Deployment guide for Calling in Webex App (Unified CM)

First Published: 2019-03-28

Last Modified: 2024-04-24

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
http://www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

THE SOFTWARE LICENSE AND LIMITED WARRANTY FOR THE ACCOMPANYING PRODUCT ARE SET FORTH IN THE INFORMATION PACKET THAT SHIPPED WITH THE PRODUCT AND ARE INCORPORATED HEREIN BY THIS REFERENCE. IF YOU ARE UNABLE TO LOCATE THE SOFTWARE LICENSE OR LIMITED WARRANTY, CONTACT YOUR CISCO REPRESENTATIVE FOR A COPY.

The Cisco implementation of TCP header compression is an adaptation of a program developed by the University of California, Berkeley (UCB) as part of UCB's public domain version of the UNIX operating system. All rights reserved. Copyright © 1981, Regents of the University of California.

NOTWITHSTANDING ANY OTHER WARRANTY HEREIN, ALL DOCUMENT FILES AND SOFTWARE OF THESE SUPPLIERS ARE PROVIDED “AS IS" WITH ALL FAULTS. CISCO AND THE ABOVE-NAMED SUPPLIERS DISCLAIM ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OR ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE.

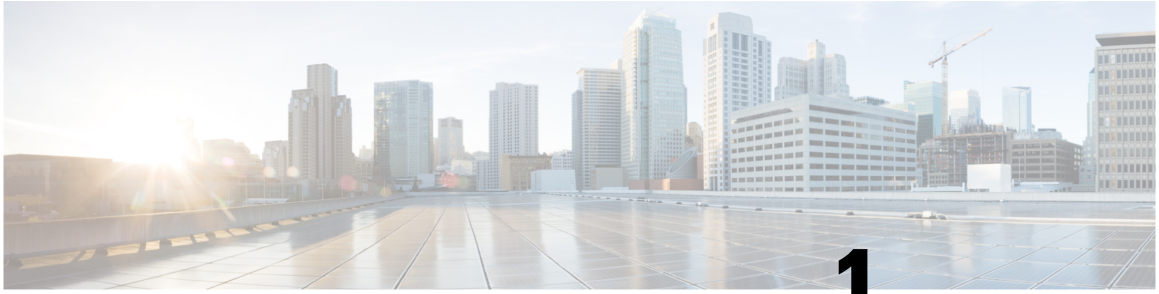
IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Any Internet Protocol (IP) addresses and phone numbers used in this document are not intended to be actual addresses and phone numbers. Any examples, command display output, network topology diagrams, and other figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses or phone numbers in illustrative content is unintentional and coincidental.

All printed copies and duplicate soft copies of this document are considered uncontrolled. See the current online version for the latest version.

Cisco has more than 200 offices worldwide. Addresses and phone numbers are listed on the Cisco website at www.cisco.com/go/offices.

CONTENTS



CHAPTER 1

Overview of Calling in Webex App (Unified CM)

New and changed information

This table covers content updates related to new features or functionality, changes to existing content, and any major errors that were fixed in the *Deployment Guide for Calling in Webex App (Unified CM)*.

For more information about Webex App updates, see the following documentation depending on the type of apps you're deploying to your users:

- **For the standalone app**—See the What's new documentation for major updates, and see the Release Notes for minor updates and bug fixes for Webex App.
- **For the VDI app**—See the VDI release notes for major updates and limitations.

Date	Changes Made
April 24, 2024	Included a link to step 3 in the chapter "Deploy Calling in Webex App (Unified CM)" > section "Configure moving a call into a meeting".
April 22, 2024	New Parameter "ShowSelectiveCallRecordingButton" is added to "Appendix" > "Policy Parameters" > "Feature Parameters" section.

Date	Changes Made
July 03, 2023	New Parameter "EnableSIPURIDialling" is added to "Appendix" > "Policy Parameters" > "Feature Parameters" section.
	New Parameter "LocalPushSSIDList" is added to "Appendix" > "Policy Parameters" > "Feature Parameters" section.
	New Feature Name "Local Push Notification Service (LPNS)" along with "Note" is added to the "Deployment Features" table in the "Deployment Features" section.
	Added a Note to "Overview of Calling in Webex App (Unified CM)" > "Calling features in Webex App" > "More information about Desk Phone Control (DPC)" section.
April 29, 2023	Revamped the section "Set up calling behavior and UC manager profiles in Control Hub".
March 10, 2023	Changes to the section, "Location reporting for emergency calling". Redsky was the only E911 SP. Now, "Intrado" is integrated with E911 SP and is called "E911 SP Intrado".
October 18, 2022	In the section "Recommended configuration - SSO redirect URI", under "Requirements", replaced "Unified CM 12.5(x) releases-12.5(1) SU4 and later (Unified CM 14 is not supported)" to "Unified CM 12.5(x) releases-12.5(1) SU4 and Unified CM 14.0(x) releases-14.0(1) SU1 and later".
June 7, 2022	• New feature "Multi call window" added to the *Additional features* table in the *Overview* > *Calling features in Webex App* section of this document. • Added Multi call window requirements to *Prepare* > *Unified CM feature requirements* • Added `CucmCallBargeMode` parameter to *Appendix* > *Policy parameters* > *Feature parameters*. • There is a new parameter `ShowPhoneNumberInLineSelection` in the configuration file, for displaying / hiding number in line selection dropdown menu. Added this parameter to the *Customization parameters* table in the Appendix to this document.
February 15, 2022	• Changed the UI path for updating user or organization calling behavior in Control Hub (in the section "Set calling behavior and UC manager profiles in Control Hub"). • Removed the note that explains "Auto cleanup and deletion of auto-provisioned devices is not supported currently" in *Overview of Auto-Provisioning of Webex App*.

Date	Changes Made
December 13, 2021	• Added prerequisites and a link to configuration steps for the Auto-Device Provisioning feature for Cloud-Connected UC. • Added RedSky emergency location reporting to the "Prepare Your Environment" chapter. • In the “Meeting join in desk phone control mode” section of the call flows, added the following clarifying text: “The meeting must be directly from a space and take place only in the Webex App. Full Featured Meetings are not supported.” • In accordance with style guidelines, changed section titles from title case to sentence case.
October 5, 2021	• In the Customize Parameters table in the Appendix, added the EnableADLockPrevention parameter.
September 7, 2021	• In the Customize Parameters table in the Appendix, added the following parameters: • For emergency disclaimers: • E911NotificationFrequency • E911NotificationURL • For video settings: • EnableVideo • StartCallWithVideo • Added the following parameters for video settings: • In the Deployment features table, added the following entries: • Customize emergency dialing disclaimer • Disable video for all 1:1 calls

Date	Changes Made
August 9, 2021	• Added new entries to Additional Features: • Network Handoff (Wi-Fi to LTE) • Switch your call from Webex to your mobile phone app • Added new section “Wi-Fi to LTE Call Network Handoff ” to Unified CM Feature Requirements in the Prepare Your Environment chapter. • Added new section “Configure Move Call to Mobile” to the deployment chapter. • In “Expressway Certificates (With MRA) ”, added section for migrating Jabber to Webex and considerations for private CA certification. • In the Feature Parameters table in the Appendix, added the following parameters for call recording: • EnableRecordingTone • LocalRecordingToneVolume • NearEndRecordingToneVolume • RecordingToneDuration • RecordingToneInterval • In the Feature Parameters table in the Appendix, added EnableCallPark.
July 7, 2021	• Added new section “Contact Center Feature Requirements,” including a link to Contact Center Integration for Webex which lists the latest supported features. • For SSO Redirect URI, clarified that Unified CM 14.0 is not supported. • Updated logos in architecture diagrams to reflect new branding for the Webex app. (See New Webex Suite and Branding for more information.)

Date	Changes Made
June 2, 2021	• Added new section “Android Devices and Density-Independent Pixels” to explain how Webex determines whether an Android device is a phone or a tablet. • Added new section “Configure Additional Features” to the deployment chapter. • Added new parameter “EnablePhoneDialerOptionOverMRA” to the Customization Parameters in the Appendix. • Added the following items to feature tables: • Added “Virtual Cameras” to the midcall features table for desktop. • Added “Virtual Cameras (macOS)” to the deployment features table. • Added “PSTN calling for mobile app users in India” to the additional calling feature table.
May 11, 2021	• Added information about how Webex distinguishes Android phones from tablets by using the device's display dp (less than 600 for phones; 600 or greater for tablets). • Removed "Retain Hybrid Call Service for Users" from the Prepare Your Environment chapter because Hybrid Calling (Call Connector architecture) will be End of Life (EOL).
May 5, 2021	• Added Chromebooks as supported devices when the TAB device type is used in Unified CM. • Added more information about configuring softphone devices on different platforms for the same user. • Added the following to the Additional Features table: • MRA failover (the minimum requirements (Unified CM 14.0 and later, Expressway X14.0 and later) are adde to the Call Control Environment Requirements section) • Diagnostics in the Webex app • Fixed error in “Configure Moving a Call into a Meeting” section: Telephony must be enabled for this feature to work. • Added more details about how to configure SSO Redirect URI on Expressway-C.

Date	Changes Made
April 7, 2021	• Added new section “Configure Move Call into a Meeting” (Deployment chapter) • Added the following entries to the feature tables: • Move a Call into a Meeting (Midcall Features—Desktop and Mobile) • In the Overview chapter, added more details about how Webex pulls configuration from Unified CM and the cloud. • Improved the architecture section.
March 3, 2021	• Added minimum releases for APNs for China and non-China deployments. • Added Call Recording to the MidCall Features table. • In the Overview chapter, added architecture diagrams for internal and MRA deployments.
February 3, 2021	• In the “Policy Parameters” section in the Index, added the following new parameters: • `E911EdgeLocationWhiteList` • `EnableE911EdgeLocationPolicy` • `EnableE911OnPremLocationPolicy` • In the “Prepare Your Environment” chapter, added new sections on Push Notifications, Location Monitoring, and Cisco Unified Survivable Remote Site Telephony (SRST). • Made the following changes to the Additional Features table: • For the Call History entry in the Additional Features table, added information about deleting call entries and the 200 call over 30 days limit. • For the Suppress Notifications entry in the Additional Features table, added information about muting notifications during a call or meeting. • Added Location Monitoring for desktop and mobile.

Date	Changes Made
January 12, 2021	- In the “Policy Parameters” section in the Index, added the following new parameters: - `SoftPhoneModeWindowBehavior` - `DeskPhoneModeWindowBehavior` - In the “Prepare Your Environment” chapter, added new section on Call Park configuration. - Made the following updates to the feature tables in the Overview chapter: - Added the following feature to the Midcall Features table: - Park and retrieve calls

Date	Changes Made
November 24, 2020	• In the “Policy Parameters” section in the Index, added the following new parameters: • `SelfCareURL` • `ShowSelfCarePortal` • `ShowCallAlerts` • Made the following updates to the feature tables in the Overview chapter: • Added the following note to the "Call on Webex Teams" row in the Additional Features table: **Note** Users only have access to the dial pad if they have a paid calling license. If they have a free calling license, they can still call other Webex Teams users. • Added "Mirror Self-View" to the mobile column of the Midcall Features table. • Added the following note to the "Apple Push Notifications (APNS) for iPhone and iPad and push notifications for incoming calls on Android" row in the Deployment Features table: **Note** Due to regulations in China, iPhone and iPad users no longer have the slide option to answer incoming calls when their mobile device is locked. Instead, they get an alert notification and must first unlock the screen and then tap the notification to answer the incoming calls. • Added “Configure Self Care Portal Link” (desktop and mobile) to the Deployment Features table.
October 29, 2020	• In the addition features table, added that “Add a Pause to Dial String” is now supported on mobile. • For the multiline and Jabber migration tool parameters, added a note that states that the parameters are not selectable presets in Unified CM. You must add these as custom parameters under policies.

Date	Changes Made
September 30, 2020	

Date	Changes Made
	- Restructured the feature overview table into four separate tables that cover basic call features, midcall features, additional features, and deployment features. Each table contains columns for desktop and mobile support so it's easier to see at a glance. - In the feature overview tables, added the following entries: - Control Your Video Device from the App (desktop, midcall features) - Simplified call options (mobile, additional features) - Contact Center integration (desktop, additional features) - Jabra headset support (desktop, additional features) - Multiline (desktop, midcall features) - Extend and Connect (desktop, additional features) - Dial via Office (DVO) (mobile, additional features) - Customize virtual background (deployment features for desktop) - Phone Service Connection Error and Action (additional features) - Call Recording (additional features) - Dial Plan Mapping (additional features) - Added “Unified CM Feature Requirements” section in Prepare Your Environment chapter. Added subsections for additional features that need to be configured in advance to be available in Webex Teams. - Added new section “Configure Users to Move Jabber Contacts and Common Settings to Webex Teams” to the Manage and Troubleshoot chapter. - Moved “Policy Parameters” to Appendix, and added the following new parameters: - `RemoteDestinationEditingWithMultipleDevices` - `RemoteInUsePresencePrimaryLineOnly` - `SelfCareURL` - `ShowSelfCarePortal` - `UserDefinedRemoteDestinations` - `EnableJabber2TeamsMigration` - `WebexTeamsDownloadURL`

Date	Changes Made
	• Added “Configure Virtual Background for Users” to Deployment chapter.
August 27, 2020	• In the feature overview table, added the following entries: • Simplified call options (enable or disable and order call options)—deployment features for desktop • Push Notifications for incoming calls on Android—mobile • More calling options—desktop • Mirror self-view—desktop • Added new sections “Configure Push Notifications and Recommended Settings” and “Set Calling Options for Users” to the deployment chapter. • In the Voicemail requirements in the prepare environment chapter, clarified that it's recommended to have Unified CM and Unity Connection on the same release but required to have them use the same authentication type. • Added Webex Teams for VDI as a supported option for calling.
August 10, 2020	In the “Create and Configure Webex Teams Softphone Devices” section, added a step for configuring emergency numbers for mobile soft clients.

Date	Changes Made
July 30, 2020	• Added "PreventDeclineOnHuntCall" to Policy Parameters for the XML config file steps. • In the "Create a UC Manager Profile" section, added the following note: "Some deployments may require both a voice services and UDS domain. For users with Webex Teams accounts that don't match Unified CM, Webex Teams cannot find the home cluster through voice services domain alone. In this case, you must configure the UDS servers. The voice service domain is still required for Mobile and Remote Access (MRA) support and locating Expressway servers." • In the feature table, added the following information: • "If a user answers on desk phone, a screen share is still possible. The phone user sees the shared screen from the phone if it supports video, otherwise they'll see the shared screen from the app." (Screen sharing for desktop) • "When you add your coworker to your Contacts list, you can edit their profile and add additional phone numbers for them. Then, you'll see the new phone number when you make an audio or video call, so it's easier to call them at their alternative number." (Contacts for desktop and mobile)
July 9, 2020	• In the deployment chapter, added new section "Voicemail Icon Indicators in Webex Teams " • In the "Allow Untrusted Certificates on Unified CM" section, added the following paragraph: "For iOS devices, you must install a custom root CA on the devices themselves if you're using a private enterprise certificate. Otherwise, Webex Teams fails to navigate to the SSO authorization URL." • In the "Expressway Certificates (with MRA)" section, added the following note: "For MRA scenarios, certificates only need to be validated on the Expressway." • In the "Configure Service Profile with UC Services" section, added a step to configure **Credential source for voicemail service** if not using SSO. • In the "Service Discovery Options" section, updated the note on supported service discovery methods: "We support SRV look up over internal and MRA environments. Service discovery enables clients to automatically detect and locate services on or outside your enterprise network. Clients query domain name servers to retrieve service (SRV) records that provide the location of servers. See the DNS SRV guidance that follows for internal and external environments."

Date	Changes Made
June 28, 2020	• In the feature overview table, added the following entries: • Add Contacts, Search Your Contacts, and Make a Call (desktop and mobile) • Missed calls (desktop) • Call control for Webex Teams calls (desktop) • Call Pickup (desktop and mobile) • Share a specific application (desktop) • Hunt Groups (desktop and mobile) • Lock symbol for secure calls (deployment features—mobile) • Added new sections to the deployment chapter that cover how to configure the XML config file for enabling hunt groups and call pickup for users: • Set Client Configuration Parameters • Create and Host Client Configuration Files
May 28, 2020	• In the feature overview table, added the following entries: • Call history callback (mobile) • Call statistics (mobile) • Desk Phone Control for Webex Teams Calls (desktop) • High Definition (HD) video (desktop) • Health Checker for Phone Services Status (desktop)
May 6, 2020	• In the feature overview table, added the following entry: • Auto-Discovery of Service Domain • In the Deployment chapter, added or updated these sections: • "UC Manager Profiles and Calling Behavior Workflow" (New) • "Create a UC Manager Profile" (New) • "Edit a UC Manager Profile" (New) • "Set Calling Behavior and UC Manager Profiles in Control Hub" (Updated)

Date	Changes Made
April 30, 2020	• In the feature overview table, added the following entries: • Single Number Reach (mobile) • Voicemail (mobile) • Emergency Calling (mobile) • Call Forwarding (mobile) • Answer call without sharing video (mobile)
March 20, 2020	• In the feature overview table, added the following entries: • Automatic Gain Control (AGC) (desktop and mobile) • Conference calls (mobile) • Merge (mobile) • Visual voicemail (desktop—additional features) • Added visual voicemail configuration requirements to the Prepare Your Environment and Deploy chapters.
February 27, 2020	• In the feature overview table, added the following entries: • Call Waiting (mobile) • Transfer (mobile) • Support for tel, sip and clicktocall protocols (mobile) • Control Hub headset management (additional features) • Added the following information about Cisco 700 headsets: “If users have Cisco 700 series headset, they can use its USB adapter to answer and end calls, put calls on hold and resume them, as well as mute and unmute calls.” • Added new section “Manage Cisco Headsets in Webex Control Hub” to the Manage and Troubleshoot chapter. • Added new section “Protocol Handlers for Calling” to the Overview chapter. • Readded Network Requirements section that was previously removed in error.

Date	Changes Made
January 30, 2020	• In the feature overview table, added the following entries for Windows and Mac: • Lock icon 🔒 for secure calls. • Support for Cisco 700 series (bluetooth) headsets. • Popout call window. • Add a pause to a dial string. • In the “License Requirements for Calling in Webex Teams (Unified CM)”, clarified that while a paid subscriptions is required anduser accounts must be managed in your organization, the user accounts don't require a specific license assignment to use Calling in Webex App (Unified CM).
December 20, 2019	• In the feature overview table, added the following entries: • Hold/resume for mobile platforms. • Resume on different devices for desktop, deskphone control mode, and mobile. • Call history for mobile platforms. • Added the following note to the Headset Requirements section: “When using the Cisco Headset 500 Series or Cisco Headset 700 Series headsets in Webex Teams, the headset firmware can get updated automatically. Users can confirm the message that pops up letting them know that an update is available, and then they'll get confirmation after it's updated.”
December 10, 2019	• Added network requirements information to the Prepare Your Environment chapter. • In the Configure SIP Address Routing for your Organization, section, added the following clarification: “`*.example.com` only matches subdomains, not top-level domains.”
November 27, 2019	• Added call history to the feature overview table for desktop platforms. • In the “Set DSCP Values on the Network”, changed the signaling packets marking from AF31 to CS3.

Date	Changes Made
November 15, 2019	• In the Deploy chapter, added relevant deployment steps and Webex Teams authentication steps for mobile softphone mode. • Added the following mobile features to the feature overview table: • Make call • Answer call • Mute/Unmute • End call • On a Call presence—In Webex Teams, users in the same organization can see this presence indicator during an active call. ☎ • Basic Shared Line Appearance • DTMF input during the call
November 7, 2019	• Added the following features to the feature overview table: • Webex Teams call (Windows or Mac)—Users can choose whether to call people using their phone number or using a Webex Teams call. A Webex Teams call is a quick way to call someone else who's using Webex Teams. Users can share their screen and whiteboard while in the call, but they can't put the call on hold, transfer the call, or use other features only available in phone calls. • SIP (URI) address routing—Configurable in Control Hub, this setting allows you to decide which SIP addresses are routed through the Webex cloud. The default is for all SIP URIs to be routed through Unified CM except for Webex services.
October 9, 2019	• In Unified CM certificates (with MRA in deployment), on page 58, removed reference to Cisco CallManager certificate and added the following note: “The Tomcat certificate is also used for secure SIP when Webex Teams is enabled for encrypted calls (SIP Outh operates on the default port 5091 for MRA). See “Configure the Phone Security Profile for Encrypted Calls” in this guide for more details.” • In Unified CM certificates (no MRA in deployment), on page 57, added the following note: “The Tomcat certificate is also used for secure SIP when Webex Teams is enabled for encrypted calls (SIP Oauth operates on the default port 5090). See “Configure the Phone Security Profile for Encrypted Calls” in this guide for more details.”

Date	Changes Made
September 26, 2019	• Added the following features to the feature table in Overview of Calling in Webex App (Unified CM), on page 19: ◦ Suppress call notifications when presenting or when DND is enabled. ◦ Support for tel, sip and clicktocall protocols. ◦ Support for Click to Call from Outlook. ◦ Support for Cisco 500 series headsets • Added new section Headset requirements, on page 60 • Removed this incorrect known issue: "Webex Teams does not register to Unified CM in secure softphone mode. You must use non-secure mode as a workaround." Removed other incorrect information that stated secure mode wasn't supported. • Fixed steps for SIP Oath configuration in Configure the phone security profile for encrypted calls, on page 83. Called out that Unified CM 12.5(1) or later is required for encrypted calls. • Added note to Authenticate with phone services in Webex App, on page 97: "If both Server address and UC domain are configured, Server Address is used to connect to Unified CM while on-premises only. Autodiscovery through DNS SRV is ignored. For MRA, Server Address is ignored."
August 29, 2019	• Added new section Configure the phone security profile for encrypted calls, on page 83. • For both softphone and desk phone control modes, added new midcall features to feature table in Overview of Calling in Webex App (Unified CM), on page 19: ◦ Conference ◦ Merge ◦ Transefer
July 25, 2019	• Rewrote the "Authenticate with Webex Teams" content to show the user configuration path to take if you have autodiscovery or if you don't.
July 9, 2019	• Removed the limited availability disclaimer for Merge and Transfer features for Webex Teams in softphone mode. (These features are now Generally Available.)

Date	Changes Made
June 27, 2019	- Removed the Preview Release Disclaimer. (Calling in Webex Teams (Unified CM) is officially Generally Available.) - Added Merge and Transfer as limited availability features for Webex Teams in softphone mode. - Added new section Allow untrusted certificates on Unified CM, on page 127 to the Appendix. - Added the following information to the certificate requirements and known issues: "Certificates issued with a deprecated signature algorithm (such as SHA-1) do not work; you must use a supported secure signature algorithm such as SHA-256 or later, as documented in the Certificates chapter in the *Administration Guide for Cisco Unified Communications Manager*."
June 14, 2019	- In Calling experience with Webex App for users, on page 35, added the following information under the "User Experience Changes for Hybrid Call Service Users" section: "If the Webex device is configured in Control Hub as a Place that is enabled for Hybrid Call Service, the user can dial from Webex Teams and the call then starts on the Webex device using that device's directory number as the caller ID on the receiving end." - In Certificate requirements, on page 57, added MRA certificate requirements and restructured as 3 subsections: Unified CM Certificates (No MRA), Unified CM Certificates (MRA), and Expressway Certificates (MRA). - In Set DSCP values on the network, on page 126, corrected QoS port range information. Previously, it read "16384 to 24574" for audio streams and "24575 to 32766" for video streams; now, it reads "16384 to 24575" and "24576 to 32676", respectively.
April 24, 2019	- Restructured the Requirements section—Each Calling in Webex Teams (Unified CM) requirement now has its own subsection to make it easier to find. - Added new section (Configure Unified CM end users for Calling in Webex App (Unified CM), on page 78) to the Deploy chapter.

Date	Changes Made
April 10, 2019	• Added Meeting join in desk phone control mode, on page 42 to the Call Flows. • In Requirements section, added the following points: • In **Cisco Unified CM Administration** > **System** > **Server**, the Unified CM server names must be defined as FQDN. • We do not support the deployment model of MRA without SSO and Unified CM with SSO. • At this time, we support internal only automatic discovery. Service discovery enables clients to automatically detect and locate services on your enterprise network. Clients query domain name servers to retrieve service (SRV) records that provide the location of servers. • If you're using Server Information for configuration and not SRV records, your users' Webex Teams email addresses must match their Unified CM email addresses—at a minimum, the user ID portion before the domain must match.
March 28, 2019	• Initial version of the document.

Overview of Calling in Webex App (Unified CM)

The Calling in Webex App (Unified CM) solution lets you register Webex App directly to your Cisco Unified Communications Manager call control environment (on-premises enterprise, Business Edition 6000/7000, Unified CM Cloud or as delivered through an HCS partner solution).

Users

This solution enhances the calling experience for end users, allowing them to directly make calls in Webex App through your Unified CM environment, use midcall features, and control their desk phone from Webex App.

When dialing from Webex App, users can use the same dial strings or prefixes as they do on their desk phones; Webex App functions like any other desk phone registered to your Unified CM. Unified CM calls that are established in Webex App use the configuration that's in place for your Unified CM deployment (such as location, bandwidth settings, point to point media, and so on).

Administrators

As an administrator of Calling in Webex App (Unified CM), you reuse your existing Unified CM and Mobile and Remote Access (MRA) configuration that you may've already had in place. The deployment model is similar to Jabber. The same device types are used: In softphone mode, Webex App registers as a SIP device with the product type "Cisco Unified Client Services Framework" or CSF for desktop, TCT or BOT for mobile, and TAB for tablets. Alternatively, Webex App can connect to Unified CM using CTI to control the user's endpoints.

The Webex App makes its primary connection to the Webex cloud to get its service configuration (messaging, meetings, presence, contact lists, calling behavior, and so on), but it also reads the following configuration from the Unified CM environment to provide specific calling functionality to users:

- Initial Unified CM discovery through DNS query to discover any configured voice services domain. (In a multicluster environment, Intercluster Lookup Service is also leveraged to determine which cluster the Unified CM user is homed to.) An outside domain (MRA deployment) is also discovered. (If the Webex domain does not match the existing Voice Services Domain, you can set a Voice Services Domain in Control Hub, and associated with specific users.)
- UC service profiles (for voicemail through Unity Connection, CTI services, and advanced calling functionality through supported parameters in the Jabber config service profile or XML file)
- Single Sign-On (SSO) credentials if an Identity Provider (IdP) is integrated
- Oath tokens, including refresh and expiry timers. (Users need to reauthenticate if a session expires.)
- Certificate validation

Calling features in Webex App

This integration provides the following feature set in Webex App for desktop (Windows and Mac) and for mobile (Android, iPad, and iPhone). Wherever possible, the feature listings in this table include a link to a relevant help article for end users. See Audio and video calls for more general information on making a call. See Supported calling options for a feature comparison table for end users.

