Installation Guide

Dynamics CRM Connect 1.2

A guide to installing and upgrading the Dynamics CRM connector for Sitecore Experience Platform

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Chapter 1

Introduction

This chapter provides background information on Dynamics CRM Connect.

1.1 Overview

Dynamics CRM Connect provides the ability to make data from Dynamics CRM available in Sitecore and to make data from Sitecore available. It offers valuable functionality that can be implemented without the involvement of developers, while also offering a complete set of extensibility and customization features in order to ensure that the product fits into your business, rather than having to make your business work around the product.

Dynamics CRM Connect was designed with several personas in mind.

1.1.1 Marketers

A CRM stores information that is an essential part of an organization's sales and marketing activities. Dynamics CRM Connect enables marketers to leverage information from Dynamics CRM in order to build personalized, contextualized digital experiences.

Dynamics CRM Connect allows marketers to:

- Personalize digital experiences using contacts, marketing lists and campaigns from Dynamics CRM.
- Create email segments using information from Dynamics CRM.
- Track visitor activity on Sitecore-delivered digital experiences using Dynamics CRM campaigns.

1.1.2 Sitecore administrators

Sitecore administrators are responsible for configuring Sitecore so that the relevant CRM data is available to Sitecore, and that the relevant Sitecore data is available to the CRM. Dynamics CRM Connect is designed to make this as easy and adaptable as possible.

Dynamics CRM Connect allows Sitecore administrators to:

- Configure the data synchronization process using the Sitecore Content Editor.
- Extend the data synchronization process without having to involve developers.

1.1.3 Developers

One of the goals of Dynamics CRM Connect is to minimize the need to involve developers when integrating CRM and Sitecore. Traditionally, CRM integration requires a large amount of involvement from developers.

CRM systems are designed to handle the unique way each business operates. As a result, no two CRM implementations are the same. While this is great for businesses (because it allows the software to accurately reflect the business), it complicates integration (because the more customized a system is, the more custom logic must be implemented in order to handle the customizations). Developers are responsible for implementing this custom logic.

Dynamics CRM Connect provides a framework that enables Sitecore administrators to handle much of this custom logic. But there are always going to be cases where developers are needed. For these cases Dynamics CRM Connect reduces the amount of work that is needed by focusing the developer's attention to specific components that can be incorporated into the framework.

Dynamics CRM Connect allows developers to:

- Build custom components that can fit into existing synchronization processes.
- Change existing components in order to accommodate specific business requirements.

1.2 Architecture

Dynamics CRM Connect provides a fairly wide variety of functionality. This functionality is implemented in separate products. As a result, Dynamics CRM Connect is a combination of components from multiple products.

You can use Dynamics CRM Connect without having a strong understanding of the different components it is made up of. However, if you understand the different components it will be easier for you to use and manage Dynamics CRM Connect.

Dynamics CRM Connect is made up of, primarily, two components:

- Sitecore CRM Connect
- Sitecore Data Exchange Framework

1.2.1 Sitecore CRM Connect

Sitecore CRM Connect is an integration framework that provides compatibility between Sitecore and CRM systems. It offers a simplified API for interacting with CRMs in a consistent way. This makes it possible for Sitecore to develop CRM-aware features that are compatible with any CRM.

Dynamics CRM Connect provides an implementation of Sitecore CRM Connect that is able to interact with Dynamics CRM. This implementation is called the "Dynamics CRM Provider for Sitecore CRM Connect".

1.2.2 Sitecore Data Exchange Framework

Sitecore Data Exchange Framework is an integration framework is an ETL (extract, transform, load) framework for Sitecore. It allows you to read data from a source system, transform it into a format that is compatible with a target system, and then load the data into the target system.

Dynamics CRM Connect includes extensions to Sitecore Data Exchange Framework that allow Dynamics CRM Connect to map and exchange data between Sitecore and Dynamics CRM. These extensions are called the "Dynamics CRM Provider for Sitecore Data Exchange Framework".

1.3 Terminology

In order to effectively use Dynamics CRM Connect, you must understand some fundamental terminology. This section provides a glossary of terms.

1.3.1 Synchronization process modeling

"Synchronization process" refers to the process used to read data from one system (called the "source" system) and write that data to another system (called the "target" system). One of the features of Dynamics CRM Connect is that you can synchronize data between Dynamics CRM and Sitecore.

