Requirements

Server Requirements

The following software requirements are common to all Cisco Jabber clients in this release:

Service	Software Requirement	Supported Version
IM and Presence	Cisco Unified Communications Manager IM and Presence Service	10.5(2) and later (Minimum) 11.5(1) SU2 or later (Recommended)
	Webex Messenger	
Telephony	Cisco Unified Communications Manager	10.5(2) and later (Minimum) 11.5(1) SU3 or later (Recommended)
	Cisco Unified Survivable Remote Site Telephony	Unified SIP SRST 12.8 and later
Contact Search	LDAP directory	LDAP v3 compliant directory such as Microsoft Active directory 2008 R2 and Open LDAP 2.4 or later
Voicemail	Cisco Unity Connection	10.5 and later
Multiline	Cisco Unified Contact Center Express	11.6

Service	Software Requirement	Supported Version
Conferencing	Cisco Meeting Server	2.2 and later
	Cisco TelePresence Server	3.1 and later
	Cisco TelePresence MCU	4.3 and later
	Cisco ISR PVDM3	Cisco Unified Communications Manager 9.x and later
	Cloud CMR	Webex Meetings Server with Collaboration Meeting Room
	Webex Meetings Server	2.8 MR1 and later
	Webex Meetings Center	WBS33 and later
Remote Access	Cisco Adaptive Security Appliance Only applies to Cisco Jabber for Android.	8.4(1) and later
	Cisco AnyConnect Secure Mobility Client Cisco Jabber for Android and Cisco Jabber for iPhone and iPad clients only.	Platform-dependent
	Cisco Expressway C	X8.10.1 and later
	Cisco Expressway E	X8.10.1 and later.

Cisco Jabber uses domain name system (DNS) servers during startup, DNS servers are mandatory for Cisco Jabber setup.

Operating System Requirements

Operating Systems for Cisco Jabber for Windows

You can install Cisco Jabber for Windows on the following operating systems:

- Microsoft Windows 10 (desktop mode)
- Microsoft Windows 8.1 (desktop mode)
- Microsoft Windows 8 (desktop mode)

Cisco Jabber for Windows does not require the Microsoft .NET Framework or any Java modules.

Windows 10 Servicing Options

Cisco Jabber for Windows supports the following Windows 10 servicing options:

- Current Branch (CB)

- Current Branch for Business (CBB)

- Long-Term Servicing Branch (LTSB)—with this option, it is your responsibility to ensure that any relevant service updates are deployed.

For more information about Windows 10 servicing options, see the following Microsoft documentation:https://technet.microsoft.com/en-us/library/mt598226(v=vs.85).aspx.

Note Cisco Jabber installs the required files to the following directories by default:

- %temp%\Cisco Systems\Cisco Jabber-Bootstrap.properties file and installation log

- %LOCALAPPDATA%\Cisco\Unified Communications-Logs and temporary telemetry data

- %APPDATA%\Cisco\Unified Communications-Cached configurations and account credentials

- %ProgramFiles%\Cisco Systems\Cisco Jabber-Installation files for x86 Windows

- %ProgramFiles(x86)%\Cisco Systems\Cisco Jabber-Installation files for x64 Windows

Operating System for Cisco Jabber for Mac

You can install Cisco Jabber for Mac on the following operating systems:

- macOS Catalina 10.15 or later

- macOS Mojave 10.14 or later

- macOS High Sierra 10.13 (or later)

- macOS Sierra 10.12 (or later)

Operating Systems for Cisco Jabber for Android

Refer to the Play Store for the latest supported operating system version information.

Note Cisco Jabber for Android is available as a 32-bit app and a 64-bit app. If your Android device has a 64-bit OS, you get a faster and richer experience by running the 64-bit Jabber client.

You cannot install the 64-bit app on a 32-bit OS. If you use the 32-bit app on most 64-bit platforms, you get a notification to upgrade to the 64-bit app.

Note   If Cisco Jabber is installed on Android 6.0 Marshmallow OS or later, and if it is kept idle:

- The network connection to Cisco Jabber is disabled.

- The users do not receive any calls or messages.

Tap **Change Settings** and ignore battery optimization to receive calls and messages.

Last Jabber Release for Android 5.x Support

Cisco Jabber 12.8 is the last release that supports devices running Android 5.x.

The Jabber 12.9 ends support for all devices that can't upgrade to Android 6.x.

Operating Systems for Cisco Jabber for iPhone and iPad

Refer to the App Store for the latest supported operating system version information.

Important   Cisco supports only the current App Store version of Cisco Jabber for iPhone and iPad. Defects found in any Cisco Jabber for iPhone and iPad release are evaluated against current versions.

Hardware Requirements

Hardware Requirements for Desktop Clients

Requirement	Cisco Jabber for Windows	Cisco Jabber for Mac
Installed RAM	2-GB RAM	2-GB RAM
Free physical memory	128 MB	1 GB
Free disk space	256 MB	300 MB

Requirement	Cisco Jabber for Windows	Cisco Jabber for Mac
CPU speed and type	AMD Mobile Sempron Processor 3600+ 2 GHz Intel Core 2 Duo Processor T7400 @ 2.16 GHz	Intel Core 2 Duo or later processors in any of the following Apple hardware: • iMac Pro • MacBook Pro (including Retina Display model) • MacBook • MacBook Air • iMac • Mac Mini
I/O ports	USB 2.0 for USB camera and audio devices.	USB 2.0 for USB camera and audio devices

CTI Supported Devices

To view the list of Computer Telephony Integration (CTI) supported devices for your Unified Communications Manager:

1. From the **Cisco Unified Reporting** page, select **Unified CM Phone Feature List** from the **System Reports** menu.

2. After opening the report, select **CTI controlled** from the **Feature** drop-down list.

Hardware Requirements for Cisco Jabber for Android

Minimum requirements for Android devices:

Android Operating System	CPU	Display
6.0 or later	1.5 GHz dual-core Recommended: 1.2-GHz quad-core or higher	For two-way video: 480p x 800p or higher. For IM only: 320p x 480p or higher.

