

Getting Started with the Common Data Service



Agenda

- Common Data Service Overview
- Creating the CDS Database
- Understanding Entities
- Importing Data into the CDS Database
- Building Model-driven Apps
- Creating a Custom Entity



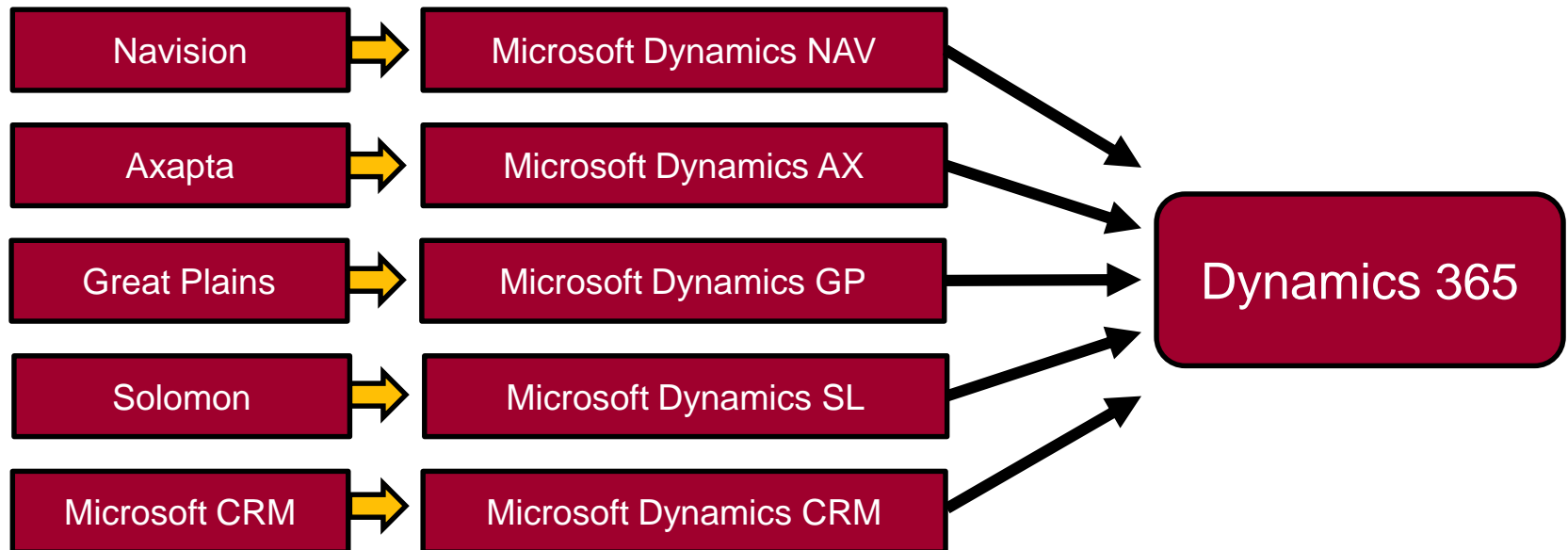
What is Common Data Service?

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



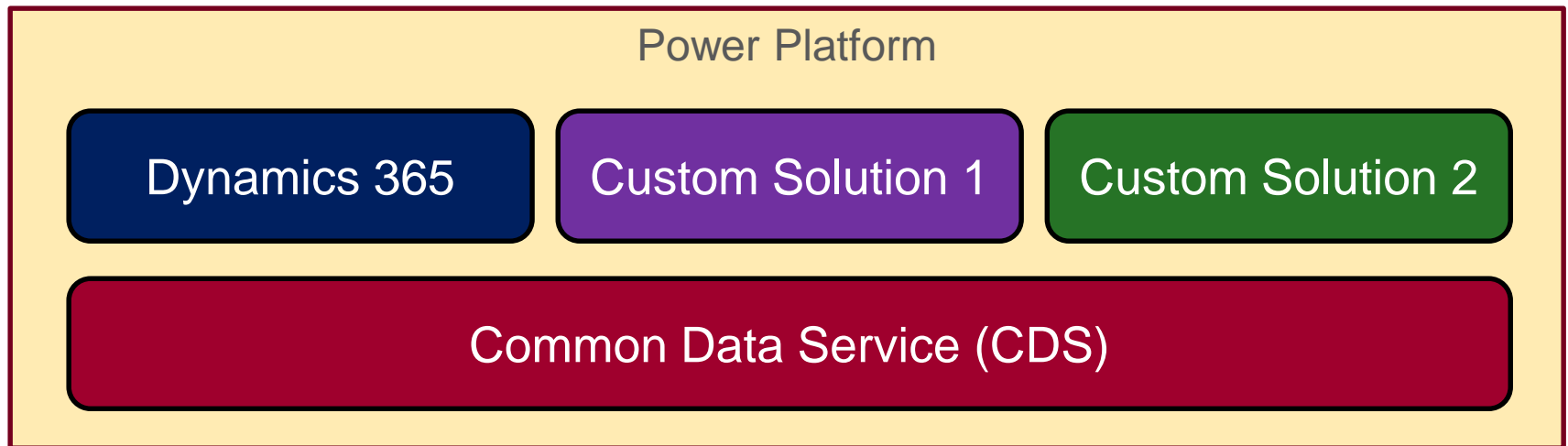
Evolution of Microsoft Business Application Suite

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



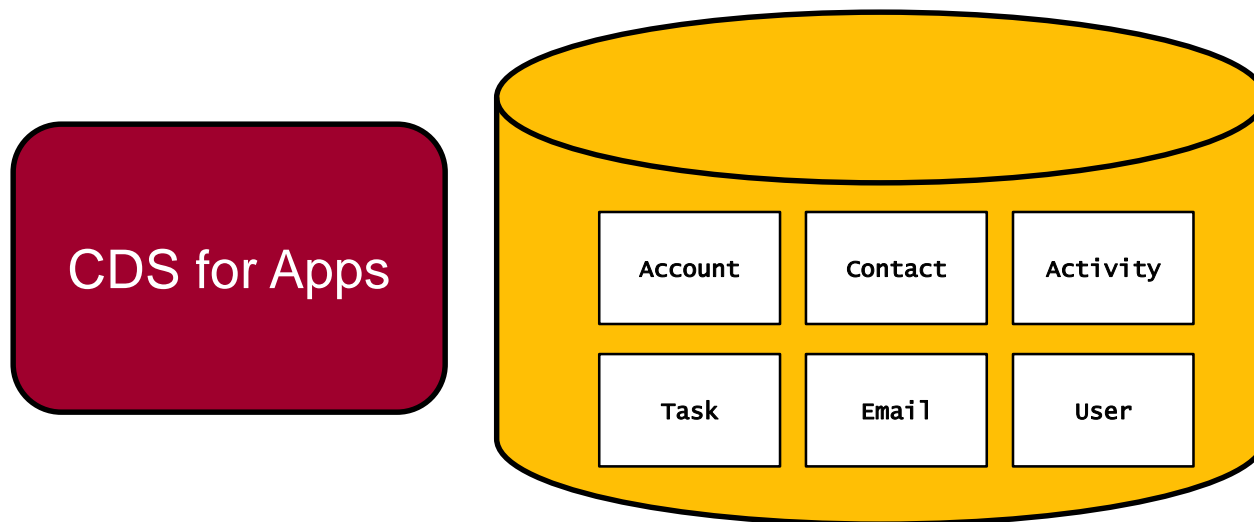
Birth of the Power Platform

- Microsoft migrating infrastructure out of Dynamics 365
 - CDS has infrastructure for building entity-based business solutions
 - Dynamics 365 add additional value-added entities with UI and logic
 - Custom solutions can be built using entities with UI and logic
 - CDS provides foundation of Power Platform



