Benni De Jagere

No coffee? No Insights!

Keeping up with your Power BI Tenant Administration

For many organisations, Power BI is becoming absolute key in their Information Delivery stream. As an important cog in the chain, it's the responsibility for that organisation to keep the cog well oiled.

Power BI Tenant Admins need to make sure they're on top of their game, to keep all parties involved on their good side. During this talk, we'll go through some of the key activities to optimise this process, based on my war stories as a consultant.

Security, Auditing, Monitoring and Alerting are the cornerstone of this process, which doesn't have to be hard. Walking out, you'll have some practical tips to take home with you.

Benni De Jagere?

Enterprise Data Architect

Inetum-Realdolmen

dataMinds .be, Co-leader

@BenniDeJagere

/bennidejagere

#SayNoToPieCharts

Microsoft® MVP Most Valuable Professional

Hello, (Accidental) Tenant Admin!

Dedicated resources are not common

Overlap with M365 is often not the case

Plenty of admins are appointed by association

Ie. You're the 'SQL' person, so ..

Early experiences were based on trial and error

Community & Enterprise maturity has risen exponentially

Power BI is a moving target ☺

Power BI End-To-End: Top Features, Key Integration Points & Related Services

Last Updated: January 4, 2021

Coates Data Strategies

Data Sources

Cloud & On-Premises Sources

- Power BI Dataset
- Power BI Dataflow
- Azure Data Lake
- Azure SQL DB
- Azure Synapse
- Dataverse
- Files & Folders
- Cloud Services & APIs
- Databases & NoSQL
- Spark & Hadoop
- Dynamics 365
- Streaming Data
- SharePoint & OneDrive
- Excel

Content Authoring

Power BI Desktop (.pbix)

Query Editor (M) → Dataset DAX Calculations Relationships → Reports & Visuals ← Row-Level Security

Privacy Level
Sensitivity Label
Custom Visuals
Perf Analyzer
Query Diag
Q&A Tooling
Theme
Phone Layout

Python & R Scripting
Custom & Certified Connectors
Quick Calcs Gallery
Power BI Template (.pbit)
AppSource
Power BI Data Source (.pbids)
GitHub: Solution Templates

Excel (.xlsx)

Power Query → Power Pivot → Pivot Tables & Charts

Power BI Data Types (Featured Tables)

External Tools

- Tabular Editor
- DAX Studio
- ALM Toolkit
- + Community tools

Azure Synapse Studio

VS SSDT

Power BI Service

Report | Dashboard | Dataflow | Dataset (QuickCreate) | Streaming Dataset

Power BI Custom Development

REST APIs | .NET API | JavaScript API | Custom Visual SDK
Tabular Object Model | Tabular Model Scripting Language
Power BI Embedded | VS Code (PQ/M Ext)

Paginated Report Builder (.rdl)

Power BI Desktop for Report Server (.pbix)

Storage of Authoring Files

OneDrive/ SharePoint | Teams | Source Control Repository

Content Delivery, Collaboration & Sharing

Power BI Service

Workspace

Dashboard → App

Power BI Report | Excel Workbook | Paginated Report

Dataset ← Dataflow

Refresh

Workspace Roles
Dataset Permissions
Sharing | App Permissions

Productivity

- Subscriptions & Alerts
- Bookmarks
- Personalize Visuals
- Comments
- Export & Download
- Power Automate integration

Governance & Data Discovery

- Datasets Hub
- Endorsements
- Sensitivity Labels & Data Protection
- Lineage & Impact Analysis
- Contacts
- Azure Purview integration

Premium

- Deployment pipelines
- Paginated reports
- DF enhanced engine, linked & computed
- ML & AI services
- Read/Write XMLA

Scalability

- Azure Synapse integration
- DirectQuery for PBI/AS
- Composite models
- Aggregations
- Large models
- Incremental refresh

Low/no-code embedding or full Javascript + REST APIs

Third party apps & services for management, modeling, debugging & querying

Teams

Power BI Personal App for Teams
Embedded reports
Private chats
Link previews

Embedded Content

- Power Apps
- Custom application
- Internal portal or SharePoint
- Public website

