Administrator guide

for Cisco TelePresence MX700 and MX800
Thank you for choosing Cisco!

Your Cisco product has been designed to give you many years of safe, reliable operation.

This part of the product documentation is aimed at administrators working with the setup and configuration of the video system.

Our main objective with this Administrator guide is to address your goals and needs. Please let us know how well we succeeded!

May we recommend that you visit the Cisco web site regularly for updated versions of this guide.

The user documentation can be found on http://www.cisco.com/go/mx-docs

How to use this guide

The top menu bar and the entries in the Table of contents are all hyperlinks. You can click on them to go to the topic.

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Chapter 1

Introduction
User documentation and software

Products covered in this guide
- Cisco TelePresence MX700 with single camera
- Cisco TelePresence MX700 with dual camera
- Cisco TelePresence MX800 Single with single camera
- Cisco TelePresence MX800 Single with dual camera
- Cisco TelePresence MX800 Dual

User documentation
This guide provides you with the information required to administer the video system.

The guide primarily addresses capabilities and configurations of on-premise registered video systems (CUCM, VCS), but a sub-set of the capabilities and configurations also applies to devices that are registered to our cloud service (Cisco Spark).

Refer to the ► User documentation on the Cisco web site appendix for more information about the guides for this product.

Documentation on the Cisco web site
Visit the Cisco web site regularly for updated versions of the guides:
- http://www.cisco.com/go/mx-docs

Documentation for cloud registered devices
For more information on Cisco Spark room devices, visit:

Cisco Project Workplace
Explore the Cisco Project Workplace to find inspiration and guidelines when preparing an office or meeting room for video conferencing:
- http://www.cisco.com/go/projectworkplace

Software
Download software for the endpoint from the Cisco web site:

We recommend reading the Software release notes (CE9):

Converting to CE software
Before upgrading from TC software to CE software, it is important to consider the upgrade requirements; otherwise upgrading to CE software can leave you with a non-functional deployment that requires you to downgrade.

Refer to the software release notes, and the ► Upgrade the system software chapter.
What’s new in CE9

This chapter provides an overview of the new and changed system settings, and the new features and improvements in the Cisco Collaboration Endpoint software version 9 (CE9) compared to CE8.

For more details, we recommend reading the Software release notes:


New features and improvements in CE9.0

Updated user interface
The user interfaces on the Touch 10, on screen, and on integrated touch screens have been updated. The main menu items on the home screen have been replaced with more prominent activities.

Some of the settings have been removed from the Touch 10 advanced settings menu to align with the on-screen display menu.

Wakeup on motion detection
Wakeup on motion detection senses when a person walks into the conference room and the video system wakes up automatically. You need to enable the following setting for this feature to work:

xConfiguration StandBy WakeupOnMotionDetection

You can’t manually set the video system in standby when this feature is enabled.

Updated In–Room Control editor
The In–Room Control editor is updated with a new look, improved logic and usability for producing a control interface more efficiently. In addition, a new directional pad widget and an In–Room Control simulator is added.

Added language support
We have added support for Potuguese (Portugal) to the on-screen display and Touch controller menus.

Other changes
• Support for HTTPS client certificates has been added.
• Unplugging the presentation cable stops the presentation sharing instantly.
System configuration changes in CE9.0

New configurations

Cameras SpeakerTrack Closeup
NetworkServices HTTPS Server MinimumTLSVersion
NetworkServices HTTPS StrictTransportSecurity
Peripherals Pairing CiscoTouchPanels EmcResilience
Standby WakeupOnMotionDetection

Configurations that are removed

UserInterface UserPreferences
Conference VideoBandwidth PresentationChannel Weight
Standby AudioMotionDetection

Configurations that are modified

Cameras Camera [n] *
  OLD: User role: ADMIN, USER
  NEW: User role: ADMIN, INTEGRATOR
Cameras PresenterTrack *
  OLD: User role: ADMIN, USER
  NEW: User role: ADMIN, INTEGRATOR
Cameras SpeakerTrack *
  OLD: User role: ADMIN, USER
  NEW: User role: ADMIN, INTEGRATOR
Conference MultiStream Mode
  OLD: Value space: Auto/Off
  NEW: Value space: Off
UserInterface Language
  NEW: Portuguese added to value space

Configurations with the new INTEGRATOR user role

A new user role - INTEGRATOR - is introduced in CE9.0. It has been added to the following configurations:

Audio DefaultVolume
Audio Input HDMI [n] *
Audio Input Line [n] *
Audio Input Microphone [n] *
Audio MicrophoneReinforcement *
Audio Microphones Mute Enabled
Audio Output Line [n] *
Audio SoundsAndAlerts *
CallHistory Mode
Cameras Camera [n] *
Cameras PowerLine Frequency
Cameras PresenterTrack *
Cameras SpeakerTrack *
Conference DefaultCall Rate
Conference DoNotDisturb DefaultTimeout
FacilityService *
GPIO Pin [n] Mode
Peripherals Pairing Ultrasound Volume MaxLevel
Peripherals Pairing Ultrasound Volume Mode
Peripherals Profile *
SerialPort BaudRate
SerialPort Mode
Standby BootAction
Standby Control
Standby Delay
Standby StandbyAction
Standby WakeupAction
Standby WakeupOnMotionDetection
SystemUnit Name
Time Zone
UserInterface OSD Output
UserInterface Wallpaper
Video ActiveSpeaker DefaultPIPPosition
Video Input Connector [n] CameraControl Cameraid
Video Input Connector [n] CameraControl Mode
Video Input Connector [n] InputSourceType
Video Input Connector [n] OptimalDefinition Profile
Video Input Connector [n] PresentationSelection
Video Input Connector [n] Quality
Video Input Connector [n] RGBQuantizationRange
Video Input Connector [n] Visibility
Video Monitors
Video Output Connector [n] *
Video Presentation DefaultPIPPosition
Video Selfview Default *
Video Selfview OnCall *

<path> * means that the change applies to all configurations starting with <path>.
Cisco TelePresence MX700 and MX800 are part of the performance line within the Cisco portfolio of integrated video collaboration room systems. These systems integrate powerful functionality into an all-in-one solution for medium-to-large meeting rooms. The MX700 has two 55” LED monitors, MX800 Single has one 70” LED monitor, and MX800 Dual has two 70” LED monitors.

The MX700 and MX800 systems come standard with a built-in amplifier and speaker system for high fidelity sound. You can choose from a single camera, or a dual camera speaker-tracking solution for MX700 and MX800 Single; MX800 Dual comes only with the dual camera speaker-tracking solution. Both cameras deliver the best possible video imaging with up to 20x zoom and 1080p60 resolution. Premium resolution and dual display are also standard features on the MX700 and MX800. The Cisco TelePresence Touch 10 provides an easy-to-use interface for both MX700 and MX800 systems.

Industry standards compliance lets the MX700 and MX800 support calls with any third party, standards-based system, including software-based video conferencing solutions. And, as the industry’s first H.265-ready systems (in SIP calls), the MX700 and MX800 lay the foundation for future bandwidth efficiencies.

**Features and benefits**

- Powerful and feature-rich video systems with ultimate video and audio quality.
- High performance video collaboration codec.
- High-definition pan-tilt-zoom camera.
- Everything you need in one unit: screen(s), speakers, codec, camera, microphones.
- Three mounting options: wall mount, free standing floor stand, floor stand secured to the wall.
- Built-in speaker tracking system as option.
- Embedded MultiSite conferencing option that allows up to four additional participants (individual transcoding, no external bridge).
- Four simultaneous video inputs.
- 1080p60 main video and 1080p30 content.
- One button to push (OBTP) to start a meeting.
- Ideal for team-based collaboration, boardrooms, meeting rooms and video centric rooms.
- Dual presentation outside of a call (e.g. use the MX700 dual screens to compare two presentations or documents).
- Optimal definition up to 1080p60.
- H.323/SIP up to 6 Mbps point-to-point.
- Up to 10 Mbps total MultiSite bandwidth.
- Ability to connect up to four HD input sources and eight microphones directly to the codec.
- Full duplex audio with high-quality sound in mono, and stereo.
- Cisco TelePresence ClearPath packet loss protection technology.
- Native support for Cisco Unified Communications Manager (requires Cisco Unified Communications Manager version 8.6 or higher).
MX700 and MX800 at a glance (page 2 of 6)

MX700 with a single camera

- Camera (20x zoom, 1080p60)
- Loudspeakers
  - (full range multi-channel and bass)
- Two 55" monitors
- Embedded codec
- Microphones
  - (default: two; maximum: eight)
- Touch 10 user interface

Mounting options

- Free standing floor stand
- Floor stand secured to the wall
- Wall mount
MX700 and MX800 at a glance (page 3 of 6)

**MX700 with dual camera**

- **Dual camera assembly**
  - (speaker-track, 20x zoom, 1080p60)

- **Loudspeakers**
  - (full range multi-channel and bass)

- **Two 55" monitors**

- **Embedded codec**

- **Microphones**
  - (default: two; maximum: eight)

- **Touch 10 user interface**

**Mounting options**

- **Free standing floor stand**
- **Floor stand secured to the wall**
- **Wall mount**
MX700 and MX800 at a glance (page 4 of 6)

MX800 Single with single camera

- Camera (20x zoom, 1080p60)
- Loudspeakers (full range multi-channel and bass)
- 70" monitor
- Embedded codec
- Microphones (default: two; maximum: eight)
- Touch 10 user interface

Mounting options:
- Free standing floor stand
- Floor stand secured to the wall
- Wall mount
Cisco TelePresence MX700 and MX800

MX700 and MX800 at a glance (page 5 of 6)

MX800 Single with dual camera

Dual camera assembly
(speaker-track, 20x zoom, 1080p60)

Mounting options

Free standing floor stand

Floor stand secured to the wall

Wall mount

Loudspeakers
(full range multi-channel and bass)

70” monitor

Embedded codec

Microphones
(default: two; maximum: eight)

Touch 10 user interface
MX800 Dual

- Dual camera assembly (speaker-track, 20x zoom, 1080p60)
- Loudspeakers (full range multi-channel and bass)
- Two 70" monitors
- Embedded codec
- Microphones (default: two; maximum: eight)
- Touch 10 user interface

Mounting options:
- Free standing floor stand
- Floor stand secured to the wall
- Wall mount
Power On and Off

Power On/Off with the Power switch

The power switch is behind the left side cover. It is located in the same place for both MX700, MX800 Single and MX800 Dual, all mounting options.

1. Remove the left side cover. It snaps to magnets.

2. The power switch is next to the power connector below the codec.

Restart and standby using the user interface

Restart the system

1. Select the settings icon (cogwheel) in the status bar of the user interface.
2. Select System Information > Restart.
3. Select Restart again to confirm your choice.

Enter/exit standby mode

1. Select the settings icon (cogwheel) in the status bar of the user interface.
2. Select Standby.

Power Off or restart the system remotely

Sign in to the web interface and navigate to Maintenance > Restart.

Restart the system

Click Restart device... and confirm your choice.

It takes a few minutes before the system is ready for use.

Power Off the system

Click Shutdown device... and confirm your choice.

You cannot power the system on again remotely.
LED indicators (page 1 of 3)

**MX700**

**Codec LEDs**
You must remove the side cover to be able to see the codec LEDs.
The side cover is fastened with magnets.

**System LED**
*Blinking:*
The video system is starting up.

*Pulsating:*
The video system is in standby mode.

**Codec LEDs**
*Syste failure:*
Lights steady (red) when there is a serious problem with the codec.

*Power:*
Lights steady (white) when the codec has power.

**Camera failure LED**
*Steady red light:*
The camera has a serious error.

**Sub-system failure LEDs**
There are four LEDs underneath the monitor(s). Normally, they are not lit.
A steady red light indicates serious error, and you should contact the Cisco support organization.
The LEDs mean (numbered from left to right):
1. Monitor failure.
2. Power failure for LCD monitor or camera sub-systems.
3. Power failure for audio sub-system.
4. Power failure for LCD monitor backlight.
LED indicators (page 2 of 3)

**MX800 Single**

**Codec LEDs**
You must remove the side cover to be able to see the codec LEDs.
The side cover is fastened with magnets.

**System LED / Camera failure LED**
This LED operates as both system LED and camera failure LED.

**System LED**
- **Blinking:** The video system is starting up.
- **Pulsating:** The video system is in standby mode.

**Codec LEDs**
- **System failure:**
  - Lights steady (red) when there is a serious problem with the codec.
- **Power:**
  - Lights steady (white) when the codec has power.

**Camera failure LED**
- **Steady red light:**
  - The camera has a serious error.

**Sub-system failure LEDs**

**System LED / Camera failure LED**
This LED operates as both system LED and camera failure LED for the right camera in a dual camera assembly.

**Camera failure LED**
- **Steady red light:**
  - The camera has a serious error.

**Sub-system failure LEDs**

**Camera failure LED**
- **Steady red light:**
  - The camera has a serious error.

**Sub-system failure LEDs**

There are four LEDs underneath the monitor(s). Normally, they are not lit.

A steady red light indicates serious error, and you should contact the Cisco support organization.

The LEDs mean (numbered from left to right):
1. Monitor failure.
2. Power failure for LCD monitor or camera sub-systems.
3. Power failure for audio sub-system.
4. Power failure for LCD monitor backlight.
Codec LEDs

You must remove the side cover to see the codec LEDs. The side cover is fastened with magnets.

System LED / Camera failure LED

This LED operates as both system LED and camera failure LED for the right camera in a dual camera assembly.

Camera failure LED

Steady red light: The camera has a serious error.

Sub-system failure LEDs

There are four LEDs underneath the monitor(s). Normally, they are not lit.

A steady red light indicates a serious error, and you should contact the Cisco support organization.

The LEDs mean (numbered from left to right):
1. Monitor failure.
2. Power failure for LCD monitor or camera sub-systems.
3. Power failure for audio sub-system.
4. Power failure for LCD monitor backlight.

LED indicators (page 3 of 3)

MX800 Dual
In general, we recommend you to use the web interface to administer and maintain the video system, as described in this administrator guide.

Alternatively, you can access the API of the video system by other methods:
- HTTP or HTTPS (also used by the web interface)
- SSH
- Telnet
- Serial interface (RS-232)

If you want more information about the different access methods, and how to use the API, refer to the API guide for the video system.

### Tip
If the configuration or status is available in the API, the web interface setting or status translates into an API configuration or status as follows:

- Set $X > Y > Z$ to Value (web)
  - is the same as
  - xConfiguration $X$ $Y$ $Z$: Value (API)
- Check $X > Y > Z$ status (web)
  - is the same as
  - xStatus $X$ $Y$ $Z$ (API)

For example:

- **Set SystemUnit > Name** to **MySystem**
  - is the same as
  - xConfiguration SystemUnit Name: MySystem
- **Check SystemUnit > Software > Version** status
  - is the same as
  - xStatus SystemUnit Software Version

More settings and statuses are available in the web interface than in the API.

### How to configure the video system

<table>
<thead>
<tr>
<th>Access method</th>
<th>Notes</th>
<th>How to enable/disable the methods</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HTTP/HTTPS</strong></td>
<td>- Used by the web interface of the video system</td>
<td><strong>NetworkServices &gt; HTTP &gt; Mode</strong></td>
</tr>
<tr>
<td></td>
<td>- Non-secure (HTTP) or secure (HTTPS) communication</td>
<td>Restart the video system for changes to take effect</td>
</tr>
<tr>
<td></td>
<td>- HTTP: Enabled by default</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- HTTPS: Enabled by default</td>
<td></td>
</tr>
<tr>
<td><strong>Telnet</strong></td>
<td>- Non-secure TCP/IP connection</td>
<td><strong>NetworkServices &gt; Telnet &gt; Mode</strong></td>
</tr>
<tr>
<td></td>
<td>- Disabled by default</td>
<td>You do not need to restart the video system. It may take some time for changes to take effect</td>
</tr>
<tr>
<td><strong>SSH</strong></td>
<td>- Secure TCP/IP connection</td>
<td><strong>NetworkServices &gt; SSH &gt; Mode</strong></td>
</tr>
<tr>
<td></td>
<td>- Enabled by default</td>
<td>You do not need to restart the video system. It may take some time for changes to take effect</td>
</tr>
<tr>
<td><strong>Serial interface (RS-232)</strong></td>
<td>- Connect to the video system with a cable. IP-address, DNS, or a network is not required</td>
<td><strong>SerialPort &gt; Mode</strong></td>
</tr>
<tr>
<td></td>
<td>- Enabled by default</td>
<td>Restart the video system for changes to take effect</td>
</tr>
<tr>
<td></td>
<td>- We recommend using the default baud rate, because the video system may return much feedback (SerialPort &gt; BaudRate)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- For security reasons, you are asked to sign in by default (SerialPort &gt; LoginRequired)</td>
<td></td>
</tr>
</tbody>
</table>

If all access methods are disabled (set to **Off**), you can no longer configure the video system. You are not able to re-enable (set to **On**) any of the access methods, and you must factory reset the video system to recover.
How to administer the video system (page 2 of 4)

The web interface of the video system

The web interface is the administration portal for the video system. You can connect from a computer and administer the system remotely. It provides full configuration access and offers tools and mechanisms for maintenance.

*Note:* The web interface requires that HTTP or HTTPS is enabled (refer to `NetworkServices > HTTP > Mode` setting).

We recommend that you use the latest release of one of the major web browsers.

Connect to the video system

Open a web browser and enter the IP address of the video system in the address bar.

**How to find the IP address**

1. Select the settings icon (cogwheel) in the status bar of the user interface.
2. Select `System Information`.

Sign in

Enter user name and passphrase for the endpoint and click `Sign In`.

The system is delivered with a default user named `admin` with no passphrase. Leave the `Passphrase` field blank when signing in for the first time.

It is mandatory to set a password for the `admin` user.

Sign out

Hover the mouse over the user name and choose `Signout` from the drop-down list.
How to administer the video system (page 3 of 4)

How the web interface is organized

The web interface is organized in sub-pages. All sub-pages shown below are available if the video system is registered to an on-premise service (CUCM, VCS); the pages shown in grey color are not available if the video system is registered to the Cisco cloud service (Cisco Spark).

In both cases, a user that is signed in, sees only the pages that he has access rights for.

Read more about user administration, user roles and access rights in the ► User administration chapter.
How to administer the video system (page 4 of 4)

Settings available on the user interface

You have access to some basic configurations and system tests on the video system's user interface. Some of the configurations and tests may be unavailable due to the actual system setup.

- Change the language
- Change the time zone
- Change the network settings for the video system
- Change the network settings for the Touch controller
- Select and activate a service (Cisco's cloud service, or Cisco UCM, VCS or Expressway on-premise services)
- Check the microphone level
- Run a system volume check, and set the default volume
- Set the default camera position
- View system diagnostics for troubleshooting
- Unpair the Touch controller from the video system, and select another system to pair with
- Factory reset the video system
- Enable extended logging

Most of these settings and tests are also part of the Setup assistant that is launched when the video system is powered up for the first time. The Setup assistant is described in the Getting Started Guide for systems running CE software.

Access Settings

1. Select the settings icon (cogwheel) in the status bar of the user interface.
2. Select System information > Settings.
3. Select the button next to the setting you want to change or the test you want to run.
Chapter 2

Configuration
User administration

You have to sign in to get access to the web and command line interfaces. You can assign different roles to users, to determine what they should have access to.

The default user account

The video system comes with a default administrator user account with full access rights. The user name is admin and no passphrase is initially set.

It is mandatory to set a passphrase for the admin user.

Read how to set the passphrase in the Change the system passphrase chapter.

Create a new user account

1. Sign in to the web interface, and navigate to Security > Users.
2. Click Add new user...
3. Fill in the Username, Passphrase and Repeat passphrase input fields.
   As a default, the user has to change the passphrase when he signs in for the first time.
   Fill in the Client Certificate DN (Distinguished Name) field only if you use client certificates for authentication.
4. Check the appropriate Roles check boxes.
   If you assign the ADMIN role to a user, enter your own passphrase in the Your passphrase input field for verification.
5. Set the Status to Active to activate the user.
6. Click Create User.
   Use the Back button to leave without making any changes.

Edit an existing user account

If you make changes to a user that holds the Admin role, you must always enter your own passphrase in the Your passphrase input field for verification.

Change the user privileges

1. Sign in to the web interface, and navigate to Security > Users.
2. Click the appropriate user in the list.
3. Choose user roles, set the status to Active or Inactive, and decide if the user has to change the passphrase on the next sign in.
   Fill in the Client Certificate DN (Distinguished Name) field only if you use certificate login on HTTPS.
4. Click Edit User to save the changes.
   Use the Back button to leave without making any changes.

Change the passphrase

1. Sign in to the web interface, and navigate to Security > Users.
2. Click the appropriate user in the list.
3. Enter the new passphrase in the appropriate input fields.
4. Click Change passphrase to save the change.
   Use the Back button to leave without making any changes.

Delete the user account

1. Sign in to the web interface, and navigate to Security > Users.
2. Click the appropriate user in the list.
3. Click Delete user... and confirm when prompted.

About user roles

A user account may hold one or a combination of user roles. A user account with full access rights, like the default admin user, should possess the ADMIN, USER and AUDIT roles.

These are the user roles:

ADMIN: A user with this role can create new users, change most settings, make calls, and search the contact lists. The user cannot upload audit certificates and change the security audit settings.

USER: A user with this role can make calls and search the contact lists. The user can modify a few settings, for example adjust the ringtone volume and set the time and date format.

AUDIT: A user with this role can change the security audit settings and upload audit certificates.

ROOMCONTROL: A user with this role can create in-room controls. The user has access to the In-room control editor and corresponding development tools.

INTEGRATOR: A user with this role has access to settings, commands and status that are required to set up advanced AV scenarios, and to integrate our video systems with 3rd party equipment. Such a user can also create in-room controls.

Cisco Spark registered systems

If a video system is registered to Cisco's could service (Cisco Spark), only local users with the INTEGRATOR and ROOMCONTROL user roles are available.
Change the system passphrase

You need to know the system passphrase in order to:
- Sign in to the web interface
- Sign in and use the command line interfaces

The default user account
The video system is delivered with a default user account with full access rights. The user name is *admin*, and initially, no passphrase is set.

It is mandatory to set a passphrase for the default *admin* user in order to restrict access to system configuration. It is also mandatory to set a passphrase for any other user with ADMIN rights.

A warning, saying that the system passphrase is not set, is shown on screen until a passphrase is set for the *admin* user.

Other user accounts
You can create many user accounts for the video system.

Read more about how to create and manage user accounts in the [User administration chapter](#).

Change your passphrase

1. Sign in to the web interface, hover the mouse over the user name, and choose *Change Passphrase* in the drop down list.
2. Enter the current passphrase and new passphrase in the input fields, and click *Change passphrase*.

   The passphrase format is a string with 0–64 characters.

   If the passphrase currently is not set, leave the *Current passphrase* field blank.

Change another user’s passphrase

If you have administrator access rights, you can change the password of any user.

1. Sign in to the web interface, and navigate to *Security > Users*.
2. Click the appropriate user in the list.
3. Enter the new passphrase in the *Passphrase and Repeat passphrase* input fields.

   If the user holds the Admin role, you must enter your own passphrase in the *Your passphrase* input field for verification.

4. Click *Change passphrase* to save the change.

   Use the *Back* button to leave without making any changes.
System configuration

Sign in to the web interface, and navigate to Setup > Configuration.

Find a system setting

Search for settings
Enter as many letters as needed in the search field. All settings that contain these letters are shown in the right pane. Settings that have these letters in their value space are also shown.

