

Dataverse

FÜR ACCESSLER



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Lösung für alle
Datenbankprobleme,
spätestens nach der
Freigabe des
Accessconnectors.



Was ist es?



Kollege Ronald...

- Braucht man Dataverse? Nein, nicht unbedingt...
- Kann man aber Fan werden? Ja, durchaus!



Probieren? Power Apps Developer Plan

- <https://learn.microsoft.com/en-us/power-apps/maker/developer-plan>
- <https://powerapps.microsoft.com/en-us/developerplan/>



Free for development and testing

Create apps and flows without writing code with full-featured Power Apps and Power Automate development tools. Easily share and collaborate with others.

[Learn more >](#)



Developer-friendly

Connect to data sources, including Azure, Dynamics 365, and custom APIs, with premium connectors. Create additional environments to exercise application lifecycle management and CI/CD.

[Learn more >](#)



Dataverse included

Save time with a fully managed, scalable, Azure-backed data platform, including support for common business app actions. Use out-of-the-box common tables or easily build your own data schema.

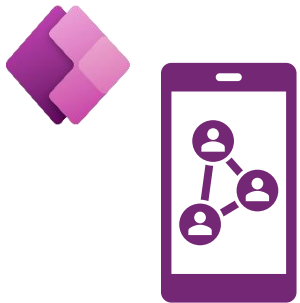
[Learn more >](#)

Zentraler Teil der Power Platform

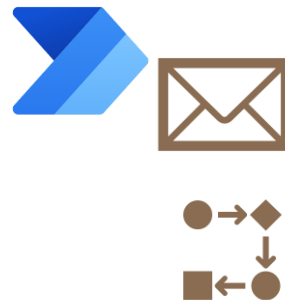
Basis



Dataverse liefert Speicher, Auditing, Erweiterbarkeit, Azure AD basierte Security, usw.



Power Apps liefert low code/no code Anwendungen (Apps) auch für mobile Geräte



Automate liefert die Automatisierung

Add-ons



Power BI liefert die Berichte und "Business Analytics"



Power Virtual Agents (Bots)



Power Pages liefert eine öffentliche Website

Warum sollte ich Dataverse verwenden? Aus Microsoft-Sicht...

- Einfach zu verwalten
- Einfach zu sichern
- Zugriff auf Ihre Dynamics 365 Daten
- Reichhaltige Metadaten
- Logik und Validierung
- Produktivitätstools (Excel!)
- <https://learn.microsoft.com/de-de/power-apps/maker/data-platform/data-platform-intro>

Zielgruppe

- Corporates
 - Compliance / Security / Azure AD Gruppen / Security roles
 - Citizen Developer, weil nicht zu technisch und trotzdem unter Kontrolle
- Teams

Dataverse Bausteine

How Power Platform with Dataverse Adds
New Capabilities for Access Developers and Customers
(new capabilities in blue)

Dynamics

API

Security

Logik

Daten

Speicher

Integration

Dataflows

Authentication

Authorization

Auditing

Calculated &
Rollup fields

Plugins

Jobs

Business
Rules

Duplicate
Detection

Workflows

Modelling

Reporting

Data
validation

Mobile
Offline

Common Data
Model

Catalog
and discovery

Files and
blobs

Relational
databases

Semi-structured
data

Data lake

Log files

Search and
Find data

Event to Event Hub

Event to Service Bus

Event to webhook

Export to SQL

Export to Lake

Dataverse versus SQL Server

- DV soll SQL Server nicht ersetzen, sondern bietet eine extra Möglichkeit für Firmen ohne SQL-Kenntnisse
- SQL Server bietet relationale Datenbanken aber... es ist kein low code / no code und braucht deswegen technische Kenntnisse.
- Speicher wird in DV automatisch für "best performance and most cost-effectiveness" optimiert
- DV optimiert sich selber ohne einen **SQL-Administrator**

Dataverse versus SQL Server

Dataverse

- Einfache Verwaltung, wenig Kontrolle
- Komplexe Datentypen mit eigener Logik (Currency, Activities, Contacts)
- Embedded in Power Platform (und Access ;-))
- Völlig Web-basiert

SQL Server

- Komplizierte Verwaltung, viel Kontrolle
- Einfacher auch von "Aussen" erreichbar



2 Mal Dataverse

- “Dataverse”
 - Enterprise Anwendung
 - Managed
 - Extra-Lizenz
 - 10 Gigabyte (erweiterbar)
- “Dataverse for Teams”
 - Team-gebunden, alle Mitglieder sind berechtigt, auf die Daten zuzugreifen.
“Guests” möglich
 - Eher unmanaged, aber dafür oft “abgedreht”
 - Office 365 Lizenz
 - 2 Gigabyte max

Bausteine für Anwendungen

- Umgebung (Environment)
 - Mit oder ohne Datenbank
 - *“Bei einer Power Platform Umgebung handelt es sich um Speicherplatz zum Verwalten und Freigeben der Geschäftsdaten, Apps, Chatbots und Flows Ihrer Organisation.”*
- Solutions & Publishers
 - Export & Update zwischen Environments
 - Devops durch Azure Pipelines (ALM)

So bekomme ich Dataverse

- Ihr habt es schon, weil einige Office 365 Anwendungen Dataverse verwenden, z.B. MS Projekt
 - ist aber eingeschränkt
- Ihr fangt an, Power Apps oder Power Automate zu verwenden und kommt dann weiter zu Dataverse: **make.powerapps.com**
 - Default Environment
 - Extra-Lizenz nötig (\$5 per user)

Environment

New environment

This operation is subject to [capacity constraints](#)

Name *

Type ⓘ *

Region *

Local environments can provide quicker data access.

Purpose

Create a database for this environment? ⓘ
 Yes

Add database

This operation is subject to [capacity constraints](#)

Language *

Default language for user interfaces in this environment

URL
A unique domain name will be generated. Click [here](#) to enter a custom domain.

