



Integrate Microsoft Office Communicator Client and Microsoft Lync Client for Cisco UC

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Overview



Important

This section contains information that may be relevant to partners with installations of Cisco HCS previous to release 10.1(2). It is presented here for reference purposes.

Cisco UC Integration for Microsoft Office Communicator provides interoperability with Microsoft Office Communicator Server 2007 (OCS) and the Microsoft Office Communicator (MOC) client. Cisco UC Integration for Microsoft Lync provides interoperability with Microsoft Lync 2010 and the Microsoft Lync 2010 client. Cisco UC Integration for Microsoft Office Communicator/ Cisco UC Integration for Microsoft Lync uses the Client Services Framework (CSF) and incorporates it into a tab integration of MOC. This tab integration allows for the use of audio functionality of existing Unified Communications Manager endpoints, both acting as work phone.

**Note**

Lync 2013 is not in the scope of this document.

As a general rule, you should use the latest version of the Cisco IC Integration applications:

- [CUCI-Lync](#)
- [CUCI-MOC](#)

Check the relevant product pages on Cisco.com for the latest release information.

The Cisco Unified Communications (UC) Integration for Microsoft Office Communicator client provides the voice features and the MOC client provides the IM and Presence (provided directly to OCS).

Similarly, the Cisco UC Integration for Microsoft Lync client provides the voice features and the Lync client provides the IM and Presence (provided directly to Lync 2010).

With the introduction of Microsoft Lync, the Cisco offering has been updated to include support for both OCS and Lync solutions. Lync, like OCS, consists of a client and a server with a Cisco UC Integration for Microsoft Lync CSF-based integration into the Lync client just as the Cisco UC Integration for Microsoft Office Communicator solution integrates into the MOC client.

Following is a list of supported work phone features:

- Right-click call or conference from a contact list or IM session. See [Limitations and considerations, on page 2](#) for more information.
- Call from MOC/Lync search. See [Limitations and considerations, on page 2](#) for more information.
- Direct dial through keypad: Numbers to dial should be the same as if initiating a call from an HCS IP Phone.
- Do Not Disturb (DND): Set through MOC/Lync or IP Phone.
- Session Initiation Protocol (SIP) call control.
- Work phone features: DTMF, call waiting, mute, transfer (blind, consultative), conference, redial, hold, volume, hang up, park, shared line retrieval, headset/speakers switch.
- Start IM from conversation window.
- Conversation information: Call status, participants, participant availability (OCS), duration.
- Call forwarding.
- Single number reach.
- Placed, missed, and received calls in client call history.
- Call survival in case of MOC/OCS/Lync failure.

Limitations and considerations

- Active Directory provides phone numbers for Cisco UC Integration for Microsoft Lync and MOC.
- LDAP must be synchronized with Unified Communications Manager and OCS/Lync server.

- User IDs, devices, and directory numbers match in the Active Directory server, Microsoft Lync Server or OCS and Cisco Unified Communications Manager server.
- It is recommended that phone numbers are defined in +E.164 format for each user in the Active Directory.
- The user phone number within HCS (Unified Communications Manager) is configured in a private number plan. This requires Application Dialing Rules and Directory Lookup Dialing Rules to be configured in the Unified Communications Manager.
- [Application Dial Rules and Directory Lookup Dial Rules](#), on page 10

