

# Power BI Usage Metrics

Using log analytics to provide usage across a tenant

Number of Views (by Day & Time)

Time Period	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
00:00 - 00:59	18	4	1	2			6
01:00 - 01:59	2	1	2	2			
02:00 - 02:59			1		5		2
03:00 - 03:59		1	1				
04:00 - 04:59		4	1		2		6
05:00 - 05:59	8	3	10	9	1		5
06:00 - 06:59	19	36	25	25	17	11	17
07:00 - 07:59	43	97	84	93	54	28	35
08:00 - 08:59	251	205	166	195	109	50	59
09:00 - 09:59	325	256	257	208	141	47	44
10:00 - 10:59	215	179	137	165	83	25	35
11:00 - 11:59	147	141	114	131	58	27	25
12:00 - 12:59	178	156	153	124	127	21	26
13:00 - 13:59	158	115	129	64	100	17	27
14:00 - 14:59	154	118	143	149	64	17	37
15:00 - 15:59	210	93	113	113	72	14	20

Number of Views by Top 10 Directorates



# Why Usage Metrics?

## 1 Platform Administration

Support platform administration allowing team to decide which reports could be deprecated.

## 2 Manage Usage

Encouraging usage might be a training issue or it could be a case of improving communication in certain areas of the business.

## 3 Traffic

Understand user traffic across the week or month – where might you need to ensure data is available. This might impact consumption plans.

## 4 Governance

Ensure that the right people are accessing the right data.

# Out of the Box Usage Metrics

Power BI Service Comes with a usage metrics Report accessible from any report

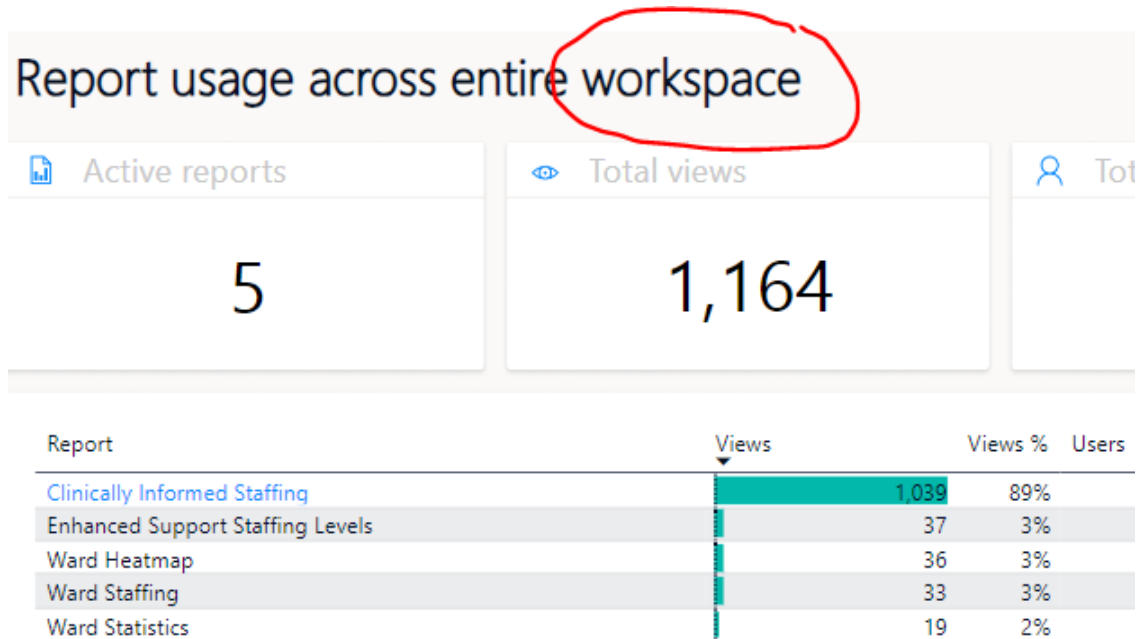
Power BI Operations

Operations

+ New    Upload    ...

