

Microsoft BizTalk Adapter for Microsoft Dynamics CRM 4.0 Installation and Usage Guide

August 2009

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Introduction

This document provides product overview and describes the installation and usage of the Microsoft® BizTalk® Server Adapter for Microsoft Dynamics® CRM 4.0

This document describes how to create a send port for this adapter and fetch schemas from Microsoft Dynamics CRM.

This guide is intended for users who have knowledge of the basic concepts of Microsoft BizTalk Server and Microsoft Visual Studio®.

Product Overview

Release Goal

To enable integration between Microsoft Dynamics CRM and external business applications.

Product Scope

The Microsoft® BizTalk® Server Adapter for Microsoft Dynamics® CRM 4.0 provides following operations.

1. Availability of Microsoft Dynamics CRM as a send Adapter
2. Discovery and usage of actions/entities schemas for different Microsoft Dynamics CRM organizations.

The user can utilize the above capabilities of the adapter to connect Microsoft Dynamics CRM to other applications via BizTalk server using the BizTalk server orchestration/mapping capabilities.

Support

Support for the Microsoft® BizTalk® Server Adapter for Microsoft Dynamics™ CRM 4.0 is limited to the areas outlined in this Installation and Usage Guide. These areas include:

- Installation
- Creating Send Ports
- Fetching Schema from Microsoft CRM

Installation

Prerequisites for Installation

The following prerequisites must be fulfilled before you run Microsoft BizTalk Adapter for Microsoft Dynamics CRM 4.0 installation.

1. One of the following supported versions of BizTalk Server and its pre-requisites are installed and configured:
 - a. BizTalk Server 2009
 - b. BizTalk Server 2006 R2
 - c. BizTalk Server 2006
2. A supported version of Visual Studio installed.
 - a. BizTalk Server 2009 requires Visual Studio 2008 SP1
 - b. BizTalk Server 2006 and 2006 R2 require Visual Studio 2005

For more information regarding BizTalk Server pre-requisites, please review the [BizTalk Server system requirements page](#) on the BizTalk Server site. Please note that support for these pre-requisites is not included with support for the Adapter install.

Installation Instructions

1. Download the .exe file from the Microsoft Download Center.
2. Double-click the .exe file. The Installation Wizard opens, to help guide you through the installation.
3. After the installation is complete, **Microsoft Dynamics CRM 4.0** appears in the list of adapters in the BizTalk Server Administration Console, as shown in Figure 1. The BizTalk Server Administration Console is installed with Microsoft BizTalk Server.
4. User has to be local administrator and member of "SSO Administrators" group to perform the installation.

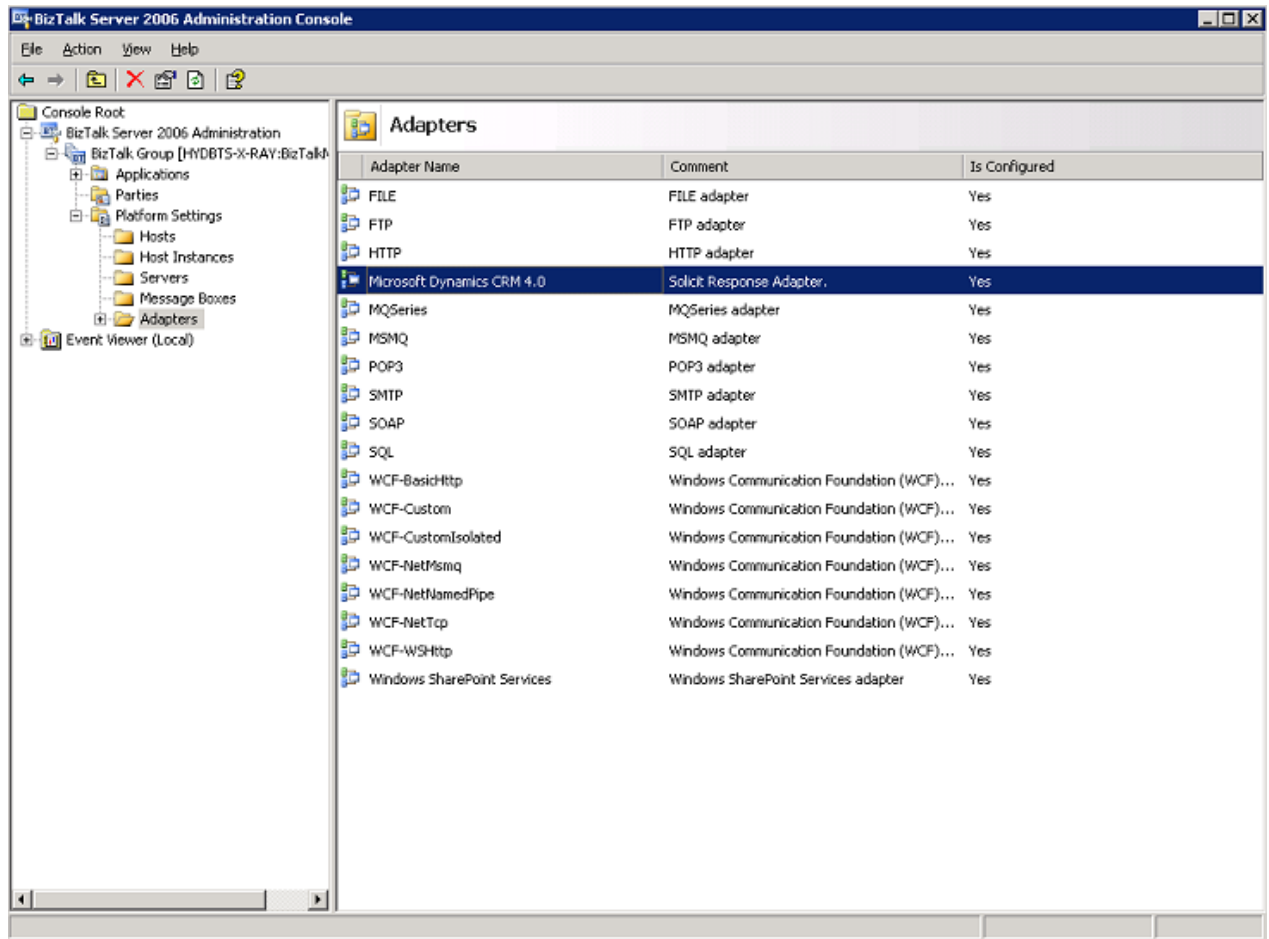


Figure 1

On Premise: Creating a send port when the BizTalk Server process user is also the Microsoft Dynamics CRM access user

Follow these steps to create the send port when the BizTalk Server process is running under the credentials of a Microsoft Dynamics CRM access user.

Note: The steps listed below are for Microsoft BizTalk Server 2006. The same steps may be used for BizTalk Server 2009 by using the corresponding application links in the **Microsoft BizTalk Server 2009** folder on the Start menu.