You will not see this term in the product. This is a description of something that the software enables. It is used to describe the software in action. More precise terminology is used to describe how, exactly, the software provides the ability to create, manage and run synchronization processes.

Term	Description	Product that provides the component
Pipeline Batch	The configuration of a specific synchronization process. Running a synchronization process involves running a Pipeline Batch. A Pipeline Batch has one or more Pipelines assigned. These Pipelines are handled in the order in which they are assigned to the Pipeline Batch.	Data Exchange Framework
Pipeline Batch Processor	Implements the logic that runs a Pipeline Batch. This component implements the logic that determines the order in which the Pipeline assigned to the Pipeline Batch are run, and what happens if an error occurs while a Pipeline is run. A Pipeline Batch Processor is assigned to a Pipeline Batch.	Data Exchange Framework
Pipeline	A collection of instructions. A Pipeline does not do anything itself but have a name and a set of instructions in a specific order. These instructions are called Pipeline Steps. A Pipeline has one or more Pipeline Steps assigned. The order that the Pipeline Steps are assigned is important because this is the order in which they are handled when a Pipeline Batch is run. A Pipeline may be used by one or more Pipeline Batches.	Data Exchange Framework
Pipeline Processor	Implements the logic that runs a Pipeline. This component implements the logic that determines the order in which the Pipeline Steps assigned to the Pipeline are run, and what happens if an error occurs while a Pipeline Step is run. A Pipeline Processor is assigned to a Pipeline.	Data Exchange Framework

Term	Description	Product that provides the component
Pipeline Step	A specific instruction that is used when a Pipeline Batch is run. A Pipeline Step may be used by one Pipeline. A Pipeline Step performs a very specific instruction. Examples include reading entities from Dynamics CRM, looping through those entities, and updating a contact in Sitecore using data from a CRM contact. Each of these instructions is represented by a separate step. A synchronization process may consist of a dozen or more different types of steps.	Dynamics CRM Provider Sitecore Provider
Pipeline Step Processor	Implements the logic that runs a Pipeline Step. This component implements the logic that determines how the settings on the Pipeline Step are used to run an instruction. A Pipeline Processor is assigned to a Pipeline.	Dynamics CRM Provider Sitecore Provider

1.3.2 Data access

"Data access" refers to how data is read from and written to various data sources. A "source system" is a system from which data can be read. A "target system" is a system to which data can be written.

Term	Description	Product that provides the component
Endpoint	A representation of a system that may be a source system, a target system, or both a source and a target system.	Dynamics CRM Provider Sitecore Provider
Entity Repository	Provides the ability to read/write a specific type of entity from Dynamics CRM.	Dynamics CRM Provider
Filter Expression	An object that defines a condition (or set of conditions) that must be met in order for an entity to be read from Dynamics CRM. For example, a Filter Expression may specify that only contacts from a certain account should be read.	Dynamics CRM Provider
Entity Repository Set	The collection of Entity Repositories that are supported by a specific Endpoint. This component also supplies settings to its constituent Entity Repositories. For example, the Entity Repository Set may store the connection string to the Dynamics CRM system. All Entity Repositories use the same connection string to access Dynamics CRM.	Dynamics CRM Provider

Term	Description	Product that provides the component
Value Reader	Provides the ability to read a value from a source object. If you are a .NET developer, a Value Reader is like a property-getter on a class.	Data Exchange Framework Dynamics CRM Provider Sitecore Provider
Value Writer	Provides the ability to write a value to a target object. If you are a .NET developer, a Value Writer is like a property-setter on a class.	Data Exchange Framework Dynamics CRM Provider Sitecore Provider
Value Accessor	Associates a Value Reader with a Value Writer. If are a.NET developer, a Value Accessor is like a property on an class.	Data Exchange Framework
Value Accessor Set	The collection of Value Accessors that define the ability to read and write values on a specific type of source and target objects. If you are a .NET developer, a Value Accessor Set is like a class.	Data Exchange Framework

1.3.3 Data mapping

"Data mapping" refers to the ability to associate a value from a source object with a value on a target object, for the purpose of reading a value from the source object and writing that value to the target object.

Term	Description	Product that provides the component
Value Mapping	The object on which 2 Value Accessors are specified: one represents the component that can read from the source object, and the other represents the component that can write to the target object.	Data Exchange Framework
Value Mapping Set	The collection of Value Mappings that defines the ability to map multiple values from a source object to a target object. When the mappings specified in the Value Mapping Set are applied, it is said to "run". In other words, running a Value Mapping Set will result in the values being read from the source object and written to the target object.	Data Exchange Framework

1.3.4 Converter

A converter, given an object, can create a new object of a different type.