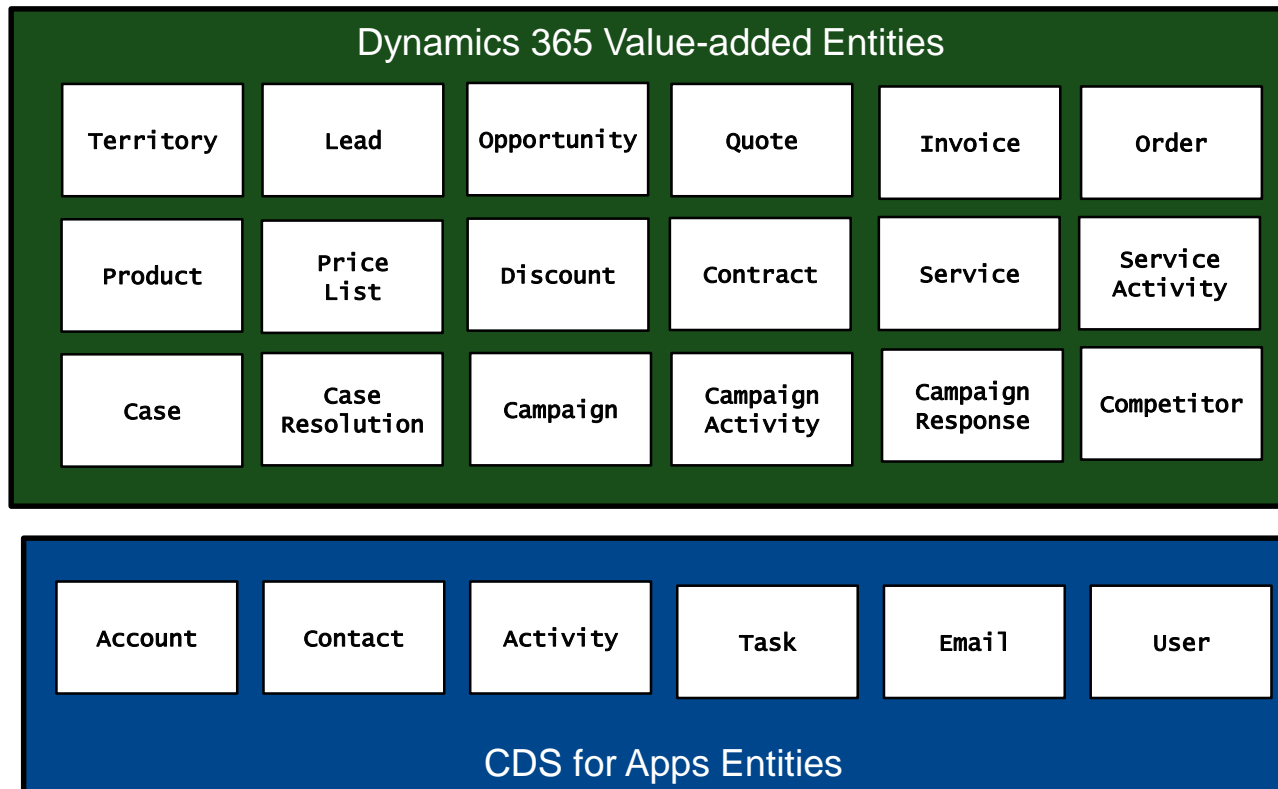
Common Database Model Schema

- 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 for Apps vs Dynamics 365 for Sales

- CDS for Apps provides base set of entities
 - Custom solutions can extend and add entities
 - Dynamics 365 add a large set of its own entities



Agenda

- ✓ Common Data Service Overview
- Creating the CDS Database
 - Understanding Entities
 - Importing Data into the CDS Database
 - Building Model-driven Apps
 - Creating a Custom Entity




PowerApps Plan 2

- Certain design tasks require PowerApps Plan 2
 - You can start a 30-day trial for PowerApps Plan 2
 - License must be assigned to individual user accounts

Business apps

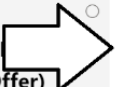
Boost employee productivity with apps that power your organization. Build apps, automate processes and tasks, plan and track your projects, and create diagrams, organization charts, maps, and workflows - all to support your business.



Microsoft PowerApps
(Qualified Offer)

Create, share, and run business apps and workflows for cloud and on-premises data or the Microsoft

Starting at
\$7.00 user/month



Microsoft PowerApps Plan 2
(Qualified Offer)

Create, share, and run business apps and workflows for cloud and on-premises data or the Microsoft

Starting at
\$40.00 user/month



Microsoft PowerApps Plan 2

Create, share, and run business apps and workflows for cloud and on-premises data or the Microsoft Common Data Model. Includes more database capacity, data modeling, and administration of the Common Data Model.







Starting at
\$40.00 user/month



Subscription options

- \$40.00 user/month
- \$480.00 user/year

[Buy](#)  [Get free trial](#) 

Active users

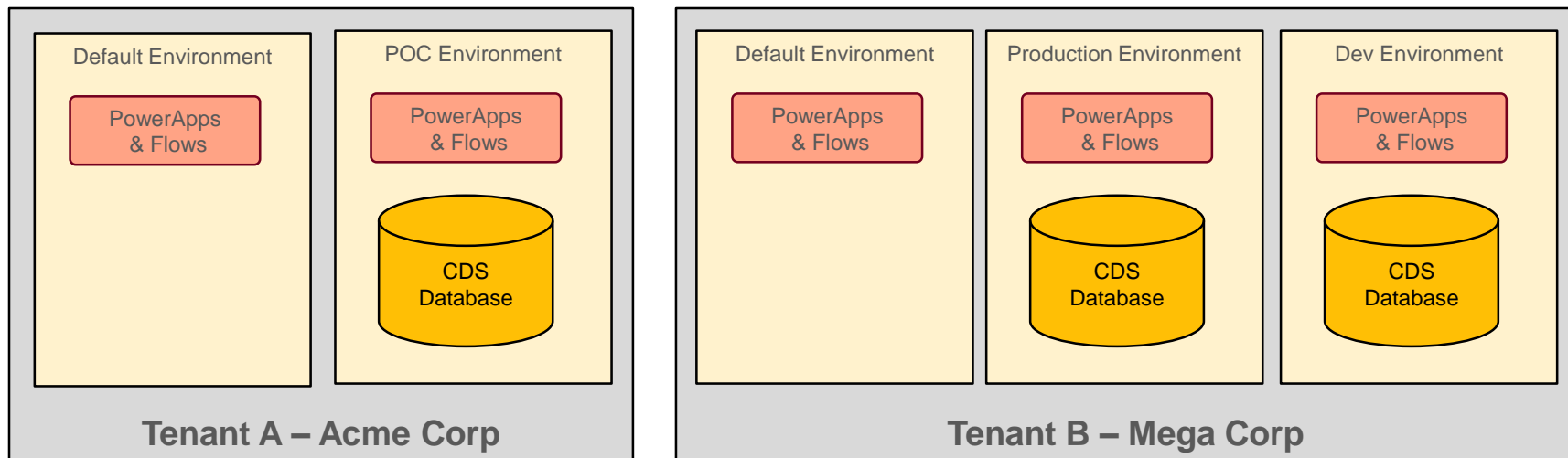
 Add a user  Refresh  Reset password  Assign to group  Manage product licenses ... 1 selected  Search

Display name ↑	Username	Licenses
James Bond	JamesB@labs4summit.onmicrosoft.com	Office 365 E5
 Stu Dent	Student@labs4summit.onmicrosoft.com	Office 365 E5, Microsoft PowerApps Plan 2 



What is an Environment?

