

# Playing Further Outside Your Sandbox

Advanced Concepts In SharePoint Business Connectivity Services

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## Solvera Solutions



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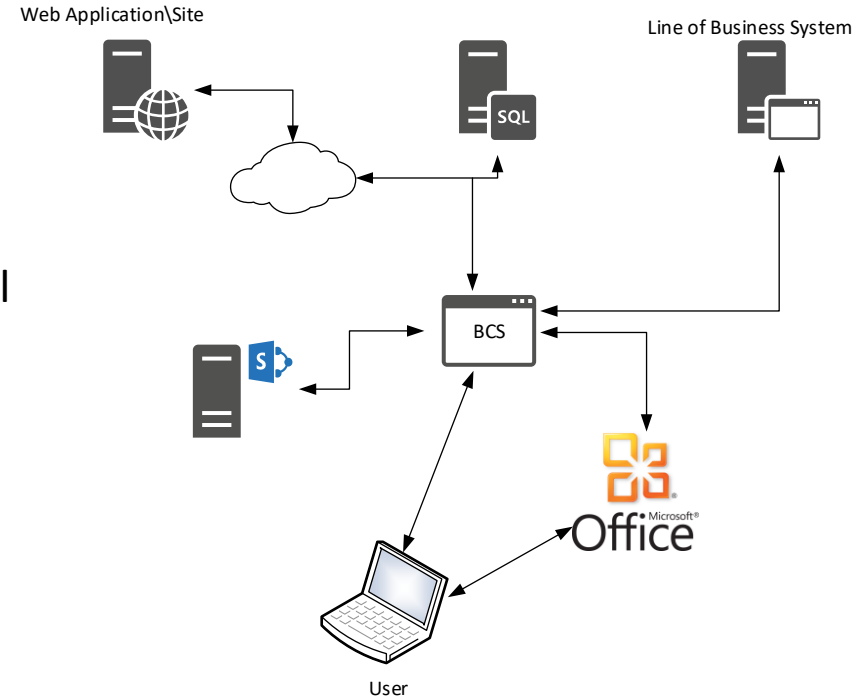
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# Things we are going to cover

- Review of BCS basics
- BCS in SharePoint Online
- How to use SP Search with BCS
- Associations
- Demos...lots of demos

# Important Concepts in BCS

- Business Connectivity Service seamlessly connects SharePoint to external data sources
- Integrates rich client applications to external data systems
- Can use BCS to surface data from external sources into SharePoint lists and even update those sources from SharePoint



# External Content Types

- The foundation of any BCS solution within SharePoint
- External Content Types allow you to customize the data you wish to view from the external source
- Can use to populate entire lists with data or use as source for drop down fields
- Can be configured to allow for full CRUD operations or only display values as stored in the data source

# BCS in SharePoint Online

- Implementation very similar to On-Prem SharePoint
  - Create “Picker” columns the same
  - Create External Lists the same
  - Even create ECTs the same...
    - Almost
- OOTB implementation to database is to Azure DBs only.

