



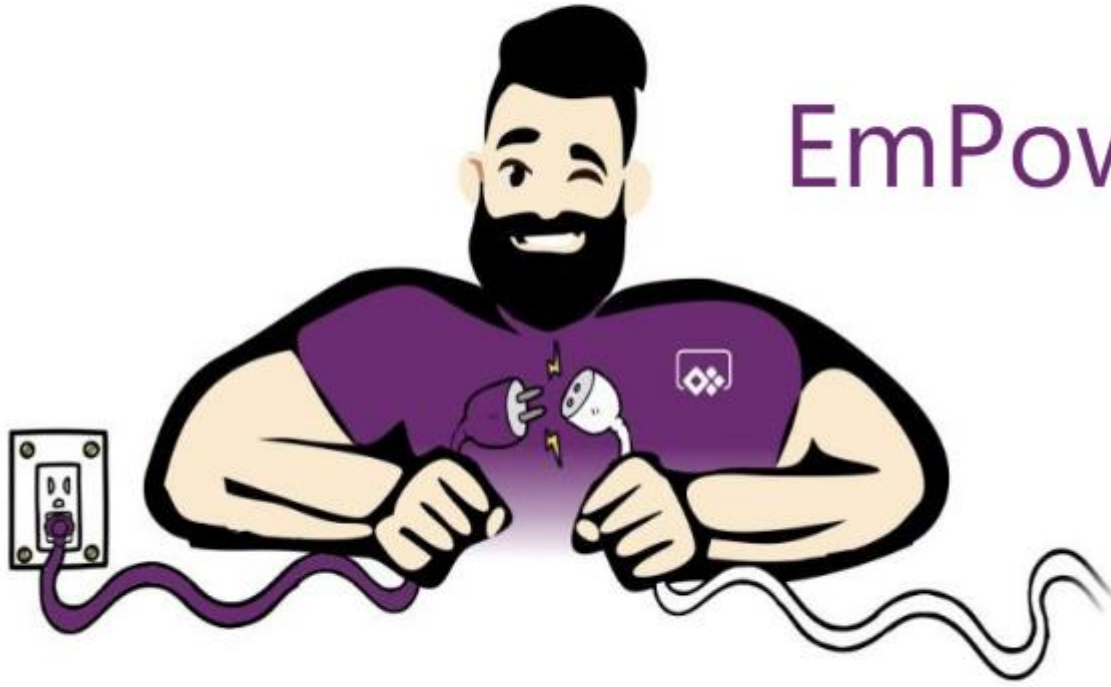
EmPower Your Career

Conference

April 3rd to 5th

365
SATURDAY

*"There can be no greater gift then that of giving one's time and energy
to help others without expecting anything in return"*
– Nelson Mandela



EmPower Your Career

Conference
April 3rd to 5th

365
SATURDAY

**LEVERAGING POWER BI WITH THE COMMON DATA
SERVICE**

JOE GRIFFIN, SOLO CLOUD SOLUTIONS

Agenda

- **About Me**
- **Common Data Service (“CDS”) Background**
 - History
 - Dynamics 365: The awkward bedfellow?
 - Brief Overview of Built-in Reporting Options
- **Using Power BI with CDS**
 - Licensing Considerations
 - Power BI Online
 - Apps for Power BI
 - Data flows
 - Power BI Desktop
 - Common Data Service Connector
 - FetchXML
 - SQL via Data Export Service
 - Azure Data Lake
- **Closing Remarks**
- **Q&A**



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About Me

- Director @ SOLO Cloud Solutions, MS Gold Partner consultancy practice in the UK
- Hold various certifications (Translation: I like shiny badges! 🌟)
- Worked with Dynamics CRM/Dynamics 365 for around 5 years; previous background of SQL, C#, Office 365; lots of my daily work involves the Power Platform, including:
 - Power Apps
 - Power Automate
 - Power BI
 - Bespoke technical integrations involving these products.
- PRINCE2 PM/Agile Practitioner
- Certified Scrum Master (Scrum Alliance)
- CRMUG/D365UG NW Committee Member
- Contact Details:

🌐 <https://crmchap.co.uk>

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🐦 [joejgriffin](#)

🌐 [joejgriffin](#)

🐙 JJGriffin

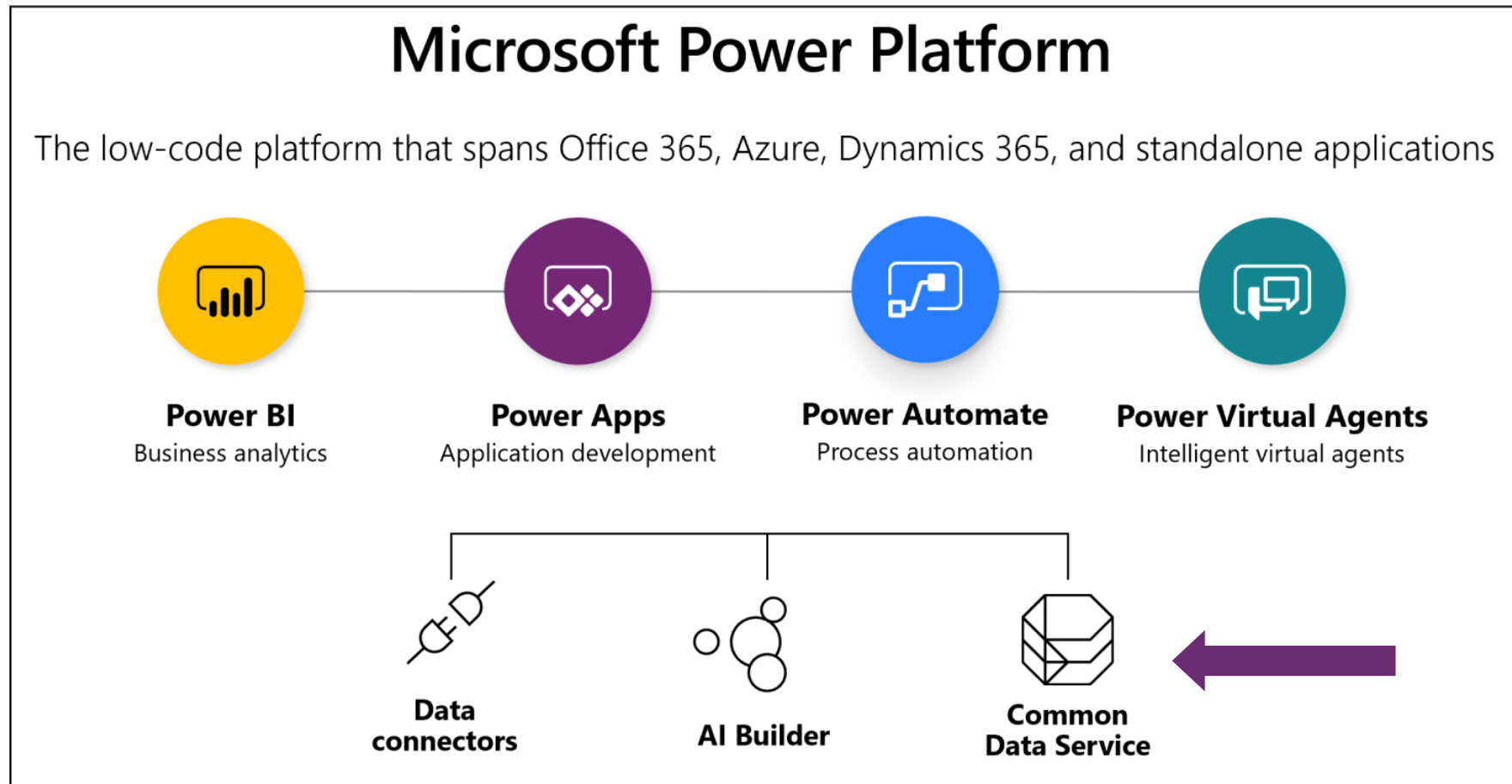


Common Data Service (CDS)

