

Extending Fabric Monitoring for custom requirements

Marc Lelijveld and Iqbal Khan

04/01/2025

Why monitoring? Monitoring can help with:



Best practice and policy enforcement



Audit and compliance

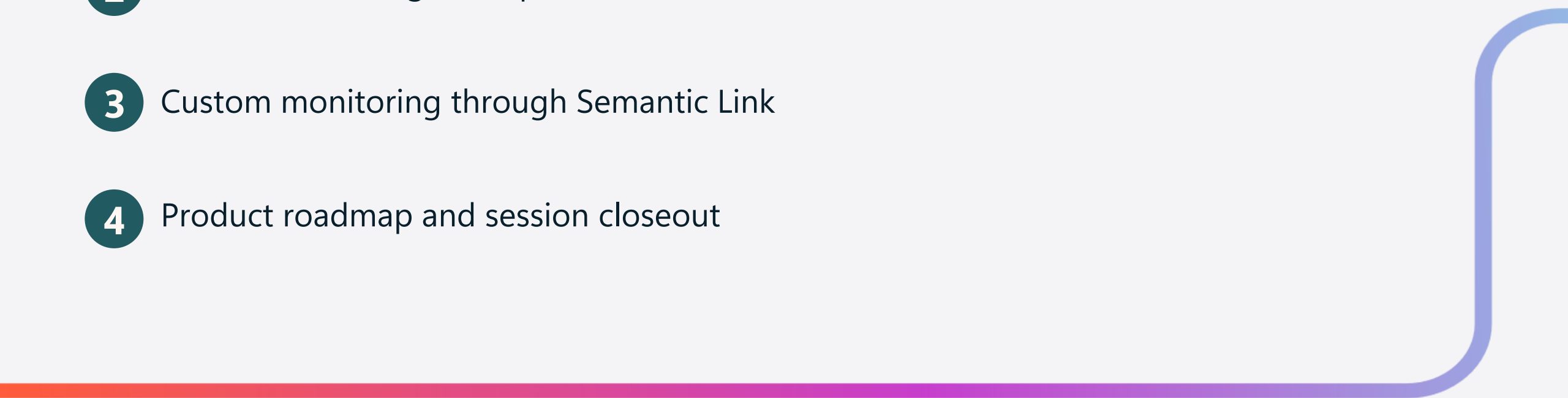


Efficiency and reusability



Cost optimization

Agenda - Extending Fabric Monitoring for custom requirements

- 1 Why monitoring? What are my options?
 - 2 Admin monitoring workspace
 - 3 Custom monitoring through Semantic Link
 - 4 Product roadmap and session closeout
- 

Presenters

Marc Lelijveld

Technical Evangelist & Data Platform MVP



- Joined Macaw in 2018
- Accidental Fabric Administrator at various enterprise clients
- Previously only focused on Power BI, till Fabric came along!
- Based in a tiny town next to Gouda - Netherlands



Presenters

Iqbal Khan

Admin Monitoring – Reporting Lead

- Joined Microsoft in 2021 as a Power BI architect
- Moved to Fabric engineering in 2023
- Previously spent time at Deloitte, EY, and Calendly in various engineering roles
- Based in NYC with my wife Kellie and cat Jax
- Currently pursuing Masters of Analytics at UW-M



Why monitoring?

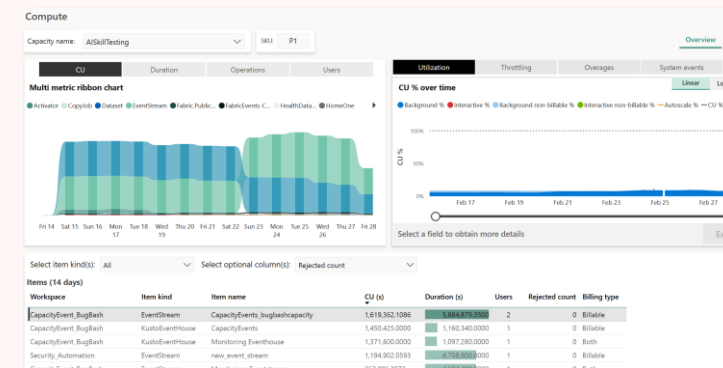
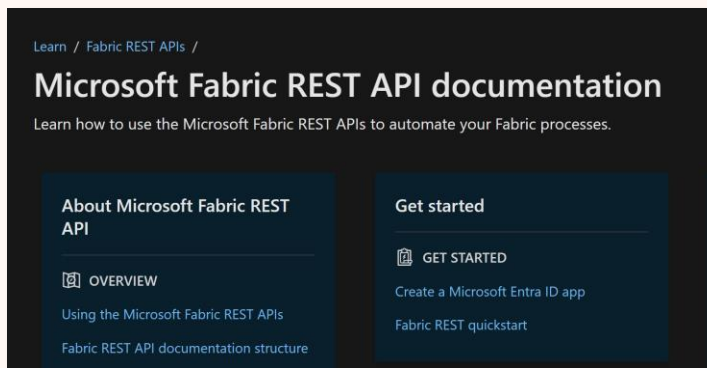
As organizations continue to expand their use of Fabric, it is critical to have a governance strategy in place to ensure secure and effective use of your data.

Monitoring can help with:

- Understanding data solutions needed to support business
 - Ensuring safe and secure use of data
 - Maximizing Fabric return on investment
 - Reducing data outages
 - Enforcing best practices and organizational policies
- ...and much more!



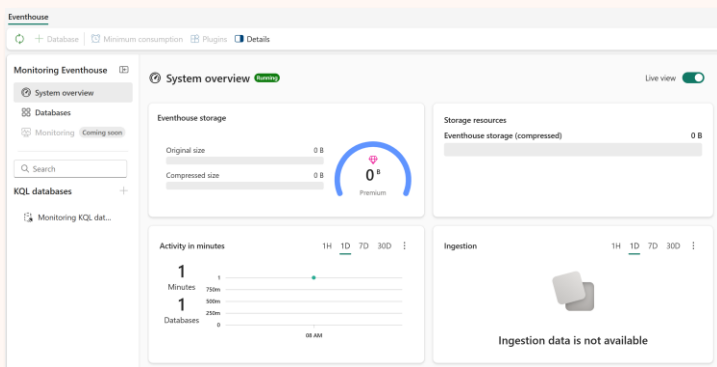
Which monitoring solution is right for me?