- Environment is container for PowerApps, Flow and the CDS
 - Each environment and its resources exist within a geographic region
 - Environment resources include PowerApps, Flows and CDS database
 - 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)

Environments

Analytics

Help + support

Data integration

Data gateways

+ New

Refresh

Environments

Environment		Type	State	Region
My Dev Environment	⋮	Production	Ready	United States
Critical Path Training Labs (default)	⋮	Default	Ready	United States



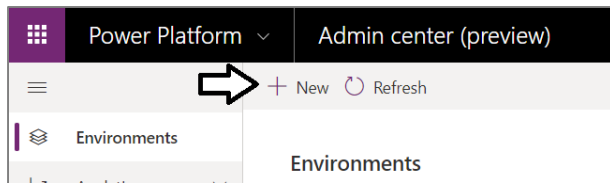
Environment Roles (Admin and Maker)

- Environment Admin role
 - Change role membership
 - Create new environments with or without CDS database
 - View and manage all resources created in environment
 - Set Data Loss Prevention policies
- Environment Maker role
 - Create apps, connections, custom APIs, gateways, and flows
 - Create and extend CDS entities (*requires PowerApps plan 2*)



Creating Environment with CDS Database

- Steps to create a new CDS for Apps Database
 1. Navigate to Power Platform Admin Center
 2. Create a new environment
 3. Configure the new environment with a CDS database



A screenshot of the 'Add environment' dialog box. It contains the following fields and options:

- Name ***: A text input field containing 'My Dev Environment'.
- Type ⓘ ***: A dropdown menu set to 'Production'.
- Region ***: A dropdown menu set to 'United States - Default'. Below it, a note states: 'Local environments can provide quicker data access'.
- Purpose**: A text area with the placeholder text 'Describe the environment purpose'.
- Create a database for this environment? ⓘ**: A toggle switch set to 'Yes'.
- At the bottom are 'Next' and 'Cancel' buttons.

Three white arrows point to the 'Name', 'Type', and 'Create a database' fields.

A screenshot of the 'Add database' dialog box. It contains the following fields and options:

- Language ***: A dropdown menu set to 'English'. Below it, a note states: 'Default language for user interfaces in this environment'.
- Currency ***: A dropdown menu set to 'USD (US\$)'. Below it, a note states: 'Reports will use this currency'.
- Enable Dynamics 365 apps**: A toggle switch set to 'No'. Below it, a note states: 'In addition to Power Apps. Learn more'.
- Deploy sample apps and data**: A toggle switch set to 'No'.
- Security group**: A text area with the placeholder text 'Restrict environment access to people in this security group. Otherwise, everyone can access. Learn more'.
- At the bottom are 'Save' and 'Cancel' buttons.



Examining the New Environment

- It takes a minute or so to create new environment

✓ New environment My Dev Environment is getting prepared. It can be used once active. ✕

Environments				
Environment		Type	State	Region
My Dev Environment		Production	PreparingInstance	United States
Critical Path Training Labs (default)	...	Default	Ready	United States

- You can use the environment once its status is **Ready**

✓ New environment My Dev Environment has been successfully created.

Environments				
Environment		Type	State	Region
My Dev Environment	...	Production	Ready	United States
Critical Path Training Labs (default)	...	Default	Ready	United States




Environment Settings


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

Environments > My Dev Environment > Settings


Search for a setting

✓  **Product**


Behavior, Features, Languages, Privacy + Security

✓  **Business**


Business closures, Calendar, Connection roles, Currencies

✓  **Users + permissions**


Business units, Hierarchy security, Mobile configuration, Positions

✓  **Audit and logs**


Audit log management, Audit settings, Audit summary view, Entity and field audit settings

✓  **Templates**


Access team templates, Article templates, Contract templates, Data import templates

✓  **Email**


Email settings, Email tracking, Mailboxes, Server profiles

✓  **Integration**


Enable server-based SharePoint integration, Document management settings, Manage document suggestions, Microsoft Social Engagement

✓  **Data management**

Add ready-to-use business processes, Announcements, Auto numbering, Automatic record creation policies

✓  **Encryption**

Data encryption





✓  **Resources**

All legacy settings, Dynamics 365 for Outlook



Environmental Security Roles

- User access to CDS data based on roles
 - Environment security configured in terms of business units
 - CDS pre-defines common security roles
 - You can define custom security roles as well

Security Roles	
Business Unit: org6c024aee ▾	
 New    More Actions ▾	
<input type="checkbox"/> Name ↑	Business Unit
Common Data Service User	org6c024aee
Delegate	org6c024aee
Environment Maker	org6c024aee
Product Manager	org6c024aee
System Administrator	org6c024aee
System Customizer	org6c024aee



Security Role Configuration – Core Records

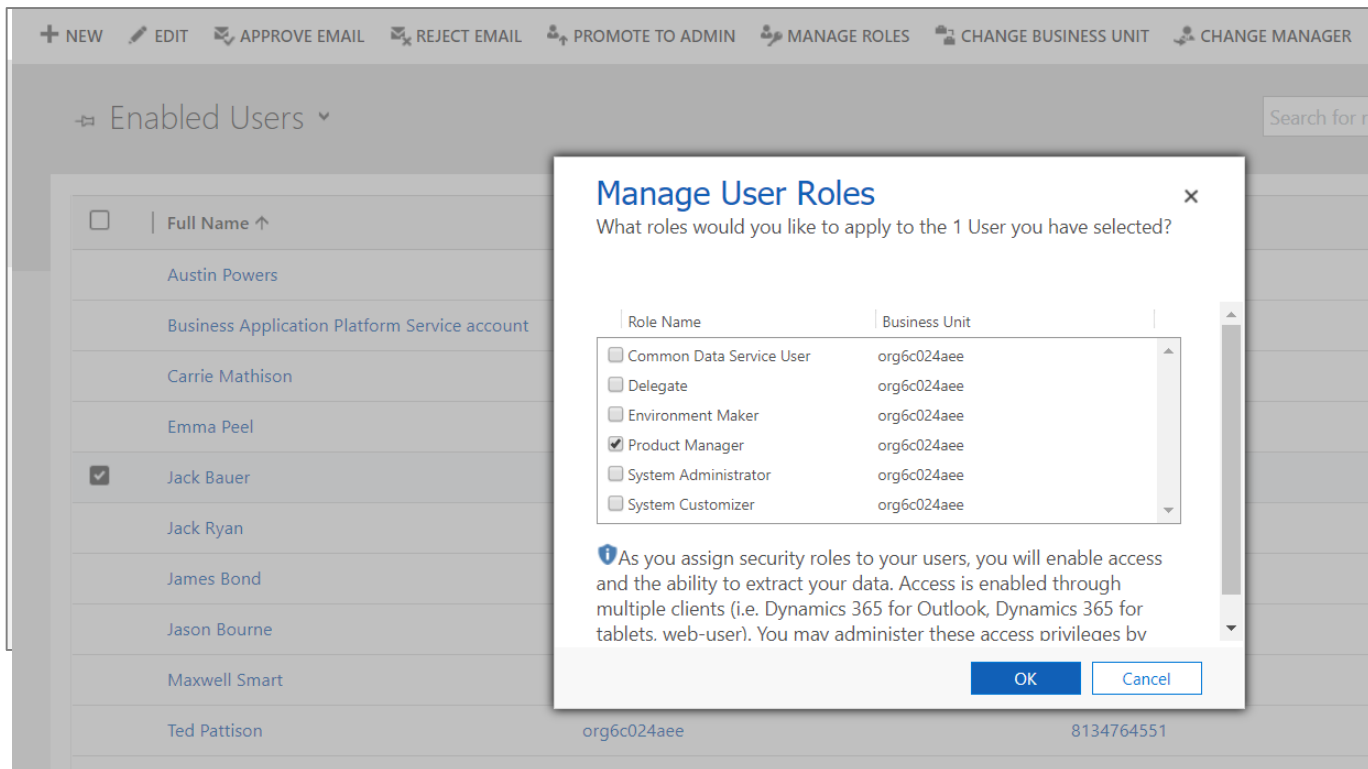
- Roles define access to specific entities
 - Permissions include **create**, **read**, **write**, **delete**, etc.

