

Reveal your Power BI platform: Tenant Manager and Data Access Catalogue

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2024

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Introduction





- ~15 years in IT
- **0**
- **Business Intelligence**

BI Consultant

Lead Engineer, Power BI platform owner & administrator at

ANDREA MARTORANA TUSA

~26 years in IT



Microsoft MVP, Data Platform



Data Geek and BI specialist

Product Manager, Power BI platform co-owner & administrator at







Agenda

- 1. Admin workspace
- 2. Purview vs custom solution
- 3. Tenant Manager
- 4. Data and Access Catalogue



Platform in numbers

Enterprise Solution



Self-Service Solution – the controlled part





Admin workspace

25 min.





Your troubles as Admin ...

- 1. Users left the company without handing over a report?
- 2. Who is owning a dataset/report?
- 3. Who can access a workspace? How can I limit or control access to it?
- 4.

What are YOUR troubles as Admin?

DEMO



Admin Monitoring workspace

The Admin monitoring workspace is designed to provide admins with monitoring capabilities for their organization. Using the admin monitoring workspace resources, admins can perform security and governance tasks such as audits and usage checks.

Two interesting reports:

- 1. Feature Usage and Adoption
- 2. Purview Hub Insights (Preview)



https://learn.microsoft.com/en-us/fabric/admin/monitoring-workspace

•	Admin monitoring		
<u>8</u> 1	Nanage access 🛛 🖏 Workspace settings		
C	Name	Туре	Owner
Ш	Feature Usage and Adoption	Report	Admin monitoring
::-	Feature Usage and Adoption	Semantic model	Admin Monitoring
Ш	Purview Hub	Report	Admin monitoring
::-	Purview Hub	Semantic model	Admin Monitoring



Admin Monitoring workspace

 \triangleright

DEMO



https://learn.microsoft.com/en-us/fabric/admin/feature-usage-adoption



Admin Monitoring workspace

 \triangleright

DEMO



https://learn.microsoft.com/en-us/fabric/governance/use-microsoft-purview-hub?tabs=admin-view



A user would like to get access to a report (or dashboard – he does not know what it is). He is not the owner of the object. He requested access but got no answer. He only knows:

- the report/dashboard name ('test1 excel')
- and the report/dashboard link

How do YOU find it?



DEMO

1. The easy way – use the link and see where it goes:

https://app.powerbi.com/groups/me/reports/bffbdf00-a1a1-438b-ae02-882b087957f2/ReportSection?ctid=656793e6-d51d-4bb2-b5fa-c66ddd181a40&experience=power-bi

Let's get you permission to view this report		×
Send a request for access below.		
Add a note (optional) ^		
Your optional note		
	Send request	Cancel



DEMO

2. Let's check Purview Hub \rightarrow Inventory Report (filter by item type and search by item name)

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Sometimes filters do not help you, remove item type. You can then find related dataset BUT dataset name are not always the same as report name. Better use **Item ID in 'Explore Data'** feature



DEMO

3. Let's check Purview Hub \rightarrow Inventory Report \rightarrow Explore Data (preview)

User may send you different links, but the object ID is somewhere there:

https://app.powerbi.com/groups/me/reports/bffbdf00-a1a1-438b-ae02-882b087957f2/ReportSection?ctid=656793e6-d51d-4bb2-b5fa-c66ddd181a40&experience=power-bi

Add filter Item ID is bffbdf00-a1a1-438b-i	ae0 × Item type is not bla	pe ×	Workspace name is not or (Blank)	e ×	
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□ test1 - excel					
⊖ Jolanta Garlacz					
PersonalWorkspace 10032000C6C	FC1D5				
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Use the user name or workspace name to find out more about the workspace status and if necessary, overtake it to get the report



Q&A





Purview vs custom solution

10 min.





What is missing admin workspace?

What is missing?

- 1. Historical records (Usage and Adoption).
- 2. No comparison to previous period for example last year to be checked.
- 3. Users' access and details.
- 4. Limited options of slicing and dicing data.
- 5. Data model is a black box



Our solution vs admin workspace

Why not Microsoft Purview/Admin workspace?

