



Informatica® PowerExchange for Microsoft
Dynamics 365 for Sales

10.5.9

User Guide for PowerCenter

This software and documentation are provided only under a separate license agreement containing restrictions on use and disclosure. No part of this document may be reproduced or transmitted in any form, by any means (electronic, photocopying, recording or otherwise) without prior consent of Informatica LLC.

Informatica, the Informatica logo, PowerCenter, and PowerExchange are trademarks or registered trademarks of Informatica LLC in the United States and many jurisdictions throughout the world. A current list of Informatica trademarks is available on the web at <https://www.informatica.com/trademarks.html>. Other company and product names may be trade names or trademarks of their respective owners.

U.S. GOVERNMENT RIGHTS Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation is subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License.

Portions of this software and/or documentation are subject to copyright held by third parties. Required third party notices are included with the product.

The information in this documentation is subject to change without notice. If you find any problems in this documentation, report them to us at infa_documentation@informatica.com.

Informatica products are warranted according to the terms and conditions of the agreements under which they are provided. INFORMATICA PROVIDES THE INFORMATION IN THIS DOCUMENT "AS IS" WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING WITHOUT ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OR CONDITION OF NON-INFRINGEMENT.

Table of Contents

Preface	5
Informatica Resources.	5
Informatica Network.	5
Informatica Knowledge Base.	5
Informatica Documentation.	5
Informatica Product Availability Matrices.	6
Informatica Velocity.	6
Informatica Marketplace.	6
Informatica Global Customer Support.	6
 Chapter 1: Introduction to PowerExchange for Microsoft Dynamics 365 for Sales.....	 7
PowerExchange for Microsoft Dynamics 365 for Sales Overview.	7
Introduction to Microsoft Dynamics 365 for Sales.	8
 Chapter 2: PowerExchange for Microsoft Dynamics 365 for Sales Configuration.....	 9
PowerExchange for Microsoft Dynamics 365 for Sales Configuration Overview.	9
Prerequisites.	9
Registering the Plugin.	10
Registering the Plug-in from the Administrator Tool.	10
Registering the Plug-in from the Command Line Program.	11
Configuring HTTP Proxy Options.	11
Configuring HTTP Proxy Options for the PowerCenter Client.	11
Configuring HTTP Proxy Options for the PowerCenter Integration Service.	11
Using a Web Application for Client Certificate Grant Authentication.	12
 Chapter 3: Microsoft Dynamics 365 for Sales Sources and Targets.....	 15
Microsoft Dynamics 365 for Sales Sources and Targets Overview.	15
Importing a Microsoft Dynamics 365 for Sales Source or Target Definition.	16
Specifying Import Filters.	19
Importing Target Objects with Long Names.	19
 Chapter 4: Microsoft Dynamics 365 for Sales Mappings.....	 20
Microsoft Dynamics 365 for Sales Mappings Overview.	20
Source Filter.	20
Source Join.	22
Microsoft Dynamics 365 for Sales Mapping Example.	24

Chapter 5: Microsoft Dynamics 365 for Sales Sessions.....	27
Microsoft Dynamics 365 for Sales Sessions Overview.	27
Microsoft Dynamics 365 for Sales Connection Properties.	27
Configuring a Microsoft Dynamics 365 for Sales Connection	29
Configure Microsoft Dynamics 365 for Sales Source Session Properties.	29
Filter Override.	30
Configure Microsoft Dynamics 365 for Sales Target Session Properties.	31
Parameterizable Session Properties.	33
Lookups.	33
Pipeline Lookups.	33
Unconnected Lookups.	33
Example Scenario of a Pipeline Lookup Transformation in a Mapping.	33
Partitioning.	34
Applying Filter Override Conditions for Partitions.	35
Rules and Guidelines for Microsoft Dynamics 365 for Sales Sessions.	37
Rules and Guidelines for FetchXML Query and Record Name Aliases.	38
Rules and Guidelines for Write to Collection Values.	39
 Appendix A: Data Type Reference.....	 40
Data Type Reference Overview.	40
Microsoft Dynamics 365 for Sales and Transformation Data Types.	41
Finding the LogicalCollectionName.	44
 Index.....	 45

Preface

Use the *Informatica® PowerExchange® for Microsoft Dynamics 365 for Sales User Guide for PowerCenter®* to learn how to read from and write to Microsoft Dynamics 365 for Sales by using PowerCenter Client. Learn to create a Microsoft Dynamics 365 for Sales connection, develop mappings, and run sessions in an Informatica domain.

Informatica Resources

Informatica provides you with a range of product resources through the Informatica Network and other online portals. Use the resources to get the most from your Informatica products and solutions and to learn from other Informatica users and subject matter experts.

Informatica Network

The Informatica Network is the gateway to many resources, including the Informatica Knowledge Base and Informatica Global Customer Support. To enter the Informatica Network, visit <https://network.informatica.com>.

As an Informatica Network member, you have the following options:

- Search the Knowledge Base for product resources.
- View product availability information.
- Create and review your support cases.
- Find your local Informatica User Group Network and collaborate with your peers.

Informatica Knowledge Base

Use the Informatica Knowledge Base to find product resources such as how-to articles, best practices, video tutorials, and answers to frequently asked questions.

To search the Knowledge Base, visit <https://search.informatica.com>. If you have questions, comments, or ideas about the Knowledge Base, contact the Informatica Knowledge Base team at KB_Feedback@informatica.com.

Informatica Documentation

Use the Informatica Documentation Portal to explore an extensive library of documentation for current and recent product releases. To explore the Documentation Portal, visit <https://docs.informatica.com>.

If you have questions, comments, or ideas about the product documentation, contact the Informatica Documentation team at infa_documentation@informatica.com.

Informatica Product Availability Matrices

Product Availability Matrices (PAMs) indicate the versions of the operating systems, databases, and types of data sources and targets that a product release supports. You can browse the Informatica PAMs at <https://network.informatica.com/community/informatica-network/product-availability-matrices>.

Informatica Velocity

Informatica Velocity is a collection of tips and best practices developed by Informatica Professional Services and based on real-world experiences from hundreds of data management projects. Informatica Velocity represents the collective knowledge of Informatica consultants who work with organizations around the world to plan, develop, deploy, and maintain successful data management solutions.

You can find Informatica Velocity resources at <http://velocity.informatica.com>. If you have questions, comments, or ideas about Informatica Velocity, contact Informatica Professional Services at ips@informatica.com.

Informatica Marketplace

The Informatica Marketplace is a forum where you can find solutions that extend and enhance your Informatica implementations. Leverage any of the hundreds of solutions from Informatica developers and partners on the Marketplace to improve your productivity and speed up time to implementation on your projects. You can find the Informatica Marketplace at <https://marketplace.informatica.com>.

Informatica Global Customer Support

You can contact a Global Support Center by telephone or through the Informatica Network.

To find your local Informatica Global Customer Support telephone number, visit the Informatica website at the following link:

<https://www.informatica.com/services-and-training/customer-success-services/contact-us.html>.

To find online support resources on the Informatica Network, visit <https://network.informatica.com> and select the eSupport option.

CHAPTER 1

Introduction to PowerExchange for Microsoft Dynamics 365 for Sales

This chapter includes the following topics:

- [PowerExchange for Microsoft Dynamics 365 for Sales Overview, 7](#)
- [Introduction to Microsoft Dynamics 365 for Sales, 8](#)

PowerExchange for Microsoft Dynamics 365 for Sales Overview

You can use PowerExchange for Microsoft Dynamics 365 for Sales to extract data from and load data to Microsoft Dynamics 365 for Sales.

You can import Microsoft Dynamics 365 for Sales business entities as sources and targets to create mappings and run a session to extract data from or load data to an entity. You can view, create, update, and delete data in Microsoft Dynamics 365 for Sales entities.

PowerExchange for Microsoft Dynamics 365 for Sales uses the Microsoft Dynamics 365 for Sales security model to enforce data access controls. Microsoft Dynamics 365 for Sales supports multiple organizations. You can access data depending on the Microsoft Dynamics 365 for Sales organization that is associated with the user login that you use when you connect to Microsoft Dynamics 365 for Sales.

You can use PowerExchange for Microsoft Dynamics 365 for Sales to read from diverse data sources.

The PowerCenter Integration Service uses the REST APIs to read data from and write data to the Microsoft Dynamics 365 for Sales service.

You can use Power Exchange for Microsoft Dynamics 365 for Sales for online deployment with client certificate and client secret grant authentication, and on-premises deployment with password grant authentication.

Introduction to Microsoft Dynamics 365 for Sales

Microsoft Dynamics product line consists of enterprise resource planning (ERP) and customer relationship management (CRM) software applications.

Microsoft Dynamics 365 for Sales is an enterprise software that you can use to manage marketing, sales, and customer service. Microsoft Dynamics 365 for Sales provides an account management system that tracks activities and revenue.

In a Microsoft Dynamics 365 for Sales system, the top-most entity is called an organization. An organization can have multiple business units. Business units can have child business units. The Microsoft Dynamics 365 for Sales users are assigned to the different business units.

Microsoft Dynamics 365 for Sales supports a rich business entity model. The entity model has the following features:

- An entity is a container for data, similar to a table in a relational database.
- Each entity contains a set of attributes. An attribute is a container for a piece of data in an entity. Microsoft Dynamics 365 for Sales supports a wide variety of attribute types.
- When you install Microsoft Dynamics 365 for Sales a set of entities are available by default. In addition, you can create custom entities to contain business data.
- A relationship defines an association between two entities. You can specify one-to-many, many-to-one, many-to-many, and self-referential relationships.
- The owner of an entity can be an organization, a business unit or a user.

CHAPTER 2

PowerExchange for Microsoft Dynamics 365 for Sales Configuration

This chapter includes the following topics:

- [PowerExchange for Microsoft Dynamics 365 for Sales Configuration Overview, 9](#)
- [Prerequisites, 9](#)
- [Registering the Plugin, 10](#)
- [Configuring HTTP Proxy Options, 11](#)
- [Using a Web Application for Client Certificate Grant Authentication, 12](#)

PowerExchange for Microsoft Dynamics 365 for Sales Configuration Overview

PowerExchange for Microsoft Dynamics 365 for Sales installs with PowerCenter. After you install or upgrade Informatica Services, you must register the PowerExchange for Microsoft Dynamics 365 for Sales plug-in with the PowerCenter repository.

When you want to use PowerExchange for Microsoft Dynamics 365 for Sales, perform the following steps:

1. Complete the prerequisites.
2. Register the plugin.
3. Configure HTTP Proxy Options.
4. Use a Web Application for Client Certificate Grant Authentication.

Prerequisites

Before you use PowerExchange for Microsoft Dynamics 365 for Sales, perform the following tasks:

- Install or upgrade PowerCenter.

- Verify that you have read and write permissions on the following directories on each machine that runs the PowerCenter Integration Service and PowerCenter Repository Service:
 - <Informatica installation directory>\server\connectors\cci\plugins
 - <Informatica installation directory>\server\bin\Plugin
 - <Informatica installation directory>\connectors\thirdparty
- Verify that you have read and write permissions on the following directories on each machine where you installed the PowerCenter Client:
 - <Informatica installation directory>\clients\PowerCenterClient
 - <Informatica installation directory>\clients\PowerCenterClient\bin\Help\<language>

For more information about product requirements and supported platforms, see the Product Availability Matrix on Informatica Network:

<https://network.informatica.com/community/informatica-network/product-availability-matrices>.