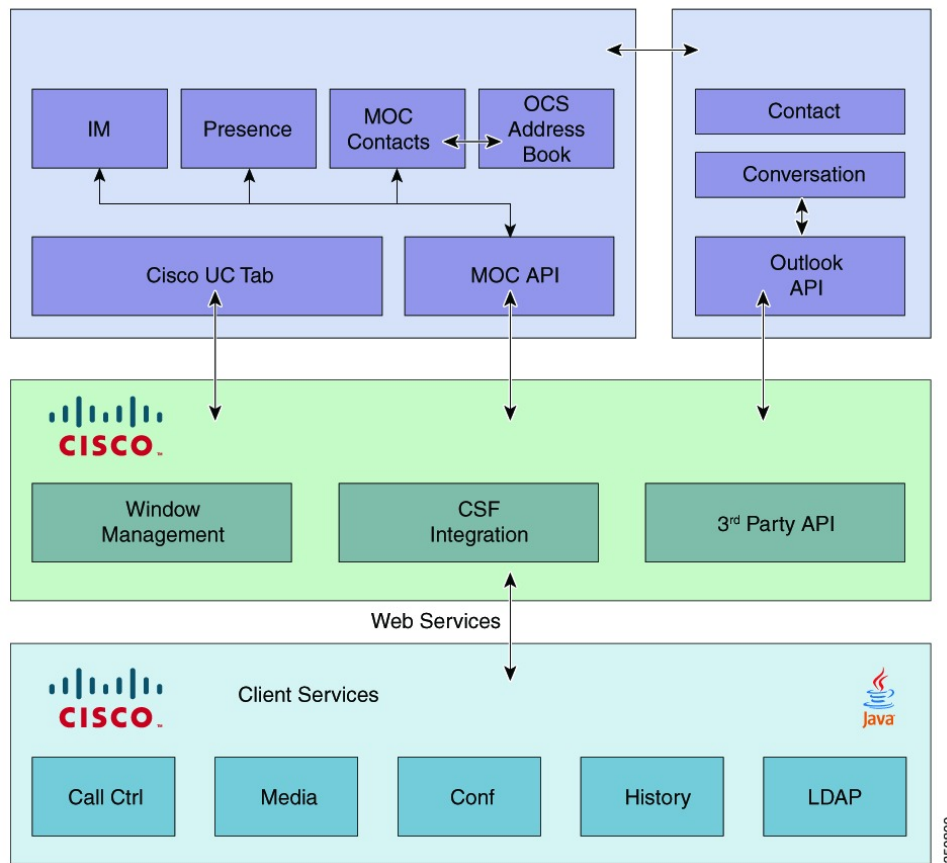
Cisco UC Integration for Microsoft Office Communicator client design and architecture

Following components are part of the Cisco UC Integration for Microsoft Office Communicator architecture:

- Microsoft Office Communicator (MOC)
 - Client for Office Communications Server
 - Downloads contact details from the Address Book Server (a component of OCS)
 - Address Book is made up of Active Directory users
- Office Communications Server (OCS)
 - Microsoft server providing Instant Messaging and Presence information
- Cisco UC Integration for Microsoft Office Communicator
 - Integrates with MOC through the Office Communicator Automation API for Contact, IM and Presence information
 - Integrates with Client Services Framework (CSF) to communicate with Cisco infrastructure and LDAP
- Client Services Framework (CSF)
 - Provides back-end integration to Unified Communications Manager and Active Directory
 - Implements work phone, desk phone control, LDAP integration, Media Termination, and so on

The following figure provides an overview of the Cisco UC Integration for Microsoft Office Communicator desktop architecture.

Figure 1: Cisco UC Integration for Microsoft Office Communicator desktop architecture



The Cisco UC Tab UI is embedded in MOC/Lync UI allowing interaction with Cisco UC Integration for MOC/Lync.

Cisco UC Integration provides windows management, client security, third-party integration and CSF integration. CSF provides call control, user authentication, Message Waiting Indicator (MWI), media, and so on. Cisco UC Integration for Microsoft Office Communicator/ Cisco UC Integration for Microsoft Lync Tab, Cisco UC Integration for Microsoft Office Communicator/ Cisco UC Integration for Microsoft Lync and CSF do not require special permissions and run using Standard User permissions.



Note

Cisco UC Integration for Microsoft Office Communicator/ Lync Installer installs all necessary client-side components.

