Getting Started with the Common Data Service



Agenda

- Common Data Service Overview
- Creating the CDS Database
- Understanding Entities
- Building Model-driven Apps
- Developing with Solutions and Custom Entities
- Importing Data into the CDS Database



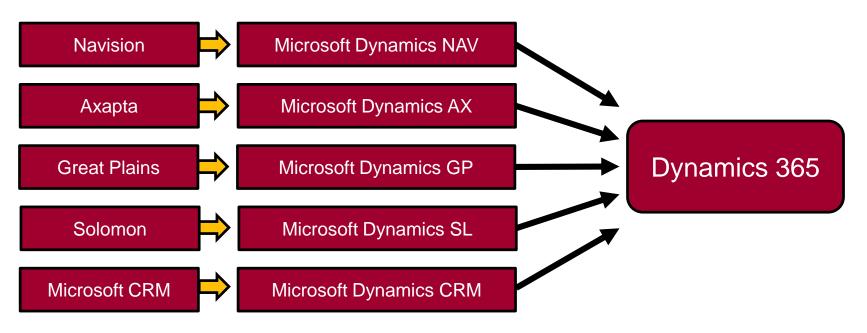
What is Common Data Service?

- Platform for building business applications
 - Business application categories include CRMs, ERPs, etc.
 - Provides common database for generalized business scenarios
 - Conforms to the Common Data Model (CDM)
- What does Common Data Service provide?
 - Standard database schema of common business entities
 - Extensible design for extending and creating entities
 - Ability to leverage and build entity-specific views and forms
 - Ability to build entity-specific business logic
 - Ability to quick build apps by assembling entity components



Evolution of Microsoft Business Application Suite

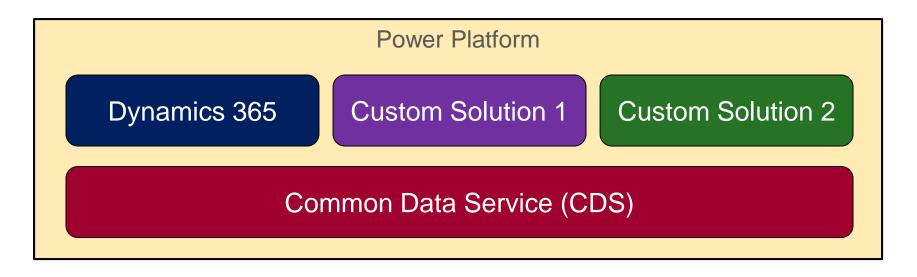
- Microsoft has acquired many software companies
 - Several acquisitions involved software that targets CRMs and ERPs
 - Microsoft evolved many software applications into Dynamics suite
 - Dynamics 365 represents evolution from on-premises to cloud





Birth of the Power Platform

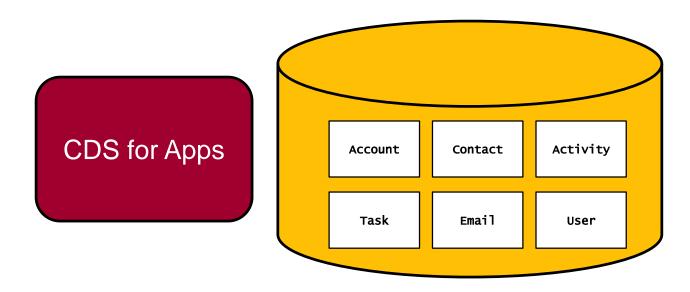
- Microsoft moved entity infrastructure out of Dynamics 365
 - CDS has infrastructure for building entity-based business solutions
 - Dynamics 365 is now a suite of products that sit on top of CDS
 - Custom solutions built on CDS by adding entities with UI and logic
 - CDS provides underling foundation of Power Platform