The main use of converters in Data Exchange Framework is to convert a Sitecore item into the appropriate framework object. For example, a Sitecore item represents a specific Value Reader. A converter is used to transform the Sitecore item into a Value Reader.

Note
This type is needed because it is possible to use the framework outside of Sitecore. When the framework runs outside of Sitecore, the configuration is still stored in Sitecore. An external application will read the configuration from Sitecore (meaning it will read Sitecore items) and then use converters to transform the Sitecore items into the appropriate framework object.

1.3.5 Tenant

A Tenant represents a single brand, business unit, or organization. It allows you to isolate the configuration for one brand from another brand.

Chapter 2

Installation

This chapter guides you through the process of installing Dynamics CRM Connect.

2.1 Prerequisites

This section explains the requirements for running Dynamics CRM Connect.

2.1.1 Dynamics CRM

This product supports the following versions of Dynamics CRM:

- Dynamics 365
- Dynamics CRM 2016
- Dynamics CRM Online

You also need a Dynamics CRM user that Dynamics CRM Connect will use to interact with CRM. The privileges assigned to this user will determine how much data can be shared between CRM and Sitecore. It is recommended you give the user the following privileges, at a minimum:

- Create, Read, Write on the entity Contact
- Create, Read, Write on the entity Campaign
- Create, Read, Write on the entity Marketing List

Note
If you do not have access to a Dynamics CRM server, you can create a free 30-day trial account on Dynamics 365. More information is available at https://www.microsoft.com/en-us/dynamics/free-crm-trial.aspx.

2.1.2 Sitecore

This product requires Sitecore 8.1 update 1 (or greater).

If you are using Solr for the analytics index, you must use Sitecore 8.1 update 2 (or greater).

If you are deploying Sitecore to Microsoft Cloud using Web Apps, you must use Sitecore 8.2 update 1 (or greater).

2.1.3 Sitecore xDB Cloud

At the time this document was written, xDB Cloud does not support custom contact facets or processing/aggregation logic. As a result, the functionality that depends on these features are unavailable to customers using xDB Cloud:

- Personalization based on CRM marketing list membership
- Segmentation based on CRM marketing list membership
- Updating CRM contacts using data from Sitecore

Note
If you attempt to use the functionality described above with xDB Cloud, you will not see any errors in your local Sitecore log. You will need to look at the log for the aggregation server, which is available from Sitecore Product Support.

Note
A future version of Sitecore Experience Platform is expected to provide full support for xDB Cloud.

2.2 Installation

This section describes how to install Dynamics CRM Connect on your Sitecore servers.

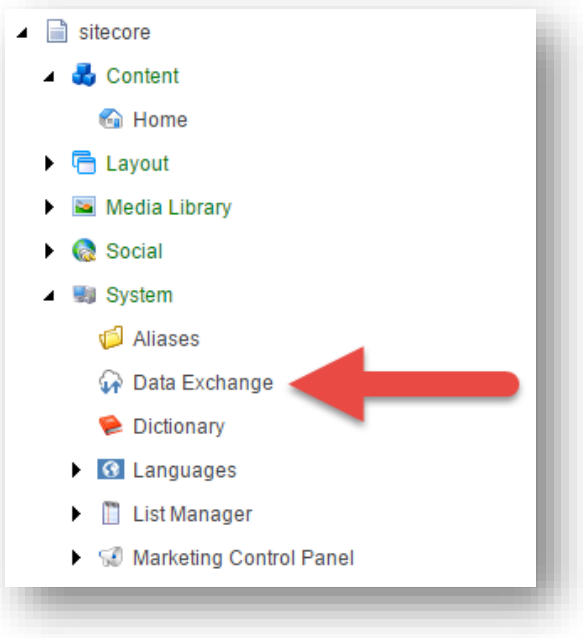
2.2.1 Content Management Role

Typically, data synchronization runs on a content management server. This requires the entire Dynamics CRM product to be installed.

Note
You must install the Sitecore packages in the order listed below. If you install the packages in a different order, your tenants will not be created properly and you will be unable to synchronize data between Dynamics CRM and Sitecore.