Security Role: New Security Role								
<div>DetailsCore RecordsBusiness ManagementCustomizationMissing EntitiesBusiness Process FlowsCustom Entities</div>								
Entity	Create	Read	Write	Delete	Append	Append To	Assign	Share
Account								
ACIViewMapper								
Action Card								
Action Card User Settings								
Activity								
Announcement								
Application File								
Connection								
Connection Role								
Contact								
Customer Relationship								
Data Import								
Data Map								
Data Performance Dashboard								
Document Location								
Document Suggestions								
Duplicate Detection Rule								



Assigning Users to Security Roles

- Roles are assigned to users and groups





DEMO

Creating a new Environment with a CDS Database

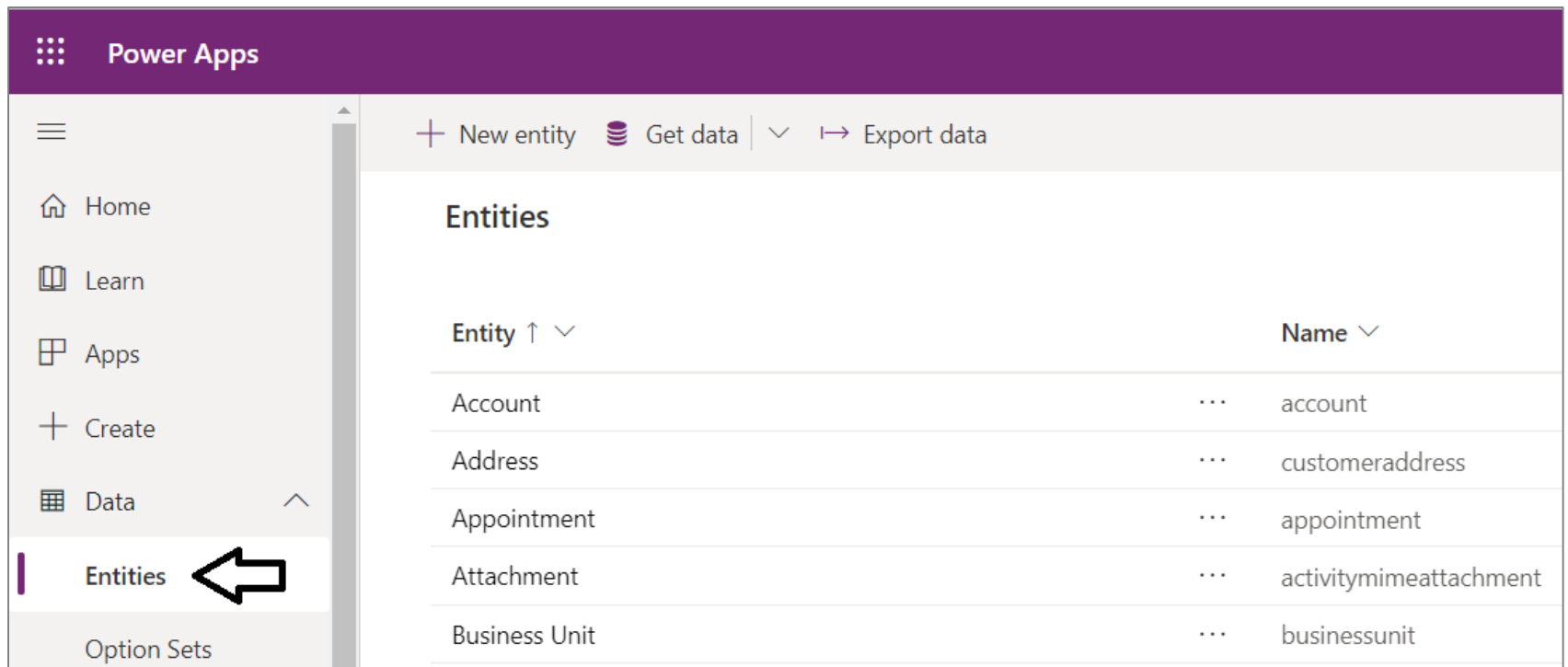
Agenda

- ✓ Common Data Service Overview
- ✓ Creating the CDS Database
- Understanding Entities
 - Importing Data into the CDS Database
 - Building Model-driven Apps
 - Creating a Custom Entity



Inspecting the Standard Entities

- CDS created with set of standard entites



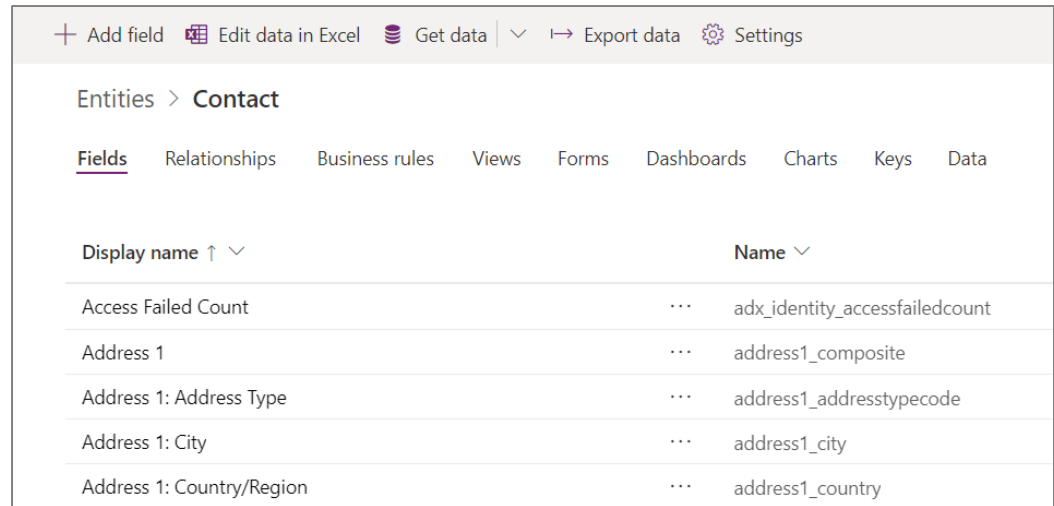
The screenshot shows the Power Apps interface. The left sidebar contains a navigation menu with the following items: Home, Learn, Apps, Create, Data, **Entities** (highlighted with a large black arrow), and Option Sets. The main area displays the 'Entities' section with a table of standard entities.

Entity ↑ ▾	Name ▾
Account	account
Address	customeraddress
Appointment	appointment
Attachment	activitymimeattachment
Business Unit	businessunit



What Exactly is an Entity?

