



## Installation Guide for Cisco Unified Communications Integration for Microsoft Office Communicator Release 7.1

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# CHAPTER 1

## Overview of Cisco Unified Communications Integration for Microsoft Office Communicator

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- [Cisco UC Integration for Microsoft Office Communicator, page 1-1](#)
- [Installation Prerequisites, page 1-3](#)
- [Installing Cisco UC Integration for Microsoft Office Communicator with Other Microsoft Office Communicator Tabs, page 1-3](#)

## Cisco UC Integration for Microsoft Office Communicator

The Cisco UC Integration for Microsoft Office Communicator adds a conversation pane to Microsoft Office Communicator.

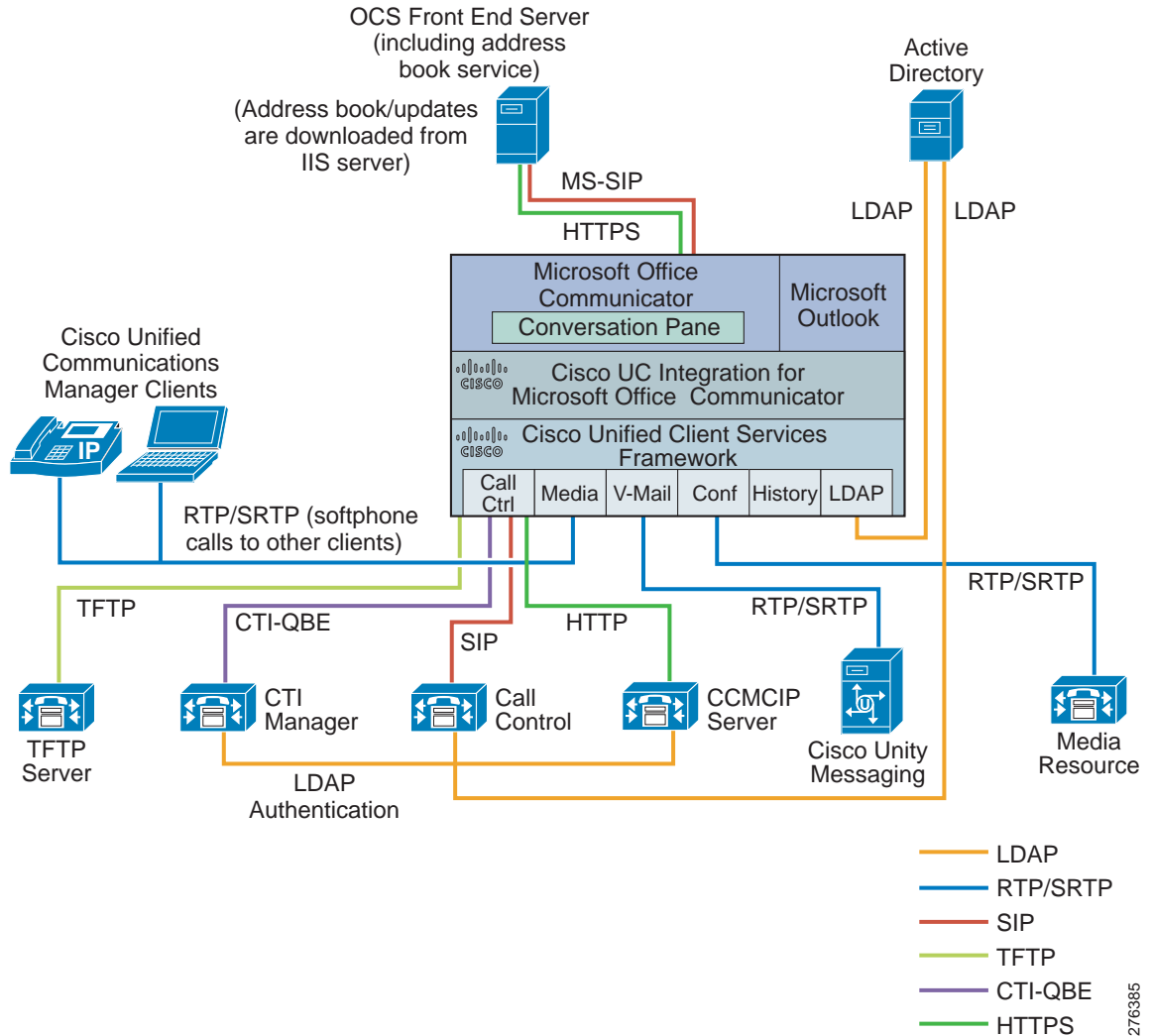
Users can perform the following tasks from the conversation pane:

- Place and receive phone calls.
- Start and participate in conference calls.
- Transfer your calls to other contacts, or depending on your configuration, to a mobile device or other remote device.
- Forward your calls to your voicemail service, another contact, or another number.
- Park your call, then retrieve the call from another device.
- Call your voicemail service.
- Display your conversation history.
- (Optional) Save your conversation history in Microsoft Outlook.
- Set options for the conversation pane.
- Switch phone modes.
- (Optional) Use the click-to-call feature to place calls from within Mozilla Firefox and the following Microsoft applications: Excel, Internet Explorer, Outlook, PowerPoint, SharePoint, and Word.
- (Optional) Use the click-to-call feature to place calls to numbers in your clipboard.

Cisco UC Integration for Microsoft Office Communicator integrates closely with Microsoft Office Communicator. Cisco UC Integration for Microsoft Office Communicator updates the availability status of users automatically. Users can send instant messages through Microsoft Office Communicator to contacts with whom they are currently having a conversation through the conversation pane.

Cisco UC Integration for Microsoft Office Communicator interacts with servers and applications as shown in Figure 1-1:

**Figure 1-1 Cisco UC Integration for Microsoft Office Communicator Interactions with Network Servers**



Cisco UC Integration for Microsoft Office Communicator provides window management, client security, third-party integration, and client services framework (CSF) integration. The CSF provides call control services, user authentication, message waiting indicators, media, firewall traversal, and so on.

When you install Cisco UC Integration for Microsoft Office Communicator, the installation application installs all the required components.

# Installation Prerequisites

Before you install Cisco UC Integration for Microsoft Office Communicator, check that your system meets all the necessary prerequisites. Ensure that you have the correct versions of all the required software, as listed in the release notes at the following URL:

[http://www.cisco.com/en/US/products/ps10317/prod\\_release\\_notes\\_list.html](http://www.cisco.com/en/US/products/ps10317/prod_release_notes_list.html)

# Installing Cisco UC Integration for Microsoft Office Communicator with Other Microsoft Office Communicator Tabs

Cisco UC Integration for Microsoft Office Communicator is implemented as a tab that is added to the Microsoft Office Communicator window. Microsoft Office Communicator can be configured with multiple tabs.

- [Definition of Microsoft Office Communicator Tabs, page 1-3](#)
- [Precedence of the TabURL Registry Key Entry, page 1-3](#)
- [Updating the Microsoft Office Communicator Tabs XML File, page 1-3](#)

## Definition of Microsoft Office Communicator Tabs

The Microsoft Office Communicator tabs are defined in an XML file which can be located in the local file system, or on a remote server. You can define the tabs in only *one* XML file. One of the following registry key entries specifies the location of this XML file:

- HKEY\_LOCAL\_MACHINE\SOFTWARE\Policies\Microsoft\Communicator\TabURL
- HKEY\_CURRENT\_USER\Software\Policies\Microsoft\Communicator\TabURL

If you performed a default installation, and did not specify values for the TabURL key before the installation, the XML file is in the default installation folder, as follows:

```
C:\Program Files\Cisco Systems\Cisco UC Integration TM for Microsoft Office Communicator\cisco-moc-tab-config.xml
```

## Precedence of the TabURL Registry Key Entry

Microsoft Office Communicator can read only one TabURL registry key. The HKEY\_LOCAL\_MACHINE entry takes precedence over the HKEY\_CURRENT\_USER entry.

## Updating the Microsoft Office Communicator Tabs XML File

If the XML file in your configuration of Microsoft Office Communicator is on a remote server, you must update the XML file *before* you install Cisco UC Integration for Microsoft Office Communicator.

Add the following <tab> element within the <tabdata> element in the XML file:

```
<tab attr="CUCIMOC">
<image>file:///<installation_folder>\Resources\CUCIMOCtab.PNG</image>
<name>Cisco Softphone</name>
<tooltip>Cisco Softphone</tooltip>
```

```
<contenturl>file:///<installation_folder>\MocTab\CUCIMOCtab.html</contenturl>  
<userid>>true</userid>  
<contactid>>false</contactid>  
<accessibility>both</accessibility>  
</tab>
```

For more information about how to edit the XML file, see the *Microsoft Office Communicator 2007 Deployment Guide* at the following URL:

<http://www.microsoft.com/downloads/details.aspx?FamilyID=F1D1A947-6EFF-4AC4-8878-F0A77894AC99&displaylang=en>



## CHAPTER 2

# Configuring Servers for Cisco Unified Communications Integration for Microsoft Office Communicator

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- [How to Configure Active Directory Server and OCS Server, page 2-1](#)
- [Dial Plan Options for Cisco UC Integration for Microsoft Office Communicator, page 2-5](#)
- [How to Configure Cisco Unified Communications Manager Server, page 2-8](#)
- [Verifying the Configuration of Active Directory, OCS, and Cisco Unified Communications Manager Servers, page 2-15](#)

## How to Configure Active Directory Server and OCS Server

When you configure your servers for Cisco UC Integration for Microsoft Office Communicator, you must ensure that the user IDs, devices, and directory numbers match in the following servers:

- Active Directory server
- Office Communications Server (OCS)
- Cisco Unified Communications Manager server

You must also configure your users so that each user has the following:

- A phone number that can be correctly dialed within the context of your Cisco Unified Communications Manager configuration.
- All phone numbers for the user are in E.164 format.

For more information about the importance of the use of the E.164 format to the deployment of Cisco UC Integration for Microsoft Office Communicator, read the following topics:

- [E.164 Formatting, page 2-2](#)
- [Phone Numbers for Active Directory Users Must Use E.164 Formatting, page 2-2](#)

To configure the Active Directory server and the OCS server for Cisco UC Integration for Microsoft Office Communicator, you must perform the following tasks:

- [Enabling Users for OCS, page 2-2](#)
- [Updating OCS Address Book Manually, page 2-3](#)

- [Verifying OCS Address Book Synchronization, page 2-4](#)

## E.164 Formatting

The E.164 standard defines an international numbering plan for public phone systems. In the E.164 standard, each number contains a country code, an area code, and a subscriber number. Each phone user has a globally unique number. In Cisco UC Integration for Microsoft Office Communicator, phone numbers in E.164 format must begin with a plus character (“+”).

