System Requirements for Cisco Unity Connection Release 10.x

Revised April, 2019

This document lists requirements for a Cisco Unity Connection version 10.x system. It contains the following sections:

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Hardware Requirements

- A server that meets Cisco Unity Connection specifications. See the *Cisco Unity Connection 10.x Supported Platforms List* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/supported_platforms/10xcucspl.html.

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Caution   If you try to install version 10.x on an unsupported platform, Unity Connection will not be displayed as an option in the Product Deployment Selection window of the installation program. See the server-specific table in the "Cisco Unity Connection Supported Servers" section of the Cisco Unity Connection 10.x Supported Platforms List to verify platform specifications, particularly regarding memory and processor speed.

- Unity Connection 10.0(1) and later can only be installed on virtual servers. If you are upgrading from an earlier version of Unity Connection or migrating from Cisco Unity to Unity Connection 10.x, you need to replace the existing server with a virtual machine. For information on migrating a physical server to virtual server, see the *Install, Upgrade, and Maintain Guide for Cisco Unity Connection* Release 10.x at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/install_upgrade/guide/10xcuciumgx.html.

- If you are adding features, for example, Unity Connection Networking, a Unity Connection cluster, or single inbox, you may need to replace hard disks or add memory to the Unity Connection server for the feature to be supported. For more information, see the applicable server-specific table in the *Cisco Unity Connection 10.x Supported Platforms List*.

- The list of supported virtual platform is listed in the *Cisco Unity Connection 10.x Supported Platforms List*

Software Requirements

This section contains the following information:

Software Requirements—Cisco Unity ConnectionServer

Unity Connection software and any required third-party software are installed by Cisco Unity Connection Setup.

Software Requirements—Administrator Workstations (Unity Connection and Unity Connection SRSV)

Revised January, 2016

- To access web applications on the Unity Connection and Unity Connection SRSV server, the operating system and web browser must be compatible with the version of Unity Connection that you are installing. Table 1 lists supported operating-system and browser combinations.

Table 1   *Supported Operating Systems and Browsers on Administrator Workstations for Unity Connection 10.x and Unity Connection SRSV*

Operating System on Administrator Workstation	Browser on Administrator Workstation
Microsoft Windows Vista (32 bit and 64 bit)	• Microsoft Internet Explorer • Mozilla Firefox
Mac OS 10.9	• Mozilla Firefox
Mac OS X 10.8 (Mountain Lion)	• Mozilla Firefox • Safari
Mac OS X 10.7 (Lion)	• Mozilla Firefox • Safari
Mac OS X 10.6 (Snow Leopard)	• Mozilla Firefox

Table 1   Supported Operating Systems and Browsers on Administrator Workstations for Unity Connection 10.x and Unity Connection SRSV

Operating System on Administrator Workstation	Browser on Administrator Workstation
Microsoft Windows 7 (32 and 64 bit)	• Microsoft Internet Explorer • Mozilla Firefox
Microsoft Windows 8.1 (32-bit and 64-bit) • Enterprise	• Microsoft Internet Explorer • Mozilla Firefox • Chrome

- Cisco Unity Connection Administration (CUCA) is now supported over both IPv4 and IPv6. However, to access CUCA over IPv6, Unity Connection platform must be configured in Dual (IPv4/IPv6) mode. For more information on Configuring IPv6 settings, see the Install, Upgrade, and Maintain Guide for Cisco Unity Connection Release 10.x at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/install_upgrade/guide/10xcuciumgx.html.

Note On RHEL, the IPv6 address is supported only through DNS.

Caveats:

- The recording and playback on MAC operating system is supported by TRAP functionality only. PC based recording is not supported.

For more information on supported operating systems and browsers, see the *Compatibility Matrix: Cisco Unity Connectionand the Software on User Workstations Guide* at http://www.cisco.com/en/US/docs/voice_ip_ comm/connection/compatibility/matrix/cucclientmtx.html.

Table 2 lists software required for correct browser configuration.

Table 2   Software Required for Correct Browser Configuration on Administrator Workstations for Cisco Unity Connection 10.x and Cisco Unity Connection SRSV

Browser	Required Software

Firefox	The following software, depending on the operating system:
	• With Mac OS X:
	  – Java Runtime Environment 7.
	  – Java Embedding Plugin for Mac OS X version 0.9.5 or later.[1]
	• With Linux:
	  – ALSA driver version 1.0.9 or later
	  – Java Runtime Environment 7 update 67.
	• With Windows:
	  – Java Runtime Environment 7 update 67.

Internet Explorer	Java Runtime Environment 7 update 67.

Table 2 ***Software Required for Correct Browser Configuration on Administrator Workstations for Cisco Unity Connection 10.x and Cisco Unity Connection SRSV (continued)***

Browser	Required Software
Google Chrome	Java Runtime Environment 7 update 67.
	✎
	Note Chrome does not provide support of Java 7 on MAC OS X.

1. The Java Embedding Plug-in for Mac OS X is bundled with Firefox versions 1.5.0.1 and later.

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Note Java Runtime Environment 8 update 40 is also supported with Unity Connection 10.5(2) SU3 and later.

Software Requirements—User Workstations

- The operating system and Web browser(s) on user workstations must be compatible with the version of Unity Connection that you are installing, to allow users to access the Unity Connection web tools through the Cisco Personal Communications Assistant. See the *Compatibility Matrix: Cisco Unity Connection and the Software on User Workstations* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/compatibility/matrix/cucclientmtx.html.

- If you are using Cisco Unity Connection ViewMail for Microsoft Outlook, the ViewMail version must be compatible with the version of Unity Connection that you are installing. See the *Compatibility Matrix: Cisco Unity Connection and the Software on User Workstations*.

- If you are using an IMAP email application to access Unity Connection voice messages, the email application must be compatible with the version of Unity Connection that you are installing. See the *Compatibility Matrix: Cisco Unity Connection and the Software on User Workstations*.

- Table 3 lists software required for correct browser configuration, depending on the browser(s) installed on the user workstation.

Table 3 ***Software Required for Correct Browser Configuration on User Workstations for Cisco Unity Connection 10.x***

Browser	Required Software
Firefox	The following software, depending on the operating system:
	• With Mac OS X:
	– Java Runtime Environment 7 update 67
	• With Linux:
	– ALSA driver version 1.0.9 or later
	– Java Runtime Environment 7 update 67
	• With Windows:
	– Java Runtime Environment 7 update 67
Internet Explorer	Java Runtime Environment 7 update 67

Table 3   Software Required for Correct Browser Configuration on User Workstations for Cisco Unity Connection 10.x (continued)

Browser	Required Software
Safari	Java Runtime Environment 7 update 67
Google Chrome	Java Runtime Environment 7update 67. **Note** Chrome does not provide support of Java 7 on MAC OS X.

Note Java Runtime Environment 8 update 40 is also supported with Unity Connection 10.5(2) SU3 and later.

Requirements for the Phone System Integration

Revised April, 2015

Cisco Unity Connection can be integrated with Cisco Unified Communications Manager and Cisco Unified Communications Manager Express.

In addition, Cisco Unified CM integrations with Unity Connection support the use at remote sites of Cisco Unified CM Express in Survivable Remote Site Telephony (SRST) mode or of SRST installed on Cisco IOS platforms.

For supported versions of Cisco Unified CM and Cisco Unified CM Express, see the applicable document, depending on the integration type:

- *SCCP Compatibility Matrix: Cisco Unity Connection, Cisco Unified Communications Manager, and Cisco Unified Communications Manager Express* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/compatibility/matrix/cucsccpmtx.html.

- *SIP Trunk Compatibility Matrix: Cisco Unity Connection, Cisco Unified Communications Manager, and Cisco Unified Communications Manager Express* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/compatibility/matrix/cucsiptrunkmtx.html.

    - The SIP Trunk can also be referred for PIMG/TIMG integrations. For information on PIMG/TIMG integrations, see the applicable Cisco Unity Connection integration guides at http://www.cisco.com/en/US/products/ps6509/products_installation_and_configuration_guides_list.html

Note Unity connection PIMG/TIMG integration supports Version 6.0, SU10 for Dialogic® 1000 and 2000 Media Gateway Series.

Unity Connection can also be integrated with other supported phone systems and with multiple phone systems simultaneously. For information on other supported phone systems, see the applicable Cisco Unity Connection integration guides at http://www.cisco.com/en/US/products/ps6509/products_installation_and_configuration_guides_list.html.

Licensing Requirements

In Cisco Unity Connection 10.x, the licenses for Unity Connection are managed by the Enterprise License Manager (ELM) server. The following are the license tags supported by Unity Connection 10.x in conjunction with the ELM server:

- CUC_BasicMessaging: Allows you to use the following Unity Connection features:
  - Synchronization of Unity Connection and Exchange mailboxes (single inbox)
  - Calendar information for meetings
  - Exchange contact information
  - Intrasite/intersite networking
  - HTTPS Networking
  - VPIM networking
  - Personal call transfer rules
  - Users with Unity Connection mailboxes
  - Users with IMAP or Single Inbox access to voice messages
  - Recording length
  - Phone interface (TUI)
  - Cisco Unity Connection Mini Web Inbox
  - Cisco Unity Connection Web Inbox
  - Cisco Unity Connection ViewMail for Microsoft Outlook 8.0 and later
  - IMAP email client
  - Cisco Unified Personal Communicator
  - Cisco Mobile and Cisco Unified Mobile Communicator
  - Cisco Unified Messaging with IBM Lotus Sametime
  - Visual Voicemail
  - RSS readers
  - Cisco Unity Connection Phone View
  - Video Greetings
  - Tenant Partitioning
  - OpenAM Single Sign -On
  - SAML Single Sign-On
- CUC_SpeechView: Allows you to use SpeechView standard transcription service.
- CUC_SpeechViewPro: Allows you to use SpeechView professional transcription service.
- CUC_SpeechConnectPort: Allows you to use Speech Connect, text-to speech, and voice-recognition features.
- CUC_EnhancedMessaging: Allows you to use Unity Connection SRSV feature.