Overview

- First released in 2016, alongside Power Apps.
- Designed to be the central storage unit for your core business data, that can then be leveraged by other tools within the Power Platform.
- Cloud-only product.
- Feature highlight:
 - Allows you to model your business data via Entities (think tables), that can be related alongside each other
 - Supports custom, calculated and rollup fields, of various data types (text, date/time, currency etc.)
 - Business logic automation via tools such as Business Rules
 - Powerful, yet highly customisable, security access framework
- Best thought of as “SQL Server on steroids”
- Version 2 of the CDS saw a complete overhaul of the technical architecture of the solution, introducing new capabilities and features

CDS within the Power Platform

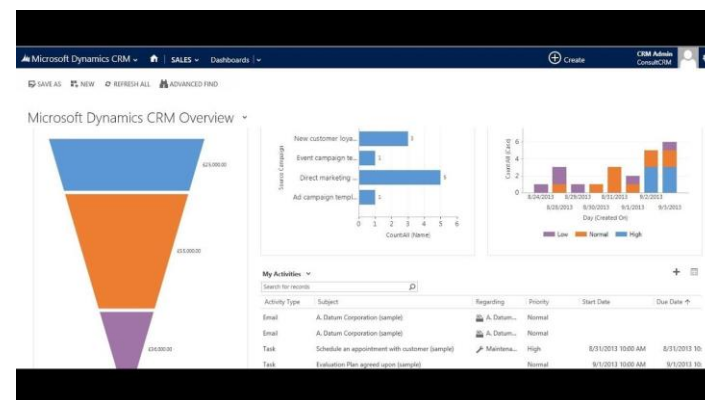


Dynamics 365: the awkward bedfellow?

- Originally, CDS was dis-associated from Dynamics 365, with capabilities to integrate both databases together, where required.
- Version 2 addressed this, by re-purposing the Dynamics 365 database as the “new” CDS; with the recognition that Version 1 was duplicating what was already available elsewhere.
- If you hear people talk about CDS and the Dynamics 365 database, they are the same thing
- Users of the V1 of CDS should have migrated across already to V2
- In retrospect, a VERY good decision.
- Understanding the history and traditional features available within Dynamics CRM/365 can be helpful when evaluating CDS reporting options.

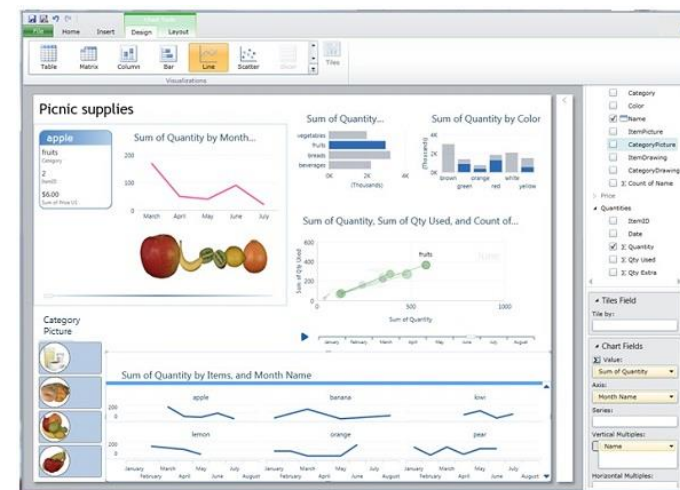


A long time ago...

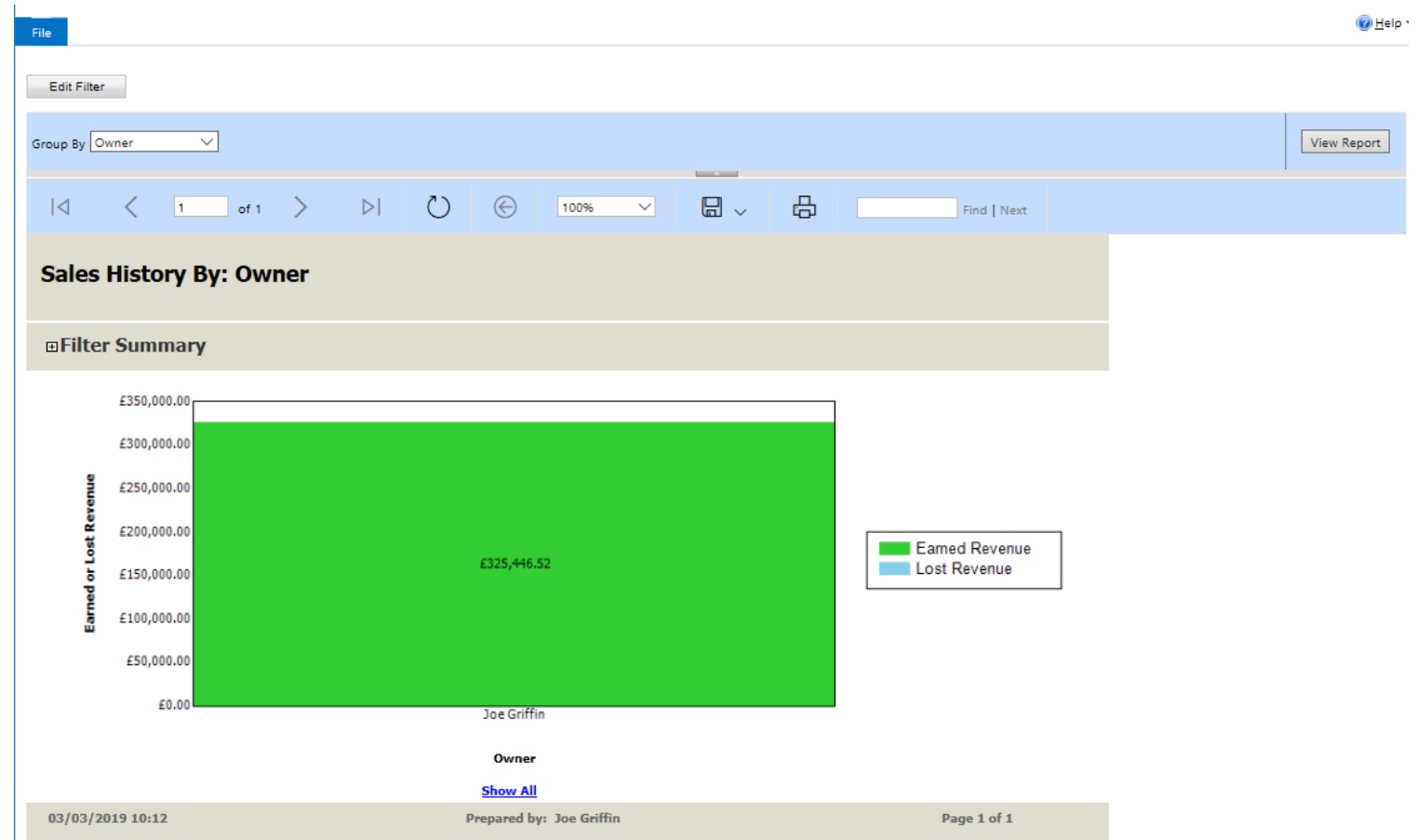
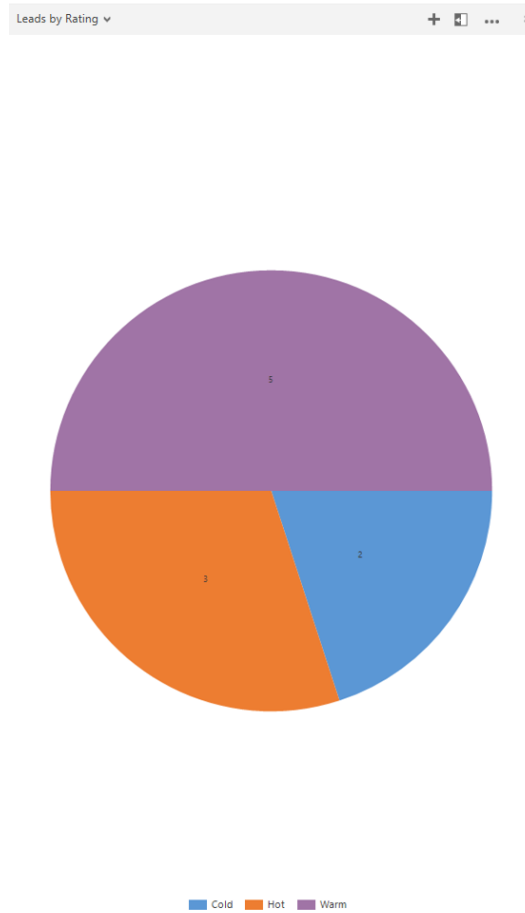