Registering the Plugin

After you complete the installation, register the plug-in with the repository. If you are upgrading from a previous version, update the plug-in registration when you register the plug-in.

To register the plug-in, the repository must be running in exclusive mode. Use the Administrator tool or the pmrep RegisterPlugin command line program to register the plug-in. If you do not have the correct privileges to register the plug-in, contact the user who manages the PowerCenter Repository Service.

The plug-in file is an .xml file that defines the functionality of the adapter. When you install the server component, the installer copies the plug-in file to the following directory:

```
<Informatica installation directory>/server/bin/plugin
```

The name of the plug-in file for PowerExchange for Microsoft Dynamics 365 for Sales is msdcrm0DataPlugin.xml.

Registering the Plug-in from the Administrator Tool

Register a repository plug-in to add its functionality to the repository.

1. Run the PowerCenter Repository Service in exclusive mode.
2. In the **Navigators**, select the PowerCenter Repository Service to which you want to add the plug-in.
3. In the **Contents** panel, click the **Plug-ins** view.
4. In the **Actions** menu of the **Domain** tab, select **Register Plug-in**.
5. On the **Register Plugin** page, click the **Browse** button to locate the plug-in file.
6. Enter your user name, password, and security domain.

The **Security Domain** field appears when the Informatica domain contains an LDAP security domain.

7. Click **OK**.

The PowerCenter Repository Service registers the plug-in with the repository. The results of the registration operation appear in the activity log.

8. Run the PowerCenter Repository Service in normal mode.

Registering the Plug-in from the Command Line Program

You can use the `pmrep RegisterPlugin` command to register the plug-in from the command line program.

1. Run the PowerCenter Repository Service in exclusive mode.
2. Run the `pmrep Connect` command to connect to the Repository Service using a user account with Administrator Repository privilege.

The `RegisterPlugin` command uses the following syntax:

```
pmrep connect -r <repository name> -d <domain_name> -n <domain user name> -x  
<domain_password>
```

3. Find `<adaptername>.xml` in the following directory:
`<Informatica installation directory>\server\bin\Plugin`
4. Run the `pmrep RegisterPlugin` command to update the repository.

The `RegisterPlugin` command uses the following syntax:

```
pmrep registerplugin -i <Informatica installation directory>\server\bin\Plugin  
\<adaptername>.xml -e
```

Configuring HTTP Proxy Options

If your organization uses a proxy server to access the internet, you can configure the HTTP proxy server authentication settings for the PowerCenter Client and the PowerCenter Integration Service to read data from or write data to Microsoft Dynamics 365 for Sales.

Configuring HTTP Proxy Options for the PowerCenter Client

You can configure the proxy server authentication settings in the `ccijvmoptions.ini` file for the PowerCenter Client.

1. Ensure that you enable the proxy server settings from your web browser.
2. Access the `ccijvmoptions.ini` file from the following location: `<PowerCenter Installation Directory>\clients\PowerCenterClient\client\bin`
3. Add the following properties to the `ccijvmoptions.ini` file:

```
-Dhttp.useProxy=true  
-Dhttps.proxyHost=<Host name of the HTTP proxy server>  
-Dhttps.proxyPort=<Port number of the HTTP proxy server>
```
4. Restart the PowerCenter Client.

Configuring HTTP Proxy Options for the PowerCenter Integration Service

You can configure the proxy server authentication settings for the PowerCenter Integration Service from the Administrator Console.

1. Ensure that you enable the proxy server settings from your web browser.
2. In the Administrator Console, navigate to the PowerCenter Integration Service for which you want to set the proxy server settings and then add the following JVM options in the custom properties section:

```
JVMOption1=-Dhttp.useProxy=true
```

```
JVMOption2=-Dhttps.proxyHost=<Host name of the HTTP proxy server>
JVMOption3=-Dhttps.proxyPort=<Port number of the HTTP proxy server>
```

3. Restart the PowerCenter Integration Service.

Using a Web Application for Client Certificate Grant Authentication

You must have a valid certificate to use the client certificate grant authentication type.

1. Run the following command to create a public-private key pair:

```
keytool -genkey -alias <keypair_name1> -keyalg <key_algorithm> -validity <number_days> -
keystore <path and file name of the generated certificate> -storetype <store_type> -
keypass <key_password> -storepass <store_password>
```

For example, `keytool -genkey -alias keyalias -keyalg RSA -validity 1825 -keystore "C:\Cdrive\PC\MSDCRM_WebAPI\MSDCRM_WebAPI\certificate\iicsdummy.com\federated.jks" -storetype JKS -keypass keypassword -storepass changeit`

2. Run the following commands to import the root CA certificate(s) followed by the user's signed certificate to the keystore:

a. `keytool -import -trustcacerts -alias <keypair_name2> -file <CA_certificate_name> -keystore <path and file name of the generated certificate>`

For example, `keytool -import -trustcacerts -alias root -file gd_bundle-g2-g1.crt -keystore "C:\Cdrive\PC\MSDCRM_WebAPI\MSDCRM_WebAPI\certificate\iicsdummy.com\federated.jks"`

b. `keytool -import -trustcacerts -alias <keypair_name1> -file <user's_signed_certificate_name> -keystore <path and file name of the generated certificate>`

For example, `keytool -import -trustcacerts -alias keyalias -file b2024001944cdb12.crt -keystore "C:\Cdrive\PC\MSDCRM_WebAPI\MSDCRM_WebAPI\certificate\iicsdummy.com\federated.jks"`

Note: The above steps might vary depending on the types of files you receive from the CA. You might also receive a single file with all the certificates for which you only need to perform step b.

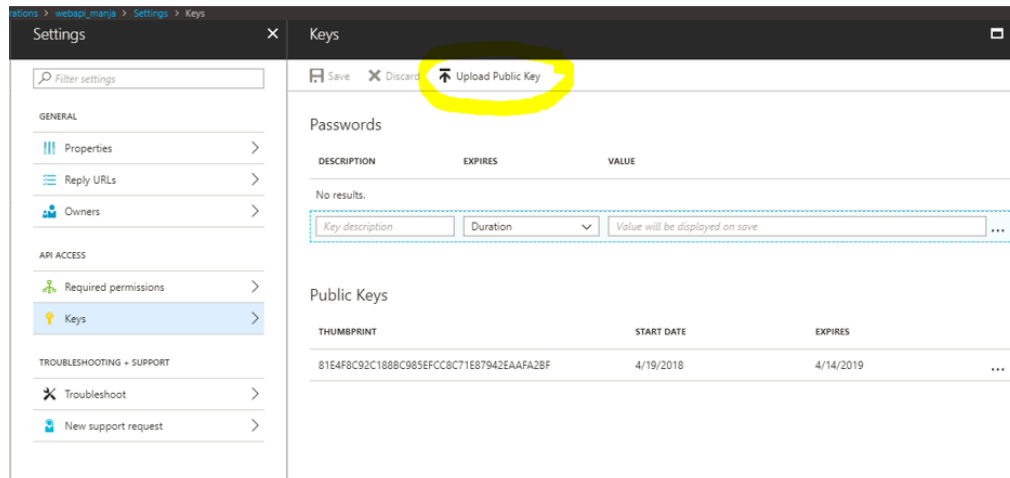
Do not perform these steps for self-signed certificates.

3. Run the following command to export the certificate from the keystore:

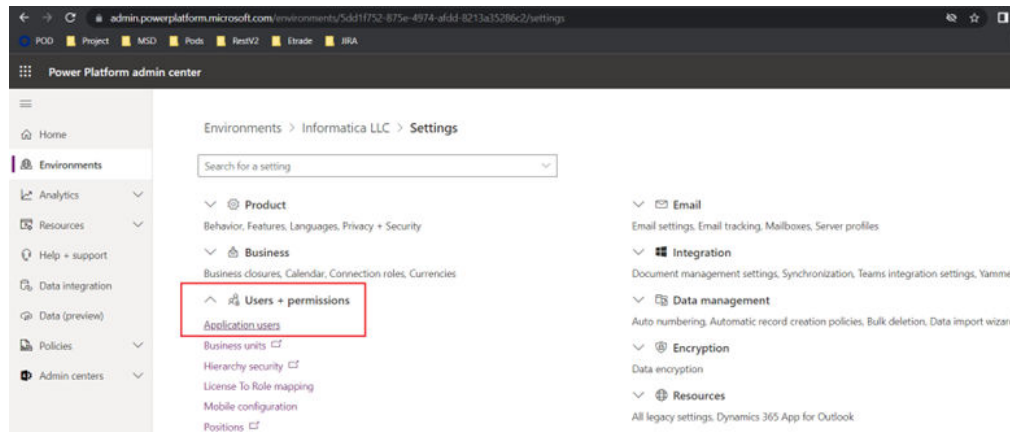
```
keytool -export -alias <keypair_name1> -file <certificate_name> -keystore <path and file
name of the generated certificate>
```

For example, `keytool -export -alias keyalias -file keyalias.crt -keystore "C:\Cdrive\PC\MSDCRM_WebAPI\MSDCRM_WebAPI\certificate\iicsdummy.com\federated.jks"`

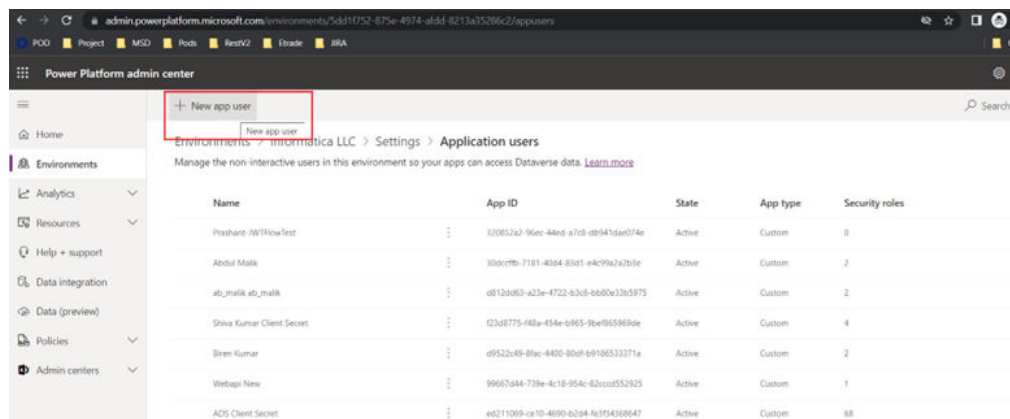
4. Upload the certificate or public key to a new Web application.



5. Log in to <https://admin.powerplatform.microsoft.com/> to create a new application user for the registered application.
6. Navigate to **Environments** and select the required environment.
7. In the Settings option for the environment, click **Users+permissions**.
8. Select the **Applications users** option.

