System Requirements for Cisco Unity Connection Release 15

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System Requirements for Cisco Unity Connection Release 15

This document lists requirements for a Cisco Unity Connection version 15 system. It contains the following sections:

Hardware Requirements

- A server that meets Cisco Unity Connection specifications. See the *Cisco Unity Connection 15 Supported Platforms List* at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/supported_platforms/b_15cucspl.html.

Caution If you try to install version 15 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 "Unity Connection Supported Servers" section of Cisco Unity Connection 15 Supported Platforms List to verify platform specifications, particularly regarding memory and processor speed.

- Unity Connection 15 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 15, you need to replace the existing server with a virtual machine. For information on migrating a physical server to virtual server, see the "Migrating from Cisco Unity 4.x and Later to Unity Connection 7.x and Later" section of the "Maintaining Cisco Unity Connection Server" chapter of the Install, Upgrade, and Maintenance Guide for Cisco Unity Connection, Release 15, available at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/install_upgrade/guide/b_15cuciumg.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 15 Supported Platforms List .
- The list of supported virtual platform is listed in the Cisco Unity Connection 15 Supported Platforms List .

Software Requirements

This section contains the following information:

Software Requirements-Unity Connection Server

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

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

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 and Unity Connection SRSV

Operating System on Administrator Workstation	Browser on Administrator Workstation
Mac OS 13 (macOS Ventura)	• Safari
Microsoft Windows 11 (32-bit and 64-bit) • Enterprise • Professional	• Mozilla Firefox • Chrome • Edge
Microsoft Windows 10 (32-bit and 64-bit) • Enterprise • Professional	• Mozilla Firefox • Chrome • Edge

Note 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.

On CentOS, the IPv6 address is supported only through DNS.

For more information on supported operating systems and browsers, see the Compatibility Matrix: Cisco Unity Connection and the Software on User Workstations Guide at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/compatibility/matrix/b_cucclientmtx.html.

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 for Cisco Unity Connection

at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/compatibility/matrix/b_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.
- 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.

Requirements for the Phone System Integration

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 Compatibility Matrix for Cisco Unity Connection at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/compatibility/matrix/b_cucclientmtx.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/c/en/us/support/unified-communications/unity-connection/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/c/en/us/support/unified-communications/unity-connection/products-installation-and-configuration-guides-list.html.

Licensing Requirements

In Unity Connection, the licenses for Unity Connection are managed by the Cisco Smart Software Manager (CSSM). The following are the license tags supported by Unity Connection in conjunction with the CSSM:

- 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)
- Mini Web Inbox
- Web Inbox
- Cisco Unity Connection ViewMail for Microsoft Outlook 11.5(1) and later
- IMAP email client
- 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 and messaging
- Tenant Partitioning
- SAML Single Sign-On

- CUC_SpeechView: Allows you to use SpeechView standard transcription service.
- CUC_SpeechConnectPort: Allows you to use Speech Connect and voice-recognition features.
- CUC_EnhancedMessaging: Allows you to use Unity Connection SRSV feature along with Basic Messaging features.
- CUC_SpeechConnectGuestUser : Allows you to specify the maximum number of local contacts, along with VPIM contacts created from Non Unity Connection Server.

Unity Connection provides Specific License Reservation feature that allows you to reserve the licenses or entitlements from your virtual account and associate them with the product instance. The product instance can use the reserved licenses without communicating usage information to CSSM. In Specific License Reservation mode, Unity Connection supports the following license tags:

- CUC_BasicMessaging
- CUC_SpeechConnectPort
- CUC_EnhancedMessaging

For information on Unity Connection licenses, see the "Managing Licenses" chapter of the *Install, Upgrade, and Maintenance Guide for Cisco Unity Connection, Release 15*, available at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/install_upgrade/guide/b_15cuciumg.html.