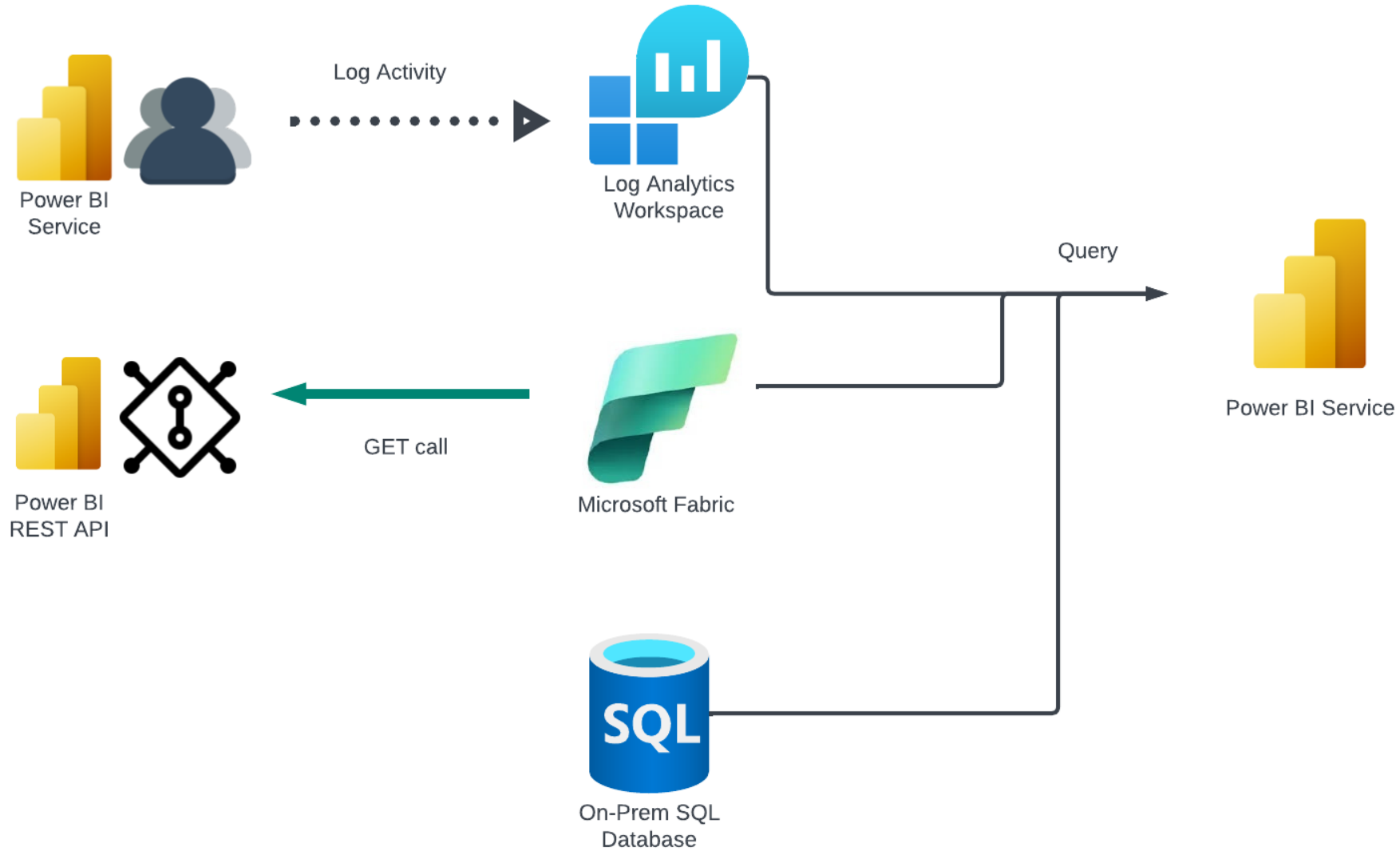
Name	Type	Task
Clinically Informed Staffing	Report	—
Enhanced Support Staffing Levels	Report	—
Ward Heatmap	Report	—
Ward Staffing	Report	—
Ward Statistics	Report	—

But this will show reports for an entire workspace only – what if I want to see reports across multiple workspaces?



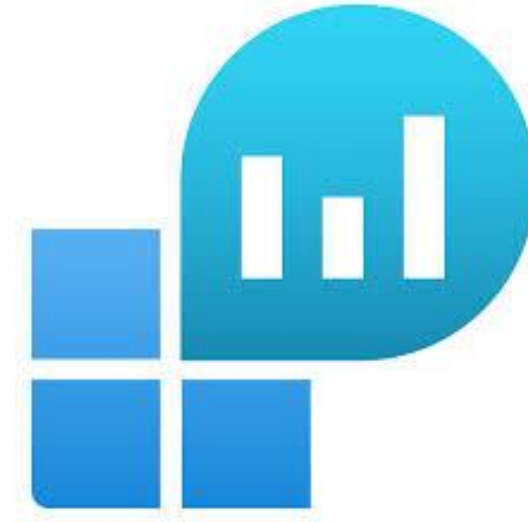
# The Plan

Use Log Analytics as a data source



# What is Azure Log Analytics?

- A store for log files (text format)
- Can be large quantities of data
- Built on the Azure Data Explorer engine
- Query with KQL language