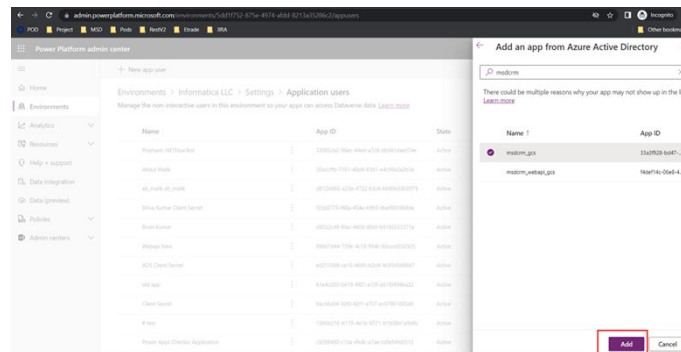


9. Click **New app user**.

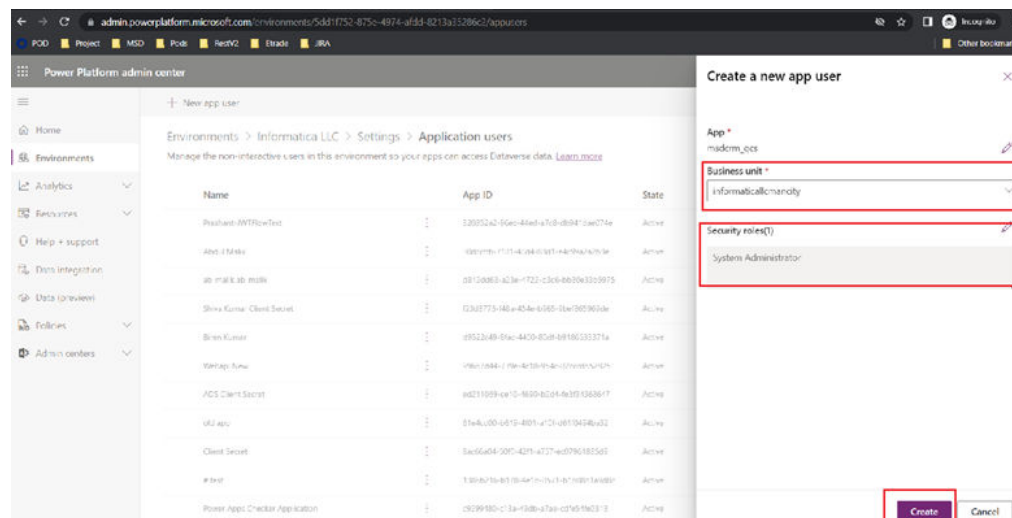


A tab opens on the right requesting for App and User details.

10. Select the registered application from the list in the Azure portal and click **Add**



11. Create a new application user, select the **Business unit** and add **Security roles**.



12. Click **Create**
13. Enter the application ID, keystore file, keystore password, key alias, and key password when you create a connection in Informatica Cloud.

CHAPTER 3

Microsoft Dynamics 365 for Sales Sources and Targets

This chapter includes the following topics:

- [Microsoft Dynamics 365 for Sales Sources and Targets Overview, 15](#)
- [Importing a Microsoft Dynamics 365 for Sales Source or Target Definition, 16](#)

Microsoft Dynamics 365 for Sales Sources and Targets Overview

Use the Designer to import Microsoft Dynamics 365 for Sales entities into the PowerCenter repository and create source or target definitions.

Microsoft Dynamics 365 for Sales entities represent Microsoft Dynamics 365 for Sales metadata. You can import the metadata from any entity available in your Microsoft Dynamics 365 for Sales organization. When you import from Microsoft Dynamics 365 for Sales, the Designer displays the entities available in the organization in a hierarchical order. The relationship between the entities can be one-to-one, one-to-many, many-to-many, many-to-one, or self-referential. Design the mappings according to the entity relationships in the sources and targets to maintain the integrity of data.

The Designer imports the following properties of the attributes in an entity:

- Name
- Type
- Precision
- Scale
- Access Type
- Not Null

The Designer displays all the entities in Microsoft Dynamics 365 for Sales. Some entities may not be readable or writable. You can edit the source or target definitions after you import the entities.

You cannot import the logical attributes.

Importing a Microsoft Dynamics 365 for Sales Source or Target Definition

1. Start PowerCenter Designer and connect to a PowerCenter repository configured with a Microsoft Dynamics 365 for Sales instance.
2. Open a source or target folder.
3. Select **Source Analyzer** or **Target Designer**.
 - In the Source Analyzer, click **Sources > Create PowerExchange for Microsoft Dynamics 365 for Sales Source**.
 - In the Target Designer, click **Targets > Create PowerExchange for Microsoft Dynamics 365 for Sales Target**.

The **Microsoft Dynamics 365 for Sales Connection** dialog box appears.
4. Configure the following connection parameters:

Parameter	Description
Authentication Type	The authentication method that the connector must use to log in to the Microsoft Dynamics 365 for Sales online or on-premises. Select one of the following authentication types: <ul style="list-style-type: none">- OAuth 2.0 Password Grant. Requires you to specify the web API URL, username, password, and application ID. You additionally need the security token service URL to access Microsoft Dynamics 365 for Sales on-premises. Applies to Microsoft Dynamics 365 for Sales on-premises.- OAuth 2.0 Client Certificate Grant. Requires you to specify the web API URL, application ID, tenant ID, keystore file, keystore password, key alias, and key password. Applies to Microsoft Dynamics 365 for Sales online.- OAuth 2.0 Client Secret Grant. Requires you to specify the application ID and client secret. Applies to Microsoft Dynamics 365 for Sales online.
Web API url	The URL of the Microsoft Dynamics 365 for Sales endpoint.
Username	The user name to connect to the Microsoft Dynamics 365 for Sales account.
Password	The password to connect to the Microsoft Dynamics 365 for Sales account.
Application ID	The Azure application ID for Microsoft Dynamics 365 for Sales.
Tenant ID	The directory ID for Azure Active Directory.
Keystore File	The location and the file name of the key store. Not applicable when you use the Hosted Agent.
Keystore Password	The password for the keystore file required for secure communication.
Key Alias	The alias name for the individual key.
Key Password	The password for the individual keys in the keystore file required for secure communication. Not applicable when you use the Hosted Agent.

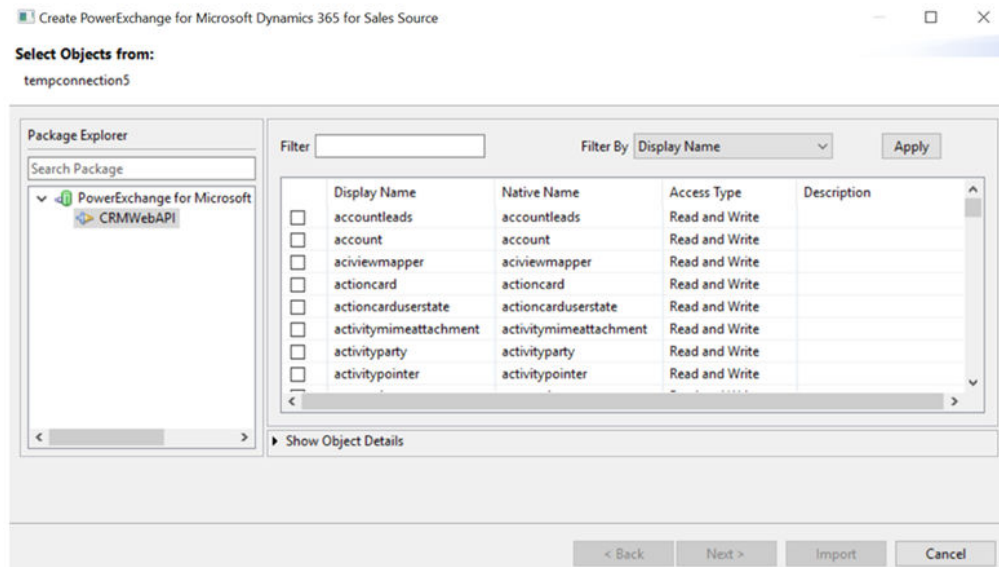
Parameter	Description
Retry Error Codes	The comma-separated http error codes for which the retries are made.
Retry Count	The number of retries to get the response from an endpoint based on the retry interval. Default is 5.
Retry Interval	The time in seconds to wait before Microsoft Dynamics 365 for Sales Connector retries for a response. Default is 60.
Client Secret	The client secret key to connect to Microsoft Dynamics 365 for Sales account.
Server Type	The Microsoft Dynamics 365 for Sales server that you want to access. You can select the server type from the following list: <ul style="list-style-type: none"> - Microsoft Dynamics Online. Select this option to connect to Microsoft Dynamics 365 for Sales deployed online. - Microsoft Dynamics On-premise. Select this option to connect to Microsoft Dynamics 365 for Sales deployed on-premises.
Security Token Service URL	The Microsoft Dynamics 365 for Sales security token service URL. For example, <code>https://sts1.<company>.com/adfs/oauth2/token</code> . Applicable when you use OAuth 2.0 Password Grant to access Microsoft Dynamics 365 for Sales on-premises.

- Click **Test** to test the connection.
- Click **Finish** to add the connection.
- Click **Next**.

The **Select Objects from** tab appears.

- Select the database and schema in **Package Explorer**.

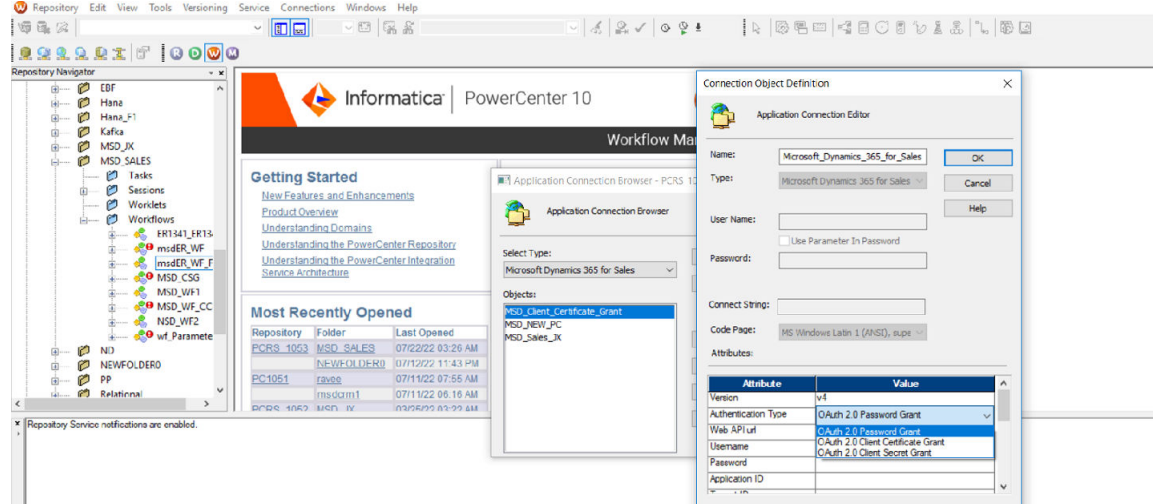
A list of table appears as shown in the following image:



- Select the table that you want to import, and then click **Import**. You can import multiple tables from a Microsoft Dynamics 365 for Sales dataset. To view the table metadata, select the table, and double-click the table name.

