Polycom RealPresence Desktop for Windows

What's New in This Release

Polycom RealPresence Desktop 3.10.3 is a maintenance release that fixes the issues identified in the Resolved Issues section.

Release History

This following table lists the release history of RealPresence Desktop.

Release History

Release	Release Date	Features
3.10.2	November 2019	Bug fixes. System log enhancements.
3.10	April 2019	Collaborates with Polycom Studio and Plantronics Calisto 7200 Bug fixes
3.9.1	September 2018	RealPresence Web Suite soft client supports NoiseBlock controlled by RealPresence Web Suite Bug fixes
3.9	January 2018	RealPresence® Web Suite® soft client for non-WebRTC conferencing Dropped Support for Polycom CMA Desktop integration Install or upgrade RealPresence Desktop as a normal user

Security Updates

RealPresence Desktop is includes OpenSSL to the latest version 1.0.2k for higher security.

Please refer to the Polycom Security Center for information about known and resolved security vulnerabilities.

Hardware and Software Requirements

The following hardware 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
Windows	Windows 7: 32-bit and 64-bit Windows 8 and 8.1 Standard, Pro, and Enterprise: 32-bit and 64-bit Windows 10: 32-bit and 64-bit
Processor	RealPresence Desktop system’s capabilities vary depending on processor performance. The processor types and speeds listed below are intended as reference. RealPresence Desktop has equivalent capabilities on other processors with equivalent performance. Recommended CPU: Intel Core i5, 2.5 GHz or higher. Basic Video Transmit (up to QVGA 30 fps sending, up to 720p 15 fps receiving) • Single core • Dual logical cores, lower than 2.0 GHz • Quad logical cores, lower than 1.3 GHz Premium Video Transmit (up to VGA 30 fps sending, up to 720p 30 fps receiving) • Dual logical cores, 2.0 GHz or higher • Quad logical cores, 1.3 GHz or higher HD Transmit • Quad logical cores, 2.0 GHz or higher, 4th generation or newer Intel CPU (up to 720p 30 fps sending, up to 1080p 30 fps receiving) • Dual logical cores, 2.5 GHz or higher (up to 720p 15 fps sending, up to 720p 30 fps receiving) • Quad logical cores, 1.6 GHz or higher (up to 720p 15 fps sending, up to 720p 30 fps receiving)
RAM	4 GB
Video memory	Minimum: 256 MB
Hard drive space	200 MB
Camera	Integrated or external Note: RealPresence Desktop only supports directly connecting with common cameras. RealPresence Desktop doesn’t support connecting with video transcoding devices, for example, BlackMagic Web Presenter.
Audio devices	Standard PC97 audio devices
Monitor	Recommended: 16:9, 1920 x 1080 Minimum: 1280 x 720

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.

The RealPresence Desktop installation file is available from the Polycom Support in two formats:

- The .exe file is intended for easy, interactive installation by end users in standalone mode.
- The `.msi` file is intended for use by experienced Windows administrators to support provisioned and silent installations in managed mode.

Installation Notes

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

- Installation of the RealPresence Desktop application requires that you have Microsoft .Net Framework version 4.0 installed. You can view your Microsoft .Net Framework version in `C:\Windows\Microsoft.NET\Framework`.
- 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.
- When installing RealPresence Desktop for the first time, you can select one of the supported languages. The language selected here affects the language display during installation process
- The RealPresence Desktop installation user interface does not support Kazakh because the Windows InstallShield does not support Kazakh.
- You can view the license number of the RealPresence Desktop by clicking  **Polycom RealPresence Desktop** on the application's title bar and selecting the **About** option.

Install RealPresence Desktop in Standalone Mode

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

The `.exe` file is intended for easy, interactive installation by end users.

To install RealPresence Desktop using the `.exe` file:

1. Download the `.exe` file from Polycom Support.
2. Open the file and follow the instructions in the installation procedure.

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 Code** 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 `.msi` file is intended for use by experienced Windows administrators to support managed, provisioned, and silent installations. These procedures use methods such as Group Policy Objects (GPOs). You should already be familiar with these methods to use the `.msi` installation file.