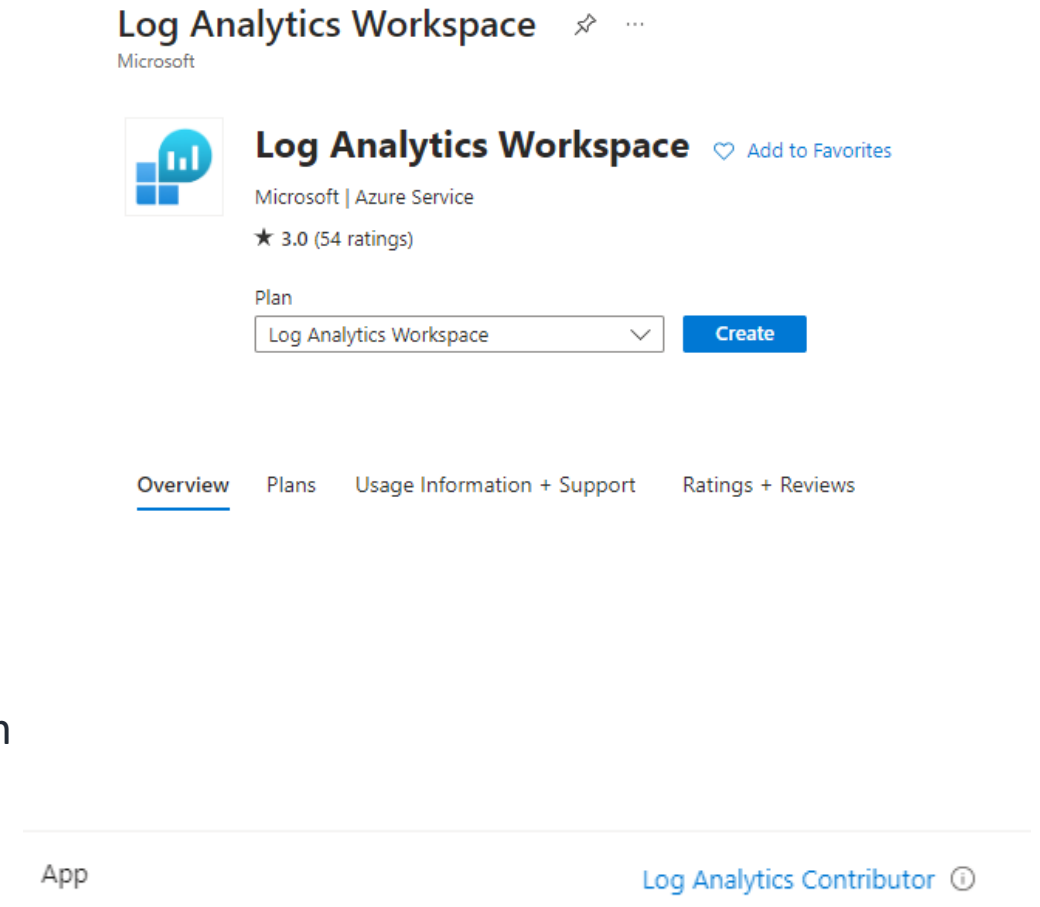
# Create a Log Analytics Workspace

## 1. In the Azure Portal

- Find Log Analytics Workspace in the Marketplace
- Give the resource a name.
- Select Region
- Create

## 2. Grant Access to the new resource

- Power BI needs access to log to this resource
- A reader credential needs to have access to read from this resource.