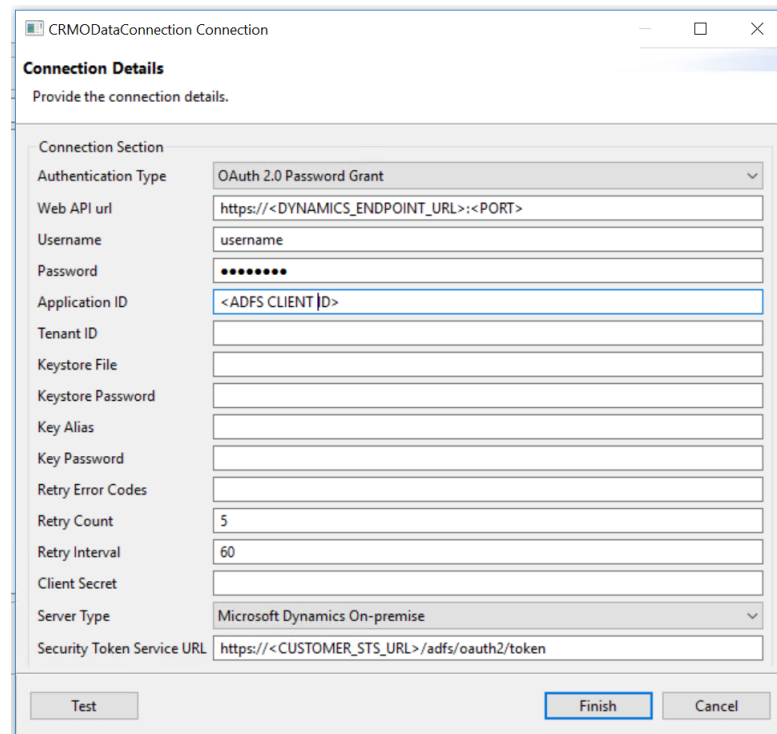
10. Select the object from the Application connection browser popup and then select the attribute in the application connection editor popup.

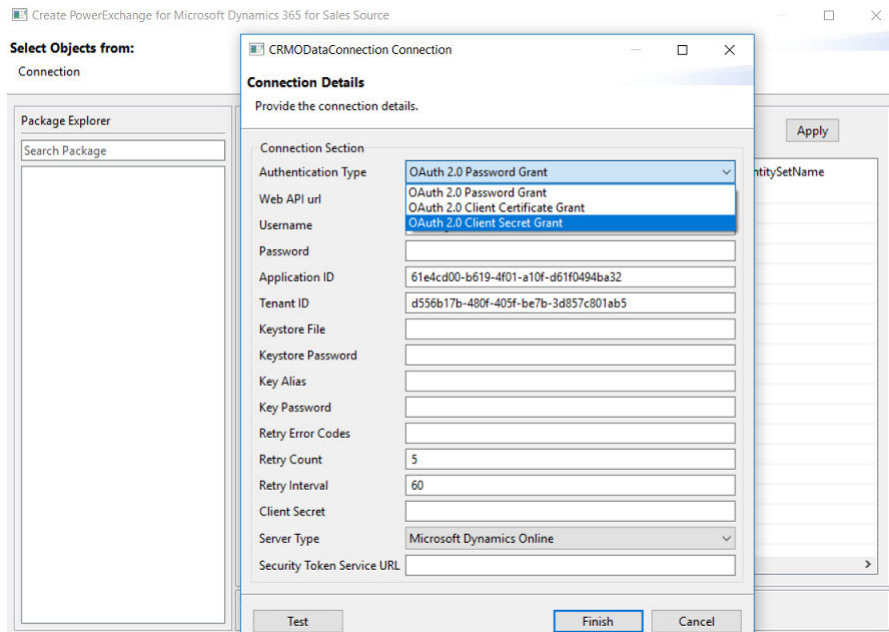
The following image shows the workflow manager:



11. Select the authentication type from the connection details page.

The following windows shows the connection details for on-premise and online servers.





12. Enter the required credentials and click **Finish**.

Specifying Import Filters

You can provide filter conditions when you import Microsoft Dynamics 365 for Sales source or target definition to filter the required entities.

When you import Microsoft Dynamics 365 for Sales source definitions or target definitions, you can view entities that match the condition.

You can filter entities by name. Use the following guidelines when you enter a filter condition:

- Use a comma (,) to enter more than one filter criterion.
- Use an underscore (_) or period (.) as wildcard character for a single character. Use an asterisk (*) or percent sign (%) as wildcard character for multiple characters.

Importing Target Objects with Long Names

If you want to import a target object where the table name exceeds 80 characters, you must set the JVM property in the `ccijvmoptions.ini` file for the PowerCenter client.

Perform the following tasks before you import the target object:

1. Open the `ccijvmoptions.ini` file from the following directory:
`< PowerCenter Installation Directory > \clients\PowerCenterClient\client\bin\`
2. Add the following JVM property `INFA_MSDCRM_WEBAPI_IGNORE_CVP` in the file and set its value to `True`:
`-DINFA_MSDCRM_WEBAPI_IGNORE_CVP=True`

CHAPTER 4

Microsoft Dynamics 365 for Sales Mappings

This chapter includes the following topics:

- [Microsoft Dynamics 365 for Sales Mappings Overview, 20](#)
- [Microsoft Dynamics 365 for Sales Mapping Example, 24](#)

Microsoft Dynamics 365 for Sales Mappings Overview

After you import a Microsoft Dynamics 365 for Sales source or target definition into the PowerCenter repository, you can create a mapping to extract data from a Microsoft Dynamics 365 for Sales source or load data to a Microsoft Dynamics 365 for Sales target.

You can extract data from one or more Microsoft Dynamics 365 for Sales sources, and load data to one or more Microsoft Dynamics 365 for Sales targets. You can join multiple Microsoft Dynamics 365 for Sales entities when you add relationships.

You can enter a filter condition to reduce the number of source rows the PowerCenter Integration Service returns from Microsoft Dynamics 365 for Sales sources. You can enter a single filter condition or a series of conditions.

Source Filter

You can enter a filter condition to reduce the number of source rows the PowerCenter Integration Service returns from Microsoft Dynamics 365 for Sales sources. You can enter a single filter condition or a series of conditions.

Use the source filter in the **Application Source Qualifier** to retrieve rows from an entity that meet a condition.

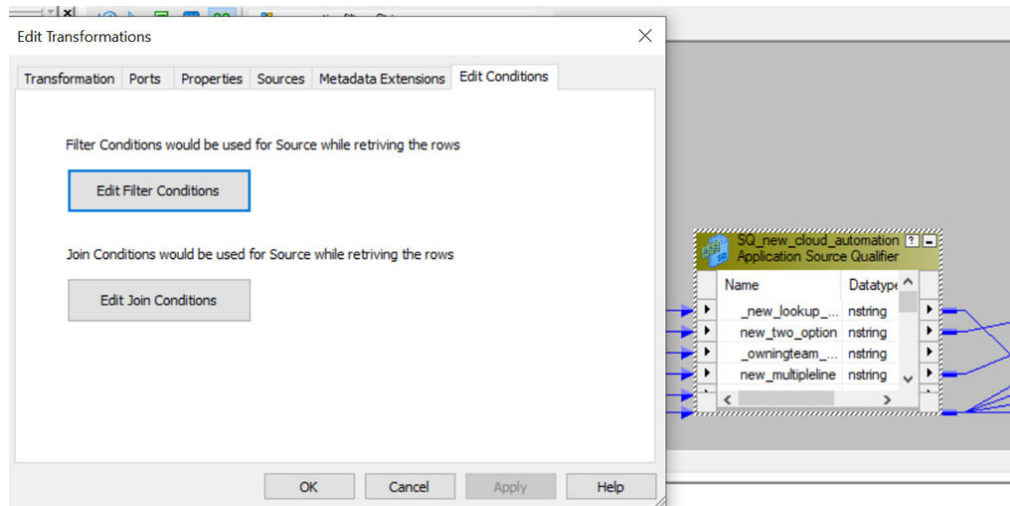
You can provide a source filter to improve the performance when you read from Microsoft Dynamics 365 for Sales.

Configuring a Source Filter

Configure a source filter in the Application Source Qualifier.

1. In the **Mapping Designer**, double-click the Application Source Qualifier.

The **Edit Transformations** dialog box appears as shown in the following image:



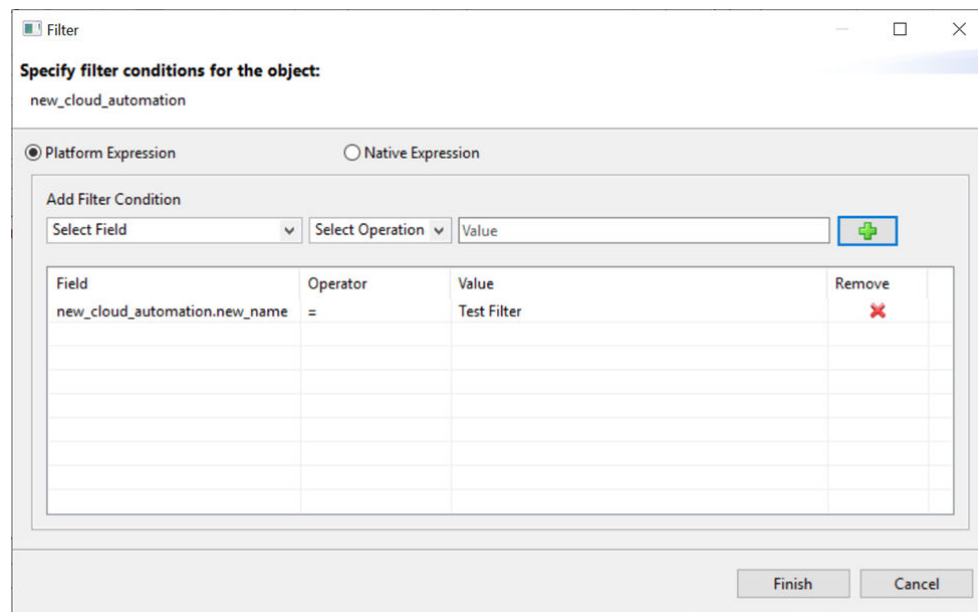
2. Click the **Edit Conditions** tab.
3. Click **Edit Filter Conditions**.

The **Add Filter Condition** dialog box appears.

4. Select **Platform Expression** or **Native Expression**.

- If you configure a platform expression, select the filter field and operator that you want to specify in the condition, enter a value for the condition, and click **Add Condition**.

The following image shows a platform filter expression configured for a Microsoft Dynamics 365 for Sales source:

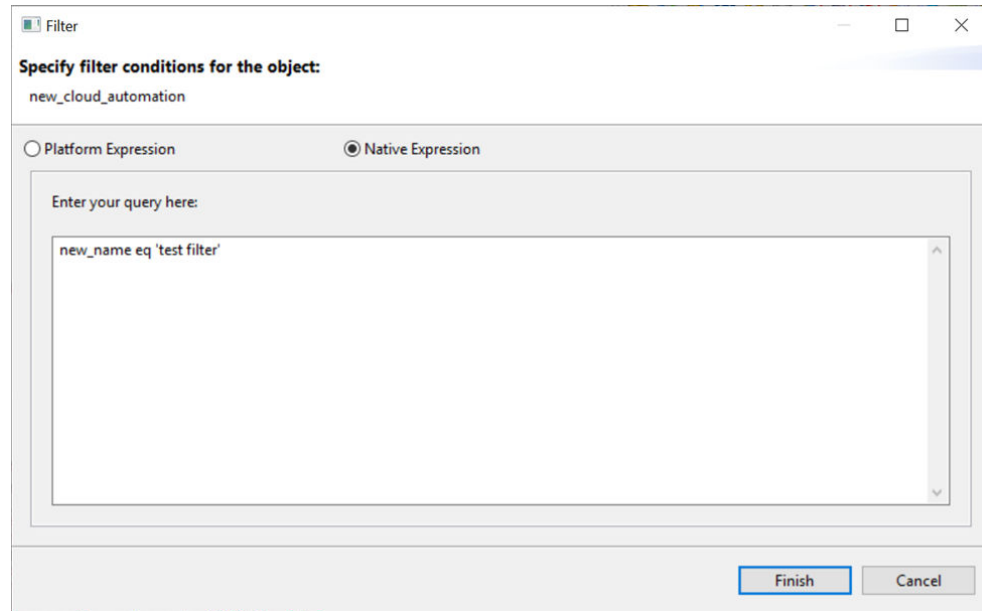


- If you configure a native expression, specify a filter expression in the following format:

<Attribute><Operator><Value>

You can use AND, OR, or nested conditions in the filter expression. The expression that you enter becomes the WHERE clause in the query used to retrieve records from the source.