- 1. We wanted full control over our tenant and full governance over our data
- 2. We started the Tenant Manager project when Purview/admin WSP was at an early stage
- 3. Purview is still missing some metadata about Capacities, Apps, Gateways, ... (March 2024)
- 4. Purview is based on the same set of API we are running daily. The Scanner API but our is more up to date.
- 5. Active Directory data is not included in Purview. It is crucial for our assessment.
- 6. Endorsement and sensitivity labels for datasets, not available at the time we started.
- 7. Overall basic reporting on sensitivity labels but we needed more sophisticated solution
- 8. As a company we do not use Purview, we can only see insights available in Admin workspace. We do not have access to the full features that Purview offers.



Q&A





45 min.





The **Tenant Manager** is an in-house, fully automated solution to collect metadata for the <u>Power BI tenant</u>.

The data collection is achieved through a series of calls for the Power BI Admin APIs. The ouput of each call is saved, transformed and stored into a datawarehouse.



• ...

What kind of questions we want to address with the Tenant Manager?

- Give <u>high level overview</u> about our platform (Premium capacity, WSPs, SSBI vs Enterprise, users, real data and number of datasets and reports etc.) ...
- We can *drill through* to different levels of <u>WSPs or datasets</u> to validate if they are compliant
- Access who has access to what in our platform lineage <u>user-report-dataset-datasource</u>
- *Data catalogue* very important for our Self-service BI users
- Useful for *clean-up* exercise (important especially on Premium capacity)

The Tenant Manager goes along with the *adoption & measurement* metrics we collect from the <u>Power BI audit logs</u> to have a fully managed environment where all the data we need is stored is the same location.



What are we collecting?

Pandora's Power BI tenant metadata:

- Workspaces
- Workspace users
- Capacities
- Capacity admins
- Reports
- Dashboards
- Apps
- App users

- Dataflows
- Datasets
- Dataset Users
- Datasources
- Dataset refresh schedule
- Dataset refresh history
- ...



How do we collect? -> Through REST APIs

- Power BI API
 - Admin
 - Capacities
 - Datasets
- MS Graph API
 - AAD Groups
 - AAD Groups members
 - AAD Users
- **Power BI Scanner API** (we collect the same sets as Purview does)



Power BI REST API



https://learn.microsoft.com/en-us/rest/api/power-bi/



Power BI REST API

REST Operation groups

This table lists the Power BI REST API operation groups.

Operation group	Description
Admin	Operations for working with administrative tasks.
Apps	Operations for working with Apps.
Available Features	Operations that return available features.
Capacities	Operations for working with capacities.
Dashboards	Operations for working with dashboards.
Dataflow Storage Accounts	Operations for working with dataflow storage accounts.
Dataflows	Operations for working with dataflows.
Datasets	Operations for working with datasets.
Embed Token	Operations for working with embed tokens.
Gateways	Operations for working with gateways.
Groups	Operations for working with groups.
Imports	Operations for working with imports.
Pipelines	Operations for working with deployment pipelines.
Push Datasets	Operations for working with push datasets.
Reports	Operations for working with reports.
Template Apps	Operations for working with Template Apps.
Users	Operations for working with users.

https://learn.microsoft.com/en-us/rest/api/power-bi/



The **Power BI scanner API** is a set of admin APIs which allows you to collect and catalogue metadata from your tenant.

With the scanner API you can extract information about your entire Power BI tenant such as:

- Workspaces
- Datasets with details for each table
- Data sources
- Sensitivity label
- Endorsement status
- ...



Feedback

Scanner API

The scanner API set is made of four different REST APIs under the "Admin" domain

WorkspaceInfo GetModifiedWorkspaces WorkspaceInfo GetScanResult WorkspaceInfo GetScanStatus WorkspaceInfo PostWorkspaceInfo

- > Apps
- > Available Features
- > Capacities
- > Dashboards
- > Dataflow Storage Accounts
- > Dataflows
- > Datasets



- GetModifiedWorkspaces
- WorkspaceGetInfo
- WorkspaceScanStatus
- WorkspaceScanResult



Get Modified Workspaces

Gets a list of <u>workspace IDs</u> in the organization.

With parameters:

- excludeInActiveWorkspaces
- excludePersonalWorkspaces
- modifiedSince

The use of the parameter modifiedSince enables to return only the workspaces that are changed <u>after the set date-time</u>.

In this way you can perform an **incremental refresh** for your environment, rather than a full load every time you call the API.



