



## Tutorial: Centerprise Integration with MS Dynamics CRM

### Overview

Microsoft Dynamics CRM is a full-featured customer relationship management (CRM) application. Dynamics CRM supports on-premise as well as in-cloud deployment and seamlessly integrates with Outlook, Office, and other Microsoft enterprise-level applications.



This document describes the Dynamics CRM integration functionality in Centerprise Data Integrator and discusses some technical concepts. Centerprise brings a natural and streamlined approach to integration with Dynamics CRM. With Centerprise, Dynamics CRM looks and works exactly like a local database. Whether you are using on-premise deployment or Dynamics CRM in the cloud, with Centerprise the interaction is consistent and straightforward.

Centerprise delivers powerful data integration features, enterprise-grade performance, an extensive and continuously expanding list of connectors, workflow orchestration, a built-in scheduler, and event-driven real-time integration functionality. A high-performance, multi-threaded integration engine, combined with Dynamics CRM specific optimizations, ensures that Centerprise will deliver the performance and scalability to efficiently process large initial and ongoing data volumes.



## Bulk Data Insert

Centerprise combines its high-performance parallel-processing architecture and the bulk-load capability of Dynamics CRM to deliver high data-load performance. This enables users to load large amounts of data at rapid speed.

A number of other optimization techniques are used to improve performance. These include intelligent lookup caching, parallel loaders, and more.

## Bulk Update

When you use the update action function while writing to Dynamics CRM, Centerprise batches updates and uses the bulk load capability to perform updates in batches. This eliminates single updates and substantially improves throughput. You can also use SQL update and delete statements to perform updates to Dynamics CRM data.

## Extracting Data from Dynamics CRM

Using Centerprise dataflows, you can quickly and easily build complex data extractions from Dynamics CRM. The extractions can span multiple tables and use sophisticated criteria on fields from multiple tables. You can choose to use the drag-and-drop method and let Centerprise construct the query, or write a query using Centerprise Query Language (CQL), an object-oriented, SQL-style query language.

## Querying and Updating Dynamics CRM Data

### Centerprise Object-Query Language

CQL enables users to query Dynamics CRM data using an object-oriented query style. CQL uses Dynamics CRM data model entities and relationships to build queries that access data from multiple objects by traversing relationships. CQL syntax enables you to build complex queries using streamlined object syntax.

The CQL “where” clause supports standard SQL constructs such as comparison and logical operators, in clause, and between and like operators. Additionally, the query language supports Dynamics CRM date operators such as yesterday, today, tomorrow, last week, this week, next week, and more.

An example of a CQL query is presented here to illustrate the power and simplicity of CQL syntax. This query retrieves the specified fields from multiple entities and uses criteria spanning multiple entities as well:

```
select accountnumber, name, modifiedon, service_accounts.name ,  
territory_accounts.name, account_master_account.name,  
transactioncurrency_account.currencyname  
from account  
where transactioncurrency_account.currencyname = 'US Dollar'  
and address1_city = 'Montreal'  
and modifiedon during last year
```

## Insert, Update, and Delete Statements

Business needs often necessitate ad hoc mass changes to application data. This may be due to a data loading error, the result of policy changes, or to reflect changes in source data. While such changes are fairly easy to make in SQL-based databases, Microsoft Dynamics CRM does not have built-in capabilities to easily carry out such modifications.

Centerprise streamlines such ad hoc changes using the familiar SQL syntax. Centerprise data manipulation statements can be used to insert, update, or delete records in Dynamics CRM. The following examples describe the syntax and capabilities of CQL for data manipulation.

### Example 1—Insert statement

This SQL statement inserts a record in Dynamics CRM account entity:

```
insert into account (name, address1_name, address1_line1,  
address1_city, address1_country)  
values('John Smith', 'Home', '1234 Main Street',  
'Los Angeles', 'USA')
```

### Example 2—Update statement with key where

This update statement uses a simple where clause with account key:

```
update account set name = 'New Name', address1_name = 'Home2'  
where accountid = '5bf46381-af0c-e011-9dde-001f29c8e9a8'
```

## Example 3—update statement 2 with multi-table where

This update statement is a more complex where clause that updates the donotfax flag. Centerprise allows you to use any valid where clause in update and delete statements.

```
update account set donotfax = '1'  
where accountratingcode = '1'  
and modifiedon during last week  
and transactioncurrency_account.currencyname = 'US Dollar'
```

## Example 4—Delete statement

Delete statements work similarly to update statements in that you can specify any where clause for the delete statement. Here is an example using the where clause from the above update statement:

```
Delete from account  
where accountratingcode = '1'  
and modifiedon during last week  
and transactioncurrency_account.currencyname = 'US Dollar'
```

## Database Browser

Centerprise Database Browser provides a tree view of the Dynamics CRM database. Database browser provides basic data management features such as view of table schema and keys, ability to query tables, and more.



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