Table 1: CSF Port usage for inbound traffic

Port	Transport Protocol	Application Layer Protocol
16384-32766	UDP	RTP

Table 2: CSF Port usage for outbound traffic

Port	Transport Protocol	Application Layer Protocol
69	UDP	TFTP ¹
389	TCP	LDAP (Version 3) ²
2748	TCP	CTI-QBE
5060	UDP/TCP	SIP
5061	UDP/TCP	Secure SIP
8443	TCP	Connects to the Cisco Unified Communications Manager IP Phone (CCMCIP) server to get a list of currently assigned devices.
8191	TCP	SOAP Web Service local port
16384-32766	UDP	RTP

¹ - Used to download the cnf.xml file at registration or resets.

² - LDAP connection is to the Microsoft OCS server.

Table 3: Codecs supported

G711A, U law
G722 wide-band
G729a
G729ab
iLBC (free narrow-band speech codec)

Desktop hardware minimum requirements**Table 4: Desktop PC**

Property	Minimum Requirements: Audio Only
Installed RAM	1024 MB
Free disk space	120 MB
CPU speed/type	2.4 GHz Intel Pentium IV
I/O ports	USB 2.0 port
Operating System	Windows XP (SP2, SP3), Windows Vista, Windows 7

Table 5: Laptop PC

Property	Minimum Requirements: Audio Only
Installed RAM	1024 MB
Free disk space	120 MB
CPU speed/type	1.5 GHz Intel Pentium M Centrino
I/O ports	USB 2.0 port
Operating System	Windows XP (SP2, SP3), Windows Vista, Windows 7

Table 6: Software minimum requirements

Operating System	32-Bit	64-Bit
Windows XP SP2	Supported	Not Supported
Windows XP SP3	Supported	Not Supported
Windows Vista Business SP1	Supported	Supported
Windows Vista Enterprise SP1	Supported	Supported
Windows Vista Ultimate SP1	Supported	Supported
Windows 7.0 (Pro, Enterprise, or Ultimate)	Supported	Supported

Table 7: Supported Microsoft version

Component	Version
OCS Server Version	Microsoft Office Communications Server 2007 R1 Microsoft Office Communications Server 2007 R2
MOC Client Version	Microsoft Office Communicator R1 build number 2.0.6362.36 or later

Additional design and architectural specifications

Ports used by Cisco UC Integration for Microsoft Lync

Port	Transport Protocol	Application Layer Protocol	Key Value Name
44442	HTTP	The Cisco UC Integration for Microsoft Lync process, cucimoc.exe, listens for events from Cisco Unified Client Services Framework on this port.	CUCIMOCCSFPort

Minimum hardware and software requirements for Cisco UC Integration for Microsoft Lync

Table 8: Desktop PC or Laptop PC

Property	Minimum Requirements: Audio Only
Memory	1 GB
Free disk space	350 MB
Minimum Windows Experience Index (WEI) processor score	2.0
I/O ports	USB 2.0 port

Table 9: Software minimum requirements

Operating System	32-Bit	64-Bit
Windows XP SP2	Supported	Not Supported
Windows XP SP3 with DirectX 9.0c	Supported	Not Supported
Windows Vista Business SP2 with DirectX 10	Supported	Supported
Windows Vista Enterprise SP2 with DirectX 10	Supported	Supported
Windows Vista Ultimate SP2 with DirectX 10	Supported	Supported
Windows 7.0 (Pro, Enterprise, or Ultimate)	Supported	Supported

Table 10: Supported Microsoft version

Component	Version
OCS/Lync Version	Microsoft Lync 2010 Microsoft Office Communicator 2007 R2

Table 11: Enterprise Voice feature comparison

Feature	MOC	Lync
Off Net (PSTN) Calling	Y	Y
On Net Calling	Y	Y
IP desk phone control	Y	Y
Call hold	Y	Y
Call transfer	Y	Y
Call forward	Y	Y
Private line (Second DDI)	N	Y

Prerequisites and overview of Cisco UC Integration for Microsoft Office Communicator and Lync integration

The following steps describe how to deploy Cisco UC Integration for Microsoft Office Communicator/Lync

Before You Begin

Before the Cisco UC Integration for Microsoft Office Communicator and Lync integration, complete the following prerequisites:

- Install Active Directory (AD).
- Create users inside AD.
- Activate Certificate Authority (CA) services on the same server.
- Install Microsoft OCS/Lync server.
- Install MOC/Lync clients on PC.
- Verify IM and Presence with native MOC/Lync client and voice with Cisco UC Integration for Microsoft Office Communicator/Lync.