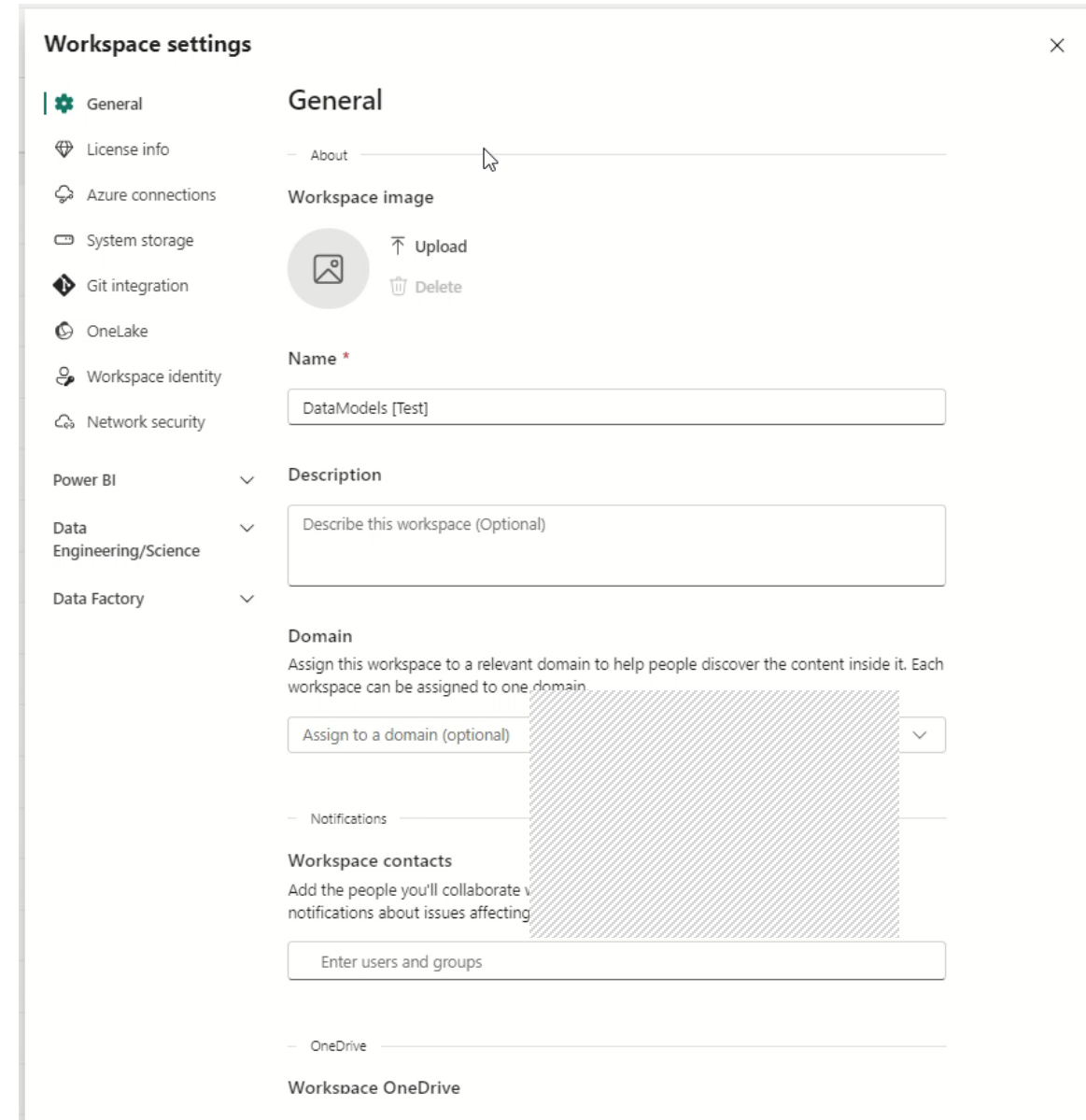


# Configure PBI Workspace

3. In Power BI Service navigate to your Workspace Settings > Azure connections
4. Under Azure Log Analytics use the drop down boxes to select the subscription, resource group and log analytics resource.

## Requirements

- Workspace must be on a premium capacity
- User needs to be a Power BI Capacity admin
- Access to the log analytics resource needs to be configured correctly



The screenshot displays the 'Workspace settings' dialog box in the Power BI Service. The 'General' tab is selected in the left-hand navigation pane. The main content area shows the following configuration options:

- General**: Includes an 'About' link and a 'Workspace image' section with an 'Upload' button and a 'Delete' button.
- Name \***: A text input field containing 'DataModels [Test]'.
- Description**: A text input field with the placeholder text 'Describe this workspace (Optional)'.
- Domain**: A section with a description: 'Assign this workspace to a relevant domain to help people discover the content inside it. Each workspace can be assigned to one domain.' Below this is a dropdown menu labeled 'Assign to a domain (optional)'.
- Notifications**: A section with a description: 'Add the people you'll collaborate with and receive notifications about issues affecting your workspace.' Below this is a text input field labeled 'Enter users and groups'.
- OneDrive**: A section with a description: 'Workspace OneDrive'.

The left-hand navigation pane lists the following settings categories: General, License info, Azure connections, System storage, Git integration, OneLake, Workspace identity, Network security, Power BI, Data Engineering/Science, and Data Factory. The 'Power BI' category is currently expanded.

