CISCO SYSTEMS

Cisco Unified CallConnector for Microsoft Dynamics CRM 3.0 Installation and Configuration Guide

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C O N T E N T S

Preface

This preface discusses the objectives, audience, and organization of this document. It also provides sources for obtaining documentation and technical assistance from Cisco Systems.

For information on Obtaining Documentation, Documentation Feedback, Cisco Product Security, Obtaining Technical Assistance, and Obtaining Additional Publications and Information, see the monthly What's New publication, which lists all new and revised Cisco technical documentation.

Contents

Documentation Objectives

This document describes the tasks and commands necessary to install and configure the Cisco Unified CallConnector for Microsoft Dynamics Customer Relations Management 3.0 (Cisco Unified CallConnector for Microsoft Dynamics CRM, formerly know as Cisco Unified CRM CallConnector) to integrate with Cisco Unified Communications Manager (formerly known as Cisco Unified CallManager), Cisco Unified Communications Manager Express (Cisco Unified CME, formerly known as Cisco Unified CallManager Express), and Cisco Unified IP Call Control Express (Cisco Unified IPCC Express).

Audience

This document is intended primarily for Cisco Partners and Resellers who install and maintain the Cisco Unified CallConnector for Microsoft Dynamics CRM—developed by Cisco Systems with the support of Microsoft Corporation—to enable small- to medium-businesses (SMBs) and networked branch offices to deploy a more complete CRM solution by connecting Cisco Unified IP Communications with the Microsoft Business Solutions Customer Relationship Management (Microsoft CRM) application.

Documentation Organization

This document includes the following sections:

Table 1   Document Organization

Title	Description
Cisco Unified CallConnector for Microsoft Dynamics CRM 3.0 Overview	Description of Cisco Unified CallConnector for Microsoft Dynamics CRM concepts. Includes hardware and software prerequisites.
Installing Cisco Unified CallConnector for Microsoft Dynamics CRM 3.0	Step-by-step procedures to install the software required for the Cisco Unified CallConnector for Microsoft Dynamics CRM.
Configuring the IP Phone Service and XML Display Service	Step-by-step procedures for configuring IP phone service and XML display service.
Integrating Cisco Unified CallConnector for Microsoft Dynamics CRM with Cisco Unified IPCC Express	Step-by-step procedures for integrating Cisco Unified CallConnector for Microsoft Dynamics CRM with Cisco Unified IPCC Express.
Using the Cisco Unified CallConnector for Microsoft Dynamics CRM Client	Description of how to use the Cisco Unified CallConnector for Microsoft Dynamics CRM Client.
Appendix A: Troubleshooting Tips	Troubleshooting tips for the Cisco Unified CallConnector for Microsoft Dynamics CRM.

Addditional References

Related Documents

Related Topic	Document Title or URL
Cisco Unified Communications Manager	Cisco Unified Communications Manager technical documentation
Cisco Unified Communications Manager Express	Cisco Unified Communications Manager Express technical documentation
Cisco Unified CCC 2.1	Cisco Unified CRM Communications Connector 2.1
Cisco Unified IPCC Express	Cisco Unified IPCC Express technical documentation
Cisco IOS voice features	See the entire Cisco IOS Voice Configuration Library—including library preface and glossary, feature documents, and troubleshooting information—at http://www.cisco.com/en/US/products/ps6441/prod_configuration_guide09186a0080565f8a.html

Related Websites

Related Topic	URL
Cisco and Microsoft Website	http://www.ciscomicrosoftsmb.com
Cisco Unified Contact Center Express	http://www.cisco.com/en/US/products/sw/custcosw/ps1846/index.html

Related Support Aliases

Related Topic	Alias
For assistance for Cisco Unified IPCC Express	Ask-icd-ivr-support@external.cisco.com
For assistance for configuring and using Cisco Agent Desktop	Ask-cad@external.cisco.com
For product plans and marketing information	Ask-icd-ivr-pm@external.cisco.com

MIBs

MIBs	MIBs Link
No new or modified MIBs are supported by this feature, and support for existing MIBs has not been modified by this feature.	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

Technical Assistance

Description	Link
The Cisco Technical Support & Documentation website contains thousands of pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.	http://www.cisco.com/techsupport

Cisco Unified CallConnector for Microsoft Dynamics CRM 3.0 Overview

Cisco Unified CallConnector for Microsoft Dynamics CRM 3.0 (formerly known as Cisco Unified CRM Connector) integrates Cisco Unified IP Communications with the Microsoft Business Solutions CRM 3.0 (Microsoft CRM). It allows small and medium-sized businesses (SMBs) and Enterprise businesses to integrate Cisco Unified IP Communications solutions with Microsoft CRM at the desktop, without additional hardware. The Microsoft client uses Microsoft Outlook or Internet Explorer as the primary client for managing tasks and contacts.

Cisco Unified CallConnector for Microsoft Dynamics CRM 3.0 is a client/server-based application that supports the following primary features in Cisco IP Telephony environments using Microsoft CRM:

- Automatic detection and screen-pop searches of the Microsoft CRM database for both incoming and outgoing phone calls
- Automatic creation of phone call activity records for incoming and outgoing calls with call duration tracking
- Click-to-dial from the Microsoft CRM user interface
- Multisite configuration capabilities with geographically correct dialing configurations per user
- Easily pop associated Microsoft CRM Customer Services cases
- A search system that allows searches by name and access to contact records and associated support cases
- Integration with Cisco Unified Communications Manager (formerly known as Cisco Unified CallManager), Cisco Unified Communications Manager Express (Cisco Unified CME, formerly known as Cisco Unified CallManager Express), and Cisco Unified IP Contact Center Express

What to Do Next

You are now ready to download the required software to install Cisco Unified CallConnector for Microsoft Dynamics CRM 3.0 (see the).

Installing Cisco Unified CallConnector for Microsoft Dynamics CRM 3.0

This chapter describes how to install the Cisco Unified CallConnector for Microsoft Dynamics CRM 3.0 with the following software:

- Cisco Unified Communications Manager 4.0 or later
- Cisco Unified Communications Manager Express 3.2 or later
- Cisco Unified IPCC Express 4.0 or later

Contents

Prerequisites

- If you are upgrading from a previous version of the Cisco Unified CallConnector for Microsoft Dynamics CRM (version 2.x), you must uninstall the old version before installing this version.

- If you are integrating with Cisco Unified Contact Center Express, you must follow the Cisco Unified Communications Manager installation steps as described in the Cisco Unified Communications Manager technical documentation, and then complete the "Integrating with Cisco Unified Contact Center Express" steps as described in the Cisco Unified Contact Center Express technical documentation to complete the configuration process.

- Install, configure, and verify the proper operation of Cisco Telephony Application Programming Interface (Cisco TAPI) software must be before proceeding with the installation of the Cisco Unified CallConnector for Microsoft Dynamics CRM components.

- Install the Microsoft .NET Framework before proceeding with the Cisco Unified CallConnector for Microsoft Dynamics CRM installation.

Restrictions

- The installation process is supported by Virtual Network Computing (VNC) and other remote control desktop software, but is not supported by Terminal Services.

About Installing Cisco Unified CallConnector for Microsoft Dynamics CRM

Install and ensure operation of the Cisco Unified CallConnector for Microsoft Dynamics CRM server component on the Microsoft CRM server itself. To allow for maximum ease of installation during the client phase, install and ensure operation of the Cisco Unified CallConnector for Microsoft Dynamics CRM server component and service before installing clients because they will attempt to contact the Cisco Unified CallConnector for Microsoft Dynamics CRM server component during their own installation.

> **Note** Configure the Cisco TAPI client software properly and ensure it is running before proceeding with the installation of the Cisco Unified CallConnector for Microsoft Dynamics CRM software. Verify that you can monitor and control the end-user phone extension associated with the client PC. Failure to do so will cause problems during the Cisco Unified CallConnector for Microsoft Dynamics CRM installation. For more information about installing and configuring the Cisco TAPI software, see the Cisco Unified Communications Manager technical documentation.

Software Installation Order

You must install the Cisco Unified CallConnector for Microsoft Dynamics CRM server and client components in the following order:

1. Cisco Unified CallConnector for Microsoft Dynamics CRM server component (installed on Microsoft CRM server)
2. Cisco Unified CallConnector for Microsoft Dynamics CRM client component (installed on all client PCs using the Cisco Unified CallConnector for Microsoft Dynamics CRM)

Installing the Cisco Unified CallConnector for Microsoft Dynamics CRM Server

Use the following steps to install the Cisco Unified CallConnector for Microsoft Dynamics CRM server.

Step 1 Log in to your PC as administrator.

Step 2 Locate and double-click the Setup.exe file for the Cisco Unified CallConnector for Microsoft Dynamics CRM Server installer (see Figure 1) to bring up the Setup Wizard (see Figure 2).

Figure 1   *Server Setup.Exe File: Cisco Unified CallConnector for Microsoft Dynamics CRM*

Figure 2   *Server Setup Wizard: Cisco Unified CallConnector for Microsoft Dynamics CRM*

Step 3   Click **Next**.

The License Agreement window appears (see Figure 3).

Figure 3 Server License Agreement Window: Cisco Unified CallConnector for Microsoft Dynamics CRM

Step 4 Select **I Agree** and click **Next**.

The Select Installation Folder window appears (see Figure 4).

Figure 4   *Select Installation Folder Window: Cisco Unified CallConnector for Microsoft Dynamics CRM*
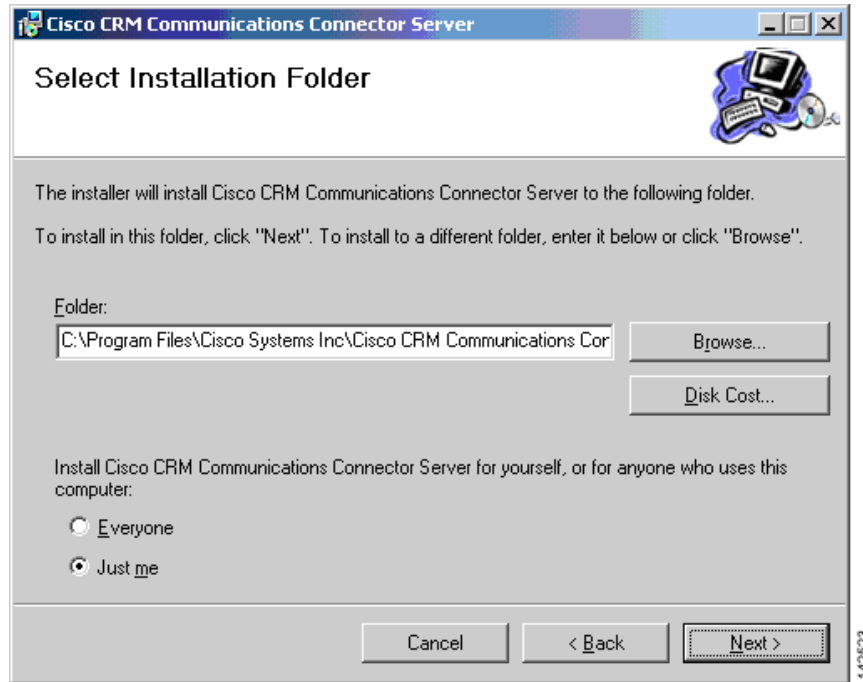
Step 5   Click **Just me** to specify yourself as administrator.

Step 6   Click **Next** to accept the default installation folder location (we recommend this).

The Confirm Installation window appears (see Figure 5).

Figure 5   *Server Installation Confirmation Window: Cisco Unified CallConnector for Microsoft Dynamics CRM*
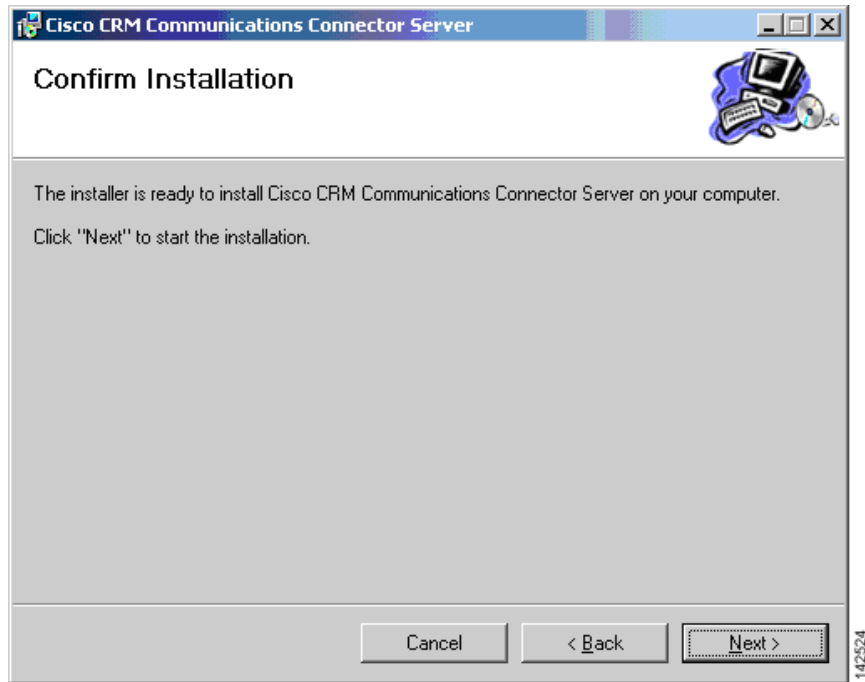
Step 7   Confirm the installation by clicking **Next**.

After the files are copied, the Server Configuration Wizard appears.

Step 8   Configure the Server Configuration tab.

Figure 6 shows how this configuration dialog might appear after configuration, before configuring the phone number processors. In this example, "triton" is the Microsoft CRM server name and it runs on port 5555. Include the remainder of the path that you see in the example (specifically, /MSCRMServices/2006/CrmService.asmx).

Figure 6   *Server Configuration Window—Server Configuration Tab: Cisco Unified CallConnector for Microsoft Dynamics CRM*
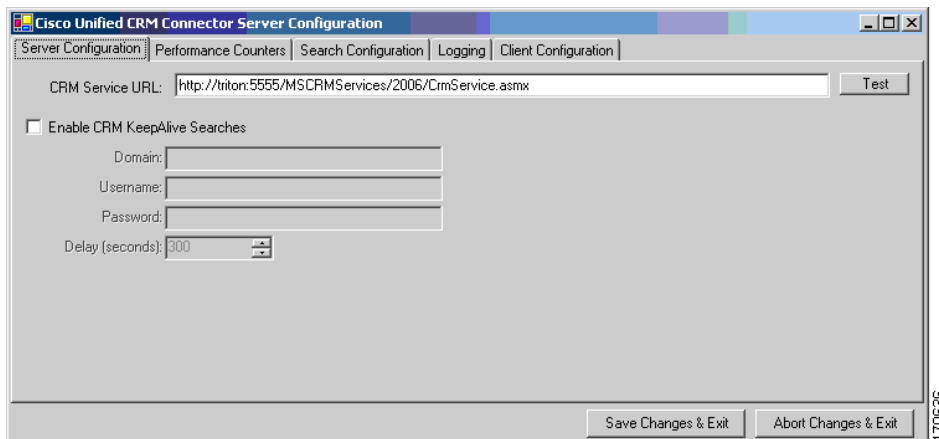
When you click the **Test** button next to the CRM Services URL, you may receive various responses. Figure 7 shows what you want to see. "The URL is Valid" means that the C4 Server Service successfully contacted the Microsoft CRM Web Services.