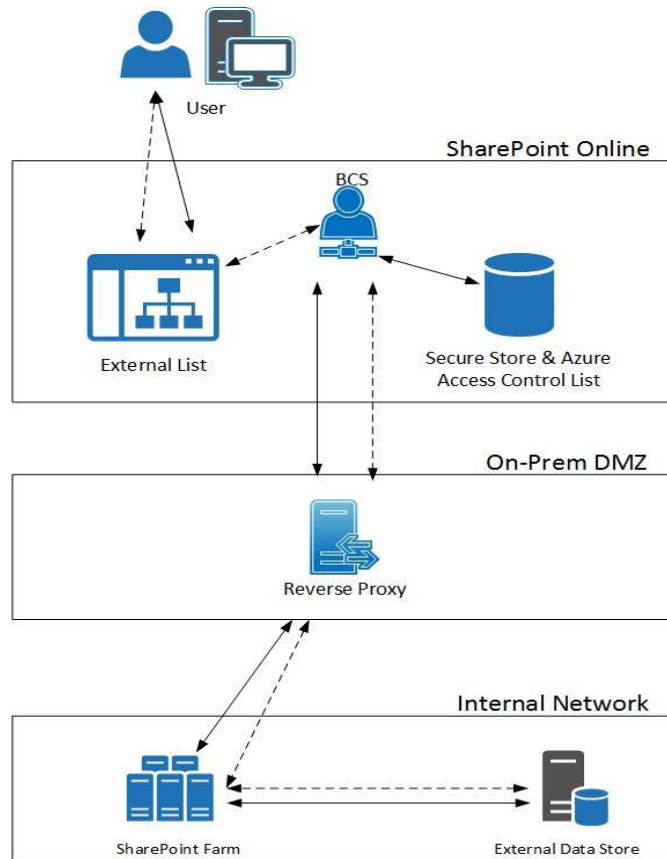
# Demo: Create SharePoint Online ECT

- To configure Azure DB for BCS connectivity please see:
  - <http://prairiedeveloper.com/2016/08/prepare-azure-database-sharepoint-online-bcs-connection/>
    - (Short URL: <http://bit.ly/PrepAzureDB>)

# SharePoint Online to On-Prem Data

- SharePoint Online can access on-prem data via BCS.
  - Requires Hybrid functionality
  - Still requires an on-prem SharePoint farm to act as intermediary
- Uses Azure AD to provide OAuth tokens for authentication
- Requires an OData endpoint(s) to exist at the data source





Based on diagram from: <https://technet.microsoft.com/en-us/library/dn197239.aspx>



# SharePoint Online to On-prem Data - Alternative Methods

- Data Management Gateway with PowerBI
  - Creates an OData connection that BCS can integrate with.
- Sync Azure DB with on prem DB
  - Requires Microsoft SQL Azure Data Sync Client

# Search and BCS

- Utilizes external content types to find and surface data to users through SharePoint search
- Requires a BCS profile page to surface data
- Search indexes the external data the same as it would in SharePoint
- When clicking on an item found in search, the ID of that item is passed to the profile page and used by the web parts to surface the data.

# BCS Profile Page

- Used by SharePoint to surface data related to the ECT.
- Basically a site page built with BCS Web Parts.
- By default will display all information for a single row as defined by the BCS connection.

# Demo: Setting up the profile page

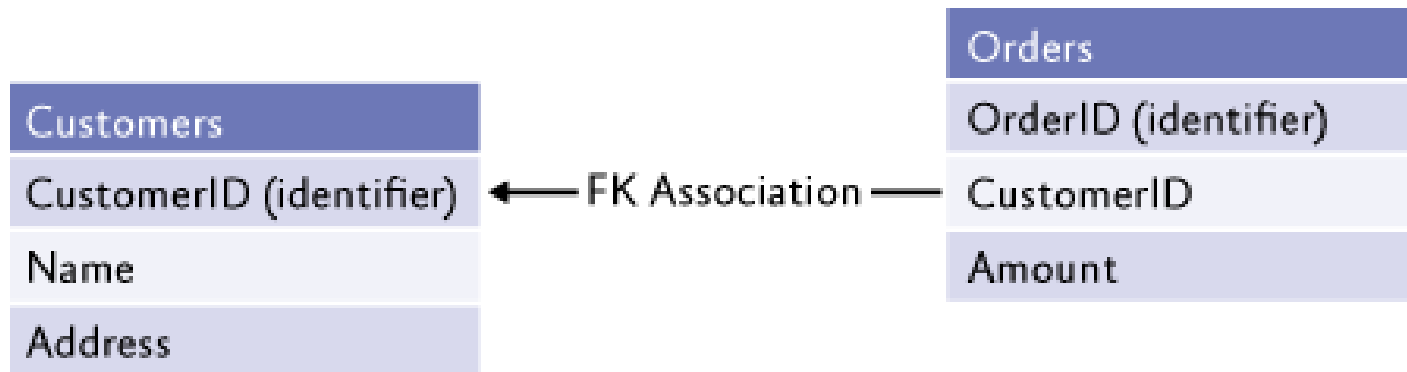
# Demo: Configure Search with BCS

# Associations

- Way to connect multiple external sources together to provide a better experience of the data you are looking for.
- Displays the relationship between two (can be more) sources of data (ECTs)
- Important for displaying related data