Currency *

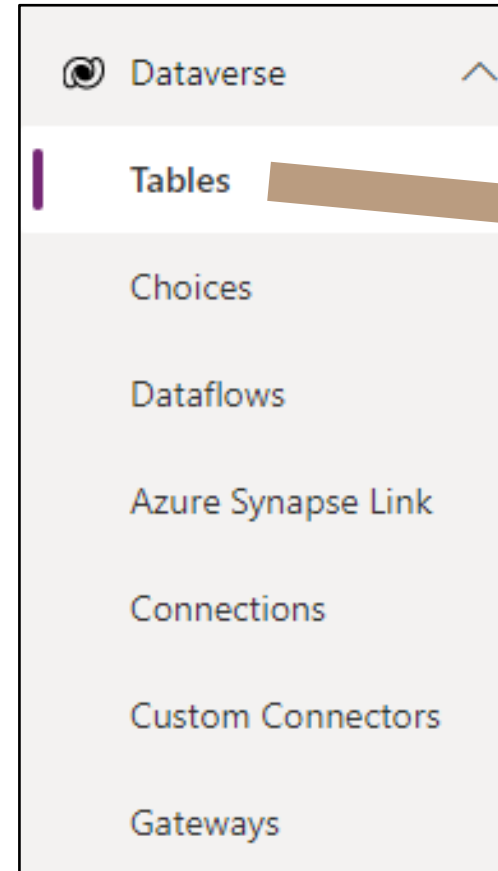
Reports will use this currency

Enable Dynamics 365 apps
In addition to Power Apps. [Learn more](#)
 No
⚠ Currently, Dynamics 365 apps can only be enabled for production environment. You can create trial [here](#)

Deploy sample apps and data
 No

Security group
Restrict environment access to people in this security group. Otherwise, everyone can access. [Learn more](#)

Environment mit Datenbank



- Spalten
- Beziehungen
- Schlüssel
- Formulare
- Ansichten

Tables

+ New table ← Import → Export

Tables

Recommended Custom All

☰	Table ▾		Name ▾	Type ↑ ▾	Managed ▾	Customizable ▾	Tags ▾
○	Appointment	⋮	appointment	Activity	Yes	Yes	Productivity
	Email	⋮	email	Activity	Yes	Yes	Productivity
	Fax	⋮	fax	Activity	Yes	Yes	Productivity
	Letter	⋮	letter	Activity	Yes	Yes	Productivity
	Phone Call	⋮	phonecall	Activity	Yes	Yes	Standard
	Recurring Appointment	⋮	recurringappointmentmas...	Activity	Yes	Yes	Standard
	Task	⋮	task	Activity	Yes	Yes	Productivity
	Account	⋮	account	Standard	Yes	Yes	Core
	Attachment	⋮	activitymimeattachment	Standard	Yes	Yes	Productivity

Choices

+ New choice

Choices

Display name ↑ ▾	Name ▾	Type ▾	Customizable ▾
Activity Type	... activitypointer_activitytypecode	Standard	
Approve Article	... knowledgearticle_isapproverel...	Standard	
Assign type	... assigntype	Standard	
Associated EntityType Code	... documenttemplate_associated...	Managed	
Authentication Protocol	... emailserverprofile_authenticati...	Standard	
A Yes or No boolean	... field_security_permission_type	Standard	
Blocked Profile	... socialprofile_isblocked	Standard	✓
Boolean Option Set	... appmodulemetadata_boolean...	Standard	
Capability	... capability	Managed	✓
Category	... connectionrole_category	Standard	✓
Channel Activities	... convertrule_channelactivity	Standard	
Chatbot Language	... chatbotlanguage	Managed	
Chatbot sharing role type	... botsharingroletypes	Managed	✓
Chatbot Subcomponent Reuse Policy	... botcomponentreusepolicy	Managed	✓

Dataflows

+ New dataflow | ▾ + New link to data lake

Dataflows

My Dataflows | All Dataflows

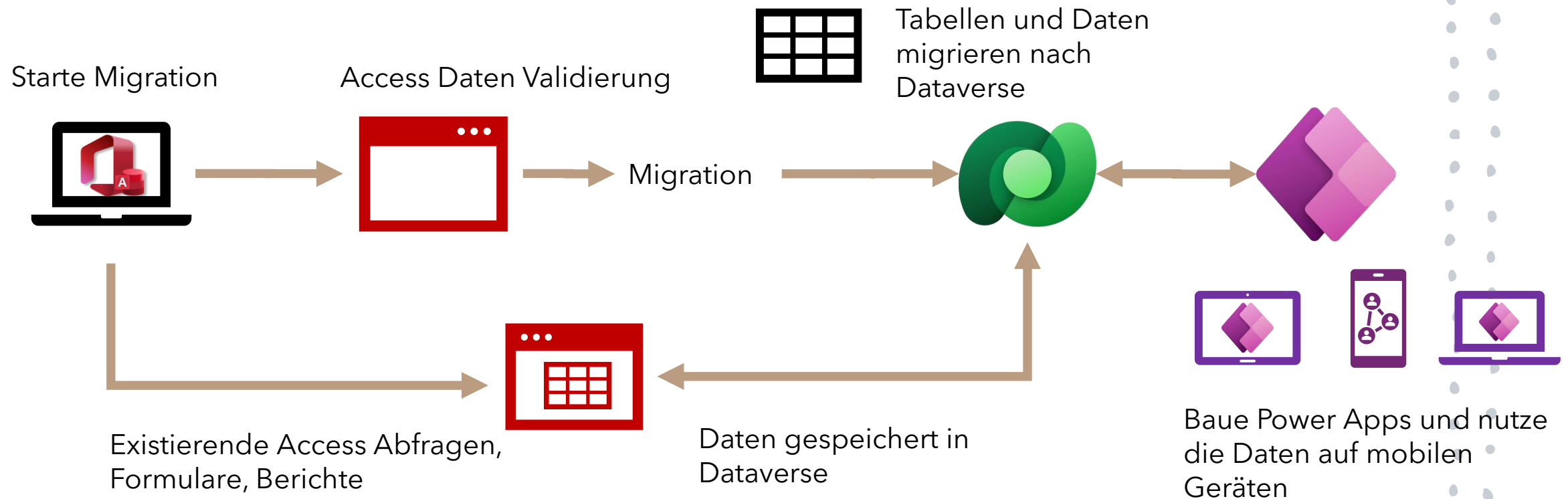
Name	Type ⓘ	Draft status ⓘ	Last published ↓	Last refresh	Next refresh
yjk_DataflowDevicesUpsert	⋮ Standard V2	✔ Published	25-9-2022 20:12:44	✔ 9/25/2022, 8:12:45 PM	N/A
yjk_DataflowManufactursUpsert	⋮ Standard V2	✔ Published	25-9-2022 18:54:06	✔ 10/2/2022, 7:00:29 PM	10/9/2022, 7:00:00 PM
YJK_DataflowImportAndCreate	⋮ Standard V2	✔ Published	25-9-2022 12:57:49	✔ 9/25/2022, 12:57:51 PM	N/A

