



Release Notes

3.6 | June 2016 | 3725-69925-007A1

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# Polycom<sup>®</sup> RealPresence<sup>®</sup> Desktop for Mac<sup>®</sup> OS X



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## What's New in Release 3.6

Polycom announces the 3.6 release of the Polycom® RealPresence® Desktop software. This release includes the following features.

### **Free Access to Polycom® People+Content™ IP and SmartPairing in Standalone Mode**

In standalone mode, you can now use the Polycom® People+Content™ IP content sharing technology and SmartPairing feature with or without a valid license.

### **Audio Enhancements**

Audio experience is enhanced by adopting audio codecs per call bit rates. To improve calls that connect with low bit rates, RealPresence Desktop now supports low bit rate Polycom® Siren™ Lost Packet Recovery technologies, including Polycom® Siren™ 32 and Polycom® Siren™ 24. This enables the RealPresence Desktop application to accept incoming Siren Lost Packet Recovery streams of any bit rate.

### **Video Enhancements**

Outgoing H.264 video is enhanced to offer better video experience for high-resolution video streams in low bit rate environments, such as 720p video streams.

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## Release History

The following table shows the release history of Polycom RealPresence Desktop.

Release	Release Date	Features
3.6	June 2016	Free access to Polycom® People+Content™ IP and SmartPairing in standalone mode Audio enhancements Video enhancements
3.5.1	April 2016	Constant Bitrate (CBR) adopted for video codecs Bug fixes and feature enhancements
3.5	January 2016	Polycom® Concierge Solution Support TLSv2 support MusicMode support New Devices support SmartPairing Support for Polycom® RealPresence Debut™ Systems
3.4	June 2015	Profile Photo and Virtual Business Card Support for Audio Mute Shortcut Keys Support for Polycom NoiseBlock™ In-call Toolbar User Interface Enhancements Provision the migration of CMA Desktop to RealPresence Desktop using RealPresence Resource Manager Mid-string Search of Favorites
3.3	December 2014	User Interface Improvements Support for Calling SIP Users Directly Directory Search Enhancements Instant Messaging Enhancement Some test features have been moved from the <b>Test Features</b> tab under <b>Settings</b> . <ul style="list-style-type: none"><li>• The <b>USB Headset Acoustic Fence™</b> feature is now on the <b>Device</b> tab.</li><li>• The <b>SDP Size Adjustment</b> feature has been moved out. To enable or disable this feature, enter #001# from the Dialpad.</li></ul> Mac OS X Support Changes RealPresence Desktop 3.3 adds support for Yosemite 10.10 and drops support for Lion 10.7.

Release	Release Date	Features
3.2.2	December 2014	Fixed the password security issue ( <a href="#">VIDESC-13226</a> ).
3.2.1	July 2014	<p>Support for DTMF with keyboard input.</p> <p>You can enter a DTMF password using your keyboard without showing the DTMF keypad during a call.</p> <p>This feature works only when the RealPresence Desktop DTMF keypad is not shown. When you open the DTMF keypad, you can use only the keypad to enter the password.</p> <p>Fixed an OpenSSL security vulnerability (CVE-2014-0224).</p>
3.2	June 2014	<p>Support for user profile import and export</p> <p>Support for Quality of Service (QoS) in managed mode</p> <p>Support for keyboard noise suppression</p> <p>Support for setting dialing preference</p> <p>Support for the Czech language</p> <p>Directory enhancements as follows:</p> <ul style="list-style-type: none"> <li>• Hide the H.323 and SIP technical terms from the GUI. <ul style="list-style-type: none"> <li>▲ Removes the H.323 and SIP technical protocol indicator from the main window.</li> <li>▲ Removes the H.323 or SIP call type from the device list displayed for contacts or directory search results.</li> </ul> </li> <li>• Support for display device model.</li> <li>• Add the Contacts and Organization buttons under the Contacts tab and support for the Multi-tier directory. <ul style="list-style-type: none"> <li>▲ <b>Contacts</b> Contacts are divided into two groups: <ul style="list-style-type: none"> <li><b>Frequently Used</b> Your frequently used contacts are listed here automatically.</li> <li><b>Favorites</b> Favorites are contacts that you add to the Favorites list. You also can edit a contact or remove a contact from the Favorites list.</li> </ul> </li> <li>▲ <b>Organization</b> See the hierarchy of your organization. This feature is available only in managed mode and if you have permission to view the address on the server.</li> </ul> </li> </ul> <p>Support for the following test features:</p> <ul style="list-style-type: none"> <li>• Polycom Acoustic Fencer™</li> <li>• Automatic SDP Size Adjustment</li> <li>• Automatic Face Brightness Adjustment</li> </ul>

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## Hardware and Software Requirements

The following hardware and software requirements were determined based on test scenarios. Your system's actual performance may vary based on software or hardware configurations.