The following image shows a native filter expression configured for a Microsoft Dynamics 365 for Sales source:



5. Click **Finish** to add the filter condition.
6. Click **OK**.

Source Join

Use source join when you want to use FetchXML with two or more objects.

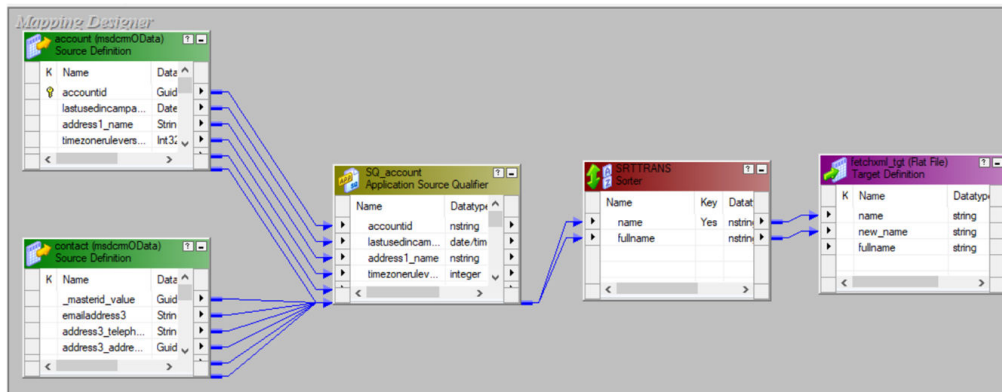
Use the Platform Expression type to define the relationship of the tables that you want to join.

Configuring a Source Join

You can use the Application Source Qualifier of the parent table to join multiple tables.

1. In the **Mapping Designer**, retain the source qualifier only of the parent table and manually delete the source qualifiers for the child tables.
2. Link the fields from the child tables to the parent source qualifier.

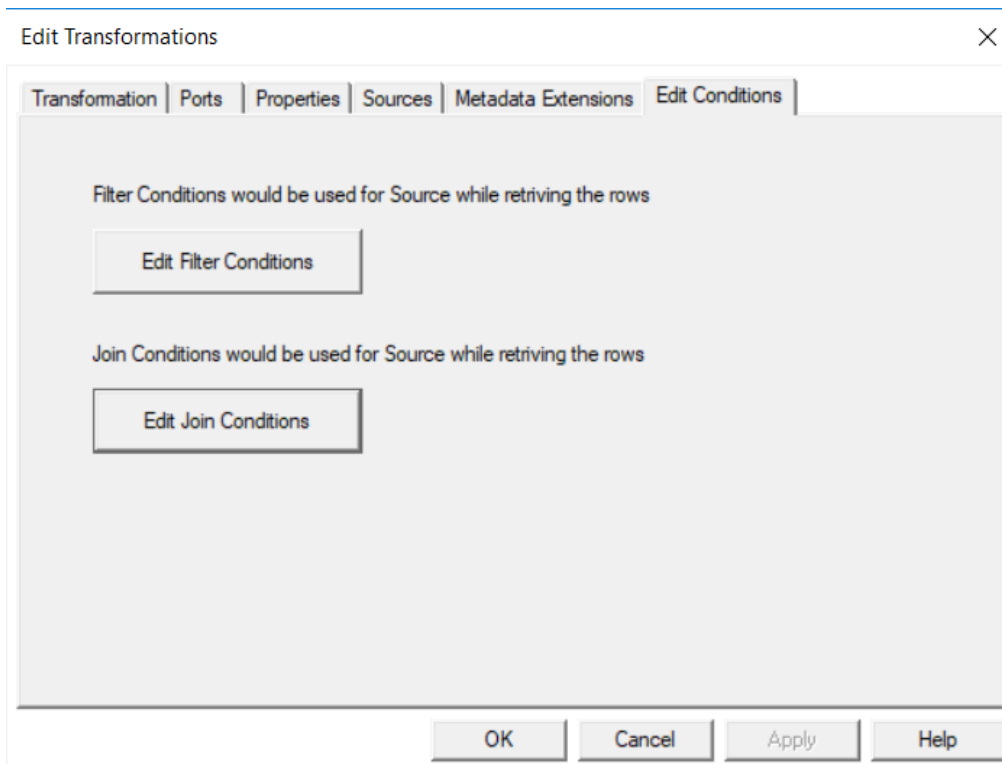
The following image shows an example mapping that contains the linked child tables with the parent source qualifier:



3. Double-click the **Application Source Qualifier** of the parent table.

The **Edit Transformation** tab appears.

The following image shows the **Edit Conditions** tab in the Application Source Qualifier Transformation type:



4. Click the **Edit Conditions** tab.
5. Click **Edit Join Conditions**.
6. To define a join condition for the tables using **Platform Expression**, perform the following tasks:
 - a. In the **Tables** section, select the child table, and then select the join type for the child table with the parent table.

- b. In the **Relationships** section, define the relationship for the join.

The **Add** button in the **Relationships** section enables only when you select the child table.

The following image shows the join types that you can configure and the relationship that you can define to join tables when you use the Platform Expression:

Join

Expression Type ☒ Platform Expression ☐ Native Expression

Tables:

Order	Table Name	Join Type
1	account	None
2	contact	Outer

Move Up Move Down

Relationships:

Left Field	Operator	Right Field
account.accountid	=	contact._masterid...

Add Remove

OK Cancel

Note: Native Expression is not supported.

7. Click **OK**.

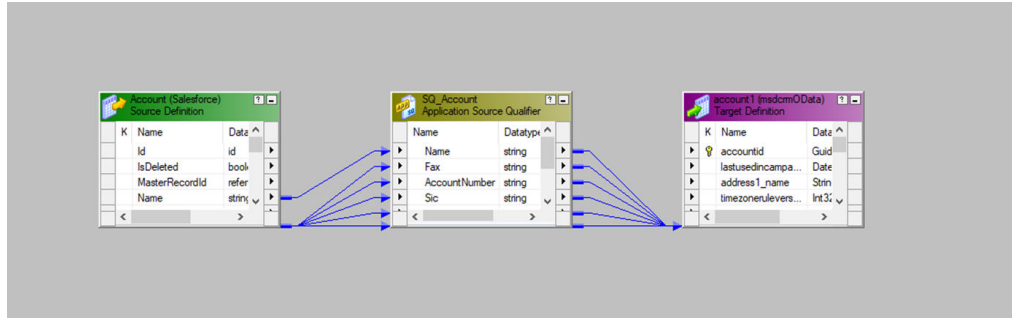
Microsoft Dynamics 365 for Sales Mapping Example

An enterprise wants to migrate from Salesforce to Microsoft Dynamics 365 for Sales. You can extract the account details from a Salesforce source and load it to the account target table in Microsoft Dynamics 365 for Sales.

The following procedure shows how to move data from Salesforce to Microsoft Dynamics 365 for Sales:

1. Import the Salesforce source.
2. Import a Microsoft Dynamics 365 for Sales target.

3. Create a mapping with a Salesforce source and a Microsoft Dynamics 365 for Sales target. The following image shows the example mapping:



4. Create a session and configure it to load the data to the Microsoft Dynamics 365 for Sales target. The mapping contains the following objects:

Source Definition

The mapping source definition is Salesforce. In the **Source Analyzer**, import the Salesforce source account. The PowerCenter Integration Service reads the account details from the Salesforce source.

The following table describes the structure of the source definition called Account (Salesforce):

Field	Data Type
Name	Varchar
Fax	Varchar
AccountNumber	Varchar
Sic	Varchar
NumberOfEmployees	Varchar
Description	Varchar
OwnerId	Varchar

Mapping Target

The mapping contains account table from Microsoft Dynamics 365 for Sales as target definition.

In the **Target Designer**, import a Microsoft Dynamics 365 for Sales target definition.

The following table describes the structure of the target definition called Account(msdOdata) for migration:

Field	Data Type
Name	Varchar
Fax	Varchar

Field	Data Type
AccountNumber	Varchar
Sic	Varchar
NumberOfEmployees	Varchar
Description	Varchar
OwnerId	Varchar

CHAPTER 5

Microsoft Dynamics 365 for Sales Sessions

This chapter includes the following topics:

- [Microsoft Dynamics 365 for Sales Sessions Overview, 27](#)
- [Microsoft Dynamics 365 for Sales Connection Properties, 27](#)
- [Configure Microsoft Dynamics 365 for Sales Source Session Properties, 29](#)
- [Configure Microsoft Dynamics 365 for Sales Target Session Properties, 31](#)
- [Parameterizable Session Properties, 33](#)
- [Lookups, 33](#)
- [Partitioning, 34](#)
- [Rules and Guidelines for Microsoft Dynamics 365 for Sales Sessions, 37](#)

Microsoft Dynamics 365 for Sales Sessions Overview

After you create mappings, you can create a session to extract and load data.

You must configure a Microsoft Dynamics 365 for Sales connection in the **Workflow Manager** to extract data from or load data to a Microsoft Dynamics 365 for Sales table. You can define properties in a session to determine how the PowerCenter Integration Service must extract data from a Microsoft Dynamics 365 for Sales source or load data to a Microsoft Dynamics 365 for Sales target.

Microsoft Dynamics 365 for Sales Connection Properties

When you configure a Microsoft Dynamics 365 for Sales connection, you define the connection attributes that the PowerCenter Integration Service uses to connect to the Microsoft Dynamics 365 for Sales database.

to be conreffed

The following table describes the Microsoft Dynamics 365 for Sales connection properties:

Property	Description
Runtime Environment	The name of the runtime environment where you want to run the tasks.
Authentication Type	<p>The authentication method that the connector must use to login to the web application. Select one of the following authentication types:</p> <p>OAuth 2.0 Password Grant. It requires you to use the ADFS configuration. Specify the web API URL, username, password, and application ID. You additionally need the security token service URL to access Microsoft Dynamics 365 for Sales on-premises. Applies to Microsoft Dynamics 365 for Sales on-premise.</p> <p>OAuth 2.0 Client Certificate Grant. Requires you to specify the web API URL, application ID, tenant ID, keystore file, keystore password, key alias, and key password. Applies to Microsoft Dynamics 365 for Sales online.</p> <p>OAuth 2.0 Client Secret. Requires you to specify the application ID and client secret. Applies to Microsoft Dynamics 365 for Sales online.</p> <p>For more information on how to configure OAuth with IFD(ADFS) configuration, see the knowledge base article: Configuration of on-premise endpoint</p>
Web API URL	The URL of the Microsoft Dynamics 365 for Sales endpoint.
Username	The user name to connect to the Microsoft Dynamics 365 for Sales account.
Password	The password to connect to the Microsoft Dynamics 365 for Sales account.
Application ID	The Azure application ID for Microsoft Dynamics 365 for Sales.
Tenant ID	The directory ID for Azure Active Directory.
Keystore File	The location and the file name of the key store. Not applicable when you use the Hosted Agent.
Keystore Password	The password for the keystore file required for secure communication.
Key Alias	The alias name for the individual key.
Key Password	The password for the individual keys in the keystore file required for secure communication. Not applicable when you use the Hosted Agent.
Retry Error Codes	The comma-separated http error codes for which the retries are made.
Retry Count	The number of retries to get the response from an endpoint based on the retry interval. Default is 5.
Retry Interval	The time in seconds to wait before Microsoft Dynamics 365 for Sales Connector retries for a response. Default is 60.
Client Secret	The client secret key to connect to Microsoft Dynamics 365 for Sales account.

