

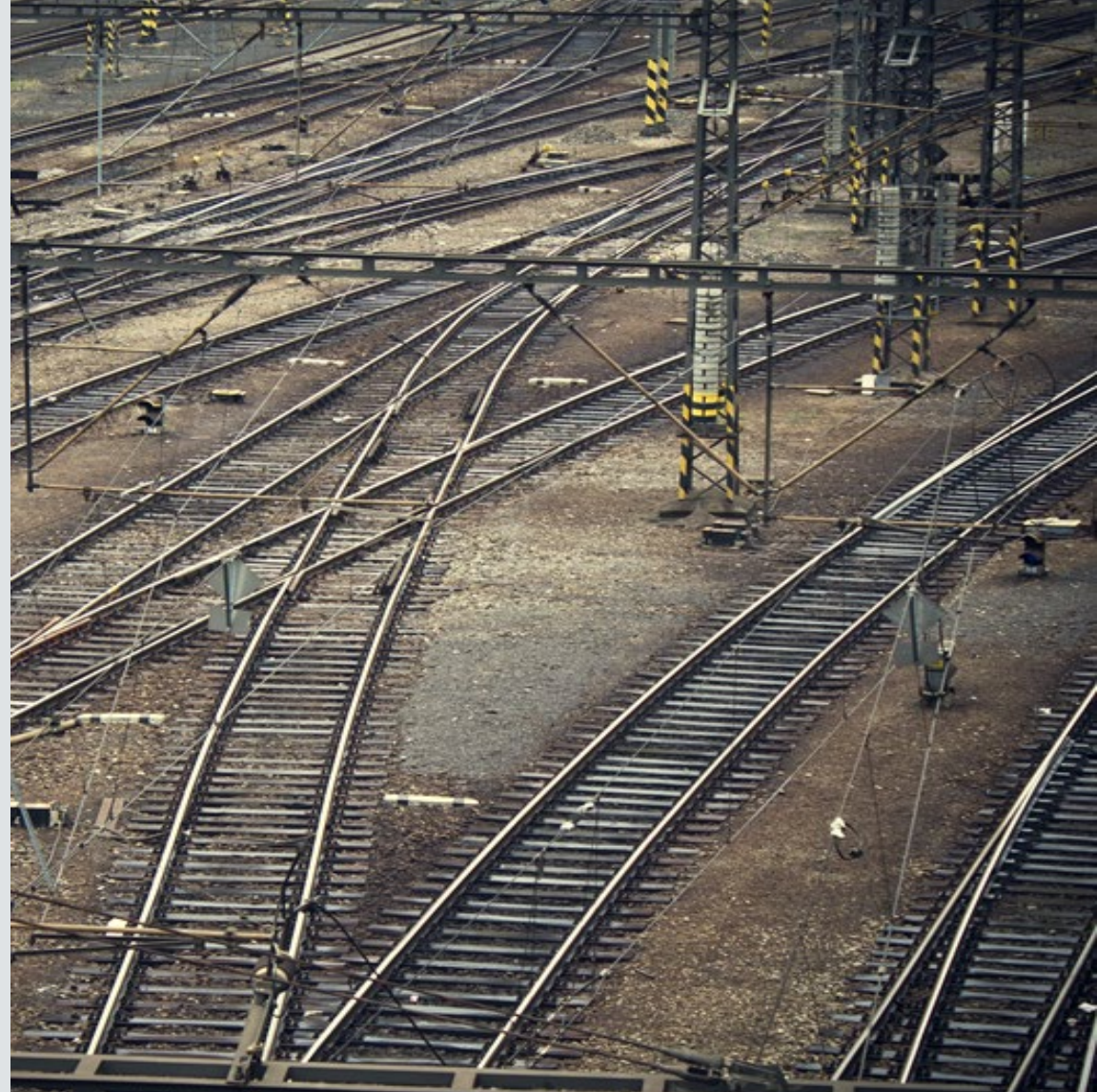
What You Need to Know to Administer Power BI

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Slides & recordings: CoatesDS.com/Presentations

Content last updated: March 24, 2022

Melissa Coates



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Data architect specializing in Power BI governance & administration

Author of [Power BI Adoption Roadmap](#)

Author of [Power BI Implementation Planning](#)

Creator of [Power BI Deployment & Governance](#) online course

Power BI Deployment & Governance

Comprehensive online course



Governance
Adoption & data culture
Center of Excellence
Data architecture
Content management
Data trustworthiness
Security & protection
System oversight



Comprehensive set of video recordings
Live group Q&A sessions
Live hands-on workshops
Customizable templates
Recommended actions
Access for 6 months

Goals for This Session



- ✓ How and why the Power BI administrator role varies based upon the BI approach being used
- ✓ Introduce the breadth & scope of responsibilities
- ✓ Suggestions for next steps

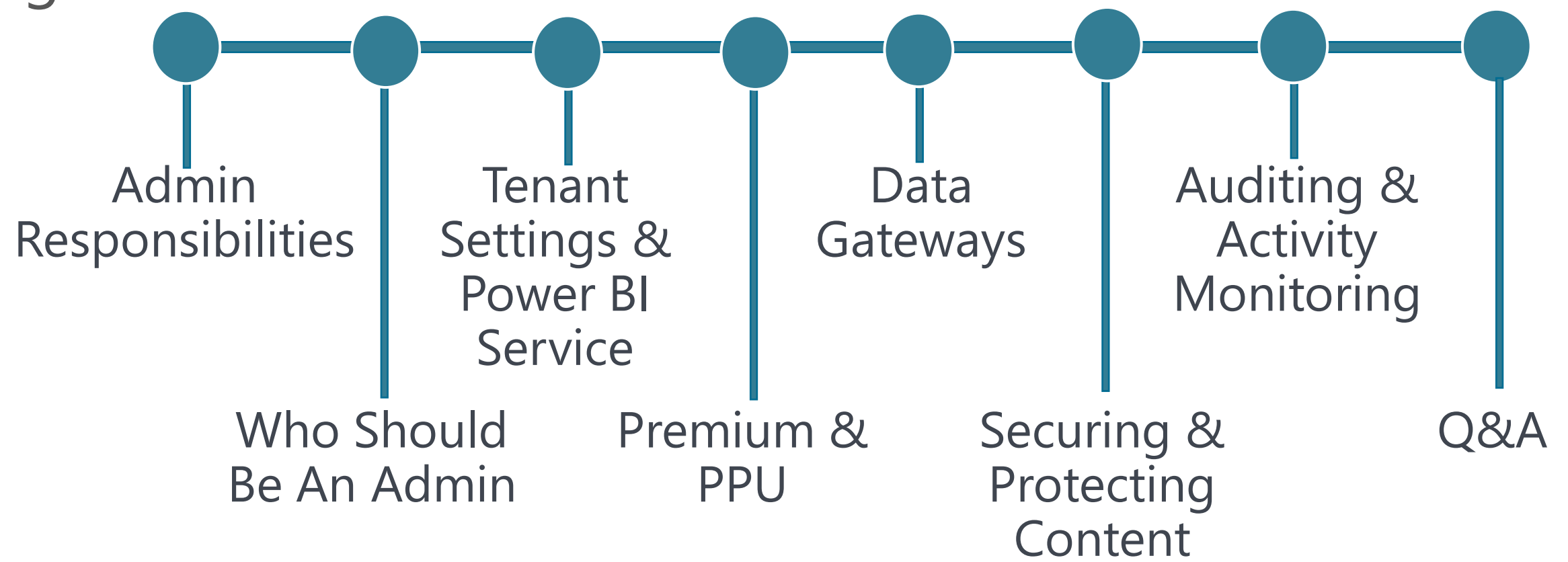
Session focus: Using the Power BI Service with the commercial cloud service only. The national clouds (ex: Government, China, Germany) are not specifically covered.

Out of scope: Power BI Report Server and Power BI Embedded.



What You Need to Know to Administer Power BI

Agenda





Typical Power BI Administrator Responsibilities

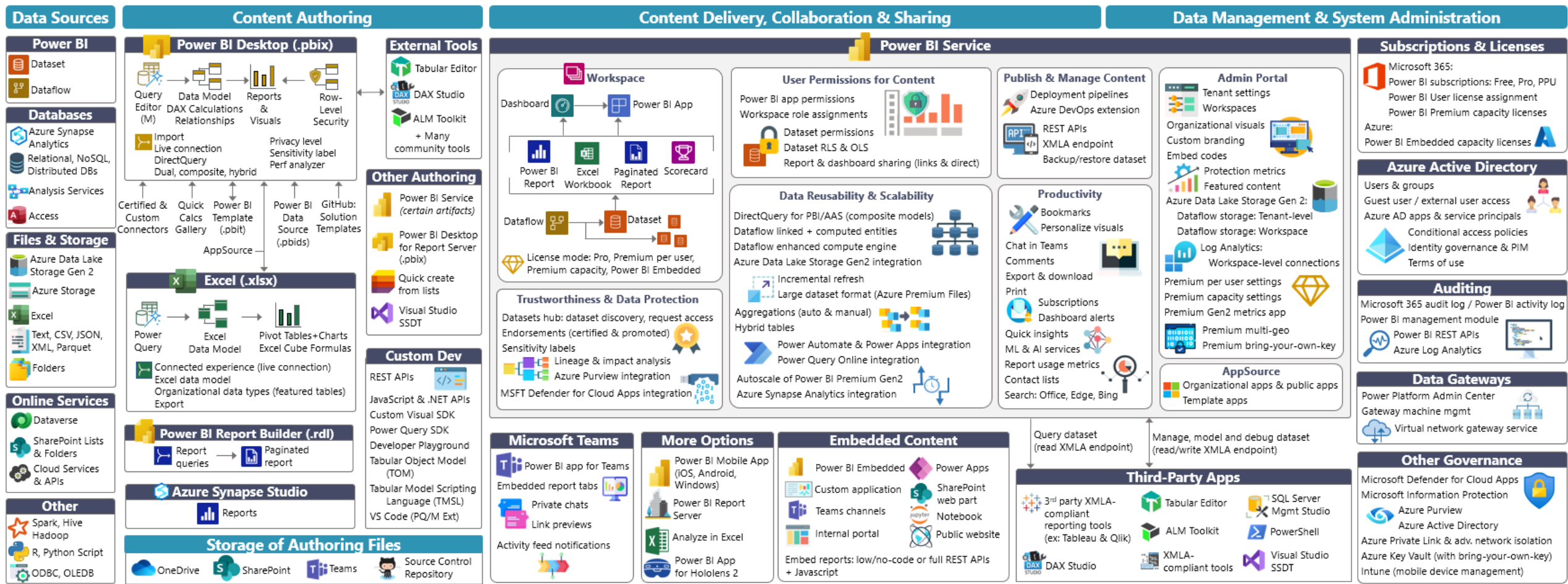
Power BI is a Broad and Deep Ecosystem



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

Last Updated: March 23, 2022

Coates Data Strategies



Original diag oDerivative Works 3.0

Download at: CoatesDS.com/diagrams

Power BI Admins Affect the User Experience



Why can't I create a workspace?

Why can't I start a Pro trial?



Why can't I export data?



Why can't I certify a dataset?