Figure 7   URL Is Valid Message

Figure 8 shows a validation error. In this instance, the URL is probably not the correct location to the Microsoft CRM Web Services. Verify the URL and try again.

Figure 8   Validation Error Message: Cisco Unified CallConnector for Microsoft Dynamics CRM
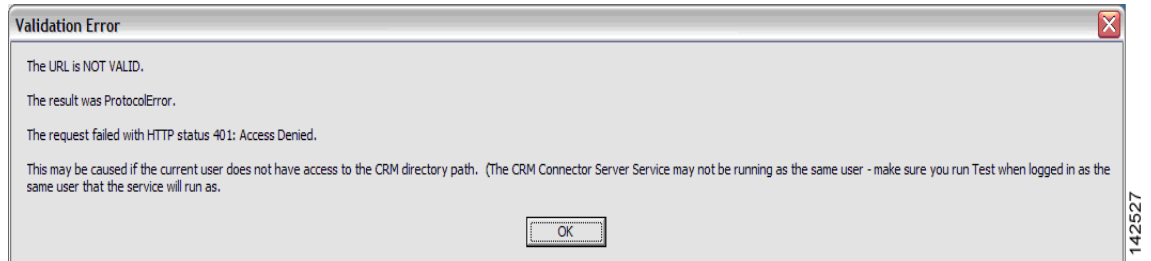
Figure 9 shows a Simple Object Access Protocol (SOAP) error. This could indicate that the user installing the C4 Server Service does not have access to Microsoft CRM.

Figure 9   Validation Error Message: Cisco Unified CallConnector for Microsoft Dynamics CRM
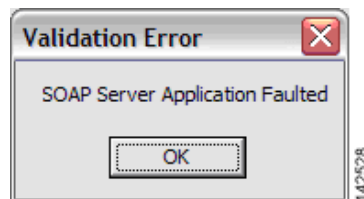
Step 9 In the Server Configuration tab (see Figure 6) check or uncheck the Enable CRM Keepalive Searches field to enable or disable keepalive searches.

Use the keepalive feature to ensure that the Microsoft CRM server is continuously polled so that it does not drop objects from its cache, which could negatively affect a demonstration environment. You do not need to use this feature in a live deployment or production environment.

The remaining fields in the Server Configuration tab are:

- **Domain**—User domain to use when authenticating for performing keepalive searches.
- **Username**—Username to use when authenticating for performing keepalive searches.

- **Password**—User password to use when authenticating for performing keepalive searches.

- **Delay**—Delay in seconds to wait after performing any search before initiating a keepalive search.

Step 10 Click **OK**.

Step 11 Click the **Performance Counters** tab.

The Performance Counters tab window appears (see Figure 10).

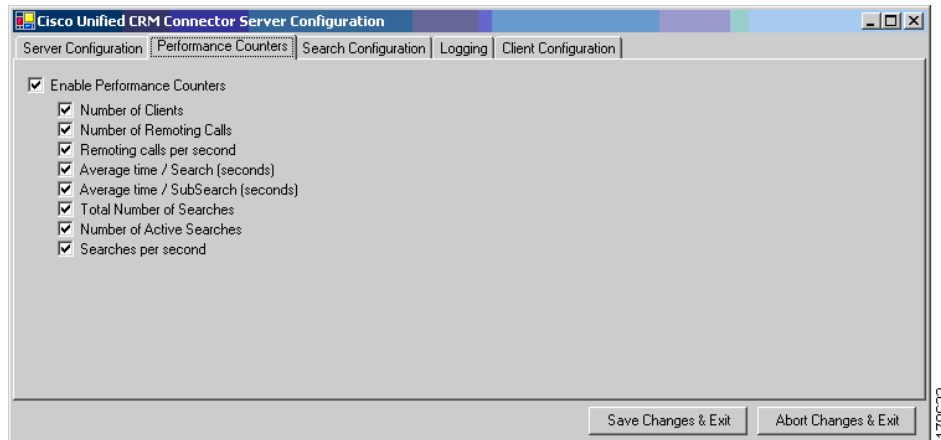*Figure 10 Server Configuration Window—Performance Counter Tab: Cisco Unified CallConnector for Microsoft Dynamics CRM*

Step 12 In the Performance Counter tab, check or uncheck the Enable Performance Counters box to enable or disable performance monitor counters. To view these objects, add "C4.Server" as a counter within the Windows Performance Monitor, and select the objects to monitor.

The remaining fields in the Performance Counter tab are :

- **Number of Clients**—Number of clients that are currently connected.

- **Number of Remoting Calls**—Total number of client-initiated server requests.

- **Remoting calls per second**—Average number of client-initiated requests per second.

- **Average time/Search (seconds)**—Average time in seconds to complete a full search.

- **Average time/SubSearch (seconds)**—Average time in seconds to complete a search of any specific entity.

- **Total Number of Searches**—Total number of searches that have been performed.

- **Number of Active Searches**—Number of searches that are currently executing.

- **Searches per second**—Average number of searches per second.

Step 13 Click the **Search Configuration** tab.

The Search Configuration window appears (see Figure 11).

The Search Configuration tab displays the entities and fields within Microsoft CRM that the Cisco Unified CallConnector for Microsoft Dynamics CRM will search to match the Caller ID or name to a customer record. You do not need to manipulate this file for initial program usage.

Figure 11   *Server Configuration Window—Search Configuration Tab:*
Cisco Unified CallConnector for Microsoft Dynamics CRM
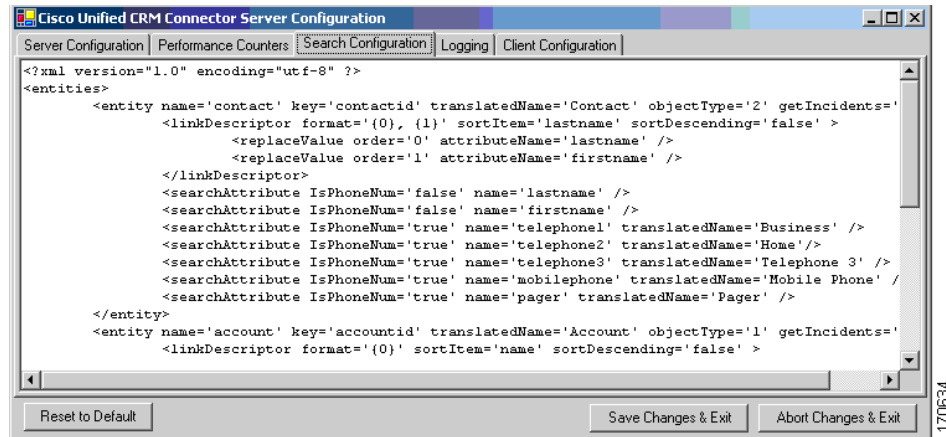
Step 14   Click the **Logging** tab.

The Logging tab window appears (see Figure 12).

Figure 12   *Server Configuration Window—Logging Tab: Cisco Unified CallConnector for*
Microsoft Dynamics CRM
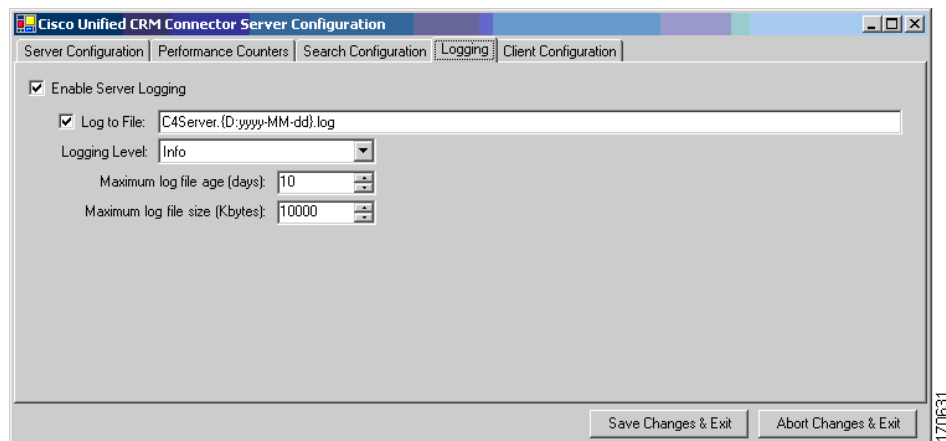
The following describes the fields in the Logging tab:

- **Enable Server Logging**—Check or uncheck to enable or disable logging.

- **Log to File**—To log to a filename, check and type the filename.

- **Logging Level**—Sets the verbosity of the log file output.

- **Maximum log file age**—Maximum age in days of old (existing) log files. You must use dynamic filenames.

- **Maximum log file size**—Maximum approximate size in KB of any single log file.

Step 15 Click the **Client Configuration** tab.

The following describes the fields and buttons in the Client Configuration tab:

- **Ignore inbound/outbound phone numbers**—Allows you to specify phone numbers that the Cisco Unified CallConnector for Microsoft Dynamics CRM client should ignore when processing inbound and outbound phone numbers. The first four boxes allow you to specify numbers to ignore when the phone number either begins with, ends with, is exactly, or contains the specified digit strings. Only digits are allowed. The fifth box, "Custom/Advanced," allows you to specify regular expressions of phone number digit strings to ignore.

- **Edit Phone Number Processor Configs**—Click to configure the phone number processors.

- **Default PNP Config**—Default phone number processor configuration for clients with unspecified or invalid phone number processor configurations.

When you first configure the Cisco Unified CallConnector for Microsoft Dynamics CRM server component and enter the Phone Number Processor (PNP) Configuration window, you see a blank configuration area, as shown in Figure 13, because you must first create a new phone number processor configuration.
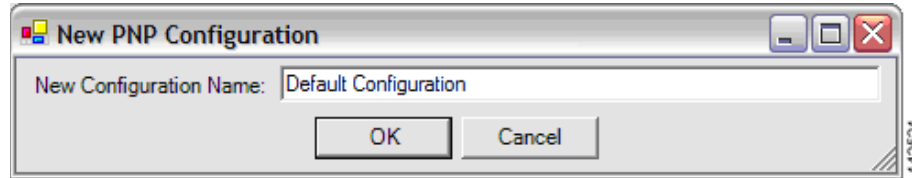
Figure 13 *Phone Number Processor Configuration Window—Disabled*
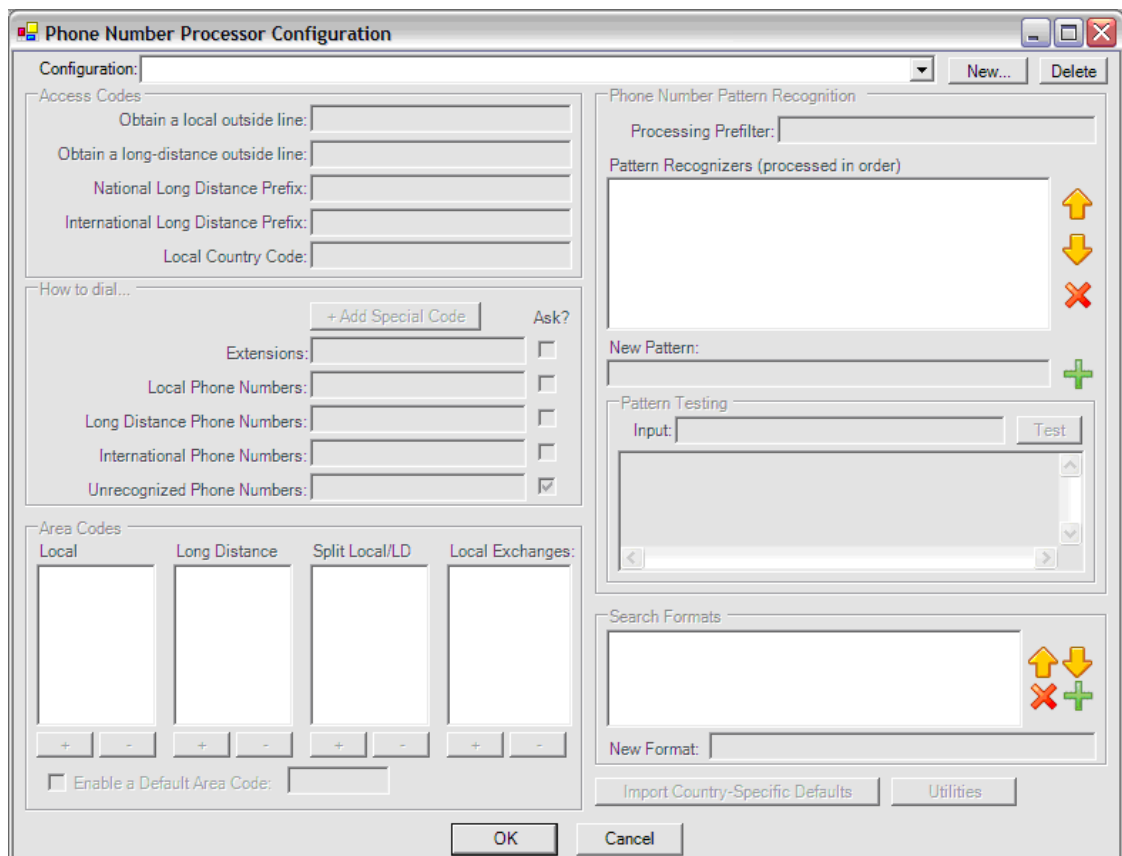
Step 16 In the Phone Number Processor Configuration window, click **New** to begin a new configuration.

The New PNP Configuration window is shown in Figure 14.

Figure 14   New PNP Configuration Window

Step 17 In the New PNP Configuration window, enter a configuration name and click **OK**.

You can configure each client to use one of the multiple configurations that you have defined. You can define each additional configuration as a site, for use with branch or remote offices that have a different area code than the main business location where the Microsoft CRM server is located.

Step 18 The Phone Number Processor Configuration window appears, as shown in Figure 15. Some defaults are loaded based on the United States 10-digit dialing rules.

