins)



What Needs to be Done?

Power BI Settings

Tenant Settings – General



Allow AAD guests to
access Power BI



Show AAD Guests in Power
BI Service suggested people



Invite externals to your
organization



Tenant Settings – Specific



Use datasets across
workspaces



Allow specific users
to turn on external
data sharing



Allow AAD
guest users edit and
manage content in
the organization



Guest users can
work with shared
datasets in their own
tenants

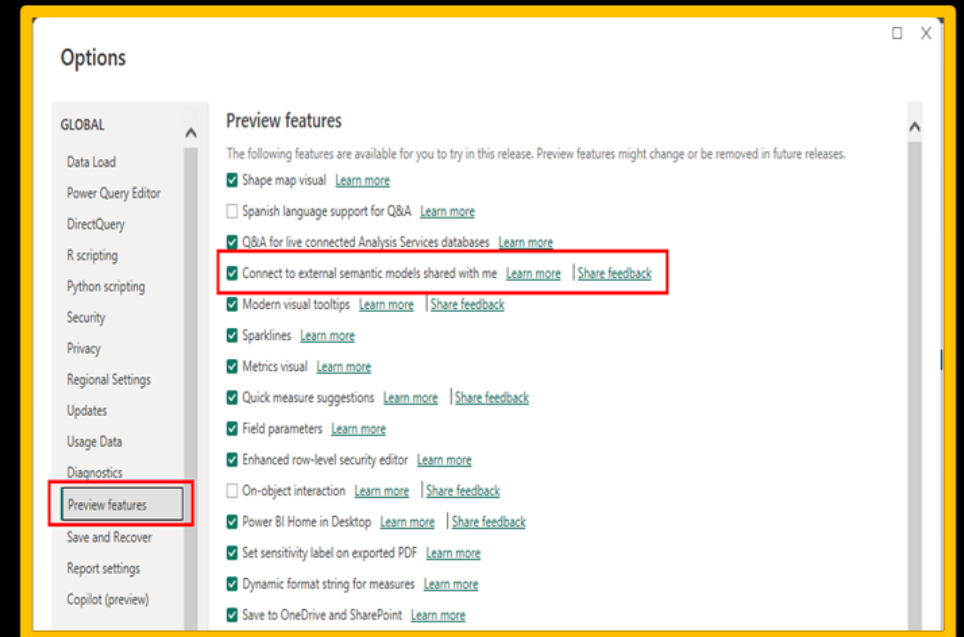
External User Needs to Do



Accept AAD guest user invitation



Enable Preview features in Power BI Desktop





Demo – use case 1

Connect to external hosted Power BI Dataset from Power BI Desktop
And publish to **own tenant**.



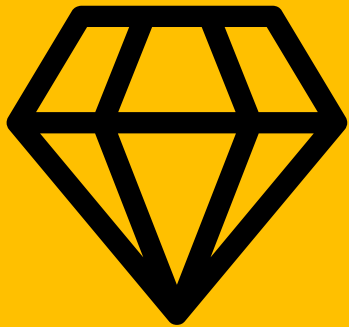
Demo – use case 2

Connect to external hosted Power BI Dataset from Power BI Desktop
And publish to the **client tenant**

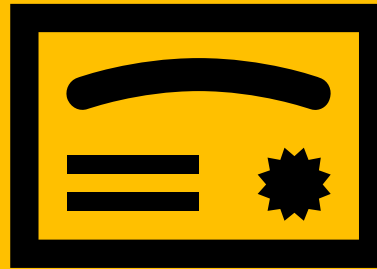


Licensing

What about Power BI Licensing?