The following link provides information about how to configure for Cisco UC Integration for Microsoft Office Communicator:

http://www.cisco.com/en/US/partner/docs/voice_ip_comm/cucimoc/7_1/english/integrat/guide/config_servers.html#wpxref91199

The following link provides information about how to configure servers for Cisco UC Integration for Microsoft Lync:

http://www.cisco.com/en/US/docs/voice_ip_comm/cucimoc/8_5/english/release/cucimocReleaseNote.html

Procedure

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- Step 1** Configure Active Directory server and OCS/Lync server
 - Step 2** Dial rules that are required for Cisco UC Integration for Microsoft Office Communicator/Lync. For more information, see [Application Dial Rules and Directory Lookup Dial Rules](#), on page 10.
 - a) Application dial rules
 - b) Directory lookup dial rules
 - Step 3** Configure Cisco Unified CM server.
 - a) Cisco Unified CM client services framework device type.
 - b) Configure CUCM for LDAP integration with OCS/Lync server.
 - c) Enable LDAP authentication.
 - Step 4** Create device and Directory Numbers for users. For more information, see [Install Cisco UC Integration for Microsoft Office Communicator or Lync client](#).
 - Step 5** Add a user to the Standard CTI enabled user group (optional). For more information, see [Enable CTI control of deskphone](#).
 - Step 6** Make Cisco Unified CM dial rules accessible.

For more information, see [Application Dial Rules and Directory Lookup Dial Rules](#), on page 10.

- a) Verify that dial rules are configured on Cisco Unified CM.
 - b) Generate copies of the dial rules.
 - c) Verify that copies of the dial rules were generated.
 - d) Restart the TFTP service.
 - e) Ensure Cisco UC integration for Microsoft Office Communicator clients are restarted.
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Application Dial Rules and Directory Lookup Dial Rules

Deployment of OCS or Lync for integration with HCS requires the user phone number that is stored in Active Directory to be in +E.164 format. The user phone number within HCS (Unified Communications Manager) is configured in a private number plan. This requires Application dial rules and Directory lookup dial rules to be configured in the Unified Communications Manager.

Application dial rules map numbers in the OCS address book to a number format that can be correctly dialed within the context of the Cisco Unified Communications Manager configuration; that is, application dial rules map +E.164 numbers to the private numbering plan.

Conceptual and task-based information on Application dial rules are available in the *Cisco Unified Communications Manager Administration Guide, Release 10.0(1)* at:

http://www.cisco.com/c/en/us/td/docs/voice_ip_comm/cucm/admin/10_0_1/ccmcf/CUCM_BK_C95ABA82_00_admin-guide-100.html.

Directory lookup dial rules transform caller identification numbers into numbers that can be looked up in the directory; that is, to transform the private number into the +E.164 format number as stored in Active Directory, to identify the caller as a contact.

Conceptual and task-based information about Directory lookup dial rules is available in the *Cisco Unified Communications Manager Administration Guide, Release 9.1(1)* at

http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/admin/9_1_1/ccmcf/CUCM_BK_A34970C5_00_admin-guide-91_chapter_011101.html.

For more details about the dial rules that are required for Cisco UC integration, see *Configuring Servers for Cisco UC Integration for Microsoft Lync* available at

http://www.cisco.com/c/en/us/td/docs/voice_ip_comm/cucilync/9_7_4/CUCI_BK_ADA5E814_00_administration-guide.html.