### Hardware and Software Requirements

Hardware or Software	Requirement
Mac OS X	Mavericks (10.9) Yosemite (10.10) El Capitan (10.11)
Software	Polycom® RealPresence® Resource Manager version 8.1 or later
Processor	RealPresence Desktop system's capabilities vary depending on processor performance. The processor types and speeds listed below are intended as reference guides. RealPresence Desktop will have equivalent capabilities on other processors with equivalent performance. Recommended CPU: Intel Core i5, 2.5GHz or higher. Basic Video Transmit (Up to QVGA 30fps send, up to 720P 15fps receive) <ul style="list-style-type: none"><li>• single core</li><li>• dual cores, lower than 2.0 GHz</li><li>• quad cores, lower than 1.3 GHz</li></ul> Premium Video Transmit (Up to VGA 30fps send, up to 720P 30fps receive) <ul style="list-style-type: none"><li>• dual cores, 2.0 GHz or higher</li><li>• quad cores, 1.3 GHz or higher</li></ul> HD Transmit <ul style="list-style-type: none"><li>• dual cores, 2.5 GHz or higher (Up to 720p 15fps send, up to 720P 30fps receive)</li><li>• quad cores, 1.6 GHz or higher (Up to 720p 15fps send, up to 720P 30fps receive)</li><li>• quad cores, 2.0 GHz or higher (Up to 720p 30fps send, up to 720P 30fps receive)</li></ul>
RAM	4 GB
Video memory	Minimum: 256 MB
Hard drive space	200 MB
Camera	Integrated or external



## Products Tested with This Release

RealPresence Desktop is tested extensively with a wide range of products. The following list indicates the products that have been tested for compatibility with this release, but is not a complete inventory of compatible equipment.



Polycom recommends that you upgrade all of your Polycom systems with the latest software Versions, as compatibility issues may already have been addressed by software updates. Go to the [Polycom Support](#) site to see the Current Polycom Interoperability Matrix.

Type	Product	Version
Gatekeeper, Gateways, External MCU, Bridges, Call Managers	Polycom® Distributed Media Application™ (DMA®) 7000	6.2, 6.3
	Polycom® RealPresence® Resource Manager	9.0, 10.0
	Polycom® RealPresence® Collaboration Server (RMX®) 4000/2000	8.6, 8.7
	Polycom® RealPresence® Collaboration Server (RMX®) 1500	8.6
	Polycom® RealPresence® Collaboration Server (RMX®)1800	8.5, 8.6
	Polycom® RealPresence® Collaboration Server (RMX®) 1000C	2.5.1
	Polycom® RealPresence® Media Suite	2.1, 2.5
	Broadsoft SIP Server	r21
	Polycom® RealPresence® Web Suite	2.0, 2.1
Endpoints	Polycom® HDX® Series	3.1.7, 3.1.9
	Polycom® RealPresence® Mobile	3.5, 3.5.1 (iOS) 3.5, 3.5.1 (Android)
	Polycom® VVX®	5.3.0
	Polycom® RealPresence® Desktop	3.5.1, 3.6 (Windows) 3.5.1, 3.6 (Mac)
	Polycom® RealPresence® Group Series	5.0, 5.1
NAT/Firewall/Border Controller	ACME Packet Net-Net 3820	Firmware SCX6.3.0 MR-5 Patch 2
	Polycom® VBP® 7301	14.2.5
	Polycom® RealPresence® Access Director™	4.1, 4.2
Other	Polycom® People+Content IP	1.3 (PC only)
	Broadsoft environment	r21

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# Install RealPresence Desktop

This section discusses how to install RealPresence Desktop in both standalone and managed mode. In standalone mode, you will need a license number and activation key code or license file to activate the product and use it beyond the 30-day trial period.

## Installation Notes

Here are some things to consider when doing a RealPresence Desktop installation:

- The RealPresence Desktop user interface supports the following languages: English, International Spanish, French, German, Simplified Chinese, Korean, Japanese, Russian, Portuguese, Kazakh, Czech, and Traditional Chinese.
- The Mac OS language setting controls the language choice for RealPresence Desktop.
- You can view the license number of the RealPresence Desktop by clicking Polycom RealPresence Desktop on the top menu and selecting the About option.