Cisco Jabber for Android supports Full UC mode in the devices with these OS versions:

Table 1: Supported Android Devices

Device	Model	Minimum Android OS Version	Notes
BlackBerry	Priv	6.0.1	If you remove Jabber from the recently viewed apps list and you keep the device idle for some time, then Jabber becomes inactive.

Device	Model	Minimum Android OS Version	Notes
Fujitsu	Arrows M357	6.0.1	

Device	Model	Minimum Android OS Version	Notes
Google	Nexus 5	6.0	
	Nexus 5X	6.0	
	Nexus 6	6.0	
	Nexus 6P	6.0	For Google Nexus 6P with Android OS version 6.x or 7.0, your administrator must set your Jabber phone service as a secure phone service. Otherwise, your device might not respond. No action is required for Android OS version 7.1 or later.
	Nexus 7	6.0	
	Nexus 9	6.0	
	Pixel	7.0	
	Pixel C	6.0	
	Pixel XL	7.0	
	Pixel 2	8.0	During a Jabber call, if the user switches audio from the mobile device to a headset, momentary audio issues are possible.
	Pixel 2 XL	8.0	During a Jabber call, if the user switches audio from the mobile device to a headset, momentary audio issues are possible.
	Pixel 3	8.0	If you use the attached headset with the phone, then there might be some issues with the audio for few seconds.
	Pixel 3 XL	8.0	If you use the attached headset with the phone, then there might be some issues with the audio for few seconds.
Honeywell Dolphin	CT50	6.0	
	CT40	7.1.1	
	CT60	7.1.1 and 8.1	We only support the CT60 with Android OS 7.1.1 and 8.1.
HTC	10	6.0	
	A9	6.0	

Device	Model	Minimum Android OS Version	Notes	
		M8	6.0	
M9		6.0		
X9		6.0		
Huawei [1]	Honor 7	6.0		
	Mate 8	6.0		
	Mate 9	6.0		
	Nova	7.0		
	Mate 10	8.0		
	Mate 10 Pro	8.0		
	P8	6.0		
	P9	6.0		
	P10	7.0		
	P10 Plus	7.0		
	P20	8.0		
	P20 Pro	8.0		
	Mate20	8.0		
	Mate20 Pro	8.0		
	P30	9.0		
	P30 Pro	9.0		
LG	G3	6.0		
	G4	6.0		
	G5	6.0		
	G6	7.0		
	V10	6.0		
	V30	8.0		

Device	Model	Minimum Android OS Version	Notes
Motorola	Moto G4	6.0	
	Moto G5	7.0	
	Moto G6	8.0	
	Moto Z Droid	6.0	
Nokia	6.1	8.0	
	8.1	8.1	

Device	Model	Minimum Android OS Version	Notes
OnePlus	One	6.0	
	5	8.0	
	5T	8.0	
	6	9.0	
	6T	9.0	
	7T	10.0	
	Samsung	All	6.0

Device	Model	Minimum Android OS Version	Notes	
				• Devices that can't upgrade to Android OS 6.x or later are no longer supported.
				• Enable the auto-run option for Jabber. For Android OS 6.x and later, you can find the auto-run option under **App Smart Manager**.
				• Jabber delays the incoming call notification pop-up on Samsung Galaxy Tab Pro 8.4 (Model T320UEU1AOC1) for Canada.
				• Jabber delays reconnecting to the network on a Samsung Xcover 3 when it loses Wi-Fi connectivity.

				• There's an audio quality issue in Samsung devices with chipset Exynos 7580. The audio becomes unclear when the device screen is off. Here is the device list:
				   • Samsung Galaxy A3 2016
				   • Samsung

Device	Model	Minimum Android OS Version	Notes	
				Galaxy A5 2016 • Samsung Galaxy A7 2016 • Samsung Galaxy S5 Neo • Samsung Galaxy J7 • Samsung Galaxy View
	Seuic	Cruise 1	9.0	
	Sonim	XP8	7.1.1	

Device	Model	Minimum Android OS Version	Notes
Sony Xperia	XZ	7.0	
	XZ1	8.0	
	XZ2	8.0	
	XZ3	9.0	
	Z2	6.0	
	Z2 tablet	6.0	
	Z3	6.0	Sony Xperia Z3 (Model SO-01G) with Android OS 5.0.2 has poor audio on Jabber calls.
	Z3 Tablet Compact	6.0	
	Z3+/Z4	6.0	Video call is unstable on Sony Z3+/Z4. Try disabling your self-video for a video call. Otherwise, make a voice call only.
	Z4 TAB	6.0	
	Z5 Premium and Z5	6.0	
	Xiaomi	4C	6.0	Only the 32-bit version runs on these devices.
MAX		6.0	
Mi 4		6.0	
Mi 5		6.0	
Mi 5s		7.0	
Mi 6		7.0	
Mi 8		8.0	
Mi 9		9.0	
Mi 10		10.0	
Pocophone		8.0	
Mi Note		6.0	Only the 32-bit version runs on these devices.
Mi Note 2		7.0	
Mi MIX 2		8.0	

Device	Model	Minimum Android OS Version	Notes
Mi A1		8.0	
Redmi Note 3		6.0	
Redmi Note 4X		6.0.1	
Redmi Note 5		8.0	
Redmi Note 6 Pro		8.1	
Zebra		TC75X	6.0
	TC51	6.0	

[1] Because of changes in EMUI 10, incoming call toasts might not appear when your device is locked. In Jabber, go to **Settings** > **Notifications** and select **Banners**.