Common Database Model Schema

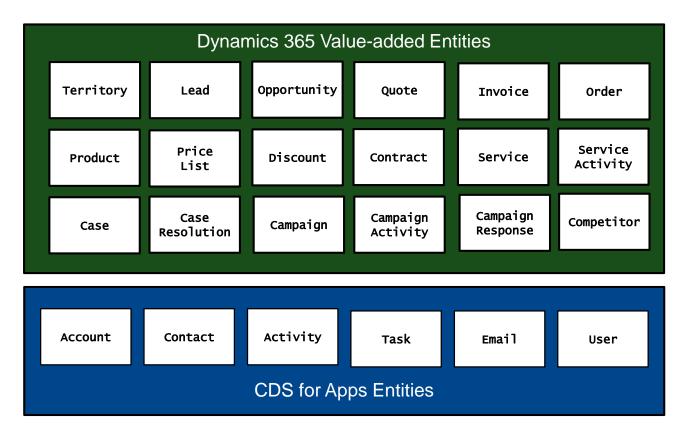
- CDM defines set of entities available to all applications
 - Account: represents an business entity that can be invoiced
 - Contact: represents a human being
 - Activity: represents an event that can be schedule
 - Task: represents work item that can be assigned to user or team
 - Email: represents email message sent or received
 - User: represents system user who can be owner of records





CDS versus Dynamics 365 for Sales

- CDS provides base set of entities
 - Custom solutions extend CDS by adding custom entities
 - Dynamics 365 extends CDS by adding a large set of its own entities





Agenda

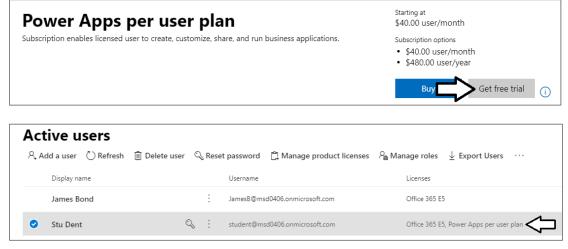
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Getting a Power Apps Per User Plan

- Certain design tasks require Power Apps per user plan
 - You can start a 30-day trial for Power Apps per user plan
 - License must be assigned to individual user accounts

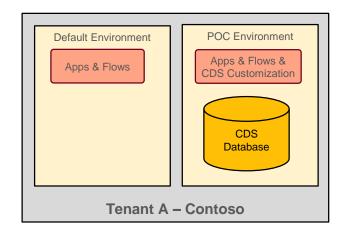


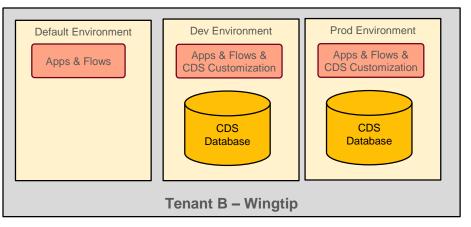




What is an Environment?

- Environment is container for apps, flows and a CDS database
 - Each environment and its resources exist within a geographic region
 - Environment represents a governance and security boundary
 - Every tenant is provisioning with a default environment
 - Administrator can provision additional environments if needed
 - Environment can be provisioned with or without a CDS database
 - Environment can contain only one CDS database







Power Apps Environments and the CDS

- Environments managed in Power Platform Admin Center
 - You can configure security and access
 - You can create new environments

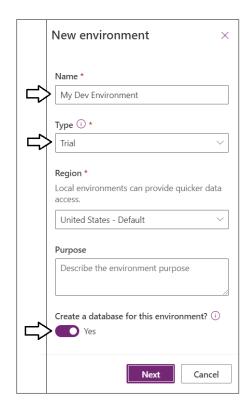
 	Power Platform	Admin center (preview)						
=		+ New ♂ Refresh						
⊗	Environments	Environments						
<u>~</u>	Analytics ×							
Ç	Help + support	Environment		Туре	State	Region		
[c	Data integration	My Dev Environment		Production	Ready	United States		
(7)	Data gateways	Critical Path Training Labs (default)		Default	Ready	United States		

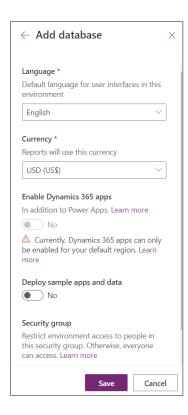


Creating Environment with CDS Database

- Steps to create a new CDS for Apps Database
 - Navigate to Power Platform Admin Center
 - Create a new trial environment a CDS database
 As of January 2020, users with trial licenses can only create trial environments