Basic calling features

Table 1: Basic calling features

Feature	Description and documentation	Desktop	Mobile
Answer call	—	✓	✓
Answer call without sharing video	See Turn Off Your Video for all Incoming Calls.	✓	✓
Desk Phone Control	Desk Phone Control (including meetings and calls in Webex App)—See Make Calls With Your Desk Phone.	✓	
DTMF input during the call	—	✓	✓
End call	—	✓	✓
Make call	—	✓	✓
Mute/Unmute	—	✓	✓

Feature	Description and documentation	Desktop	Mobile
On a Call presence	In Webex App, users in the same organization can see this presence indicator during an active call.	✓	✓

Midcall calling features

Table 2: Midcall calling features

Feature name	Description and documentation	Desktop	Mobile
Call Pickup	If a user is in a customer support role and their coworker isn't able to answer an incoming call to their phone, the support user gets a notification in Webex App if both are in the same pickup group. That user can answer their call from the notification in the app. The user can also pick up the calls in other pickup groups. See Pick Up Someone Else's Call.	✓	✓
Call Recording	You can determine how much control users have over recording calls. Depending on the setup, incoming and outgoing calls may be recorded automatically or you may be able to decide which calls you want to record. If you enable users with call recording, they can start and stop recordings at their own discretion. When a call is being recorded, that recording continues whether a user moves the call to another device, merges the call with another active call, or makes a conference call. They're presented with a visual indicator letting them know when a call is being recorded. See Record Your Phone Calls.	✓	✓
Call Waiting	When a user is already in call and someone else calls, the called user can choose how they want to handle the incoming call. For example, the user can put the active call on hold and answer the second call. See Answer Call Waiting for more information.	✓	✓

Feature name	Description and documentation	Desktop	Mobile
Conference calls	When users are on a call with someone else, they might want to add other people into the call to start a conference call right away. They can add up to 8 other people into conference calls started in this way. See Start a Conference Call.	✓	✓
Control Your Video Device from the App	Users can start or stop sharing your video on a connected video device right from the app. For example, if connected to a Cisco Webex Board and users don't want to share video, they no longer have to walk up to the board and turn off the video. They can turn it off from the app. See Turn Off Your Video During a Meeting or Call On Webex Boards, Room and Desk Devices.	✓	
Hold/resume	Users place a call on hold and resume in Webex App. See Put a Phone Call On Hold.	✓	✓
Hunt Groups	Users can sign in or out of a Hunt Group from Call Settings. When they're signed in and a call comes into a group that they belong to, they'll see the Hunt Group number on the incoming call notification. Sign in to a Hunt Group.	✓	✓
Merge	Users take 2 active calls and merge them into a single conference call in Webex App. See Merge Two Phone Calls.	✓	✓
Mirror self-view	Mirror self-view—By default, when users share video during a call, they can see themselves just like you're looking in a mirror. If they text behind them and want to read it easily instead of having to read it backwards, tehey may want to off the **Mirror my video view** setting. This setting doesn't affect the way other people in the meeting see you. See Turn Off Mirror View for Your Self-View Video..	✓	✓

Feature name	Description and documentation	Desktop	Mobile
Move a call into a meeting	Users in a call can take advantage of advanced meetings features such as transcriptions, real-time translations, notes, action items, recordings, and whiteboarding. Just move that call into a full-featured meeting. Before moving the call into a meeting, users can even invite other people into the discussion.	✓	✓
Multiline	Users can use up to 8 phone lines with Webex App and leverage advanced calling features on each line such as call forward, transfer, hunt group, shared lines, and voicemail. They can also assign different ringtones to each line. And you can turn on presence for shared lines so that line status is displayed for users. See Change the Active Line for Calling.	✓	
Park and retrieve calls	Users can park a call on one device and that user or someone else can retrieve the call from another device.	✓	✓
Resume from different devices	A user can put a call on hold from the desktop app and resume it on mobile. Or, put your mobile call on hold and resume it on a desk phone. Go any direction between desk phone, mobile, and desktop; just put the call on hold and resume wherever it's convenient. See Put a Phone Call On Hold.	✓	✓

Feature name	Description and documentation	Desktop	Mobile
Screen sharing	Screen sharing—Share content from a computer screen during a call in Webex App. Users can choose a specific application to share, rather than having to share their whole screen. If a user answers on desk phone, a screen share is still possible. The phone user sees the shared screen from the phone if it supports video, otherwise they'll see the shared screen from the app. See Share Your Screen in a Phone Call. **Note** Users can share your screen regardless of whether the person they called is using a cloud-registered device or an on-premises device. The screen share is still sent with a high frame rate (30 FPS), high resolution (1080p), and includes audio.	✓	
Switch between front and back cameras	On mobile phones or tablets, you can switch between front-facing and back-facing cameras. See the mobile sections in Change Your Video Settings.		✓
Transfer	Redirects a connected call within Webex App. The target is the user to which another user wants to transfer the call. See Transfer a Phone Call.	✓	✓
Virtual cameras	During a call, users can choose to use a virtual camera. Use a virtual camera, such as an application, driver, or software, to create an overlay of video, images, or feeds.	✓	

Additional features

Table 3: Additional features

Feature name	Description and documentation	Desktop	Mobile
Add a Pause to Dial String	Users can add a pause to an entered phone number, which they might need if joining a conference call and need to enter numbers in response to the automated system. They can add a comma (,) to the number, which gives a 1-second delay in the dialing. They can add several commas in a row to extend the delay. For example: 95556543123,,,,56789.	✓	✓
Add Contacts, Search Your Contacts, and Make a Call	Users can add coworkers into a Contacts list and group them however they like, making people easier to find when users need to chat or call. Users can even look up Outlook contacts (Windows), local address book (Mac), and local phone contacts (iPhone, iPad, and Android) from Webex App, so they can easily find contacts and make a call. When you add your coworker to your Contacts list, you can edit their profile and add additional phone numbers for them. Then, you'll see the new phone number when you make an audio or video call, so it's easier to call them at their alternative number. See Add Someone to Your Contacts List.	✓	✓
Automatic Gain Control (AGC)	AGC is a unique circuit that listens to the incoming audio level and adjusts the recording level when sounds are too loud or too soft. When the audio volume is too loud, it automatically reduces the sound. When the audio is too soft, it automatically amplifies the sound. This doesn't adjust the audio volume at the OS level.	✓	✓

Feature name	Description and documentation	Desktop	Mobile
Call on Webex App	Users can choose whether to call people using their phone number or using a call in Webex App. A call in Webex App is a quick way to call someone else who's using Webex App. Users can share their screen and whiteboard while in the call, but they can't put the call on hold, transfer the call, or use other features only available in phone calls. See Call Anyone with a Webex App account. **Note** Users only have access to the dial pad if they have a paid calling license. If they have a free calling license, they can still call other Webex App users.	✓	✓
Call control for calls in Webex App	If using a Cisco 730 headset, users can use its USB adapter or Bluetooth to answer and end calls, put calls on hold and resume them, as well as mute and unmute calls. See Make and Answer Calls on the Cisco Headset 730.	✓	
Call history	When a user calls other people in the organization, they see more details about phone numbers in the call history. So, to call someone back, that user can see if they're calling a work or mobile number. Users can select the Call icon beside someone’s name or number in their Call History and automatically call the person back at the number in the history. Users no longer need to choose what number to reach others at. After they return a missed call, they can delete the call from call history. The call history only shows the last 200 calls over the last 30 days. See View Call and Meeting History for more information.	✓	✓
Call Statistics	When users are in a call, they can check call statistics, such as packet loss, latency, and resolution rate. See Access Call Statistics.		✓

Feature name	Description and documentation	Desktop	Mobile
Click to Call from Outlook	You can set up your Windows or Mac computer so that Webex App is the default option for calling numbers that you click outside of the app, for example, in Microsoft Outlook or from a link in your web browser. See Click to Call From Another App.	✓	
Client Matter Codes (CMCs) and Forced Authorization Codes (FMCs)	With client matter codes (CMCs) and forced authorization codes (FACs), you can effectively manage call access and accounting. CMCs assist with call accounting and billing for clients, and FACs regulate the types of calls that certain users can place. CMCs force the user to enter a code; this action specifies that the call relates to a specific client matter. You can assign client matter codes to customers, students, or other populations for call accounting and billing purposes. FACs force the user to enter a valid authorization code that is assigned at a certain access level before the call is completed. See the “Prepare Your Environment” chapter.	✓	✓
Contact Center Integration	Webex App can integrate into your Cisco Contact Center application and be controlled in Finesse desktop (Unified Contact Center Enterprise or Express). This integration supports contact center features such as multiline, recording, conferencing, and more. See Contact Center Integration for the latest supported features.	✓	
Diagnostics in the Webex App	If users experience connection issues, they can use the diagnostic tool to identify configuration errors or export a network diagnostics report. This information helps you troubleshoot any issues they're experiencing. See the Troubleshooting chapter.	✓	

Feature name	Description and documentation	Desktop	Mobile
Dial-via-Office (DVO)	When you set up users with DVO, they have the option to make work calls using their mobile phone connection, which ensures calls are uninterrupted even if data is unavailable. No matter what option they choose, the work number is always used as the caller ID so people can easily identify users. See Make Work Calls Over a Mobile Phone Connection.		✓
Dial Plan Mapping	You configure dial plan mapping to ensure that dialing rules on Cisco Unified Communications Manager match dialing rules on your directory. See the Prepare Your Environment chapter.	✓	✓
Emergency calls	If users make an emergency call in Webex App, the call is made using the device's Phone app, making it easier for Emergency Services to pinpoint a location through their network carrier.		✓
Extend and Connect	You can set up users to connect to alternate devices to make and receive calls. Users can see those devices under **Alternate Devices** when they go to calling settings. That's where they can add or edit the phone numbers for those devices. See Make a Call From an Alternate Device.	✓	
Fast failover (MRA)	Webex can detect failure quickly, whether it's a controlled shutdown, node failure, or network failure, and seamlessly fail over to a backup path through MRA so user productivity isn't affected. See the Prepare Your Environment chapter.	✓	✓
Health Checker for Phone Services Status	If unsure whether Phone Service is working properly, users can check out the status of the phone connection from the app. On Windows, they click their profile picture and then go to **Help** > **Health Checker**. On Mac, they go to **Help** > **Health Checker**. Health Checker tests the connection and lets users know if there's a problem.	✓	

Feature name	Description and documentation	Desktop	Mobile
High Definition (HD) Video	Users can enable or disable HD video by clicking their profile picture, going to **Settings** (Windows) or **Preferences** (Mac), selecting **Video**, and then enabling or disabling the setting. They may want to disable HD video if their computer CPU is running high or they want to save network bandwidth during a call or meeting.	✓	
Location Monitoring	You can turn on location monitoring so that when users call emergency services from Webex (for example, 911), their location is automatically shared with emergency responders.	✓	✓
Missed calls	See how many calls you've missed with a red badge counter in the Calls ☎ tab. The Calls tab shows a list of incoming and outgoing calls and you can call someone back from your Call History. Your scheduled meetings are listed in the Meetings tab, making it easier for you to distinguish between the two types of communication.	✓	
More calling options	Users can call someone's video address (for example, bburke@biotechnia.com) from anywhere in the app where they'd make any type of call (example: search for someone or being in a space with that person).	✓	
Multi call window	Webex App users with multiple lines see this by default. It is a separate, floating window to help with managing multiple or shared lines. See Manage your phone calls in the Multi Call window.	✓ (Windows)	
Network Handoff (Wi-Fi to LTE)	When you're on an active call and you need to change networks but want to keep the call in Webex, no need to worry; the change is made automatically without any interruption or effect to call quality. (See Unified CM features in Prepare Your Environment.)	✓	✓

Feature name	Description and documentation	Desktop	Mobile
Phone numbers in contact cards	Work numbers and mobile numbers are synchronized from Active Directory and appear as selectable items in Webex App. (Requires Cisco Directory Connector to synchronize user phone number attributes to the Webex cloud.)	✓	✓
Phone Service Connection Error and Action	The footer in Webex App shows more descriptive error messages if the phone service disconnects. See Error Messages.	✓	✓
Popout Call Window	When a user calls someone else, the call window pops out, and both users can access calling features. While in the call, users can still respond to critical messages.	✓	
PSTN calling for mobile app users in India	Users in India can make that call when they can't be on the corporate network. The Webex mobile app gives them the option to use the device's calling app instead. See "EnablePhoneDialerOptionOverMRA" in the customization policy parameters in the Appendix.		✓
PSTN for Personal Mode Devices	Leveraging Hybrid Calling, you can provide PSTN access to users' personal mode devices. (See the Deployment Guide for Hybrid Calling for Cisco Webex Devices.)	✓	
RedSky location reporting for emergency calling	To comply with Ray Baum's act, you can require users to give accurate location information when they are outside the office.	✓	✓
Self Care Portal—Call forwarding	If users need to take your work calls from another number, they can set up call forwarding right from Webex App. They just enter the call forwarding number, and their calls all ring at that number. See Forward Phone Calls and Access More Call Settings.	✓	✓
Self Care Portal—Single Number Reach (SNR)	Users can access the Self Care Portal from Webex App and add more numbers for devices they want to ring simultaneously with their enterprise directory number. See Get Work Calls at Any Number and Access More Call Settings.	✓	✓

Feature name	Description and documentation	Desktop	Mobile
Support for Cisco 500 series and 700 series (bluetooth) headsets	If users have the Cisco 700 series headset, they can use its USB adapter to answer and end calls, put calls on hold and resume them, as well as mute and unmute calls. When users use a Cisco headset with Webex App, you can now keep track of it in Webex Control Hub. This lets you track inventory and troubleshoot issues for your users. (See the deployment chapter.)	✓	
Support for Jabra headsets	See Details%20about%20Headset%20Support for supported models.	✓	
Suppress call notifications when presenting, when DND is enabled, or when you're already in a call or meeting.	Users can mute notifications for incoming calls so that they don't see or hear someone calling. If voicemail is set up, the caller can leave a message. The call still shows up in the spaces list and call history.	✓	
Switch your call from Webex to your mobile phone app	When you're on an active call in Webex and you want to take your call on the run, just switch your call from Webex to your mobile phone app. You maintain connectivity and call quality with only a short pause in your call while you make the quick switch from **More** ⋯. (See the Deployment chapter and Switch Your Call to Your Mobile Phone App.)		✓
tel, sip and clicktocall protocol	See the relevant section in this overview chapter.	✓	✓
Voicemail	No more missing calls in Webex App. Users can manage their voicemail in the Calls tab. There's a red badge counter that lets them know how many voice messages they have. They can check out the details of a message, play it, mark it as read, delete it, or call back the sender. After they listened to messages, either with Webex App or desk phone, the red badge counter disappears. See Voicemail.	✓	✓

Feature name	Description and documentation	Desktop	Mobile
Visual Voicemail	Visual voicemail—No more missing calls in Webex App. Users get a dedicated Voicemail tab to manage all their voicemails. There's a red badge counter that lets them know how many voice messages they have. They can check out the details of a message, play it, mark it as read, delete it or call back the sender. After they listened to your messages, either with Webex App or your desk phone, the red badge counter disappears. See Voicemail.	✓	

Deployment features

Table 4: Deployment features

Feature name	Description and Documentation	Desktop	Mobile
Apple and Android Push Notifications (APNs)	On iPhone, iPad, and Android devices, push notifications let the user know about incoming calls in Webex App. (See the "Prepare Your Environment" chapter.) **Note** Due to regulations in China, iPhone and iPad users no longer have the slide option to answer incoming calls when their mobile device is locked. Instead, they get an alert notification and must first unlock the screen and then tap the notification to answer the incoming calls.		✓

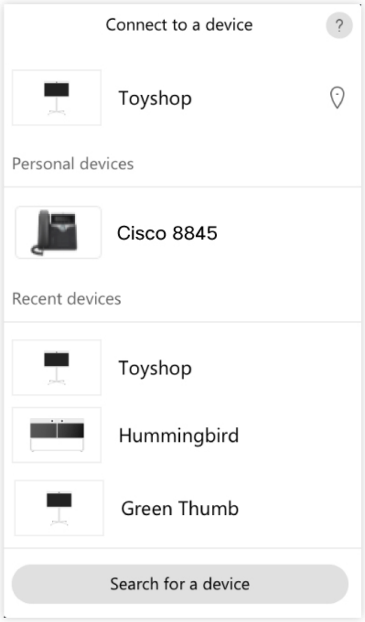
Feature name	Description and Documentation	Desktop	Mobile
Local Push Notification Service (LPNS)	This is a reliable and secure way to notify Webex users on iOS devices of incoming VoIP calls under the following operating conditions: • In a WiFi-constrained network. • No Internet connection hence cannot access Apple Push Notification Service(APNs). **Note** **1.** To get LPNS call notifications, users must grant the Local Network permission to Webex App. **2.** If both LPNS and APNs are configured on UCM, UCM will deliver the call through the LPNS channel first, if it fails, APNs will be the fallback option with the best effort. **3.** To get LPNs call notifications working properly, when the users have multiple iPhones or iPads, they must ensure the Webex app runs only on one iPhone and one iPad.		✓ iOS and iPad OS
Auto-Discovery of Service Domain	You can use Control Hub to configure a UC manager profile to add a service domain automatically to users' **Phone Services** settings in Webex App. That way, they don't need to manually enter a domain and can sign in right away. (See the deployment chapter.)	✓	✓
Configure Self Care Portal Link	You can choose the portal link for your users when they access it from the **Call Settings** in their app. (See the deployment chapter for config file steps and the appendix for related policy parameters.)	✓	✓
Customize virtual background	You can let users add up to 3 images of their own to use for virtual backgrounds. See Configure Virtual Backgrounds for Webex Users.	✓	
Customize emergency dialing disclaimer	You can customize the content of the emergency dialing disclaimer to meet regulations and business needs in various regions and situations. You can also change the frequency of the disclaimer pop-up, or hide the disclaimer if the emergency responder infrastructure is not ready. (See the customizable parameters in the Appendix.)	✓	✓

Feature name	Description and Documentation	Desktop	Mobile
Disable video for all 1:1 calls	Using Control Hub, you can disable video for calling or set the default to video off for compliance, privacy, or network purposes.	✓	✓
Expressway Mobile Remote Access (MRA) for Webex App	MRA provides a secure connection for Webex App traffic without having to connect to the corporate network over a VPN. (See the Mobile and Remote Access Through Cisco Expressway Deployment Guide.)	✓	✓
Secure and encrypted calls	Encrpyted calls are configurable from Unified CM and indicated by a lock icon 🔒 in Webex App. (See the deployment chapter.)	✓	✓
Service Discovery	Service discovery enables clients to automatically detect and locate services on your enterprise (internal) and MRA (external) network. (See the deployment chapter.)	✓	✓
Simplified call options (enable or disable and order call options)	You can set up user calling options to suit their needs. For example, they may not need to make Webex App calls and only want to call coworkers using their work number, mobile number, or SIP URI address. You can disable calls in Webex App so they don't have that option show up when they make a call. See Configure Call Settings for Your Organization.	✓	✓
SIP (URI) address routing	Configurable in Control Hub, this setting allows you to decide which SIP addresses are routed through the Webex cloud. The default is for all SIP URIs to be routed through Unified CM except for Webex services. See Configure SIP Address Routing for Your Organization.	✓	
Single Sign-On (SSO)	With SSO integration between your IdP, your premises environment, and the Webex cloud, users can sign in across applications with one set of credentials. (See the "Prepare Your Environment" chapter.)	✓	✓
Virtual cameras (macOS)	You can use Webex Control Hub to enable or disable virtual camera usage for your users' calls and meetings in the Webex app. Users can use a virtual camera, such as an application, driver, or software, to create an overlay of video, images, or feeds.	✓ (macOS only)	

More information about Desk Phone Control (DPC)

Any desk phones or Extension Mobility profiles that are associated with the user's Unified CM account are listed as an available device to connect to in Webex App for Windows or Mac. If the device is selected, Unified CM calls that are dialed from or answered in Webex App use that desk phone. Users can start or stop the call, enter DTMF input (which the phone acknowledges), and use the midcall features that are documented in the preceding feature table. Users can also join meetings from Webex App in desk phone control mode.

Note Webex App does not support Extension Mobility.



Users can access the description of your desk phone right from their desktop app and personalize that description to something that makes sense. They can hover over the phone description and then click ✎ to change the name. If you assigned more than one desk phone to users, customizing each description can be helpful.

Calling experience with Webex App for users

Call comparison

This table lists what types of Webex App calls go through Unified CM and types of Webex App calls or meetings that do not go through Unified CM (and instead go "over the top" as calls to cloud microservices).

Table 5: Comparison of calls through Unified CM and calls/meetings through the cloud

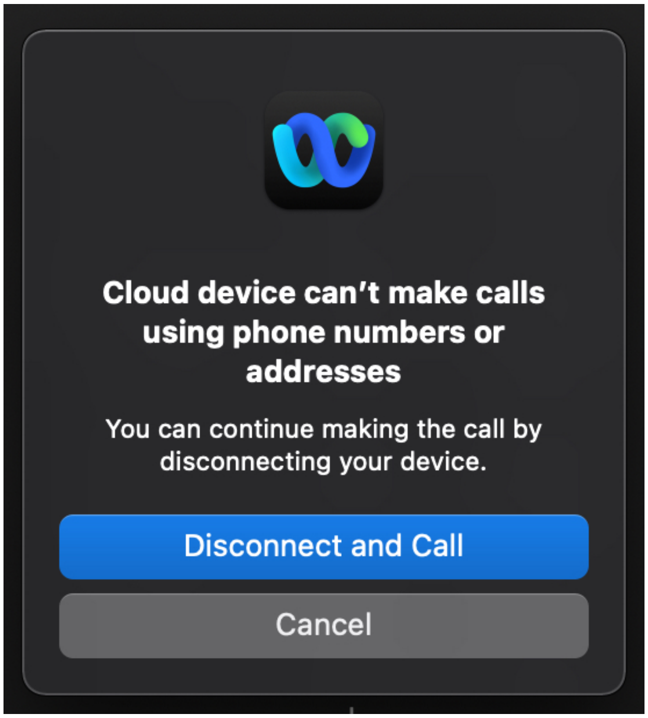
Calls through Unified CM environment	Calls and meetings through Webex cloud
Calls initiated directly from a 1:1 space or from a contact card in the Webex App	Ad hoc meetings from a group space in the Webex App
Search and then call a user in the Webex App	Using the Join button in the Webex App to join an ad hoc or scheduled meeting
Dialing directory numbers or PSTN numbers from Call ☎ in the Webex App	Dialing premises Directory URIs from Call ☎ in the Webex App. (Depends on the Unified CM SIP Address Routing setting in Control Hub.)

Calls through Unified CM environment	Calls and meetings through Webex cloud
Desk phone control (DPC) calls (outgoing: dial a directory or PSTN number in the Webex App, take the call on the Unified CM device; incoming: answer the call in Webex App, take the call on the device).	Joining a meeting while paired through Room, Desk, or Board devices
	1:1 calls that are placed directly in the Webex App to a free user in the consumer organization, to a user in another organization, or to a user in the same organization who doesn't have a directory number. (Numbers are not shared across organizations, so don't appear in contact cards.) These are classified as a Call on Webex App.

User experience

For users who are paired to a cloud-registered Room, Desk, or Board device:

- Unified CM registration in the Webex App stays active.
- Incoming calls to a user's directory number are presented in Webex App and, when accepted, calls are answered on the desktop app and do not use the paired Room, Desk, or Board device.
- If the Webex device is configured in Control Hub as a Workspace that is enabled for Hybrid Calling, the user can dial from Webex App and the call then starts on the Webex device using that device's directory number as the caller ID on the receiving end. A user cannot answer an incoming call to a paired device.
- If the Webex device is not in a Workspace that's enabled for Hybrid Calling, the directory number or PSTN dialing fails and an error message is presented in the user's Webex App.



Cloud device can’t make calls using phone numbers or addresses

You can continue making the call by disconnecting your device.

For users who are in desk phone control mode in Webex App:

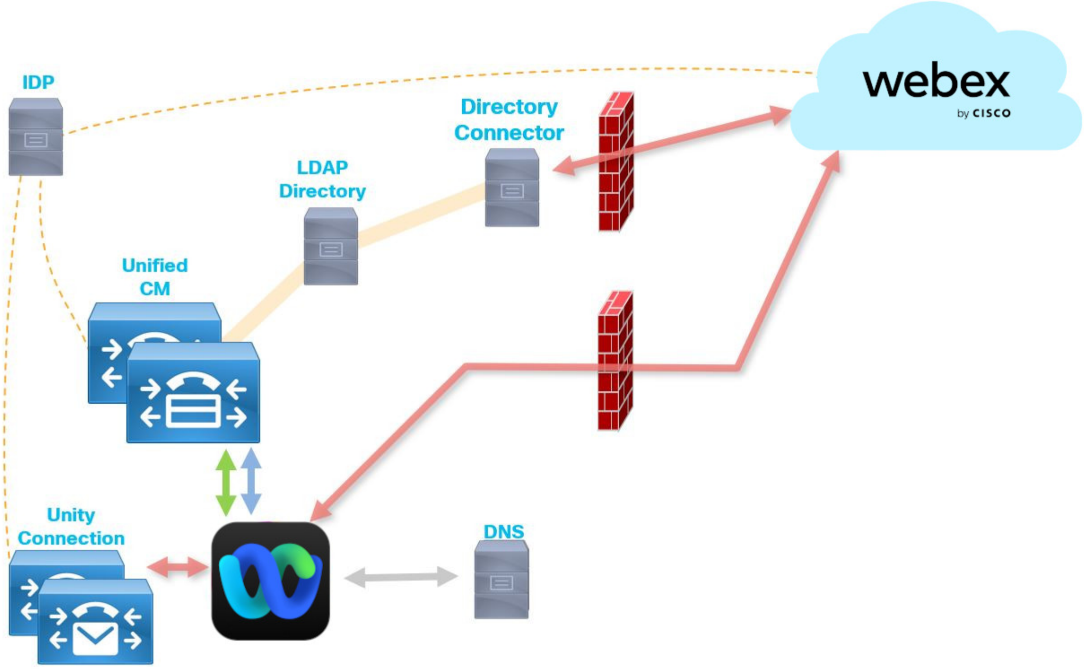
- Media (audio and video) for 1:1 calls to users with contact cards and calls that are started from the search or dial view go through the on-premises desk phone.
- Media (audio and video) for group space meetings, Webex meetings (scheduled or ad-hoc), and calls to users without contact cards go through the on-premises desk phone.

For scenarios involving a call going to voicemail:

- Incoming calls that don't go through Unified CM do not roll over to voicemail and continue to ring until the user answers or declines.
- Incoming calls that go through Unified CM (for example, to a user's corporate directory number) roll over to voicemail.