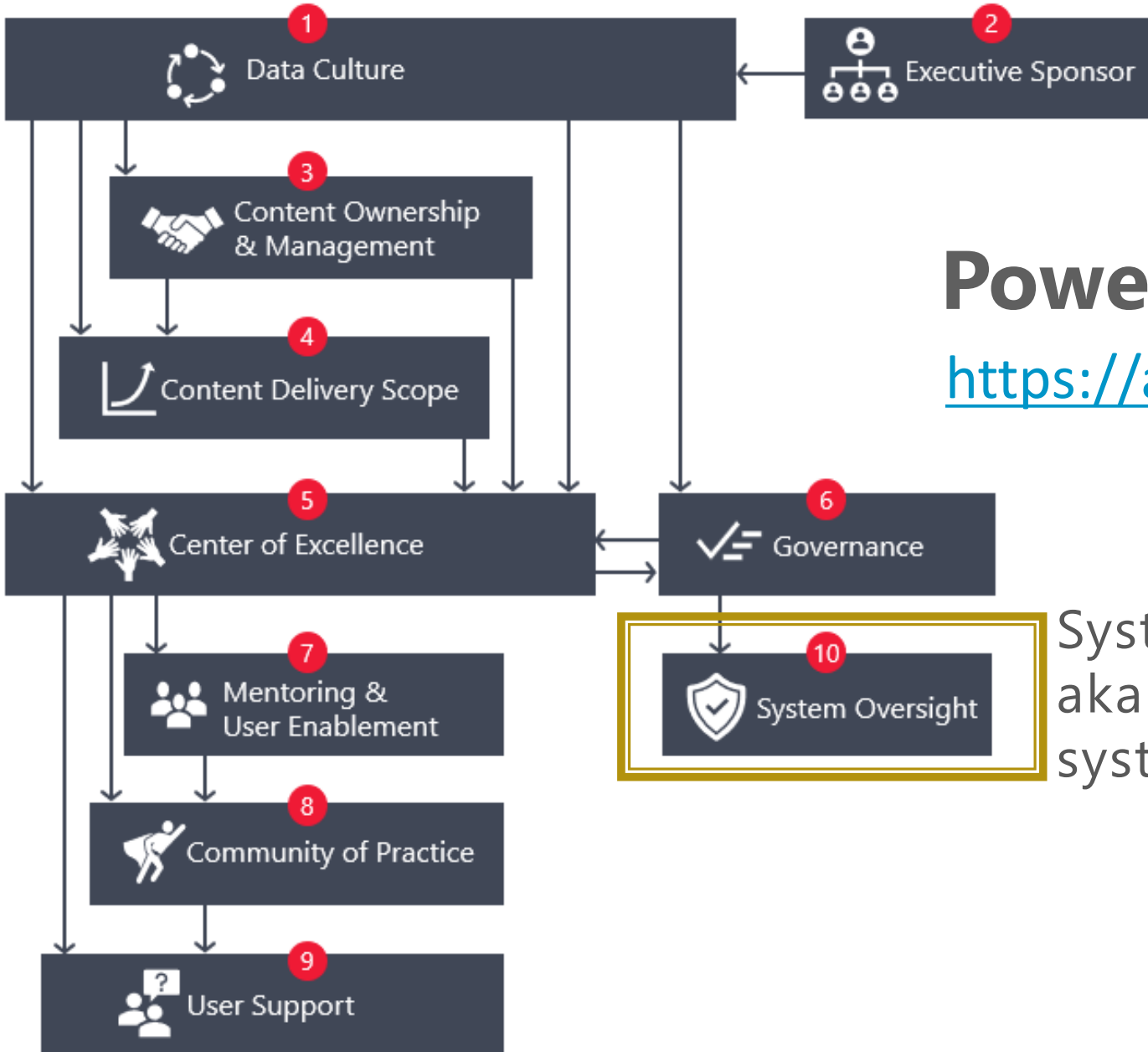
Why can't I use this custom visual?

Why can't I share to Teams?



Why can't I install a gateway?





Power BI Adoption Roadmap

<https://aka.ms/PowerBIAdoptionRoadmap>

System oversight
aka
system administration

Main Goals for Governing Self-Service BI



1

User Enablement

Empower the internal user community to be productive & efficient

2

Internal Requirements

Adhere to internal requirements for the proper use of data

3

Regulations

Comply with external industry, governmental & contractual regulations



Administration/System Oversight Goals

1

Enact governance guidelines and policies to support self-service BI & enterprise BI

2

Support internal processes & systems that empower the internal user community, while adhering to the org's regulations & requirements

3

Allow for **broader organizational adoption of Power BI** with effective governance & data management practices (in coordination with the Center of Excellence/IT/BI teams)



Where Does an Admin Fit?



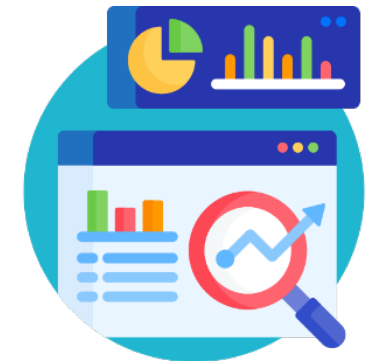
Organizational Adoption

The effectiveness of Power BI **governance** and **data management** practices to support and enable BI efforts



User Adoption

The extent to which users continually **increase their knowledge** to **actively use** Power BI in an **effective way**



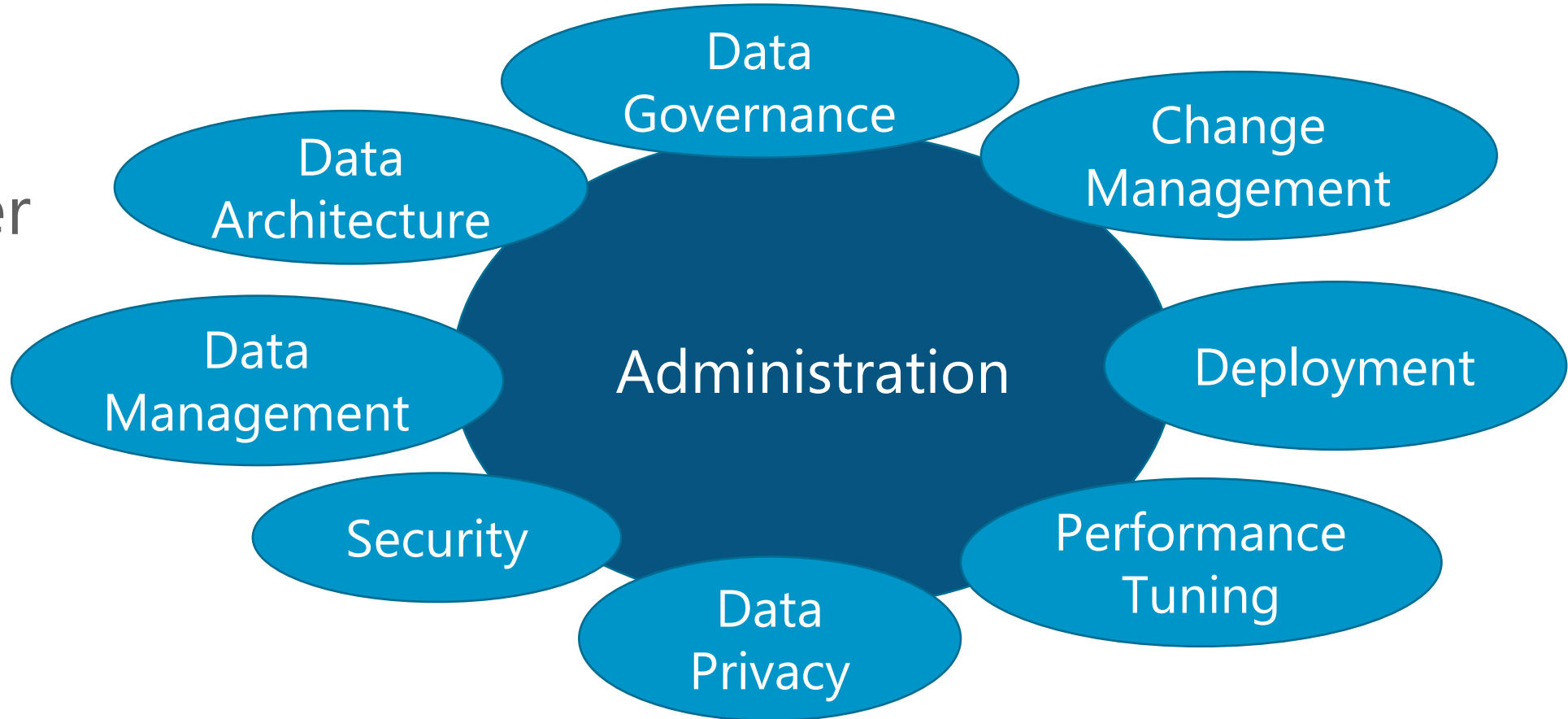
Solution Adoption

The **impact** and **business value** achieved for individual requirements & solutions

Where Does Administration Start & End?

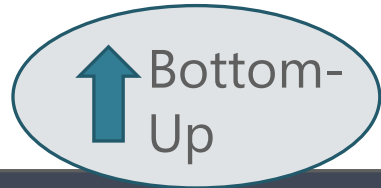


A lot of overlap with other things





How Does an Admin Support Users?



Business-led self-service BI



Managed self-service BI



Enterprise BI

Data ownership

Decentralized:
Content owned & managed by business unit

Centralized:
Content owned & managed by BI, COE or IT

Data ownership

Report ownership

Report ownership

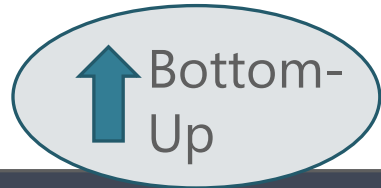
Report ownership

Report ownership

Report ownership



How Does an Admin Support Users?



Business-led
self-service BI

Decentralized



Managed
self-service BI



Enterprise
BI

Centralized

Internal
Factors

Data Management Maturity Level

Data Culture

External
Factors

Compliance & Regulatory Requirements

Industry & Competitive Influences



Types of Power BI Administrators

Power BI Service Administrator

Power BI Gateway Administrator

Power BI Premium Capacity Administrator

Power BI Report Server Administrator

Power BI Workspace Administrator



Common Power BI Admin Responsibilities

Power BI Service

Workspace creation

Tenant settings

Security & access

Gateways & data sources

Auditing & monitoring

Premium capacity

Deployments

Desktop software

Licensing & user mgmt

Power BI Report Server

Integration w/ other apps



Other Administrators & Teams Involved

Global Microsoft 365 administrator	Azure AD administrator
SharePoint administrator	Azure & DB administrators
OneDrive administrator	Licensing & billing admin
Teams administrator	Intune administrator
Desktop support	Security & compliance
Infrastructure team	Legal & risk management
Networking	Internal audit



Who Is Allowed To Be A Power BI Administrator

Who is Permitted to be a Power BI Admin?



Competent people able to get things done independently



Risk of too many people with elevated permissions



Consider the Power BI administrator role to be a high privilege role that's provided to just a few people.



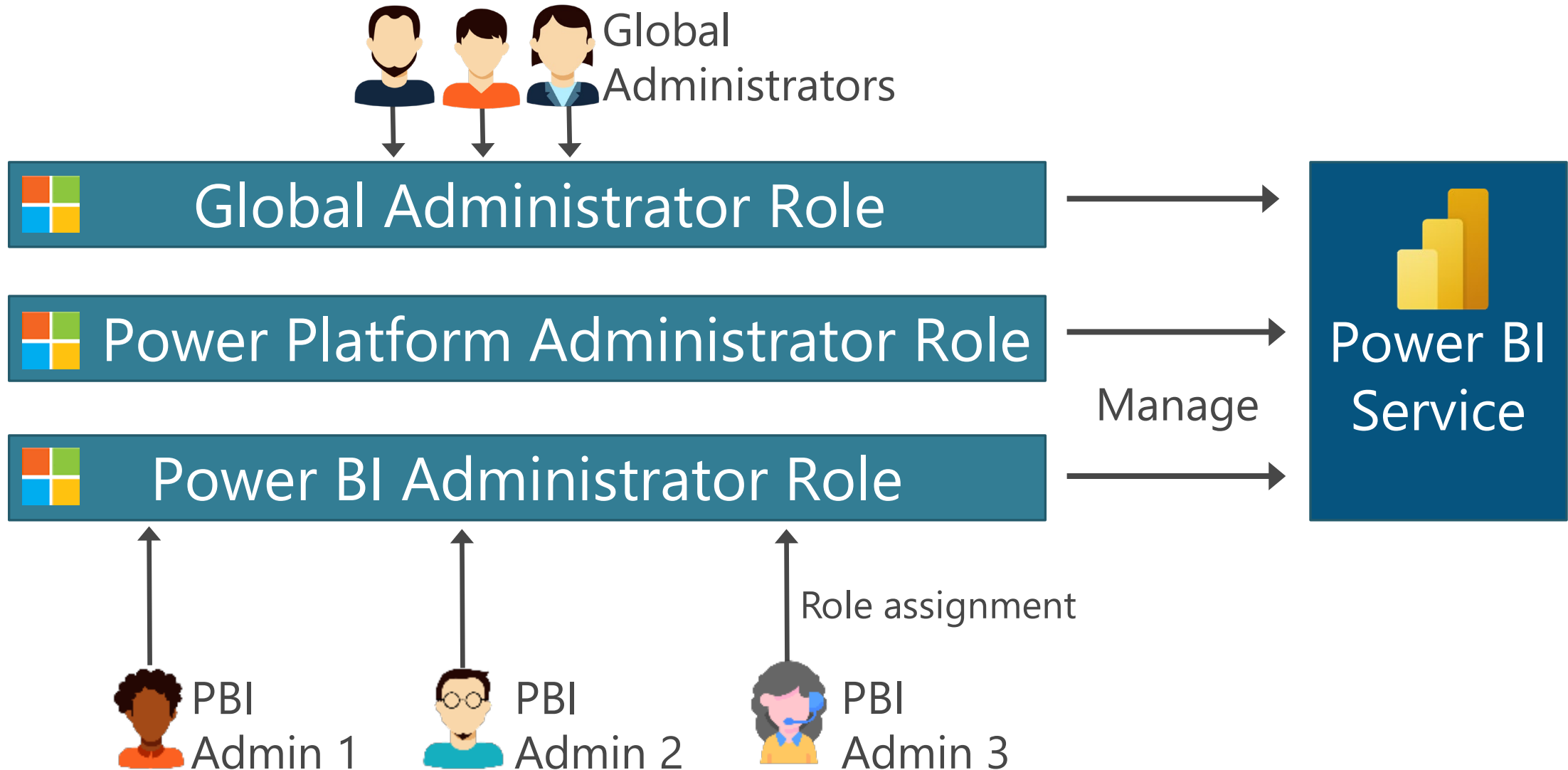
Roles for Managing the Power BI Service

Microsoft 365 Roles:





Option 1: Assign Individuals to the Role



What If You Also Use a Group?



