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# How to bring your data into Dataverse

4PS Group B.V.  
06-06-2024

# Speaker's intro

- Bert Verbeek
- Working with NAV/BC for 16 years in several roles
- Technical Solution Architect @ 4PS Group
- Microsoft MVP – Business Applications
- Twitter and LinkedIn: bertverbeek
- Blog: bertverbeek.nl

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# Agenda

- What is Dataverse?
- Data synchronization
- Virtual Tables
- Business Events

# What is Dataverse?

# What is Dataverse?

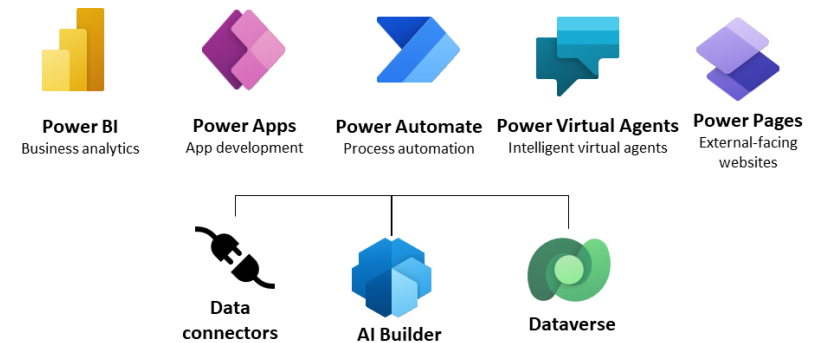
- Cloud based solution
- Structured database
- Role based security
- Integration with Power Platform
- Stored in Azure Data Lake
- API's

[Service protection API limits \(Microsoft Dataverse\)](#)

[- Power Apps | Microsoft Learn](#)



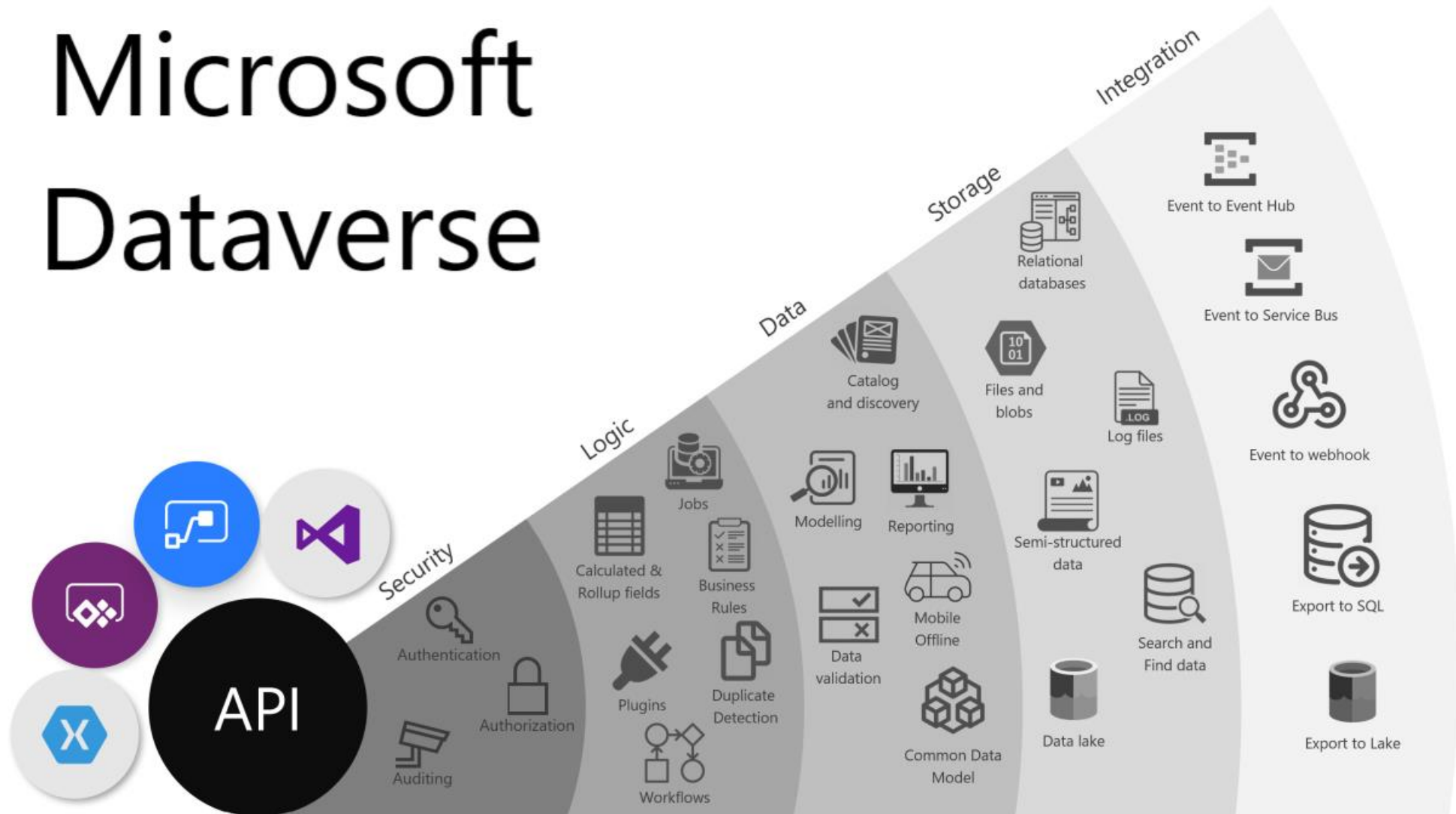
The low code platform that spans Microsoft 365, Azure, Dynamics 365, and standalone apps.