Figure 15   Phone Number Processor Configuration Window—Enabled
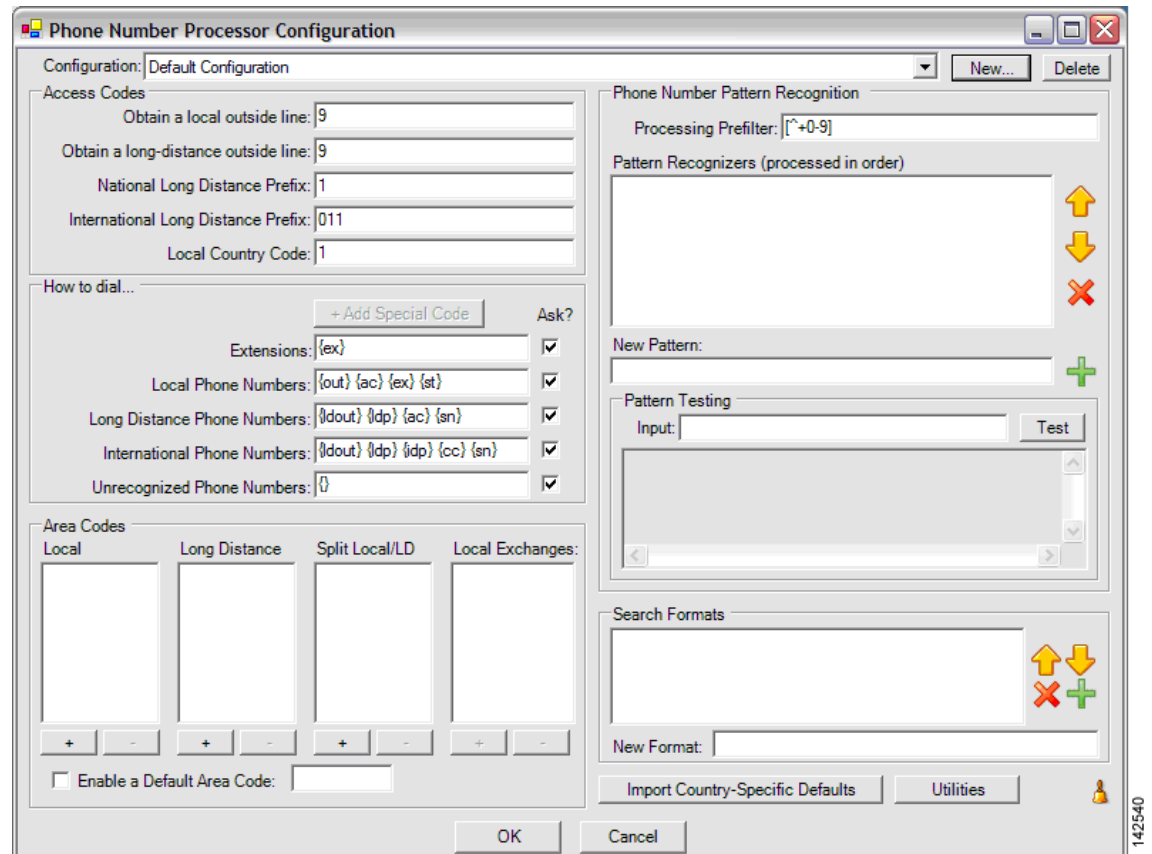
Step 19 Click the import defaults for your area. The supported configurations include the following:

- U.S. 10-digit dialing
- U.S. 7-digit dialing
- Germany
- Australia

All of these predefined configurations require additional custimization for your specific area. To import one of these configurations, click **Import Country-Specific Defaults** near the bottom of the dialog window, and select a configuration. Figure 16 shows the details of the lower right section of the Phone Number Processor Configuration window.

Figure 16   Dial Plan Templates
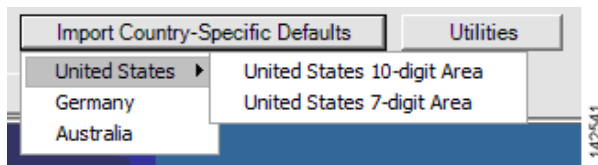
Note If you do this with a predefined configuration, it will be overwritten, and you will lose any custom dialing rules (specifically pattern recognizers and search formats).

Step 20 Configure the Phone Number Processor Configuration window, as shown in Figure 17. The values that you can configure in the Phone Number Processor Configuration window are described in Table 2.

Figure 17   Phone Number Processor Configuration Window—Example Configuration
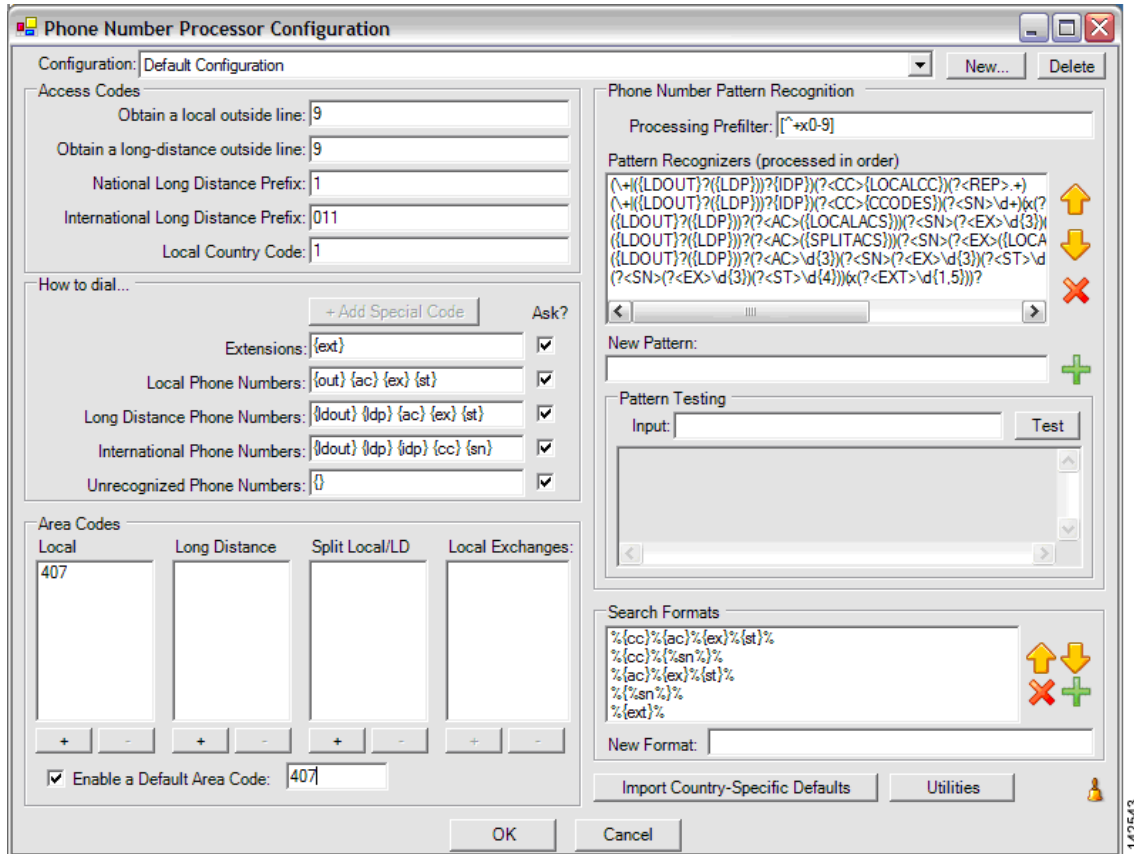
Table 2   PNP Configuration Dialog

Section	Configurable Values
Access Codes	You can define five access codes. Their actual use is dictated by the values provided in the "How to dial..." section, but their general use is described below. Each access code has a mnemonic associated with it, which is shown in curly braces. • **Obtain a local outside line** {out}—Digit string that is typically dialed before placing local calls. • **Obtain a long-distance outside line** {ldout}—Digit string typically dialed before placing local long-distance and international calls. • **National Long Distance Prefix** {ldp}—Digit string typically dialed before the area code when placing long-distance and international calls. • **International Long Distance Prefix** {idp}—Digit string that is typically dialed to indicate the call is international. • **Local Country Code** {localcc}—Digit string representing the country the user is located in when users dial from another country.
How to dial...	Each box in this section defines how to dial a phone number after it is divided into parts (country code, area code, etc.). Typically, the values provided in each style phone number field are combinations of codes that are built into the program, although you could also provide numbers directly in each box. The codes that are available are the same codes shown in the Access Codes and Phone Number Pattern Recognition sections, plus one special code, "{}," which means all digits. The "Ask?" check box next to each field tells the client whether to ask the user to verify the phone number before dialing when using click-to-dial, and when there is only one phone number for the requested click-to-dial contact.
Area Codes	The values in these boxes are used by the "Phone Number Pattern Recognition" section to determine the accurate parts of each phone number, and to determine the style (local, long distance, etc.) of the phone number being processed. The exact way in which these area codes are used is determined by the Phone Number Pattern Recognition section, but the intended meaning of values in each box are: • Local—Values are considered local area codes. • Long Distance—Values are considered long-distance area codes. • Split Local/LD—Values are local and long distance area codes. • Local Exchanges—For each area code in the "Split Local/LD" box, values are the local exchanges for that area code. Values in this box are maintained individually for each area code in the "Split Local/LD" box. The Enable a Default Area Code check box allows the system to assign the user's local area code if it is not in the contact's record. If the area code is in the CRM contact record, then this field is not used during processing.

| Section	Configurable Values
Phone Number and Pattern Recognition	This area is what really allows the client to pick the parts of the phone number for efficient CRM searching and for accurate no-touch click-to-dial capability. It uses Microsoft .NET Regular Expressions to identify each part of the phone number. The patterns are used during both incoming and outgoing phone call detection for efficient CRM searches, and also click-to-dial. First, the phone number is filtered according to the prefilter. Anything that matches the prefilter is removed from the digit string being considered. Then, the digit string is tested with each pattern in order until a match is found. Each pattern must result in at least one named match for the following values: • **CC**—Country code • **AC**—Area code • **EX**—Exchange • **ST**—Station • **EXT**—Extension • **SN**—Generic "subscriber number" The subscriber number may or may not follow the typical definition of a subscriber number; this value is more of a generic container. After a pattern is found that matches the digit string, and it is divided into its parts, one of two things occurs: • If the number is being processed for click-to-dial, the style of the phone number is determined by specific rules. The phone number is then dialed as specified in the "How to dial..." section. • If the number is being processed for searching Cisco Unified CallConnector for Microsoft Dynamics CRM, it is formatted and searched according to the patterns specified in the "Search Formats" area.

Section	Configurable Values
Search Formats	Search formats allows the administrator to maximize efficiency and accuracy when searching Cisco Unified CallConnector for Microsoft Dynamics CRM. After a phone number is processed by the pattern recognizers, the list of search formats is processed in order until one is found in which all components of the search format can be provided. Each search format component is a code that matches the named match values detected by the pattern recognizers. Each matching value is then replaced with that portion of the phone number. There are two formats for each search component, using AC as an example: • {ac}—Replaces the "{ac}" with the area code detected from the phone number. • {%ac%}—Replaces the "{%ac%}" with the area code detected from the phone number with "%" symbols between each digit. The first format provides the most accurate searching, however, in some cases, may not find the correct records if there are other characters interspersed in the text stored in Cisco Unified CallConnector for Microsoft Dynamics CRM. This will not occur if Cisco Unified CallConnector for Microsoft Dynamics CRM users are diligent about how they enter phone numbers into the Cisco Unified CallConnector for Microsoft Dynamics CRM system. When other characters are interspersed in the text in Cisco Unified CallConnector for Microsoft Dynamics CRM, the "{%ac%}" format can help because it will still recognize those values, but probably also produces some results that are not true matches.

Step 21 After completing the configuration, click **OK**.

Step 22 Click **OK** again to finish the C4Server installation program.

The Cisco Unified CallConnector for Microsoft Dynamics CRM Server Service is now installed and starts automatically, as shown in Figure 18.
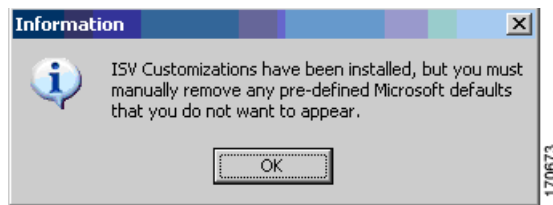
Figure 18   *Windows Services*
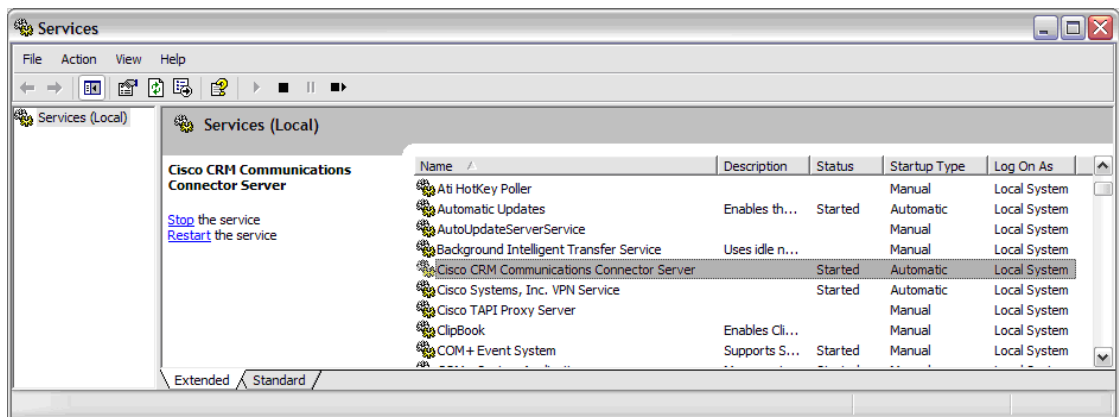
Step 23 Next, the installation of the Cisco Unified CallConnector for Microsoft Dynamics CRM server component prompts you to choose which website to install the Independent Software Vendor (ISV) customizations into. Choose the Microsoft CRM 3.0 website from the drop-down list, as shown in Figure 19.

Figure 19   Selecting the Microsoft CRM Website
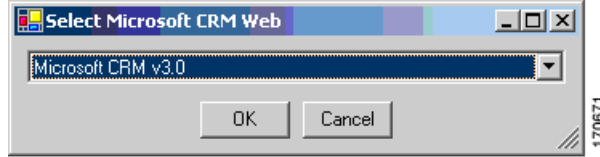
Step 24   After selecting the Microsoft CRM website, the installer displays a notification message, which advises you that the ISV customizations are installed, as shown in Figure 20, but you must manually remove the default customizations. Otherwise, you may receive unwanted buttons in the Cisco Unified CallConnector for Microsoft Dynamics CRM GUI, such as the Test button.

Figure 20   ISV Customization Message

You are now done with installation of the Cisco Unified CallConnector for Microsoft Dynamics CRM server components. Proceed to the "Installing the Cisco Unified CallConnector for Microsoft Dynamics CRM Client" section on page 27.

Installing the Cisco Unified CallConnector for Microsoft Dynamics CRM Client

Note   For maximum ease of configuration, install and verify the operation of the Cisco Unified CallConnector for Microsoft Dynamics CRM Server Service before installing clients.

Install the following software for the Cisco Unified CallConnector for Microsoft Dynamics CRM Client.