Requirements for Using Unified Messaging Features

The following are the supported mail servers with which you can integrate Unity Connection to enable Unified Messaging:

1. Microsoft Exchange 2019 and 2016 Servers.
2. Microsoft Office 365.
3. Gmail Server.

Following versions of Microsoft Exchange servers are supported:

- Exchange Server 2019 Cumulative Update 14 and earlier.
- Exchange Server 2016 Cumulative Update 23 and earlier.

The Unified Messaging requirements are as follows.

Unified Messaging Requirements: Synchronizing Unity Connection and supported mail servers(Single Inbox)

- Microsoft Exchange 2016, 2019 servers can be integrated with Unity Connection to synchronize voice messages in Unity Connection and user mailbox on Exchange servers. For more information on Unity Connection integration with Microsoft Exchange, see the section Task List for Configuring Unified Messaging with Exchange 2016 or Exchange 2019in the chapter “Configuring Unified Messaging" of *Unified Messaging Guide for Cisco Unity Connection Release 15*, available at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/unified_messaging/guide/b_15cucumgx.html.
- Microsoft Office 365 can be integrated with Unity Connection to synchronize voice messages in Unity Connection and user mailbox on Microsoft Office 365. 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 section Task List for Configuring Unified Messaging with Office 365 in the chapter “Configuring Unified Messaging" of *Unified Messaging Guide for Cisco Unity Connection Release 15*, available at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/unified_messaging/guide/b_15cucumgx.html.
- Gmail server can be integrated with Unity Connection to synchronize voice messages in Unity Connection and user mailbox on Gmail server. Administrative account is required for accessing Google Workspace services of Google Cloud. For more information on Unity Connection integration with Gmail server, see the section Task List for Configuring Unified Messaging with Google Workspace in the chapter "Configuring Unified Messaging" of *Unified Messaging Guide for Cisco Unity Connection Release 15*, available at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/unified_messaging/guide/b_15cucumgx.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 Cluster. 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 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 section "Latency" in the chapter "Single Inbox" of the *Design Guide for Cisco Unity Connection Release 15* available at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/design/guide/b_15cucdg.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 using Outlook.
  - Compose, reply to, or forward synchronized voice messages 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".

- 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."

Note Single Inbox over IPv4 and IPv6 is supported for Exchange,Microsoft Office 365 and Gmail server.

Unified Messaging Requirements: SpeechView Transcriptions

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

- Unity Connection integrated with a supported version of Microsoft Exchange Server.
- Unity Connection integrated with Gmail server supports SpeechView feature.

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.

Note *(Applicable for Releases before 15 SU2)* For more information, see "SpeechView" chapter of the *System Administration Guide for Cisco Unity Connection Release 15* available at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/administration/guide/b_15cucsag.html.

(Applicable for Releases 15 SU2 and later) For more information, see "SpeechView Cisco Webex in-house transcription service" chapter of the *System Administration Guide for Cisco Unity Connection Release 15* available at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/administration/guide/b_15cucsag.html.

For Unity Connection requirements, see the Requirements for Using SpeechView Transcriptions.

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

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

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 The Text-to-Speech feature is supported with Exchange 2019, 2016 and 2013 over both IPv4 and IPv6. However, to access the transcripted text over IPv6, Unity Connection platform must be configured in Dual (IPv4/IPv6) mode.

For Unity Connection requirements, see the Requirements for Accessing Exchange Email Messages Using Text to Speech, on page 15.

Unified Messaging Requirements: Accessing Calendar Information for Meetings

Unity Connection integrated with a supported application for calendar information:

- When accessing Exchange calendars, Unity Connection integrated with a supported version of Microsoft Exchange Server.

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 calendars is supported with Exchange 2019, 2016 and 2013 over both IPv4 and IPv6. However, to access the calendars over IPv6, Unity Connection platform must be configured in Dual (IPv4/IPv6) mode.

For Unity Connection requirements, see the Requirements for Accessing Calendar Information for Meetings, on page 16.

Unified Messaging Requirements: Accessing Exchange Contact Information

Exchange contacts can be imported into Unity Connection, allowing users to place outgoing calls 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.