Change a system setting

Check the value space
A setting's value space is specified either by text following the input field or in a drop-down list that opens when you click the arrow.

Change a value

1. Choose the preferred value from the drop-down list, or enter new text in the input field.
2. Click Save for the change to take effect.
Use the Undo or Cancel buttons if you do not want to make any changes.

About system settings
All system settings can be changed from the web interface.

Each system setting is described in the System settings chapter.

Different settings may require different user credentials. In order to be sure that an administrator is able to change all system settings, an administrator user must possess all user roles.

You can read more about user administration and user roles in the User administration chapter.

Categories with unsaved changes are marked with an edit symbol (✓).
Add a sign in banner

Sign in to the web interface, and navigate to Security > Sign In Banner.

1. Enter the message that you want to present to the user when he signs in.

2. Click Save to activate the banner.

About sign in banner

If a system administrator wants to provide initial information to all users, he can create a sign in banner. The message is shown when the user signs in to the web interface or the command line interface.
Manage the service certificates of the video system

Sign in to the web interface and navigate to Security > Service Certificates.

You need the following files:
- Certificate (file format: .PEM)
- Private key, either as a separate file or included in the same file as the certificate (file format: .PEM format)
- Passphrase (required only if the private key is encrypted)

The certificate and the private key will be stored in the same file on the video system.

The certificates and certificate issuers in the illustration are examples. Your system has other certificates.

Enable or disable, view or delete a certificate

Use the On and Off buttons to enable or disable a certificate for the different services.
Use the corresponding button to view or delete a certificate.

Add a certificate

1. Browse to find the Certificate file and Private key file (optional) on your computer.
2. Fill in the Passphrase if required.
3. Click Add certificate... to store the certificate on the video system.

About the service certificates of the video system

Certificate validation may be required when using TLS (Transport Layer Security).

A server or client may require that the video system presents a valid certificate to them before communication can be set up.

The video system's certificates are text files that verify the authenticity of the system. These certificates may be issued by a certificate authority (CA).

Certificates are used for the following services: HTTPS server, SIP, IEEE 802.1X and audit logging.

You can store many certificates on the video system, but only one certificate can be enabled for each service at a time.
If authentication fails, the connection will not be established.
Manage the list of trusted certificate authorities (CAs)

Sign in to the web interface, navigate to Security > Certificate Authorities, and open the Custom CAs tab.

You need the following file:
- CA certificate list (file format: .PEM).

Upload a list of certificate authorities

1. Browse to find the file containing a list of CA certificates on your computer (file format: .PEM).
2. Click Add certificate authority... to store the new CA certificates on the video system.

View or delete a certificate

Use the corresponding button to view or delete a certificate.

About trusted CAs

Certificate validation may be required when using TLS (Transport Layer Security).

The video system may be set up to require that a server or client presents its certificate to the video system before communication can be set up.

The certificates are text files that verify the authenticity of a server or client. The certificates must be signed by a trusted CA.

In order to verify the signature of the certificates, a list of trusted CAs must reside on the video system.

The list must include all CAs needed in order to verify certificates for both audit logging and other connections.

If authentication fails, the connection will not be established.
Set up secure audit logging

Sign in to the web interface, navigate to Setup > Configuration.

1. Open the Security category.
2. Find the Audit > Server settings, and enter the Address of the audit server.
   If you set PortAssignment to Manual, you must also enter a Port number for the audit server.
   Click Save for the changes to take effect.
3. Set Audit > Logging > Mode to ExternalSecure.
   Click Save for the change to take effect.

About secure audit logging

When audit logging is enabled, all sign in activity and configuration changes on the video system are recorded.

Use the Security > Audit > Logging > Mode setting to enable audit logging. Audit logging is disabled by default.

In ExternalSecure audit logging mode the video system sends encrypted audit logs to an external audit server (syslog server), which identity must be verified by a signed certificate.

The signature of the audit server is verified using the same CA list as other servers/clients.

If the audit server authentication fails, no audit logs are sent to the external server.

The certificate authority (CA) that verifies the certificate of the audit server must be in the video system’s list of trusted certificate authorities. Otherwise, logs will not be sent to the external server.

Refer to the Manage the list of trusted certificate authorities (CAs) chapter how to update the list.
Manage pre-installed certificates for CUCM via Expressway provisioning

Sign in to the web interface, navigate to Security > Certificate Authorities, and open the Preinstalled CAs tab.

To view the pre-installed certificates:

1. Sign in to the web interface.
3. Open the Preinstalled CAs tab.
4. Use the Details... and Disable buttons to view or disable certificates.

About pre-installed certificates

The pre-installed certificates in this list are only used when the video system is provisioned by Cisco Unified Communications Manager (CUCM) via Expressway (Edge).

Only Cisco Expressway infrastructure certificates are checked against this list.

If the validation of the Cisco Expressway infrastructure certificate fails, the video system will not be provisioned and registered.

Factory resetting the video system does not delete the list of pre-installed certificates.

As an alternative to using the pre-installed certificates, you can append the certificates you need to the certificate list manually.

Refer to the Manage the list of trusted certificate authorities (CAs) chapter how to update the list of trusted certificates.
Delete CUCM trust lists

The information in this chapter is only relevant for video systems that are registered to a Cisco Unified Communications Manager (CUCM).

Sign in to the web interface, navigate to Security > CUCM Certificates.

Delete the CUCM trust lists

Click Delete CTL/ITL to remove the trust lists.

As a general rule, you should not delete old CTL (Certificate Trust List) and ITL (Initial Trust List) files. In these cases, you must still delete them:

- When you change the CUCM IP address.
- When you move the endpoint between CUCM clusters.
- When you need to re-generate or change the CUCM certificate.

Overview of trust list fingerprints and certificates

The trust lists’ fingerprints and an overview of the certificates in the lists are displayed on the web page. This information may be useful for troubleshooting.

More information about trust lists

For more information about CUCM and trust lists, read the Deployment guide for TelePresence endpoints on CUCM that is available on the Cisco web site.
Change the persistency mode

Sign in to the web interface and navigate to Security > Non-persistent Mode.

Check the persistency status

The active radio buttons show the current persistency status of the video system.

Alternatively, you can navigate to Setup > Status, and then open the Security category to see the Persistency status.

Change the persistency settings

All persistency settings are set to Persistent by default. You only have to change these settings if you want to make them Non-persistent.

1. Click the radio buttons to set the persistency for configurations, call history, internal logging, local phonebook (local directory and favorites) and IP connectivity (DHCP) information.

2. Click Save and reboot....

   The video system restarts automatically. After the restart, the behavior changes according to the new persistency settings.

   Logs, configurations, and other data that was stored before you switched to Non-persistent mode, are NOT cleared or deleted.

Persistency mode

Configurations, call history, internal logs, local phonebook (local directory and favorites list), and IP connectivity information are stored by default. Because all persistency settings are set to Persistent, a system restart does not delete this information.

Generally, we recommend you NOT to change the persistency settings. Only change to Non-persistent mode if you have to prevent users from being able to see or traceback to any logged information from the previous session.

In Non-persistent mode, the following information is lost or cleared each time the system restarts:

- System configuration changes
- Information about placed and received calls (call history)
- Internal log files
- Changes to the local contacts or favorites list
- All IP related information (DHCP) from the last session

Information that was stored before changing to Non-persistent mode is not automatically cleared or deleted. You must factory reset the video system to delete such information.

There is more information about performing a factory reset in the Factory reset the video system chapter.
Set strong security mode

Sign in to the web interface, navigate to Security > Strong Security Mode.

Set strong security mode
Read carefully about the consequences of strong security mode before you continue.
1. If you want to use strong security mode, click Enable Strong Security Mode... and confirm your choice in the dialog box that appears. The video system restarts automatically.
2. Change the passphrase when you are prompted. The new passphrase must meet the strict criteria as described. How to change the system passphrase is described in the ► Change the system passphrase chapter.

Return to normal mode
Click Disable Strong Security Mode... in order to restore the video system to normal mode. Confirm your choice in the dialog box that appears. The video system restarts automatically.

About strong security mode
Use strong security mode only when compliance with DoD JITC regulations is required.
Strong security mode sets very strict passphrase requirements, and requires all users to change their passphrase on the next sign in.
Set up Intelligent Proximity for content sharing (page 1 of 5)

Cisco Proximity allows users to see, control, capture and share content directly on their own mobile devices (smartphone, tablet, or laptop), when the device is near a video system.

The mobile device can automatically pair with the video system when it comes within range of ultrasound transmitted by the video system.

The number of simultaneous Proximity connections depends on the type of video system. The client warns new users if the maximum number of connections has been reached.

<table>
<thead>
<tr>
<th>Video system</th>
<th>Maximum number of connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spark Room Kit</td>
<td>7</td>
</tr>
<tr>
<td>SX80</td>
<td>10</td>
</tr>
<tr>
<td>SX20</td>
<td>7</td>
</tr>
<tr>
<td>SX10</td>
<td>7</td>
</tr>
<tr>
<td>MX700, MX800</td>
<td>10</td>
</tr>
<tr>
<td>MX200 G2, MX300 G2</td>
<td>7</td>
</tr>
<tr>
<td>DX70, DX80</td>
<td>3</td>
</tr>
</tbody>
</table>

Proximity services

**Place calls and control the video system:**
- Dial, mute, adjust volume, hang up
- Available on smartphones and tablets (iOS and Android)

**View shared content on a mobile device:**
- View shared content, review previous slides, save selected slides
- Available on smartphones and tablets (iOS and Android)
- For DX70 and DX80, this service is available only when in a call

**Wireless share from a desktop client:**
- Share content without connecting a presentation cable
- Available on laptops (OS X and Windows)
Set up Intelligent Proximity for content sharing (page 2 of 5)

Install a Cisco Proximity client

Where to find the clients
You can download the Cisco Proximity clients for smartphones and tablets (Android and iOS), and laptops (Windows and OS X) free of charge from http://proximity.cisco.com

Clients for smartphones and tablets are also available directly through Google Play (Android) and Apple App Store (iOS).

End-user license agreement

Supported operating systems
- iOS 7 and above
- Android 4.0 and above
- Mac OS X 10.9 and above
- Windows 7 and above

The tile based interface introduced with Windows 8 is not supported.
Set up Intelligent Proximity for content sharing (page 3 of 5)

Ultrasound emission
Cisco video systems emit ultrasound as part of the Proximity feature.

Use the Proximity > Mode setting to switch the Proximity feature – and thereby also ultrasound emission – On and Off.

Most people are exposed to ultrasound more or less daily in many environments, including industry, commercial applications and home appliances.

Even if airborne ultrasound may cause subjective effects for some individuals, it is very unlikely that any effects will occur for levels below 75 dB.

Spark Room Kit, SX10N and MX Series:
- The ultrasound sound pressure level is below 75 dB at a distance of 50 cm or more from the loudspeaker.

DX70 and DX80:
- The ultrasound sound pressure level is below 75 dB at a distance of 20 cm or more from the loudspeaker.

SX10, SX20, and SX80:
- We are not able to control the ultrasound sound pressure level because these systems emit ultrasound on third-party loudspeakers.

Headsets
Spark Room Kit, DX70, DX80, and SX10N:
You can always use a headset with these systems because:
- DX70 and DX80 have dedicated headset outputs, on which we never emit ultrasound.
- Spark Room Kit and SX10N play ultrasound on their built-in loudspeakers. Ultrasound is never emitted on the HDMI or audio outputs.

SX10, SX20, SX80, and MX Series:
- We strongly recommend you to switch off ultrasound emission if you use a headset with these video systems (set Proximity > Mode to Off). Then you cannot use the Proximity feature.

Since these systems don’t have dedicated headset outputs, we are not able to control the sound pressure level from the connected headsets.
Set up Intelligent Proximity for content sharing (page 4 of 5)

Enable Proximity services
1. Sign in to the web interface, and navigate to Setup > Configuration.
2. Go to Proximity > Mode. Check that Proximity is On (default), so that the video system sends ultrasound pairing messages.
3. Enable the services you want to allow. Only Wireless share from a mobile device is enabled by default.

Place calls and control the video system:
   • Go to Proximity > Services > CallControl and choose Enabled.

View shared content on a mobile device:
   • Go to Proximity > Services > ContentShare > FromClients and choose Enabled.

Wireless share from a desktop client:
   • Go to Proximity > Services > ContentShare > ToClients and choose Enabled.

Temporarily disable the Proximity services
In sessions or meetings where you want to prevent devices in the room from receiving content, you can use the video system’s user interface to temporarily disable the Proximity services.

The video system will continue to transmit ultrasound pairing messages during such sessions. This ensures that clients will know about a nearby video system, and can give the user an explanation why he cannot connect.

1. Select the settings icon (cogwheel) in the status bar of the user interface to open the dropdown panel.
2. Switch Proximity on or off with the toggle button.

The Proximity indicator
You will see a Proximity indicator on the display when Proximity is switched On, and at least one Proximity service is enabled.

The Proximity indicator has two states:

- Proximity services are available for use.
- Proximity services are temporarily disabled. Use the toggle button in the settings dropdown panel to make them available again.

About Proximity
The Proximity feature is switched On by default.

When Proximity is switched On, the video system transmits ultrasound pairing messages.

The ultrasound pairing messages are received by nearby devices with Proximity clients, and triggers the authentication and authorization of the device.

Cisco recommends – for the best user experience – that Proximity always is switched On.

In order to get full access to Proximity, the Proximity services (Proximity > Services > ...) must be Enabled as well.

* We recommend not to use a headset, if you have switched on Proximity (ultrasound).
Set up Intelligent Proximity for content sharing (page 5 of 5)

Room considerations

Room acoustics

- Rooms with hard surfaces may cause challenges due to severe audio reflections. Acoustical treatment of meeting rooms is always highly recommended for the best meeting experience as well as Intelligent Proximity performance.
- Cisco recommends only one video system with Intelligent Proximity enabled in a room. Otherwise, interference is likely to occur, which may lead to problems with device discovery and session maintenance.

About privacy

In the Cisco Privacy statement and the Cisco Proximity Supplement you find information about data collection in the clients and privacy concerns that needs to be considered when deploying this feature in the organization. Refer to:

You can use the video system's user interface to temporarily disable the Proximity services. This is useful in sessions or meetings where you want to prevent mobile devices in the room from receiving content.

Basic troubleshooting

Cannot detect devices with Proximity clients

- Some Windows laptops are not able to record sound in the ultrasound frequency range (20kHz-22kHz). This can be due to frequency limitations with the sound card, sound driver or the internal microphone of the particular device. Refer to the Support forum for more information.

Audio artifacts

- If you can hear audio artifacts, like humming or clipping noise, decrease the maximum ultrasound volume (Peripherals > Pairing > Ultrasound > Volume > MaxLevel).

Cannot share content from a laptop

- For content sharing to work, the video system and the laptop must be on the same network. For this reason Proximity sharing might fail if your video system is connected to your company network via Expressway, and your laptop is connected via VPN (VPN client dependent).

Additional resources

Cisco Intelligent Proximity site:
► https://www.cisco.com/go/proximity
Support forum:
► https://www.cisco.com/go/proximity-support
Adjust the video quality to call rate ratio

Video input quality settings
When encoding and transmitting video there is a trade-off between high resolution (sharpness) and high frame rate (motion).

The Video Input Connector n Quality setting must be set to Motion for the optimal definition settings to take any effect. With the video input quality set to Sharpness, the endpoint will transmit the highest resolution possible, regardless of frame rate.

Optimal definition profile
The optimal definition profile should reflect the lighting conditions in the video conferencing room and the quality of the camera (video input source). The better the lighting conditions and the better the quality of the camera, the higher the profile should be used.

Generally, the Medium profile is recommended. However, if the lighting conditions are very good, we recommend that you test the endpoint on the various Optimal Definition Profile settings before deciding on a profile. The High profile may be set in order to increase the resolution for a given call rate.

Some typical resolutions used for different optimal definition profiles, call rates and transmit frame rates are shown in the tables on the next page. The resolution and frame rate must be supported by both the calling and called systems.

Threshold for sending video at 60 fps
Use the Video Input Connector n OptimalDefinition Threshold60fps setting to decide when to allow sending video at 60fps.

For all resolutions lower than this threshold, the maximum transmitted frame rate will be 30fps; for higher resolutions, 60fps is possible if the available bandwidth is adequate.

Sign in to the web interface and navigate to Setup > Configuration.

1. Go to Video > Input > Connector n > Quality and set the video quality parameter to Motion.
2. Go to Video > Input > Connector n > OptimalDefinition > Profile and choose the preferred optimal definition profile.
3. Go to Video > Input > Connector n > OptimalDefinition > Threshold60fps to set the threshold below which the maximum transmitted frame rate will be 30fps.
### Adjust the video quality to call rate ratio (page 2 of 2)

<table>
<thead>
<tr>
<th>Call rate [kbps]</th>
<th>H.264, maximum 30fps</th>
<th>H.264, 60fps allowed at 512×288 and higher resolutions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Normal</td>
<td>Medium</td>
</tr>
<tr>
<td>128</td>
<td>320×180@30</td>
<td>512×288@20</td>
</tr>
<tr>
<td>256</td>
<td>640×360@30</td>
<td>768×448@30</td>
</tr>
<tr>
<td>384</td>
<td>640×360@30</td>
<td>768×448@30</td>
</tr>
<tr>
<td>576</td>
<td>768×448@30</td>
<td>1024×576@30</td>
</tr>
<tr>
<td>768</td>
<td>1024×576@30</td>
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<td>4736</td>
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</tr>
<tr>
<td>6000</td>
<td>1920×1080@30</td>
<td>1920×1080@30</td>
</tr>
</tbody>
</table>

* The maximum bit rate for H.265 is 3 Mbps. If the bit rate is set higher the codec uses H.264. In general, H.265 gives similar quality to H.264 at half the bandwidth (call rate).

** H.264

---

* The maximum bit rate for H.265 is 3 Mbps. If the bit rate is set higher the codec uses H.264. In general, H.265 gives similar quality to H.264 at half the bandwidth (call rate).
Packet loss resilience - ClearPath

ClearPath introduces several mechanisms for advanced packet loss resilience. These mechanisms increase the experienced quality when you use your video system in an error prone environment.

ClearPath is a Cisco proprietary protocol. All endpoints running CE software support ClearPath.

If the involved endpoints and infrastructure elements support ClearPath, all packet loss resilience mechanisms are used in point-to-point connections (including hosted conferences). Only some of the mechanisms are supported in MultiSite conferences.
Choose wallpaper

Sign in to the web interface, and navigate to Setup > Personalization.

Choose a wallpaper from the list.
The active wallpaper is highlighted.

Upload a custom wallpaper

Overwrites any old custom wallpaper.

1. Browse to find the custom wallpaper image file.
2. Click Upload to save the file on the video system.
   
   Supported file formats: BMP, GIF, JPEG, PNG
   
   Maximum file size: 16 megapixels

The custom wallpaper is automatically activated once uploaded.

About a custom wallpaper

If you want the company logo or another custom picture as background on the main display, you may upload and use a custom wallpaper.

You can only store one custom wallpaper on the video system at a time; a new custom wallpaper overwrites the old one.

When you use a custom wallpaper, these items are removed from the main display:

- The large clock
- The list of upcoming meetings

Delete the custom wallpaper

Delete fully removes the custom wallpaper from the video system.

You have to upload it anew if you want use it again.
Choose a ringtone and set the ringtone volume

Sign in to the web interface, and navigate to Setup > Personalization.

Change the ringtone
1. Choose a ringtone from the drop-down list.
2. Click Save to make it the active ringtone.

Set the ringtone volume
Use the slide bar to adjust the ringtone volume.

Play back the ringtone
Click the play button (►) to play back the ringtone.
Use the stop button (■) to end the playback.

About ringtones
A set of ringtones are installed on the video system. Use the web interface to chose a ringtone, and set the ringtone volume.

You can play back the chosen ringtone from the web interface. Note that the ringtone will be played back on the video system itself, and not on the computer running the web interface.
Manage local contacts

Sign in to the web interface and navigate to Setup > Local Contacts.

Import/Export contacts from file

Click Export to save the local contacts in a file; and click Import to bring in contacts from a file.

The current local contacts are discarded when you import new contacts from a file.

Add or edit a contact

1. Click Add contact to make a new local contact, or click a contact’s name followed by Edit contact.
2. Fill in or update the form that pops up.
   Choose a folder in the folder drop down list in order to store the contact in a sub-folder.
   Click Add contact method and fill in the new input fields if you want to store more than one contact method for the contact (for example video address, telephone and mobile number).
3. Click Save to store the local contact.

Delete a contact

1. Click a contact’s name followed by Edit contact.
2. Click Delete to remove the local contact.

Manage Favorites using the the video system’s user interface

Add a contact in the Favorites list
1. Select Call on the home screen.
2. Select the contact you want to add.
3. Select Add to favorites.
The contact you add will be placed in the top folder. You cannot select or create a sub-folder.

Remove a contact from the Favorites list
1. Select Call on the home screen.
2. Select the Favorites tab.
3. Select the contact you want to remove.
4. Select Remove favorite.

Add or edit a sub-folder

1. Click Add folder to make a new sub-folder, or click one of the listed sub-folders followed by Edit folder to change an existing sub-folder.
2. Fill in or update the form that pops up.
3. Click Save to create or update the folder.

Delete a sub-folder

1. Click a folder’s name followed by Edit folder.
2. Click Delete to remove the folder and all its contacts and sub-folders. Confirm your choice in the dialog that pops up.
Chapter 3
Peripherals
Test the loudspeaker connections

Sign in to the web interface, and navigate to Integration > Developer API.

We have provided a speaker check tool that you can run to verify that the loudspeakers are correctly connected.

You must be in the same room as the video system when you test the loudspeaker connections.

Run the speaker check

1. Enter the following command in the Execute API commands and configurations text area:
   
   ```
   xCommand Audio SpeakerCheck
   MeasurementLength: <number of seconds>
   Volume: <test-signal volume>
   ```

   If you leave out the MeasurementLength and Volume parameters, the test signal is emitted for 1 second from each speaker, and the volume is 1.

2. Click Execute.

   The speaker check will now run, and a test signal will be emitted from each speaker, in sequence from left to right.

3. Listen for the test signals.

   If one or more speakers do not make a sound, or the sequence is not strictly from left to right, you have to reconnect the loudspeaker cables and run the speaker check again.

- Syntax and semantics are explained in the API guide for the video system.

Loudspeakers

It is crucial for the conferencing experience that the video system’s loudspeakers are correctly connected to the embedded codec.

Correct cabling ensures that sound meant to be coming from the right loudspeakers actually comes from the right speakers, and the sound meant to be coming from the left loudspeakers actually comes from the left speakers. If the speaker cables are incorrectly connected this will not take place.

If the speaker check reveals any issues, you must reconnect the cables.

How to reconnect cables

Check the Installation Guide for the product for all details.

1. Remove the video system’s upper textile grille. It snaps to magnets.

2. Unscrew the screw that fastens the loudspeaker (Torx T20). Then, release the speaker gently from its peg.

3. Disconnect the cable that is connected incorrectly, and connect the correct cable.

   The cables are marked with a number. Check the next page to see which cable should be connected to which loudspeaker.
Find the correct cable for each loudspeaker

The numbers that are shown in the illustrations are printed on the loudspeaker cables. This makes it easier to connect the correct cables.
Connect external monitors  (page 1 of 3)

MX700 and MX800 Dual support one external monitor, and MX800 Single supports two external monitors, in addition to the video systems’ integrated monitor(s).

The video system distributes the layout on all available monitors.