Admin monitoring – Out of the box reports on key governance scenarios | **Admin**

APIs – Flexible, programmatic data extraction & automation | **Admin\Developer**

Capacity Metrics App – Capacity management and resource planning | **Tenant\Capacity Admin**



Name	Owner	Item	Workspace
capacity_utilization_event_stream-stream	Fabric Admin	capacity_utilization_event_st	CapacityEvent_Bugbash
new_event_stream-stream	Fabric Admin	new_event_stream	Security_Automation
Weather	Fabric Admin	OsherEventhouse	osher222
Monitoring_Eventstream-stream	—	Monitoring_Eventstream	CapacityEvents_Demo
Monitoring_Eventstream-stream	—	Monitoring_Eventstream	CapacityEvent_Bugbash
CapacityEventAll	Fabric Admin	CapacityEvents	CapacityEvent_Bugbash
CapacityEvents_bugbashcapacity-stream	Fabric Admin	CapacityEvents_bugbashcap	CapacityEvent_Bugbash
azure_storage_event_stream_6-stream	Fabric Admin	Varun_test	Varun_test

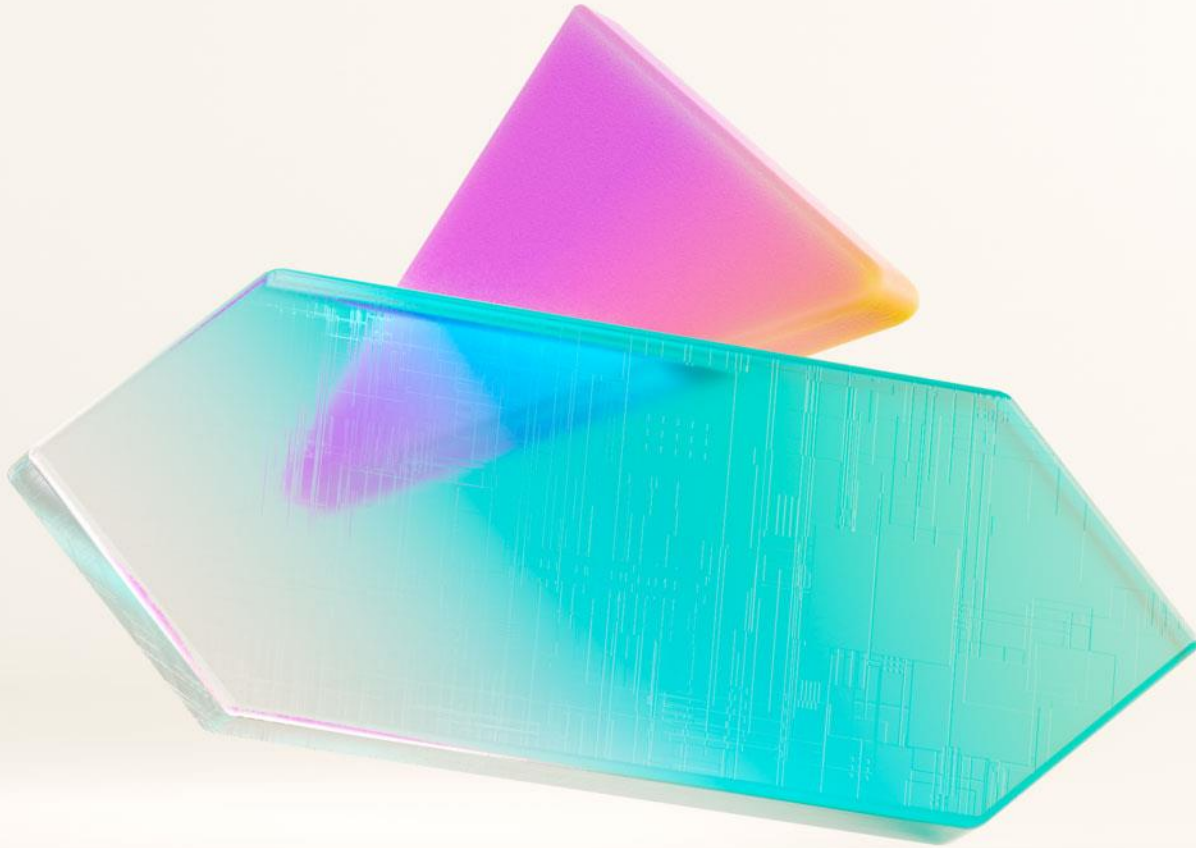
Name	Type	Owner	Refreshed	Location	Endorsement
OneLake catalog governance repo...	Semantic model	Fabric Admin	2/28/25, 8:27:26 ...	My Workspace	—
Monitoring Eventhouse	Eventhouse	—	—	ADMIN AND GOV P...	—
FeatureUsageAndAdoption 6	Semantic model	Fabric Admin	2/28/25, 7:55:58 ...	Admin Analytics (D...	—
App Id App Name Artifact UH Add...	Semantic model	Fabric Admin	2/28/25, 7:37:5 ...	Admin Analytics (D...	—
AmazonPurchases2016	Semantic model	Fabric Admin	1/15/25, 4:46:42 ...	kv12	—
FinancialPEX (1) 2	Semantic model	Fabric Admin	1/2/25, 6:11:03 ...	V2W5-Raki-02-01-25	—
Corporate Spend	Semantic model	Fabric Admin	1/2/25, 2:00:56 ...	V2W5-Raki-02-01-25	—
sample file	Semantic model	Fabric Admin	10/9/24, 4:28:57 ...	ad_09_Oct	—
RetailAdair	Semantic model	Fabric Admin	10/16/24, 12:3...	IgniteDemo2024	—

Workspace Monitoring – Diagnostic logging for Fabric items | **Developer**

Real Time Hub – Event streaming for Fabric workloads for responsive actions | **Developer**

OneLake catalog – Actionable lens into your data estate | **Developer**

Microsoft Fabric



Admin Monitoring
workspace

What preceded the Admin monitoring workspace?



Activity Events API / Scanner API / etc.