• Install one of the following:

– Cisco Unified Communications Manager Telephony Application Programming Interface (Cisco Unified Communications Manager TAPI) Client (if integrating with Cisco Unified Communications Manager, with or without Cisco Unified IPCC Express integration)

– Cisco Unified Communications Manager Express IOS TAPI Service Provider (Cisco IOSTSP) Client (if integrating with Cisco Unified Communications Manager Express). Obtain the latest version of this file from:

http://www.cisco.com/cgi-bin/Software/Tablebuild/doftp.pl?ftpfile=cisco/voice/ip-phone/ip-io stsp/CiscoIOSTSP1.3.zip&app=Tablebuild&status=showC2A

- Install Microsoft .NET Framework v1.1

Perform the following steps to install the Cisco Unified CallConnector for Microsoft Dynamics CRM Client with Cisco Unified Communications Manager, Cisco Unified Communications Manager Express, and Cisco Unified IPCC Express.

Step 1   Log in to your PC as administrator.

Step 2   Locate and double-click the **Setup.exe** file for the Cisco Unified CallConnector for Microsoft Dynamics CRM Client installer (see Figure 21).

Figure 21   Cisco Unified CallConnector for Microsoft Dynamics CRM Client Installer Extracted Files

The Cisco Unified CallConnector for Microsoft Dynamics CRM Client Setup Wizard appears (see Figure 22).
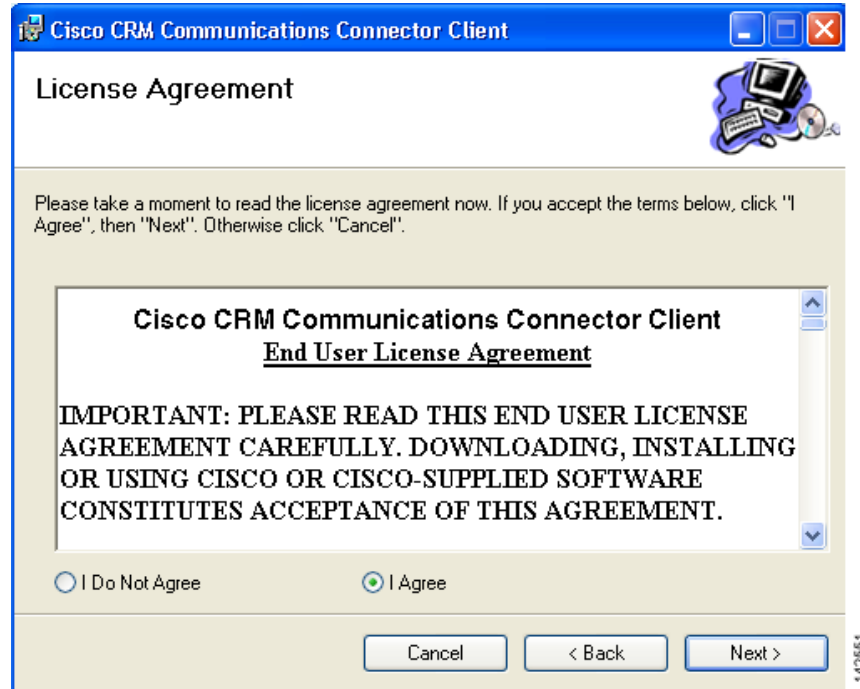
Figure 22   Client Setup Wizard: Cisco Unified CallConnector for Microsoft Dynamics CRM
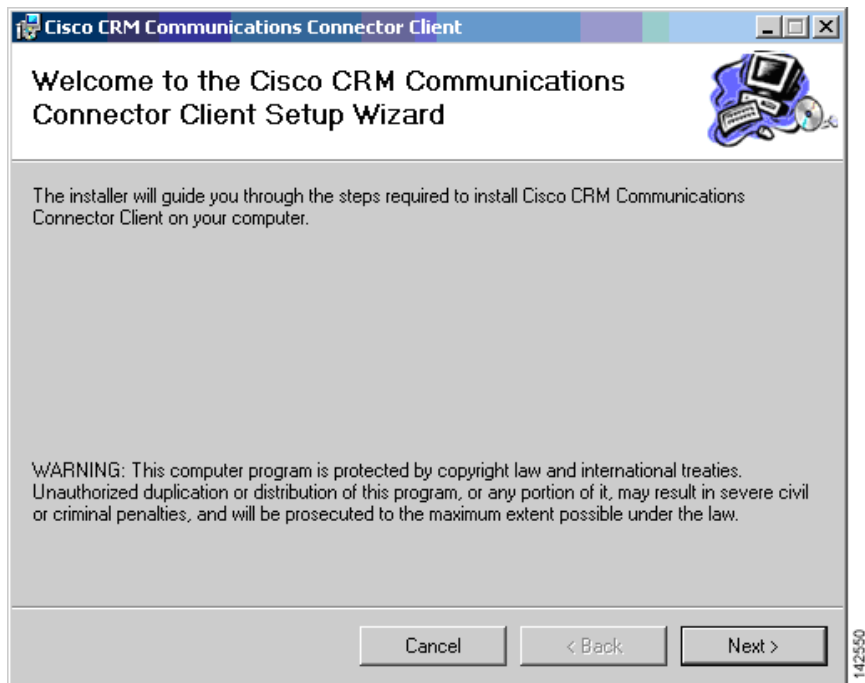
Step 3   Click **Next**.

The License Agreement dialog appears (see Figure 23).

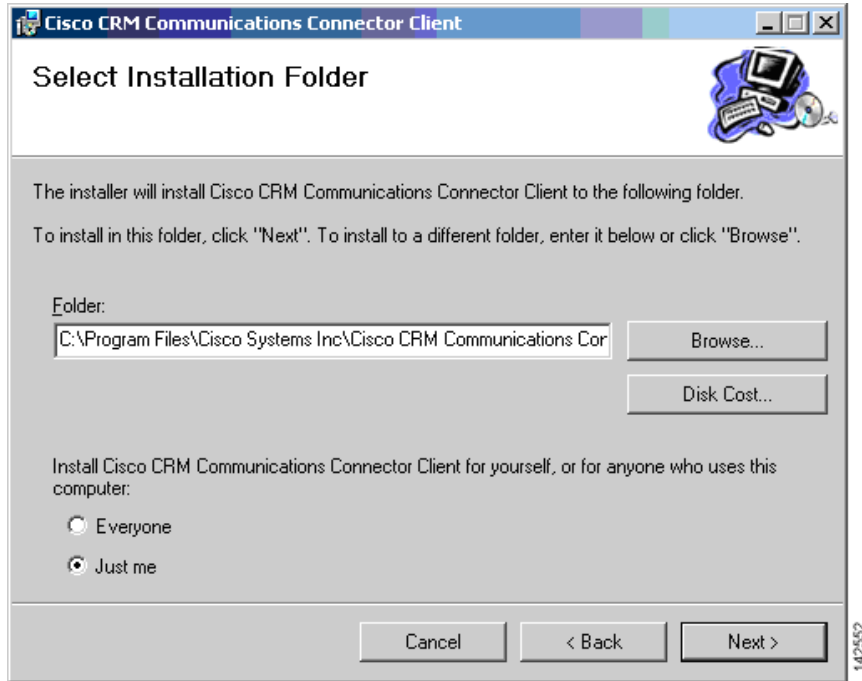*Figure 23*   *License Agreement Window: Cisco Unified CallConnector for Microsoft Dynamics CRM Client*

Step 4   Select **I Agree** to accept the license agreement.

Step 5   Click **Next**.

The Select Installation Folder window appears (see Figure 24).

*Figure 24   Select Installation Folder Window: Cisco Unified CallConnector for Microsoft Dynamics CRM Client*

Step 6   Click **Just me**.

Step 7   Click **Next** to accept the default installation folder and confirm the installation.

The Confirm Installation window appears (see Figure 25).

Figure 25   Confirm Installation Window: Cisco Unified CallConnector for Microsoft Dynamics CRM Client
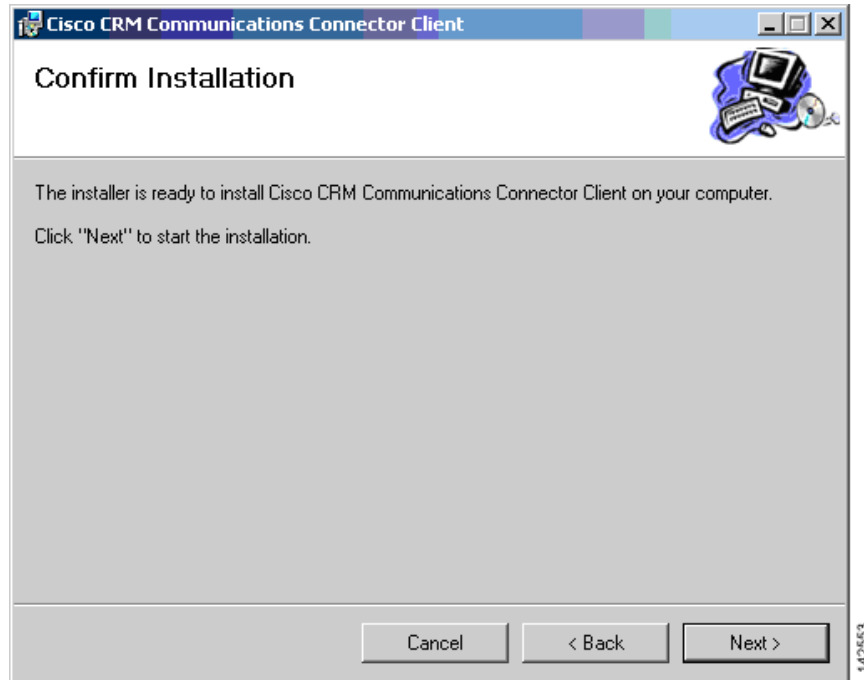
Step 8   Click **Next** to start the installation.

The installation begins copying files. After the files are copied, the Cisco Unified CallConnector for Microsoft Dynamics CRMClient Configuration window appears, as shown in Figure 26.

Figure 26   Client Configuration Window —TAPI Configuration Tab: Cisco Unified CallConnector for Microsoft Dynamics CRM
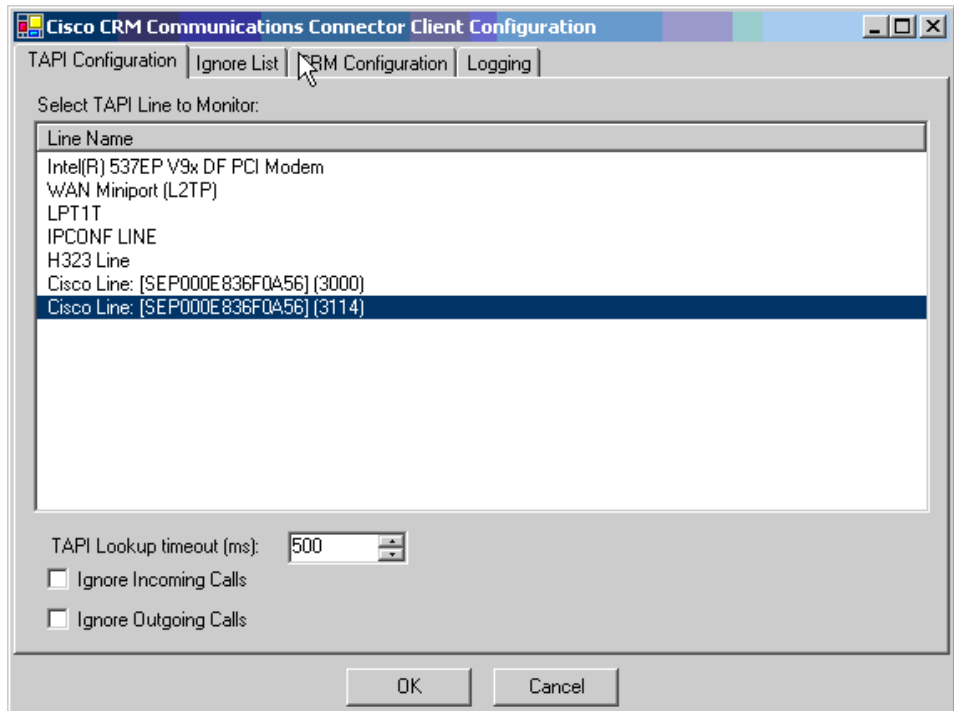
Step 9   Click the **TAPI Configuration** tab.

The TAPI Configuration tab allows you to specify the line to monitor for incoming and outgoing calls (see Figure 26). You can also specify to completely ignore either inbound or outbound calls (or both).

The TAPI Lookup timeout field specifies a value in milliseconds, after which time the Cisco Unified CallConnector for Microsoft Dynamics CRM client manually asks the provider for caller ID information if the TAPI client does not provide it. If the client frequently reports the wrong phone number (such as the internal voice-mail pilot extension), increasing this value may eliminate this.

Step 10   Click the **Ignore List** tab.

The Client Configuration window's Ignore List tab appears as shown in Figure 27.

The Ignore List tab allows you to specify phone numbers that the Cisco Unified CallConnector for Microsoft Dynamics CRM client should ignore when processing inbound and outbound phone numbers from the client side. The first four boxes allow you to specify numbers to ignore when the phone number either begins with, ends with, is exactly, or contains the specified digit strings. Only digits are allowed. The fifth box, "Custom/Advanced," allows you to specify regular expressions of phone number digit strings to ignore.

*Figure 27*   *Client Configuration Window—Ignore List Tab: Cisco Unified CallConnector for Microsoft Dynamics CRM*
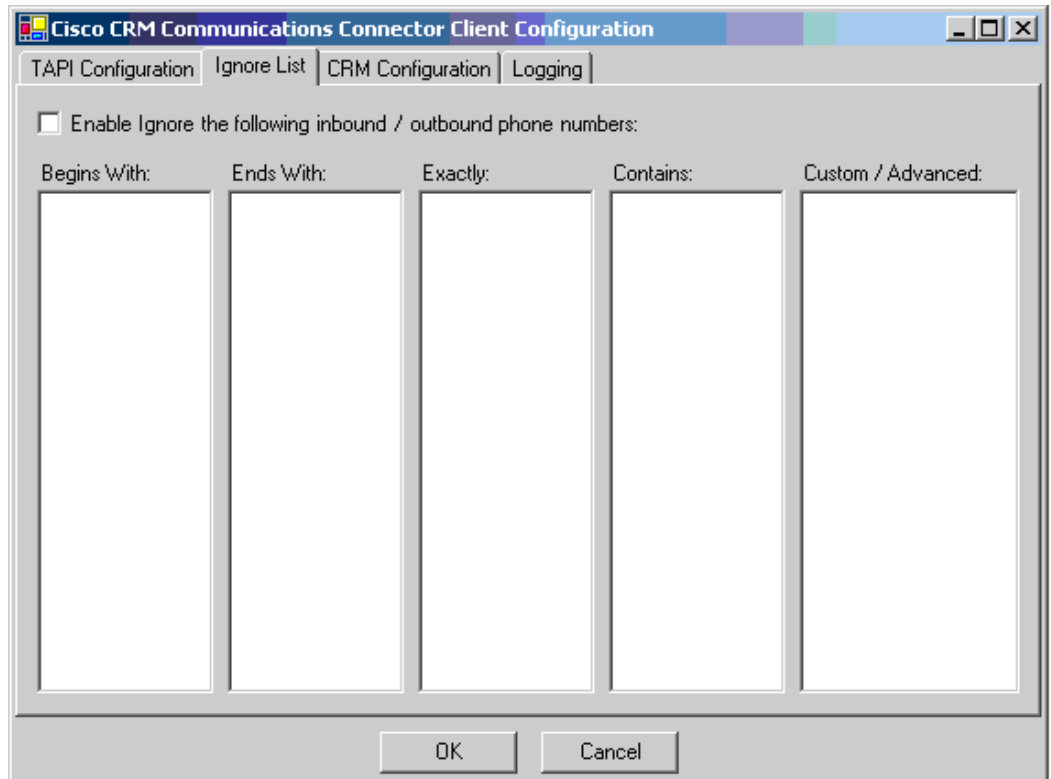
Step 11   Click the **CRM Configuration** tab.