1. In Sitecore, open Installation Wizard.
2. Install the "Sitecore Data Exchange Framework" package.
3. Install the "Sitecore Provider for Data Exchange Framework" package.
4. Install the "Dynamics CRM Provider for Data Exchange Framework" package.

You can confirm the module was installed by opening Content Editor and locating the item `/sitecore/system/Data Exchange`.



2.2.2 Content Delivery Role

In most cases, data synchronization will not run on Sitecore delivery servers. The data that is synchronized, however, is used on those servers. As a result, all parts of Dynamics CRM Connect must be installed on Sitecore delivery servers.

2.2.3 Aggregation Server Installation

If you have a dedicated aggregation server, all parts of Dynamics CRM Connect must be installed on the aggregation server.

Chapter 3

Upgrade

This chapter guides you through the process of upgrading from Dynamics CRM Connect version 1.1 to version 1.2.

3.1 Prerequisites

This section explains the requirements for upgrading from Dynamics CRM Connect version 1.1 to version 1.2.

3.1.1 Sitecore

You must have Dynamics CRM Connect 1.1 rev. 160817 installed on your Sitecore server. Specifically, this means the following Sitecore packages are installed on your Sitecore server:

- Data Exchange Framework 1.1 rev. 160817
- Sitecore Provider for Data Exchange Framework 1.1 rev. 160817
- Dynamics CRM Provider for Data Exchange Framework 1.1 rev. 160817

3.1.2 Dynamics CRM Connect 1.1 Hotfixes

If you are using a hotfix for Dynamics CRM Connect 1.1, you may have updated versions of the files originally included with version 1.1.

The upgrade application looks for the original Dynamics CRM Connect 1.1 files. When you run the upgrade installation on a Sitecore server that has a hotfix for Dynamics CRM Connect 1.1 installed, the upgrade application will find the hotfix files, will assume those files are there for a reason, and will err on the side of caution and not overwrite those files.

You have two options in this case:

1. Restore the original files for Dynamics CRM Connect 1.1 before running the upgrade process.
2. Run the upgrade process and then manually replace the files the upgrade process cannot overwrite.

3.2 Installation

Dynamics CRM Connect version 1.1 is upgraded to version 1.2 using a set of Sitecore update packages.

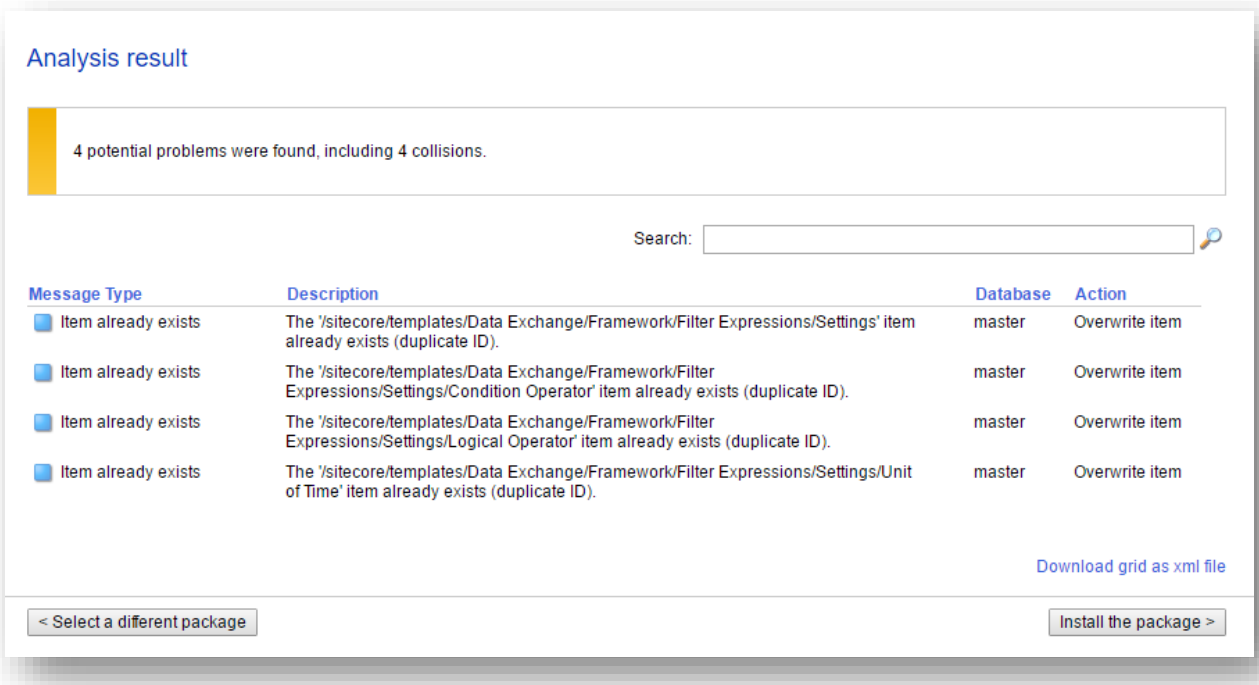
These update packages must be installed on the following Sitecore server roles:

- Content management
- Content delivery
- Aggregation

Note
This section was written using Sitecore Experience Platform 8.2 update 1. Earlier for future versions may require slightly different steps, or may involve different screens.

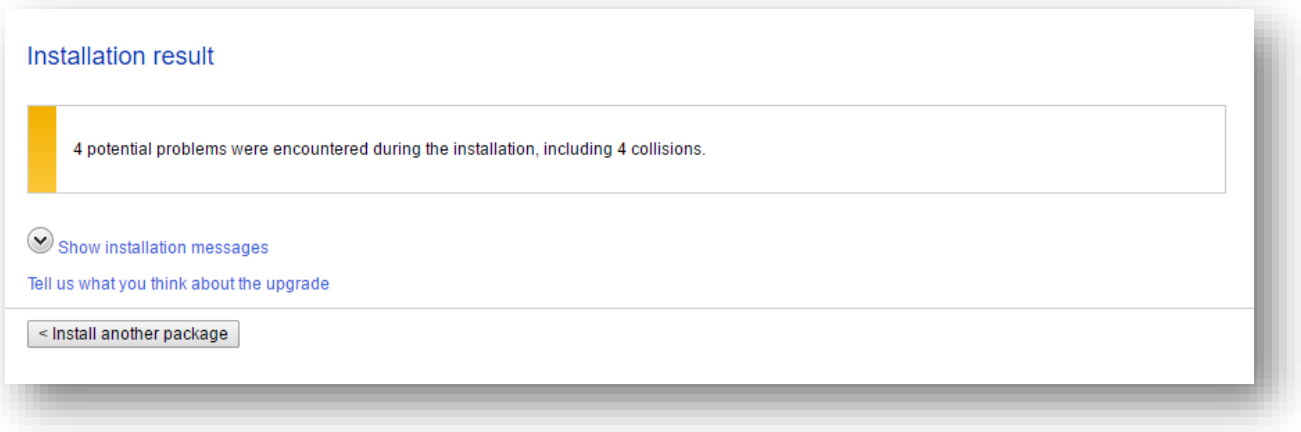
3.2.1 Update Data Exchange Framework

1. Use the Sitecore Update Installation Wizard to install the following update package:
   - Data Exchange Framework 1.2.0 rev. 161212.update.
2. You must run the package analysis. Analysis will report that potential problems were found. Ignore this warning. Click **Install the package >** to continue.



Note
The exact number of problems depends on the number of tenants you have defined and the languages you have configured. This is expected behavior.

3. After the wizard finishes, the installation results will report that potential problems were encountered. This is the expected result.