3rd party solutions – PBI monitor, GitHub projects



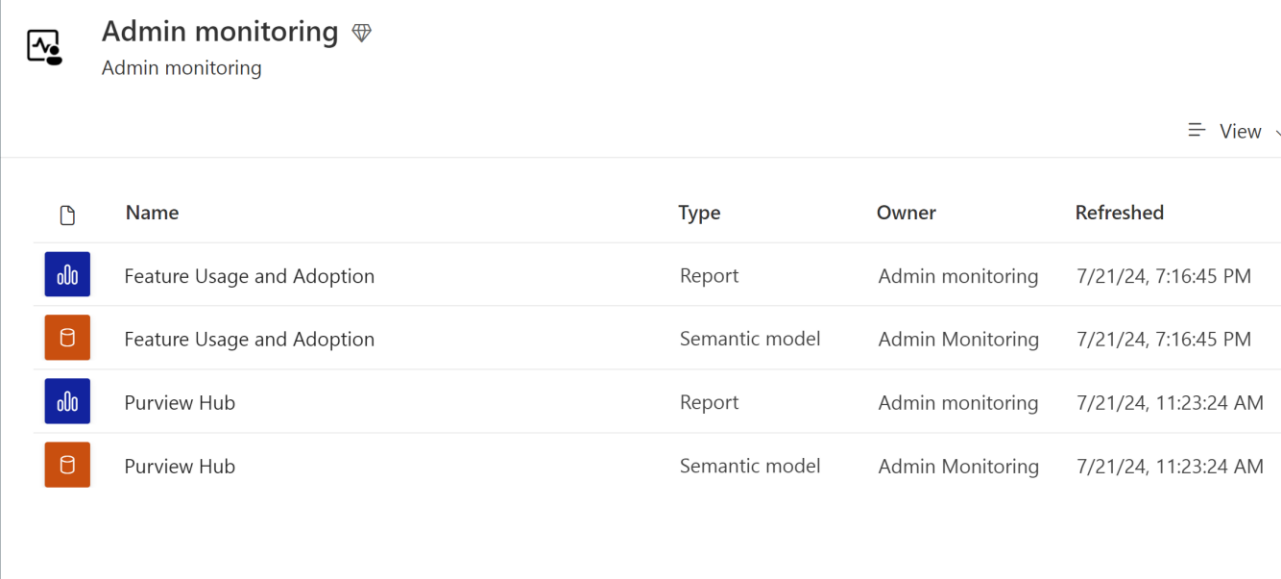
Admin portal Usage Metrics dashboard







Usage Metrics v1/v2

What is the Admin monitoring workspace? (public preview)

- **One-stop shop** for enterprise reporting and analytics
- Includes **out of the box reporting** focused on Fabric tenant management scenarios
- Also includes **semantic models for customization**
- Available to **all tenants** regardless of licensing type or total # of users



The screenshot displays the 'Admin monitoring' workspace interface. At the top, there is a header with a monitor icon, the title 'Admin monitoring', and a subtitle 'Admin monitoring'. A 'View' button is located on the right side of the header. Below the header is a table with the following columns: 'Name', 'Type', 'Owner', and 'Refreshed'. The table contains four rows of data, each with a small icon to the left of the 'Name' column.

	Name	Type	Owner	Refreshed
	Feature Usage and Adoption	Report	Admin monitoring	7/21/24, 7:16:45 PM
	Feature Usage and Adoption	Semantic model	Admin Monitoring	7/21/24, 7:16:45 PM
	Purview Hub	Report	Admin monitoring	7/21/24, 11:23:24 AM
	Purview Hub	Semantic model	Admin Monitoring	7/21/24, 11:23:24 AM

Who is the workspace intended for?



Global admins and Fabric administrators



Capacity admins and domain admins



"Power users" such as multi-workspace admins, COE leads

How does it all work?



- Data queried from multiple sources, transformed, and landed in a single repository specific to each tenant



- Managed, automated data refresh of all semantic models



- Out of the box reporting and curated semantic models made readily available via the workspace



Demo (Iqbal):

- Workspace overview
- Highlight different sharing options, workspace caveats



Feature Usage and Adoption report

Feature usage and adoption report (public preview)

Leverages audit to help understand how various Fabric features are utilized across their tenant.

Audit-focused

- Understand **what activities are occurring** in your tenant, by whom, on which item, and where
- Audit combined with tenant inventory for understanding your **most heavily-utilized and 'dormant' items**
- Investigate activities by **home tenant and external guest users**
- **Analyze custom scenarios** via drill through pages and flexible visuals (e.g. decomp tree)





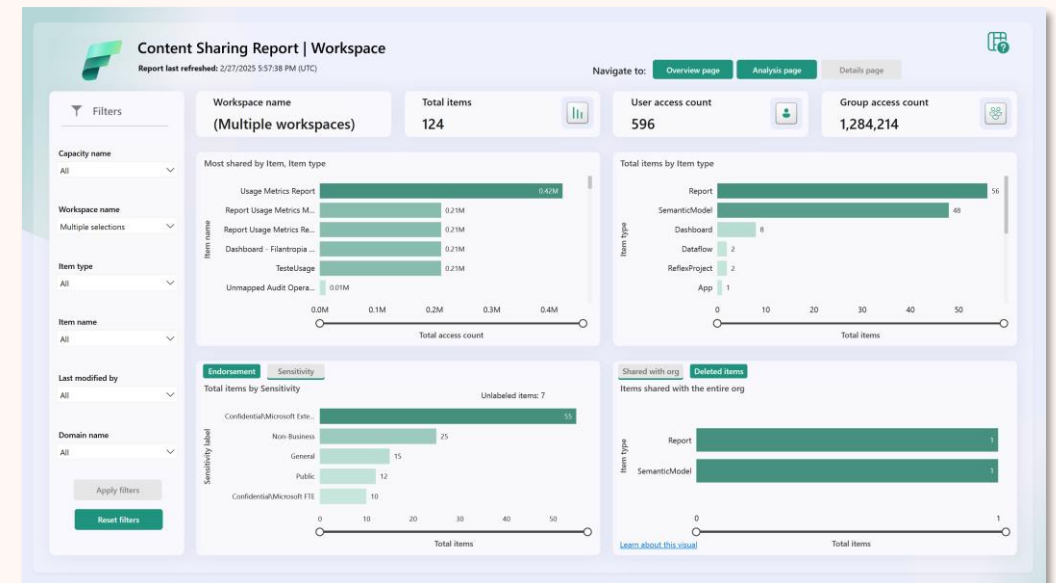
Content Sharing report

Content Sharing report (public preview)

Leverages metadata to help understand how items are distributed and shared across the org.

