

Lesson 20

Topic: Publishing and Sharing in Power BI

Prerequisites: Give a written brief explanation for all questions.

1. How does Power BI handle large datasets in the Online Service, and what is the role of Premium Capacity in this?
2. What are the differences between Import mode, DirectQuery, and Live Connection in Power BI Service?
3. Explain deployment pipelines in Power BI Online. What stages do they include?
4. How can Power BI Service integrate with Microsoft Teams or SharePoint for collaboration?
5. What is the XMLA endpoint in Premium and how does it benefit developers or enterprise BI teams?
6. Describe how usage metrics and audit logs work in Power BI Service.
7. How do you manage workspace access and permissions for different users?
8. How can data governance be enforced in Power BI Service?
9. What are the limitations of Row-Level Security when using DirectQuery or Live Connection?
10. Explain how you can refresh a dataset via Power Automate or REST API.

1) Handling Large Datasets in Power BI Online Service

- **Import Mode Limits:** In the standard (Pro) service, datasets are limited to **1 GB per dataset**. Data is compressed and stored in-memory for fast querying.
- **DirectQuery / Live Connection:** Instead of importing, Power BI can query the source directly. This avoids size limits but depends on the performance of the underlying database.
- **Incremental Refresh:** For very large datasets, Power BI supports **incremental refresh**, which updates only new or changed data rather than reloading everything.
- **Storage Optimization:** Power BI uses highly compressed columnar storage (VertiPaq engine) to handle millions of rows efficiently.

Role of Premium Capacity

- **Larger Dataset Sizes:** Premium capacity allows datasets up to **400 GB** (with Large Model storage format), far beyond the 1 GB Pro limit.
- **More Frequent Refreshes:** Pro users can refresh up to 8 times per day, while Premium allows **48 refreshes per day**.
- **Dedicated Resources:** Premium provides **dedicated cloud compute and memory**, ensuring consistent performance even with heavy workloads.
- **Advanced Features:** Premium unlocks features like **XMLA endpoint** (for enterprise-scale modeling), **paginated reports**, and **AI capabilities**.
- **Broad Sharing:** Reports in Premium workspaces can be shared with users who don't have Pro licenses, making it ideal for enterprise-wide distribution.

In Short

- **Without Premium:** Large datasets are constrained by size (1 GB) and refresh limits.
- **With Premium:** You get **dedicated capacity, larger dataset limits, more refreshes, and enterprise features**, making it the go-to solution for handling **big data at scale** in Power BI Service.

2) Quick Answer:

- **Import Mode** stores a compressed copy of the data inside Power BI for fast, in-memory queries.
- **DirectQuery** queries the source database live, without storing data in Power BI, but performance depends on the source.
- **Live Connection** connects directly to an existing semantic model (like Analysis Services or another Power BI dataset) and doesn't create a new dataset.

Import Mode

- **How it works:** Data is imported into Power BI's **VertiPaq in-memory engine**.
- **Performance:** Very fast because queries run against cached data.