- Data components
 - Entity and Fields
 - Relationships
- UI components
 - Forms
 - Views
- Logic Components
 - Business rules
 - Business process flows
 - Workflows, Actions & Flows
- Visualization Components
 - Charts
 - Dashboards

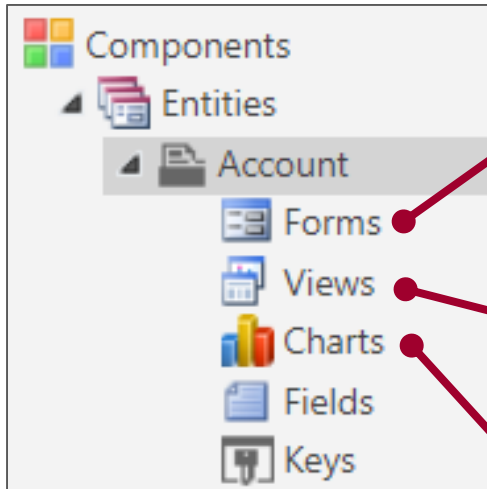


The screenshot shows a software interface for managing data entities. At the top, there is a navigation bar with options: '+ Add field', 'Edit data in Excel', 'Get data', 'Export data', and 'Settings'. Below this, the breadcrumb 'Entities > Contact' is displayed. A horizontal menu contains tabs for 'Fields', 'Relationships', 'Business rules', 'Views', 'Forms', 'Dashboards', 'Charts', 'Keys', and 'Data'. The 'Fields' tab is active, showing a table of fields for the 'Contact' entity. The table has two columns: 'Display name' and 'Name'. Each row includes a three-dot menu icon between the two columns.

Display name ↑		Name ↓
Access Failed Count	...	adx_identity_accessfailedcount
Address 1	...	address1_composite
Address 1: Address Type	...	address1_addrstypetcode
Address 1: City	...	address1_city
Address 1: Country/Region	...	address1_country



Inside an Entity



System Forms **Active Forms** ▾

☐ New ▾ ☐ Delete ☐ Enable Security Roles ☐ Form Order ▾ ☐ Activate ☐ Deactivate ☐ More Actions ▾

Name	Form State	Form Type ↑	State	Customizable	Version	Description
Account Card form	Active	Card	Managed	True	8.0.0.0	Default Account card form.
Account for Interactive experie...	Active	Main	Managed	True	8.0.0.0	Default Interactive experience Account form.
Account	Active	Main	Managed	True	5.0.0.0	Updated default Account form.
Account Quick Create	Active	Quick Create	Managed	True	6.0.0.0	Default quick create form for Account

View: All Active Views

☐ New ☐ X ☐ More Actions ▾

Name ↑	Type	State	Customizable	Description
Account Advanced Find View	Advanced Find View	Managed	True	
Account Associated View	Associated View	Managed	True	Displays information about related accounts in the detail form of ...
Account BulkOperation View	Associated View	Managed	True	Display Accounts for BulkOperation View
Account List Member View	Associated View	Managed	True	Displays information about related accounts in the Members subg...

☐ New ☐ X ☐ More Actions ▾

Name ↑	State	Customizable	Description
Accounts by Industry	Managed	True	Shows the total number of accounts by industry.
Accounts by Owner	Managed	True	Shows the total number of accounts by owner.
Accounts by Owner - Tag Chart	Managed	True	Shows the total number of accounts by owner in a tag chart.
New Accounts By Month	Managed	True	Shows the number of new accounts in a month.



CDS Extensibility

- You can modify most standard entities
 - Modification involves adding fields
 - Existing fields cannot be modified or removed
 - System entities cannot be modified
- You can create custom entities
 - Herein lies the ability to design complex business apps





DEMO

Building a Canvas App to Read and Write Contacts

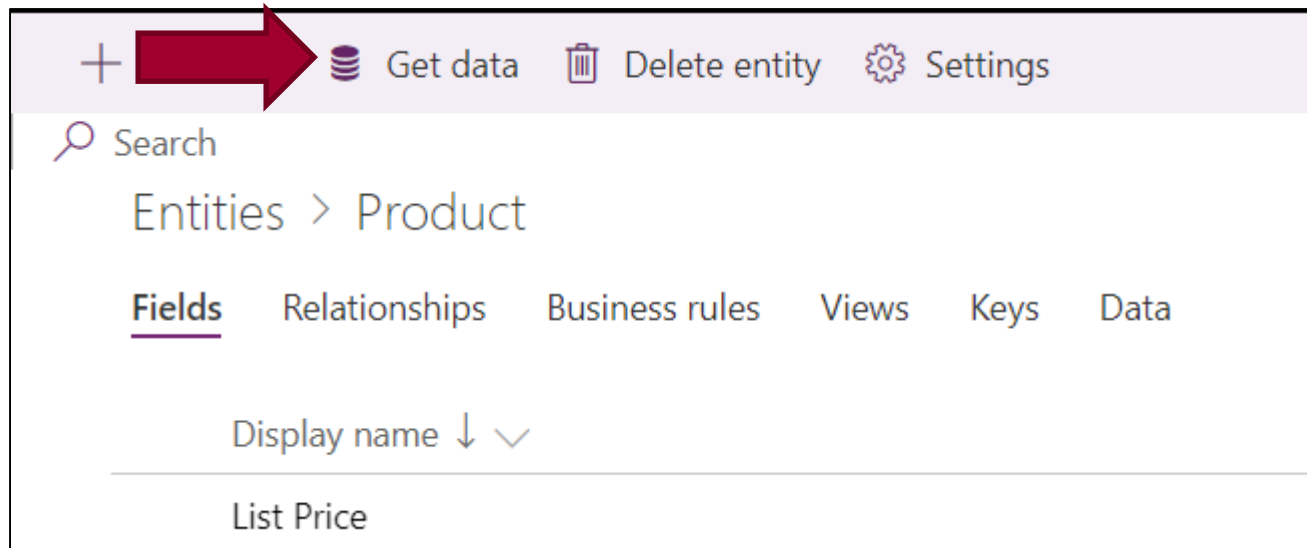
Agenda

- ✓ Common Data Service Overview
- ✓ Creating the CDS Database
- ✓ Understanding Entities
- Importing Data into the CDS Database
 - Building Model-driven Apps
 - Creating a Custom Entity