Inventory-focused

- Provides a **comprehensive view** of your Fabric inventory, cross-sectioned by capacity, workspace, domain, and more
- Items include **user and group access count figures** to highlight widely-shared items
- Quickly identify items that have been **deleted or shared with the entire org** through sharing links
- Navigate from report to URL to **take action as needed**



Microsoft Fabric



Customization

Perfect – yet imperfect...

There are always custom requirements!



What Microsoft provides

- Platform structure and governance, like capacities, domains and workspaces
- Item metadata, describing platform artifacts
- Audit logs, showing facts about usage and adoption of the platform



What needs customization

- Organizational structure
- Licensing (part of M365 admin)
- Cost monitoring components (capacity cost)
- Extensions to monitor cross-platform adoption



Demo (Iqbal):

- Connect to AM models in the Service to build custom reports
- Use "Explore" feature to create quick analyses

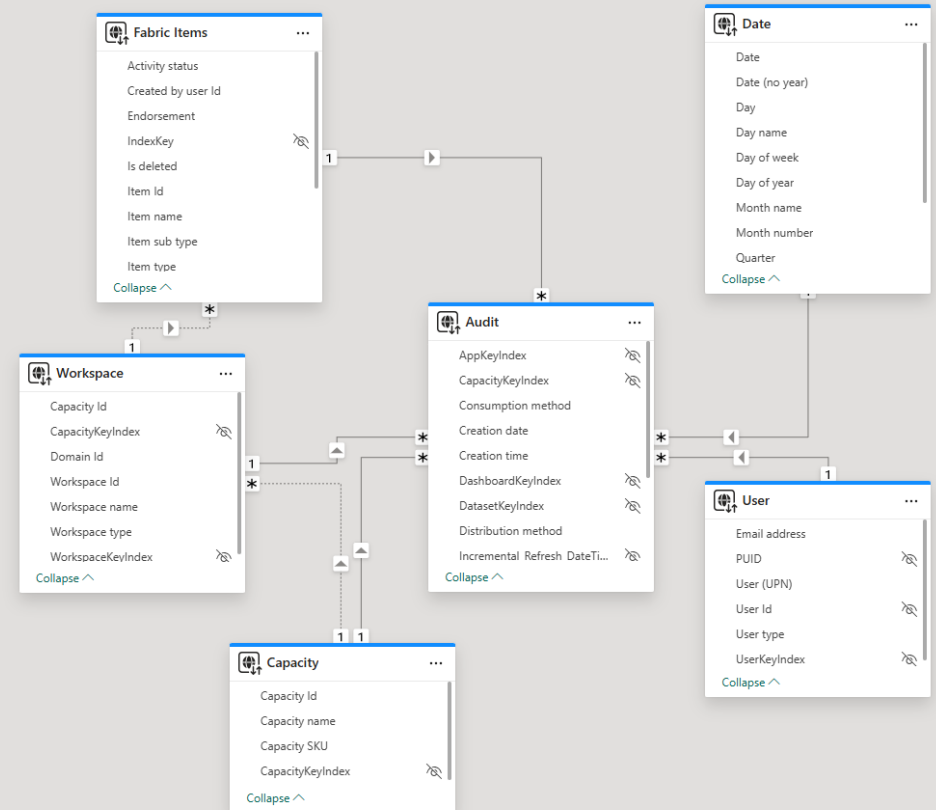
Enriching with your own data

Composite models

What are composite models:

- The ability to connect to Power BI semantic model and Azure Analysis Services models using DirectQuery you can now build a composite model using these sources.
- In composite models you combine 2 or more **source groups** in a single semantic model

Notice all tables are in the same storage mode →

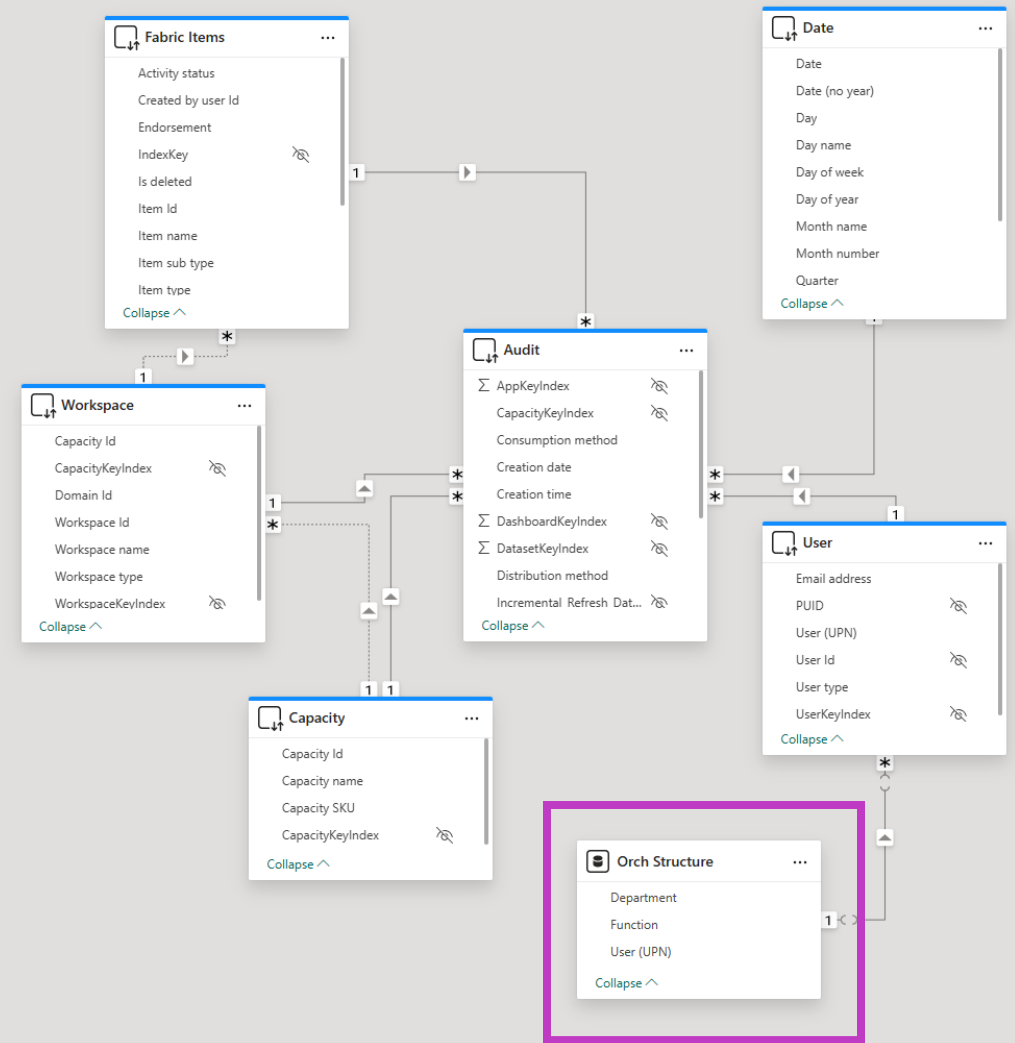


Enriching with your own data

Source groups

What are source groups:

- Source group – everything loaded from one Direct Query source
(Any additional Direct Query source, will be a separate source group)
- All import tables and calculated tables are in one source group
(e.g., Orch. Structure table)





Demo (Marc)

- Connect to models via Desktop / creating a composite model
- Adding additional dimensions for custom reporting

Microsoft Fabric



Go the extra mile!

Admin monitoring FAQ's

FAQs:

- Hosted on Pro but can be moved to capacity
- 30 days of "fact" AKA transactional data
- Metadata reflects from previous day's snapshot, retained for 30 days post deletion
- Reports take ~5 min to refresh with data upon initial install, will appear blank at first

Limitations / Considerations:

- Models can be further customized via composite model, but not edited
- Re-init required via Delete API to remove workspace, report, or model shares (but not links)

Extending Admin monitoring



Goals

- Easily combine data like org. hierarchy
- Trend analysis
- Long term storage of data



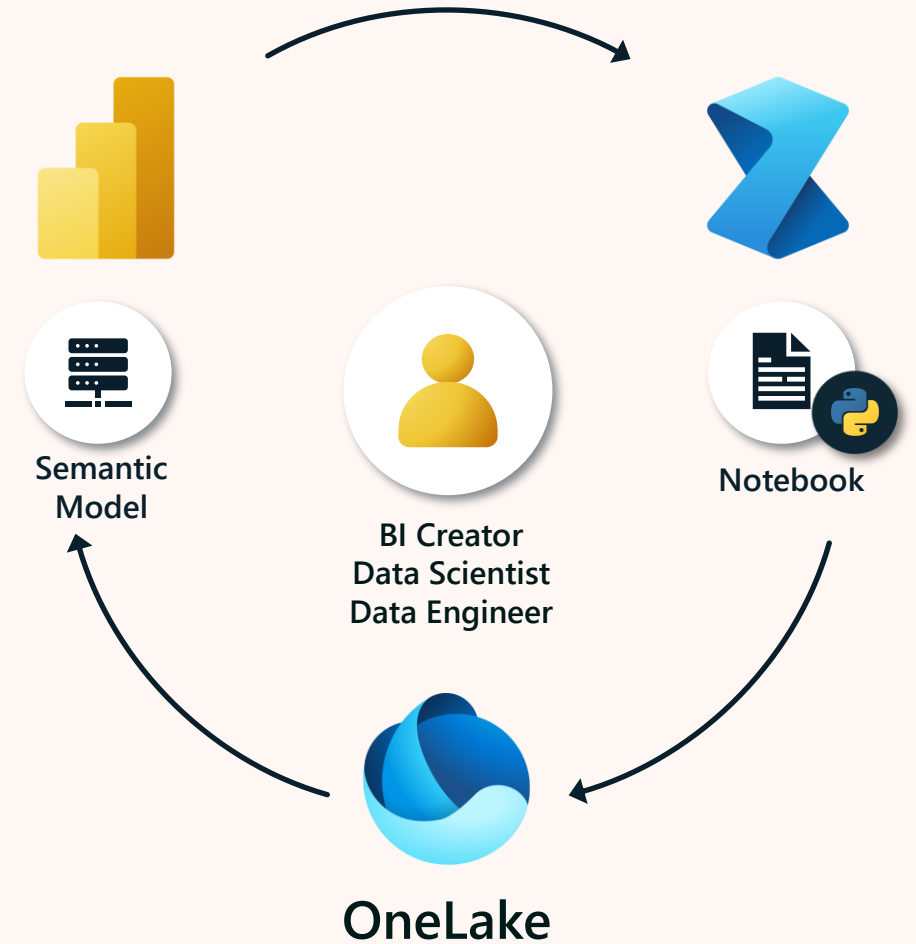
Non-goals

- Exporting to unmanaged files and carriers (like Excel)
- Distribute data across the organization

Introduction to Semantic Link

Semantic Link is a feature in Microsoft Fabric that allows you to connect from Data Science **Notebooks** to Power BI Semantic Models.

This feature **only** exists and works in Microsoft Fabric.



Semantic Link – Power BI use cases

Power BI general

- Documenting Power BI items
- Move Power BI items across workspaces
- Detect broken reports
- Rebind reports
- Set a report theme
- Migration of report-level measures to the semantic model
- Tenant Settings tracking

Semantic Models

- Best Practice Analyzer
- Vertipaq Analyzer
- Semantic model edits (TOM)
- Metadata translations
- Semantic model refresh
- Visualize a refresh
- Semantic model backups
- Run DAX with impersonation
- Manage Query Scale Out