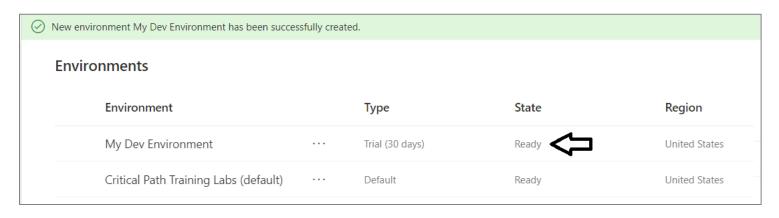


Examining the New Environment

It takes a minute or so to create new environment



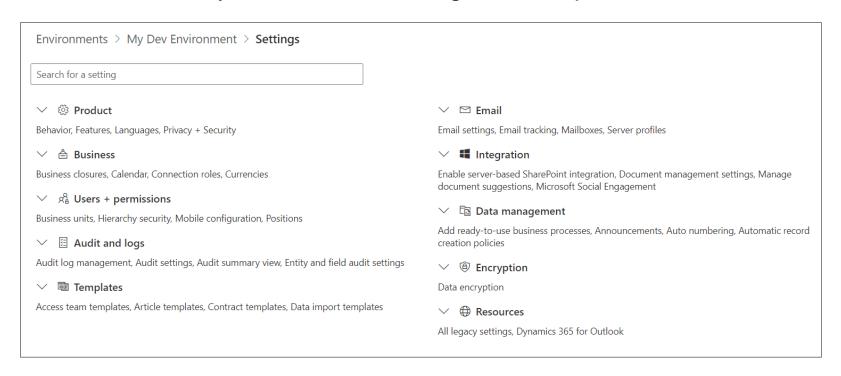
You can use the environment once its status is Ready





Environment Settings

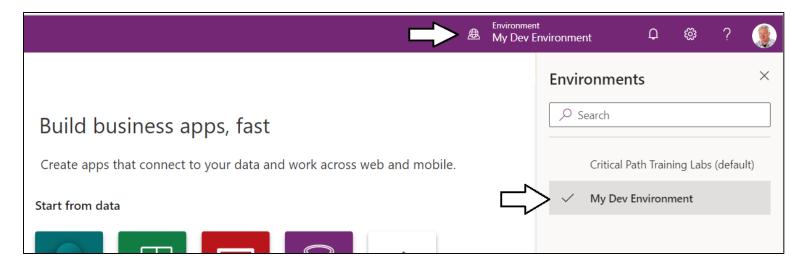
- Power Platform Admin Center provides configuration
 - Each environment has its own Setting page
 - Provides many environment configuration otpions





Navigating Between Environments

- Power Apps Maker Portal provides Environment menu
 - It's located at top right of page in the Power Apps maker portal
 - Environment menu used to navigate between environments







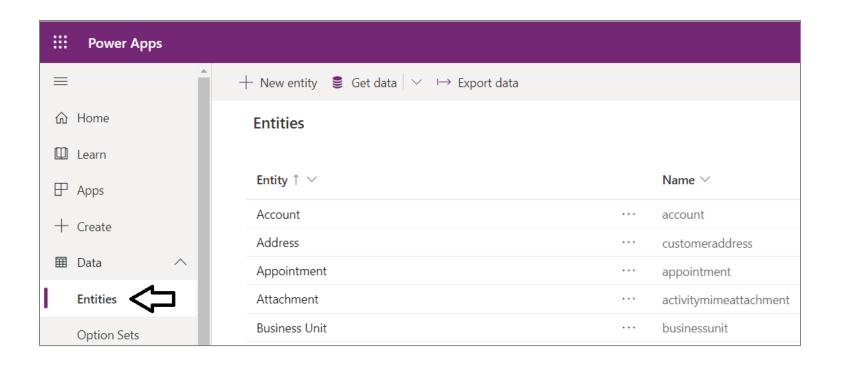
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Inspecting the Standard Entities

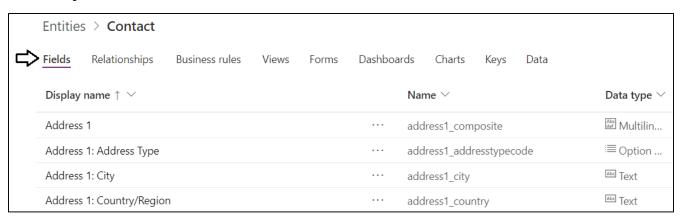
CDS created with set of standard entitles