# What is Dataverse?

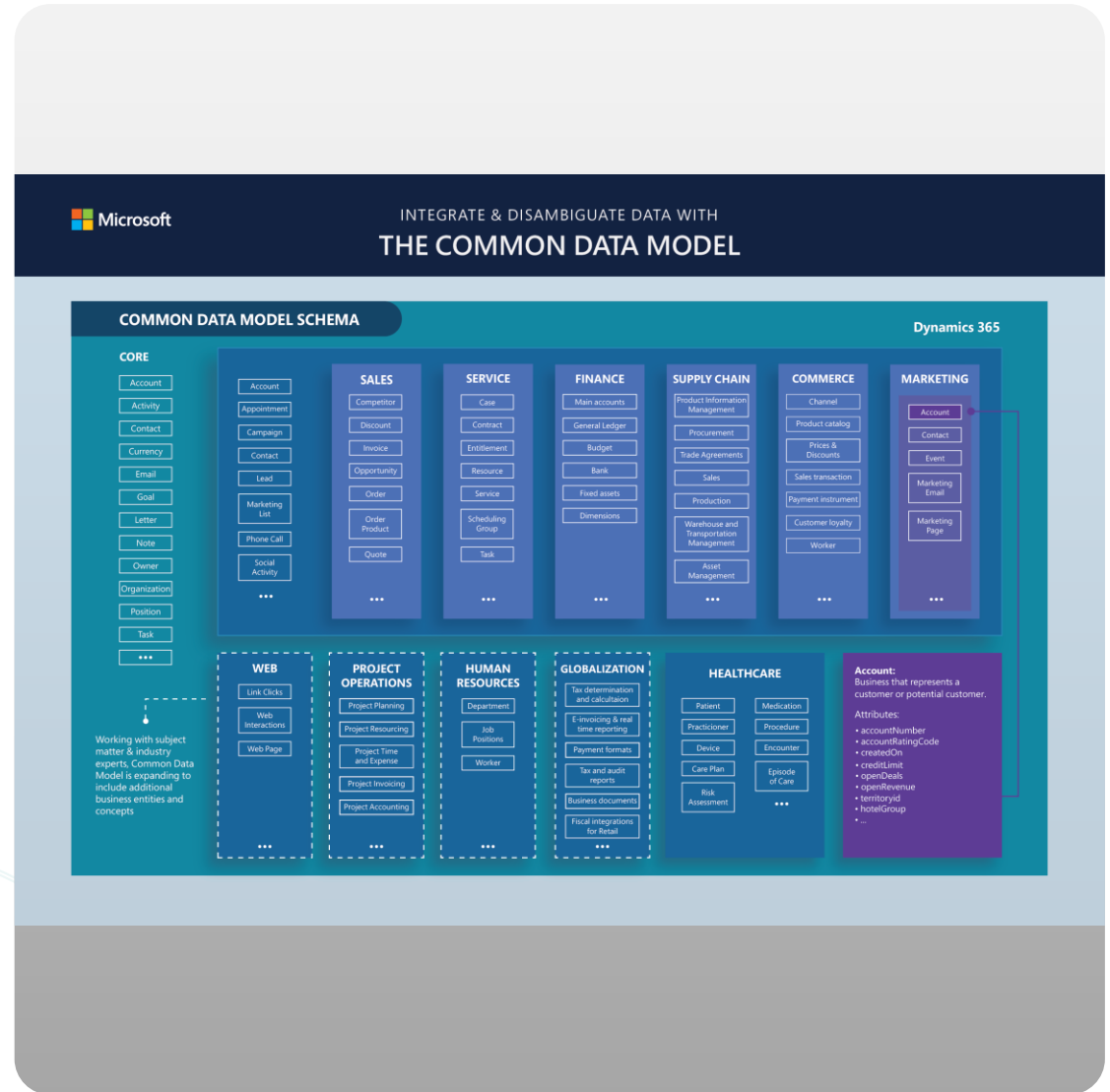
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# Microsoft Dataverse