Dynamics CRM 2013

Project Crescent

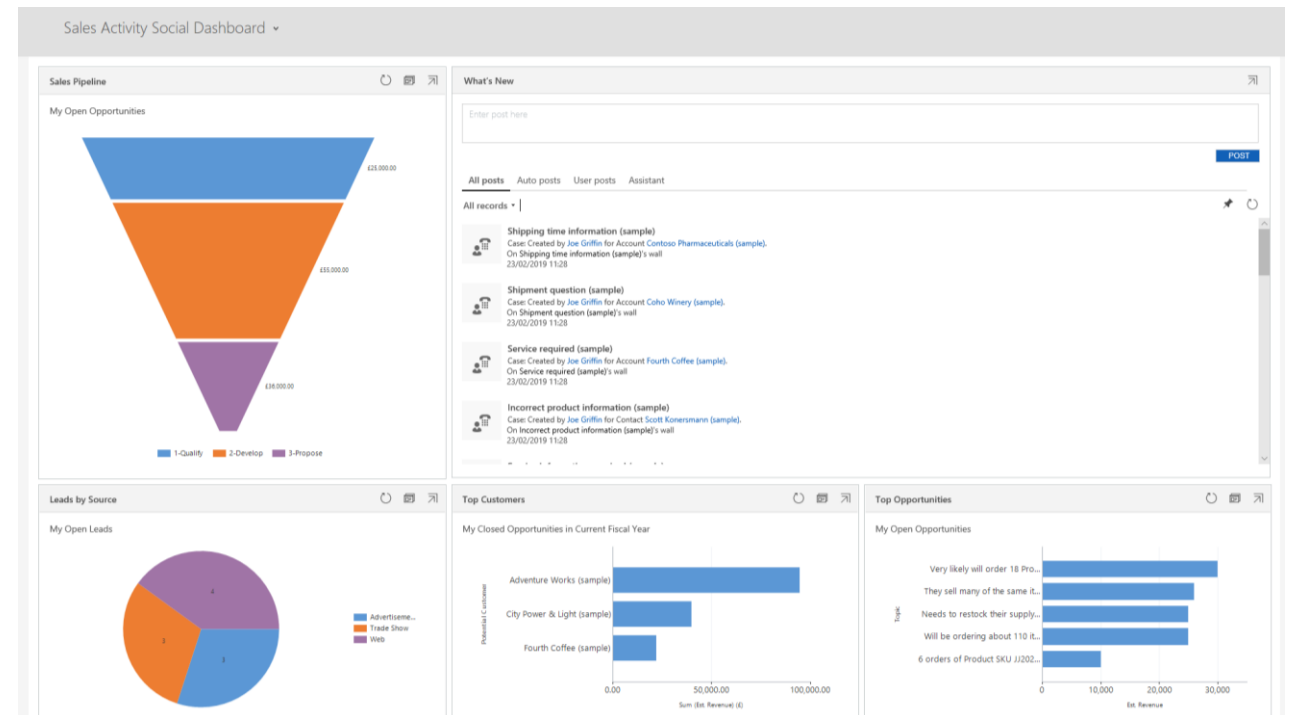


Dynamics CRM 2013 Reporting Options



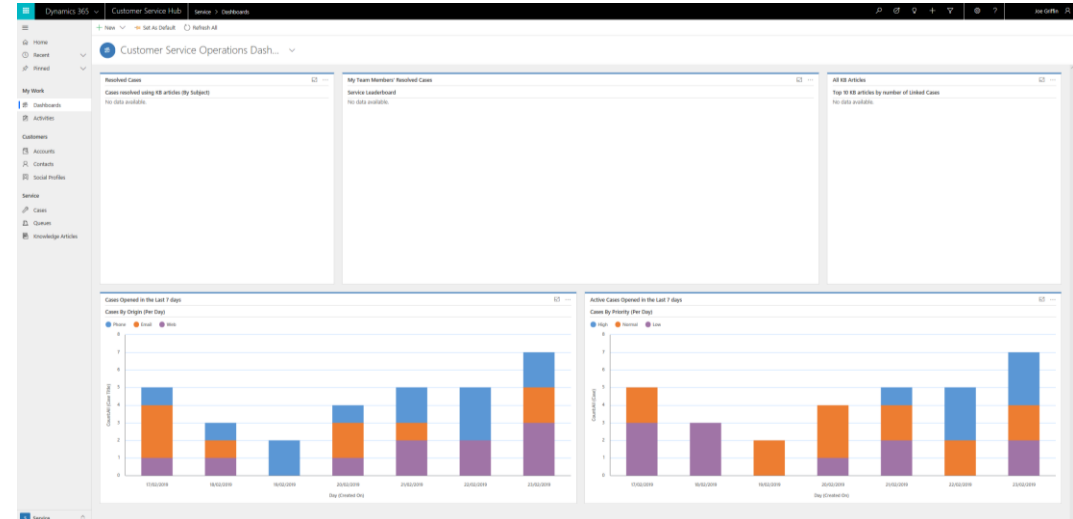
Dynamics CRM 2013 Reporting Options

My Active Contacts ▾				
<input type="checkbox"/> Full Name ↑	Email	Company Name	Business Phone	
Dave Chapelle	joe@domain.com			
Jim Glynn (sample)	someone_j@example....	Coho Winery (sample)	555-0109	
Joe Griffin	Joejgriffin@me.com			
Joe Joe	joe@domain.com			
Maria Campbell (sample)	someone_d@example....	Fabrikam, Inc. (sample)	555-0103	
Nancy Anderson (sample)	someone_c@example....	Adventure Works (sa...	555-0102	
Patrick Sands (sample)	someone_k@example....	Alpine Ski House (sam...	555-0110	
Paul Cannon (sample)	someone_h@example....	Alpine Ski House (sam...	555-0107	
Rene Valdes (sample)	someone_i@example....	A. Datum Corporation...	555-0108	
Robert Lyon (sample)	someone_g@example....	Contoso Pharmaceutic...	555-0106	
Scott Konersmann (sample)	someone_f@example....	City Power & Light (sa...	555-0105	
Sidney Higa (sample)	someone_e@example....	Blue Yonder Airlines (s...	555-0104	
Susan Burk (sample)	someone_l@example....	A. Datum Corporation...	555-0111	
Susanna Stubberod (sample)	someone_b@example....	Litware, Inc. (sample)	555-0101	
Test				
Test				
Thomas Andersen (sample)	someone_m@exampl...	Coho Winery (sample)	555-0112	
Yvonne McKay (sample)	someone_a@example....	Fourth Coffee (sample)	555-0100	



ANYONE using the application can create these

Fast Forward To Today



~~Dynamics CRM~~

Dynamics 365 / CDS



Reporting in Dynamics 365 / CDS

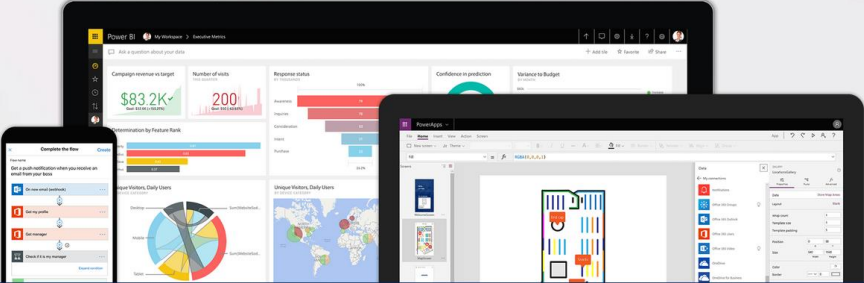


Which leaves an obvious question...**how does Power BI fit in?**

Introducing the Power Platform


Customise, extend, and build all the apps you need with the Microsoft Power Platform

Unlock the potential of Dynamics 365 and Office 365 faster than you ever thought possible.