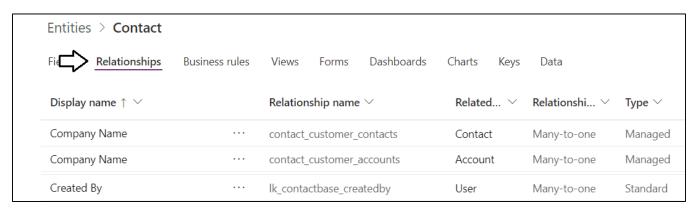


Entity Fields and Relationships

Entity contains fields which define data schema



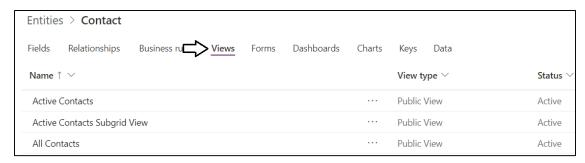
Entity defined with relationships to ensure data validation





Entity Views and Forms

Entity contains views for displaying multiple records



Entity contains forms for viewing/editing single record



- Forms and Views provide UI for model-driven apps
 - There is no way to leverage forms and views from canvas apps





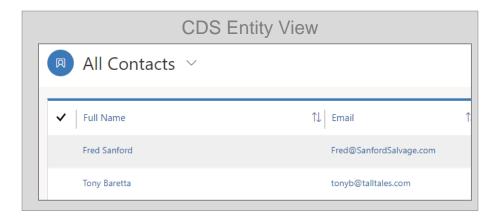
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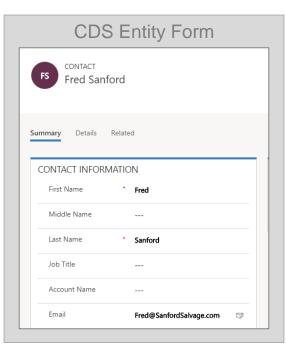
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Comparing Model-driven Apps to Canvas Apps

- What are the key benefits of model-driven apps?
 - You leverage entity views and forms no need to build screens
 - Create apps with consistent UI navigation, elements & metaphors
 - Create responsive apps that can target tablets and mobile devices





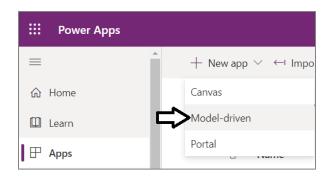


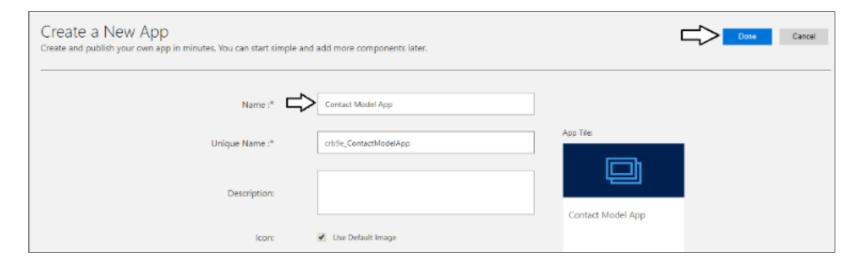
Model-driven App Components

- Model-driven app
 - Top-level collection of components
 - Tracks fundamental app properties, client type, and app URL
- Site map
 - Provides navigation component across other UI components
- Entity views
 - Read-only view of records for a specific entity
 - Defines display columns, column width, sort behavior and filters
- Entity forms
 - Provides set of data-entry controls for fields in a specific entity