Extra Optionen

- Azure Synapse Link
- Connections
- Custom Connectors
- Gateway



Eine Access-Anwendung umsetzen



Access und Dataverse Datentypen-Support

Full Support

Short Text, Autonumber, Date/Time, Currency, Yes/No, Hyperlinks, M1 relationships, self-referential

Beschränkter Support

Long Text, Number: Decimal, Number: Int, Lookup Wizard, Attachments (single attach only)

In Kürze

Rich Text, Large Numbers (Big Int)

Irgendwann

Number: Single*, Number: Double*, Calculated**, OLE, M to M relationships, Date Time Extended

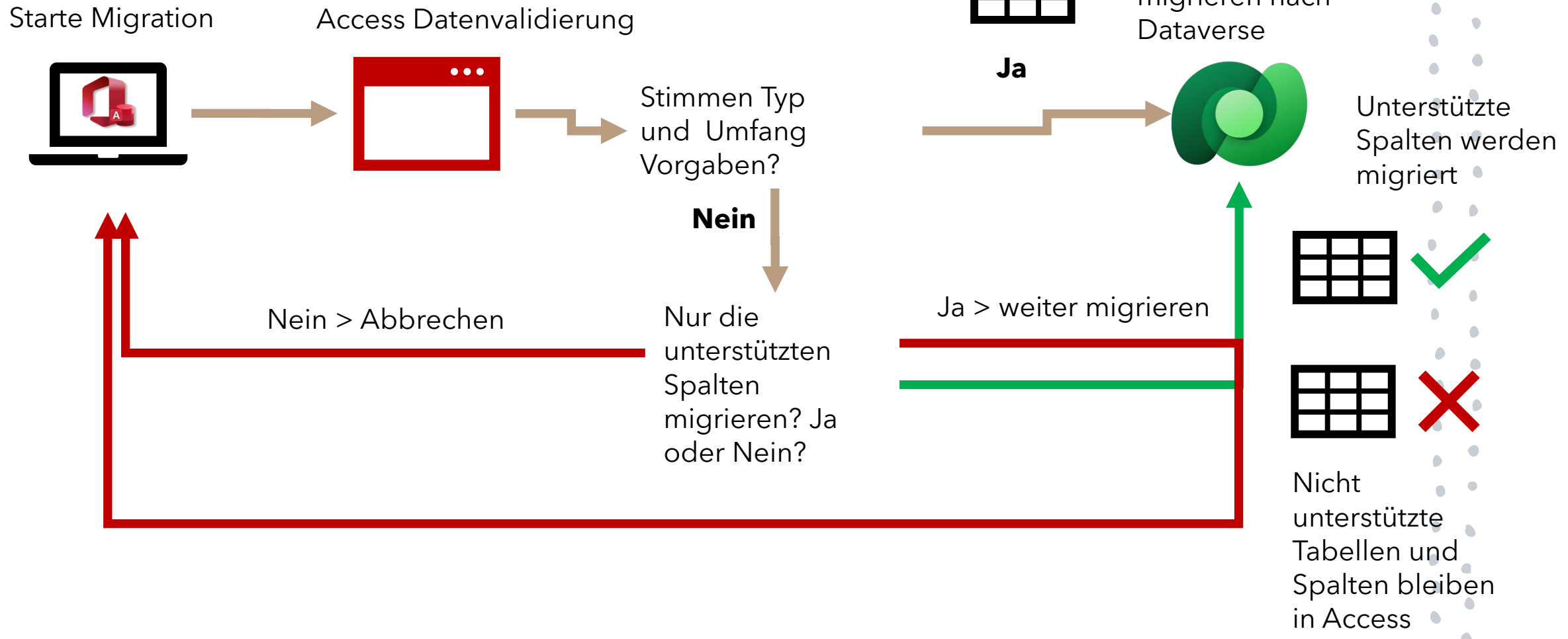


View details
online

* Can migrate now by using decimal conversion

**Today columns can migrate the last calculated value of the field, but the value is static. To make it dynamic you need to rebuild the calculation in the Dataverse DB.

Was passiert mit nicht unterstützten Datentypen?



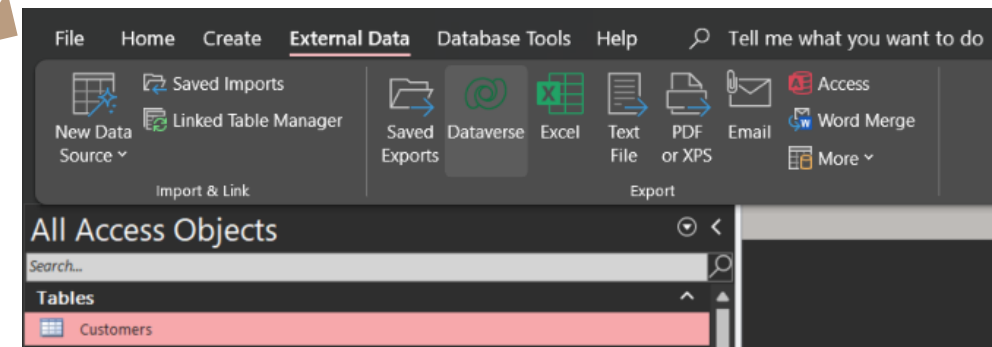
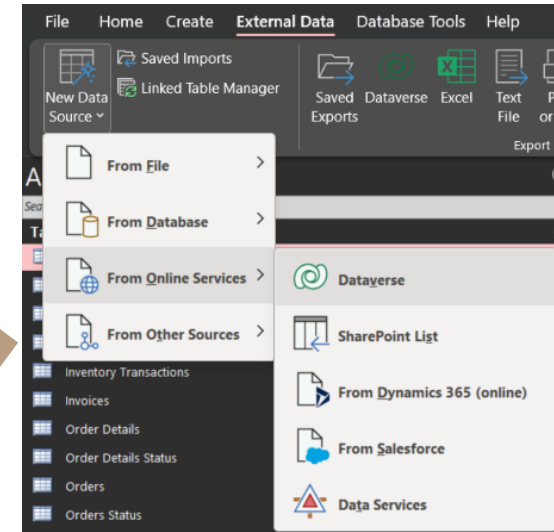
Demo