The Client Configuration window's CRM Configuration tab appears, as shown in Figure 28.

The CRM Connector Configuration tab allows you to specify server and login information for both the Cisco Unified CallConnector for Microsoft Dynamics CRM server and the Microsoft CRM server.

Figure 28   Client Configuration Window—CRM Configuration Tab: Cisco Unified CallConnector for Microsoft Dynamics CRM
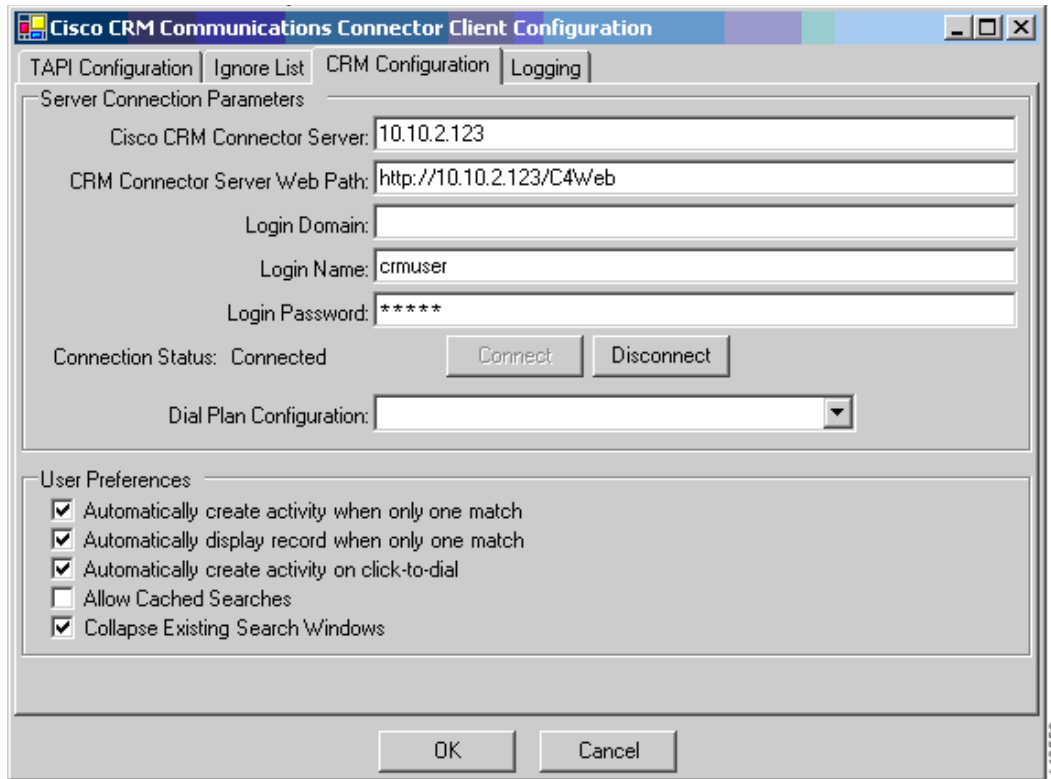
Step 12   In the Cisco Unified CallConnector for Microsoft Dynamics CRM Server field, enter the hostname on which the Cisco Unified CallConnector for Microsoft Dynamics CRM server is installed. After initial configuration, when you change the value in this field, the value in the Cisco Unified CallConnector for Microsoft Dynamics CRM Server Web Path will be updated with the same value. Change this if the Cisco Unified CallConnector for Microsoft Dynamics CRM server Web components were installed on a different server or have a different access URL. The value in the Cisco Unified CallConnector for Microsoft Dynamics CRM Web Path must be a complete URL that points to the directory in which the C4Dial.aspx and C4Stub.aspx files are located.

Note   You must also include the port number the website is running on if it is not the default port 80. In the example shown in Figure 28, the hostname of the Microsoft CRM Server is "triton" and the Microsoft CRM website is running on port 5555. Failure to provide the custom port number (except port 80) will cause problems with the screen pops.

Step 13   Configure the Login Domain, Login Name, and Login Password fields with your Microsoft CRM login information and click **Connect**.

If the connection is successful, the status will show Connected and the Dial Plan Configuration drop-down box will become enabled.

Step 14   Select the appropriate Dial Plan Configuration (Phone Number Processor Configuration) based on geographic location and as provided for by the Cisco Unified CallConnector for Microsoft Dynamics CRM Server Service administrative configuration.

Step 15   Click the **Logging** tab.

The Client Configuration window's Logging tab appears, as shown in Figure 29

The Logging tab allows you to configure how the client logs system events. Logging levels available include:

- Critical Errors
- Errors
- Warnings
- Info
- Debug
- Debug1 … Debug 4

Each level includes messages from all previous levels. The "Critical Errors" level produces virtually no output, while the "Debug4" level produces copious output. We recommend using the setting "Warnings" for normal operation. Some messages (primarily relating to TAPI events) do not currently have message levels associated with them, and they are always logged.

You can collect the logging information in eiher a file or in a logging window. If you select Log to File, additional options relating to the filename and file aging become available. If you select Enable Log to Window, one additional option to control how many messages to display is available..
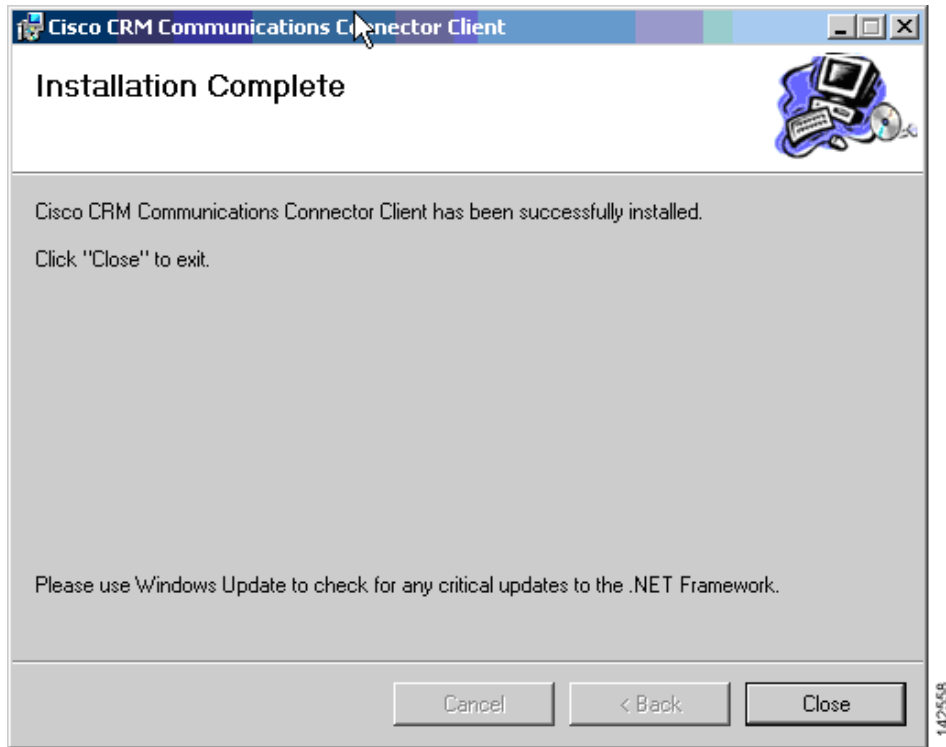
Figure 29   Client Configuration Window—Logging Tab: Cisco Unified CallConnector for Microsoft Dynamics CRM
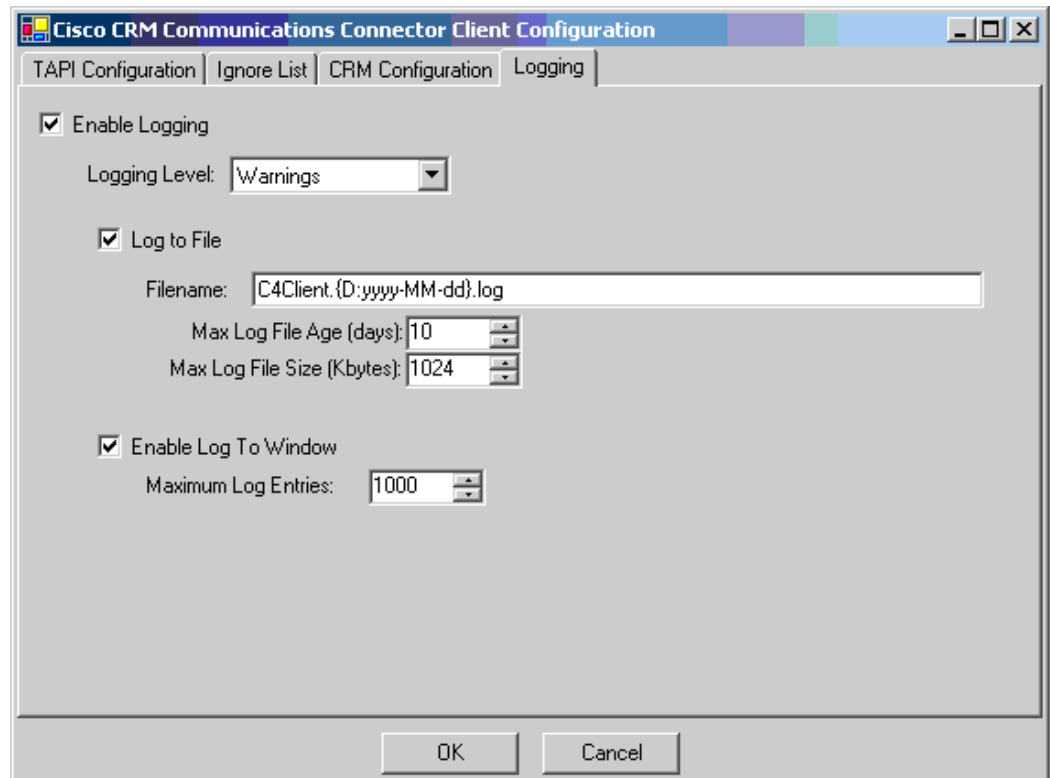
Step 16   After completing the configuration, click **OK**.

The final installation dialog appears, as shown in Figure 30.

Figure 30 Client Installation Complete Window: Cisco Unified CallConnector for Microsoft Dynamics CRM

The client is now installed and ready to run from the Start Menu.

What to Do Next

You can now either configure the IP phone lookup and XML display service (optional, see the "Configuring the IP Phone Service and XML Display Service" section on page 37) or integrate Cisco Unified CallConnector for Microsoft Dynamics CRM with Cisco Unified IPCC Express (see the "Integrating Cisco Unified CallConnector for Microsoft Dynamics CRM with Cisco Unified IPCC Express" section on page 41).

Configuring the IP Phone Service and XML Display Service

After installing the Cisco Unified CallConnector for Microsoft Dynamics CRM Server, the administrator may choose to configure the IP Phone Lookup Service. The two main features of the IP Phone Lookup Service for the Cisco Unified CallConnector for Microsoft Dynamics CRM are a lookup service and an Extensible Markup Language (XML) display on the Cisco Unified IP Phone.

The lookup service allows you to perform a manual lookup against the Cisco Unified CallConnector for Microsoft Dynamics CRM database from the Cisco Unified IP Phone by searching for a Microsoft CRM contact name. Information about the contact is then displayed on the XML display of the IP phone.

The XML display feature provides a window push to the IP phone display when the incoming caller ID uniquely matches a contact.

Note   To use the IP Phone Lookup Service features for the Cisco Unified CallConnector for Microsoft Dynamics CRM, you must have a Cisco Unified IP Phone with an XML-capable display.

Follow the steps below to configure each of the services. Each service operates independently, so you can configure the lookup service feature or the XML display feature.

Step 1   Configure the IP Phone Lookup Service.

The IP Phone Lookup Service is located in the IPPhoneService directory inside the Cisco Unified CallConnector for Microsoft Dynamics CRM Server installation directory. Inside this directory is a file called web.config that contains the settings for the following:

```
<appSettings>
<!-- <add key="CRMLoginInfoEnc" /> -->
<add key="CRMLoginUsername" value="Administrator" />
<add key="CRMLoginPassword" value="pass@word1" />
<add key="CRMLoginDomain" value="CRM" />
<add key="CRMServiceURL" value="http://triton:5555/MSCRMServices/2006/CrmService.asmx" />
<add key="CRMSearchEntitiesXMLDoc" value="C:\Program Files\Cisco Systems\Cisco Unified CRM
Connector Server\IPPhoneService\CRMSearchEntities.xml" />
</appSettings>
```

The five main settings are:

- **CRMLoginUsername**—Stores the username to perform lookups
- **CRMLoginPassword**—Stores the password corresponding to CRMLoginUsername
- **CRMLoginDomain**—Domain of the user specified in CRMLoginUsername

- **CRMServiceURL**—URL to the CrmService.aspx page

- **CRMSearchEntitiesXMLDoc**—Full path to the CRMSearchEntities.xml file (located in the IPPhoneService directory)

Step 2 Verify that the CRMServiceURL and CRMSerachEntitiesXMLDoc values are correct. The user specified in CRMLoginUsername, CRMLoginPassword, and CRMLoginDomain must be a user that has access to perform searches in Cisco Unified CRM. If you do not want to store plain text passwords in this file, you can do the following:

a. Save the plain text version of the file with the username, password, and domain specified.

b. Continue with the reamining configuration steps below.

c. After everything is working, open a Web browser to the Web page http://triton:5351/EncryptInfo.aspx (the specific URL depends on your local configuration) and you will see an encrypted string that represents the username, login, and domain.

d. Specify this string as the value for the key "CRMLoginInfoEnc," and remove the CRMLoginUsername, CRMLoginPassword, and CRMLoginDomain keys. Also make sure you uncomment the CRMLoginInfoEnc key.

Step 3 Configure a virtual directory or a virtual site for the IPPhoneService.

In the IIS Administration tool, create a virtual directory or a virtual site for the IPPhoneService to respond on. This virtual directory can be located in any website hosted on the server, and can be called nay name.