# Common Data Model

- Standard Schema
- Multiple apps
- Schema is extendible



# Solution

- Managed solutions
  - Appsource
- Unmanaged solutions

The screenshot shows the Microsoft Dynamics 365 Solutions management interface. At the top, there are navigation options: '+ New solution', '← Import solution', '📁 Open AppSource', and '🗨️ Pub'. Below this is the 'Solutions' section. A prominent message reads 'Set your preferred solution' with a document icon and the subtext 'Select where your updates will be saved so your work stays organi'. Below the message are three filter buttons: 'Unmanaged' (highlighted in purple), 'Managed' (with a lock icon), and 'All' (with a document icon). At the bottom, there is a table with columns for 'Display name', 'Preferred solution', and a menu icon (three dots). The table contains two rows: 'Common Data Services Def...' with 'Preferred solution' selected, and 'Default Solution'.

Display name	Preferred solution	
Common Data Services Def...	Preferred solution	⋮
Default Solution		⋮



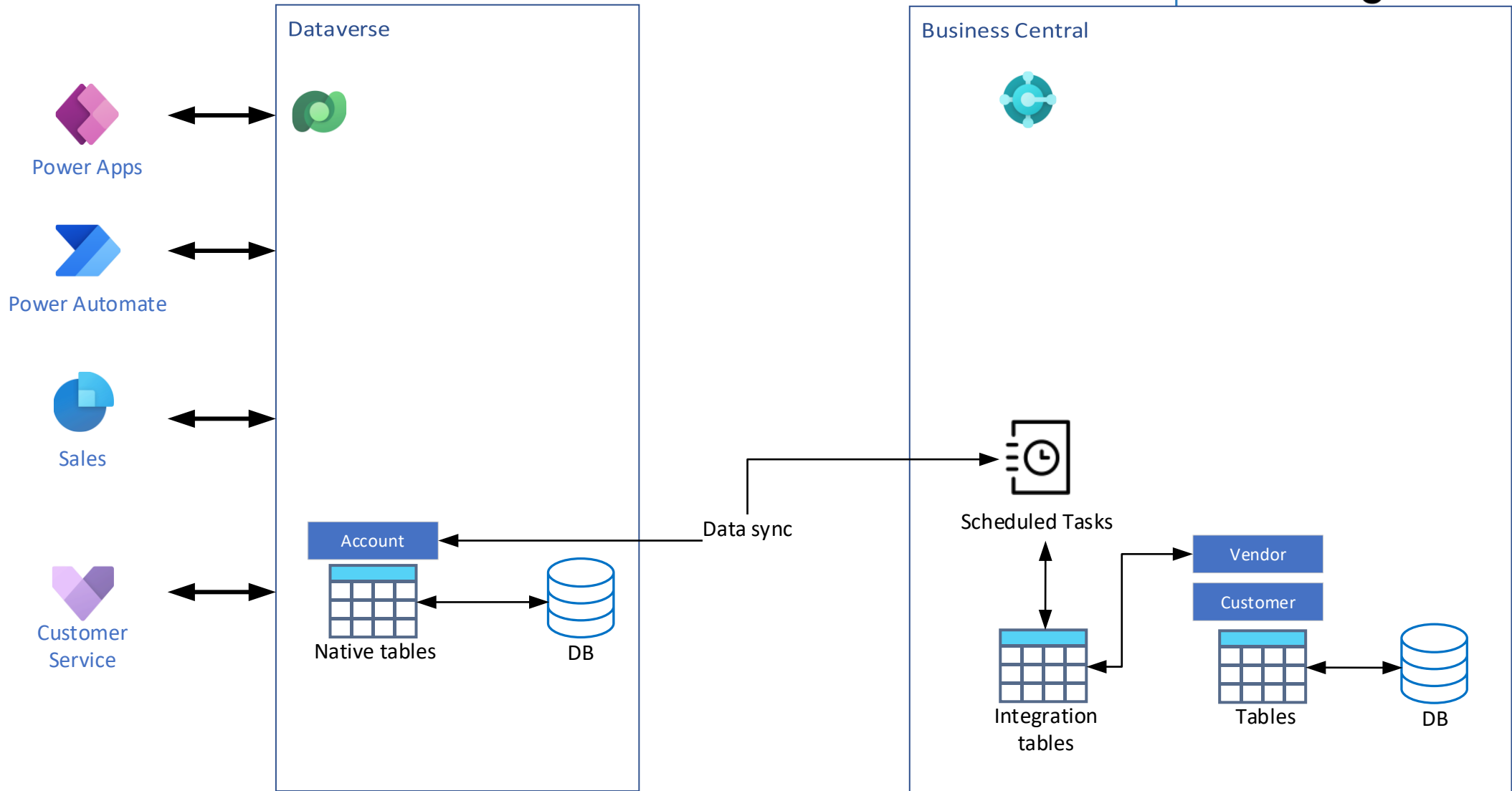
# Why put your data into Dataverse?

- Multiple apps
- Shared data
- Enrich data

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# Data synchronization



# How it works

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**DEMO**

# Build your own

- Create table inside Dataverse
- Create Proxy table  
[AL Table Proxy Generator - Business Central | Microsoft Learn](#)
- Create integration code
- Permissions inside Dataverse
- Table extensions
- Table 5331 "CRM Integration Record"

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# Changes to altpgen

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- From runtime 13
- Path  