⚠️ Always switch off power when you connect and disconnect monitors and other peripherals.

Remove the video system’s left side cover to get access to the codec connector panel and power switch. The cover is fastened with magnets.

⚠️ Do not disconnect the integrated monitors from the codec, and do not use those connectors for anything else.

The reason for this is that the integrated monitor connections make use of multichannel audio, which drives the included speaker systems. Inserting third party equipment is likely to break the audio chain, causing the video system to fail from an audio perspective.
Connect external monitors  (page 2 of 3)

Automatic setup

There is no special configuration needed on the video system in order to support dual monitors or triple monitors scenarios. By default the number of monitors are auto-detected, and the role of each monitor - whether it is intended to be the first, second, or third monitor - is automatically set according to the physical connections.

For example, if the total number of monitors are three, the following settings will be assumed when set to Auto:

• Video > Monitors : Triple
• Video > Output > Connector 1 > MonitorRole : First
• Video > Output > Connector 2 > MonitorRole : Second
• Video > Output > Connector 3 > MonitorRole : Third

These settings can be changed if necessary, but for ease of use no configuration is required in order to use the default values.

When do you need manual setup

You can override the default behavior by setting one or more settings manually. You need manual setup when you want to:

• Dedicate a monitor to only show presentations
• Use one of the outputs for a recorder
• Replicate the same layout on more than one monitor
• Show the on-screen messages and indicators (OSD) on another monitor than the video output with the lowest number
• Set the resolution manually, e.g. if the video system fails to detect the native resolution and refresh rate of a monitor
The automatic setup works well for common single monitor, dual monitors, and triple monitors scenarios. For more complex scenarios, you may need manual configuration.

Sign in to the web interface and navigate to Setup > Configuration, to find the settings referred below.

**Set a role for each monitor**

Define a role for each monitor with the Video > Output > Connector n > MonitorRole setting.

Choose monitor roles that match your monitor setup.

**Set the number of monitors**

Set the number of monitors with different layouts in your setup with the Video > Monitors setting.

When set to Auto, the video system automatically detects if a monitor is connected to a connector, and thereby also determines the number of monitors in the setup.

The other options allow you to fix a single, dual, or triple monitor setup, and to dedicate one monitor for presentations.

**Choose on which monitor to display messages and indicators**

Define on which monitor to display the messages and indicators on-screen with the UserInterface > OSD > Output setting.

When set to Auto, the video system determines which monitor to use based on the number of the connector.

**About the number of monitors and the role of each monitor**

The Video > Output > Connector n > MonitorRole setting assigns a role to the monitor that is connected to the output. The monitor role decides which layout (call participants and presentation) will appear on the monitor.

Monitors with the same monitor role get the same layout; monitors with different monitor roles have different layouts.

The Video > Monitors setting must reflect the number of different layouts in your room setup.

Most often the number of different layouts are the same as the number of physical monitors, but not always; if exactly the same layout shall be repeated on two or more monitors, the number of different layouts is less.

Note that a monitor can be reserved for presentations.

---

**Example 1:**
Three monitors in total, and the third monitor is dedicated to only show presentations:

- Video > Monitors : TriplePresentationOnly
- Video > Output > Connector 1 > MonitorRole : Auto
- Video > Output > Connector 2 > MonitorRole : Auto
- Video > Output > Connector 3 > MonitorRole : Auto
- UserInterface > OSD > Output : Auto

**Example 2:**
Two monitors in total, and a recording device is attached to Connector 3 (DVI). OSD on the monitor on Connector 2:

- Video > Monitors : Auto
- Video > Output > Connector 1 > MonitorRole : Auto
- Video > Output > Connector 2 > MonitorRole : Auto
- Video > Output > Connector 3 > MonitorRole : Recorder
- UserInterface > OSD > Output : 2
You can connect several external input sources to the video system simultaneously:

- Three for single camera systems
- Two for dual camera systems

Sign in to the web interface and navigate to Setup > Configuration, to find the settings referred in this section.

Remove the video system's left side cover to get access to the connectors. The cover is fastened with magnets.

### Analog video input

Connector 5 comprises two BNC sockets, and is used for S-Video or Composite video signals.

- **S-Video**: Connect to both the Y and C connectors.
- **Composite**: Connect to the Y connector.

### Connect a camera

Typically, an external camera is connected to an HDMI input.

In addition, you must connect the camera via an Ethernet switch to the video system's Ethernet 2 or Ethernet 3 port, or to the camera control DSUB-9 port. The type of camera determines whether to use Ethernet or DSUB-9.

### Connect a computer

Connect a computer to a video input in order to share content locally or with conference participants. The codec supports two computers simultaneously.

Typically, computers are connected to Connector 3 (HDMI) or Connector 4 (DVI-I).

To get audio when using DVI-I, you must also connect the computer to one of the codec's Audio Line inputs (Euroblock).
Connect input sources (page 2 of 2)

About video and content quality

Use the Video > Input > Connector n > Quality setting to optimize quality with respect to motion or sharpness.

Typically, you should choose Motion when a large number of participants are present or when there is a lot of motion in the picture. Choose Sharpness when you want the highest quality of detailed images and graphics.

The default value is Motion for Connector 2; and Sharpness for Connectors 3 and 4.

Set type and name for the input sources

We recommend that you set type and name for the input sources:

- Video > Input > Connector n > InputSourceType
- Video > Input > Connector n > Name

These settings determine the names and icons that are shown on the user interfaces. Intuitive names and icons make source selection easier.
Extend the number of input sources

You can customize our touch user interfaces to include input sources that are connected to a third-party external video switch. The sources will appear and behave as any other video source that is connected directly to the video system.

Consult the In-Room Control guide for full details about how to extend the user interface, and how to use the video system’s API to set it up. Go to:

► http://www.cisco.com/go/in-room-control-docs

Architecture

You need a Cisco video system with a touch interface, a third-party control system, for example Crestron or AMX, and a third-party video switch. It is the control system, not the video system, that controls the video switch.

When you program the control system you must use the video system’s API (events and commands)* in order to connect with the video switch and the controls on the touch interface. This way you can synchronize what is shown and done on the user interface with the actual state of the input sources.

* You need a user that holds the ROOMCONTROL, INTEGRATOR, or ADMIN user roles in order to access the API commands that you need when programming the control system.
Set up the SpeakerTrack feature

Sign in to the web interface and navigate to Setup > Configuration, to find the settings referred.

The speaker track feature uses automatic camera framing to select the best view based on how many people are in the room. When closeup is enabled and a person in the room speaks, the system will find the person and select the best camera framing. The closeup may not include all the persons in the room. If you want all the persons in the room to be in the picture at all times you can turn off the closeup functionality.

Configure speaker tracking

Use the Cameras > SpeakerTrack settings to configure speaker tracking.

**Cameras > SpeakerTrack > Mode**

- **Auto**: Speaker tracking is enabled in general. The system will detect people in the room and automatically select the best camera framing. Users can switch speaker track on or off instantly in the camera control panel on the Touch controller.
- **Off**: Speaker tracking is switched off. The speaker track on/off button will disappear from the Touch controller. The closeup function and the tracking mode will be disabled.

**Cameras > SpeakerTrack > Closeup**

This setting only applies when the Cameras SpeakerTrack Mode is set to Auto

- **Auto**: The system will zoom in on the person speaking.
- **Off**: The system will keep all the persons in the room in the camera framing at all times.

**Tracking mode**

The tracking mode defines how fast the camera view switch to a new speaker when the tracking algorithm detects a change.

Use the **Cameras > SpeakerTrack > TrackingMode** setting to select between the two modes.

- **Auto**: This is the default setting.
- **Conservative**: The system reacts slower to detected changes, and the camera view will switch to a new speaker later.

Products that support speaker tracking

The following Cisco products support speaker tracking:

- **MX700 and MX800 with dual camera**
  ![MX700 and MX800 with dual camera](image)

- **SpeakerTrack 60 camera**
  ![SpeakerTrack 60 camera](image)

- **Spark Room Kit**
  ![Spark Room Kit](image)

The cameras work together with a built-in microphone array to automatically track and show the person that speaks.
Set up the PresenterTrack feature (page 1 of 5)

The PresenterTrack feature enables the camera to follow the presenter, while the presenter moves about on stage. When the presenter leaves the stage the tracking stops. A system administrator must define the stage area and the trigger zone. We recommend you to be in the room while setting up PresenterTrack.

Plan the room and the stage area
Consider where to place the camera, that is used for presenter tracking, to obtain an optimal user experience. Allow the audience or meeting participants to move naturally in the room, without being tracked unintended. The stage area is the zoomed-out overview image. Make it large enough so the presenter can move about on stage. When the presenter leaves the stage area the tracking stops.

Plan the trigger zone
The trigger zone is the area where presenter tracking is triggered. The trigger zone must cover an area that enables the detection of a presenter’s face. Choose a location where the presenter naturally will enter the stage, for example by the speakers podium or presenters desk. The trigger zone is not visible for the person coming up on stage, so make it easy for the person to be detected.

To avoid false face detection, make sure the background of the trigger zone is neutral. Avoid having the trigger zone in front of a monitor.

Prerequisites
The PresenterTrack is supported with:

- MX700 or MX800 with single or dual camera,
- SX80 with Precision 60 camera, or
- SX80 with SpeakerTrack 60 camera

PresenterTrack feature
- Supports only one person in the cropped image.
- Can be used in combination with Briefing Room mode.
- You can use one of the SpeakerTrack 60 cameras for PresenterTrack.
- The camera uses digital pan, tilt and zoom, so it will not move physically.
- PresenterTrack and SpeakerTrack cannot be used simultaneously. When you activate PresenterTrack SpeakerTrack is disabled, and vice versa.
Set up the PresenterTrack feature (page 2 of 5)

Step 1: Position the camera
Sign in to the web interface:

1. Navigate to Setup > Presenter Tracking.
2. Check the Enable PresenterTrack check box.
3. Click Configure... to open the configuration page.
   - Standby is deactivated.
   - Full screen self-view is enabled.
   - The trigger zone rectangle is shown on screen.
   - If already active, the PresenterTrack feature is deactivated.

Note that if you leave this web page at this stage, without doing any changes, the trigger zone rectangle is still visible on the video system's screen.
   - If you are not in the room: Click the Save button to remove the trigger zone rectangle on the screen.
   - If you are in the room: Tap the Camera icon on the Touch controller and choose a camera position from the list.

4. Choose a camera from the Camera source drop down list. A Precision 60 or SpeakerTrack 60 camera is required to enable the PresenterTrack feature. If the camera does not meet the requirements you will see a notification. Define the stage area. Use the Touch controller to adjust the full screen self-view (zoom, pan, tilt) if necessary. The camera must cover the stage area that is used by a presenter. When the presenter leaves the stage the camera will stop following the presenter.

Tip
- We recommend that you are in the room when you configure the PresenterTrack feature.
- Use the Touch controller to adjust the camera (zoom, pan, tilt) to define the stage area.
- Use the video system’s web interface to define the trigger zone. At the same time, watch the screen of the video system to see the result.
- Activate the PresenterTrack feature from the camera panel on the Touch controller.
Set up the PresenterTrack feature (page 3 of 5)

Step 2: Set the trigger zone

The trigger zone defines the area where presenter tracking is triggered.

You cannot see the video from the room in the web interface. An empty gray area represents the camera view and a dashed rectangle represents the trigger zone. Watch the video system screen to see the video from the room, together with the same dashed rectangle as you see in the web interface.

- Adjust the size and location of the trigger zone to cover a suitable area to detect a presenter’s face. The change you do on the video system’s web interface is reflected on the video system screen.
- The trigger zone must be large enough to detect a presenter face. Have in mind that people are of different heights.

Click Save.
Set up the PresenterTrack feature  (page 4 of 5)

Step 3: Test PresenterTrack in action

Activate PresenterTrack.

1. Tap the Camera icon in the upper right corner of the Touch controller.

2. Select Presenter from the list of camera positions to activate presenter tracking.

3. The camera is now ready for presenter tracking, and you can test the feature:
   a. Position yourself in the trigger zone.
   b. When you are detected the camera zooms in on you. Walk back and forth on stage and check that the camera follows you.
   c. Leave the stage area to stop presenter tracking.

If necessary, go back to Step 1 or Step 2 to adjust the size of the stage area or the trigger zone.

User scenarios

We do not support tracking of more than one person, but sometimes more than one person is in the cropped image.

When multiple faces are in the cropped image, the faces will be tracked as long as they all move in the same direction. If they move in different directions the tracking stops and the image zooms out and show the stage area. To start the presenter tracking again, the presenter must go to the trigger zone to be detected.

**Scenario 1**: A person is interviewed by another. They are both followed by the camera as long as they stand still or move in the same direction.

**Scenario 2**: When a presenter is replaced by another the tracking stops. The new presenter must move into the trigger zone to be detected by the camera.

If you need to disable, and thereafter enable, presenter tracking in a controlled manner this can be done on the Touch controller.

1. Tap the Camera icon in the status bar.

2. Deselect Presenter from the list of camera positions to disable PresenterTrack, and select Presenter again to enable the feature.
Set up the PresenterTrack feature (page 5 of 5)

**Diagnostics mode**

In order to troubleshoot you can set the video system in PresenterTrack diagnostics mode.

- Sign in to the xAPI and run the following command.
  
  ```
  xCommand Cameras PresenterTrack Set Mode: Diagnostic
  ```

In diagnostics mode the video system screen shows the stage area (the zoomed out overview image), and the indicators:

- **RED**: The trigger zone.

- **YELLOW**: The cropped image that shows a zoomed in view of the presenter.

- **GREEN**: A face is detected and it is tracked.

- **GREEN BLINKING, FILLED**: Indicates a positive face detection. If the tracked individual does not get a valid face-read the square will become red.

- **RED BLINKING, FILLED**: Indicates a false face detection. After some seconds the tracking will stop.

- **BLUE**: A face is detected but the face is not tracked.

- **The green square indicates the at face is tracked.**

- **The blue square indicates the at face is detected but not tracked.**

- **The red rectangle is the trigger zone.**

- **The yellow rectangle is the cropped image that follows the presenter. The yellow rectangle is not visible until a person steps into the trigger zone and is being tracked.**
Briefing room set-up (page 1 of 3)

The briefing room set-up is designed to provide easy set up, management and use of a room for education, training or similar.

The set-up is tailored around the following room modes:

- **Local Presenter** (the presenter is in the room)
- **Remote Presenter** (the presenter is calling in)
- **Discussions** (for discussions between different sites with local presenter in the room)

The briefing room is available as a room type template, which means that the required configurations are pushed automatically to the video system when you select the template.

In order for these configurations to match the room, it is important that the room is set up correctly, and that cameras and displays are connected exactly as specified in this chapter.

Required equipment

- **Video system**: MX700 or MX800 with Touch 10.
- **Three displays**: They are referred to as Presentation display, Remote presenter display, and Remote audience display (see blue print to the right).
- **Two cameras**: They are referred to as Audience camera, and Presenter camera (see blue print to the right). We recommend using the integrated camera as Audience camera. We recommend Cisco TelePresence Precision 60 as Presenter camera.
- **Microphones**: We recommend the Cisco TelePresence Ceiling Microphone for good coverage of the room. Other microphone solutions can also be used.
Briefing room set-up (page 2 of 3)

Connect cables

It is very important to connect the cameras and monitors to the video system as illustrated; otherwise the configuration that is pushed to the video system when selecting the Briefing room type template will not match your actual set-up.

You only need to connect the external monitors and cameras; keep all the other connectors, including the integrated cameras and displays as first installed.

1 If the video system has a single camera, only camera input 1 is used.
2 Cisco TelePresence Precision 60 need Ethernet connection to the codec. We recommend that you add an Ethernet switch to Network port 2 as illustrated. Do not connect the Ethernet switch to Network port 1, which is reserved for the LAN connection.
If you want to use both the Briefing room and In-room control features, carefully read about the current limitations in the Software Release Notes before you start the configuration.

Configure the video system

1. Sign in to the web interface, and navigate to Setup > Room Types.
2. Click the Briefing thumbnail to push the corresponding configuration to the video system.

Note that the cameras and displays must be connected as described in the Connect cables chapter.

Change room mode while in a conference

These are the pre-defined modes for the Briefing room:
- Local Presenter (the presenter is in the room)
- Remote Presenter (the presenter is calling in)
- Discussions (for discussions between different sites with local presenter in the room)

Switching from one mode to another implies changing the camera input sources and changing the remote and local screen layouts.

Switch to another room mode manually

While in a conference, you can switch to another mode using the Touch controller.
1. Tap Briefing Room on the Touch controller.
2. Tap the mode you want to change to.

Automatic switching implies:
- The system switches to Local Presenter mode when a person is detected in the PresenterTrack trigger zone.
- The system switches to Remote Presenter mode when the local presenter, who is tracked, leaves the stage.
- If someone in the local audience asks a question, while the system is in Local Presenter mode, the system sends split-screen video of both the presenter and the person asking the question. This requires Cisco TelePresence SpeakerTrack 60 as Audience camera, and that speaker tracking is switched on.
Using extra loudspeakers and local reinforcement

With MX700, MX800 Single and MX800 Dual extra loudspeakers are required to enable local reinforcement functionality.

Configuration example

The configuration example describes a setup with the integrated loudspeakers (HDMI) as main loudspeakers, the extra loudspeakers on Line Output 1 and 2, and local presenters' microphones on Microphone Input 1 and 2.

Sign in to the web interface and navigate to Setup > Configuration, to find the settings referred below.

1. Set the delay (ms) for the extra loudspeakers:
   - Audio > Output > Line 1 > Delay > DelayMs: <0..290>
   - Audio > Output > Line 2 > Delay > DelayMs: <0..290>
   The delay can vary based on where in the room the loudspeakers are placed. To calculate the delay, see the Using Extra Loudspeakers and Local Reinforcement guide.

2. Switch on reinforcement for the microphones that the local presenters will use:
   - Audio > MicrophoneReinforcement > Input > Microphone 1 Mode: On
   - Audio > MicrophoneReinforcement > Input > Microphone 2 Mode: On

3. Switch on reinforcement for the extra loudspeakers:
   - Audio > MicrophoneReinforcement > Output > Line 1 > Mode: On
   - Audio > MicrophoneReinforcement > Output > Line 2 > Mode: On

4. Set the amplification of the microphone signal from the local presenters to the extra loudspeakers:
   - Audio > MicrophoneReinforcement > Gain: <-54..15>
   Adjust the gain in small steps and make sure that the final setting is well below the feeding level.

Additional resources

We recommend reading the Using Extra Loudspeakers and Local Reinforcement guide for a comprehensive description and best practices for the solution.

Connect the Touch 10 controller (page 1 of 3)

Touch 10 must either be directly connected to the video system as described on this page, or paired to the video system via the network (LAN) as described on the next page. The latter is referred to as remote pairing.

Connect Touch 10 directly to the video system
Connect Touch 10 to the video system's PoE injector as illustrated.

Touch 10 set-up
Once Touch 10 is connected to power, the set-up procedure begins. Follow the instructions on screen.

If Touch 10 needs software upgrade, new software will be downloaded from the video system and installed on the unit automatically as part of the set-up procedure. Touch 10 restarts after the upgrade.
Connect the Touch 10 controller (page 2 of 3)

Connect Touch 10 to the video system via the network (LAN)

Connect Touch 10 and the video system to network wall sockets or to a network switch as illustrated.

Touch 10 set-up

Once Touch 10 is connected to power, the set-up procedure begins. Follow the instructions on screen.

When the Select a room system screen appears, note the following:

- A list of video systems signalling that they are available for pairing will show up on the screen. Tap the name of the video system you want to pair with.

  Note that the following must be fulfilled for a video system to show up in the list:
  - The video system and Touch 10 must be on the same subnet.
  - The video system must have been restarted within the last 10 minutes. If the video system does not appear in the list, try restarting it.
  - If the video system does not appear in the list of available systems, enter its IP address or hostname in the input field. Tap Connect.

- You have to log in with username and passphrase for the pairing process to commence. Tap Login.

  A user with the USER role is sufficient; you do not need the ADMIN role to perform this task.

  Read more about how to create a user account and assign a role to it in the ►User administration chapter.

If Touch 10 needs software upgrade, new software will be downloaded from the video system and installed on the unit automatically as part of the set-up procedure. Touch 10 restarts after the upgrade.

Contact information

The video system’s name or address is displayed in the status bar when Touch 10 is successfully paired to the video system.

The Ethernet connector is behind the lid at the rear of Touch 10.

1 If the network infrastructure provides Power over Ethernet (PoE), you do not need a PoE injector; Touch 10 should be connected directly to the wall socket (Ethernet switch) with a PoE rated Ethernet cable.

For safety, the PoE source must be in the same building as Touch 10. The PoE rated Ethernet cable can be up to 100m (330 ft).
Connect the Touch 10 controller  (page 3 of 3)

Touch 10 physical interface

- Touch screen
- Adjustable support to accommodate individual ergonomic needs
- Sound bar for audio adjustment
- Audio mute
- Two USB connectors (not in use)
- Mini-jack, 3.5 mm (not in use)
- Ethernet with PoE: for power and Ethernet
- Micro-USB: for maintenance only
- Not in use
Chapter 4

Maintenance
Upgrade the system software (page 1 of 2)

Upgrading from TC to CE software

CE software is the evolution of TC software. We recommend that you upgrade to TC7.3.6 or later before you upgrade to CE software.

It is important that you read about upgrade requirements and functionality changes before you upgrade to CE software. Also check that your environment supports the changes. We recommend reading the Software Release Notes carefully.

If you don’t take into account these considerations, upgrading to CE can leave you with a non-functioning deployment that requires you to downgrade.

Upgrading from CE8 to CE9

The MultiStream feature with Cisco TelePresence Server is deprecated in CE9.

Also, some features that were available from the Touch controller in CE8, are not available in the first CE9.0 release. Read the Software Release Notes for details before you upgrade.

CE software does not support the following features and products:
- MultiWay conferencing
- CTMS conferencing
- MediaNet
- Displays that do not support 16:9 or 16:10 resolution
- Custom video layouts, video composition using TC Console (temporarily removed). CE Console is for audio and GPIO only.
Upgrade the system software (page 2 of 2)

Sign in to the web interface and navigate to Maintenance > Software Upgrade.

Download new software

For software download, go to the Cisco Download Software web page, and navigate to your product:


Each software version has a unique file name. The format of the file name is "s52020ce9_0_.x.pkg".

Software release notes

For a complete overview of the news and changes, we recommend reading the Software Release Notes (CE9).


Install new software

Download the appropriate software package and store it on your computer. This is a .pkg file. Don’t change the file name.

1. Click Browse... and find the .pkg file that contains the new software.

   The software version will be detected and shown.

2. Click Install software to start the installation process.

The complete installation normally take no longer than 15 minutes. You can follow the progress on the web page. The video system restarts automatically after the installation.

You must sign in anew in order to continue working with the web interface after the restart.

About software versions

This video conference system is using CE software. The version described in this document is CE9.0.x.
Add option keys

Sign in to the web interface and navigate to Maintenance > Option Keys.

You see a list of all option keys, also the ones that are not installed on your video system.

Contact your Cisco representative for information about how to get option keys for the uninstalled options.

The video system's serial number

You need the video system's serial number when ordering an option key.

Add an option key

1. Enter an Option Key in the text input field.
2. Click Add option key.

If you want to add more than one option key, repeat these steps for all keys.

About option keys

Your video system may or may not have one or more software options installed. In order to activate the optional functionality the corresponding option key must be present on the video system.