Jabber Support for Samsung Knox

Cisco Jabber for Android supports Samsung Knox as follows:

Knox Version	Samsung Devices
2.6	Note 4
	Note 5
	Note Edge
	S5
	S6
	S6 Edge
	S6 Edge Plus
	S7
	S7 Edge
	Note 10.1 (2014 Edition)
2.7.1	Galaxy Note5
3.1	Galaxy A5 (2017)
3.2	Galaxy On5 (2016)
3.3	Galaxy S10

Note   When you run Cisco Jabber for Android inside Samsung Know, the security design of Samsung Knox requires you to unlock Knox first. You can't answer or decline a call with Jabber until you unlock Knox.

Jabber Supports Samsung Dex

Cisco Jabber for Android supports Samsung Dex in Samsung S8, S8 Plus, and Note 8.

Support Policy on Earlier Android Versions for Cisco Jabber

Due to an Android kernel issue, Cisco Jabber can't register to the Cisco Unified Communications Manager on some Android devices. To resolve this problem, try the following:

Upgrade the Android kernel to 3.10 or later version.

Set the Cisco Unified Communications Manager to use mixed mode security, enable secure SIP call signaling, and use port 5061. See the *Cisco Unified Communications Manager Security Guide* for your release for instructions on configuring mixed mode with the Cisco CTL Client. You can locate the security guides in the Cisco Unified Communications Manager Maintain and Operate Guides. This solution applies to the following supported devices:

Device Model	Operating System
HTC M8	Android OS 6.0 or later
HTC M9	Android OS 6.0 or later
Sony Xperia Z2	Android OS 6.0 or later and kernel version earlier than 3.10.49.
Sony Xperia Z2 tablet	If the device's Android OS is 6.0 or later and kernel version is 3.10.49 or later, then the device can support nonsecure mode.
Sony Xperia Z3	
Sony Xperia Z3 Tablet Compact	
Xiaomi Mi4	Android OS 6.0 or later
Xiaomi Mi Note	Android OS 6.0 or later
Honeywell Dolphin CT50	Android OS 6.0 or later

Supported Bluetooth Devices

Bluetooth Devices	Dependencies
Cisco 561	
Cisco 562	
Plantronics Voyager Legend	
Plantronics Voyager Legend UC	
Plantronics Voyager edge UC	
Plantronics Voyager edge	
Plantronics PLT focus	

Bluetooth Devices	Dependencies
Plantronics BackBeat 903+	If you use a Samsung Galaxy S4, you can experience problems due to compatibility issues between these devices.
Jabra Motion	Upgrade Jabra Motion Bluetooth headset to firmware version 3.72 or above. The Jabra Motion Bluetooth headsets with firmware version 3.72 or above supports Cisco Jabber call control.
Jabra Wave+	
Jabra Biz 2400	
Jabra Easygo	
Jabra PRO 9470	
Jabra Speak 510	
Jabra Supreme UC	
Jabra Stealth	
Jabra Evolve 65 UC Stereo	
Jawbone ICON for Cisco Bluetooth Headset	If you use a Samsung Galaxy S4, you can experience problems due to compatibility issues between these devices.

Bluetooth limitations:

- Using a Bluetooth device on a Samsung Galaxy SIII may cause distorted ringtone and distorted call audio.

- If a user disconnects and reconnects the Bluetooth Headset during a Jabber call, then the user can't hear the audio. This limitation applies to Smartphones with versions earlier to Android 5.0 OS.

- In Sony Z4 / LG G4 /Devices with OS Android 6.0, users can experience audio loss when switching to a Bluetooth headset after starting a Jabber call. As a workaround, switch the audio output to a speaker and then switch back to Bluetooth. Or connect the Bluetooth headset before making a Cisco Jabber call.

Supported Android Wear

Cisco Jabber runs on all Android wear devices with Android OS 5.0 or later and Google service 8.3 or later. We test Cisco Jabber on these Android Wear devices:

- Fossil Gen 3 SmartWatch

- Huawei watch

- LG G Watch R

- LG Watch Urbane

- Moto 360

- Moto 360 (2nd Gen)

- Samsung Gear Live

- Sony SmartWatch 3

Note The Cisco Jabber installer for Android wear devices is separate from the main Jabber APK file. Users get the Android wear installer from the Google Play store when they pair the wear device with a mobile device.

Supported Chromebook Models

Chromebook must have Chrome OS version 53 or later. Users can download Cisco Jabber for Android from Google Play Store.

- Asus Chromebook Flip C302

- HP Chromebook 13 G1 Notebook PC

- Google Chromebook Pixel

- Google Chromebook Pixelbook

- Samsung Chromebook Pro

Hardware Requirements for Cisco Jabber for iPhone and iPad

Jabber supports the following Apple devices. The minimum requirement for iPhone and iPad is iOS 13.x and iPadOS. We don't support devices that aren't upgraded to these versions.

