**BIG DATA ACCESS**

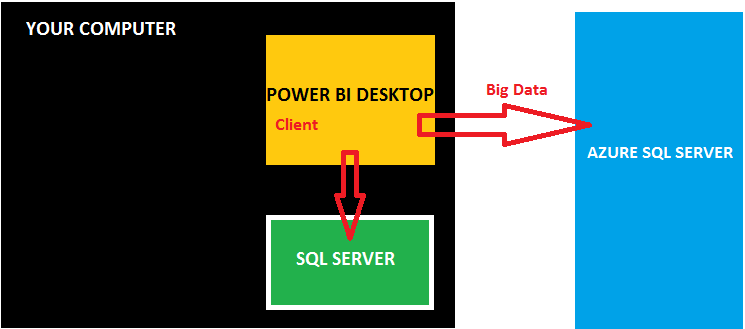
Applies to OLTP, DWH Only

**When working with Database Sources (Big or Small), we have TWO Connection Modes:**

Option 1: Import : Source data imported to Power BI In-Memory database

\*\* Option 2: Direct Query : Source data retrieved LIVE by Power BI *whenever needed*

**Example Plan:**

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**EXAMPLE 1: HOW TO CONNECT SQL SERVER DATABASE USING POWER BI?**

STEP 1: LAUNCH SSMS TOOL > CONNECT TO YOUR LOCAL SQL SERVER. RUN THE GIVEN .SQL SCRIPT. THIS INSTALLS ONE DATABASE: "PRODUCT DATABASE".

STEP 2: RIGHT CLICK ABOVE DATABASE IN SSMS TOOL > NEW QUERY > PASTE BELOW QUERY > TEST IT:

SELECT T.CalendarYear, T.CalendarQuarter,T.EnglishMonthName, t.FullDateAlternateKey as day,

P.EnglishProductName AS PRODUCT, SUM(S.SalesAmount) AS TOTAL\_SALES

FROM SALES\_DATA AS S JOIN TIME\_DATA AS T ON S.OrderDateKey = T.TimeKey

JOIN PRODUCTS\_DATA AS P ON S.ProductKey = P.ProductKey

GROUP BY T.CalendarYear, T.CalendarQuarter,T.EnglishMonthName, t.FullDateAlternateKey,

P. EnglishProductName

STEP 3: LAUNCH POWER BI > GET DATA > SQL SERVER > SPECIFY YOUR LOCAL SERVER NAME, DATABASE NAME. STORAGE MODE = IMPORT. ADVANCED: PASTE ABOVE QUERY > LOAD.

DATA WILL BE LOADED TO POWER BI IN-MEMORY VERTIPAQ DATABASE.

STEP 4: IN POWER BI DESKTOP, WE CAN DO BASIC MODELLING OPERATIONS USING **COLUMN TOOLS**

TO GET THE **COLUMN TOOLS** IN THE TOP : MENU OPTIONS, WE NEED TO SELECT A COLUMN FROM THE RIGHT : FIELDS PANE.

SELECT QUARTER : COLUMN TOOLS > DO NOT SUMMARIZE

SELECT TOTAL\_SALES: COLUMN TOOLS > SET MONETORY FORMAT ($)

SELECT TOTAL\_SALES: COLUMN TOOLS > SET 0 DECIMAL PLACES

SELECT TOTAL\_SALES: COLUMN TOOLS > NAME > RENAME COLUMN

SELECT TOTAL\_SALES: COLUMN TOOLS > MODIFY DATA TYPE

SELECT TABLE VISUAL > SELECT YEAR, QUARTER, MONTH, DAY, SALES.

**EXAMPLE #2: HOW TO CONNECT AZURE SQL DATABASE USING POWER BI?**

GET DATA > MORE > AZURE > AZURE SQL DATABASE SPECIFY THE SERVER DETAILS ONLY:

Server Name: sqlschoolprod.database.windows.net

Database Name: PRACTICEDATABASE

SELECT "DIRECT QUERY"

Load.

This would prompt for Authentication to the server:

**Authentication** : Database

User Name: sql\_school Password: zgrhi3216%$6

Then we are connected to Azure SQL Server in Power BI Interface.

Select Required Tables (Ex: Sales\_Data, Time\_Data, Products\_Data, Customers\_Data)

Relations are auto detected. To verify: Go to to Left: Model button

Perform Visualizations based on above loaded Tables (Ex: Yearly Sales)

From above two examples we see that few tables are of IMPORT mode and few more are of DIRECT QUERY Mode. Hence the Power BI Report will be with "MIXED" Mode.

Use Import Mode for such data with 50 GB or less. Preferably On-Premise connections.

Caution: Ensure proper filtering of data BEFORE importing to Power BI.

You can use one of the following techniques to FILTER the data BEFORE importing into Power BI:

1. SQL Query [Where, Having, Joins, etc..]

2. Power Query [**Parameters**]

Power BI Filters: Available in Canvas (designer). To filter data that is loaded into Power BI

Power BI Parameters: Available in Power Query. To filter data prior to actual load into Power BI

Assume you have products data.

You can create a parameter to "selectively" EXTRACT active data into Power BI. Using Power Query.

After loading the active data into Power BI In-Memory Database, then we can apply "FILTERS" to report only specific category / color / class, etc..