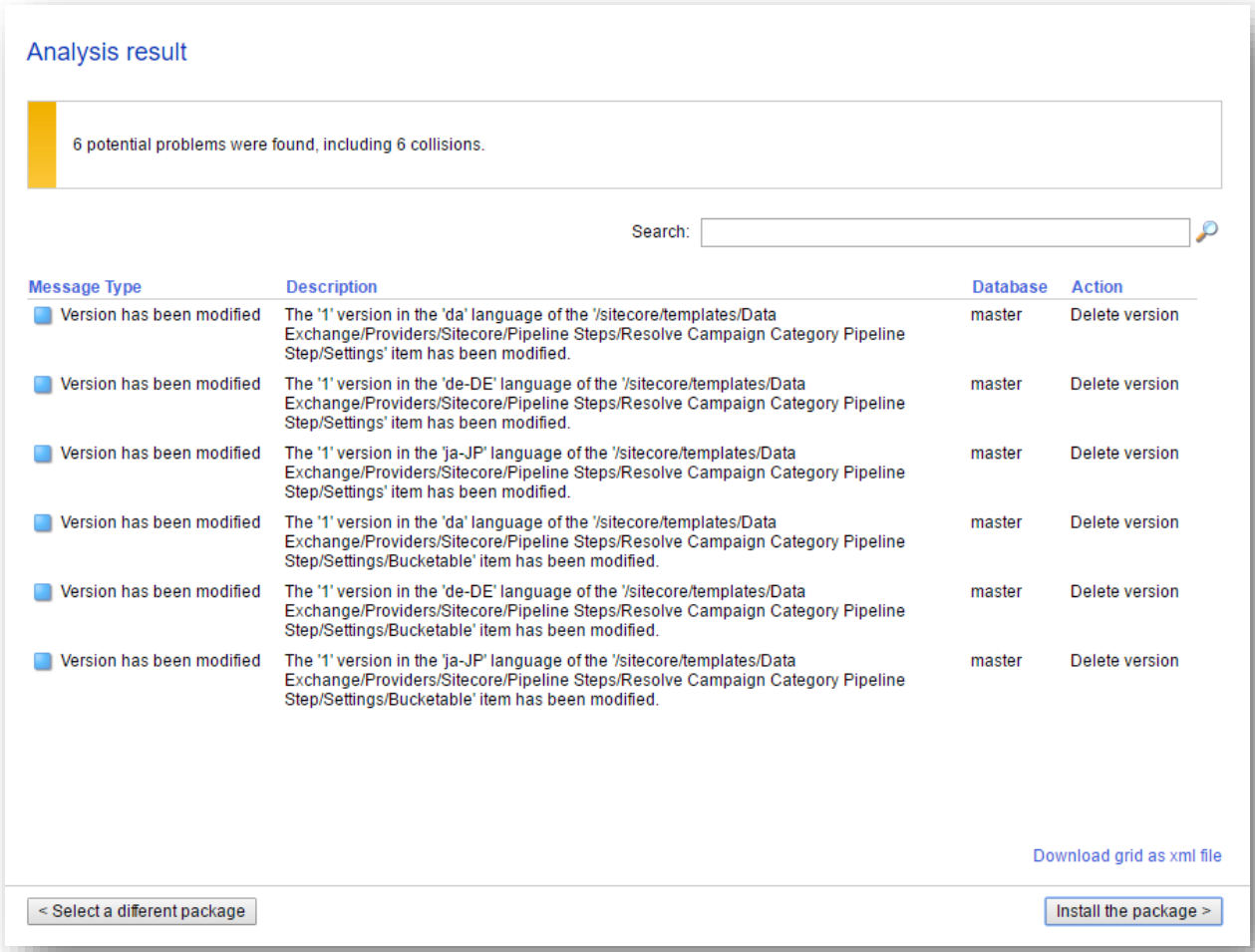


Note
The exact number of problems depends on the number of tenants you have defined and the languages you have configured. This is expected behavior.

3.2.2 Update Sitecore Provider for Data Exchange Framework

1. Use the Sitecore Update Installation Wizard to install the following update package:
   - Sitecore Provider for Data Exchange Framework 1.2.0 rev. 161212.update.

2. You must run the package analysis. Analysis will report that potential problems were found. Ignore this warning. Click **Install the package >** to continue.



Note
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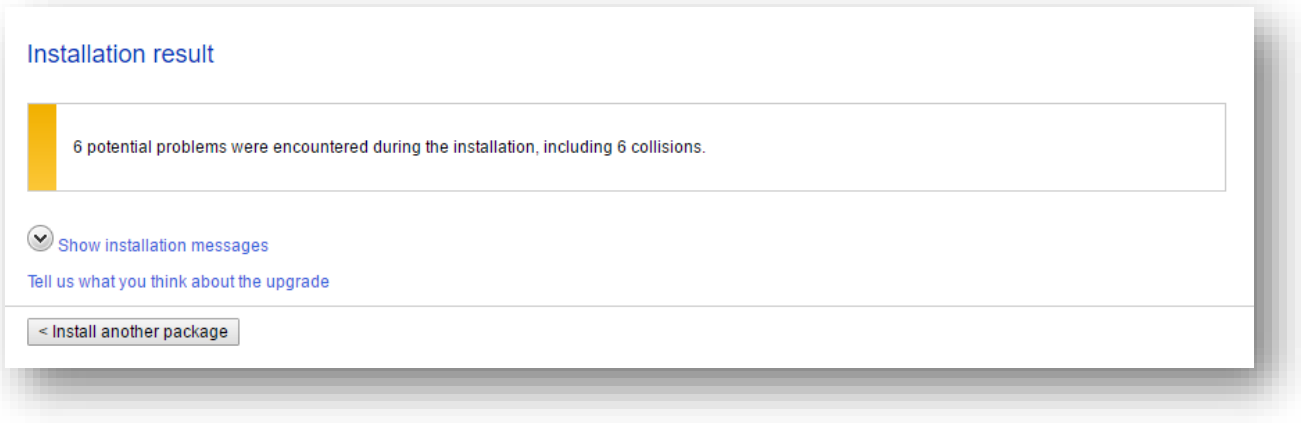
3. After the wizard finishes, the installation results may report potential problems were encountered. This is the expected result.

