# Using Power Query Builder

Save Time Connecting to D365/CDS
Data with Power Query Builder

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# Agenda

Create a Report Connection in minutes
Deeper Dive
    Why use Power Query Builder
    Getting XRM Toolbox
    Creating connection in XRM Toolbox
    Creating Service URL Queries
    Creating Data Query
    Best Practices
Q&A

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Create a PowerBI Report in 10 minutes

**Demo**

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# Three Ways to Connect Power BI to D365/CDS

| Feature | D365 Online Connector | CDS Connector | FetchXML (Power Query Builder) |
|---|---|---|---|
| 2 Option Sets, Options Sets, Multi-Select Option Sets | Only database values shown | Display values for options sets. Only database values for 2 option sets and multi-option sets | Display Values for all types of option sets |
| Look-Up Fields | GUID with expandable field to show related data | GUID only –no expandable field to bring back related data | GUID and Name stored in record are automatically returned |
| Querying from Multiple Entities | Expanding into more than one entity will destroy or break performance | | Very little hit to performance when merging to multiple entities |
| Filtering on Multiple Entities | Filtering takes place after data has been queried causing performance issues in large datasets | | Filtering without performance issues |
| Performance test-107K records with multiple entities | 1200 seconds | 72 seconds | 76 seconds |
| Customer, Owner and Regarding fields | Returns a mix of columns with GUIDS & expansions for each entity | Returns a mix of columns with only GUIDS-no expandable fields | Returns TYPE column to identify the entity, GUID and Name stored in record |

# 4th Connection Method in Preview

- TDS  Endpoint for CDS
  - Allows DirectQuery
  - Security Roles in CDS can be respected
  - Relationships automatically fit CDS schema
  - Good Data Availability
    - Look-up Fields – Both ID and name available
    - Customer fields - Both ID and name available
    - Owner Fields - Both ID and name available
    - Regarding Fields -Both ID and name available
    - Option Sets/ Statuses/ Two Option Sets - Both ID and  label available

Watch for Azure Everyday on this Soon!

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# HUGE BENEFITS of Power BI with D365/CDS

Merging Data from more than two levels deep

Power BI as an "Integration" tool-Power BI allows merges to other
apps if there is a common key with very limited resource requirements.

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Free Download at https://www.xrmtoolbox.com/

Over 100 developer tools for D365/CDS

Some GREAT!! Some not!

Many Require Admin Role

Think Spiderman

Show the developers some love

Great Info at https://crmchartguy.com/power-query-builder/

# Power Query Builder is in XRM Toolbox

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How to get XRM Toolbox

Connections in XRM Toolbox

Service URLS

Data Queries

**Demo**

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# Power Query Builder Console

# Service URLS

- Base URL is always the first part of the page URLs in your app.
  - It always looks like

    <span style="color:red">Organization</span>.crm.dynamics.com

- ServiceRootURL provides the API call
  - It always look like

    <span style="color:red">Dyn365CEBaseURL</span> & "/api/data/v9.1"

# Best Practices

Start with the end in mind!!

Consider data integrity and make necessary adjustments in D365/CDS.

Start with a view that shows as much of your data as possible in D365/CDS app.

- PQB will pick up all fields and all filters from your view
- Allows quick changes if you are missing necessary fields
- Helps document your start place

*Create a Power BI template (*.PBIT).
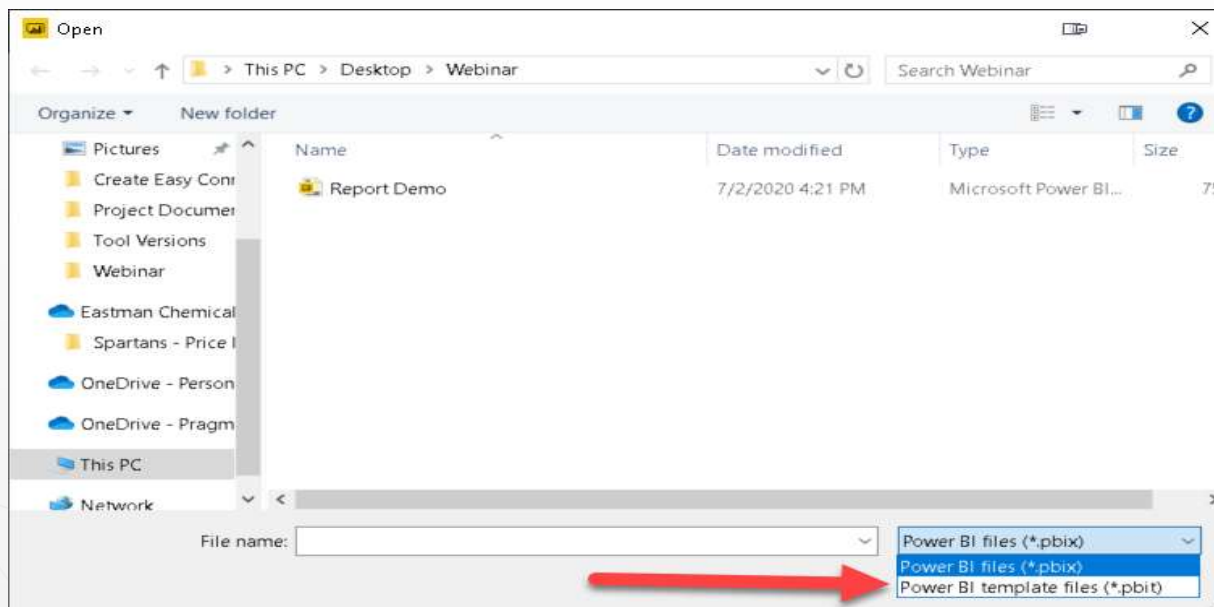
*Remove unnecessary fields early.

Work on your basic M skills so you can edit in the Advanced Editor.

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# Creating Templates

- Create Power BI Desktop file that includes
    - Dyn365CEBaseURL
    - ServiceRootURL
    - Blank Data Query
    - Any other assets that are included in all Power BI files like
        - Date Tables
        - Last Refreshed Date query
        - JSON theme
        - Headers/Footers
    - Be sure to change file suffix to *.PBIT in Save As dialog

# Using Templates

- In Browse Dialog, you need to change file suffix to *.PBIT
- Creates an untitled *.PBIX with all components in place.

- Uncheck "Include in Report Refresh" and "Enable Load" on Service URLs.

- Remove all Database values for Option Sets and Look-ups.

- Double-check to ensure that all Data Types are correct.

- If you are using any merges, be sure to test the published version in the Power BI Service.

# Power Query Editor Enhancement Steps

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# Have Any Questions?

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