- Neues Environment
- Accesstabellen Migration
- Neue Tabellen selber anlegen
- Dataflow
- (Power App ,Power Automate, Neue Tabelle aus Excel-Import = Dataflow)

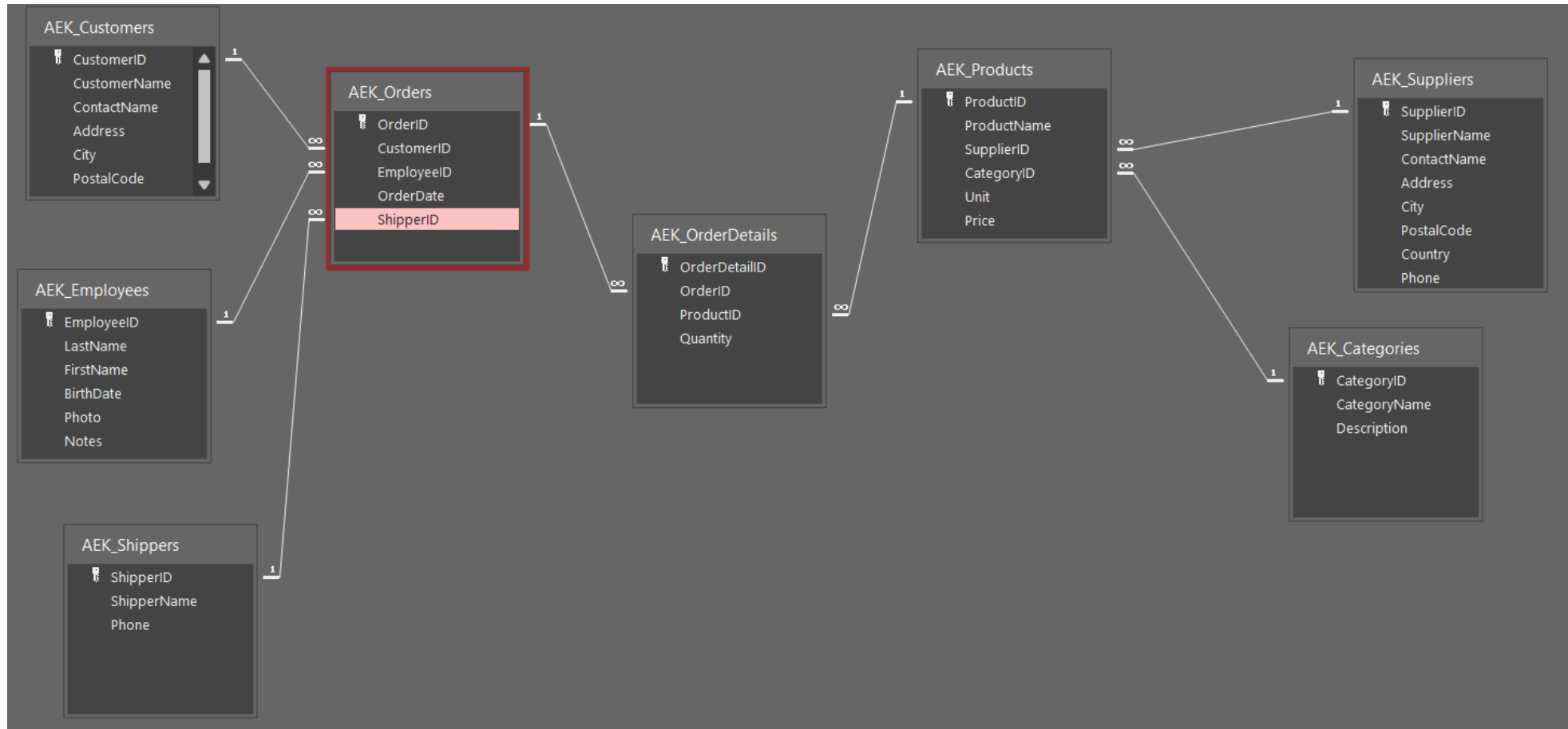


Access

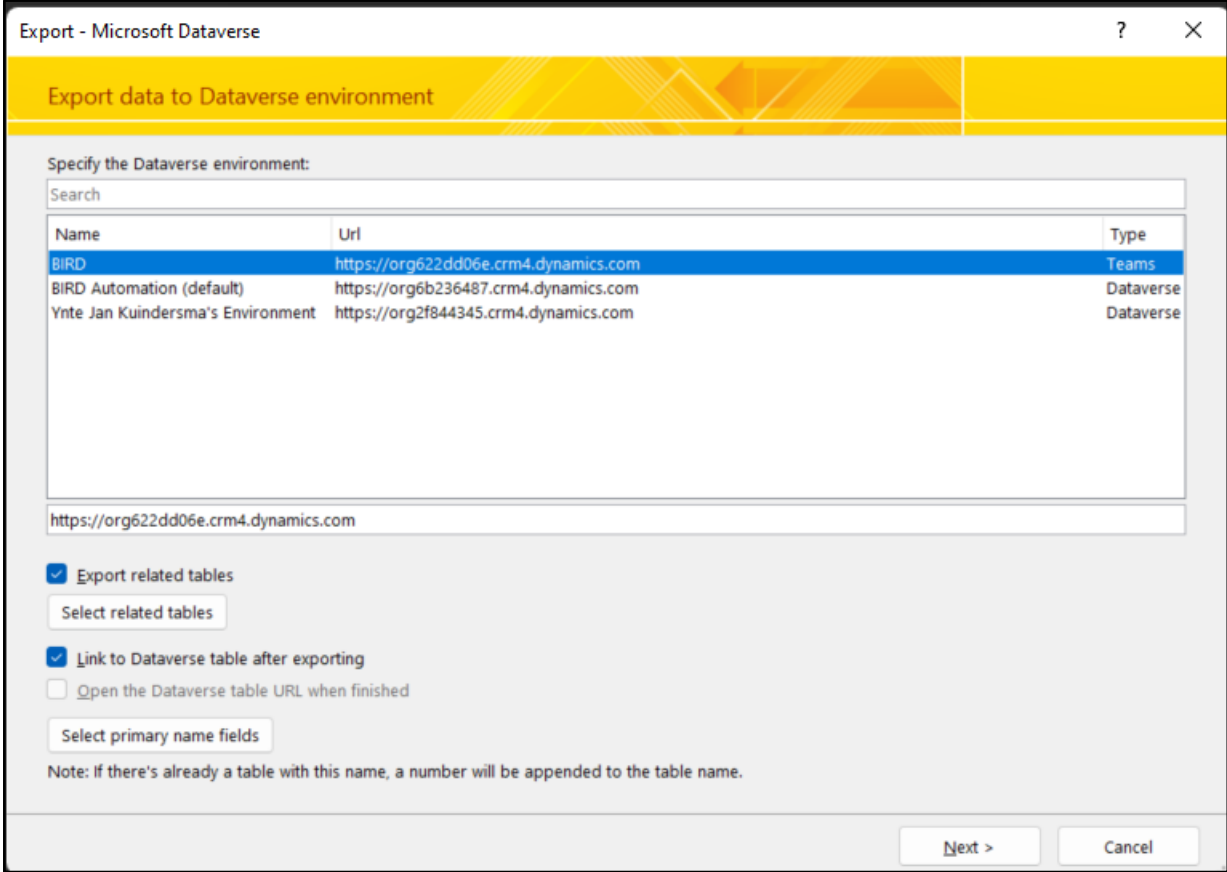