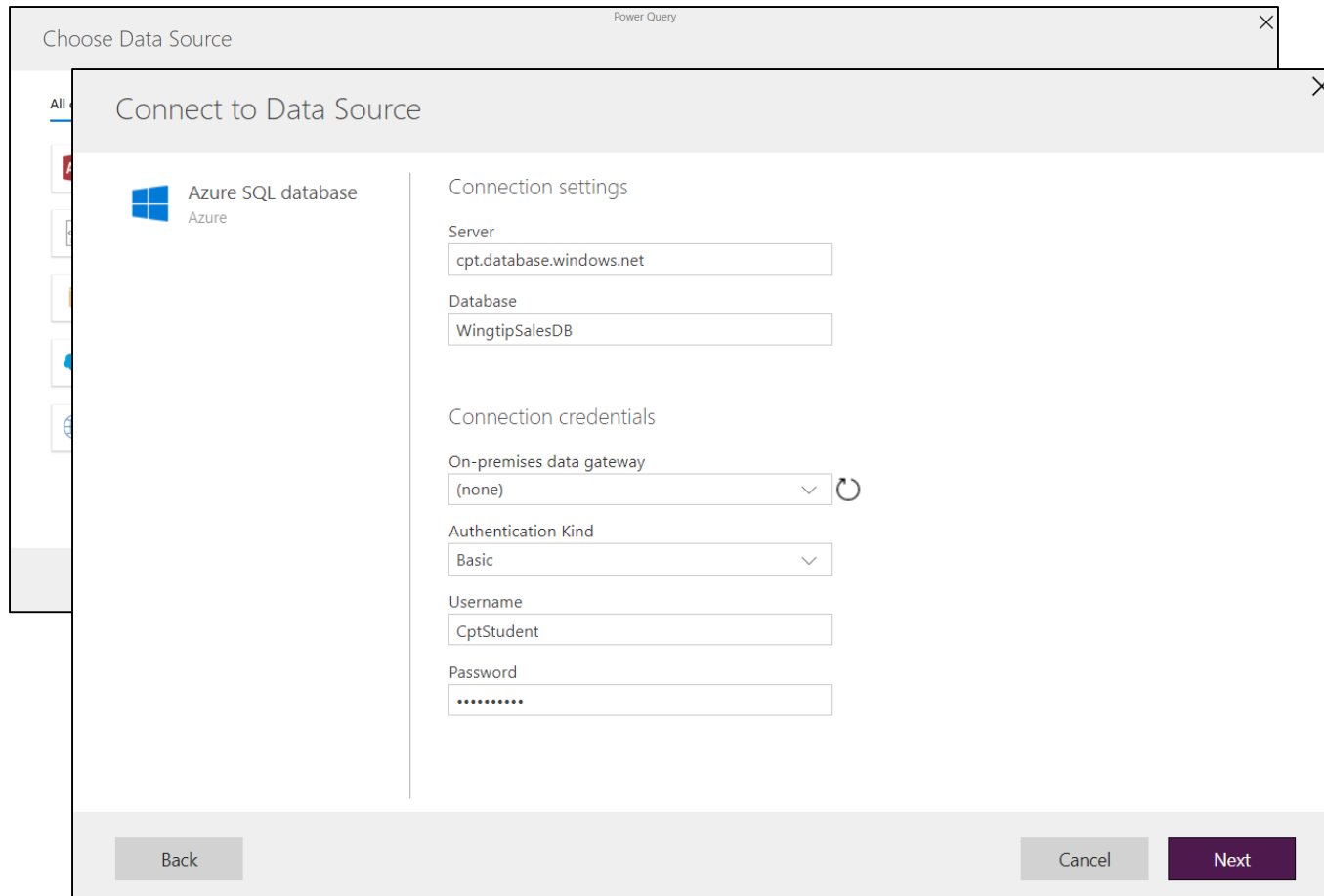
Importing Data

- You can import data from external sources
 - Data can be added to table for new or existing entity
 - Importing tools include Power Query in the browser



Selecting an External Datasource

- Select a supported datasource connector



The screenshot displays the 'Choose Data Source' dialog box in Power Query. The main window is titled 'Connect to Data Source'. On the left, a list of data sources is shown, with 'Azure SQL database' selected. The right pane shows the 'Connection settings' for this database. The 'Server' field contains 'cpt.database.windows.net' and the 'Database' field contains 'WingtipSalesDB'. Under 'Connection credentials', the 'On-premises data gateway' is set to '(none)' and the 'Authentication Kind' is set to 'Basic'. The 'Username' field contains 'CptStudent' and the 'Password' field is masked with dots. At the bottom, there are 'Back', 'Cancel', and 'Next' buttons.

Choose Data Source

Power Query

Connect to Data Source

Azure SQL database
Azure

Connection settings

Server
cpt.database.windows.net

Database
WingtipSalesDB

Connection credentials

On-premises data gateway
(none)

Authentication Kind
Basic

Username
CptStudent

Password

Back Cancel Next



Power Query in the Browser

Edit Queries

Get Data

Refresh

Options

Manage Columns

Transform Table

Reduce Rows

Add Column

Add Conditional Column

Combine Tables

Products

Table.TransformColumnTypes("#Replaced Value 2", {"ProductCategoryCode", Int64.Type}))

	ProductCode	Title	Description	ProductCategoryCode	ListPrice	ProductImage
1	WP0001	Batman Action Figure	A super hero who sometim...	0	14.95	Binary
2	WP0002	Captain America Action Fi...	A super action figure that ...	0	12.95	Binary
3	WP0003	GI Joe Action Figure	A classic action figure from...	0	14.95	Binary
4	WP0004	Green Hulk Action Figure	An overly muscular action ...	0	9.95	Binary
5	WP0005	Red Hulk Alter Ego Action ...	A case of anabolic steroids...	0	9.95	Binary
6	WP0006	Godzilla Action Figure	The classic and adorable a...	0	19.95	Binary
7	WP0007	Perry the Platypus Action F...	A platypus who plays an o...	0	21.95	Binary
8	WP0008	Green Angry Bird Action Fi...	A funny looking green bird...	0	4.95	Binary
9	WP0009	Red Angry Bird Action Figu...	A funny looking red bird t...	0	14.95	Binary
10	WP0010	Phineas and Ferb Action Fi...	The dynamic duo of the yo...	0	19.95	Binary
11	WP0011	Black Power Ranger Action...	A particularly violent actio...	0	7.5	Binary
12	WP0012	Woody Action Figure	The lovable, soft-spoken c...	0	9.95	Binary
13	WP0013	Spiderman Action Figure	The classic superhero who ...	0	12.95	Binary
14	WP0014	Twitter Follower Action Fig...	An inexpensive action figur...	0	1	Binary
15	WP0015	Crayloa Crayon Set	A very fun set of crayons i...	1	2.49	Binary
16	WP0016	Sponge Bob Coloring Book	A drawing extravaganza ba...	1	2.95	Binary
17						

Name

Products

Applied Steps

Source

Navigation

Removed Columns

Split Column By D...

Removed Columns 1

Renamed Columns

Removed Columns 2

Replaced Value

Replaced Value 1

Replaced Value 2

Changed Column Type

Next



Loading Imported Data into Existing Entity

Map Entities

Power Query

×

Queries

Products

☒ Load to existing entity

☐ Load to new entity

☐ Do not load

Destination Entity

cr9be_Product

▼

Previously loaded data will be overwritten.

Entity Display Name

Product

Entity Description

My Product Entity

Field Mapping

Destination Field	Source Column	Auto-map
cr9be_ProductCode*	ProductCode	▼
cr9be_ProductName*	Title	▼
cr9be_ListPrice	ListPrice	▼
cr9be_listprice_Base	(none)	▼
cr9be_ProductAvailable	(none)	▼
cr9be_ProductCategory	ProductCategoryCode	▼
cr9be_ProductDescription	Description	▼
cr9be_ProductId	(none)	▼
CreatedBy	(none)	▼
CreatedOn	(none)	▼
CreatedOnBehalfBy	(none)	▼