Power BI Report Server

Power BI Report | Paginated Report | Excel Workbook

Data Refresh | Shared Datasets
Subscriptions | Security

- Power BI Mobile App
- Power BI App for Windows
- Analyze in Excel

Related Services

Power Platform

Power Apps
Power Automate
Dataverse

- Power Query Online
- Azure Data Lake Storage Gen 2
- Azure Premium Files
- Azure Synapse Analytics
- Power BI App for Hololens 2
- Azure Portal/ Azure Services
- AppSource
- Azure Power BI Embedded
- Azure Purview
- Azure Maps
- Azure Machine Learning
- Azure Cognitive Services
- Power BI Search: Bing and Office

System Administration

Microsoft 365

Power BI Subscription
Power BI Capacity Licenses
Power BI User Licenses: Pro and PPU
M365 Audit Log
M365 Groups

Azure Active Directory

Users | Groups | Guest User Access
Azure AD Apps | Service Principals
Conditional Access Policies & App Control
Identity Governance | Terms of Use

Power BI Service Admin Center

Tenant Settings
Workspaces
Dataflow Settings
Org Custom Visuals
Protection Metrics
Custom Branding
Embed Codes
Gateway Mgmt
Azure Connections
Featured Content

Power BI Premium

Premium: Per-User (PPU) & Capacity-Based
Premium Capacity Settings & Workloads
Premium Capacity Metrics App

Power BI Activity Log & API Data

REST APIs | PowerShell | Azure CloudShell

Security, Compliance & Governance

Microsoft Cloud App Security
Microsoft Information Protection
Azure Purview
Microsoft 365 Security & Compliance
Azure Active Directory
Azure Private Link | Azure Key Vault
Premium: Multi-Geo & BYOK

On-Premises Data Gateway

Power Platform Admin Center
Gateway Mgmt | Data Source Mgmt
Policies | Administrators
Standard Mode | Personal Mode
Drivers | Custom Connectors

Intune

Power Automate, Azure Functions, Azure Logic Apps, Azure DevOps

Creative Commons License: Attribution-NonCommercial-NoDerivative Works 3.0

What does a Tenant Admin do?

A Tenant Admin should strive to Empower and Enable a Data Culture in their organisation.

Restricting and disabling things means policies, processes, and people need to be able to handle incoming requests

But they can’t do it alone ☺

What does a Tenant Admin do?

Data Management

Data Governance

Security & Compliance

Change Management

Product Integration

Problem Solving

But most importantly ..

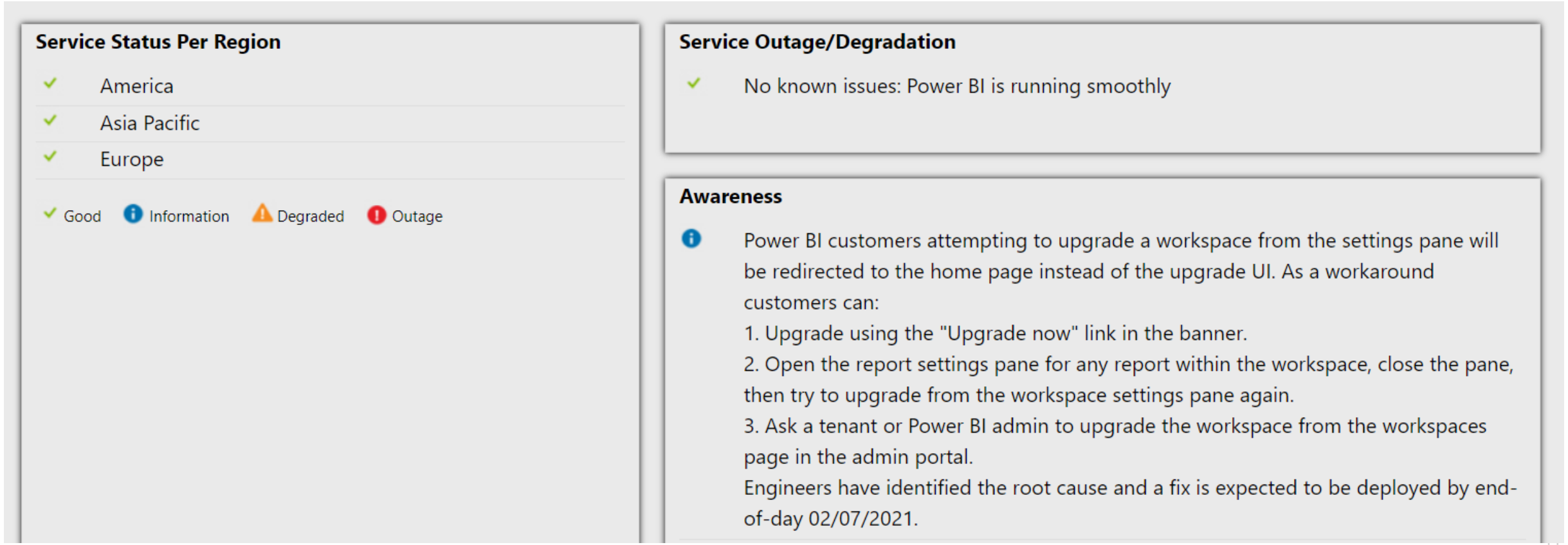
What does a Tenant Admin do?