- 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 contacts is supported with Exchange servers over both IPv4 and IPv6. However, to access the contacts over IPv6, Unity Connection platform must be configured in Dual (IPv4/IPv6) mode.

For Unity Connection requirements, see the Requirements for Accessing Exchange Contact Information, on page 16.

Requirements for Using Video Messaging

Note Cisco Media Sense is now end of life and end of support, hence Unity Connection will no longer provide the Video Messaging feature for users.For more information on Cisco Media Sense EOL, see https://www.cisco.com/c/en/us/products/collateral/customer-collaboration/mediasense/eos-eol-notice-c51-738857.html.

- Unity Connection must be integrated with supported version of Cisco MediaSense Primary node. Cisco MediaSense cluster is not supported.
- Unity Connection users must be assigned a class of service with video parameters enabled.
- 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
- Video messaging and video greetings are supported only over SIP Integration with Cisco Unified Communications Manager.
- The Primary DNS server should not have a response delay of more than 500 milliseconds.
- The MediaSense server must be co-located with Unity Connection server with 1Gbps connectivity between the servers and less than 10ms Round Trip Time (RTT) latency.

Requirements for Using Voice-Recognition Features

- You must have required licenses on Cisco Smart Software Manager (CSSM).
- 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 Unity Connection.

- Unity Connection must be registered with Cisco Smart Software Manager(CSSM) or Cisco Smart Software Manager satellite and must have aquired proper licenses to use SpeechView service.
- *(Applicable to 15 SU2 and later releases)* Unity Connection server must be onboarded on Cisco Webex Cloud-Connected UC.
- "SpeechView Voicemail Transcript" service must be enabled on the Service Management Page of Cisco Webex Cloud-Connected UC.

Note "SpeechView Voicemail Transcript" service option will only be visible on Cisco Webex Cloud-Connected UC when Unity Connection server is running on Release 15 SU2 or later.

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

Note Make sure that Domain Name Server (DNS) is configured on Unity Connection as SpeechView Cisco Webex in-house transcription service is not supported with only IP address configuration of Unity Connection.

For Unity Connection speechview transcription requirements, see the Unified Messaging Requirements: SpeechView Transcriptions, on page 7

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 for Cisco Unity Connection at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/compatibility/matrix/b_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 for Cisco Unity Connection at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/compatibility/matrix/b_cucclientmtx.html.

Personal Call Transfer Rules web tool

- 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 for Cisco Unity Connection at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/compatibility/matrix/b_cucclientmtx.html.

Note Cisco Personal Communications Assistant (CPCA) is now supported both over IPv4 and IPv6. However, to access Cisco PCA over IPv6, Unity Connection platform must be configured in Dual (IPv4/IPv6) mode.

Requirements for Accessing Voice Messages Using Web Inbox

- 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 for Cisco Unity Connection at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/compatibility/matrix/b_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.

Caveats:

The Internet Explorer does not support playback functionality for voice messages using Web Inbox.

Requirements for Accessing Voice Messages Using 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 Mini Web Inbox. For more information on how to configure the trusted certificate on Unity Connection, see the section "Securing Unity Connection Administration, Cisco PCA, Unity Connection SRSV, and IMAP Client Access to Unity Connection" of chapter "Using SSL to Secure Client/ Server Connections" of *Security Guide for Cisco Unity Connection, Release 15* available at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/security/guide/b_15cucsecx.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, see the section "Configuring Unity Connection for HTML Based Message Notification" of the chapter "Configuring an Email Account to Access Cisco Unity Connection Voice Messages" of *User Workstation Setup Guide for Cisco Unity Connection Release 15* available at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/user_setup/guide/b_15cucuwsx.html.
- Make sure to perform the steps to configure the Mini Web Inbox on user workstation. For more information on how to configure the Mini Web Inbox, see the "Configuring Unity Connection for Mini Web Inbox" section of the "Configuring an Email Account to Access Cisco Unity Connection Voice Messages" chapter of the *User Workstation Setup Guide for Cisco Unity Connection Release 15* available at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/user_setup/guide/b_15cucuwsx.html.
- Audio Playback on Computer
  - Mozilla Firefox plays voice messages on Mini Web Inbox using HTML 5 Audio (.wav format).
- Audio Recording on Computer

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 for Cisco Unity Connection at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/compatibility/matrix/b_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.