Apple Device	Version
iPad	5th, 6th, and 7th generation
iPad Air	Air 2 and Air 3
iPad Pro	9.7 and 10.5 inch 12.9 inch, 1st, 2nd and 3rd generation
iPad mini	Mini 4 and mini 5
iPhone	6s, 6s Plus, 7, 7 Plus , 8, 8 Plus, X, Xs, Xs Max, 11, 11 Pro, 11 Pro Max, XR and SE
iPod touch	6th generation
Apple Watch	WatchOS 5 running on Apple Watch and Apple Watch 2, 3 and 4.

The following Bluetooth headsets are supported on iPhone and iPad:

Manufacturer	Model(s)
Apple	AirPod
Cisco	561, 562
Jabra	BIZ 2400, Easygo, Evolve 65 UC Stereo, EXTREME 2, Motion[2], PRO 9470, Speak 450 for Cisco, Speak 510, Stealth Supreme UC, Wave +
Jawbone	ICON for Cisco Bluetooth Headset
Plantronics	Voyager Edge, Voyager Edge UC, Voyager Legend, Voyager Legend UC
Sony Eriksson	MW-600

[2] Supports Bluetooth control for Cisco Jabber calls. This feature is only supported with firmware version 3.72.

Network Requirements

When using Cisco Jabber 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.

IPv6 Requirements

Cisco Jabber is fully IPv6 ready, it works as normal in pure IPv6 and hybrid networks with the limitations listed in this section. Cisco Collaboration solutions does not currently fully support IPv6. For example, Cisco VCS Expressway for Mobile and Remote Access has limitations in pure IPv6 networks that require NAT64/DNS64 to be deployed in mobile carrier networks. Cisco Unified Communications Manager and Cisco Unified Communications Manager IM and Presence don't currently support HTTPS in pure IPv6 networks.

This feature is configured in Jabber using the IP_Mode parameter to set the protocol to IPv4, IPv6, or Dual Stacks. Dual Stacks is the default setting. The IP_Mode parameter can be included in Jabber Client Configuration (refer to the latest version of the *Parameters Reference Guide for Cisco Jabber*), the bootstrap for Windows, and the URL configuration for Mac and Mobile clients.

The network IP protocol used by Jabber when connecting to services is determined by the following factors:

• The Jabber Client Configuration IP_Mode parameter.

• The client operating system IP capabilities.

• The server operating system IP capabilities.

• The availability of a DNS record for IPv4 and IPv6.

• Cisco Unified Communications Manager SIP setting for softphone devices configuration for IPv4, IPv6, or both. The SIP connection setting for softphone devices must match the Jabber IP_Mode parameter setting to make a successful connection.

• Underlying network IP capabilities.

On Cisco Unified Communications Manager, the IP capability is determined by generic server settings and device-specific settings. The following table lists the expected Jabber connections given the various settings, this list assumes that the DNS records for IPv4 and IPv6 are both configured.

When the Client OS, Server OS, and Jabber IP_Mode parameter are set to Two Stacks, Jabber will use either IPv4 or IPv6 address for connections with the server in accordance with RFC6555.

Client OS	Server OS	Jabber IP_Mode parameter	Jabber Connection outcome
IPv4 Only	IPv4 Only	IPv4-Only	IPv4 Connection
		IPv6-Only	Connection Failure
		Two Stacks	IPv4 Connection
IPv4 Only	IPv6 Only	IPv4-Only	Connection Failure
		IPv6-Only	Connection Failure
		Two Stacks	Connection Failure

Client OS	Server OS	Jabber IP_Mode parameter	Jabber Connection outcome
IPv6 Only	IPv4 Only	IPv4-Only	Connection Failure
		IPv6-Only	Connection Failure
		Two Stacks	Connection Failure
IPv6 Only	IPv6 Only	IPv4-Only	Connection Failure
		IPv6-Only	IPv6 Connection
		Two Stacks	IPv6 Connection
IPv4 Only	Two Stacks	IPv4-Only	IPv4 Connection
		IPv6-Only	Connection Failure
		Two Stacks	IPv4 Connection
IPv6 Only	Two Stacks	IPv4-Only	Connection Failure
		IPv6-Only	IPv6 Connection
		Two Stacks	IPv6 Connection
Two Stacks	IPv4 Only	IPv4-Only	IPv4 Connection
		IPv6-Only	Connection Failure
		Two Stacks	IPv4 Connection
Two Stacks	IPv6 Only	IPv4-Only	Connection Failure
		IPv6-Only	IPv6 Connection
		Two Stacks	IPv6 Connection
Two Stacks	Two Stacks	IPv4-Only	IPv4 Connection
		IPv6-Only	IPv6 Connection
		Two Stacks	IPv6 Connection

When you use Jabber in IPv6-Only mode, NAT64/DNS64 is required to connect to an IPv4 infrastructure, such as Webex Messenger service, Cisco VCS Expressway for Mobile and Remote Access, and Cisco Webex Platform service.

Desktop device support is available for IPv6-only on-premises deployments. All Jabber mobile devices must be configured as Two Stacks.

For more details about IPv6 deployment, see the IPv6 Deployment Guide for Cisco Collaboration Systems Release 12.0.

Limitations

- HTTPS Connectivity

  - In an On-Premises deployment, Cisco Jabber supports IPv4 only and Two Stacks modes to connect to Cisco Unified Communications Manager and Cisco Unified Communications Manager IM and Presence Service. These servers do not currently support IPv6 HTTPS connections.