C:\Users\\.vscode\extensions\ms-dynamics-smb.al-14.0.963280\bin\win32\altpgen\altpgen.exe
- Register an Entra Application
- Assign API Permissions to it
  - Dynamics CRM -> user\_impersonation (delegated)
- Get redirect uri

-clientid:<**clientid**>

-redirecturi:"msale4b313f9-f6c6-4a9e-9a27-818a198f9f6d://auth"



# Easier ways?

- VS Code Extension
  - [microsoft/bc2dataverse: Integrate Business Central to Dataverse in a low code way \(github.com\)](#)
  - Not maintained < BC24
- BC Extension
  - [Bertverbeek4PS/DataverseSyncUI \(github.com\)](#)
- BC24 improvement



# Trigger Job Queue

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[Use a Power Automate flow to timely synchronize Dataverse entity changes - Business Central | Microsoft Learn](#)

← Notify BC from Dataverse Send feedback Copilot S

### Create record (V3)

Parameters Settings Code View Testing About

Environment \*  
DOK

Company \*  
CRONUS NL

API Category \*  
microsoft/dataverse/v1.0

Table Name \*  
dataverseEntityChanges

Advanced parameters  
Showing 1 of 1 Show all Clear all

Entity Name  
account

Connected to admin@M365x27595860.onmicrosoft.com. [Change connection](#)

```
graph TD; Trigger[When a row is added, modified or deleted] --> GetRow[Get a row by ID]; GetRow --> Condition{Condition}; Condition -- True --> Terminate[Terminate]; Condition -- False --> CreateRecord[Create record V3];
```

The flow diagram shows a sequence of steps: 1. Trigger: 'When a row is added, modified or deleted'. 2. Action: 'Get a row by ID'. 3. Condition: A decision point with two paths: 'True' leading to 'Terminate' and 'False' leading to 'Create record (V3)'. The 'Create record (V3)' step is highlighted with a blue border, indicating it is the current step being configured.