Architecture

On network

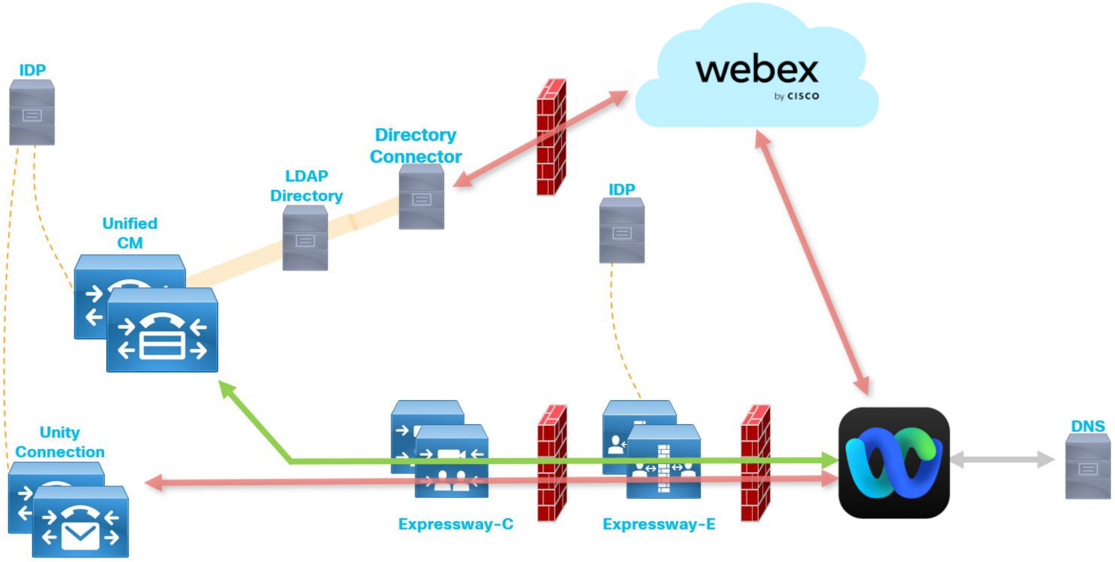


This architecture diagram represents Webex integrated with a Unified CM calling environment that is inside the corporate network.

Table 6: Legend

Icon	Protocol	Purpose
↔	HTTPS	Webex cloud services, Visual Voicemail
↔	SIP	Softphone Mode
↔	CTI/QBE	Deskphone Control
↔	LDAP	Directory
↔	DNS	Service Discovery
┄┄┄	SP Agreement	Single Sign-On (SSO) Agreement

Remote



This architecture diagram represents Webex integrated with a Unified CM calling environment. The environment also contains Expressway pair that is deployed for Mobile and Remote Access (MRA) for remote users.

Table 7: Legend

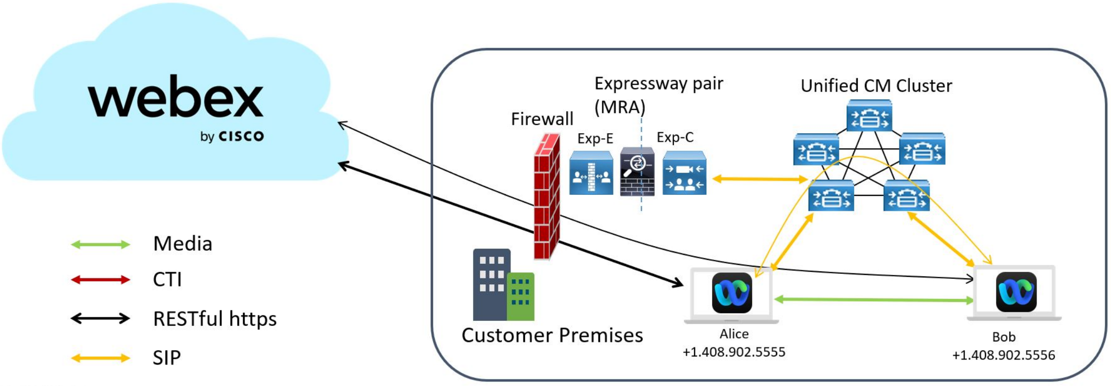
Icon	Protocol	Purpose
↔	HTTPS	Webex cloud services, Visual Voicemail

Icon	Protocol	Purpose
⟷	SIP	Softphone Mode
⟷	LDAP	Directory
⟷	DNS	Service Discovery
- - - - - - - - -	SP Agreement	Single Sign-On (SSO) Agreement

Call flows for Calling in Webex App (Unified CM)

Unified CM call answered on Webex App

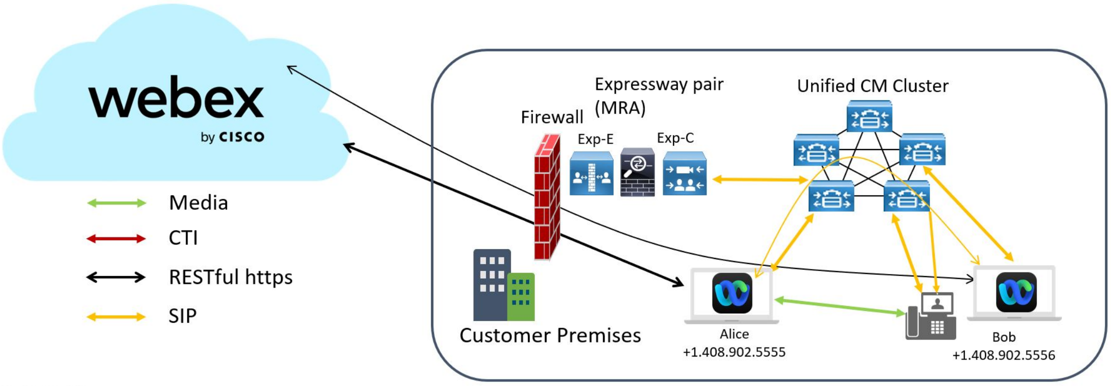
Figure 1: Call between two users on Unified CM, call answered on Webex App



1. Using Webex App, Alice calls Bob's directory number from the contact card in their 1:1 space.
2. The call rings on Bob's Webex App.
3. Bob answers the call in the Webex App. Call signaling is established through Unified CM.
4. Both parties can turn on video and share content. (Video is on by default if a camera is present.)

Unified CM incoming call answered on desk phone

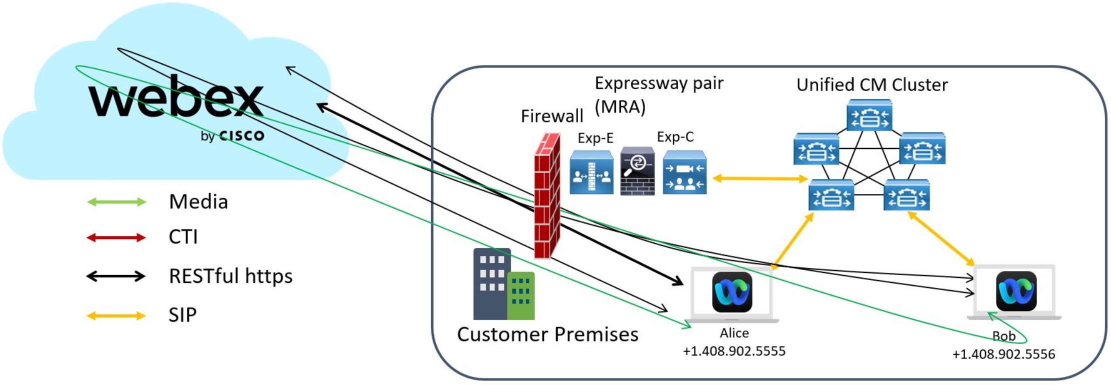
Figure 2: Call between two users on Unified CM, call answered on desk phone



1. From her Webex App, Alice calls Bob's directory number from their Webex App 1:1 space. (Bob's directory number is available on his contact card in the app.)
2. Call signaling is established through Unified CM. The call rings on both Bob’s desk phone and his Webex App.
3. Bob answers on his desk phone. Media flows directly between Alice's Webex App and Bob’s desk phone.
4. Both parties can turn on video and share content. (Video is on by default if a camera is present on the Webex App desktop device.)

Call on Webex App to a user with no directory number

Figure 3: Call between user on Unified CM and a user with no directory number, call answered on Webex App

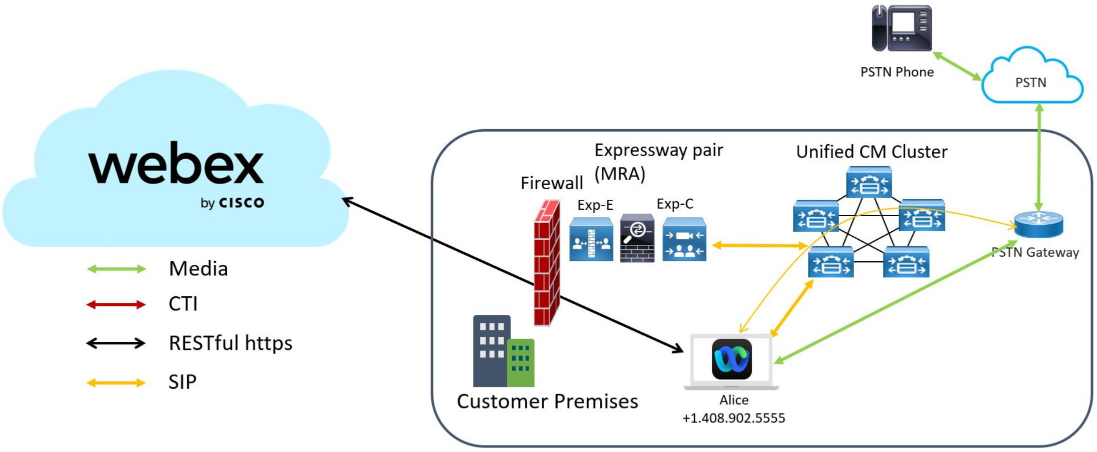


1. Using Webex App, Alice calls Bob's Webex App from their 1:1 space. (Bob's directory number is not available on his contact card in the app.)
2. Bob answers the call on Webex App.

3. The call is established between the two Webex App users as a call on Webex App. Media flows between the two Webex App instances over the cloud or through an on-premises Video Mesh Node if deployed.

Unified CM call in Webex App to PSTN number

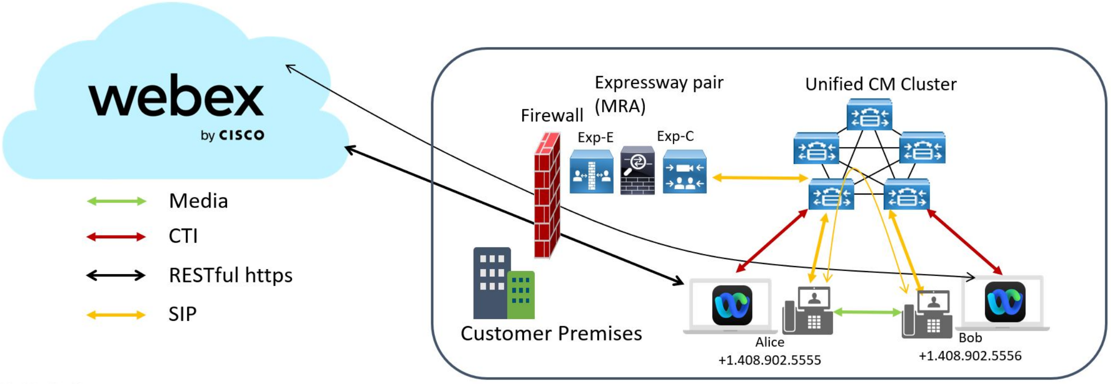
Figure 4: Call from user on Unified CM to PSTN number



1. Alice calls a PSTN number from Webex App using the Call ☎ tab.
2. Call signaling is established through the Unified CM to the PSTN gateway.
3. Media flows directly between Webex App and the PSTN gateway.

Unified CM call in desk phone control mode

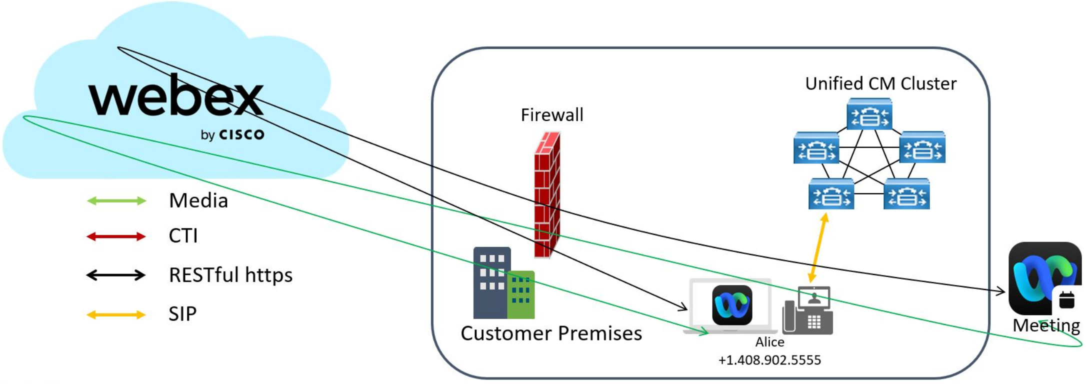
Figure 5: Call between two users with Unified CM. Call is answered on Webex App in deskphone control mode



1. Using Webex App, Alice (in desk phone control mode) calls Bob's directory number from their Webex App 1:1 space. (Bob's directory number is available on his contact card in the app.)
2. The call goes through her desk phone. Call signaling is established through Unified CM.

3. Bob's desk phone rings and he gets a notification on Webex App.
4. Bob answers the call in Webex App in desk phone control mode. Media flows directly between the two desk phones.

Meeting join in desk phone control mode



1. Using the Webex App, Alice (while in desk phone control mode) joins a meeting. (The meeting must be directly from a space and take place only in the Webex App. Full Featured Meetings are not supported.)
2. In desk phone control mode, the media is established between the Unified CM phone and the meeting over the cloud. Media flows between the two over the cloud or through a Video Mesh Node if deployed.

CHAPTER 2

Prepare your environment for Calling in Webex App (Unified CM)

Call control environment requirements

To enable Calling in Webex App (Unified CM), you must use one of the supported Unified CM-based Cisco call control solutions, and ensure that you're on the minimum supported version or later.

Table 8: Supported Unified CM releases

Call solution	Version
Cisco Unified Communications Manager*	**Minimum** **Desktop and mobile (Android)** • Unified CM Release 11.5(1) SU3 and later for desktop. • While not mandatory, this minimum also release supports Firebase Cloud Messaging (FCM) push notifications on Android. **Desktop and mobile (iOS)** • For an 11.5 release, Unified CM Release 11.5(1) SU8 or a later SU is required minimum for Apple Push Notification (APN) service on iOS mobile devices. (This release is not supported in China. See below.) • For a 12.5 release, Unified CM Release 12.5(1) SU3 or a later SU is required for iOS APN support. **Secure calls (SIP Oauth)** • Unified CM Release 12.5(1) and later **Note** CAPF is not supported. **Recommended** **Desktop and mobile** • Unified CM Release 12.5(1) SU3 or later.** This recommended release ensures that push notifications work for all mobile platforms in your environment and that secure calling is supported. See Push Notifications, on page 50 for more information. **Note** If your organization is based in China, you must use this version at a minimum. • If you use Mobile Remote Access (MRA) and want to configure MRA failover, Unified CM Release 14.0 or later is required. **SSO Redirect URI** This enhancement has specific Unified CM and Expressway requirements. See the SSO Redirect URI section in Recommended Configuration for more information.
Cisco Business Edition	Check the software load summary documentation for BE6K and BE7K to ensure the solution is running a supported version of Unified CM.

Call solution	Version
Cisco Hosted Collaboration Solution	11.5 and later at a minimum. 12.5 and later is recommended for SIP Oath encrypted calls support. (CAPF is not supported.)
Cisco Unified Communications Manager Cloud	—

* For voicemail integration in Webex App, we recommend that the Cisco Unity Connection version match the Unified CM version. However, make sure the authentication method and credentials are the same across both servers.

** In alignment with Apple's changes to the iOS notification architecture, Cisco Webex App is implementing Apple Push Notification support for notifications. We highly recommend that customers upgrade Cisco Unified Communications Manager, Cisco Expressway, and Cisco Webex App as soon as possible. Failure to upgrade on time will result in loss of voice notification for Cisco Webex App users using Unified Communications Manager and IM notifications for Cisco Webex App iOS users. For up to date support information that is related to Push Notifications with iOS 13, including upgrade requirements, refer to Apple Push Notification Service Updates.

While not required, if you want Mobile and Remote Access (MRA) support (so Webex App can be used in softphone mode outside the corporate network), you must use a Cisco Expressway traversal pair, and ensure that you're on the minimum supported version or later.

Table 9: Supported Expressway releases

Call solution	Version
Cisco Expressway E and C traversal pair for Mobile and Remote Access (MRA)	X8.11.4 or later is required for Calling in Webex App (Unified CM). See the "Important Information" section in the Expressway Release Notes for more information. This release and later provide added security. X12.6 or later for Push Notifications. If you use Mobile Remote Access (MRA) and want to configure MRA failover, Expressway Release X14.0 or later is required. See the Mobile and Remote Access via Expressway Deployment Guide for more information.

Unified CM feature requirements

Many Unified CM features are automatically available in Webex App after you configure your environment. However, certain features need to be preconfigured in Unified CM for them to work in Webex App.

Auto answer with tone on connect

You can configure auto answer on a directory number that is assigned to the user. See the *System Configuration Guide for Cisco Unified Communications Manager* for your release at https://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-installation-and-configuration-guides-list.html and see the Cisco Unified CM Administration online help for more information about the Auto Answer setting.

For an agent on Webex to hear a tone before the call connects, choose **True** for the **Tone on connect** Cisco CallManager service parameter. This parameter determines whether a tone plays to indicate that media starts to stream. The valid values for this parameter are True, which plays a tone, or False, which does not play a tone, and the default is False. This Global Parameter affects all the users in the cluster.

Call Park

The Call Park feature allows you to place a call on hold so that can be retrieved from another phone or soft client in the Unified Communications Manager system (for example, a phone in another office or the Webex app). If you are on an active call, you can park the call to a call park extension by clicking Park in Webex. Another phone or soft client in your system can then dial the call park extension to retrieve the call.

For more information about call park configuration, see “Call Park and Directed Call Park” in the *Feature Configuration Guide for Cisco Unified Communications Manager* for your release at https://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-installation-and-configuration-guides-list.html.

Call Recording

Call Recording enables a recording server to archive agent conversations. Webex App supports this feature for Unified CM-based deployments.

Some releases of Unified CM require a device package to enable recording capabilities. To confirm, verify that the **Built In Bridge** field is available in the **Phone Configuration** window for the device. If the field isn’t available, download and apply the most recent device packages.

For detailed information about how to configure call recording, see the “Recording” chapter in the *Feature Configuration Guide for Cisco Unified Communications Manager*.

For configuration parameters that you can configure in the Jabber Config XML file or client configuration service, see the Feature Parameters table in the Appendix in this guide.

Dial Plan Mapping

You configure dial plan mapping to ensure that dialing rules on Cisco Unified Communications Manager match dialing rules on your directory.

Application Dial Rules

Application dial rules automatically add or remove digits in phone numbers that users dial. Application dialing rules manipulate numbers that users dial from the client.

For example, you can configure a dial rule that automatically adds the digit 9 to the start of a 7 digit phone number to provide access to outside lines.

Directory Lookup Dial Rules

Directory lookup dial rules transform caller ID numbers into numbers that the client can lookup in the directory. Each directory lookup rule you define specifies which numbers to transform based on the initial digits and the length of the number.

For example, you can create a directory lookup rule that automatically removes the area code and two-digit prefix digits from 10-digit phone numbers. An example of this type of rule is to transform `4089023139` into `23139`.

Dial Via Office Reverse

The Dial via Office (DvO) feature allows users to initiate Webex App outgoing calls with their work number using the mobile voice network for the device.

Webex App supports DvO-R (DvO-Reverse) calls, which work as follows:

1. User initiates a DvO-R call.
2. The client notifies Cisco Unified Communications Manager to call the mobile phone number.
3. Cisco Unified Communications Manager calls and connects to the mobile phone number.
4. Cisco Unified Communications Manager calls and connects to the number that the user dialed.
5. Cisco Unified Communications Manager connects the two segments.
6. The user and the called party continue as with an ordinary call.

Note The users do not receive incoming calls on Webex App in the following situations:

- If users select the **Mobile Voice Network** calling option on any network and the Single Number Reach (SNR) is not configured for their device, they will not receive incoming calls on Webex App.
- If users select the **Mobile Voice Network** calling option on any network and the Single Number Reach (SNR) is configured with the **Ring Schedule**, they will not receive incoming calls on Webex App beyond the time set in the **Ring Schedule**.

The following table describes the calling methods used for incoming and outgoing calls. The calling method (VoIP, DvO-R, or cellular call) varies depending on the selected Calling Options and the network connection.

Table 10: Calling Methods used with Calling Options over Different Network Connections

Connection	Calling Options					
	Voice over IP		Mobile Voice Network		Autoselect	
Wi-Fi	Outgoing: VoIP	Incoming: VoIP	Outgoing: DvO-R	Incoming: VoIP	Outgoing: VoIP	Incoming: VoIP
Mobile Network (3G, 4G, 5G)					Outgoing: DvO-R	Incoming: VoIP

To set up DvO-R, follow the steps in Configuring Dial via Office-Reverse to Work with Mobile and Remote Access.

Extend and Connect

The Extend and Connect feature allows administrators to deploy Unified Communications Manager (UC) Computer Telephony Integration (CTI) applications that interoperate with any endpoint. With Extend and Connect, users can access UC applications from any location using any device.

Note Users can only add and edit numbers for existing devices. You must configure at least one device for users. If no device exists, then even if this feature is enabled, users won't see it as an option in Webex App.

See Configure Extend and Connect for more information.

Move call to mobile

Users can transfer an active VoIP call from the Webex App to their mobile phone number on the mobile network. This feature is useful when a user on a call leaves the Wi-Fi network (for example, leaving the building to walk out to the car), or if there are voice quality issues over the Wi-Fi network.

Before you begin

Set up a mobile identity for users.

Step 1 From Cisco Unified CM Administration, go to **Devices** > **Phone**, and then search for the user's Webex App for mobile (TCT or BOT) device.

Step 2 For **Mobility User ID**, choose the user's ID (typically the same as the **Owner User ID**.

Step 3 Choose the **Associated mobile identity** that you configured.

Step 4 For **Transfer to Mobile Network**, choose **Use Mobility Softkey (user receives call)**

When this setting is configured, Unified CM calls the phone number of the PSTN mobile service provider for the mobile device.

Step 5 Save your changes, then go to **User Management** > **End User** and locate any user accounts you want to add this feature to.

Step 6 Check the following settings:

- **Enable Mobility**
- **Enable Mobile Voice Access**

Step 7 Save your changes.

What to do next

Users can change the Destination in the Self Care Portal:

1. In the Webex App settings, go to **Calling** > **Advanced Call Settings**.
2. On the Self Care Portal page, select your mobile device.
3. Click **Edit Single Number Reach**, change the entry for **Phone Number or URI**, and then click **Save**.

Multiline

You can configure multiple phone lines for your users to perform daily Webex App tasks. You can add up to 8 phone lines for each user. You can configure multiline for your users on the Cisco Services Framework (CSF) device for desktop clients.

Multiline is supported on Cisco Unified Communications Manager release 11.5 SU3 and later. However, if you are using Cisco Unified Communications Manager release 11.5 SU3 or Cisco Unified Communications Manager release 12.0, you must manually install the Cisco Options Package (COP) file on all cluster nodes and restart Cisco Unified Communications Manager to enable multiline.

To configure multiline, use the steps in Add a directory number to the device, on page 82 to add multiple lines to a device and then associate the device to users.

Note Multiline is supported when using Webex App for desktop in Mobile and Remote Access (MRA) mode. This function can be enabled on the Expressway-C in the traversal pair (**Unified Communication** > **Configuration** > **SIP Path headers** and set it to **On**).

You can also configure the `RemoteInUsePresencePrimaryLineOnly` parameter if you want to modify the presence for shared line scenarios. See Policy parameters, on page 109 for more information.

Note This parameter is not a selectable preset in Unified CM. You must add it as a customer parameter under policies.

After you have installed and configured Multiline, your users can:

- Select a preferred line for making calls.
- View missed calls and voicemails.
- Use call forwarding, transfers, and conference calls on all lines.
- Assign custom ringtones to each line.

Multiline supports the following features on all lines:

- CTI control for the desk phone
- Hunt groups
- Shared line, dial rules, and directory lookup
- Accessory manager

If Multiline is enabled, these features are only available on the primary line:

- Call pickup
- Extend & Connect

Multi call window

The multi call window is a separate, floating window that helps Webex App users to manage multiple or shared lines. As well as making and receiving calls on multiple or shared lines, users can see the status of all lines, and they also have better access to features like hold, transfer, and barge, without changing to another window.

Configure the following features on Unified CM to give users the maximum benefit from the multi call window:

- Multiline
- Voicemail
- Barge
- Privacy
- Message waiting indicator (MWI)

Read these articles:

- Configure multi call window for Calling in Webex App (Unified CM)
- Webex App | Manage all your phone calls in one place

Push Notifications

When your cluster is enabled for Push Notifications, Cisco Unified Communications Manager use either the Apple or Google cloud’s Push Notification service to send push notifications to compatible Webex clients that run on iOS (Apple Push Notifications or APNs) or Android (Firebase Cloud Messaging or FCM) devices. Push Notifications let your system communicate with the client, even after it has entered into background mode (also known as suspended mode). Without Push Notifications, the system may not be able to send calls to clients that have entered into background mode.

For more information about how to configure Apple and Android push notifications (APNs), see Push Notifications (On-Premises Deployments) in the *Push Notifications Deployment Guide*.

Location reporting for emergency calling

To comply with Ray Baum's act, in the US, you can require users to give accurate location information when they are outside the office.

If the Webex App determines users moved to a new location, they are prompted to update their address. When users make an emergency call from Webex App, accurate location information is automatically sent through a National E911 Service Provider to the public-safety answering point (PSAP), which is the local emergency call center that responds to emergency calls. This way, first responders have the necessary information needed to pinpoint the "dispatchable location" and quickly reach an emergency caller regardless of the device they dial from, or their exact location inside a large building.

Note This feature is limited to Windows, Mac, Linux, VDI, iPad, Android Tablet and Chromebook.

For mobile soft phone device with cellular, Webex App cross-launches the built-in phone app to make the emergency call.

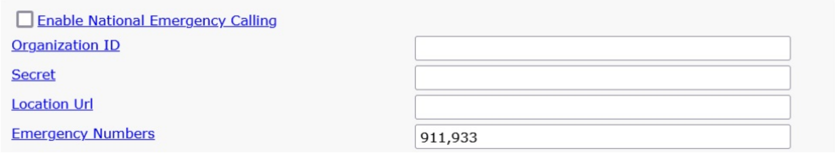
Users on MacOS Monterey need to grant network permission to Webex App, so that Webex can report the BSSID to Redsky. If BSSID cannot be reported automatically, each user must manually add their locations in the Webex App.