## Phone Numbers for Active Directory Users Must Use E.164 Formatting

You must define phone numbers in E.164 format for each user in your Active Directory. This ensures the following:

- When Microsoft Office Communicator downloads the OCS address book, each user in the OCS address book is assigned a number in the correct format.
- Each user has a phone number that can be correctly dialed within the context of your Cisco Unified Communications Manager configuration.

The Microsoft Office Communicator Automation API reads contacts and their associated phone numbers from Active Directory, and passes this data to the Cisco UC Integration for Microsoft Office Communicator.



### Tip

Define phone numbers in E.164 format for each user in your Active Directory. If you do not do this, you must configure a set of phone number normalization rules on the OCS server, so that a phone number that can be correctly dialed is available in the OCS address book. Configuring phone number normalization rules can be an error-prone task, especially for international and enterprise dial plans. If you choose not to define phone numbers in E.164 format, see [Appendix A, “Normalization Rules for OCS”](#).

### What to Do Next

- [Enabling Users for OCS, page 2-2](#)

## Enabling Users for OCS

### Procedure

- 
- Step 1** Start the Active Directory Users and Computers administrative tool.
  - Step 2** Expand the domain that contains your users.
  - Step 3** Open the organizational unit (OU) that contains your users.
  - Step 4** Check the following details for all users that you want to enable for OCS:
    - All users have valid email addresses.
    - All users are assigned to a group.
    - All the phone numbers for each user are in E.164 format, and can be correctly dialed within the context of your Cisco Unified Communications Manager configuration.

**Step 5** Right-click the users, then select **Enable users for Communications Server**.

Active Directory uses the User logon name field and the domain name to form a SIP email address in the Office Communications Server Address column. This address is used to sign users in to Microsoft Office Communicator, and enables users to send instant messages.

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#### Related Topics

- [Configuration of Telephony Options for Users, page 2-3](#)
- [Phone Numbers for Active Directory Users Must Use E.164 Formatting, page 2-2](#)

#### What to Do Next

- [Updating OCS Address Book Manually, page 2-3](#)

## Configuration of Telephony Options for Users

We strongly recommend that you do *not* select the following telephony options for your users:

- **Enable Remote call control**
- **Enable Enterprise Voice**

If you select either of these options, voice traffic is allowed from both Cisco UC Integration for Microsoft Office Communicator *and* Microsoft Office Communicator. This can result in the following problems:

- A confusing user experience, as users can place and receive calls from a mixture of user interface elements in both applications.
- Inconsistent voice traffic. That is, calls from Cisco UC Integration for Microsoft Office Communicator might give a different audio experience to Microsoft Office Communicator.
- A mixed configuration is more difficult to manage, as administrators must track traffic from two sources. You might want to monitor voice usage in your network and if you use both applications, you must configure your monitoring tools to track traffic from both applications.

#### Related Topics

- [Enabling Users for OCS, page 2-2](#)

## Updating OCS Address Book Manually

To ensure that the OCS address book has the latest information from the Active Directory server, you must update the OCS address book manually. For information about how to perform this task, see the following URL:

<http://technet.microsoft.com/en-us/library/bb936631.aspx>

#### What to Do Next

- [Verifying OCS Address Book Synchronization, page 2-4](#)

## Verifying OCS Address Book Synchronization

You must verify that the users are enabled for OCS, that the OCS address book is synchronized with the Active Directory server, and that the OCS address book is configured and operational.

To resolve problems associated with synchronization of the OCS address book, see [Troubleshooting Cisco Unified Communications Integration for Microsoft Office Communicator, page 5-1](#). Alternatively, see the relevant Microsoft documentation.

### Procedure

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- Step 1** Use one of the user accounts to sign in to Microsoft Office Communicator.  
This step signs the user in to OCS.
- Step 2** Verify that the following message is *not* displayed in the notifications area in Microsoft Office Communicator after the user signs in:  
Cannot Synchronize Address Book
-

# Dial Plan Options for Cisco UC Integration for Microsoft Office Communicator

The following table summarizes the dial plan options available when you deploy Cisco UC Integration for Microsoft Office Communicator:

Option	Phone Numbers in Active Directory	Phone Numbers in Cisco Unified Communications Manager	Comments
1	E.164 number format	E.164 number format	Requires Cisco Unified Communications Manager Release 7.0 or later.
2	E.164 number format	Private numbering plan	Requires you to do the following: <ul style="list-style-type: none"> <li>• Configure application dialing rules and directory lookup dialing rules on Cisco Unified Communications Manager.</li> </ul>
3	Private numbering plan	Private numbering plan	Requires you to do the following: <ul style="list-style-type: none"> <li>• Configure normalization rules on OCS.</li> <li>• Configure application dialing rules and directory lookup dialing rules on Cisco Unified Communications Manager.</li> </ul>

This chapter deals with options 1 and 2. [Appendix A, “Normalization Rules for OCS”](#) deals with option 3.



## Note

If you choose option 3, you must configure a set of phone number normalization rules on the OCS server. Configuring OCS normalization rules can be an error-prone task, especially for international and enterprise dial plans. For more information about this topic, see [Appendix A, “Normalization Rules for OCS”](#).

## Dialing Rules Required for Cisco UC Integration for Microsoft Office Communicator

If your Cisco Unified Communications Manager uses a private numbering plan, you must configure the following types of dialing rules in Cisco Unified Communications Manager:

- [Application Dialing Rules, page 2-6](#)
- [Directory Lookup Dialing Rules, page 2-7](#)

For detailed conceptual and task-based information on dialing rules, see the Cisco Unified Communications Manager Administration online help or the *Cisco Unified Communications Manager Administration Guide* and the *Cisco Unified Communications Manager System Guide*:

[http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod\\_maintenance\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html)

**Note**

If your Cisco Unified Communications Manager uses dialing rules, you must ensure that Cisco UC Integration for Microsoft Office Communicator and Cisco Unified Client Services Framework (CSF) can access these dialing rules.

**Related Topics**

- [How to Make Cisco Unified Communications Manager Dialing Rules Accessible, page 2-12](#)

## Application Dialing Rules

Application dialing rules modify the dial string on outbound calls to conform to the route plan on the Cisco Unified Communications Manager. For Cisco UC Integration for Microsoft Office Communicator, application dialing rules map numbers in the OCS address book to a number format that can be correctly dialed within the context of your Cisco Unified Communications Manager configuration. That is, you must define application dialing rules to map E.164 numbers to the private numbering plan.

### Example Application Dialing Rule for Contacts with North American Numbers

The following table illustrates the application dialing rule that you need to use to resolve E.164-format numbers to a Cisco Unified Communications Manager private numbering plan that uses six-digit numbers beginning with 8.

	1	2	3	4	5	6	7	8	9	10	11	12
Number for contact in OCS address book in E.164 format	+	1	4	0	8	5	5	5	0	1	0	0
	Number begins with +1408555											
	Number of digits is 12											
Operations performed by application dialing rule	+	1	4	0	8	5	5	5	0	1	0	0
	Number of digits to remove is 7											
	Prefix with 8											
Dialed number	850100											

### Example of Application Dialing Rule for Contacts with Spanish Numbers

The following table illustrates the application dialing rule that you need to use to resolve E.164-format numbers to a Cisco Unified Communications Manager private numbering plan that uses nine-digit numbers beginning with 9.

	1	2	3	4	5	6	7	8	9	10	11	12
Number for contact in OCS address book in E.164 format	+	3	4	9	8	5	5	5	0	1	9	9
	Number begins with +34											
	Number of digits is 12											

	1	2	3	4	5	6	7	8	9	10	11	12
Operations performed by application dialing rule	+	3	4	9	8	5	5	5	0	1	9	9
	Number of digits to remove is 3											
	No prefix required											
Dialed number	985550199											

## Directory Lookup Dialing Rules

Directory lookup dialing rules transform caller identification numbers into numbers that can be looked up in the directory. For example, if the Cisco Unified Communications Manager reports a call from 85550100, that must be transformed into the E.164 format +14085550100 as stored in LDAP to identify the caller as a contact. If numbers in the LDAP are not in E.164 format, but the enterprise routable number is stored in LDAP, then the directory lookup dialing rules need to map incoming numbers to the enterprise routable numbers.

For Cisco UC Integration for Microsoft Office Communicator, directory lookup dialing rules map private numbering plan numbers to the number format used in Active Directory. That is, you must define directory lookup dialing rules to transform private numbering plan numbers to E.164-format numbers.

### Example of Directory Lookup Dialing Rule for Contacts with North American Numbers

The following table illustrates the directory lookup dialing rule that you need to use to resolve a number from a Cisco Unified Communications Manager private numbering plan that uses six-digit numbers beginning with 81 to an E.164-format number.

	1	2	3	4	5	6	7	8	9	10	11	12
Private numbering plan number from Cisco Unified Communications Manager							8	1	0	1	9	9
							Number begins with 81					
	Number of digits is 6											
Operations performed by directory lookup dialing rule	+	1	4	0	8	5	5	5	0	1	9	9
	Prefix with +1408555											
	Digits to remove is 2											
Resulting E.164-format number	+14085550199											

**Example of Directory Lookup Dialing Rule for Contacts with Spanish Numbers**

The following table illustrates the directory lookup dialing rule that you need to use to resolve a number from a Cisco Unified Communications Manager private numbering plan that uses nine-digit numbers beginning with 98 to an E.164-format number.

	1	2	3	4	5	6	7	8	9	10	11	12
Private numbering plan number from Cisco Unified Communications Manager				9	8	5	5	5	0	1	0	0
				Number begins with 98								
	Number of digits is 9											
Operations performed by directory lookup dialing rule	+	3	4	9	8	5	5	5	0	1	0	0
	Prefix with +34											
	Digits to remove is 0											
Resulting E.164-format number	+34985550100											

## How to Configure Cisco Unified Communications Manager Server

Before you configure the Cisco Unified Communications Manager server, read the following topics:

- [Prerequisites for Configuring Cisco Unified Communications Manager, page 2-8](#)
- [Cisco Unified Communications Manager Client Services Framework Device Type, page 2-9](#)

To configure the Cisco Unified Communications Manager server for Cisco UC Integration for Microsoft Office Communicator, you must perform the following tasks:

- [Enabling LDAP Synchronization, page 2-9](#)
- [Enabling LDAP Authentication, page 2-10](#)
- [Creating Devices and Directory Numbers for Users, page 2-10](#)
- [How to Make Cisco Unified Communications Manager Dialing Rules Accessible, page 2-12](#)

## Prerequisites for Configuring Cisco Unified Communications Manager

You must have a properly working Cisco Unified Communications configuration with the following servers:

- Cisco Unified Communications Manager server

For information about Cisco Unified Communications Manager servers, see the documentation at the following URL:

[http://www.cisco.com/en/US/products/sw/voicesw/ps556/tsd\\_products\\_support\\_general\\_information.html](http://www.cisco.com/en/US/products/sw/voicesw/ps556/tsd_products_support_general_information.html)

- Cisco Trivial File Transfer Protocol (TFTP) server

For information about Cisco TFTP servers, see the *Cisco Unified Communications Manager System Guide*.