Requirements for Using Unified Messaging Features

See the applicable section:

Unified Messaging Requirements: Synchronizing Unity Connection and Exchange Mailboxes (Single Inbox)

Revised April, 2019

- Cisco Unity Connection integrated with a supported version of Microsoft Exchange Server
  - Exchange Server 2019
  - Exchange Server 2016 with Cumulative Update 12 and earlier
  - Exchange Server 2013 with Cumulative Update 22 and earlier
- Microsoft Business Productivity Online Suite (BPOS-Dedicated) is now supported in Cisco Unity Connection.You can configure Unity Connection to synchronize voice messages in Unity Connection user's mailbox with the user's Exchange mailbox configured on Microsoft Business Productivity Online Suite (BPOS-Dedicated) environments as well as other third party hosted dedicated Exchange environments. For more information on Unity Connection's integration with Microsoft BPOS Dedicated environments, see the "Cisco Unity Connection 10.x Overview" chapter of the *Design Guide for Cisco Unity Connection Release10.x* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/design/guide/10xcucdgx.html.
- Microsoft Office 365 is supported with Cisco Unity Connection. It is a cloud hosted collaboration solution provided by Microsoft. Using Microsoft Office 365, you can access emails and calendars anywhere. For more information on Unity Connection integration with Microsoft Office-365, see the "Configuring Cisco Unity Connection and Microsoft Office-365 for Unified Messaging" chapter of the *Unified Messaging Guide for Cisco Unity Connection* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/unified_messaging/guide/10xcucumgx.html.
- Exchange servers and Active Directory domain controllers/global catalog servers (DC/GCs) can be installed in any hardware virtualization environment supported by Microsoft. (Cisco does not provide technical support for message-store servers or for DC/GCs.)
- The Microsoft Exchange message store can be stored in any storage area network configuration supported by Microsoft. (Cisco does not provide technical support for message-store servers.)
- Exchange clusters are supported.
- To access Exchange servers in more than one forest, you must create at least one unified messaging service for each forest. Unity Connection supports a maximum of 20 unified messaging services per Unity Connection server.

- Depending on the number of voice messaging ports on each Unity Connection server, the path of connectivity must have the following guaranteed bandwidth with no steady-state congestion:

  - For 50 voice messaging ports on each server—7 Mbps

  - For 100 voice messaging ports on each server—14 Mbps

  - For 150 voice messaging ports on each server—21 Mbps

  - For 200 voice messaging ports on each server—28 Mbps

  - For 250 voice messaging ports on each server—35 Mbps

  The bandwidth numbers above are intended as guidelines to ensure proper operation of mailbox synchronization. For information on bandwidth requirements for Unity Connection clusters, see the "Requirements for a Unity Connection 10.x Cluster" section on page 22. Additional conditions such as network congestion, CPU utilization, and message size may contribute to lower throughput than expected. Call-control and call-quality requirements are in addition to the guidelines above and should be calculated by using the bandwidth recommendations in the applicable Cisco Unified Communications SRND at
  http://www.cisco.com/en/US/solutions/ns340/ns414/ns742/ns818/landing_uc_mgr.html.

- The default Unity Connection configuration is sufficient for a maximum of 2000 users and 80 milliseconds of round-trip latency between Unity Connection and Exchange servers. For more than 2000 users and/or more than 80 milliseconds of latency, you can change the default configuration. For more information, see the "Latency" section in the "Single Inbox in Cisco Unity Connection" chapter of the *Design Guide for Cisco Unity Connection Release 10.x*. at
  http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/design/guide/10xcucdgx.html.

- Users must be assigned to a class of service that is enabled for using single inbox.

- For each user configured for single inbox, an email client that is configured to access the user's Exchange mailbox. For full single-inbox functionality, we recommend that you use Microsoft Outlook and install Cisco ViewMail for Microsoft Outlook. ViewMail for Outlook is required to:

  - Review secure Unity Connection voice messages by using Outlook.

  - Compose, reply to, or forward synchronized voice messages by using Outlook.

  Other email clients can be used to access Unity Connection voice messages in Exchange, but users will not have the functionality provided by ViewMail for Outlook.

  For information on Unity Connection support for Outlook, see the "Requirements for Accessing Voice Messages Using Cisco ViewMail for Microsoft Outlook 8.5 and Later" section on page 15.

- For users who are configured for single inbox and SpeechView transcriptions, the message in Exchange is not updated with the transcribed text. You can configure Unity Connection to send a notification message that contains the transcription.

- When message expiration and single inbox are configured, the .wav file is not deleted from the message in Exchange. Voice messages in Unity Connection are still removed from user mailboxes and are replaced with a recording that tells the user "This message is expired."

The synchronization of voice messages in Unity Connection and Exchange Mailboxes for single inbox (SIB) users is now supported over both IPv4 and IPv6.

Note Single Inbox over IPv6 is supported only for Exchange 2013, Exchange 2016, Exchange 2019 and Microsoft Office 365.

Unified Messaging Requirements: SpeechView Transcriptions

The SpeechView feature—which provides transcriptions of voice messages—is supported with Cisco Unity Connection.

- Required licenses must be installed on the Enterprise License Manager (ELM) server to use SpeechView service.

- Users must be assigned to a class of service enabled for using SpeechView transcriptions of voice messages.

For Unity Connection 10.x requirements, see the "Requirements for Using SpeechView Transcriptions" section on page 13.

Unified Messaging Requirements: Accessing Exchange Email Messages by Using Text to Speech

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- Cisco Unity Connection integrated with a supported version of Microsoft Exchange Server:

    – Exchange Server 2019

    – Exchange Server 2016 with Cumulative Update 12 and earlier

    – Exchange Server 2013 with Cumulative Update 22 and earlier

    Microsoft Business Productivity Online Suite is not supported.

    Microsoft Office 365 emails configured with Unity Connection are supported.

- Exchange servers and Active Directory domain controllers/global catalog servers (DC/GCs) can be installed in any hardware virtualization environment supported by Microsoft. (Cisco does not provide technical support for message-store servers or for DC/GCs.)

- The Microsoft Exchange message store can be stored in any storage area network configuration supported by Microsoft. (Cisco does not provide technical support for message-store servers.)

- Exchange clusters are supported.

- To access Exchange servers in more than one forest, you must create at least one unified messaging service for each forest.

Note   Text-to-speech with Exchange 2013, 2016, 2019 and Office 365 is now supported over both IPv4 and IPv6. However, to access Text-to-speech over IPv6, Unity Connection platform must be configured in Dual (IPv4/IPv6) mode. For more information on Configuring IPv6 settings, see *Install, Upgrade, and Maintain Guide for Cisco Unity Connection Release 10.x* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/install_upgrade/guide/10xcuciumg x.html.

For Unity Connection 10.x requirements, see the "Requirements for Accessing Exchange Email Messages Using Text to Speech" section on page 18.

Unified Messaging Requirements: Accessing Calendar Information for Meetings

Revised April, 2019

Cisco Unity Connection integrated with a supported application for calendar information:

- When accessing Exchange calendars, Cisco Unity Connection integrated with a supported version of Microsoft Exchange Server:
  - Exchange Server 2019
  - Exchange Server 2016 with Cumulative Update 12 and earlier
  - Exchange Server 2013 with Cumulative Update 22 and earlier

  Microsoft Business Productivity Online Suite is not supported.

  Microsoft Office 365 calendars configured with Unity Connection are supported.

- Exchange servers and Active Directory domain controllers/global catalog servers (DC/GCs) can be installed in any hardware virtualization environment supported by Microsoft. (Cisco does not provide technical support for message-store servers or for DC/GCs.)

- The Microsoft Exchange message store can be stored in any storage area network configuration supported by Microsoft. (Cisco does not provide technical support for message-store servers.)

- Exchange clusters are supported.

- To access Exchange servers in more than one forest, you must create at least one unified messaging service for each forest.

Note Accessing Exchange 2013/2016/2019 calendars is now supported over both IPv4 and IPv6. However, to access Exchange 2007/2010/2013/2016 calendars over IPv6 address, Unity Connection platform must be configured in Dual (IPv4/IPv6) mode. For more information on Configuring IPv6 settings, see *Install, Upgrade, and Maintain Guide for Cisco Unity Connection Release 10.x* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/install_upgrade/guide/10xcuciumg x.html.

For Unity Connection 10.x requirements, see the .

Unified Messaging Requirements: Accessing Exchange Contact Information

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Exchange contacts can be imported into Cisco Unity Connection, allowing users to place outgoing calls by using voice commands and to create personal call transfer rules based on the contact information.