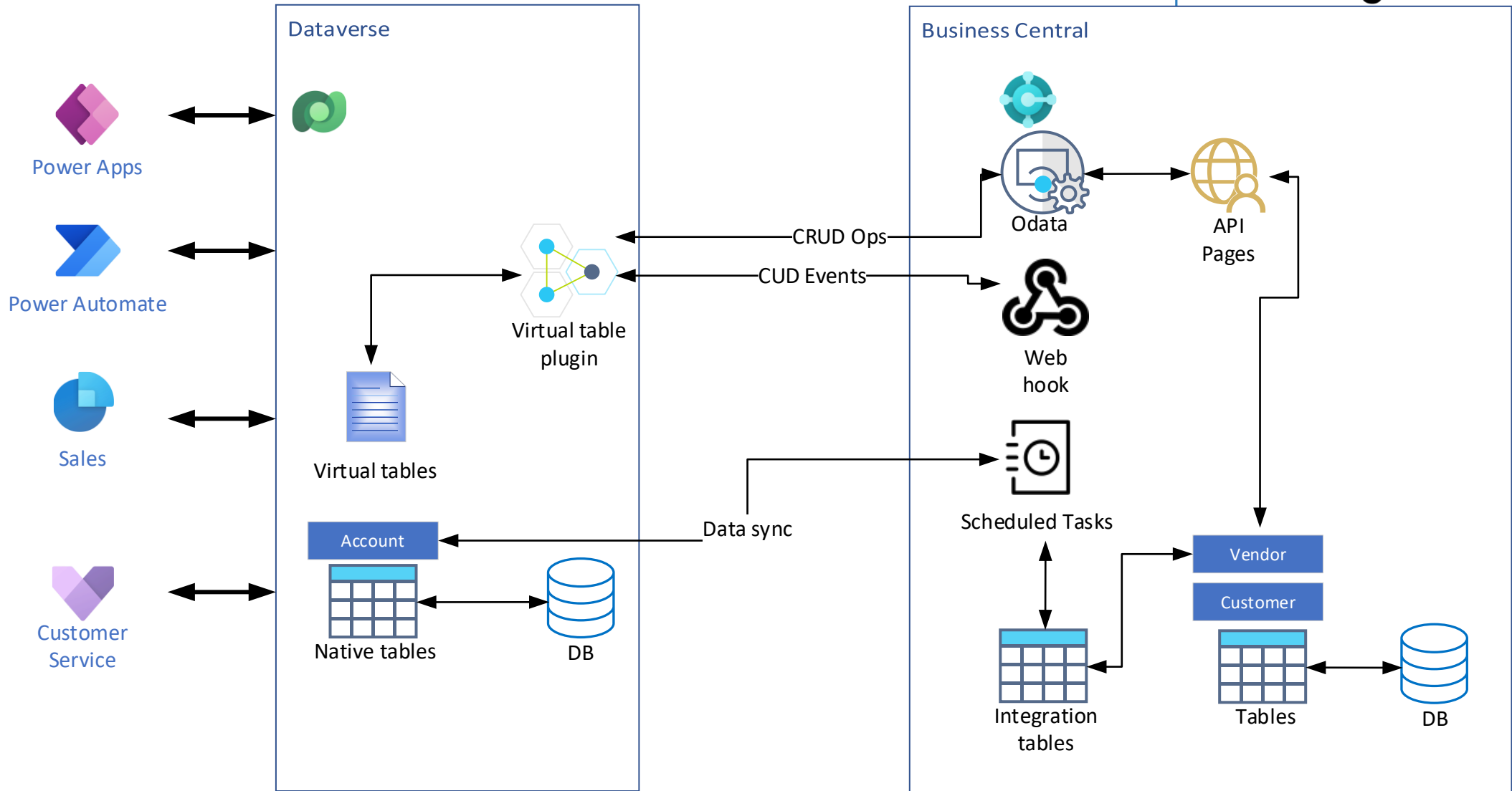


# Performance

- Full sync (Initial load)
  - 435 records (17 fields) into Dataverse
  - 4 min 5 sec (inserts)
- Sync times (modified)
  - 920 milliseconds (1 record change)