If you're environment uses Unified CM 12.5 or earlier, you must upgrade to the supported server version:

Customer type	Required components and supported versions
Unified CM on-premises	Unified CM 12.5SU6 Cisco Emergency Responder 12.5SU6 Cisco Expressway X14.1
Unified CM Cloud	Unified CM 12.5SU5a Cisco Emergency Responder 12.5SU5a Cisco Expressway X14.0.4

RedSky-related configuration goes through the Unified CM service profile powered by the UDS interface.

- `<EnableEmergencyCalling>`(Yes/No)
- `<OrganizationId>`
- `<Secret>`
- `<LocationUrl>`
- `<EmergencyNumbers>`



☐ Enable National Emergency Calling

Organization ID	
Secret	
Location Url	
Emergency Numbers	911,933

If you're using Unified CM 14 or later, your users must install the Redsky MyE911 app and report location from there. If you're using CER to report the on-premises wireless location, you can keep CER and use the RedSky solution to only track off-premises location.

Note Webex App for Linux doesn't support CER. You must deploy RedSky to report both on-premises and off-premises location for emergency calling.

For mobile soft phone devices (TCT/BOT), you must provision the emergency number (such as 911) in your Unified CM server, so that Webex App launches the built in phone app to make the emergency call. See "Create and Configure Webex Softphone Devices" in the deployment chapter.

Further documentation

Configuring Emergency Responder with a National E911 Service Provider

Cisco Emergency Responder integrates with National E911 Service Provider like RedSky or Intrado for automated Location update, MSAG (Master Street Address Guide) for a User input location and Call Completion. Emergency Responder automatically finds and tracks the dispatchable locations of all your devices as they move throughout the enterprise so you can comply with E911 regulations.

https://www.cisco.com/c/dam/td-xml/en_us/voice-ip-comm/ucm_cloud/WebexCallingDI_Islands/National_E911_for_DedicatedInstance.pdf

Configuring Unified Communications Manager for Nomadic E911 Support

Nomadic E911 enables administrators to address the requirements of RAY BAUM'S Act by letting users update their location natively in Webex App.

https://www.cisco.com/c/dam/td-xml/en_us/voice-ip-comm/ucm_cloud/WebexCallingDI_Islands/National_E911_WebexApp_AdminGuide.pdf

Survivable Remote Site Telephony (SRST)

Cisco Unified Survivable Remote Site Telephony (SRST) provides Unified CM with fallback support for Webex App users. Cisco Unified SRST enables routers to provide call-handling support for Webex App users when they lose connection to remote primary, secondary, or tertiary Cisco Unified CM installations or when the WAN connection is down.

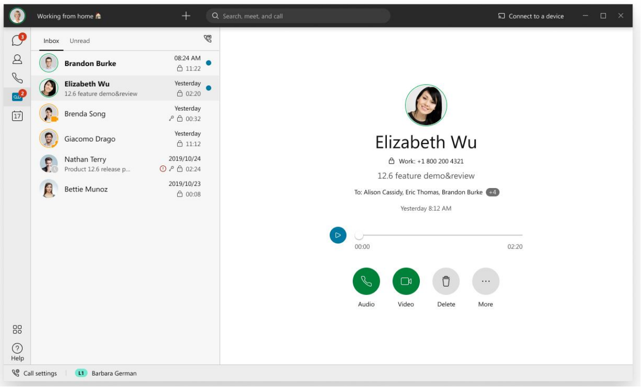
For more information about this feature, see “Configure SRST” in the System Configuration Guide for your Unified CM release and see the Cisco Unified SCCP and SIP SRST System Administrator Guide (All Versions) for IOS configuration, feature support, and restrictions.

Voicemail

For voicemail to work in Webex App, you must ensure that Cisco Unity Connection and Unified CM use a matching authentication method (for example, legacy SSO, oAuth SSO, or non-SSO). When integrated with Unified CM, Cisco Unity Connection (the voicemail and messaging system) provides voice-messaging features for users that you configure manually, through AXL services, or through LDAP integration. After receiving voice messages in their mailboxes, users receive message-waiting lights on their phones and integrated applications—in this case, Webex App.

Note For server performance considerations, don't use Visual Voicemail with both Jabber and Webex App at the same time.

Users get a visual voicemail inbox in Webex App. They can play messages, delete messages, mark as read, and respond with an audio or video call:



Users can also click Call Voicemail ☎, which accesses the voicemail system with an internal or external call. Users can then retrieve, listen to, reply to, forward, and delete their messages. For more information about this feature for your users, see the Webex App Voicemail documentation.

Note Voicemail always uses Unified CM end user credentials. These credentials and the voicemail credentials on Unity Connection must be consistent—either set up both with single sign-on (SSO) or with non-SSO credentials, so that the sign in experience is the same. See Recommended configuration, on page 62 for more information.

For information about setting up Cisco Unity Connection and integrated it with your Unified CM environment, see the following documentation:

- *Cisco Unified Communications Manager SIP Integration Guide for Cisco Unity Connection* for your release at https://www.cisco.com/c/en/us/support/unified-communications/unity-connection/products-installation-and-configuration-guides-list.html
- “Managing the Phone System Integrations in Cisco Unity Connection” in the *System Administration Guide for Cisco Unity Connection* for your release at https://www.cisco.com/c/en/us/support/unified-communications/unity-connection/products-maintenance-guides-list.html.

Wi-Fi to LTE Call Network Handoff

Wi-Fi to LTE Call Handoff provides flexibility for Calling in Webex App (Unified CM) users to switch between different networks (such as Wi-Fi and LTE) without disconnecting any active calls that the user may be while switching network.

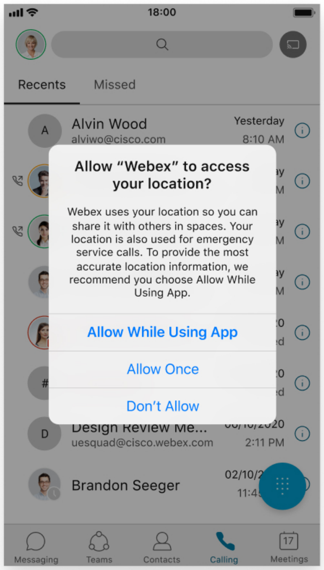
This feature is automatically enabled for desktop and mobile users. Your calling environment must be on Unified CM 14 and later. See the Unified CM release notes for more information.

For known issues and limitations for this feature, see the known issues in the deployment chapter.

Wireless Location Monitoring Service

Webex App supports wireless access point (AP) location monitoring. Wireless location monitoring service allows you to determine the physical location from where your Webex App users connect to the corporate network. This information is stored in Cisco Unified Communications Manager.

This feature is supported with on-premises and Mobile and Remote Access (MRA) Edge wireless connections.



Allow “Webex” to access your location?

Webex uses your location so you can share it with others in spaces. Your location is also used for emergency service calls. To provide the most accurate location information, we recommend you choose Allow While Using App.

Webex App monitors your users’ locations, gathers Service Set ID (SSID) and Basic Service Set ID (BSSID) information, and sends this information to Unified CM at least every 24 hours (desktop only), or whenever:

- Their current access point changes.
- They sign in to Webex App.
- They switch between networks for on-premises and Expressway for MRA.
- Webex App resumes from sleep or is made active.

Note If Webex App for mobile gets suspended, it may not send the location every 24 hours.

- **For on-premises deployments**, configure wireless location monitoring using `EnableE911OnPremLocationPolicy` parameter with the value true.
- **For Expressway for MRA deployments**—you can configure wireless location monitoring using the `EnableE911EdgeLocationPolicy` with the value true and `E911EdgeLocationWhiteList` with a list of up to 30 SSIDs, separated by a semicolon.

For more details on these parameters, see the Appendix in this guide.

For more information about how to configure Cisco Emergency Responder (CER), see the *Cisco Emergency Responder Administration Guide* for your release at https://www.cisco.com/c/en/us/support/unified-communications/emergency-responder/products-maintenance-guides-list.html.

Contact Center feature requirements

Webex App can integrate into your Cisco Contact Center solution (Unified Contact Center Enterprise or Express) and be controlled in Finesse desktop as a softphone client. This integration supports contact center features such as multiline, recording, conferencing, and more.

To see the latest supported features in the Webex App, see Contact Center integration for Webex App.

For information about how to configure your Cisco Contact Center solution, see the Feature Guide documentation for your specific product and release:

- Cisco Unified Contact Center Enterprise (UCCE)
- Cisco Unified Contact Center Express (UCCX)

Network requirements

When using Calling in Webex App (Unified CM) over your corporate Wi-Fi network, we recommend that you do the following:

- Design your Wi-Fi network to eliminate gaps in coverage as much as possible, including in areas such as elevators, stairways, and outside corridors.
- Ensure that all access points assign the same IP address to the mobile device. Calls are dropped if the IP address changes during the call.
- Ensure that all access points have the same service set identifier (SSID). Hand-off may be much slower if the SSIDs do not match.
- Ensure that all access points broadcast their SSID. If the access points do not broadcast their SSID, the mobile device may prompt the user to join another Wi-Fi network, which interrupts the call.
- Ensure that the Enterprise firewall is configured to allow the passage of Session Traversal Utilities for NAT (STUN) packets.

Conduct a thorough site survey to minimize network problems that could affect voice quality. We recommend that you do the following:

- Verify nonoverlapping channel configurations, access point coverage, and required data and traffic rates.
- Eliminate rogue access points.
- Identify and mitigate the impact of potential interference sources.

For more information, see the following documentation:

- The “VoWLAN Design Recommendations” section in the *Enterprise Mobility Design Guide*.
- The *Cisco Unified Wireless IP Phone 7925G Deployment Guide*.
- The *Capacity Coverage & Deployment Considerations for IEEE 802.11g* white paper.
- The *Solutions Reference Network Design (SRND)* for your Cisco Unified Communications Manager release.

Ports and protocols

Calling in Webex App (Unified CM) uses the ports and protocols listed in the following table. If you plan to deploy a firewall between the client and a server, configure the firewall to allow these ports and protocols.

Port	Application layer protocol	Transport layer protocol	Description
Configuration			
6970	HTTP	TCP	Connect to the TFTP server to download client configuration files.
6972	HTTPS	TCP	Connects to the TFTP server to download client configuration files securely for Cisco Unified Communications Manager.
8443	HTTPS	TCP	Traffic to Cisco Unified Communications Manager.
Communication Manager signaling			
2748	CTI	TCP	Computer Telephony Interface (CTI) used for desk phone control.
5060	SIP	TCP	Provides Session Initiation Protocol (SIP) call signaling.
5061	SIP over TLS	TCP	SIP over TLS provides secure SIP call signaling. (Used if Secure SIP is enabled for device.)
5070 to 6070	BFCP	UDP	Binary Floor Control Protocol (BFCP) for video screen sharing capabilities.
Voice or video media exchange			
16384 to 32766	RTP/SRTP	UDP	Cisco Unified Communications Manager media port range used for audio, video, and BFCP video desktop share.
33434 to 33598	RTP/SRTP	UDP	Cisco Webex Hybrid Services media port range used for audio and video.
8000	RTP/SRTP	TCP	Allows users to receive video transmitted to their desk phone devices on their computers through the client.

Supported codecs

Type	Codec	Codec type	Webex App for Android	Webex App for iPhone and iPad	Webex App for Mac	Webex App for Windows
Audio	G.711	A-law	Yes		Yes	Yes
		µ-law/Mu-law	Yes		Yes	Yes
	G.722		Yes		Yes	Yes
	G.722.1	24 kb/s and 32 kb/s	Yes		Yes	Yes
	G.729		No		No	No
	G.729a		Yes		Yes	Yes
	Opus		Yes		Yes	Yes
Video	H.264/AVC	Baseline profile	Yes		Yes	Yes
		High profile	No		Yes	Yes

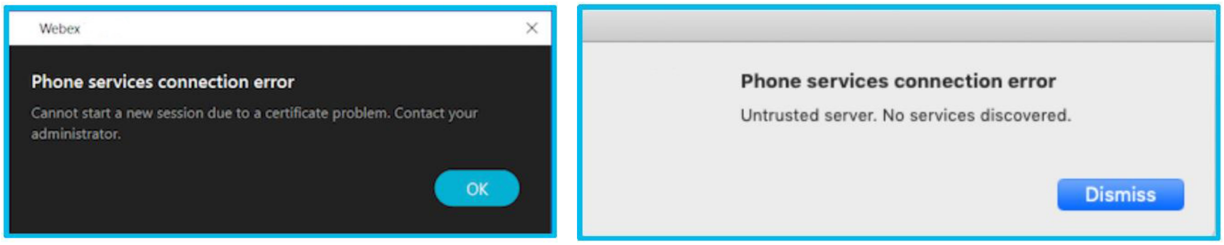
Certificate requirements

Unified CM certificates (no MRA in deployment)

To establish a secure connection with Unified CM, Webex App validates the certificate that is presented by the server during the connection process. Unlike Jabber, Webex App does not prompt users with the option to accept an untrusted certificate.

Unified CM must be configured with certificates that Webex App can validate, preferably a CA root that signed the tomcat certificate (which is known to the operating system that Webex App is on, Windows or MacOS by default). or a self-signed trusted certificate (which must be deployed to the OS in advance by the enterprise administrator).

Table 11: Phone services error when certificate is untrusted (Webex App for Windows and Mac)



Phone services connection error

Cannot start a new session due to a certificate problem. Contact your administrator.

Phone services connection error

Untrusted server. No services discovered.

Note The Tomcat certificate is also used for secure SIP when Webex App is enabled for encrypted calls (SIP Oauth operates on the default port 5090). See “Configure the Phone Security Profile for Encrypted Calls” in this guide for more details.

Certificates issued with a deprecated signature algorithm (such as SHA-1) do not work; you must use a supported secure signature algorithm such as SHA-256 or later, as documented in the Certificates chapter in the *Administration Guide for Cisco Unified Communications Manager*.

Note The certificates that are deployed on Unified CM servers must include the fully qualified domain name (FQDN) as the server identity rather than a simple hostname or IP address (for example, **`cucm-server-1.example.com`** rather than `cucm-server-1` or 203.0.113.1).

In **Cisco Unified CM Administration** > **System** > **Server**, the Unified CM server names must be defined as FQDN.

See High Level View of Certificates and Authorities in CUCM and CUCM Certificate Management and Change Notification for information about certificate management in Unified CM.

Unified CM certificates (with MRA in deployment)

The Unified CM Tomcat certificate is significant for Mobile and Remote Access (MRA). This certificate is automatically installed on the Cisco Unified Communications Manager. By default, it is self-signed and has the same common name (CN).

Note The Tomcat certificate is also used for secure SIP when Webex App is enabled for encrypted calls (SIP Outh operates on the default port 5091 for MRA). See “Configure the Phone Security Profile for Encrypted Calls” in this guide for more details.

We recommend using CA-signed certificates. However, if you do use self-signed certificates, the two certificates must have different common names. The Expressway does not allow two self-signed certificates with the same CN. So if the CallManager and tomcat self-signed certificates have the same CN in the Expressway's trusted CA list, the Expressway can only trust one of them. This means that either secure HTTP or secure SIP, between Expressway-C and Cisco Unified Communications Manager, will fail.

Expressway certificates (with MRA in deployment)

Note For MRA scenarios, certificates only need to be validated on the Expressway.

The Expressway certificate signing request (CSR) tool prompts for and incorporates the relevant Subject Alternative Name (SAN) entries as appropriate for the Unified Communications features that are supported on that Expressway.

The following table shows which CSR alternative name elements apply to which Unified Communications features.

Table 12: CSR alternative name element and Mobile Remote Access (MRA)

Add these items as Subject Alternative Names (SANs)	When generating a CSR for MRA
Unified CM registrations domains (despite their name, these have more in common with service discovery domains than with Unified CM Unified CM SIP registration domains)	Required on Expressway-E only
(Clustered systems only) Expressway cluster name	Required on Expressway-C only

Note You must restart the Expressway for any new uploaded server certificate to take effect.

Expressway-E server certificate requirements

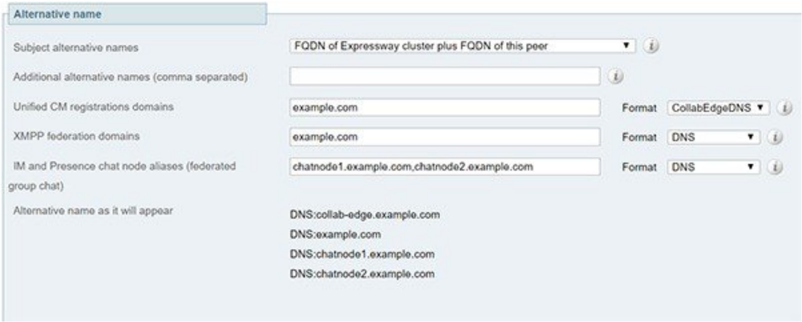
The Expressway-E server certificate needs to include the following element in its list of subject alternative names (SAN):

- **Unified CM registrations domains**: all of the domains which are configured on the Expressway-C for Unified CM registrations. Required for secure communications between endpoint devices and Expressway-E.

  The Unified CM registration domains used in the Expressway configuration and Expressway-E certificate, are used by Mobile and Remote Access clients to lookup the _collab-edge DNS SRV record during service discovery. They enable MRA registrations on Unified CM, and are primarily for service discovery.

  These service discovery domains may or may not match the SIP registration domains. It depends on the deployment, and they don't have to match. One example is a deployment that uses a .local or similar private domain with Unified CM on the internal network, and public domain names for the Expressway-E FQDN and service discovery. In this case, you need to include the public domain names in the Expressway-E certificate as SANs. There is no need to include the private domain names used on Unified CM. You only need to list the edge domain as a SAN.

  Select the DNS format and manually specify the required FQDNs. Separate the FQDNs by commas if you need multiple domains. You may select *CollabEdgeDNS* format instead, which simply adds the prefix collab-edge to the domain that you enter. This format is recommended if you do not want to include your top level domain as a SAN (see example in following screenshot).



Alternative name

Subject alternative names: FQDN of Expressway cluster plus FQDN of this peer

Additional alternative names (comma separated):

Unified CM registrations domains: example.com Format: CollabEdgeDNS

XMPP federation domains: example.com Format: DNS

IM and Presence chat node aliases (federated group chat): chatnode1.example.com,chatnode2.example.com Format: DNS

Alternative name as it will appear:
DNS:collab-edge.example.com
DNS:example.com
DNS:chatnode1.example.com
DNS:chatnode2.example.com

Requirements when migrating from Jabber to Webex App

In migration scenarios, you may encounter an issue if you're using a private CA with the Certificate Revocation List (CRL) default format (`ldap :///`) for the Expressway-E certificate.

In that deployment, after migrating from Jabber to the Webex App, Webex App on iOS devices does not register to Unified CM phone services. The registration fails because the iOS client tries to reach the CRL URL from the Internet, but the CRL format `ldap:///` is not supported by iOS clients.

Tip If you're using a private CA for issuing certificates for Expressway-E, we recommend that the Expressway-E is issued by a public CA, and then you can migrate users from Jabber to the Webex App.

If you must use certificates signed by a private CA for your Expressway-E setup (in particular, a CRL with the format `ldap:///`), follow these steps to ensure a successful migration from Jabber to the Webex App:

- Remove the CRL parameter, if any, from the private CA template.
- Reissue Expressway-E server certificates without the CRL parameter.
- Make sure certificates that the private CA signs support the following requirements for iOS:
    - Minimum key size of 2048
    - SHA-2 signature
    - Server DNS name as SAN
    - Extended key usage extension containing the id-kp-serverAuth OID
    - Validity period of 398 or fewer days
- Install the root CA file on mobile devices

Note For Apple iOS devices, you must also enable full trust for root certificates.

Headset requirements

Unified CM calling in Webex App supports the following Cisco series headsets. Click the links for more information on each model:

- 520 Series
- 530 Series
- 560 Series
- 730 Series (Bluetooth)

Some Jabra headsets are supported. See Details about headset support for more information.

Note When using a supported headset in Webex App, the headset firmware can get updated automatically. Users get a message that pops up letting them know that an update is available, and then they'll get confirmation after it's updated.

License requirements

You require a Cisco Webex organization (managed in Control Hub) with a paid subscription. User accounts must be managed in your organization but they don't require a specific license assignment to use Calling in Webex App (Unified CM).

Additionally, for softphone functionality, each Webex App registers to Unified CM as a softphone client. Like Cisco Jabber, this registration uses the Cisco Unified Client Services Framework (CSF) client for desktop and a BOT, TCT, or TAB device for mobile, and counts as a device toward Unified CM licensing. Users with three or more apps and/or devices require CUWL perpetual licensing or for the organization to be on a Flex Calling subscription.

Tip We recommend Flex Calling as the subscription channel for Calling in Webex App (Unified CM).

Webex App requirements

To ensure that Calling in Webex App (Unified CM) functions correctly and the latest features, functionality, and other fixes are continuously delivered, users must be on the latest release of the Webex App for desktop or mobile, or the latest VDI thin client.

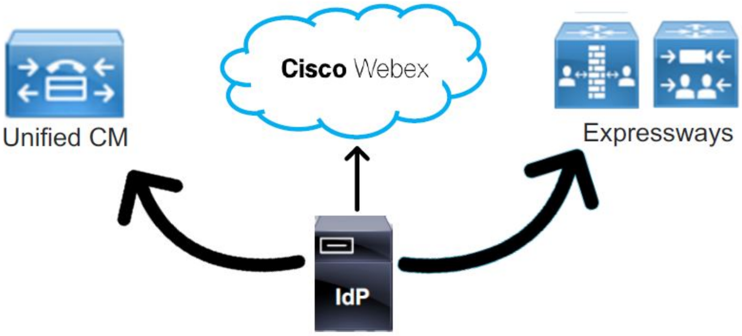
Note The Web app (web.webex.com) does not allow users to call phone numbers.

- For installation and upgrade instructions, see Installation and automatic upgrade.
- For managing the frequency of Webex App updates for users in your organization, see Product update controls for Webex App.
- Chromebooks on both ARM and x86 architecture are supported for Calling in Webex App (Unified CM). Users can also be signed into phone service on both a Chromebook and Android phone at the same time.
- For VDI deployment steps, see the Deployment guide for Virtual Desktop Infrastructure (VDI).
- For release information, see the Release notes and What's new documentation for the Webex App and the VDI release notes for Webex App for VDI.

Recommended configuration

Single sign-on (SSO) and IdP integration

- For Calling in Webex App (Unified CM), SSO is supported with Unified CM and Expressway. You must either enable or disable SSO on both. For a consistent user experience with SSO, we recommend that you extend your Identity Provider (IdP) integration to Webex App so that users can sign in with the same credentials. With Single Sign-On (SSO) integration between your IdP, your premises environment, and the Webex cloud, users can sign in across applications with one set of credentials.



- For premises Unified CM configuration, see the SAML SSO Deployment Guide for Cisco Unified Communications Applications for your release. We recommend applying this configuration to Unified CM and any Unity Connection voicemail servers in your deployment.
- For Expressway configuration, see the Mobile and Remote Access via Cisco Expressway Deployment Guide for your release.
- For cloud (Webex App) configuration, see Single Sign-On Integration with Webex Control Hub

See the following table for supported authentication types:

Table 13: Supported authentication types

Type	Windows	Mac	iOS	Android
IWA Auth with NTLM	✓	✓	✓ See the SSO Redirect URI requirements	✓
IWA Auth with Kerberos	✓			
Form-based Auth	✓	✓	✓	✓
Cert-based Auth	✓	✓	✓ See the SSO Redirect URI requirements	✓

SSO redirect URI

The Webex App supports SSO redirect URI, an enhancement to the app's embedded browser support.

This feature provides the following enhancements:

- Provides protection against "Authorization Code Interception Attack" using RFC7636.
- Allows Webex App running on an Operating Systems other than iOS to use the Embedded Browser (For example: Android).
- Allows Webex App to use the Embedded browser for Unified Communications Manager (and MRA) OAuth flow. This support prevents dual login when SSO is enabled.

Requirements

This feature requires the following minimum versions:

- Unified CM 12.5(x) releases-12.5(1) SU4 and Unified CM 14.0(x) releases-14.0(1) SU1 and later
- Expressway X14 and later
- Webex App 41.4 and later

For more information, see the following documentation:

- Expressway Release Notes
- Unified CM Release Notes

Configuration

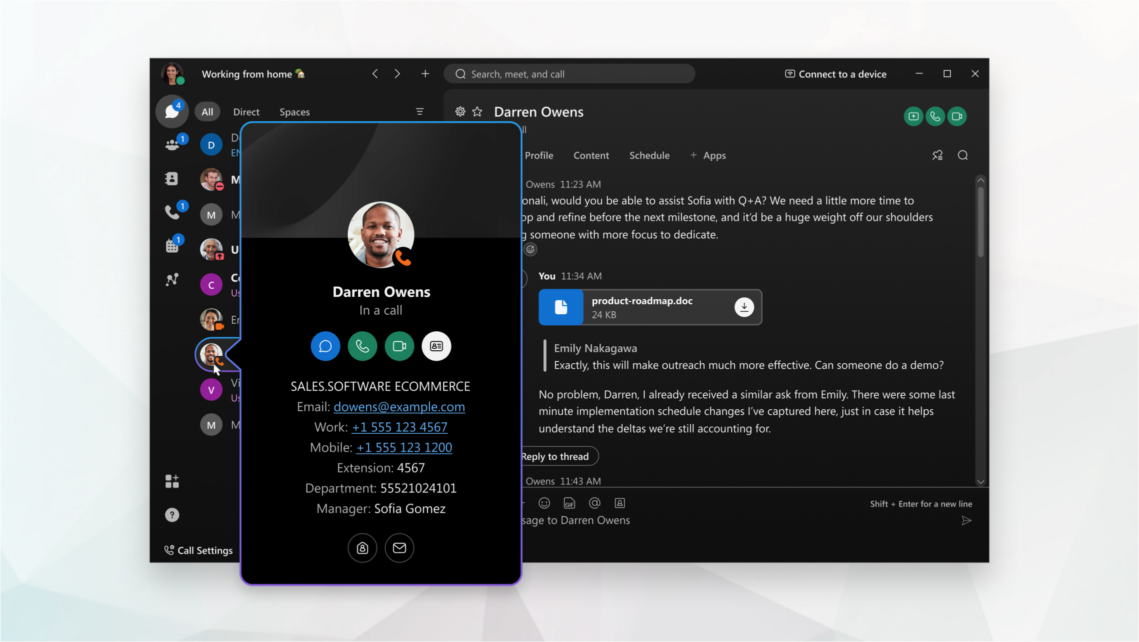
For Unified CM—No configuration is required.