## Importing Data from Polycom® CMA® Desktop With Easy Upgrade

When you install RealPresence Desktop for the first time, it can detect if there is a previously installed Polycom® CMA® Desktop version 5.2.2 or greater.



RealPresence Desktop supports this easy upgrade feature only on Mac 10.8.

If RealPresence Desktop finds CMA Desktop, RealPresence Desktop displays a message to confirm the back up and to import the application and user data of CMA Desktop. RealPresence Desktop also confirms the uninstall of the CMA Desktop.

If you choose yes, RealPresence Desktop will back up and import the following CMA Desktop data:

- Auto-answered incoming calls
- Mute auto-answered calls
- Always check (Call to/H.323/SIP) RealPresence Desktop will not import this data on Mac systems.
- Specify sign-in server
- Automatically start Polycom CMA Desktop at system start
- Sign in using network login credentials RealPresence Desktop will not import the network login credentials unless you have chosen this option
- Maximum call rate
- Local contacts
- Video and Audio device settings on Mac.



- If RealPresence Desktop and CMA Desktop are running on the same computer and you use the same account to sign in to both applications, the local contacts may not be synchronized between the two applications. XMPP contacts will be synchronized if they are downloaded from the RealPresence Resource Manager or CMA system.
- After you uninstall CMA Desktop, your CMA Desktop settings will not be retained.
- Silent installation for enterprise IT: RealPresence Desktop will import CMA Desktop settings and user data automatically when you install RealPresence Desktop for the first time and the CMA Desktop version is higher than 5.2.2. RealPresence Desktop will not uninstall CMA Desktop. Enterprise IT can uninstall CMA Desktop using other software deployment tools.


## Install RealPresence Desktop in Standalone Mode

This section describes how to install RealPresence Desktop in standalone mode.

### To install RealPresence Desktop:

- 1 Download the installation file from the [Polycom Support site](#).
- 2 Follow the Installer Wizard instructions.

### To activate RealPresence Desktop license:

- 1 Start RealPresence Desktop application and in the **Individual Account** box click **Enter**.
- 2 Click **Activate** to activate the application with a license. Then do one of the following:
  - Click  to select a license file.  
The license file is a .txt file that contains the license number and activation key.
  - Specify your **License Number** and **Activation Key** manually.  
You can press the TAB key to navigate among different text fields.  
You can also copy your key string, click in the first text field, and then press Ctrl + V to paste it.
- 3 Click **Activate**.

## Install RealPresence Desktop in Managed Mode

In managed mode, an administrator can distribute the latest version of RealPresence Desktop to all managed systems. To do this, the administrator uploads the RealPresence Desktop distribution package (.tar.gz) to the RealPresence Resource Manager system. This process is described in detail in the ***Distribute Polycom Applications*** topic in the *Polycom RealPresence Resource Manager Operations Guide*.

The .pkg file is intended for use by experienced Mac administrators to support managed, provisioned, and silent installations.



#### **About the .pkg file**

- Centralized distribution is used by corporate system administrators for software installation or upgrades.
- When you save the .pkg file to your local disk, do not rename it.
- Silent installation needs administrator level permission.
- The name of the .pkg in your command line should be consistent with the installation package.

#### **To install RealPresence Desktop using terminal:**

- 1 Navigate to the folder where the RealPresence Desktop .pkg installation file resides.
- 2 Run this command:

```
sudo installer -pkg *.pkg -dumplog -verbose -target /
```

---

## Upgrade RealPresence Desktop

This section describes how to upgrade RealPresence Desktop when an upgrade package is available on the RealPresence Resource Manager.

The RealPresence Resource Manager can schedule and perform limited monitoring of the RealPresence Desktop application as well as manage and provision the application. The CMA system cannot upgrade the RealPresence Desktop application, and the Polycom RealPresence Resource Manager system can upgrade the application only from version 8.0.

For more information on upgrading managed RealPresence Desktop systems, see the ***Using Dynamic Software Updates Applications*** topic in the *Polycom RealPresence Resource Manager Operations Guide*.