# Virtual tables



# How it works

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**DEMO**

# Tips

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- Switch company
  - Table "user" column "Company"
  - Companies in table "Company" (cdm\_company)
- Plugin:
  - [What's new: Business Central Integration with Dataverse - YouTube](#)

```
Patch(
    Users,
    First(
        Filter(
            Users,
            'User Name' = "admin@[REDACTED].onmicrosoft.com"
        )
    ),
    {
        Company: Company_dropdown.Selected
    }
);
```

# Tips

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- Trigger on Virtual Table in Power Automate

The screenshot shows the configuration for a trigger in Power Automate. The trigger is titled "When a row is added, modified or deleted" and is connected to a "Send an email (V2)" action. The configuration fields are as follows:

* Change type	Added or Modified or Deleted
* Table name	Customers
* Scope	Organization
Select columns	City, Name
Filter rows	Enter an OData style filter expression to determine which rows can trigger t
Delay until	Enter a time to delay the trigger evaluation, eg. 2020-01-01T10:10:00Z
Run as	Choose the running user for steps where invoker connections are used

Below the configuration fields, there is a link "Hide advanced options" with an upward arrow. At the bottom of the trigger card, there is a plus sign icon with a downward arrow, indicating that the trigger is expanded. The action card below is titled "Send an email (V2)".

# Relationships

- Between synchronized data and Virtual data
  - [Use synthetic relationships to expose more Business Central data in Dataverse | Microsoft Learn](#)



# Power Pages

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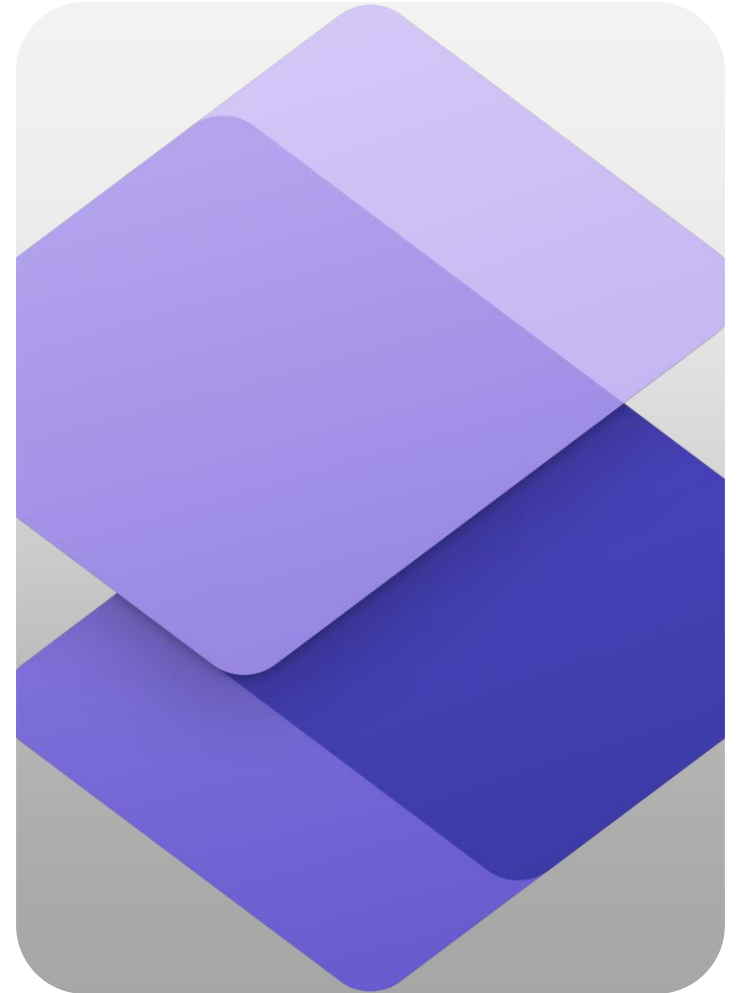
**DEMO**