- Cisco Unity Connection integrated with a supported version of Microsoft Exchange Server:
  - Exchange Server 2019
  - Exchange Server 2016 with Cumulative Update 12 and earlier
  - Exchange Server 2013 with Cumulative Update 22 and earlier

  Microsoft Business Productivity Online Suite is not supported.

- Exchange servers and Active Directory domain controllers/global catalog servers (DC/GCs) can be installed in any hardware virtualization environment supported by Microsoft. (Cisco does not provide technical support for message-store servers or for DC/GCs.)

- The Microsoft Exchange message store can be stored in any storage area network configuration supported by Microsoft. (Cisco does not provide technical support for message-store servers.)

- Exchange clusters are supported.

- To access Exchange servers in more than one forest, you must create at least one unified messaging service for each forest.

- Microsoft Office 365 contacts configured with Unity Connection are supported.

Note   Accessing Exchange 2013/2016/2019 contacts are now supported over both IPv4 and IPv6. However, to access Exchange 2007/2010/2013/2016 contacts over IPv6, Unity Connection platform must be configured in Dual (IPv4/IPv6) mode. For more information on Configuring IPv6 settings, see *Install, Upgrade, and Maintain Guide for Cisco Unity Connection Release 10.x* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/install_upgrade/guide/10xcuciumgx.html.

For Unity Connection 10.x requirements, see the "Requirements for Accessing Exchange Contact Information" section on page 19.

Requirements for Using Video Greetings Feature

- Cisco Unity Connection integrated with supported version of Cisco MediaSense 10.0.(1) Primary node. Cisco MediaSense cluster is not supported.

- Unity Connection users must be assigned a class of service with video parameters enabled.

- Video Greeting feature is supported on 7vCPU Cisco Unity Connection Server.

- Unity Connection is configured in IPv4 mode only.

- Unity Connection supports the following codecs in a video call

  – H.264 video codec

  – G.711ulaw audio codec

- Unity Connection supports video greetings over SIP Integration with Cisco Unified Communications Manager. Video greetings are not supported over SCCP integration.

- In a Cisco Unity Connection cluster, each server supports maximum of 20 concurrent video calls.

- In without cluster Cisco Unity Connection a maximum of 35 concurrent video calls are supported.

- The Primary DNS server should not have a response delay of more than 500 milliseconds.

Requirements for Using Voice-Recognition Features

- Required licenses must be installed on the Enterprise License Manager (ELM) server.

- Users must be assigned to a class of service enabled for using voice recognition.

- Phone systems must be configured to send calls to Unity Connection in any of the supported audio codecs except G729a. The G.729a audio codec is not supported with the voice-recognition features.

Note Remote Message Monitor is only supported if all end points (incoming, Unity, and outgoing) are using the same codec.

Requirements for Using SpeechView Transcriptions

The SpeechView feature—which provides transcriptions of voice messages—is supported with Cisco Unity Connection.

- Required licenses must be installed on the Enterprise License Manager (ELM) server to use SpeechView service.

- Users must be assigned to a class of service enabled for using SpeechView transcriptions of voice messages.

For Unity Connection 10.0(1) requirements, see the .

Requirements for Accessing the Unity Connection Web Tools through Cisco PCA

Messaging Assistant web tool

- Users must be assigned to a class of service enabled for using the Messaging Assistant.

- A supported operating system and web browser(s) on user workstations. See *Compatibility Matrix: Cisco Unity Connection and the Software on User Workstations* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/compatibility/matrix/cucclientmtx.html.

Web Inbox web tool

- Users must be assigned to a class of service enabled for using the Web Inbox and RSS feeds.

- A supported operating system and web browser(s) on user workstations. See *Compatibility Matrix: Cisco Unity Connection and the Software on User Workstations* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/compatibility/matrix/cucclientmtx.html.

Personal Call Transfer Rules web tool

- Cisco Unity Connection must be integrated with a supported version of the Cisco Unified Communications Manager phone system. (Cisco Unified Communications Manager Express is not supported.)

- Users must be assigned to a class of service enabled for using the Personal Call Transfer Rules web tool.

- A supported operating system and web browser(s) on user workstations. See *Compatibility Matrix: Cisco Unity Connection and the Software on User Workstations* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/compatibility/matrix/cucclientmtx.html.

Note Cisco Personal Communications Assistant (CPCA) is now supported both over IPv4 and IPv6. However, to access CPCA over IPv6, Unity Connection platform must be configured in Dual (IPv4/IPv6) mode. For more information on Configuring IPv6 settings, see *Install, Upgrade, and Maintain Guide for Cisco Unity Connection Release 10.x* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/install_upgrade/guide/10xcuciumg x.html.

Requirements for Accessing Voice Messages Using Unity Connection Web Inbox

- Users must be assigned to a class of service enabled for using the Web Inbox and RSS feeds.

- Adobe Flash Player version 10 or later on user workstations.

- QuickTime version 7.7.4 or later on user workstations.

- A supported operating system and web browser(s) on user workstations. See *Compatibility Matrix: Cisco Unity Connection and the Software on User Workstations* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/compatibility/matrix/cucclientmtx. html.

Note Web Inbox is now supported over both IPv4 and IPv6. However, to access Web Inbox over IPv6, Unity Connection platform must be configured in Dual (IPv4/IPv6) mode. For more information on Configuring IPv6 settings, see "Adding or Changing the IPv6 Addresses of Cisco Unity Connection" chapter of *Upgrade Guide for Cisco Unity Connection Release 10.x* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/upgrade/guide/10xcucrugx.html.

Requirements for Accessing Voice Messages Using Unity Connection Mini Web Inbox

- Make sure the trusted certificate of the certification authority is added to the Trusted Root Store on the user workstations in order to access the notifications via email and the voice message via Unity Connection Mini Web Inbox. For more information on how to configure the trusted certificate on Cisco Unity Connection, refer to the "Securing Cisco Unity Connection Administration, Cisco PCA, and IMAP Email Client Access to Cisco Unity Connection 10.x" chapter of the *System Administration Guide for Cisco Unity Connection* Release 10.x, available at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/administration/guide/10xcucsa gx.html.

- Make sure to perform the steps to configure the HTML notification on user workstation. For more information on how to configure the HTML notifications, refer to the "Configuring Cisco Unity Connection10.x for HTML-based Message Notification" section of the "Configuring an Email Account to Access Cisco Unity Connection 10.x Voice Messages" chapter of the *User Workstation Setup Guide for Cisco Unity Connection*, available at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/user_setup/guide/10xcucuwsx. html.

- Make sure to perform the steps to configure the Unity Connection Mini Web Inbox on user workstation. For more information on how to configure the Unity Connection Mini Web Inbox, refer to the "Configuring Internet Explorer 8 for Cisco Unity Connection Mini Web Inbox" section of the "Configuring an Email Account to Access Cisco Unity Connection 10.x Voice Messages" chapter of the *User Workstation Setup Guide for Cisco Unity Connection Release 10.x*, available at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/user_setup/guide/10xcucuwsx.html.

- Audio Playback on Computer

    - Mozilla Firefox plays voice messages on Cisco Unity Connection Mini Web Inbox using HTML 5 Audio (.wav format).

    - Microsoft Internet Explorer and Mozilla Firefox require the compatible Quick Time Plug-in to play the voice messages.

- Audio Recording on Computer

    - Microsoft Internet Explorer and Mozilla Firefox require the compatible Adobe Flash Player.

Caveats:

- On MAC OS - The recording on MAC OS is supported by telephone record and playback functionality only, computer based recording is not supported.

For supported operating system and web browser(s) on user workstations, see *Compatibility Matrix: Cisco Unity Connection and the Software on User Workstations* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/compatibility/matrix/cucclientmtx.html.

Note Mini Web Inbox is supported over both IPv4 and IPv6. However, to access Mini Web Inbox over IPv6, Unity Connection platform must be configured in Dual (IPv4/IPv6) mode. For more information on Configuring IPv6 settings, see *Install, Upgrade, and Maintain Guide for Cisco Unity Connection Release 10.x* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/install_upgrade/guide/10xcuciumgx.html.

Requirements for Accessing Voice Messages Using Cisco ViewMail for Microsoft Outlook 8.5 and Later

- *IMAP users only:* Users must be assigned to a class of service that is enabled for accessing voice messages by using an IMAP client.

- *IMAP users only:* Users must have email accounts in Outlook configured to access Unity Connection voice messages.

- *Single-inbox users only:* Users must have Exchange email accounts in Outlook pointing to their Exchange mailboxes.

- A ViewMail for Outlook version supported for use with the Outlook version and operating system on user workstations. See *Compatibility Matrix: Cisco Unity Connection and the Software on User Workstations* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/compatibility/matrix/cucclientmtx.html.

For workstation and other software-related requirements, and for installation and upgrade information, see *Release Notes for Cisco ViewMail for Microsoft Outlook* at http://www.cisco.com/en/US/products/ps6509/prod_release_notes_list.html.

Cisco Unity Connection ViewMail for Microsoft Outlook 8.5 and later now support the single sign-on functionality. For more information, refer to the "Support For Single Sign-On in ViewMail for Outlook(VMO)" section of the *Release Notes for Cisco ViewMail for Microsoft Outlook Release 8.6(5)* available at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/vmo/release/notes/865cucvmorn.html.