Property	Description
Server Type	<p>The Microsoft Dynamics 365 for Sales server that you want to access. You can select the server type from the following list:</p> <ul style="list-style-type: none"> - Microsoft Dynamics Online. Select this option to connect to Microsoft Dynamics 365 for Sales deployed online. Requires you to enter the Web API URL, client secret, and certificate password. - Microsoft Dynamics On-premise. Select this option to connect to Microsoft Dynamics 365 for Sales deployed on-premises. Requires you to enter the ADFS client ID as Application ID and certificate password.
Security Token Service URL	The service URL with the security token. For example, <code>http://<customer_STS_URL>/adfs/oauth2/token</code> .

Configuring a Microsoft Dynamics 365 for Sales Connection

Configure a Microsoft Dynamics 365 for Sales connection in the Workflow Manager to define the connection attributes that the PowerCenter Integration Service uses to connect to the Microsoft Dynamics 365 for Sales database.

1. In the Workflow Manager, click **Connections > Application**.
The **Application Connection Browser** dialog box appears.
2. Click **New**.
The **Select Subtype** dialog box appears.
3. Select **Microsoft Dynamics 365 for Sales** and click **OK**.
The **Application Connection Editor** dialog box appears.
4. Enter a name for the Microsoft Dynamics 365 for Sales connection.
5. Enter the application properties for the connection.
6. Enter the Microsoft Dynamics 365 for Sales connection attributes.
7. Click **OK** to create a Microsoft Dynamics 365 for Sales connection.

Configure Microsoft Dynamics 365 for Sales Source Session Properties

You can configure the session properties for a Microsoft Dynamics 365 for Sales source on the **Workflow Manager** tab. Define the properties for the source instance in the session.

The following table describes the session properties that you can configure for a Microsoft Dynamics 365 for Sales source session:

Session Property	Description
Row Limit	The maximum number of rows that the PowerCenter Integration Service processes. Specify a number to process a specific number of rows.
Page Size	Size of the page set to retrieve the maximum number of entries for each page. Default value is 100.
Tracing Level	Amount of detail that appears in the log for this transformation. You can choose terse, normal, verbose initialization, or verbose data. Default is normal.
FetchXML Query	The native Microsoft query format to read data from Microsoft Dynamics 365 for Sales. Enter the FetchXML query defined in Microsoft Dynamics 365 for Sales. You can use one or any combination of paging, filter, sort, and join operations in the FetchXML query. If you do not add a FetchXML query for multiple sources, an implicit join will take place and the primary object and sibling object relationship will be used. The implicit join is used, by default.
Record Name Aliases	The map that holds the alias names for each linked entity that is part of the FetchXML query. Enter the record name aliases as a name-value pair. Use the following format: <code>{"<EntityName1>" : "<EntityAlias1>","<EntityName2>" : "<EntityAlias2>"}</code> For example, <code>{"lead":"lead","contact":"con"}</code>
Read Picklist Values	Reads string values for picklist fields. By default, the check box is not selected.
Filter Override Type	The type of filter expression that you want to override in the source qualifier. You can select Native or Platform filter expression type to override. Default is None.
Filter Override	The filter condition that overrides the filter condition you specify in the source qualifier. After you select Native or Platform Filter Override Type, specify the filter condition to override in the source qualifier.

Filter Override

When you read data from a Microsoft Dynamics 365 for Sales source, you can specify the filter override type and filter override condition in the Microsoft Dynamics 365 for Sales source session properties to override the filter condition you specify in the source qualifier.

You can select Native or Platform expression as the **Filter Override Type** in the Microsoft Dynamics 365 for Sales source session properties irrespective of the expression used in the source qualifier. Default is None.

After you select the filter expression, specify the filter condition in the **Filter Override** field. When you run the session, the PowerCenter overrides the filter condition you specify in the source qualifier and uses the condition you specified in the session properties to filter the Microsoft Dynamics 365 for Sales data.

Configure Microsoft Dynamics 365 for Sales Target Session Properties

You can configure the session properties for a Microsoft Dynamics 365 for Sales target on the **Workflow Manager** tab. Define the properties for the target instance in the session.

The following table describes the session properties that you can configure for a Microsoft Dynamics 365 for Sales target session:

Session Property	Description
Ignore Null Values	If you select the check box, the update operation ignores the null value for the column. By default, the Ignore Null Values check box is not selected, and the update operation updates the column with the null value.
Alternate Key Name	Specifies the name of the key created in Microsoft Dynamics 365 for Sales. You can use alternate key in update, delete, and upsert operations. Alternate key contains one or more fields. Map all the fields or attributes that are part of the alternate key. If you map both primary key and alternate key attributes in a mapping, the primary key takes precedence over the alternate key.
Write Picklist Values	Writes string values for picklist fields. By default, the check box is not selected.
Write to Collection Values	Writes to the collection valued fields of the entity. You can use insert operation to add an association. You can use delete operation to delete an association. By default, the check box is not selected.
Run as Batch	Writes records in batch mode during data load. In batch mode, you can write multiple records in a batch. By default, the Run as Batch check box is not selected and the PowerCenter Integration Service does not write records in batch mode.
Batch size	Determines the maximum number of records that the PowerCenter Integration Service can write in a batch. The default value is 10. The maximum value is 100.

Session Property	Description
Transactional Write	<p>Writes each record in a single transaction. When you use the transactional write mode, you can configure a maximum of two partitions. The transactional write mode supports the following operations:</p> <ul style="list-style-type: none"> - Insert. You can insert upto 100 rows in a batch for each partition that you configure. - Update/Upsert. You can update/upsert upto 100 rows in a batch for each partition that you configure. - Delete. You can delete upto 100 rows in a batch. Partitioning is not supported. <p>If you do not select the Transactional Write check box, there is no restriction on the number of partitions as long as the batch size is less than or equal to 10. You can configure a maximum of 40 partitions. If batch size is greater than 10, you can configure a maximum of two partitions. If you configure more than two partitions, the task fails with an error. You can perform the following operations:</p> <ul style="list-style-type: none"> - Insert. You can insert upto 10 rows in a batch for each partition that you configure. - Update/Upsert. You can update/upsert upto 10 rows in a batch for each partition that you configure. - Delete. You can delete upto 100 rows in a batch. Partitioning is not supported. <p>By default, the Transactional Write check box is not selected.</p> <p>Note: If you do not select the Transactional Write check box, the performance is better because more number of partitions can be used.</p>
Batch Retry	<p>Indicates whether the PowerCenter Integration Service must attempt connection retries in the event of a connection failure while writing data in batch mode.</p> <p>By default, the Batch Retry check box is not selected.</p>
Batch Error File Path	<p>The location and file name where the PowerCenter Integration Service stores the error log. Applicable only if the Run as Batch check box is selected.</p>
INSERT	<p>Inserts all rows to the Microsoft Dynamics 365 for Sales target.</p> <p>You must select the INSERT option before you run a session.</p> <p>Default is true.</p>
DELETE	<p>Deletes rows from the Microsoft Dynamics 365 for Sales target.</p> <p>If you select DELETE, you need to select Delete for the Treat Source Rows As session property in the Properties page.</p>
UPDATE	<p>Updates rows in the Microsoft Dynamics 365 for Sales target.</p> <p>If you select UPDATE, you need to select Update for the Treat Source Rows As session property in the Properties page.</p> <p>Note: You can perform Update as update or Update else insert operation.</p>
UpdateMode	<p>Loads data to the target based on the mode you specify.</p> <p>Select one of the following modes:</p> <ul style="list-style-type: none"> - Update as Update. Updates all rows flagged for update. - Update else Insert. Updates all rows flagged for update if they exist in the target and then inserts any remaining rows marked for insert. - Update as Insert. Updates all rows flagged for update as inserts.

Parameterizable Session Properties

You can parameterize the Microsoft Dynamics 365 for Sales connection and session properties.

You can create a configuration file with the connection and session properties that you want to override at run time.

Lookups

You can create a connected or unconnected pipeline Lookup transformation.

You can only create a cached pipeline lookup or unconnected lookup. When you create a cached lookup, the performance increases because the Integration Service caches a large lookup source or small lookup tables. When you cache the lookup source, the Integration Service queries the lookup cache instead of querying the lookup source for each input row.

Pipeline Lookups

You can create a pipeline Lookup transformation to perform a lookup on a Microsoft Dynamics 365 for Sales table. A pipeline Lookup transformation has a source qualifier as the lookup source.

When you configure a pipeline Lookup transformation, the lookup source and source qualifier are in a different pipeline from the Lookup transformation. The source and source qualifier are in a partial pipeline that contains no target. The PowerCenter Integration Service reads the source data in this pipeline and passes the data to the Lookup transformation to create the cache.

For more information, see the topic "Pipeline Lookups" in the *PowerCenter Transformation Guide*.

Unconnected Lookups

You can configure an unconnected lookup transformation for the source qualifier in a mapping.

An unconnected Lookup transformation is a Lookup transformation that is not connected to any source, target, or transformation in the pipeline.

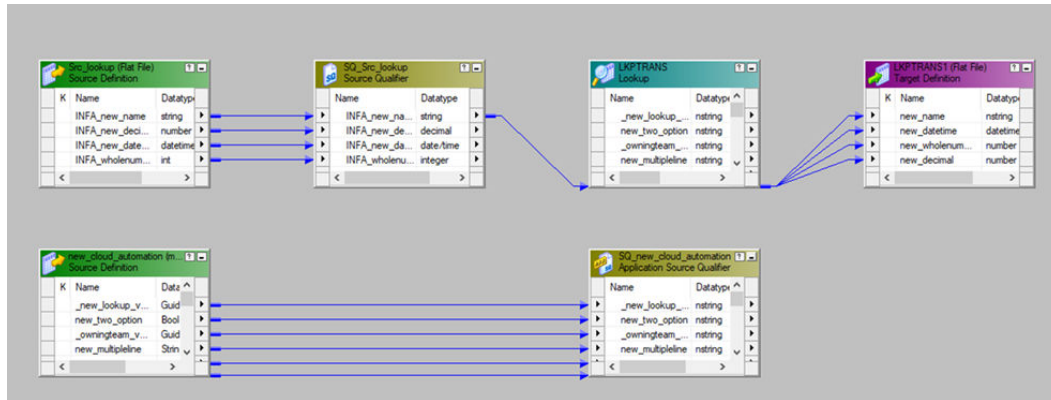
An unconnected Lookup transformation receives input values from the result of a :LKP expression in another transformation. The Integration Service queries the lookup source or cache based on the lookup ports and condition in the Lookup transformation and passes the returned value to the port that contains the :LKP expression. The :LKP expression can pass lookup results to an expression in another transformation.