Power BI Administrators Group

Tenant Settings

Groups used to allow/disallow features

Workspace Access

Auditing, health, adoption & security reports

Alerting

Notifications such as PowerShell jobs or MS Defender alerts



We don't want to have to maintain the Power BI Admin group *and* the built-in role twice.



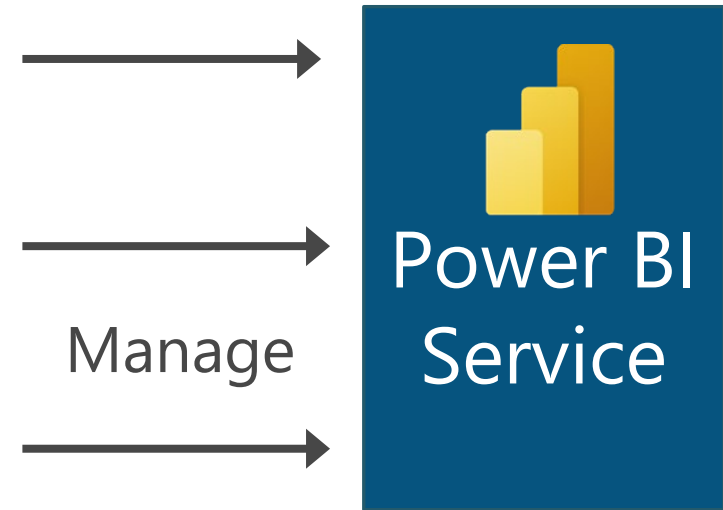
Option 2: Assign Individuals to Group that's Assigned to a Role



 Global Administrator Role

 Power Platform Administrator Role

 Power BI Administrator Role



Role is assigned to the group


 Power BI Administrators Group



Administrator-Related Groups Useful to Have




Security group
(Azure AD)




Power BI
Administrators

→  Power BI administrator role

→  Workspace access: admin, auditing, adoption, security reporting


 Mail-enabled
security group
(Exchange)




Power BI
System Support

→  Tenant setting: incidents and alerts


→  Notifications from PowerShell or MSFT Defender for Cloud Apps

 Mail-enabled
security group
OR
M365 unified
group




Power BI
Gateway Admin

→  Gateway cluster administrators



Power BI
Capacity Admin

→  Premium capacity administrators



Power BI
User Support

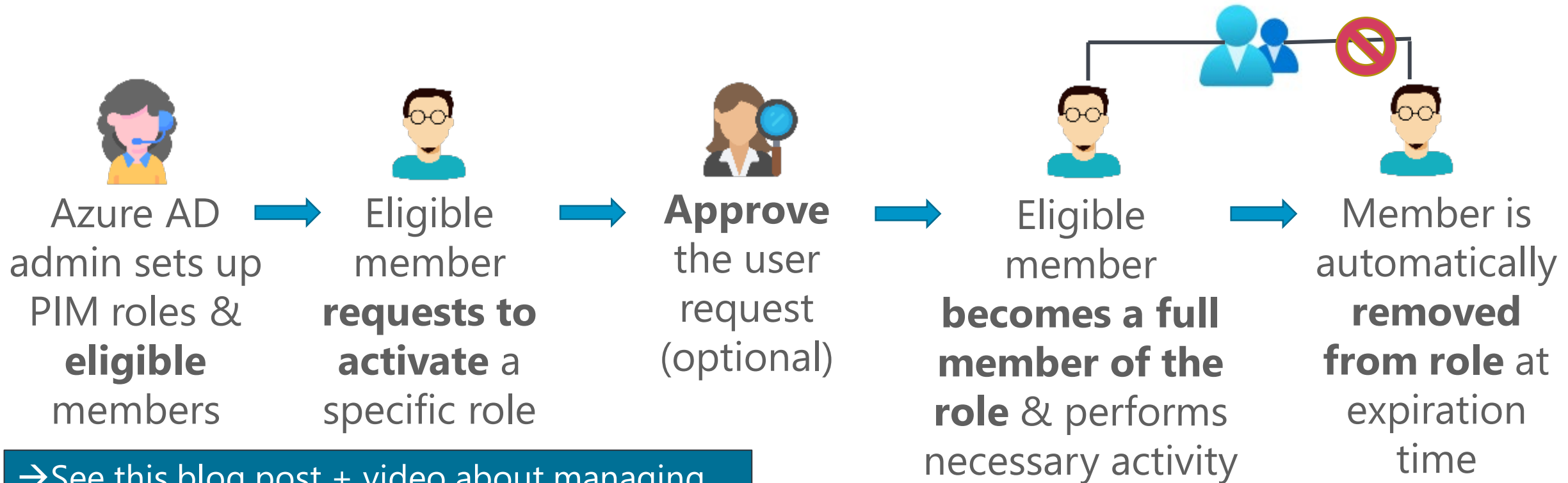
→  User contact group for support

How to Reduce the # of Administrators



Azure AD Privileged Identity Management (PIM)

Provides “just-in-time” membership in roles such as Global Administrator, Power BI Administrator, etc.



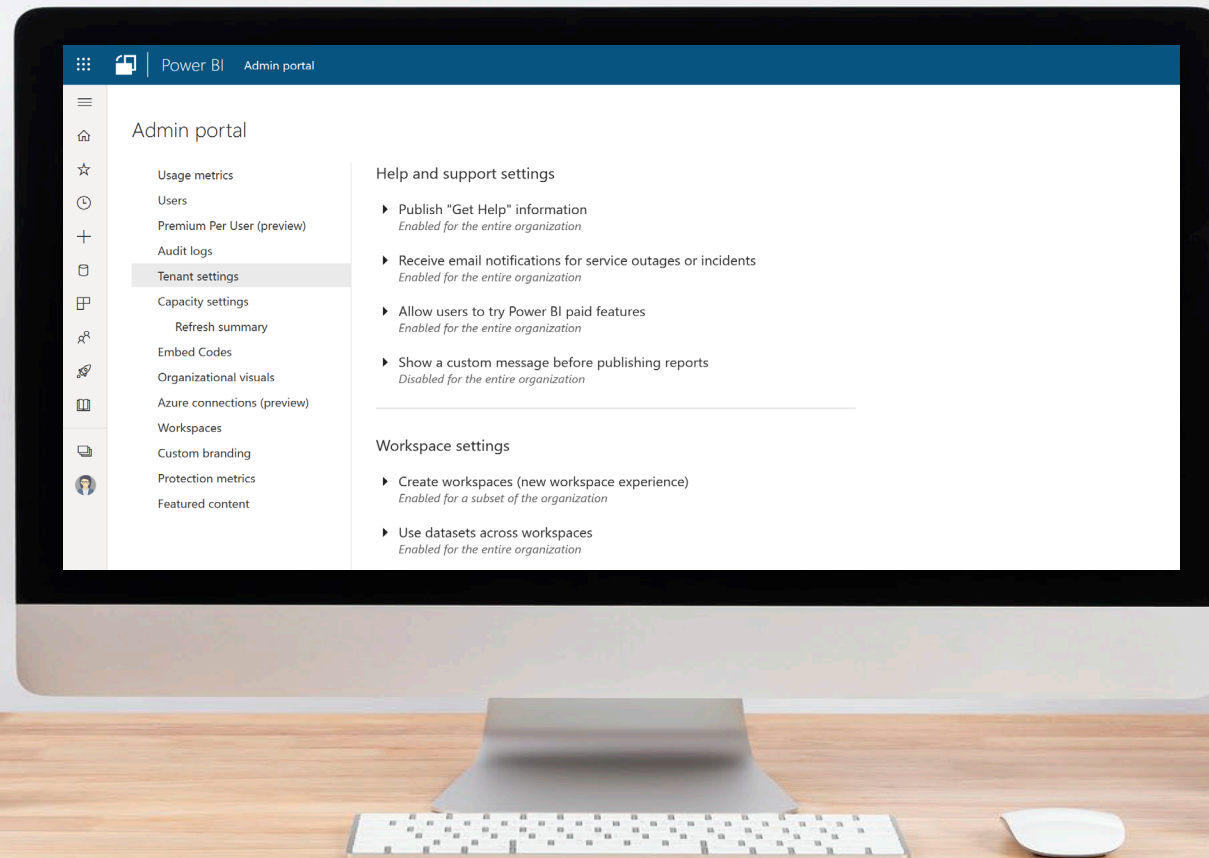
→ See [this blog post](#) + [video](#) about managing the admin role & PIM



Managing & Documenting Tenant Settings

Tenant settings

One of **the most important** things to get right





How Tenant Settings Work



A Power BI administrator can ***manage*** and ***edit*** all of the tenant settings.

However, the Power BI admin cannot ***perform*** those activities unless they are allowed to by the specific tenant setting.

Managing Tenant Settings



1. Review every tenant setting
2. Document decisions made (who, when, why)
3. Document the settings for users to view
 - + which groups are used for functionality
 - + how to get approved for a group
3. Track changes with the 'UpdatedAdminFeatureSwitch' operation in the activity log (plus alerts if desired)
4. Audit the tenant settings regularly (every 3-6 months)

Reviewing Tenant Settings



Review every
tenant setting



Enabled or
disabled?

Setting limited to
specific security
group(s)?



Does an existing security
group exist which is suitable?



Need to request new
security group(s)?



Why Document Tenant Settings for Users?



There's no "reader role" for a Power BI administrator. This is a challenge in bigger, decentralized companies.



Users read online things they can do, and end up being frustrated things don't work.

Tenant Settings: Email Alerts When a Settings Is Changed

→ See [this blog post + video](#) about getting alerted when a tenant setting changes

The screenshot shows the Microsoft Defender for Cloud Apps interface. The left sidebar contains navigation options: Dashboard, Discover, Investigate, Control (highlighted), Policies, Templates, and Alerts (with a notification badge). The main content area is titled 'Edit activity policy' and includes the following sections:

- Policy name ***: A text input field containing 'Power BI - Administrative Activity'.
- Policy severity ***: A visual indicator with three colored bars (yellow, orange, red).
- Category ***: A dropdown menu set to 'Configuration control'.
- Description**: A text area containing 'Administrative activity occurred in Power BI.'
- Create filters for the policy**: A section with two radio button options: 'Single activity' (selected) and 'Repeated activity:'. Below these are filter rules:
 - Rule 1: App equals Microsoft Power BI
 - Rule 2: Administrative activity is True
- Alerts**: A section with a checked checkbox 'Create an alert for each matching event with the policy's severity' and a checked checkbox 'Send alert as email'. The email address field contains 'PowerBIAdministrators@...com'.



Managing the Power BI Service



Managing Workspaces

View & update metadata for all non-personal workspaces* in the tenant: Name, description, and security access

Admin portal

- Usage metrics
- Users
- Audit logs
- Tenant settings
- Capacity settings
 - Refresh summary
- Embed Codes
- Organizational visuals
- Dataflow settings
- Workspaces**
- Custom branding
- Protection metrics (preview)
- Featured content

Workspaces

View personal and group workspaces that exist in your organization. To change users' ability to create workspaces, see [Tenant settings](#).

Refresh Export

Name	Description	Type	State	Read only	On dedicated capacity
Device Telemetry Data	Production data workspace w...	Workspace	Active	False	False
Sales Analytics	MTD, QTD, YTD sales reporting.	Workspace	Active	False	False
Sales Data	Production data workspace fo...	Workspace	Active	False	False
Common Data	Production data workspace co...	Workspace	Active	False	False
Executive Metrics	Production workspace for exe...	Workspace	Active	False	True
Executive Bonuses [R]	Restricted	Workspace	Active	False	False
Power BI Admin & Monitoring	Workspace for Corporate BI a...	Workspace	Active	False	False
Power BI Community [Team]	Power BI artifacts, resources, a...	Workspace	Active	False	False

*V2 new workspace experience

Embed Codes

Admin portal

- Usage metrics
- Users
- Audit logs
- Tenant settings
- Capacity settings
- Refresh summary
- Embed Codes**
- Organizational visuals
- Dataflow settings
- Workspaces
- Custom branding
- Protection metrics (preview)
- Featured content

Embed Codes

View embed codes that have been created by your organization. To change users' ability to use publish to web, see [Tenant settings](#).