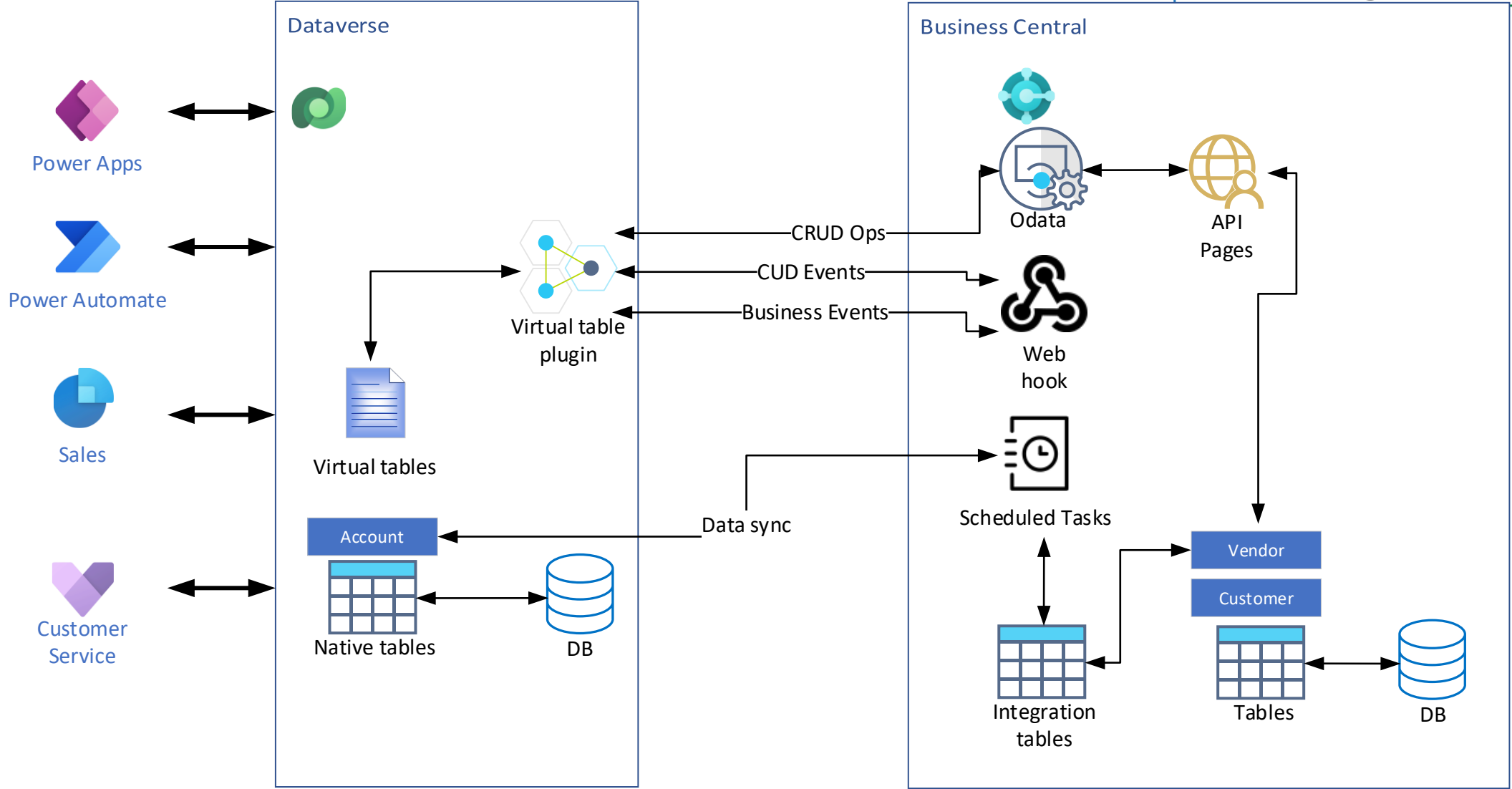
# Power Pages

- Entra ID inside BC
- Permissions in Power Pages

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# Business Events



# Business Events

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- Notify and trigger Dataverse
- AL Code:

```
7 [EventSubscriber(ObjectType::Table, Database::"Customer", 'OnAfterValidateEvent', 'Blocked', false, false)]  
  0 references  
8 local procedure OnAfterValidateCustomerBlocked(var Rec: Record Customer)  
  var  
1 [ExternalBusinessEvent('CustomerBlocked', 'Customer blocked', 'This business event is triggered when a customer is blocked for shipping  
  1 reference  
1 local procedure CustomerBlocked(CustomerId: Guid; Blocked: enum "Customer Blocked"; Url: Text[250]; WebClientUrl: Text[250])  
1 begin  
1 end;  
1  
1 [ExternalBusinessEvent('CustomerUnBlocked', 'Customer unblocked', 'This business event is triggered when a customer is unblocked for shipping  
  1 reference  
1 local procedure CustomerUnBlocked(CustomerId: Guid; Blocked: enum "Customer Blocked"; Url: Text[250]; WebClientUrl: Text[250])  
1 begin  
1 end;  
2  
21 CustomerUnBlocked(Rec.SystemId, Rec.Blocked, Url, WebClientUrl);  
22 end;  
23
```

# Business Event

← Business Events