- Cisco CTIManager server

For information about Cisco CTIManager servers, see the *Cisco Unified Communications Manager System Guide*.

- Cisco Unified Communications Manager IP Phone (CCMCIP) server

## Cisco Unified Communications Manager Client Services Framework Device Type

The Cisco UC Integration for Microsoft Office Communicator requires a new Cisco Unified Communications Manager device type called *Client Services Framework*. Depending on which release of Cisco Unified Communications Manager is installed in your Cisco Unified Communications system, you might need to patch Cisco Unified Communications Manager with a Cisco Options Package (COP) file.

You must run the COP file if your Cisco Unified Communications Manager does not have the Client Services Framework device type. You run the COP file on the Cisco Unified Communications Manager publisher server. After you apply the COP file, you must restart the Cisco Unified Communications Manager publisher server, and all other servers.

For information about which releases of Cisco Unified Communications Manager require you to run the COP file to install the Client Services Framework device type, see the release notes at the following URL:

[http://www.cisco.com/en/US/products/ps10317/prod\\_release\\_notef\\_list.html](http://www.cisco.com/en/US/products/ps10317/prod_release_notef_list.html)

### What to Do Next

- [Enabling LDAP Synchronization, page 2-9](#)

## Enabling LDAP Synchronization

This allows Cisco Unified Communications Manager to integrate with Active Directory and build the Cisco Unified Communications Manager user database from the same data source where Windows users and Microsoft Office Communicator users are defined.

If you synchronize the Cisco Unified Communications Manager with Active Directory, the Cisco UC Integration for Microsoft Office Communicator user IDs will be the same as the Windows and Microsoft Office Communicator user IDs. If you synchronize the Cisco Unified Communications Manager with Active Directory, you must also enable LDAP authentication. For more information about how to enable LDAP authentication, see [Enabling LDAP Authentication, page 2-10](#).

If you do not synchronize, you must manually map your Cisco Unified Communications Manager user IDs with Windows and Microsoft Office Communicator user IDs. If you choose not to synchronize, see [Appendix A, “Normalization Rules for OCS”](#).

### Procedure

- 
- Step 1 Select **System > LDAP > LDAP System** in Cisco Unified Communications Manager Administration.
  - Step 2 Select **Enable Synchronizing from LDAP Server**.
  - Step 3 Select **Microsoft Active Directory** from the LDAP Server Type list box.

- Step 4** Select the LDAP attribute that you want to use as the User ID in Cisco Unified Communications Manager from the LDAP Attribute for User ID list box.
- Step 5** Select **Save**.
- Step 6** Select **System > LDAP > LDAP Directory**.
- Step 7** Select **Add New**.
- Step 8** Enter data in the LDAP Directory window as required.
- Step 9** Select **Save**.
- Step 10** Select **Perform Full Sync Now**.

For information about how to synchronize with LDAP, see the LDAP directory integration documentation at the following URLs:

**Release 7.x:** [http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/cucm/srnd/7x/directry.html](http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/srnd/7x/directry.html)

**Release 6.x:** [http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/cucm/srnd/6x/directry.html](http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/srnd/6x/directry.html)

---

#### What to Do Next

- [Enabling LDAP Authentication, page 2-10](#)

## Enabling LDAP Authentication

If you enable LDAP authentication in Cisco Unified Communications Manager, the Active Directory provides authentication services to Cisco Unified Communications Manager by proxy. For example, Cisco Unified Communications Manager can forward authentication requests from the Cisco UC Integration for Microsoft Office Communicator to Active Directory, and Active Directory responds to the request.

#### Procedure

---

- Step 1** Select **System > LDAP > LDAP Authentication** in Cisco Unified Communications Manager Administration.
- Step 2** Select **Use LDAP Authentication for End Users**.
- Step 3** Select **Save**.
- 

#### What to Do Next

- [Creating Devices and Directory Numbers for Users, page 2-10](#)

## Creating Devices and Directory Numbers for Users

#### Procedure

---

- Step 1** Select **Device > Phone** in Cisco Unified Communications Manager Administration.
- Step 2** Select **Add New**.

**Step 3** Select **Client Services Framework** from the Phone Type list box, then select **Next**.

**Step 4** Enter information for the phone in the Phone Configuration window, as follows:

Field	Description
Device Name	Enter a name to identify the Cisco Unified Client Services Framework device. The name can contain 1 to 15 characters, including alphanumeric characters, periods, hyphens, and underscores. The device name does not need to relate to the user ID of the user.
Device Pool	Select the device pool to which you want the phone assigned. The device pool defines sets of common characteristics for devices, such as region, date/time group, softkey template, and Multilevel Precedence and Preemption (MLPP) information.
Phone Button Template	Select the appropriate phone button template. The phone button template determines the configuration of buttons on a phone and identifies which feature (line, speed dial, and so on) is used for each button.
Allow Control of Device from CTI	Select this option if you want Cisco UC Integration for Microsoft Office Communicator to be able to control the desk phone of the user with the Computer Telephony Integration (CTI) server.  Ensure that the user is added to the Standard CTI Enabled user group.
Device Security Profile	Select the security profile you require for the phone.  If you select Client Services Framework- Standard SIP Secure Profile, do the following: <ol style="list-style-type: none"> <li>a. Enter certification and authentication information in the Certification Authority Proxy Function (CAPF) Information section.</li> <li>b. Select <b>Generate String</b>.</li> <li>c. Email the contents of the Authentication String field to the user.</li> </ol>
SIP Profile	Select the default SIP profile or a specific profile that was previously created. SIP profiles provide specific SIP information for the phone such as registration and keepalive timers, media ports, and do not disturb control.

**Step 5** Enter any other required information, then select **Save**.

**Step 6** Select **Reset** on the Phone Configuration window to reset the phone.

**Step 7** Select the **Add a new DN** link in the Association Information section on the Phone Configuration window.

**Step 8** Enter information for the directory number on the Directory Number Configuration window.

**Step 9** Select **Save**.

**Step 10** Select **Associate End Users** on the Directory Number Configuration window.

**Step 11** Search for the user in the Find and List Users window, select the user, then select **Add Selected**.

**Step 12** Select **Save**.

**Step 13** Select **User Management > End User** in Cisco Unified Communications Manager Administration.

**Step 14** Search for the user in the Find and List Users window, then select the user.

- Step 15** Verify that the device is listed for the user in the Controlled Devices list box in the Device Associations group.
- 

#### Related Topics

- [Adding a User to the Standard CTI Enabled User Group, page 2-12](#)
- [Cisco Unified Communications Manager Client Services Framework Device Type, page 2-9](#)

## Adding a User to the Standard CTI Enabled User Group

If you want Cisco UC Integration for Microsoft Office Communicator to be able to control the desk phone of the user, you must select the Allow Control of Device from CTI option when you create the device for the user. You must also ensure that the user is added to the Standard CTI Enabled user group.

#### Procedure

---

- Step 1** Select **User Management > End User** in Cisco Unified Communications Manager Administration.
- Step 2** Select the user that you want to add.
- Step 3** Select **Add to User Group** in the Permissions Information group in the End User Configuration window.
- Step 4** Search for “Standard CTI” in the Find and List User Groups window.
- Step 5** Select the Standard CTI Enabled user group.
- Step 6** Select **Add Selected**.
- Step 7** Select **Save** in the End User Configuration window.
- 

## How to Make Cisco Unified Communications Manager Dialing Rules Accessible

If your Cisco Unified Communications Manager uses dialing rules, you must ensure that Cisco UC Integration for Microsoft Office Communicator and CSF can access these dialing rules.

You must run a COP file to generate copies of the dialing rules in XML format, which Cisco UC Integration for Microsoft Office Communicator and CSF can access.

You must run a COP file to generate copies of the dialing rules in XML format, which Cisco UC Integration for Microsoft Office Communicator and CSF can access. You can get the COP file from the Administration Toolkit. To access the Administration Toolkit, navigate to Cisco UC Integration for Microsoft Office Communicator from the Download Software page at the following URL:

<http://tools.cisco.com/support/downloads/go/Redirect.x?mdfid=278875240>



#### Note

- Every time you update the dialing rules in your Cisco Unified Communications Manager, you must run the COP file again, to ensure that Cisco UC Integration for Microsoft Office Communicator and CSF can access the updated dialing rules.

- You must run the COP file on each Cisco Unified Communications Manager that runs a TFTP server.

---

To make the Cisco Unified Communications Manager dialing rules accessible by Cisco UC Integration for Microsoft Office Communicator and CSF, you must perform the following tasks:

- [Verifying That Dialing Rules Are Configured on Cisco Unified Communications Manager, page 2-13](#)
- [Generating Copies of the Dialing Rules, page 2-13](#)
- [Verifying That Copies of the Dialing Rules Were Generated, page 2-14](#)
- [Restarting the TFTP Service, page 2-14](#)
- [Ensuring That Cisco UC Integration for Microsoft Office Communicator Clients Are Restarted, page 2-14](#)

## Verifying That Dialing Rules Are Configured on Cisco Unified Communications Manager

### Procedure

---

- Step 1** Select **Call Routing > Dial Rules > Application Dial Rules** in Cisco Unified Operating System Administration.
- Step 2** Search for the dialing rules in the Find and List Application Dial Rules window.
- Step 3** Verify that application dialing rules are found.
- Step 4** Select **Call Routing > Dial Rules > Directory Lookup Dial Rules** in Cisco Unified Operating System Administration.
- Step 5** Search for the dialing rules in the Directory Lookup Dial Rule Find and List window.
- Step 6** Verify that directory lookup rules are found.

If there are no application dialing rules or directory lookup dialing rules on your Cisco Unified Communications Manager, you do not need to make dialing rules accessible by Cisco UC Integration for Microsoft Office Communicator.