This example creates a virtual site called "IPPhoneService" on port 5351. A virtual site is the preferred mechanism because it ensures that the configuration of the IPPhoneService is not affected by other configuration values in the host site if you are using a virtual directory. If you choose a virtual directory, ensure you are able to see the output of the C4Lookup.aspx page, as shown in Figure 31, before proceeding.

Figure 31   IP Phone Service IIS Virtual Directory
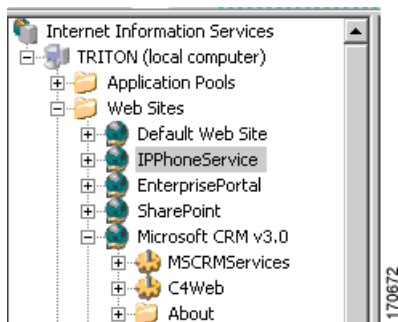
Set the access properties for the virtual directory to "Read" and "Run Scripts." The user is now able to test the configuration by opening a Web browser and specifying the following URL:

http://triton:5351/C4LookupService/C4Lookup.aspx

The exact URL depends on how you configured the virtual directory. You should see a response similar to Figure 32.

Figure 32 Testing the IP Phone Service URL
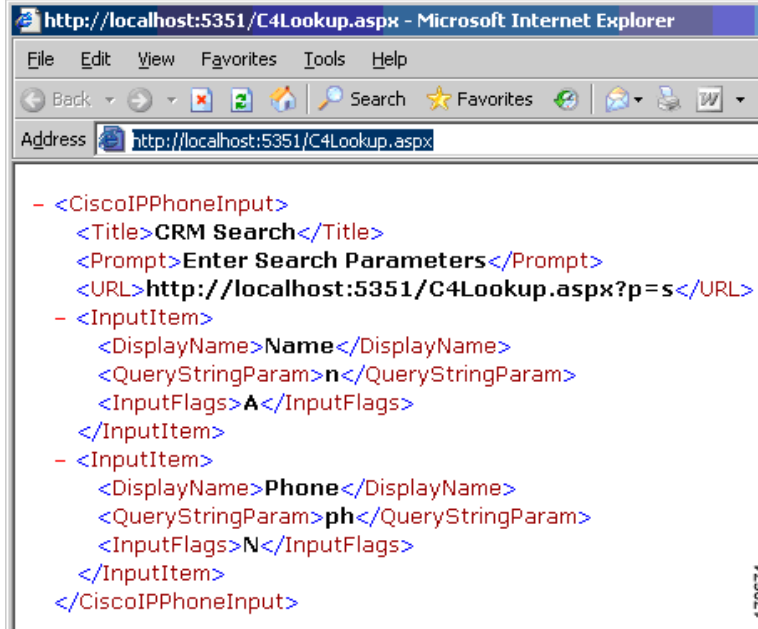
Step 4 (Optional) Configure the service in Cisco Unified Communications Manager or Cisco Unified Communications Manager Express.

When configuring the IP Phone Lookup Service in Cisco Unified Communications Manager or Cisco Unified Communications Manager Express, use the path to the virtual directory or site created in the previous step. For example:

http://triton:5351/C4LookupService/C4Lookup.aspx

where "triton" is the hostname of the server hosting the lookup service, in this case, the Microsoft CRM server. The virtual directory or virtual site responds to requests on port 5351. See the Cisco Unified Communications Manager or Cisco Unified Communications Manager Express technical documentation for detailed instructions on how to configure and publish the IP Phone Lookup Service.

Step 5 Configure the XML display.

To enable the XML display on the IP phone for users of the Cisco Unified CallConnector for Microsoft Dynamics CRM, configure the server component to allow this. In the server component configuration wizard, go to the Client Configuration tab, as shown in Figure 33.

Enable and specify the path to the IP Phone Lookup Service; for example:

http://triton:5351/C4LookupService/C4Lookup.aspx

Figure 33 *Server Configuration Window—Client Configuration Tab: Cisco Unified CallConnector for Microsoft Dynamics CRM*
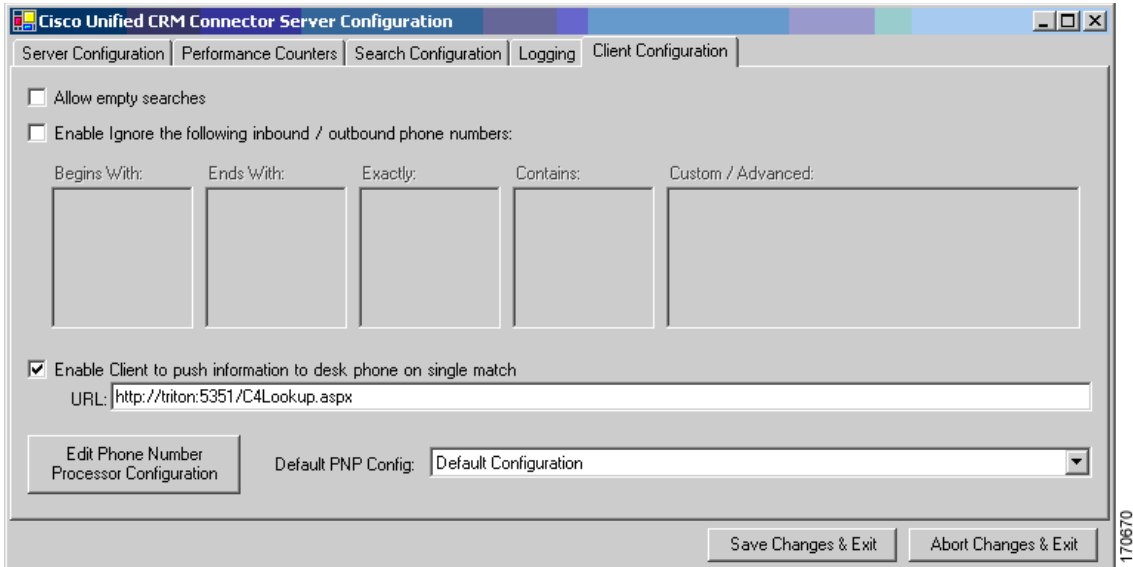
Step 6 (Optional) Customize the information to display on the IP phone.

Edit the CRMSearchEntities.xml file to specify what entities to search and what information to present on the information window on the IP phone display. This customization is an advanced step and is not required to display the default IP Phone service.

What to Do Next

You are now ready to integrate Cisco Unified CallConnector for Microsoft Dynamics CRM with Cisco Unified IPCC Express (see the).

Integrating Cisco Unified CallConnector for Microsoft Dynamics CRM with Cisco Unified IPCC Express

This chapter addresses the desktop integration between Cisco Agent Desktop, the desktop component of Cisco Unified IPCC Express, and Microsoft Customer Relationship Management. This integration is based on the CTI capabilities in Cisco Agent Desktop Enhanced and Premium services offered under Cisco Unified IPCC Express. This integration uses a utility program included with Cisco Unified CallConnector for Microsoft Dynamics CRM called CADLink.

Note Cisco Unified IPCC Express integration is not necessary if you are just running Cisco Unified Communications Manager and Cisco Unified Communications Manager Express.

Contents

CADLink

CADLink's primary purpose is to act as an intermediary between the capabilities of Cisco Agent Desktop and those of the Cisco Unified CallConnector for Microsoft Dynamics CRM. This link is needed because the Cisco Telephony Application Programming Interface (TAPI) cannot properly detect caller ID information from calls routed by Cisco Unified Contact Center Express. CADLink solves this by providing one-way communication of caller ID information from Cisco Agent Desktop to the Cisco Unified CallConnector for Microsoft Dynamics CRM when the agent receives calls through Cisco Unified IPCC Express.

Integration Methodology

To achieve the integration, the workflow events available in Cisco Unified IPCC Express pass inbound call information to CADLink, which is then passed to Cisco Unified CallConnector for Microsoft Dynamics CRM to be acted on. Outbound dialing and call recognition use TAPI.

Three events in every inbound call are of importance to Cisco Unified CRM Connector:

- **Ringing**—CallerID information must be processed during the ringing phase of the phone call. At this event, the Cisco Unified CallConnector for Microsoft Dynamics CRM search window appears.

- **Answered**—At this event, the Cisco Unified CallConnector for Microsoft Dynamics CRM client knows that the phone call has begun.

- **Dropped**—If the call is dropped, the Cisco Unified CallConnector for Microsoft Dynamics CRM client stores the appropriate information about call duration

These events correlate with those available in Cisco Unified IPCC Express. Each event uses the "Call external application" event action to enable CADLink with appropriate command-line parameters. However, because the "Call External Application" action is restricted in the available command-line parameters, CADLink relies on the number of command-line parameters to determine which event has occurred. For this reason, one of the events (Dropped) utilizes placeholder parameters, and you must follow these procedures.

How to Integrate Cisco Unified CallConnector for Microsoft Dynamics CRM with Cisco Unified IPCC Express

Note   Before beginning the integration procedures for Cisco Unified Contact Center Express and Cisco Agent Desktop, you must complete the preliminary installation and configuration steps for Cisco Unified Communications Manager available at the beginning of this document.

This section provides detailed instructions for the following:

Each of the integrations is based on the CTI integration capabilities offered in Cisco Agent Desktop. For additional information, please refer to the Cisco Agent Desktop Administration Guide at http://www.cisco.com/univercd/cc/td/doc/prouct/voice/sw_ap_to/apps_3_5/english/admn_app/cad_admn.pdf.
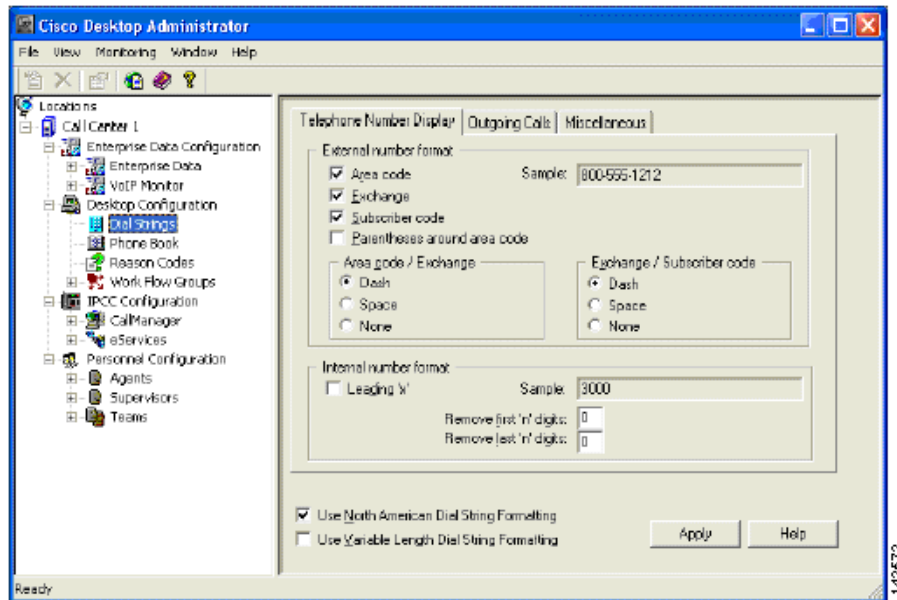
Perform the integration by administratively configurating of workflows in the Cisco Agent Desktop Manager. You must first assign the workflows to the agent.

Assigning a Workflow Agent

To assign a workflow agent, perform the following steps.

Step 1 Open the Cisco Desktop Administrator window as seen in Figure 34.
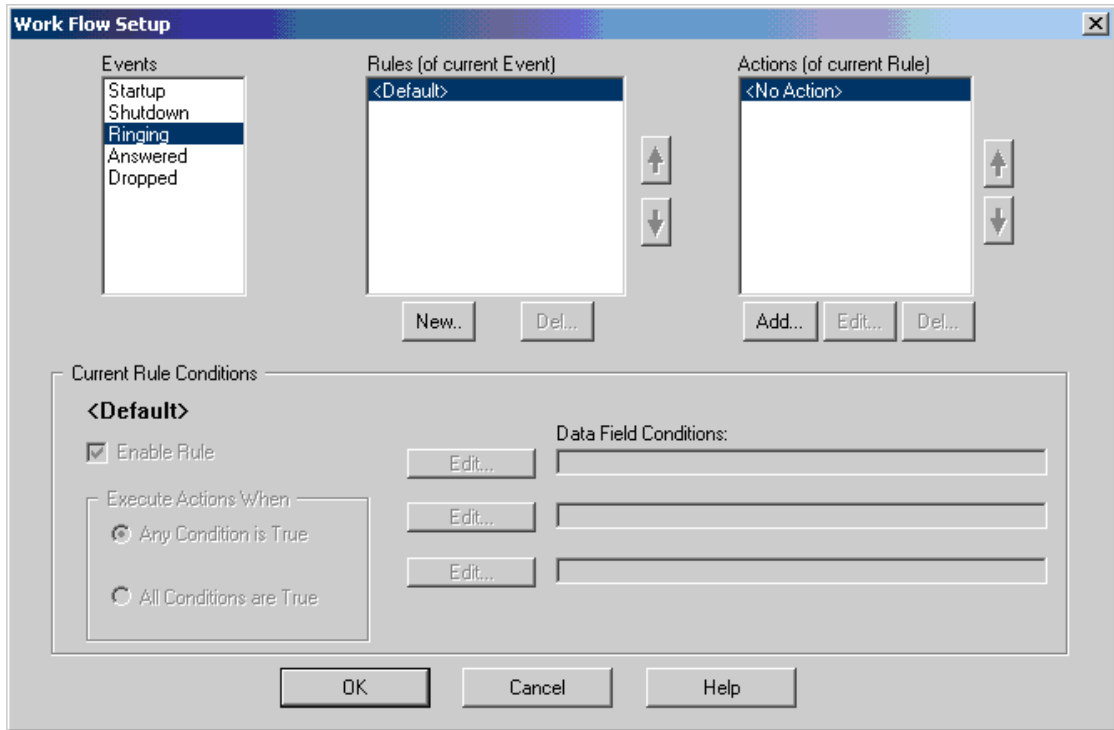
Figure 34 Cisco Desktop Administrator Window

Step 2 Select **Work Flow Groups** from the left pane.

Step 3 Select **Agents**.

Step 4 Select the agent type to configure.

**Step 5** Click **Work Flow** in the right pane.

The Work Flow Setup window appears, as shown in Figure 35.

Figure 35   Work Flow Setup Window

Configuring a Ringing Event

To configure a ringing event, perform the following steps.

Step 1   Select **Ringing** from the Events list, as shown in Figure 35.

Step 2   Click **New…** to add a new Rule (middle list).

Step 3   Name the rule RingingRule, or something similar that describes the rule (see Figure 36).

Figure 36   Create RingingRule
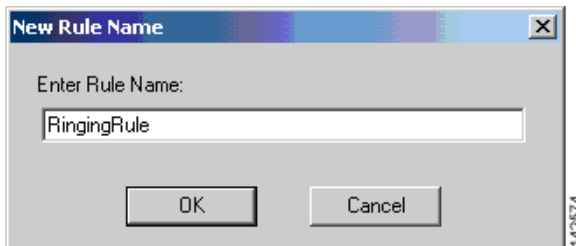
Step 4   Select the **RingingRule** from the list of rules and click **New…** to add a new action (from the right list in Figure 35).