Each video system has unique option keys.

Option keys are not deleted when performing a software upgrade or factory reset, so they need to be added only once.
System status

System information overview
Sign in to the web interface to see the System Information page.
This page shows the product type, system name and basic information about the hardware, software, installed options and network address. Registration status for the video networks (SIP and H.323) is included, as well as the number/URI to use when making a call to the system.

Detailed system status
Sign in to the web interface, and navigate to Setup > Status in order to find more detailed status information.

Search for a status entry
Enter as many letters as needed in the search field. All entries that contain these letters are shown in the right pane. Entries that have these letters in their value space are also shown.

Select a category and navigate to the correct status
The system status is grouped in categories. Choose a category in the left pane to show the related status to the right.

* The status shown in the illustration serve as an example. The status of your system may be different.
Run diagnostics

Sign in to the web interface and navigate to Maintenance > Diagnostics.

The diagnostics page lists the status for some common sources of errors*.

Errors and critical issues are clearly marked in red color; warnings are yellow.

Run diagnostics

Click Re-run diagnostics to ensure that the list is up to date.

Leave standby mode

Click Deactivate standby to wake up a video system that is in standby mode.

* The messages shown in the illustration serve as examples. Your system may show other information.
Download log files

Sign in to the web interface and navigate to Maintenance > System Logs.

Download all log files
Click Download logs archive... and follow the instructions.
An anonymized call history is included in the log files by default.
Use the drop down list if you want to exclude the call history from the log files, or if you want to include the full call history (non-anonymous caller/callee).

Open/save one log file
Click the file name to open the log file in the web browser; right click to save the file on the computer.

Start extended logging
Click Start extended logging... Extended logging lasts for 3 or 10 minutes, depending on whether full capture of network traffic is included or not.
Click Stop extended logging if you want to stop the extended logging before it times out.
As default, the network traffic is not captured. Use the drop down menu if you want to include partial or full capture of network traffic.

Refresh a log file list
Click the refresh button for Current logs or Historical logs to update the corresponding lists.

About log files
The log files are Cisco specific debug files which may be requested by the Cisco support organization if you need technical support.
The current log files are time stamped event log files.
All current log files are archived in a time stamped historical log file each time the video system restarts. If the maximum number of historical log files is reached, the oldest one will be overwritten.

Extended logging mode
Extended logging mode may be switched on to help diagnose network issues and problems during call setup. While in this mode more information is stored in the log files.
Extended logging uses more of the video system’s resources, and may cause the video system to under-perform. Only use extended logging mode when you are troubleshooting an issue.
Create a remote support user


The remote support user should only be enabled for troubleshooting reasons when instructed by Cisco TAC.

About the remote support user

In cases where you need to diagnose problems on the video system you can create a remote support user.

The remote support user is granted read access to the system and has access to a limited set of commands that can aid troubleshooting.

You will need assistance from Cisco Technical Assistance Center (TAC) to acquire the password for the remote support user.

Create remote support user

1. Click Create user.
2. Open a case with Cisco TAC.
3. Copy the text in the Token field and send it to Cisco TAC.
4. Cisco TAC will generate a password.

The remote support user is valid for seven days, or until it is deleted.

Delete remote support user

Click Delete user.
Backup or restore a configuration

Sign in to the web interface and navigate to Maintenance > Backup and Restore.

Show the current configuration
Click Preview backup to display the current settings on-screen.

Back up the current configuration
Click Take backup to store the configuration as a text file.

Restore configuration from backup
1. Click Browse... and find the backup file with the configuration you want to restore.
2. Click Restore to reconfigure the system as defined in the file. Some settings require that you restart the video system before they take effect.

About configuration backup
All the system settings, which are available on the System configuration page, can be listed on-screen or stored as a backup text file.

The backup text file can be loaded back onto the system, thereby restoring the configuration.

⚠️ We do not recommend that you load back a backup text file from TC software, onto a video system that is running CE software.

The configuration of the video system is likely to be incomplete, due to the differences between the two software generations.
Revert to the previously used software image

Sign in to the web interface and navigate to Maintenance > System Recovery.

We recommend you to back up the log files and configuration of the video system before you swap to the previously used software image.

Back up log files and system configuration

1. Select the Backup tab.
2. Click Download Logs and follow the instructions to save the log files on your computer.
3. Click Download Configuration Backup and follow the instructions to save the configuration file on your computer.

About the previously used software image

If there is a severe problem with the video system, switching to the previously used software image may help solving the problem.

If the system has not been factory reset since the last software upgrade, the previously used software image still resides on the system. You do not have to download the software again.

Revert to the previously used software image

Only administrators, or when in contact with Cisco technical support, should perform this procedure.

1. Select the Software Recovery Swap tab.
2. Click Switch to software: cex.y.z..., where x.y.z indicates the software version.
3. Click Yes to confirm your choice, or Cancel if you have changed your mind.

Wait while the system resets. The system restarts automatically when finished. This procedure may take a few minutes.
Factory reset the video system (page 1 of 3)

If there is a severe problem with the video system, the last resort may be to reset it to its default factory settings.

⚠️ It is not possible to undo a factory reset.

Always consider reverting to the previously used software image before performing a factory reset. In many situations this will recover the system. Read about software swapping in the ► Revert to the previously used software image chapter.

We recommend that you use the web interface or user interface to factory reset the video system. If these interfaces are not available, use the reset button.

A factory reset implies:
• Call logs are deleted.
• Passphrases are reset to default.
• All system parameters are reset to default values.
• All files that have been uploaded to the system are deleted. This includes, but is not limited to, custom wallpaper, certificates, and favorites lists.
• The previous (inactive) software image is deleted.
• Option keys are not affected.

The video system restarts automatically after the factory reset. It is using the same software image as before.

We recommend that you back up the log files and configuration of the video system before you perform a factory reset; otherwise these data will be lost.
Factory reset the video system (page 2 of 3)

**Factory reset using the web interface**

We recommend that you back up the log files and configuration of the video system before you continue with the factory reset.

Sign in to the web interface and navigate to **Maintenance > System Recovery**.

1. Select the **Factory Reset** tab, and read the provided information carefully.
2. Click **Perform a factory reset**.
3. Click **Yes** to confirm your choice, or **Cancel** if you have changed your mind.
4. Wait while the video system reverts to the default factory settings. When finished, the video system restarts automatically. This may take a few minutes.

   When the system has been successfully reset to factory settings, the Setup assistant starts with the **Welcome** screen.

**Factory reset from the user interface**

We recommend that you back up the log files and configuration of the video system before you continue with the factory reset.

1. Select the settings icon (cogwheel) in the status bar of the user interface.
2. Select **System information > Settings**.
3. Select **Reset system**.
4. Click **Reset** to confirm your choice, or **Back** if you have changed your mind.
5. Wait while the video system reverts to the default factory settings. When finished, the video system restarts automatically. This may take a few minutes.

   When the system has been successfully reset to factory settings, the Setup assistant starts with the **Welcome** screen.

**Back up log files and system configuration**

Sign in to the web interface and navigate to **Maintenance > System Recovery**.

1. Select the **Backup** tab.
2. Click **Download Logs** and follow the instructions to save the log files on your computer.
3. Click **Download Configuration Backup** and follow the instructions to save the configuration file on your computer.
**Factory reset the video system** (page 3 of 3)

**Factory reset using the reset button**

We recommend that you back up the log files and configuration of the video system before you continue with the factory reset.

1. Remove the left side cover of the video system to get access to the codec connector panel. The cover snaps to magnets.

2. Use the tip of a pen (or similar) to press and hold the recessed reset button until the screen turns black (approximately 10 seconds). Then release the button.

3. Wait while the video system reverts to the default factory settings. When finished, the video system restarts automatically. This may take a few minutes.

   When the system has been successfully reset to factory settings, the Setup assistant starts with the *Welcome* screen.
Factory reset the Touch 10

In an error situation it may be required to factory reset the Touch controller to recover connectivity. This should be done only when in contact with the Cisco support organization.

When factory resetting the Touch controller the pairing information is lost, and the Touch itself (not the video system) is reverted to factory defaults.

⚠️ It is not possible to undo a factory reset.

1. Locate the Mute and Volume down buttons.
2. Press and hold the Mute button until it starts blinking (red and green). It takes approximately 10 seconds.
3. Press the Volume down button twice.
   Touch 10 automatically reverts to the default factory settings and restarts.

   If Touch 10 is directly connected to the video system it receives a new configuration automatically from the video system.

   If Touch 10 is connected via LAN the device must be paired to the video system anew. When successfully paired it receives a new configuration automatically from the video system.

About pairing and how to connect Touch 10 to the video system

In order to use the Touch 10 controller, Touch 10 must either be directly connected to the codec, or paired to the codec via LAN. The latter is referred to as remote pairing.

Read about pairing and how to connect Touch 10 to the video system in the Connect the Touch 10 controller chapter.
Sign in to the web interface and navigate to Maintenance > User Interface Screenshots.

Capture a screenshot
Click Take screenshot of Touch Panel to capture a screenshot of the Touch controller, or click Take screenshot of OSD to capture a screenshot of the on-screen display.

The screenshot displays in the area below the buttons. It may take up to 30 seconds before the screenshot is ready.

All captured snapshots are included in the list above the buttons. Click the screenshot ID to display the image.

Delete screenshots
If you want to delete all screenshots, click Remove all.
To delete just one screenshot, click the × button for that screenshot.

About user interface screenshots
You can capture screenshots both of a Touch controller that is connected to the video system, and of the on-screen display (menus, indicators and messages on the main display).
Chapter 5

System settings
Overview of the system settings

In the following pages you will find a complete list of the system settings which are configured from the Setup > Configuration page on the web interface.

Open a web browser and enter the IP address of the video system then sign in.

How to find the IP address

1. Select the settings icon (cogwheel) in the status bar of the user interface.
2. Select System Information.

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Audio settings

Audio DefaultVolume
Define the default volume for the speakers. The volume is set to this value when you switch
on or restart the video system. Use the Touch controller to change the volume while the
video system is running. You may also use API commands (xCommand Audio Volume) to
change the volume while the video system is running, and to reset to default value.
Requires user role: ADMIN, INTEGRATOR, USER
Default value: 50
Value space: Integer (0..100)
   Select a value between 1 and 100. This corresponds to the dB range from -34.5 dB to
   15 dB, in steps of 0.5 dB. If set to 0 the audio is switched off.

Audio Microphones Mute Enabled
Define the microphone mute behaviour on the video system.
Requires user role: ADMIN, INTEGRATOR
Default value: True
Value space: True/InCallOnly
   True: Muting of audio is always available.
   InCallOnly: Muting of audio is only available when the device is in a call. When Idle it is
   not possible to mute the microphone. This is useful when an external telephone service/
   audio system is connected via the codec and is to be available when the codec is not
   in a call. When set to InCallOnly this will prevent the audio–system from being muted by
   mistake.

Audio MicrophoneReinforcement Input Microphone [1..8] Mode
Set the microphone reinforcement mode individually on each microphone. The
signals from all microphones with Mode = On will be mixed and fed to the selected
MicrophoneReinforcement outputs. Also consult the Audio MicrophoneReinforcement
Output Line Mode setting.
Requires user role: ADMIN, INTEGRATOR
Default value: Off
Value space: Off/On
   On: The microphone signal will be fed to the selected MicrophoneReinforcement
   outputs, as well as to the far end.
   Off: The microphone signal will be sent only to the far end. It will not be fed to the
   selected MicrophoneReinforcement outputs.

Audio MicrophoneReinforcement Output Line [1..4] Mode
Set the microphone reinforcement mode individually on each line output. If Mode = On, the
line output will add the microphone reinforcement mix to its ordinary output signal. Also
consult the Audio MicrophoneReinforcement Input Microphone Mode setting.
Requires user role: ADMIN, INTEGRATOR
Default value: Off
Value space: Off/On
   On: This output will deliver far end audio, local presentation audio and the microphone
   reinforcement mix.
   Off: This output will deliver far end audio and local presentation audio.
Audio Microphone Reinforcement Gain

The gain (in dB) that will be applied to the mixed microphone signal that is fed to the selected Microphone Reinforcement outputs.

Requires user role: ADMIN, INTEGRATOR
Default value: -54

Value space: Integer (-54..15)

Use this gain to adjust the level of microphone signal that should be fed to the local output. The value -54 means "Off", and no signal will be fed from the microphone to the output.

Audio SoundsAndAlerts RingTone

Define which ringtone to use for incoming calls.

Requires user role: ADMIN, INTEGRATOR, USER
Default value: Sunrise

Value space: Sunrise/Mischief/Ripples/Reflections/Vibes/Reflect/Playful/Ascent/Calculation/Mellow/Ringer

Select a ringtone from the list.

Audio SoundsAndAlerts RingVolume

Define the ring volume for incoming calls.

Requires user role: ADMIN, INTEGRATOR, USER
Default value: 30

Value space: Integer (0..100)

The value goes in steps of 5 from 0 to 100 (from -34.5 dB to 15 dB). Volume 0 = Off.

Audio Input HDMI [n] Level

This setting applies to HDMI [2..3] for single camera systems, and to HDMI [3] for dual camera systems.

Define the audio level of the HDMI input connector, in steps of 1 dB.

Requires user role: ADMIN, INTEGRATOR
Default value: 0

Value space: Integer (-24..0)

Select a value between -24 and 0, in steps of 1 dB.

Audio Input HDMI [n] Mode

This setting applies to HDMI [2..3] for single camera systems, and to HDMI [3] for dual camera systems.

Define if the audio channels on the HDMI input shall be enabled. The HDMI inputs have two audio channels.

Requires user role: ADMIN, INTEGRATOR
Default value: On

Value space: Off/On

Off: Disable audio on the HDMI input.
On: Enable audio on the HDMI input.

Audio Input HDMI [n] VideoAssociation MuteOnInactiveVideo

This setting applies to HDMI [2..3] for single camera systems, and to HDMI [3] for dual camera systems.

Determine whether to play audio only when you present the HDMI input source, or to always play audio when an audio source is connected to the HDMI input.

Requires user role: ADMIN, INTEGRATOR
Default value: On

Value space: Off/On

Off: Audio is always played, locally and to far end; you do not have to present the HDMI input source.
On: Audio is played, locally and to far end, only when you present the HDMI input source.
Audio Input Line [1..4] Equalizer ID
Select the equalizer ID of the audio source that is connected to the line input.
Requires user role: ADMIN, INTEGRATOR
Default value: 1
Value space: Integer (1..8)
Set the equalizer ID.

Audio Input Line [1..4] Equalizer Mode
Define the equalizer mode for the audio source that is connected to the line input.
Requires user role: ADMIN, INTEGRATOR
Default value: Off
Value space: Off/On
   Off: No equalizer.
   On: Enable the equalizer for the audio source that is connected to the line input.

Audio Input Line [1..4] VideoAssociation MuteOnInactiveVideo
The audio source can be associated with a video source on the video input connector, and
you can determine whether to play or mute audio depending on whether the video source is
presented or not.
Requires user role: ADMIN, INTEGRATOR
Default value: Line [1, 2]: On   Line[3, 4]: Off
Value space: Off/On
   Off: The audio source is not associated with a video source. The audio will be played
   locally and to far end regardless of whether the video source is presented.
   On: The audio source is associated with a video source. The audio will be played (locally
   and to far end) when the associated video source is presented. The audio will be muted
   when the video source is not presented.

Audio Input Line [1..4] VideoInputSource
The audio source can be associated with a video source on the video input connector.
Requires user role: ADMIN, INTEGRATOR
Default value: Line [1, 2]: 4   Line[3, 4]: 1
Value space: 1/2/3/4/5
   Select the video input connector to associate the audio source with.

Audio Input Line [1..4] Channel
Define whether the audio source on the line input is a mono signal or part of a multichannel
signal.
Requires user role: ADMIN, INTEGRATOR
Default value: Left
Value space: Left/Mono/Right
   Left: The Audio Line input signal is the left channel of a stereo signal.
   Mono: The Audio Line input signal is a mono signal.
   Right: The Audio Line input signal is the right channel of a stereo signal.

Audio Input Line [1..4] Level
Define the level of the audio source on the line input connector.
See the Audio Level table in the Physical Interface Guide for Cisco TelePresence SX80 for a
complete overview of the values represented in dB.
Requires user role: ADMIN, INTEGRATOR
Default value: 10
Value space: Integer (0..24)
   Select a value between 0 and 24, in steps of 1 dB.
Audio Input Line [1..4] Mode
Define the mode for the audio input line.
Requires user role: ADMIN, INTEGRATOR
Default value: On
Value space: Off/On
  Off: Disable the Audio Line input.
  On: Enable the Audio Line input.

Audio Input Microphone [1..8] EchoControl Mode
The echo canceller continuously adjusts itself to the audio characteristics of the room, and compensates for any changes it detects in the audio environment. If the changes in the audio conditions are significant, the echo canceller may take a second or two to re-adjust.
Requires user role: ADMIN, INTEGRATOR
Default value: On
Value space: Off/On
  Off: Turn off the echo control. Recommended if external echo cancellation or playback equipment is used.
  On: Turn on the echo control. Recommended, in general, to prevent the far end from hearing their own audio. Once selected, echo cancellation is active at all times.

Audio Input Microphone [1..8] EchoControl NoiseReduction
The system has built-in noise reduction, which reduces stationary background noise, for example noise from air-conditioning systems, cooling fans etc. In addition, a high pass filter (Humfilter) reduces very low frequency noise. Noise reduction requires that Audio Input Microphone [n] EchoControl Mode is enabled.
Requires user role: ADMIN, INTEGRATOR
Default value: On
Value space: Off/On
  Off: Turn off the noise reduction.
  On: Turn on the noise reduction. Recommended in the presence of low frequency noise.

Audio Input Microphone [1..8] EchoControl Dereverberation
The system has built-in signal processing to reduce the effect of room reverberation. Dereverberation requires that Audio Input Microphone [n] EchoControl Mode is enabled.
Requires user role: ADMIN, INTEGRATOR
Default value: Off
Value space: Off/On
  Off: Turn off the dereverberation.
  On: Turn on the dereverberation.

Audio Input Microphone [1..8] Equalizer ID
Select the equalizer ID of the source that is connected to the microphone input.
Requires user role: ADMIN, INTEGRATOR
Default value: 1
Value space: Integer (1..8)
  Set the equalizer ID.

Audio Input Microphone [1..8] Equalizer Mode
Define the equalizer mode for the source that is connected to the microphone input.
Requires user role: ADMIN, INTEGRATOR
Default value: Off
Value space: Off/On
  Off: No equalizer.
  On: Enable the equalizer for the source that is connected to the microphone input.
Audio Input Microphone [1..8] Video Association
MuteOnInactiveVideo

The microphone can be associated with a video source on the video input connector, and you can determine whether to play or mute audio depending on whether the video source is presented or not. By default, audio is not muted.

Requires user role: ADMIN, INTEGRATOR
Default value: On

Value space: Off/On
- Off: No video source is associated.
- On: A video source is associated, and the audio will be muted if the associated video source is not displayed.

Audio Input Microphone [1..8] Video Association
VideoInputSource

Select the video input connector to associate the audio source with.

Requires user role: ADMIN, INTEGRATOR
Default value: 1

Value space: 1/2/3/4/5
- Select the video input connector to associate the audio source with.

Audio Input Microphone [1..8] Level

Define the level of the Microphone input connector.
See the Audio Level table in the Physical Interface Guide for Cisco TelePresence SX80 for a complete overview of the values represented in dB.

Requires user role: ADMIN, INTEGRATOR
Default value: 58

Value space: Integer (0..70)
- Select a value between 0 and 70, in steps of 1 dB.

Audio Input Microphone [1..8] Mode

Disable or enable audio on the microphone connector.

Requires user role: ADMIN, INTEGRATOR
Default value: On

Value space: Off/On
- Off: Disable the audio input microphone connector.
- On: Enable the audio input microphone connector.

Audio Input Microphone [1..8] Type

The microphone connectors are intended for electret type microphones. The microphone connector can be set to line or microphone mode.

Requires user role: ADMIN, INTEGRATOR
Default value: Microphone

Value space: Line/Microphone
- Microphone: Select Microphone when you have 48 V Phantom voltage and the pre-amplification is On.
- Line: Select Line when you have a standard balanced line input. The phantom voltage and pre-amplification is Off.

Audio Output Line [1..6] Channel

Define whether the Audio Line output is a mono signal or part of a multichannel signal.

Requires user role: ADMIN, INTEGRATOR
Default value: Left

Value space: Left/Mono/Right
- Left: The Audio Line output signal is the left channel of a stereo signal.
- Mono: The Audio Line output signal is a mono signal.
- Right: The Audio Line output signal is the right channel of a stereo signal.
Audio Output Line [1..6] Delay DelayMs

To obtain lip-synchronization, you can configure each audio line output with an extra delay that compensates for delay in other connected devices, for example TVs and external loudspeakers. The delay that you set here is either fixed or relative to the delay on the HDMI output, as defined in the Audio Output Line [n] Delay Mode setting.

Requires user role: ADMIN, INTEGRATOR
Default value: 0
Value space: Integer (0..290)

The delay in milliseconds.

Audio Output Line [1..6] Delay Mode

You may add extra delay to an audio line output with the Audio Output Line [n] Delay DelayMs setting. The extra delay added is either a fixed number of milliseconds, or a number of milliseconds relative to the detected delay on the HDMI output (typically introduced by the connected TV).

Requires user role: ADMIN, INTEGRATOR
Default value: Fixed
Value space: Fixed/RelativeToHDMI

Fixed: Any extra delay (DelayMs) added to the output, will be a fixed number of millisecond.
RelativeToHDMI: Any extra delay (DelayMs) added to the output, will be relative to the detected delay on the HDMI output. The actual delay is HDMI-delay + DelayMs. The Audio Output Connectors Line [n] DelayMs status reports the actual delay.

Audio Output Line [1..6] Equalizer ID

Select the equalizer ID for the audio source that is connected to the output line.

Requires user role: ADMIN, INTEGRATOR
Default value: 1
Value space: Integer (1..8)

Set the equalizer ID.

Audio Output Line [1..6] Equalizer Mode

Define the equalizer mode for the audio source that is connected to the output line.

Requires user role: ADMIN, INTEGRATOR
Default value: Off
Value space: Off/On

Off: No equalizer.
On: Enable the equalizer for the audio output line.

Audio Output Line [1..6] Level

Define the audio level on the line output connector.

See the Audio Level table in the Physical Interface Guide for Cisco TelePresence SX80 for a complete overview of the menu values represented in dB.

Requires user role: ADMIN, INTEGRATOR
Default value: -10
Value space: Integer (-24..0)

Select a value between -24 and 0, in steps of 1 dB.

Audio Output Line [1..6] Mode

Define the mode for the audio line output.

Requires user role: ADMIN, INTEGRATOR
Default value: On
Value space: Off/On

Off: Disable the audio line output.
On: Enable the audio line output.
CallHistory settings

CallHistory Mode

Determine whether or not information about calls that are placed or received are stored, including missed calls and calls that are not answered (call history). This determines whether or not the calls appear in the Recents list in the user interfaces.

Requires user role: ADMIN, INTEGRATOR
Default value: On

Value space: Off/On

- Off: New entries are not added to the call history.
- On: New entries are stored in the call history list.
Cameras settings

Cameras Camera [1..7] AssignedSerialNumber

The camera ID is the number n in Camera [n]. By default, the camera ID is assigned automatically to a camera. If EDID information is not passed on from the camera to the codec, the camera ID is not persistent after a reboot. This means that a camera may get a new camera ID when the codec (video system) is restarted.