---

### What to Do Next

- [Generating Copies of the Dialing Rules, page 2-13](#)

## Generating Copies of the Dialing Rules

You must run a COP file to generate copies of the dialing rules in XML format. You can get the COP file from the Administration Toolkit. To access the Administration Toolkit, navigate to Cisco UC Integration for Microsoft Office Communicator from the Download Software page at the following URL:

<http://tools.cisco.com/support/downloads/go/Redirect.x?mdfid=278875240>

### Procedure

---

- Step 1** Select **Software Upgrades > Install/Upgrade** in Cisco Unified Operating System Administration.

- Step 2 Specify the location of the COP file in the Software Installation/Upgrade window.
  - Step 3 Select **Next**.
  - Step 4 Select the appropriate file from the **Available Software** list box.
  - Step 5 Select **Next**.
  - Step 6 Select **Install**.
- 

#### What to Do Next

- [Verifying That Copies of the Dialing Rules Were Generated, page 2-14](#)

## Verifying That Copies of the Dialing Rules Were Generated

#### Procedure

---

- Step 1 Select **Software Upgrades > TFTP File Management** in Cisco Unified Operating System Administration.
  - Step 2 Search for a directory that begins with CUPC in the TFTP File Management window.
  - Step 3 Verify that the following files are found:
    - AppDialRules.xml
    - DirLookupDialRules.xml
- 

#### What to Do Next

- [Restarting the TFTP Service, page 2-14](#)

## Restarting the TFTP Service

After you verify the generation of the copies of the dialing rules, restart the TFTP service. You must restart the TFTP service on every server on which you ran the COP file.

For information about how to restart TFTP services, see *Cisco Unified Serviceability Administration Guide* at the following URL:

[http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod\\_maintenance\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html)

#### What to Do Next


- [Ensuring That Cisco UC Integration for Microsoft Office Communicator Clients Are Restarted, page 2-14](#)

## Ensuring That Cisco UC Integration for Microsoft Office Communicator Clients Are Restarted

#### Procedure

---

- Step 1 Select  in the Microsoft Office Communicator title bar.
- Step 2 Select **Tools > Stop Conversation Pane**.

- Step 3** Start the Task Manager.
- Step 4** End the cucsf.exe process.
- Step 5** Select  in the Microsoft Office Communicator title bar.
- Step 6** Select **Tools > Start Conversation Pane**.

The Cisco UC Integration for Microsoft Office Communicator client and the cucsf.exe process are automatically restarted.

---

## Verifying the Configuration of Active Directory, OCS, and Cisco Unified Communications Manager Servers

Use a user account to sign in to the User Options pages of a user. Check that the devices associated with the user are the correct devices.





## CHAPTER 3

# Configuring Client Computers for Cisco Unified Communications Integration for Microsoft Office Communicator

---

Revised: January 29, 2010

- [About Client Computer Configuration, page 3-1](#)
- [Location of CSF Configuration Data, page 3-2](#)
- [Value Names for CSF Client Integration, page 3-2](#)
- [Configuring Microsoft Office Communicator to Use HTTPS to Access Custom Availability Statuses, page 3-8](#)
- [Enabling LDAP Over SSL, page 3-7](#)
- [Configuring Microsoft Office Communicator to Use HTTPS to Access Custom Availability Statuses, page 3-8](#)
- [Configuration of Policies for Microsoft Office Applications, page 3-9](#)
- [About the CSF Cache and LDAP Searches, page 3-10](#)

## About Client Computer Configuration

Before you install Cisco UC Integration for Microsoft Office Communicator, you must perform some configuration on the computers of your users. You specify the CSF client settings, Microsoft Office Communicator settings, and Microsoft Office settings that you want the client computers to use.

Then you must deploy the policy changes to the CSF client and Microsoft Office Communicator to the computers in your Cisco Unified Communications system. To do this, you can use software management system, for example, Active Directory Group Policy, Altiris, Microsoft System Management Server (SMS), and so on.

You must configure the Client Services Framework (CSF) on the computers of your users so that the CSF can function as the phone device for that user, to specify where CSF can connect to, and to specify the LDAP parameters. For more information about the configuring CSF on client computers, read this chapter.

## Location of CSF Configuration Data

You specify the configuration for CSF in the following registry key:

HKEY\_CURRENT\_USER\Software\Cisco Systems, Inc.\Client Services Framework\AdminData

If you use Active Directory Group Policy to configure Cisco UC Integration for Microsoft Office Communicator, then CSF configuration data is specified in the following registry key:

HKEY\_CURRENT\_USER\Software\Policies\Cisco Systems, Inc.\Client Services Framework\AdminData



### Note

- If CSF configuration data is present in both of these registry keys, the policies configuration data takes precedence.
- CSF reads only HKEY\_CURRENT\_USER keys. CSF does not read HKEY\_LOCAL\_MACHINE keys.

## Value Names for CSF Client Integration

Table 3-1 lists the name-value pairs that you must use to specify the servers, voice message service configuration, and security certificate location.

**Table 3-1** Server and Voice Message Service Value Names

Value Names	Description
TftpServer1, TftpServer2, TftpServer3	Enter the IP address of the primary TFTP server in your Cisco Unified Communications system, and any other TFTP servers.
CtiServer1, CtiServer2	Enter the IP address of the primary CTIManager server in your Cisco Unified Communications system, and the secondary CTIManager server, if present.
CcmcipServerValidation	<p>Enter the type of certificate validation for CSF to use with HTTPS to sign in to Cisco Unified Communications Manager to retrieve the device list. Enter one of the following values:</p> <ul style="list-style-type: none"> <li>• 0: CSF accepts all certificates.</li> <li>• 1: CSF accepts certificates that are defined in the keystore and self-signed certificates. A keystore is a file that stores authentication and encryption keys. The keystore is located in <i>&lt;location-of-jre&gt;/lib/security</i>. The default location of the JRE is C:\Program Files\Common Files\Cisco Systems\Client Services Framework.</li> <li>• 2: CSF only accepts certificates that are defined in the keystore.</li> </ul> <p><b>Note</b> CSF uses this certificate to verify the Cisco Unified Communications Manager server. When the certificate is accepted, CSF must use the credentials of the user to sign in to Cisco Unified Communications Manager.</p>

**Table 3-1 Server and Voice Message Service Value Names**

Value Names	Description
CmccipServer1, CmccipServer2	Enter the IP address of the primary CCMCIP server in your Cisco Unified Communications system, and the secondary CCMCIP server, if present.
VoicemailPilotNumber	Enter the number of the voice message service in your Cisco Unified Communications system. This value only relates to when users use the desk phone to access their voice message.
SECURITY_CertificateDirectory	<p>Specify the location of the directory where the security certificates are stored. For example, you might store LDAP or CCMCIP certificates in this location.</p> <p>Use this setting to specify a location for the certificates where the certificates will not be overwritten if you reinstall Cisco UC Integration for Microsoft Office Communicator.</p> <p>If you do not specify a value for this setting, the certificates are stored in the following locations:</p> <ul style="list-style-type: none"> <li>Windows XP: &lt;drive&gt;:\Documents and Settings\&lt;username&gt;\Application Data\Cisco\Unified Communications\Client Services Framework\certificates</li> <li>Windows Vista: &lt;drive&gt;:\Users\&lt;username&gt;\AppData\Roaming\Cisco\Unified Communications\Client Services Framework\certificates</li> </ul>


Table 3-2 lists the name-value pairs that you must use to specify the LDAP configuration.

**Table 3-2 LDAP Value Names**

Value Names	Description
LDAP_Server_1	<p>Enter the protocol name, followed by the fully-qualified domain name (FQDN) of your LDAP server. For example:</p> <p>ldap://ldap.example.com</p> <p>If you want to use a port number other than the default 389, add a colon to the value, followed by the port number. For example:</p> <p>ldap://ldap.example.com:19389</p> <p>If you want to use LDAP over SSL, this IP address must begin with <i>ldaps://</i>. For example:</p> <p>ldaps://ldap.example.com</p> <p>If you want to use a port number other than the default 636, add a colon to the value, followed by the port number. For example:</p> <p>ldaps://ldap.example.com:19636</p> <p>For more information about how to enable LDAP over SSL, see <a href="#">Enabling LDAP Over SSL, page 3-7</a>.</p>
LDAP_SearchBaseDN_1, LDAP_SearchBaseDN_2, LDAP_SearchBaseDN_3, LDAP_SearchBaseDN_4, LDAP_SearchBaseDN_5	<p>Specify the primary distinguished name for the location in the LDAP directory from which searches begin. For example, specify a distinguished name similar to the following:</p> <p>OU=Sales,DC=example,DC=com</p> <p>Specify any further search bases also.</p>
LDAP_MaxCacheSize	Specify the maximum number of LDAP directory records to retain in the cache of the user.
LDAP_ResultSetMaxSize	Specify the maximum number of records to return when the user searches the LDAP directory. That is, when the user searches for contacts in Microsoft Office Communicator.
LDAP_UserLogonDomain	Enter the name of the domain that contains the LDAP account of the user.
LDAP_enableWildcardMatchesForPhoneNumberSearches	<p>Set to <b>true</b> if you want to enable wildcard searches for phone numbers in the LDAP.</p> <p><b>Note</b> If you set this key to <b>true</b>, the speed of searches of the LDAP might be affected.</p>
LDAP_AttributeName_primaryPhoneNumberForSearches	<p>Specify the phone number field that you use to resolve most of your LDAP queries.</p> <p>CSF searches this field first. If a match is not found, CSF searches the remaining phone number fields. The default value is the value you set for the LDAP_AttributeName_businessPhone key.</p>

Table 3-3 lists the values you must enter for LDAP attribute key names to enable CSF searches to map to the appropriate fields of the Active Directory.