Refresh Export

Report name	Workspace name	Published by
Public Financial Summary	Financial Summary [Public]	Payton Adamsen

Items per page: 10

Publish to web

Enabled for a subset of the organization

People in your org can publish public reports on the web. Publicly published reports don't require authentication to view them.

Go to [Embed Codes](#) in the admin portal to review and manage public embed codes. If any of the codes contain private or confidential content remove them.

Review embed codes regularly to make sure no confidential information is live on the web. [Learn more about Publish to web](#)

Enabled

Choose how embed codes work

- Only allow existing codes
- Allow existing and new codes

Apply to:

- The entire organization
- Specific security groups

Power BI Public Publishing X Enter security groups

Except specific security groups



1. Ensure tenant setting permits **very few people to use Publish to Web**
2. Track use of the 'GenerateEmbedToken' operation in the **activity log**
3. **Validate** the list of embed codes on a regular basis

Organizational Visuals

Custom visuals give report creators significantly more flexibility



1. Enable **tenant setting** to use certified visuals only in the Power BI Service.
2. Enable **group policy** to use certified visuals only in Power BI Desktop.
3. Handle exceptions using **organizational visuals**.
Specific allowed visuals may include:
 - Internally developed visuals
 - Non-certified, but trustworthy & approved for use

Admin portal

Usage metrics

Users

Audit logs

Tenant settings

Capacity settings

Refresh summary

Embed Codes

Organizational visuals

Dataflow settings

Workspaces

Organizational visuals

Add and manage Power BI visuals for your organization. [Learn more](#)

VISUAL

CHANGED BY



Corporate Custom Scatterplot

Payton Adamsen

Add an organizational visual

Azure Connections



Azure Data Lake Storage Gen 2 account:
"Bring your own data lake" for dataflows & backup / restore datasets

Allow use of Azure Log Analytics

Admin portal

- Tenant settings
- Usage metrics
- Users
- Premium Per User
- Audit logs
- Capacity settings
 - Refresh summary
- Embed Codes
- Organizational visuals
- Azure connections**
- Workspaces
- Custom branding
- Protection metrics
- Featured content

Connect to Azure resources (preview)

- ▾ Tenant-level storage (preview)
 - Connect an Azure Data Lake Gen2 storage account. [Learn more](#)
 - Subscription** 2a[redacted]e7d
 - Resource group** CorporateAnalyticsRGDev
 - Storage account** corpdatalakedev
 - Disconnect from Azure**
- ▾ Workspace-level storage permissions (preview)
 - Allow workspace admins to connect their own storage account
 - Save** **Cancel**
- ▾ Workspace-level Log Analytics permissions (preview)
 - You can allow Workspace administrators to configure activity logging in [Tenant settings](#)

Monitoring Power BI System Health



Power BI Support Site

<https://powerbi.microsoft.com/en-us/support/>

Support

How can we help you? **SEARCH SUPPORT**

Service Status Per Region

- ✓ America
- ✓ Asia Pacific
- ✓ Europe

✓ Good ⓘ Information ⚠ Degraded ❌ Outage

Service Outage/Degradation

- ✓ No known issues: Power BI is running smoothly

Awareness

- ⓘ Power BI customers attempting to author content with [QuickBooks Online](#) using the Power BI Desktop client may encounter an error window saying "Script Error". As a short term mitigation, the Intuit team has rolled back the impacting change for two weeks. During this time, customers are requested to log in using the Power BI desktop client and then refresh their report every 30 days until a permanent fix is available. The long term solution for this issue is expected to be deployed by the end of April, 2021.

Azure Status

<https://status.azure.com/en-us/status>

Microsoft Azure My account Portal

Azure status RSS

Last updated 50 seconds ago

View other issues that may be impacting your services: [Go to Azure Service Health](#)

HELPFUL LINKS

- Status history & Root Cause Analysis (RCAs)
- Set up automatic service health alerts
- Service Level Agreements (SLAs)

Refresh every

✓ Good ⓘ Information ⚠ Warning ❌ Critical

	Americas	Europe	Asia Pacific	Middle East and Africa	Azure Government	Azure China
PRODUCTS AND SERVICES						
Power BI Embedded	✓	✓	✓	✓	✓	✓

Microsoft 365 Admin Center

<https://admin.microsoft.com>

Microsoft 365 admin center

The new admin center

Service health March 1, 2020 11:57 AM

All services Incidents Advisories History Reported issues

View the health status of all services that are available with your current subscriptions.

[+ Report an issue](#) [Preferences](#) 22 items

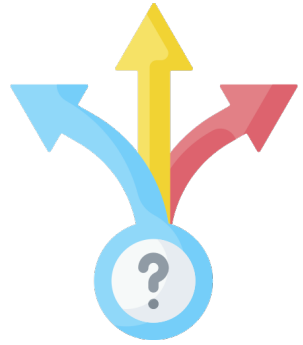
Name	Status
Exchange Online	1 advisory
SharePoint Online	2 advisories
OneDrive for Business	Healthy
Planner	Healthy
Power Apps in Microsoft 365	Healthy
Power BI	Healthy

Includes:

- Root cause
- Scope & user impact
- Start & end time
- Next steps



Power BI Service Updates



There is NOT a way to receive updates in the Power BI Service faster or slower.

Power BI doesn't participate in the Microsoft 365 update channels (current, monthly, semi-annual).



Power BI Service Updates

You can control:

- When **Desktop** updates are installed
- When **Gateway** updates are installed

Best to keep current & aligned with the Service

Desktop: only the latest release is officially supported.

Gateway: the last 6 months are officially supported.

User Support - Internal



Decide what your internal support team is willing & capable of handling, such as:

- Data discrepancies
- Technical troubleshooting (ex: refreshes & connectivity)
- Updates & installations

Make sure your internal support team is ready & there are clear expectations (SLAs).

The extent of support for enterprise content vs. self-service content needs to be clear.

User Support - Microsoft



Microsoft Support Option	Service Level Agreement
<p>Power BI Community Web-based forum: answers from community members & Microsoft https://community.powerbi.com/</p>	Best effort
<p>Power BI Pro User Support Basic technical support for content authors & consumers who have a Pro license https://support.powerbi.com/ https://powerbi.microsoft.com/en-us/support/pro/</p>	1 business day
<p>Power BI Administrator Support Technical support for Power Platform admins & M365 Global admins https://admin.powerplatform.microsoft.com/support https://admin.microsoft.com/AdminPortal/Home#/support/requests</p>	1 business day or 1 hour depending on severity
<p>Microsoft Premier Support Enterprise support & additional training, reviews & workshops for customers with a Premium Support contract https://admin.microsoft.com/AdminPortal/Home#/support/requests</p>	Varies depending on customer agreement & severity

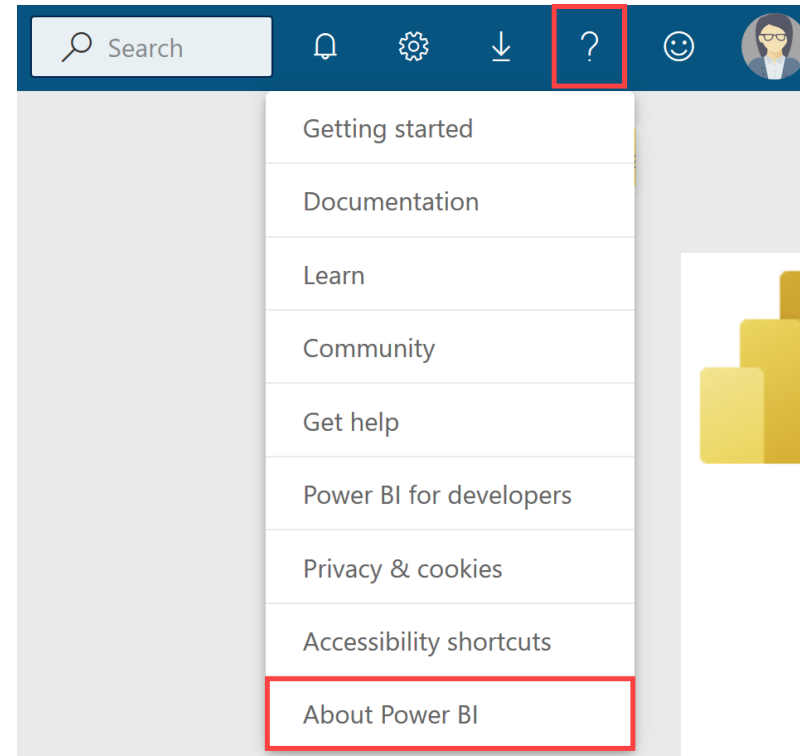
Authoritative source: <https://docs.microsoft.com/en-us/power-bi/admin/service-support-options>



Tenant Location

Locate as close as possible to each other:

- Power BI tenant
- Data sources
- Gateways
- Users



Power BI

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Service version 13.0.15302.46

Client version 2101.4.04609-train

Activity ID 6289257b-054f-4df7-89f7-2d7cc20f352d

App Instance ID 3i936

Time Fri Feb 05 2021 08:04:33 GMT-0500 (Eastern Standard Time)

Your data is stored in North Central US (Illinois)

Tenant URL <https://app.powerbi.com/home?ctid=a198ef79-e>

Close

A Premium capacity node can reside in a specific geography if needed.

Managing User Machines & Devices



Power BI Software to Install & Update

Power BI Desktop (monthly updates + QFE releases)

Power BI Desktop Optimized for Report Server (3x/year updates)

Power BI Paginated Report Builder

Power BI Mobile App

Power BI App for Windows 10

Ideally pushed to users so all authors are on same version

QFE = Quick Fix Engineering

Managing User Machines & Devices



Other Common Items to Install & Update

Drivers (ex: Oracle, HANA, MS Access Engine, etc.)

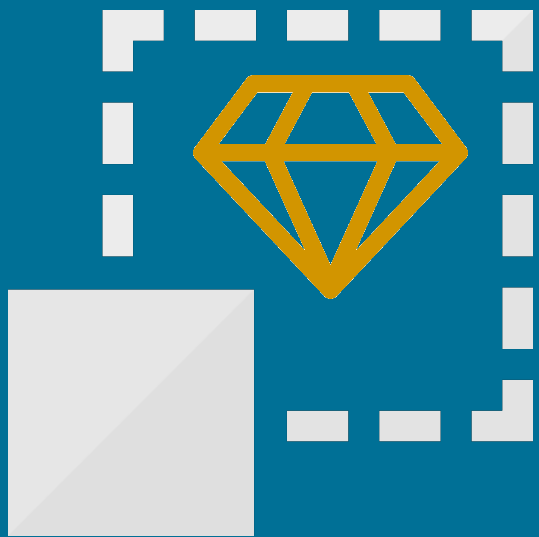
Analyze in Excel Provider

External Tools (ex: Tabular Editor, DAX Studio, ALM Toolkit)

Custom connectors

Group Policy settings (ex: use of custom visuals)

Registry settings (ex: set global privacy level, disable update notifications)



Managing Power BI Premium & Premium Per User

4 Workspace License Modes



 User-based named licensing

-  My Workspace
-  Pro Workspace

Power BI Free license

Power BI Pro license

Premium Gen 2

 + User-based Premium licensing



-  PPU Workspace

Premium Per User (PPU) license

Premium Gen 1

 Capacity-based Premium licensing




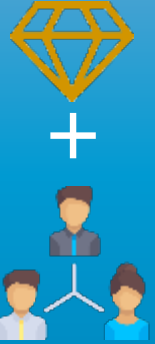



-  Premium Workspace

Power BI Premium (P or EM) or Power BI Embedded (A SKUs)

Who Can Access a Workspace?



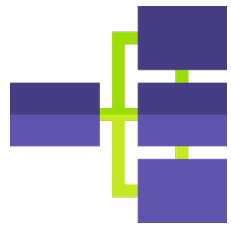
Free User Pro User PPU User

 <p>User-based named licensing</p>		 <p>My Workspace</p>	X	X	X	
		 <p>Pro Workspace</p>		X	X	
Premium Gen 1	Premium Gen 2	 <p>User-based Premium licensing</p>	 <p>PPU Workspace</p>			X
		 <p>Capacity-based Premium licensing</p>	 <p>Premium Workspace</p>	X	X	X

Why Go Premium?

