

A dark gray silhouette of a world map serves as the background for the slide. The continents are clearly outlined against a black background.

Best Practices for Delivering and Sharing Content in Power BI

Melissa Coates

Melissa Coates

Solution Architect, BlueGranite

Blog: SQLChick.com

Co-founder & volunteer: Charlotte BI Group



Objectives

Understand the definition of and options for:

- ✓ Sharing
- ✓ Collaboration
- ✓ Distribution

Understand options for:

- ✓ Personal BI
- ✓ Small teams
- ✓ Large teams
- ✓ Enterprise

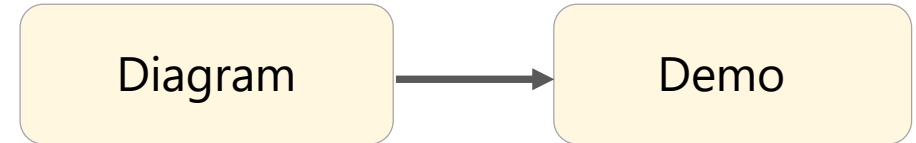
Agenda

Most common capabilities:

- ☐ My workspace
- ☐ Sharing
- ☐ App workspace (*focus on new experience*)
- ☐ Apps

Additional content delivery options:

- ☐ Power BI Premium
- ☐ Power BI Report Server
- ☐ Embedded solutions
- ☐ Other options & techniques



The textual slides in this deck are for takeaway purposes only.

More Details Available in Whitepaper

Many of the diagrams & concepts we'll discuss today are contained in this whitepaper, which was coauthored with Chris Webb. V2 was released in July.

<https://docs.microsoft.com/en-us/power-bi/whitepapers>



Planning a Power BI Enterprise Deployment

Whitepaper

Summary: This is a technical whitepaper which outlines considerations and best practices for achieving an optimal, well-performing, enterprise level Power BI deployment.

Writers: Melissa Coates ([BlueGranite](#)), Chris Webb ([Crossjoin Consulting](#))

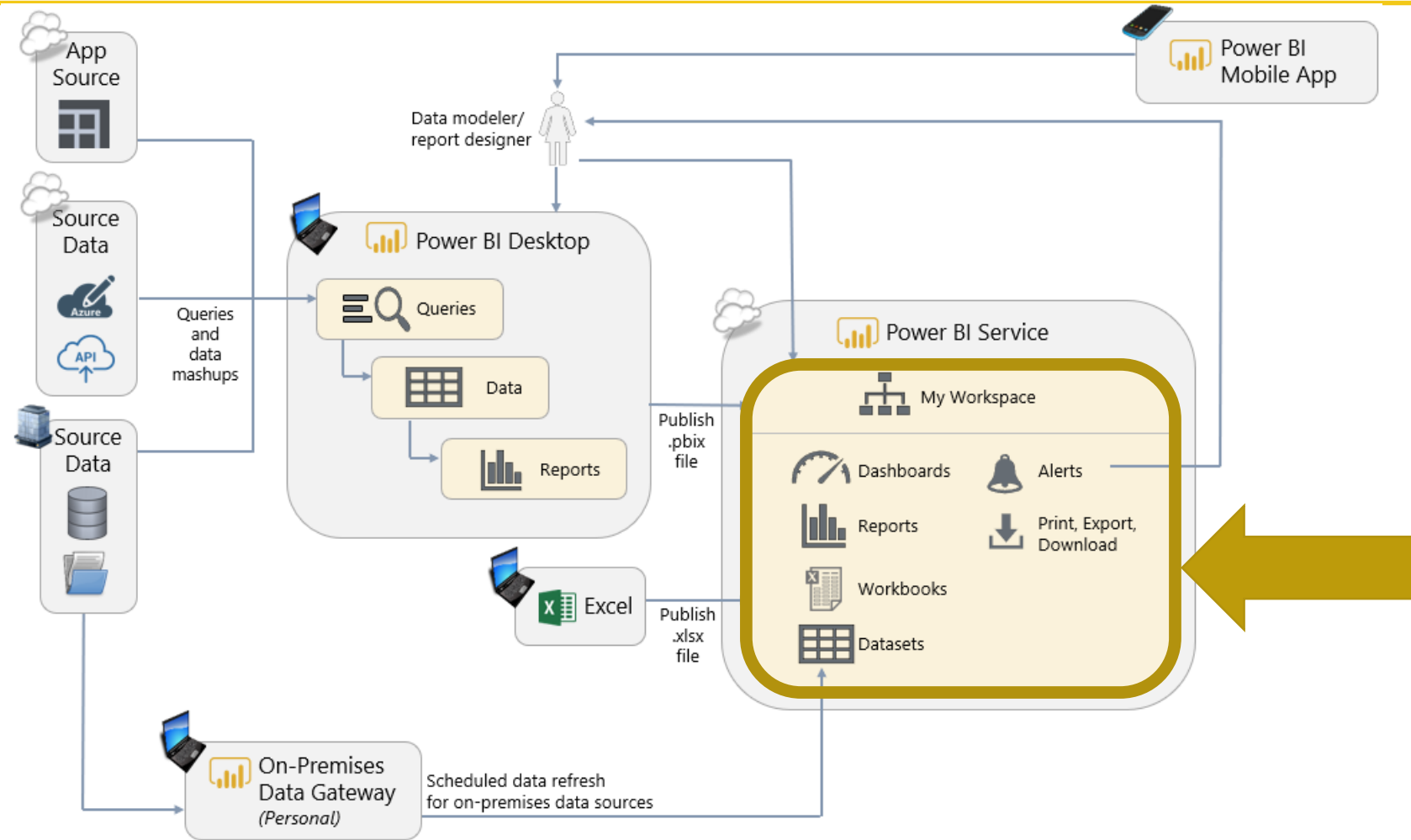
Technical Reviewers: Meagan Longoria ([BlueGranite](#)), Lukasz Pawlowski, Adam Wilson, Will Thompson, Chris Finlan, Orion Lee, Nimrod Shalit, Kay Unkroth, Adi Regev, Adam Saxton, Tamer Farag, Christian Wade, Youssef Shoukry, Amanda Cofsky, Michel Abd Elmalik, Maya Shenhav, Brandon Unger

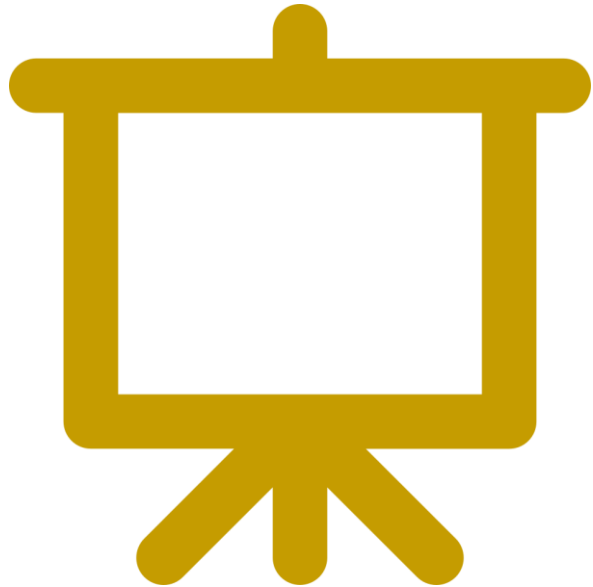
Version: 2.0
Published: July 2018

My Workspace

A personal area in the Power BI Service dedicated to each Power BI user.

My Workspace: Personal BI





Demo

My Workspace

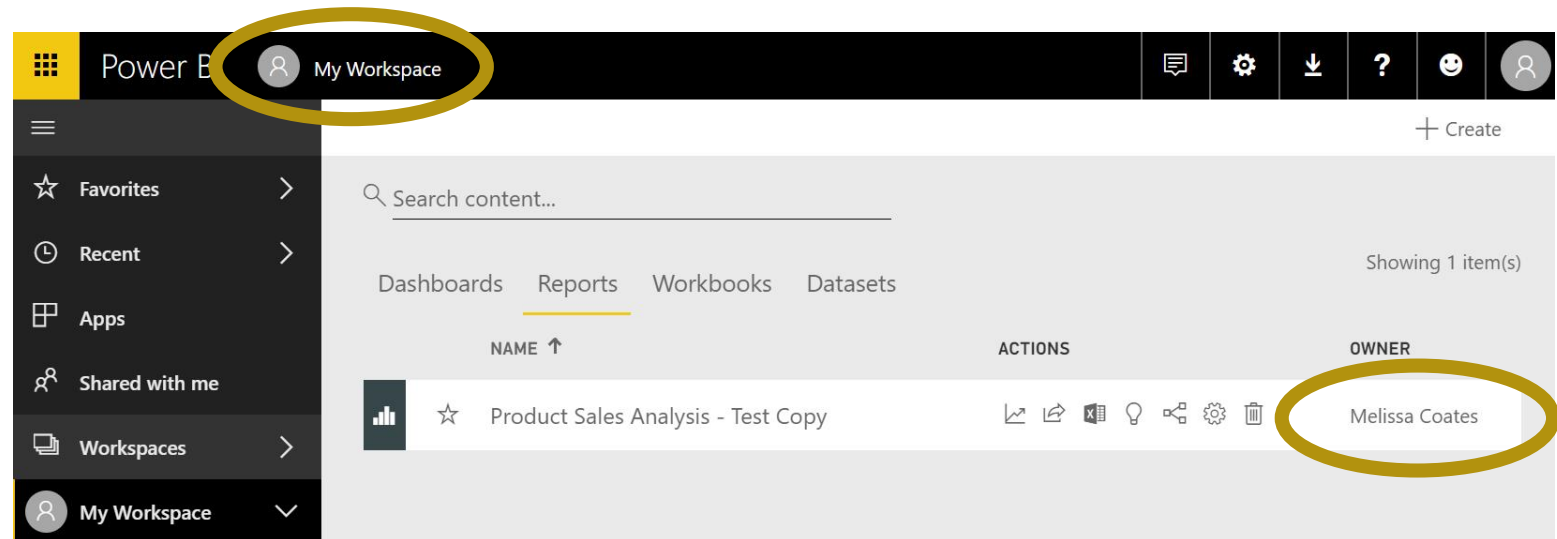
Where to Locate Mission-Critical Content

Best Practice ✓

Don't store content which is critical to the company in My Workspace.

Why?

Only one owner can edit My Workspace.



File Names

Best Practice ✓

Distinguish personal copies in the file name so that you have **unique file names**.

Examples:

- Sales Report *(App Workspace)*
- Sales Report – Personal Copy *(My Workspace)*

Why? ❓

Reduces confusion when there are similar reports across workspaces.

File Names

Best Practice ✓

Keep your **file names consistent** each time you publish.
Do **not** implement versioning as part of the file name.
Ex: SalesReport_20180731

Why? ?

Dependencies in the Power BI Service. Ex:

- Data refresh schedules
- Visuals pinned from a report to a dashboard
- Reports created from a dataset
- Live Connection to a Power BI dataset

Storing Original Files

Best ✓ Practice

Best place to retain original PBIX and XLSX files:

- Backed up location
- Versioning built in

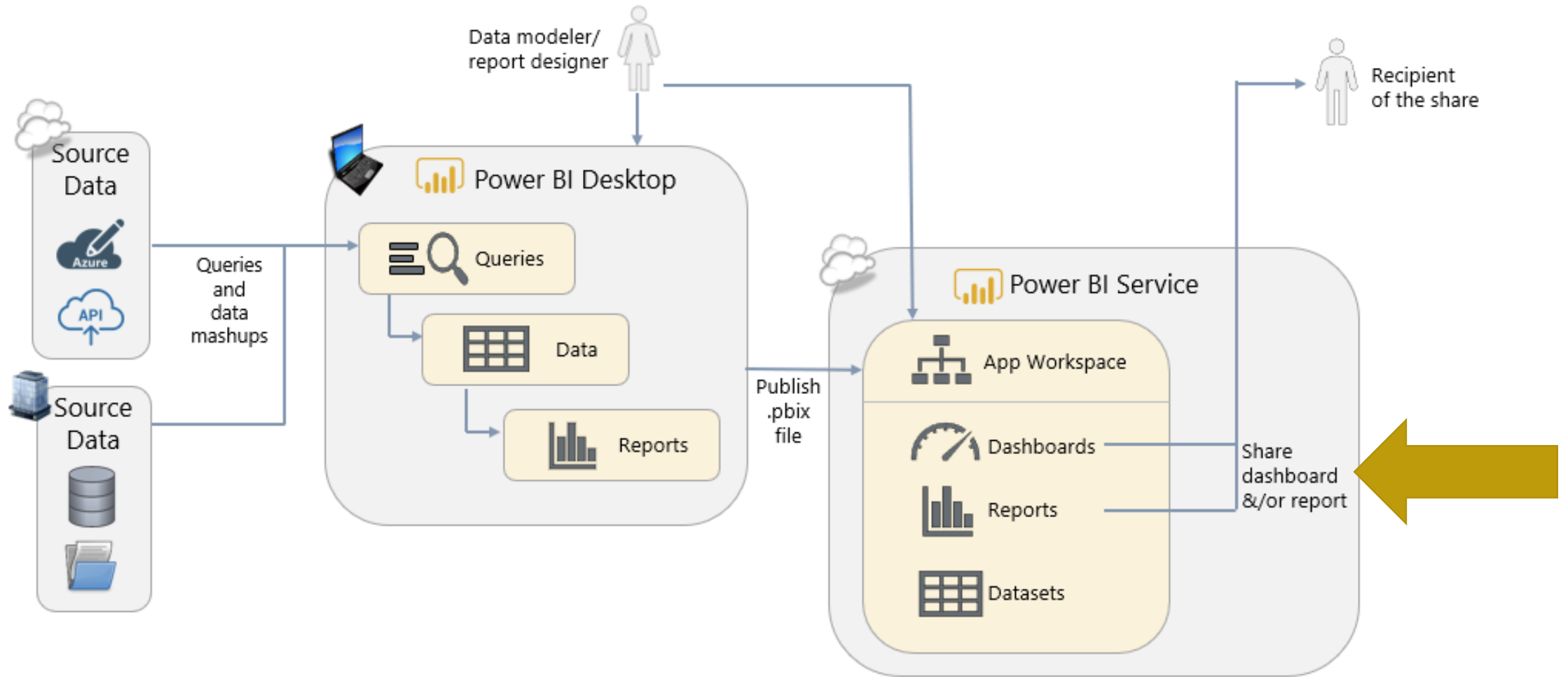
Best ✓ Practice

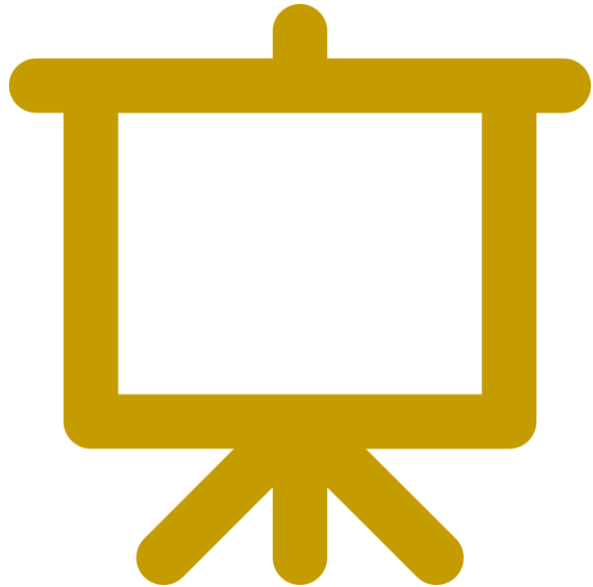
Store original files in a central location where the path is the same for everyone.

Sharing

The act of granting read-only access to individual reports & dashboards to others. Also the name of an actual feature.

Sharing in the Power BI Service





Demo Sharing

Sharing

Best Practice ✓

Sharing is best suited to **informal scenarios** where content is shared with **just a few people**. It is intended primarily for users who know each other.

Why ?

Workspaces and apps are better suited when content needs to be distributed to a larger number of people (discussed in the next sections).

Sharing from My Workspace

Best Practice ✓

Use **sharing from My Workspace** ***very* sparingly**.

Types of content: proof of concept, personal items, or a temporary analysis.

Why? ?

Only one person (the owner of My Workspace) can manage, edit, and share the content. If this person leaves, the content could be lost and/or recipients experience a disruption in content availability.

Sharing from App Workspace

Best Practice ✓


Use sharing from App Workspace only when:

- You want to allow **read-only** access to **individual pieces of content**
- You don't want recipient(s) to see everything in the workspace

Why? ?


Sharing is done on individual reports & dashboards, which can become hard to manage.

Sharing and Re-Sharing

FYI  If someone shares content with a user who only has a Free account, the recipient will be prompted to start a Power BI pro trial in order to view the content. There is **no licensing validation** done at the time of sharing.

FYI  The ability to **re-share is enabled by default.**

Immediate Visibility to Changes

FYI  **Content changes are visible immediately** to recipients of a share (as opposed to Apps which require republishing).

Sharing Permissions

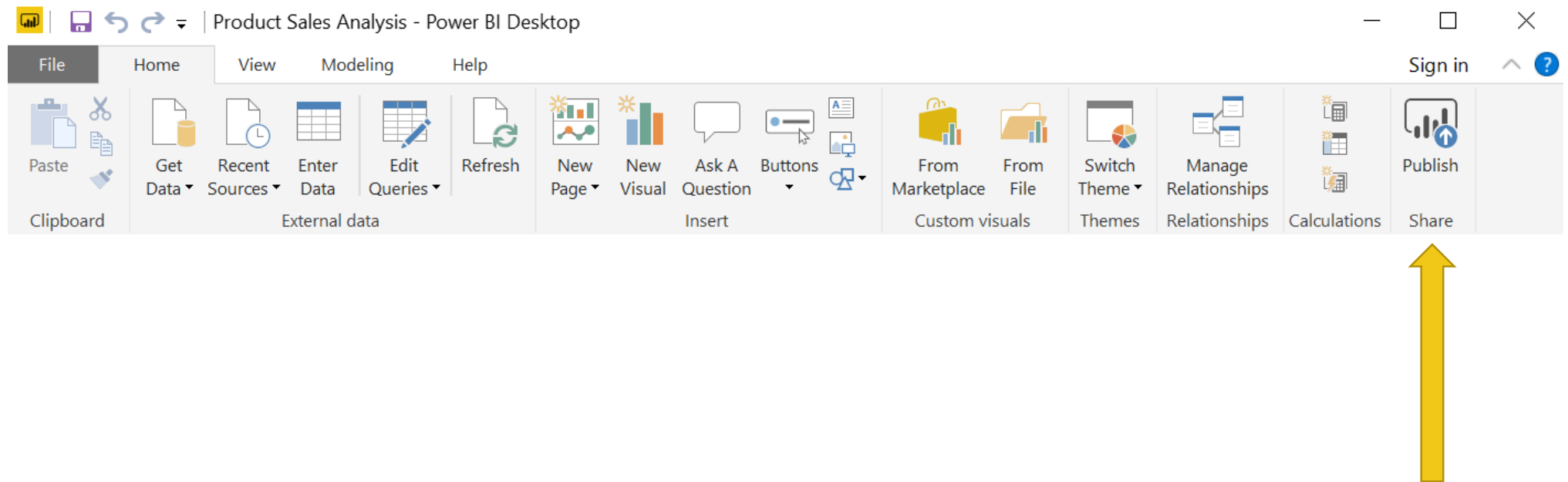
V1=My workspace or existing app workspace
V2 =New workspace experience in preview

| V1 | V2 | |
|----|----|---|
| ✓ | ✓ | Individual (within organization or outside of or using B2B) |
| ✓ | ✓ | Distribution list |
| ✓ | ✓ | Security group |
| ✓ | ✓ | Mail-enabled security group |
| ✗ | ✓ | Office 365 group (aka modern group) |

No 'Sharing' from Power BI Desktop



Although the label on the ribbon says 'Share' it has nothing to do with the Sharing feature.



Tenant Settings Which Affect Sharing

Admin portal

Usage metrics

Users

Audit logs

Tenant settings

Capacity settings

Embed Codes

Organization visuals

Export and sharing settings

Share content with external users

Enabled for the entire organization

Users in the organization can share dashboards with users outside the organization.

Enabled

Apply to:

☒ The entire organization

☐ Specific security groups

☐ Except specific security groups

Apply

Cancel

Sharing customized report views

Enabled for the entire organization

Users in this organization can share their customized report view (filters, slicers, and other data views) with others.

Enabled

Apply

Cancel

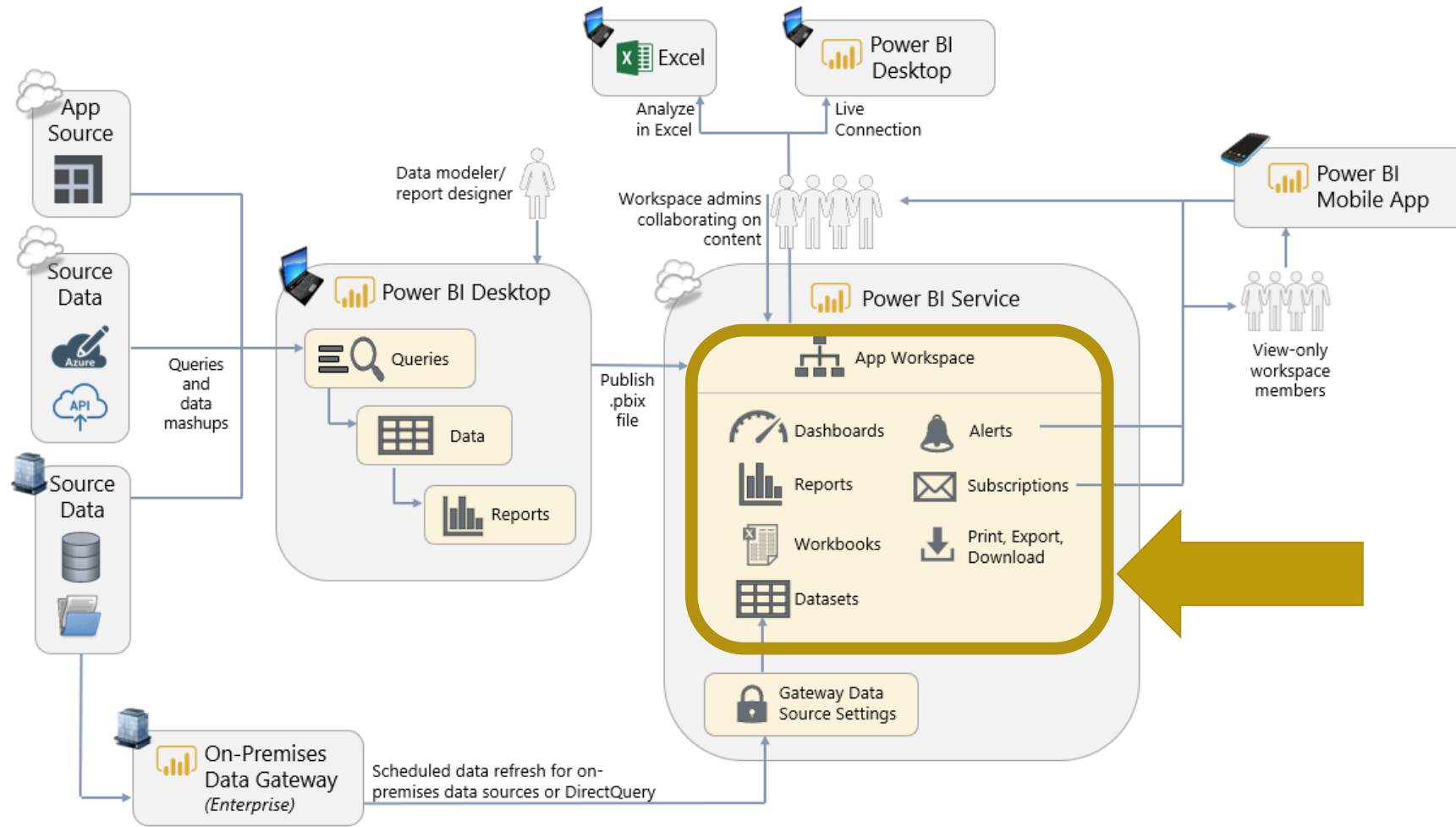
i

This setting applies to the entire organization

App Workspace

In the Power BI Service, ***collaboration*** among multiple persons creating and testing content occurs in an App Workspace.