Note Cisco Unity Connection ViewMail for Microsoft Outlook (VMO) 8.6(7) is supported over both IPv4 and IPv6. For more information on VMO 8.6(7) over IPv6 support, see Release Notes for Cisco ViewMail for Microsoft Outlook Release 8.6(7) at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/vmo/release/notes/867cucvmorn.html.

Requirements for Accessing Unity Connection Voice Messages Using an IMAP Email Client

- Users must be assigned to a class of service that is enabled for accessing voice messages by using an IMAP client.
- A supported IMAP email client on user workstations. See *Compatibility Matrix: Cisco Unity Connection and the Software on User Workstations* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/compatibility/matrix/cucclientmtx.html.
- Sound card, speakers, and media player on user workstations.

Note Accessing Unity Connection voice messages using IMAP clients is now supported over both IPv4 and IPv6. However, to access voice messages using IMAP clients over IPv6, Unity Connection platform must be configured in Dual (IPv4/IPv6) mode. For more information on Configuring IPv6 settings, see "Adding or Changing the IPv6 Addresses of Cisco Unity Connection" chapter of *Upgrade Guide for Cisco Unity Connection Release 10.x* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/upgrade/guide/10xcucrugx.html.

Requirements for Accessing Unity Connection Voice Messages Using Cisco Unified Personal Communicator

- Users must be assigned to a class of service that is enabled for accessing voice messages by using a unified client.
- A supported version of Cisco Unified Personal Communicator on user workstations. See *Compatibility Matrix: Cisco Unity Connection and the Software on User Workstations* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/compatibility/matrix/cucclientmtx.html.

For workstation, system, and other software-related requirements, see the applicable *Release Notes for Cisco Unified Personal Communicator* at http://www.cisco.com/en/US/products/ps6844/prod_release_notes_list.html.

Cisco Unified Personal Communicator 8.x support secure messaging with Cisco Unity Connection 10.x.

Cisco Unified Personal Communicator versions 8.0 and later support IMAP IDLE.

Requirements for Accessing Cisco Jabber

Revised September 24, 2014
Unity Connection 10.0 (1) and later supports Cisco Jabber as client with the following:

- Cisco Jabber 9.2.3 and later with Windows 7.
- Cisco Jabber 9.7 and later with Windows 8 and later.
- Cisco Jabber 9.2 and later with Apple OS X Lion Version 10.7.4 (or later) or Apple OS X Mountain Lion Version 10.8.1 (or later) or Apple OS X Mavericks Version 10.9 (or later).
- Cisco Jabber 9.3(21386) and later with iPad 7.1.1 and later.

For more information on Cisco Jabber with operating systems, see the windows release notes at http://www.cisco.com/c/en/us/td/docs/voice_ip_comm/jabber/Windows/10_5/rn/JABW_BK_J559CFFB_00_jabber-windows-release-notes-10-5.html.

and for Macintosh, see the release notes at:
http://www.cisco.com/c/en/us/td/docs/voice_ip_comm/jabber/mac/10_5/JABM_BK_J395EAC7_00_jabber-mac-release-notes-10-5.html.

Requirements for Accessing Unity Connection Voice Messages Using Visual Voicemail

- A supported Cisco Unified IP Phone model. (See the "Cisco Unified IP Phone Requirements" section under "System Requirements" in the *Release Notes for Visual Voicemail*.)

For server and phone firmware requirements, and other information about using Visual Voicemail, see the applicable *Release Notes for Visual Voicemail* at http://www.cisco.com/en/US/products/ps9929/prod_release_notes_list.html.

Requirements for Accessing Unity Connection Voice Messages Using RSS Readers

- Users must be assigned to a class of service enabled for using the Messaging Inbox and RSS feeds.

- Sound card, speakers, and media player on user workstations.

Note RSS feeds is now supported over both IPv4 and IPv6. However, to access RSS feeds over IPv6, Unity Connection platform must be configured in Dual (IPv4/IPv6) mode. For more information on Configuring IPv6 settings, see "Adding or Changing the IPv6 Addresses of Cisco Unity Connection" chapter of *Upgrade Guide for Cisco Unity Connection Release 10.x* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/upgrade/guide/10xcucrugx.html.

Requirements for Accessing Exchange Email Messages Using Text to Speech

Revised April, 2019

- Cisco Unity Connection integrated with a supported version of Microsoft Exchange Server:
    - Exchange Server 2019
    - Exchange Server 2016 with Cumulative Update 12 and earlier
    - Exchange Server 2013 with Cumulative Update 22 and earlier

Exchange server(s) in a supported Windows domain configuration. Table 4 lists the supported configurations.

***Table 4** Supported Exchange and Windows Domain Configurations*

Exchange Configuration	Supported Windows Domain Configurations
One server running Exchange Server 2013	• Exchange server is a Windows Server 2008 or 2012 domain controller/global catalog server. • Exchange server is a Windows Server 2008, or 2012 member server.
One server running Exchange Server 2010	• Exchange server is a Windows Server 2003 SP2, 2008, or 2012 domain controller/global catalog server. • Exchange server is a Windows Server 2003 SP2, 2008, or 2012 member server.
One server running Exchange Server 2007	• Exchange server is a Windows Server 2003 domain controller/global catalog server. • Exchange server is a Windows Server 2003 member server.

- The Cisco Unity Connection server and the Exchange server(s) must be located in the same local-area network.

For Unity Connection 10.x requirements, see the "Unified Messaging Requirements: Accessing Exchange Email Messages by Using Text to Speech" section on page 10.

> **Note** Text-to-speech over Exchange 2013, 2016 and 2019 is now supported over both IPv4 and IPv6. However, to access Text-to-speech over IPv6, Unity Connection platform must be configured in Dual (IPv4/IPv6) mode. For more information on Configuring IPv6 settings, see "Adding or Changing the IPv6 Addresses of Cisco Unity Connection" chapter of *Upgrade Guide for Cisco Unity Connection Release 10.x* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/upgrade/guide/10xcucrugx.html.

Requirements for Accessing Calendar Information for Meetings

Revised April, 2019

Cisco Unity Connection integrated with a supported application for calendar information:

- Exchange Server 2019
- Exchange Server 2016 with Cumulative Update 12 and earlier
- Exchange Server 2013 with Cumulative Update 22 and earlier

For Unity Connection 10.x requirements, see the "Unified Messaging Requirements: Accessing Calendar Information for Meetings" section on page 11.

> **Note** Accessing Exchange 2013/2016/2019 calendars is now supported over both IPv4 and IPv6. However, to access Exchange 2007/2010/2013/2016 calendars over IPv6 address, Unity Connection platform must be configured in Dual (IPv4/IPv6) mode. For more information on Configuring IPv6 settings, see "Adding or Changing the IPv6 Addresses of Cisco Unity Connection" chapter of *Upgrade Guide for Cisco Unity Connection Release 10.x* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/upgrade/guide/10xcucrugx.html.

Requirements for Accessing Exchange Contact Information

Revised April, 2019

Exchange contacts can be imported into Unity Connection, allowing users to place outgoing calls by using voice commands and to create personal call transfer rules based on the contact information.

- Unity Connection integrated with a supported version of Microsoft Exchange Server is required:
  - Exchange Server 2019
  - Exchange Server 2016 with Cumulative Update 12 and earlier
  - Exchange Server 2013 with Cumulative Update 22 and earlier

For Unity Connection 10.x requirements, see the "Unified Messaging Requirements: Accessing Exchange Contact Information" section on page 11.

> **Note** Accessing Exchange 2013/2016/2019 contacts is now supported over both IPv4 and IPv6. However, to access Exchange 2007/2010/2013/2016 contacts over IPv6, Unity Connection platform must be configured in Dual (IPv4/IPv6) mode. For more information on Configuring IPv6 settings, see "Adding

or Changing the IPv6 Addresses of Cisco Unity Connection" chapter of *Upgrade Guide for Cisco Unity Connection Release 10.x* at
http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/upgrade/guide/10xcucrugx.html.

Requirements for Unity Connection 10.x Phone View

- Cisco Unity Connection integrated with a supported version of the Cisco Unified Communications Manager phone system. For supported versions, see the applicable document, depending on the integration type:

  - *SCCP Compatibility Matrix: Cisco Unity Connection, Cisco Unified Communications Manager, and Cisco Unified Communications Manager Express* at
    http://www.cisco.com/en/US/docs/voice_ip_comm/connection/compatibility/matrix/cucsccpmtx.html.

  - *SIP Trunk Compatibility Matrix: Cisco Unity Connection, Cisco Unified Communications Manager, and Cisco Unified Communications Manager Express* at
    http://www.cisco.com/en/US/docs/voice_ip_comm/connection/compatibility/matrix/cucsiptrunkmtx.html.

- A supported Cisco Unified IP Phone model, with the supported Cisco Unified Communications Manager version firmware installed. The following IP Phone models are supported: 6945,8945,7975,9971,7941G, 7941G-GE, 7961G, 7961G-GE, 7970G, and 7971G-GE.

Requirements for URI Dialing

- Cisco Unity Connection must be integrated with the URI dialing supported version of Cisco Unified Communications Manager.

- Unity Connection supports URI Dialing over SIP Integration with Cisco Unified Communications Manager.

