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

- Power BI handles large datasets using **Import**, **DirectQuery**, and **Aggregations** for performance optimization.
- **Import mode** uses the in-memory VertiPaq engine to compress data.
- **Premium Capacity** provides dedicated resources, supports **large datasets up to 400 GB**, higher refresh frequency (up to 48 times/day), AI features, and enterprise-level performance.

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2. Differences between Import, DirectQuery, and Live Connection

Feature	Import Mode	DirectQuery	Live Connection
Data Storage	Stored in Power BI	Stored in the source	Stored in SSAS or Power BI Dataset
Performance	Fast (in-memory)	Depends on the source	Depends on source
Data Size Limit	Limited by capacity	Almost unlimited	Almost unlimited
Refresh Frequency	Scheduled refresh	Real-time queries	Real-time queries
Row-Level Security (RLS)	Supported	Supported	Supported

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3. Deployment Pipelines in Power BI

Deployment pipelines help manage the **Dev → Test → Production** process for Power BI content:

- **Development (Dev):** Create and modify reports/datasets.
- **Test (Staging):** Validate data, RLS, and performance before release.
- **Production (Prod):** Publish to end-users with controlled access.

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4. Power BI Integration with Microsoft Teams or SharePoint

- **Teams:** Embed reports directly into Teams channels, set up alerts, and collaborate in real time.

- **SharePoint:** Use Power BI web parts to embed interactive reports in SharePoint pages for broader sharing.

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5. XMLA Endpoint in Premium

- XMLA endpoint allows **read/write access** to datasets using tools like **SSMS** and **Tabular Editor**.
- Benefits:
    - Advanced model editing.
    - Automated deployments (CI/CD).
    - Enterprise-scale semantic models.

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6. Usage Metrics and Audit Logs

- **Usage Metrics:** Show report and dashboard view counts, top users, and usage patterns inside Power BI Service.
- **Audit Logs:** Available in Microsoft 365 Admin Center; track user activities such as logins, sharing, and data exports for compliance.

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7. Managing Workspace Access and Permissions

Roles in a workspace:

- **Admin:** Full control, including permissions.
- **Member:** Edit and publish reports.
- **Contributor:** Edit content but cannot manage permissions.
- **Viewer:** Read-only access.

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8. Data Governance in Power BI Service

Enforced through:

- **Sensitivity Labels** for data classification.
- **Data Loss Prevention (DLP) policies** to prevent unauthorized sharing.
- **Microsoft Purview** for data catalog and lineage.
- Controlled **sharing permissions** and access policies.

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9. Limitations of Row-Level Security (RLS) in DirectQuery/Live Connection

- **Performance impact:** Security filters are applied at query time, increasing latency.
- **Live Connection:** RLS must be defined in the underlying model (e.g., SSAS or dataset), not in Power BI Desktop.
- Some caching and AI features may not work well with RLS in real-time scenarios.

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10. Refreshing a Dataset via Power Automate or REST API

- **Power Automate:**
  - Trigger a flow based on schedule or event → Add "Refresh a Dataset" action.
- **REST API:**
  - Endpoint: POST https://api.powerbi.com/v1.0/myorg/datasets/{datasetId}/refreshes
  - Requires **Azure AD access token** for authentication.