Requirements for Accessing Voice Messages Using Cisco Unity Connection ViewMail for Microsoft Outlook

- *IMAP users only:* Users must be assigned to a class of service that is enabled for accessing voice messages 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 Requirements for Accessing Unity Connection Voice Messages Using an IMAP Email Client, on page 13.

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 supports the single sign-on functionality.

Note Cisco Unity Connection ViewMail for Microsoft Outlook (VMO) is 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.

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 using an IMAP client.
- A supported IMAP email client on user workstations. See Compatibility Matrix for Cisco Unity Connection at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/compatibility/matrix/b_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.

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 using a unified client.
- A supported version of Cisco Unified Personal Communicator on user workstations. See Compatibility Matrix for Cisco Unity Connection at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/compatibility/matrix/b_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/c/en/us/support/unified-communications/unified-personal-communicator/products-release-notes-list.html.

- Cisco Unified Personal Communicator 8.x support secure messaging with Unity Connection.
- Cisco Unified Personal Communicator versions 8.0 and later support IMAP IDLE.

Requirements for Accessing Cisco Jabber

Unity Connection supports Cisco Jabber 12.0(1) and later as client.

For more information on Cisco Jabber with operating systems, see the windows release notes at https://www.cisco.com/c/en/us/support/unified-communications/jabber-windows/tsd-products-support-series-home.html.

and for Macintosh, see the release notes at https://www.cisco.com/c/en/us/support/unified-communications/jabber-mac/tsd-products-support-series-home.html.

Requirements for Accessing Cisco Webex

Unity Connection supports Cisco Webex as client.

For more information on Cisco Webex with operating systems, see the windows release notes at https://help.webex.com/en-us/mqkve8/Webex-Release-Notes

and for Macintosh, see the release notes at https://help.webex.com/en-us/mqkve8/Webex-Release-Notes#sprk_2022796.

Requirements for Accessing Unity Connection Voice Messages Using Visual VoiceMail

This section contains the following information:

- 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.

Requirements for Accessing Exchange Email Messages Using Text to Speech

- Unity Connection integrated with a supported version of Microsoft Exchange Server:
- Exchange server(s) in a supported Windows domain configuration. Table 2 lists the supported configurations.

Table 2: Supported Exchange and Windows Domain Configurations

Exchange Configuration	Supported Windows Domain Configurations
One server running Exchange Server 2019	• 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 2016	• 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.

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

For Unity Connection requirements, see the Unified Messaging Requirements: Accessing Exchange Email Messages Using Text to Speech, on page 7.

Note Text-to-speech over Exchange servers 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.

Requirements for Accessing Calendar Information for Meetings

Unity Connection integrated with a supported application for calendar information:

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

Note Accessing calendars is supported with Exchange servers over both IPv4 and IPv6. However, to access the calendars over IPv6, Unity Connection platform must be configured in Dual (IPv4/IPv6) mode.

Requirements for Accessing Exchange Contact Information

Exchange contacts can be imported into Unity Connection, allowing users to place outgoing calls 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.

For Unity Connection 11.x requirements, see the Unified Messaging Requirements: Accessing Exchange Contact Information, on page 8.

Note Accessing contacts is supported with Exchange over both IPv4 and IPv6. However, to access the contacts over IPv6, Unity Connection platform must be configured in Dual (IPv4/IPv6) mode.

Requirements for Unity Connection Phone View

- Unity Connection integrated with a supported version of the Cisco Unified Communications Manager phone system. For supported versions, see the Compatibility Matrix for Cisco Unity Connection depending on the integration type at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/compatibility/matrix/b_cucclientmtx.html.
- A supported Cisco Unified IP Phone model, with the supported Cisco Unified Communications Manager version firmware installed. Supported IP Phone models are 8865, 8845, 7821.