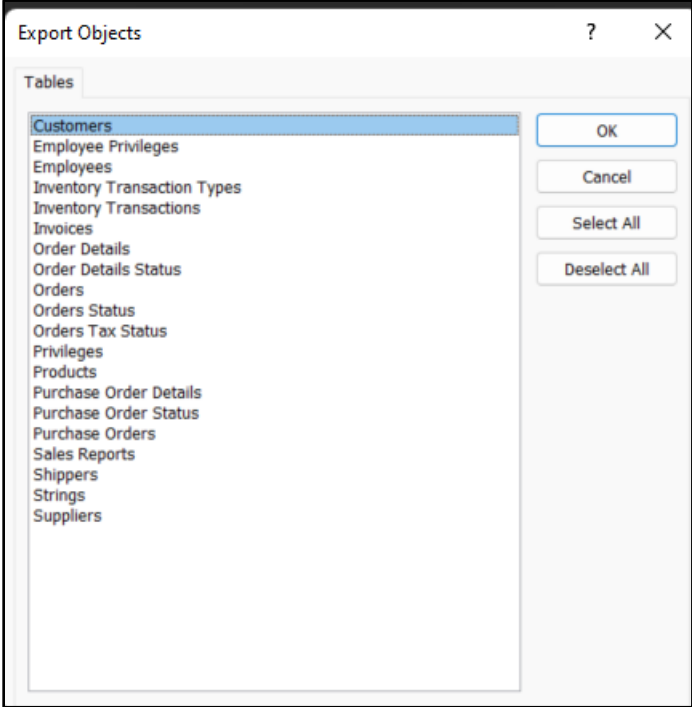
- Verknüpfen mit Dataverse-Tabellen
- Exportieren Access nach Dataverse



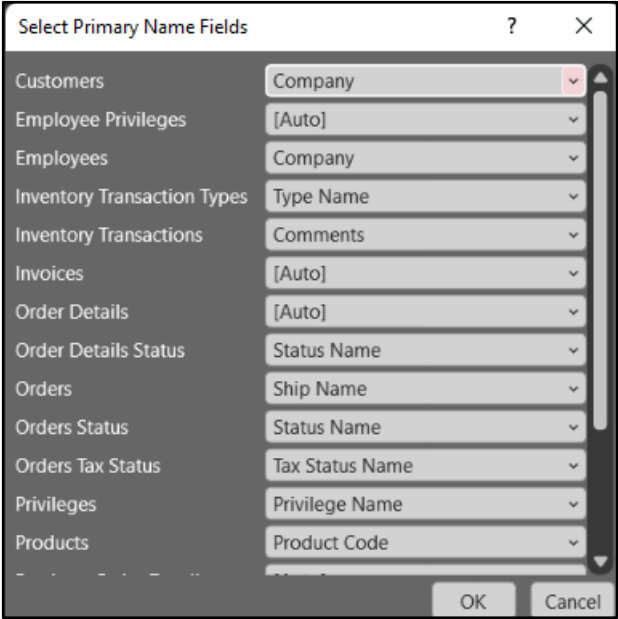
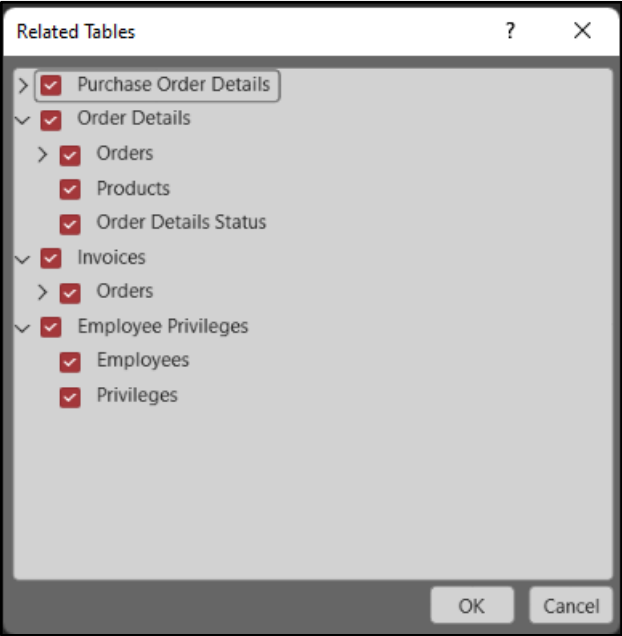
Northwind migrieren nach Dataverse