# Query Log Analytics

Logs will start appearing immediately!

Now we need to get the data out. Time to write some KQL

Look for 'View logs' in the log analytics resource.



## Search and analyze logs

Use Log Analytics rich query language to analyze logs

[View logs](#)



# Log Analytics

Microsoft Azure

Search resources, services, and docs (G+/I)

Dashboard > LogAnalyticsDataPlatform >

Logs

LogAnalyticsDataPlatform

New Query 1\*

+

LogAnalyticsDataP...

Select scope

Run

Time range : Last 24 hours

Save

Share

New alert rule

Export

Pin to

Format query

Tables

Queries

Functions

...

«

Search

:

Filter

Group by: Solution

▼

Collapse all

Favorites

You can add favorites by clicking on the ☆ icon

LogManagement

▶ PowerBIDatasetsWorkspace

▶ Usage

1

Type your query here or click one of the queries to start

Results

Chart

Showing the first 30,000 results. [Learn more](#) on how to narrow down the result set.

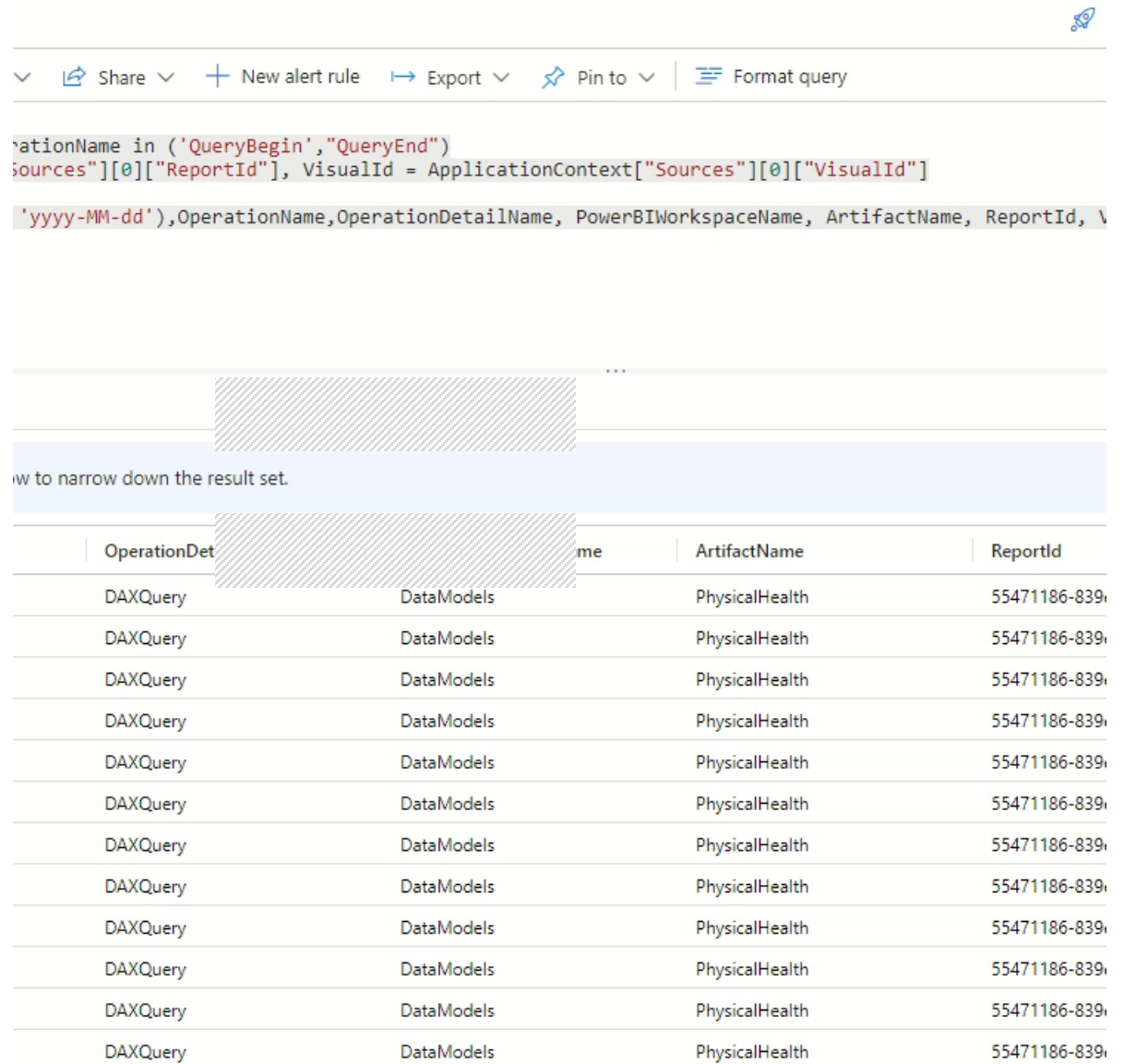
TimeGenerated	OperationName	OperationDetailName	ExecutingUser	PowerBIWorkspaceName	ArtifactName	ReportId