1. Click **Start**, point to **Microsoft BizTalk Server 2006**, open **BizTalk Administration** and expand **Applications**, and then expand **BizTalk Application 1**.
2. Right-click **Send Ports**, point to **New**, and then select desired port type.
3. If the selected port type is Static, then follow steps 5-9 to specify the Send Handler.
4. If the port type is Dynamic, no need to create a Send Handler as the Dynamic port will use the default Send Handler.
5. The **Send Port Properties** dialog box opens, as shown in Figure 2.

6. In the **Name** box, type the name of the send port.
7. In the **Type** list, select **Microsoft Dynamics CRM**. Click **Configure** to provide Microsoft Dynamics CRM URL, select **AD authentication** and choose from populated organizations.
8. In the **Send handler** list, verify that the default **BizTalkServerApplication** is selected.
9. In the **Send pipeline** list, select **XML Transmit** or, if you are using a two-way solicit response port, select **XML Receive for the response pipeline**.
10. Click **OK**.

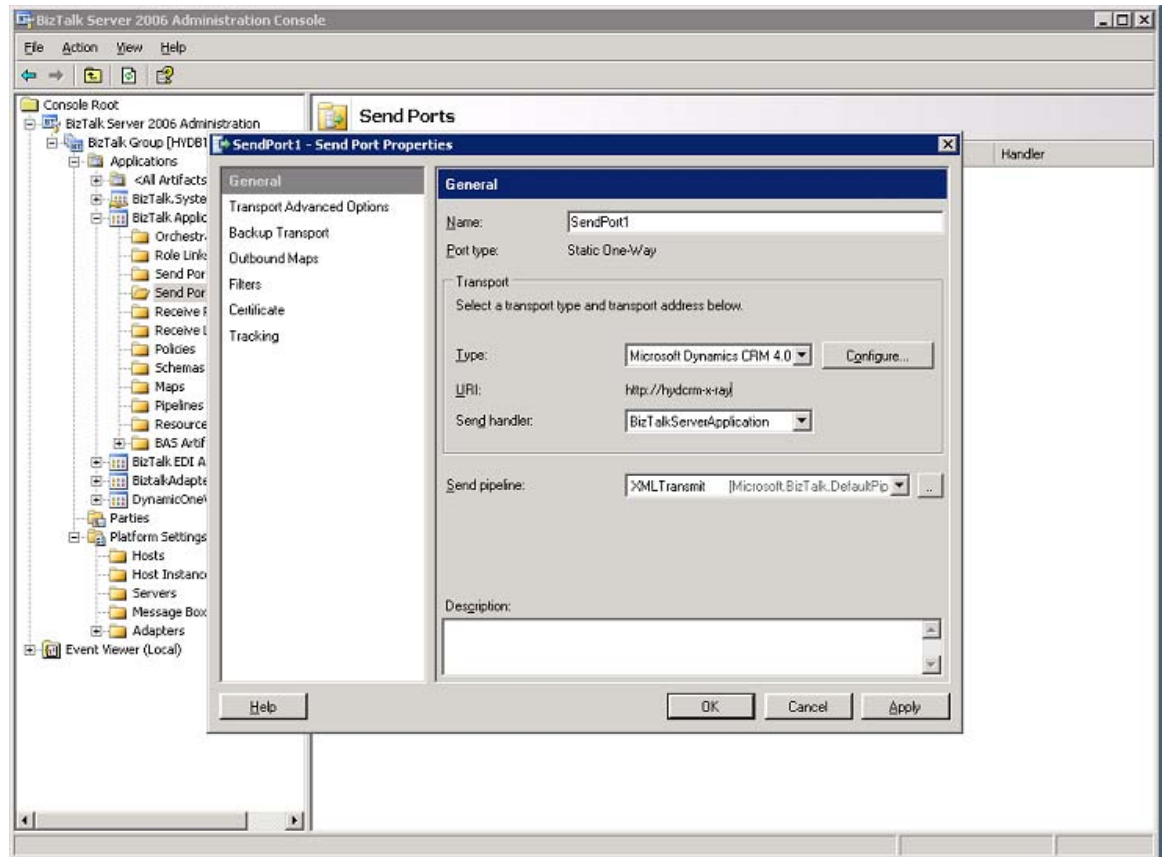


Figure 2

On-Premise: Creating a send port when the BizTalk Server process user and the Microsoft Dynamics CRM access user are different

Follow these steps to create a send port when the Microsoft Dynamics CRM access user has different credentials than the BizTalk Server process user, or if you are configuring multiple send ports to multiple Microsoft Dynamics CRM servers.

This scenario has the following steps:

1. Create the host.
2. Create the host instance.
3. Create the new send handler for the Microsoft Dynamic CRM adapter.
4. Create the send port with the new send handler.

Note: The steps listed below are for Microsoft BizTalk Server 2006. The same steps may be used for BizTalk Server 2009 by using the corresponding application links in the **Microsoft BizTalk Server 2009** folder on the Start menu.

Create the host

1. Click **Start**, point to **Microsoft BizTalk Server 2006**, open **BizTalk Administration**, and expand **Platform settings**.
2. Right-click **Hosts**, point to **New**, and select **Host**. The **Host Properties** dialog box opens, as shown in Figure 3.
3. In the **Name** box, type a host name.
4. In the **Type** list, select **In-Process**.
5. In the **Windows group** box, enter the name of the BizTalk Application Users or BizTalk Server Administrators group, and then click **OK**.