Service Health

01

Service Health

Power BI Support



Service Health

Azure Status

Refresh every

2 minutes

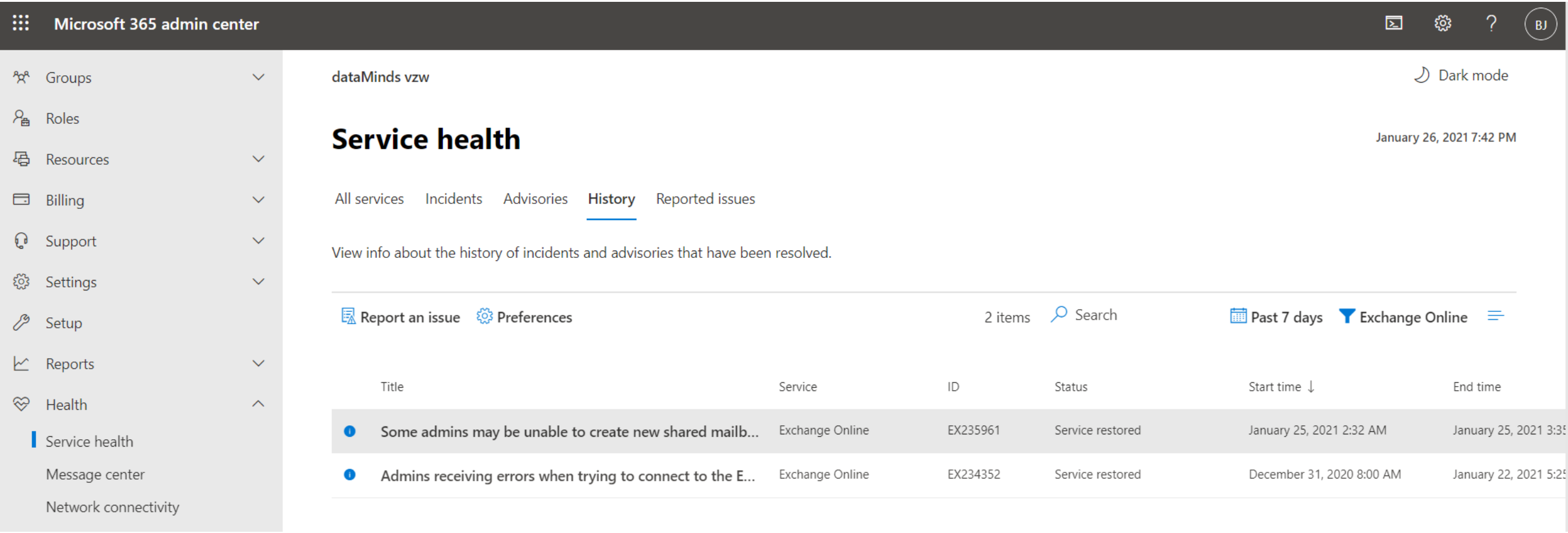
Good Information Warning Critical

Americas | Europe | Asia Pacific | Middle East and Africa | Azure Government | Azure China

PRODUCTS AND SERVICES	*NON-REGIONAL	EAST US	EAST US 2	CENTRAL US	NORTH CENTRAL US	SOUTH CENTRAL US	WEST CENTRAL US	WEST US	WEST US 2	CANADA EAST	CANADA CENTRAL	BRAZIL SOUTH	BRAZIL SOUTHEAST
COMPUTE													
Azure VMware Solution by CloudSimple		✓				✓		✓					
Virtual Machines		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SAP HANA on Azure Large Instances		✓						✓	✓				
Windows Virtual Desktop	✓												

Service Health

Microsoft 365 Admin Center



01

Service Health

Demo

Activity Log

02

The Treasure Trove, aka PBI Activity Log

Introduced December 2019 (LINK)