Example Scenario of a Pipeline Lookup Transformation in a Mapping

A mapping that contains a pipeline Lookup transformation includes a partial pipeline that contains the lookup source and source qualifier. The partial pipeline does not include a target. The Integration Service retrieves the lookup source data in this pipeline and passes the data to the lookup cache.

The partial pipeline is in a separate target load order group in session properties. You can create multiple partitions in the pipeline to improve performance. You can not configure the target load order with the partial pipeline.

The following image shows a mapping that contains a pipeline Lookup transformation and the partial pipeline that processes the lookup source:



The mapping contains the following objects:

- The lookup source definition and source qualifier are in a separate pipeline. The Integration Service creates a lookup cache after it processes the lookup source data in the pipeline.
- A flat file source contains new department names by employee number.
- The pipeline lookup transformation receives new_name from the source file. The pipeline lookup performs a lookup on new_name in the lookup cache. It retrieves new_name, new_datetime, new_wholenumber, and new_decimal from the lookup cache
- A flat file target receives the new_name, new_datetime, new_wholenumber, and new_decimal from the lookup transformation.

Partitioning

When you read from and write data to Microsoft Dynamics 365 for Sales, you can configure pass-through partitioning to optimize the session performance at run time.

When you specify pass-through partitioning for a Microsoft Dynamics 365 for Sales Source Qualifier transformation, you can specify filter conditions in the Microsoft Dynamics 365 for Sales session properties to override the filter condition you specify in the source qualifier. The Integration Service uses the filter condition you specify in the session properties when it filters data from the source.

To configure pass-through partitioning, select the Source Qualifier transformation, and add a partition point from the **Mapping** tab of the session properties. Add the number of partitions you require and select the partition type as pass through for each of the partitions.

Based on the number of partitions you add, the PowerCenter Integration Service adds those many number of partition fields for the **Filter Override** attribute in the session properties. Specify the filter override condition for each of the partitions. The PowerCenter Integration Service uses the filter conditions you specify to pass data through the appropriate partition.

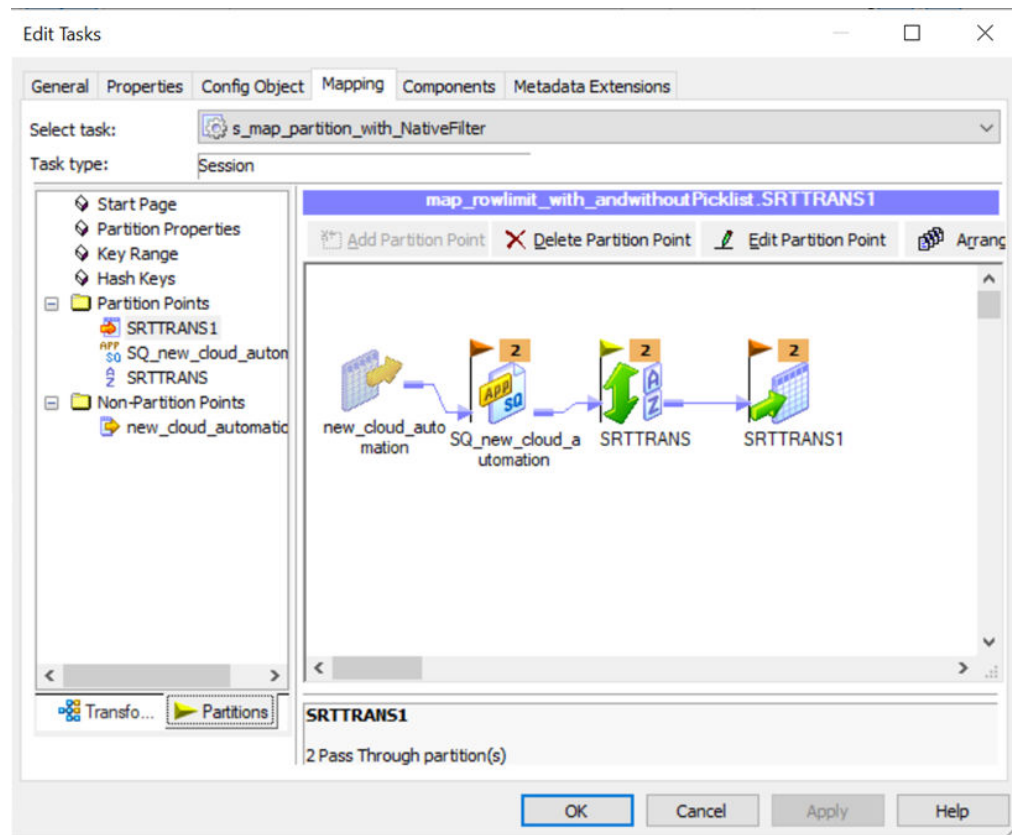
Similarly, you can specify SQL override conditions for each of the partitions in the Microsoft Dynamics 365 for Sales source session properties to override the default SQL query used to extract data from the Microsoft Dynamics 365 for Sales source.

Applying Filter Override Conditions for Partitions

Configure pass-through partitioning for a Microsoft Dynamics 365 for Sales session. After you add the number of partitions, you can specify a filter override condition for each of the partitions.

1. In the Workflow Designer, open the session properties.
2. On the **Partitions** view, click **Add Partition Point**.

The transformation name appears under the Partition Points node.



3. Select the Source transformation, and click **Edit Partition Point**.
The **Edit Partition Point** dialog box appears.
4. Click **Add** to add the partitions and enter a description for each partition.

5. Select the partition type as **Pass Through** for each of the partitions.

Partitions:

Name	Description
Partition #1	
Partition #2	

Partition Type

Warning: The partition attributes will be deleted if you change the partition type.

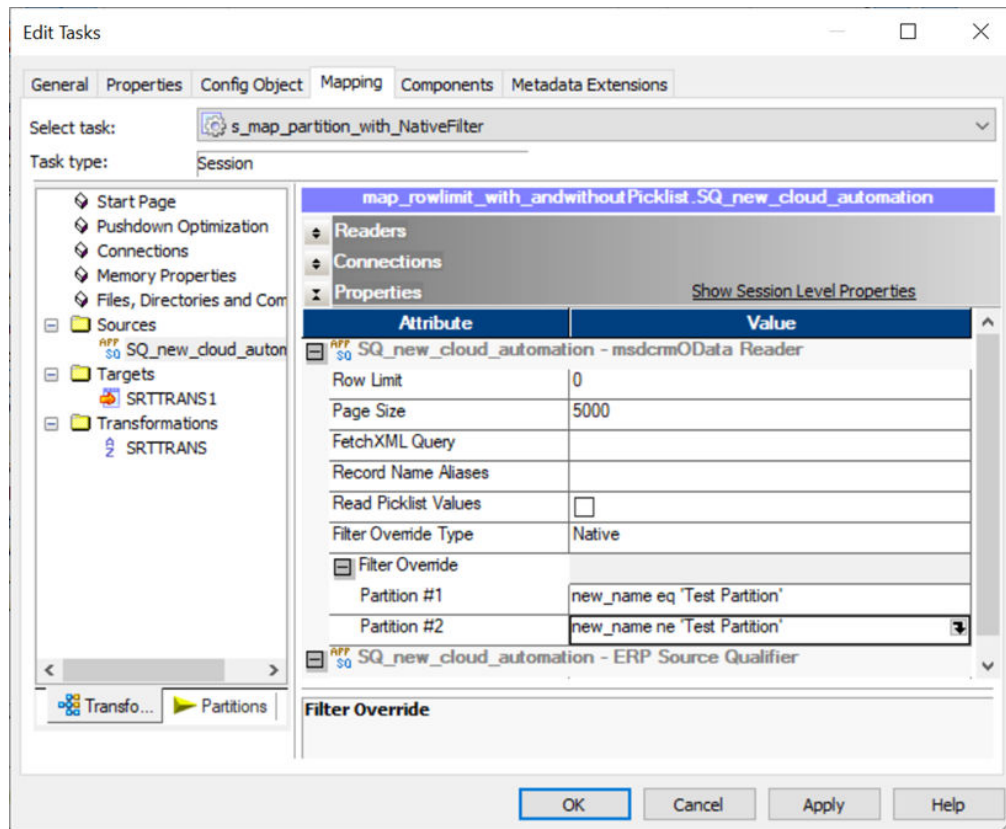
Select Partition Type:

Pass Through

OK Cancel Help

6. Click **OK**.
7. Click the **Transformations** tab in the session properties.
Based on the number of partitions you create, those many number of partition fields appear for the filter override property.
8. Specify the filter override condition for each partition.

For example, in the following image, you can configure filter override conditions for both the partitions you configured:



When you run the session, based on the condition you specify for each partition, the Integration Service passes all rows with the new name as `Test Partition` to the first partition and all rows that do not have the new name as `Test Partition` to the second partition.

9. Click **OK**.

Rules and Guidelines for Microsoft Dynamics 365 for Sales Sessions

Consider the following rules and guidelines when you use Microsoft Dynamics 365 for Sales source and target operations:

- When you use the upsert operation, you can enter either a valid, unique guid or a null guid for the record to be inserted. Microsoft Dynamics 365 for Sales Connector first tries to update the record with the guid present in the target object. If the update operation fails, Microsoft Dynamics 365 for Sales Connector inserts the value into the record.
- If you do not enter any value, Microsoft Dynamics 365 for Sales Connector does not update any value. Microsoft Dynamics 365 for Sales Connector creates an auto-generated guid and inserts this value into the record.

- If you enter a unique, valid guid, which is not present in the target object, Microsoft Dynamics 365 for Sales Connector does not update the record. Microsoft Dynamics 365 for Sales Connector inserts the guid that you provided into the record.
- The input for Customer, Owner, and Lookup data types should be in the following format:
/LogicalCollectionName(guid) or LogicalCollectionName(guid)
- When you write data to Microsoft Dynamics 365 for Sales in batch mode, even if an error row does not contain a primary key or an alternate key, the PowerCenter Integration Service writes the error row to the error file.

Rules and Guidelines for FetchXML Query and Record Name Aliases

Consider the following rules and guidelines when you use FetchXML query and record name aliases in Microsoft Dynamics 365 for Sales sources and lookups:

- The primary entity in the FetchXML query and the primary object in the source should be the same.
- Attributes should not have aliases in the FetchXML query.
- You must specify an alias map in the **Record Name Aliases** field. The map holds the alias names for each linked entity that is part of the FetchXML query. The map is required because the result dataset contains modified field names for the linked objects.
- If you use a single source object, the **Record Name Aliases** field is optional.
- The linked-entity name and alias specified in the **Record Name Aliases** field should be the same as in the FetchXML query.
- The mapped attributes in the field mapping must match the attributes mentioned in the FetchXML query. Otherwise, the non-matching attributes are ignored.
- There is a URL length limit on the FetchXML query. To fetch more elements, use `<all-attributes />` in the FetchXML query.
- You can fully parameterize a maximum of 600 characters in the FetchXML query.
- To fetch all the records from Microsoft Dynamics 365 for Sales, enter the term `#INFA_PAGING#` in the FetchXML query.

For example,

```
<fetch mapping="logical" #INFA_PAGING#>
  <entity name="new_alldatatypes">
    <attribute name="new_name"/>
    <link-entity name="account" from="accountid" to="new_customer" alias="acc" >
      <attribute name="name" />
    </link-entity>
  </entity>
</fetch>
```

- You cannot configure key range partitioning with FetchXML queries.