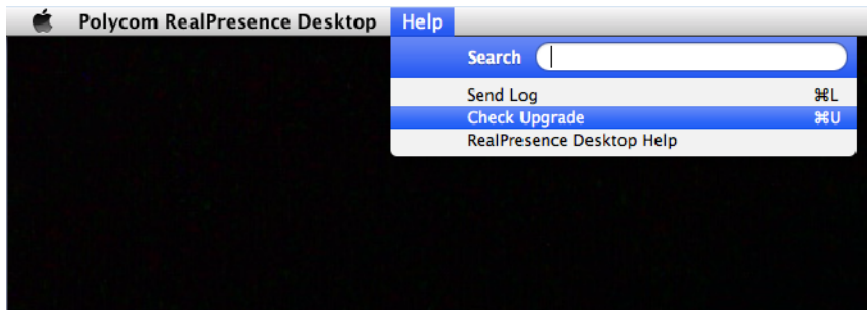
RealPresence Desktop will consume one more license after upgrading from 3.0 or earlier versions to version 3.1 or later. To release the old license, remove it manually or set the license reclaim cycle to be a small value, such as 5 minutes, on the RealPresence Resource Manager system.

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## To upgrade RealPresence Desktop:

- 1 Log in to RealPresence Desktop.
- 2 Click **Help > Check Upgrade**.

If an upgrade is available, you will be prompted to perform the upgrade.



- 3 Click **Yes** to perform the upgrade.

The RealPresence Desktop application will be upgraded to the latest version available on the management system.

---

## Uninstall RealPresence Desktop Using Code Commands

This section describes how to uninstall RealPresence Desktop application using code commands.

### To uninstall RealPresence Desktop using Mac terminal:

» Run this command:

```
cd /Applications  
sudo rm -r -f *RealPresence*
```

---

## System Capabilities and Constraints

The following protocols, resolutions, algorithms, and ports are supported for RealPresence Desktop.

### Protocols

The following table lists the supported protocols.

Protocol	Description
DNS	Domain Name System
H.235	Security and Encryption
H.239	Token Management
H.281	Far End Camera Control (FECC)
H.323	Signaling
H.460	Firewall/NAT Traversal
LDAP, H.350	Directory Services
NTLMv2	Authentication
Polycom® Lost Packet Recovery™ (LPR™)	Lost Packet Recovery
SIP	Session Initiation Protocol
XMPP	The Extensible Messaging and Presence Protocol

### Resolutions

The following table lists the supported resolutions.

#### Resolution and Frame Rate

Resolution and Frame Rate	Source
Up to 720p / 30 fps	Video sent from camera
Up to 720p / 30 fps	Video received from far end
Up to 720p (1280x720) / 5 fps	Content showing from the computer
Up to 720p (1280x720) / 5 fps	Content received from far end

### Algorithms

The following table lists the supported algorithms.



Algorithm Type	Description
Audio	G.711 $\mu$ or G.711A Siren LPR at 24 kbps, 32 kbps, 48 kbps, and 64 kbps G.722.1 at 16 kbps, 24 kbps, and 32 kbps G.722.1 Annex C at 24 kbps, 32 kbps, and 48 kbps G.719 at 32 kbps, 48 kbps, 64 kbps G.729 G.728 SAC Automatic gain control Acoustic echo cancellation
Video	H.261 H.263/H.263+ H.264 AVC H.264 SVC H.264 high profile Content over H.264/H.263/H.263+ Video LPR
Encryption	AES-128 media encryption TLS/SRTP supported in SIP calls

## Inbound and Outbound Ports

The following tables list the supported inbound and outbound ports.

### Inbound Ports

Port	Function
1720 (TCP)	H.323 Call Signaling (H.225)
1719 (UDP)	H.323 Registration, Admission, and Status (RAS)
3230 - 3250 (TCP)	H.323 Call Control (H.245)
3230 - 3250 (UDP)	Media (RTP/RTCP)
3238 (UDP and TCP)	BFCP
5060 (UPD and TCP)	SIP

### Outbound Ports

Port	Function
443 (TCP)	Provisioning, Monitoring, Help Files, HTTPS
389 (TCP)	LDAP

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**Outbound Ports**

<b>Port</b>	<b>Function</b>
5060 (UDP and TCP)	SIP
5061 (TCP)	SIP TLS signaling
5222 (TCP)	XMPP
1720 (TCP)	H.323 Signaling (H.225)
1719 (UDP)	H.323 Registration, Admission, and Status (RAS)
3230 - 3250 (TCP)	H.323 Call Control (H.245)
3230 - 3250 (UDP)	Media (RTP/RTCP)
3238 (UDP and TCP)	BFCP

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## Interoperability Issues

You may encounter the following issues when using RealPresence Desktop with other products or on specific operating systems.

### Interoperability Limitations

Platform/Product Name	Description	Solution
Limitations Related to the Mac Operating System	When the CPU type is single or dual core and the Mac OS version is 10.8, RealPresence Desktop only sends half frame rate of expected per second.	Upgrade to Mac OS 10.9.2 or higher.
	On the Mac Air with CPU Intel Core 2 Duo, RealPresence Desktop has performance issues, such as long delays.	This issue is due to CPU limitation. The recommended CPU is Intel Core i5, 2.5 GHz or higher.