- Configure URI supported IP Phones (89xx or 99xx series) or Jabber using Cisco Unified Presence Server and CUCM, in order to dial via URI directly.

Requirements for a Cisco Fax Server Integration

- Cisco Fax Server version 10.x (available from Cisco until May 2011)

- OpenText Fax Server, RightFax Edition, version 10.x and later.

- Sagemcom Xmedius Fax SP version 6.5.5.

Note Cisco will no longer be selling Cisco Fax Server version 10.x after May 2011; however, support for Cisco Fax Server will continue until May 2014. For detailed information on end-of-sale and end-of life dates for the Cisco Fax Server, see the information at
http://www.cisco.com/en/US/prod/collateral/voicesw/ps6789/ps5745/ps2237/end_of_life_notice_c51-630608.html.

Requirements for an LDAP Directory Integration

Revised February, 2019

- Cisco Unity Connection integrated with a supported LDAP directory. Table 5 lists supported directories and the Unity Connection version(s) with which they are supported.

  The last column in the table indicates whether an LDAP directory supports specifying additional LDAP directory servers to act as backup in case the LDAP directory servers that Unity Connection accesses for synchronization and for authentication become unavailable.

Table 5   *LDAP Directories Supported for Synchronization and Authentication*

Supported LDAP Directory	Supports Redundant Directory Servers
Microsoft Active Directory 2019 Lightweight Directory Services	Yes
Microsoft Active Directory 2019	Yes
Microsoft Active Directory 2016 Lightweight Directory Services	Yes
Microsoft Active Directory 2016	Yes
Microsoft Active Directory 2012 Lightweight Directory Services	Yes
Microsoft Active Directory 2012 and Active Directory 2012 R2	Yes
Microsoft Active Directory 2008 and Active Directory 2008 R2	Yes
Microsoft Active Directory 2008 Lightweight Directory Services	Yes
Microsoft Active Directory 2003	Yes
Microsoft Active Directory Application Mode (Windows Server 2003 and Windows XP Professional)	Yes
OpenLDAP 2.3.39 and 2.4	Yes
Sun iPlanet Directory Server 5.1 and later	No
Oracle Directory Server Enterprise Edition 11g and later (formerly Sun ONE Directory Server)	No

- When you are using Active Directory, you can integrate a single Unity Connection server with more than one user search base, but all user search bases must be in the same Active Directory forest. To integrate Unity Connection with more than one forest, you must install one digitally networked Unity Connection server per forest.

- When you are configuring Unity Connection for Microsoft Active Directory 2008 Lightweight Directory Services, choose the "Microsoft Active Directory Application Mode" option in Cisco Unity Connection Administration.

- When you are using a Sun iPlanet or ONE directory server, you can integrate a single Unity Connection server with more than one user search base, but all user search bases must be in the same tree. To integrate Unity Connection with more than one tree, you must install one digitally networked Unity Connection server per tree.

- During the LDAP authentication process, Unity Connection expects the LDAP server to respond within 40 milliseconds.

Requirements for a Unity Connection 10.x Cluster

See the applicable section:

Unity Connection Cluster Requirements When the Servers are Installed in the Same Building or Site

- Both servers must meet specifications according to the *Cisco Unity Connection 10.x Supported Platforms List* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/supported_platforms/10xcucspl.html.

- For a cluster with two virtual machines, both must have the same virtual platform overlay.

- Both Unity Connection servers must be collocated.

- Both Unity Connection servers must be located in the same local-area network.

- Both Unity Connection servers must have a minimum 100 Mbps Unity Connection to the network.

- The maximum round-trip latency must be not more than 5 ms.

- The network must use the following load-balancing techniques for connections to the Unity Connection servers:

  - The Unity Connection servers are assigned a common DNS name with the Unity Connection publisher server first.

  - All user client and administrator sessions connect to the Unity Connection publisher server. If the Unity Connection publisher server stops functioning, the user client and administrator sessions must connect to the Unity Connection subscriber server.

  - Phone systems must attempt to route incoming calls to the Unity Connection subscriber server. If no voice messaging ports are available to answer calls on the Unity Connection subscriber server, the phone systems must route calls to the Unity Connection publisher server.

- The Unity Connection servers must not be separated by a firewall.

- Both Unity Connection servers must have the same software and engineering-special versions installed.

- Both Unity Connection servers must have the same enabled features and configurations.

- Both Unity Connection servers must connect to the same phone system(s).

- If the Unity Connection servers contain dual NICs, the two NICs on each Unity Connection server must be configured for fault tolerance using a single IP address, or one of the NICs must be disabled. Configuring the two NICs with distinct IP addresses for network load balancing is not supported.

- For selected servers supported for earlier versions of Unity Connection, a memory upgrade. To determine whether your server requires a memory upgrade, see the applicable server-specific table in the *Cisco Unity Connection 10.x Supported Platforms List*.

Note The Unity Connection cluster feature is not supported for use with Cisco Business Edition.

Unity Connection Cluster Requirements When the Servers are in Separate Buildings or Sites

Revised May 21, 2014

- Both servers must meet specifications according to the *Cisco Unity Connection 10.x Supported Platforms List* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/supported_platforms/10xcucspl.html.

- For a cluster with two virtual machines, both must have the same virtual platform overlay.

- Depending on the number of voice messaging ports on each Unity Connection server, the path of connectivity must have the following guaranteed bandwidth with no steady-state congestion:

    - For 50 voice messaging ports on each server—7 Mbps

    - For 100 voice messaging ports on each server—14 Mbps

    - For 150 voice messaging ports on each server—21 Mbps

    - For 200 voice messaging ports on each server—28 Mbps

    - For 250 voice messaging ports on each server—35 Mbps

    Note The bandwidth numbers above are intended as guidelines to ensure proper operation of an active-active cluster with respect to synchronization traffic between the two servers. Additional conditions such as network congestion, CPU utilization, and message size may contribute to lower throughput than expected. Call-control and call-quality requirements are in addition to the guidelines above and should be calculated by using the bandwidth recommendations in the applicable *Cisco Unified Communications SRND* at http://www.cisco.com/en/US/solutions/ns340/ns414/ns742/ns818/landing_uc_mgr.html.

- When both the subscriber and publisher are taking calls, the maximum round-trip latency must be not more than 100 ms. When only the publisher is taking calls, subscriber is idle but replicating with publisher, the maximum round-trip latency must be not more than 150 ms.

- The network must use the following load-balancing techniques for connections to the Unity Connection servers:

    - The Unity Connection servers are assigned a common DNS name with the Unity Connection publisher server first.

    - All user client and administrator sessions connect to the Unity Connection publisher server. If the Unity Connection publisher server stops functioning, the user client and administrator sessions must connect to the Unity Connection subscriber server.

    - Phone systems must attempt to route incoming calls to the Unity Connection subscriber server. If no voice messaging ports are available to answer calls on the Unity Connection subscriber server, the phone systems must route calls to the Unity Connection publisher server.

- The TCP and UDP ports of the firewall must be open as listed in the "IP Communications Required by Cisco Unity Connection 10.x" chapter of the *Security Guide for Cisco Unity Connection* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/security/guide/10xcucsecx.html.

- Both Unity Connection servers must have the same software and engineering-special versions installed.

- Both Unity Connection servers must have the same enabled features and configurations.

- Both Unity Connection servers must be configured to be in the same time zone.

- Both Unity Connection servers must connect to the same phone system(s).

- If the Unity Connection servers contain dual NICs, the two NICs on each Unity Connection server must be configured for fault tolerance using a single IP address, or one of the NICs must be disabled. Configuring the two NICs with distinct IP addresses for network load balancing is not supported.

- For selected servers supported for earlier versions of Unity Connection, a memory upgrade. To determine whether your server requires a memory upgrade, see the applicable server-specific table in the *Cisco Unity Connection 10.x Supported Platforms List*.

- For selected servers supported for earlier versions of Unity Connection, replacement hard disks. To determine whether your server requires hard-disk replacement, see the applicable server-specific table in the *Cisco Unity Connection 10.x Supported Platforms List*.

- The Unity Connection cluster feature is not supported for use with Cisco Business Edition.

Requirements for Unity Connection 10.x Networking

Cisco Unity Connection servers can be joined through intrasite networking to form a single site (known as a Digital Network). you may add upto a maximum of ten Untiy Connection server or cluster per site. In addition, two Unity Connection sites can be linked together through intersite networking for a total of up to 20 Cisco Unity Connection servers sharing the same directory information

Alternatively, you can use intersite networking to link a single Cisco Unity Connection site of up to ten servers with a single Cisco Unity server or Digital Network. (In a Cisco Unity Connection cluster, only the publisher server is joined to the network, so a cluster counts as a single server toward the limit of ten in each site.)

Beginning with Cisco Unity Connection10.0(1) and later, HTTPS networking can be used to link up to 25 Cisco Unity Connection servers or clusters in a single site network, referred to as HTTPS Unity Connection network.

See the applicable section:

Requirements for Intrasite Networking

Intrasite networking uses SMTP to provide directory synchronization and message networking among Cisco Unity Connection servers.

Unity Connection version 7.x servers, version 8.x, and version 10.x servers can coexist in the same site as long as each 7.x server meets all the applicable requirements in the *System Requirements for Cisco Unity Connection Release 7.x* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/7x/requirements/7xcucsysreqs.html.