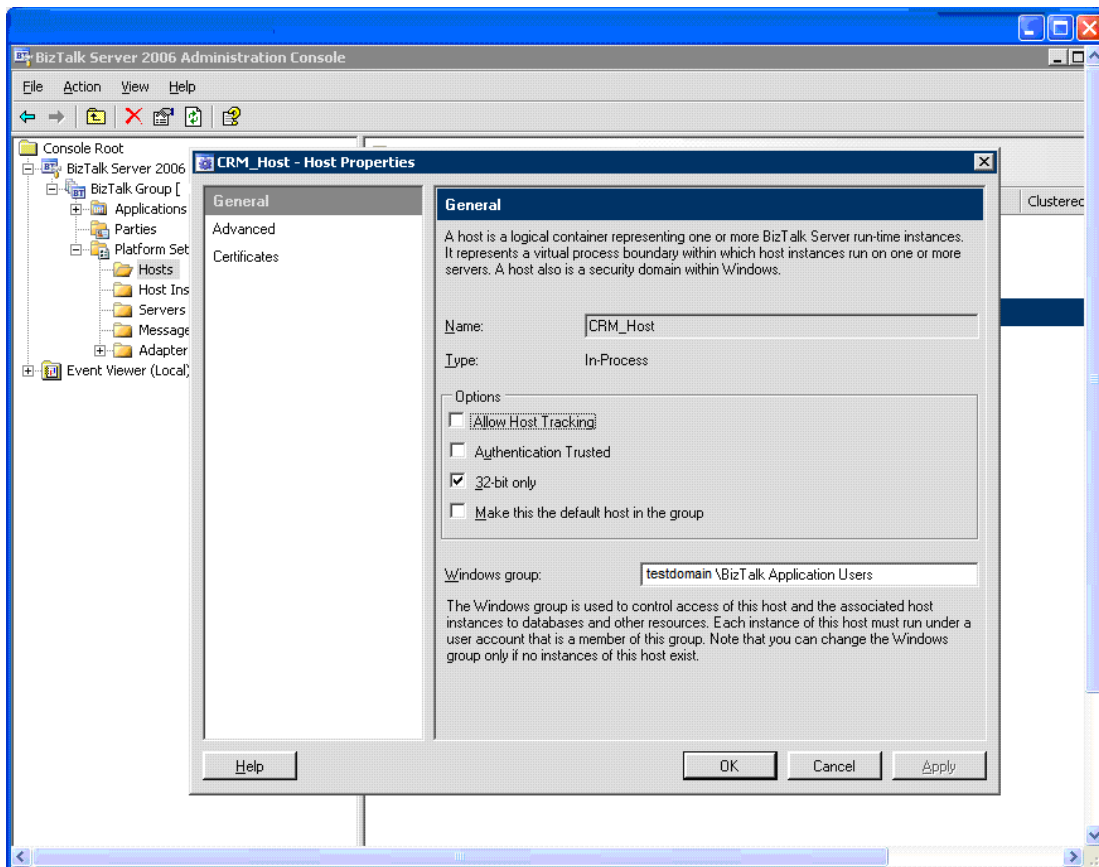


Figure 3

Create the host instance

1. Click **Start**, point to **Microsoft BizTalk Server 2006**, open **BizTalk Administration**, and expand **Platform Settings**.
2. Right-click **Host Instances**, point to **New**, and then click **Host Instance**. The **Host Instances Properties** dialog box opens, as shown in Figure 4.
3. In the **Host name** list, select a name.
4. In the **Server** list, select a server.
5. Click **Configure**. The **Logon Credentials** dialog box opens.
6. In the **Logon** and **Password** boxes, type the domain logon name and password of the Microsoft Dynamics CRM access user. These are the credentials used for the host instance to run and for the send handler that will be created (as explained in the next procedure) for the Microsoft Dynamics CRM adapter under this host. Verify that this user is part of the BizTalk Application Users group.
7. Click **OK**.

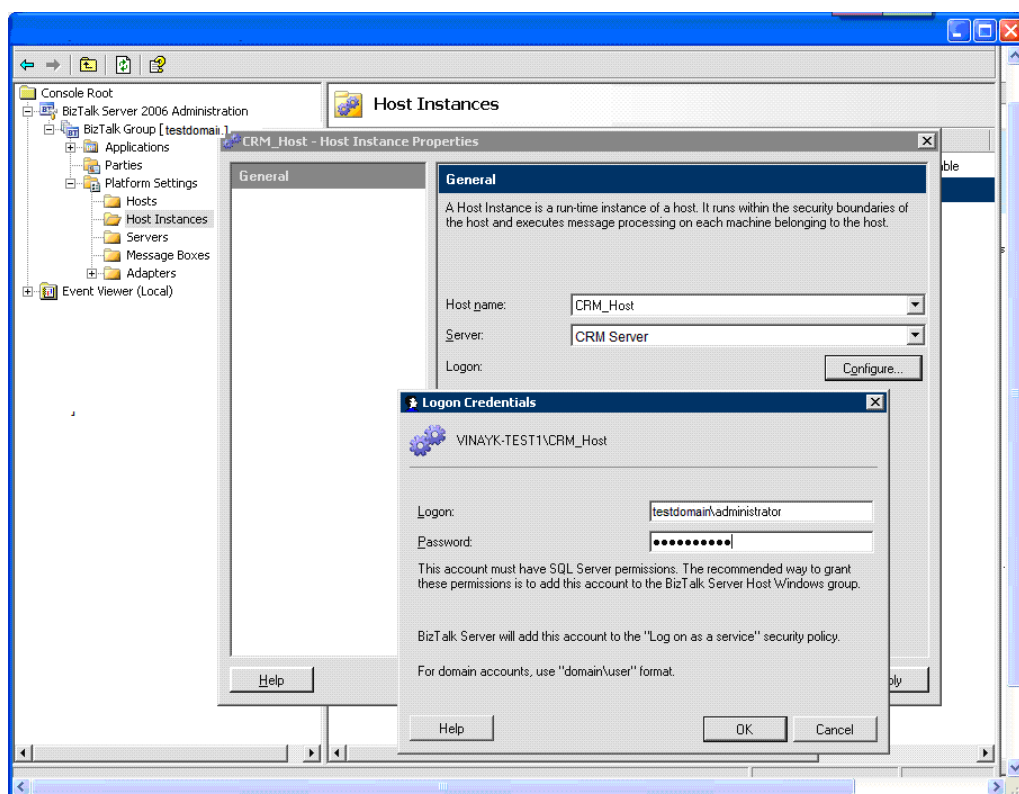


Figure 4

Create the new send handler for the adapter

1. Click **Start**, point to **Microsoft BizTalk Server 2006**, open **BizTalk Administration**, and then expand **Platform Settings**.

2. Expand the **Adapters** node, and then select **Microsoft Dynamics CRM**.
3. Right-click **Microsoft Dynamics CRM 4.0**, point to **New**, and then click **Send Handler**. The **Microsoft Dynamics CRM – Adapter Handler Properties** dialog box opens, as shown in Figure 5.
4. In the **Host name** list, select the host that you created in the previous procedure, and then click **OK**.
5. To start (or restart) the host instance, right-click the host instance, and click **Start (or Restart)**.