> 2024-05-30	QueryBegin	DAXQuery	MNChavi@stah.org	DataModels	Staffing	2dbb8e74-6933-437c-8727-08df3a5c
> 2024-05-30	QueryEnd	DAXQuery	MNChavi@stah.org	DataModels	Staffing	2dbb8e74-6933-437c-8727-08df3a5c
> 2024-05-30	QueryBegin	DAXQuery	MNChavi@stah.org	DataModels	Staffing	2dbb8e74-6933-437c-8727-08df3a5c
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> 2024-05-30	QueryBegin	DAXQuery	MNChavi@stah.org	DataModels	Staffing	2dbb8e74-6933-437c-8727-08df3a5c
> 2024-05-30	QueryEnd	DAXQuery	MNChavi@stah.org	DataModels	Staffing	2dbb8e74-6933-437c-8727-08df3a5c
> 2024-05-30	QueryEnd	DAXQuery	MNChavi@stah.org	DataModels	Staffing	2dbb8e74-6933-437c-8727-08df3a5c
> 2024-05-30	QueryEnd	DAXQuery	MNChavi@stah.org	DataModels	Staffing	2dbb8e74-6933-437c-8727-08df3a5c
> 2024-05-30	QueryEnd	DAXQuery	MNChavi@stah.org	DataModels	Staffing	2dbb8e74-6933-437c-8727-08df3a5c
> 2024-05-30	QueryEnd	DAXQuery	MNChavi@stah.org	DataModels	Staffing	2dbb8e74-6933-437c-8727-08df3a5c
> 2024-05-30	QueryEnd	DAXQuery	MNChavi@stah.org	DataModels	Staffing	2dbb8e74-6933-437c-8727-08df3a5c