You should use the Cameras Camera AssignedSerialNumber setting to cater for configurations where the codec does not receive EDID information from multiple cameras. This setting allows you to manually assign a camera ID to a camera by associating the camera ID with the camera's serial number. The setting is persistent until the codec is factory reset.

Typical situations where the codec does not receive EDID information are: when you connect a Cisco TelePresence 60 camera using 3G-SDI; when you connect a Cisco TelePresence 60 (Cisco PrecisionHD 1080p4×S2) camera; when you use an HDMI repeater that does not pass on EDID information.

The default value is an empty string.

Requires user role: ADMIN, INTEGRATOR
Default value: ""

Value space: String (0, 20)
   The camera's serial number.

Cameras Camera [1..7] Backlight DefaultMode

This configuration turns backlight compensation on or off. Backlight compensation is useful when there is much light behind the persons in the room. Without compensation the persons will easily appear very dark to the far end.

Requires user role: ADMIN, INTEGRATOR
Default value: Off

Value space: Off/On
   Off: Turn off the camera backlight compensation.
   On: Turn on the camera backlight compensation.

Cameras Camera [1..7] Brightness Mode

Define the camera brightness mode.

Requires user role: ADMIN, INTEGRATOR
Default value: Auto

Value space: Auto/Manual
   Auto: The camera brightness is automatically set by the system.

Cameras Camera [1..7] Brightness DefaultLevel

Define the brightness level. Requires the Cameras Camera [n] Brightness Mode to be set to Manual.

Requires user role: ADMIN, INTEGRATOR
Default value: 20

Value space: Integer (1..31)
   The brightness level.
Cameras Camera [n..7] Flip
This setting applies to Camera [2..7] for single camera systems, and to HDMI [3..7] for dual camera systems.
With Flip mode (vertical flip) you can flip the image upside down. Flipping applies both to the self-view and the video that is transmitted to the far end.
Requires user role: ADMIN, INTEGRATOR
Default value: Auto
Value space: Auto/Off/On
Auto: If the camera detects that it is mounted upside down, the image is automatically flipped. If the camera cannot auto-detect whether it is mounted upside down or not, the image is not changed.
Off: Display the image on screen the normal way.
On: Display the image flipped upside down. This setting is used when a camera is mounted upside down, but cannot automatically detect which way it is mounted.

Cameras Camera [n..7] Focus Mode
This setting applies to Camera [2..7] for single camera systems, and to HDMI [3..7] for dual camera systems.
Define the camera focus mode.
Requires user role: ADMIN, INTEGRATOR
Default value: Auto
Value space: Auto/Manual
Auto: The camera will auto focus once a call is connected, as well as after moving the camera (pan, tilt, zoom). The system will use auto focus only for a few seconds to set the right focus; then auto focus is turned off to prevent continuous focus adjustments of the camera.
Manual: Turn the autofocus off and adjust the camera focus manually.

Cameras Camera [1..7] Gamma Mode
This setting enables gamma corrections, and applies only to cameras which support gamma mode. Gamma describes the nonlinear relationship between image pixels and monitor brightness.
Requires user role: ADMIN, INTEGRATOR
Default value: Auto
Value space: Auto/Manual
Auto: Auto is the default and the recommended setting.
Manual: In manual mode the gamma value is changed with the gamma level setting, ref. Cameras Camera [n] Gamma Level.

Cameras Camera [1..7] Gamma Level
By setting the Gamma Level you can select which gamma correction table to use. This setting may be useful in difficult lighting conditions, where changes to the brightness setting does not provide satisfactory results. Requires the Cameras Camera [n] Gamma Mode to be set to Manual.
Requires user role: ADMIN, INTEGRATOR
Default value: 0
Value space: Integer (0..7)
Define the gamma level.
Cameras Camera \([n..7]\) Mirror
This setting applies to Camera \([2..7]\) for single camera systems, and to HDMI \([3..7]\) for dual camera systems.
With Mirror mode (horizontal flip) you can mirror the image on screen. Mirroring applies both to the self-view and the video that is transmitted to the far end.
Requires user role: ADMIN, INTEGRATOR
Default value: Auto
Value space: Auto/Off/On
Auto: If the camera detects that it is mounted upside down, the image is automatically mirrored. If the camera cannot auto-detect whether it is mounted upside down or not, the image is not changed.
Off: Display the image as other people see you.
On: Display the image as you see yourself in a mirror.

Cameras Camera \([1..7]\) MotorMoveDetection
This setting applies only when using a Cisco TelePresence PrecisionHD 1080p12x camera.
If adjusting the camera position by hand you can configure whether the camera should keep its new position or return to the preset or position it had before.
Requires user role: ADMIN, INTEGRATOR
Default value: Off
Value space: Off/On
Off: When the camera position is adjusted manually the camera will keep this position until adjusted again. WARNING: If moving the camera by hand, the camera will not register the new pan and tilt values since there is no position feedback. This will result in wrong pan and tilt values when recalling the camera presets subsequently.
On: When the camera position is adjusted manually, or the camera detects that the motors have moved, it will first re-initialize (i.e. go to default position) then return to the preset/position it had before the camera was adjusted.

Cameras Camera \([1..7]\) Whitebalance Mode
Define the camera white balance mode.
Requires user role: ADMIN, INTEGRATOR
Default value: Auto
Value space: Auto/Manual
Auto: The camera will continuously adjust the white balance depending on the camera view.
Manual: Enables manual control of the camera white balance. The white balance level is set using the Cameras Camera \([n]\) Whitebalance Level setting.

Cameras Camera \([1..7]\) Whitebalance Level
Define the white balance level. Requires the Cameras Camera \([n]\) Whitebalance Mode to be set to manual.
Requires user role: ADMIN, INTEGRATOR
Default value: 1
Value space: Integer (1..16)
The white balance level.

Cameras PowerLine Frequency
If your camera supports power line frequency anti-flickering, the camera is able to compensate for any flicker noise from the electrical power supply. You should set this camera configuration based on your power line frequency. If your camera supports auto detection of line frequency, you can select the Auto option in the configuration.
All Cisco Precision cameras support both anti-flickering and auto detection of line frequency. Auto is the default value, so you should change this setting if you have a camera that does not support auto detection.
Requires user role: ADMIN, INTEGRATOR
Default value: Auto
Value space: 50Hz/60Hz/Auto
50Hz: Use this value when the power line frequency is 50 Hz.
60Hz: Use this value when the power line frequency is 60 Hz.
Auto: Allow the camera to detect the power frequency automatically.
Cameras PresenterTrack CameraPosition Pan
Define the pan position which the presenter tracking camera will move to when the feature is activated.
Requires user role: ADMIN, INTEGRATOR
Default value: 0
Value space: Integer (-65535..65535)
The pan position.

Cameras PresenterTrack CameraPosition Tilt
Define the tilt position which the presenter tracking camera will move to when the feature is activated.
Requires user role: ADMIN, INTEGRATOR
Default value: 0
Value space: Integer (-65535..65535)
The tilt position.

Cameras PresenterTrack CameraPosition Zoom
Define the zoom position which the presenter tracking camera will move to when the feature is activated.
Requires user role: ADMIN, INTEGRATOR
Default value: 0
Value space: Integer (-65535..65535)
The zoom position.

Cameras PresenterTrack Connector
Define which video input connector the presenter tracking camera is connected to.
Requires user role: ADMIN, INTEGRATOR
Default value: 1
Value space: Integer (1..5)
The video input connector.

Cameras PresenterTrack Enabled
Define whether or not the PresenterTrack feature is available for use.
Requires user role: ADMIN, INTEGRATOR
Default value: False
Value space: False/True
False: The PresenterTrack feature is disabled.
True: The PresenterTrack feature is available for use.

Cameras PresenterTrack PresenterDetectedStatus
Define whether or not to update the Cameras PresenterTrack PresenterDetected status when a new person enters the trigger zone.
The status is is used by the codec's internal scripts in the Briefing room scenario. This setting may be used to turn off automatic layout switching in that scenario.
Requires user role: ADMIN, INTEGRATOR
Default value: Enabled
Value space: Disabled/Enabled
Disabled: The status is not updated when a new person enters the trigger zone.
Enabled: The status is updated when a new person enters the trigger zone.
Cameras PresenterTrack TriggerZone
Define the image coordinates of the trigger zone on the video system screen. A person’s head must have been inside this region of the image in order to be tracked.

The format is a string of x and y coordinate pairs: "x1,y1,...,xn,yn", where the range of x is (0,1920) and y is (0,1080). Two coordinate pairs define the upper left and lower right corner of a rectangular trigger zone. More than two coordinate pairs define the vertices of a polygonal trigger zone.

Requires user role: ADMIN, INTEGRATOR
Default value: ""
Value space: String (0..255)

The coordinates for the trigger zone.

Cameras SpeakerTrack Mode
This setting applies only to systems with a dual camera (speaker track).
The dual camera assembly consists of two cameras and uses an audio tracking technique that finds and captures a close-up of the active speaker. When a change of speaker is detected, the system can switch automatically between the two cameras to always show the best camera view. Refer to the Cameras SpeakerTrack TrackingMode setting for different switching modes.

Requires user role: ADMIN, INTEGRATOR
Default value: Auto
Value space: Auto/Off

Auto: Speaker tracking is switched on. The cameras in the camera assembly behave as one integrated unit that finds the active speaker and dynamically chooses the best camera view.
Off: The cameras operate as two individual cameras. Speaker tracking is not used.

Cameras SpeakerTrack Closeup
This setting applies only when the Cameras SpeakerTrack Mode is set to Auto.
When a person in the room speaks the system will find the person and select the best camera framing. This is called a closeup and may not include all the persons in the room. If you want all the persons in the room to be in the picture at all times you can turn off the closeup functionality.

Requires user role: ADMIN, INTEGRATOR
Default value: Auto
Value space: Auto/Off

Auto: The system will zoom in on the person speaking.
Off: The system will keep all the persons in the room in the camera framing at all times.
Cameras SpeakerTrack Tracking Mode

This setting applies only to systems with a dual camera (speaker tracking), and when Cameras SpeakerTrack Mode is set to Auto.

The speaker tracking algorithm can react to changes in two modes, one faster than the other. The mode determines when the camera view will change to a new speaker.

Requires user role: ADMIN, INTEGRATOR

Default value: Auto

Value space: Auto/Conservative
  - Auto: Normal tracking mode.
  - Conservative: The camera view will change to a new speaker later than in Normal mode.

Cameras SpeakerTrack Whiteboard Mode

This setting applies to systems with a dual camera (speaker track).

Define whether to enable the Snap to Whiteboard feature or not.

The Snap to Whiteboard feature relies on a speaker track camera. When a presenter is standing next to the whiteboard, the camera will capture both the presenter and the whiteboard if the Snap to Whiteboard feature is enabled. If the feature is disabled, only the presenter will be captured.

The Snap to Whiteboard feature is set up from the Touch controller.

Requires user role: ADMIN, INTEGRATOR

Default value: Off

Value space: Off/On
  - Off: The Snap to Whiteboard feature is disabled.
  - On: The Snap to Whiteboard feature is enabled.

Cameras SpeakerTrack ConnectorDetection Mode

Not applicable in this version.

Cameras SpeakerTrack ConnectorDetection Camera Left

Not applicable in this version.

Cameras SpeakerTrack ConnectorDetection Camera Right

Not applicable in this version.
Conference settings

Conference ActiveControl Mode
Active control is a feature that allows conference participants to administer a conference on Cisco TelePresence Server or Cisco Meeting Server using the video system’s interfaces. Each user can see the participant list, change video layout, disconnect participants, etc. from the interface. The active control feature is enabled by default, provided that it is supported by the infrastructure (Cisco Unified Communications Manager (CUCM) version 9.1.2 or newer, Cisco TelePresence Video Communication Server (VCS) version X8.1 or newer, Cisco Media Server (CMS) version 2.1 or newer). Change this setting if you want to disable the active control features.

Requires user role: ADMIN
Default value: Auto
Value space: Auto/Off
  Auto: Active control is enabled when supported by the infrastructure.
  Off: Active control is disabled.

Conference AutoAnswer Mode
Define the auto answer mode. Use the Conference AutoAnswer Delay setting if you want the system to wait a number of seconds before answering the call, and use the Conference AutoAnswer Mute setting if you want your microphone to be muted when the call is answered.

Requires user role: ADMIN
Default value: Off
Value space: Off/On
  Off: You must answer incoming calls manually by tapping Answer on the Touch controller.
  On: The system automatically answers incoming calls, except if you are already in a call. You must always answer or decline incoming calls manually when you are already engaged in a call.

Conference AutoAnswer Mute
Define if the microphone shall be muted when an incoming call is automatically answered. Requires that AutoAnswer Mode is switched on.

Requires user role: ADMIN
Default value: Off
Value space: Off/On
  Off: The incoming call will not be muted.
  On: The incoming call will be muted when automatically answered.

Conference AutoAnswer Delay
Define how long (in seconds) an incoming call has to wait before it is answered automatically by the system. Requires that AutoAnswer Mode is switched on.

Requires user role: ADMIN
Default value: 0
Value space: Integer (0..50)
  The auto answer delay (seconds).

Conference CallProtocolIPStack
Select if the system should enable IPv4, IPv6, or dual IP stack on the call protocol (SIP, H323).

Requires user role: ADMIN
Default value: Dual
Value space: Dual/IPv4/IPv6
  Dual: Enables both IPv4 and IPv6 for the call protocol.
  IPv4: When set to IPv4, the call protocol will use IPv4.
  IPv6: When set to IPv6, the call protocol will use IPv6.
Conference Default Call Protocol
Define the Default Call Protocol to be used when placing calls from the system.
Requires user role: ADMIN
Default value: Auto
Value space: Auto/H320/H323/Sip/Spark
  - Auto: Enables auto-selection of the call protocol based on which protocols are available.
    If multiple protocols are available, the order of priority is: 1) SIP; 2) H323; 3) H320. If the
    system cannot register, the auto-selection chooses H323.
  - H320: All calls are set up as H.320 calls (only applicable if connected to Cisco
    TelePresence ISDN Link).
  - H323: All calls are set up as H.323 calls.
  - Sip: All calls are set up as SIP calls.
  - Spark: Reserved for Spark registered systems. Do not use.

Conference Default Call Rate
Define the Default Call Rate to be used when placing calls from the system.
Requires user role: ADMIN, INTEGRATOR
Default value: 3072
Value space: Integer (64..6000)
  The default call rate (kbps).

Conference Do Not Disturb Default Timeout
This setting determines the default duration of a Do Not Disturb session, i.e. the period
when incoming calls are rejected and registered as missed calls. The session can be
terminated earlier by using the user interface. The default value is 60 minutes.
Requires user role: ADMIN, INTEGRATOR
Default value: 60
Value space: Integer (1..1440)
  The number of minutes (maximum 1440 minutes = 24 hours) before the Do Not Disturb
  session times out automatically.

Conference Encryption Mode
Define the conference encryption mode. A padlock with the text “Encryption On” or
“Encryption Off” displays on screen for a few seconds when the conference starts.
NOTE: If the Encryption Option Key is not installed on the video system, the encryption
mode is always Off.
Requires user role: ADMIN
Default value: BestEffort
Value space: Off/On/BestEffort
  - Off: The system will not use encryption.
  - On: The system will only allow calls that are encrypted.
  - BestEffort: The system will use encryption whenever possible.
    > In Point to point calls: If the far end system supports encryption (AES-128), the call will
      be encrypted. If not, the call will proceed without encryption.
    > In MultiSite calls: In order to have encrypted MultiSite conferences, all sites must
      support encryption. If not, the conference will be unencrypted.

Conference Far End Control Mode
Lets you decide if the remote side (far end) should be allowed to select your video sources
and control your local camera (pan, tilt, zoom).
Requires user role: ADMIN
Default value: On
Value space: Off/On
  - Off: The far end is not allowed to select your video sources or to control your local
    camera (pan, tilt, zoom).
  - On: Allows the far end to be able to select your video sources and control your local
    camera (pan, tilt, zoom). You will still be able to control your camera and select your
    video sources as normal.
Conference FarEndControl SignalCapability

Define the far end control (H.224) signal capability mode.

Requires user role: ADMIN
Default value: On
Value space: Off/On
  Off: Disable the far end control signal capability.
  On: Enable the far end control signal capability.

Conference MaxReceiveCallRate

Define the maximum receive bit rate to be used when placing or receiving calls. Note that this is the maximum bit rate for each individual call; use the Conference MaxTotalReceiveCallRate setting to set the aggregated maximum for all simultaneous active calls.

Requires user role: ADMIN
Default value: 6000
Value space: Integer (64..6000)
  The maximum receive call rate (kbps).

Conference MaxTransmitCallRate

Define the maximum transmit bit rate to be used when placing or receiving calls. Note that this is the maximum bit rate for each individual call; use the Conference MaxTotalTransmitCallRate setting to set the aggregated maximum for all simultaneous active calls.

Requires user role: ADMIN
Default value: 6000
Value space: Integer (64..6000)
  The maximum transmit call rate (kbps).

Conference MaxTotalReceiveCallRate

This configuration applies when using a video system's built-in MultiSite feature (optional) to host a multipoint video conference.

Define the maximum overall receive bit rate allowed. The bit rate will be divided fairly among all active calls at any time. This means that the individual calls will be up-speeded or down-speeded as appropriate when someone leaves or enters a multipoint conference, or when a call is put on hold (suspended) or resumed.

The maximum receive bit rate for each individual call is defined in the Conference MaxReceiveCallRate setting.

Requires user role: ADMIN
Default value: 6000
Value space: Integer (64..6000)
  The maximum receive call rate (kbps).

Conference MaxTotalTransmitCallRate

This configuration applies when using a video system's built-in MultiSite feature (optional) to host a multipoint video conference.

Define the maximum overall transmit bit rate allowed. The bit rate will be divided fairly among all active calls at any time. This means that the individual calls will be up-speeded or down-speeded as appropriate when someone leaves or enters a multipoint conference, or when a call is put on hold (suspended) or resumed.

The maximum transmit bit rate for each individual call is defined in the Conference MaxTransmitCallRate setting.

Requires user role: ADMIN
Default value: 6000
Value space: Integer (64..6000)
  The maximum transmit call rate (kbps).
Conference MicUnmuteOnDisconnect Mode

Define if the microphones shall be unmuted automatically when all calls are disconnected. In a meeting room or other shared resources this may be done to prepare the system for the next user.

Requires user role: ADMIN
Default value: On
Value space: Off/On
  Off: If muted during a call, let the microphones remain muted after the call is disconnected.
  On: Unmute the microphones after the call is disconnected.

Conference Multipoint Mode

Define how the video system handles multiparty video conferences (ad hoc conferences). If registered to a Cisco TelePresence Video Communication Server (VCS), the video system can use its own built-in MultiSite feature. If registered to a Cisco Unified Communications Manager (CUCM) version 8.6.2 or newer, the video system can use either the CUCM conference bridge, or the video system's own built-in MultiSite feature. Which option to use, is set-up by CUCM.

The CUCM conference bridge allows you to set up conferences with many participants. The built-in MultiSite allows up to five participants (yourself included) plus one additional audio call.

The built-in MultiSite is optional and may not be available on all video systems.

Requires user role: ADMIN
Default value: Auto
Value space: Auto/CUCMMediaResourceGroupList/MultiSite/Off
  Auto: The multipoint method is selected automatically; if no multipoint method is available, the Multipoint Mode will be set to Off.
  CUCMMediaResourceGroupList: Multiparty conferences are hosted by the CUCM configured conference bridge. This setting is provisioned by CUCM in a CUCM environment, and should never be set manually by the user.
  MultiSite: Multiparty conferences are set up using the built-in MultiSite feature. If MultiSite is selected when the MultiSite feature is not available, the Multipoint Mode will automatically be set to Off.
  Off: Multiparty conferences are not allowed.

Conference MultiStream Mode

The video system supports multistream video for conferences, provided that the conference infrastructure supports the feature.

Requires user role: ADMIN
Default value: Off
Value space: Off
  Off: Multistream is disabled.

Conference IncomingMultisiteCall Mode

Select whether or not to allow incoming calls when already in a call/conference.

Requires user role: ADMIN
Default value: Allow
Value space: Allow/Deny
  Allow: You will be notified when someone calls you while you are already in a call. You can accept the incoming call or not. The ongoing call may be put on hold while answering the incoming call; or you may merge the calls (requires support for multiparty video conferences).
  Deny: An incoming call will be rejected if you are already in a call. You will not be notified about the incoming call. However, the call will appear as a missed call in the call history list.
Conference Presentation RelayQuality

This configuration applies to video systems that are using the built-in MultiSite feature (optional) to host a multipoint video conference. When a remote user shares a presentation, the video system will transcode the presentation and send it to the other participants in the multipoint conference. The RelayQuality setting specifies whether to give priority to high frame rate or to high resolution for the presentation source.

Requires user role: ADMIN
Default value: Sharpness

Value space: Motion/Sharpness
- Motion: Gives the highest possible frame rate. Used when there is a need for higher frame rates, typically when there is a lot of motion in the picture.
- Sharpness: Gives the highest possible resolution. Used when you want the highest quality of detailed images and graphics.

Conference Presentation OnPlacedOnHold

Define whether or not to continue sharing a presentation after the remote site has put you on hold.

Requires user role: ADMIN
Default value: NoAction

Value space: Stop/NoAction
- Stop: The video system stops the presentation sharing when the remote site puts you on hold. The presentation will not continue when the call is resumed.
- NoAction: The video system will not stop the presentation sharing when put on hold. The presentation will not be shared while you are on hold, but it will continue automatically when the call is resumed.

Conference VideoBandwidth Mode

Define the conference video bandwidth mode.

Requires user role: ADMIN
Default value: Dynamic

Value space: Dynamic/Static
- Dynamic: The available transmit bandwidth for the video channels are distributed among the currently active channels. If there is no presentation, the main video channels will use the bandwidth of the presentation channel.
- Static: The available transmit bandwidth is assigned to each video channel, even if it is not active.
FacilityService settings

FacilityService Service [1..5] Type
Up to five different facility services can be supported simultaneously. With this setting you can select what kind of services they are. A facility service is not available unless both the FacilityService Service [n] Name and the FacilityService Service [n] Number settings are properly set.

Requires user role: ADMIN, INTEGRATOR
Default value: Helpdesk

Value space: Catering/Concierge/Emergency/Helpdesk/Security/Transportation/Other
  Catering: Select this option for catering services.
  Concierge: Select this option for concierge services.
  Emergency: Select this option for emergency services.
  Helpdesk: Select this option for helpdesk services.
  Security: Select this option for security services.
  Transportation: Select this option for transportation services.
  Other: Select this option for services not covered by the other options.

FacilityService Service [1..5] Name
Define the name of the facility service. Up to five different facility services are supported. A facility service is not available unless both the FacilityService Service [n] Name and the FacilityService Service [n] Number settings are properly set. The name will show on the facility service call button, which appears when you tap the question mark icon in the top bar.

Requires user role: ADMIN, INTEGRATOR
Default value: Service 1: "Live Support" Other services: ""

Value space: String (0, 1024)
  The name of the facility service.

FacilityService Service [1..5] Number
Define the number (URI or phone number) of the facility service. Up to five different facility services are supported. A facility service is not available unless both the FacilityService Service [n] Name and the FacilityService Service [n] Number settings are properly set.

Requires user role: ADMIN, INTEGRATOR
Default value: ""

Value space: String (0, 1024)
  The number (URI or phone number) of the facility service.