About the `.msi` file

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

To install RealPresence Desktop using code commands:

1. Save the `.msi` installation file of RealPresence Desktop to a directory (for example, `C:\temp`) on your local system.
2. Build a desktop management or group policy object that will write the `.exe` installation file to a directory (for example, **`C:\temp`**) on your local system.
3. Run the command line in Command Prompt to install RealPresence Desktop.

   The following is an example of using the installer from the directory where the Polycom RealPresence Desktop `.msi` file resides:

   ```
   msiexec /qn /i RPDesktop.msi  /l*v log
   ```

   If you run the installation from a directory other than the directory where the executable file resides, include the full path in the command:

   ```
   msiexec /qn /i "c:\temp\RPDesktop.msi" /l*v log
   ```

Silent Installation of RealPresence Desktop with Options Enabled

As part of that `msiexec.exe`, the administrator can include a command line statement to set configuration parameter that affect the user interface.

From version 3.9, the configured parameters below are only valid for the first-time installation of RealPresence Desktop. Upgraded RealPresence Desktop uses the configurations saved from the previous release.

The format of this silent installation with options command line statement is:

```
msiexec /qn /i RPDesktop.msi
CMDLINE="<parameterkey1>=<parametervalue1>;<parameterkey2>=<parametervalue2>;...” /l*v
log
```

How to set default callrate to 512k when using silent installation:

```
msiexec /qn /i RPDesktop.msi CMDLINE="DEFAULT_CALL_RATE=CALLRATE512" /l*v log
```

How to enable shorten SDP feature when using silent installation:

```
msiexec /qn /i RPDesktop.msi CMDLINE="SUPPORT_SIMPLE_SDP=true" /l*v log
```

How to enable single sign on feature when using silent installation:

```
msiexec /qn /i RPDesktop.msi
CMDLINE="ENTRANCE_MODE=1;ENABLE_CMA=true;CMA_SERVER_ADDRESS=pctcgk.polycom.com;CMA_INT
EGRATED_LOGIN=true" /l*v log
```

The following table identifies some of the RealPresence Desktop configuration parameters that can be set as part of the silent installation:

Feature	Parameter Keys	Possible Parameter Values
Set default call rate	DEFAULT_CALL_RATE	AUDIOONLY= 64 CALLRATE256 = 256 CALLRATE384 = 384 CALLRATE512 = 521 CALLRATE768 = 768 CALLRATE1024 = 1024 CALLRATE1920 = 1920
Enable Simple Session Description Protocol (SDP) size adjustment feature for SIP	SUPPORT_SIMPLE_SDP	TRUE or FALSE
Enable Managed mode	ENTRANCE_MODE	0 = Stand alone mode 1 = Managed mode
Enable provisioning server	ENABLE_CMA	TRUE or FALSE
Identify provisioning server	CMA_SERVER_ADDRESS	
Enable single sign on	CMA_INTEGRATED_LOGIN	TRUE or FALSE

Upgrade RealPresence Desktop through RealPresence Resource Manager

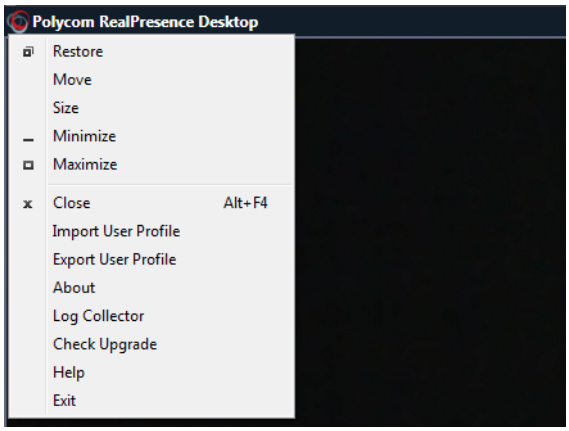
This section describes how to upgrade RealPresence Desktop when an upgrade package is available on the RealPresence Resource Manager.

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*.