Direct Lake

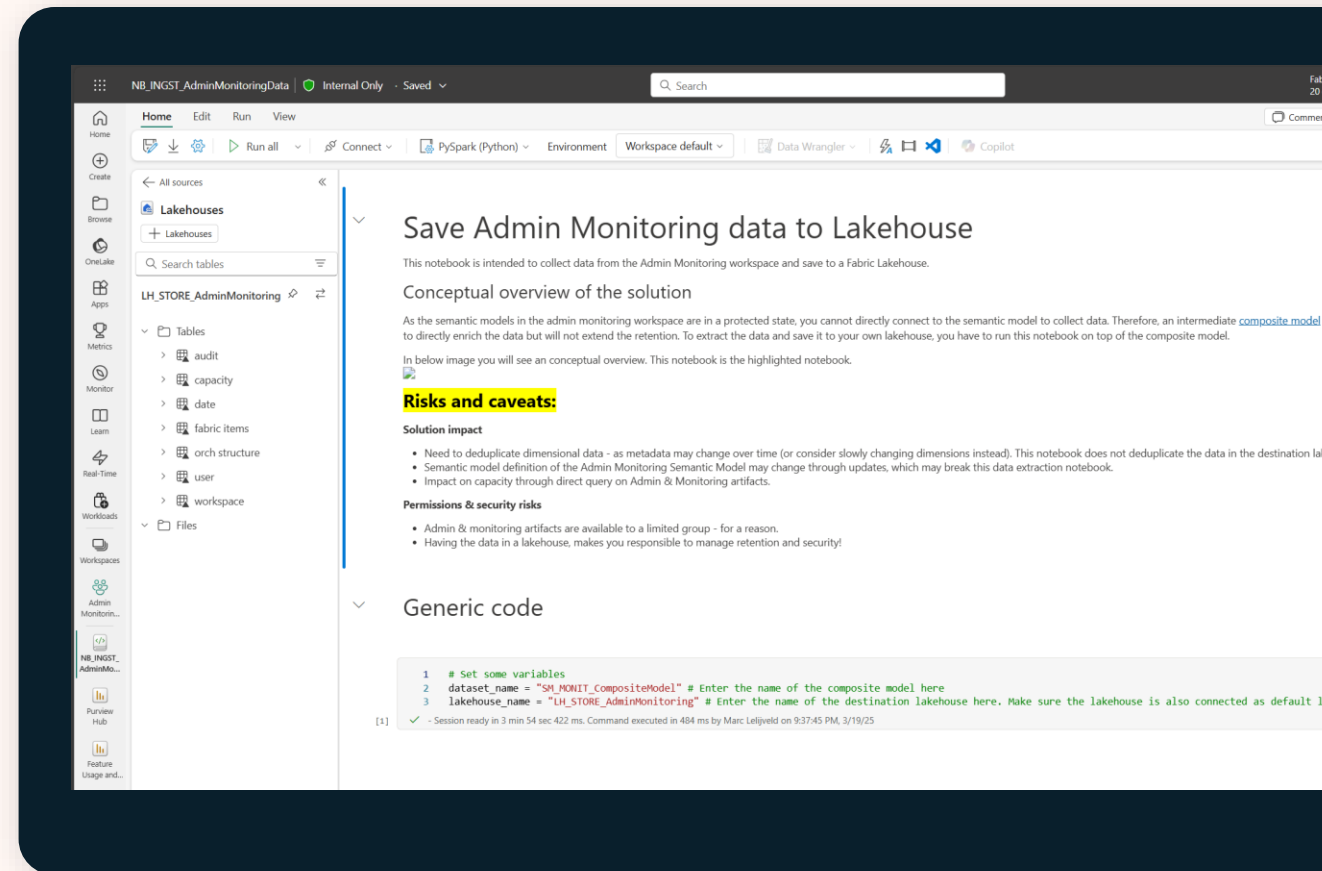
- Migration to Direct Lake
- Check Direct Lake guardrails
- Warm the cache for Direct Lake
- Analyze Delta tables for Direct Lake
- Fallback to DirectQuery diagnostics
- Update connection of a Direct Lake semantic model

Capacities

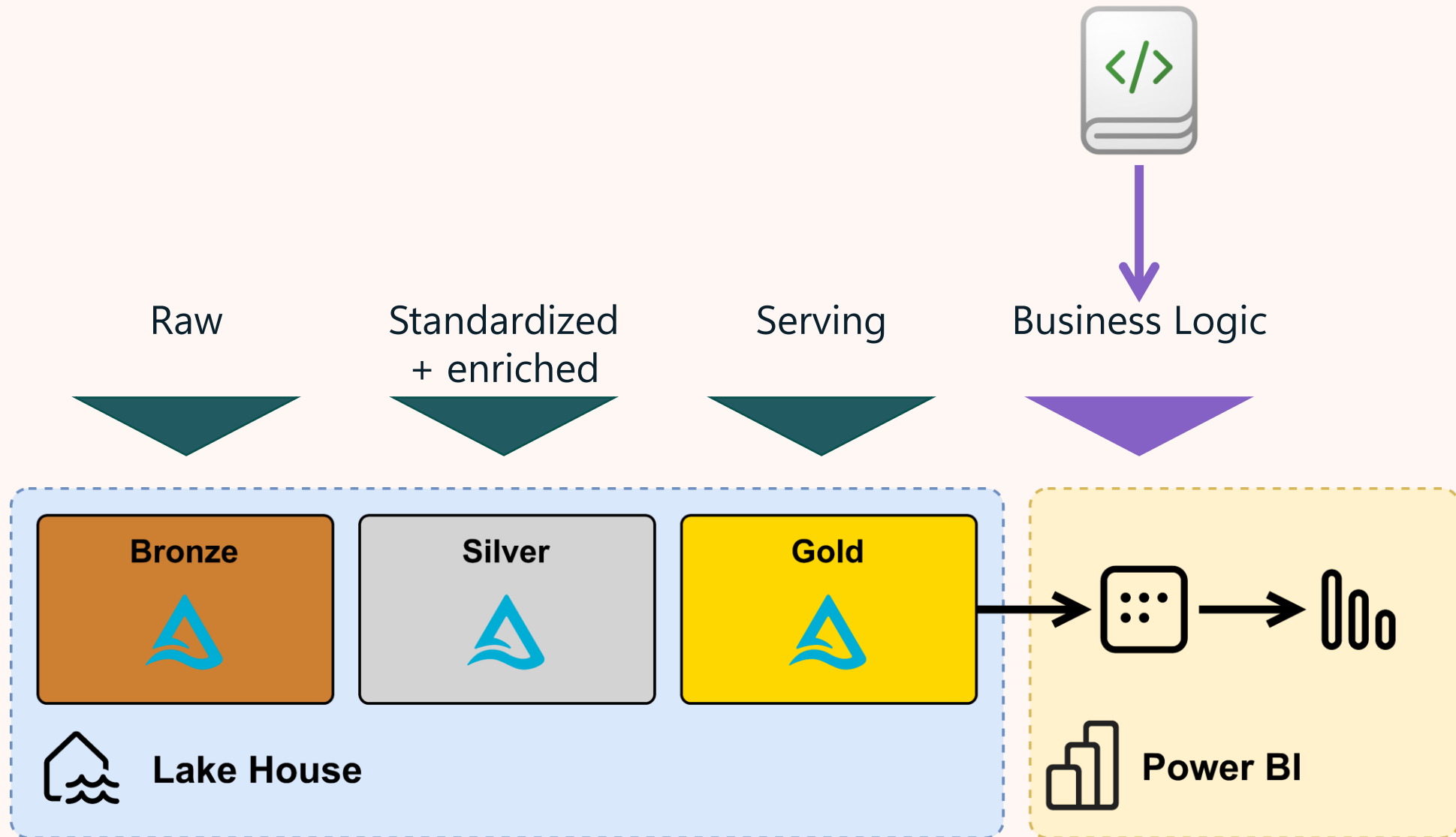
- Migration from P SKUs to F SKUs
- Migration from FT SKUs to F SKUs
- Capacity management