Intrasite networking has the following requirements:

- Each version 10.x server in the site must meet all applicable requirements listed in this document.

- Each server in the site must be able to access the other servers in the site directly through TCP/IP port 25 (SMTP), or SMTP messages must be routed among the servers through an SMTP smart host.

- If your site includes one or more Unity Connection clusters, you must have a smart host available to resolve the SMTP domain of the cluster to both the publisher and subscriber servers in order for message traffic to reach the cluster subscriber server in the event that the publisher server is down.

- The virtual directory created by the networked Unity Connection servers must not exceed the maximum total numbers of objects listed in Table 7 in the "Directory Object Limits for Unity Connection 10.x" section on page 32.

Note Intrasite networking is not supported for use with Cisco Business Edition.

Requirements for Intersite Networking

You can use intersite networking to link one Unity Connection site to another Unity Connection site. Or you can use it to link a Unity Connection site to a Cisco Unity server or Cisco Unity Digital Network. The linked sites are called a Cisco Voicemail Organization. To create an intersite link, you choose a single location on each site to act as a gateway to the other site. The gateways exchange directory synchronization information by using HTTP or HTTPS; voice messages are exchanged between the sites by using SMTP.

Intersite networking has the following requirements:

- Each Unity Connection server or cluster in the Cisco Voicemail Organization must be at version 10.x, and must meet all applicable requirements listed in this document.

- Each Unity Connection site must meet the requirements listed in the "Requirements for Intrasite Networking" section on page 24.

- Each Unity Connection site gateway must be able to route SMTP messages to the remote site gateway (when two Unity Connection sites are linked) or to the Microsoft Exchange organization for delivery to the Interoperability Gateway for Microsoft Exchange (when a Unity Connection site is linked to a Cisco Unity site). This routing can be done either directly through TCP/IP port 25 or through an SMTP smart host.

- The site gateways must be IP addressable and able to route to each other by using HTTP on port 80 or HTTPS on port 443.

For more information on virtual servers and the specifications on the memory that must be added, see the *Cisco Unity Connection 10.x Supported Platforms List* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/supported_platforms/10xcucspl.html.

- The virtual directory created by the networked sites must not exceed the maximum total numbers of objects listed in Table 7 in the "Directory Object Limits for Unity Connection 10.x" section on page 32.

> • Intersite networking can be used to link a maximum of two sites. (Adding more than one intersite link per site is not supported.)

✎
Note Intersite networking is not supported for use with Cisco Business Edition.

Requirements for HTTPS Networking

You can use HTTPS networking to link one or more Cisco Unity Connection servers or clusters to form a well-connected network based on hub-spoke topology. The servers that are joined together in the network are referred as locations (Unity Connection cluster counts as one location in the network). Within a network, each location uses HTTP or HTTPS to exchange directory information and SMTP to exchange voice messages with each other.

HTTPS networking has the following requirements:

- • Each Unity Connection server or cluster in the HTTPS network must be at version 10.x or later, and must meet all applicable requirements listed in this document.

- • Each server in the network must be IP addressable and able to exchange directory information by using HTTP on port 8081 or HTTPS on port 8444.

- • The servers in the network must be able to route SMTP messages to the other servers in the network directly through TCP/IP port 25 or through an SMTP smart host.

- • If your network includes one or more Unity Connection clusters, you must have a smart host available to resolve the SMTP domain of the cluster to both the publisher and subscriber servers, which helps divert message traffic to the subscriber server when the publisher server is down.

- • The virtual directory created by the networked Unity Connection servers must not exceed the maximum numbers of objects listed in Table 8 and Table 9 in the "Directory Object Limits for Unity Connection 10.x" section on page 32 section.

- • HTTPS networking can be used to link a maximum of 25 Unity Connection locations.

- • HTTPS networking supports single site network only. (Connecting multiple Unity Connection sites in a network is not supported.)

- • HTTPS networking is not supported with intrasite or intersite networking.

✎
Note HTTPS networking is not supported for use with Cisco Business Edition version 3000. Before using HTTPS networking, ensure that directory replication takes place properly in Intrasite or Intersite Networking. Also, the Unity Connection servers should be using appropriate OVA as per topology and directory size.

Requirements for Using OpenAM Single Sign-On Feature

In case of a cluster, Cisco Unity Connection is required on each cluster of a server.

The single sign-on feature requires the following third-party applications:

- • Microsoft Windows Server 2003 with SP1/SP2 or Microsoft Windows Server 2008 with SP2 for deploying Active Directory.

- • Microsoft Active Directory server (any version).

- ForgeRock Open Access Manager (OpenAM) version 10.x.
- Apache Tomcat 7.0.0

The single sign-on feature uses Active Directory and OpenAM in combination to provide single sign-on access to client applications.

These third party products must meet the following configuration requirements:

- Active Directory must be deployed in a Windows domain-based network configuration, not only as an LDAP server.
- The OpenAM server must be accessible by name on the network to all client systems, Unity Connection server, and the Active Directory server.
- The OpenAM server can be installed on Microsoft Windows 2003 server or RedHat Enterprise Linux (RHEL) server.
- The Active Directory (Domain Controller) server, Windows clients, Cisco Unity Connection, and
- OpenAM must be in the same domain.
- DNS must be enabled in the domain.
- The clocks of all the entities participating in single sign-on must be synchronized

See the third-party product documentation for more information about those products.

Single sign-on allows the end users to log in once and gain access to use the following Cisco Unity Connection applications without signing on again:

- Cisco Personal Communications Assistant
- Web Inbox
- Cisco Unity Connection Administration
- Cisco Unity Connection Serviceability

To use single sign on for a browser-based client application, you must configure the web browser. The following web browsers are supported:

- Internet Explorer 6.x and later versions
- Mozilla Firefox 3.x and later versions

Requirements for Using Security Assertion Markup Language Single Sign-On (SAML SSO)

SAML SSO allows a user to gain single sign-on access with Unity Connection subscriber web interfaces and across the administrative web applications on the following Unified Communication products:

- Cisco Unity Connection
- Cisco Unified Communications Manager
- Cisco Unified IM/Presence

For more information on accessing web application pages through SAML SSO, see the "Overview of SAML SSO in Cisco Unity Connection" section of "Managing Security Assertion Markup Language Single Sign-On (SAML SSO) in Cisco Unity Connection 10.x" chapter in *System Administration Guide for Cisco Unity Connection Release 10.x* http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/administration/guide/10xcucsag11 2.html.

Note   The SAML SSO feature is supported with Unity Connection 10.0(1) and later releases only.

The SAML SSO feature requires the following third party applications:

- Microsoft Windows Server 2008 R2 /Windows Server 2012.
- LDAP Directory.
- The Identity Provider authenticates an end user and returns SAML assertions. SAML Assertion shows either Yes (authenticated) or No (authentication fails) response. When an end user enters the username and password, the user credentials authenticates on Identity Provider. This further gives access to web applications on the Cisco Unity Connection server. The supported Identity Providers are:
  - ADFS (Active Directory Federated Services) version 2.0
  - Ping Federate version 6.10.0.4
  - OpenAM version 10.1
  - Oracle Identity Manager version 11.0
- To enable the SAML SSO feature from Cisco Unity Connection Administration, make sure you have at least one LDAP user in Unity Connection with administrator rights.

Note   Unity Connection supports SAML 2.0 protocol for the SAML SSO feature.

The third party products mentioned above must meet the following configuration requirements:

- Active directory domain controllers/global catalog servers and Active Directory Federated Services (ADFS) can be installed in any hardware virtualization environment supported by Microsoft. (Cisco does not provide technical support for DC/ GCs or ADFS that acts as an Identity Provider).
- The Identity Provider server is installed on Microsoft Windows 2008 R2 or Windows 2012.
- The Identity Provider that you are using must be accessible by its hostname on the network to all the client systems like Unity Connection.
- The clocks of all entities participating in SAML SSO must be synchronized.

See the third-party product documentation for more information about the above products.

Note   Make sure that Domain Name Server (DNS) is configured on Cisco Unity Connection as SAML SSO is not supported with only IP address configuration of Unity Connection.

All web browsers that are currently supported with Unity Connection 10.0(1) and later, allows SAML SSO access to web client applications.

Requirements for VPIM Networking

Cisco Unity Connection 10.x supports Voice Profile for Internet Mail (VPIM) version 2, which allows the exchange of voice and text messages with other messaging systems.

VPIM Networking can be used to provide message networking between Unity Connection 10.x and the following messaging systems:

- Cisco Unity Connection 10.x, 9.x, 8.x, and 7.x.
- Cisco Unity Connection in Cisco Business Edition 10.x, 9.x, 8.x, and 7.x.
- Cisco Unity 8.x and 7.x.
- Cisco Unity Express 3.2(1) and later.
- Cisco Unified Messaging Gateway 1.0(2) and later.
- Third-party voice messaging systems that support the VPIM version 2 protocol, as defined in Internet RFC 3801.

For information on using VPIM in Cisco Unity Connection, see the "VPIM Networking in Cisco Unity Connection 10.x" chapter of the *Networking Guide for Cisco Unity Connection* at http://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/10x/networking/guide/10xcucnetx.html.

Requirements for Using a Provisioning Application

A supported provisioning application:

- Unimax Second Nature version 6.8 B0 and later.