Alternative to Office 365 Audit Log

Data is retained for 30 days

Requires Power BI Admin or Global Admin privileges

Your key to many questions

MSFT Docs

02

Activity Log

Demo

Artefact Inventory

03

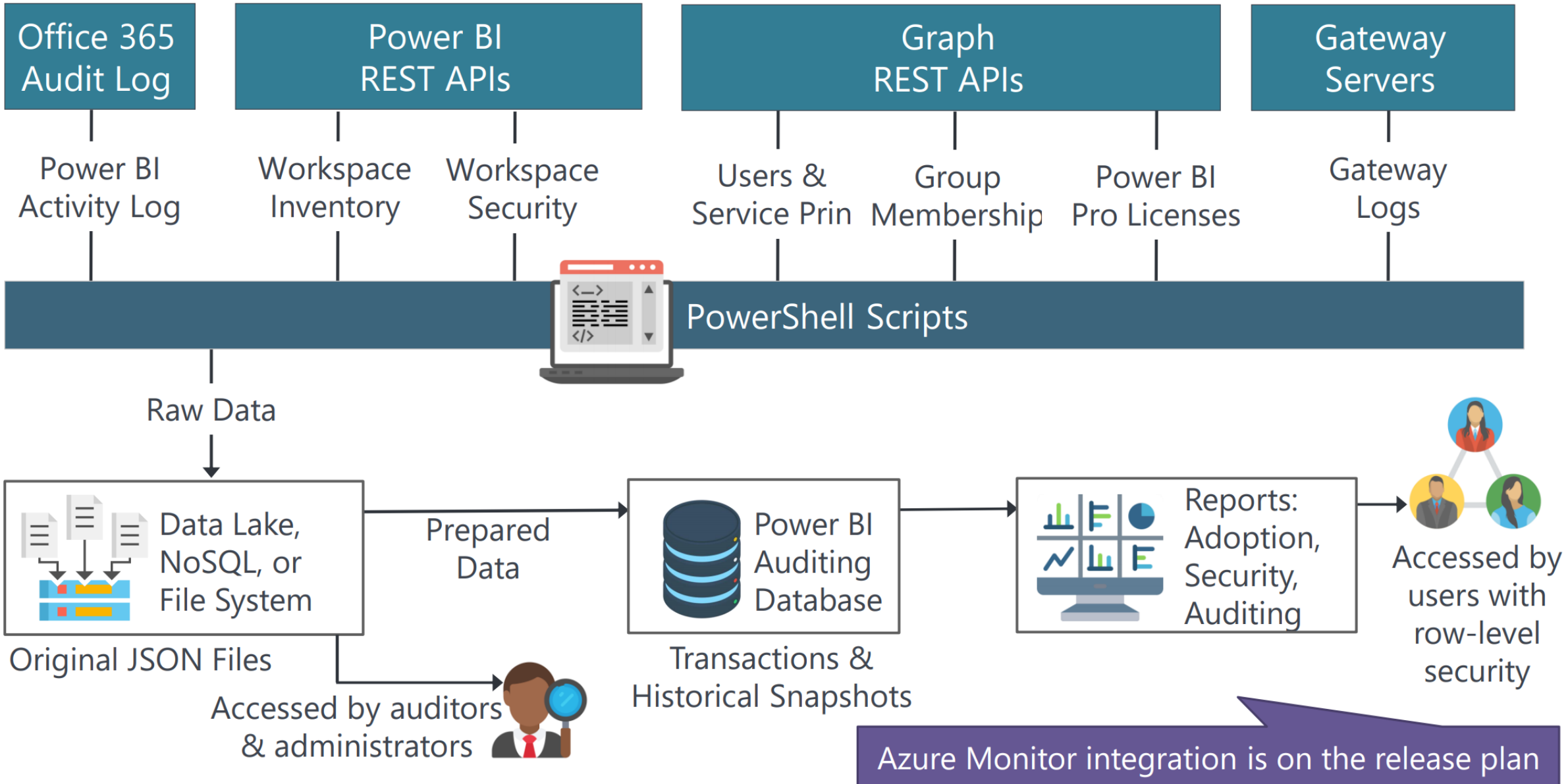
Artefact Inventory

Most artefacts can be extracted through APIs (or PowerShell)