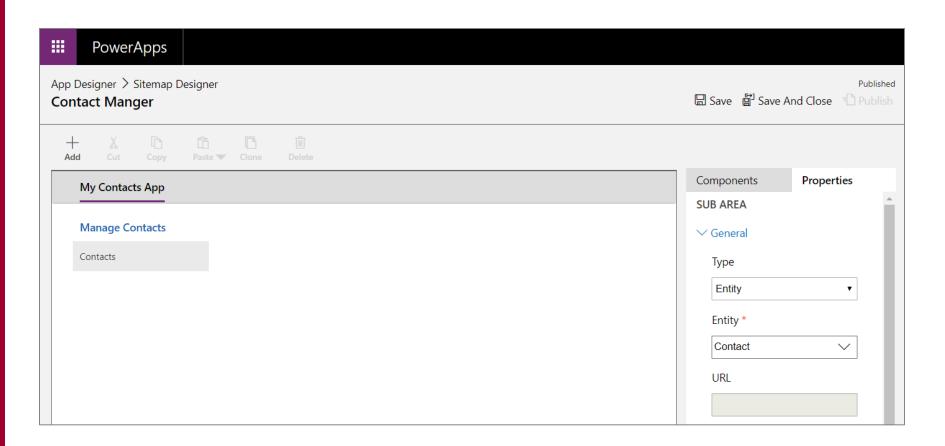
Creating a Model-driven App





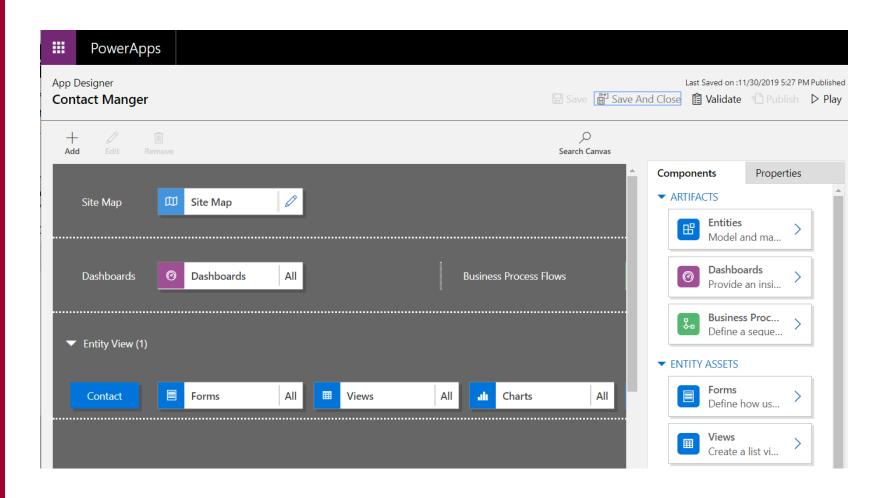


Creating the Sitemap Component



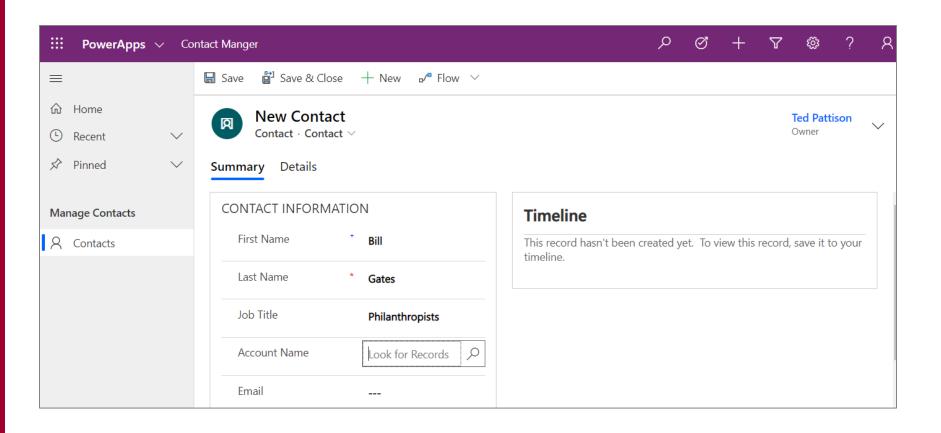


Publishing and Running the App





Testing a Model-driven App







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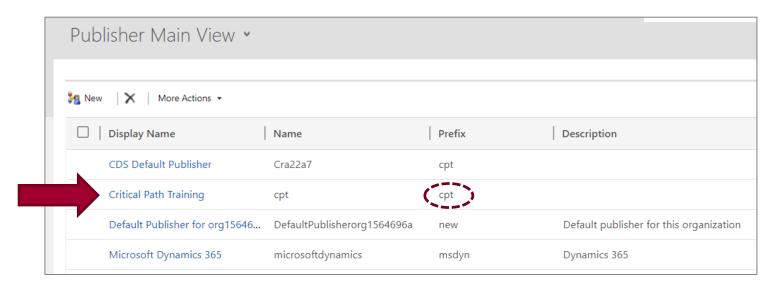
Understanding CDS Solutions