Empower everyone to innovate with one connected app platform

Creating apps for your business just got easier. A powerful, point-and-click approach to app building makes it easy for anyone familiar with Microsoft Office to customise and extend Dynamics 365 and Office 365 and build a new category of apps.




PowerApps

Build apps in hours—not months—that easily connect to data, use Excel-like expressions to add logic, and run on the web, iOS, and Android devices



Power BI

Make sense of your data through interactive, real-time dashboards and unlock the insights needed to drive your business forward.



Microsoft Flow

Include powerful workflow automation directly in your apps with a no-code approach that connects to hundreds of popular apps and services.

- Dynamics 365 is now, in effect, a Power App.
- Dynamics 365 customisation experience gradually migrating across to Power Apps and CDS.
- Microsoft are clearly signposting Power BI as their preferred platform for reporting within the wider stack

So where does this leave us?

- Dynamics 365 has numerous existing reporting options available, which can cover most business requirements...
- ...however, most of these have a “legacy” feel and appear to be out of step with the Power Platform.
- SSRS overcomplicates the technical architecture of CRM within the Power Platform
- Familiarity with Power BI now becomes mandatory when building out an effective business applications solution, especially if there is a requirement to integrate with external systems.
 - The flipside of this is that Power BI Developers must also start becoming familiar with Power Apps, the Common Data Service and Flow.

A Minefield of Options

- Difficulties can arise when determining the best way to generate reporting information from CDS and how to align these to business requirements:
 - Does data need to be refreshed instantly or on schedule?
 - Are you querying just CDS data or do you need to bring in other application data?
 - What's the "state" of your data?
 - What are technical capabilities within your team/organisation?
 - How big is your wallet? (Most important question 😁)
- Answering these questions will help you determine how a Power BI solution can fit in alongside CDS



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Getting Started with Power BI and CDS

Licensing Notes

- Power BI is NOT an included SKU as part of the current Dynamics 365 / Power Apps licensing offers (i.e. the license types that include CDS storage).
- User must be assigned a Free or Professional License to access and deploy reports to the online service OR part of a Workspace assigned to a Premium capacity.
- Keep in mind the limitations around the Free SKU:
 - No internal/external sharing
 - No scheduling
 - Apps cannot be installed
 - Dataset size/refresh limitations



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Power BI Online

Power BI Apps

OVERVIEW

Pre-built Dashboard/Reports from Microsoft that expose CDS information from the Dynamics 365 Sales and Service Modules. Available on AppSource

- + Quick and easy to deploy.
- + Exposes broad variety of “out of the box” functionality.
- + No Power BI development experience required.
- Power BI Professional License Required
- No ability to modify or expose bespoke CDS customization's
- US-centric from a reporting standpoint

VERDICT

Useful for early-stage demonstrations involving Dynamics 365 or planning sessions to identify bespoke reporting requirements; for smaller organization's, potentially “good to go” as a solution.




Microsoft Dynamics 365 Process Analyzer
By Microsoft
Power BI apps

See the performance and throughput of your business processes by volume and

★★★★★ (11)

Free

[Get it now](#) 





Sales Analytics for Dynamics 365
By Microsoft
Power BI apps

Explore your past sales performance, activities, sales pipeline and more

★★★★★ (91)

Free

[Get it now](#) 




Customer Service Analytics for Dynamics 365
By Microsoft
Power BI apps

Get insights about your customer service performance, activities and active cases

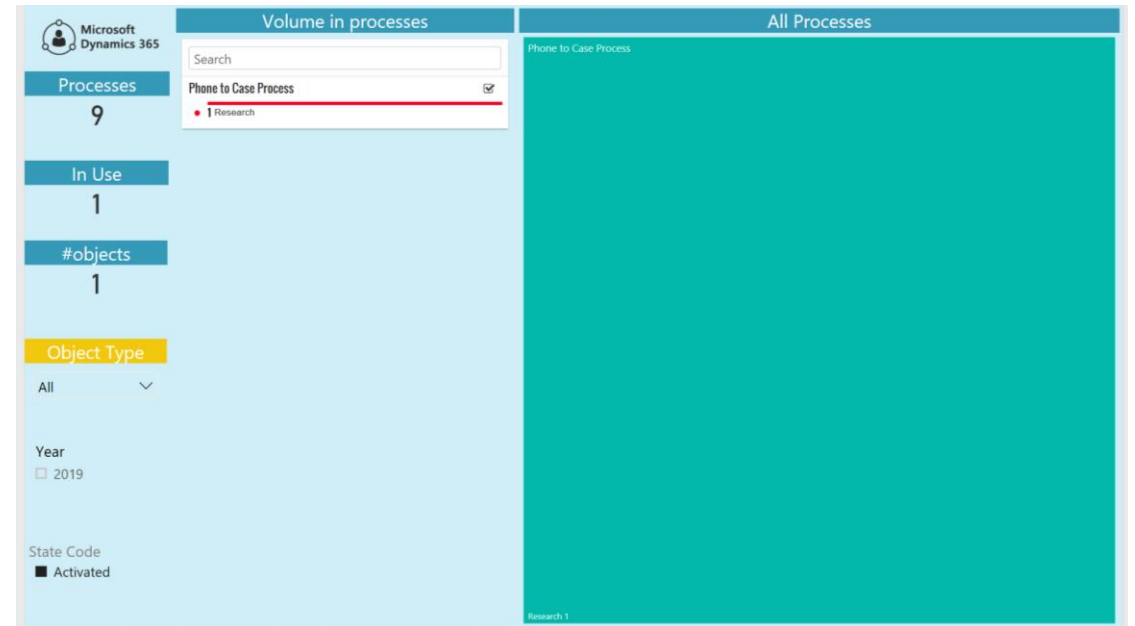
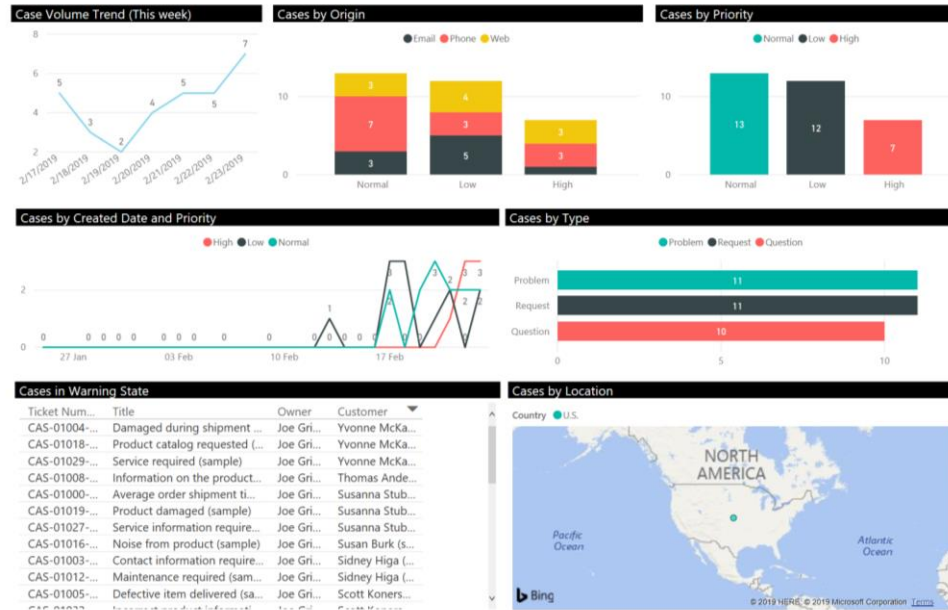
★★★★★ (39)