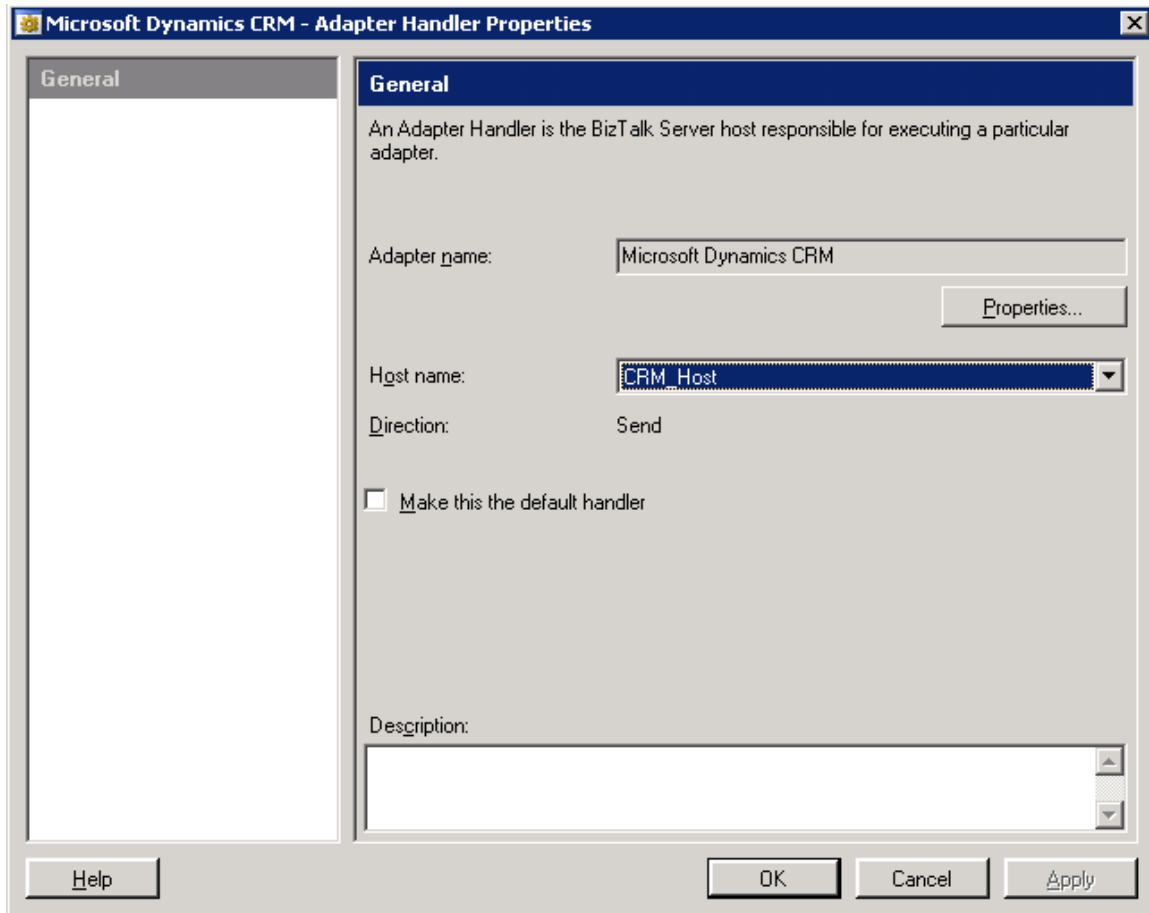


Figure 5

Create the send port with the new send handler

1. Click **Start**, point to **Microsoft BizTalk Server 2006**, open **BizTalk Administration** and expand **Applications**, and then expand **BizTalk Application 1**.
2. Right-click **Send Ports**, point to **New**, and then select either **Static One-Way Port** or **Static Solicit Response Port**.
The **Send Port Properties** dialog box opens, as shown in Figure 6 a.
3. In the **Name** box, type a name for the send port.

4. In the **Type** list, select **Microsoft Dynamics CRM 4.0**. Click **Configure** to provide Microsoft Dynamics CRM URL , select **AD authentication** and select from populated organizations.
5. In the **Send handler** list, select the host created in the previous procedure.
6. In the **Send pipeline** list, select **XML Transmit** or, if you are using a two-way solicit response port, select **XML Receive**, and then click **OK**.

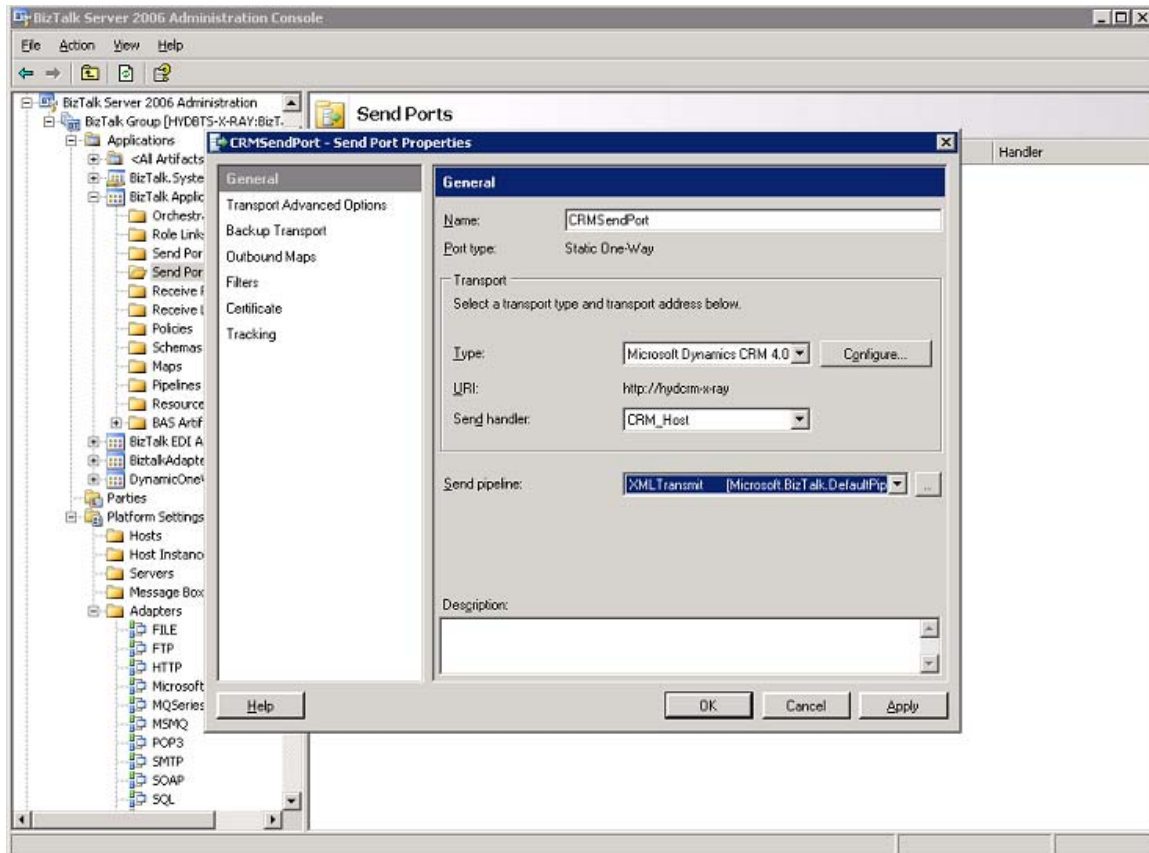


Figure 6a

IFD: Creating a send port

The adapter needs the external domain credentials to communicate with Microsoft Dynamics CRM 4.0 IFD installations. All the steps are valid to the above on-premise installations for the Microsoft Dynamics CRM 4.0, except when configuring send port, one has to select Form Based Authentication and provide the IFD credentials after clicking the configure button during the send port creation. See figure 6 b below.