# Association Categories

- **Foreign Key Associations** – Connecting an ECT to the identifier of another ECT

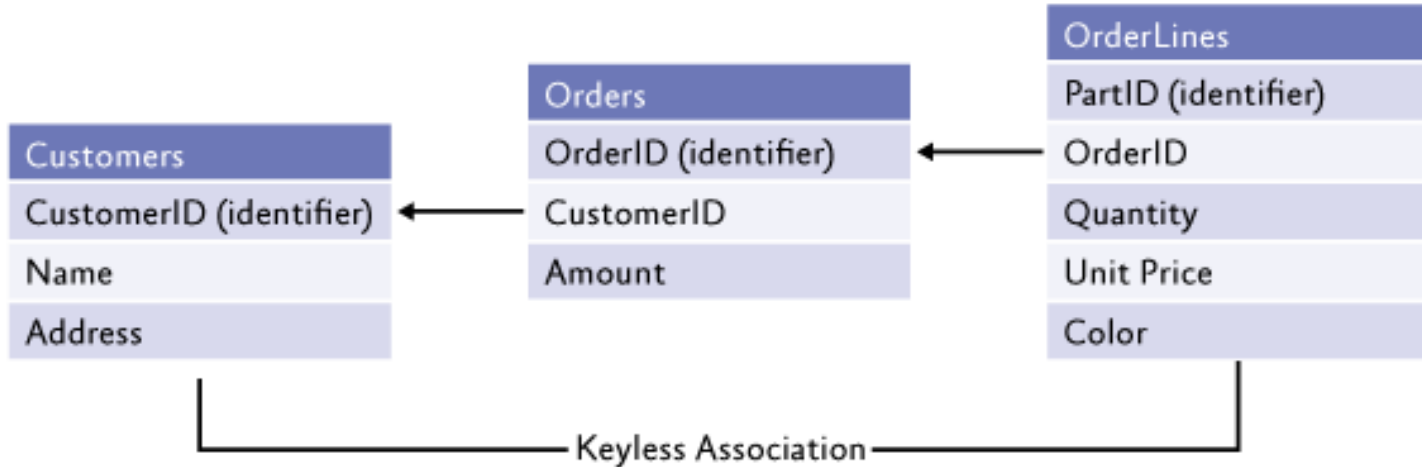


<https://msdn.microsoft.com/en-us/library/ff798500.aspx>



# Association Categories

- **Foreign Keyless Associations** – Requires custom logic to connect an ECT to another.



<https://msdn.microsoft.com/en-us/library/ff798500.aspx>

# Foreign Key Associations

- One-to-One Foreign Key Associations
  - Two different ECTs
  - Maps one item in ECT #1 to one item in ECT #2
  - ECT #1 has a primary key that can reference a foreign key in ECT #2

# Foreign Key Associations

- One-To-Many Foreign Key Associations
  - Two different ECTs
  - Maps one item in ECT #1 to many items in ECT #2
  - ECT #1 has a primary key that can reference a foreign key in ECT #2

# Foreign Key Associations

- Self-Referential Foreign Key Associations
  - One ECT
  - Shows relationship to other items within the ECT

# Demo: Creating a One-To-Many Association

# Demo: Display Data via Association

- Goal: Display all the assets we have that correspond to a particular category.

# Foreign Keyless Associations

- Like Foreign Key Associations, keyless associations have **one-to-one**, **one-to-many** and **many-to-many associations**
  - Do not connect directly to association over a foreign key.
- Multiple External Content Type Associations
  - Connects to more than one field across more than one ECT.

# Foreign Keyless Associations

- Non-Integer Primary Keys
  - Are connected to other ECTs using primary key that is a non-integer identifier
  - Use custom logic to link to other sources of data.
  
- Use ECTs within the same BDC Model



# Demo: Custom Edit ECT

- Goal: Illustrate how to edit an ECT outside of Designer.

# How to contact me:

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Stay tuned for more great sessions ...