Get Modified Workspaces

Sample request

GET https://api.powerbi.com/v1.0/myorg/admin/workspaces/modified?modifiedSince=2020-10-02T05:51:30.0000000Z&excludePersonalWorkspaces=True&excludeInActiveWorkspaces=True

Sample response



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Download PDF

Admin - WorkspaceInfo GetModifiedWorkspaces

Reference

Service: Power BI REST APIs API Version: v1.0

Gets a list of workspace IDs in the organization.

If the optional modifiedSince parameter is set to a date-time, only the IDs of workspaces that changed after that datetime are returned. If the modifiedSince parameter isn't used, the IDs of all works to see in the organization are returned. The date-time specified by the modifiedSince parameter must be in the range of 30 minutes (to allow workspace changes to take effect) to 30 days prior to the current time. Permissions

Limitations URI Parameters

A Feedback

Required Scope

Show more ∨

Permissions

The user must have administrator rights (such as Microsoft 365 Global Administrator or Power BI Service Administrator) or authenticate using a service principal.

When running under service principal authentication, an app **must not** have any admin-consent required permissions for Power BI set on it in the Azure portal.

Required Scope

Tenant.Read.All or Tenant.ReadWrite.All

Relevant only when authenticating via a standard delegated admin access token. Must not be present when authentication via a service principal is used.

Limitations

Maximum 30 requests per hour.





Graph API

Microsoft 365 Platform



Microsoft Graph is a Microsoft API developer platform that connects multiple services and devices such as Windows, Microsoft 365, Azure ...

https://learn.microsoft.com/en-us/graph/api/overview

https://en.wikipedia.org/wiki/Microsoft_Graph



Graph API

76	Filter by title
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	> Corporate management
	> Service health and communications
>	Education
>	Extensions
>	Files
>	Identity and access
>	Mail
>	Notes
>	People and workplace intelligence
>	Personal contacts

Version

Learn /

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Microsoft Graph REST API v1.0 endpoint reference

Article • 07/01/2022 • 2 minutes to read • 10 contributors

Feedback

Welcome to Microsoft Graph REST API reference for the v1.0 endpoint.

API sets on the v1.0 endpoint (https://graph.microsoft.com/v1.0) are in general availability (GA) status, and have gone through a rigorous review-and-feedback process with customers to meet practical, production needs. Updates to APIs on this endpoint are additive in nature and do not break existing app scenarios.

Common use cases

The power of Microsoft Graph lies in easy navigation of entities and relationships across different services exposed on a single Microsoft Graph REST endpoint.

A number of these services are designed to enable rich scenarios around a user and around a group.

User-centric use cases in v1.0

- 1. Get the profile and photo of a user, Lisa.
- 2. Get the profile information about Lisa's manager and IDs of her direct reports, all stored in Azure Active Directory.
- 3. Access Lisa's files on OneDrive for Business, find the identity of the last person who modified a file there, and navigate to that person's profile.
- 4. Access Lisa's calendar on Exchange Online and determine the best time for Lisa to meet with her team in the next two weeks.
- 5. Subscribe to and track changes in Lisa's calendar, tell Lisa when she is spending more than 80% of her time in meetings.
- 6. Set automatic replies when Lisa is away from the office.
- 7. Get the people who are most relevant to Lisa, based on communication, collaboration, and business relationships.
- 8. Get the latest sales projection from a chart in an Excel file in Lisa's OneDrive for Business.
- 9. Find the tasks assigned to Lisa in Planner.

https://learn.microsoft.com/en-us/graph/api/overview?view=graph-rest-1.0

Graph API

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See more queries in the <u>Microsoft Graph API Reference docs</u>					
> Getting Started (8)					
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When you use Microsoft Graph APIs, you agree to the Microsoft APIs Terms of Use. View the Microsoft Privacy State	ment-				×
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Company



Solution blueprint





Logic Apps



The full set of API calls is handled through two Logic Apps: one for **Power BI**, one for MS **Graph**.

Logic Apps are fully parameterized and can handle several cases in the same app, based on the input parameters.



Why using Logic App, rather than pipelines for calling the API? Because they are way cheaper!

B Power BI Logic Apps



$\underset{\text{\tiny DEMO}}{\textcircled{\tiny DEMO}} MS \ Graph \ Logic \ App$

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Transformation





Data Model



Demo Data Warehouse

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Q&A





Data and Access Catalogue

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Tenant Manager Model





Data and Access Catalogue

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DEMO





Data and Access Catalogue

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Apps

Datasets

Reports

Groups



Q&A





Session evaluation



Event evaluation