App Workspace for Team Collaboration



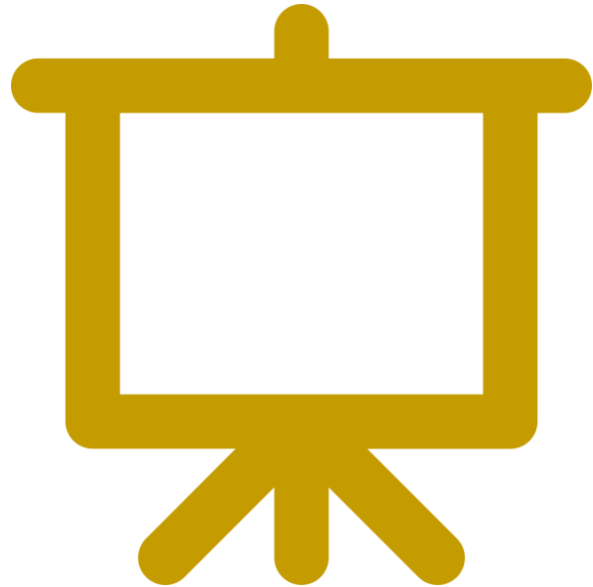
New Workspace Experience

V1 Workspace

- Requires creation of an Office 365 group (modern group)
- Only individuals can be assigned for security
- All members can edit or view (not by individual person)

V2 New Workspace Experience -- in Public Preview

- Decoupled from Office 365 groups
- More flexible security group assignments
- More granular edit/view permissions (by individual)
- Workspace users automatically see an App



Demo

Workspace: Content Collaboration

Workspace Permissions in the New Experience

| | Admin | Member | Contributor | Viewer |
|-------------------------|-------|--------|-------------|---------|
| Edit/delete workspace | ✓ | | | |
| Add members | ✓ | ✓ | | |
| Share | ✓ | ✓ | | |
| Publish/update apps | ✓ | ✓ | | |
| Add/edit/delete content | ✓ | ✓ | ✓ | |
| View content | ✓ | ✓ | ✓ | ✓ at GA |

Workspace Access

V1 V2

✓ ✓ Individual (within organization or outside of or using B2B)

✗ ✓ Distribution list

✗ ✓ Security group

✗ ✓ Mail-enabled security group

✓ ✓ Office 365 group (aka modern group)

Workspace Purpose

Best ✓ Practice

The purpose of workspaces are for **collaboration** on content (datasets, reports, dashboards). Ex:

- One user publishes dataset with calcs, relationships, etc.
- Another user publishes reports
- Another user tests content for QA purposes

Why ?

Collaboration involves multiple people taking an active part in report design, not just passive consumption of content.

Separating Dataset from Reports

Best Practice

Since the skills for dataset creation (relationships, data modeling, DAX calculations) differs from report development skills, it can be beneficial to **separate out the dataset from the reports** – i.e., two PBIX files.

This can facilitate better collaboration when the roles are performed by different people, and it sets you up for dataset reuse.

Workspace Purpose & Scope

Best Practice

Workspace scope shouldn't be too narrow, nor too broad.

| Scope: | Per Department or Team | Per Individual Report | Per Project, Type of Analysis, or Subject Area |
|-----------------------|-----------------------------------|-------------------------------------|--|
| Example: | Finance reports | Sales summary report | Quarter-end reports, or Product launch reports |
| Use of the Workspace: | Very broad (a large # of reports) | Extremely narrow (very few reports) | Medium (a manageable # of reports) |

Why?

Think of a workspace as a boundary for logical content groups as well as a security boundary.

Workspace Naming

Best Practice

Use a **descriptive name** that represents the group of reports.

Ex:

- Finance Department Reports
- Product Launch Reports
- Social Media Sentiment Analysis

Don't include "app workspace" or "workspace" in the name.

Why

If you publish an App, it inherits the name of the workspace.

Managing Original Content

Best Practice

Users who have permissions to edit content can do so directly within the Power BI Service.

- Keep **# of authors** to a manageable number, and
- Create a **standard practice** for editing & publishing content, and
- Routinely **download the .pbix** from the Power BI Service before making edits in Power BI Desktop if there's a chance the content changed

Workspace Limitations



Workspaces are “flat” structures. There are no folders, nor any hierarchical organization.



Viewer role (read-only access to workspace content) is not available during preview – will be at GA.



Content packs (on a deprecation path) are not supported in the new workspace experience.

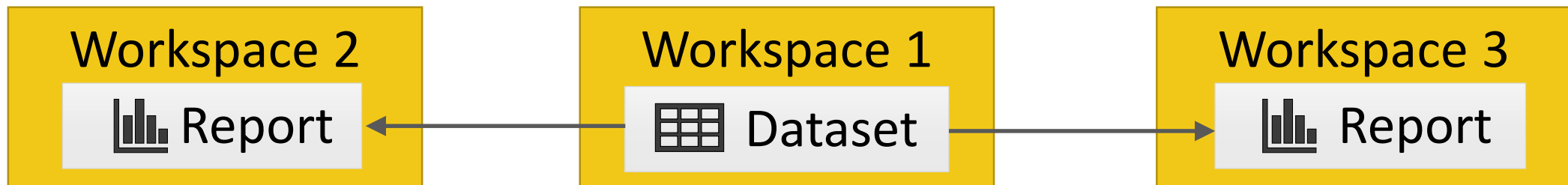
Workspace Limitations




Related content constrained to one workspace.


However, that will change with Dataset Discovery:

- ✓ Reuse a dataset across many workspaces
- ✓ Connect a report to a dataset in another workspace
- ✓ Promote datasets for discovery & certify datasets



Transition Period

FYI  There's a transition period between V1 workspaces and the new workspace experience. At some point there will be a required migration.

FYI  The concept of read-only workspaces (i.e., when all members are set to read-only) is going away. It is being replaced by the Viewer permission in the new workspace experience, which is far more flexible on an individual user basis.

Tenant Settings Which Affect Workspaces

Admin portal

Usage metrics

Users

Audit logs

Tenant settings

Capacity settings

Embed Codes

Organization visuals

Workspace settings

◀ Create workspaces (new workspace experience preview)

Unapplied changes

Users in the organization can create app workspaces to collaborate on dashboards, reports, and other content.

●

 Enabled

ⓘ

The permission to create workspaces in the new workspaces experience preview is currently controlled by the permission to create groups in Office 365. By clicking Apply, the values below will control which users can create workspaces in the new workspaces experience preview. [Learn more](#).

Apply to:

☒ The entire organization

☐ Specific security groups

☐ Except specific security groups

Apply

Cancel

Workspace vs App

Best Practice ✓

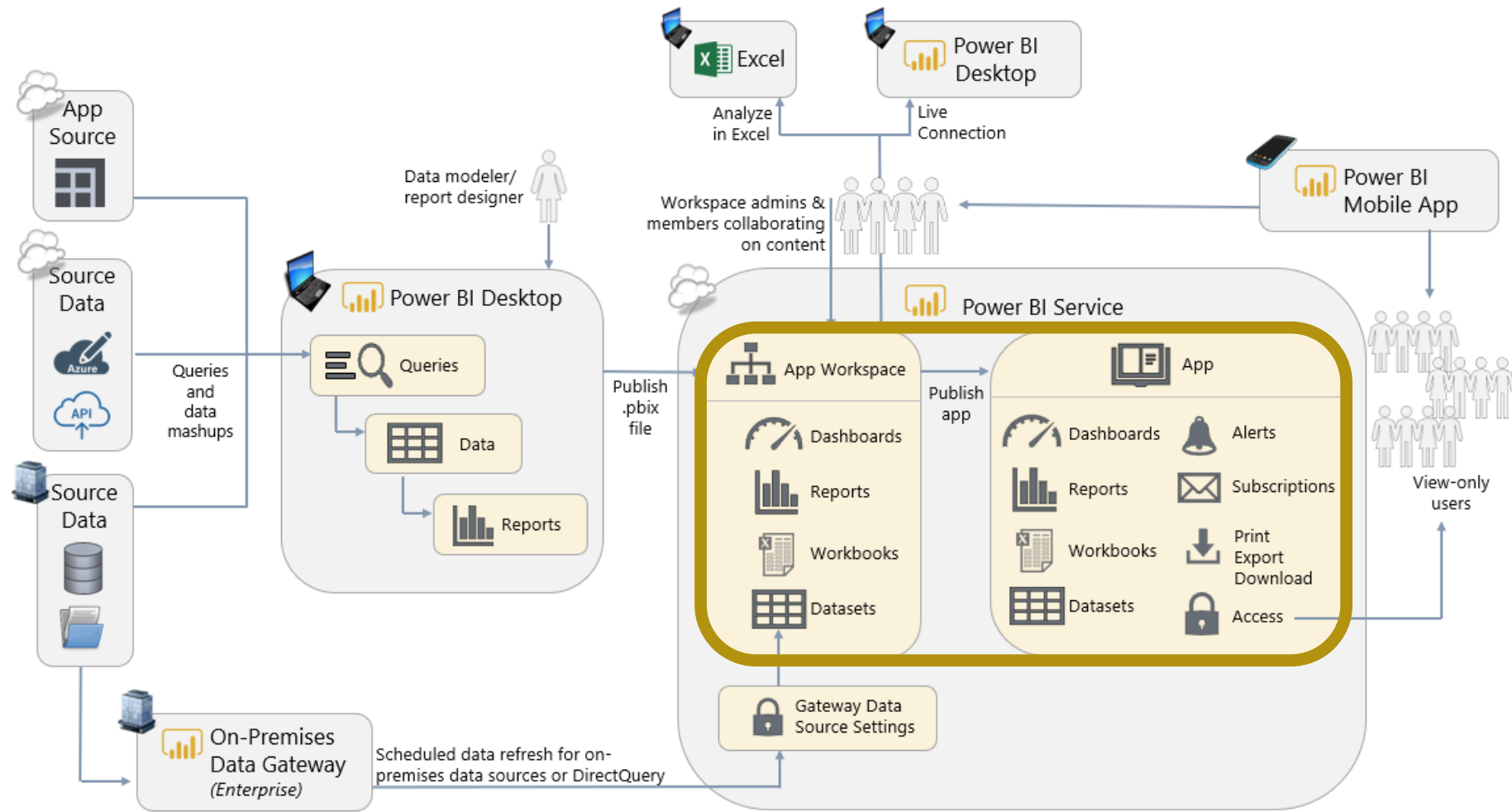
Small teams: Using a workspace for **collaboration plus distribution** works pretty well for **small teams**. This simplifies things when an App isn't needed.

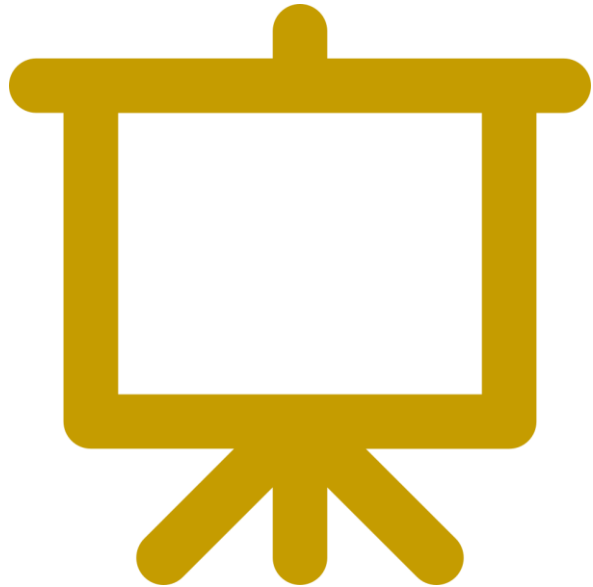
Larger teams: However, at some point, using an App begins to make more sense vs. using a workspace for everything. Apps are covered next.

App

A more 'formal' method of broad content distribution to many users.

Apps for Content Distribution





Demo

App: Content Distribution

Simplifying Permissions Management

**Best ✓
Practice**

Use **Apps for delivery of read-only content** more frequently than Sharing – especially when there are several pieces of related content.

Handling Permissions in Large Environments

Best 
Practice

Workspace:

Limit access to the workspace to those who are handling authoring, development, and testing.

App:

All **read-only users** obtain access via the **App only**.

App Limitations



One app can be created from one workspace.

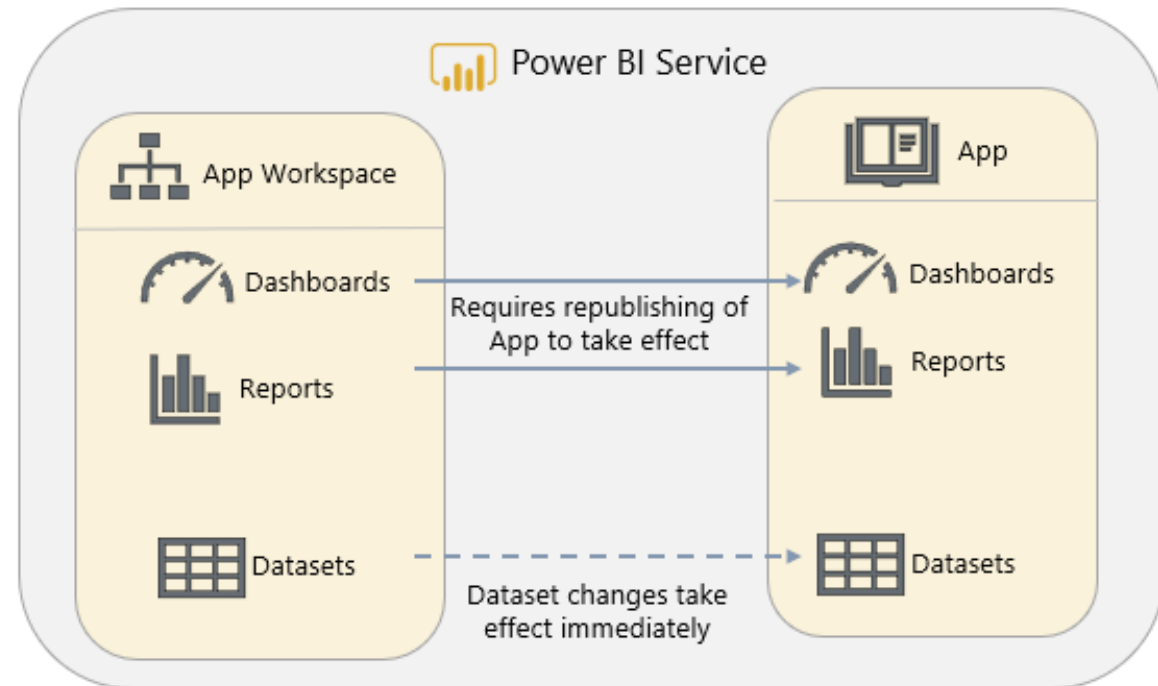


An app cannot be “personalized” (i.e., save as to create a personal version of a report or dashboard) yet.