  Note: Phone models that have reached EOL status are no longer supported.

Requirements for URI Dialing

- 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/Webex 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/c/en/us/products/collateral/unified-communications/unity/end_of_life_notice_c51-630608.html.

Requirements for an LDAP Directory Integration

- Unity Connection integrated with a supported LDAP directory. Table 3 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 3: 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

Supported LDAP Directory	Supports Redundant Directory Servers
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
Other LDAPv3 Compliant Directories	Yes
Sun iPlanet or other OpenLDAP directory server	Yes
Sun ONE Directory Server 5.2 and later	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 configuring Unity Connection for Novell e-Directory Services, choose the "Sun iPlanet or other OpenLDAP directory server 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.

Requirements for a Unity Connection Cluster

If your system is configured for a Unity Connection cluster, consider how the requirements varies in the following scenarios.

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

- Both servers must meet specifications according to the *Cisco Unity Connection 15 Supported Platforms List* at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/supported_platforms/b_15cucspl.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 no 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 publisher server first.
  - All user client and administrator sessions connect to the publisher server. If the publisher server stops functioning, the user client and administrator sessions must connect to the subscriber server.
  - Phone systems must attempt to route incoming calls to the subscriber server. If no voice messaging ports are available to answer calls on the subscriber server, the phone systems must route calls to the 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 15 Supported Platforms List.



Note The Unity Connection cluster feature is not supported for use with SAML SSO.

Cluster Requirements When Both Servers are in Separate Buildings or Sites

- Both servers must meet specifications according to the *Cisco Unity Connection 15 Supported Platforms List* at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/supported_platforms/b_15cucspl.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 using the bandwidth recommendations in the applicable *Cisco Unified Communications SRND* at http://www.cisco.com/c/en/us/solutions/enterprise/unified-communication-system/index.html.

- When both the subscriber and publisher are taking calls, the maximum round-trip latency must be no 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 no 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 publisher server first.
  - All user clients like Jabber, WebInbox etc and administrator sessions connect to the publisher server. If the publisher server stops functioning, the user client and administrator sessions must connect to the subscriber server.
-

Caution If failover happens and publisher node of Unity Connection cluster is not completely down then subscriber node will become primary node and user clients (Jabber,Web Inbox etc..) will still connect to publisher node.However, users may experience delay in accessing the voicemail through clients. In this case administrator should configure the RTMT alerts "AutoFailbackInitiated and AutoFailbackSucceeded" to troubleshoot failover. For more information on configuration of these alarms refer Alarm Message Definitions for Cisco Unity Connection Release 15 guide available at link https://www.cisco.com/c/td-xml/en_us/voice-ip-comm/connections/15/alarm_messages/15cucalrmmsgdef.html. In order to experience seamless voicemail access experience through user clients(Jabber, Web Inbox etc..) for Cisco Unity Connection failover scenario as mentioned above, it is recommended to either deploy the Unity Connection Cluster with maximum round-trip latency for not more than 5ms when both servers are in separate buildings or sites. Or customer should plan to install both servers in same building or sites. For more information, see section "Cluster Requirements When Both Servers are Installed in the Same Building or Site" of System Requirements for Cisco Unity Connection Release 15 guide.

  - Phone systems must attempt to route incoming calls to the subscriber server. If no voice messaging ports are available to answer calls on the subscriber server, the phone systems must route calls to the publisher server.
- The TCP and UDP ports of the firewall must be open as listed in the IP Communications Required by Cisco Unity connection chapter of the *Security Guide for Cisco Unity Connection Release 15* available at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/security/guide/b_15cucsecx.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 or replacement of hard disks. To determine whether your server requires a memory upgrade or replacement of hard disks, see the applicable server-specific table in the Cisco Unity Connection 15 Supported Platforms List.

Note The Unity Connection cluster feature is not supported for use with the SAML SSO feature.

Requirements for Unity Connection Networking

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 Unity Connection servers sharing the same directory information

Alternatively, you can use intersite networking to link a single Unity Connection site of up to ten servers with a single Cisco Unity server or Digital Network. (In a 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.)