Quick look at Notebooks

- Code first
- Web-based interface
- Cell based code blocks
- Runs on nodes (part of Fabric capacity)
- Often used languages are Python, Spark & Markdown
- Used by data engineers for data ingest, prep and transformations
- Used by data scientist for experiments and models

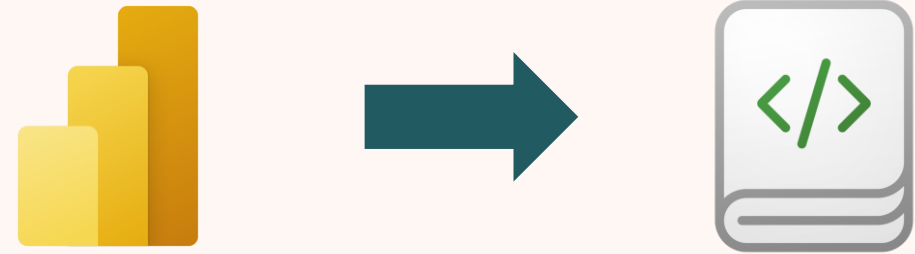


Semantic Link – Positioning (conceptual)



Semantic Link - Connectivity

Default uses the Power BI REST API. For certain operations, the XMLA endpoint might be more useful. With *use_xmla=True* you can direct the connection of XMLA.



*Semantic Models can be in read-only mode.
Work-around may be needed.*

Python

 Copy

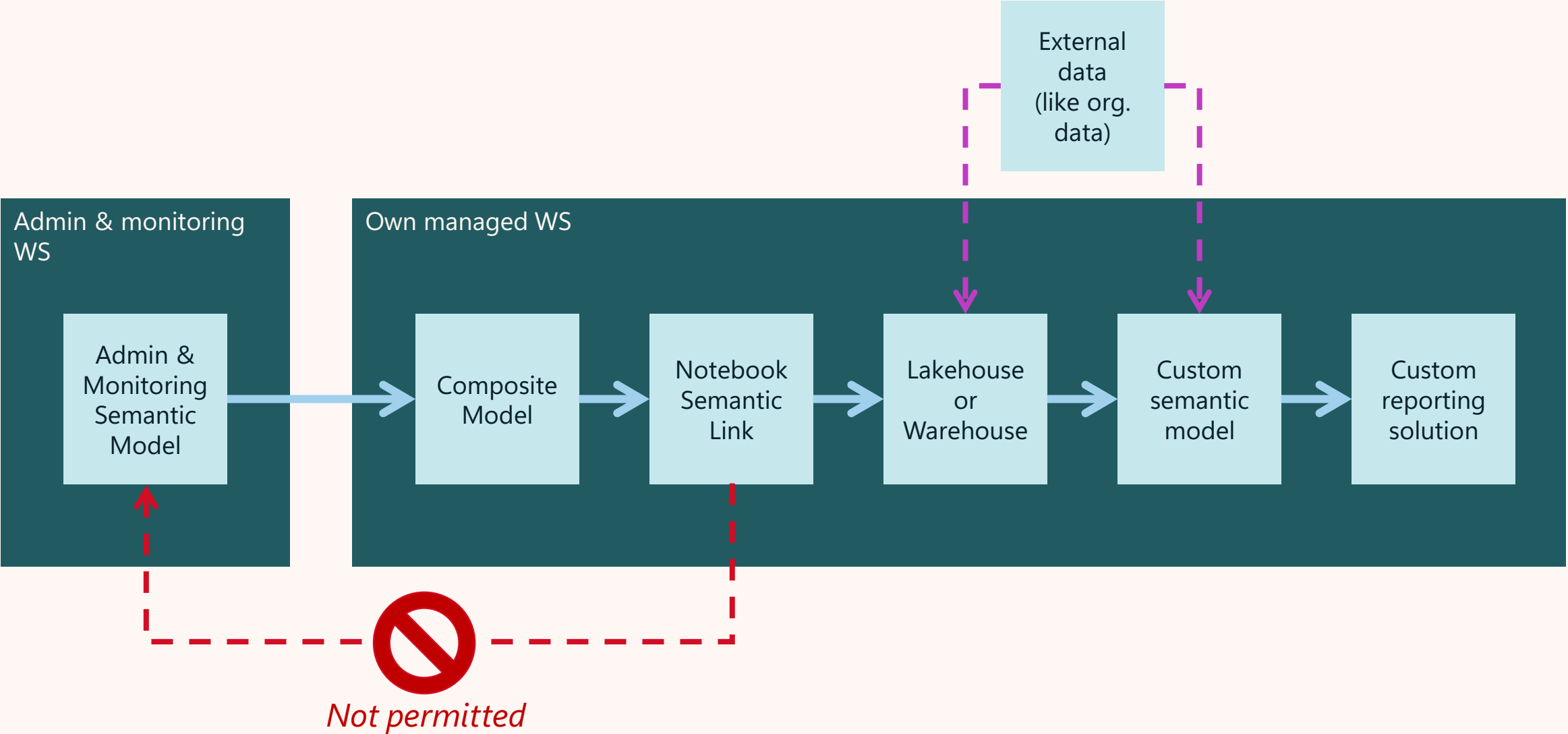
```
fabric.evaluate_measure(dataset, \
    measure=["Average Selling Area Size", "Total Stores"], \
    groupby_columns=["Store[Chain]", "Store[DistrictName]", \
    filters={"Store[Territory]": ["PA", "TN", "VA"], "Store[Chain]": ["Lindseys"]}, \
    use_xmla=True)
```



Demo (Marc)

- Connect to Admin monitoring model through semantic link
- Extend data retention

Overview solution (conceptual)