To check upgrade:

1. Click the RealPresence Desktop logo on the application's title bar.



2. Click **Check Upgrade**.

Upgrade RealPresence Desktop using Code Commands

To upgrade RealPresence Desktop using code commands:

1. Save the `.msi` installation file of RealPresence Desktop to a directory (for example, `C:\temp`) on your local system.
2. Build a desktop management or group policy object that will write the `.exe` installation file to a directory (for example, **`C:\temp`**) on your local system.

3 Run the command line in Command Prompt to install RealPresence Desktop.

The following is an example of using the installer from the directory where the Polycom RealPresence Desktop `.msi` file resides:

```
msiexec /qn /i RPDesktop.msi  /l*v log
```

If you run the installation from a directory other than the directory where the executable file resides, include the full path in the command:

```
msiexec /qn /i "c:\temp\RPDesktop.msi" /l*v log
```

Uninstall RealPresence Desktop Using Code Commands

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

To uninstall RealPresence Desktop using the .msi file:

» Run this command:

```
msiexec /qn /x RPDesktop.msi
```

If corporate security policy blocks the MSI uninstallation command performed by a non-admin computer user, the user may fail to uninstall the RealPresence Desktop 3.9. You can use WMIC as an alternative.

To uninstall RealPresence Desktop using WMIC.exe:

» Run this command:

```
WMIC product where name="Polycom RealPresence Desktop" call uninstall
/nointeractive
```

Products Tested with this Release

The RealPresence Desktop is tested with other products. The following list is not a complete inventory of compatible equipment. It indicates the products that have been tested for compatibility with this release.

Polycom recommends that you upgrade your Polycom devices with the latest software versions, as compatibility issues may already have been addressed by software updates. See the Current Polycom Interoperability Matrix to match product and software versions.

Products Tested with this Release

Type	Product	Tested Versions
Gatekeeper, Gateways, External MCU, Bridges, Call Managers	Polycom® Distributed Media Application™ (DMA®) 7000	10.0.0.5
	Polycom® RealPresence® Resource Manager	10.6
	Polycom® RealPresence® Collaboration Server (RMX®) 4000/2000/1800/1500	8.8.0, 8.8.1
	Polycom® RealPresence® Collaboration Server, Virtual Edition	8.8.0, 8.8.1
	Polycom® RealPresence® Web Suite	2.2.3 2.2.2
Endpoints	Polycom® RealPresence® Group Series	6.2
	Polycom® HDX® Series	3.1.12
	Polycom® RealPresence® Desktop	3.9.1, 3.10.0, 3.10.2
	Polycom® RealPresence® Mobile	3.9.1, 3.10.1
	Polycom Studio	1.0
	Polycom Trio™ 8800	5.9.0

Interoperability Issues

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

Interoperability Issues Related to Operating System and Third-party Software

Description	Solution
On a 64-bit Windows 7 operating system, selecting **Polycom CX5000 Panoramic Video** as video device displays a blue screen.	On 64-bit Windows 7, use other video device.
On 32-bit Windows 7, when you share a Microsoft PowerPoint 2007 file and expand it to full screen, the content share control bar is covered by the RealPresence Desktop application. To display the content control bar, you need to minimize or restore the screen.	To display the content control bar, you need to minimize or restore the screen.

Interoperability Limitations Related to Other Polycom Products

Description	Solution
RealPresence Resource Manager Enterprise Sign-in from RealPresence Desktop does not check for valid IP format in the "Server" field	
Log into RealPresence Resource Manager from RealPresence Desktop Enterprise using Cyrillic/Chines Names Fails	
In a motion mode conference, RealPresence Desktop receives video with a large 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: • Change the RealPresence Collaboration Server (RMX) **Content Settings** to **Graphics**, and **Content Protocol** to **H.263 & H.264 Auto Selection**. • Set the call rate on RealPresence Mobile to above 384 kbps.
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.
If you use an MPM+ media card in a call with a RealPresence Collaboration Server (RMX) system, a blue edge is displayed at the bottom of the video window.	Use only an MPMX media card with the RealPresence Collaboration Server (RMX) system.
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.
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 RealPresence DMA system.	Register the endpoints

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 1080p / 30 fps	Video received from far end
Up to 1080p / 5 fps	Content showing from the computer
Up to 1080p / 15 fps	Content received from far end

Algorithms

The following table lists the supported algorithms.