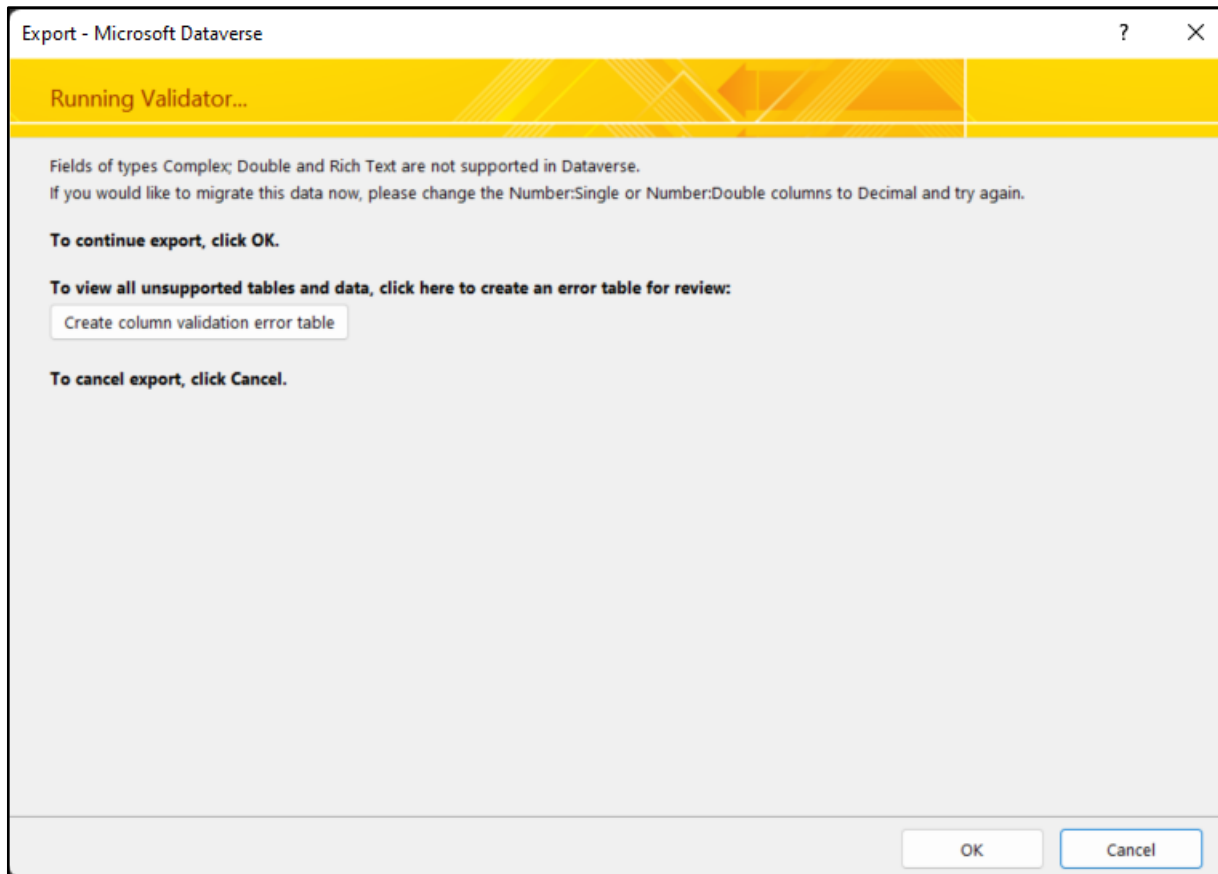
Access Export



Access Export



Access Export



Demo



Meine Erfahrungen

- Überwältigende und überraschende Vielfalt
 - Upsert in Dataflow
- Bequemes Programmieren, weil Power Apps die Datenbank- Metadaten kennt
 - GalleryCustomers.Selected.Orders
 - Orderstatus = Orderstatus.'Active' (Choice)
- Autonumber ist Text
- Wie umgehen mit Primary Name Field?



Meine Erfahrungen 2

- Ich dachte zu kompliziert
- Excel
 - Daten ändern, wirklich ;-) (Edit in Excel)
 - Einbinden PowerQuery
- Power BI



Fragen ?



Links

- <https://learn.microsoft.com/de-de/power-apps/maker/data-platform/data-platform-intro>
- <https://learn.microsoft.com/de-de/power-platform/admin/pricing-billing-skus>
- <https://www.linkedin.com/pulse/access-dataverse-connector-karl-donaubauer/>

**Die folgenden Folien sind einfach zum
Nachschauen**



Daten anschauen

Tables > Account

Table properties ⚙️ Properties 🗄️ Tools

Name	Primary column	Description
Account	Account Name	Business that represents a customer or potential customer.
Type	Last modified	The company that is billed in business transactions.
Standard	1 year ago	

Schema ⓘ

- Columns
- Relationships
- Keys

Data experiences ⓘ

- Forms
- Views
- Charts
- Dashboards

Customizations ⓘ

- Business rules
- Commands

Account columns and data ✎ Edit

Account Name * ↑	Main Phone	Address 1: City	Primary Contact	+143 more
A. Datum Corporation (sample)	555-0158	Redmond	Rene Valdes (sample)	
Adventure Works (sample)	555-0152	Santa Cruz	Nancy Anderson (sample)	
Alpine Ski House (sample)	555-0157	Missoula	Paul Cannon (sample)	
Blue Yonder Airlines (sample)	555-0154	Los Angeles	Sidney Higa (sample)	
City Power & Light (sample)	555-0155	Redmond	Scott Konersmann (sample)	
Coho Winery (sample)	555-0150	Redmond	Jim Clark (sample)	

Spalten verwalten 1

+ New column

Search

Tables > Account > Columns

Display name ↑	Name ↓	Data type ↓	Managed ↓	Customizable ↓	Required ↓	Searchable ↓
<input type="radio"/> (Deprecated) Process Stage	⋮ Stageld	Unique identifier	Yes	No	No	No
(Deprecated) Traversed Path	⋮ TraversedPath	Single line of text	Yes	Yes	No	No
Account	⋮ AccountId	Unique identifier	Yes	Yes	Yes	Yes
Account Name Primary name column	⋮ Name	Single line of text	Yes	Yes	Yes	Yes

Spalten verwalten 2

Edit column

Previously called fields. [Learn more](#)



Close

Display name *

Address 1: City

Description ⓘ

Type the city for the primary address.