Risks and caveats

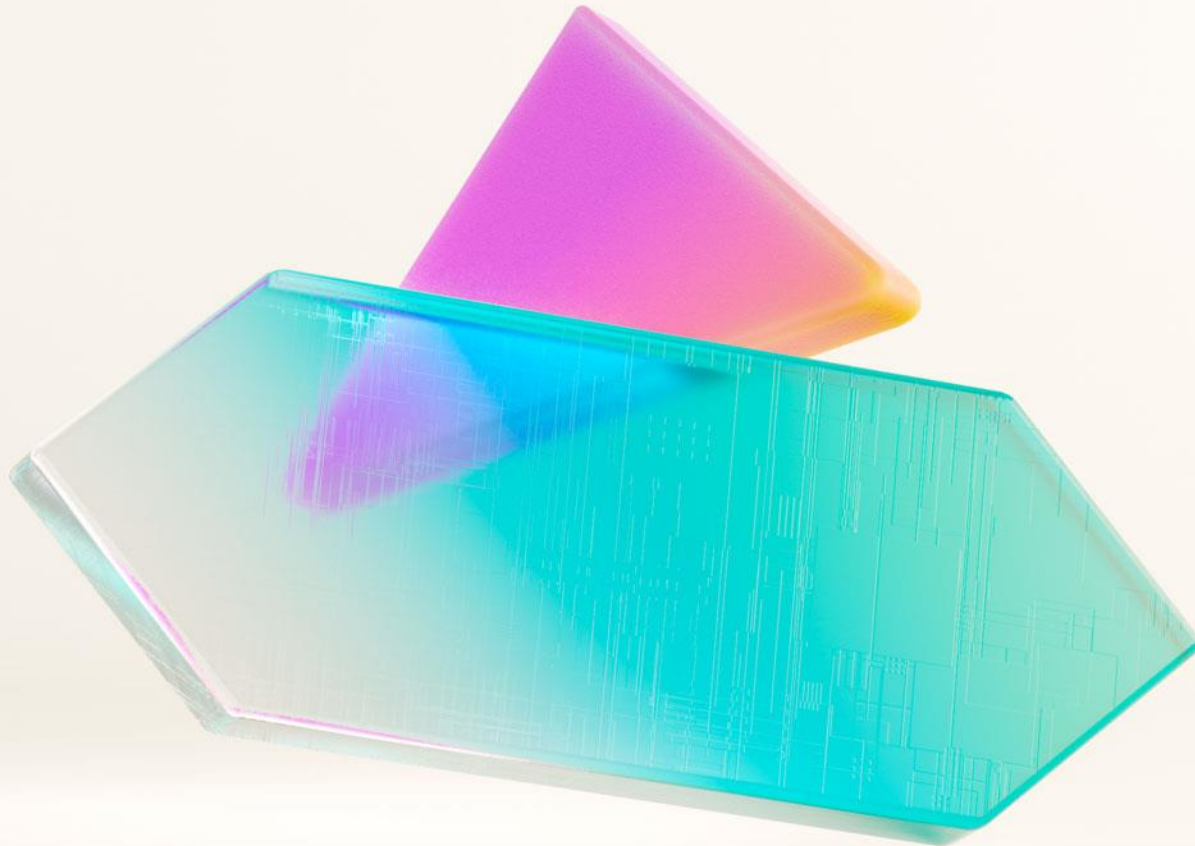
Solution impact

- Need to **deduplicate** dimensional data – as metadata may change over time (or consider slowly changing dimensions instead)
- Semantic model definition may **change** through updates, which may **break** your data extraction notebook
- Impact on **capacity** through DirectQuery on Admin Monitoring artifacts

Permissions & security risks

- Admin monitoring artifacts are available to a **limited group** – for a reason
- Having the data in a lakehouse makes you responsible to manage **retention** and **security**!





Appendix / Round-up

What's next for Admin monitoring?

As we continue maturing the workspace, here's what's on our mind:

- 1 **New reports**
 - 2 **Expanding existing reports** – More dimensions, deeper analysis, RLS support
 - 3 **Extended data retention**
 - 4 **Continued consolidation** – Other monitoring experiences migrated into AM
 - 5 **Increased promotion** – Videos, blog posts, certification modules
- 

Additional links and resources

Public docs:

- Admin Monitoring Workspace
<https://learn.microsoft.com/en-us/fabric/admin/monitoring-workspace>
- Feature Usage and Adoption Report
<https://learn.microsoft.com/en-us/fabric/admin/feature-usage-adoption>
- GitHub with sample scripts
<https://github.com/marclelijveld/Fabric-Automation/>

Reach us at: AdminMonitoring@microsoft.com

Other monitoring solutions to check out

Session: Enterprise Scale - Administer and Govern Fabric with Ease

Fabric Platform



Tweet



Share



Share



Email

Discover the future of enterprise-scale administration and governance with Microsoft Fabric. This session will showcase the latest capabilities and features designed to simplify the administration, management and governance of Fabric at an enterprise level. Learn about our vision for admin controls and how existing tools and new enhancements can help you maintain control and compliance while leveraging the full potential of the platform. Get timely updates on the latest developments and best practices for administering Fabric, ensuring your organization can effectively manage its digital infrastructure

PRESENTED BY:



Arthi Ramasubramanian Iyer
Partner Director Product
Microsoft



Varun Jain
Product
Microsoft Fabric

Type
Session

Administer and Govern Fabric with Ease

by Arthi Iyar and Varun Jain
([Session Link](#))

Session: What's New in Fabric Capacities

Fabric Platform



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Capacities are the foundation for all Microsoft Fabric workloads. This session will provide an overview of what's new in Fabric Capacities. For instance, we will talk about:

- Surge Protection to help you get ahead of capacity outages
- Improvements to monitoring and observability in Capacity metrics, e.g., tools to help you monitor your capacity in real time through the Real Time Hub (RTH)
- Customer pain points and tips to help you better manage your capacities at scale

PRESENTED BY:



Lukasz Pawlowski
Principal Program Manager
Microsoft



Ope Aladekomo
Principal Group Product Manager
Microsoft

Type
Session

What's new in Fabric Capacities

by Lukasz Pawlowski and Ope Aladekomo
([Session Link](#))

Additional links and resources

Public docs:

- Admin Monitoring Workspace
<https://learn.microsoft.com/en-us/fabric/admin/monitoring-workspace>
- Feature Usage and Adoption Report
<https://learn.microsoft.com/en-us/fabric/admin/feature-usage-adoption>
- GitHub with sample scripts
<https://github.com/marclelijveld/Fabric-Automation/>

Reach us at: AdminMonitoring@microsoft.com