For Expressway—On the Expressway-C, you must set the parameter **Webex Client Embedded Browser Support** to **Yes** to enable this feature. For more information, see Configure MRA Access Control in the *Mobile and Remote Access Through Cisco Expressway Deployment Guide (X14.0)* .

Directory synchronization and contact cards

We recommend using the Cisco Directory Connector for user synchronization from your Active Directory into Control Hub.

You can also synchronize user phone numbers. Their numbers appear in contact cards in the Webex App for Windows and Mac:



Darren Owens
In a call

SALES.SOFTWARE ECOMMERCE
Email: dowens@example.com
Work: +1 555 123 4567
Mobile: +1 555 123 1200
Extension: 4567
Department: 55521024101
Manager: Sofia Gomez

Darren Owens

Owens 11:23 AM
onali, would you be able to assist Sofia with Q+A? We need a little more time to
op and refine before the next milestone, and it'd be a huge weight off our shoulders
g someone with more focus to dedicate.

You 11:34 AM
product-roadmap.doc
24 KB

> Emily Nakagawa
> Exactly, this will make outreach much more effective. Can someone do a demo?

No problem, Darren, I already received a similar ask from Emily. There were some last minute implementation schedule changes I've captured here, just in case it helps understand the deltas we're still accounting for.

Owens 11:43 AM

Note For iOS and Android, users can access someone's contact card from a space by just tapping a profile picture. See Verify Who You're Contacting for more information.

For the numbers to appear, you must deploy Cisco Directory Connector to synchronize the numbers from an existing Active Directory attribute into the cloud. See the attribute mapping information in the *Deployment Guide for Cisco Directory Connector* at https://www.cisco.com/go/hybrid-services-directory.

Overview of Auto-Provisioning of Webex App

The auto-provisioning feature in Control Hub allows the users to self-provision the devices for Calling in Webex (Unified CM) with zero or minimal intervention. This feature avoids over-provisioning of multiple devices in Unified CM that helps to minimize the impact on cluster scaling and licensing usage. Devices are auto created in Unified CM, when a user provisioned for Calling in Webex (Unified CM) signs in with their registered email address or User ID to Webex App.

Administrators don't need to go to Unified CM to pre-provision any of the Webex App devices for users in their organization. When the user signs in to the Webex App with any device for the first time, and if the device isn’t already available in the Unified CM server, the new device type is auto created for the user.

This feature allows auto-provisioning of following devices types in Unified CM for the users when they sign into Webex App from various device platforms:

- Android Device (BOT)
- Chromebook/iPad Devices (TAB)
- Windows/MAC Devices (CSF)
- iPhone Device (TCT)

Note After the deletion of a device, it is recommended that you wait for 5-10 minutes before you auto-provision a device of the same type. Also, you can reset the device from Webex App before you auto-provision it again (Go to **Help** > **Health Checker** and click the **Reset** button.)

Prerequisite

Before you plan to allow auto-provision of Webex App for the users, make sure that you meet the following requirements:

- Activate Cloud-Connected UC and set up the on-premises devices in your organization to communicate with the Control Hub. For more information, see Set Up Cloud-Connected UC for On-Premises Devices.
- For the user account in Control Hub, add either a Basic or Professional Webex Calling license.
- Cisco Unified Communications Manager clusters should be version 11.5 or above. See the supported Unified CM version for Calling in Webex (Unified CM) at Deployment Guide for Calling in Webex (Unified CM).
- The minimum supported Webex App version is 41.12 and higher.
- The minimum supported Cisco Expressway Release version is X14.0.2. If the Expressway version is below the recommended version, Expressway should add the following URLs manually to the Allow List to allow external clients (Cisco Jabber or Webex App) to access the Unified Communications nodes discovered having MRA configuration:
  - **POST**: **https://{{cucmip}}:8443/devicemanagement/v1/clientAutoProv/createDevice**
  - **GET**: **https://{{cucmip}}:8443/ucmservices/v1/supportedServices**
- Ensure that the User ID or email ID of Unified CM users matches with the User ID of the user records entity in Webex Identity Service. Also, the users configured in the Unified CM server should be available in the organizations’ Webex Identity Service.

Additional configuration

We recommend the following additional configuration to provide further benefits for your Calling in Webex App (Unified CM) deployment:

- Quality of Service (QoS), covered in the Appendix, on page 109 in this guide. QoS helps manage packet loss, delay and jitter on your network infrastructure.
- Call Admission Control (CAC) on Unified CM, covered in the System Configuration Guide for Cisco Unified Communications Manager. CAC enables you to control the audio quality and video quality of calls over a wide-area (IP WAN) link by limiting the number of calls that are allowed on that link at the same time.

CHAPTER 3

Deploy Calling in Webex App (Unified CM)

Calling in Webex App (Unified CM) deployment task flow

These steps walk you through a typical phone only deployment that's used for Calling in Webex App (Unified CM). For this deployment, Webex App is going to register to Unified CM as a softphone client, just like Cisco Jabber does.

Before you begin

Prepare your environment for Calling in Webex App (Unified CM), on page 43

Procedure

	Command or Action	Purpose
Step 1	Configure UC services workflow, on page 72 • Configure voicemail pilot number, on page 72	Bundle together UC services in a service profile. You must create a CTI service which provides Webex App with the devices that are associated with the user. You can create

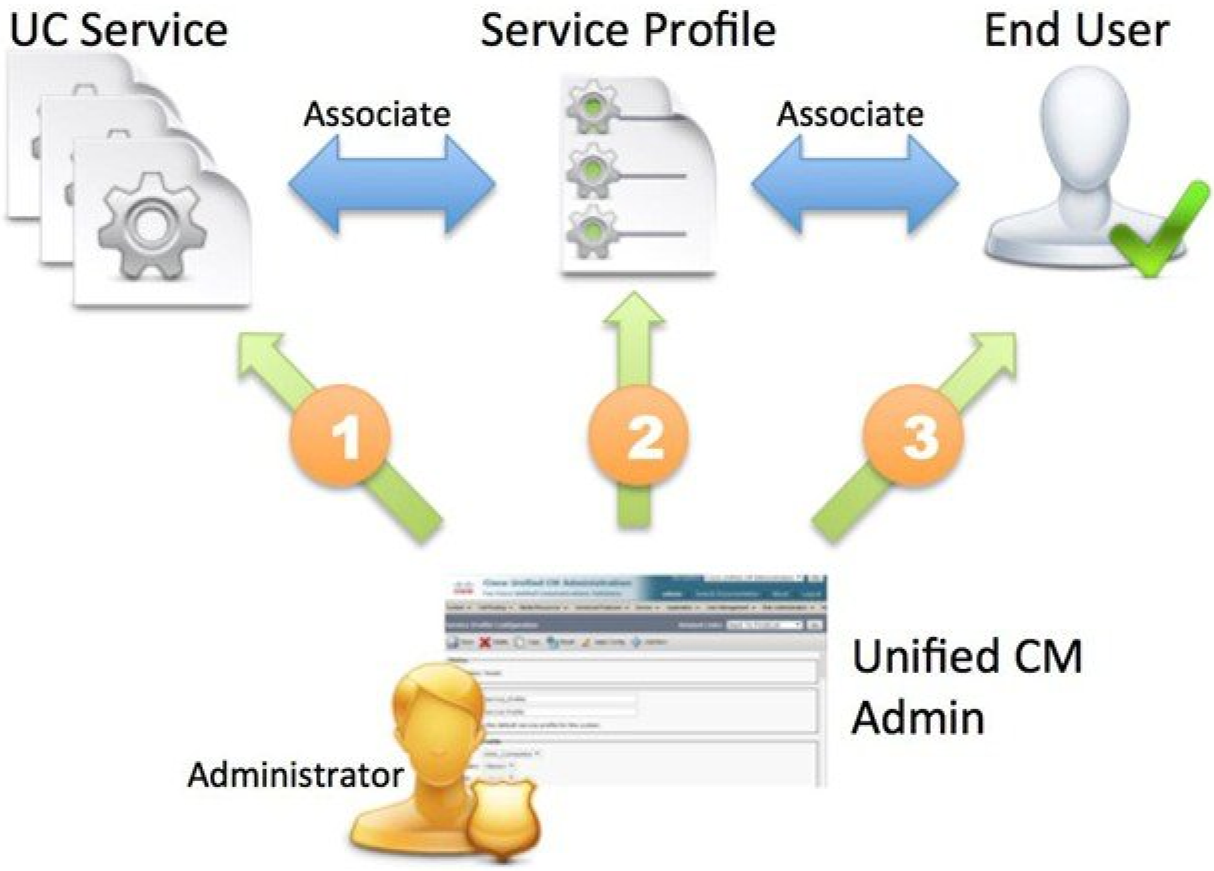
	Command or Action	Purpose
	- Configure UC services, on page 73 - Configure service profile with UC services, on page 74	a voicemail service if you want users to have access to voicemail in Webex App. At the end, create a service profile to add the UC services which later get applied to end user accounts.
Step 2	Choose from the Service discovery options, on page 75: - Configure DNS SRV records, on page 75 - Manual connection settings, on page 97	Service discovery enables clients to automatically detect and locate services on your enterprise network. You can configure service discovery using one of the following options. - DNS SRV Records—The client (Webex App) automatically locates and connects to services. This is the recommended option. - Manual Connection Settings—Manual connection settings provide a fallback mechanism when service discovery is not used. With administrator guidance, users must manually enter a server address or UC domain followed by their SSO or non-SSO credentials, as documented at the end of the task flow.
Step 3	Choose from the Authentication options, on page 77: - SAML SSO in the client, on page 77 - Authenticate with the LDAP server, on page 77	These options determine the authentication mechanism that is used when a user signs into phone services in Webex App: - SAML Single Sign-On (SSO)—End user passwords are authenticated against the password that resides in the identity provider used for SSO. - LDAP Server—End user passwords are authenticated against the password that is assigned in the company LDAP directory.
Step 4	Set parameters on phone configuration for desktop clients, on page 77	The client can retrieve configuration settings in the phone configuration from specific locations on Cisco Unified Communications Manager.
Step 5	Configure Unified CM end users for Calling in Webex App (Unified CM), on page 78	For Calling in Webex App (Unified CM) to work, you must create new users or configure existing users on Unified CM with the following settings.
Step 6	Follow these steps in the Create softphones workflow, on page 79: - Add a directory number to the device, on page 82 - Associate users with devices, on page 82 - Configure the phone security profile for encrypted calls, on page 83	Follow these steps to manually or automatically create and configure softphone devices (these correspond to each Webex App for softphone use), add a directory number to the softphone device, associate the device with an end user account, and optionally configure devices and Webex App instances for secure and encrypted calls.
Step 7	Follow these steps in the Create softphones workflow, on page 79:	Follow these steps to manually or automatically create and configure softphone devices (these correspond to each Webex App for softphone use), add a directory number to

	Command or Action	Purpose
	• Create and configure soft phones using one of these options: • **Automatic (Control Hub through Cloud Connected UC (CCUC))**—Auto provision devices. **Note** This process may take up to 5 minutes to auto create the device for users and connect them to phone services. If your users were on a version of the app that didn't support auto provisioning, they need to restart to upgrade the app, and then the softphone device is auto created in the specified time frame. • **Manual (Unified CM)**—Create and configure Webex App softphone devices, on page 79 • Add a directory number to the device, on page 82 • Associate users with devices, on page 82 • Configure the phone security profile for encrypted calls, on page 83	the softphone device, associate the device with an end user account, and optionally configure devices and Webex App instances for secure and encrypted calls.
Step 8	Configure push notifications and recommended settings, on page 84	With Push Notifications, your deployment uses Google or Apple's cloud-based Push Notification service to push voice calls, video calls, and instant message notifications to Webex App for iOS and Android clients that are running in the background. You must enable Push Notifications to maintain persistent communication with Webex App for iOS and Android.
Step 9	Choose an option: • Set client configuration parameters (releases 12.5 and later), on page 85 (Highest priority) • Create and host client configuration files (releases earlier than 12.5), on page 86	You can set client configuration parameters that are applied when users sign in using one of the following methods: • Set the client configuration parameters with Unified CM. • Create XML files using an XML editor that contain configuration parameters. You then host the XML files on a TFTP server. Calling in Webex App (Unified CM) leverages the existing Jabber configuration XML file functionality. You can use the file to enable specific calling features (such as hunt groups and call pickup) and other supported functionality for Webex App users in your organization.

	Command or Action	Purpose
Step 10	Configure moving a call into a meeting, on page 91	When users are in the middle of a call, they may want to invite other coworkers into the discussion while making use of some advanced meetings features. Users can move that call to a meeting. From there, people can raise their hands when they want to share something important, add an emoji to let someone know visually that they agree with what's being said, make use of breakout rooms, and much more.
Step 11	Follow these steps in Calling experience for users workflow, on page 92: • Create a UC manager profile, on page 93 • Edit a UC manager profile, on page 104 • Set up calling behavior and UC manager profiles in Control Hub	You can use Control Hub to customize the calling experience for you users. Set a UC Manager Profile with either or both a voice services domain and UDS server. Set the calling behavior for some of your users (recommended) or for your entire organization (when you're ready to roll out the service). For Calling in Webex App (Unified CM), you configure this setting so that users can use the calling feature set. Set calling options that appear in the app and whether users can do a single click-to-call.
Step 12	Authenticate with phone services in Webex App, on page 97	If you have DNS SRV implemented, users will be autodiscovered for phone services in the Webex App. If you don't, you can also simplify their sign-in process with the UC manager profile you configured earlier, which contains UDS server or the UC domain (FQDN or IP address of Unified CM) for Phone Services. If none of these options is in place, users must manually enter a server address for the UDS server or the UC domain (FQDN or IP address of Unified CM) that you provide to them.
Step 13	Configure extra features after deployment, on page 98	These tasks are optional and are not mandatory for deploying Calling in Webex App (Unified CM). However, these features provide more customization for you and your users. You can refer to the documentation that is linked in each step for additional guidance.

Overview of service profile

Figure 6: Service profiles workflow



1. Create UC services.
2. Associate the UC Service with the Service Profile.
3. Associate the User with the Service Profile.

Create default service profile

Create a service profile to add the UC services.

Step 1 Open the **Cisco Unified CM Administration** interface.

Step 2 Select **User Management** > **User Settings** > **Service Profile**.
The **Find and List Service Profiles** window opens.

Step 3 Select **Add New**.
The **Service Profile Configuration** window opens.

Step 4 Enter a name for the service profile in the **Name** field.

Step 5 Select **Make this the default service profile for the system** if you want the service profile to be the default for the cluster.

Step 6 Select **Save**.

What to do next

Create the UC services for your deployment.

Configure UC services workflow

Set up the relevant UC services in a service profile for your Calling in Webex App (Unified CM) deployment. The CTI service is required.

Set up the voicemail service if you have Unity Connection deployed and want to integrate voicemail access into Webex App.

Before you begin

Voicemail, on page 52

Procedure

	Command or Action	Purpose
Step 1	Configure voicemail pilot number, on page 72	If you're configuring voicemail access for Webex App users, ensure that you identify a directory number in your Unified CM deployment to use for voicemail system access.
Step 2	Configure UC services, on page 73	The CTI UC service provides Webex App with the location of the CTI service, which retrieves a list of devices that are associated with the user. The voicemail service ties into your existing Unity Connection deployment and provides voicemail retrieval to users when they are associated with the corresponding service profile.
Step 3	Configure service profile with UC services, on page 74	After you add and configure Cisco Unified Communications Manager services, you add them to a service profile. You can apply additional configuration in the service profile.

What to do next

Associate the service profile to end user accounts.

Configure voicemail pilot number

The voicemail pilot number designates the directory number that you dial to access your voice messages. Cisco Unified Communications Manager automatically dials the voice-messaging number when users press the Message button on their phones or access voicemail through Webex App. Each pilot number can belong to a different voice-messaging system.

Step 1 From Cisco Unified CM Administration, go to **Advanced Features** > **Voice Mail** > **Voice Mail Pilot**.

Step 2 Configure the following settings:

- **Voice Mail Pilot Number**—Enter a number to identify the voice mail pilot number. Allowed characters are numeric (0-9), plus (+), asterisk (*), and pound (#).

  Note You cannot save the configuration if both the **Voice Mail Pilot Number** and **Calling Search Space** fields are empty. You must enter a value in one of the two fields.

- **Calling Search Space**—Choose the appropriate calling search space. A calling search space comprises a collection of partitions that are searched for numbers that are called from this pilot number.
- **Description**—Enter the description of the pilot number. The description can include up to 50 characters in any language, but it cannot include double-quotes ("), percentage sign (%), ampersand (&), or angle brackets (<>).
- **Make this the default Voice Mail Pilot for the system**—Check this setting to make this pilot number the default Voice Mail Pilot for the system.

  Note If you check the Default box, this voice mail pilot number replaces your current default pilot number.

Step 3 Save your changes.

Configure UC services

Add Cisco Unified Communications Manager services to specify the address and other settings for the service.

The CTI UC service provides Webex App with the location of the CTI service, which retrieves a list of devices that are associated with the user. The voicemail service ties into your existing Unity Connection deployment and provides voicemail retrieval to users when they are associated with the corresponding service profile.

Step 1 Open the **Cisco Unified CM Administration** interface.

Step 2 Select **User Management** > **User Settings** > **UC Service**.

The **Find and List UC Services** window opens.

Step 3 Select **Add New**.

The **UC Service Configuration** window opens.

Step 4 In the **Add a UC Service** section, select **CTI** from the **UC Service Type** drop-down list.

Step 5 Select **Next**.

Step 6 Provide details for the CTI service as follows:

a) Specify a name for the service in the **Name** field.

The name you specify displays when you add services to profiles. Ensure the name you specify is unique, meaningful, and easy to identify.

b) Specify the CTI service address in the **Host Name/IP Address** field.

Enter the address in the form of a hostname, IP address, or fully qualified domain name (FQDN). This value corresponds to the Unified CM publisher that's running the CTI Manager service. You'll create a second service for the subscriber.

c) Specify the port number for the CTI service in the **Port** field.

Step 7 Save your changes, return to **User Management** > **User Settings** > **UC Service**, and then click **Add New**.

Step 8 Choose **Voicemail** and then click **Next**.

Step 9 Provide details for the Voicemail service as follows:

a) Specify a name for the service in the **Name** field.

The name you specify displays when you add services to profiles. Ensure the name you specify is unique, meaningful, and easy to identify.

b) Specify the voicemail address in the **Host Name/IP Address** field.

Enter the address in the form of a fully qualified domain name (FQDN). Otherwise, the certificate validation step fails.

Note By default, the client always uses port 443 and the HTTPS protocol to connect to the voicemail server. For this reason, any value you specify does not take effect.

Step 10 Save your changes.

What to do next

Add UC services to the service profile.

Configure service profile with UC services

After you add and configure Cisco Unified Communications Manager services, you add them to a service profile. You can apply additional configuration in the service profile.

Step 1 Open the **Cisco Unified CM Administration** interface.

Step 2 Select **User Management** > **User Settings** > **Service Profile**.

Step 3 Enter a name for the service profile in the **Name** field.

Step 4 Select **Make this the default service profile for the system** if you want the service profile to be the default for the cluster.

Step 5 Add your UC services under **Voicemail Profile** and **CTI Profile**.

Step 6 Set **Credential source for voicemail service** to **Unified CM - IM and Presence**.

Step 7 Complete any additional configuration and then click **Save**.

What to do next

You must assign the configured service profile to end user accounts in Unified CM.

Voicemail Icon Indicators in Webex App

The Unity Connection server's web version of Visual Voicemail provides checkboxes for the following attributes when a voicemail is composed. The corresponding icons appear in Webex App next to the voice message entry in a user's visual voicemail list.

- ❗ Exclamation—Indicates an urgent, important voice message.
- 🔒 Lock—Indicates a secure voice message. Each time you play the message, it is downloaded and then the local file is deleted when you're finished.
- 🔑 Key—Indicates a private voice message. You cannot forward private messages to other people.

Service discovery options

Service discovery enables clients to automatically detect and locate services on your enterprise (internal) and MRA (external) network. You can configure service discovery using one of the following options.

Option	Description
Configure DNS SRV records, on page 75	The client automatically locates and connects to services. This is the recommended option.
Manual connection settings, on page 97	Manual connection settings provide a fallback mechanism when service discovery is not used.

Note We support SRV look up over internal and MRA environments. Service discovery enables clients to automatically detect and locate services on or outside your enterprise network. Clients query domain name servers to retrieve service (SRV) records that provide the location of servers. See the DNS SRV guidance that follows for internal and external environments.

Configure DNS SRV records

Before you begin

Review your SRV record requirements in the *Service Discovery* chapter of the *Planning Guide for Cisco Jabber*.

Create the SRV records for your deployment:

Option	Description
_cisco-uds	Provides the location of Cisco Unified Communications Manager. The client can retrieve service profiles from Cisco Unified Communications Manager to determine the authenticator.
_collab-edge	Provides the location of Cisco VCS Expressway or Cisco Expressway-E. The client can retrieve service profiles from Cisco Unified Communications Manager to determine the authenticator.

Example of an SRV record

```
_cisco-uds._tcp.DOMAIN service location:
priority = 0
weight = 0
port = 8443
svr hostname=_cisco-uds._tcp.example.com
```

What to do next

Test SRV records, on page 76

Test SRV records

After creating your SRV records test to see if they are accessible.

Tip You can also use the SRV check tool on the Collaboration Solutions Analyzer site if you prefer a web-based option.

Step 1 Open a command prompt.

Step 2 Enter **nslookup**.

The default DNS server and address is displayed. Confirm that this is the expected DNS server.

Step 3 Enter **set type=SRV**.

Step 4 Enter the name for each of your SRV records.

For example, `_cisco-uds._tcp.`*`exampledomain`*

- Displays server and address—SRV record is accessible.
- Displays `_cisco-uds_tcp.`*`exampledomain`*`: Non-existent domain`—There is an issue with your SRV record.

Authentication options

SAML SSO in the client

For more information about integrating SSO with Unified CM so that Webex App users can sign in using a single set of credentials, see the *SAML SSO Deployment Guide for Cisco Unified Communications Applications*. For cloud (Webex Control Hub) configuration, see *Single Sign-On Integration With Webex Control Hub*.

Authenticate with the LDAP server

Perform this procedure if you want to enable LDAP authentication so that end user passwords are authenticated against the password that is assigned in the company LDAP directory. LDAP authentication gives system administrators the ability to assign an end user a single password for all company applications. When users sign in to the client, Webex App routes that authentication to Cisco Unified Communications Manager. Cisco Unified Communications Manager then sends that authentication to the directory server.

Step 1 Open the **Cisco Unified CM Administration** interface.

Step 2 Select **System** > **LDAP** > **LDAP Authentication**.

Step 3 Select **Use LDAP Authentication for End Users**.

Step 4 Specify LDAP credentials and a user search base as appropriate.

See the *Cisco Unified Communications Manager Administration Guide* for information about the fields on the **LDAP Authentication** window.

Step 5 Select **Save**.

Set parameters on phone configuration for desktop clients

The client can retrieve configuration settings in the phone configuration from the following locations on Cisco Unified Communications Manager:

Enterprise Phone Configuration

Applies to the entire cluster.

Common Phone Profile Configuration

Applies to groups of devices and takes priority over the cluster configuration.

Cisco Unified Client Services Framework (CSF) Phone Configuration

Applies to individual CSF desktop devices and takes priority over the group configuration.

Configure Unified CM end users for Calling in Webex App (Unified CM)

For Calling in Webex App (Unified CM) to work, you must create new users or configure existing users on Unified CM with the following settings.

Note If you use LDAP synchronization, these settings may already be in place. If setting up a new LDAP synchronization, see “LDAP Synchronization Overview” in the *On-Premises Deployment for Cisco Jabber* documentation at https://www.cisco.com/c/en/us/support/unified-communications/jabber-windows/products-installation-guides-list.html.

Step 1 From Cisco Unified CM Administration, go to **User Management** > **End Users**, choose any criteria, click **Find**, and then open the user account that you want to configure.

Step 2 Verify that **Mail ID** contains the user's email address.

Note If you're using Server Information for configuration and not SRV records, your users' Webex App email addresses must match their Unified CM email addresses—at a minimum, the user ID portion before the domain must match.

Step 3 Under the user's **Service Settings**, check the **Home Cluster** checkbox.

Configure this setting on the Cisco Unified Communications Manager where each user is homed and where their devices are registered.

Step 4 (Optional) Choose your service profile from the **UC Service Profile** drop-down list that you created earlier (with CTI service and voicemail) if you need to make user-level overrides.

Step 5 Save your changes, and then you'll assign applicable roles to the user.

Step 6 Click **Add to Access Control Group**.

Step 7 Click the corresponding check box for each access control group that you want to assign to the end users.

At a minimum you should assign the user to the following access control groups:

- **Standard CCM End Users**
- **Standard CTI Enabled**—This option is used for desk phone control.

Certain phone models require additional control groups, as follows:

- Cisco Unified IP Phone 9900, 8900, or 8800 series or DX series, select **Standard CTI Allow Control of Phones supporting Connected Xfer and conf**.
- Cisco Unified IP Phone 6900 series, select **Standard CTI Allow Control of Phones supporting Rollover Mode**.

What to do next

Associate devices to the user.

Create softphones workflow

Procedure

	Command or Action	Purpose
Step 1	Use one of these options to create softphones for users: • **Control Hub through Cloud Connected UC (CCUC)**—Auto provision devices. **Note** This process may take up to 5 minutes to auto create the device for users and connect them to phone services. If your users were on a version of the app that didn't support auto provisioning, they need to restart to upgrade the app, and then the softphone device is auto created in the specified time frame.	**Tip** We recommend using the auto-provisioning feature in Control Hub. This feature allows the users to self-provision the devices for Calling in Webex (Unified CM) with zero or minimal intervention. This feature avoids over-provisioning of multiple devices in Unified CM that helps to minimize the impact on cluster scaling and licensing usage. Devices are auto created in Unified CM, when a user provisioned for Calling in Webex (Unified CM) signs in with their registered email address or User ID to Webex Apps.
	• **Unified CM**—Create and configure Webex App softphone devices, on page 79	Create at least one device for every user that wants to use Webex App in softphone mode. You can add one softphone device for any supported Webex App platforms that the users are on—for example, appropriate device types for desktop, mobile and tablet.
Step 2	Add a directory number to the device, on page 82	For each device you create, add a directory number.
Step 3	Associate users with devices, on page 82	Associate users with devices.
Step 4	Configure the phone security profile for encrypted calls, on page 83	Complete this task to set up secure phone capabilities for all devices and Webex App.

Create and configure Webex App softphone devices

To make the Webex App a softphone client, create at least one device for every user that you're configuring for Calling in Webex App (Unified CM). Webex App for desktop and mobile registers to Unified CM using the same softphone device types as Cisco Jabber.