Managing Content Changes

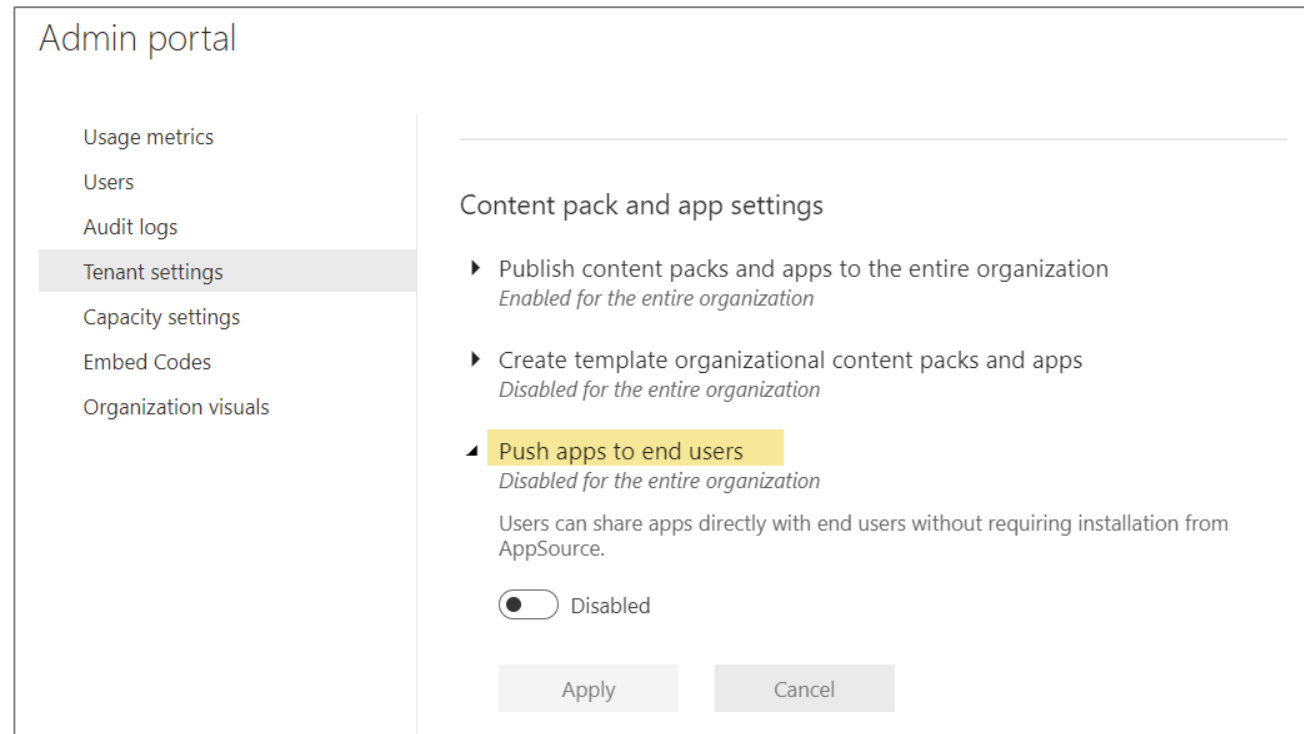
FYI 💡 Dataset changes always take effect immediately whereas reports & dashboards require republishing.

This includes data refresh, as well as DAX calculation changes, relationship changes, etc.



Tenant Settings Which Affect Apps

Push Apps is disabled by default because overzealous app publishers could diminish user experience if too much content “just shows up.”



Best Practice ✓

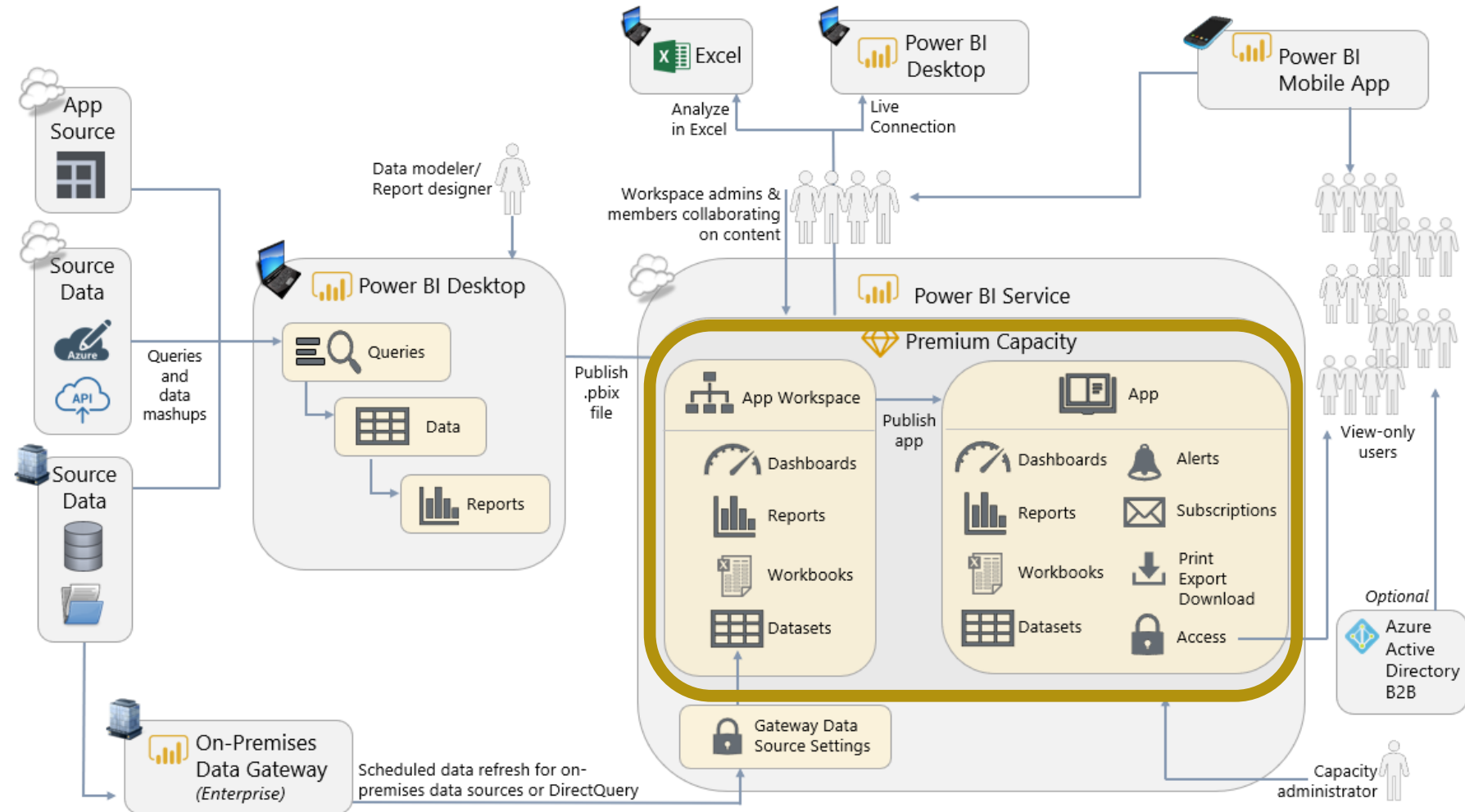
Consider enabling selective groups of authors.

Power BI Premium

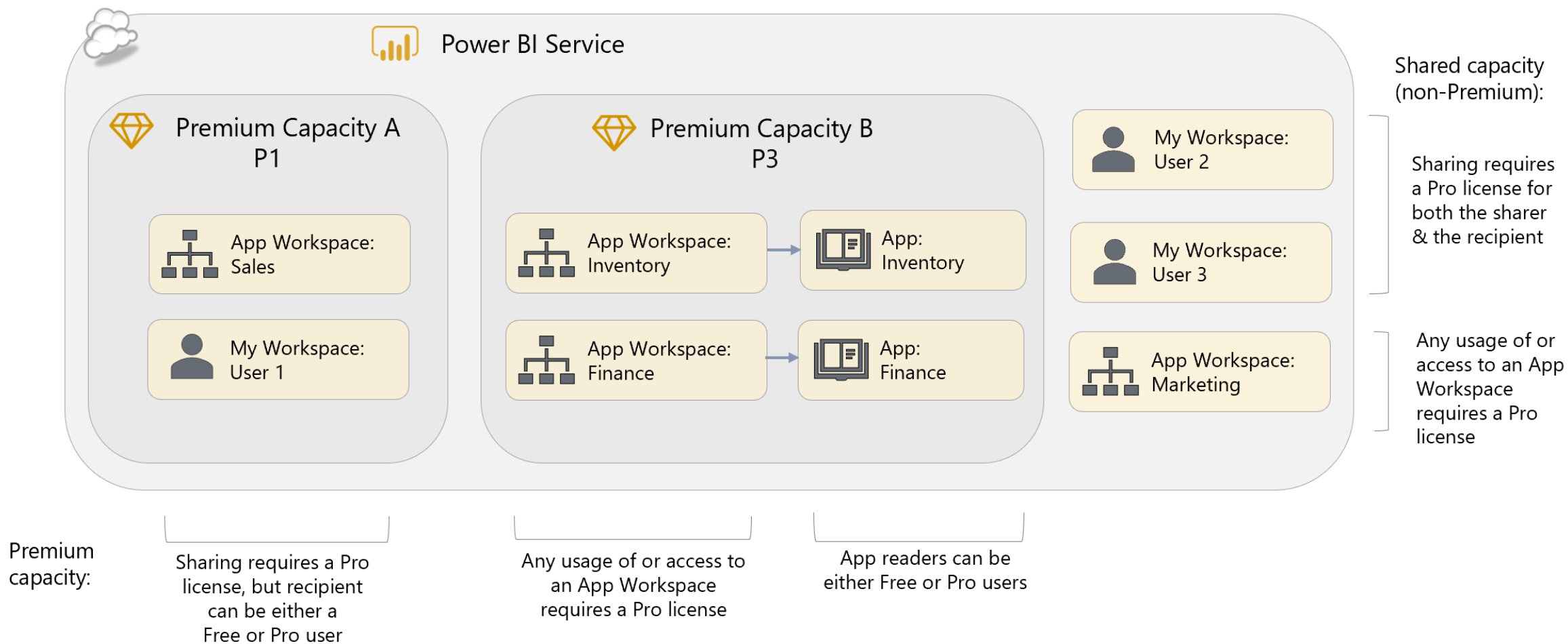
Dedicated resources in the Power BI Service to address workload demands of larger enterprise deployments.

Premium Capacity

- Read-only free users
- Dedicated hardware
- Larger storage volumes
- Larger dataset sizes
- Higher refresh rates
- Incremental data refresh
- RDL report integration
- Power BI Report Server



Read-Only Users



Managing Capacities

**Best ✓
Practice**

Consider using multiple smaller capacities for **workload isolation**.

**Best ✓
Practice**

Prioritize datasets for Premium which might soon exceed shared capacity **dataset size limits**.

**Best ✓
Practice**

Prioritize datasets for Premium which can take advantage of **incremental data refresh**.