Shared content is backed
by Power BI Premium

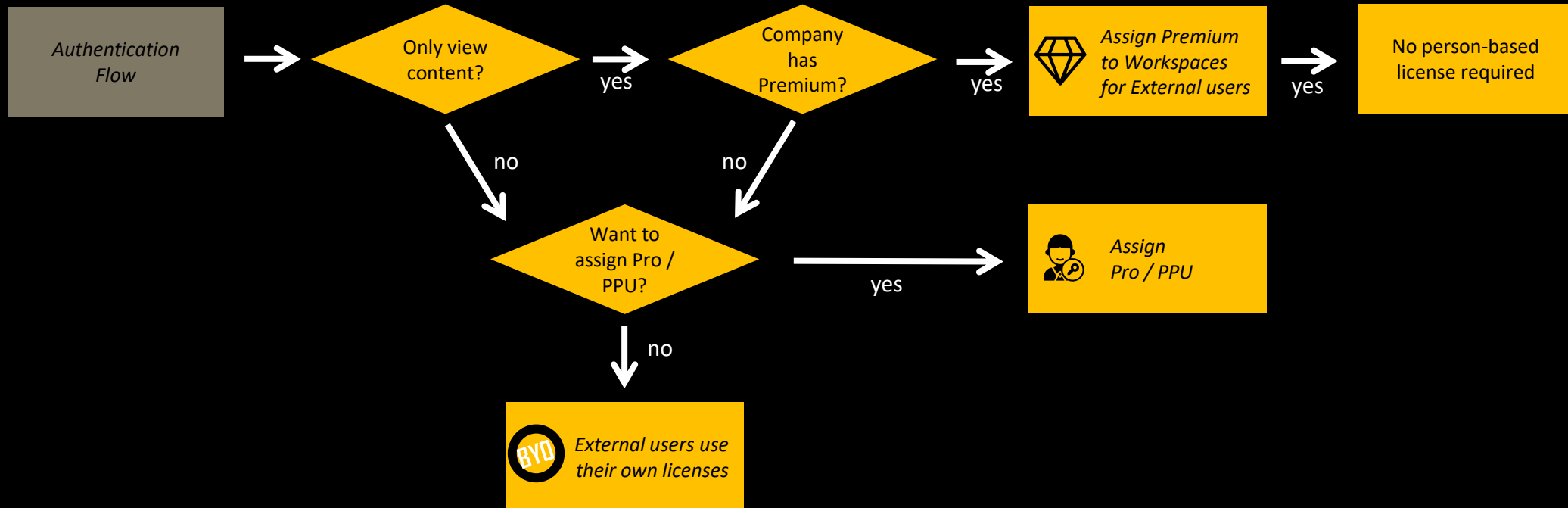


Hosting tenant assigns
Power BI Pro License



Guest users bring their own
Power BI Pro license

Licensing



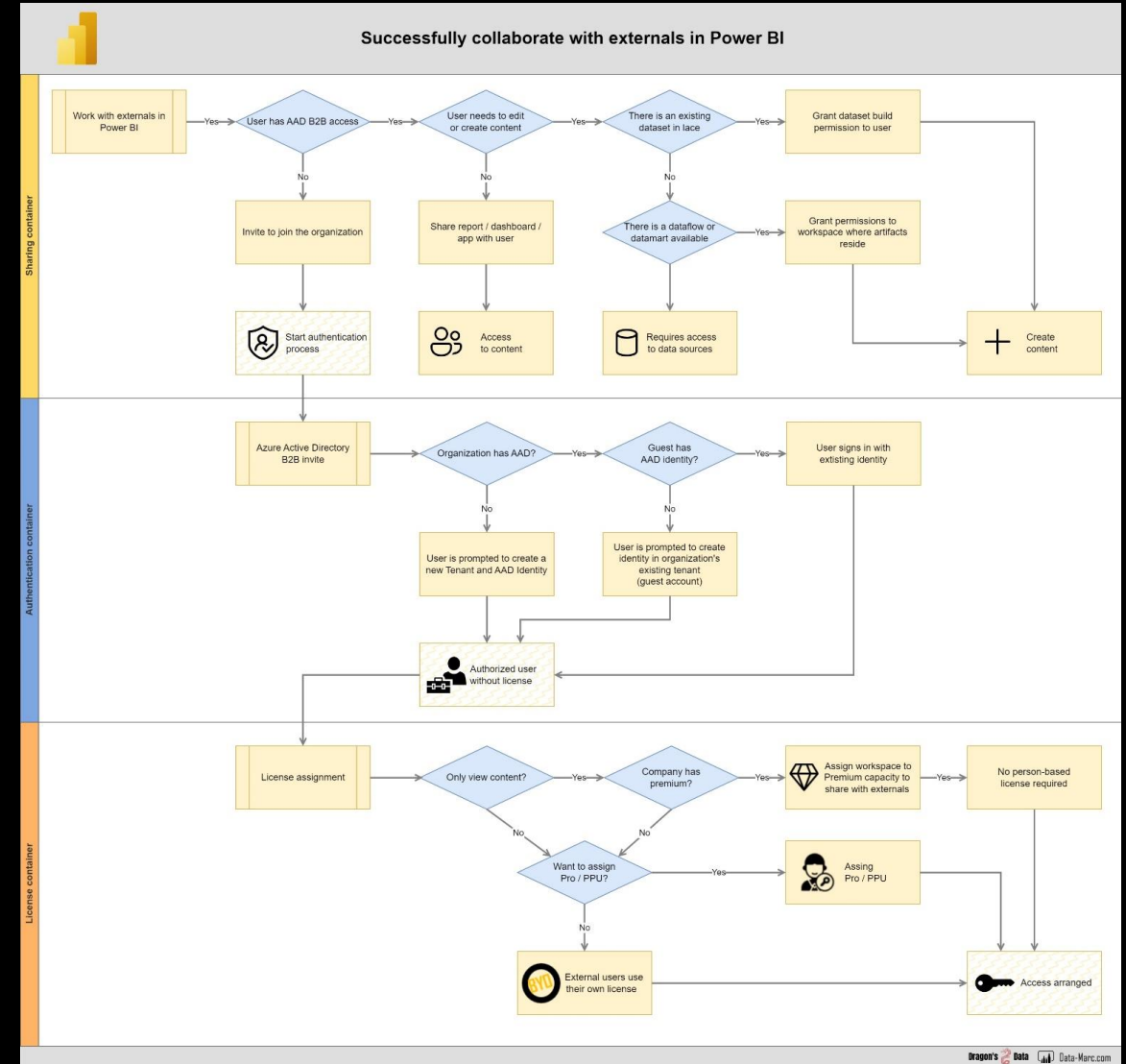


Wrap-Up & Remarks

Full Decision Tree



<https://bit.ly/PBIDecisionTree>





Things That Will Help You to Get Started

Think about the purpose of sharing. Do they just need to view the content or also build on top of it?

If you work with external vendors, you do not always need to provide internal user accounts – they can use their own.

Security 101: Principle of least privilege as possible.

Consider the way how you share content:
Apps / Direct share / Workspace / Dataset build permissions



Consideration & Limitations

Pro / PPU trial users won't be able to use this capability

If connected tenants are not in the same region, your data might cross regions

Cross-sovereign cloud scenarios are not supported

You cannot share from personal workspaces (my workspace)

Live connect to an externally located dataset is unsupported, all connections will be DirectQuery (*DirectQuery & composite model limitations apply*)

Resources



- Power BI Security whitepaper
<https://learn.microsoft.com/en-us/power-bi/guidance/whitepaper-powerbi-security>
- SQL Bits 2020 – Kasper de Jonge – Power BI security deep dive
<https://youtu.be/I-1atHWpQFE>
- Guy in a Cube - Publish from Power BI Desktop for external users
<https://youtu.be/x1xMxRXQ2So>
- Distribute Power BI externally using Azure Active Directory B2B
<https://learn.microsoft.com/en-us/power-bi/guidance/whitepaper-azure-b2b-power-bi>
- Overall decision tree to get started with external collaboration in Power BI <https://bit.ly/PBIDecisionTree>



Thank you for attending!


<https://feedback.dsmuc.de/>




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