FacilityService Service [1..5] CallType
Define the call type for each facility service. Up to five different facility services are supported. A facility service is not available unless both the FacilityService Service [n] Name and the FacilityService Service [n] Number settings are properly set.

Requires user role: ADMIN, INTEGRATOR
Default value: Video

Value space: Audio/Video
  Audio: Select this option for audio calls.
  Video: Select this option for video calls.
GPIO settings

GPIO Pin [1..4] Mode

The four GPIO pins are configured individually. The state can be retrieved by xStatus GPIO Pin [1..4] State. The default pin state is High (+12 V). When activated as an output, a pin is set to 0 V (Low); when deactivated, it is set to +12 V (High). To activate a pin as an input, the voltage on the pin must be pulled down to 0 V; to deactivate it, raise the voltage to +12 V.

Requires user role: ADMIN, INTEGRATOR
Default value: InputNoAction
Value space: InputAcceptAllCalls/InputDisconnectAllCalls/InputMuteMicrophones/
InputNoAction/OutputAllCallsEncrypted/OutputInCall/OutputManualState/
OutputMicrophonesMuted/OutputPresentationOn/OutputStandbyActive

- InputAcceptAllCalls: When the pin is activated, the xCommand Call Accept command, which accepts all incoming calls, will be issued.
- InputDisconnectAllCalls: When the pin is activated, the xCommand Call Disconnect command, which disconnects all calls, will be issued.
- InputMuteMicrophones: When the pin is activated, the microphones will be muted. When deactivated, the microphones will be unmuted.
- InputNoAction: The pin state can be set, but no operation is performed.
- OutputAllCallsEncrypted: The pin is activated when all calls are encrypted, and deactivated when one or more calls are not encrypted.
- OutputInCall: The pin is activated when in call, and deactivated when not in call.
- OutputManualState: The pin state can be set by xCommand GPIO ManualState Set PinX: <High/Low>. It is set to +12 V or 0 V, respectively.
- OutputMicrophonesMuted: The pin is activated when microphones are muted, and deactivated when not muted.
- OutputPresentationOn: The pin is activated when presentation is active, and deactivated when presentation is not active.
- OutputStandbyActive: The pin is activated when the system is in standby mode, and deactivated when no longer in standby.
H323 settings

H323 Authentication Mode
Define the authentication mode for the H.323 profile.

Requires user role: ADMIN
Default value: Off

Value space: Off/On
- Off: The system will not try to authenticate itself to a H.323 Gatekeeper, but will still try a normal registration.
- On: If an H.323 Gatekeeper indicates that it requires authentication, the system will try to authenticate itself to the gatekeeper. Requires the H323 Authentication LoginName and H323 Authentication Password settings to be defined on both the codec and the Gatekeeper.

H323 Authentication LoginName
The system sends the H323 Authentication Login Name and the H323 Authentication Password to an H.323 Gatekeeper for authentication. The authentication is a one way authentication from the codec to the H.323 Gatekeeper, i.e. the system is authenticated to the gatekeeper. If the H.323 Gatekeeper indicates that no authentication is required, the system will still try to register. Requires the H.323 Authentication Mode to be enabled.

Requires user role: ADMIN
Default value: ""

Value space: String (0, 50)
- The authentication login name.

H323 Authentication Password
The system sends the H323 Authentication Login Name and the H323 Authentication Password to an H.323 Gatekeeper for authentication. The authentication is a one way authentication from the codec to the H.323 Gatekeeper, i.e. the system is authenticated to the gatekeeper. If the H.323 Gatekeeper indicates that no authentication is required, the system will still try to register. Requires the H.323 Authentication Mode to be enabled.

Requires user role: ADMIN
Default value: ""

Value space: String (0, 50)
- The authentication password.

H323 CallSetup Mode
Defines whether to use a Gatekeeper or Direct calling when establishing H.323 calls.

Direct H.323 calls can be made also when H323 CallSetup Mode is set to Gatekeeper.

Requires user role: ADMIN
Default value: Gatekeeper

Value space: Direct/Gatekeeper
- Direct: You can only make an H.323 call by dialing an IP address directly.
- Gatekeeper: The system uses a Gatekeeper to make an H.323 call. When choosing this option, the H323 Gatekeeper Address must also be configured.
H323 Encryption KeySize
Define the minimum or maximum key size for the Diffie-Hellman key exchange method, which is used when establishing the Advanced Encryption Standard (AES) encryption key.
Requires user role: ADMIN
Default value: Min1024bit
Value space: Min1024bit/Max1024bit/Min2048bit
Min1024bit: The minimum size is 1024 bit.
Max1024bit: The maximum size is 1024 bit.
Min2048bit: The minimum size is 2048 bit.

H323 Gatekeeper Address
Define the IP address of the Gatekeeper. Requires H323 CallSetup Mode to be set to Gatekeeper.
Requires user role: ADMIN
Default value: ""
Value space: String (0, 255)
A valid IPv4 address, IPv6 address or DNS name.

H323 H323Alias E164
The H.323 Alias E.164 defines the address of the system, according to the numbering plan implemented in the H.323 Gatekeeper. The E.164 alias is equivalent to a telephone number, sometimes combined with access codes.
Requires user role: ADMIN
Default value: ""
Value space: String (0, 30)
The H.323 Alias E.164 address. Valid characters are 0-9, *, and #.

H323 H323Alias ID
Define the H.323 Alias ID, which is used to address the system on a H.323 Gatekeeper and will be displayed in the call lists.
Requires user role: ADMIN
Default value: ""
Value space: String (0, 49)
The H.323 Alias ID. Example: "firstname.lastname@company.com", "My H.323 Alias ID"

H323 NAT Mode
The firewall traversal technology creates a secure path through the firewall barrier, and enables proper exchange of audio/video data when connected to an external video conferencing system (when the IP traffic goes through a NAT router). NOTE: NAT does not work in conjunction with gatekeepers.
Requires user role: ADMIN
Default value: Off
Value space: Auto/Off/On
Auto: The system will determine if the H323 NAT Address or the real IP address should be used in signaling. This makes it possible to place calls to endpoints on the LAN as well as endpoints on the WAN. If the H323 NAT Address is wrong or not set, the real IP address will be used.
Off: The system will signal the real IP address.
On: The system will signal the configured H323 NAT Address instead of its real IP address in Q.931 and H.245. The NAT server address will be shown in the startup-menu as: "My IP Address: 10.0.2.1". If the H323 NAT Address is wrong or not set, H.323 calls cannot be set up.
H323 NAT Address

Define the external/global IP address to the router with NAT support. Packets sent to the router will then be routed to the system. Note that NAT cannot be used when registered to a gatekeeper.

In the router, the following ports must be routed to the system's IP address:

* Port 1720
* Port 5555-6555
* Port 2326-2487

Requires user role: ADMIN

Default value: ""

Value space: String (0, 64)

A valid IPv4 address or IPv6 address.

H323 PortAllocation

This setting affects the H.245 port numbers used for H.323 call signaling.

Requires user role: ADMIN

Default value: Dynamic

Value space: Dynamic/Static

Dynamic: The system will allocate which ports to use when opening a TCP connection. The reason for doing this is to avoid using the same ports for subsequent calls, as some firewalls consider this as a sign of attack. When Dynamic is selected, the H.323 ports used are from 11000 to 20999. Once 20999 is reached they restart again at 11000. The ports are automatically selected by the system within the given range. Firewall administrators should not try to deduce which ports are used when, as the allocation schema within the mentioned range may change without any further notice.

Static: When set to Static the ports are given within a static predefined range [5555-6555].
Logging settings

Logging External Mode
Determine whether or not to use a remote syslog server for logging.
Requires user role: ADMIN
Default value: Off
Value space: Off/On
  Off: Disable logging to a remote syslog server.
  On: Enable logging to a remote syslog server.

Logging External Protocol
Determine which protocol to use toward the remote logging server. You can use either the syslog protocol over TLS (Transport Layer Security), or the syslog protocol in plaintext. For details about the syslog protocol, see RFC 5424.
Requires user role: ADMIN
Default value: SyslogTLS
Value space: Syslog/SyslogTLS
  Syslog: Syslog protocol in plain text.
  SyslogTLS: Syslog protocol over TLS.

Logging External Server Address
The address of the remote syslog server.
Requires user role: ADMIN
Default value: ""
Value space: String (0..255)
  A valid IPv4 address, IPv6 address or DNS name.

Logging External Server Port
The port that the remote syslog server listens for messages on. If set to 0, the video system will use the standard syslog port. The standard syslog port is 514 for syslog, and 6514 for syslog over TLS.
Requires user role: ADMIN
Default value: 514
Value space: Integer (0..65535)
  The number of the port that the remote syslog server is using. 0 means that the video system uses the standard syslog port.

Logging Mode
Define the logging mode for the video system (syslog service). When disabled, the syslog service does not start, and most of the event logs are not generated. The Historical Logs and Call Logs are not affected.
Requires user role: ADMIN
Default value: On
Value space: Off/On
  Off: Disable the system logging service.
  On: Enable the system logging service.
Network settings

Network [1] DNS Domain Name
The DNS Domain Name is the default domain name suffix which is added to unqualified names.
Example: If the DNS Domain Name is "company.com" and the name to lookup is "MyVideoSystem", this will result in the DNS lookup "MyVideoSystem.company.com".

Requires user role: ADMIN, USER
Default value: ""
Value space: String (0, 64)
  The DNS domain name.

Define the network addresses for DNS servers. Up to three addresses may be specified. If the network addresses are unknown, contact your administrator or Internet Service Provider.

Requires user role: ADMIN, USER
Default value: ""
Value space: String (0, 64)
  A valid IPv4 address or IPv6 address.

Network [1] IEEE8021X Mode
The system can be connected to an IEEE 802.1X LAN network, with a port-based network access control that is used to provide authenticated network access for Ethernet networks.

Requires user role: ADMIN, USER
Default value: Off
Value space: Off/On
  Off: The 802.1X authentication is disabled (default).
  On: The 802.1X authentication is enabled.

Network [1] IEEE8021X TlsVerify
Verification of the server-side certificate of an IEEE802.1x connection against the certificates in the local CA-list when TLS is used. The CA-list must be uploaded to the video system. This can be done from the web interface.
This setting takes effect only when Network [1] IEEE8021X Eap Tls is enabled (On).

Requires user role: ADMIN, USER
Default value: Off
Value space: Off/On
  Off: When set to Off, TLS connections are allowed without verifying the server-side X.509 certificate against the local CA-list. This should typically be selected if no CA-list has been uploaded to the codec.
  On: When set to On, the server-side X.509 certificate will be validated against the local CA-list for all TLS connections. Only servers with a valid certificate will be allowed.

Authentication using a private key/certificate pair during an IEEE802.1x connection. The authentication X.509 certificate must be uploaded to the video system. This can be done from the web interface.

Requires user role: ADMIN, USER
Default value: Off
Value space: Off/On
  Off: When set to Off client-side authentication is not used (only server-side).
  On: When set to On the client (video system) will perform a mutual authentication TLS handshake with the server.
**Network [1] IEEE8021X Identity**

Define the user name for 802.1X authentication.

Requires user role: ADMIN, USER

Default value: ""

Value space: String (0, 64)

The user name for 802.1X authentication.

---

**Network [1] IEEE8021X Password**

Define the password for 802.1X authentication.

Requires user role: ADMIN, USER

Default value: ""

Value space: String (0, 32)

The password for 802.1X authentication.

---

**Network [1] IEEE8021X AnonymousIdentity**

The 802.1X Anonymous ID string is to be used as unencrypted identity with EAP (Extensible Authentication Protocol) types that support different tunneled identity, like EAP-PEAP and EAP-TTLS. If set, the anonymous ID will be used for the initial (unencrypted) EAP Identity Request.

Requires user role: ADMIN, USER

Default value: ""

Value space: String (0, 64)

The 802.1X Anonymous ID string.

---

**Network [1] IEEE8021X Eap Md5**

Define the Md5 (Message-Digest Algorithm 5) mode. This is a Challenge Handshake Authentication Protocol that relies on a shared secret. Md5 is a Weak security.

Requires user role: ADMIN, USER

Default value: On

Value space: Off/On

Off: The EAP-MD5 protocol is disabled.
On: The EAP-MD5 protocol is enabled (default).

---

**Network [1] IEEE8021X Eap Ttls**

Define the TTLS (Tunneled Transport Layer Security) mode. Authenticates LAN clients without the need for client certificates. Developed by Funk Software and Certicom. Usually supported by Agere Systems, Proxim and Avaya.

Requires user role: ADMIN, USER

Default value: On

Value space: Off/On

Off: The EAP-TTLS protocol is disabled.
On: The EAP-TTLS protocol is enabled (default).

---

**Network [1] IEEE8021X Eap Tls**

Enable or disable the use of EAP-TLS (Transport Layer Security) for IEEE802.1x connections. The EAP-TLS protocol, defined in RFC 5216, is considered one of the most secure EAP standards. LAN clients are authenticated using client certificates.

Requires user role: ADMIN, USER

Default value: On

Value space: Off/On

Off: The EAP-TLS protocol is disabled.
On: The EAP-TLS protocol is enabled (default).
Network [1] IEEE8021X Eap Peap
Define the Peap (Protected Extensible Authentication Protocol) mode. Authenticates LAN clients without the need for client certificates. Developed by Microsoft, Cisco and RSA Security.
Requires user role: ADMIN, USER
Default value: On
Value space: Off/On
- Off: The EAP-PEAP protocol is disabled.
- On: The EAP-PEAP protocol is enabled (default).

Network [1] IPStack
Select if the system should use IPv4, IPv6, or dual IP stack, on the network interface. NOTE: After changing this setting you may have to wait up to 30 seconds before it takes effect.
Requires user role: ADMIN, USER
Default value: Dual
Value space: Dual/IPv4/IPv6
- Dual: The network interface operates on both IP versions at the same time, and can have both an IPv4 and an IPv6 address at the same time.
- IPv4: The system will use IPv4 on the network interface.
- IPv6: The system will use IPv6 on the network interface.

Network [1] IPv4 Assignment
Define how the system will obtain its IPv4 address, subnet mask and gateway address. This setting applies only to systems on IPv4 networks.
Requires user role: ADMIN, USER
Default value: DHCP
Value space: Static/DHCP
- Static: The addresses must be configured manually using the Network IPv4 Address, Network IPv4 Gateway and Network IPv4 SubnetMask settings (static addresses).
- DHCP: The system addresses are automatically assigned by the DHCP server.

Network [1] IPv4 Address
Define the static IPv4 network address for the system. Applicable only when Network IPv4 Assignment is set to Static.
Requires user role: ADMIN, USER
Default value: *
Value space: String (0, 64)
A valid IPv4 address.

Network [1] IPv4 Gateway
Define the IPv4 network gateway address. Applicable only when the Network IPv4 Assignment is set to Static.
Requires user role: ADMIN, USER
Default value: *
Value space: String (0, 64)
A valid IPv4 address.

Network [1] IPv4 SubnetMask
Define the IPv4 network subnet mask. Applicable only when the Network IPv4 Assignment is set to Static.
Requires user role: ADMIN, USER
Default value: *
Value space: String (0, 64)
A valid IPv4 address.
Network [1] IPv6 Assignment
Define how the system will obtain its IPv6 address and the default gateway address. This setting applies only to systems on IPv6 networks.

Requires user role: ADMIN, USER
Default value: Autoconf

Value space: Static/DHCPv6/Autoconf
- Static: The codec and gateway IP addresses must be configured manually using the Network IPv6 Address and Network IPv6 Gateway settings. The options, for example NTP and DNS server addresses, must either be set manually or obtained from a DHCPv6 server. The Network IPv6 DHCPOptions setting determines which method to use.
- DHCPv6: All IPv6 addresses, including options, will be obtained from a DHCPv6 server. See RFC 3315 for a detailed description. The Network IPv6 DHCPOptions setting will be ignored.
- Autoconf: Enable IPv6 stateless autoconfiguration of the IPv6 network interface. See RFC 4862 for a detailed description. The options, for example NTP and DNS server addresses, must either be set manually or obtained from a DHCPv6 server. The Network IPv6 DHCPOptions setting determines which method to use.

Network [1] IPv6 Address
Define the static IPv6 network address for the system. Applicable only when the Network IPv6 Assignment is set to Static.

Requires user role: ADMIN, USER
Default value: 

Value space: String (0, 64)
A valid IPv6 address including a network mask. Example: 2001:DB8::/48

Define the IPv6 network gateway address. This setting is only applicable when the Network IPv6 Assignment is set to Static.

Requires user role: ADMIN, USER
Default value: 

Value space: String (0, 64)
A valid IPv6 address.

Network [1] IPv6 DHCPOptions
Retrieve a set of DHCP options, for example NTP and DNS server addresses, from a DHCPv6 server.

Requires user role: ADMIN, USER
Default value: On

Value space: Off/On
- Off: Disable the retrieval of DHCP options from a DHCPv6 server.
- On: Enable the retrieval of a selected set of DHCP options from a DHCPv6 server.

Network [1] MTU
Define the Ethernet MTU (Maximum Transmission Unit) size. The MTU size must be supported by your network infrastructure. The minimum size is 576 for IPv4 and 1280 for IPv6.

Requires user role: ADMIN, USER
Default value: 1500

Value space: Integer (576..1500)
Set a value for the MTU (bytes).

Network [1] QoS Mode
The QoS (Quality of Service) is a method which handles the priority of audio, video and data in the network. The QoS settings must be supported by the infrastructure. Diffserv (Differentiated Services) is a computer networking architecture that specifies a simple, scalable and coarse-grained mechanism for classifying, managing network traffic and providing QoS priorities on modern IP networks.

Requires user role: ADMIN, USER
Default value: Diffserv

Value space: Off/Diffserv
- Off: No QoS method is used.
- Diffserv: When you set the QoS Mode to Diffserv, the Network QoS Diffserv Audio, Network QoS Diffserv Video, Network QoS Diffserv Data, Network QoS Diffserv Signalling, Network QoS Diffserv ICMPv6 and Network QoS Diffserv NTP settings are used to prioritize packets.
Network [1] QoS Diffserv Audio
This setting will only take effect if Network QoS Mode is set to Diffserv.
Define which priority Audio packets should have in the IP network.
The priority for the packets ranges from 0 to 63 - the higher the number, the higher the priority. The recommended class for Audio is CS4, which equals the decimal value 32. If in doubt, contact your network administrator.
The priority set here might be overridden when packets are leaving the network controlled by the local network administrator.
Requires user role: ADMIN, USER
Default value: 0
Value space: Integer (0..63)
Set the priority of the audio packets in the IP network - the higher the number, the higher the priority. The default value is 0 (best effort).

Network [1] QoS Diffserv Video
This setting will only take effect if Network QoS Mode is set to Diffserv.
Define which priority Video packets should have in the IP network. The packets on the presentation channel (shared content) are also in the Video packet category. The priority for the packets ranges from 0 to 63 - the higher the number, the higher the priority. The recommended class for Video is CS4, which equals the decimal value 32. If in doubt, contact your network administrator.
The priority set here might be overridden when packets are leaving the network controlled by the local network administrator.
Requires user role: ADMIN, USER
Default value: 0
Value space: Integer (0..63)
Set the priority of the video packets in the IP network - the higher the number, the higher the priority. The default value is 0 (best effort).

Network [1] QoS Diffserv Data
This setting will only take effect if Network QoS Mode is set to Diffserv.
Define which priority Data packets should have in the IP network.
The priority for the packets ranges from 0 to 63 - the higher the number, the higher the priority. The recommended value for Data is 0, which means best effort. If in doubt, contact your network administrator.
The priority set here might be overridden when packets are leaving the network controlled by the local network administrator.
Requires user role: ADMIN, USER
Default value: 0
Value space: Integer (0..63)
Set the priority of the data packets in the IP network - the higher the number, the higher the priority. The default value is 0 (best effort).

Network [1] QoS Diffserv Signalling
This setting will only take effect if Network QoS Mode is set to Diffserv.
Define which priority Signalling packets that are deemed critical (time-sensitive) for the real-time operation should have in the IP network.
The priority for the packets ranges from 0 to 63 - the higher the number, the higher the priority. The recommended class for Signalling is CS3, which equals the decimal value 24. If in doubt, contact your network administrator.
The priority set here might be overridden when packets are leaving the network controlled by the local network administrator.
Requires user role: ADMIN, USER
Default value: 0
Value space: Integer (0..63)
Set the priority of the signalling packets in the IP network - the higher the number, the higher the priority. The default value is 0 (best effort).
Network [1] QoS Diffserv ICMPv6
This setting will only take effect if Network QoS Mode is set to Diffserv.
Define which priority ICMPv6 packets should have in the IP network.
The priority for the packets ranges from 0 to 63 - the higher the number, the higher the priority. The recommended value for ICMPv6 is 0, which means best effort. If in doubt, contact your network administrator.
The priority set here might be overridden when packets are leaving the network controlled by the local network administrator.
Requires user role: ADMIN, USER
Default value: 0
Value space: Integer (0..63)
Set the priority of the ICMPv6 packets in the IP network - the higher the number, the higher the priority. The default value is 0 (best effort).

Network [1] QoS Diffserv NTP
This setting will only take effect if Network QoS Mode is set to Diffserv.
Define which priority NTP packets should have in the IP network.
The priority for the packets ranges from 0 to 63 - the higher the number, the higher the priority. The recommended value for NTP is 0, which means best effort. If in doubt, contact your network administrator.
The priority set here might be overridden when packets are leaving the network controlled by the local network administrator.
Requires user role: ADMIN, USER
Default value: 0
Value space: Integer (0..63)
Set the priority of the NTP packets in the IP network - the higher the number, the higher the priority. The default value is 0 (best effort).

Define which IP addresses (IPv4/IPv6) are allowed for remote access to the codec from SSH/Telnet/HTTP/HTTPS. Multiple IP addresses are separated by a white space.
A network mask (IP range) is specified by <ip address>/N, where N is 1-32 for IPv4, and N is 1-128 for IPv6. The /N is a common indication of a network mask where the first N bits are set. Thus 192.168.0.0/24 would match any address starting with 192.168.0, since these are the first 24 bits in the address.
Requires user role: ADMIN, USER
Default value: *
Value space: String (0, 255)
A valid IPv4 address or IPv6 address.

Network [1] Speed
Define the Ethernet link speed. We recommend not to change from the default value, which negotiates with the network to set the speed automatically. If you do not use autonegotiation, make sure that the speed you choose is supported by the closest switch in your network infrastructure.
Requires user role: ADMIN, USER
Default value: Auto
Value space: Auto/10half/10full/100half/100full/1000full
Auto: Autonegotiate link speed.
10half: Force link to 10 Mbps half-duplex.
10full: Force link to 10 Mbps full-duplex.
100half: Force link to 100 Mbps half-duplex.
100full: Force link to 100 Mbps full-duplex.
1000full: Force link to 1 Gbps full-duplex.
Network [1] TrafficControl Mode

Define the network traffic control mode to decide how to control the video packets transmission speed.

Requires user role: ADMIN, USER
Default value: On

Value space: Off/On
  Off: Transmit video packets at link speed.
  On: Transmit video packets at maximum 20 Mbps. Can be used to smooth out bursts in the outgoing network traffic.

Network [1] VLAN Voice Mode

Define the VLAN voice mode. The VLAN Voice Mode will be set to Auto automatically if you have Cisco UCM (Cisco Unified Communications Manager) as provisioning infrastructure. Note that Auto mode will NOT work if the NetworkServices CDP Mode setting is Off.