Cancel

Next





DEMO

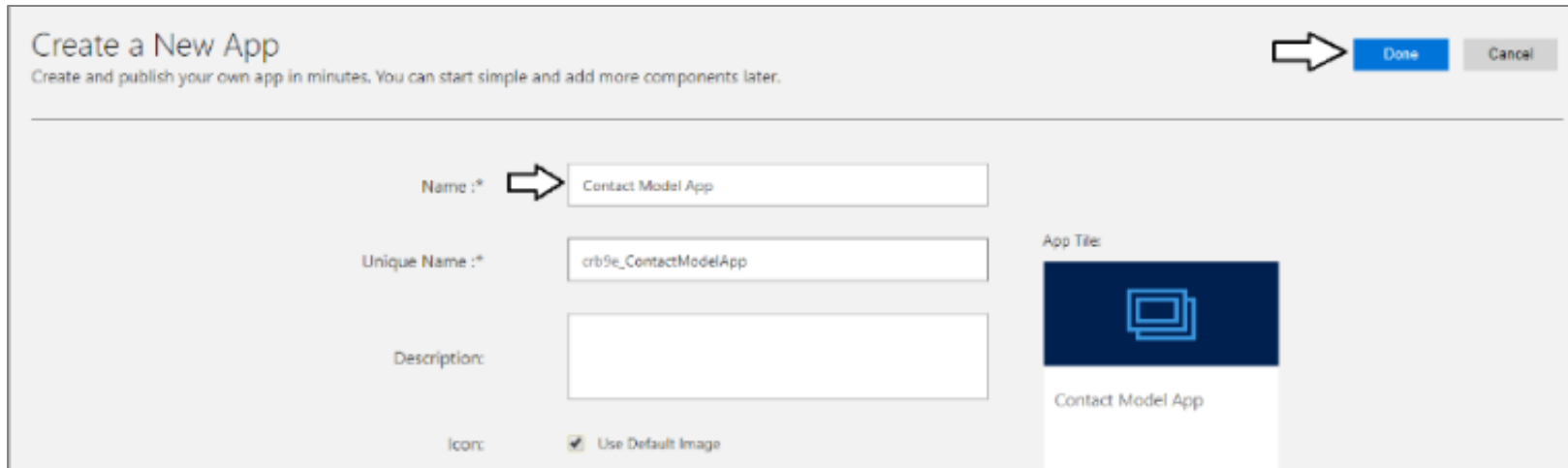
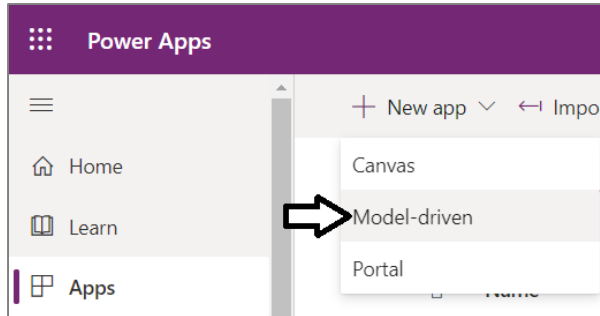
Importing Contacts into the CDS

Agenda

- ✓ Common Data Service Overview
- ✓ Creating the CDS Database
- ✓ Understanding Entities
- ✓ Importing Data into the CDS Database
- Building Model-driven Apps
 - Creating a Custom Entity



Creating a Model-driven App



The image shows the 'Create a New App' form. At the top, it says 'Create a New App' and 'Create and publish your own app in minutes. You can start simple and add more components later.' There are 'Done' and 'Cancel' buttons at the top right. The form has several fields: 'Name :*' with the value 'Contact Model App', 'Unique Name :*' with the value 'crb9e_ContactModelApp', and a 'Description:' field. There is also an 'Icon:' section with a checked box for 'Use Default Image'. On the right side, there is an 'App Title:' section with a blue icon and the text 'Contact Model App'. A white arrow points to the 'Name :*' field.



Creating the Sitemap Component

The screenshot shows the PowerApps Sitemap Designer interface for an application named "Contact Manger". The top navigation bar includes the PowerApps logo and the text "App Designer > Sitemap Designer". The main workspace is titled "My Contacts App" and contains a "Manage Contacts" section with a "Contacts" component. A toolbar above the workspace provides actions: Add, Cut, Copy, Paste, Clone, and Delete. On the right, the "Properties" pane is active, showing the "General" section with fields for "Type" (set to "Entity"), "Entity" (set to "Contact"), and "URL". The "Published" status is indicated in the top right corner.

PowerApps

App Designer > Sitemap Designer

Contact Manger

Published

Save Save And Close Publish

Add Cut Copy Paste Clone Delete

My Contacts App

Manage Contacts

Contacts

Components Properties

SUB AREA

General

Type

Entity

Entity *

Contact

URL



Publishing and Running the App

The screenshot displays the Microsoft PowerApps App Designer interface for an application named "Contact Manger". The top navigation bar includes the "PowerApps" logo and the application name. Below this, the "App Designer" section shows the application's structure, including a "Site Map" and a "Dashboards" section. The "Site Map" section contains a "Site Map" component. The "Dashboards" section contains a "Dashboards" component and a "Business Process Flows" component. The "Entity View (1)" section contains a "Contact" component, a "Forms" component, a "Views" component, and a "Charts" component. The right-hand side of the interface features a "Components" pane with a "Properties" tab. The "Components" pane lists "ARTIFACTS" and "ENTITY ASSETS". Under "ARTIFACTS", there are three items: "Entities" (Model and ma...), "Dashboards" (Provide an insi...), and "Business Proc..." (Define a seque...). Under "ENTITY ASSETS", there are two items: "Forms" (Define how us...) and "Views" (Create a list vi...). The top right corner of the interface shows the "Last Saved on" date and time, and the "Published" status. The bottom right corner of the interface features a small logo.

PowerApps

App Designer
Contact Manger

Last Saved on :11/30/2019 5:27 PM Published

Save Save And Close Validate Publish Play

Add Edit Remove Search Canvas

Site Map Site Map

Dashboards Dashboards All Business Process Flows

Entity View (1)

Contact Forms All Views All Charts All

Components Properties

ARTIFACTS

- Entities Model and ma...
- Dashboards Provide an insi...
- Business Proc... Define a seque...

ENTITY ASSETS

- Forms Define how us...
- Views Create a list vi...



Testing a Model-driven App

The screenshot displays the Microsoft PowerApps 'Contact Manger' application. The interface features a purple header bar with the 'PowerApps' logo and a dropdown menu, and a search bar with icons for search, share, add, filter, settings, help, and user profile. A left-hand navigation pane includes a hamburger menu, 'Home', 'Recent', 'Pinned', and a 'Manage Contacts' section with a 'Contacts' link. The main content area is titled 'New Contact' and includes a 'Contact · Contact' breadcrumb. It shows the user 'Ted Pattison' as the 'Owner'. Below the title are tabs for 'Summary' (selected) and 'Details'. The 'Summary' tab contains a 'CONTACT INFORMATION' section with fields for 'First Name' (Bill), 'Last Name' (Gates), 'Job Title' (Philanthropists), 'Account Name' (with a 'Look for Records' button), and 'Email' (---). To the right of the form is a 'Timeline' section with a message: 'This record hasn't been created yet. To view this record, save it to your timeline.'

PowerApps Contact Manger

Save Save & Close New Flow

New Contact
Contact · Contact

Ted Pattison
Owner

Summary Details

CONTACT INFORMATION

First Name **Bill**

Last Name **Gates**

Job Title **Philanthropists**

Account Name

Email ---

Timeline

This record hasn't been created yet. To view this record, save it to your timeline.

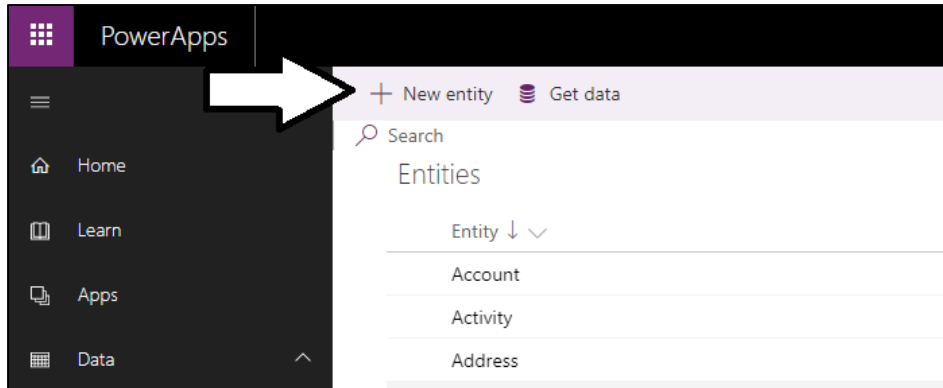


Agenda

- ✓ Common Data Service Overview
- ✓ Creating the CDS Database
- ✓ Understanding Entities
- ✓ Importing Data into the CDS Database
- ✓ Building Model-driven Apps
- Creating a Custom Entity



