

Power of Import, Direct Query and Live Connection in Power BI

In the world of business intelligence, Power BI has emerged as a leading platform for data visualization and analysis. When building Power BI reports, it is essential to understand the different data connection options available: Import, Direct Query, and Live Connection. Each of these options offers unique advantages and considerations, impacting the performance and functionality of your Power BI reports.

Import

Import is the default data connection mode in Power BI, where data is imported into the Power BI model, stored in a compressed in-memory database. This mode provides excellent performance for smaller datasets and allows for extensive data transformations, calculated columns, and measures within Power BI's data modeling capabilities.

When to use "Import"?

Import is ideal when you need to perform extensive data transformations, create calculated columns and measures, or build complex relationships within Power BI. It provides the flexibility to enrich and shape the data to meet specific reporting requirements.

Import is suitable for smaller to medium-sized datasets, where the entire dataset can fit comfortably in memory. It ensures fast query response times and provides a responsive user experience.

Direct Query

Direct Query mode enables Power BI reports to query data directly from the source system in real-time, bypassing the need for data import and storage. This mode is useful when working with large datasets or when immediate access to real-time data is required.

When to use "Direct Query"?

Direct Query is well-suited for scenarios where the dataset size exceeds the memory capacity of the Power BI service or the need to load data locally is impractical due to data volume.

Direct Query allows you to connect to live data sources, such as transactional databases or streaming data, enabling real-time insights. It ensures that the reports always reflect the latest data from the source system.

Live Connection

Live Connection mode establishes a connection between Power BI and an external Analysis Services model, such as SQL Server Analysis Services (SSAS). In this mode, the Power BI report consumes the pre-defined data model without importing the data, leveraging the performance optimizations of the underlying Analysis Services engine.

When to use Live Connection?

Live Connection is beneficial when organizations have already invested in building and maintaining enterprise-level data models using Analysis Services. It allows Power BI reports to reuse these existing models and benefit from their optimizations.

Live Connection enables multiple users to collaborate on reports without duplicating the data model. It ensures consistent data definitions and calculations across reports, simplifying maintenance and governance.