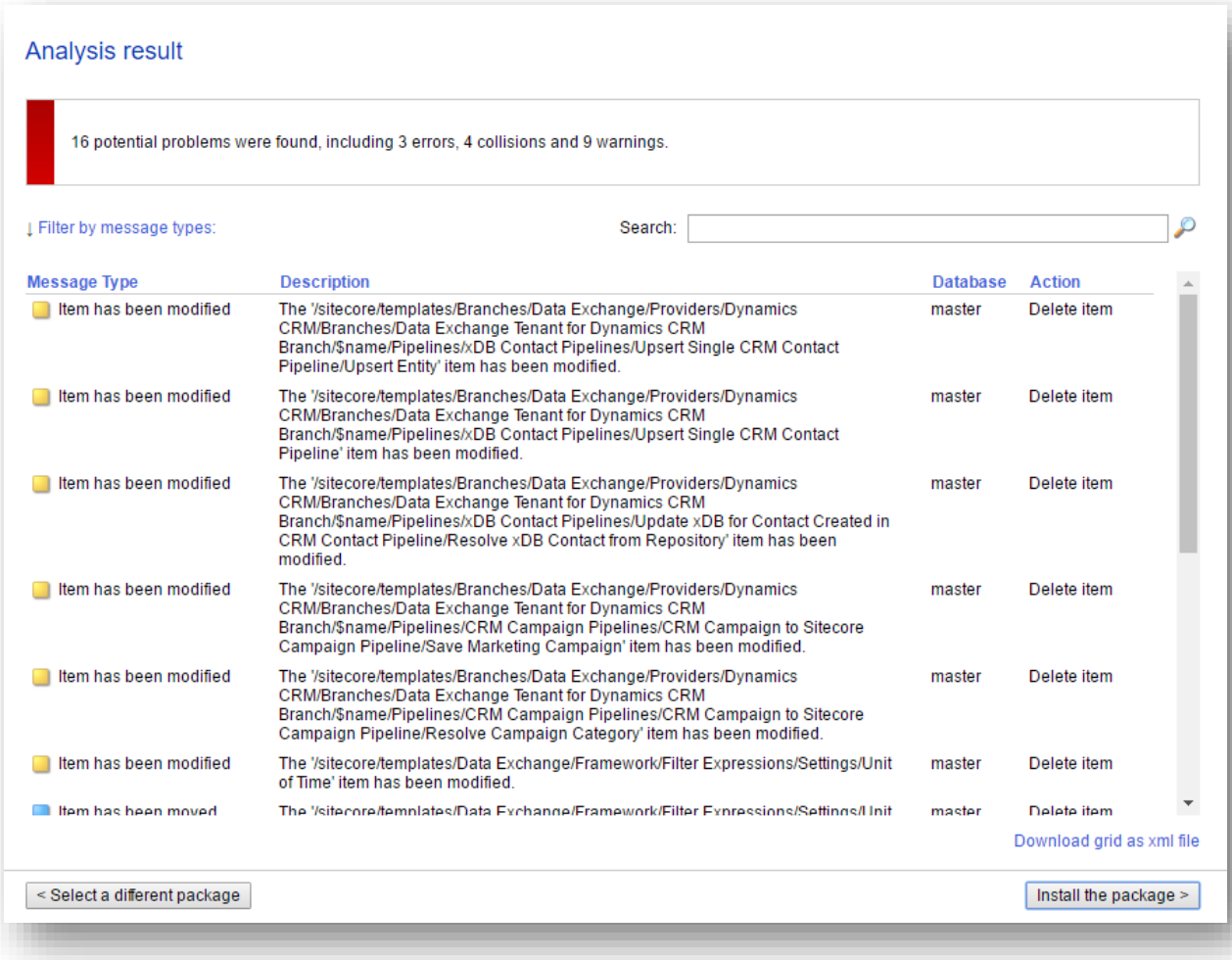


Note
The exact number of problems depends on the number of tenants you have defined and the languages you have configured. This is expected behavior.