Note If you want any user to only have desk phone control and no softphone functionality, you do not need to create a desktop CSF device for them.

Step 1 Log in to the **Cisco Unified CM Administration** interface.

Step 2 Select **Device** > **Phone**.
Find and List Phones window opens.

Step 3 Select **Add New**.

Step 4 From the **Phone Type** drop-down list, select the option that is applicable to the device type you are configuring and then select **Next**.

For Webex App users, you can only create one type of device per platform for a user, although you can create multiple devices for each user. For example, you can create one dual mode mobile device and one CSF device but not two CSF devices.

- **Cisco Unified Client Services Framework**—Select this option to create a CSF device for Webex App for Mac or Webex App for Windows.
- **Cisco Dual Mode for iPhone**—Select this option to create a TCT device for Webex App for iPhone users.
- **Cisco Jabber for Tablet**—Select this option to create a TAB device for Webex App on an iPad, Android tablet, or Google Chromebook. For Android, Webex App identifies devices with displays that are 600 density-independent pixels (dp) or greater as a tablet.
- **Cisco Dual Mode for Android**—Select this option to create a BOT device for Webex App for Android phone users. Webex App identifies devices with displays that are under 600dp as a phone.

Note For more information about how Webex App identifies Android devices, see Android Devices and Density-Independent Pixels, on page 82.

Users can be signed into phone service on one device type for each platform (for example, Webex App for a Windows device and Webex App for an iPhone). Users can't be signed into phone service on more than one device type on the same platform (for example, Webex App for an iPad and Webex App for an Android tablet).

Note While Chromebook users require a TAB device to use Calling in Webex App (Unified CM), phone service does work for a user with both a Chromebook and an Android phone signed in at the same time.

Step 5 From the **Owner User ID** drop-down list, select the user for whom you want to create the device.

Step 6 In the **Device Name** field, use the applicable format to specify a name for the device:

If you select	Required format
Cisco Unified Client Services Framework	• Valid characters: a–z, A–Z, 0–9. • 15-character limit.
Cisco Dual Mode for iPhone	• The device name must begin with *TCT*. For example, if you create a TCT device for user, Tanya Adams, whose username is tadams, enter **`TCTTADAMS`**. • Must be uppercase. • Valid characters: A–Z, 0–9, period (.), underscore (_), hyphen (-). • 15-character limit.

If you select	Required format
Cisco Jabber for Tablet	• The device name must begin with *TAB*. For example, if you create a TAB device for user, Tanya Adams, whose username is tadams, enter **`TABTADAMS`**. • Must be uppercase. • Valid characters: A–Z, 0–9, period (.), underscore (_), hyphen (-). • 15-character limit. • For Android, Webex App identifies devices with displays that are 600 density-independent pixels (dp) or greater as a tablet. See Android Devices and Density-Independent Pixels, on page 82 for more information.
Cisco Dual Mode for Android	• The device name must begin with *BOT*. For example, if you create a BOT device for user, Tanya Adams, whose username is tadams, enter **`BOTTADAMS`**. • Must be uppercase. • Valid characters: A–Z, 0–9, period (.), underscore (_), hyphen (-). • 15-character limit. • For Android, Webex App identifies devices with displays that are less than 600 density-independent pixels (dp) as a phone. See Android Devices and Density-Independent Pixels, on page 82 for more information.

Note You need to deploy Mobile and Remote Access (MRA) on Expressway if your Webex App users need to connect outside of the corporate network.

Step 7 For mobile devices only (TCT, BOT, and TAB), in the **Product Specific Configuration Layout** section, enter any designated emergency numbers in **Emergency Numbers** to route emergency calls through the user's mobile provider.

You can enter a comma-separated list of additional emergency numbers that users can direct dial. These numbers must contain only numerical digits; we do not allow spaces, dashes, or other character.

Emergency numbers as defined on the device are always dialed direct using the mobile network instead of through the enterprise environment. Use direct-dial numbers for users who frequently travel to countries other than the country of their mobile network provider, if the emergency number differs depending on the location, or if your organization uses a dedicated security number.

Step 8 Select **Save**.

Step 9 Click **Apply Config**.

What to do next

Add one or more Directory Numbers (lines) to the softphone device.

Android Devices and Density-Independent Pixels

Webex App uses density-independent pixels (dp) to identify Android devices. A dp is a unit of length for screen size, typically used in mobile software to scale an app display to different screen sizes. Devices with displays that are 600dp or greater are identified as tablets; devices with tess than 600dp are identified as phones.

- **Tablets (600dp or greater)**—The device shows the Tablet UI (left and right layout, the right panel shows the space chat content or profile detail page), and we choose the TAB softphone device type in Unified CM.
- **Phones (less than 600dp)**—The device shows the Phone UI (vertical layout), and we choose the BOT softphone device type in Unified CM.

For more information, see the Android developer documentation.

Add a directory number to the device

After you create and configure each device, you must add a directory number to the device. This topic provides instructions on adding directory numbers using the **Device** > **Phone** menu option.

Before you begin

Create a device.

Step 1 Locate the **Association Information** section on the **Phone Configuration** window.

Step 2 Click **Add a new DN**.

Step 3 In the **Directory Number** field, specify a directory number.

Step 4 In the **Users Associated with Line** section, click **Associate End Users**.

Step 5 In the **Find User where** field, specify the appropriate filters and then click **Find**.

Step 6 From the list that appears, select the applicable users and click **Add Selected**.

Step 7 Specify all other required configuration settings as appropriate.

Step 8 Select **Apply Config**.

Step 9 Select **Save**.

Associate users with devices

Before you begin

Note A softphone device for Webex App should not be associated to multiple users if you intend to use different service profiles for these users.

Step 1 Associate users with devices.

a) Open the **Unified CM Administration** interface.
b) Select **User Management** > **End User**.
c) Find and select the appropriate user.

The **End User Configuration** window opens.

d) Select **Device Association** in the **Device Information** section.
e) Associate the user with devices as appropriate.
f) Return to the **End User Configuration** window and then select **Save**.

Step 2 Set the **User Owner ID** field in the device configuration.

a) Select **Device** > **Phone**.
b) Find and select the appropriate device.

The **Phone Configuration** window opens.

c) Locate the **Device Information** section.
d) Select **User** as the value for the **Owner** field.
e) Select the appropriate user ID from the **Owner User ID** field.
f) Select **Save**.

Configure the phone security profile for encrypted calls

You can optionally set up secure phone capabilities for all devices and Webex App instances. Secure phone capabilities provide secure SIP signaling and secure media streams.

If you enable secure phone capabilities for users, device connections to Cisco Unified Communications Manager are secure. However, calls with other devices are secure only if both devices have a secure connection. Secure call support requires Unified CM 12.5 and later.

Before you begin

- You must use Unified CM Release 12.5 or later and we support only SIP OAuth with Webex App. CAPF is not supported. For more details, see the chapter on SIP OAuth in the *Feature Configuration Guide for Cisco Unified Communications Manager* at https://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-installation-and-configuration-guides-list.html.
- For conference calls, ensure that the conferencing bridge supports secure phone capabilities. If the conferencing bridge does not support secure phone capabilities, calls to that bridge are not secure. Likewise, all parties must support a common encryption algorithm for the client to encrypt media on conference calls.

Step 1 In **Cisco Unified Communications Manager**, select **System** > **Security** > **Phone Security Profile**.

Step 2 Select **Add New**.

Step 3 From the **Phone Type** drop-down list, select the option that is applicable to the device type you are configuring and then select **Next**.

- **Cisco Unified Client Services Framework**—Select this option to create a CSF device for Webex App for Mac or Windows.

- **Cisco Dual Mode for iPhone**—Select this option to create a TFT device for an iPhone.
- **Cisco Jabber for Tablet**—Select this option to create a TAB device for an iPad or an Android tablet.
- **Cisco Dual Mode for Android**—Select this option to create a BOT device for an Android device.
- **CTI Remote Device**—Select this option to create a CTI remote device.

  CTI remote devices are virtual devices that monitor and have call control over a user's remote destination.

Step 4 In the **Name** field of the **Phone Security Profile Configuration** window, specify a name for the phone security profile.

Step 5 For **Device Security Mode**, choose **Encrypted**.

The SIP connection is over TLS using AES 128/SHA encryption. The client uses Secure Real-time Transport Protocol (SRTP) to offer encrypted media streams.

Step 6 Check **Enable Oath Authentication**

Step 7 Click **Save**.

What to do next

You can use Webex App for Windows or Mac to make a call and confirm the secure calling setup. During the call, you'll see a lock icon 🔒 at the top right of your calling window, letting you know that the call is secure.

Configure push notifications and recommended settings

With Push Notifications, your deployment uses Google or Apple's cloud-based Push Notification service to push voice calls, video calls, and instant message notifications to Cisco Webex App for iOS and Android clients that are running in the background.

If your calling environment uses voicemail and Single Number Reach (SNR), we also recommend some timer changes to optimize the overall configuration.

Before you begin

Make sure that Unified CM and Expressway are on a support minimum version for Push Notifications. See Call control environment requirements, on page 43.

Step 1 From Cisco Unified CM Administration, go to **Advanced Features** > **Cisco Cloud Onboarding**.

Step 2 Check **Enable Push Notifications**.

For more information, see the *Push Notifications Deployment Guide* at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/cucm/push_notifications/cucm_b_push-notifications-deployment-guide.html.

Step 3 If you have voicemail configured, we recommend that you go to **Call Routing** > **Voicemail**, and change **No Answer Ring Duration (seconds)** to 25 or greater.

If a voicemail server is configured, the timer for no answer forward to voicemail is 12 seconds. Push notifications take approximately 8 seconds, which leaves only 4 seconds for ringing if the duration value isn't changed.

Step 4 If you have SNR configured, we recommend that you go to **Device** > **Remote Destination**, open any entries, and then change the **Wait seconds before ringing this phone when my business line is dialed** to **13** or greater.

Upon receive incoming call notification, Webex App must register to Unified CM quickly before this wait timeout. Otherwise, the call rings the phone itself and not Webex App.

Set client configuration parameters (releases 12.5 and later)

Set client configuration parameters and assign to service profiles in Unified CM.

Before you begin

You must ensure the required Unified CM configuration is in place for the supported features. See the following documentation for guidance:

- Hunt Groups in the *System Configuration Guide for Cisco Unified Communications Manager*.
- Call Pickup in the *Feature Configuration Guide for Cisco Unified Communications Manager*.

Step 1 Define configuration parameters, on page 85

Unified CM allows you to add, search, display, and maintain information about UC Services including client configuration.

Step 2 Assign Client Configuration to Service Profile, on page 86

Unified CM allows you to assign client configuration to users through service profiles.

Define configuration parameters

Unified CM (Releases 12.5 and later) allows you to add, search, display, and maintain information about UC Services including Webex App client configuration, which is provided by the jabber-config.xml file.

Step 1 Open the **Cisco Unified CM Administration** interface.

Step 2 Select **User Management** > **User Settings** > **UC Service**.

Step 3 Choose one:

- For a new configuration, select **Add New**, and then choose **Jabber Client Configuration (jabber-config.xml)** as the **UC Service Type**.
- For an existing configuration, choose an existing UC Service that you configured with **Jabber Client Configuration (jabber-config.xml)** as the **UC Service Type**.

Step 4 Select **Next**.

Step 5 Enter a name in the **UC Service Information** section, refer to Unified CM Help for more requirements.

Step 6 Enter the parameters in the **Jabber Configuration Parameters** section. For more information, see Policy parameters, on page 109.

Step 7 Select **Save**.

Assign Client Configuration to Service Profile

Unified CM allows you to assign client configuration to users through service profiles.

Step 1 Open the **Cisco Unified CM Administration** interface.

Step 2 Select **User Management** > **User Settings** > **Service Profile**.

Step 3 Select **Add New** or select the existing service profile you want to assign the Webex App client configuration to.

Step 4 Select the name of the configuration you want to apply to the profile in the section **Jabber Client Configuration (jabber-config.xml) Profile**.

Step 5 Select **Save**.

Create and host client configuration files (releases earlier than 12.5)

Create client configuration files and host them on the Cisco Unified Communications Manager TFTP service.

Before you begin

You must ensure the required Unified CM configuration is in place for the features that the config file supports. See the following documentation for guidance:

- Hunt Groups in the *System Configuration Guide for Cisco Unified Communications Manager*.
- Call Pickup in the *Feature Configuration Guide for Cisco Unified Communications Manager*.

Procedure

	Command or Action	Purpose
Step 1	XML config file requirements, on page 87	Understand the proper formatting and other requirements for XML config files.
Step 2	Policy parameters, on page 109	Reference the table for the policy parameters that you can use to enable specific features for users.
Step 3	Create global configurations, on page 87	Configure the clients for users in your deployment.
Step 4	Create group configurations, on page 88	Apply different configuration to different set of users.
Step 5	Host configuration files, on page 89	Host the configuration files on your TFTP server.
Step 6	Restart TFTP server, on page 89	Restart the TFTP server before the client can access the configuration files.

XML config file requirements

Note the following configuration file requirements:

- Configuration filenames are case-sensitive. Use lowercase letters in the filename to prevent errors and to ensure that the client can retrieve the file from the TFTP server.
- Use UTF-8 encoding for the configuration files.
- The client cannot read configuration files that do not have a valid XML structure. Check the structure of your configuration file for closing elements and correct nesting of elements.
- Use only valid XML character entity references in your configuration file. For example, use `&amp;` instead of `&`. If your XML contains invalid characters, the client cannot parse the configuration file.

  To validate your configuration file, open the file in Microsoft Internet Explorer.

  - If Internet Explorer displays the entire XML structure, your configuration file is valid.
  - If Internet Explorer displays only part of the XML structure, your configuration file likely contains invalid characters or entities.

Create global configurations

Calling in Webex App (Unified CM) leverages the existing Jabber configuration XML file functionality. You can use the file to enable specific calling features (hunt groups and call pickup) for Webex App users in your organization.

Before you begin

If you already deployed Jabber in the past, you have a `jabber-config.xml` file on your Unified CM TFTP server. You can confirm by opening http://*tftp_server_address*:6970/jabber-config.xml in your browser (where *tftp_server_address* is the server FQDN or IP address of your publisher) and see if a file downloads.

If you have the required policy parameters already specified, no further action is needed in the config file.

Note Webex App and Jabber share the same jabber-config.xml file. Webex App only honors a subset of Jabber parameters in that file, as documented in this guide.

Step 1 Either create a file named jabber-config.xml with any text editor or open the file you downloaded.

- Use lowercase letters in the filename.
- Use UTF-8 encoding.

Note Unified CM 12.5 and later lets you create the file in the administration interface.

Step 2 Define the required configuration parameters in jabber-config.xml under `<policies></policies>`:

- For call pickup:

```
<EnableCallPickup>true</EnableCallPickup>
<EnableGroupCallPickup>true</EnableGroupCallPickup>
<EnableOtherGroupPickup>true</EnableOtherGroupPickup>
```

- For hunt groups:

```
<EnableHuntGroup>true</enableHuntGroup>
```

To hide the decline button for an incoming call in a hunt group:

```
<PreventDeclineOnHuntCall>true</PreventDeclineOnHuntCall>
```

Create group configurations

Group configuration files apply to subsets of users and are supported on Webex App for desktop (CSF devices) and on Webex App for mobile devices. Group configuration files take priority over global configuration files.

If you provision users with CSF devices, specify the group configuration filenames in the **Cisco Support Field** field on the device configuration. If users do not have CSF devices, set a unique configuration filename for each group during installation with the TFTP_FILE_NAME argument.

Before you begin

If the structure of your configuration file is not valid, the client cannot read the values you set. Review the XML samples in this chapter for more information.

Step 1 Create an XML group configuration file with any text editor.

The group configuration file can have any appropriate name; for example, `webexteams-groupa-config.xml`.

Step 2 Define the required configuration parameters in the group configuration file.

Step 3 Add the group configuration file to applicable CSF devices.

a) Open the Cisco Unified CM Administration interface, and then choose **Device** > **Phone**.
b) Find and select the appropriate CSF device to which the group configuration applies.
c) In the Phone Configuration window, navigate to **Product Specific Configuration Layout** > **Desktop Client Settings**.
d) In the Cisco Support Field field, enter configurationfile=*group_configuration_file_name.xml*. For example, enter configurationfile=*webexteams-groupa-config.xml*.

If you host the group configuration file on your TFTP server in a location other than the default directory, you must specify the path and the filename; for example, configurationfile=*/customFolder/webexteams-groupa-config.xml*. Do not add more than one group configuration file. The client uses only the first group configuration in the **Cisco Support Field** field.

e) Click **Save**.

Step 4 Host the group configuration file on your TFTP server.

Host configuration files

We recommend hosting configuration files on the Cisco Unified Communications Manager TFTP server, which is where the device configuration file resides.

Procedure

	Command or Action	Purpose
Step 1	From Cisco Unified OS Administration, go to **Software Upgrades** > **TFTP File Management**, and then click **Upload File**.	If your environment has multiple TFTP servers, ensure that the configuration file is the same on all TFTP servers.
Step 2	Click **Browse**, choose the `jabber-config.xml` file from your local system, leave the directory field blank, and then click **Upload File**.	You should leave an empty value in the **Directory** text box so that the configuration file resides in the default directory of the TFTP server.

Restart TFTP server

You must restart your TFTP server before the client can access the configuration files.

Step 1 From the drop-down on the top right, click **Cisco Unified Serviceabilty**, and then sign in.

Step 2 Click **Tools** > **Control Center - Feature Services**, and then choose your Unified CM publisher from the **Server** drop-down.

Step 3 Click **Go**, then scroll to **CM Services**, and click **Cisco Tftp**.

Step 4 Scroll to the top, click **Restart**, and then click **OK**.

You'll see a message that the service restart was successful.

If your environment has multiple TFTP servers, ensure that the configuration file is the same on all TFTP servers.

What to do next

To verify that the configuration file is available on your TFTP server, open the configuration file in any browser. Typically, you can access the global configuration file at the following URL: http://*tftp_server_address*:6970/jabber-config.xml

Create global configurations

Calling in Webex App (Unified CM) leverages the existing Jabber configuration XML file functionality. You can use the file to enable specific calling features (hunt groups and call pickup) for Webex App users in your organization.

Before you begin

If you already deployed Jabber in the past, you have a `jabber-config.xml` file on your Unified CM TFTP server. You can confirm by opening http://*tftp_server_address*:6970/jabber-config.xml in your browser (where *tftp_server_address* is the server FQDN or IP address of your publisher) and see if a file downloads.

If you have the required policy parameters already specified, no further action is needed in the config file.

Note Webex App and Jabber share the same jabber-config.xml file. Webex App only honors a subset of Jabber parameters in that file, as documented in this guide.

Step 1 Either create a file named jabber-config.xml with any text editor or open the file you downloaded.

- Use lowercase letters in the filename.
- Use UTF-8 encoding.

Note Unified CM 12.5 and later lets you create the file in the administration interface.

Step 2 Define the required configuration parameters in jabber-config.xml under `<policies></policies>`:

- For call pickup:

```
<EnableCallPickup>true</EnableCallPickup>
<EnableGroupCallPickup>true</EnableGroupCallPickup>
<EnableOtherGroupPickup>true</EnableOtherGroupPickup>
```

- For hunt groups:

```
<EnableHuntGroup>true</enableHuntGroup>
```

To hide the decline button for an incoming call in a hunt group:

```
<PreventDeclineOnHuntCall>true</PreventDeclineOnHuntCall>
```

Configuration file requirements

- Configuration filenames are case sensitive. Use lowercase letters in the filename to prevent errors and to ensure the client can retrieve the file from the TFTP server.
- You must use utf-8 encoding for the configuration files.
- The client cannot read configuration files that do not have a valid XML structure. Ensure you check the structure of your configuration file for closing elements and that elements are nested correctly.
- Your XML can contain only valid XML character entity references. For example, use `&amp;` instead of `&`. If your XML contains invalid characters, the client cannot parse the configuration file.

Tip Open your configuration file in Microsoft Internet Explorer to see if any characters or entities are not valid.

If Internet Explorer displays the entire XML structure, your configuration file does not contain invalid characters or entities.

If Internet Explorer displays only part of the XML structure, your configuration file most likely contains invalid characters or entities.

Configure moving a call into a meeting

When users are in the middle of a call, they may want to invite other coworkers into the discussion while making use of some advanced meetings features. Users can move that call to a meeting. From there, people can raise their hands when they want to share something important, add an emoji to let someone know visually that they agree with what's being said, make use of breakout rooms, and much more.

This feature requires specific Unified CM, Expressway, and Webex App site configuration, as detailed in the following steps.

Before you begin

Note Moving a call into a meeting won't work in the following Webex Meetings site configurations:

- Encryption is set to End-to-End or PKI.
- Telephony is disabled.
- Video Mesh is deployed and media encryption is enabled.
- The site is on the slow release channel. See Manage Software Release Channels for more information.

Step 1 Configure SIP URI dialing on Unified CM.

See “Configure URI Dialing” in the *System Configuration Guide* for your release at https://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-installation-and-configuration-guides-list.html

You must configure a SIP Route Pattern in Unified CM to route calls to your Webex App site, such as `example.webex.com`.

Step 2 Configure a partition and Calling Search Space (CSS), and then use the CSS as a Reroute Calling Search Space (CSS), which evaluates the partition to see if the rerouted destination is allowed.

This configuration is required for users who make a call and then want to bring a remote participant into a meeting.

- See this document for the partition and CSS steps.
- For the reroute CSS for the softphone devices of the user, go to **Device** > **Phone**, find the device that you want to modify (for example, csf<userid>). Then, choose the CSS you created for the **Rerouting Calling Search Space** setting and then save your changes.

A reroute CSS allows users to forward calls along a different path so that calls can be moved to meetings. The reroute CSS should have access to the SIP Route Pattern that you configured in the first step.

Step 3 Configure an Expressway pair to route calls from Unified CM to Webex App.

See the section "Zones and Neighbors" in the Cisco Expressway Administrator Guide for more information.

On an Expressway-C, configure two neighbor zones—one for Unified CM, one for an Expressway-E which can reach Webex App.

See Configure Expressway for Mutual TLS Authentication for more information.

Step 4 Ensure that your Webex Meetings site is on a minimum of 41.3 or later and that Telephony is Enabled.

To check your meeting version, use the steps in Determine Your Webex Site Version in Cisco Webex Control Hub.

Step 5 Enable the full-featured meetings experience for any users who want to move calls to meetings.

- Customers are automatically enabled for this experience. If you encounter any issues, contact your partner or CSM for guidance.
- Remote users being added to an escalated meeting do not require this feature.

Step 6 Users must set their default Webex App site using these steps.

Step 7 In the jabber-config.xml file (Unified CM earlier than 12.5) or the Jabber Client Configuration profile (Unified CM 12.5 and later), set the `EnableMeetingPowerUp` parameter to `True`.

For parameter configuration, see the relevant section in this chapter. For more information on parameters and their values, see Policy parameters, on page 109 in the Appendix.

Users are enabled for moving calls to meetings in Webex App. The changes take effect immediately, but users in active calls won't be able to move them to meetings until the next call.

For end user information about how to use the feature, see Move a Call into a Meeting.

Calling experience for users workflow

Use these tasks to customize various aspects of the calling experience for users: set login behavior (for on-net and MRA, for example) and set calling behavior.

Note For information about additional customization features, such as setting virtual backgrounds and prioritizing calling options, see Configure extra features after deployment, on page 98.

Procedure

	Command or Action	Purpose
Step 1	Create a UC manager profile, on page 93	Your UC Manager Profile defaults to your organization's domain. This may mean that users need to manually specify a domain when they sign into Phone Services in Webex App. If you want to override the default and specify a domain, you can set up UC Manager Profiles for the whole organization or for user-level overrides. You can choose either the default option for your organization or manually create a new profile if you want users to sign into Webex App Phones Services with a different domain.
Step 2	Edit a UC manager profile, on page 104	You can edit your UC Manager Profiles in Control Hub at any time.

	Command or Action	Purpose
Step 3	Set up calling behavior and UC manager profiles in Control Hub, on page 93	Your UC manager profiles are tied in with the Calling Behavior setting (either organization-wide or user-level) in Control Hub. When you set the calling behavior, you can also choose the default option or a manual option for UC manager profiles.

Create a UC manager profile

Step 1 From the customer view in https://admin.webex.com, go to **Management** > **Organization Settings**, and under **UC Manager Profiles** select **Add Profile**.

Step 2 Add a **Profile Name**, choose the necessary settings, and then select **Save**.

Enter a Voice Services Domain if you have SRV records but the login email domain is not used for service discovery. It's required for Mobile Remote Access (MRA), as well. You can also enter a UDS server if the Webex App account user ID does not match the Unified CM user ID or ILS is not enabled in a multiple Unified CM cluster deployment. With both values entered, Webex App uses UDS first for the premises and Voice Services for MRA.

Set up calling behavior and UC manager profiles in Control Hub

You can use Control Hub to set the calling behavior for specific users in your organization or for your entire organization. For Calling Behavior, you configure this setting for users so that they can use the calling feature set. Webex App first connects to cloud services and retrieves its configuration, including the calling behavior setting.

By default, the Webex App sends DNS SRV queries based on the Webex organization domain (the user email domain). If the Webex domain does not match the existing Voice Services Domain or you have multiple domains without a DNS SRV record for each, you can specify a UC Manager profile as an override setting—either your organization's default or one that you manually configured if you want to specify a different domain for users assigned to a UC Manager profile.

The option is not available if Hybrid Calling is still enabled for users in your organization. You must remove Hybrid Calling from users before you can assign Calling Behavior. See the “Prepare Your Environment” chapter for more information.

Note We recommend that you configure this setting based on your organization's needs—for example, you may want to enable specific users in your organization, have them test out the service, and then configure the service for your entire organization when you're ready.

More information

Control which calling application opens when users make the calls from the Webex App. You can configure the client's calling settings, including mixed-mode deployment for organizations with users entitled with Unified CM, Webex Calling, and users without paid calling services from Cisco.

Depending upon the user’s calling license, the calling behavior options can be set up.

- For Unified CM licensed users, you can set up to make calls directly from the Cisco Jabber or through the Webex App, and choose the domain (organization domain or UC Manager profile) that gets applied to the users. You can configure the settings at organization level, group level, and user level.
- For users without paid calling services from Cisco, you can set up third-party applications to initiate calls. By default, all calls through the Webex App use "Call on Webex" option. You can configure the settings at the organization level.
- For Webex Calling licensed users, the Webex App is the default calling application to make calls. Hence, no specific calling behavior configuration is needed.

Enable calling behavior settings at the organization level

The settings configured at the organization level automatically apply to all users under the organization.

Step 1 Log in to Control Hub at https://admin.webex.com

Step 2 Go to **Services** > **Calling** > **Client Settings**.

Step 3 Go to **Calling Behavior** section and set the calling behavior options for Unified CM Users and Users without Paid Calling Services from Cisco.