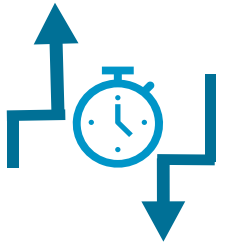


Both PPU & Premium Capacity Licensing:



Additional Enterprise BI Capabilities

Deployment pipelines, paginated reports, XMLA read/write, full featureset for dataflows, change detection for auto page refresh



Scalability

Auto-scale for 24 hours, large datasets, more frequent refreshes



Integration with Other Apps

Azure Cognitive Services and Azure Machine Learning

Why Go Premium?



Premium Capacity Only (not available to PPU):



Unlimited Content Distribution to Free Users

Capacity-based licensing for a large number of read-only users is more cost-effective



Regulatory & Privacy

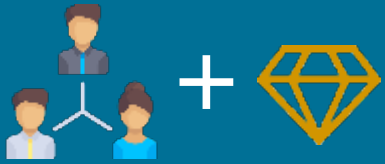
Bring-your-own-key, specific geography for data storage



Hybrid Cloud

Use of Power BI Report Server as alternative deployment location

Using Both PPU & Premium Capacity



Premium Per User (PPU)
Licenses



Premium
Capacity License



Development

Read/write access:
Content authors &
admins



Test

Read/write access:
Content authors &
admins

Read access:
Quality assurance &
user acceptance
testing



Production

Read/write access:
Content authors &
admins

Read access:
Content viewers

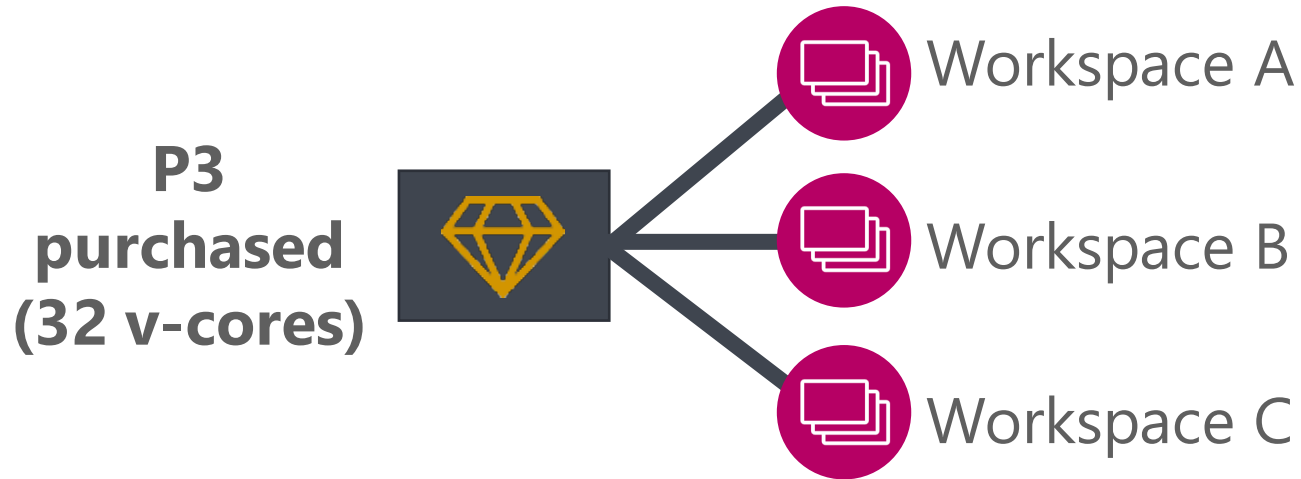




Deciding on Premium Capacity Size

Single larger capacity:

- Larger model size
- Greater parallelism

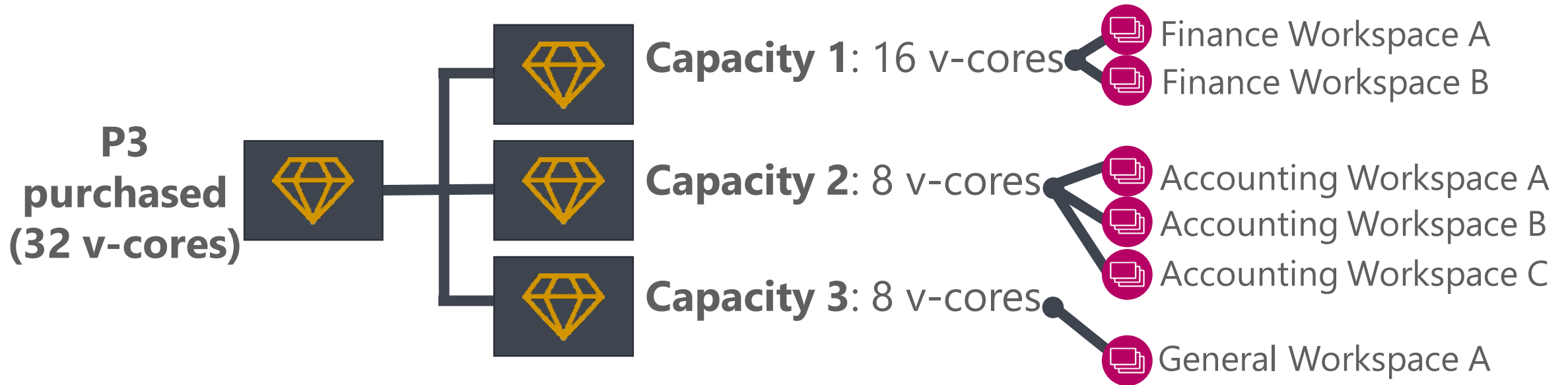




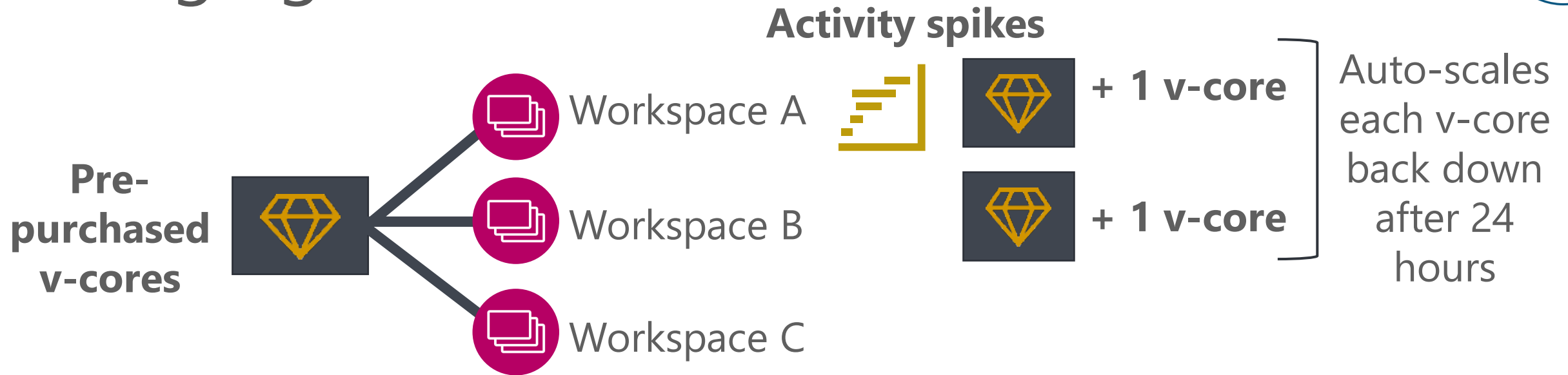
Deciding on Premium Capacity Size

Multiple smaller capacities:

- Isolated workloads for departments
- Separate capacity contributors
- The full maximum purchased isn't available



Managing Auto-Scale



Two options for managing auto-scale cost:

1. Max v-cores set in the Power BI Service
2. Spending limits & budgets set in Azure (auto-scale v-cores are supported by the Azure Power BI Embedded service)

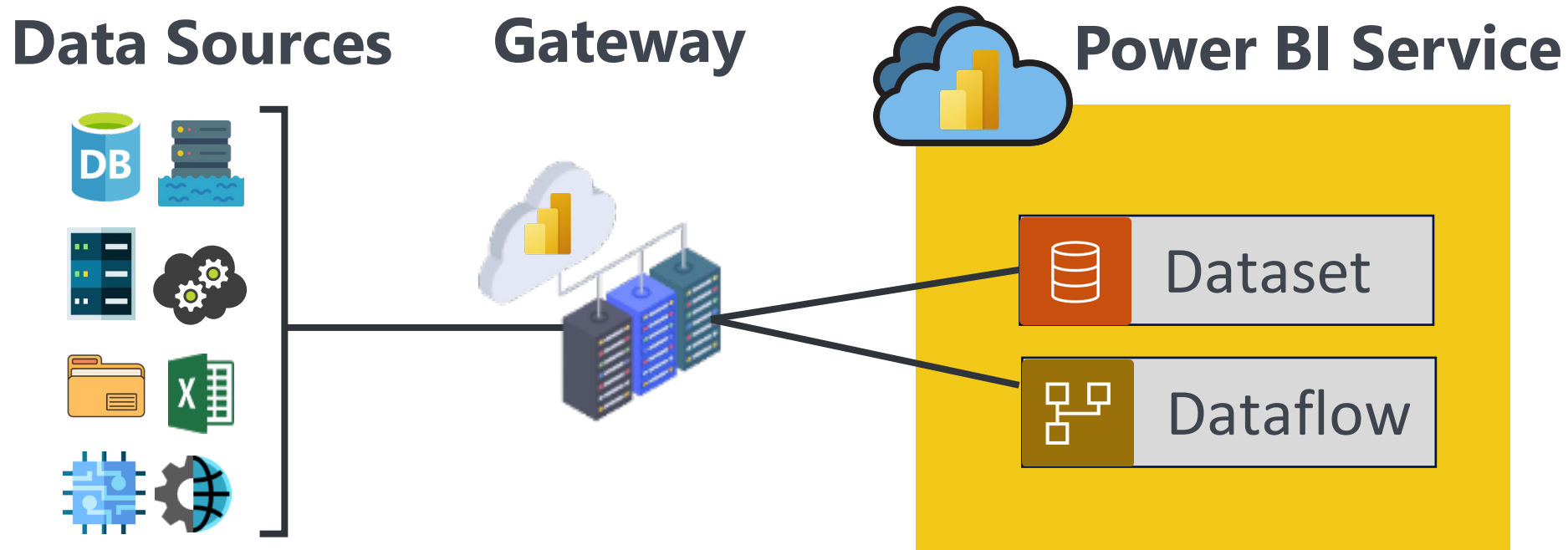


Managing Power BI Data Gateways



Purpose of a Data Gateway

Reach data sources from the cloud service:



When is a Gateway Needed?



1

In the
Power BI Service

AND

2

Data source is located in
a private network

OR

3

Security isolation when certain
Power Query connectors &
functions are used

When is a Gateway Needed?



1

In the
Power BI Service

- Refreshing imported datasets
- Refreshing dataflows
- Using DirectQuery
- Using Live Connection for Analysis Services

When is a Gateway Needed?



2

Data source
is located in a
private network

- Data center within organizational network or on-premises
- Cloud-based virtual machine (IaaS: infrastructure as a service)
- Cloud-based database in a VNet (PaaS: platform as a service in a virtual network)

When is a Gateway Needed?