3.2.3 Update Dynamics CRM Provider for Data Exchange Framework

1. Use the Sitecore Update Installation Wizard to install the following update package:
   - Dynamics CRM Provider for Data Exchange Framework 1.2.0 rev. 161212.update.

2. You must run the package analysis. Analysis will report that potential problems were found. Ignore this warning. Click **Install the package >** to continue.



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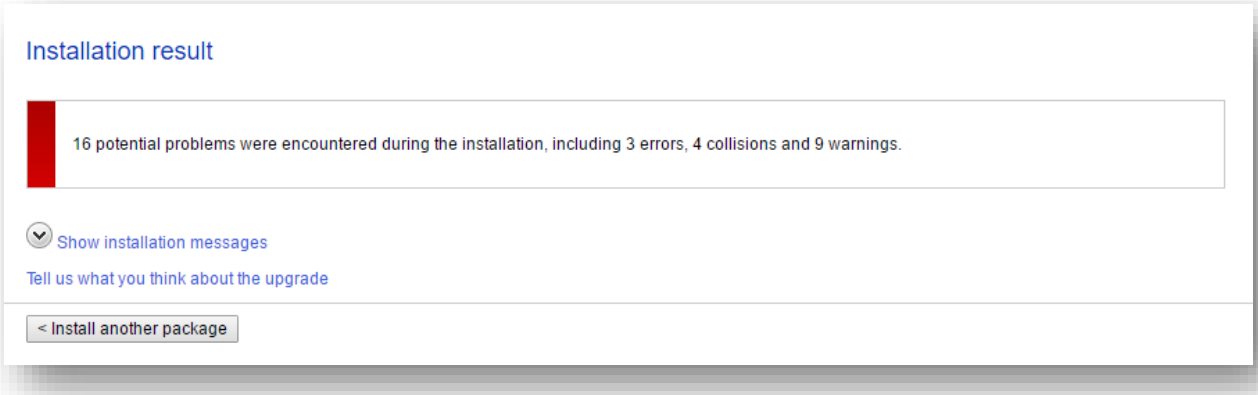

Note
The exact number of problems depends on the number of tenants you have defined and the languages you have configured. This is expected behavior.

4. Add the following code to **web.config,** under the section **/configuration/runtime/assemblyBinding**:

```
              <dependentAssembly>
                <assemblyIdentity name="Microsoft.Xrm.Sdk" publicKeyToken="31bf3856ad364e35"
culture="neutral" />
                <bindingRedirect oldVersion="0.0.0.0-8.0.0.0" newVersion="8.0.0.0" />
              </dependentAssembly>
              <dependentAssembly>
                <assemblyIdentity name="Microsoft.Crm.Sdk.Proxy"
publicKeyToken="31bf3856ad364e35" culture="neutral" />
                <bindingRedirect oldVersion="0.0.0.0-8.0.0.0" newVersion="8.0.0.0" />
              </dependentAssembly>
```

3.3 Post Installation Steps

3.3.1 Config Files

Under certain conditions, some config files from Dynamics CRM Connect 1.1 may not be deleted automatically during the upgrade process.

If these files exist on your Sitecore server, delete them:

- [include file path]\DynamicsCrm\Sitecore.Analytics.DynamicsCrm.Lucene.config
- [include file path]\DynamicsCrm\Sitecore.Analytics.DynamicsCrm.Solr.config.example

3.3.2 Existing Tenants

You may have tenants that were configured prior to upgrading your Sitecore server. The upgrade process updates the templates and files that are included in Dynamics CRM Connect, but it does not change items under any tenants you previously created. This means that some new functionality will be available to those tenants (such as features inherited from standard values), but not all (such as changes to the standard pipeline batched).

For this reason, it is strongly recommended that you re-create any tenants you already have configured. This will ensure that all new settings from Dynamics CRM Connect 1.2 are included.

If you do not re-create your tenants, you must test each tenant to ensure the tenant is still working as you expect.

In addition, in order to take advantage of new features (such as improved performance in writing data to Dynamics CRM and Sitecore), you will need to add the required configuration to your tenant. This can be done by creating a new tenant, and comparing the items in the new tenant to the items in your existing tenant.