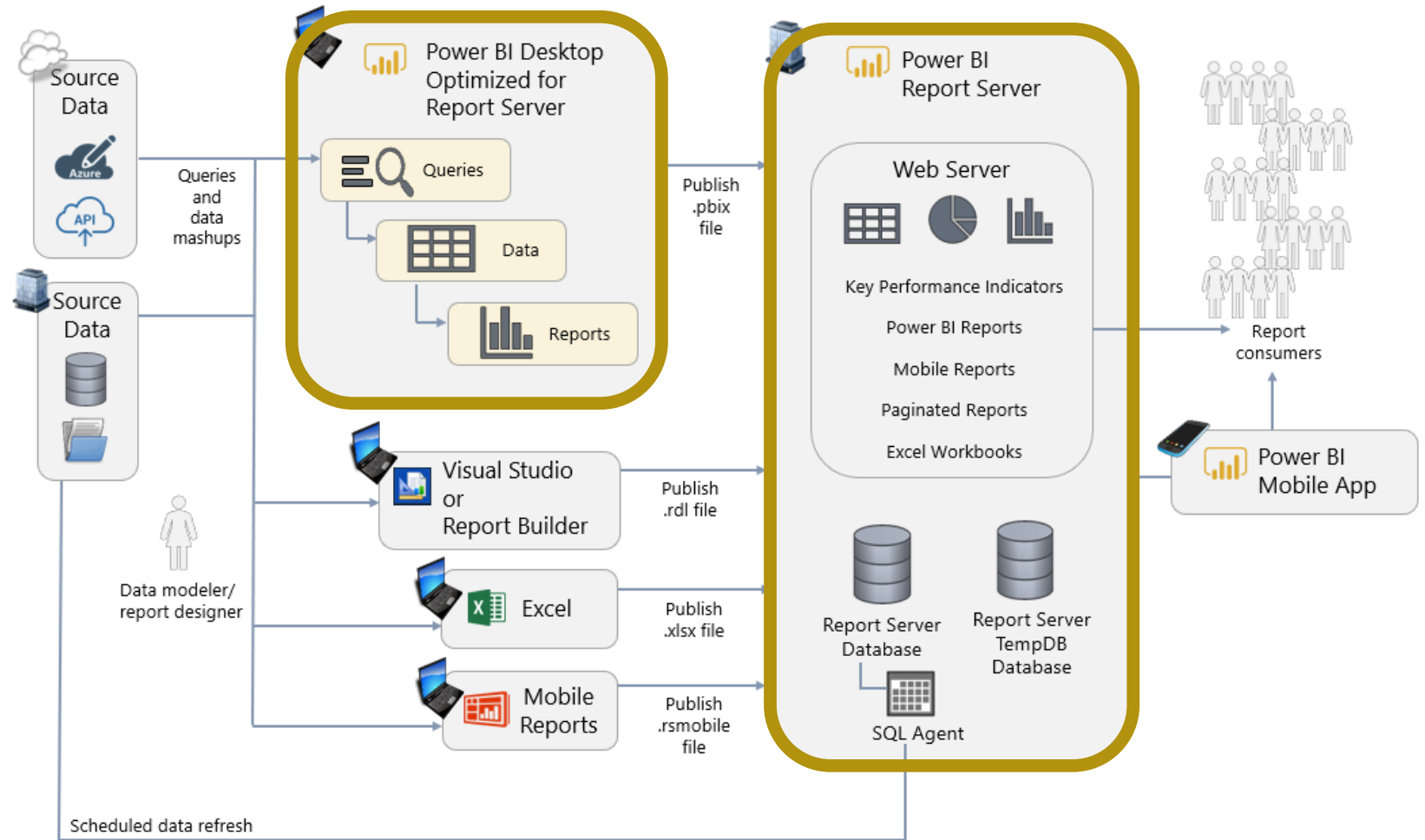
Power BI Report Server

On-Premises Deployment of Power BI

On-Premises Delivery with Power BI Report Server



Goal is *not*
feature parity
with the Power
BI Service.



Managing Location of Content

Best Practice

If both the Power BI Service and Power BI Report Server are utilized, users will have to visit **two places for content**. This should be carefully managed.

Managing Power BI Desktop

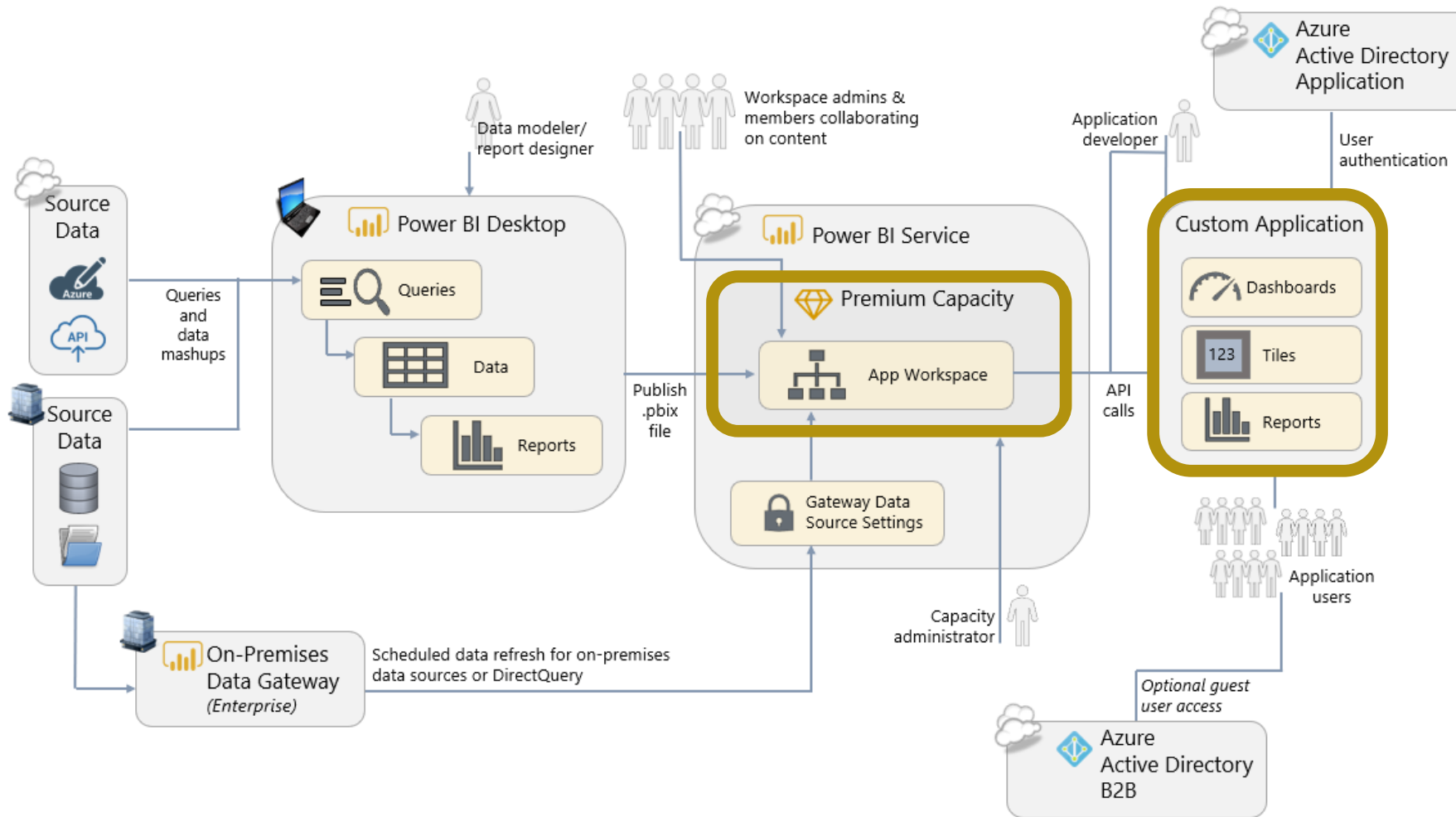
Best Practice

Power BI Desktop authors must use a **version compatible with Power BI Report Server**, which is released approx. every 4 months. This ‘flavor’ of Power BI Desktop is not auto-installed.

Embedded Solutions

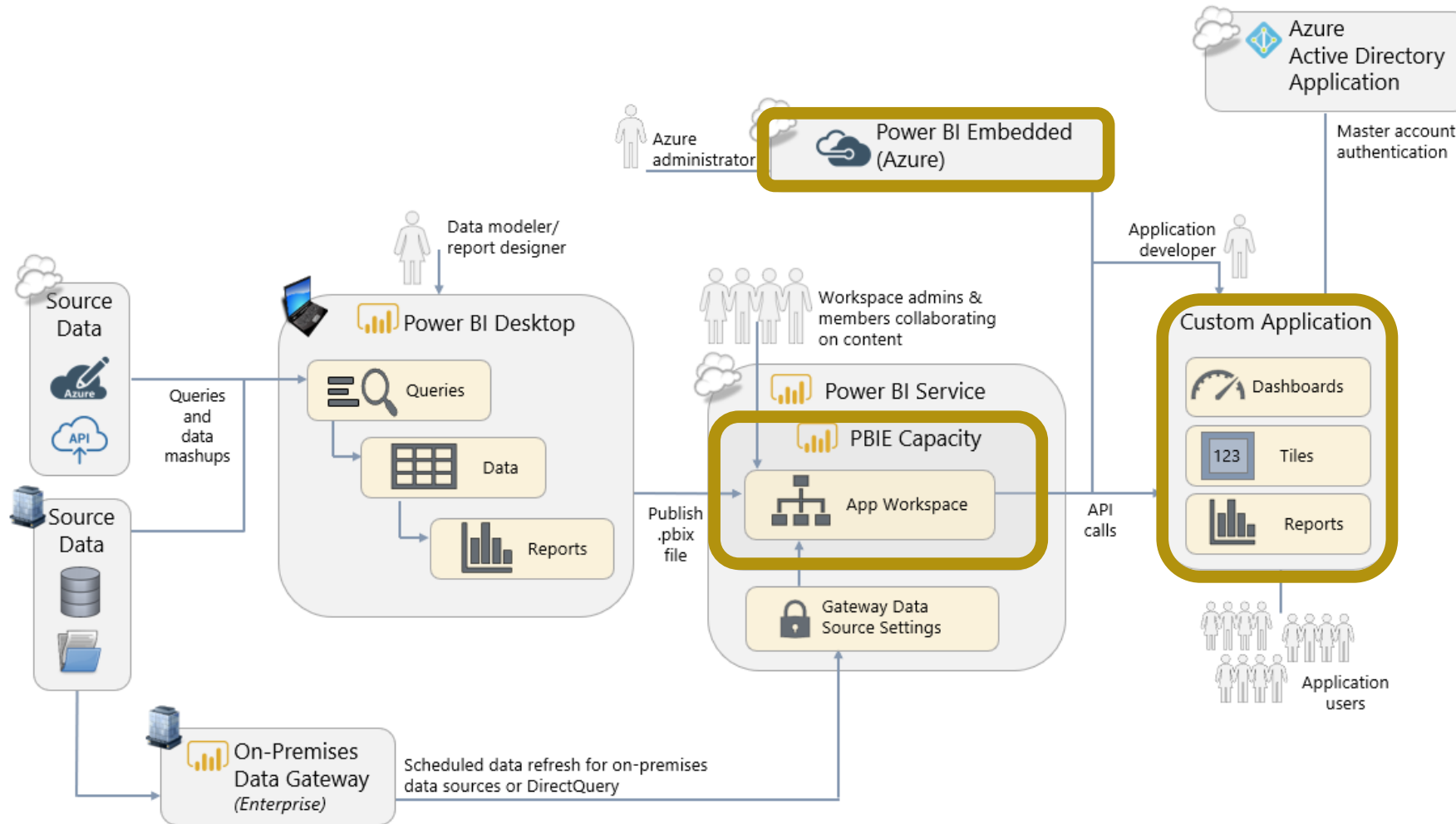
Set of REST APIs for delivering content embedded in a custom application, SharePoint Online, Teams, or third party applications.