Algorithm Type	Description
Audio	G.711µ 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

Outbound Ports

Port	Function
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

Resolved Issues

The following table lists resolved issues in this release.

Resolved Issues

Issue ID	Description
EN-159613	The App sometimes crashes.
EN-159753 EN-163705	When the H.323 alias is a Cyrillic name, the outgoing call does not connect.
EN-163568	The product code for the `.msi` installer updates automatically.

Known Issues

The following table lists all known issues and suggested workarounds for RealPresence Desktop.

These release notes do not provide a complete listing of all known issues that are included in the software. Issues not expected to significantly impact customers with standard voice or video conferencing environments may not be included. In addition, the information in these release notes is provided as-is at the time of release and is subject to change without notice.

Known Issues

Issue #	Description	Workaround
EN-156888	RealPresence Desktop on WIN, the navigation menu options do not work for Move and Size.	
EN-157392	RealPresence Desktop on WIN, the Import XML function does not overwrite the Recent" Call List or Local Contact List	
EN-127032	RealPresence Desktop users that use special characters such as ¬ and £ in their passwords cannot sign into a RealPresence Resource Manager system.	
EN-143170	Users have trouble logging into the RealPresence Desktop client from RealPresence Resource Manager 10.4 on some Microsoft Windows 10 workstations. The login sometimes fails and the account is locked.	
EN-143512	Runtime crash on RealPresence Mobile 3.10.1 running on an Android v28 phone.	
EN-144570	Sometimes the RealPresence Desktop vCard is empty during the conference and in the profile.	
EN-144583	RealPresence Web Suite and RealPresence Desktop are not showing the camera image when connect to a VMR conference.	
EN-150871	RealPresence Mobile Android devices provisioned by RealPresence Resource Manager through RealPresence Access Director with domain accounts are unable to search for LDAP contacts if SMBv2 is used. The error received is "Incorrect LDAP server username or password."	
EN-165936	When using RealPresence Desktop on WiIN, Auto-Answer sometimes doesn't work on incoming calls from non-RealPresence Desktop endpoints.	
EN-157258	Video on the RealPresence Desktop freezes after or while using Citrix application	
EN-163950	RealPresence Desktop and RealPresence Mobile do not receive content when in a VMR or Point-to-Point call.	
EN-164444	Calls between GS500 6.2.2 and RealPresence Desktop 3.10 sometimes have lip sync and audio dropout issues.	

Limitations

The following table lists the limitations in this release.

Issue ID	Description	Workaround
EN-162035	RealPresence Resource Manager Enterprise Sign-in from RealPresence Desktop does not check for valid IP format in the Server field.	
EN-165915	Log into RealPresence Resource Manager from RealPresence Desktop Enterprise using Cyrillic/Chinese names fails.	
EN-59873	You cannot manually upgrade your RealPresence Desktop to a higher version than 3.9 in following situations: • You installed RealPresence Desktop 3.9 using the `.msi` file. • Your computer administrator upgraded RealPresence Desktop to 3.9 using RealPresence Resource Manager.	Install the higher version using the `.msi` file.

Known Limitations for Windows 10

The following table lists the known limitations for Windows 10 in this release.

Issue ID	Description	Workaround
EN-63023	Due to Windows default settings, if you installed the consumer version of Microsoft Skype, clicking a “callto:” or “sip:” URL always launches the Skype application, instead of the RealPresence Desktop.	Do one of the following: • Launch RealPresence Desktop and dial your call manually. • Uninstall the consumer version of Microsoft Skype.
SWEP-8227	If you share content, the content boarders appear on other virtual desktops instead.	None.
SWEP-7802	When you share Microsoft Edge content, the application icon doesn’t appear on the left of the application name in the **Share Application** section.	None.

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
- 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.

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.

Value	Description
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.

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 DesktopRealPresence 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.