Platform/Product Name	Description	Solution
Limitations Related to Other Polycom Products	In a motion mode conference, RealPresence Desktop receives video with a long delay because the video is 60 fps.	Set a conference with sharpness mode on MCU.
	If you create a Continuous Presence (CP) only conference call on Polycom RealPresence Collaboration Server (RMX) 4000/2000 system and Polycom RealPresence Collaboration Server 800s version 8.1 with default content settings (Content Settings: HiResGraphics and Content Protocol: H.264 HD), the RealPresence Desktop application cannot send or receive content if call rate is set as 384 kbps or below.	In this case, you need to do the following: <ul style="list-style-type: none"> <li>• Change Polycom RealPresence Collaboration Server (RMX) <b>Content Settings to Graphics</b>, and <b>Content Protocol to H.263 &amp; H.264 Auto Selection</b>.</li> <li>• Set the call rate on RPM to above 384 kbps.</li> </ul>
	RealPresence Desktop supports using only English user names and passwords to sign into the Polycom CMA server and RealPresence Resource Manager, or to register to a gatekeeper or an SIP server.	Use English user names and passwords.
	When RealPresence Desktop and m100 are not in the same local network, RealPresence Desktop fails to call m100.	Let m100 call RealPresence Desktop.
	When you enable mutual TLS (Transport Layer Security) from RealPresence Resource Manager, RealPresence Desktop will fail to upgrade from RealPresence Resource Manager.	Disable mutual TLS.
	When using a USB camera through a USB hub, video may not be displayed.	Direct connect the USB camera to the desktop system.
	With NoiseBlock on, when a participant speaks after a long period of silence, the participant's first syllables may not be heard.	None
	In some MCU conference templates, the virtual business card is truncated.	None
	RealPresence Desktop SIP call transfers by VVX systems may fail when the endpoints are not registered with a Polycom RealPresence DMA system.	Register the endpoints.

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## Known Issues

The following table lists the known issues for this release.

Issue ID	Description	Workaround
SWEP-9344	When working in standalone mode, if you attempt to pair to an IP address that doesn't exist, you cannot stop the pairing by clicking the <b>Unpair</b> button.	None.
SWEP-9311	During a call, if you switch your audio device to your computer's built-in microphone, the far end cannot hear your audio for approximately 10 seconds after the switch.	None.
SWEP-9197	If you are using Blue®Yeti Pro microphone, plugging out the microphone may cause the RealPresence Desktop application to crash occasionally.	None.
SWEP-8747	Polycom RealPresence Desktop application V3.5 or later cannot register with a VBP server that is using a Diffie-Hellman (DH) key smaller than 768 bit.	Increase your VBP server DH key to 768 bit or above.
SWEP-8716	When you place an H.323 point-to-point call from the RealPresence Desktop application, the video protocol shown in the call statistics shows H264SVCHigh.	This is the designed behavior. To improve user experience in bad network environments, people and content video are both encoded as SVC/SVC high instead of H264/H264 high for H.323 point-to-point calls.
SWEP-7938	The local and far-end video doesn't display properly if you choose Logitech® QuickCam® Pro 9000 as your video device.	None. Logitech QuickCam Pro 9000 is incompatible with RealPresence Desktop.
SWEP-7846	When you are in a call with MusicMode enabled, if both sides talk, the audio quality is poor.	This is the designed behavior. Disable MusicMode if you don't want to reproduce the far end music. For example, in distance music learning or concert.
SWEP-7500	Sometimes RealPresence Desktop cannot be provisioned after it disconnected from the network and then connected again.	Sign out, disconnect, reconnect, and sign in again.

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## Resolved Issues

The following table lists the resolved issues in this release.

Issue ID	Description
SWEP-9332	Sometimes, when you attempt to log in to the RealPresence Desktop application, the application crashes.