Option 1: Organizational Embedding



Applicable to:
Power BI
handles user
authorization via
Premium
(depicted) or all
users having Pro
licenses

Option 2: Power BI Embedded (Azure Service)



Applicable to:
Custom app
handles user
authorization

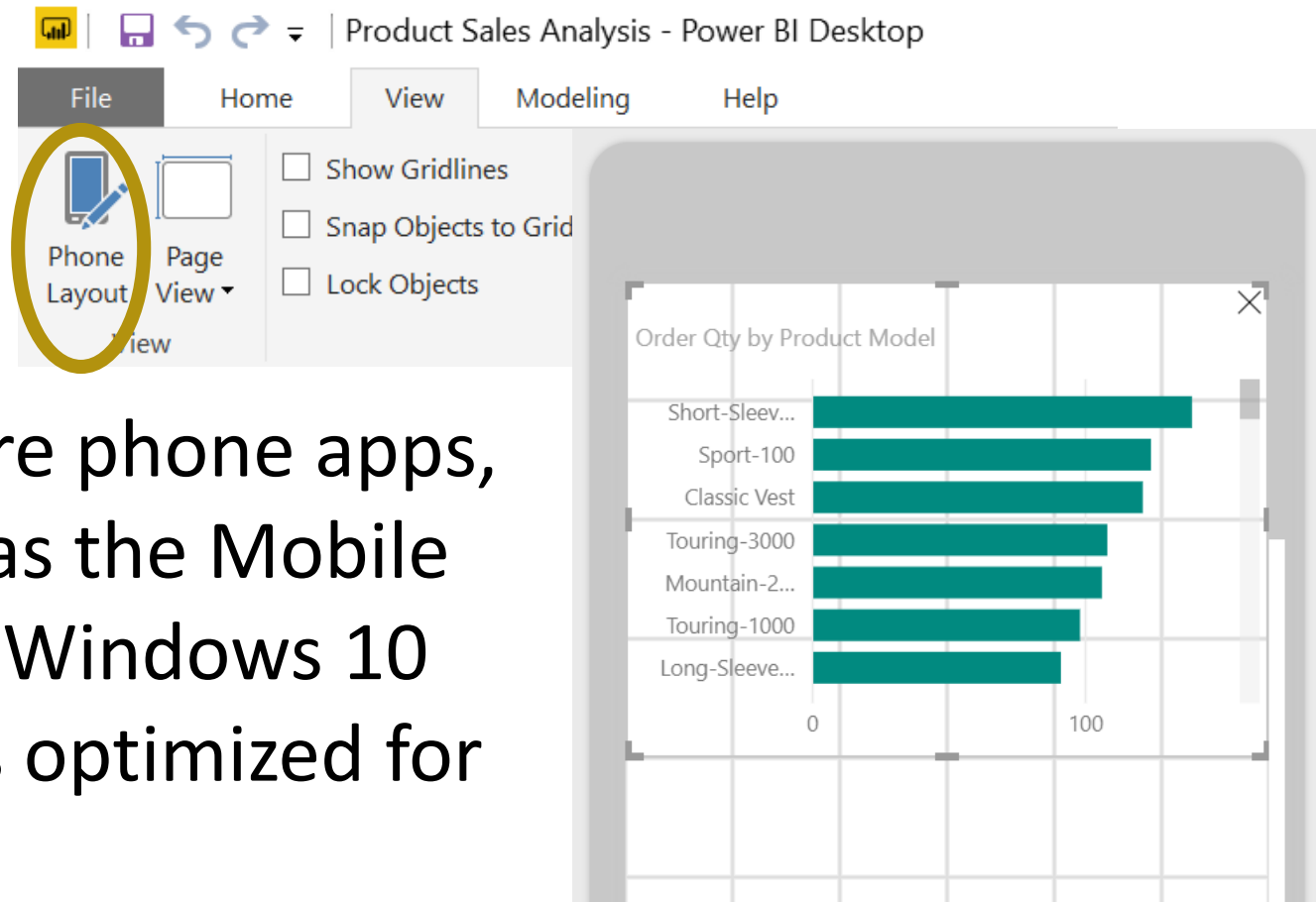
Capacity-Based Licenses

**Best ✓
Practice**

Do a careful analysis of licensing needs for capacity. There are distinctions between **P-series, EM-series, and A-series SKUs**. It can get very confusing.

Other Content Delivery Options

Power BI Mobile Apps

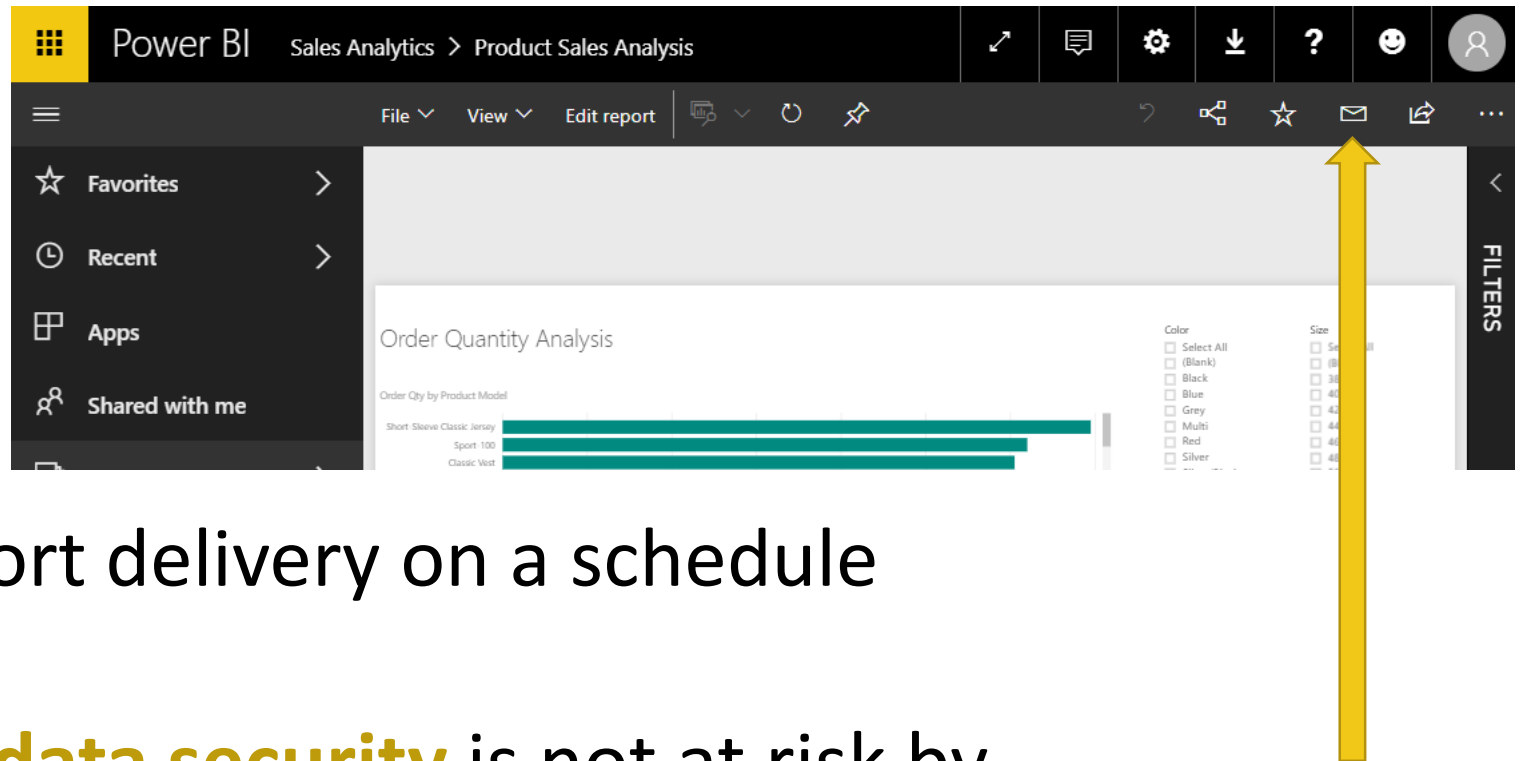


There are phone apps, as well as the Mobile App for Windows 10 which is optimized for tablets.

Subscriptions

Best for:

- Point-in-time snapshot
- Interactivity not needed
- User prefers report delivery on a schedule

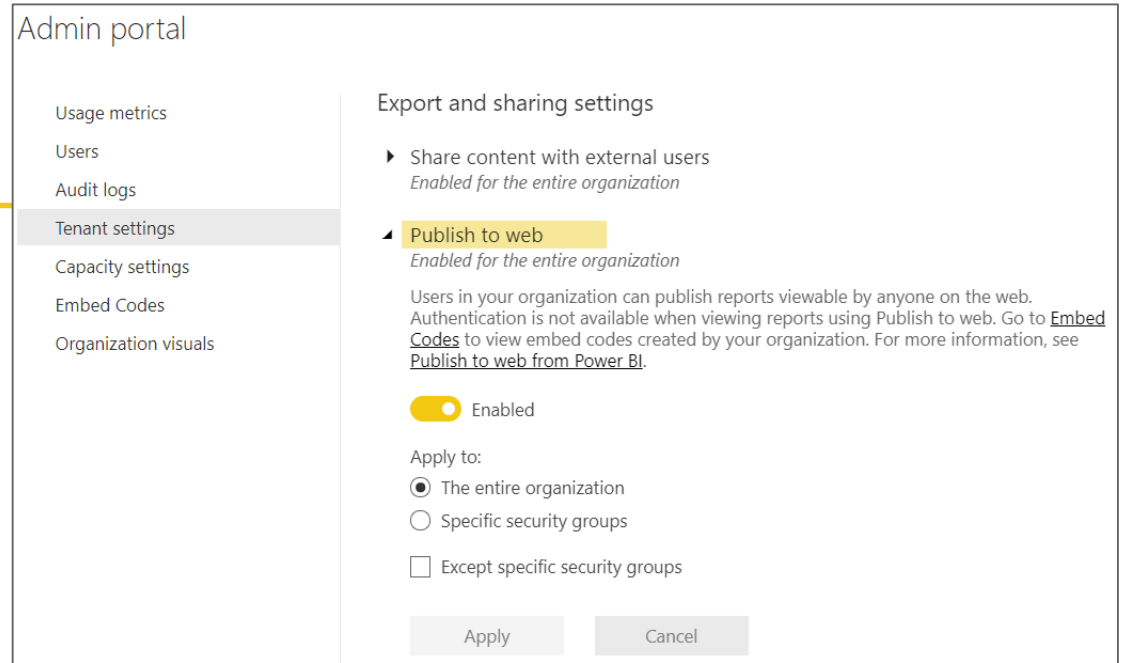


Best Practice ✓ Verify **data security** is not at risk by distributing PDFs via e-mail delivery.

Publish to Web

Best for:

- Public data
- Embed code in a frame



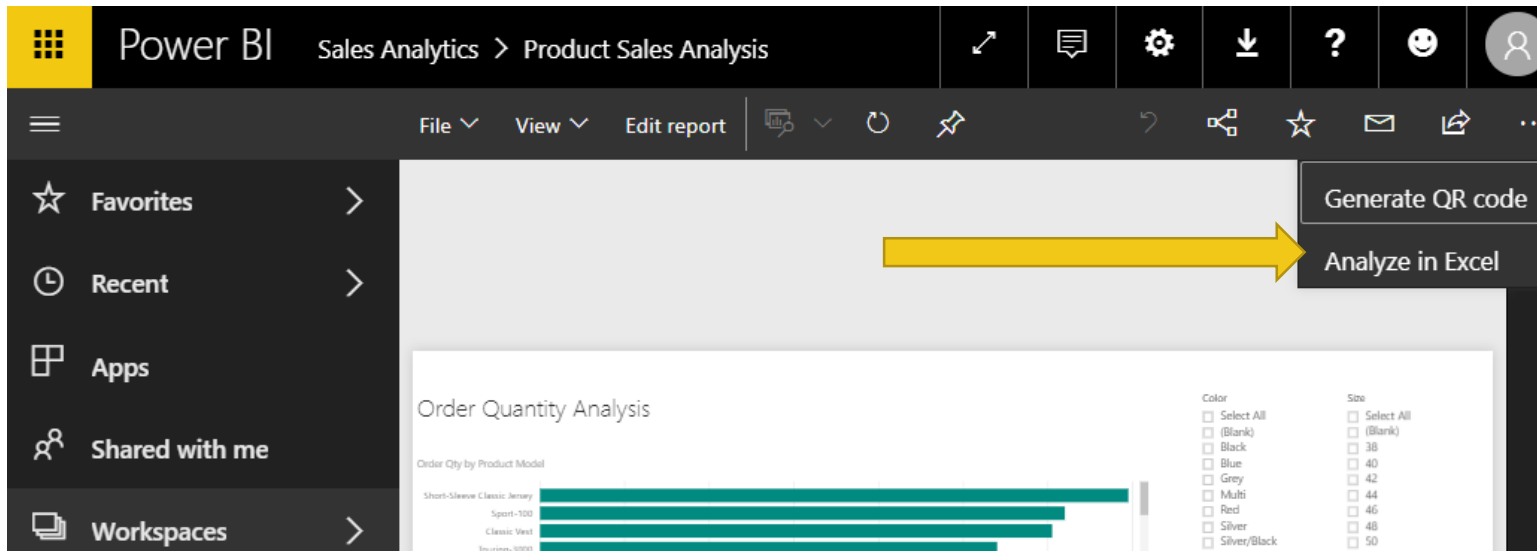
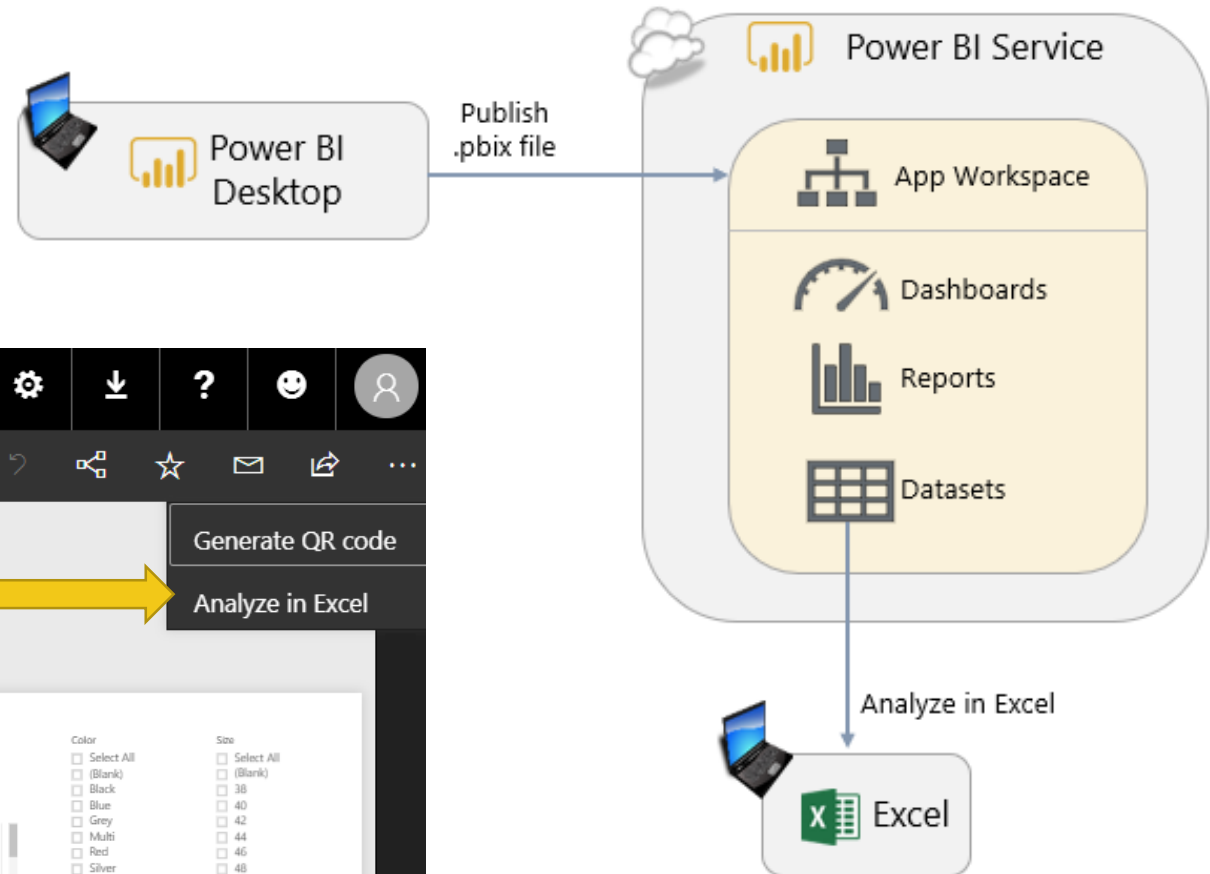
Best Practice ✓ Because of the security risks: **disable the Publish to Web** capability in the tenant settings. Enable selectively only. This capability can be utilized by Free users.