Track details about under/heavily used artefacts

Admin APIs are your friend, especially $expand

Typical Power BI Auditing Solution



03

Artefact Inventory

Demo

Tenant Settings

04

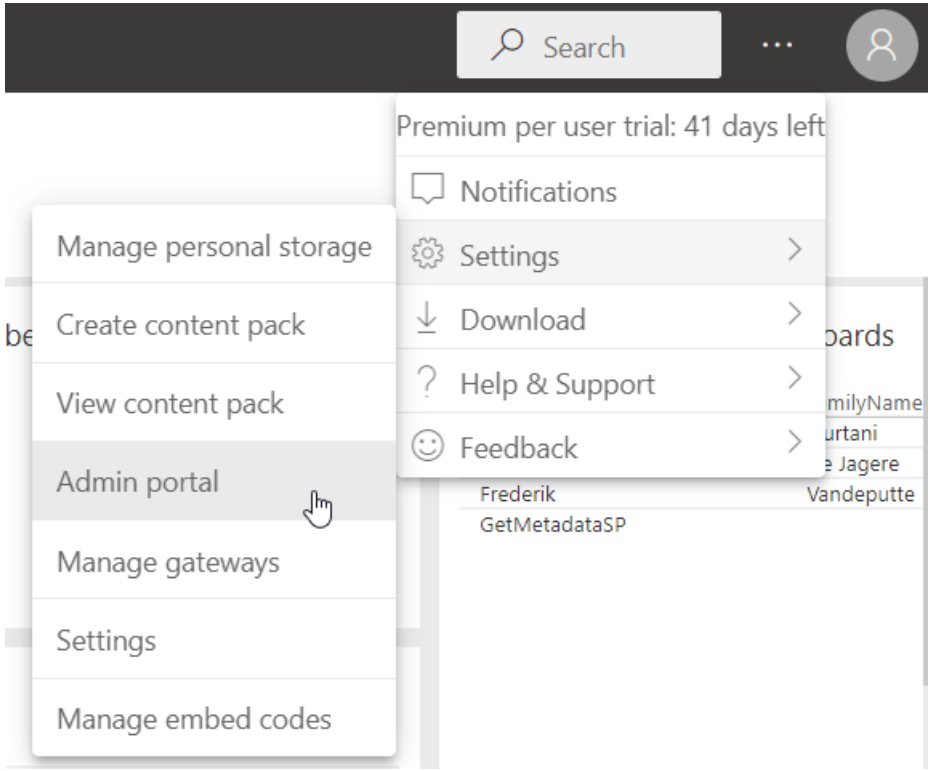
Tenant Settings

Admin Portal to control behaviour

Document settings

Changes are not easily captured

- Activity Log
- Cloud App Security Center



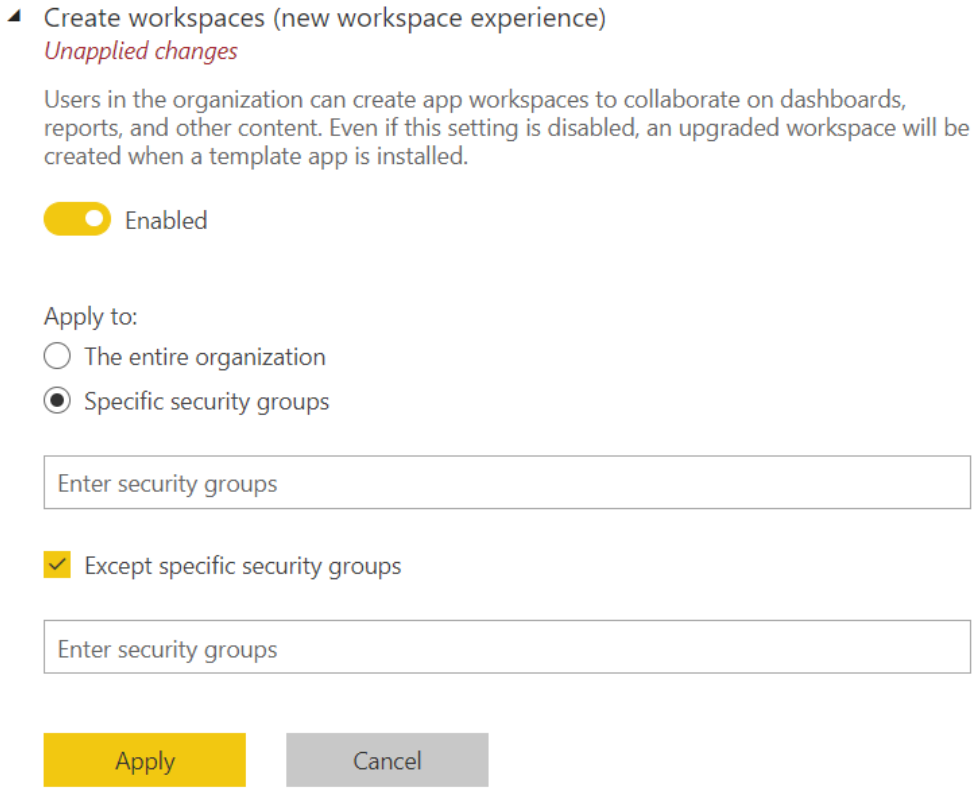
Tenant Settings

Most settings can be scoped to:

- Enable/Disable behaviour
- Entire Organisation
- Include/Exclude Groups

Mail-Enabled Security Groups work best

[Info by Fourmoo]



Tenant Settings

Pay special attention to :

- Workspace Settings
- Export and Sharing Settings
- Power BI Visuals

04

Tenant Settings

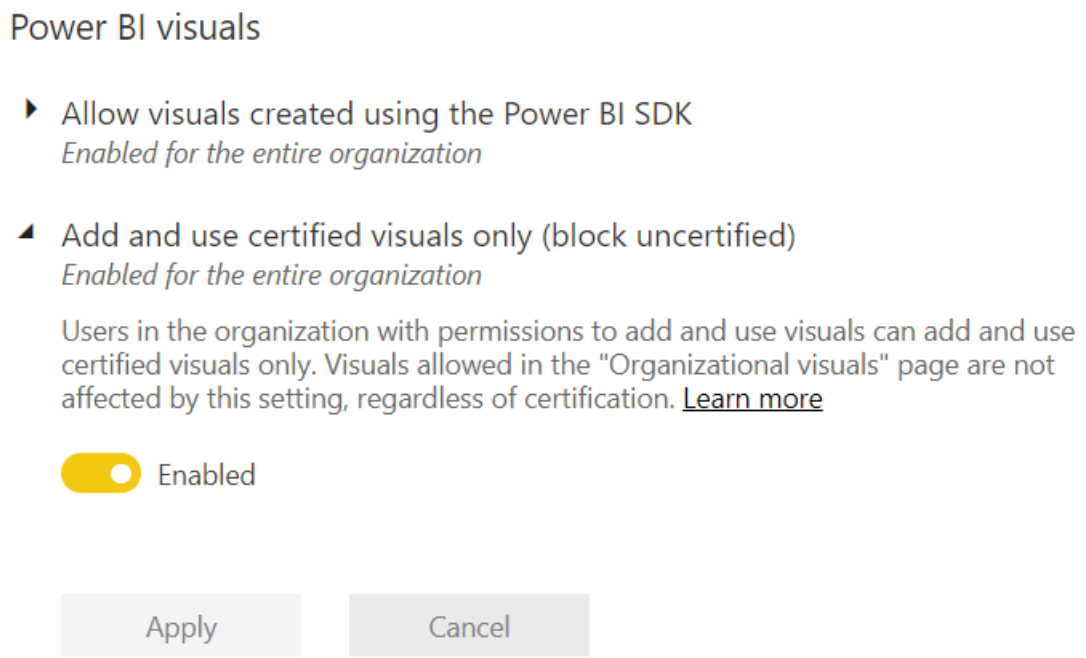
Demo

Organisational Visuals

05

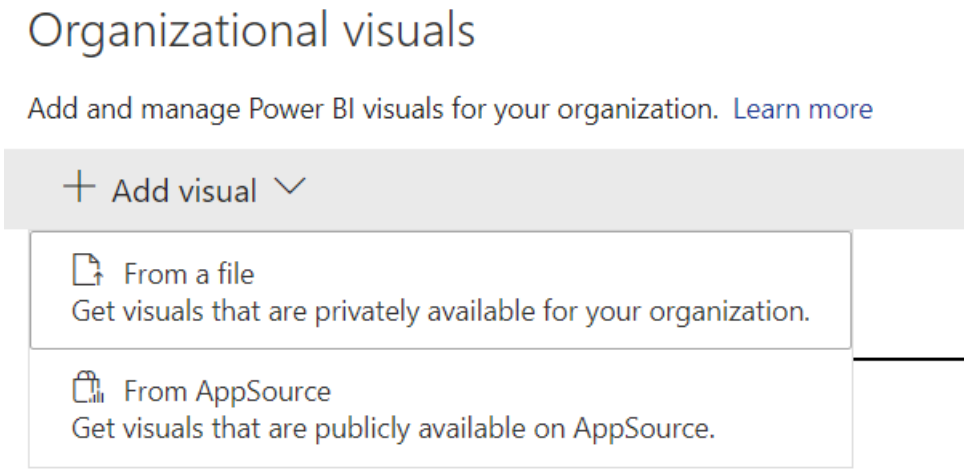
Organisational Visuals

Tenant Setting to control custom visuals



Organisational Visuals

Add visuals you trust and approve



05

Organisational Visuals

Demo

Data Access

06

Who can access your data?