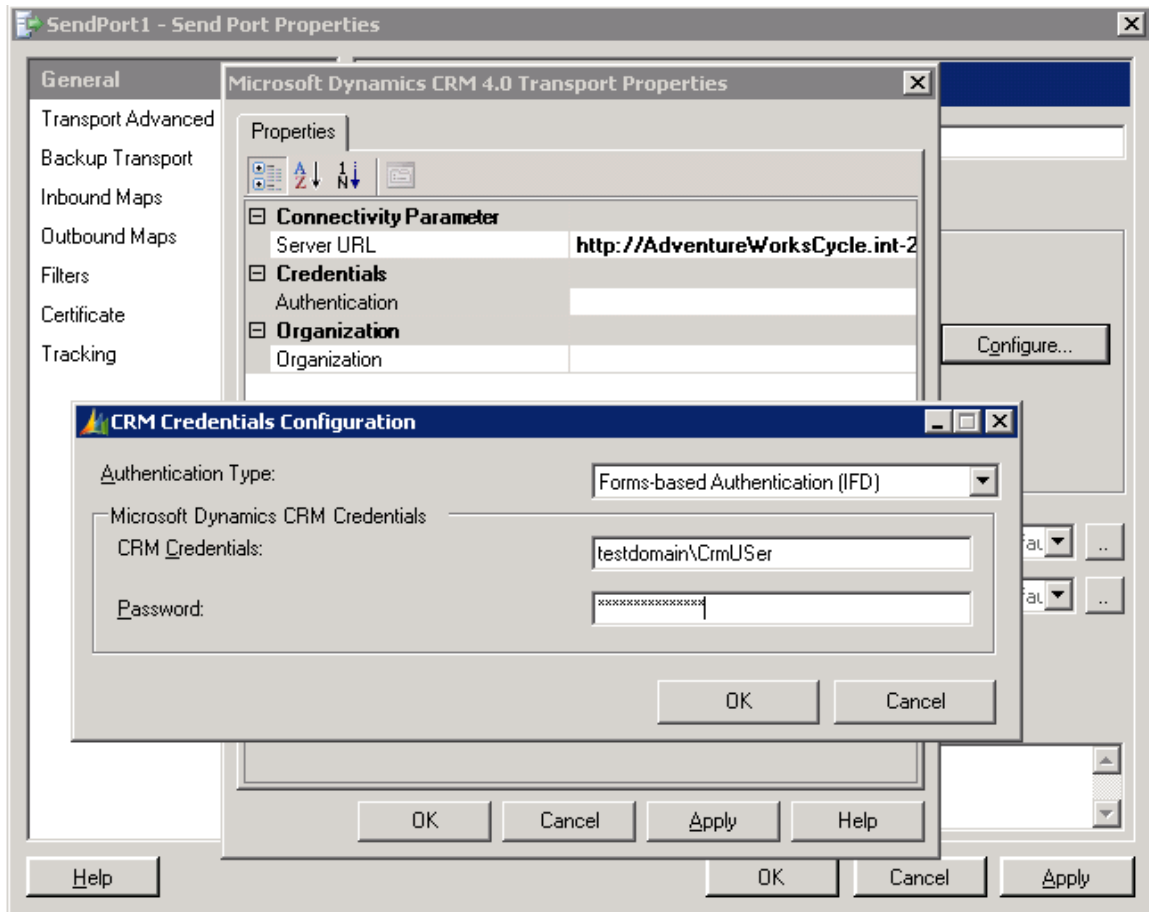


Figure 6b

Fetch the schema

Follow these steps to fetch the entities or actions schemas from Microsoft Dynamics CRM.

Note: The steps listed below are for Microsoft Visual Studio 2005. The same steps may be used for Visual Studio 2008 by using the corresponding application links in the **Microsoft Visual Studio 2008** folder on the Start menu.

1. Click **Start**, point to **Programs**, point to **Microsoft Visual Studio .NET**, and then click **Microsoft Visual Studio .NET**.
2. In Visual Studio .NET, on the **File** menu, point to **New**, and then click **Project**.
The **New Project** dialog box opens, as shown in Figure 7.
3. In the Solution Explorer window, right-click **BizTalk Server Project**, point to **Add**, and then click **Add Generated Items**.
The **Add Generated Items** dialog box opens, as shown in Figure 8.

4. Under **Categories**, select **Add Adapter Metadata**, and then click **Add**. The **Add Adapter Wizard** opens, as shown in Figure 9.
5. From the list of registered adapters, select **Microsoft Dynamics CRM 4.0**.
6. In the **Port** list, select the port created in the previous procedure, and then click **Next**.
The **Microsoft Dynamics CRM User Credentials** dialog box appears, as shown in Figure 10 a (on-premise) and 10 b (IFD).
7. In the **Authentication Type** drop-down, select **AD** for on-premise and **form-based authentication** for IFD. For **User Name** and **Password** input boxes type the user name and password of the Microsoft Dynamics CRM user. Click **Get CRM organizations** and make the organization selection and click **OK**. The **Microsoft Dynamics CRM Entities and Actions** dialog box appears, as shown in Figure 11.
8. Expand the tree view shown for the list of Entities and Actions by clicking on the '+' sign. Figure 12 shows an expanded list.
9. Select the check boxes for all entities or actions for which schemas are to be fetched, and then click **Next**. The fetched schemas are displayed in the Solution Explorer view of Visual Studio, as shown in Figure 13.i