Best Practice ✓ Regularly **verify the embed codes** in the Admin Portal.

Analyze in Excel

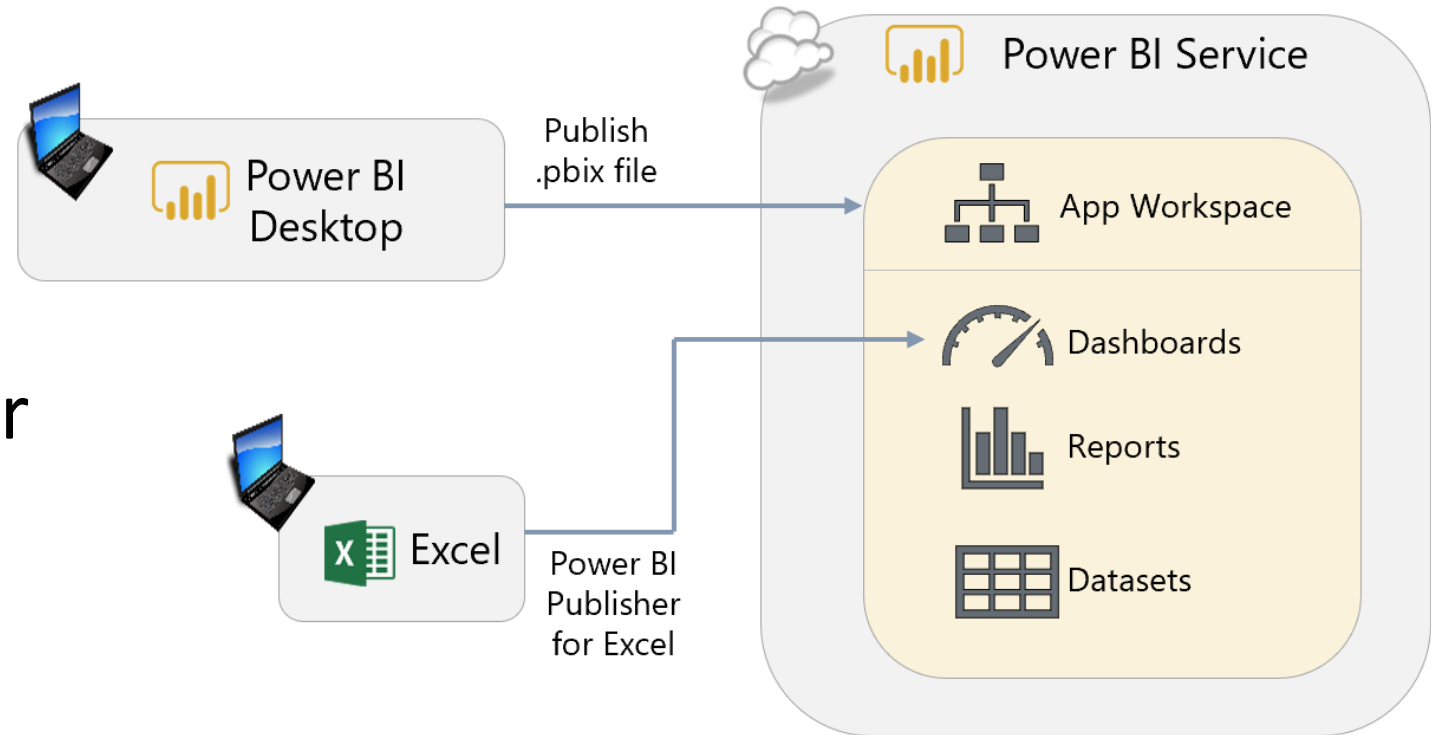
Best for:

- Reusing existing dataset
- Using familiar Excel

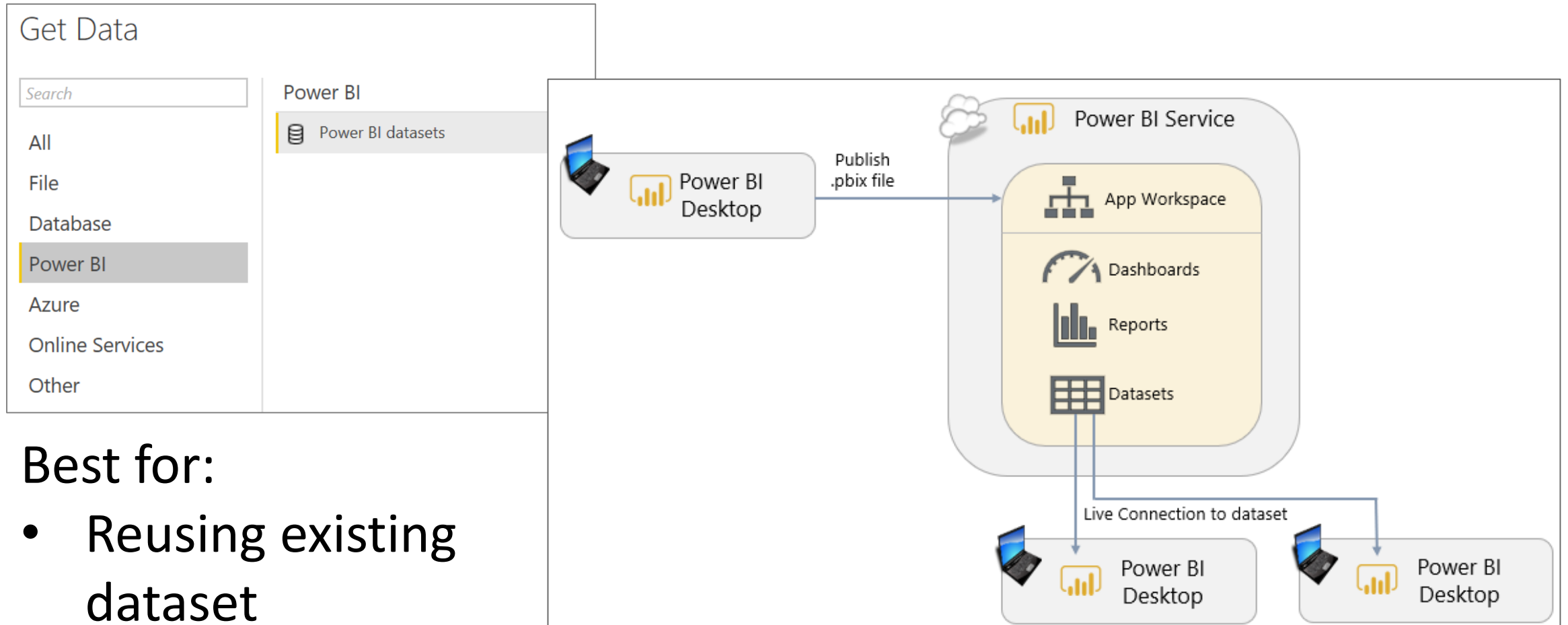


Power BI Publisher for Excel

Best Practice ✓ Retain original Excel files in a location which aligns with Power BI content.