- Solutions used to move applications between environments
 - Solutions used to package apps, flows and CDS customizations
 - Solutions not used to move business data itself
- Solutions can be exported/imported as managed or unmanaged
 - Unmanaged solutions is "open" solution which allows changes
 - Managed solutions can be locked down to disallow changes
 - During development, you work with an unmanaged solution
 - When exporting a solution, you choose between managed or unmanaged



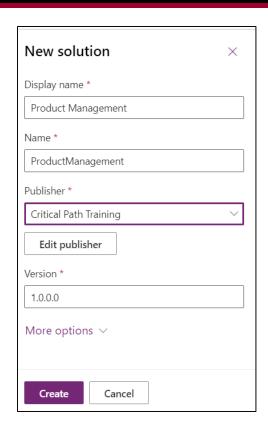
Publishers and Solutions

- CDS solutions used to distribute applications
 - Used to conduct robust application lifecycle management (ALM)
- Define a Profile for a CDS Publisher
 - Profile used to provide identity of developer of CDS solutions
 - You should create new publisher profile when developing solutions
 - Publisher profile contains prefix used in component names





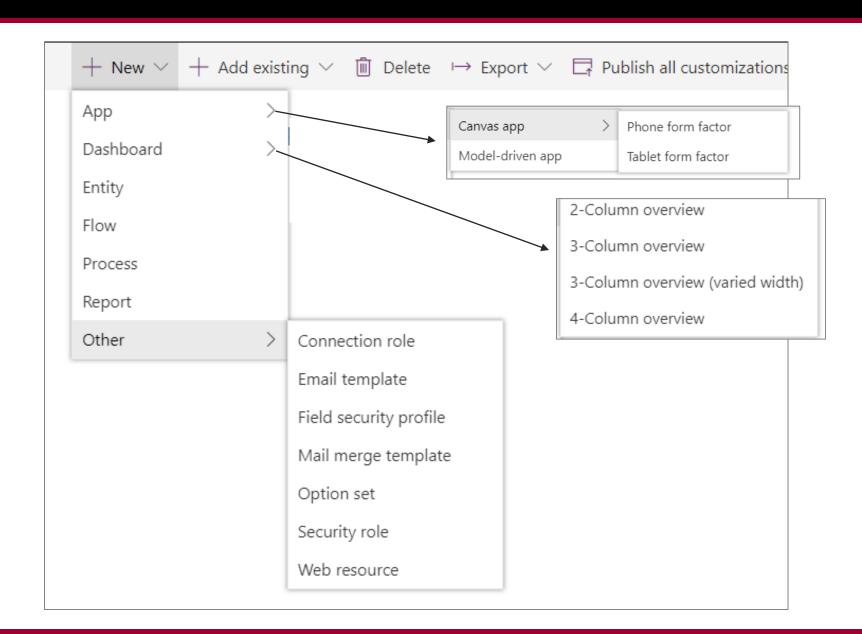
Creating a New CDS Solution



Solutions			
Display name	Name	Created \downarrow	Version
Product Management	 ProductManagement	4/10/2020	1.0.0.0
PowerApps Checker Base	 msdyn_PowerAppsC	4/4/2020	1.1.1.26
PowerApps Checker Update	 msdyn_PowerAppsC	4/4/2020	1.1.1.26
PowerApps Checker	 msdyn_PowerAppsC	4/4/2020	1.1.0.10