Requires user role: ADMIN, USER
Default value: Auto

Value space: Auto/Manual/Off
  Auto: The Cisco Discovery Protocol (CDP), if available, assigns an id to the voice VLAN. If CDP is not available, VLAN is not enabled.
  Manual: The VLAN ID is set manually using the Network VLAN Voice VlanId setting. If CDP is available, the manually set value will be overruled by the value assigned by CDP.
  Off: VLAN is not enabled.

Network [1] VLAN Voice VlanId

Define the VLAN voice ID. This setting will only take effect if Network VLAN Voice Mode is set to Manual.

Requires user role: ADMIN, USER
Default value: 1

Value space: Integer (1..4094)
  Set the VLAN voice ID.
NetworkServices settings

NetworkServices CDP Mode
Enable or disable the CDP (Cisco Discovery Protocol) daemon. Enabling CDP will make the endpoint report certain statistics and device identifiers to a CDP-enabled switch. If CDP is disabled, the Network VLAN Voice Mode: Auto setting will not work.

Requires user role: ADMIN
Default value: On
Value space: Off/On
  Off: The CDP daemon is disabled.
  On: The CDP daemon is enabled.

NetworkServices H323 Mode
Define whether the system should be able to place and receive H.323 calls or not.

Requires user role: ADMIN
Default value: On
Value space: Off/On
  Off: Disable the possibility to place and receive H.323 calls.
  On: Enable the possibility to place and receive H.323 calls (default).

NetworkServices HTTP Mode
Define whether or not to allow access to the video system using the HTTP or HTTPS (HTTP Secure) protocols. Note that the video system's web interface use HTTP or HTTPS. If this setting is switched Off, you cannot use the web interface.

If you need extra security (encryption and decryption of requests, and pages that are returned by the web server), allow only HTTPS.

Requires user role: ADMIN
Default value: HTTP+HTTPS
Value space: Off/HTTP+HTTPS/HTTPS
  Off: Access to the video system not allowed via HTTP or HTTPS.
  HTTP+HTTPS: Access to the video system allowed via both HTTP and HTTPS.
  HTTPS: Access to the video system allowed via HTTPS, but not via HTTP.

NetworkServices HTTPS Server MinimumTLSVersion
Set the lowest version of the TLS (Transport Layer Security) protocol that is allowed.

Requires user role: ADMIN
Default value: TLSv1.1
Value space: TLSv1.1/TLSv1.2
  TLSv1.1: Support of TLS version 1.1 or higher.
  TLSv1.2: Support of TLS version 1.2 or higher.
NetworkServices HTTPS StrictTransportSecurity

The HTTP Strict Transport Security header lets a web site inform the browser that it should never load the site using HTTP and should automatically convert all attempts to access the site using HTTP to HTTPS requests instead.

Requires user role: ADMIN
Default value: Off

Value space: Off/On
- Off: The HTTP strict transport security feature is disabled.
- On: The HTTP strict transport security feature is enabled.

NetworkServices HTTPS VerifyServerCertificate

When the video system connects to an external HTTPS server (like a phone book server or an external manager), this server will present a certificate to the video system to identify itself.

Requires user role: ADMIN
Default value: Off

Value space: Off/On
- Off: Do not verify server certificates.
- On: Requires the system to verify that the server certificate is signed by a trusted Certificate Authority (CA). This requires that a list of trusted CAs are uploaded to the system in advance.

NetworkServices HTTPS OCSP Mode

Define the support for OCSP (Online Certificate Status Protocol) responder services. The OCSP feature allows users to enable OCSP instead of certificate revocation lists (CRLs) to check the certificate status.

For any outgoing HTTPS connection, the OCSP responder is queried of the status. If the corresponding certificate has been revoked, then the HTTPS connection will not be used.

Requires user role: ADMIN
Default value: Off

Value space: Off/On
- Off: Disable OCSP support.
- On: Enable OCSP support.

NetworkServices HTTPS OCSP URL

Define the URL of the OCSP responder (server) that will be used to check the certificate status.

Requires user role: ADMIN
Default value: **

Value space: String (0, 255)
A valid URL.

NetworkServices HTTPS VerifyClientCertificate

When the video system connects to a HTTPS client (like a web browser), the client can be asked to present a certificate to the video system to identify itself.

Requires user role: ADMIN
Default value: Off

Value space: Off/On
- Off: Do not verify client certificates.
- On: Requires the client to present a certificate that is signed by a trusted Certificate Authority (CA). This requires that a list of trusted CAs are uploaded to the system in advance.
NetworkServices NTP Mode

The Network Time Protocol (NTP) is used to synchronize the system's time and date to a reference time server. The time server will be queried regularly for time updates.

Requires user role: ADMIN
Default value: Auto

Value space: Auto/Manual/Off
  - Auto: The system will use an NTP server for time reference. As default, the server address will be obtained from the network's DHCP server. If a DHCP server is not used, or if the DHCP server does not provide an NTP server address, the NTP server address that is specified in the NetworkServices NTP Server [n] Address setting will be used.
  - Manual: The system will use the NTP server that is specified in the NetworkServices NTP Server [n] Address setting for time reference.
  - Off: The system will not use an NTP server. The NetworkServices NTP Server [n] Address setting will be ignored.

NetworkServices NTP Server [1..3] Address

The address of the NTP server that will be used when NetworkServices NTP Mode is set to Manual, and when NetworkServices NTP Mode is set to Auto and no address is supplied by a DHCP server.

Requires user role: ADMIN
Default value: 0.tandberg.pool.ntp.org

Value space: String (0, 255)
  - A valid IPv4 address, IPv6 address or DNS name.

NetworkServices SNMP Mode

SNMP (Simple Network Management Protocol) is used in network management systems to monitor network-attached devices (routers, servers, switches, projectors, etc) for conditions that warrant administrative attention. SNMP exposes management data in the form of variables on the managed systems, which describe the system configuration. These variables can then be queried (set to ReadOnly) and sometimes set (set to ReadWrite) by managing applications.

Requires user role: ADMIN
Default value: ReadOnly

Value space: Off/ReadOnly/ReadWrite
  - Off: Disable the SNMP network service.
  - ReadOnly: Enable the SNMP network service for queries only.
  - ReadWrite: Enable the SNMP network service for both queries and commands.

NetworkServices SNMP Host [1..3] Address

Define the address of up to three SNMP Managers.

The system’s SNMP Agent (in the codec) responds to requests from SNMP Managers (a PC program etc.), for example about system location and system contact. SNMP traps are not supported.

Requires user role: ADMIN
Default value: *

Value space: String (0, 255)
  - A valid IPv4 address, IPv6 address or DNS name.
NetworkServices SNMP CommunityName
Define the name of the Network Services SNMP Community. SNMP Community names are used to authenticate SNMP requests. SNMP requests must have a password (case sensitive) in order to receive a response from the SNMP Agent in the codec. The default password is "public". If you have the Cisco TelePresence Management Suite (TMS) you must make sure the same SNMP Community is configured there too. NOTE: The SNMP Community password is case sensitive.

Requires user role: ADMIN
Default value: ""
Value space: String (0, 50)
The SNMP community name.

NetworkServices SNMP SystemContact
Define the name of the Network Services SNMP System Contact.

Requires user role: ADMIN
Default value: ""
Value space: String (0, 50)
The name of the SNMP system contact.

NetworkServices SNMP SystemLocation
Define the name of the Network Services SNMP System Location.

Requires user role: ADMIN
Default value: ""
Value space: String (0, 50)
The name of the SNMP system location.

NetworkServices SSH Mode
SSH (or Secure Shell) protocol can provide secure encrypted communication between the codec and your local computer.

Requires user role: ADMIN
Default value: On
Value space: Off/On
   Off: The SSH protocol is disabled.
   On: The SSH protocol is enabled.

NetworkServices SSH AllowPublicKey
Secure Shell (SSH) public key authentication can be used to access the codec.

Requires user role: ADMIN
Default value: On
Value space: Off/On
   Off: The SSH public key is not allowed.
   On: The SSH public key is allowed.

NetworkServices Telnet Mode
Telnet is a network protocol used on the Internet or Local Area Network (LAN) connections.

Requires user role: ADMIN
Default value: Off
Value space: Off/On
   Off: The Telnet protocol is disabled. This is the factory setting.
   On: The Telnet protocol is enabled.
NetworkServices UPnP Mode

Fully disable UPnP (Universal Plug and Play), or enable UPnP for a short time period after the video system has been switched on or restarted.

The default operation is that UPnP is enabled when you switch on or restart the video system. Then UPnP is automatically disabled after the timeout period that is defined in the NetworkServices UPnP Timeout setting. Use the video system’s web interface to set the timeout.

When UPnP is enabled, the video system advertises its presence on the network. The advertisement permits a Touch controller to discover video systems automatically, and you do not need to manually enter the video system’s IP address in order to pair the Touch controller.

Requires user role: ADMIN
Default value: On
Value space: <Off/On>
   Off: UPnP is disabled. The video system does not advertise its presence, and you have to enter the video system’s IP address manually in order to pair a Touch controller to the video system.
   On: UPnP is enabled. The video system advertises its presence until the timeout period expires.

NetworkServices UPnP Timeout

Define for how many seconds UPnP shall stay enabled after the video system is switched on or restarted. The NetworkServices UPnP Mode setting must be On for this setting to take any effect.

Requires user role: ADMIN
Default value: 600
Value space: <0..3600>
   Range: Select a value between 0 and 3600 seconds.

NetworkServices WelcomeText

Choose which information the user should see when logging on to the codec through Telnet/SSH.

Requires user role: ADMIN
Default value: On
Value space: Off/On
   Off: The welcome text is: Login successful
   On: The welcome text is: Welcome to <system name>; Software version; Software release date; Login successful.

NetworkServices XMLAPI Mode

Enable or disable the video system’s XML API. For security reasons this may be disabled. Disabling the XML API will limit the remote manageability with for example TMS, which no longer will be able to connect to the video system.

Requires user role: ADMIN
Default value: On
Value space: Off/On
   Off: The XML API is disabled.
   On: The XML API is enabled (default).
Peripherals settings

Peripherals Pairing CiscoTouchPanels EmcResilience

If the Touch controller is used in environments with considerable amounts of electromagnetic noise present, you may experience an appearance of false signals—for example as if someone tapped the Touch controller when obviously nobody did so. To cope with this you may enable the EMC Resilience Mode.

Requires user role: ADMIN
Default value: Off
Value space: Off/On
   Off: The EMC resilience is disabled.
   On: The EMC resilience is enabled.

Peripherals Pairing CiscoTouchPanels RemotePairing

In order to use Cisco Touch 10 (touch panel) as user interface for the video system, Touch 10 must be either directly connected to the video system or paired to the video system via LAN. The latter is referred to as remote pairing.
Remote pairing is allowed by default; you must switch this setting Off if you want to prevent remote pairing.

Requires user role: ADMIN
Default value: On
Value space: Off/On
   Off: Remote pairing of Touch 10 is not allowed.
   On: Remote pairing of Touch 10 is allowed.

Peripherals Pairing Ultrasound Volume Mode

This setting applies to the Intelligent Proximity feature. Keep the setting at its default value.

Requires user role: ADMIN, INTEGRATOR
Default value: Dynamic
Value space: Dynamic/Static
   Dynamic: The video system adjusts the ultrasound volume dynamically. The volume may vary up to the maximum level as defined in the Peripherals Pairing Ultrasound Volume MaxLevel setting.
   Static: Use only if advised by Cisco.

Peripherals Pairing Ultrasound Volume MaxLevel

This setting applies to the Intelligent Proximity feature. Set the maximum volume of the ultrasound pairing message. Refer to the Peripherals Pairing Ultrasound Volume Mode setting.

Requires user role: ADMIN, INTEGRATOR
Default value: 70
Value space: Integer (0..90)
   Select a value in the specified range. If set to 0, the ultrasound is switched off.
Peripherals Profile Cameras

Define the number of cameras that are expected to be connected to the video system. This information is used by the video system’s diagnostics service. If the number of connected cameras does not match this setting, the diagnostics service will report it as an inconsistency.

Requires user role: ADMIN, INTEGRATOR
Default value: Minimum1

Value space: NotSet/Minimum1/0/1/2/3/4/5/6/7
  NotSet: No camera check is performed.
  Minimum1: At least one camera should be connected to the video system.
  0-7: Select the number of cameras that are expected to be connected to the video system.

Peripherals Profile ControlSystems

Define if a third-party control system, for example Crestron or AMX, is expected to be connected to the video system. This information is used by the video system’s diagnostics service. If the number of connected control systems does not match this setting, the diagnostics service will report it as an inconsistency. Note that only one third-party control system is supported.

If set to 1, the control system must send heartbeats to the video system using xCommand Pair and HeartBeat commands. Failing to do so will cause the in-room control extensions to show a warning that the video system has lost connectivity to the control system.

Requires user role: ADMIN, INTEGRATOR
Default value: NotSet

Value space: 1/NotSet
  1: One third-party control system should be connected to the video system.
  NotSet: No check for a third-party control system is performed.

Peripherals Profile TouchPanels

Define the number of touch panels that are expected to be connected to the video system. This information is used by the video system’s diagnostics service. If the number of connected touch panels does not match this setting, the diagnostics service will report it as an inconsistency. Note that only one Cisco Touch controller is supported in this version.

Requires user role: ADMIN, INTEGRATOR
Default value: Minimum1

Value space: NotSet/Minimum1/0/1/2/3/4/5
  NotSet: No touch panel check is performed.
  Minimum1: At least one touch panel should be connected to the video system.
  0-5: Select the number of Touch controllers that are expected to be connected to the video system.
Phonebook settings

Phonebook Server [1] ID
Define a name for the external phone book.
Requires user role: ADMIN
Default value: ""
Value space: String (0, 64)
  The name for the external phone book.

Phonebook Server [1] Type
Select the phonebook server type.
Requires user role: ADMIN
Default value: Off
Value space: Off/CUCM/Spark/TMS/VCS
  Off: Do not use a phonebook.
  CUCM: The phonebook is located on the Cisco Unified Communications Manager.
  Spark: The phonebook is located on Spark.
  TMS: The phonebook is located on the Cisco TelePresence Management Suite server.
  VCS: The phonebook is located on the Cisco TelePresence Video Communication Server.

Phonebook Server [1] URL
Define the address (URL) to the external phone book server.
Requires user role: ADMIN
Default value: ""
Value space: String (0, 255)
  A valid address (URL) to the phone book server.
Provisioning settings

Provisioning Connectivity
This setting controls how the device discovers whether it should request an internal or external configuration from the provisioning server.

Requires user role: ADMIN, USER
Default value: Auto

Value space: Internal/External/Auto
  Internal: Request internal configuration.
  External: Request external configuration.
  Auto: Automatically discover using NAPTR queries whether internal or external configurations should be requested. If the NAPTR responses have the “e” flag, external configurations will be requested. Otherwise internal configurations will be requested.

Provisioning Mode
It is possible to configure a video system using a provisioning system (external manager). This allows video conferencing network administrators to manage many video systems simultaneously. With this setting you choose which type of provisioning system to use. Provisioning can also be switched off. Contact your provisioning system provider/representative for more information.

Requires user role: ADMIN, USER
Default value: Auto

Value space: Off/Auto/CUCM/Edge/Spark/TMS/VCS
  Off: The video system is not configured by a provisioning system.
  Auto: Automatically select the provisioning server.
  CUCM: Push configurations to the video system from CUCM (Cisco Unified Communications Manager).
  Edge: Push configurations to the video system from CUCM (Cisco Unified Communications Manager). The system connects to CUCM via the Collaboration Edge infrastructure.
  Spark: Push configurations to the video system from Spark.
  TMS: Push configurations to the video system from TMS (Cisco TelePresence Management System).
  VCS: Push configurations to the video system from VCS (Cisco TelePresence Video Communication Server).

Provisioning LoginName
This is the username part of the credentials used to authenticate the video system with the provisioning server. This setting must be used when required by the provisioning server.

Requires user role: ADMIN, USER
Default value: **

Value space: String (0, 80)
  A valid username.
Provisioning Password
This is the password part of the credentials used to authenticate the video system with the provisioning server. This setting must be used when required by the provisioning server.
Requires user role: ADMIN, USER
Default value: **
Value space: String (0, 64)
A valid password.

Provisioning HttpMethod
Select the HTTP method to be used for the provisioning.
Requires user role: ADMIN, USER
Default value: POST
Value space: GET/POST
GET: Select GET when the provisioning server supports GET.
POST: Select POST when the provisioning server supports POST.

Provisioning ExternalManager Address
Define the IP Address or DNS name of the external manager / provisioning system.
If an External Manager Address (and Path) is configured, the system will send a message to this address when starting up. When receiving this message the external manager / provisioning system can return configurations/commands to the unit as a result.
When using CUCM or TMS provisioning, the DHCP server can be set up to provide the external manager address automatically (DHCP Option 242 for TMS, and DHCP Option 150 for CUCM). An address set in the Provisioning ExternalManager Address setting will override the address provided by DHCP.
Requires user role: ADMIN, USER
Default value: **
Value space: String (0, 64)
A valid IPv4 address, IPv6 address or DNS name.

Provisioning ExternalManager AlternateAddress
Only applicable when the endpoint is provisioned by Cisco Unified Communication Manager (CUCM) and an alternate CUCM is available for redundancy. Define the address of the alternate CUCM. If the main CUCM is not available, the endpoint will be provisioned by the alternate CUCM. When the main CUCM is available again, the endpoint will be provisioned by this CUCM.
Requires user role: ADMIN, USER
Default value: **
Value space: String (0, 64)
A valid IPv4 address, IPv6 address or DNS name.

Provisioning ExternalManager Protocol
Define whether to use the HTTP (unsecure communication) or HTTPS (secure communication) protocol when sending requests to the external manager / provisioning system.
The selected protocol must be enabled in the NetworkServices HTTP Mode setting.
Requires user role: ADMIN, USER
Default value: HTTP
Value space: HTTPS/HTTP
HTTPS: Send requests via HTTPS.
HTTP: Send requests via HTTP.

Provisioning ExternalManager Path
Define the Path to the external manager / provisioning system. This setting is required when several management services reside on the same server, i.e. share the same External Manager address.
Requires user role: ADMIN, USER
Default value: **
Value space: String (0, 255)
A valid path to the external manager or provisioning system.
Provisioning ExternalManager Domain

Define the SIP domain for the VCS provisioning server.

Requires user role: ADMIN, USER

Default value: ""

Value space: String (0, 64)
  A valid domain name.
Proximity settings

Proximity Mode
Determine whether the video system will emit ultrasound pairing messages or not.
When the video system emits ultrasound, Proximity clients can detect that they are close
to the video system. In order to use a client, at least one of the Proximity services must be
enabled (refer to the Proximity Services settings). In general, Cisco recommends enabling
all the Proximity services.
Requires user role: ADMIN, USER
Default value: On
Value space: Off/On
  Off: The video system does not emit ultrasound, and Proximity services cannot be used.
  On: The video system emits ultrasound, and Proximity clients can detect that they are
close to the video system. Enabled Proximity services can be used.

Proximity Services CallControl
Enable or disable basic call control features on Proximity clients. When this setting is
enabled, you are able to control a call using a Proximity client (for example dial, mute,
adjust volume and hang up). This service is supported by mobile devices (iOS and Android).
Proximity Mode must be On for this setting to take any effect.
Requires user role: ADMIN, USER
Default value: Disabled
Value space: Enabled/Disabled
  Enabled: Call control from a Proximity client is enabled.
  Disabled: Call control from a Proximity client is disabled.

Proximity Services ContentShare FromClients
Enable or disable content sharing from Proximity clients. When this setting is enabled, you
can share content from a Proximity client wirelessly on the video system, e.g. share your
laptop screen. This service is supported by laptops (OS X and Windows). Proximity Mode
must be On for this setting to take any effect.
Requires user role: ADMIN, USER
Default value: Enabled
Value space: Enabled/Disabled
  Enabled: Content sharing from a Proximity client is enabled.
  Disabled: Content sharing from a Proximity client is disabled.

Proximity Services ContentShare ToClients
Enable or disable content sharing to Proximity clients. When enabled, Proximity clients will
receive the presentation from the video system. You can zoom in on details, view previous
content and take snapshots. This service is supported by mobile devices (iOS and Android).
Proximity Mode must be On for this setting to take any effect.
Requires user role: ADMIN, USER
Default value: Disabled
Value space: Enabled/Disabled
  Enabled: Content sharing to a Proximity client is enabled.
  Disabled: Content sharing to a Proximity client is disabled.
RTP settings

RTP Ports Range Start
Define the first port in the range of RTP ports.
As default, the system is using the UDP ports in the range 2326 to 2487 for RTP and RTCP media data. Each media channel is using two adjacent ports for RTP and RTCP. The default number of ports required in the UDP port range is based on the number of simultaneous calls that the endpoint is capable of.
NOTE: Restart the system for any change to this setting to take effect.

Requires user role: ADMIN
Default value: 2326

Value space: Integer (1024..65438)
Set the first port in the range of RTP ports.

RTP Ports Range Stop
Define the last port in the range of RTP ports.
As default, the system is using the UDP ports in the range 2326 to 2487 for RTP and RTCP media data. Each media channel is using two adjacent ports for RTP and RTCP. The default number of ports required in the UDP port range is based on the number of simultaneous calls that the endpoint is capable of.
NOTE: Restart the system for any change to this setting to take effect.

Requires user role: ADMIN
Default value: 2486

Value space: Integer (1120..65535)
Set the last port in the range of RTP ports.
Security settings

Security Audit Logging Mode
Define where to record or transmit the audit logs. The audit logs are sent to a syslog server. When using the External/ExternalSecure modes and setting the port assignment to manual in the Security Audit Server Port Assignment setting, you must also enter the address and port number for the audit server in the Security Audit Server Address and Security Audit Server Port settings.

Requires user role: AUDIT
Default value: Off

Value space: Off/Internal/External/ExternalSecure
- Off: No audit logging is performed.
- Internal: The system records the audit logs to internal logs, and rotates logs when they are full.
- External: The system sends the audit logs to an external syslog server. The syslog server must support UDP.
- ExternalSecure: The system sends encrypted audit logs to an external syslog server that is verified by a certificate in the Audit CA list. The Audit CA list file must be uploaded to the codec using the web interface. The common_name parameter of a certificate in the CA list must match the IP address of the syslog server, and the secure TCP server must be set up to listen for secure (TLS) TCP Syslog messages.

Security Audit OnError Action
Define what happens when the connection to the syslog server is lost. This setting is only relevant when Security Audit Logging Mode is set to ExternalSecure.

Requires user role: AUDIT
Default value: Ignore

Value space: Halt/Ignore
- Halt: If a halt condition is detected the system codec is rebooted and only the auditor is allowed to operate the unit until the halt condition has passed. When the halt condition has passed the audit logs are re-spooled to the syslog server. Halt conditions are: A network breach (no physical link), no syslog server running (or incorrect address or port to the syslog server), TLS authentication failed (if in use), local backup (re-spooling) log full.
- Ignore: The system will continue its normal operation, and rotate internal logs when full. When the connection is restored it will again send its audit logs to the syslog server.

Security Audit Server Address
The audit logs are sent to a syslog server. Define the IP address of the syslog server. Only valid IPv4 or IPv6 address formats are accepted. Host names are not supported. This setting is only relevant when Security Audit Logging Mode is set to External or ExternalSecure.

Requires user role: AUDIT
Default value: **

Value space: String (0, 255)
- A valid IPv4 address or IPv6 address
Security Audit Server Port
The audit logs are sent to a syslog server. Define the port of the syslog server that the system shall send its audit logs to. This setting is only relevant when Security Audit Server PortAssignment is set to Manual.