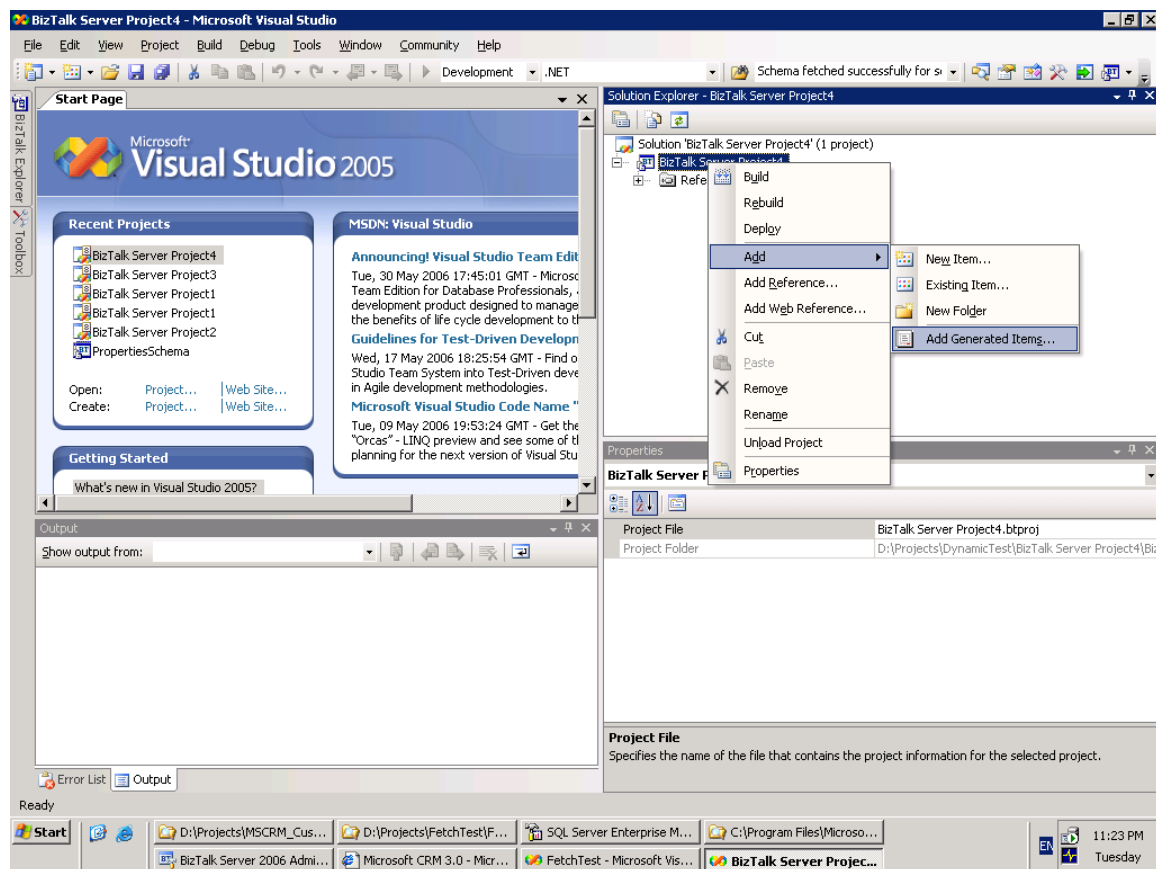


Figure 7

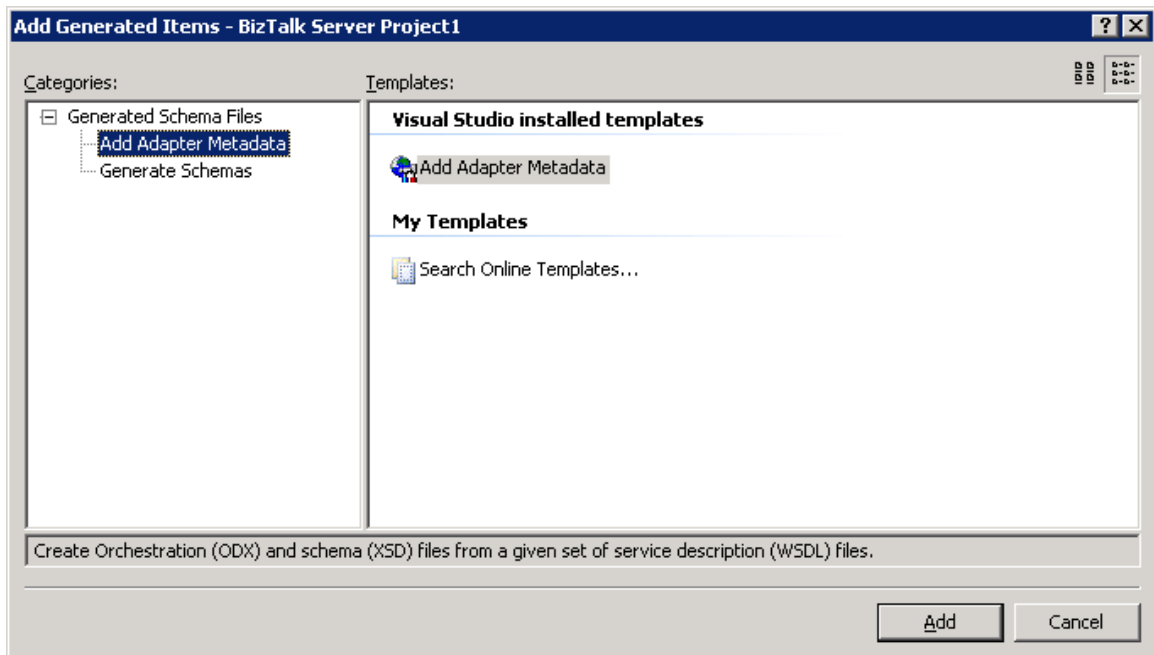


Figure 8

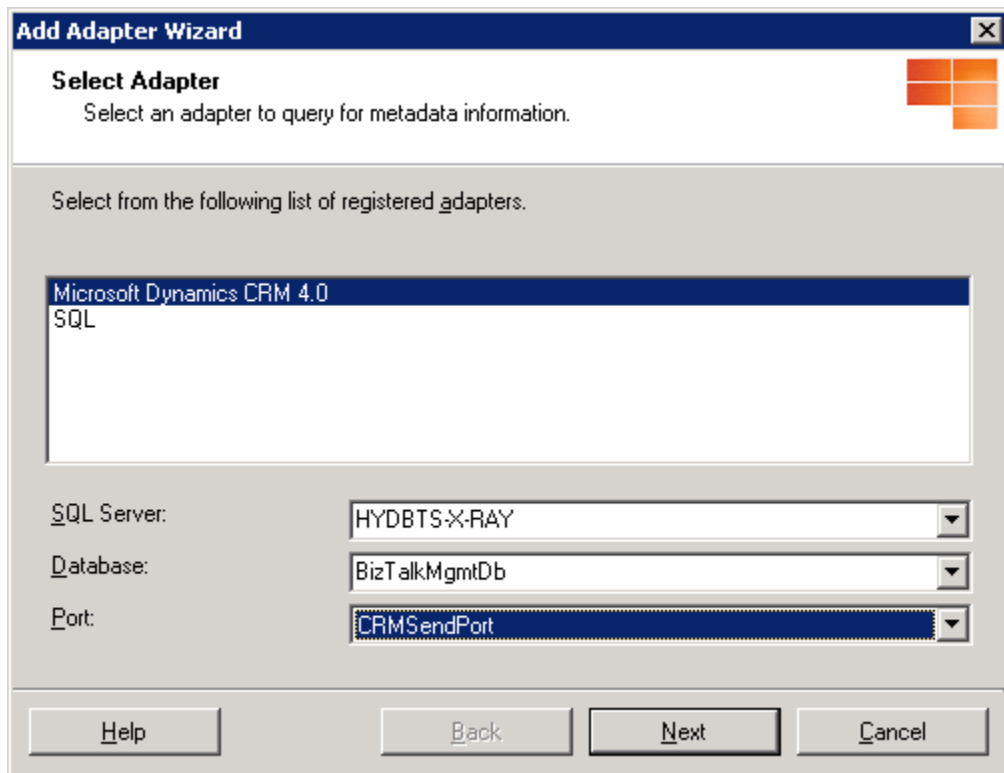


Figure 9

The screenshot shows a dialog box titled "Microsoft Dynamics CRM User Credentials". It contains the following fields and controls:

- CRM Server URL:** A text box containing "http://hydcrm-x-ray".
- Authentication Type:** A dropdown menu with "Active Directory" selected.
- Microsoft Dynamics CRM Credentials:** A group box containing:
 - CRM Credentials:** A text box containing "administrator".
 - Password:** A text box containing ten dots.
 - Get CRM Organizations:** A button.
- CRM Organization:** A dropdown menu with "AdventureWorksCycle" selected.
- OK** and **Cancel** buttons at the bottom right.