Any technical support or troubleshooting required on the provisioning software must be obtained from the manufacturer. Cisco is responsible for providing technical support only on the Unity Connection application.

Requirements for Migrating from Unity Connection 7.x to Version 10.x

During the migration, only user data and, optionally, voice messages are preserved. System-level configuration data (for example, templates and classes of service) must be manually configured.

⚠ **Caution**　Requirements for Cisco Unity Connection 10.x are different from requirements for Unity Connection 7.x. The system must meet Unity Connection 10.x requirements to receive support from Cisco TAC.

A migration from Unity Connection version 7.x to 10.x has the following requirements:

- All applicable requirements listed in this document.
- A server that is supported for use with Unity Connection and that meets Unity Connection 10.x specifications, particularly regarding memory and processor speed. (Not all servers supported for use with Unity Connection 7.x are supported for use with Unity Connection 10.x.) For information on supported Unity Connection servers, including specifications on individual servers, see the

Cisco Unity Connection 10.x Supported Platforms List at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/supported_platforms/10xcucspl.html.

⚠
Caution   If you try to install version 10.x on an unsupported platform, Cisco Unity Connection will not be displayed as an option in the Product Deployment Selection window of the installation program.

To determine whether your server requires replacement hard disks or a memory upgrade, see the applicable server-specific table in the *Cisco Unity Connection 10.x Supported Platforms List*.

Requirements for Migrating from Cisco Unity to Unity Connection Version 10.x Using a Gradual Migration

⚠
Caution   Requirements for Cisco Unity Connection are different from requirements for Cisco Unity. The system must meet Unity Connection 10.x requirements to receive support from Cisco TAC.

A migration from Cisco Unity to Unity Connection 10.x by gradually moving data has the following requirements:

- All applicable requirements listed in this document.

- A Cisco Unity Digital Network in which at least one server is running version 8.0(3) to act as a gateway to Unity Connection. Other servers in the Cisco Unity Digital Network must be running version 8.0(3) or later, or version 7.0(2) with Engineering Special (ES) 36 or later.

- A server that is supported for use with Unity Connection and that meets Unity Connection 10.x specifications, particularly regarding memory and processor speed. (Not all servers supported for use with Cisco Unity are supported for use with Unity Connection.) For information on supported Unity Connection servers, including specifications on individual servers, see the *Cisco Unity Connection 10.x Supported Platforms List* at http://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/10x/supported_platforms/10xcucspl.html.

⚠
Caution   If you try to install version 10.x on an unsupported platform, Cisco Unity Connection will not be displayed as an option in the Product Deployment Selection window of the installation program.

Note that voice cards are not supported for integrations with circuit-switched phone systems.

Requirements for Installing Unity Connection 10.x on a Virtual Machine

Revised Sept, 2016

For information on installing other Cisco Unified Communications applications on the same physical server on which Unity Connection is installed, see the Unified Communications Virtualization wiki at http://cisco.com/go/uc-virtualized.

- If you are running Unity Connection on a physical server and want to migrate over to Unity Connection 10.x, then it is required to migrate from a physical server to a virtual server since the physical Unity Connection server is not supported for use with Unity Connection 10.x.

- A physical host that meets Unity Connection specifications and that is supported for use in a virtualized environment. See the *Cisco Unity Connection 10.x Supported Platforms List* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/supported_platforms/10xcucsp l.html.

- The applicable edition of VMware vSphere ESXi Version 4.0 Update 1, 4.1, 5.0, 5.1 and 5.5 installed on the host server on which the Unity Connection virtual machine will run:

    – *For VMware configurations supporting up to 10,000 users:* Any edition.

    – *For VMware configurations supporting up to 20,000 users:* Enterprise Plus edition *(required only for ESXi Version 4.0 Update 1 and 4.1)*

> **Note** Updates to ESXi Version 5.0 Update 1,5.1, 5.5, 6.0 and 6.5 are supported.

- *For VMware configurations supporting 300GB and 500GB vDisks:* The datastore where the Unity Connection virtual machine will reside must be formatted with a VMware VMFS block size large enough to allow for the intended size of the virtual hard disk for the Unity Connection virtual machine. For example, a block size of 1MB limits the maximum virtual hard disk size to 256GB. A block size of 2MB allows 512GB virtual disks.

- When deployed with the ESXi4.1, Cisco Unity Unity Connection will support the VMware Boot from SAN functionality. See http://docwiki.cisco.com/wiki/Unified_Communications_VMware_Requirements#ESXi_Support_ for_Messaging_and_Presence_Applications for more information.

- Unity Connection 8.0(2) and later can be run on specification based hardware from Cisco, HP and IBM. However, some restrictions are applied. See http://docwiki.cisco.com/wiki/Specification-Based_Hardware_Support for more information.

- The support for the Input/Output devices on the servers that are running Unity Connection as a virtual appliance has been enhanced to include FCoE and Cisco Converged Network adapters. See http://docwiki.cisco.com/wiki/Specification-Based_Hardware_Support#IO_Devices for more information.

- Unity Connection 8.0(2) and later now support FC, FCOE, iSCSI, and NFS SAN environments with some restrictions. See http://docwiki.cisco.com/wiki/Shared_Storage_Considerations for more information.

- For list of VMware features that are supported for Unity Connection, see http://docwiki.cisco.com/wiki/Unified_Communications_VMware_Requirements#VMware_Featu re_Support_for_Messaging_and_Presence_8.0.282.29_through_8.6.281.29.

- Accessing a USB key is not supported.

- Oversubscribing processors and memory is not supported.

- For VMware vSphere ESXi 5.1 and earlier, at least one processor core must be available for the VMware ESXi hypervisor / scheduler.

- For VMware vSphere ESXi 5.5 and later, Latency Sensitivity function is included to reduce virtual machine latency. When the **Latency Sensitivity** value is set to high you do not need to leave any unused processor core for the ESXi hypervisor / scheduler.

- If the hyper-threading feature is available on the CPU, you should enable the feature to create logical cores. However, the logical cores do not change the Unity Connection rule that is based on 1:1 mapping of physical cores to vcpu not the logical cores to vcpu.

- All virtual disks assigned to the Unity Connection virtual machine must be configured in independent-persistent mode, which provides the best storage performance.

- A network time protocol (NTP) server must be accessible to the Unity Connection server.

- When configuring a Unity Connection cluster, you can install Unity Connection on one physical server and one virtual machine, or on two virtual machines, but the two virtual machines must be on separate physical hosts. When using blades as hosts, we recommend that the blades be on separate chassis.

Directory Object Limits for Unity Connection 10.x

This section contains two tables that list directory object limits.

Table 6 lists the maximum numbers of certain objects that can be created on a Cisco Unity Connection server. For these objects, the limits apply regardless of the platform overlay in use by the server.

If you are using legacy (intrasite or intersite networking) or HTTPS networking to link Unity Connection servers, the limits in Table 6 apply to each Unity Connection server in the site or organization.

Table 7 applies to the virtual directory created by the networked Unity Connection servers. When Unity Connection servers are networked together by using intrasite networking, replication between locations creates the virtual directory consisting of the users, administrator-defined contacts, system distribution lists, partitions, search spaces, and VPIM locations that are homed on each location, along with data about the locations themselves. When servers are networked together by using intersite networking, the virtual directory for an individual server consists of all users from both sites plus the administrator-defined contacts local to the site to which the server belongs, along with the system distribution lists, partitions, and search spaces on both sites, plus the VPIM locations on the local site.

Table 8 and Table 9 apply to the virtual directory created by the Unity Connection servers connected in an HTTPS network. When Unity Connection servers are linked together by using HTTPS networking, replication between locations creates the virtual directory consisting of the users, administrator-defined contacts, system distribution lists, partitions, search spaces, VPIM locations, and VPIM contacts homed on each location along with the data about the locations themselves.

Limits for other objects that depend on the platform overlay are listed in the *Cisco Unity Connection 10.x Supported Platforms List* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/supported_platforms/10xcucspl.html.

Table 6   Directory Object Limits for a Unity Connection 10.x Server

Directory Object	Unity Connection Version 10.x Limit
Classes of service	3.000
Call handlers	40,000
Call routing rules	1,200
Mailbox stores	5

Table 6   Directory Object Limits for a Unity Connection 10.x Server (continued)

Directory Object	Unity Connection Version 10.x Limit
Search spaces	2000
Partitions	2000
User-defined contacts	100,000
VPIM locations	100

The limits in Table 7 apply to the entire site or Cisco Voicemail Organization, regardless of whether the network comprises only two locations or the maximum number of supported locations. (For example, in Unity Connection version 10.x, if the individual server platforms support the limits, you can have 10 locations in one site with 10,000 Unity Connection users each, or 20 locations in two sites with 5,000 Unity Connection users each.)

Table 7   Directory Object Limits for a Unity Connection 10.x Site or Cisco Voicemail Organization

Directory Object	Unity Connection Version 10.x Limit
Unity Connection locations	10 per site
VPIM locations	100 per site
Intersite links	1 per site
Total number of Unity Connection users and administrator-defined contacts	100,000
System distribution lists	100,000
Members per system distribution list	25,000
Total number of distribution list members across all system distribution lists	1.5 million
Nested lists within a distribution list	20
Search spaces	10,000*
Partitions	10,000*

The limits in Table 8 apply to the entire network assuming that the locations use virtual platform overlay supporting 20,000 users.