3

Security isolation
when certain Power
Query connectors &
functions are used

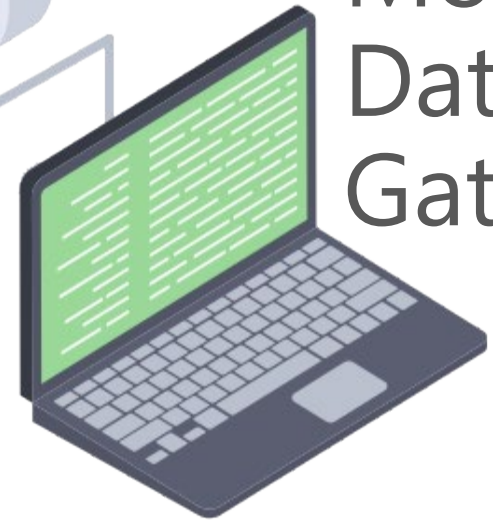
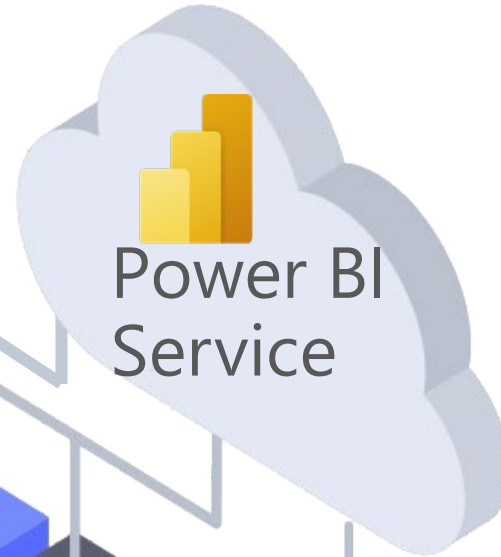
Situations such as:

- Web Page connector
- Web.BrowserContent function
- Web.Page function
- Use of the ACE driver



Three Types of Gateways

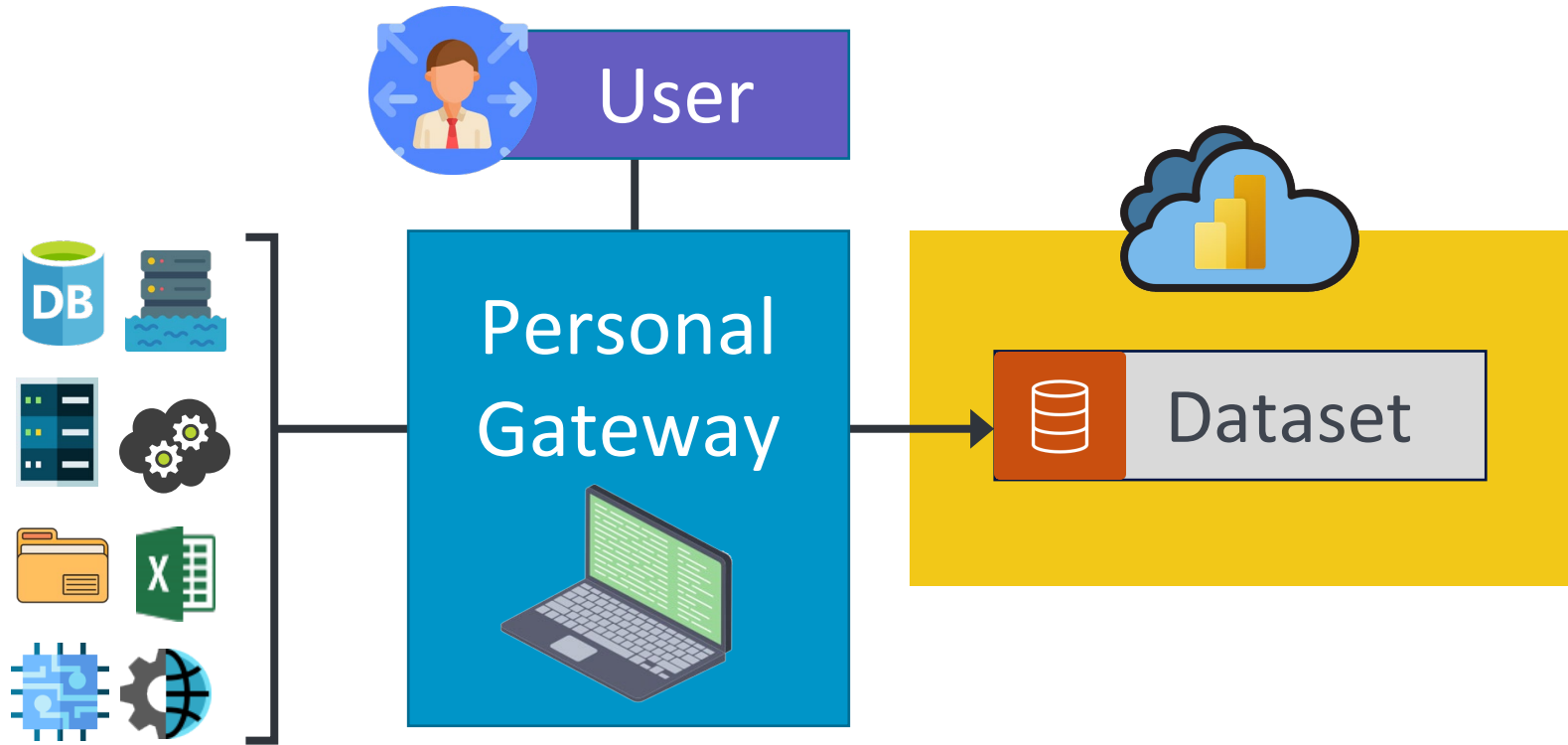
Virtual Network
Data Gateway



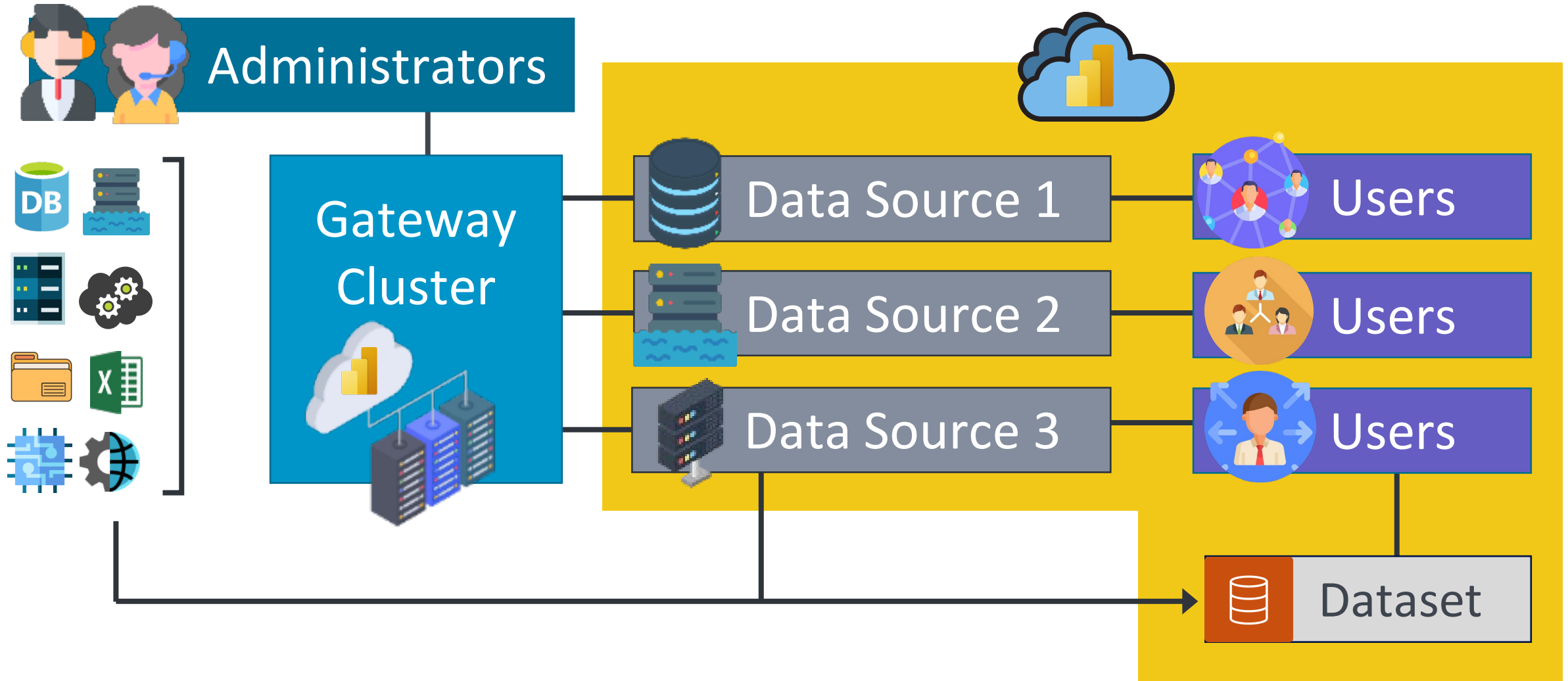
Personal
Mode
Data
Gateway

Standard Mode
Data Gateway Cluster

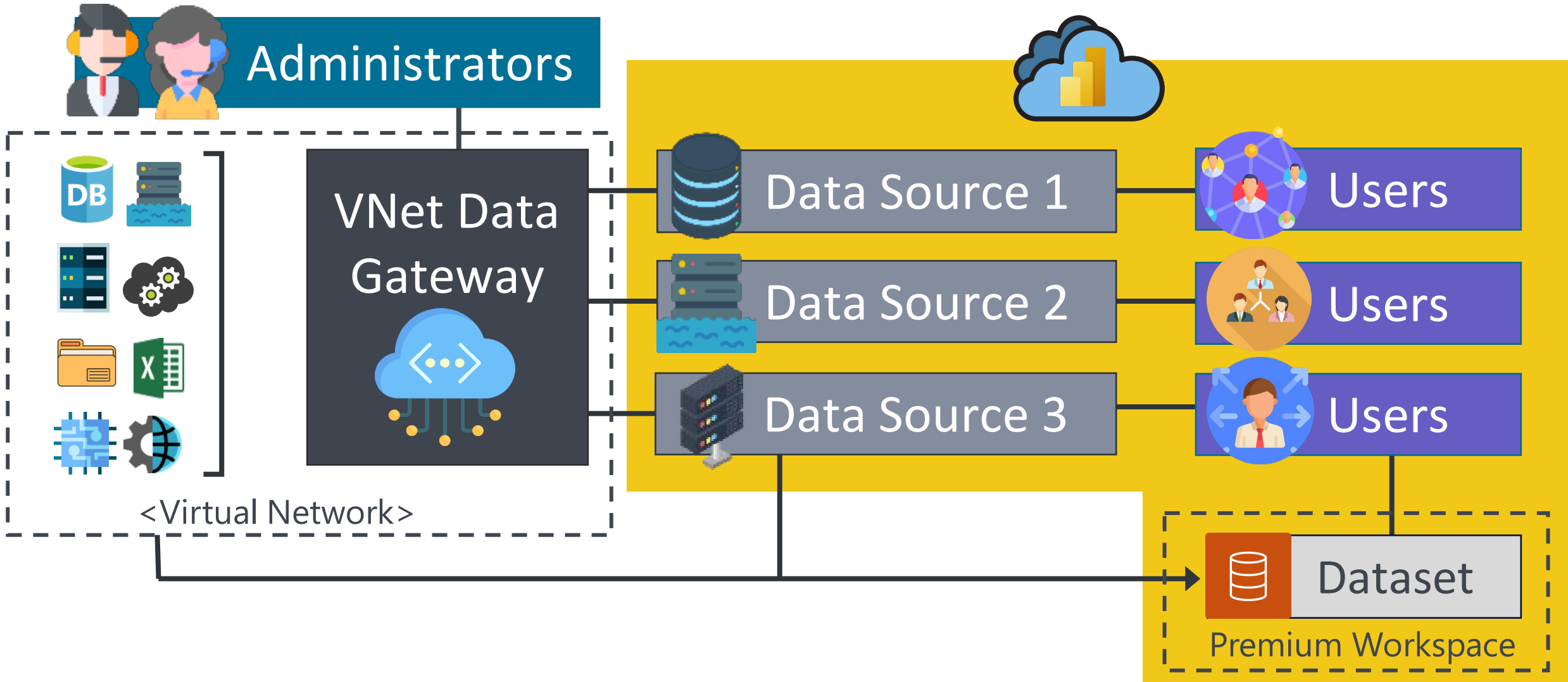
Personal Mode Data Gateway



Standard Mode Data Gateway



Virtual Network Data Gateway



Three Types of Gateways



VNet



Standard Mode



Personal Mode

For use by	Many users	Many users	One user
Managed by	Microsoft	Customer (Admin)	Customer (User)
Premium Workspaces	--Yes--	N/A	N/A
Supports:			
Data Refresh	Yes	Yes	Yes
DirectQuery	Yes	Yes	--No--
Live Connection	Yes	Yes	--No--
Azure AD Single Sign-On	Yes	Yes	--No--
R & Python Connectivity	--No--	--No--	Yes

Gateway Cluster Environments



Production gateway cluster

Should have at least 2 machines for:

High availability

Goal: eliminate single point of failure

Load balancing

Goal: distribute workload across machines

Rotating updates

Goal: ensure uptime



Dev/test gateway cluster

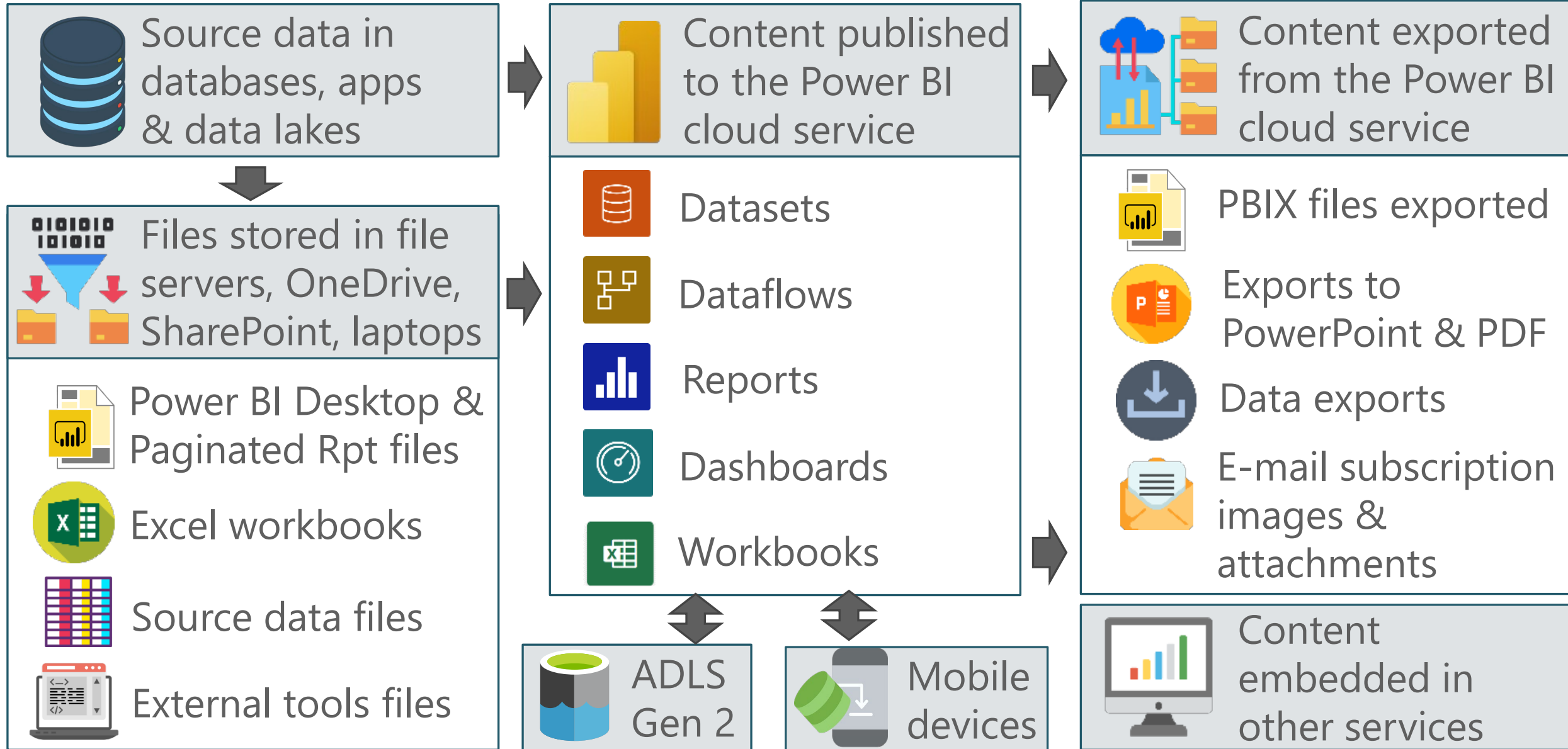
Okay to allocate fewer servers & less resources;
Most useful for testing monthly updates



Securing & Protecting Power BI Content



What Needs To Be Secured & Protected?



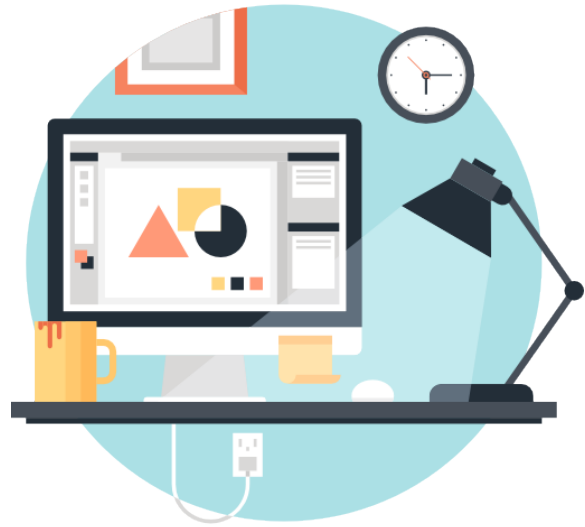
File Location Permissions



Have clear guidance for the internal user community regarding use of approved file storage locations:

- Source files (ex: PBIX, RDL, XLSX)
- Source data (ex: flat files, XLSX, etc)
- Saved subscription e-mail attachments
- Exports of data
- Exports of reports

Managing User Licenses



All Power BI users need to be identified via Azure Active Directory identity associated with a user license:

- Power BI Free license,
- Power BI Pro license, or
- Power BI Premium Per User (PPU) license

Exceptions:

- Content published publicly with Publish to Web
- Power BI Embedded (when application is managing authentication)
- Power BI Report Server (publishers of content need Pro license)



Azure AD Conditional Access

Implement security requirements based on conditions:



Conditions

Users and groups

Sign-in risk

Device platform

Location

Device state



Block access

Block access from:

- Locations which are not trusted
- Devices not domain-joined
- Devices not Intune-compliant



Grant access

Allow access if:

- Multi-factor authentication is completed
- Login from specific IP address range
- Login is from a specific device type
- Login is from certain Azure AD groups

Power BI Permissions Managed by Authors



Workspace

Admin | Member | Contributor | Viewer

Premium Capacity

Contributor

Deployment Pipelines

Admin

External Tool

Object-Level Security

Dashboards & Reports

Read:
Direct access sharing
or sharing link

Reshare

Sensitivity Label

Datasets

Read

Reshare

Build

Owner

Credentials or
GW data source

Sensitivity label

Discover

Request Access

Dataflows

Credentials or
GW data source

Owner

Sensitivity label

Goals

View

Check-in

Subscriptions

Recipients

Read

Apps

Read

Reshare

Sensitivity label

Personal gateway credentials

File locations for original & exported files

Power BI Desktop
Sensitivity Label

Row-Level Security

Data Source Settings

→ See this [blog post](#) & [video](#) for more info

Permissions Managed by Gateway Admin



Per gateway



Administrators



Per data source



Stored credentials 

User permissions

Use of single sign-on

Data privacy levels

Data Sensitivity Labels



Tenant setting controls who may apply sensitivity labels in Power BI

Sales Analytics
MTD, QTD, YTD sales reporting.

+ New ▾

≡ View ▾ ▾ Filters ⚙ Settings 👤 Access ⋮

All Content Datasets + dataflows

Name	Type	Owner	Refreshed	Sensitivity (preview)	Include in app
Call Center Dashboard	Dashboard	Sales Analytics	—	Internal Use ⓘ	<input checked="" type="checkbox"/> Yes
Call Center Stats	Report	Sales Analytics	5/12/20, 8:33:11 PM	Internal Use ⓘ	<input checked="" type="checkbox"/> Yes
Customer Analysis	Report	Sales Analytics	5/12/20, 8:33:15 PM	Highly Confidential ⓘ	<input type="checkbox"/> No
Gross Margin Analysis	Report	Sales Analytics	5/12/20, 8:33:27 PM	Restricted ⓘ	<input checked="" type="checkbox"/> Yes
Product Sales Analysis	Report	Sales Analytics	5/12/20, 8:33:27 PM	Restricted ⓘ	<input checked="" type="checkbox"/> Yes
Sales KPIs	Dashboard	Sales Analytics	—	Internal Use ⓘ	<input checked="" type="checkbox"/> Yes
Usage Metrics - Product Sales Analysis	Report	Sales Analytics	5/26/20, 6:17:36 PM	—	<input type="checkbox"/> No
YTD Sales Dashboard	Dashboard	Sales Analytics	—	Restricted ⓘ	<input checked="" type="checkbox"/> Yes
YTD Sales Revenue	Report	Sales Analytics	5/12/20, 8:33:27 PM	Restricted ⓘ	<input checked="" type="checkbox"/> Yes

Data Sensitivity Labels



Tenant-wide view of sensitivity labels used

Admin portal

- Usage metrics
- Users
- Audit logs
- Tenant settings
- Capacity settings
 - Refresh summary
- Embed Codes
- Organizational visuals
- Dataflow settings
- Workspaces
- Custom branding
- Protection metrics (preview)**
- Featured content

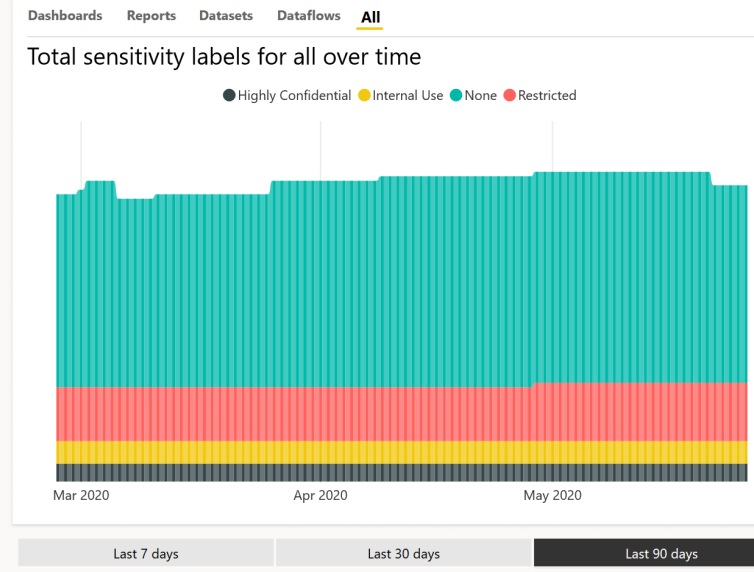
Data protection metrics report (preview)

This report shows how Power BI sensitivity labels help protect your content.

Power BI data protection is integrated with Microsoft Cloud App Security [Learn more](#)

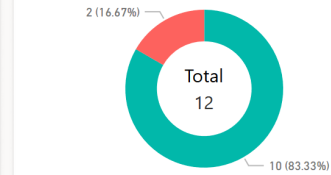
[Open the Cloud App Security portal to view more metrics](#)

Data Protection Summary

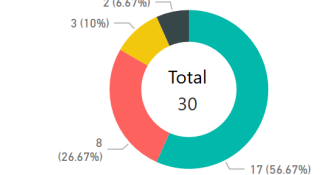


Sensitivity labels in your organization today

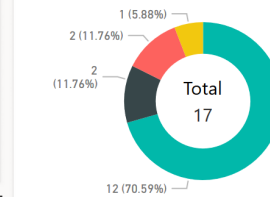
Dashboards



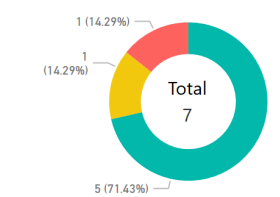
Reports



Datasets



Dataflows



Data Sensitivity Labels



Have a data handling policy for each sensitivity label which explains what can, and cannot, happen with the data.