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 When an action is performed

**Parameters** Settings Code View About

Catalog \*

Dynamics 365 Business Central

Category \*


Accounts Receivable

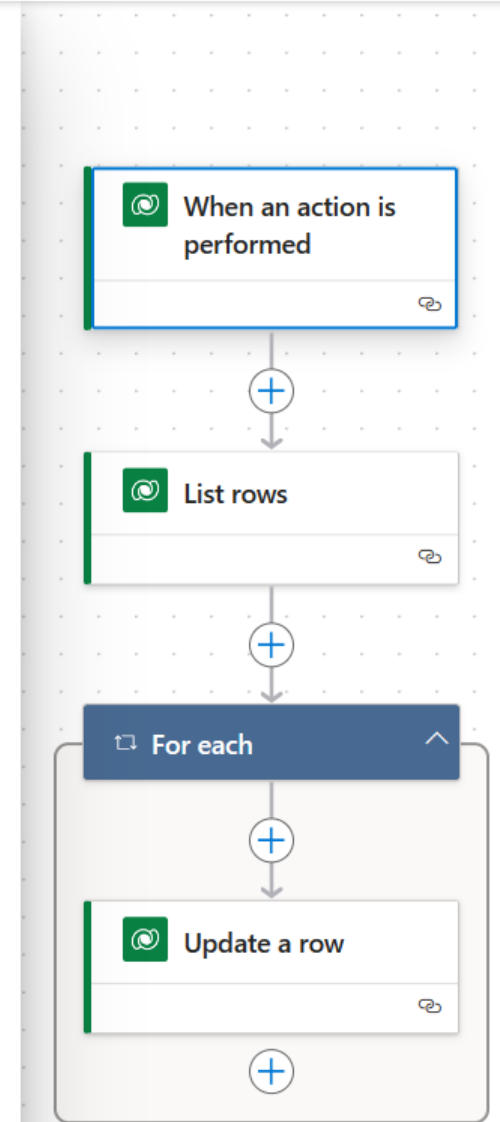
Table Name \*

(none)

Action Name \*

Customer blocked - 1.0

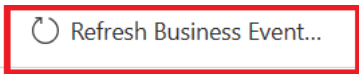
 Connected to admin@M365x27595860.onmicrosoft.com. [Change connection](#)



# Tips

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← ↻ Save Save & Close + New Refresh Companies Refresh Business Event... Delete Refresh Check Access View Hierarchy Share



## Business Central - Saved

Business Central Virtual Data Source Configuration

General Related

Name	Business Central
Target Host	* <a href="https://api.businesscentral.dynamics.com">https://api.businesscentral.dynamics.com</a>
Environment Name	* DOK
Default Company	CRONUS NL

# Tips

business even

## Go to Pages and Tasks

- > Business Event Activity Log Administration
- > Business Event Notifications Administration
- > Business Event Subscriptions Administration

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# Give us Feedback!

and help us improve!

Please rate my session in the Conference App!

and leave a constructive comment.

**bverbeek@4ps.nl**

## Thank you !