    Cisco Jabber can connect using HTTPS to Cisco Unity Connection for Voicemail using IPv6 only mode.

- Webex Messenger Limitations

  - Webex Messenger is not supported on IPv6.

- Telephony Limitations

  - When you upgrade user devices on Cisco Unified Communications Manager to either Two Stacks or IPv6 only, the corresponding Jabber client must be upgraded to 11.6 or later.

  - When an installation includes IPv4 endpoints and IPv6 endpoints, we recommend that you use a hardware MTP to bridge the Audio and Video between these devices. This is supported on hardware MTP with Cisco IOS version 15.5. For example, a Cisco 3945 router must run the following T-train build: c3900e-universalk9-mz.SPA.155-2.T2.bin.

  - At present we do not have a solution roadmap to support IPv4 and IPv6 simultaneously in Cisco endpoints including Jabber. Cisco Unified Communications Manager supports the current functionality which is IPv4-Only and IPv6-Only. An MTP is required to support calls between IPv4-only and IPv6-only endpoints, or IPv4-only or IPv6-only Gateways.

  - Jabber to Jabber calls are not supported on IPv6.

- File Transfer Limitations

  - Advanced File Transfer—When the client is configured for Two Stacks and Cisco Unified Communications Manager IM and Presence Service is Two Stacks enabled, advanced file transfer is supported on the following Cisco Unified Communications Manager IM and Presence Service versions:

    - 10.5.2 SU2

    - 11.0.1 SU2

    - 11.5

  - Person to Person file transfer—For on-premises deployment person to person file transfer between IPv4 and IPv6 clients is not supported. If you have a network configuration with both IPv4 and IPv6 clients, we recommend configuring advanced file transfer.

- Mobile and Remote Access Limitations

  - Cisco VCS Expressway for Mobile and Remote Access doesn't support IPv6.

  - If Cisco Unified Communications Manager is configured for an IPv6 SIP connection, you can't connect to Cisco Unified Communications Manager using Cisco VCS Expressway for Mobile and Remote Access to use telephony services.

Requirements to Support IPv6 in Android

Android OS Requirement

Android 5.0 and later

Network Requirements

- IPv4 Only mode (Android accepts only IPv4 address)

- Dual Stack with SLAAC (Android accepts both IPv4 and IPv6 address)

- NAT64 or DNS64 (server uses IPv4 address and client uses IPv6 address)

Limitations

- DHCPv6 Limitation

    - DHCPv6 is not supported on an Android device.

- Android OS Limitation

    - Android OS does not support IPv6-only network. For more information on this limitation, see the Android developer link.

Ports and Protocols

The client 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 release 11.0 and later.
	53	DNS	UDP	Hostname resolution.
	3804	CAPF	TCP	Issues Locally Significant Certificates (LSC) to IP phones. This port is the listening port for Cisco Unified Communications Manager Certificate Authority Proxy Function (CAPF) enrollment.
	8443	HTTPS		Traffic to Cisco Unified Communications Manager and Cisco Unified Communications Manager IM and Presence Service.
	8191	SOAP	TCP	Connects to local port to provide Simple Object Access Protocol (SOAP) web services.

	Port	Application Layer Protocol	Transport Layer Protocol	Description
Directory Integration—For LDAP contact resolution, one of these ports is used based on your LDAP configuration.				
	389	LDAP	TCP	LDAP TCP (UDP) Connects to an LDAP directory service.
	3268	LDAP	TCP	Connects to a Global Catalog server for contact searches.
	636	LDAPS	TCP	LDAPS TCP Connects securely to an LDAP directory service.
	3269	LDAPS	TCP	LDAPS TCP Connects securely to the Global Catalog server.
Instant Messaging and Presence				
	443	XMPP	TCP	XMPP traffic to the Webex Messenger service. The client sends XMPP through this port in cloud-based deployments only. If port 443 is blocked, the client falls back to port 5222.
	5222	XMPP	TCP	Connects to Cisco Unified Communications Manager IM and Presence Service for instant messaging and presence.
	37200	SOCKS5 Bytestream	TCP	Peer to Peer file transfer, In on-premises deployments, the client also uses this port to send screen captures.
	7336	HTTPS	TCP	MFT File transfer (On-Premises only).
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 TCP Provides secure SIP call signaling. (Used if Secure SIP is enabled for device.)
	3000-3999	FECC	UDP	Far end camera control (FECC).
	5070-6070	BFCP	UDP	Binary Floor Control Protocol (BFCP) for video screen sharing capabilities.
Voice or Video Media Exchange				
	16384-32766	RTP/SRTP	UDP	Cisco Unified Communications Manager media port range used for audio, video, and BFCP video desktop share.
	33434-33598	RTP/SRTP	UDP	Cisco Hybrid Services (Jabber to Jabber calling) media port range used for audio and video.
	8000	RTP/SRTP	TCP	Used by Jabber Desk Phone Video Interface. The interface enables users to receive video that's transmitted to their desk phone through the Jabber client.

	Port	Application Layer Protocol	Transport Layer Protocol	Description
Unity Connection				
	7080	HTTP	TCP	Used for Cisco Unity Connection to receive notifications of voice messages (new message, message update, and message deleted).
	7443	HTTPS	TCP	Used for Cisco Unity Connection to securely receive notifications of voice messages (new message, message update, and message deleted).
	8443	HTTPS	TCP	Connects to Cisco Unity Connection for configuration.
	443	HTTPS	TCP	Connects to Cisco Unity Connection for voicemail.
Webex Meetings				
	80	HTTP	TCP	Connects to Webex Meetings Center for meetings.
	443	HTTPS	TCP	Connects to Webex Meetings Center for meetings.
	8443	HTTPS	TCP	Web access to Cisco Unified Communications Manager and includes connections for the following: • Cisco Unified Communications Manager IP Phone (CCMCIP) server for assigned devices • User Data Service (UDS) for contact resolution
Accessories Manager				
	8001		TCP	In Cisco Jabber for Windows and Mac, Sennheiser plugin uses this port for Localhost traffic for call controls.