**Table 3-3 Values to Enter to Map CSF Searches to Active Directory**

For This Value Name...	Enter the Following Active Directory Field...
LDAP_AttributeName_objectclassKey	objectclass
LDAP_AttributeName_objectclassValue	person
LDAP_AttributeName_userLogonName	userPrincipalName
LDAP_AttributeName_displayName	displayName
LDAP_AttributeName_commonName	cn
LDAP_AttributeName_firstName	givenName
LDAP_AttributeName_lastName	sn
LDAP_AttributeName_email	mail
LDAP_AttributeName_uri	msRTCSIP-PrimaryUserAddress
LDAP_AttributeName_photoUri	photoUri
LDAP_AttributeName_businessPhone	telephoneNumber
LDAP_AttributeName_homePhone	homePhone
LDAP_AttributeName_mobilePhone	mobile
LDAP_AttributeName_otherPhone	otherTelephone
LDAP_AttributeName_title	title
LDAP_AttributeName_companyName	company
LDAP_AttributeName_userAccountName	sAMAccountName
	 <p><b>Note</b> Do not use any other Active Directory field for this key name.</p>
POLICY_CREDENTIALS_IsLdapSynchronizedWithCucm	Specify whether CSF uses the Cisco Unified Communications Manager user ID and password to authenticate with LDAP. Set to <b>true</b> if the Cisco Unified Communications Manager user ID and password have been synchronized with LDAP. This means that users do not need to enter a separate LDAP user ID and password in the options dialog box of Cisco UC Integration for Microsoft Office Communicator.

#### Related Topics

- [Configuration of Policies for Microsoft Office Applications, page 3-9](#)
- [Using an Active Directory Group Policy Administrative Template to Configure CSF Clients, page 3-6](#)

## Using an Active Directory Group Policy Administrative Template to Configure CSF Clients

A Group Policy administrative template is provided with Cisco UC Integration for Microsoft Office Communicator. You can use this template to define the CSF registry settings on a system, or for groups of users. The template file is CUCIMOC.adm.

### Procedure

- 
- Step 1** Execute the following command to start the Group Policy application:
- gpedit.msc**
- Step 2** Expand the **User Configuration** node.
- Step 3** Right-click **Administrative Templates**, then select **Add/Remove Templates**.
- Step 4** Add the file CUCIMOC.adm to the list of current policy templates in the Add/Remove Templates dialog box, then select **Close**.
- Step 5** Open the Cisco Unified Communications Integration for Microsoft Office Communicator folder in the right pane.



**Note** In Windows Vista, this folder is in the Administrative Templates > Classic Administrative Templates folder. In Windows XP, this folder is in the Administrative Templates folder.

- 
- Step 6** Open the folder for the settings whose value you want to specify.
- Step 7** Double-click the setting whose value you want to specify.
- Step 8** Enter the value you require, then select **OK**.



**Note** Every time that you start the Group Policy application *after* you set the registry settings, the settings under the Cisco Unified Communications Integration for Microsoft Office Communicator folder are not automatically displayed. Each time you start the Group Policy application, you must uncheck **Only show policy settings that can be fully managed** in the Filtering dialog box to display the settings.

### Related Topics

- [Configuration of Policies for Microsoft Office Applications, page 3-9](#)

## Installing Security Certificates on Client Computers

### Procedure

- 
- Step 1** Put the certificate file into a folder where you store your security certificates.
- Step 2** Use the SECURITY\_CertificateDirectory registry key value name to specify the folder where the certificates are stored.
-

**Related Topics**

- [Value Names for CSF Client Integration, page 3-2](#)

## Enabling LDAP Over SSL

- [Creating a Certificate on the Active Directory Server, page 3-7](#)
- [Installing the Certificate on the Client Computer, page 3-7](#)
- [Configuring CSF, page 3-8](#)

### Creating a Certificate on the Active Directory Server

**Before You Begin**

Ensure that the LDAP server is configured to support LDAP over SSL (LDAPS).

**Procedure**

---

**Step 1** Sign in to the Active Directory server.

**Step 2** Execute the following command:

**certutil -ca.cert cucimoc.crt**

This command generates a file called cucimoc.crt. You must install this certificate on each client computer.

---

**What to Do Next**

- [Installing the Certificate on the Client Computer, page 3-7](#)

### Installing the Certificate on the Client Computer

Before you install the certificate on the client computer, ensure that neither of the following processes are running:

- CSF, that is, the cucsf.exe process.
- Cisco UC Integration for Microsoft Office Communicator, that is, the cucimoc.exe process.

For information about how to install the LDAP security certificate, see [Installing Security Certificates on Client Computers, page 3-6](#).

**What to Do Next**

- [Configuring CSF, page 3-8](#)

## Configuring CSF

### Procedure

- Step 1** Set the value for the LDAP\_Server\_1 value name to set the URL of the LDAP server. For example, set the value of LDAP\_Server\_1 to the following:

```
ldaps://ldap.example.com
```

The only change from using standard LDAP is that you specify the protocol as *ldaps* instead of *ldap*.

Use the FQDN of the LDAP server as specified in the certificate. You cannot use the IP address of the LDAP server, or the server name alone. Ensure that the FQDN is reachable. If the FQDN cannot be reached using DNS, add an appropriate entry to your hosts file.

If your LDAP server does not use the default port for LDAPS, specify the port with the URL. For example, enter a value such as the following:

```
ldaps://ldap.example.com:19636
```

- Step 2** Restart Cisco UC Integration for Microsoft Office Communicator.

- Step 3** To verify that you are connected to LDAPS, select the Menu button in the Microsoft Office Communicator title bar, then select **Tools > Server Status**.

Read the server protocol information in the Server Status tab. The protocol is displayed as *ldap*. Read the server port field to verify that you are connected to LDAPS.

### Related Topics

- [Value Names for CSF Client Integration, page 3-2](#)

## Configuring Microsoft Office Communicator to Use HTTPS to Access Custom Availability Statuses

Cisco UC Integration for Microsoft Office Communicator includes custom availability statuses such as “On the Phone”. These statuses are stored in a custom availability status file, `cisco-presence-states-config.xml`.

To enable Microsoft Office Communicator to access the custom availability status file, the security mode of Microsoft Office Communicator must be set to high.

That is, you must set the value of the following Microsoft Office Communicator registry key to 1:

```
[HKEY_CURRENT_USER\Software\Policies\Microsoft\Communicator]"EnableSIPHighSecurityMode"
```

For information about how to apply this policy setting to Microsoft Office Communicator, see the following URL:

<http://www.microsoft.com/downloads/details.aspx?FamilyID=dd3cae08-3153-4c6a-a314-daa79d616248&displaylang=en>

# Configuration of Policies for Microsoft Office Applications

- [Microsoft Office Communicator Policies, page 3-9](#)
- [Microsoft Office Phone Policy, page 3-9](#)

## Microsoft Office Communicator Policies

We strongly recommend that you configure Microsoft Office Communicator policies to allow only IM and availability status traffic on all Cisco UC Integration for Microsoft Office Communicator user groups.

If you do not do this, voice traffic is allowed from both Cisco UC Integration for Microsoft Office Communicator *and* Microsoft Office Communicator. This can result in the following problems:

- A confusing user experience, as users can place and receive calls from a mixture of user interface elements in both applications.
- Inconsistent voice traffic. That is, calls from Cisco UC Integration for Microsoft Office Communicator might give a different audio experience to Microsoft Office Communicator.
- A mixed configuration is more difficult to manage, as administrators must track traffic from two sources. You might want to monitor voice usage in your network and if you use both applications, you must configure your monitoring tools to track traffic from both applications.

We strongly recommend that you configure the Microsoft Office Communicator policies as shown in the following table:

Policy	Set Value To...
TelephonyMode	5 = IM and Presence Only
DisableAVConferencing	1

For information about how to apply these policy settings to Microsoft Office Communicator, see the following URL:

<http://www.microsoft.com/downloads/details.aspx?FamilyID=dd3cae08-3153-4c6a-a314-daa79d616248&displaylang=en>

You can also find the policy administrative template file Communicator.adm on that web site.

Alternatively, you can apply the following keys to set the policies manually:

```
[HKEY_CURRENT_USER\Software\Policies\Microsoft\Communicator]"TelephonyMode"=dword:00000005
```

```
[HKEY_CURRENT_USER\Software\Policies\Microsoft\Communicator]"DisableAVConferencing"=dword:00000001
```

### Related Topics

- [Value Names for CSF Client Integration, page 3-2](#)

## Microsoft Office Phone Policy

We strongly recommend that you configure a Microsoft Office policy to disable the Call menu that appears when you select a contact in a Microsoft Office application. This Call menu only appears if you have the correct smart tag switched on in the relevant Microsoft Office application.

Cisco UC Integration for Microsoft Office Communicator provides an Additional Actions menu that enables you to call contacts that you select in your Microsoft Office applications. If you do not disable the Call menu, this can result in a confusing user experience, as users might think that they can perform similar actions from a mixture of user interface elements.

To disable the Call menu in Microsoft Office, set the value of the Phone policy to zero (0).

Alternatively, you can apply the key to set the policy manually.

```
[HKEY_CURRENT_USER\Software\Microsoft\Office\12.0\Common\PersonaMenu]"Phone"=dword:00000000
```


**Note**

In the registry keys, the values 11.0 and 12.0 refer to the different versions of Microsoft Office; 11.0 refers to Microsoft Office 2003 and 12.0 refers to Microsoft Office 2007.

## About the CSF Cache and LDAP Searches

CSF maintains a cache of LDAP contacts. When you place a call, receive a call, or miss a call, the contacts for the calls are added to your CSF cache. Any contact that is in your conversation history is automatically placed in your cache. All the data for the contacts in your contact list in Microsoft Office Communicator is also cached.

If a contact for a call already exists in the cache, CSF does not search LDAP. If a contact does not exist in the cache, CSF searches LDAP. LDAP searches are only performed when you place a call to, or receive a call from a contact who is not in your conversation history or your Microsoft Office Communicator contact list.

All contacts in the CSF cache have already had the directory lookup dialing rules applied to all of their numbers. When Cisco UC Integration for Microsoft Office Communicator displays numbers for contacts that are in the CSF cache, the numbers have already had the directory lookup dialing rules applied to them.

The CSF cache is a disk cache. The contents of the cache are *not* copied to a local file system. When the cucsfc.exe process is restarted, the contents of the CSF cache are refreshed.

- [Incoming Calls, page 3-10](#)
- [Outgoing Calls to Contacts Who Are Enabled for OCS, page 3-11](#)
- [Outgoing Calls to Contacts Who Are Not Enabled for OCS, page 3-11](#)
- [Outgoing Calls to Microsoft Outlook Contacts, page 3-12](#)

## Incoming Calls

When a user receives a call, the following events occur:

1. When Cisco Unified Communications Manager detects the incoming call, it sends the following data to CSF:
  - The directory number from which the call originates.
  - The Alerting Name of the directory number that is specified in the Directory Number Configuration screen, if the field is not blank.
2. CSF sends the directory number and alerting name to Cisco UC Integration for Microsoft Office Communicator.