For instance:

- Data access permitted (ex: internal only)
- Download allowed to local PC
- Content markings required
- Anonymization required

Data Loss Prevention with Defender for Cloud Apps



Policies

Threat detection Information protection Conditional access Shadow IT All policies

Filters:

Name: Type: **Select type** Status: **ACTIVE** DISABLED Severity: ■ ■ ■ ■ ■ ■ ■ ■ ■ Category: **Select risk category**

+ Create policy Export

1 - 4 of 4 Policies

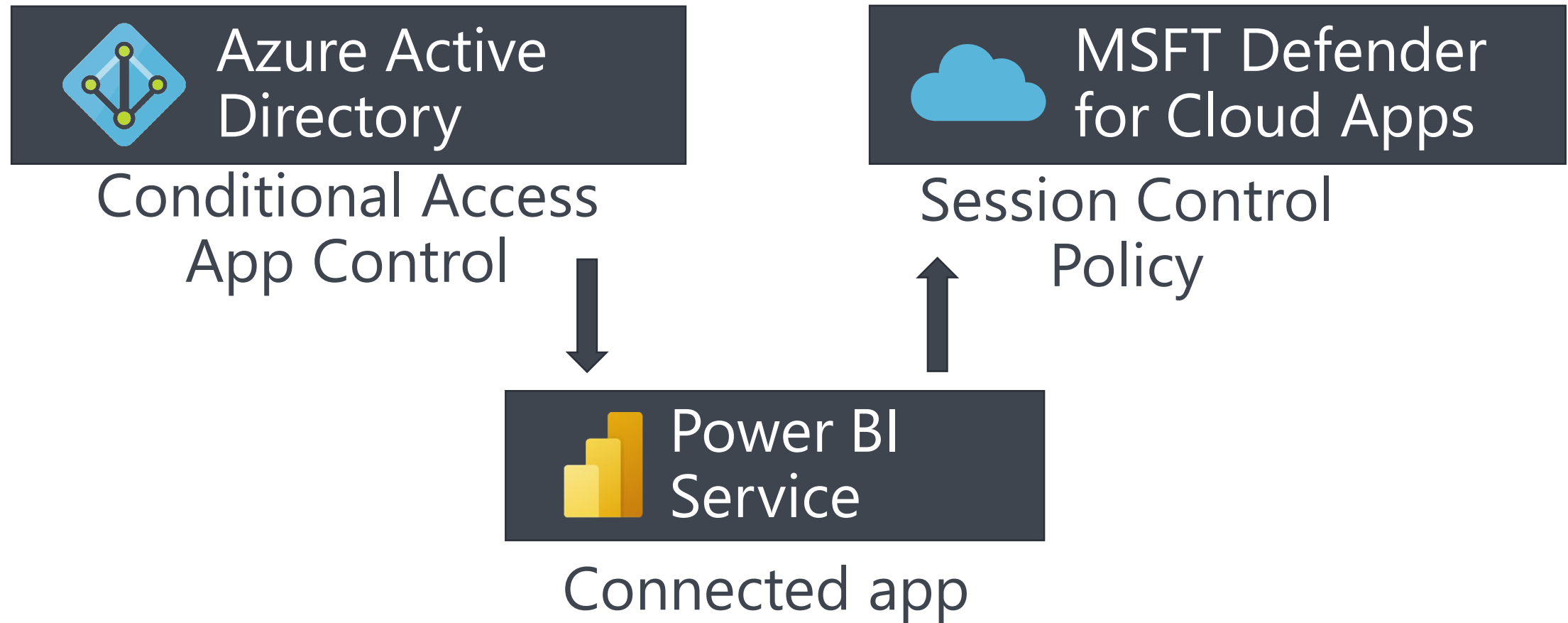
Policy	Count	Severity	Category	Action	Modified
Power BI - highly restricted data - block downloads	1 open alerts	High	DLP		Mar 2, 2022
Suspicious Power BI report sharing This policy profiles your environment and triggers alerts when a user shared a Power BI report that may includ...	0 open alerts	Medi...	Threat detection		Mar 21, 2022
Multiple Power BI report sharing activities This policy profiles your environment and triggers alerts when users perform multiple share report in Power BI ...	0 open alerts	Medi...	Threat detection		Mar 21, 2022
Power BI - Administrative Activity Administrative activity occurred in Power BI. This includes when a tenant setting changes.	0 open alerts	Low	Configuration control		Nov 1, 2021



Limiting Activities in the Power BI Service

Session Control: Limits an experience in a connected cloud application.

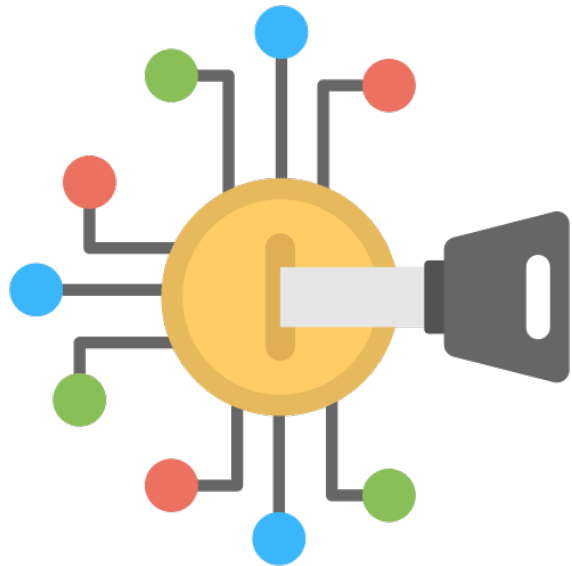
For example, block download of PBIX from Power BI Service if it's been assigned the "highly confidential" sensitivity label.





Managing Encryption Keys

- Data gateway recovery key (standard mode)
- Power BI Premium encryption key (if 'byok' is used)
- Azure Premium Storage encryption key (if large models)
- Power BI Report Server encryption key





Auditing & Activity Monitoring

Why Usage Monitoring is Critical



Critical content

What content is most frequently used?
Is it adequately supported?



Change tracking

What changes occur, when, and by whom?



Internal and external auditing

Are you able to satisfy requests from auditors?

Why Usage Monitoring is Critical



Monitoring adoption efforts

Can we analyze not only usage stats, but that the system is being used consistently and optimally/as it was intended?



Data trustworthiness levels

How many certified vs. non-certified datasets? How many datasets support > 1 report?



License usage

Who is (and is not) using Power BI, at what frequency?

Why Usage Monitoring is Critical



Understanding usage patterns

How are users *really* using Power BI?



Finding training opportunities

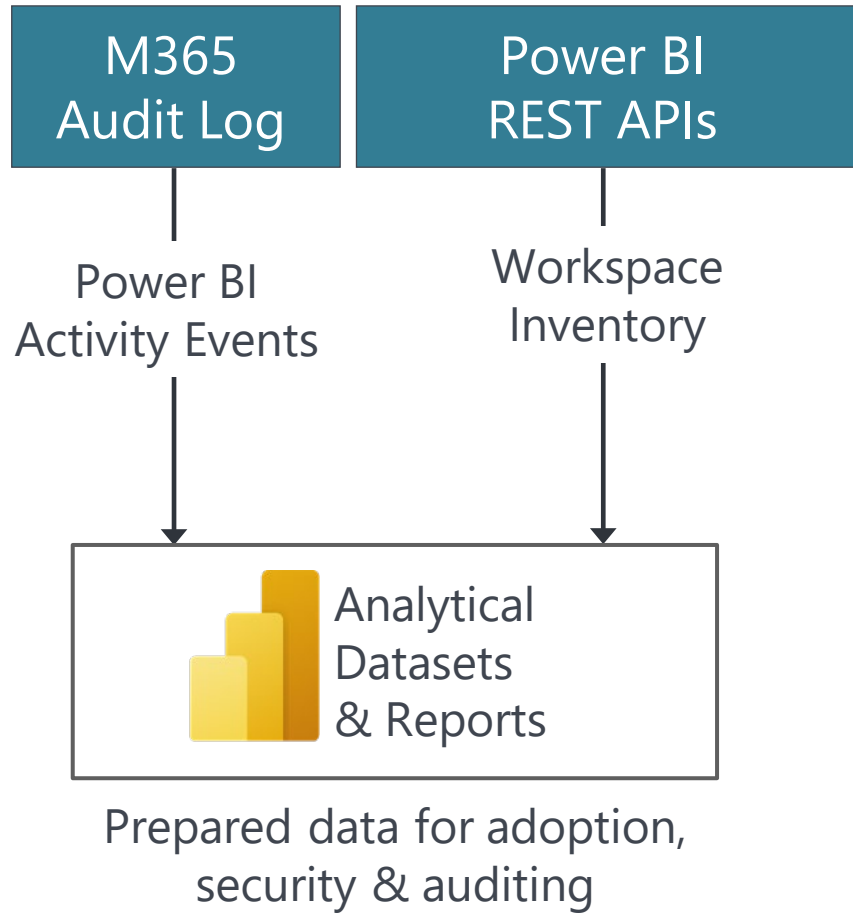
Is training actively made available to new users, or to encourage specific behaviors?



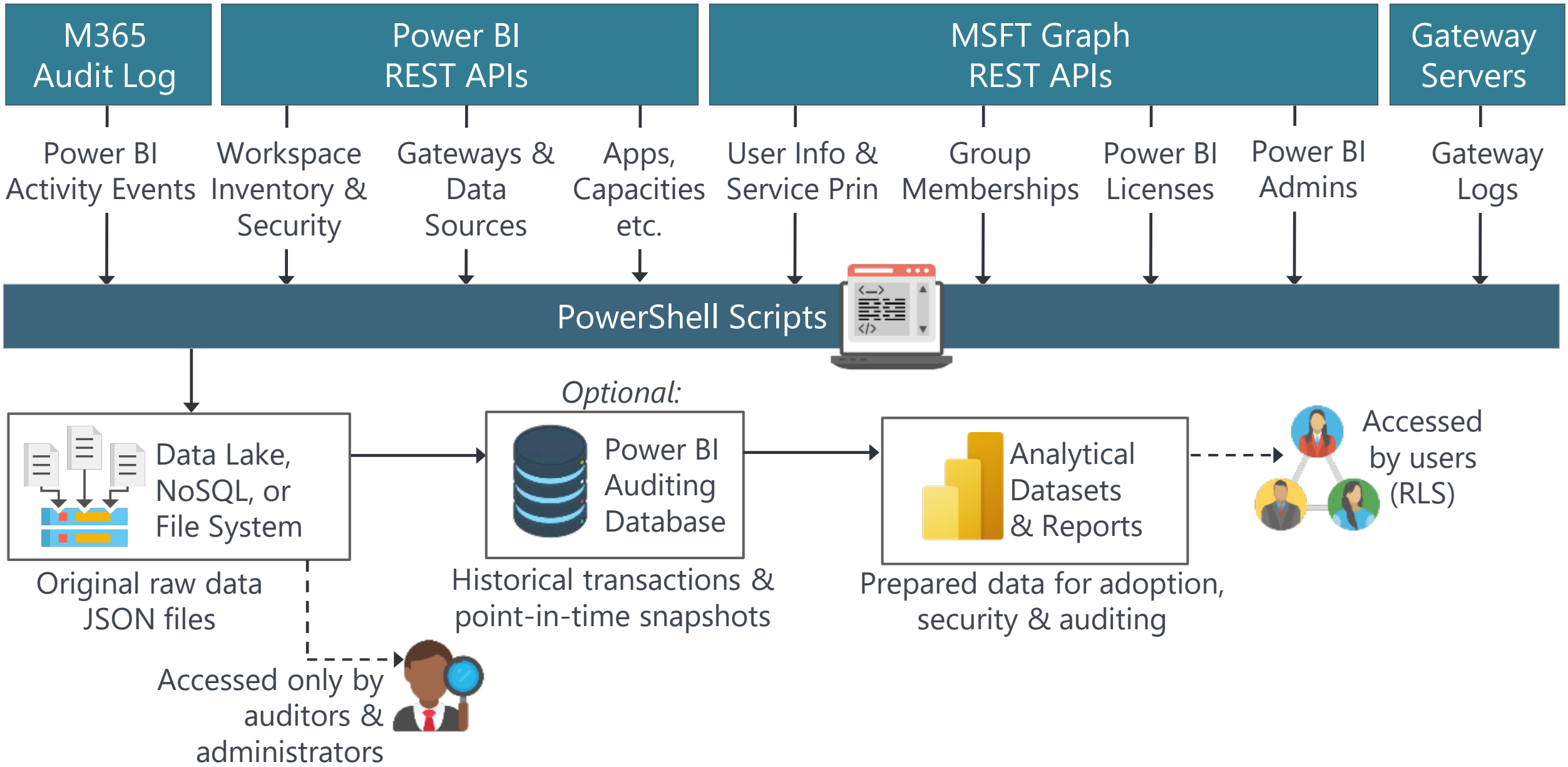
Suspicious usage patterns

Are any concerning activities occurring?

Basic Power BI Auditing Solution



End-To-End Power BI Auditing Solution



Tips for Successful Usage Monitoring



Know what your
"normal" is

Recognize when something is unusual to take action early

Accumulate
history

Comply with auditing requests & do useful trending analysis

Securely retain
raw data files

Retain raw files in a secure and immutable (no modifications or deletions) location so you can:

- Re-parse the data if you missed a new attribute
- Rely on this data for formal auditing

Correlate data

Improve usefulness by correlating with other related data



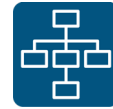
Q&A

More Information from Melissa Coates



Slides:

CoatesDS.com/Presentations



Diagrams:

CoatesDS.com/Diagrams



Power BI Governance Training:

CoatesDS.com/Training



Blog:

CoatesDS.com/Blog-Posts



YouTube:

YouTube.com/CoatesDataStrategies



Twitter:

[@SQLChick](https://twitter.com/SQLChick) | [@CoatesDS](https://twitter.com/CoatesDS)