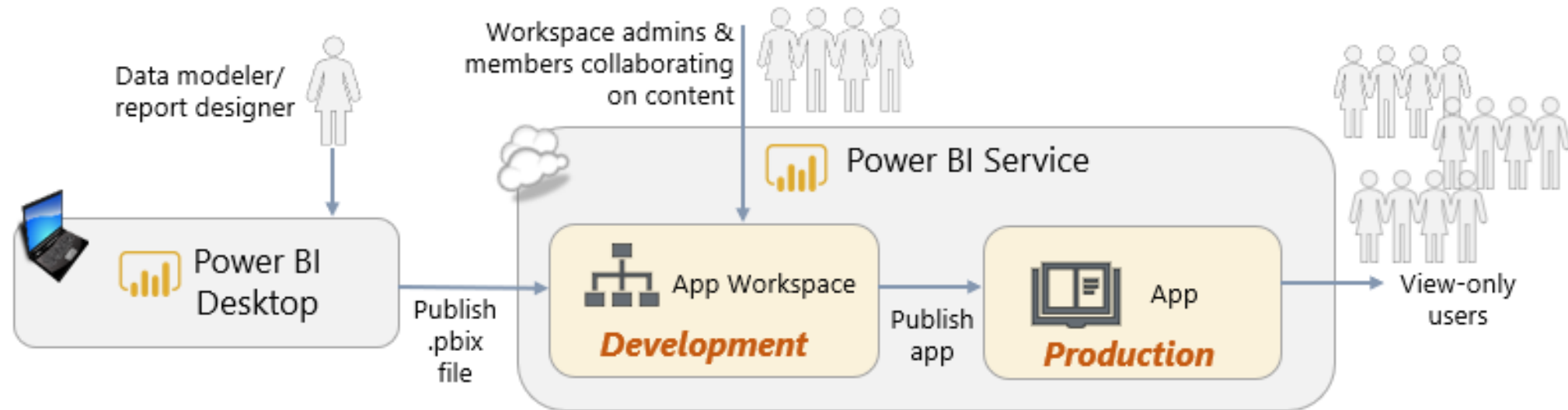


Power BI Service Live Connection



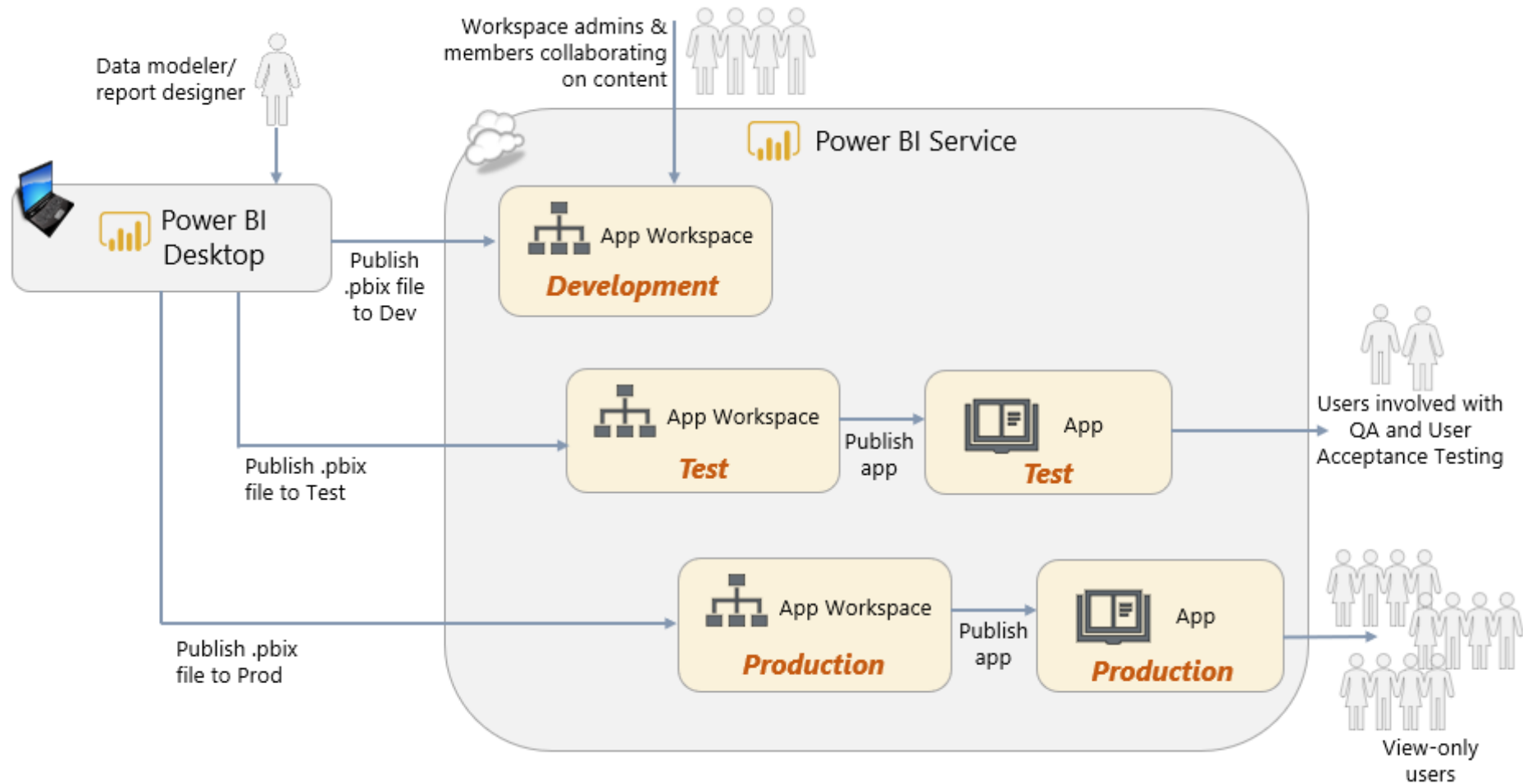
Options for Handling Multiple Dev, Test, and Prod Environments

Handling Dev, Test, Production Environments Option 1



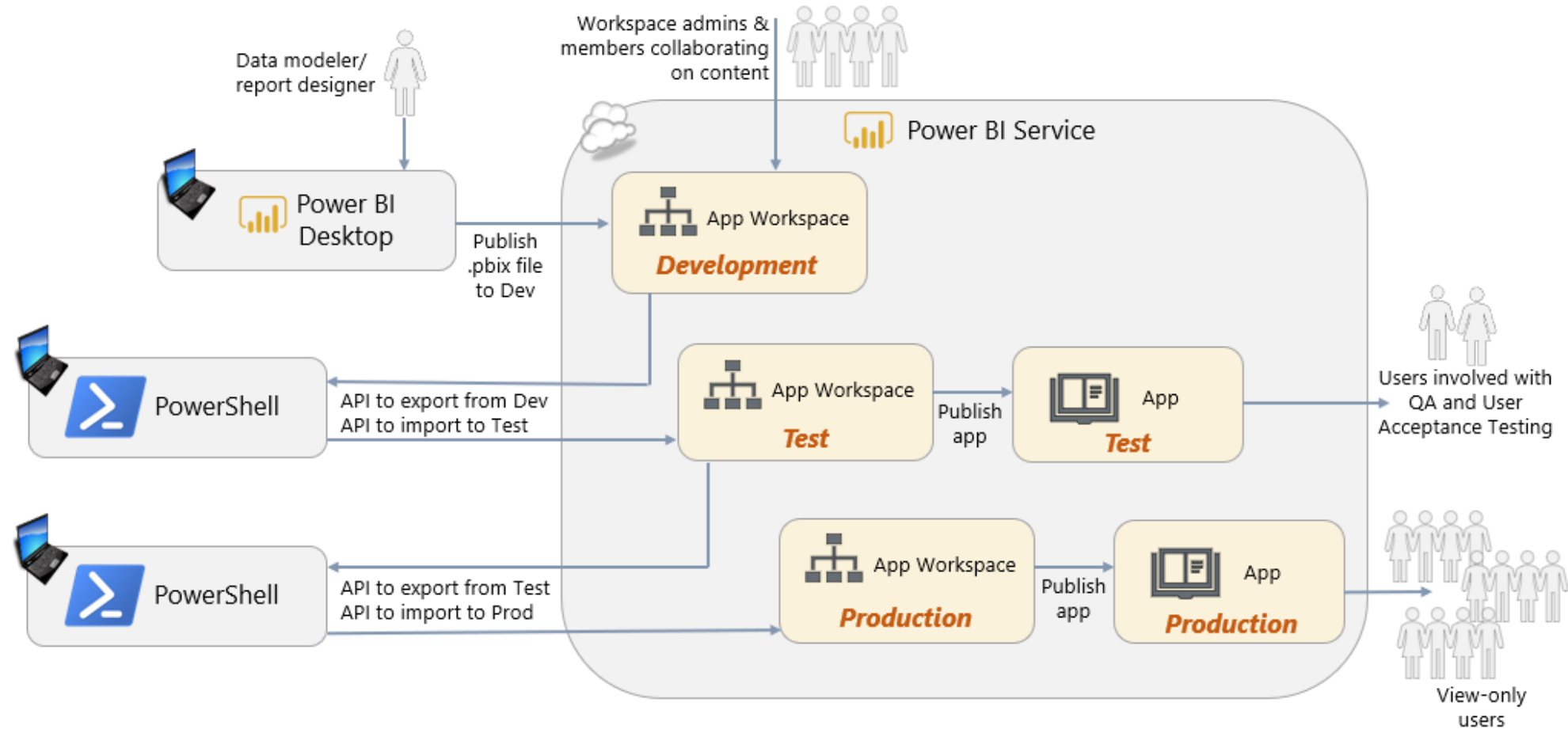
Handling Dev, Test, Production Environments

Option 2





Handling Dev, Test, Production Environments

Option 3



Copying Content Between Workspaces

FYI  A future V2 new workspace feature will be to **copy content between workspaces**. This will open up an additional possibility for handling different Dev/Test/Prod environments.

FYI  There is not yet an API to publish an App. Therefore, the workspace content management can be automated, but the **App publishing cannot yet be fully automated**.

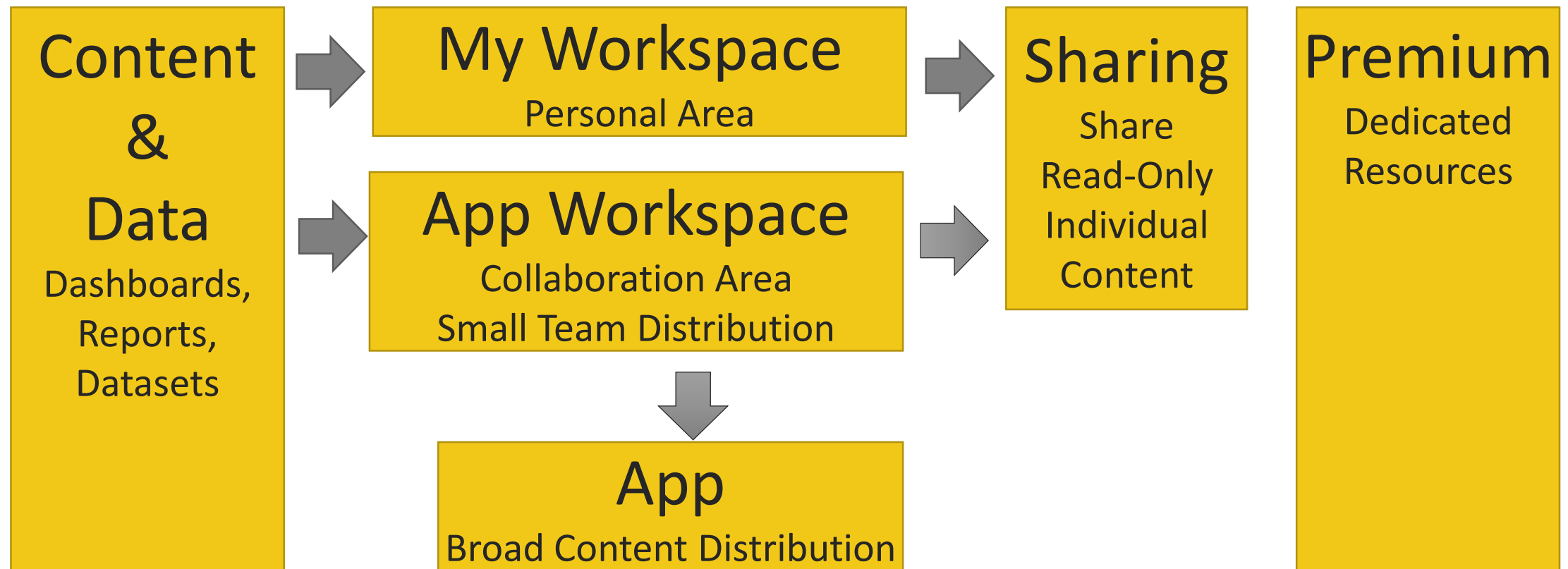
Parameterize Connection Strings

Best 
Practice

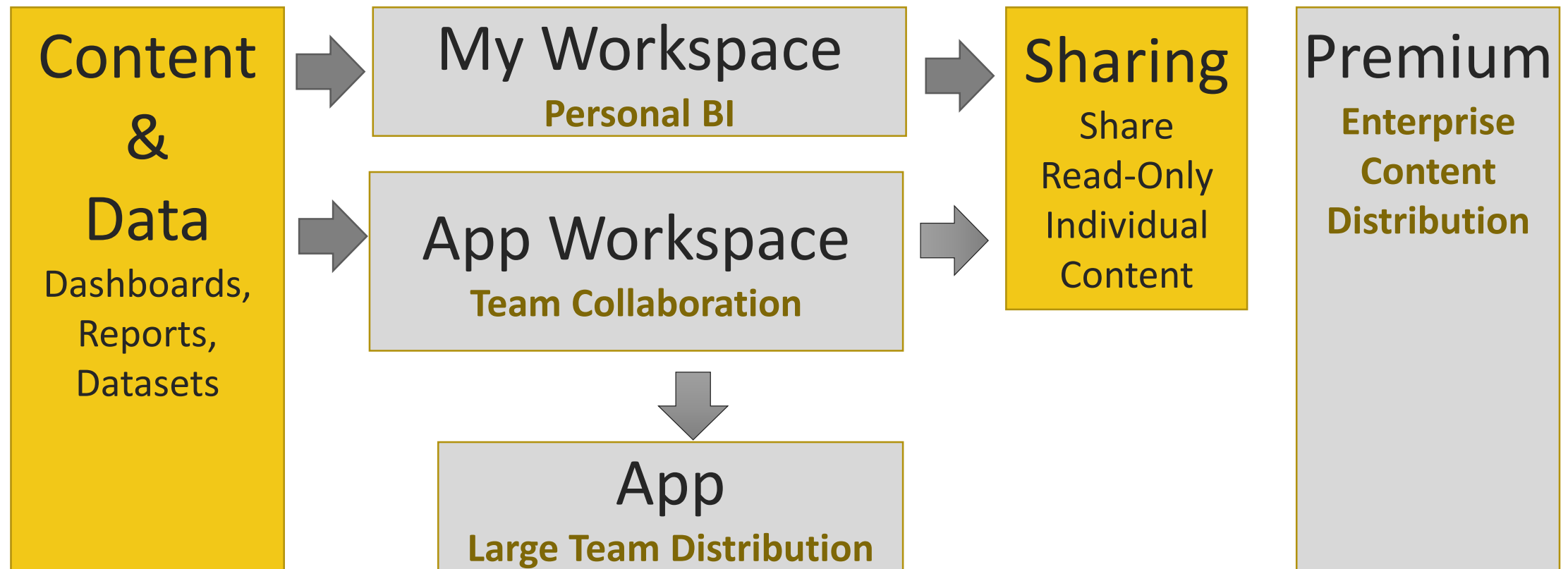
To simplify Dev/Test/Prod scenarios, use **parameters in the Query Editor to store data source connection** information. (By default, connections are stored in every individual query.)

Wrap-Up

Recap: Sharing, Collaboration, Distribution



Recap: Sharing, Collaboration, Distribution



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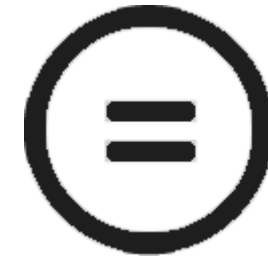
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