Ports for Other Services and Protocols

In addition to the ports listed in this section, review the required ports for all protocols and services in your deployment. You can find the port and protocol requirements for different servers in the following documents:

- For Cisco Unified Communications Manager, Cisco Unified Communications Manager IM and Presence Service, see the *TCP and UDP Port Usage Guide*.

- For Cisco Unity Connection, see the *System Administration Guide*.

- For Webex Meetings Server, see the *Administration Guide*.

- For Cisco Meeting Server, see *Cisco Meeting Server Release 2.6 and 2.7: Single Combined Meeting Server Deployments*.

- For Webex services, see the *Administrator's Guide*.

- For Expressway for Mobile and Remote Access, refer to *Cisco Expressway IP Port Usage for Firewall Traversal*.

• For file transfer port usage, see the *Configuration and Administration of IM and Presence Service on Cisco Unified Communications Manager*.

Supported Codecs

Type	Codec	Codec Type	Cisco Jabber for Android	Cisco Jabber for iPhone and iPad	Cisco Jabber for Mac	Cisco Jabber for Windows
Audio	G.711	A-law	Yes Supports normal mode.		Yes	Yes
		μ-law/Mu-law	Yes Supports normal mode.		Yes	Yes
	G.722		Yes		Yes	Yes
	G.722.1	24 kb/s and 32 kb/s	Yes Supports normal mode.		Yes	Yes
	G.729		Does not support Visual Voicemail with G.729; however, you can access voice messages using G.729 and the **Call Voicemail** feature.		No	No
	G.729a		Yes Minimum requirement for low-bandwidth availability. Only codec that supports low-bandwidth mode. Supports normal mode.		Yes	Yes
	Opus		Yes		Yes	Yes
Video	H.264/AVC	Baseline profile	Yes		Yes	Yes
		High profile	No		Yes	Yes
Voicemail	G.711	A-law	Yes		Yes	Yes
		μ-law / Mu-law (default)	Yes		Yes	Yes
	PCM linear		Yes		Yes	Yes

If users have issues with voice quality when using Cisco Jabber for Android or Cisco Jabber for iPhone and iPad, they can turn low-bandwidth mode on and off in the client settings.

Virtual Environment Requirements

Software Requirements

To deploy Cisco Jabber for Windows in a virtual environment, select from the following supported software versions:

Software	Supported Versions
Citrix XenDesktop	7.9, 7.8, 7.6, 7.5, 7.1
Citrix XenApp	7.9 published apps and desktop 7.8 published apps and desktop 7.6 published apps and desktop 7.5 published desktop 6.5 published desktop
VMware Horizon View	6.x to 8.x

Softphone Requirements

For softphone calls, use Jabber Softphone for VDI. For more information, see **Release Notes for Cisco Jabber Softphone for VDI Release 12.9**

Audio and Video Performance Reference

⚠️

Attention The following data is based on testing in a lab environment. This data is intended to provide an idea of what you can expect in terms of bandwidth usage. The content in this topic is not intended to be exhaustive or to reflect all media scenarios that might affect bandwidth usage.

Media Assure

Ensure quality of real-time media on all network types so that your meetings aren't interrupted because of poor media quality. Media Assure can relieve up to 25% packet loss.

Media Assure is supported for video on Cisco Unified Communications Manager Release 10.x or later and for audio and video on Cisco Unified Communications Manager Release 11.5 or later.

For Expressway for Mobile and Remote Access deployments, Media Assure requires Cisco Expressway Release 8.8.1 or later.

For minor to severe network conditions Jabber can:

- Temporarily limit bandwidth on streams.

- Re-sync video.

- Pace packets to avoid unnecessary congestion based burst losses.

- Provide resilience mechanisms by using upfront SDP signaling from first media packet.

- Protect packet loss.

- Avoid congestion based loss because of over production of media.

- Improve protection of low frame rate / low bit rate streams.

- Support authenticated and encrypted FEC.

Fast Lane Support

Fast Lane support ensures that business critical applications are prioritized on the network, even during high traffic. Jabber supports Fast Lane for Voice and Video traffic. For iOS 10, when the access point (AP) fast lane feature is used, the DSCP value configured on Cisco Unified Communications Manager will not be used anymore; whereas for iOS 11 that does not support the fast lane feature, Jabber will continue using the DSCP value configured on Cisco Unified Communications Manager.

Irrespective of the DSCP configuration on Cisco Unified Communications Manager, if your wireless AP supports the fast lane feature, then Jabber automatically sets the following DSCP and user priority (UP) values:

- For audio calls or the audio portion in a video call, DSCP is set to 0x2e and UP is set to 6.

- For the video portion in a video call, DSCP is set to 0x22 and UP is set to 5.

- If your AP does not support fast lane or does not use it, DSCP values are automatically set to that designated by Cisco Unified Communications Manager.