Free

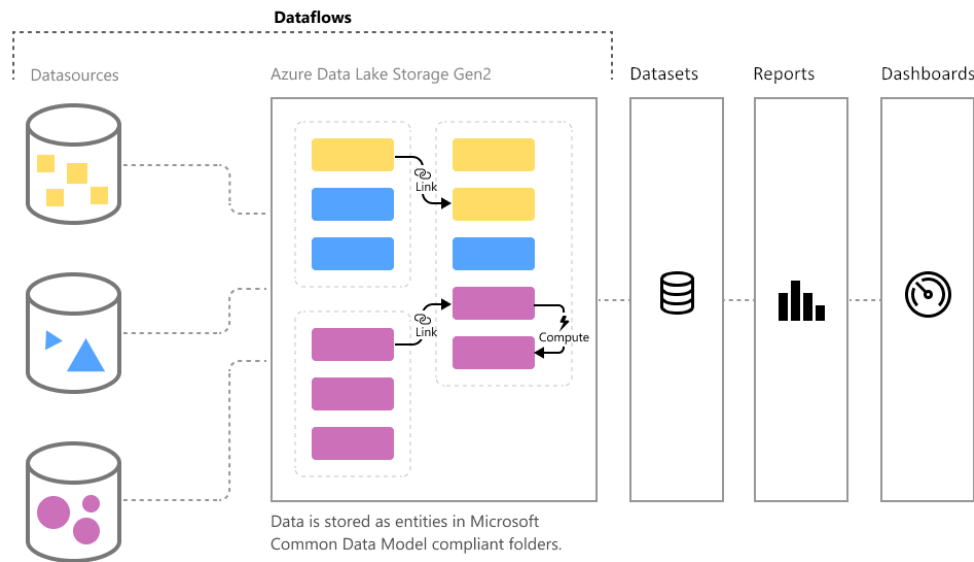
[Get it now](#) 

- Owner
- ☐ Delegated Admin
 - ☐ Joe Griffin
 - ☐ Support User

- Title
- ☐ (Blank)
 - ☐ Default Subject
 - ☐ Delivery
 - ☐ Information
 - ☐ Maintenance
 - ☐ Products
 - ☐ Query
 - ☐ Service



Data Flows



OVERVIEW

Using the Common Data Service for Apps connector, entities can be brought into a dataflow to centralise, combine and manipulate data for further consumption

- + Uses a fully supported connector, allowing you to quickly bring in data from the application.
- + Exposes all system/custom entities that the connecting user has access to.
- + Allows you to bring all connections to CDS within a single location.
- Requires considerable work in Power Query to create consolidated/focused queries.
- Some familiarity with CDS data structure is required.
- Requires Power BI Professional / Premium Capacity

VERDICT

Lots of potential here to help with consolidating datasets across a Power BI Online tenant, but considerable Power Query knowledge required to get the CDS data into the best format for end-user consumption

Choose data source

All categories File Database Azure Online services Other

Search

Data sources

Access File	Excel File	JSON File	Text/CSV File	XML File	Amazon Redshift Database	IBM Db2 database Database
MySQL database Database	Oracle database Database	PostgreSQL database Database	SQL Server database Database	Sybase database Database	Teradata database Database	Vertica Database
Azure Blobs Azure	Azure Data Explorer Azure	Azure SQL Data Warehouse Azure	Azure SQL database Azure	Azure Tables Azure	Common Data Service for Apps Online services	Microsoft Exchange Online Online services
Salesforce objects Online services	Salesforce reports Online services	SharePoint Online list Online services	Smartsheet Online services	Active Directory Other	OData Other	SharePoint list Other
Web API Other	Web page Other	Blank table Other	Blank query Other			



Connect to data source

Common Data Service for Apps
Online services

Connection settings

Server Url *

Connection credentials

On-premises data gateway

Authentication kind

You are currently signed in.

[Sign in as different user](#)



Common Data Service for Apps [2]

Entities [152]

- ☒ Account
- ☐ AccountLeads
- ☐ ActivityMimeAttachment
- ☐ ActivityParty
- ☒ ActivityPointer
- ☐ adminsettingsentity
- ☐ Annotation
- ☐ Appointment
- ☐ Attachment
- ☐ BookableResource
- ☐ BookableResourceBooking
- ☐ BookableResourceBookingHeader
- ☐ BookableResourceCategory
- ☐ BookableResourceCategoryAssn
- ☐ BookableResourceCharacteristic
- ☐ BookableResourceGroup
- ☐ BookingStatus



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Demo



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Power BI Desktop

Common Data Service for Apps Connector

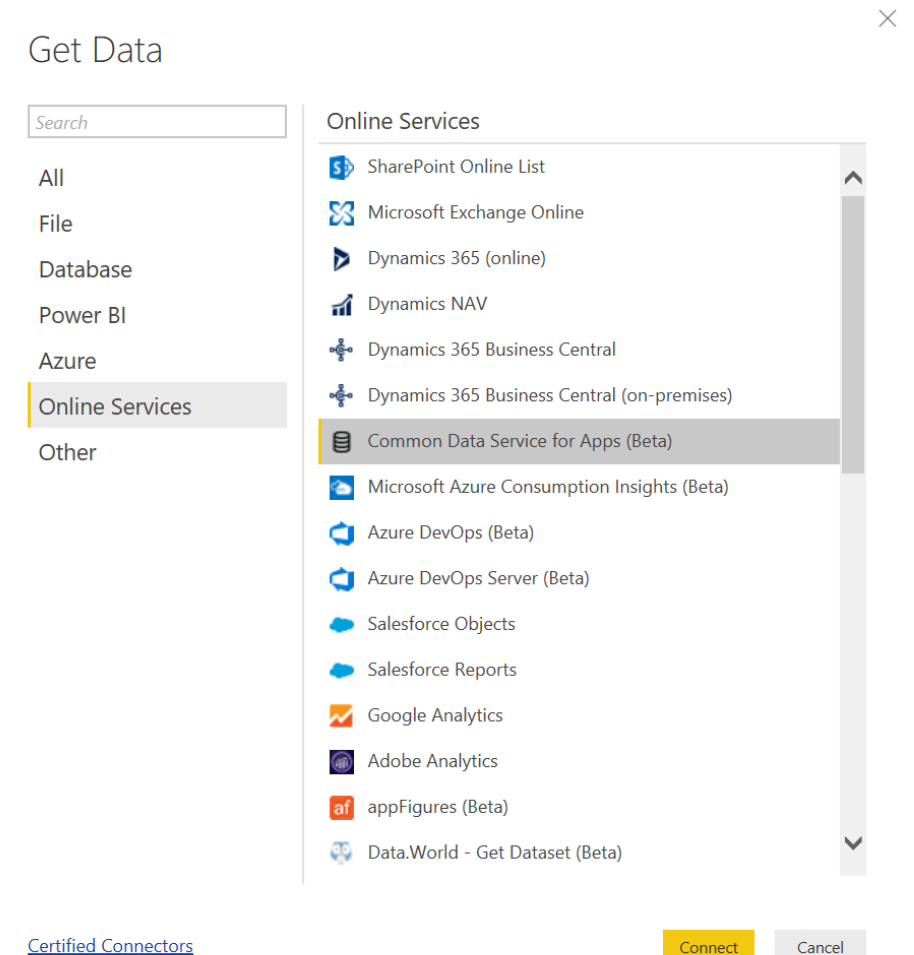
OVERVIEW

New connector for the Common Data Service for Apps Web API (i.e. the Dynamics 365 OData endpoint).

- + Quick and easy to deploy.
- + Options to re-order columns alphabetically and include formatted values automatically.
- + Power BI Professional not required.
- + Exposes all CDS data and custom functions/actions.
- Does not return labels for record ID's and lookups,

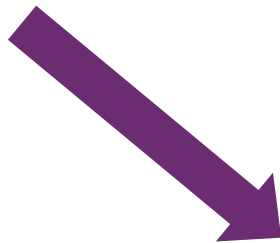
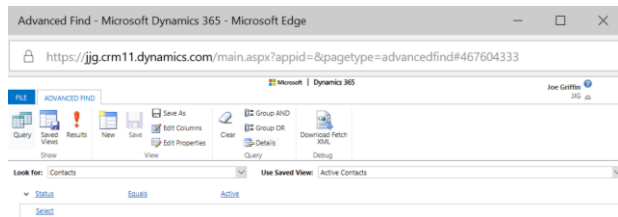
VERDICT

Represents the natural choice for report developers to quickly bring in CDS data into Power BI Desktop.