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 on a PC:

1. Make sure you have OpenSSL installed and configured.
2. Open the CMD console window from your PC.
3. Generate the private key *client.key*. For example:
   ```
   C:\OpenSSL-Win32\bin> openssl genrsa -out client.key 1024
   ```
4. Generate the certificate request *client.csr*. For example:
   ```
   C:\OpenSSL-Win32\bin> openssl req -new -key client.key -out client.csr
   For som-----
   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 [Note1]
   An optional company name []:poly
   ```
5. Submit the certificate request to your CA:
   a. View the content of the file *client.csr* using the following command: Select and copy its content (from ---BEGIN CERTIFICATE REQUEST to END CERTIFICATE REQUEST---):
      ```
      C:\OpenSSL-Win32\bin> type client.csr
      ```
   b. Go to your CA's web interface http://<*CA's IP address*>/certsrv/, and then choose **Request a certificate**.
   c. Click **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* to the text filed in the **Saved Request** text field, and click **Submit**.

f Choose **Base 64 encoded** and click **Download certificate**.

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

6 Move the generated *certnew.cer* file to your current directory.

7 Convert the file ccertnew.cer to a .p12 file by using the OpenSSL tool. The export password should be the same as the challenge password you set in Step 4. For example:

```
C:\OpenSSL-Win32\bin> openssl pkcs12 -export -in certnew.cer -inkey
client.key -out client.p12 -name testp12
Enter Export Password:

Verifying - Enter Export Password:
```

8 Encrypt the challenge password you set in Step 4:

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*.

9 Open the RealPresence Desktop appdata folder **%appdata%\RealPresence Desktop**, and then copy the files client.p12 and client.pwd to the folder.

Import the Root Certificate of Your CA

To establish MTLS connections, the client and server need to hold the root certificate of your CA also.

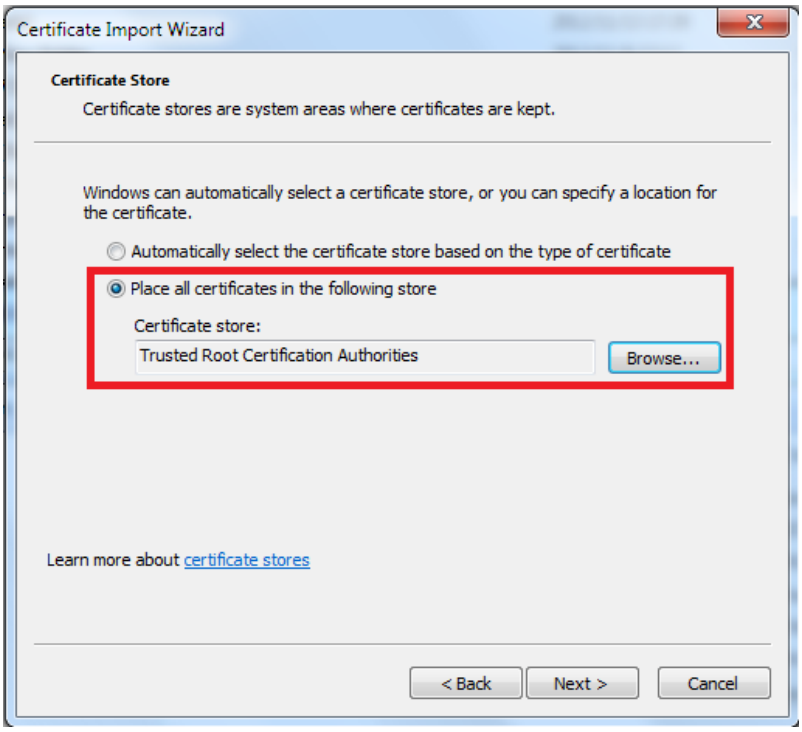
To import the root certificate of your CA:

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 Right-click the CA file, and select **Install Certificate**. Follow the Certificate Import Wizard.

Be sure to install it to **Trusted Root Certificate Authorities**.



About Section 508 Accessibility Standards

For information about how RealPresence Desktop conforms to the Section 508 Accessibility Standards, see Voluntary Product Accessibility Template Reports.

Get Help

For more information about installing, configuring, and administering Polycom products, refer to Documents and Downloads at Polycom Support.

To find all Polycom partner solutions, see Polycom Global Strategic Partner Solutions.

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