The Select Action window appears, as shown in Figure 37.

Figure 37   *Select Action Window*
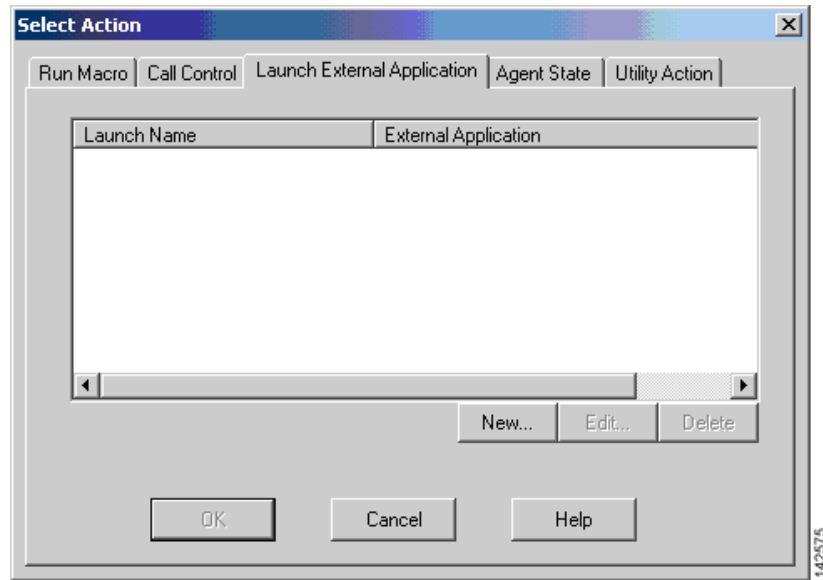
Step 5   Select the **Launch External Application** tab.

Step 6   Click the **New** button to add a new Launch External Application action.

The Setup Launching External Application Action window appears, as shown in Figure 38.

Figure 38   *Setup Launching External Application Action Window*
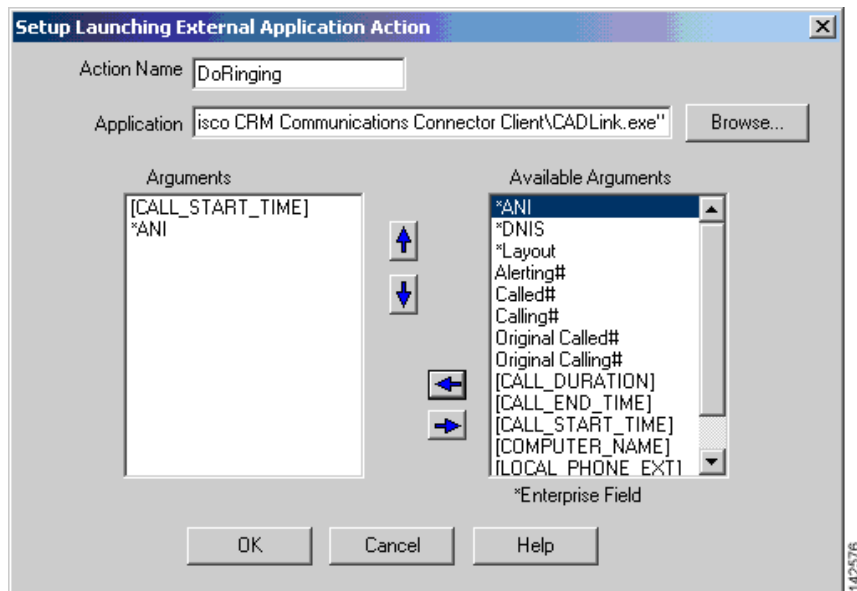
Step 7   In the Action Name field enter **DoRinging**.

Step 8   In the Application field, enter **C:\Program Files\Cisco Systems\Cisco Unified CRM Connector Client\CADLink.exe**, or your path to the CADLink.exe executable file on the client machines.

Note   You must install the Cisco Unified CallConnector for Microsoft Dynamics CRM client application in the same physical location on all clients that will use CADLink.

Step 9   Select **[CALL_START_TIME]** as the first argument.

Step 10   Select ***ANI** as the second argument.

Step 11   Click **OK** to accept the configuration.

Step 12   In the Work Flow Setup window (Figure 35), enable RingingRule by clicking the first Edit box in the Current Rule Conditions.

The Data Field Condition window appears, as shown in Figure 39.

Figure 39   Data Field Condition Window
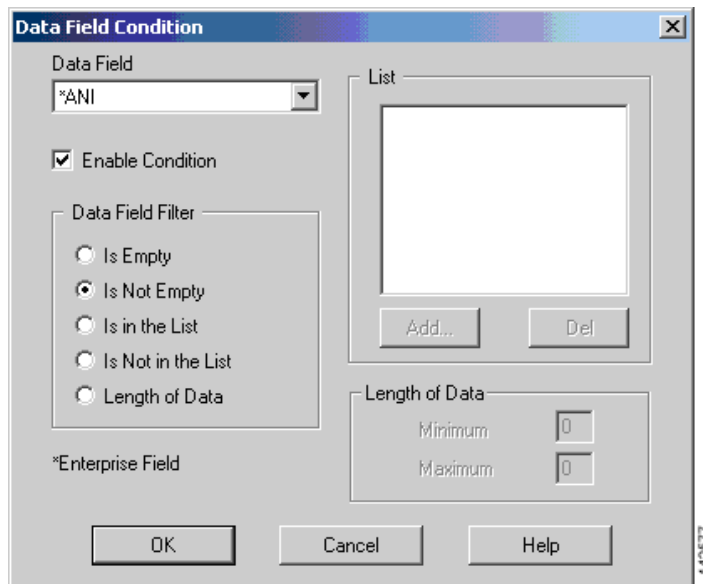
Step 13   Select ***ANI** from the Data Field.

Step 14   Select **Is Not Empty** in the Data Field Filter list.

Step 15   Check **Enable Condition**.

Step 16   Click **OK**.

The Work Flow Setup window appears, as shown in Figure 40.

Figure 40   Work Flow Setup Window
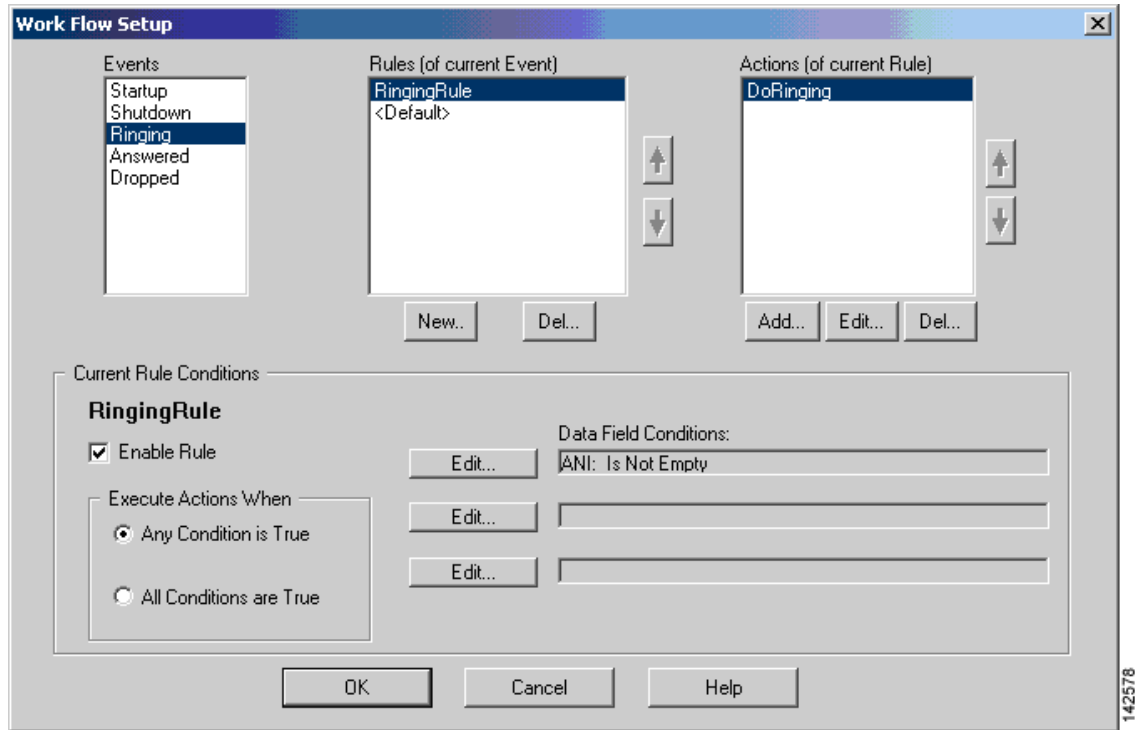
Step 17   Check **Enable Rule** to make the rule active.

Step 18   Repeat these steps for the Answered and Dropped events, making appropriate custimizations as described in the next two sections.

Configuring the Answered Event

To configure the answered event, follow the same steps as for the Ringing event (see the "Configuring a Ringing Event" section on page 44), except call the rule "AnsweredRule," and the action "DoAnswered." The parameter for the DoAnswered event is [CALL_START_TIME], as shown in Figure 41.

Figure 41   Setup Launching External Application Action Window: Answered Event
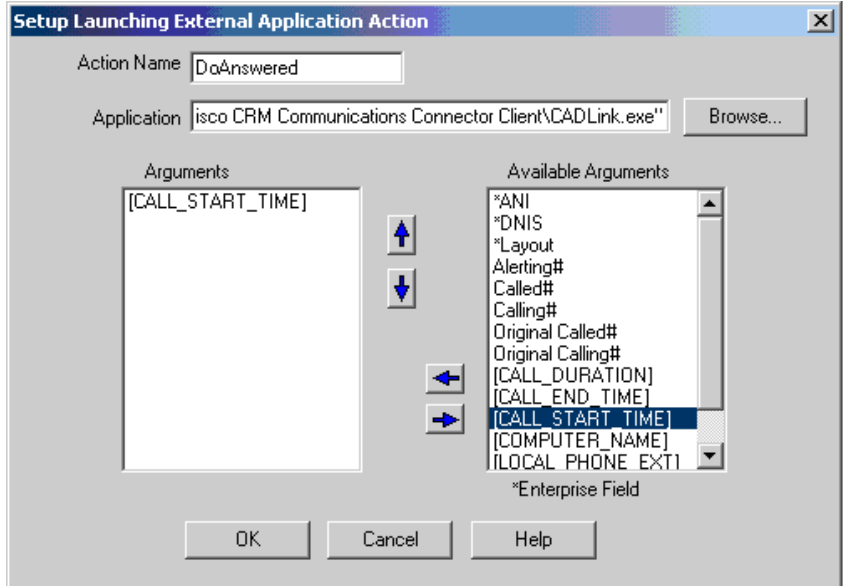
Configuring the Dropped Event

To configure the dropped event, follow the same steps as for the Ringing event (see the "Configuring a Ringing Event" section on page 44), except call the rule "DroppedRule," and the action "DoDropped." The parameters for the DoAnswered event are [CALL_START_TIME], [COMPUTER_NAME], and [COMPUTER_NAME].

As shown in Figure 42, the COMPUTER_NAME parameter is repeated as a dummy placeholder to ensure that there are three parameters.

Figure 42   Launch External Application Window
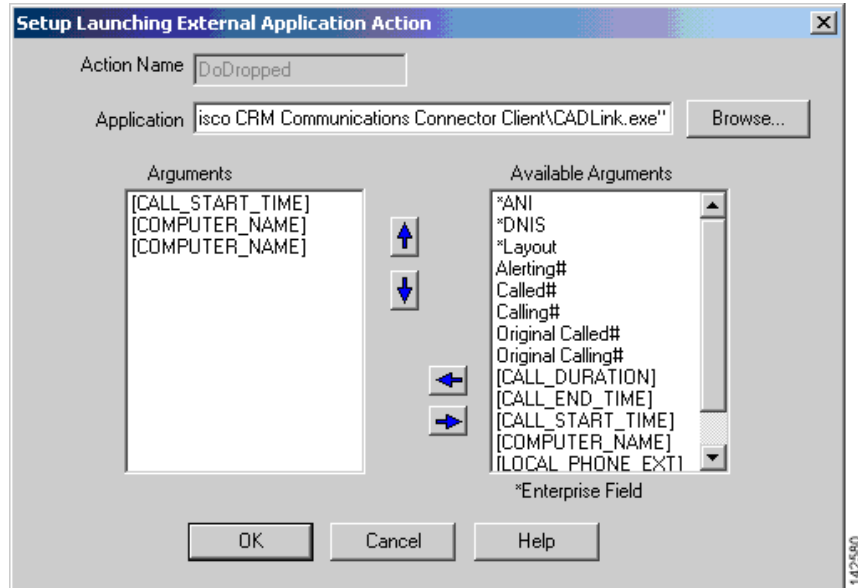
Additional Configuration Steps for Cisco Unified CallConnector for Microsoft Dynamics CRM Client

Inbound call information are received from the Cisco Agent Desktop. You must configure the client to ignore incoming TAPI call information so that the Cisco Unified CallConnector for Microsoft Dynamics CRM client will be able to process incoming calls routed by the automated call distributor (ACD), and not by the TAPI messages sent from Cisco Unified Communications Manager. Therefore, you must check "Ignore Incoming Calls," as shown in Figure 43.

Note   Failure to disable incoming TAPI messages results in double screen pops of the user-configured screen pops (specifically, Microsoft CRM contact records and phone call activity records).

Figure 43 *Cisco Unified CallConnector for Microsoft Dynamics CRM—TAPI Tab Configuration*
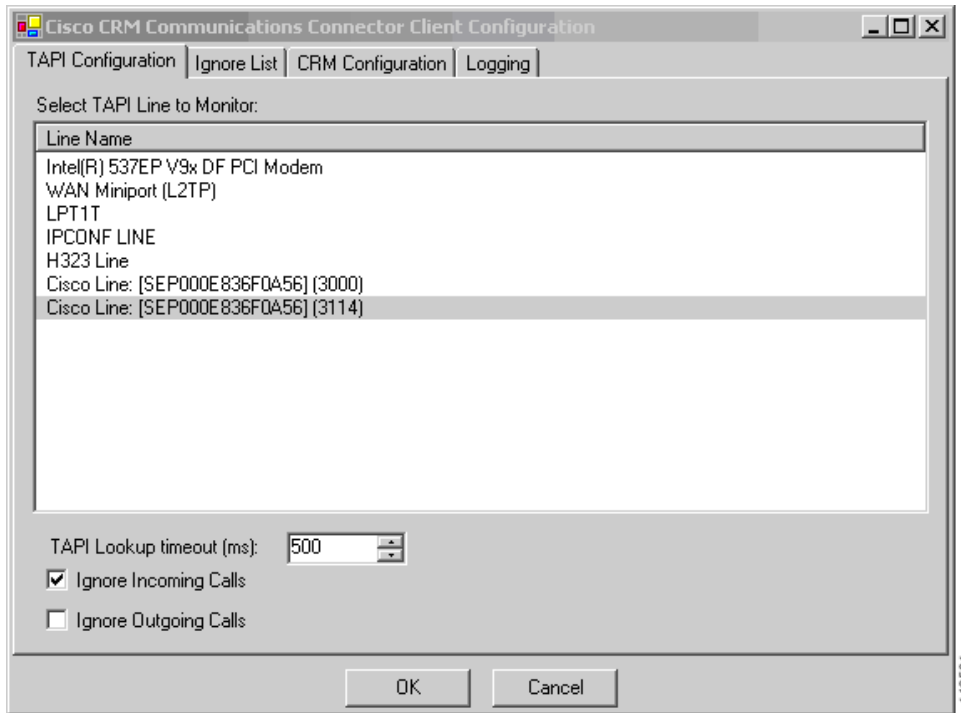
What to Do Next

You are now ready to use the Cisco Unified CallConnector for Microsoft Dynamics CRM (see the "Using the Cisco Unified CallConnector for Microsoft Dynamics CRM Client" section on page 51).