[Certified Connectors](#)

FetchXML Queries



@odata.etag	fullname	emailaddress1	contactid
W/"998263"	Dave Chapelle	joe@domain.com	9d93561a-451f-e911-a96d-002248014cda
W/"1831644"	Jim Glynn (sample)	someone_j@example.com	1a04afdc-5d37-e911-a97c-0022480749f0
W/"1243387"	Joe Griffin	Joejgriffin@me.com	683c4b48-3723-e911-a96d-002248014cda
W/"998257"	Joe Joe	joe@domain.com	ec40c3f0-441f-e911-a96d-002248014cda
W/"1831602"	Maria Campbell (sample)	someone_d@example.com	0e04afdc-5d37-e911-a97c-0022480749f0
W/"1831595"	Nancy Anderson (sample)	someone_c@example.com	0c04afdc-5d37-e911-a97c-0022480749f0
W/"1831653"	Patrick Sands (sample)	someone_k@example.com	1c04afdc-5d37-e911-a97c-0022480749f0
W/"1831630"	Paul Cannon (sample)	someone_h@example.com	1604afdc-5d37-e911-a97c-0022480749f0
W/"1831637"	Rene Valdes (sample)	someone_i@example.com	1804afdc-5d37-e911-a97c-0022480749f0
W/"1831623"	Robert Lyon (sample)	someone_g@example.com	1404afdc-5d37-e911-a97c-0022480749f0
W/"1831616"	Scott Konersmann (sample)	someone_f@example.com	1204afdc-5d37-e911-a97c-0022480749f0
W/"1831609"	Sidney Higa (sample)	someone_e@example.com	1004afdc-5d37-e911-a97c-0022480749f0
W/"1831660"	Susan Burk (sample)	someone_l@example.com	1e04afdc-5d37-e911-a97c-0022480749f0
W/"1831588"	Susan Stubberod (sample)	someone_b@example.com	0a04afdc-5d37-e911-a97c-0022480749f0
W/"998129"	Test		b10977d7-7b1e-e911-a970-0022480130e2
W/"998063"	Test		2525972a-751e-e911-a971-0022480140fe
W/"1831667"	Thomas Andersen (sample)	someone_m@example.com	2004afdc-5d37-e911-a97c-0022480749f0
W/"1831581"	Yvonne McKay (sample)	someone_a@example.com	0804afdc-5d37-e911-a97c-0022480749f0

OVERVIEW

By using the OData endpoint, it is possible to execute FetchXML queries to return data back into Power BI.

- + Full FetchXML functionality can be used (filtering, joins etc.)
- + Can re-use existing view/Report queries from Dynamics CRM / 365
- + Allows you to specify whether option set, user name etc. labels are returned or not.
- Requires some knowledge of M to implement
- Only useful if you have someone who is familiar with compiling FetchXML queries.
- Can cause performance issues when scaled.

VERDICT

Complex way to bring in data but allows for those who are familiar with building FetchXML queries to pass these onto BI Developers, without them needing to become overtly familiar with the application.

As Always, the Community Delivers...



Power Query (M) Builder

Version: 1.2018.1014.5

Author: Mohamed Rasheed (ITLec) and Ulrik "CRM Chart Guy" Carlsson (eLogic LLC)

Create Power Query (M) scripts for Dynamics 365 and Power BI

- Lets you generate M Code queries based off Entity views or FetchXML Queries; full support for paging.
- Can also generate OData queries
- Generates OptionSet label values too

In short, an AMAZING tool!

<https://www.xrmttoolbox.com/plugins/PowerQueryBuilder/>



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Demo

Using SQL via the Data Export Service

OVERVIEW

The underlying database technology for CDS is SQL Server, which can be exposed entirely as part of the Data Export Service. This allows you to continually sync data to a Azure hosted SQL database.

- + Allows you to leverage full capability of T-SQL when querying CDS data
- + Data Export Service delta-syncs provide near real-time view of data.
- + Greater level of control over database capacity, performance etc.
- Requires an infrastructure/billing commitment within Azure
- Some limitations on the entities that can be synchronized.
- Familiarity with how CDS handles underlying data types is still required.

VERDICT

Recommended solution for situations that require more complex and scalable reporting needs or where significant existing T-SQL technical knowledge exists within your team.

Data Export Service Overview

AppSource | Apps for Dynamics 365

< Apps



Microsoft Dynamics 365 - Data Export Service

Microsoft Dynamics 365

Overview [Reviews](#)

[GET IT NOW](#)

★★★★★

Products
[Dynamics 365 for Sales](#)
[Dynamics 365 for Customer ...](#)
[Dynamics 365 for Field Service](#)
[Dynamics 365 for Project Ser...](#)

Publisher
Microsoft Dynamics 365

Acquire Using
Work or school account

Version
8.0

Updated
11/2/2016

Categories
[Marketing](#)
[Sales](#)

Support

This service exports schema and data from Dynamics 365 (online) to customer owned Azure SQL database

Data Export Service is an add-on service for Dynamics 365 (online) that adds the ability to replicate sales, service and marketing data to a SQL store in a customer-owned Azure subscription. It simplifies the technical and administrative complexity of deploying and managing a data export solution - managing schema and data. You will be up and running in a matter of few minutes to export data to Azure

- Export profiles configure entities and relationships to synchronize data with the destination database. Destination schema is automatically created and updated based on entity and relationship definition
- Metadata changes such as addition or modification of fields are automatically synchronized
- Full initial data synchronization
- Push based delta synchronization as changes occur in the Dynamics 365. Delta changes are pushed in a matter of few minutes
- Built-in recovery for addressing transient failures
- Delete log to track deletes along with their timestamps
- Download failure records with failure reason for error encountered during synchronization
- Monitoring and diagnostics on sync progress
- Scalable, reliable and secure cloud service operated by Microsoft
- APIs for programmatic management of export profiles

Available at: North America South America Europe Middle East Africa Japan Asia/Pacific Australia

- “Free” add-on solution for CDS / Dynamics 365
- Allows you continually sync data to a Azure SQL database or SQL Server on a Windows VM.
- One-way sync
- Required setup:
 - Provision Azure environment:
 - SQL Database OR VM with SQL Server
 - Azure Key Vault
 - Install Data Export Managed Solution
 - Define Data Export Profile (i.e. list of entities to sync)
 - Begin sync:
 - Metadata
 - Initial data sync (can take a while!)
 - Continuous delta data sync.
- Effective replacement solution for SSIS, Kingswaysoft or Scribe Online solutions, where complex transformation options are not required during the sync process.

Dynamic365 Data Export Service

BY SCOTT-DUROW / DEC 09, 2016 / DYNAMICS365, SPARKLE XRM

SHARE

If you've moved to Dynamics CRM/365 Online then the likelihood is that you've come up against the limitation of not being able to query the SQL database directly to perform more complex reporting or for custom integrations. Many on premises deployments rely on querying the backend databases and in the past this has been a blocker to moving to the cloud – or at least it has meant a complex and costly integration to copy the data from Dynamics 365 to a on prem SQL database.

The introduction of the Data Export Service is a real game changer with the possibility to replicate your data from Dynamics CRM/365 online to an Azure SQL database in your own Azure Subscription. Once you have your data in a SQL Database you can then using PowerBI, integrate with other systems and create a data warehouse. I've found that the speed of the replication is impressive, being minutes/seconds and not hours.