Data type * ⓘ

Single line of text

Format *

Text

Behavior ⓘ

Simple

Required ⓘ

Optional

Searchable ⓘ

[Advanced options](#) ▾


Beziehungen

+ New relationship ▾


Tables > Account > Relationships ▾

Display name ↑ ▾	Name ▾	Related table ▾	Relationship type ▾	Managed ▾	Customizable ▾
(Deprecated) Process Stage	: processstage_account	Process Stage	Many-to-one	Yes	No
<input checked="" type="radio"/> Account ↔ Web Role	: adx_webrole_account	Web Role	Many-to-many	Yes	Yes
Account ↔ Website	: adx_website_sponsor	Website	Many-to-many	Yes	Yes
Assign To Account	: adx_invitation_assigntoaccount	Invitation	One-to-many	Yes	Yes
Base Record ID	: Account_DuplicateBaseRecord	Duplicate Record	One-to-many	Yes	No
Company Name	: contact_customer_accounts	Contact	One-to-many	Yes	Yes

Schlüssel

+ New key  Refresh

Tables > Account > Keys ▾

Display name ↑ ▾	Name ▾	Columns ▾	Managed ▾	Customizable ▾	Status ▾
 <p>We didn't find anything to show here</p>					



Choices

Edit choice

This is a global choice. Changes will be reflected wherever this choice is used. Close

Display name *
Activity Type

Choices Sort ▾

	Label *	Value *		
⋮	Fax	4.204		
⋮	Phone Call	4.210		
⋮	Email	4.202		
⋮	Letter	4.207		
⋮	Appointment	4.201		
⋮	Task	4.212		
⋮	Recurring Appointment	4.251		
⋮	Donation	10.013		
⋮	Alert Subscription	10.113		
⋮	Invite Redemption	10.116		
⋮	Portal Comment	10.165		
⋮	Activity record for the Teams chat	10.404		

+ New choice

Advanced options ▾

Dataflow 1 (= Power Query online)

The screenshot displays the Microsoft Power Query interface. The main window shows a data table with columns: DeviceID, ManufacturerID, Title, DeviceType, Price, Processor, Memory, Storage, ScreenSize, and Photo. The 'Applied steps' pane on the right shows a sequence of operations: Source, Navigation 1, Promoted columns, Changed columns, Removed columns, Rounded off, and Changed columns. The formula bar at the top shows the transformation: `Table.TransformColumnTypes(#"Rounded off", {"ScreenSize", type text})`.

DeviceID	ManufacturerID	Title	DeviceType	Price	Processor	Memory	Storage	ScreenSize	Photo
1	1	Aspire U	All in one	1899.99	Intel Core i5-3210M (2.5 GHz)	8GB DDR3	1TB	15.6	https://deviceimage.azureedge.net/devices/As...
2	2	Aspire M	Ultrabook	699.99	Intel Core i5-3317U (1.7 GHz)	6GB DDR3	500GB	15.6	https://deviceimage.azureedge.net/devices/As...
3	3	Aspire S3	Ultrabook	628	Intel Core i3-2377M (1.5 GHz)	4GB DDR3	500GB	13.3	https://deviceimage.azureedge.net/devices/As...
4	4	Aspire S5	Ultrabook	1049.99	Intel Core i5 3317U (1.7 GHz)	4GB SDRAM	128GB	13.3	https://deviceimage.azureedge.net/devices/As...
5	5	Aspire S7	Ultrabook	1399.99	Intel Core i3-3317U (1.7 GHz)	4GB DDR3	128GB	13.3	https://deviceimage.azureedge.net/devices/As...
6	6	ICONIA W5	Tablet	599.99	Intel Atom Z2760 (1.5 GHz)	2GB DDR3	64GB	10.1	https://deviceimage.azureedge.net/devices/As...
7	7	ICONIA W7	Tablet	999.99	Intel Core i3-3217U (1.8 GHz)	4GB DDR3	128GB	11.6	https://deviceimage.azureedge.net/devices/As...
8	8	Aspire E	Laptop	379.99	AMD E1-1200 (1.4 GHz)	4GB DDR3	500GB	15.6	https://deviceimage.azureedge.net/devices/As...
9	9	TravelMate B	Laptop	399.99	Intel Pentium 967 (1.3 GHz)	4GB DDR3	320GB	11.6	https://deviceimage.azureedge.net/devices/As...
10	10	Aspire V3	Laptop	499.99	Intel Core i7-3632QM (2.2 GHz)	6GB SDRAM	500GB	15.6	https://deviceimage.azureedge.net/devices/As...
11	11	Aspire One A0756-4890	Netbook	379.99	AMD C-70	4GB DDR3	500GB	11.6	https://deviceimage.azureedge.net/devices/As...
12	12	Aspire One A0725-0845	Netbook	329.99	AMD C-70	2GB DDR3	320GB	11.6	https://deviceimage.azureedge.net/devices/As...
13	13	Aspire One	Netbook	379.99	Intel Celeron 987 (1.5 GHz)	4GB DDR3	500GB	12.1	https://deviceimage.azureedge.net/devices/As...
14	14	Aspire V5	Laptop	749.99	Intel Core i3-3227U (1.7 GHz)	6GB DDR3	750GB	10.1	https://deviceimage.azureedge.net/devices/As...
15	15	K55VD	Laptop	899.99	Intel Core i7-3630QM (2.4 GHz)	6GB DDR3	750GB	15.6	https://deviceimage.azureedge.net/devices/As...
16	16	G75VW	Laptop	1699.99	Intel Core i7-2640M (2.8 GHz)	16GB DDR3	750GB	17.3	https://deviceimage.azureedge.net/devices/As...
17	17	N56VJ	Laptop	999.99	Intel Core i7-3630QM (2.4 GHz)	8GB DDR3	1.0TB	15.6	https://deviceimage.azureedge.net/devices/As...
18	18	B53S	Laptop	1469.99	Intel Core i7-2640M (2.8 GHz)	4GB DDR3	500GB	15	https://deviceimage.azureedge.net/devices/As...
19	19	VivoTab	Tablet	799.99	Intel Atom Z2760 (1.8 GHz)	2GB RAM	64GB	11.6	https://deviceimage.azureedge.net/devices/As...
20	20	Transformer Book	Ultrabook	999.99	Intel Core i7-3517U (3.2 GHz)	4GB DDR3	320GB	13.3	https://deviceimage.azureedge.net/devices/As...
21	21	ET2411IUTI	All in one	999	Intel Core i5-3450 (3.1 GHz)	6GB DDR3	1000GB	11.6	https://deviceimage.azureedge.net/devices/As...
22	22	VivoBook	Ultrabook	599.99	Intel Core i5-3317U (1.8 GHz)	4GB DDR3	500GB	11.6	https://deviceimage.azureedge.net/devices/As...