Prerequisites:

- WLC running AireOS 8.3 and higher

- AP1600/2600 Series Access Points, AP1700/2700 Series Access Points, AP3500 Series Access Points, AP3600 Series Access Points + 11ac Module, WSM, Hyperlocation module, 3602P, AP3700 Series Access Points + WSM, 3702P, OEAP600 Series OfficeExtend Access Points, AP700 Series Access Points, AP700W Series Access Points, AP1530 Series Access Points, AP1550 Series Access Points, AP1570 Series Access Points, and AP1040/1140/1260 Series Access Points

- iOS device running on iOS 11 or later.

Audio Bit Rates for Cisco Jabber Desktop Clients

The following audio bit rates apply to Cisco Jabber for Windows and Cisco Jabber for Mac.

Codec	RTP (kbits/second)	Actual bit rate (kbits/second)	Notes
G.722.1	24/32	54/62	High quality compressed
G.711	64	80	Standard uncompressed

Codec	RTP (kbits/second)	Actual bit rate (kbits/second)	Notes
G.729a	8	38	Low quality compressed

Audio Bit Rates for Cisco Jabber Mobile Clients

The following audio bit rates apply to Cisco Jabber for iPad and iPhone and Cisco Jabber for Android.

Codec	Codec bit rate (kbits/second)	Network Bandwidth Utilized (kbits/second)
g.711	64	80
g.722.1	32	48
g.722.1	24	40
g.729a	8	24

Video Bit Rates for Cisco Jabber Desktop Clients

The following video bit rates (with g.711 audio) apply to Cisco Jabber for Windows and Cisco Jabber for Mac. This table does not list all possible resolutions.

Resolution	Pixels	Measured bit rate (kbits per second) with g.711 audio
w144p	256 x 144	156
w288p This is the default size of the video rendering window for Cisco Jabber.	512 x 288	320
w448p	768 x 448	570
w576p	1024 x 576	890
720p	1280 x 720	1300
1080p	1920 x 1080	2500-4000

Note   The measured bit rate is the actual bandwidth used (RTP payload + IP packet overhead).

Video Bit Rates for Cisco Jabber for Android

Video	Resolution	Bandwidth
HD	1280 x 720	1024
VGA	640 x 360	512

Video	Resolution	Bandwidth
CIF	488x211	310

Note To send and receive HD video during calls:

- Configure the maximum bit rate for video calls higher than 1024 kbps in Cisco Unified Communications Manager.

- Enable DSCP on a router to transmit video RTP package with high priority.

Video Bit Rates for Cisco Jabber for iPhone and iPad

The client captures and transmits at 20 fps.

Resolution	Pixels	Bit rate (kbits/second) with g.711 audio
w144p	256 x 144	290
w288p	512 x 288	340
w360p	640 x 360	415
w720p	1280 x 720	1024

Presentation Video Bit Rates

Cisco Jabber captures at 8 fps and transmits at 2–8 fps.

The values in this table do not include audio.

Pixels	Estimated wire bit rate at 2 fps (kbits per second)	Estimated wire bit rate at 8 fps (kbits per second)
720 x 480	41	164
704 x 576	47	188
1024 x 768	80	320
1280 x 720	91	364
1280 x 800	100	400
1920 x 1080	150-300	500-1000

In Release 12.5, we changed the bit rate allocation to improve the main video quality when your total video bandwidth is under 300 kb. But, that change also set the maximum bit rate for the main video at 450 kilobits/sec.

At higher total video bandwidths, you might see lower resolution, compared to earlier releases, in the main video.

Maximum Negotiated Bit Rate

You specify the maximum payload bit rate in Cisco Unified Communications Manager in the **Region Configuration** window. This maximum payload bit rate does not include packet overhead, so the actual bit rate used is higher than the maximum payload bit rate you specify.

The following table describes how Cisco Jabber allocates the maximum payload bit rate:

Desktop sharing session	Audio	Interactive video (Main video)	Presentation video (Desktop sharing video)
No	Cisco Jabber uses the maximum audio bit rate.	Cisco Jabber allocates the remaining bit rate as follows: The maximum video call bit rate minus the audio bit rate.	—
Yes	Cisco Jabber uses the maximum audio bit rate.	Cisco Jabber allocates half of the remaining bandwidth after subtracting the audio bit rate.	Cisco Jabber allocates half of the remaining bandwidth after subtracting the audio bit rate.

Audio	Interactive video (Main video)
Cisco Jabber uses the maximum audio bit rate	Cisco Jabber allocates the remaining bit rate as follows: The maximum video call bit rate minus the audio bit rate.

Bandwidths

Region configuration on Cisco Unified Communications Manager can limit the bandwidth available to the client.

Use regions to limit the bandwidth that is used for audio and video calls within a region and between existing regions by specifying the transport-independent maximum bit rates for audio and for video calls. For more information on region configuration, see the Cisco Unified Communications Manager documentation for your release.