3. Cisco UC Integration for Microsoft Office Communicator displays the directory number and alerting name in a notification window and, if the call is answered, in the conversation window.
4. If the directory number is not in the CSF cache, CSF applies any directory lookup dialing rules to the directory number. This occurs while CSF transmits the data to Cisco UC Integration for Microsoft Office Communicator.
5. If the directory number is not in the CSF cache, CSF searches LDAP for the number that is returned *after* the directory number is processed by the directory lookup dialing rules.
6. LDAP sends the LDAP data for any matches back to CSF, including data such as other phone numbers, and a URI of a photo of the caller.
7. CSF updates the data for the contact and sends the updated data to Cisco UC Integration for Microsoft Office Communicator.
8. Cisco UC Integration for Microsoft Office Communicator updates the conversation window. For example, at this point a photo of the caller might be displayed as the photoURI field from LDAP is passed to Cisco UC Integration for Microsoft Office Communicator by CSF.

## Outgoing Calls to Contacts Who Are Enabled for OCS

When a user places a call to a contact who is enabled for OCS, the following events occur:

1. Cisco UC Integration for Microsoft Office Communicator sends the number for the contact to be called to CSF, and asks CSF to place a call to that number.
2. If the contact is not in the CSF cache, CSF searches LDAP for details of the party to be called.
3. LDAP sends data back to CSF.
4. CSF sends data about the contact back to Cisco UC Integration for Microsoft Office Communicator. If the contact has several numbers, Cisco UC Integration for Microsoft Office Communicator displays a window from which the user selects the number to call. If the contact has only one number, Cisco UC Integration for Microsoft Office Communicator places the call.
5. CSF applies any directory lookup dialing rules to the number to be called.
6. CSF searches LDAP for the number that is returned after the directory lookup dialing rules are applied.
7. CSF applies the application dialing rules and sends the number to Cisco Unified Communications Manager.
8. Cisco Unified Communications Manager places the call.

## Outgoing Calls to Contacts Who Are Not Enabled for OCS

When a user places a call to a contact who is not enabled for OCS, the following events occur:

1. Cisco UC Integration for Microsoft Office Communicator sends the display name for the contact to CSF.
2. If the contact is not in the CSF cache, CSF searches LDAP for the contact associated with the display name. The operator for this search is *contains* rather than *equals*.
3. If the LDAP search returns more than one contact, Cisco UC Integration for Microsoft Office Communicator displays a window from which the user selects the number to call. If the contact has only one number, Cisco UC Integration for Microsoft Office Communicator places the call.

4. CSF applies any directory lookup dialing rules to the number to be called.
5. CSF searches LDAP for the number that is returned after the directory lookup dialing rules are applied.
6. CSF applies the application dialing rules and sends the number to Cisco Unified Communications Manager.
7. Cisco Unified Communications Manager places the call.

## Outgoing Calls to Microsoft Outlook Contacts

When a user places a call to a Microsoft Outlook contact, the following events occur:

1. The user drags a contact from the Microsoft Office Communicator to the Cisco UC Integration for Microsoft Office Communicator conversation pane.
2. Cisco UC Integration for Microsoft Office Communicator searches the Microsoft Outlook contacts for a user that matches the display name. If a contact is found, then the contact is added to the CSF cache.
3. CSF applies any directory lookup dialing rules to the phone numbers of the contact.
4. CSF searches LDAP for the number that is returned after the directory lookup dialing rules are applied.
5. CSF applies the application dialing rules and sends the number to Cisco Unified Communications Manager.
6. Cisco Unified Communications Manager places the call.



## CHAPTER 4

# Installing Cisco Unified Communications Integration for Microsoft Office Communicator

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Revised: January 29, 2010

- [Cisco UC Integration for Microsoft Office Communicator Deployment, page 4-1](#)
- [Information to Provide to Users After Installation, page 4-2](#)

## Cisco UC Integration for Microsoft Office Communicator Deployment

The Cisco UC Integration for Microsoft Office Communicator installation application installs the following components:

- User interface for Cisco UC Integration for Microsoft Office Communicator.
- The client-related components of the client services framework (CSF).
- Click-to-call functionality, which you can choose whether to install.

You can deploy the Cisco UC Integration for Microsoft Office Communicator installation application in any of the following ways:

- Use Active Directory Group Policy. You can use group policy to deploy administrator configuration settings.
- Use a software management system, for example, Altiris, Microsoft System Management Server (SMS), and so on.
- Use a self-extracting executable with a batch script. You can use the batch script to deploy administrator configuration settings.
- Use a standalone installation. You deploy the administrator configuration settings, but users install Cisco UC Integration for Microsoft Office Communicator.

The installation application contains the following:

- An executable file. This includes a .NET 3.5 SP1 installer stub. Users can run the executable file on their own computers. The .NET installer stub runs automatically as part the Cisco UC Integration for Microsoft Office Communicator installation.



- A Microsoft Installer (MSI) file. This file assumes that .NET 3.5 SP1 is already installed. You can use a software management system to push the MSI file to the computers of your users.  
MSI requires that Microsoft Visual Studio 2005 Tools for Office Second Edition Runtime (x86) is installed on the computer of the administrator. .

## Upgrading Cisco UC Integration for Microsoft Office Communicator

To upgrade Cisco UC Integration for Microsoft Office Communicator, you do not need to uninstall Cisco UC Integration for Microsoft Office Communicator. When you install a newer version, the installation application uninstalls the previous version of Cisco UC Integration for Microsoft Office Communicator, then installs the new version.

## Information to Provide to Users After Installation

When your installation of Cisco UC Integration for Microsoft Office Communicator is complete, you can provide the information in the following table to your users:

Provide...	Explanation
Sign-in information.	<p>If you set the POLICY_CREDENTIALS_IsLdapSynchronizedWithCucm key value name to <b>false</b>, your users must enter their LDAP username and password after they sign in for the first time. Ask your users to do the following:</p> <ol style="list-style-type: none"> <li>1. Select  in the conversation pane.</li> <li>2. Enter a user ID and password in the LDAP Credentials area on the options dialog box.</li> <li>3. Select <b>OK</b>.</li> </ol>
Instructions for using the application.	<p>Provide users with information about how to access the online help, as follows</p> <ol style="list-style-type: none"> <li>1. Select  in the Microsoft Office Communicator title bar.</li> <li>2. Select <b>Tools &gt; Help on Conversation Pane</b>.</li> </ol> <p>You can also provide users with the <i>User Guide for Cisco UC Integration for Microsoft Office Communicator</i>, which contains the same information as the online help.</p>
Internal company support for the application.	Provide your users with the names of people to contact for assistance if they encounter problems with the application.



# CHAPTER 5

## Troubleshooting Cisco Unified Communications Integration for Microsoft Office Communicator

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Revised: January 29, 2010

- [Moving a Device to Another Cluster, page 5-1](#)
- [Viewing Logs, page 5-2](#)
- [How to Resolve General Problems with the Integration, page 5-2](#)
- [How to Resolve Synchronization Problems, page 5-5](#)
- [How to Resolve Availability Status Problems, page 5-6](#)
- [How to Resolve Click to Call Problems, page 5-8](#)
- [How to Resolve Instant Message Window Problems, page 5-10](#)

### Moving a Device to Another Cluster

If you configure security in your Cisco Unified Communications system, you use Certificate Trust List (CTL) files. The CTL file contains certificates for all of the servers in your Cisco Unified Communications system with which CSF might need to communicate securely.

When a device connects to a server in your Cisco Unified Communications system, the server is verified against this list. CSF does not allow secure connections to servers that are not explicitly listed in the CTL.

If a device is moved from one cluster to another, you must update the CTL file for the device list of servers in the new cluster.

---

**Step 1** Delete the contents of the appropriate folder from the following table:

Operating System	Folder
Windows XP	<drive>:\Documents and Settings\<username>\Application Data\Cisco\Unified Communications\Client Services Framework\Security\sec
Windows Vista	<drive>:\Users\<username>\AppData\Roaming\Cisco\Unified Communications\Client Services Framework\Security\sec

**Step 2** Delete the contents of the appropriate folder from the following table:

Operating System	Folder
Windows XP	<drive>:\Documents and Settings\<username>\Application Data\Cisco\Unified Communications\Client Services Framework\Config
Windows Vista	<drive>:\Users\<username>\AppData\Roaming\Cisco\Unified Communications\Client Services Framework\Config

**Step 3** Update the device settings for the user to point to the new cluster. For example, update the references to the Cisco Unified Communications Manager IP Phone (CCMCIP) server, Trivial File Transfer Protocol (TFTP) server, and Computer Telephony Integration (CTI) servers.

## Viewing Logs

To obtain logs for Cisco UC Integration for Microsoft Office Communicator from a user, ask the user to create a problem report and send the report to you. Users can also change the logging level for Cisco UC Integration for Microsoft Office Communicator. For information about how to create a problem report, or how to change the logging level, see the online help or the *User Guide for Cisco Unified Communications Integration for Microsoft Office Communicator*.

Alternatively, you can view the log files in the following locations:

Operating System	Log File Location
Windows XP	<drive>:\Documents and Settings\<username>\Local Settings\Application Data\Cisco\Unified Communications\Cucimoc\Logs
Windows Vista	<drive>:\Users\<username>\AppData\Local\Cisco\Unified Communications\Cucimoc\Logs

## How to Resolve General Problems with the Integration

- [Users See “Application Deployment Canceled” Error Message, page 5-3](#)
- [Users Cannot See the Cisco UC Integration for Microsoft Office Communicator Conversation Pane, page 5-3](#)
- [Users Cannot See the Cisco UC Integration for Microsoft Office Communicator Menu Items, page 5-3](#)
- [Cisco Unified IP Phone 7931G Users Cannot Control Desk Phone from Cisco UC Integration for Microsoft Office Communicator, page 5-4](#)
- [Audio Devices Are Selected Incorrectly, page 5-4](#)
- [Conversation Pane Takes a Long Time to Connect, page 5-4](#)
- [Incorrect Caller Name Displayed for Shared Lines, page 5-5](#)
- [Users with More Than One Directory Number Not Added to Conference Call, page 5-5](#)

## Users See “Application Deployment Canceled” Error Message

**Problem** Users see the following error message in a pane at the bottom of the Microsoft Office Communicator window, when they try to start Cisco UC Integration for Microsoft Office Communicator for the first time:

“Application Deployment Canceled. The application deployment was canceled.”

The Cisco UC Integration for Microsoft Office Communicator conversation pane is implemented as an XBAP (XAML browser application). XBAPs are hosted in browsers or in user interface controls in browsers. Cisco UC Integration for Microsoft Office Communicator uses a browser control in Microsoft Office Communicator to display the conversation pane.