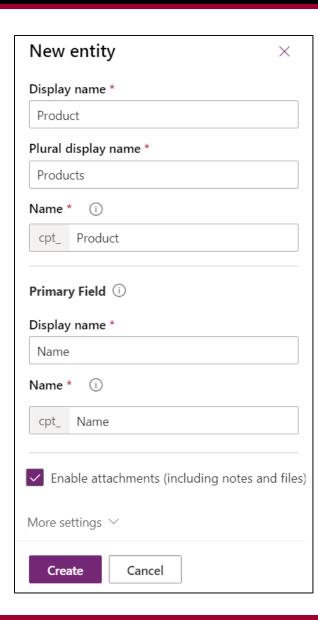
Adding Solution Components







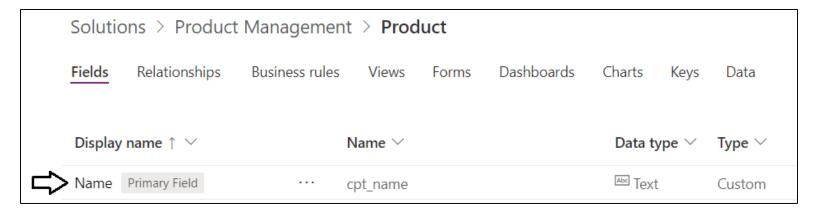
Developing a Custom Entity





Primary Field

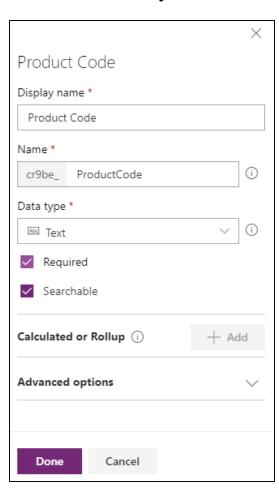
- Every new custom entity created with a Primary Field
 - Primary field given a default name of Name
 - Similar to the Title site column in SharePoint list
 - Display name of primary field can be changed if appropriate





Adding Fields

Custom entity can be extended by adding fields





Adding Custom Fields

Solutions > Product Management > Product					
<u>Fields</u> Relationships Business rules	Views	Forms Dashboards Charts	Keys Data		
Display name ↑ ∨		Name ∨	Data type \vee		
Currency		transactioncurrencyid	⊞ Lookup		
Exchange Rate		exchangerate	X₂ Decimal Number		
List Price		cptlabs_listprice	Currency		
List Price (Base)		cptlabs_listprice_base	Currency		
Product Category		cptlabs_productcategory	■ Option Set		
Product Code		cptlabs_productcode	Abc Text		
Product Description		cptlabs_productdescription	Abc Text Area		
Product Image Primary Image		entityimage	™ Image		
Product Image URL		cptlabs_productimageurl	Abc URL		
Product Name Primary Field		cptlabs_productname	Abc Text		



Core System Fields Added to All Entities

Solutions > Product Management > Product				
Fields Relationships Business rules	Views	Forms Dashboards Chart	ts Keys Data	
Display name ↑ ∨		Name ∨	Data type \vee	
Created By		createdby	⊞ Lookup	
Created By (Delegate)		createdonbehalfby	⊞ Lookup	
Created On		createdon	᠍ Date and Time	
Import Sequence Number		importsequencenumber	123 Whole Number	
Modified By		modifiedby	⊞ Lookup	
Modified By (Delegate)		modified on behalf by	⊞ Lookup	
Modified On		modifiedon	᠍ Date and Time	
Owner		ownerid	8 Owner	
Owning Business Unit		owningbusinessunit	⊞ Lookup	
Owning Team		owningteam	⊞ Lookup	
Owning User		owninguser	⊞ Lookup	
Product		cptlabs_productid	□ Unique Identifier	
Record Created On		overriddencreatedon	Date Only	
Status		statecode	■ Option Set	
Status Reason		statuscode	≡ Option Set	
Time Zone Rule Version Number		timezoneruleversionnumber	Whole Number	
UTC Conversion Time Zone Code		utcconversiontimezonecode	Whole Number	
Version Number		versionnumber	Big Integer	

unique GUID-based identifier



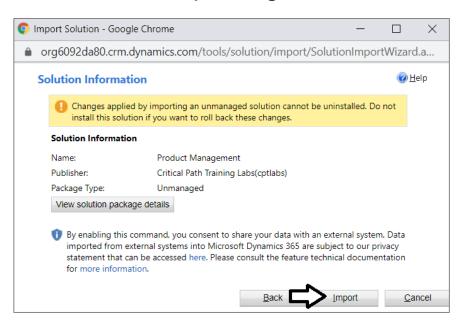


Importing Solutions

Click Import button in Solutions page



Select solution package file and run import command







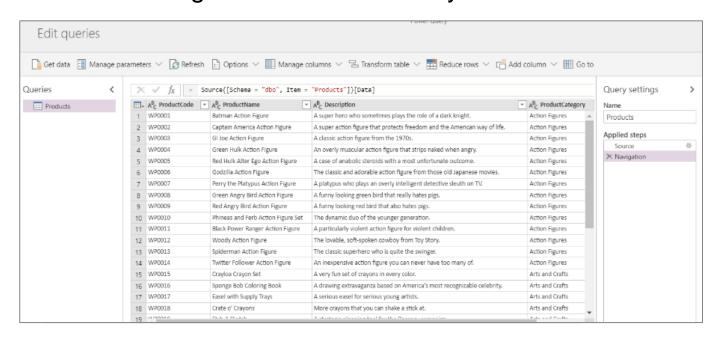
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Importing Data using a Dataflow