For Unified CM Users:

- Select **Use the email domain of the user** to apply your organization's domain (default option) to all Unified CM users in Webex App, or select the **Use UC Manager Profile for calling** and choose a created UC Manager profile from the dropdown.
- Select **Open Cisco Jabber from the Webex app** check box, if the organization uses the Jabber app for calling. Unified CM users can make calls directly in Cisco Jabber or through Webex. When users make call in Webex App, the Cisco Jabber app launches and is used to make the call.

For Users without Paid Calling Services from Cisco:

- Select **Open third-party app from Webex** check box to allow all the users to make calls through a third-party app, even if they haven't enabled calling in Webex. When users make call in Webex App, the third-party app is launched and used to make the call.

Enable calling behavior settings at the group level

You can enable unified CM calling behavior organization settings for a user-group through a Calling template. You can create a template and assign to the user-group. The configuration in the template applies to all users in the group.

To create a template

Before you begin

Make sure that the user has the Unified CM license. For more information, see: Edit service licenses for individual users.

Step 1 Log in to Control Hub at https://admin.webex.com.

Step 2 Go to **Services** > **Calling** > **Client Settings** > **Templates**

Step 3 Click **Create template**.

Step 4 In the **General** section, type the **Template name** and **description**.

Step 5 Go to the **Calling behavior** section and update following settings.

- Select the **Use the email domain of the user** to apply your organization's domain (default option) to the user group, or select the **Use UC Manager Profile for calling** and choose a created UC Manager profile from the dropdown.
- Select the **Open Cisco Jabber from the Webex app** check box to allow Unified CM users to make calls directly in Cisco Jabber or through Webex. When users make call in Webex App, the Cisco Jabber app launches and is used to make the call.

Step 6 Click **Create template and next**.

Step 7 Search and select a group for this template in the search box.

Step 8 Click **Done**.

To delete the template, click the template and select **Delete** from the **Actions** drop-down list. In the **Delete template** page, check the check box informing you that deleting a template is permanent, and then click **Delete**.

To modify the template, click the template, modify the toggles, and click **Save**.

To apply an existing template to a user-group

Few pointers to consider when applying the Calling templates:

- When a user is on boarded to an organization, the user inherits the settings from the organization-level.
- If the user is added to a user-group, then the settings from the Calling template apply.
- If a user belongs to multiple user-groups, then the template with the highest rank (Rank 1) takes the highest precedence and that template settings apply.
- If the user has individual user settings, then these settings take precedence over user-group or organization-level settings.

See Configure settings templates for more information about managing your templates.

You can apply the existing template either from **Group** section or **Calling** section.

To apply template from Group section, see: Configure settings template.

To apply from the Calling section, perform the following steps:

Step 1 From the customer view in https://admin.webex.com, go to **Services** in the left navigation bar and then click **Calling** > **Client Settings** > **Templates**.

Step 2 Click the … icon next to an existing template and then click **Apply template**.

Step 3 Type the group name to which you want to apply the template and then choose the group.

Step 4 Click **Done**.

Override calling behavior organization settings at the user level

Before you begin

Make sure that the user has the Unified CM license. For more information, see: Edit service licenses for individual users.

Step 1 Log in to Control Hub at https://admin.webex.com.

Step 2 Go to **Management** > **Users** and select the user that you want to modify.

Step 3 Select **Calling** > **Calling Behavior**.

Step 4 Toggle off the **Use organization level settings** to override the organization default settings with the user settings.

To revert to the organization default settings, toggle on the **Use organization level settings**.

Note The toggle is visible only when the user is not part of any group and overriding the organization level settings.

Step 5 Update the following calling behavior settings:

- Select the **Use the email domain of the user** to apply your organization's domain (default option) to the user, or select the **Use UC Manager Profile for calling** and choose a created UC Manager profile from the dropdown.
- Select the **Open Cisco Jabber from the Webex app** check box to allow a Unified CM user to make calls directly in Cisco Jabber or through Webex. When a user makes call in Webex App, the Cisco Jabber app launches and is used to make the call.

Step 6 Click **Save** and confirm **Yes**.

Override calling behavior group level settings at the user level

Before you begin

- Make sure that the user has the Unified CM license. For more information, see: Edit service licenses for individual users.
- Make sure that the user is a part of a user group with the calling template assigned.

Step 1 Log in to Control Hub at https://admin.webex.com.

Step 2 Go to **Management** > **Users** and select the user that you want to modify.

Step 3 Select **Calling** > **Calling Behavior**.

Step 4 Update the following calling behavior settings:

- Select the **Use the email domain of the user** to apply your organization's domain (default option), or select the **Use UC Manager Profile for calling** and choose a created UC Manager profile from the dropdown.

- Select the **Open Cisco Jabber from the Webex app** check box to allow the Unified CM user to make calls directly in Cisco Jabber or through Webex. When a user makes call in Webex App, the Cisco Jabber app launches and is used to make the call.

Step 5 Click **Save** and confirm **Override setting**.

The marking **Overridden** displays beside the updated field. To revert to the group template settings, click **Actions** > **Reset**. To view the details of calling template inherited by the user, click **Actions** > **View inheritance**.

Note The **Reset** option is available only when the inherited settings are overridden for the user.

Manual connection settings

Manual connection settings provide a fallback mechanism when Service Discovery is not used.

When you start Webex App, you can specify the authenticator and server address in the **Phone Services** window. The app caches the server address to the local application configuration that loads on subsequent starts. Webex App prompts users to enter advanced settings on the initial start if the app cannot get the authenticator and server addresses from the service profile.

Authenticate with phone services in Webex App

If you have DNS SRV implemented, users will be autodiscovered for phone services in the Webex App and they can use their SSO or manual credentials to sign in. If you don't, you can still simplify their sign-in process by configuring a UC manager profile (covered earlier in the guide). If none of these options is in place, users must manually enter a server address for the UDS server or the UC domain (FQDN or IP address of Unified CM) that you provide to them.

Procedure

- **If you have autodiscovery through DNS SRV or configured a UC manager profile**, users simply open Webex App and are prompted for SSO or manual credentials. No further steps are needed.

  The option to enter the server address or UC domain is not presented if you use service discovery with matching login and UC domains. The option also doesn't appear if you specified a UC manager profile for the specific domain for Phone Services.

- **If you don't have autodiscovery through DNS SRV**, help your users follow these steps:

  a) Access the Phone Services settings using the applicable Webex App platform:

     - For Windows, click your profile picture, choose **Settings**, and then click **Phone Services**.
     - For Mac, click your profile picture, choose **Preferences**, and then click **Phone Services**.
     - For Android, tap your profile picture, choose **Settings**, and then choose **Phone Services**.
     - For iPhone and iPad, tap your profile picture, and then choose **Phone Services**

b) Enter an option, depending on the authentication type and platform:

For Windows or Mac, enter one of the following:

- **Server address**—Enter the User Data Service (UDS) server if you don't have SRV records configured. Typically, this is the Unified CM publisher.
- **UC Domain**—Enter the domain name of the Unified CM that is used for service discovery.

For Android, iPhone, or iPad, enter the UDS server or domain name in the **Server Address or UC Domain** field, and then tap **Apply** or **Apply Changes**.

Note If both Server address/UDS Server and UC domain/Voice Services Domain are configured, Server Address determines the Home Cluster (autodiscovery through DNS SRV is ignored) and UC domain determines whether the client is on-premises or off-premises (MRA).

c) Tell users to enter their username and password when they're prompted in the app, and then they can sign in.

Note The sign in screen varies, depending on the existing SSO setup.

Users are authenticated with phone services and can use Calling in Webex App (Unified CM) features.

What to do next

- **Train Your Users**—You can direct users to the Supported calling options article or use it in your training materials to assist your users with learning how to use the feature set (such as putting a call on hold in Webex App or using desk phone control) in Calling in Webex App (Unified CM).
- **Troubleshoot Issues**—If there are errors with registration, see the troubleshooting material in this guide for more information.
- **Reset Server Information**—If the phone services information changes or you need Webex App users to reenter the server information for the Unified CM (for example, moving from a lab to production server), they must reset the database (for desktop, under **Settings** > **Health Checker** > **Reset Database**). For mobile apps, users must uninstall and reinstall on their devices to reset server information.

Configure extra features after deployment

These extra features are not mandatory for the first-time deployment of Calling in Webex App (Unified CM). However, after you complete the initial deployment steps, you can configure these features for more customization for you and your users. You can refer to the documentation that is linked for each feature for additional guidance.

Go to the article links to learn how to configure these additional features:

Table 14: Documentation for extra features

Help Center article	Feature description and benefits
Configure call settings for your organization in Control Hub	You have complete control and flexibility as an administrator in managing different calling deployments with these call settings features in Control Hub. Enable and prioritize different calling options (such as work number or extension, SIP address, and so on) and set single click-to-call for users.
Configure SIP Address Routing for Your Organization	If you configure this setting in Control Hub and change the default option, SIP calls in Webex can route through your Unified CM environment for the domains that you enter. This setting reduces calling traffic from going directly to the cloud and back.
Configure virtual backgrounds for Webex App users	Blurring your background makes your surroundings appear out of focus so people can't see what's going on behind you. As an administrator, you can use Control Hub to configure what options users have for applying virtual backgrounds to their meetings and calls in Webex. You can allow users to use preset backgrounds or their own custom backgrounds.
Configure virtual cameras for calls and meetings in Control Hub (macOS only)	You can use Control Hub to enable or disable virtual camera usage for your users' calls and meetings in the Webex app. Users can use a virtual camera, such as an application, driver, or software, to create an overlay of video, images, or feeds.
Enable or disable video for calling in the Webex App (Call on Webex only)	You can disable video for calling and other Webex services on the Webex app. Enabling and disabling the video option is available for all Calling licenses and is configured on the organization or user level in Control Hub. **Note** The Control Hub setting only affects Call on Webex. If you want to configure video for Calling in Webex App (Unified CM), use the `EnableVideo` parameter in the config file or associated service profile on Unified CM. See the customization parameters in the Appendix for more information.
Enable or disable remote desktop control for calling in the Webex App (Call on Webex only)	You can disable Remote Desktop Control (RDC) for Calling and other Webex services on the Webex app. Enabling and disabling RDC is available for all Calling licenses and is configured on the organization or user level in Control Hub.

Known issues and limitations with Calling in Webex App (Unified CM)

You can also use the Known Issues article for information that is specific to the Webex App.

Mobile

- These limitations apply to Wi-Fi to LTE call handoff on Webex for mobile (41.8):

  - This feature only supports active call handover of 1 call.

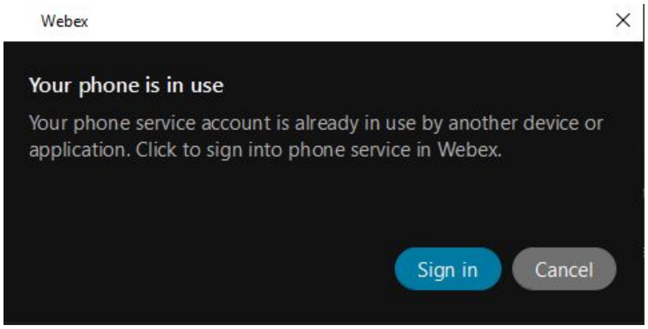
    For multiple concurrent calls on the Webex mobile app, all calls end after the network switch.

  - The sharing capability is lost after the network switch, so the calling user cannot start or receive a share during that call.
  - An active call ends if the network does not recover within 20 seconds.
  - If Call recording is active, the recording is stopped and won't continue after handover.
  - Network handover does not support the following: midcall features (such as hold or transfer), screen share handover, conference call handover, call center features.

- Calling in Webex App (Unified CM) for mobile and proximity pairing do not work together.
- When running two instances of the app on a mobile platform, a message about another active connection appears.
- For numbers in a contact card on the mobile apps, users must tap the green video icon to see other users' numbers.
- For Webex App login and phone services, the web sessions are separated. For example, a user can be prompted two times for authentication even through the same IdP (SSO) is configured for components in your calling environment and the Webex cloud. To fix this issue, you can upgrade your Unified CM and Expressway environment to support the SSO redirect URI enhancement. See the Prepare Your Environment chapter for more information on this recommended configuration.

General

- Calling in Webex App (Unified CM) does not work alongside Hybrid Calling or Webex Calling. You must disable Hybrid Calling or Webex Calling user enablement before you can enable Calling in Webex App (Unified CM) for your users. See the Prepare Your Environment chapter for more information on how to disable Hybrid Calling for users.
- Certificates issued with a deprecated signature algorithm (such as SHA-1) do not work; you must use a supported secure signature algorithm such as SHA-256 or later, as documented in the Certificates chapter in the *Administration Guide for Cisco Unified Communications Manager*.
- Cross-launch calling app functionality and Calling in Webex App (Unified CM) cannot be configured for a single user. You can use Control Hub to do overrides and set calling behavior for individual users—for example, you may want some users on Calling in Webex App (Unified CM) and some users on a Cisco Jabber app cross-launch.
- Phone services and coexistence with Jabber:
  - Phone Services can only be used on one device of each type (desktop and mobile). Phone Services cannot be signed in on both Jabber and Webex App at the same time.
  - Jabber and Webex App each try to register as the same softphone device in Unified CM. A registration popup lets you choose which client you want to use for calling.



Webex

Your phone is in use

Your phone service account is already in use by another device or application. Click to sign into phone service in Webex.

If a user is already registered on one client, and then somehow another client forces registration, that user does not see the dialog on the originally registered client

- Calls through Calling in Webex App (Unified CM) do not leverage Webex Video Mesh nodes.

CHAPTER 4

Manage and troubleshoot Calling in Webex App (Unified CM)

Configure users to move Jabber contacts and common settings to Webex App

This feature is built into Cisco Jabber and provides a way to migrate contacts in the buddy list and other common user preferences from Jabber to Webex. The data is encrypted. You just need to configure some settings before users see this option pop up automatically in Jabber.

Learn how to configure Jabber users to move to Webex App.

Access call statistics for Calling in Webex App (Unified CM)

During a call, you can access call statistics such as video frame rate, audio codec, packet loss, jitter, and bandwidth usage. An indicator also appears that shows the call environment that you're on (your administrator or support team may need this information for troubleshooting purposes).

Follow the steps or have your users follow the steps in Access call statistics to access statistics for a call in Webex App for desktop or mobile.

Edit a UC manager profile

Step 1 From the customer view in https://admin.webex.com, go to **Management** > **Organization Settings**, and under **UC Manager Profiles** select the ellipsis **...**.

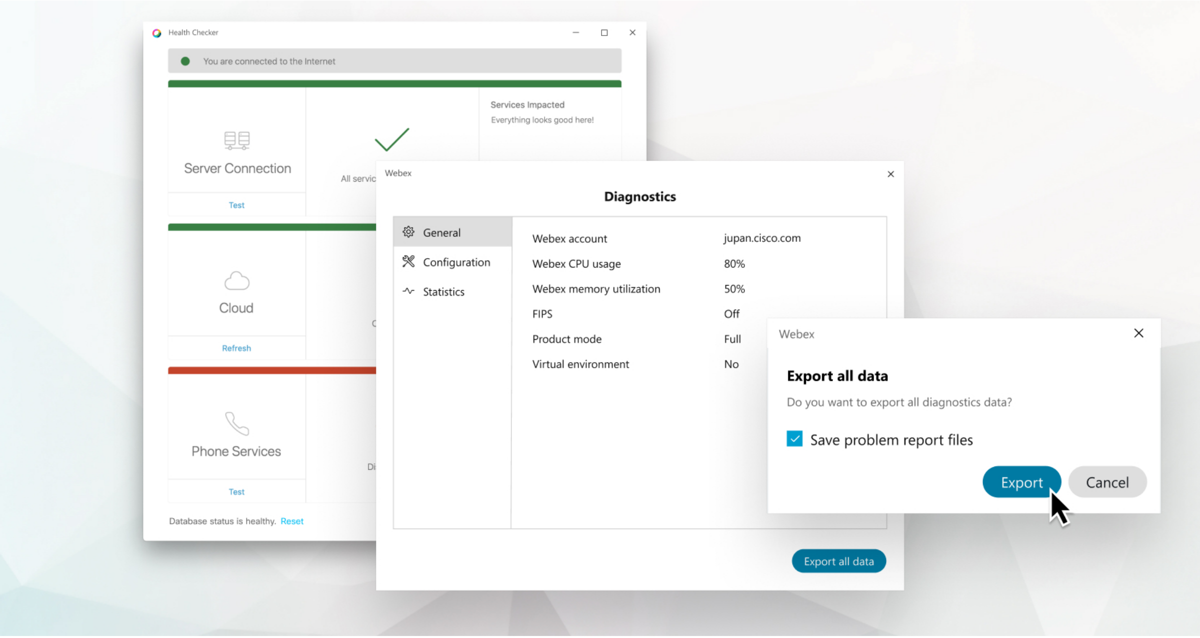
Step 2 Choose **Edit**.

Step 3 Make the necessary edits, and then select **Save**.

Diagnostics in the Webex App

The diagnostics available in the Webex App (desktop and VDI) help you and your users resolve connection issues, check media quality, and collect important troubleshooting information.

Figure 7: Diagnostics in the Webex App



Webex account	jupan.cisco.com
Webex CPU usage	80%
Webex memory utilization	50%
FIPS	Off
Product mode	Full
Virtual environment	No

Export all data

Do you want to export all diagnostics data?

☑ Save problem report files

When you set up Calling in Webex App (Unified CM), you may encounter issues related to the connection or required settings (such as voice domain and UC services). Using this tool, you can diagnose what services are configured correctly and what is missing. This feature is useful for troubleshooting scenarios and reducing support cases, whether you're migrating to Calling in Webex App (Unified CM) or setting up new users.

When user experience issues, they can access the diagnostics view and export the data to share with you or support.

- **Unified CM Settings**—Critical settings (for Jabber migration as well as new user setup) for phone services to work correctly, such as:
  - Unified CM version

    - UC service domain
    - SSO
    - UC services such as voicemail
    - Expressway for MRA

- **Media quality**—Quality for video, audio, and sharing in both directions
- **Devices**—Device information, when users are connected to devices

For shortcut keys to show the diagnostics window, see Keyboard and navigation shortcuts.

Manage Cisco headsets in Control Hub

In the Control Hub devices view, you can get a list of all the Cisco headsets that are registered in your organization for tracking purposes. You can find further details and management options for each headset entry. This information can help you make decisions on whether headsets need to be replaced or troubleshooted.

For more information, see Manage Cisco headsets in Control Hub.

Connection is lost to the Webex cloud

If https://status.webex.com or the health checker show a Webex App cloud full or partial outage, Calling in Webex App (Unified CM) still works for users who are already signed in, as long as the call type is a Unified CM call and goes through Unified CM infrastructure.

Unified CM calling can't happen in the following scenarios when sign in is blocked:

- First day sign-in for the user
- Sign out of Webex App then sign in again

Unified CM calling can happen in the following scenarios where the app remains signed in:

- Quit or exit Webex App and then relaunch—cached data remains (contacts, call history, messages). Unified CM registration and calling aren't affected, but presence when on a call is not sent to other users.
- Reboot the device that Webex App is running on—cached data remains (contacts, call history, messages). Unified CM registration and calling aren't affected, but presence when on a call is not sent to other users.

Single Number Reach (SNR) workaround

If Unified CM is not reachable from Webex App, users can use the Self Care Portal (a link is available in Webex App) to set up Single Number Reach (SNR) so that calls get routed to mobile through the PSTN. For administrative steps, see the Cisco Unified Mobility Features chapter in the Feature Configuration Guide for Cisco Unified Communications Manager. For user self-care configuration, see the Self Care Portal User Guide.

Troubleshoot issues with Calling in Webex App (Unified CM)

If you see registration issues when trying to use Calling in Webex App (Unified CM), go through these checklist items before you submit a ticket.

Step 1 Verify that any CTI-RD or Cisco Spark-RD was removed from Unified CM for the user; if not, delete any stray remote devices.

Step 2 If your organization is enabled for a different call behavior (such as a cross-launch to another calling app) in Control Hub, disable this feature and reselect **Calling in Webex App (Unified CM)** because Unified CM registration and cross-launch cannot be enabled together.

Step 3 Exit Jabber if it's installed on the same machine, because Jabber and Webex App cannot both be registered to Unified CM in softphone mode at the same time.

Step 4 Check other configuration on Unified CM. Some common culprits include the following:

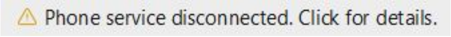
- No **Controlled Devices** in the Unified CM end user account. Ensure that the soft phone device is added to the Controlled Devices.
- Missing **SUBSCRIBE Calling Search Space** for Extension Mobility users. Ensure that a value is selected for this setting.
- A missing Access Control Group permission on the end user account: **Standard CTI Allow Control of Phones supporting Connected Xfer and conf**. Ensure this box is checked.

What to do next

If you addressed all of these steps and issues still persist, restart Webex App and then choose **Help** > **Send Feedback** to submit logs and open a case for the support team to investigate.

Error messages in Webex App

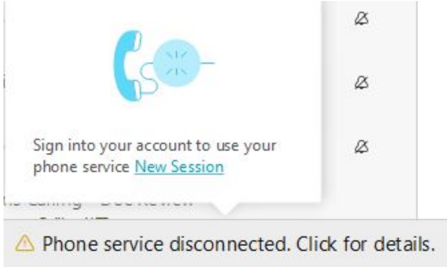
A warning icon appear in the app if Webex App failed to register to Unified CM because of a sign in failure or other reason. A summary of the reason appears next to the icon.



⚠ Phone service disconnected. Click for details.

Tip

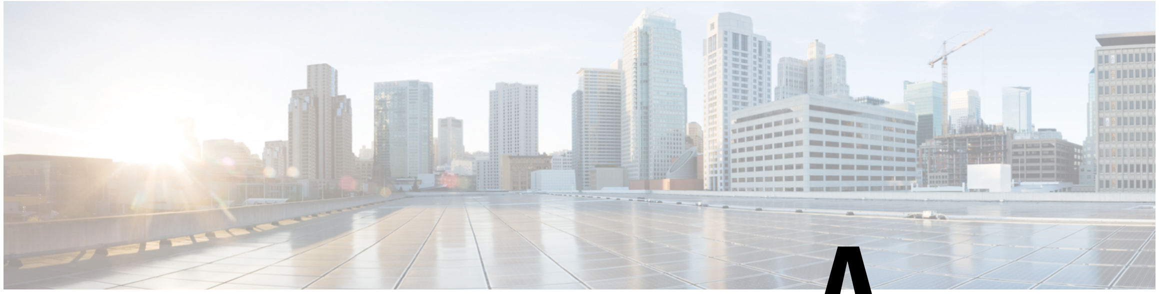
You can hover over the icon to show an error message that may give you clues about what to troubleshoot. You can also click the icon to see if there are any next steps that you have to take to resolve the issue (such as sign into phone services or start a new session).



Sign into your account to use your phone service New Session

Phone service disconnected. Click for details.

See the Error messages documentation for more information on the errors that may appear in Webex App and how to resolve the problem.



APPENDIX A

Appendix

Policy parameters

Reference the following tables for the policy parameters. These parameters let you control specific client functionality in Webex App.