There are a number of prerequisites to enabling this which you can read about in msdn:

<https://technet.microsoft.com/en-us/library/mt744592.aspx>

PAGELIST

Download License

Ribbon Workbench

TAGCLOUD

CRM 2011 Beta CRM 2011 Development
CRM 2011 Development 'Must Knows'
CRM 2013 Development CRM 2015 Development
CRM 2016 Development Document Management
Dynamics365 Javascript Licensing LINQ
'Must Knows' Plug-Ins PowerApps PowerPlatform
Pricing Ribbon SharePoint Silverlight
Sparkle XRM Unified Client Upgrade UR12
Version 9 Workflows

Tweets by @ScottDurow

Scott Durow Retweeted



David Reid
@davidsreid

If you were at or wish you were at

<https://develop1.net/public/post/2016/12/09/Dynamic365-Data-Export-Service>

Handling Option Set, Status & Status Reason Values

```
SELECT fullname, _jobtitle
FROM dbo.contact
ORDER BY fullname
```

100 %

Results Messages

	fullname	_jobtitle
1	Andrew	805070109
2	Ian	805070154
3	Jane	805070060
4	Jill	805070154
5	Kevin	805070142
6	Sandra	805070066

```
SELECT fullname, _jobtitle, GOSM.[LocalizedLabel]
FROM dbo.contact AS C
INNER JOIN dbo.GlobalOptionSetMetadata AS GOSM
ON C._jobtitle = GOSM.[Option]
AND ' _jobtitle' = GOSM.OptionSetName
WHERE LocalizedLabelLanguageCode = 1033
ORDER BY fullname
```

100 %

Results Messages

	fullname	_jobtitle	LocalizedLabel
1	Andrew	805070109	Managing Director - Commercial
2	Ian	805070154	Operations Manager
3	Jane	805070060	Events Manager
4	Jill	805070154	Operations Manager
5	Kevin	805070142	Managing Director
6	Sandra	805070066	General Manager



Handling Option Set, Status & Status Reason Values

```
CREATE FUNCTION [dbo].[fnGetGlobalOptionSetLabel]
(
    @GlobalOptionSetName NVARCHAR(64),
    @Option INT,
    @LanguageCode INT
)
RETURNS NVARCHAR(256)
AS
BEGIN
    DECLARE @Label NVARCHAR(256);
    DECLARE @RecordCount INT = (SELECT COUNT(*) FROM dbo.GlobalOptionSetMetadata WHERE OptionSetName = @GlobalOptionSetName AND [Option] = @Option AND LocalizedLabelLanguageCode = @LanguageCode);
    IF @RecordCount = 1
        SET @Label = (SELECT TOP 1 LocalizedLabel FROM dbo.GlobalOptionSetMetadata WHERE OptionSetName = @GlobalOptionSetName AND [Option] = @Option AND LocalizedLabelLanguageCode = @LanguageCode);
    ELSE
        SET @Label = CAST('An error has occurred. Could not obtain label for Global Option Set field ' + @GlobalOptionSetName AS INT);
    RETURN @Label;
END
GO
```



```
SELECT fullname, dbo.fnGetGlobalOptionSetLabel(' _jobtitle', _jobtitle, 1033) AS JobTitle
FROM dbo.contact
ORDER BY fullname
```

	fullname	JobTitle
1	Andrew	Managing Director - Commercial
2	Ian	Operations Manager
3	Jane	Events Manager
4	Jill	Operations Manager
5	Kevin	Managing Director
6	Sandra	General Manager



Couple More Things to Remember...

- Record lookups are stored as GUID values, including for **ownerid** values – be prepared to do plenty of joins in your queries!
- Data Export Service creates some additional tables, which may be of use:
 - **AttributeMetadata** - Stores an overview of each attribute synced across – useful for detecting changes and also as a reference for field data types.
 - **DeleteLog** – Records the ID and date for each record deleted.
 - **TargetMetadata** – Summary table of all the defined relationships included as part of the sync.
- P1 Premium is recommended SKU for Azure SQL, but S functions fine for smaller workloads; Azure Automation can be used to auto-scale your database.
- It's YOUR database, so feel free to bolt-on additional functionality to help suit your specific requirements, so long as it does not alter the base tables that sync data.



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Demo

Data Lake Export

OVERVIEW

For situations where the size and complexity of your CDS deployment makes it difficult to work with the data using SQL, Data Lake export meets these objectives, allowing you to incorporate CDS data as part of your “big data” processes, leverage as part of machine learning (ML) activities or even query via Power BI.

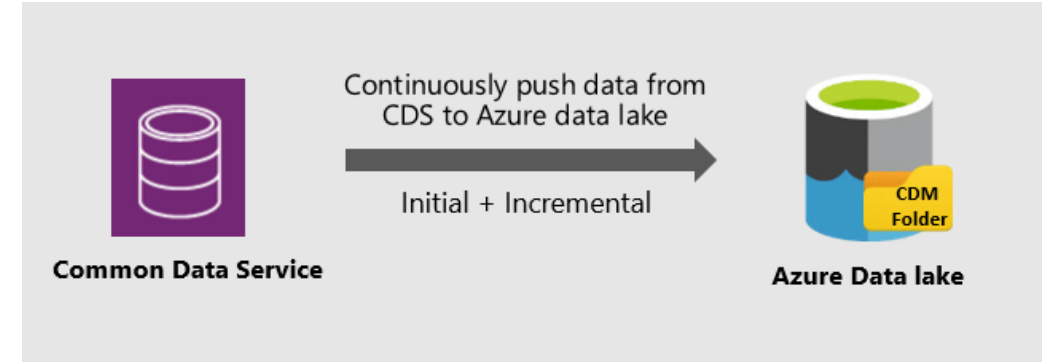
- + Potentially cheaper option versus SQL Server Data Export wizard
- + Provides near real-time export of data
- + Full CUD (Create, Update, Delete) operation support
- Requires an infrastructure/billing commitment within Azure
- Only supports entities enabled for change tracking
- Some Geographical/tenant restrictions – check your CRM region first!
- Requires significant work in Power BI to consume the data.

VERDICT

A true enterprise scale solution, only suitable where your CDS instance size is in the hundreds of GB's or if you have a specific requirement relating to ML/“big data” processing.

FURTHER READING

[Export entity data to Azure Data Lake Storage Gen2 – Microsoft Docs](#)



Setup Steps

Create storage account

✓ Validation passed

Basics

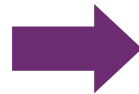
Networking

Advanced

Tags

Review + create

Basics	
Subscription	Visual Studio Professional
Resource group	jjpgcdspbitalk
Location	UK West
Storage account name	jjpgcdsdatalake
Deployment model	Resource manager
Account kind	StorageV2 (general purpose v2)
Replication	Read-access geo-redundant storage (RA-GRS)
Performance	Standard
Access tier (default)	Hot
Networking	
Connectivity method	Public endpoint (all networks)
Advanced	
Secure transfer required	Enabled
Blob soft delete	Disabled
Blob change feed	Disabled
Hierarchical namespace	Enabled
NFS v3	Disabled



New link to data lake

- Select Storage Account

jjpgcdsdatalake
- Add Entities

Select Storage Account

Select the storage account that you want link to the Common Data Service environment. The storage account must be in the same region as your environment.

Your environment is located in: **UK West**

Please attach a storage account in one of the following location(s): **UK West**

Subscription *

Visual Studio Professional

Resource group *

jjpg-cdspbitalk

Storage account *

jjpgcdsdatalake

As part of linking the Common Data Service environment to a data lake, you are granting the Export to data lake service additional roles to your storage account. By using the Export to data lake service, you agree that data may go outside of Power Apps' compliance boundary. For more information, see the Privacy Notice in the [technical documentation for the service](#).