3s 540ms

Display time (UTC+00:00) ▼

# Create a dataset

1. Use Export menu
2. This generates a Power BI Dataset for you
3. Connect to this dataset (using Tabular Editor for example) to enhance the dataset



# Extract Power BI Metadata

The logs provide only raw data. We need to enhance the dataset to make it useful.

Get metadata data about reports and workspaces from Power BI REST API

Several ways of doing this – I’ve written a a notebook to load the data into a Fabric data lakehouse (available in github)

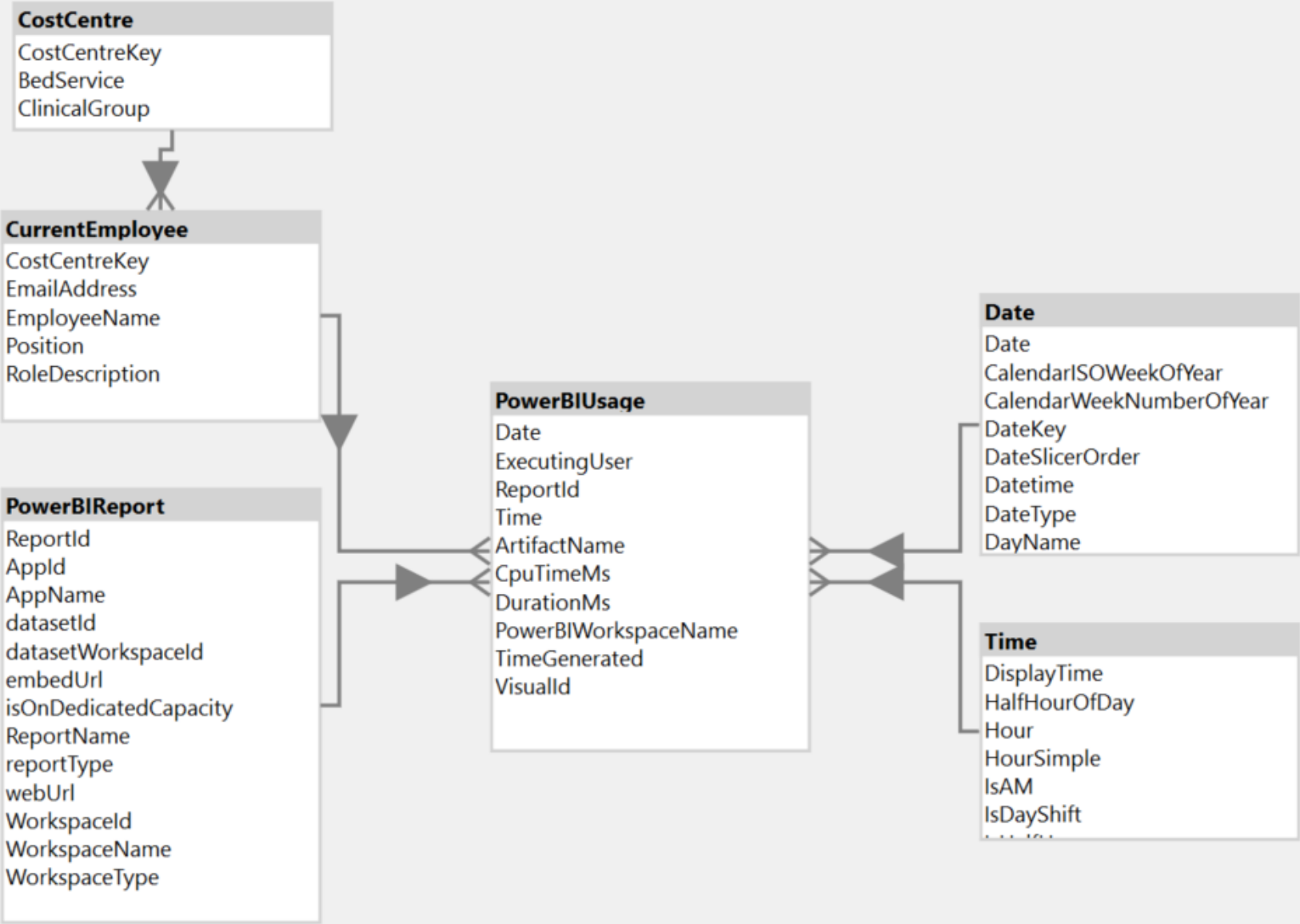
The output looks like this

ArtifactName	ReportId
Staffing	3bcc2dd1-d0eb-4a86-904d-4c92fa3ba539
PhysicalHealth	55471186-839e-479b-bf9e-1423d3138d17
PhysicalHealth	55471186-839e-479b-bf9e-1423d3138d17
PhysicalHealth	55471186-839e-479b-bf9e-1423d3138d17
PhysicalHealth	55471186-839e-479b-bf9e-1423d3138d17
PhysicalHealth	55471186-839e-479b-bf9e-1423d3138d17
PhysicalHealth	55471186-839e-479b-bf9e-1423d3138d17