When the .NET runtime environment loads an XBAP application for the first time, it displays a progress dialog with a Cancel button in the browser or browser control. While the XBAP is loading, this Cancel button has focus. If a user accidentally presses the space, Esc, Return, or Enter keys, the Cancel button is selected, and deployment of the XBAP is canceled.

If this occurs, the Application Deployment Canceled message is displayed, with a Retry button.

**Solution** Ask the user to select the Retry button, and to wait until the *Connecting to conversation pane* message is displayed before pressing the space, Esc, Return, or Enter keys again.


## Users Cannot See the Cisco UC Integration for Microsoft Office Communicator Conversation Pane

**Problem** The user cannot see the conversation pane, even though the processes Cisco.Uc.Clients.Moc.UCClient.exe and cucsfc.exe are running.

The user might have grabbed the horizontal line at the top of the conversation pane, then dragged the horizontal line below the conversation pane.

**Solution** Restart Microsoft Office Communicator to restore the conversation pane.

## Users Cannot See the Cisco UC Integration for Microsoft Office Communicator Menu Items

**Problem** When users select  in the Microsoft Office Communicator title bar, then select Tools, the following menu items are missing:

- Help on Conversation Pane
- Select Device for Conversation Pane
- Create Problem Report
- Connection Statistics
- Server Status
- About Conversation Pane
- Sign Out of Conversation Pane
- Start Conversation Pane
- Stop Conversation Pane

This problem occurs if the computer has no network connection.

**Solution** Close Microsoft Office Communicator, connect to a network, then restart Microsoft Office Communicator.

## Cisco Unified IP Phone 7931G Users Cannot Control Desk Phone from Cisco UC Integration for Microsoft Office Communicator


**Problem** Users who have a Cisco Unified IP Phone 7931G cannot use their desk phone from Cisco UC Integration for Microsoft Office Communicator.

**Solution** Set the value of the Outbound Call Rollover to field to **No Rollover** in Cisco Unified Communications Manager, as follows:

- 
- Step 1 Select **Device > Phone** in Cisco Unified Communications Manager Administration.
  - Step 2 Search for the Cisco Unified IP Phone 7931G phone of the user in the Find and List Phones window.
  - Step 3 Select the Cisco Unified IP Phone 7931G phone.
  - Step 4 Select **No Rollover** from the Outbound Call Rollover list box in the Protocol Specific Information section.
  - Step 5 Select **Save**.
- 

## Audio Devices Are Selected Incorrectly

**Problem** Users might experience audio device selection issues. For example, audio might be played on the computer speakers, but the headset microphone is the active microphone, rather than the microphone on the computer.

**Solution** Cisco UC Integration for Microsoft Office Communicator does not support the Default option in the Microsoft Office Communicator Set Up Audio and Video feature. Ensure that users select the Custom option when they configure the audio devices for Cisco UC Integration for Microsoft Office Communicator. To do this, the user must select  in the Microsoft Office Communicator title bar, then select **Tools > Setup Audio and Video**. For more information, see *User Guide for Cisco Unified Communications Integration for Microsoft Office Communicator*.

## Conversation Pane Takes a Long Time to Connect

**Problem** When a user starts Microsoft Office Communicator, the “Connecting to conversation pane” message is displayed, but the application does not connect to the conversation pane within five minutes.

**Solution** Host Intrusion Protection Software (HIPS) software might unexpectedly terminate the cucimoc.exe process. Start the Task Manager, then check if the cucimoc.exe process is running. If the process is not running, check if there is HIPS software running on your computer. Disabling HIPS software might help to resolve this problem.

The exact cause of the process termination is not clear. Please report such incidents to Cisco support to help to determine the root cause of the problem and to help identify a solution.

## Incorrect Caller Name Displayed for Shared Lines

**Problem** When users are configured in Cisco Unified Communications Manager to share a line, the incorrect caller name might be displayed in notification windows or in the active conversations window.

**Solution** This is expected behavior. In Cisco Unified Communications Manager, caller names are sent to the phones when the phones are initially configured. However, Cisco UC Integration for Microsoft Office Communicator must search for the caller name in Active Directory.

If lines are shared, when Cisco UC Integration for Microsoft Office Communicator performs a search based on the phone number, the caller name in the first set of results returned that is the closest match to the Cisco Unified Communications Manager caller name is displayed. When shared lines are not configured, there is usually only one match in Active Directory for the phone number and the caller name associated with this number is displayed.

## Users with More Than One Directory Number Not Added to Conference Call

**Problem** When a user tries to add a participant to a conference call, the participant is not added to the conference call but remains in a normal phone call with the user who tried to add them to the conference.

**Solution** This issue typically occurs when participants in a conference call have shared lines configured. The issue occurs in the following circumstances:

- A participant in the conference call has more than one directory number configured in Cisco Unified Communications Manager.
- One of the directory numbers of that participant is missing from Active Directory.
- There is another participant who also has more than one directory number. This participant has the *same directory number* configured in the Active Directory that the first participant is missing from Active Directory.

Either of these participants might not be added to the conference call, but remain in a one-to-one call with the host of the conference call.

If a user has more than one directory number configured, then the corresponding Active Directory registry value must be set also. To resolve this issue, ensure that all users who have more than one directory number have all of their numbers configured in Active Directory. The field in the Active Directory to which you need to add the numbers is defined in the following registry key value name:

```
HKEY_CURRENT_USER\Software\Cisco Systems, Inc.\Client Services  
Framework\AdminData\LDAP_AttributeName_otherPhone
```

## How to Resolve Synchronization Problems

- [Users See “Cannot Synchronize...” Error Message, page 5-5](#)
- [Users See “Cannot Synchronize... Communicator 2007” Error Message, page 5-6](#)

## Users See “Cannot Synchronize...” Error Message

**Problem** Microsoft Office Communicator users see the following error message:

“Cannot synchronize with the corporate address book because the file could not be found.”

**Solution** Install a security certificate for the default web site in Internet Information Services (IIS). For more information about this issue, see the following URLs:

- <http://support.microsoft.com/kb/939530>
- <http://support.microsoft.com/kb/299875>

## Users See “Cannot Synchronize... Communicator 2007” Error Message

**Problem** Microsoft Office Communicator users see the following error message:

“You cannot synchronize the corporate address book when you use Communicator 2007 to log on to Communications Server 2007.

Cannot synchronize with the corporate address book. This may be because the proxy server setting in your web browser does not allow access to the address book. If the problem persists, contact your system administrator.”

**Solution** Set the correct permissions in IIS. For more information about this issue, see the following URL:

<http://support.microsoft.com/kb/953113>

**Solution** Ensure that the password for the RTCComponentService user account has not expired. If the password has expired, reset the password, and check **Password Never Expires**.

**Solution** Ensure that the security certificates are configured properly. For more information on this topic, see the following URL:

<http://www.windowsecurity.com/articles/Client-Certificate-Authentication-IIS6.html>

### Related Topics

- [Users See “Application Deployment Canceled” Error Message, page 5-3](#)

## How to Resolve Availability Status Problems

- [“Inactive” and “Away” Availability Statuses and Custom Availability Statuses, page 5-6](#)
- [“On the Phone” Availability Status Not Available in Some Locales, page 5-7](#)
- [Availability Status Incorrect for Previously-Called Contacts, page 5-8](#)

## “Inactive” and “Away” Availability Statuses and Custom Availability Statuses

**Problem** Users might observe some unusual availability statuses.

**Solution** Microsoft Office Communicator provides the availability information in Cisco UC Integration for Microsoft Office Communicator. In particular circumstances, Cisco UC Integration for Microsoft Office Communicator provides custom phone availability status information which can result in unusual availability statuses.

The following table lists the circumstances that result in these unusual availability statuses:

Initial Availability Status	Event	Availability Status Is Updated To...
Inactive	Call starts	<i>Inactive On the Phone</i>
Away	Call starts	Availability status is not updated.
Inactive On the Phone	All calls end	<i>Inactive</i> , followed by the availability status before the call started. For example, the status might be <i>Inactive Available</i> .
Away, and Cisco UC Integration for Microsoft Office Communicator automatically set the status to On the Phone	All calls end	<i>Inactive</i> , followed by the availability status before the call started. For example, the status might be <i>Inactive Available</i> .

## “On the Phone” Availability Status Not Available in Some Locales

**Problem** Users cannot see the custom availability status “On the Phone” when they select the presence button in Microsoft Office Communicator. Other users see the availability status of this user as “Busy”. This problem occurs on computers that use the following Microsoft locales:

Language	Locale ID
Chinese (Taiwan)	1028
Spanish - Spain (Traditional Sort)	1034

This problem occurs on computers on which Microsoft Office Communicator was installed using a standalone installer for each language. In this case, the locale ID is not stored in the system registry, so Microsoft Office Communicator uses the locale ID of the computer.

Users who share the same OCS server cannot use a mixture of the locale IDs above and the following locale IDs:

Language	Locale ID
Chinese (Default Chinese-Simplified)	2052
Spanish - Modern Sort (Default Spanish)	3082

**Solution** You can change the locale IDs of the custom availability status file as follows:

- 
- Step 1** Search the uc-client log files on the computer for the following string:  
CurrentCulture LCID
- The locale ID that the computer is using is in brackets ([]) after the string.
- Step 2** Locate the cisco-presence-states-config.xml file in the installation folder, then open the file.
- Step 3** If the current locale ID identified in [Step 1](#) is 1028, change the value of the LCID attribute of the <activity> element in cisco-presence-states-config.xml from 2052 to 1028.
- If the current locale ID is 1034, change the value of the LCID attribute from 3082 to 1034.
- Step 4** Ask the user to sign out of Microsoft Office Communicator, then sign in again.
-

**Related Topics**

- [Viewing Logs, page 5-2](#)

## Availability Status Incorrect for Previously-Called Contacts

**Problem** If you have previously called a contact, their availability status appears as “Unknown” in the conversation history window and Select Contacts dialog box.

**Solution** This problem occurs because the contact has been cached. If your system does not use E.164 number formatting, enable wildcard searches.

For more information about how to enable wildcard searches, see [Value Names for CSF Client Integration, page 3-2](#).