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## Firewall and NAT Support

The Polycom RealPresence Desktop provides firewall and Network Address Translator (NAT) traversal ability without the need to log in to a VPN. The following features are supported:

- Ability to keep Real-time Transport Protocol (RTP) NAT mapping alive during live streaming.
- Support for guest user dialing.
- Ability to support Secure Real-time Transport Protocol (SRTP) and Transport Layer Security (TLS) for the secure transmission of media.
- Ability to support Binary Floor Control Protocol (BFCP) over both TCP and UDP links (UDP preferred). Control signaling can now be forwarded using the best-effort traffic class in firewall and NAT traversal.
- Support for the following dial strings when you place calls without registering to a server.
  - H.323
    - ◆ name@FQDN
    - ◆ name@IP
    - ◆ extension@FQDN
    - ◆ extension@IP
    - ◆ IP##extension
  - SIP
    - ◆ <name>@FQDN
    - ◆ <extension>@<ipAddress:port>
- Ability to verify server certificates by using installed root certificates (SIP, HTTPS, and LDAP) when establishing TLS connections.
- Ability to interoperate with Acme Session Border Controller (SBC) systems and Polycom® RealPresence® Access Director™.
- Support for SIP signaling FW/NAT traversal over TCP/TLS as defined in RFC5626.
- Ability to switch to a backup SIP server when the primary server fails.

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## Enterprise Scalable Video Coding (SVC) Mode

The Enterprise Scalable Video Coding (SVC) mode is an alternative to the AVC mode that has traditionally been supported. Differences between the two modes are listed in the following table.

### SVC and AVC Mode

SVC Mode	AVC Mode
Each participant in the conference call is received by the client as a separate video stream.	The composite video image is determined by the bridge based on administrator configuration.
A Caller ID is indicated by text in the appropriate window, which remains on display throughout the call.	Caller ID information is displayed intermittently.
Double-clicking or tapping on a participant's video, content video, or local preview expands that video to full screen. Double-clicking or tapping again reverts the display to the composite image.	Layout may be controlled by dialing ** and then selecting a format. Double-clicking or tapping on the remote video, content video, or local preview expands that video to full screen. Double-clicking or tapping again reverts the display to the composite image.

The SVC mode provides the following features:

- Video sends and receives up to 720p resolution
- Frame rates of 7.5/15/30
- Support for AVC content
- Support for SVC auto layouts for video streams of up to nine far-end participants  
Last active speakers, resolution, bandwidth, and number of participants are adjusted based on network bandwidth and processor capabilities.



When using SIP UDP in an SVC call and there is more than 10 percent Packet Loss, the screen layout may display incorrectly. Changing to SIP TLS or TCP is recommended.

- Supported layouts of 1x1 and 1+1 through 1+10  
The maximum layout of 1+10 comprises nine remote participants plus one content sharing frame, and one local preview frame
- Support for SAC with at least two quality layers, for example, 48 kbps and 10 kbps
- Support for mixing up to three different audio streams from the MCU
- Support for combining up to nine different SVC video streams (call rate at 1920 kbps) from the MCUs

SVC conference calls currently do not support the following:

- Far-end Camera Control (FECC)
- Recording with RealPresence Capture Server



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- H.323 calls



In a poor network connection, sometimes a participant disconnects automatically from an SVC call. This can result in a frozen video stream of the participant. The RealPresence Collaboration Server (RMX) system will clear the frozen stream in 30 minutes.

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## Access Media Statistics

To access media statistics, click the antenna icon  on the in-call toolbar during a call.

Value	Description
Call Type	SIP or H.323 call type.
Call Encryption	Indicates whether your call is encrypted.
Far Site Name	Name of the far site.
Far Site System	Type of video conferencing system at the far end and the software version.
Call Speed	Negotiated speed (bandwidth) for the call, which is usually the combined video and audio speeds in the call.
Video Protocol	ITU-C video algorithm and annexes used in the current call. The video protocol used depends on the capabilities of the system at the far end as well as on your system's configuration.
Video Format	Picture size currently in use.
Audio Protocol	Audio algorithm and annexes used in the current call. The audio protocol used depends on the capabilities of the system at the far end as well as on your system's configuration.
Audio Rate	Bandwidth specified for the audio portion of the call. The proportion of the audio rate to the video rate depends on the protocol used.
Video Rate	Bandwidth specified for the video portion of the call. The proportion of the video rate to the audio rate depends on the protocol used.
Video Rate Used	Actual bandwidth being used for the video portion of the call. This is a real-time measurement, which normally fluctuates.
Video Frame Rate	Rate your system uses to update the picture seen at the far end. The system can send up to 15 frames per second. If the camera picks up large, continuous, or frequent motions, the software takes longer to assemble the data into video frames, and the frame rate drops. Changes in lighting also reduce the frame rate.
Video Packets Loss Percentage	Total video packet loss as a percentage of the total number of video packets transmitted by your system and those transmitted by the far end.
Video Jitter	Percentage of variation in the video transmission rate.
Audio Packet Lost	Number of audio data packets lost during the call, including transmitted packets and incoming packets. Packet loss indicates congestion or other problems on the network.
Audio Packets Loss Percentage	Total audio packet loss as a percentage of the total number of audio packets transmitted by your system and those transmitted by the far end.
Audio Jitter	Percentage of variation in the audio transmission rate.
Content Protocol	Format used for the recording, compression, and distribution of the content.
Content Format	Display resolution of the content.
Content Rate	Rate your system uses in content transmission.