Rules and Guidelines for Write to Collection Values

Collection-valued properties represent a collection of entities. The collection could represent either a one-to-many or a many-to-many relationship between the entities. The many-to-many relationship is handled through an entity known as intersect entity.

Consider the following rules and guidelines when you use **Write to Collection Values** to write to Microsoft Dynamics 365 for Sales targets:

- To only update an association of the existing entities, choose the insert operation and map the primary key or alternate key of the entity and the collection value fields. For example, to associate an account with a lead, map the fields `accountid` and `accountleads_association`.
- To create a new record and add an association to it, choose the insert operation and map the data field and collection valued fields along with a key.
For example, to insert an account and add an existing association to it, map the fields `name`, `emailaddress1`, `accountid`, and `accountleads_association`. You can insert null values to the `accountid` field because the value is retrieved from the Microsoft Dynamics 365 for Sales as a part of insert operation.

You cannot create a new record and add an association to it in batch mode.

- To delete an existing association, select the delete operation and map the primary key or alternate key of the entity and the collection value fields.
- You can use one of the following formats when you use the collection valued property:

- `https://xxx.dynamics.com/api/data/v9.0/LogicalCollectionName(guid)`

For example, `https://informaticallc.api.crm8.dynamics.com/api/data/v9.0/leads(09fa2b1f-a419-e911-a969-000d3af06ac5)`

- `https://xxx.dynamics.com/api/data/v9.0/leads(alternate_key_name=value)`

For example, `https://informaticallc.api.crm8.dynamics.com/api/data/v9.0/leads(new_key=5)`

APPENDIX A

Data Type Reference

This appendix includes the following topics:

- [Data Type Reference Overview, 40](#)
- [Microsoft Dynamics 365 for Sales and Transformation Data Types, 41](#)
- [Finding the LogicalCollectionName, 44](#)

Data Type Reference Overview

PowerCenter uses the following data types in Microsoft Dynamics 365 for Sales mappings, synchronization, and mapping tasks:

- Microsoft Dynamics 365 for Sales native data types appear in the source and target transformations when you choose to edit metadata for the fields.
- Transformation data types. Set of data types that appear in the transformations. These are internal data types based on ANSI SQL-92 generic data types, which the PowerCenter Integration Service uses to move data across platforms. They appear in all transformations in a mapping.

When the PowerCenter Integration Service reads source data, it converts the native data types to the comparable transformation data types before transforming the data. When the PowerCenter Integration Service writes to a target, it converts the transformation data types to the comparable native data types.

Microsoft Dynamics 365 for Sales and Transformation Data Types

The following table lists the Microsoft Dynamics 365 for Sales data types that PowerCenter supports and the corresponding transformation data types:

Microsoft Dynamics 365 for Sales Data Type	Microsoft Dynamics 365 Web API Specific DataType	Range and Description	Transformation Data Type
Bigint	Int64	You can specify the maximum and minimum values between 922, 337, 203, 685, 477 and 922, 337, 203, 685, 477.	Bigint
Boolean	Boolean	You can specify the text for both options. When added to a form, the field properties control whether the attribute is displayed as two radio buttons, a check box, or a list. Input must be True or False.	String
Customer	String	<p>Customer attribute represents a type of lookup where either an account or contact is a valid type of record. Input must be in the following format:</p> <p>/LogicalCollectionName(guid) or LogicalCollectionName(guid)</p> <p>For example, /accounts(4fca93d7-b73d-e011-b010-005056a8019b) or accounts(4fca93d7-b73d-e011-b010-005056a8019b)</p> <p>The source field uses the following naming convention:</p> <p><name>_value, where <name> matches the name of the Customer data type.</p> <p>For example, _customerid_value</p> <p>The target field uses the following naming convention:</p> <p><name>_<reference>, where <reference> is an entity that has a relationship with the object.</p> <p>For example, customerid_account</p> <p>Note: A field name starting with an underscore character (_), for example _customerid_value, also appears under the target object. However, you cannot write the field to the target object.</p> <p>For more information about the naming convention, refer to the following URL:</p> <p>https://msdn.microsoft.com/en-in/library/mt607990.aspx#bkmk_properties</p> <p>To use an alternate key, input must be in the following format:</p> <p>\LogicalCollectionName(<fieldname>=value,<field2name>=value,...), where field name is the alternate key defined in the LogicalCollectionName.</p>	String
DateTime	DateTimeOffset	<p>Date and time values.</p> <p>The minimum value is 01/01/1900 00:00:00. The maximum value is 12/30/9999 23:59:59.</p>	Date/Time

Microsoft Dynamics 365 for Sales Data Type	Microsoft Dynamics 365 Web API Specific DataType	Range and Description	Transformation Data Type
Decimal	Decimal	You can specify the level of precision up to ten decimal places and the minimum and maximum values from -1,000,000,000 to 1,000,000,000.	Decimal
Double	Double	A decimal attribute. You can specify the level of precision up to five decimal places and the minimum and maximum values from -1,000,000,000 to 1,000,000,000.	Double
EntityName	String	The entity attribute represents the logical name of an entity. You cannot write the EntityName data type.	String
Integer	Int32	Integer values. You can specify the maximum and minimum values from -2,147,483,648 to 2,147,483,647.	Integer
Lookup	String	<p>The lookup attribute represents the relationship attribute on the related entity. The valid type for the lookup is established in the relationship. Input must be in the following format:</p> <p>/LogicalCollectionName(guid) or LogicalCollectionName(guid)</p> <p>For example, /accounts(4fca93d7-b73d-e011-b010-005056a8019b) or accounts(4fca93d7-b73d-e011-b010-005056a8019b)</p> <p>The source field uses the following naming convention:</p> <p><u><name></u> value, where <name> matches the name of the Lookup data type.</p> <p>For example, <u>_lookupid</u> value</p> <p>The target field uses the following naming convention:</p> <p><name></p> <p>For example, lookupid</p> <p>Note: A field name starting with an underscore character (_), for example <u>_lookupid</u> value, also appears under the target object. However, you cannot write the field to the target object.</p> <p>For more information about the naming convention, refer to the following URL:</p> <p>https://msdn.microsoft.com/en-in/library/mt607990.aspx#bkmk_properties</p> <p>To use an alternate key, input must be in the following format:</p> <p>\LogicalCollectionName(<fieldname>=value,<field2name>=value,...), where field name is the alternate key defined in the LogicalCollectionName.</p>	String
Memo	String	The memo attribute represents a multiline text box.	String
Money	Decimal	You can specify the maximum and minimum values between -922,337,203,685,477 and 922,337,203,685,477. You can set the precision as one, two, or three.	Decimal

Microsoft Dynamics 365 for Sales Data Type	Microsoft Dynamics 365 Web API Specific Data Type	Range and Description	Transformation Data Type
Owner	String	<p>The owner attribute represents the relationship attribute on the related entity. The valid type for the owner is established in the relationship. Input must be in the following format:</p> <p><code>/LogicalCollectionName(guid) or LogicalCollectionName(guid)</code></p> <p>For example, <code>/accounts(4fca93d7-b73d-e011-b010-005056a8019b)</code> or <code>accounts(4fca93d7-b73d-e011-b010-005056a8019b)</code></p> <p>The source field uses the following naming convention: <code>_<name>_value</code>, where <code><name></code> matches the name of the Owner data type.</p> <p>For example, <code>_ownerid_value</code></p> <p>The target field uses the following naming convention: <code><name></code></p> <p>For example, <code>ownerid</code></p> <p>Note: A field name starting with an underscore character (<code>_</code>), for example <code>_ownerid_value</code>, also appears under the target object. However, you cannot write the field to the target object.</p> <p>For more information about the naming convention, refer to the following URL:</p> <p>https://msdn.microsoft.com/en-in/library/mt607990.aspx#bkmk_properties</p> <p>To use an alternate key, input must be in the following format:</p> <p><code>\LogicalCollectionName(<fieldname>=value,<fieldname2>=value,...)</code>, where field name is the alternate key defined in the LogicalCollectionName.</p>	String
Picklist	Int32	<p>The picklist attribute provides a set of options that are displayed in a list. You can create the picklist attribute so that it can contain its own options or use a global options set. An option value of a picklist is an integer that corresponds to the option description. You can find the option values and description for the default entities in the Microsoft Dynamics 365 for Sales documentation.</p> <p>For example, for an AccountRole picklist, to set the picklist value to Decision Maker, the option value is 1.</p>	Integer
State	Int32	<p>The state attribute is automatically created when you create an entity. The state attribute internally represents the status of the entity. A value of a state is an integer that corresponds to the state description. You can find the state values and description for the default entities in the Microsoft Dynamics 365 for Sales documentation.</p> <p>For example, to set the state as Open, the value is 0 for the Activity entity.</p>	Integer

Microsoft Dynamics 365 for Sales Data Type	Microsoft Dynamics 365 Web API Specific DataType	Range and Description	Transformation Data Type
Status	Int32	<p>The status attribute is automatically created when you create an entity. Each of the options must be associated with the state attribute for the entity. The status attribute displays the value of state to the end user. A value of a status is an integer that corresponds to the status description. You can find the status values and description for the default entities in the Microsoft Dynamics 365 for Sales documentation.</p> <p>For example, to set the status as Active, the value is 1 for the Account entity.</p>	Integer
String	String	The string attribute represents a single line of text.	String
UniquelIdentifier	Guid	<p>UniquelIdentifier represents an attribute that is the guid of another entity instance. UniquelIdentifier must be in the guid format.</p> <p>For example, 4fca93d7-b73d-e011-b010-005056a8019b</p>	String

Finding the LogicalCollectionName

To find the LogicalCollectionName for Lookup, Customer, and Owner data types, perform the following steps:

1. Log in to the Microsoft Dynamics 365 Sales instance.
2. Install the Entity Metadata Browser solution. To install the Entity Metadata Browser solution, perform the steps given in the following URL:
<https://msdn.microsoft.com/en-us/library/hh547411.aspx>
3. Click **Settings > Solutions**. Select **MetadataBrowser**.
The **Metadata Browser Tool** window opens.
4. Click **Open Metadata Browser**.
5. In the **Metadata Browser** window, under **Schema Name**, select the required entity.
6. Under **Property**, select the corresponding value of LogicalCollectionName.

INDEX

C

configuring source filter [21](#)
configuring source join [22](#)

D

data types
overview [40](#)

F

filter
application source qualifier [20](#)
source filter [20](#)
filter conditions [21](#)

I

import attributes [16](#)

J

join conditions [22](#)

L

Lookup transformation
pipeline lookup example [33](#)
using pipeline in mapping [33](#)

M

mapping
example [24](#)
filter [20](#)
source [20](#)
target [20](#)
Microsoft Dynamics 365 for Sales
mappings [20](#)

Microsoft Dynamics 365 for Sales (*continued*)
native data types [41](#)
transformation data types [41](#)

P

pipeline lookup
mapping [33](#)
mapping example [33](#)
plug-ins
registering [10](#)
registering PowerExchange for Microsoft Dynamics 365 for Sales
[10](#)

R

registering
plug-ins [10](#)

S

session
additional JDBC URL parameters [27](#)
connection configuration [29](#)
connection properties [27](#)
database/schema [27](#)
overview [27](#)
source properties [29](#)
target properties [31](#)
Sources
importing Microsoft Dynamics 365 for Sales source [16](#)
filter [19](#)

T

Targets
importing Microsoft Dynamics 365 for Sales target [16](#)
filter [19](#)
table name [19](#)