HTTPS networking can be used to link up to 25 Unity Connection servers or clusters in a single site network, referred to as HTTPS Unity Connection network.

Requirements for Intrasite Networking

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

Unity Connection version 11.x and version 12.x servers can coexist in the same site as long as each server meets all the applicable requirements in the System Requirements for Cisco Unity Connection Guide.

Intrasite networking has the following requirements:

- Each version 12.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 4 in "Directory Object Limits for Unity Connection".

Note SAML SSO feature is not supported to access all the nodes of Intrasite networking. Only a local administrator can configure the Intrasite networking in Unity Connection..

Requirements for Intersite Networking

You can use intersite networking to link one Unity Connection site to another Unity Connection site. You can also 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.

Intersite networking has the following requirements:

- Each Unity Connection server or cluster in the Cisco Voicemail Organization must be at version 15 and must meet all applicable requirements listed in this document.
- Each Unity Connection site must meet the requirements listed in the Requirements for Intersite Networking.

For more information on virtual servers and the specifications on the memory that must be added, see the *Cisco Unity Connection 15 Supported Platforms List* at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/supported_platforms/b_15cucspl.html.

- The virtual directory created by the networked sites must not exceed the maximum total numbers of objects listed in Table 4 in the "Directory Object Limits for Unity Connection" .
- Intersite networking can be used to link a maximum of two sites. (Adding more than one intersite link per site is not supported.)



Note SAML SSO feature is not supported to access all the nodes of Intersite networking. Only a local administrator can configure the Intersite networking in Unity Connection.

Requirements for HTTPS Networking

You can use HTTPS networking to link one or more 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 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 5 and Table 6 in the "Directory Object Limits for Unity Connection" 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.

Note SAML SSO feature is not supported to access all the nodes of HTTPS networking. Only a local administrator can configure the HTTPS networking in Unity Connection.

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
- Cisco Unified Communications OS Administration
- Disaster Recovery System

For more information on accessing web application pages through SAML SSO, see the Quick Start Guide for SAML SSO in Cisco Unity Connection , Release 15, available at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/quick_start/guide/b_15cucqssamlsso.html.

The SAML SSO feature requires the following third party applications:

- 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 Unity Connection server.

  For information on currently supported Identity Providers, see "SAML-Based SSO Solution" chapter of *SAML SSO Deployment Guide for Cisco Unified Communications Applications* available at https://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-maintenance-guides-list.html.

- 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 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 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 15, allows SAML SSO access to web client applications.

Requirements for VPIM Networking

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

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

- Unity Connection 15,14,12.x, 11.x and 10.x.
- Third-party voice messaging systems that support the VPIM version 2 protocol, as defined in Internet RFC 3801.

For information on using VPIM in Unity Connection Unity Connection in Cisco Business Edition, see the "VPIM Networking" chapter of the *Networking Guide for Cisco Unity Connection, Release 15,* available at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/networking/guide/b_15cucnetx.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 10.x to Version 15

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 Unity Connection 15 are different from requirements for Unity Connection 10.x. The system must meet Unity Connection 15 requirements to receive support from Cisco TAC.

A migration from Unity Connection version 10.x to 15 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 15 specifications, particularly regarding memory and processor speed. For information on supported Unity Connection servers, including specifications on individual servers, see the *Cisco Unity Connection 15 Supported Platforms List* at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/supported_platforms/b_15cucspl.html.

Note With Cisco Unity Connection release 15 and later, direct upgrade from versions 10.5, 11.5 to 15 is not supported. To upgrade from version 10.5 to 15 or from version 11.5 to 15, you must follow an intermediate upgrade path such as going from 10.5 to 12.5 or later and then from 12.5 or later to 15.

Caution If you try to install version 15 on an unsupported platform, Unity Connection will not be displayed as an option in the Product Deployment Selection window of the installation program.