Dataflow 2

Power Query

Map tables

Queries

Devices

Load settings

Reset load settings

Table name
cr7c4_yjk_DevicesRelatedToManufacturer

Table display name
yjk_DevicesRelatedToManufacturer

Table description

Delete rows that no longer exist in the query output

Column mapping

Select key (optional)

OriginalDeviceIDKey (cr7c4_OriginalDeviceID)

Auto map

Source column	Destination column
Title	cr7c4_DeviceName
DeviceType	cr7c4_DeviceType
ManufacturerID	cr7c4_Manufacturer.cr7c4_ManufacturerOriginalID
Memory	cr7c4_Memory
DeviceID	cr7c4_OriginalDeviceID
Photo	cr7c4_Photo
Price	cr7c4_Price
Processor	cr7c4_Processor
ScreenSize	cr7c4_ScreenSize
Storage	cr7c4_Storage
Thumbnail	cr7c4_Thumbnail

Welche Version?



Dataverse for Teams



- Included with Microsoft 365 E3, E5, Business Basic for less than \$5/month, and others
- Create apps/flows/etc for your team members to use in Teams
- No data type support for Customer, and multi-transaction currency
- Most controls available
- 2GB max size for Relational + blob storage and 1M record limit



Dataverse Full Version

- Requires a Power Apps or Dynamics 365 license
- Create apps/flows/etc. use anywhere by any licensed user
- All data types and controls
- 10GB storage with ability to increase
- Relational + Blob + Log storage
- Direct API usage + Plugins

April Dunnam's comparison

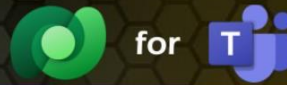
	SharePoint	Dataverse for Teams	Dataverse 
Types of Data	Tabular, File, Image	Relational, File, Image	Relational, File, Image Managed Data Lake, Virtual Tables, Log
Clients	MS Lists, Teams, SharePoint Mobile App, Desktop, Custom Code	Teams	Teams, Power Apps, Power Apps Portals, Dynamics 365, Custom Code
Licensing	M365 Business Licenses Seeded Version Access to non-premium data sources	M365 Business Licenses Access to Dataverse within Teams Access to Azure APIM	Power Apps Per App or Per User Plan Required Access to all connectors
Capacity	Standard SharePoint Limits Up to 30M rows 25Tb per site collection **Subject to delegation only 2k rows accessible in some situations	Up to 1M rows per environment 2000 API calls per day per use 2 GB per Teams environment **Less delegation issues	No row limit 2000 API Calls and additional capacity add-ons 4 TB per environment
Security	M365 groups, AD groups	Basic Teams permissions, AD Group	Custom security roles, business units Hierarchical/field-level security 

S	for T	
<ul style="list-style-type: none"> ✓ Kostenlos ✓ Für geringes Datenvolumen ✓ Sehr einfach und beliebt ✓ Keine intelligente Datenverarbeitung ✓ Nur grundlegende Datentypen ✓ Daten sind nicht exklusiv für die Anwendung (d. h. es macht euch nichts aus, wenn die Benutzer über SharePoint Online auf die Daten zugreifen können) 	<ul style="list-style-type: none"> ✓ Kostenlos ✓ unterstützt größere, relationale Datasets ✓ Leichtes Upgrade zu Dataverse ✓ Teams wird schon von vielen Menschen genutzt ✓ Power Automate- und Virtual Agent-Funktionen ✓ Auch für Benutzer außerhalb Ihres Teams freigeben 	<ul style="list-style-type: none"> ✓ Premium Funktion ✓ Für großes oder groß wachsendes Datenvolumen mit umfangreichen Metadatenoptionen ✓ Entwicklung von Geschäftsanwendungen, Automatisierung, Interaktionen und KI ✓ Hinzufügen von Geschäftsregeln, Logik und Validierung ✓ Freigabe mit Berechtigungsmanagement



Beispiele für Apps:

- Proof of Concept-Anwendungen
- Apps zur persönlichen Produktivität
- Einfache Audit-Anwendungen
- Checklisten
- Einfache Buchungs-Apps
- Schätzungs-Apps
- Tracking-Apps
- Einfache Zeiterfassungs-Apps



Beispiele für Apps:

- Register für Projektrisiken und -probleme
- Case Management
- Inspektionsprüfungen vor Ort
- Inspektionen von Anlagen und Anlagenwartung
- Gesundheits- und Sicherheitsinspektionen
- Interne Kundenbetreuung
- Apps für Projektzeiterfassung
- Apps zur Ideenfindung
- Genehmigungs-Workflow-Apps



Beispiele für Apps:

- Management der Kundenbeziehungen
- Verwaltung von Dienstleistungen
- Tracking Apps
- Unternehmensinventar und Anlagenverwaltung
- B2C-Anwendungen wie Case Management/Investor Relations Management
- Anwendungen für komplexe Geschäftsprozesse und Automatisierung
- Kundenbetreuung und -verwaltung
- Anlagenleasing und -verwaltung
- Externe Zugangsportale