Access is determined by :

- Workspace Access
- Workspace App Access
- Manual Report Sharing
- Dataset Permissions (Build vs. Read)

Workspace Admin, Member, or Contributor have:

- No RLS applied
- Implicit Build Permissions

Monitor key assets closely

An Admin (PBI/Global) can give access to anyone in all V2 Workspaces

06

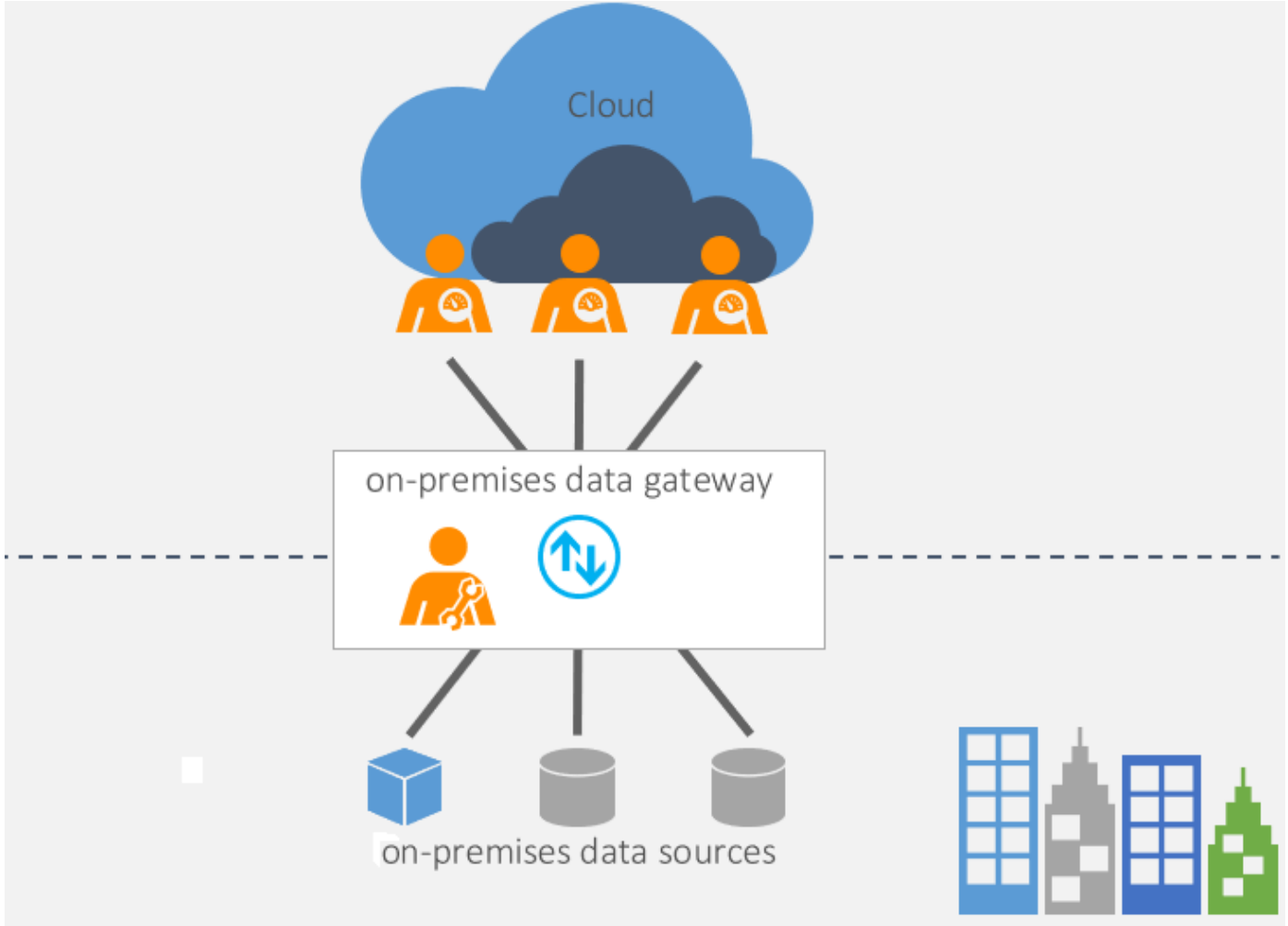
Data Access

Demo

Gateways

07

Gateways



Gateways

Allow users that publish new datasets and reports to datasources

By default, any user can install personal and on-premises data gateways

Potentially, this opens up corporate data

Debate the policy for personal gateways in your organisation

Power Platform admin center

07

Power Platform Admin Center (Gateways)

Demo

Premium Per User

08

Premium Per User

Preview Feature, be careful with production dependencies

By default users can :

- Self-assign an In Product Trial Experience
- Create workspaces, and assign to a PPU Capacity

Identify usage by :

- Get Workspace Inventory, correlate with Capacity Information
- Get License Information
- Track the Power BI Activity Log

My chase down the rabbit hole

Monitoring

09

Monitoring (Easy mode)

Consider setting up simple alerts you want to follow-up

Set up a dashboard tile, with simple count for your actions

Possible actions to monitor closely:

- Changes to Tenant Settings
- Publish To Web
- In Product Trial Experiences
- Export Data
- Delete ..
- Create/Edit Gateway

Or build out an End-to-End Monitoring Solution ☺

Keep updated

Power BI Roadmap

Power BI Blog

Power Platform Release Waves

Many community authors and iniatives

Pro Tip: Check the release date, as information ages quickly

Takeaways

10

Takeaways

Set up:

- an extraction process for the Power BI Activity Log
- Scoped Tenant Settings for key areas
- Alerting for external failures
- Alerting for internal usage
- Monitoring for creation and configuration of Data Gateways

Foster a Data Culture in your organisation

Try to keep yourself updated

Takeaways

The Self-Service BI Hoax