Creating a Custom Entity



New entity

Display name *

Plural display name *

Name *

 ⓘ

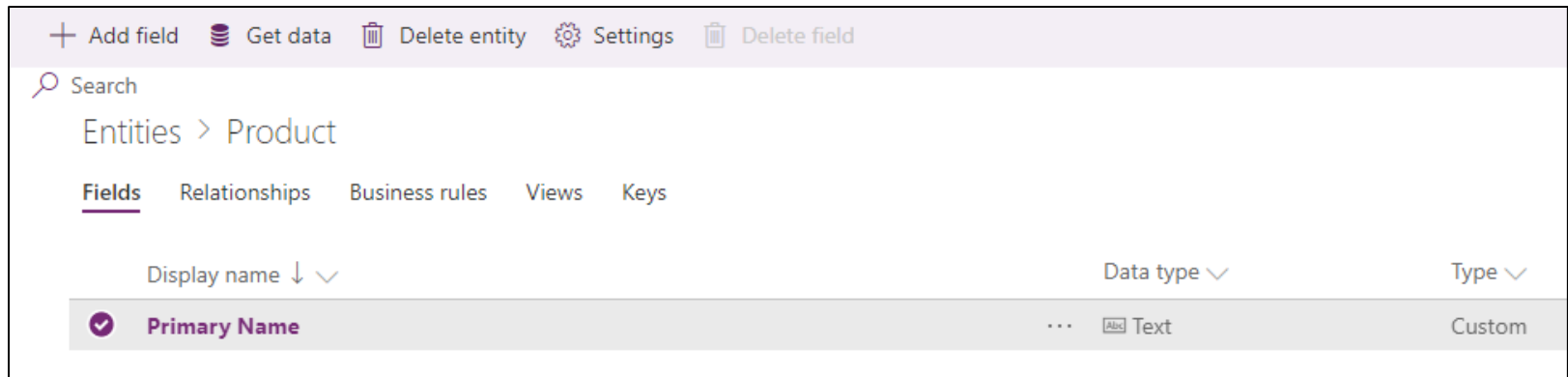
Description

Next Cancel



Primary Name

- Every entity created with Primary name field
 - Display name can be changed to something more appropriate



The screenshot shows a database management interface. At the top, there is a toolbar with icons and labels for '+ Add field', 'Get data', 'Delete entity', 'Settings', and 'Delete field'. Below this is a search bar with a magnifying glass icon and the text 'Search'. The main content area shows the breadcrumb 'Entities > Product'. Underneath, there are tabs for 'Fields', 'Relationships', 'Business rules', 'Views', and 'Keys'. The 'Fields' tab is selected. A table lists the fields for the 'Product' entity. The first field is 'Primary Name', which is marked as the primary field with a checkmark icon. It has a data type of 'Text' and a custom type. The table has columns for 'Display name', 'Data type', and 'Type'.

Display name ↓	Data type ↓	Type ↓
✓ Primary Name	... Text	Custom



Adding Fields

- Custom entity can be extended by adding fields

×

Product Code

Display name *

Product Code

Name *

cr9be_ ProductCode i

Data type *

ABD Text ▼ i

☒ Required

☒ Searchable

Calculated or Rollup i + Add

Advanced options ▼

Done Cancel



Adding Custom Fields

Entities > Product

Fields

Relationships

Business rules

Views

Keys

Data

Display name ↓ ▾		Data type ▾	Type ▾	Required ▾
List Price	...	Currency	Custom	
List Price (Base)	...	Currency	Custom	
Product Available	...	Two Options	Custom	
Product Category	...	Option Set	Custom	
Product Code	...	Text	Custom	✓
Product Description	...	Text Area	Custom	
Product Image	...	Image	Custom	
Product Name	...	Text	Custom	✓



Core System Fields Added to All Entities

Entities > Product		
Fields	Relationships	Business rules
Views	Keys	Data
Display name ↓	Data type ↓	
Type ↓		
Created By	...	Lookup System
Created By (Delegate)	...	Lookup System
Created On	...	Date and Time System
Currency	...	Lookup Standard
Exchange Rate	...	%, Decimal Number Standard
Import Sequence Number	...	Whole Number System
List Price	...	Currency Custom
List Price (Base)	...	Currency Custom
Modified By	...	Lookup System
Modified By (Delegate)	...	Lookup System
Modified On	...	Date and Time System
Owner	...	Owner System
Owning Business Unit	...	Lookup System
Owning Team	...	Lookup System
Owning User	...	Lookup System
Product	...	Unique Identifier System
Product Available	...	Two Options Custom
Product Category	...	Option Set Custom
Product Code	...	Text Custom
Product Description	...	Text Area Custom
Product Image	...	Image Custom
Product Name	...	Text Custom
Record Created On	...	Date Only System
Status	...	Option Set System
Status Reason	...	Option Set System
Time Zone Rule Version Number	...	Whole Number System
UTC Conversion Time Zone Code	...	Whole Number System
Version Number	...	Big Integer System

Product	...	Unique Identifier	System
---------	-----	-------------------	--------

Created By	...	Lookup	System
Created By (Delegate)	...	Lookup	System
Created On	...	Date and Time	System

Modified By	...	Lookup	System
Modified By (Delegate)	...	Lookup	System
Modified On	...	Date and Time	System

Owner	...	Owner	System
Owning Business Unit	...	Lookup	System
Owning Team	...	Lookup	System
Owning User	...	Lookup	System

Record Created On	...	Date Only	System
Status	...	Option Set	System
Status Reason	...	Option Set	System
Time Zone Rule Version Number	...	Whole Number	System
UTC Conversion Time Zone Code	...	Whole Number	System
Version Number	...	Big Integer	System



Moving to Model-driven Apps

- What are the key benefits of model-driven apps?
 - Rich no-code design environment focusing on components
 - Create apps with consistent UI navigation, elements & metaphors
 - Design apps using the building blocks of Dynamics 365
 - Create responsive apps that work on desktop and mobile devices
 - Build apps into solutions that can be distributed and versioned
- What are the steps to building a model-driven app?
 - Model business data using entities in Common Data Model (CDM)
 - Define business processes on top of app-specific entity model
 - Compose the app UI on top of entities and business processes



MDA Components and Designers

- Model-driven apps assembled using components
 - App designer builds app by adding components
 - Components used to compose app functionality and appearance
 - App metadata consists of components and component properties
- App components separated into four categories
 1. Data components
 2. Logic components
 3. UI components
 4. Visualization components



Data Components

- Entity
- Field
- Option set field
- Relationship



UI Components

- App
 - Top-level collection of components
 - Tracks fundamental app properties, client type, and app URL
- Site map
 - Provides navigation across other UI components
- Form
 - Provides set of data-entry fields for a specific entity
- View
 - Read-only view of records for a specific entity
 - Defines display columns, column width, sort behavior and filters



Business Logic Components

- Business process flow
 - Interactive logic to walk user through standard business process
 - User moves flow from step to step until flow completes
- Workflow
 - Non-interactive logic to automate business process
 - Once workflow starts, it runs to completion without user interaction
- Actions
 - Logic that can be invoked manually by user
- Business rule
 - Logic to define rule or validation constraints to a form
- Flow
 - Microsoft Flow logic to read or write data to external sources





DEMO

Creating Model-driven Apps

Summary

- ✓ Common Data Service Overview
- ✓ Creating the CDS Database
- ✓ Understanding Entities
- ✓ Importing Data into the CDS Database
- ✓ Building Model-driven Apps
- ✓ Creating a Custom Entity