Figure 10 a

The screenshot shows the same dialog box as Figure 10 a, but with the following changes:

- Authentication Type:** The dropdown menu now shows "Forms-based Authentication (IFD)".
- CRM Credentials:** The text box now contains "crmtestdomain\administrator".
- Password:** The text box still contains ten dots.
- Get CRM Organizations:** A button.
- CRM Organization:** The dropdown menu still shows "AdventureWorksCycle".
- OK** and **Cancel** buttons at the bottom right.

Figure 10 b

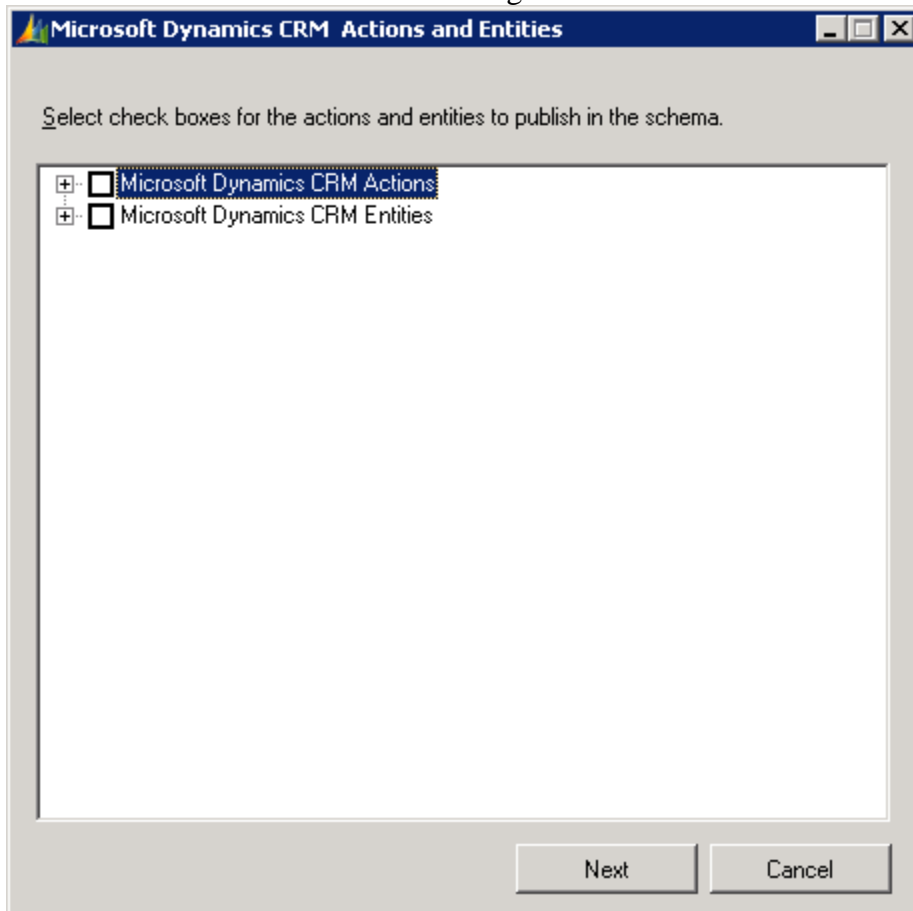


Figure 11

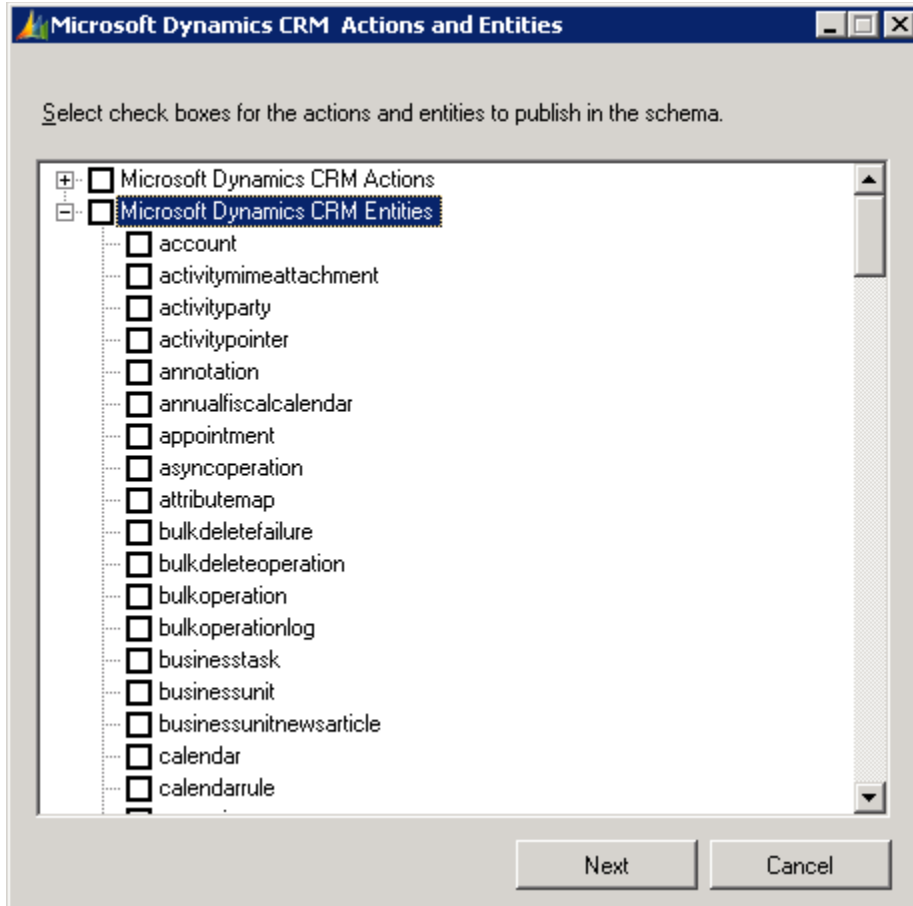


Figure 12

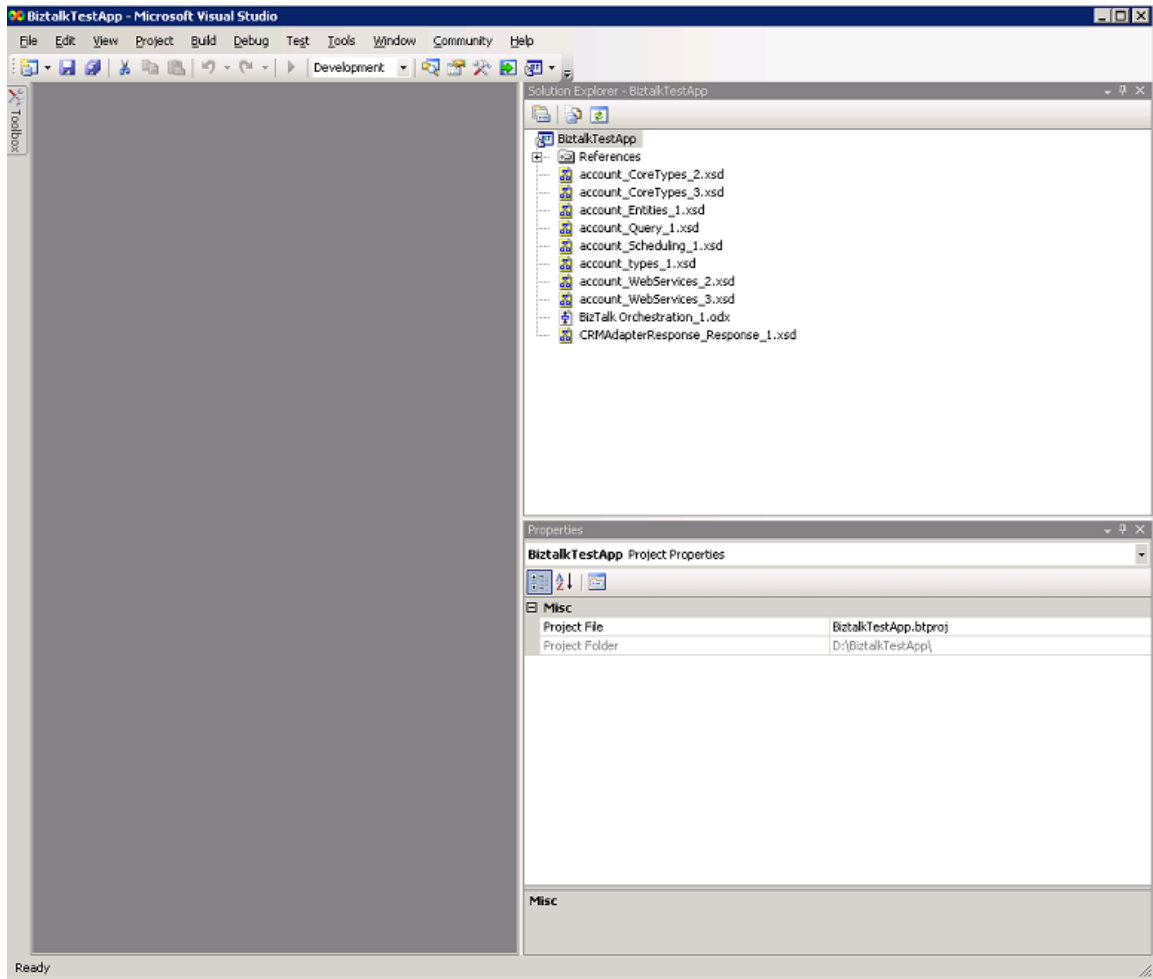


Figure 13

Run-time Behavior

The Microsoft BizTalk Adapter for Microsoft Dynamics CRM 4.0 processes the XML sent from BizTalk Server and performs the Create, Update, and Delete actions of any entities and all other possible actions supported in Microsoft Dynamics CRM 4.0 based on the values present in the incoming XML.

There is an attribute named “crm_action” in the root node of entity and action schemas. Following is the behavior of Microsoft BizTalk Adapter for Microsoft Dynamics CRM 4.0 when the incoming XML (the transformed /mapped XML) is received, if:

- “crm_action” attribute is empty:
 - (1) If the primary key node of the entity (for example accountid for Account) is not present in the XML or if the node has an empty value, the adapter assumes this is a “create” action.
 - (2) If the primary key node of the entity has a correct GUID value, the adapter assumes the action to be “update”.

- “crm_action” attribute contains some value:
 - (1) If the action is “create”, “update” or “delete”, perform create, update and delete respectively.
 - (2) If the action is “execute”, this adapter performs the action requested using the Microsoft Dynamics CRM SDK. Some examples of actions are ConvertQuoteToSalesOrderRequest, ConvertProductToKitRequest, and SetStateAccountRequest. For a complete reference of all possible actions, see the [Microsoft Dynamics CRM 4.0 SDK](#).

A special case: If you want to perform a create action where you want to specify the GUID for the entity beforehand. For example, you want to create an account where the account id is “{684FD04E-E515-491f-AF25-F9258A3C9F03}”.

Solution:

- (1) The input XML to the adapter (which can be the result of a map transformation) should contain the following nodes with the specified values.
 - (a) <accountid> {684FD04E-E515-491f-AF25-F9258A3C9F03}
</accountid>
 - (b) crm_action=”create” [crm_action is an attribute.]

Create a secured log path directory

You can use a debug feature to check whether the map used in the orchestration is generating the correct XML for Microsoft Dynamics CRM SDK.

This feature is toggled using a registry setting. When Debug = true in the registry, the adapter checks the values in the XML (which results from a transformation/map in orchestration) against all attributes of an entity and their permissible values.

Warning: Modifying the registry incorrectly can cause serious problems that may require you to reinstall your operating system. Microsoft cannot guarantee that problems resulting from the incorrect use of the registry can be solved. Use the registry at your own risk.

If there are incorrect values in the XML, an error is logged in a log file that is created in a directory specified by the registry key “LogPath” in the same registry path where “Debug” is present.

Important: The registry path is

“HKEY_CLASSES_ROOT\CLSID\{D38D5DCC-2B30-43b9-9C69-3BBFD0926986}”. This directory must be protected with the appropriate permissions and credentials so that only a user who has the appropriate credentials and permissions can create and access files in this directory.

Known Issues

1. Deletion of any entities does not return the GUID in the response XML returned by Microsoft Dynamics CRM.
2. User is able to fetch list of entities and actions using <wrong domain>\ <right login> <right password> if the machine is a domain controller.
3. Compilation of BizTalk project fails if following steps are not performed after fetching the schema. User has to set the correct reference in Orchestration for the schema that has been fetched. Please follow the steps given below to avoid compilation failure.
 - a. Open up the Orchestration.
 - b. Go to the Orchestration View, expand “Types”, expand “Multi-Part Message Types”, expand <name of the schema fetched + Request> node, click parameters.
 - c. In the property window, click the dropdown list next to the field “Type” and select the fetched schema.
 - d. Save the Orchestration and compile it.