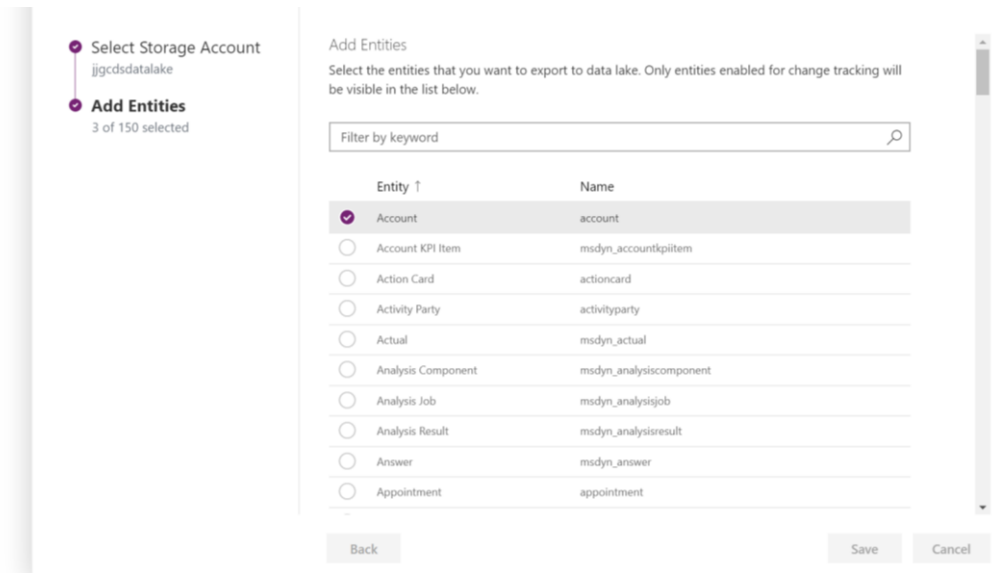
Back

Next

Cancel

Note: CRM11 regions map to UK West in Azure

Setup Steps



Select Storage Account
jgcdsdatalake

Add Entities
3 of 150 selected

Add Entities
Select the entities that you want to export to data lake. Only entities enabled for change tracking will be visible in the list below.

Filter by keyword




Entity ↑	Name
<input checked="" type="radio"/> Account	account
<input type="radio"/> Account KPI Item	msdyn_accountkpiitem
<input type="radio"/> Action Card	actioncard
<input type="radio"/> Activity Party	activityparty
<input type="radio"/> Actual	msdyn_actual
<input type="radio"/> Analysis Component	msdyn_analysiscomponent
<input type="radio"/> Analysis Job	msdyn_analysisjob
<input type="radio"/> Analysis Result	msdyn_analysisresult
<input type="radio"/> Answer	msdyn_answer
<input type="radio"/> Appointment	appointment

Back Save Cancel



Authentication method: Access key ([Switch to Azure AD User Account](#))


Location: [commondataservice-jjg-orgabe4af40](#) / account

Search blobs by prefix (case-sensitive)						
Name	Modified	Access tier	Blob type	Size	Lease state	
<input type="checkbox"/>  [..]						...
<input type="checkbox"/>  2019.csv	4/1/2020, 8:35:35 AM	Hot (Inferred)	Block blob	12.65 KiB	Available	...
<input type="checkbox"/>  2020.csv	4/1/2020, 8:35:35 AM	Hot (Inferred)	Block blob	1.85 KiB	Available	...

Don't Forget...


Name ⓘ Type ⓘ Role ⓘ Scope ⓘ Group by ⓘ

1 items (1 Users)

<input type="checkbox"/>	Name	Type	Role	Scope
Storage Blob Data Reader				
<input type="checkbox"/>	 Joe Griffin joe@griffin.gb.net	User	Storage Blob Data Reader ⓘ	This resource

Viewing Data Lake Content in Power BI

Content	Name	Extension	Date accessed	Date modified	Date created	Attributes	Folder Path
Binary	Model_1585726653.json	.json	null	01/04/2020 07:37:33	null	Record	https://jigcdsdatalake.dfs.core.windows.net/commond...
Binary	2019.csv	.csv	null	01/04/2020 07:37:32	null	Record	https://jigcdsdatalake.dfs.core.windows.net/commond...
Binary	2019.csv.blockidx	.blockidx	null	01/04/2020 07:35:35	null	Record	https://jigcdsdatalake.dfs.core.windows.net/commond...
Binary	2019.csv.lck	.lck	null	01/04/2020 07:35:35	null	Record	https://jigcdsdatalake.dfs.core.windows.net/commond...
Binary	2020.csv	.csv	null	01/04/2020 07:37:32	null	Record	https://jigcdsdatalake.dfs.core.windows.net/commond...
Binary	2020.csv.blockidx	.blockidx	null	01/04/2020 07:35:35	null	Record	https://jigcdsdatalake.dfs.core.windows.net/commond...
Binary	2020.csv.lck	.lck	null	01/04/2020 07:35:35	null	Record	https://jigcdsdatalake.dfs.core.windows.net/commond...
Binary	account-EntityMetadata.json	.json	null	01/04/2020 07:35:33	null	Record	https://jigcdsdatalake.dfs.core.windows.net/commond...
Binary	account-model.json	.json	null	01/04/2020 07:37:32	null	Record	https://jigcdsdatalake.dfs.core.windows.net/commond...
Binary	2019.csv	.csv	null	01/04/2020 07:37:32	null	Record	https://jigcdsdatalake.dfs.core.windows.net/commond...
Binary	2019.csv.blockidx	.blockidx	null	01/04/2020 07:36:09	null	Record	https://jigcdsdatalake.dfs.core.windows.net/commond...
Binary	2019.csv.lck	.lck	null	01/04/2020 07:36:07	null	Record	https://jigcdsdatalake.dfs.core.windows.net/commond...
Binary	contact-EntityMetadata.json	.json	null	01/04/2020 07:35:33	null	Record	https://jigcdsdatalake.dfs.core.windows.net/commond...
Binary	contact-model.json	.json	null	01/04/2020 07:37:32	null	Record	https://jigcdsdatalake.dfs.core.windows.net/commond...
Binary	empty.csv	.csv	null	01/04/2020 07:35:36	null	Record	https://jigcdsdatalake.dfs.core.windows.net/commond...
Binary	2019.csv	.csv	null	01/04/2020 07:37:32	null	Record	https://jigcdsdatalake.dfs.core.windows.net/commond...
Binary	2019.csv.blockidx	.blockidx	null	01/04/2020 07:35:38	null	Record	https://jigcdsdatalake.dfs.core.windows.net/commond...
Binary	2019.csv.lck	.lck	null	01/04/2020 07:35:38	null	Record	https://jigcdsdatalake.dfs.core.windows.net/commond...
Binary	lead-EntityMetadata.json	.json	null	01/04/2020 07:35:36	null	Record	https://jigcdsdatalake.dfs.core.windows.net/commond...
Binary	lead-model.json	.json	null	01/04/2020 07:37:33	null	Record	https://jigcdsdatalake.dfs.core.windows.net/commond...

 The data in the preview has been truncated due to size limits.



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Wrapping Up

So what's the best way to consume CDS data within Power BI?

- Getting your CDS data into SQL does make it a lot easier for traditional BI developers to consume data from the application...
- ...if they have some awareness of how the application stores option set values, lookup fields etc.
- Common Data Service connector should be your go-to destination when building out a report from scratch.
- For more advanced requirements, consider going down the SQL/data lake route.

Closing Thoughts

- Today, it's easier than ever before to use Power BI alongside CDS, thereby making Power BI your first-preference reporting tool.
- Having a good awareness of the underlying data types and how relationships operate in CDS will help you immensely.
- Review Power BI licensing **before** rolling your content out.
- Remember: In most cases, a solution that works for Dynamics CRM / Dynamics 365 will also work for CDS

Additional Resources

- [Power Apps Community Plan](#): Free personal environment, including CDS and Power Apps
- Microsoft Learn Learning Paths:
 - [Consume data with Power BI](#)
 - [Get started using Common Data Service](#)
 - [Create relationships, business rules, calculations and rollups in Common Data Service](#)
 - [Manage permissions and administration for Common Data Service](#)
- Blog Posts:
 - [Evaluating Power BI Desktop Connector Options for Dynamics 365 Customer Engagement](#)
 - [Exam 70-779 Revision Notes Series](#)



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Q&A

Please fill out the survey!



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EmPower Your Career Conference

April 3rd to 5th

Contact Details:

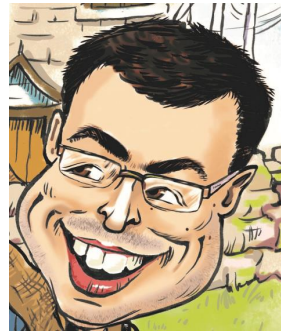
 <https://crmchap.co.uk>

 joe@griffin.gb.net

 [joejgriffin](#)

 [joejgriffin](#)

 [JJGriffin](#)



365
SATURDAY

Thank You for Attending