Requirements for Installing Unity Connection on a Virtual Machine

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://www.cisco.com/c/dam/en/us/td/docs/voice_ip_comm/uc_system/virtualization/virtualization-cisco-unity-connection.html.

- If you are running Unity Connection on a physical server and want to migrate over to Unity Connection 15, 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 15.
- A physical host that meets Unity Connection specifications and that is supported for use in a virtualized environment. See the *Cisco Unity Connection 15 Supported Platforms List* available at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/supported_platforms/b_15cucspl.html.

Note Unity Connection 15 supports ESXi version of 7.0 U3 or 8.0 U1 with minimum VM Hardware version of 17.

- *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.
- 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://www.cisco.com/c/dam/en/us/td/docs/voice_ip_comm/uc_system/virtualization/collaboration-virtualization-hardware.html 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://www.cisco.com/c/dam/en/us/td/docs/voice_ip_comm/uc_system/virtualization/collaboration-virtualization-hardware.html for more information.
- Unity Connection 8.0(2) and later now support FC, FCOE, iSCSI, and NFS SAN environments with some restrictions. See http://www.cisco.com/c/dam/en/us/td/docs/voice_ip_comm/uc_system/virtualization/virtualization-collaboration-storage-design-requirements.html for more information.
- For list of VMware features that are supported for Unity Connection, see http://www.cisco.com/c/dam/en/us/td/docs/voice_ip_comm/uc_system/virtualization/virtualization-collaboration-storage-design-requirements.html.
- Accessing a USB key is not supported.
- Oversubscribing processors and memory is not supported.
- For VMware vSphere ESXi 7.0 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.
- 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.
- 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.

Directory Object Limits for Unity Connection

This section contains two tables that list directory object limits.

Table 4lists the maximum numbers of certain objects that can be created on a 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 4 apply to each Unity Connection server in the site or organization.

Table 4 applies to the virtual directory created by the networked Unity Connection servers. When Unity Connection servers are networked together 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 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 5 and Table 6 apply to the virtual directory created by the Unity Connection servers connected in an HTTPS network. When Unity Connection servers are linked together 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. The directory object limits for other objects that depend on the platform overlay are listed in the *Cisco Unity Connection 15 Supported Platforms List* at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/supported_platforms/b_15cucspl.html.

Table 4: Directory Object Limits for a Unity Connection Server

Directory Object	Unity Connection Limit
Classes of service	3.000
Call handlers	40,000
Call routing rules	1,200
Mailbox stores	5
Search spaces	2000
Partitions	2000
VPIM locations	100

The limits in Table 4 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 12.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.)

The limits in Table 5 apply to the entire network assuming that the locations use virtual platform overlay supporting 20,000 users.

Table 5: Directory Object Limits for an HTTPS Unity Connection network

Directory Object	Unity Connection Limit
Connection locations	25 [1]
VPIM locations	100
System distribution lists	100,000
Members per system distribution list	25,000

Directory Object	Unity Connection Limit
Total number of distribution list members across all system distribution lists	1.5 million
Nested lists within a distribution list	20
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 6

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 upto 20 mins to replicate across the site.

Table 6 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 6: 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 Note	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

Note 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 6.
- 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.

Note 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 Components

Note Languages are not licensed, and Unity Connection 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 14 Supported Platforms List* available at link https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/14/supported_platforms/b_14cucspl.html, information on the number of minutes of storage available on each server assumes that you have installed no 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 12.0 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 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, Hebrew.

Transcription service for Cisco SpeechView

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

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

Use the numeric codes in Table 7 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 "Bulk Administration Tool" chapter of the *System Administration Guide for*

Cisco Unity Connection, Release 15, available at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/administration/guide/b_15cucsag.html.

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

Table 7: Codes for Languages Supported in 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
Greek	1032	ELL
Hebrew	1037	HEB
Hungarian	1038	HUN
Italian	1040	ITA
Japanese	1041	JPN
Korean	1042	KOR
Norwegian	1044	NOR
Polish	1045	PLK

Language	Numeric Code	Alphabetic Code
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

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