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<b>Value</b>	<b>Description</b>
Content Rate Used	Actual bandwidth being used for the content transmission.
Content Frame Rate	Rate your system uses in content frame transmission.
Content Packets Lost	Number of content data packets lost during the call, including transmitted packets and incoming packets. Packet loss indicates congestion or other problems on the network.
Content Packets Loss Percentage	Total audio packet loss as a percentage of the total number of content packets transmitted by your system and those transmitted by the far end.

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## About AES Encryption

The following are requirements for using AES encryption in calls.

### AES Encryption in H.323 Calls

To use AES encryption in H.323 calls, both you and the far end must satisfy the following requirements:

- Enable AES encryption.

When working in the managed mode, the AES encryption of the RealPresence Desktop application is configurable through its provisioning server.

When working in the standalone mode, the AES encryption of the RealPresence Desktop application works as “When available” and is not guaranteed.

- Both you and your far end must support, or be compatible with, the same Key exchange and encryption method (H.235v3 w, or AES 128bit CBC).

### AES Encryption in SIP Calls

To use AES encryption in SIP calls, both you and the far end must satisfy the following requirements:

- Enable AES encryption
- Enable TLS for SIP transport
- Support for SDES over TLS key exchange
- Support for AES 128 bit CBC mode over SRTP



When working in the managed mode, the AES encryption of the RealPresence Desktop application is configurable through its provisioning server.

When working in the standalone mode, the AES encryption of the RealPresence Desktop application works as “When available” and is not guaranteed.

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# Preparing Your Device for Mutual Transport Layer Security

You can establish secure communications using Mutual Transport Layer Security (MTLS) with provisioning servers such as Polycom RealPresence DMA, CMA, or RealPresence Resource Manager systems.

To establish MTLS connections, the client and server need to hold certificates issued from the same Certificate Authority (CA) and the root certificate of this CA.

## Generate and Import Your Certificate

To import certificates, you need to generate a Certificate Request (CSR) first by using a computer that has installed the OpenSSL tool.

### To generate and import your certificate:

- 1 Open the Terminal window from your Mac. (**Applications > Utilities > Terminal.app**)
- 2 Go to the **Documents** folder and generate the private key client.key. For example:

```
localhost$ cd documents
localhost$ openssl genrsa -out client.key 1024
```

- 3 Generate the certificate request client.csr. For example:

```
localhost$ openssl req -new -key client.key -out client.csr
```

The requested information is incorporated into your certificate request. Enter a distinguished name (DN) and other information into the following fields (you can leave some blank).

```
-----
Country Name (2 letter code) [GB]:cn ---CSR info.
State or Province Name (full name) [Berkshire]:bj ---CSR info.
Locality Name (eg, city) [Newbury]:bj ---CSR info.
Organization Name (eg, company) [My Company Ltd]:plcm ---CSR info.
Organizational Unit Name (eg, section) []:caqa ---CSR info.
Common Name (eg, your name or your server's hostname) []:caqa ---CSR info.
Email Address []:pp@pp.com ---CSR info.
```

Enter the following “extra” attributes to be sent with your certificate request. Write down the challenge password. You will need it later in the procedure.

```
A challenge password []:1234 -----see the note below.
An optional company name []:poly
```

- 4 Submit the certificate request to your CA:
  - a View the content of the file client.csr using the following command:

```
localhost > more client.csr
```

Select and copy its content from BEGIN CERTIFICATE REQUEST to END CERTIFICATE REQUEST.
  - b Go to your CA's web interface <http://<CA's IP address>/certsrv/>, and click **Request a certificate**.
  - c Choose **Advanced certificate request**.

- d Click **Submit a certificate request by using a base-64-encoded CMC or PKCS #10 file, or Submit a renewal request by using a base-64-encoded PKCS #7 file.**
- e Paste the content of the file `client.csr` in the **Saved Request** text field, and click **Submit**.
- f Choose **Base 64 encoded** and then click **Download certificate**.