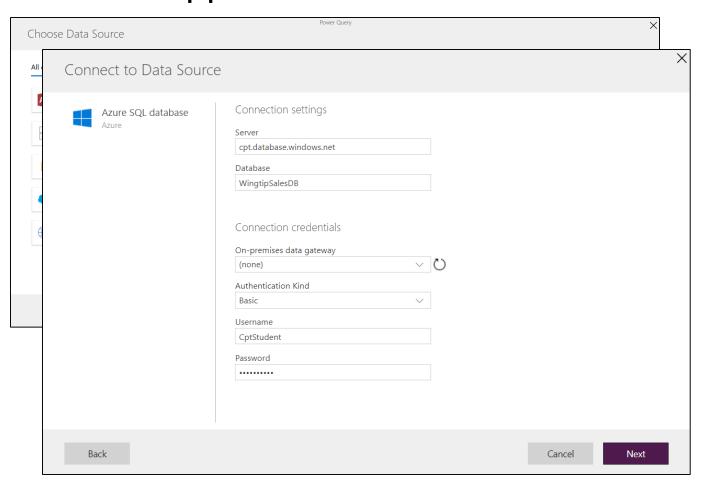
- You create dataflows to import data from external sources
 - Data can be added to table for new or existing entity
 - Dataflow tooling include Power Query UI in the browser





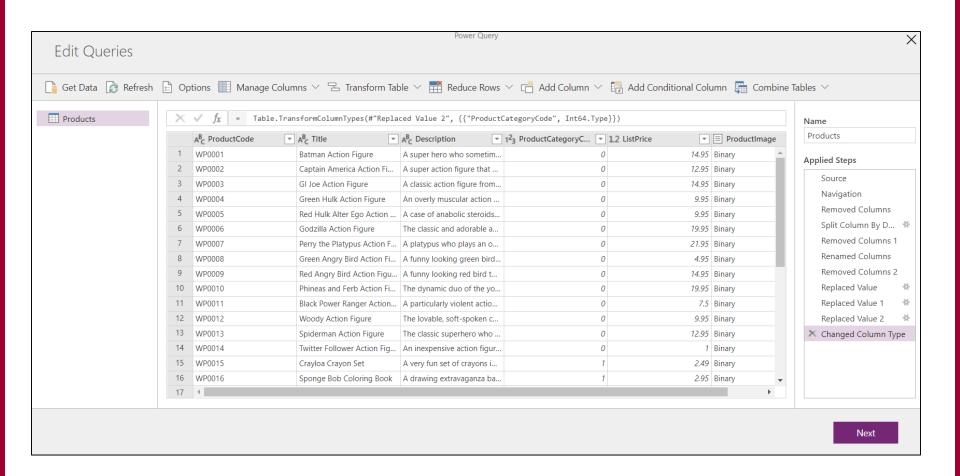
Selecting an External Datasource

Select a supported datasource connector



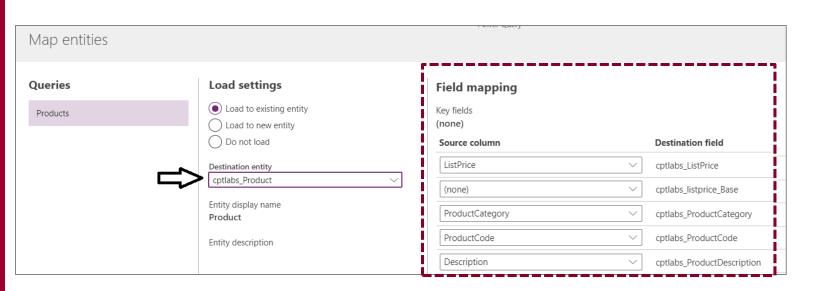


Power Query in the Browser





Loading Imported Data into Existing Entity







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