Feature parameters

Parameter	Description and Values	Supported platforms
CucmCallBargeMode	**Parameter:** CucmCallBargeMode • `OFF` (default)—The barge button does not show in the Webex App. • `BARGE`—The barge initiator sends a barge invite, and the barge target acts as a conference server. Example: `<CucmCallBargeMode>BARGE</CucmCallBargeMode>`	

Parameter	Description and Values	Supported platforms

E911EdgeLocationWhiteList	**Parameter:** E911EdgeLocationWhiteList
	Specifies a whitelist of up to 30 Service Set IDs (SSIDs) separated by a semicolon.
	You must configure this parameter when the E911EdgeLocationPolicy parameter is set to true. Then the client monitors users who connect to the corporate network through Expressway for Mobile and Remote Access network.
	Example:
	`<EnableE911EdgeLocationPolicy>true</EnableE911EdgeLocationPolicy>`
	`<E911EdgeLocationWhiteList>SSID1;SSID2</E911EdgeLocationWhiteList>`
		Desktop and mobile

EnableCallPark	**Parameter:** EnableCallPark Specifies whether the call park feature is available in the client. To access the call park feature, users can choose the More option in the call window. • **true** (default)—Call park is enabled. • **false**—Call park is disabled. There is no call park option under the More button.	Desktop
EnableCallPickup	**Parameter:** EnableCallPickup Specifies if a user can pickup a call in their call pickup group. • **true**—Enables call pickup. • **false**—Disables call pickup (default).	Desktop and mobile

Parameter	Description and Values	Supported platforms

EnableE911EdgeLocationPolicy	**Parameter:** EnableE911EdgeLocationPolicy
	Specifies it the client uses the wireless location monitoring service when users connect to the corporate network through Expressway for Mobile and Remote Access.
	• **true**—Webex App monitors wireless location over MRA. You must also configure the `E911EdgeLocationWhiteList` parameter with Service Set IDs (SSIDs). You can configure a list of up to 30 SSIDs, separated by a semicolon.
	• **false**—Webex App doesn't monitor wireless location (default).
	Example:
	`<EnableE911EdgeLocationPolicy>true</EnableE911EdgeLocationPolicy>`
	`<E911EdgeLocationWhiteList>SSID1;SSID2</E911EdgeLocationWhiteList>`
		Desktop and mobile

EnableE911OnPrem LocationPolicy	**Parameter:** EnableE911OnPremLocationPolicy Specifies it the client uses wireless location monitoring service in an on-premises deployment. • **true**—Webex App always monitors wireless location when connected on-premises. • **false**—Webex App never monitors wireless location when connected on-premises (default).	Desktop and mobile
EnableGroupCallPickup	**Parameter:** EnableGroupCallPickup Specifies if a user can pickup incoming calls in another call pickup group, by entering the call pickup group number. • **true**—Enables group call pickup. • **false**—Disables group call pickup (default).	Desktop and mobile
EnableHuntGroup	**Parameter:** EnableHuntGroup Specifies if a user can log into a hunt group. • **true**—Users can log into their hunt group. • **false**—Users cannot log into their hunt group (default).	Desktop and mobile

Parameter	Description and Values	Supported platforms
EnableMeetingPowerUp	**Parameter:** EnableMeetingPowerUp Specifies if a user can move an active call to a meeting. • **true**—Enables move a call to a meeting. • **false**—Disables move a call to a meeting (default).	Desktop
EnableOtherGroupPickup	**Parameter:** EnableOtherGroupPickup Specifies if a user can pickup an incoming call in a group that is associated with their own call pickup group. • **true**—Enables other group call pickup. • **false**—Disables other group call pickup (default).	Desktop and mobile
EnableRecordingTone	**Parameter:** EnableRecordingTone Enables recording tones for the user. This parameter works with these other parameters: LocalRecordingToneVolume, NearEndRecordingToneVolume, RecordingToneDuration, and RecordingToneInterval. **Note** Enable the Unified CM service parameter to play recording notification tones before adding the rrecording tone parameters. See the monitoring and recording chapter of the Features and Services Guide for Cisco Unified Communications Manager for details • **true**—Enable recording tones. (Default) • **false**—Disable recording tones.	Desktop and mobile
EnableSIPURIDialling	**Parameter:** EnableSIPURIDialling Enables URI dialing with Webex and allows users to make calls with URIs. • **true**—Users can make calls with URIs. (Default) • **false**—Users cannot make calls with URIs. Example: `<EnableSIPURIDialling>false</EnableSIPURIDialling>`	Desktop and mobile

Parameter	Description and Values	Supported platforms
LocalPushSSIDList	**Parameter:** LocalPushSSIDList Admin must specify supported WiFi list in Jabber-config.xml file. Specifies a whitelist of up to 10 Service Set IDs (SSIDs) separated by a semicolon. You must configure this parameter when the Local Push Notification Connectivity feature is enabled on CUCM. Example: `<LocalPushSSIDList>SSID1;SSID2</LocalPushSSIDList>`	Mobile: iOS and iPad OS
LocalRecordingToneVolume	**Parameter:** LocalRecordingToneVolume Specifies the volume at which the client plays the recording tone locally. The range is 0-100 and defaults to 10. Example: `<LocalRecordingToneVolume>25</LocalRecordingToneVolume>` See 'EnableRecordingTone' for details on properly configuring recording tones.	Desktop and mobile
NearEndRecording ToneVolume	**Parameter:** NearEndRecordingToneVolume Specifies the volume of the recording tone which Webex sends to the remote device and to the near-end recording server. The range is 0-100 and defaults to 10. Example: `<NearEndRecordingToneVolume>25</NearEndRecordingToneVolume>` See EnableRecordingTone for details on properly configuring recording tones.	Desktop and mobile
PreventDeclineOnHuntCall	**Parameter:** PreventDeclineOnHuntCall Specifies if the Decline button is displayed for an incoming call in a hunt group. • **true**—Decline button is not displayed for an incoming call in a hunt group. • **false**—Decline button is displayed for an incoming call in a hunt group (default).	Desktop and mobile

Parameter	Description and Values	Supported platforms
RecordingToneDuration	**Parameter:** RecordingToneDuration Specifies the milliseconds of a single tone. The range is 100-2000 and defaults to 500. Example: `<RecordingToneDuration>500</RecordingToneDuration>` See 'EnableRecordingTone' for details on properly configuring recording tones.	Desktop and mobile
RecordingToneInterval	**Parameter:** RecordingToneInterval Specifies the milliseconds between consecutive tones. The range is 8000-32000 and defaults to 11500. Example: `<RecordingToneInterval>11500</RecordingToneInterval>` See 'EnableRecordingTone' for details on properly configuring recording tones.	Desktop and mobile
ShowSelectiveCall RecordingButton	**Parameter:** ShowSelectiveCallRecordingButton • **true (default)**— The recording button is shown on the Webex app. • **false**— The recording button is hidden on the Webex app, so users cannot start or stop recording, but you could still use a 3rd party CTI to record. Example: `<ShowSelectiveCallRecordingButton>false</ ShowSelectiveCallRecordingButton>` **Note** This parameter will only take effect if the **Recording Option** field on the "Cisco Unified CM Administration portal" for the user's line is set to **Selective Call Recording Enabled**.	Desktop and mobile

Customization parameters

Parameter	Description and values	Supported platforms
DeskPhoneModeWindowBehavior	Controls whether to show the call control window in desk phone control mode. • **OnCall** (default)— Conversation window is always displayed when a call is answered. • **Never**—Conversation window is never displayed when a call is answered. • **NotOnHold**— Conversation window is not displayed when call is held by a shared line device. In other scenarios, the window is displayed.	Desktop (Windows only)
E911NotificationFrequency	Controls the frequency of the emergency calling disclaimer. • **FirstSignIn** (default)—Shows the disclaimer only when users sign in for the first time. • **EverySignIn**—Shows the disclaimer whenever users sign out and sign in again. • **Never**—Hides the disclaimer. An example that shows the disclaimer only for first-time sign in: `<E911NotificationFrequency>FirstSignIn</E911NotificationFrequency>`	Desktop and mobile
E911NotificationURL	Shows a customizable disclaimer message or notification to users each time they sign in, which they must accept before their telephony capabilities are enabled. This prompt allows users to acknowledge the disclaimer or notification. Set the value of this parameter to a valid HTML web page URL where you are hosting your notification message. Example: `<E911NotificationURL>http://www.example.com/e911.html</E911NotificationURL>` To ensure that the web page renders correctly for all apps that are operating outside the corporate network, the web page must be a static HTML page because the scripts and link tags are not supported by the E911NotificationURL parameter.	Desktop and mobile

Parameter	Description and values	Supported platforms
EnableADLockPrevention	You can configure your Active Directory server for a maximum number of failed signin attempts. This setting can lead to incorrect account lockouts in some Webex deployments. For example, in a deployment without SSO authentication, all Webex services can send the same incorrect credentials to the AD server, rapidly incrementing the failure counter. If you encounter this issue, you can use EnableADLockPrevention to prevent services from sending the same incorrect credentials to the AD server. The allowed values are: • **true**—Webex stops all services which have the same credentials after one service receives an invalid credentials error. • **false** (default)—Webex ignores invalid credential errors and continues sign-in attempts. Example: `<EnableADLockPrevention>true</EnableADLockPrevention>`	Desktop and mobile
EnablePhoneDialerOptionOverMRA	Due to regulation in India, users cannot use VoIP apps to place a PSTN call when they are not in the corporate network. When Webex mobile users are outside and they want to call the contact phone number in Webex, the app gives the option to use the built-in phone app to make calls. • **true**—Every call from an MRA environment shows the phone options dialog. • **false** (default) —The phone options dialog never shows, regardless of the network that the user is on.	Mobile

Parameter	Description and values	Supported platforms
EnableVideo	Specifies if a user can have video for outgoing and incoming calls. • **true** (default)—User can have video for outgoing and incoming calls. • **false**—User cannot have video for outgoing and incoming calls; all the calls are audio only call. **Important** If this key is configured, the key's setting always takes priority over the Control Hub setting. If the key is not configured with any value, the Control Hub setting takes effect and determines whether video is enabled or disabled.	Desktop and mobile
RemoteDestinationEditingWithMultipleDevices	Allows you to determine whether users with multiple devices can edit or add remote destinations. • **true** (default)—Users with multiple devices can edit or add remote destinations. (Default) • **false**—Users with multiple devices cannot edit or add remote destinations.	Desktop
RemoteInUsePresencePrimaryLineOnly	Specifies the presence behavior when a user with multiple lines is on a call. • **true**—RemoteInUse presence is shown only when primary line is in use by the user. For example, if a user's second line shares the same number with a deskphone and a call is made from the deskphone, the user's status does not show "On a Call." • **false** (default)—RemoteInUse presence is shown for all lines when in use by the user. For example, if a user's second line shares the same number with a deskphone and a call is made from the deskphone, the user's status shows as "On a Call." **Note** This parameter is not a selectable preset in Unified CM. You must add it as a custom parameter under policies.	Desktop

Parameter	Description and values	Supported platforms
SelfCareURL	Specifies the fully qualified domain name (FQDN) of Cisco Unified Communications Manager service. Defines the URL for the Self Care Portal when no default service profile is selected in Cisco Unified Communications Manager. Example: `<SelfCareURL>https://selfcare.example.com</SelfCareURL>`	Desktop and mobile
ShowSelfCarePortal	Determines whether the Self Care Portal tab displays in the Options dialog. • **true** (default)—The Self Care Portal tab displays in the Options dialog. • **false**—The Self Care Portal tab does not display in the Options dialog.	Desktop and mobile
ShowCallAlerts	Specifies whether incoming call alerts are displayed. • **true** (default)—Incoming call alerts are always displayed. • **false**—Incoming call alerts are never displayed.	Desktop (Windows only)
ShowPhoneNumberInLineSelection	Controls whether the phone number shows in the line selection dropdown. • **true** (default)—users see the phone number (DID, or extension number) of the line in the line selection drop down menu. If there is a text label configured for the line, they see the number and the label. • **false**—users don't see the phone number (DID, or extension number) of the line in the line selection drop down menu. They only see the line text label.	Desktop (Windows only)
SoftPhoneModeWindowBehavior	Controls whether to show the call control window in softphone mode. • **OnCall** (default)— Conversation window is always displayed when a call is answered. • **Never**—Conversation window is never displayed when a call is answered. • **NotOnHold**— Conversation window is not displayed when call is held by a shared line device. In other scenarios, the window is displayed.	Desktop (Windows only)

Parameter	Description and values	Supported platforms
StartCallWithVideo	Specifies if a user can start video for incoming calls. • **true** (default)—Send video for incoming calls. • **false**—Do not send video for incoming calls, but the user can receive the video.	Desktop and mobile
UserDefinedRemoteDestinations	Lets users add, edit, and delete remote destinations through the client interface. Use this parameter to change the default behavior when you provision Extend and Connect capabilities. By default, if a user's device list contains only a CTI remote device, the client does not let that user add, edit, or delete remote destinations. This occurs to prevent users from modifying dedicated remote devices that you assign. However, if the user's device list contains a software device or a desk phone device, the client lets users add, edit, and delete remote destinations. • **true**—Users can add, edit, and delete remote destinations. • **false** (default)—Users cannot add, edit, and delete remote destinations.	Desktop

Jabber to Webex App migration parameters

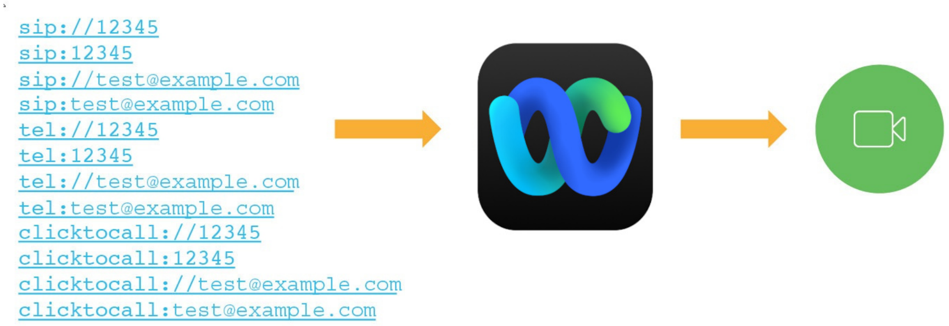
Parameter	Description and values	Supported platforms
EnableJabber2TeamsMigration	Tags users as candidates for moving their data from Jabber to Webex App. This process brings over the users' contact (buddy) list and common preferences to Webex App. • **true**—Moving data from Jabber to Webex App is available to the user if they have a matching email address for both applications. The data move starts between 5 minutes–3 hours after a user signs into Jabber or when they manually initiate the migration from the help menu. • **false**—Moving data from Jabber to Webex App does not appear for the user. (Default) **Note** This parameter is not a selectable preset in Unified CM. You must add it as a custom parameter under policies.	Desktop

Parameter	Description and values	Supported platforms
WebexTeamsDownloadURL	Specifies where users can download Webex App if they did not download while doing the upgrade. Add a value for this URL, otherwise users are asked to contact an administrator for help. For example (using the official download page): `<WebexTeamsDownloadURL>https://www.webex.com/downloads.html </WebexTeamsDownloadURL>` **Note** This parameter is not a selectable preset in Unified CM. You must add it as a custom parameter under policies.	Desktop

Protocol handlers for calling

Calling in Webex App (Unified CM) registers the following protocol handlers with the operating system to enable click-to-call functionality from web browsers or other applications. The following protocols start an audio or video call in Webex App when it's the default calling application on Mac or Windows:

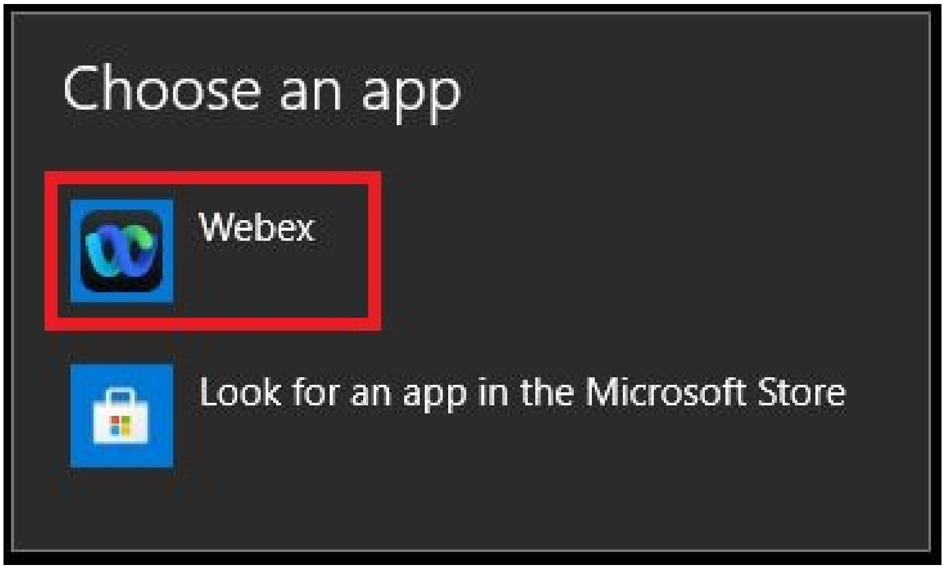
- CLICKTOCALL: or CLICKTOCALL://
- SIP: or SIP://
- TEL: or TEL://
- WEBEXTEL: or WEBEXTEL://



Note If Unified CM is not connected when the app is launched for these protocols, Webex App waits three minutes for Unified CM to connect. If three minutes passes with no connection, the call request stops. If using SIP address to start a call (for example, `sip:test@example.com`), the call may go through the cloud or Unified CM, depending on your organization's SIP address routing configuration in Control Hub.

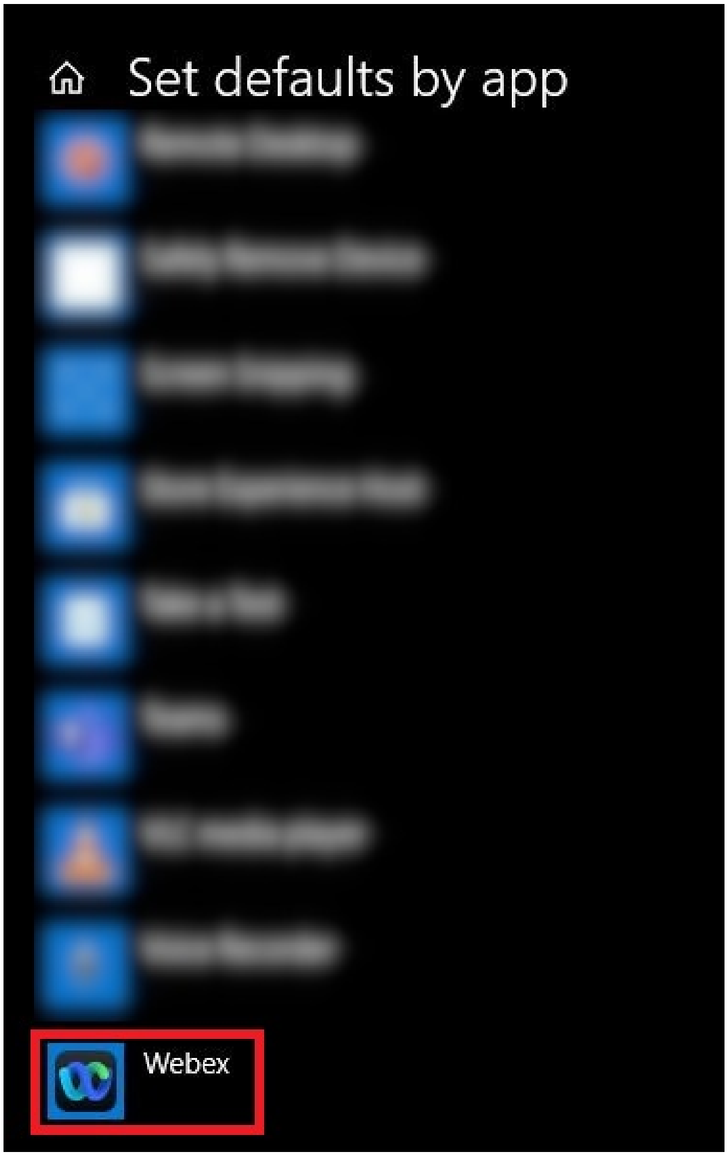
Protocol Handlers for Windows

Other apps can register for the protocol handlers before the Webex App. In Windows 10, the system window to ask users to select which app to use to launch the call. The user preference can be remembered if the user checks **Always use this app**.

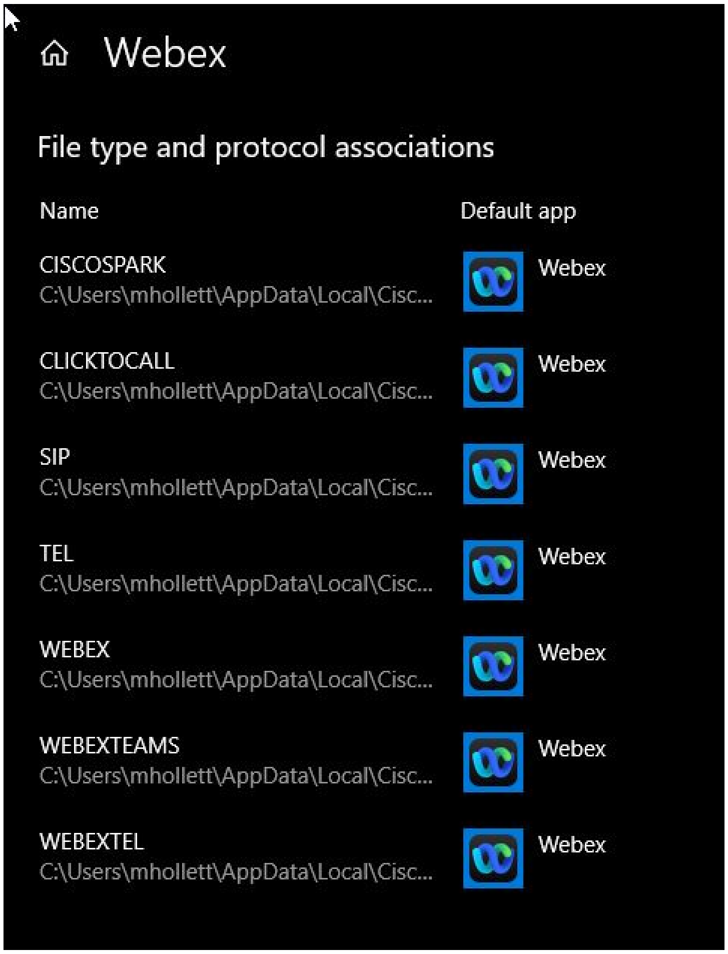


If users need to reset the default calling app settings so that they can pick Webex App, you can instruct them to change the protocol associations for Webex App in Windows 10:

1. Open the **Default app settings** system settings, click **Set defaults by app**,and then choose **Webex App**.



2. For each protocol, choose **Webex App**.



Webex

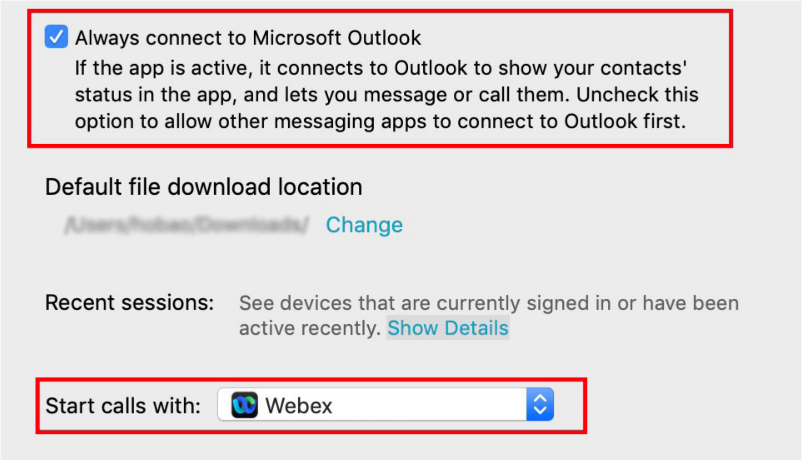
File type and protocol associations

Name	Default app
CISCOSPARK C:\Users\mhollett\AppData\Local\Cisc...	Webex
CLICKTOCALL C:\Users\mhollett\AppData\Local\Cisc...	Webex
SIP C:\Users\mhollett\AppData\Local\Cisc...	Webex
TEL C:\Users\mhollett\AppData\Local\Cisc...	Webex
WEBEX C:\Users\mhollett\AppData\Local\Cisc...	Webex
WEBEXTEAMS C:\Users\mhollett\AppData\Local\Cisc...	Webex
WEBEXTEL C:\Users\mhollett\AppData\Local\Cisc...	Webex

Protocol handlers for macOS

On Mac OS, if other apps registered to the calling protocols before Webex App, users must configure their Webex App to be the default calling option.

In Webex App for Mac, users can confirm that **Webex App** is selected for the **Start calls with** setting under general preferences. They can also check **Always connect to Microsoft Outlook** if they want to make calls in Webex App when they click an Outlook contact's number.



☑ Always connect to Microsoft Outlook
If the app is active, it connects to Outlook to show your contacts' status in the app, and lets you message or call them. Uncheck this option to allow other messaging apps to connect to Outlook first.

Default file download location
[redacted] Change

Recent sessions: See devices that are currently signed in or have been active recently. Show Details

Start calls with: Webex

Quality of service

Quality of service options

Use the following options to configure quality of service (QoS) for Webex App:

- Supported codecs, on page 124
- Define a port range on the SIP profile, on page 125
- Set DSCP values, on page 125

Supported codecs

Type	Codec	Codec Type	Webex App for Mac	Webex App for Windows
Audio	G.711	A-law	Yes	Yes
		µ-law/Mu-law	Yes	Yes
	G.722		Yes	Yes
	G.722.1	24 kb/s and 32 kb/s	Yes	Yes
	G.729		No	No
	G.729a		Yes	Yes
	Opus		Yes	Yes
Video	H.264/AVC		Yes	Yes

Define a port range on the SIP profile

The client uses the port range to send RTP traffic across the network. The client divides the port range equally and uses the lower half for audio calls and the upper half for video calls. As a result of splitting the port range for audio media and video media, the client creates identifiable media streams. You can then classify and prioritize those media streams by setting DSCP values in the IP packet headers.

Step 1 Open the **Cisco Unified CM Administration** interface.

Step 2 Select **Device** > **Device Settings** > **SIP Profile**.

Step 3 Find the appropriate SIP profile or create a new SIP profile.

The **SIP Profile Configuration** window opens.

Step 4 Specify whether you want common or separate port ranges for audio and video. If you are separating your audio and video port ranges, provide audio and video ports. Specify the port range in the following fields:

- **Start Media Port** — Defines the start port for media streams. This field sets the lowest port in the range.
- **Stop Media Port** — Defines the stop port for media streams. This field sets the highest port in the range.

Step 5 Select **Apply Config** and then **OK**.

Set DSCP values

Set Differentiated Services Code Point (DSCP) values in RTP media packet headers to prioritize Webex App traffic as it traverses the network.

Set DSCP values on Unified CM

You can set DSCP values for audio media and video media on Unified CM. Webex App can then retrieve the DSCP values from the device configuration and apply them directly to the IP headers of RTP media packets.

Restriction Operating systems such as Microsoft Windows 10 have a security feature that prevents applications from setting DSCP values on IP packet headers. For this reason, you should use an alternate method for marking DSCP values, such as Microsoft Group Policy.

Step 1 Open the **Cisco Unified CM Administration** interface.

Step 2 Select **System** > **Service Parameters**.

The **Service Parameter Configuration** window opens.

Step 3 Select the appropriate server and then select the **Cisco CallManager** service.

Step 4 Locate the **Clusterwide Parameters (System - QOS)** section.

Step 5 Specify DSCP values as appropriate and then select **Save**.

Set DSCP Values with group policy

If you deploy Webex App for Windows on an operating system such as Microsoft Windows 7 or later, you can use Microsoft Group Policy to apply DSCP values.

Complete the steps in the following Microsoft support article to create a group policy: http://technet.microsoft.com/en-us/library/cc771283%28v=ws.10%29.aspx

You should create separate policies for audio media and video media with the following attributes:

These directions apply to Unified CM calls that go through Webex App. For calls on Webex App only, use the guidelines in the Network Requirements documentation for Webex App.

Attributes	Audio Policy	Video Policy	Signaling Policy
Application name	`CiscoCollabHost.exe`	`CiscoCollabHost.exe`	`CiscoCollabHost.exe`
Protocol	UDP	UDP	TCP
Port number or range	Corresponding port number or range from the SIP profile on Cisco Unified Communications Manager.	Corresponding port number or range from the SIP profile on Cisco Unified Communications Manager.	5060 for SIP
DSCP value	46	34	24

Set DSCP values on the network

You can configure switches and routers to mark DSCP values in the IP headers of RTP media.

To set DSCP values on the network, you must identify the different streams from the client application.

- Media Streams — Because the client uses different port ranges for audio streams and video streams, you can differentiate audio media and video media based on those port range. Using the default port ranges in the SIP profile, you should mark media packets as follows:
  - Audio media streams in ports from 16384 to 24575 as EF
  - Video media streams in ports from 24576 to 32767 as AF41
- Signaling Streams—You can identify signaling between the client and servers based on the various ports required for SIP, CTI QBE, and XMPP. For example, SIP signaling between Webex App and Cisco Unified Communications Manager occurs through port 5060.

  You should mark signaling packets as CS3.
- For port ranges for Webex App only calls, use the guidelines in the Network Requirements documentation for Webex App.

Allow untrusted certificates on Unified CM

If needed, you can use Control Hub to allow untrusted certificates from your Unified CM. They may be untrusted because they're self-signed or if the certificate doesn't match the address that is being used for the connection.

⚠ **Caution** This setting downgrades your deployment's security. We strongly advise that you use a more secure method for certificate trust. Use this method as a last resort for limited deployments, such as those in a lab testing environment.

Before you begin

- Before you use this option, understand certificate requirements and best practices: Certificate requirements, on page 57.
- For iOS devices, you must install a custom root CA on the devices themselves if you're using a private enterprise certificate. Otherwise, Webex App fails to navigate to the SSO authorization URL.

Step 1 From the customer view in https://admin.webex.com, go to **Services** > **Calling**, and then choose **Client Settings**.

Step 2 In Unified CM Settings, toggle on **Allow Unified CM registration without trusted certificate**.

After this toggle is enabled, Webex App registers to the Unified CM environment, regardless of what type of certificate is being used.