

# Publishing and Sharing in Power BI — Key Concepts

## 1. How does Power BI handle large datasets in the Online Service, and what is the role of Premium Capacity in this?

- **Power BI Online Service enforces dataset size limits:**
  - **Pro license:** max **1 GB per dataset**
  - **Premium Capacity:** increases limit to **up to 400 GB per dataset (as of 2025)**
  - Premium also allows **larger model sizes, higher refresh rates, and incremental refresh.**
- **Premium Capacity:**
  - Provides dedicated cloud resources (memory, CPU)
  - Enables advanced capabilities like **Paginated Reports, AI workloads, XMLA endpoints, multi-geo support, and unlimited distribution** via Power BI Apps without requiring Pro licenses for viewers.

## 2. What are the differences between Import mode, DirectQuery, and Live Connection in Power BI Service?

Mode	Data Storage	Performance	Data Freshness	Use Case
<b>Import Mode</b>	Data imported into Power BI dataset	Fast, in-memory VertiPaq engine	Requires scheduled/manual refresh	Best for static or medium-volume datasets
<b>DirectQuery</b>	No data stored; queries run live against the source	Slower (dependent on source)	Always up to date	Real-time reports on operational databases
<b>Live Connection</b>	Similar to DirectQuery but only works with Analysis Services (Azure/SQL Server)	Real-time	Always up to date	Centralized semantic models in enterprise

## 3. Explain deployment pipelines in Power BI Online. What stages do they include?

Deployment pipelines in Power BI provide **version control and environment promotion** for reports, datasets, and dashboards.

### Stages:

1. **Development** — Build and test content privately.
2. **Test** — Validate changes in a staging environment.
3. **Production** — Publish content for business users.

You can compare content between stages, promote changes, and deploy updates in a controlled, repeatable way.

#### 4. How can Power BI Service integrate with Microsoft Teams or SharePoint for collaboration?

- **Microsoft Teams:**
  - Embed Power BI reports or dashboards inside Teams channels or chats using the **Power BI app for Teams**.
  - Users can view, comment, and collaborate without leaving Teams.
  - Supports integration with meeting apps and workflows.
- **SharePoint Online:**
  - Embed Power BI reports in SharePoint pages using the **Power BI Web Part**.
  - Allows reports to be viewed interactively within intranet sites.

#### 5. What is the XMLA endpoint in Premium and how does it benefit developers or enterprise BI teams?

- **XMLA (XML for Analysis) endpoint** allows **external tools** like SQL Server Management Studio (SSMS), Tabular Editor, and DAX Studio to connect directly to Power BI datasets.
- Available for **Premium and Premium Per User (PPU)**.
- **Benefits:**
  - Model management (metadata editing)
  - Advanced scripting (TMSL or XMLA scripts)
  - Automating deployments, schema updates
  - Better debugging and performance tuning
  - Supports enterprise-scale development workflows (source control, DevOps)

#### 6. Describe how usage metrics and audit logs work in Power BI Service.

- **Usage Metrics Reports:**
  - Track report/dashboard views, active users, usage trends, and distribution.
  - Available for each report or dashboard within the service.
  - Help assess content value and identify popular reports.
- **Audit Logs (via Microsoft Purview/Compliance Center):**
  - Log user activities like view, share, publish, delete, export, and refresh events.
  - Can be queried using the **Office 365 Security & Compliance Center** or **PowerShell**.
  - Essential for governance, security audits, and compliance.

#### 7. How do you manage workspace access and permissions for different users?

In Power BI Service:

- Workspaces have **roles**:
  - **Admin** — full control (edit, add, delete, manage permissions)
  - **Member** — edit content, publish, refresh
  - **Contributor** — publish and edit content but no permission management
  - **Viewer** — read-only access
- Manage access via **Microsoft 365 groups** or manually within workspace settings.
- Power BI Apps can further control which users/groups see specific reports or dashboards from a workspace.

## 8. How can data governance be enforced in Power BI Service?

Key data governance mechanisms:

- **Sensitivity Labels (Microsoft Purview)** — Classify and label content as Confidential, Internal, Public, etc.
- **Dataflows** — Standardize and centralize data preparation for consistent data usage.
- **Certified/Promoted datasets** — Indicate official, trusted datasets.
- **Audit Logs** — Track user actions and monitor data usage.
- **Row-Level Security (RLS)** — Control data access based on user identity.
- **Tenant Settings (Admin Portal)** — Control who can publish, export, use APIs, share externally, or access features.

## 9. What are the limitations of Row-Level Security when using DirectQuery or Live Connection?

- **DirectQuery:**
  - RLS applies but query performance may degrade since security filters are pushed down to the source.
  - Limited support for complex RLS logic depending on the source system.
- **Live Connection:**
  - RLS must be defined **at the Analysis Services model level** (not in Power BI).
  - Power BI cannot modify or manage RLS for Live Connections directly.
  - User identity is passed through to the Analysis Services server for security filtering.

## 10. Explain how you can refresh a dataset via Power Automate or REST API.

- **Power Automate:**
  - Use the **Power BI connector** to trigger dataset refreshes based on events (e.g., after data upload, scheduled time).
  - Example: Trigger a dataset refresh when a file is added to SharePoint.
- **REST API:**
  - Use the POST `https://api.powerbi.com/v1.0/myorg/groups/{groupId}/datasets/{datasetId}/refreshes` endpoint.
  - Requires **Service Principal** or **Admin permissions**.
  - Supports automation tools, external applications, or scheduled custom refresh workflows.