Using the Cisco Unified CallConnector for Microsoft Dynamics CRM Client

This chapter describes how use the Cisco Unified CallConnector for Microsoft Dynamics CRM Client.

When the Client first starts up, it attempts to contact the Cisco Unified CallConnector for Microsoft Dynamics CRM Server Service. If successful, the Client's main window appears at the bottom-right corner of your window (see Figure 44).

Figure 44   *Client Main Window: Cisco Unified CallConnector for Microsoft Dynamics CRM*
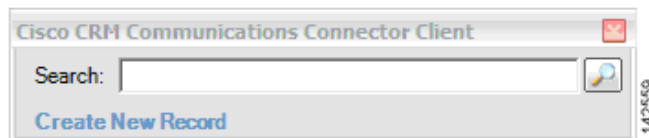
Note that the Client performs a "minimize on close." If you click **Close** in the Cisco Unified CallConnector for Microsoft Dynamics CRM Client window, the Client will not exit, instead of minimizing itself to the tray (the tray icon is always visible, however). To exit the Client, right-click the menu and select **Exit**.

The Client is a single-instance application, meaning that only one copy of the application can be running at any one time. If you attempt to start a new Client while another is running, a warning message appears (see Figure 45).

Figure 45   *Warning Message*
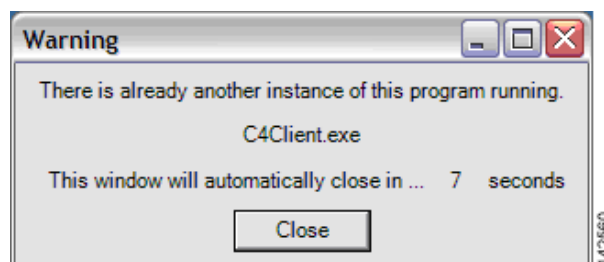
If the window is grayed out as shown in Figure 46, the attempt to contact the server was unsuccessful, and you should receive an error message.

Figure 46   Client Grayed-Out Window: Cisco Unified CallConnector for Microsoft Dynamics CRM
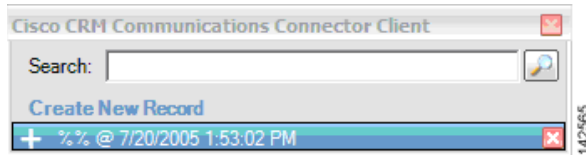
One possible error message is shown in Figure 47:

Figure 47   Error Message
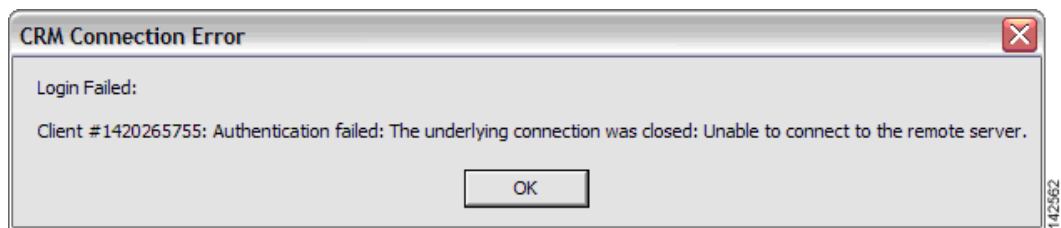
In this case, the C4Server was successfully contacted, however the login was not successful (because the Cisco Unified CallConnector for Microsoft Dynamics CRM server could not be contacted by the Cisco Unified CallConnector for Microsoft Dynamics CRM server component).

To perform a manual search, type something in the search box and press Enter or click the search button at the right. The results display in collapsible panels, as shown in Figure 48. If there is only one matching type of record, the panel displays in its expanded form. To expand or collapse a contact-type panel, click the blue horizontal bar that represents that contact type.

Figure 48 *Client Window Performing Manual Search: Cisco Unified CallConnector for Microsoft Dynamics CRM*
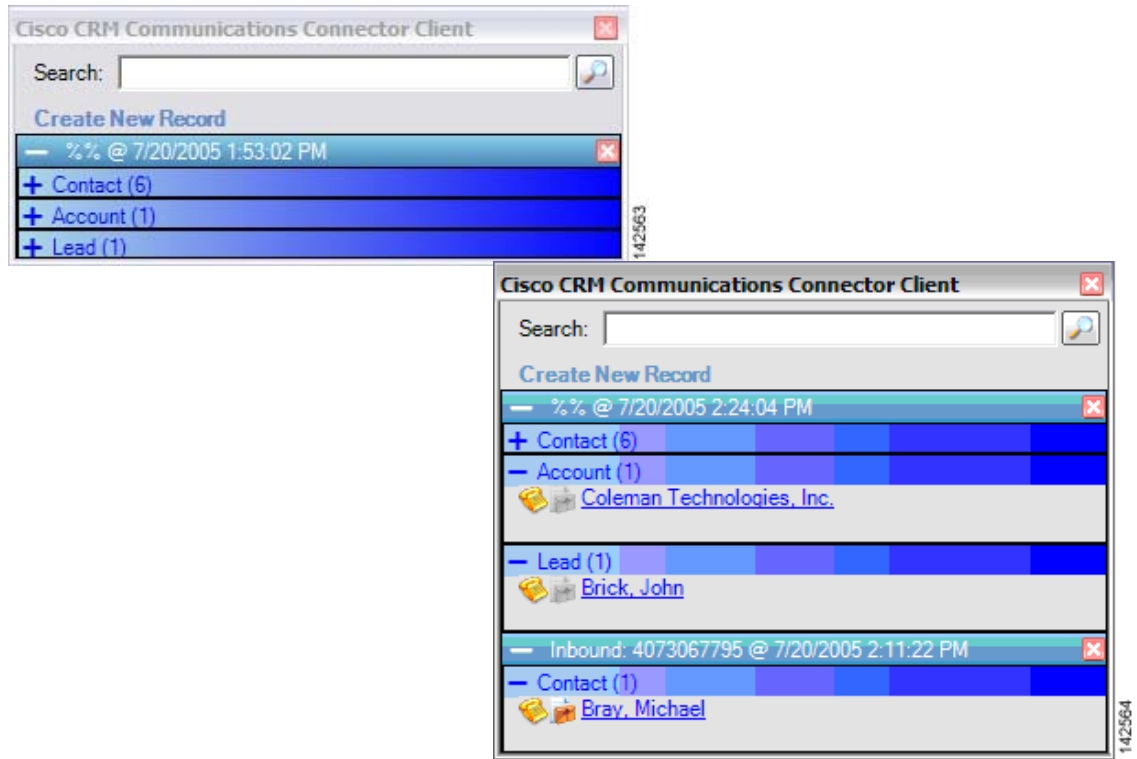
The Connector Client provides a multiple-search interface, which means that multiple search results can display at the same time. Each search result is also contained on a collapsible panel with a blue bar. Also note that the search collapsible panel has a close button—the red X at the right side of the search panel (not the window close button). To remove the search results for any specific search, click that panel's close button.

A search window with one collapsed search panel is shown in Figure 49:

Figure 49 *Client Window: Cisco Unified CallConnector for Microsoft Dynamics CRM*
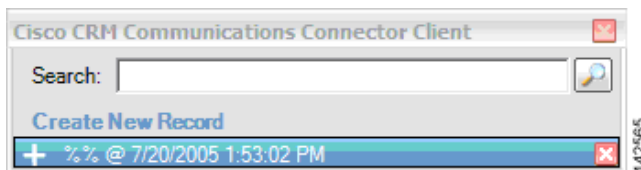
Inside each search panel are the results of the search. The example in Figure 50 shows there are 6 Contacts, 1 Account, and 1 Lead that matched the search. The Contacts panel expands so that the results are visible.

Three hot spots are in each search-panel result. Click the telephone icon and the client creates a phone call activity record for that contact. If the search was initiated by a phone call, then the details of the phone call will automatically fill in.

If you click the briefcase icon, a menu showing the active support cases for that customer appears. Clicking one of the menu items opens a support case. If the briefcase icon is grayed out, then there are no support cases available for that contact, or the administrator did not configure the server to return information about support cases.

Finally, if you click a name, the contact record opens.

Figure 50   Client Contact Record Windows: Cisco Unified CallConnector for Microsoft Dynamics CRM
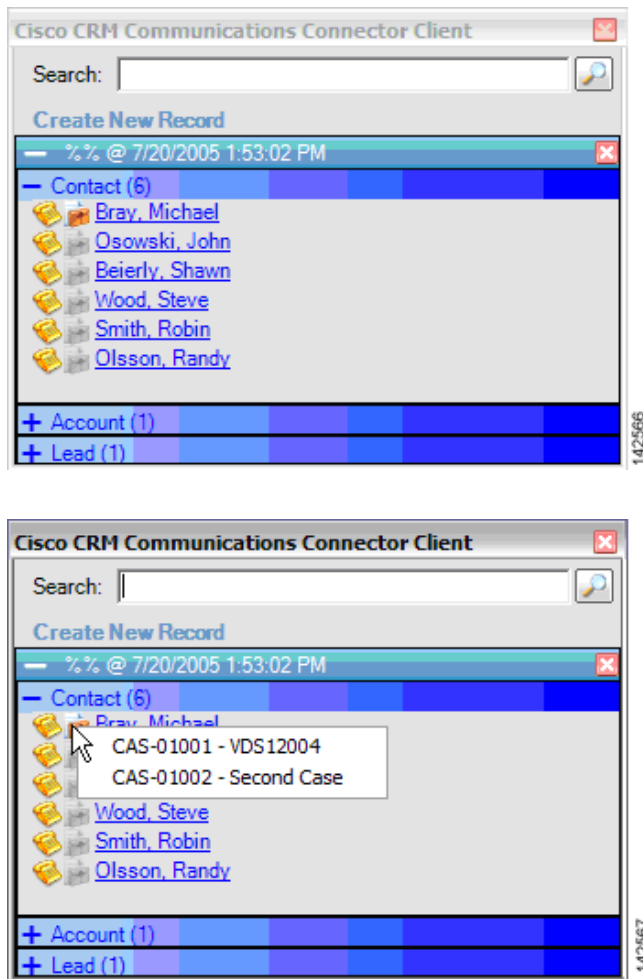
To create a new contact, account, or lead record, click **Create New Record** and select the type of record you want to create from the menu. Clicking one of the items opens a new blank record in the CRM Interface (see Figure 51).

Figure 51   Client Window—Select a New Record: Cisco Unified CallConnector for Microsoft Dynamics CRM
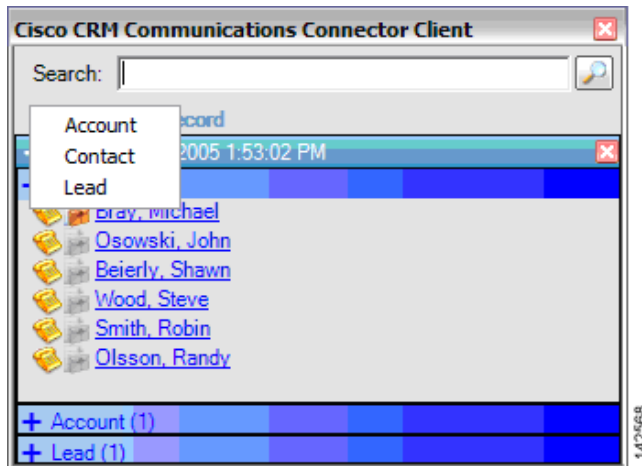
The client maintains an icon in the tray. The two possible icons are:

      Client successfully contacted and logged in.

      Client either could not contact the C4 server or could not log in.

Left-clicking these icons hides or displays the main client window. Right-clicking these icons displays the menu, as shown in .

Figure 52   Hiding and Displaying the Main Client Window and Menu
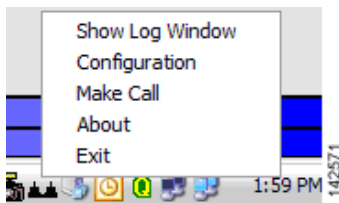
The options are as follows:

- **Show/Hide Log Window**—Visible only if logging to a window is enabled. Shows or hides the log window.

- **Configuration**—Accesses the client configuration dialog.

- **Make Call**—Manually accesses the Make Call window.

- **About**—Displays client version and support information.

- **Exit**—Exits the client.

Appendix A: Troubleshooting Tips

This appendix provides troubleshooting tips.

- Ensure that you have Microsoft CRM running. You need to be logged in and connected before any of the integration macros can work.

- Ensure that you have Cisco Unified CallConnector for Microsoft Dynamics CRM running. It should appear in the Tray on the right side of the Windows Task bar.

- Confirm that events are exactly as described. Misspellings and missing and extra spaces cause problems.

- If you see the "cadlink.exe is not recognized…" error message:

  - Confirm that CADLink is installed in the proper location. Use "Start | Search | for files or folders" on the client machine and enter cadlink.exe in the "Search for files or folders named:" field. It should appear at C:\Program Files\Cisco Systems\Cisco Unified CRM Connector Client\CADLink.exe.

  - If cadlink.exe is found somewhere else, copy it to the C:\Program Files\Cisco Systems\Cisco Unified CRM Connector Client\ folder.

For assistance with troubleshooting, use these resources:

Related Websites

Related Topic	URL
Cisco and Microsoft Website	http://www.ciscomicrosoftsmb.com
Cisco Unified Contact Center Express	http://www.cisco.com/en/US/products/sw/custcosw/ps1846/index.html

Related Support Aliases

Related Topic	Alias
For assistance for Cisco Unified IPCC Express	Ask-icd-ivr-support@external.cisco.com
For assistance for configuring and using Cisco Agent Desktop	Ask-cad@external.cisco.com
For product plans and marketing information	Ask-icd-ivr-pm@external.cisco.com

Technical Assistance

Description	Link
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