## How to Resolve Click to Call Problems

- [Users Cannot See “Call” or “Call with Edit” in Microsoft Excel 2003 or Word 2003, page 5-8](#)
- [Users Cannot See “Call” or “Call with Edit” in Microsoft Word 2003 or Word 2007, page 5-9](#)
- [Users Cannot See “Call” or “Call with Edit” in Microsoft Excel, Outlook, PowerPoint, or Word, page 5-9](#)
- [Users Cannot See “Additional Actions” Menu in Microsoft Outlook Contacts, page 5-10](#)

## Users Cannot See “Call” or “Call with Edit” in Microsoft Excel 2003 or Word 2003

**Problem** After you perform a complete installation of Cisco UC Integration for Microsoft Office Communicator, the “Call” and “Call with Edit” menu items for the click-to-call feature do not appear in Microsoft Excel 2003 or Word 2003.

**Solution** The DLL file mscoree.dll has been disabled. To enable mscoree.dll, perform the following steps:

- 
- Step 1** Select **Help > About Microsoft <application>** in the application where the problem occurs.
  - Step 2** Select **Disabled Items**.
  - Step 3** Select mscoree.dll.
  - Step 4** Select **Enable**.
  - Step 5** Close the application, then open the application again.
-

## Users Cannot See “Call” or “Call with Edit” in Microsoft Word 2003 or Word 2007

**Problem** The “Call” and “Call with Edit” menu items for the click-to-call feature do not appear, or several instances appear in Word 2003 or Word 2007. The menu items appear correctly in Excel 2003 or Excel 2007.

**Solution** Replace your normal template file as follows:

**Step 1** Close Word.

**Step 2** Delete the Word normal template file as indicated in the following table:

Version	Filename	File Location
Word 2003	Normal.dot	<drive>:\Documents and Settings\<username>\Application Data\Microsoft\Templates
Word 2007	Normal.dotm	<drive>:\Documents and Settings\<username>\Application Data\Microsoft\Templates

**Step 3** Open Word.

The normal template file is recreated automatically.

### Related Topics

- [Viewing Logs, page 5-2](#)

## Users Cannot See “Call” or “Call with Edit” in Microsoft Excel, Outlook, PowerPoint, or Word

**Problem** The “Call” and “Call with Edit” menu items for the click-to-call feature do not appear in Microsoft Excel, Outlook, PowerPoint, or Word. This problem can occur in either 2003 or 2007 versions of these applications.

**Solution** Set the value of LoadBehavior to 3 in the appropriate registry key as shown in the following table, then restart the application.

Application	Architecture	Registry Key
Excel 2003 or 2007	32-bit	HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Office\Excel\Addins\CiscoClickToCall.Connect
	64-bit	HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Office\Excel\Addins\CiscoClickToCall.Connect
Outlook 2003 or 2007	32-bit	HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Office\Outlook\Addins\CiscoClickToCallContacts.Connect
	64-bit	HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Office\Outlook\Addins\CiscoClickToCallContacts.Connect

Application	Architecture	Registry Key
PowerPoint 2003	32-bit	HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Office\PowerPoint\Addins\CiscoClickToCall.Connect
	64-bit	HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Office\PowerPoint\Addins\CiscoClickToCall.Connect
Word 2003 or 2007	32-bit	HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Office\Word\Addins\CiscoClickToCall.Connect
	64-bit	HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Office\Word\Addins\CiscoClickToCall.Connect

## Users Cannot See “Additional Actions” Menu in Microsoft Outlook Contacts

**Problem** When users right-click on a contact in the Microsoft Outlook Contacts folder, the Additional Actions menu is not displayed.

**Solution** Restart Outlook as follows:

### Procedure

---

**Step 1** Close Outlook.

**Step 2** Start the Task Manager.

**Step 3** End the Outlook process.

The name of the Outlook process is OUTLOOK.EXE or OUTLOOK\*32.EXE.

**Step 4** Restart Outlook.

---

## How to Resolve Instant Message Window Problems

- [Instant Message Window Closes When You Try to Call a Contact Who Has No Number in LDAP, page 5-10](#)
- [Instant Message Window Displayed When Users Select the Place a Call Menu Item, page 5-11](#)

## Instant Message Window Closes When You Try to Call a Contact Who Has No Number in LDAP

**Problem** The instant message window closes automatically when you do the following:

1. Open instant message window with a contact who has no number in LDAP.
2. Do not type any text in the window.
3. Right-click the contact, then select **Place a Call**.

**Solution** This is expected behavior.

## Instant Message Window Displayed When Users Select the Place a Call Menu Item

**Problem** When users right-click on a contact in the Microsoft Office Communicator Contact List, Instant Message Window, or Search Box, then select **Place a Call**, an instant message window is displayed briefly.

**Solution** This is expected behavior.





## Normalization Rules for OCS

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**Revised: January 29, 2010**

If you do not define phone numbers in E.164 format for each user in your Active Directory, you must perform other actions to ensure that the numbers in your Active Directory are processed into the Office Communications Server (OCS) address book in a form that Cisco Unified Communications Manager dialing rules can process to dial a number.

If all the numbers in your Active Directory are in E.164 format, you do not need to configure OCS normalization rules. This is the easiest way to deploy Cisco UC Integration for Microsoft Office Communicator.

If the numbers in your Active Directory are not in E.164 format, then you must configure OCS normalization rules to ensure that Microsoft Office Communicator downloads E.164-formatted numbers from OCS.

This is necessary because OCS requires E.164-formatted numbers, unless you configure normalization rules. For information about this topic, see the following URL:

<http://technet.microsoft.com/en-us/library/bb964002.aspx>



**Note**

---

Configuring OCS normalization rules can be an error-prone task, especially for international and enterprise dial plans.

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### Related Topics

- [Dial Plan Options for Cisco UC Integration for Microsoft Office Communicator, page 2-5](#)
- [Dialing Rules Required for Cisco UC Integration for Microsoft Office Communicator, page 2-5](#)





## APPENDIX B

# Enabling Display of Photos in Notification Windows, the Active Conversations Window, and Contact Cards

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Revised: January 29, 2010

- [Adding the Active Directory Schema Snap-In, page B-1](#)
- [Creating the photoUri Attribute, page B-2](#)
- [Setting a Default Value for the photoUri Attribute Using ADSI Edit, page B-2](#)
- [Configuring IIS to Display Photos, page B-4](#)
- [Verifying the User Object, page B-4](#)

## Adding the Active Directory Schema Snap-In

### Procedure

---

- Step 1** Execute the following command:  
**regsvr32 schmmgmt.dll**
- Step 2** Execute the following command to start Microsoft Management Console:  
**mmc**
- Step 3** In Microsoft Management Console, select **File > Add/Remove Snap-in**.
- Step 4** Select **Active Directory Schema**, then select **Add**.
- Step 5** Select **Close** on the Add Standalone Snap-in dialog box, then select **OK** on the Add/Remove Snap-in dialog box.
- 

### What to Do Next

- [Creating the photoUri Attribute, page B-2](#)

## Creating the photoUri Attribute

### Procedure

- 
- Step 1** Start the Active Directory Schema administrative tool.
- Step 2** Right-click the **Attribute** container, then select **New > Attribute** from the pop-up menu.
- Step 3** To create the photoUri attribute, complete the fields on the properties dialog box as follows:

Field	Description
Description	Enter "photoUri".
Common Name	Enter "photoUri".
X500 OID	Enter the object ID.
Syntax	Enter "Case Insensitive String".
Allow this attribute to be shown in advanced view	Select this option.
Attribute is active	Select this option.
Attribute is copied when duplicating a user	Select this option.

- Step 4** Select **OK**.
- Step 5** Open the **Classes** container in the Active Directory Schema administrative tool, right-click **user**, then select **Properties** from the pop-up menu.
- Step 6** Select **Attributes**, then select **Add**.
- Step 7** Select **photoUri** from the list on the Select Schema Object dialog box, then select **OK**.
- 

### What to Do Next

- [Setting a Default Value for the photoUri Attribute Using ADSI Edit, page B-2](#)

## Setting a Default Value for the photoUri Attribute Using ADSI Edit

### Before You Begin

If you cannot run the ADSI Edit application, you must enable the ADSI Edit application before you perform this procedure.

### Procedure

- 
- Step 1** Execute the following command to start the Active Directory Service Interface (ADSI) editor:  
**adsiedit.msc**
- Step 2** Open the organizational unit (OU) you require, right-click the user you require, then select **Properties**.

- Step 3** Select the **photoUri** attribute, then select **Edit**.
- Step 4** Enter the URL for the photo for the user in the Value field. For example, enter a URL similar to the following:

http://www.example.com/photos/mweinstein.jpg



---

**Note** If you plan to use a script to populate the default value, enter a space character in the Value field. You cannot run a script if there is no default value.

---

- Step 5** Select **OK**.
- Step 6** After you configure IIS to display photos, you can verify that you can view the photo by accessing the URL you entered.
- 

#### Related Topics

- [Enabling the ADSI Edit Application, page B-3](#)
- [Configuring IIS to Display Photos, page B-4](#)

## Enabling the ADSI Edit Application

If you cannot run the ADSI Edit application, you must perform the following procedure.

#### Procedure

---

- Step 1** Execute the following command:
- ```
regsvr32 adsiedit.dll
```
- Step 2** Execute the following command to start the ADSI editor:
- ```
adsiedit.msc
```
- Step 3** If the application still does not start, obtain the adsiedit.dll file, then run the command in Step 1 from the folder where the adsiedit.dll file is located.
- 

#### Related Topics

- [Setting a Default Value for the photoUri Attribute Using ADSI Edit, page B-2](#)

#### What to Do Next

- [Configuring IIS to Display Photos, page B-4](#)

# Configuring IIS to Display Photos

## Procedure

---

- Step 1** Start Internet Information Services Manager.
- Step 2** Select the computer name in the left pane, then select **Web Sites**.
- Step 3** Right-click **Default Web Site**, then select **New > Virtual Directory**.
- Step 4** Follow the instructions in the wizard to create the virtual directory, and enter the local folder where the photos are located. You can now access the photos from the URL structured as follows:

`http://<domain-name>/<virtual-directory>/<photo-filename>`

For example, you can access a photo with a URL similar to the following:

`http://www.example.com/photos/mweinstein.jpg`

---

## What to Do Next

- [Verifying the User Object, page B-4](#)

# Verifying the User Object

## Procedure

---

- Step 1** Execute the following command:
- ldp**
- Step 2** Select **Connection > Connect**, then select **OK**.
- Step 3** Select **Connection > Bind**, enter your username and password, then select **OK**.
- Step 4** Select **View > Tree**, select the BaseDN, then select **OK**.
- Step 5** Open the BaseDN node, then double-click on the user you require.
- Step 6** Verify that the photo information is present for the user.
-



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