"Products and technology don't enable Self-Service BI, people and methodologies do"

Nimrod Avissar on LinkedIn Pulse

Benni De Jagere?

Enterprise Data Architect

Inetum-Realdolmen

dataMinds .be, Co-leader

@BenniDeJagere

/bennidejagere

#SayNoToPieCharts

Microsoft® MVP Most Valuable Professional

References

API

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

https://azure.microsoft.com/en-us/updates/power-bi-rest-api-tryit-tool/

https://docs.microsoft.com/en-us/power-bi/admin/read-only-apis-service-principal-authentication

https://github.com/sqlchick/Presentations/tree/main/Power-BI-Activity-Log-And-REST-APIs

https://github.com/itsnotaboutthecell/PowerBI-cmdlets

https://github.com/SQLvariant/Demos/tree/master/Presentations/PowerShell-for-PowerBI

https://www.fourmoo.com/2021/01/06/you-can-now-view-the-power-bi-rest-api-calls-via-the-audit-log/

References

BI Elite - Admin View (Part 1 - 4)

https://www.youtube.com/watch?v=cTqFNg_y9lw

https://www.youtube.com/watch?v=2RZkc_qrV1g

https://www.youtube.com/watch?v=Z4E2jSZ4r6A

https://www.youtube.com/watch?v=BxKIJL5baAU

References

Power BI Administration

https://www.coatesdatastrategies.com/presentations/#What-You-Need-To-Know-To-Administer-Power-BI

https://www.amazon.co.uk/Pro-Microsoft-Power-Administration-Intelligence/dp/1484265661/ref=sr_1_1?dchild=1&keywords=Pro+Microsoft+Power+BI+Administration&qid=1611771199&sr=8-1

References

Governance & Data Culture

https://www.coatesdatastrategies.com/power-bi-deployment-and-governance

https://data-marc.com/2020/06/04/power-bi-govern-feature-implementation-in-phases/

https://data-marc.com/2020/04/13/power-bi-governance-why-you-should-consider-to-disable-export-to-excel/

https://www.powerbisentinel.com/

https://ssbipolar.com/building-a-data-culture/

References

Power BI Whitepapers

https://aka.ms/PBIEnterpriseDeploymentWP

https://docs.microsoft.com/en-us/power-bi/guidance/whitepaper-powerbi-premium-deployment

https://docs.microsoft.com/en-us/power-bi/admin/service-admin-power-bi-security