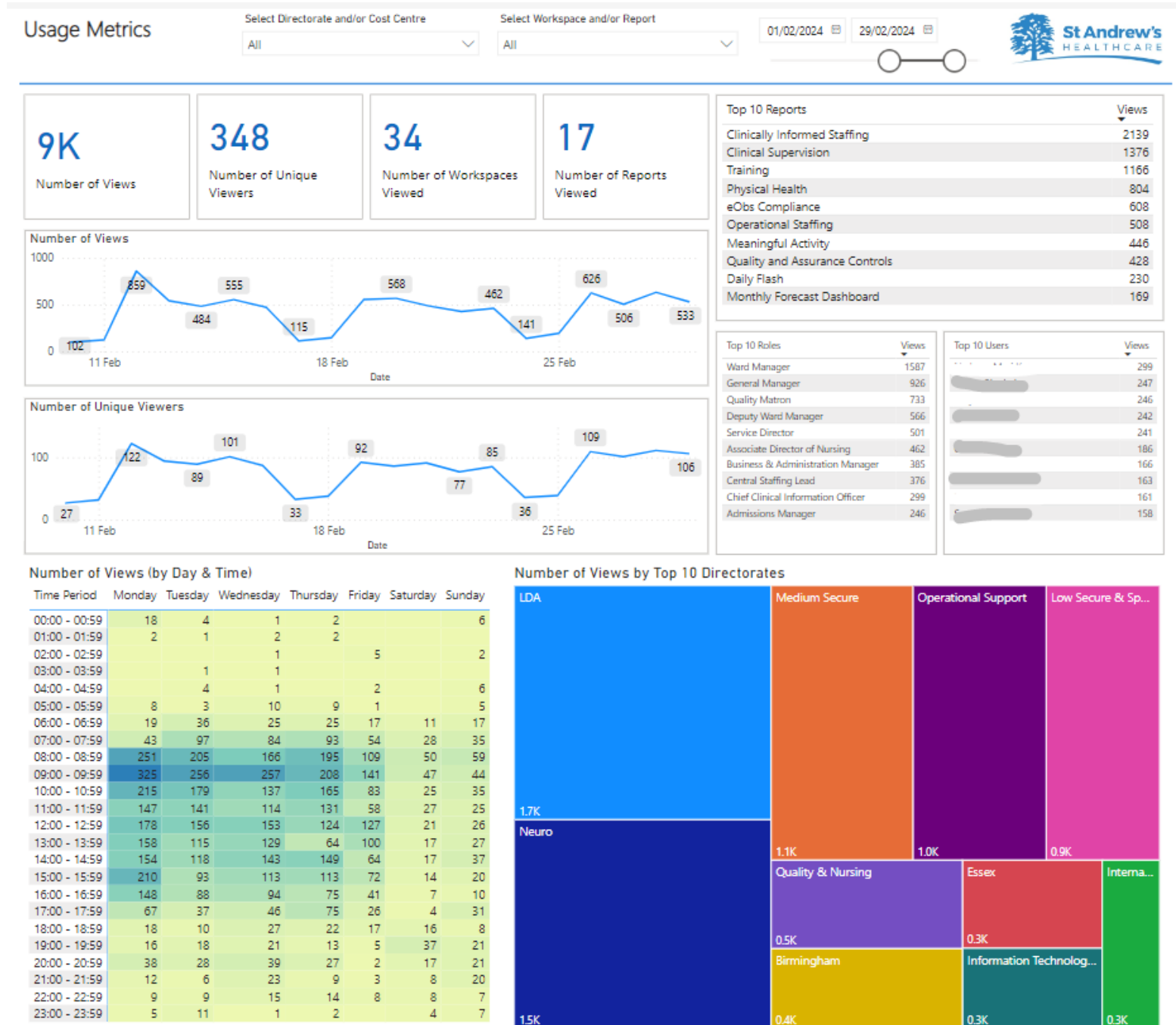
dim\_pbi\_reports

	ABC ReportId	ABC ReportName	ABC reportType	ABC webUri
33	c2b1cd30-7423-4b40-95f0-68e...	Mental Health Law Dashb...	PowerBIReport	https://app.powerb...
34	08fdb7ee-5099-4e7c-9119-bc7...	Usage Metrics Report	PowerBIReport	https://app.powerb...
35	01d7730e-4296-4a22-8eb0-94...	Seclusion Audit Dashboard	PowerBIReport	https://app.powerb...
36	cb97e62e-d45e-4447-b5d8-52...	Clinical Supervision	PowerBIReport	https://app.powerb...
37	c115d55c-8c08-422a-b06e-e4c...	eObs Compliance	PowerBIReport	https://app.powerb...
38	9af14584-cca9-44d3-8940-af1...	Quality and Assurance Co...	PowerBIReport	https://app.powerb...
39	07472e2a-c699-43e7-b822-d2...	Meaningful Activity	PowerBIReport	https://app.powerb...
40	755131e0-d503-4c4d-af6b-e2...	Usage Metrics Report	PowerBIReport	https://app.powerb...
41	059b403d-12f8-42e3-8f1e-f03...	Use of Force	PowerBIReport	https://app.powerb...
42	a5a73cf2-7c3a-453c-a64d-f30...	Mental Health Law Dashb...	PowerBIReport	https://app.powerb...
43	a41a88fa-a258-4b4a-b678-002...	Usage Metrics Report	PowerBIReport	https://app.powerb...

# Data Model



# Visualise the Data



# Things to Note

- Accessing the App REST APIs is not possible via service principle authentication. I have added notes on how to download these manually in the github resources.
- The activity logged is driven from the dataset (semantic model), so it is the workspace containing the dataset that should be paired to Log Analytics.
- There is a cost – our Log Analytics resource costs around £50 a month. There are more use cases for this resource – see Chris Webb’s blog for ideas:  
<https://blog.crossjoin.co.uk/2023/06/04/monitoring-power-bi-dataset-refresh-memory-and-cpu-usage-with-log-analytics/>
- There are alternative solutions using Microsoft 365 activity logs, those solutions might suit your scenario better.

# Resources

Slides and resources:

<https://github.com/sarah-abnett/UsageMetrics>

Connect on LinkedIn

<https://www.linkedin.com/in/sarah-abnett-7a440324/>

# Thank you!