Bandwidth Performance Expectations for Cisco Jabber Desktop Clients

Cisco Jabber for Mac separates the bit rate for audio and then divides the remaining bandwidth equally between interactive video and presentation video. The following table provides information to help you understand what performance you should be able to achieve per bandwidth:

Upload speed	Audio	Audio + Interactive video (Main video)
125 kbps under VPN	At bandwidth threshold for g.711. Sufficient bandwidth for g.729a and g.722.1.	Insufficient bandwidth for video.
384 kbps under VPN	Sufficient bandwidth for any audio codec.	w288p (512 x 288) at 30 fps
384 kbps in an enterprise network	Sufficient bandwidth for any audio codec.	w288p (512 x 288) at 30 fps
1000 kbps	Sufficient bandwidth for any audio codec.	w576p (1024 x 576) at 30 fps
2000 kbps	Sufficient bandwidth for any audio codec.	w720p30 (1280 x 720) at 30 fps

Cisco Jabber for Windows separates the bit rate for audio and then divides the remaining bandwidth equally between interactive video and presentation video. The following table provides information to help you understand what performance you should be able to achieve per bandwidth:

Upload speed	Audio	Audio + Interactive video (Main video)	Audio + Presentation video (Desktop sharing video)	Audio + Interactive video + Presentation video
125 kbps under VPN	At bandwidth threshold for g.711. Sufficient bandwidth for g.729a and g.722.1 .	Insufficient bandwidth for video.	Insufficient bandwidth for video.	Insufficient bandwidth for video.
384 kbps under VPN	Sufficient bandwidth for any audio codec.	w288p (512 x 288) at 30 fps	1280 x 800 at 2+ fps	w144p (256 x 144) at 30 fps + 1280 x 720 at 2+ fps
384 kbps in an enterprise network	Sufficient bandwidth for any audio codec.	w288p (512 x 288) at 30 fps	1280 x 800 at 2+ fps	w144p (256 x 144) at 30 fps + 1280 x 800 at 2+ fps
1000 kbps	Sufficient bandwidth for any audio codec.	w576p (1024 x 576) at 30 fps	1280 x 800 at 8 fps	w288p (512 x 288) at 30 fps + 1280 x 800 at 8 fps
2000 kbps	Sufficient bandwidth for any audio codec.	w720p30 (1280 x 720) at 30 fps	1280 x 800 at 8 fps	w288p (1024 x 576) at 30 fps + 1280 x 800 at 8 fps

Note that VPN increases the size of the payload, which increases the bandwidth consumption.

Bandwidth Performance Expectations for Cisco Jabber for Android

Note that VPN increases the size of the payload, which increases the bandwidth consumption.

Upload speed	Audio	Audio + Interactive Video (Main Video)
125 kbps under VPN	At bandwidth threshold for g.711. Insufficient bandwidth for video. Sufficient bandwidth for g.729a and g.722.1.	Insufficient bandwidth for video.
256 kbps	Sufficient bandwidth for any audio codec.	Transmission rate (Tx) — 256 x 144 at 15 fps Reception rate (Rx) — 256 x 144 at 30 fps
384 kbps under VPN	Sufficient bandwidth for any audio codec.	Tx — 640 x 360 at 15 fps Rx — 640 x 360 at 30 fps
384 kbps in an enterprise network	Sufficient bandwidth for any audio codec.	Tx — 640 x 360 at 15 fps Rx — 640 x 360 at 30 fps

Note Due to device limitations, the Samsung Galaxy SII and Samsung Galaxy SIII devices cannot achieve the maximum resolution listed in this table.

Bandwidth Performance Expectations for Cisco Jabber for iPhone and iPad

The client separates the bit rate for audio and then divides the remaining bandwidth equally between interactive video and presentation video. The following table provides information to help you understand what performance you should be able to achieve per bandwidth.

Note that VPN increases the size of the payload, which increases the bandwidth consumption.

Upload speed	Audio	Audio + Interactive Video (Main Video)
125 kbps under VPN	At bandwidth threshold for g.711. Insufficient bandwidth for video. Sufficient bandwidth for g.729a and g.722.1.	Insufficient bandwidth for video.
290 kbps	Sufficient bandwidth for any audio codec.	256 x144 at 20 fps
415 kbps	Sufficient bandwidth for any audio codec.	640 x 360 at 20 fps
1024 kbps	Sufficient bandwidth for any audio codec.	1280 x 720 at 20 fps

Video Rate Adaptation

Cisco Jabber uses video rate adaptation to negotiate optimum video quality. Video rate adaptation dynamically increases or decreases video bit rate throughput to handle real-time variations on available IP path bandwidth.

Cisco Jabber users should expect video calls to begin at lower resolution and scale upwards to higher resolution over a short period of time. Cisco Jabber saves history so that subsequent video calls should begin at the optimal resolution.

H.264 Profile Impact on Bandwidth

In earlier releases, we only supported the H.264 Baseline profile. In Release 12.8, we added support for H.264 High profile for the desktop clients. You cannot use High profile for VDI or mobile clients.

High profile can deliver the same video quality with up to 10% less bandwidth. Alternately, you can achieve better video quality with the same bandwidth.

Jabber defaults to the H.264 Baseline profile. To enable the High profile, us the H264HighProfileEnable parameter.

Call Management Records

At the end of a call, Jabber sends call performance and quality information to Cisco Unified Communications Manager. Cisco Unified Communications Manager uses these metrics to populate the Cisco Unified Communications Manager Call Management Record (CMR). Cisco Jabber sends the following information for both audio and video calls:

- Number of packets sent and received.

- Number of octets sent and received.

- Number of packets lost.

- Average jitter.

The client also sends the following video specific information:

- Codec sent and received.

- Resolution sent and received.

- Framerate sent and received.

- Average round-trip time (RTT)

The client sends the following audio specific information:

- Concealed seconds.

- Severely concealed seconds.

The metrics appear in the Cisco Unified Communications Manager CMR record output in plain text format, this data can be read directly or consumed by a telemetry or analytics application.

For more information about configuring Cisco Unified Communications Manager CMR records, see the *Call Management Records* chapter of the *Call Detail Records Administration Guide* for your release of Cisco Unified Communications Manager.