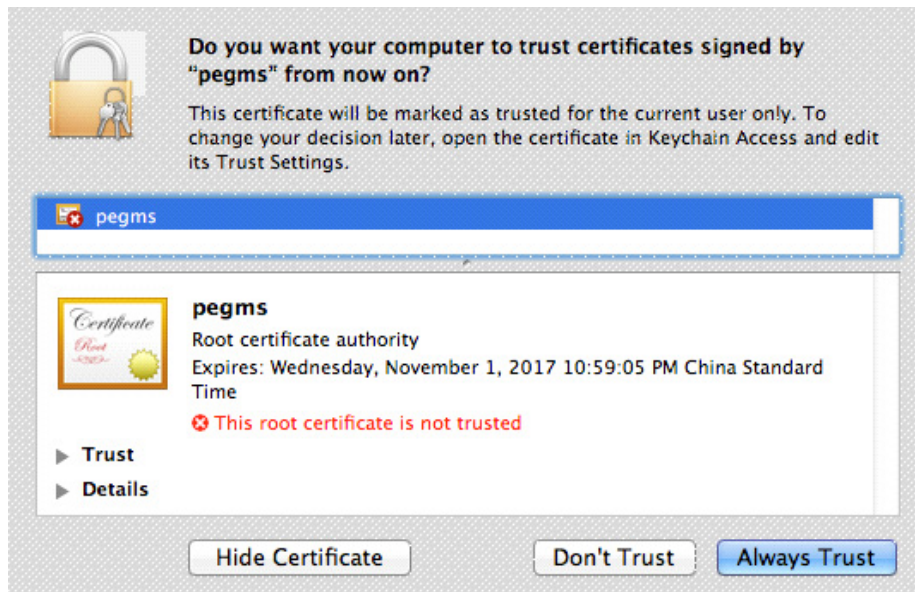
The file is saved as `certnew.cer` by default in the folder **Downloads**.

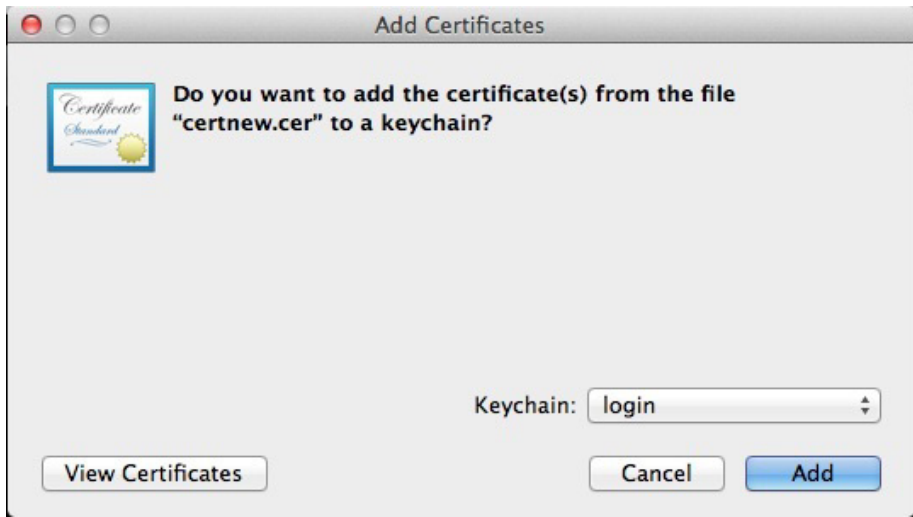
- 5 Move the generated `certnew.cer` file to the **Documents** folder.
- 6 Convert the file `ccertnew.cer` to a `.p12` file by using the `openssl` tool. Note that the export password should be the same as the challenge password you set in Step 4. For example:
 

```
localhost$ openssl pkcs12 -export -in certnew.cer -inkey client.key -out client.p12 -name testp12
Enter Export Password:
Verifying - Enter Export Password:
```
- 7 Encrypt the challenge password you set:
  - a Go to **Convert String**.
  - b Enter the challenge password in the text field, and click **Base64 Encode!**.
  - c Copy the encoded text from the following text field, and save it as a `.pwd` file. For example: `client.pwd`.
- 8 Open the **Documents/Polycom** RealPresence Desktop folder, and then copy the files `client.p12` and `client.pwd` to the folder.

### To import the root certificate of your CA:

- 1 Go to your CA's web address <http://<CA's IP address>/certsrv/>, click **Download a CA certificate, certificate chain, or CRL**.
- 2 Select **Base 64**, and click **Download CA Certificate**.
- 3 Double-click the CA file, and select **Always Trust**. If you see the Add Certificates message, click Add before you click **Always Trust**.





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