Table 8   Directory Object Limits for an HTTPS Unity Connection network

Directory Object	Unity Connection Version 10.x Limit
Connection locations	25[1.]
VPIM locations	100
System distribution lists	100,000
Members per system distribution list	25,000
Total number of distribution list members across all system distribution lists	1.5 million
Nested lists within a distribution list	20
Search spaces	10,000*
Partitions	10,000*

1. The limits of Unity Connection locations that can be connected in an HTTPS network differ as per their platform specifications mentioned in Table 9

Note   When using more than 2000 search spaces and partitions in a single site, the following activities slow down:

- Searching for Search Spaces in the System Administration slows down
- Modifying and saving search spaces can take over 6 minutes.
- Changing/ Saving/ Reordering Search spaces can take unto 20 mins to replicate across the site.

Table 9 lists the maximum number of certain objects in HTTPS network supported with different platform overlays. The limits mentioned in the table apply to the network assuming that all the Unity Connection locations in the network are of same platform overlay.

Table 9   Directory Object Limits for an HTTPS Unity Connection network

	Virtual Platform Overlay for up to 1,000 Users	Virtual Platform Overlay for up to 5,000 Users	Virtual Platform Overlay for up to 10,000 Users	Virtual Platform Overlay for up to 20,000 Users
Connection locations in the network	3	10	10	25
HTTPS links	1[1]	3	3	5
Unity Connection local users	1000	5000	10,000	20,000
Remote users	9000	35,000	40,000	80,000
Contacts (administrator-defined and VPIM contacts)	-	20,000	30,000	150,000

1. It is required to connect 1vCPU server as a spoke location in the network. 1vCPU server cannot be connected as a hub in the network.

Maximum Unity Connection locations supported in HTTPS network are determined based on the following criteria:

- Depth of HTTPS network can reach up to second level.
- Servers used in the network are of same virtual platform overlay.
- HTTPS links supported at each location are same as mentioned in Table 9.
- Maximum of 25 locations can be connected in the network.

For example, if an HTTPS network is created with only 2vCPU servers and each location supports a maximum of 3 HTTPS links then up to 10 locations can be connected in the network. Similarly, the number of Unity Connection locations supported in an HTTPS network is calculated for other virtual platform overlays used by the servers.

An HTTPS Network can be created with a combination of different platform overlays based on the following considerations:

- The number of locations that can be connected in an HTTPS Network is governed by the highest platform overlay used in the network.
- The directory size depends upon the lowest platform overlay used in the network.

Available Languages for Unity Connection 10.x Components

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Note   Languages are not licensed, and Unity Connection 10.x does not enforce a limit on the number of languages you can install and use. However, the more languages you install, the less hard-disk space is available for storing voice messages. In the *Cisco Unity Connection 10.x Supported Platforms List* (http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/supported_platforms/10xcucspl.html), information on the number of minutes of storage available on each server assumes that you have installed not more than five languages.

This section lists the languages in which Unity Connection components are available.

Cisco Personal Communications Assistant (PCA)

Arabic-Saudi Arabia, Catalan, Chinese-Hong Kong, Chinese-PRC, Chinese-Taiwan, Czech, Danish, Dutch-Netherlands, English-United States, Finnish, French-Canada, French-France, German, Greek, Hebrew, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese-Brazil, Portuguese-Europe, Russian, Spanish-Latin America, Spanish-Spain, Swedish, Turkish

Cisco Personal Communications Assistant (PCA) Help

Arabic-Saudi Arabia, Chinese-PRC, Chinese-Taiwan, Czech, Danish, Dutch-Netherlands, English-United States, French-Canada, French-France, German, Hungarian, Italian, Japanese, Korean, Polish, Portuguese-Brazil, Russian, Spanish-Latin America, Spanish-Spain, Swedish, Turkish

Cisco Unity Connection Administration

English-United States, Japanese

Cisco Unity Connection Administration Help

English-United States

Cisco ViewMail for Microsoft Outlook 8.5 and later

Arabic-Saudi Arabia, Catalan, Chinese-Hong Kong, Chinese-PRC, Chinese-Taiwan, Czech, Danish, Dutch-Netherlands, Finnish, French-Canada, French-France, German, Greek, Hebrew, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese-Brazil, Portuguese-Europe, Russian, Spanish-Latin America, Spanish-Spain, Swedish, Turkish

Cisco Unity Connection ViewMail for Microsoft Outlook 8.0

Arabic-Saudi Arabia, Chinese-PRC, Chinese-Taiwan, Czech, Danish, Dutch-Netherlands, English-United States, French-Canada, French-France, German, Hungarian, Italian, Japanese, Korean, Polish, Portuguese-Brazil, Portuguese-Europe, Russian, Spanish-Latin America, Spanish-Spain, Swedish, Turkish

Cisco Unity Connection ViewMail for Microsoft Outlook 8.0 Help

Arabic-Saudi Arabia, Chinese-PRC, Chinese-Taiwan, Czech, Danish, Dutch-Netherlands, English-United States, French-Canada, French-France, German, Hungarian, Italian, Japanese, Korean, Polish, Portuguese-Brazil, Russian, Spanish-Latin America, Spanish-Spain, Swedish, Turkish

Visual VoiceMail

Arabic, Catalan, Chinese-China, Chinese-Hong Kong, Czech, Chinese-Taiwan, Danish, Dutch, Dutch-Belgium English, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese-Brazil, Portuguese, Russian, Spanish, Swedish-Sweden, Turkish.

Note With RT phones (89xx/99xx) and TNP phones (79xx), VisualVoicemail supports Arabic, Chinese-China,Czech, Chinese-Taiwan, Danish, Dutch, English, French, German, Hungarian, Italian, Japanese, Korean, Polish, Portuguese-Brazil, Portuguese, Russian, Spanish, Swedish-Sweden, Turkish languages.

Cisco Unity Connection Web Inbox

Catalan, Chinese-Hong Kong, Chinese-PRC, Chinese-Taiwan, Czech, Danish, Dutch-Netherlands, English-United States, Finnish, French-Canada, French-France, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese-Brazil, Portuguese-Europe, Russian, Spanish-Latin America, Spanish-Spain, Swedish, Turkish

Cisco Unity Connection Mini Web Inbox

English-United States

Text-to-speech engine

Arabic-Saudi Arabia, Chinese-PRC, Catalan, Chinese-Hong Kong, Chinese-Taiwan, Czech, Danish, Dutch-Netherlands, English-Australia, English-United States, English-United Kingdom, Finnish, French-Canada, French-France, German, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese-Brazil, Portuguese-Europe, Russian, Spanish-Latin America, Spanish-Spain, Swedish, Turkish

Transcription service for Cisco SpeechView

English-Australia, English-United States, English-United Kingdom, French-Canada, French-France, German, Italian, Portuguese-Brazil, Spanish-Latin America, Spanish-Spain

Voice-recognition engine

English-United States

Product documentation for administrators/installers

English-United States, Japanese

Product documentation for end users

Chinese-PRC, Chinese-Taiwan, Danish, Dutch-Netherlands, English-United States, French-France, German, Italian, Japanese, Korean, Portuguese-Brazil, Russian, Spanish-Latin America, Spanish-Spain, Swedish

Translated versions of the five Cisco Unity Connection user guides are available at http://www.cisco.com/en/US/products/ps6509/tsd_products_support_translated_end_user_guides_list.html.

Numeric and Alphabetic Codes for Supported Languages in Unity Connection 10.x

Use the numeric codes in Table 10 when you are using the Bulk Administration Tool and a CSV file to create or update users. Enter the applicable four- or five-digit numeric code in the Language column for each user. For more information, see the "Using the Cisco Unity Connection 10.x Bulk Administration Tool" appendix of the *User Moves, Adds, and Changes Guide for Cisco Unity Connection* at http://www.cisco.com/en/US/docs/voice_ip_comm/connection/10x/user_mac/guide/10xcucmacx.html.

Use the alphabetic codes to interpret language-related log entries and error codes.

Table 10   Codes for Languages Supported in Cisco Unity Connection

Language	Numeric Code	Alphabetic Code
Arabic-Saudi Arabia	1025	ARA
Catalan	1027	CAT
Chinese-Hong Kong	3076	ZHH
Chinese-PRC	2052	CHS
Chinese-Taiwan	1028	CHT
Czech	1029	CSY
Danish	1030	DAN
Dutch-Netherlands	1043	NLD
English-Australia	3081	ENA
English-United Kingdom	2057	ENG
English-United States	1033	ENU
English TTY/TDD-United States	33801	ENX
Finnish	1035	FIN
French-Canada	3084	FRC
French-France	1036	FRA
German	1031	DEU

Table 10   Codes for Languages Supported in Cisco Unity Connection (continued)

Language	Numeric Code	Alphabetic Code
Greek	1032	ELL
Hebrew	1037	HEB
Hungarian	1038	HUN
Italian	1040	ITA
Japanese	1041	JPN
Korean	1042	KOR
Norwegian	1044	NOR
Polish	1045	PLK
Portuguese-Brazil	1046	PTB
Portuguese-Europe	2070	PTG
Russian	1049	RUS
Spanish-Latin America	9226	ESO
Spanish-Spain	1034	ESP
Swedish	1053	SVE
Turkish	1055	TRK