Requires user role: AUDIT
Default value: 514

Value space: Integer (0..65535)
Set the audit server port.

Security Audit Server PortAssignment
The audit logs are sent to a syslog server. You can define how the port number of the external syslog server will be assigned. This setting is only relevant when Security Audit Logging Mode is set to External or ExternalSecure. To see which port number is used you can check the Security Audit Server Port status. Navigate to Configuration > System status on the web interface or: if on a command line interface, run the command xStatus Security Audit Server Port.

Requires user role: AUDIT
Default value: Auto

Value space: Auto/Manual
Auto: Will use UDP port number 514 when the Security Audit Logging Mode is set to External. Will use TCP port number 6514 when the Security Audit Logging Mode is set to ExternalSecure.
Manual: Will use the port value defined in the Security Audit Server Port setting.

Security Session MaxSessionsPerUser
The maximum number of simultaneous sessions per user. 0, which is the default value, means no hard limit. Sessions consume resources, so there will be some limitation, but this may vary based on different criteria.

Requires user role: ADMIN
Default value: 0

Value space: Integer (0..100)
The maximum number of sessions per user. 0 means no hard limit.

Security Session MaxTotalSessions
The maximum number of simultaneous sessions in total. 0, which is the default value, means no hard limit. Sessions consume resources, so there will be some limitation, but this may vary based on different criteria.

Requires user role: ADMIN
Default value: 0

Value space: Integer (0..100)
The maximum number of sessions in total. 0 means no hard limit.

Security Session ShowLastLogon
When logging in to the system using SSH or Telnet you will see the UserId, time and date of the last session that did a successful login.

Requires user role: ADMIN
Default value: Off

Value space: Off/On
On: Show information about the last session.
Off: Do not show information about the last session.

Security Session InactivityTimeout
Define how long the system will accept inactivity from the user before he is automatically logged out from a web, Telnet, or SSH session.
Restart the system for any change to this setting to take effect.

Requires user role: ADMIN
Default value: 0

Value space: Integer (0..10000)
Set the inactivity timeout (minutes); or select 0 when inactivity should not enforce automatic logout.

Security Session MaxTotalSessions
The maximum number of simultaneous sessions in total. 0, which is the default value, means no hard limit. Sessions consume resources, so there will be some limitation, but this may vary based on different criteria.

Requires user role: ADMIN
Default value: 0

Value space: Integer (0..100)
The maximum number of sessions in total. 0 means no hard limit.
SerialPort settings

SerialPort Mode
Enable/disable the serial port (COM port).
Requires user role: ADMIN, INTEGRATOR
Default value: On
Value space: Off/On
- Off: Disable the serial port.
- On: Enable the serial port.

SerialPort BaudRate
Define the baud rate (data transmission rate, bits per second) for the serial port.
Other connection parameters for the serial port are: Data bits: 8; Parity: None; Stop bits: 1;
Flow control: None.
Requires user role: ADMIN, INTEGRATOR
Default value: 115200
Value space: 9600/19200/38400/57600/115200
- Set a baud rate from the baud rates listed (bps).

SerialPort LoginRequired
Define if login shall be required when connecting to the serial port.
Requires user role: ADMIN
Default value: On
Value space: Off/On
- Off: The user can access the codec via the serial port without any login.
- On: Login is required when connecting to the codec via the serial port.
SIP settings

SIP ANAT
ANAT (Alternative Network Address Types) enables media negotiation for multiple addresses and address types, as specified in RFC 4091.

Requires user role: ADMIN
Default value: Off

Value space: Off/On
  Off: Disable ANAT.
  On: Enable ANAT.

SIP Authentication UserName
This is the user name part of the credentials used to authenticate towards the SIP proxy.

Requires user role: ADMIN
Default value:"

Value space: String (0, 128)
  A valid username.

SIP Authentication Password
This is the password part of the credentials used to authenticate towards the SIP proxy.

Requires user role: ADMIN
Default value:"

Value space: String (0, 128)
  A valid password.

SIP DefaultTransport
Select the transport protocol to be used over the LAN.

Requires user role: ADMIN
Default value: Auto

Value space: TCP/UDP/Tls/Auto
  TCP: The system will always use TCP as the default transport method.
  UDP: The system will always use UDP as the default transport method.
  Tls: The system will always use TLS as the default transport method. For TLS connections a SIP CA-list can be uploaded to the video system. If no such CA-list is available on the system then anonymous Diffie-Hellman will be used.
  Auto: The system will try to connect using transport protocols in the following order: TLS, TCP, UDP.

SIP DisplayName
When configured the incoming call will report the display name instead of the SIP URI.

Requires user role: ADMIN
Default value:"

Value space: String (0, 550)
  The name to be displayed instead of the SIP URI.
SIP Ice Mode
ICE (Interactive Connectivity Establishment, RFC 5245) is a NAT traversal solution that the video systems can use to discover the optimized media path. Thus the shortest route for audio and video is always secured between the video systems.

Requires user role: ADMIN
Default value: Auto

Value space: Auto/Off/On
- Auto: ICE is enabled if a TURN server is provided, otherwise ICE is disabled.
- Off: ICE is disabled.
- On: ICE is enabled.

SIP Ice DefaultCandidate
The ICE protocol needs some time to reach a conclusion about which media route to use (up to the first 5 seconds of a call). During this period media for the video system will be sent to the Default Candidate as defined in this setting.

Requires user role: ADMIN
Default value: Host

Value space: Host/Rflx/Relay
- Host: Send media to the video system’s private IP address.
- Rflx: Send media to the video system’s public IP address, as seen by the TURN server.
- Relay: Send media to the IP address and port allocated on the TURN server.

SIP Line
When registered to a Cisco Unified Communications Manager (CUCM) the endpoint may be part of a shared line. This means that several devices share the same directory number. The different devices sharing the same number receive status from the other appearances on the line as defined in RFC 4235.
Note that shared lines are set up by CUCM, not by the endpoint. Therefore do not change this setting manually; CUCM pushes this information to the endpoint when required.

Requires user role: ADMIN
Default value: Private

Value space: Private/Shared
- Shared: The system is part of a shared line and is therefore sharing its directory number with other devices.
- Private: This system is not part of a shared line (default).

SIP ListenPort
Turn on or off the listening for incoming connections on the SIP TCP/UDP ports. If turned off, the endpoint will only be reachable through the SIP registrar (CUCM or VCS).

Requires user role: ADMIN
Default value: On

Value space: Off/On
- Off: Listening for incoming connections on the SIP TCP/UDP ports is turned off.
- On: Listening for incoming connections on the SIP TCP/UDP ports is turned on.

SIP Mailbox
When registered to a Cisco Unified Communications Manager (CUCM) you may be offered the option of having a private voice mailbox.

Requires user role: ADMIN
Default value: **

Value space: String (0, 255>)
- A valid number or address. Leave the string empty if you do not have a voice mailbox.
SIP PreferredIPMedia

Define the preferred IP version for sending and receiving media (audio, video, data). Only applicable when both Network IPStack and Conference CallProtocolIPStack are set to Dual, and the network does not have a mechanism for choosing the preferred IP version.

Requires user role: ADMIN
Default value: IPv4

Value space: IPv4/IPv6
IPv4: The preferred IP version for media is IPv4.
IPv6: The preferred IP version for media is IPv6.

SIP PreferredIPS signaling

Define the preferred IP version for signaling (audio, video, data). Only applicable when both Network IPStack and Conference CallProtocolIPStack are set to Dual, and the network does not have a mechanism for choosing the preferred IP version. It also determines the priority of the A/AAAA lookups in DNS, so that the preferred IP version is used for registration.

Requires user role: ADMIN
Default value: IPv4

Value space: IPv4/IPv6
IPv4: The preferred IP version for signaling is IPv4.

SIP Proxy [1..4] Address

The Proxy Address is the manually configured address for the outbound proxy. It is possible to use a fully qualified domain name, or an IP address. The default port is 5060 for TCP and UDP but another one can be provided.

Requires user role: ADMIN
Default value: ""

Value space: String (0, 255)
A valid IPv4 address, IPv6 address or DNS name.

SIP TlsVerify

For TLS connections a SIP CA-list can be uploaded to the video system. This can be done from the web interface.

Requires user role: ADMIN
Default value: Off

Value space: Off/On
Off: Set to Off to allow TLS connections without verifying them. The TLS connections are allowed to be set up without verifying the x.509 certificate received from the server against the local CA-list. This should typically be selected if no SIP CA-list has been uploaded.
On: Set to On to verify TLS connections. Only TLS connections to servers, whose x.509 certificate is validated against the CA-list, will be allowed.

SIP Turn DiscoverMode

Define the discover mode to enable/disable the application to search for available Turn servers in DNS. Before making calls, the system will test if port allocation is possible.

Requires user role: ADMIN
Default value: On

Value space: Off/On
Off: Set to Off to disable discovery mode.
On: When set to On, the system will search for available Turn servers in DNS, and before making calls the system will test if port allocation is possible.

SIP Turn DropRflx

DropRflx will make the endpoint force media through the Turn relay, unless the remote endpoint is on the same network.

Requires user role: ADMIN
Default value: Off

Value space: Off/On
Off: Disable DropRflx.
On: The system will force media through the Turn relay when the remote endpoint is on another network.
SIP Turn Server
Define the address of the TURN (Traversal Using Relay NAT) server. It is used as a media relay fallback and it is also used to discover the endpoint’s own public IP address.
Requires user role: ADMIN
Default value: ""
Value space: String (0, 255)
The preferred format is DNS SRV record (e.g. _turn._udp.<domain>), or it can be a valid IPv4 or IPv6 address.

SIP Turn UserName
Define the user name needed for accessing the TURN server.
Requires user role: ADMIN
Default value: ""
Value space: String (0, 128)
A valid user name.

SIP Turn Password
Define the password needed for accessing the TURN server.
Requires user role: ADMIN
Default value: ""
Value space: String (0, 128)
A valid password.

SIP Type
Enables SIP extensions and special behavior for a vendor or provider.
Requires user role: ADMIN
Default value: Standard
Value space: Standard/Cisco
- Standard: Use this when registering to standard SIP Proxy (tested with Cisco TelePresence VCS and Broadsoft)
- Cisco: Use this when registering to Cisco Unified Communication Manager

SIP URI
The SIP URI (Uniform Resource Identifier) is the address that is used to identify the video system. The URI is registered and used by the SIP services to route inbound calls to the system. The SIP URI syntax is defined in RFC 3261.
Requires user role: ADMIN
Default value: ""
Value space: String (0, 255)
An address (URI) that is compliant with the SIP URI syntax.
Standby settings

Standby Control
Define whether the system should go into standby mode or not.
Requires user role: ADMIN, INTEGRATOR
Default value: On
Value space: Off/On
  Off: The system will not enter standby mode.
  On: The system will enter standby mode when the Standby Delay has timed out.
Requires the Standby Delay to be set to an appropriate value.

Standby Delay
Define how long (in minutes) the system shall be in idle mode before it goes into standby mode. Requires the Standby Control to be enabled.
Requires user role: ADMIN, INTEGRATOR
Default value: 10
Value space: Integer (1..480)
  Set the standby delay (minutes).

Standby BootAction
Define the camera position after a restart of the codec.
Requires user role: ADMIN, INTEGRATOR, USER
Default value: DefaultCameraPosition
Value space: None/DefaultCameraPosition/RestoreCameraPosition
  None: No action.
  RestoreCameraPosition: When the video system restarts, the camera returns to the position that it had before the restart.
  DefaultCameraPosition: When the video system restarts, the camera moves to the factory default position.

Standby StandbyAction
Define the camera position when going into standby mode.
Requires user role: ADMIN, INTEGRATOR
Default value: PrivacyPosition
Value space: None/PrivacyPosition
  None: No action.
  PrivacyPosition: When the video system enters standby, the camera turns to a sideways position for privacy.

Standby WakeupAction
Define the camera position when leaving standby mode.
Requires user role: ADMIN, INTEGRATOR, USER
Default value: RestoreCameraPosition
Value space: None/RestoreCameraPosition/DefaultCameraPosition
  None: No action.
  RestoreCameraPosition: When the video system leaves standby, the camera returns to the position that it had before entering standby.
  DefaultCameraPosition: When the video system leaves standby, the camera moves to the factory default position.

Standby WakeupOnMotionDetection
Automatic wake up on motion detection is a feature that will sense when a person walks into the conference room, using ultrasound detection.
Requires user role: ADMIN, INTEGRATOR
Default value: Off
Value space: Off/On
  Off: The wake up on motion detection is disabled.
  On: When people walk into the room the system will automatically wake up from standby. When set to On, you will not be able to manually set the system in standby.
Standby PowerSave

You can reduce the video system's power consumption during out-of-office hours with this setting. The Power Save mode is an extension to the regular standby mode.

When the video system enters power save mode, power is cut to some of the video system's modules, for example the integrated cameras. The codec and Touch controller behaves like in regular standby. The video system wakes up from power save mode when you tap the touch panel.

Waking up the video system from power save mode takes longer than waking it up from regular standby, because the cameras must boot. You can make calls right away, but there is no outgoing video until the cameras has completed their boot process.

Requires user role: ADMIN

Default value: Never

Value space: Never/OutsideOfficeHours

  Never: The video system will never go into power save mode; only to regular standby.
  OutsideOfficeHours: The video system will go into power save mode during out-of-office hours. You must provide the office hours with the following settings: Time WorkWeek FirstDayOfWeek, Time WorkWeek LastDayOfWeek, Time WorkDay Start, and Time WorkDay End.
SystemUnit settings

SystemUnit Name

Define the system name. The system name will be sent as the hostname in a DHCP request and when the codec is acting as an SNMP Agent.

Requires user role: ADMIN
Default value: ""
Value space: String (0, 50)
  Define the system name.
Time settings

Time TimeFormat
Define the time format.
Requires user role: ADMIN, USER
Default value: 24H
Value space: 24H/12H
- 24H: Set the time format to 24 hours.
- 12H: Set the time format to 12 hours (AM/PM).

Time DateFormat
Define the date format.
Requires user role: ADMIN, USER
Default value: DD_MM_YY
Value space: DD_MM_YY/MM_DD_YY/YY_MM_DD
- DD_MM_YY: The date January 30th 2010 will be displayed: 30.01.10
- MM_DD_YY: The date January 30th 2010 will be displayed: 01.30.10
- YY_MM_DD: The date January 30th 2010 will be displayed: 10.01.30
Time Zone

Define the time zone for the geographical location of the video system. The information in the value space is from the tz database, also called the IANA Time Zone Database.

Requires user role: ADMIN, INTEGRATOR, USER

Default value: Etc/UTC


Select a time zone from the list.

### Time WorkDay Start

The Time WorkWeek FirstDayOfWeek, Time WorkWeek LastDayOfWeek, Time WorkDay Start, and Time WorkDay End settings are available so that you can specify when the regular working hours are, and thereby also find the out-of-office hours.

Knowing the out-of-office hours is required if you want to use the power save mode, which is set up using the Standby PowerSave setting.

Requires user role: ADMIN, USER

Default value: "07:00"

Value space: String (5, 5)

The working day start time, using the 24-hour clock. Example: "07:00"

### Time WorkDay End

The Time WorkWeek FirstDayOfWeek, Time WorkWeek LastDayOfWeek, Time WorkDay Start, and Time WorkDay End settings are available so that you can specify when the regular working hours are, and thereby also find the out-of-office hours.

Knowing the out-of-office hours is required if you want to use the power save mode, which is set up using the Standby PowerSave setting.

Requires user role: ADMIN, USER

Default value: "18:00"

Value space: String (5, 5)

The working day end time, using the 24-hour clock. Example: "18:00"

### Time WorkWeek FirstDayOfWeek

The Time WorkWeek FirstDayOfWeek, Time WorkWeek LastDayOfWeek, Time WorkDay Start, and Time WorkDay End settings are available so that you can specify when the regular working hours are, and thereby also find the out-of-office hours.

Knowing the out-of-office hours is required if you want to use the power save mode, which is set up using the Standby PowerSave setting.

Requires user role: ADMIN, USER

Default value: Monday

Value space: Monday/Tuesday/Wednesday/Thursday/Friday/Saturday/Sunday

The first day of the working week. Example: Monday
Time WorkWeek LastDayOfWeek

The Time WorkWeek FirstDayOfWeek, Time WorkWeek LastDayOfWeek, Time WorkDay Start, and Time WorkDay End settings are available so that you can specify when the regular working hours are, and thereby also find the out-of-office hours.

Knowing the out-of-office hours is required if you want to use the power save mode, which is set up using the Standby PowerSave setting.

Requires user role: ADMIN, USER
Default value: Friday

Value space: Monday/Tuesday/Wednesday/Thursday/Friday/Saturday/Sunday
  The last day of the working week. Example: Friday
UserInterface settings

UserInterface ContactInfo Type
Choose which type of contact information to show in the status field in the upper left corner of the display and Touch controller.

Requires user role: ADMIN
Default value: Auto

Value space: Auto/None/IPv4/IPv6/H323Id/H320Number/E164Alias/SipUri/SystemName/DisplayName
- Auto: Show the address which another system should dial to reach this video system. The address depends on the default call protocol and system registration.
- None: Do not show any contact information.
- IPv4: Show the system's IPv4 address.
- IPv6: Show the system's IPv6 address.
- H323Id: Show the system's H.323 ID (refer to the H323 H323Alias ID setting).
- H320Number: Show the system's H.320 number as contact information (only applicable if connected to Cisco TelePresence ISDN Link).
- E164Alias: Show the system's H.323 E164 Alias as contact information (refer to the H323 H323Alias E164 setting).
- SipUri: Show the system's SIP URI (refer to the Sip URI setting).
- SystemName: Show the system's name (refer to the SystemUnit Name setting).
- DisplayName: Show the system's display name (refer to the SIP DisplayName setting).

UserInterface KeyTones Mode
You can configure the system to make a keyboard click sound effect (key tone) when typing text or numbers.

Requires user role: ADMIN, USER
Default value: On

Value space: Off/On
- Off: There is no key tone sound effect.
- On: The key tone sound effect is turned on.

UserInterface Language
Select the language to be used in menus and messages on the screen and Touch controller.

Requires user role: ADMIN, USER
Default value: English

Value space: Arabic/Catalan/ChineseSimplified/ChineseTraditional/Czech/Danish/Dutch/English/EnglishUK/Finnish/French/FrenchCanadian/German/Hebrew/Hungarian/Italian/Japanese/Korean/Norwegian/Polish/Portuguese/PortugueseBrazilian/Russian/Spanish/SpanishLatin/Swedish/Turkish
- Select a language from the list.

UserInterface OSD EncryptionIndicator
Define for how long the encryption indicator (a padlock) is shown on screen. The icon for encrypted calls is a locked padlock, and the icon for non-encrypted calls is a crossed out locked padlock.

Requires user role: ADMIN
Default value: Auto

Value space: Auto/AlwaysOn/AlwaysOff
- Auto: If the call is encrypted, a “Call is encrypted” notification is shown for 5 seconds, while the encryption indicator icon is shown for the duration of the call.
- If the call is not encrypted, a “Call is not encrypted” notification is shown for 5 seconds. Also the encryption indicator icon disappears from screen after 5 seconds.
- AlwaysOn: The encryption indicator is displayed on screen during the entire call.
- AlwaysOff: The encryption indicator is never displayed on screen.
UserInterface OSD Output
Define on which monitor the on-screen information and indicators (OSD) should be displayed.
Requires user role: ADMIN, INTEGRATOR
Default value: 1
Value space: Auto/1/2/3
- Auto: The system sends the on-screen information and indicators to the system’s integrated display. If the system has two integrated displays, the left display is used.
- Range 1-3: The system sends the on-screen information and indicators to the specified output. Choose n to send the on-screen information and indicators to the system's Output Connector n.

UserInterface Wallpaper
Select a background image (wallpaper) for the video screen when idle.
You may upload a custom wallpaper to the video system using the web interface. The following file formats are supported: BMP, GIF, JPEG, PNG. The maximum file size is 4 MByte. When you use a custom wallpaper, the clock and the list of upcoming meetings are removed from the main display
Requires user role: ADMIN, INTEGRATOR, USER
Default value: Auto
Value space: Auto/Custom/None
- Auto: Use the default wallpaper.
- None: There is no background image on the screen.
- Custom: Use the custom wallpaper as background image on the screen. If no custom wallpaper is uploaded to the system, the setting will revert to the default value.
UserManagement settings

UserManagement LDAP Mode
The video system supports the use of an LDAP (Lightweight Directory Access Protocol) server as a central place to store and validate user names and passwords. Use this setting to configure whether or not to use LDAP authentication. Our implementation is tested for the Microsoft Active Directory (AD) service.

Requires user role: ADMIN
Default value: Off
Value space: Off/On
  Off: LDAP authentication is not allowed.
  On: For client certificate verification to work when LDAP authentication is enabled, the codec requires a CA (Certificate Authority) certificate, and the user must have a Client Certificate that matches their user distinguishing name (DN) in the active directory (AD).

UserManagement LDAP Server Address
Set the IP address or hostname of the LDAP server.

Requires user role: ADMIN
Default value: 
Value space: String (0, 255)
  A valid IPv4 address, IPv6 address or hostname.

UserManagement LDAP Server Port
Set the port to connect to the LDAP server on. If set to 0, use the default for the selected protocol (see the UserManagement LDAP Encryption setting).

Requires user role: ADMIN
Default value: 0
Value space: Integer (0..65535)
  The LDAP server port number.

UserManagement LDAP Encryption
Define how to secure the communication between the video system and the LDAP server. You can override the port number by using the UserManagement LDAP Server Port setting.

Requires user role: ADMIN
Default value: LDAPS
Value space: LDAPS/None/STARTTLS
  LDAPS: Connect to the LDAP server on port 636 over TLS (Transport Layer Security).
  None: Connect to LDAP server on port 389 with no encryption.
  STARTTLS: Connect to LDAP server on port 389, then send STARTTLS to enable TLS encryption.

UserManagement LDAP MinimumTLSVersion
Set the lowest version of the TLS (Transport Layer Security) protocol that is allowed.

Requires user role: ADMIN
Default value: TLSv1.2
Value space: TLSv1.0/TLSv1.1/TLSv1.2
  TLSv1.0: Support TLS version 1.0 or higher.
  TLSv1.1: Support TLS version 1.1 or higher.
  TLSv1.2: Support TLS version 1.2 or higher.
UserManagement LDAP VerifyServerCertificate

When the video system connects to an LDAP server, the server will identify itself to the video system by presenting its certificate. Use this setting to determine whether or not the video system will verify the server certificate.

Requires user role: ADMIN
Default value: On

Value space: Off/On
   - Off: The video system will not verify the LDAP server's certificate.
   - On: The video system must verify that the LDAP server's certificate is signed by a trusted Certificate Authority (CA). The CA must be on the list of trusted CAs that are uploaded to the system in advance. Use the video system's web interface to manage the list of trusted CAs (see more details in the administrator guide).

UserManagement LDAP Admin Filter

The LDAP filter is used to determine which users should be granted administrator privileges. If set, this setting takes precedence over the UserManagement LDAP Admin Group setting.

Requires user role: ADMIN
Default value: "*

Value space: String (0, 1024)
   - Refer to the LDAP specification for the syntax of this string. Example: "(CN=adminuser)"

UserManagement LDAP Admin Group

Members of this AD (Active Directory) group will be given administrator access. This setting is a shorthand for saying (memberOf:1.2.840.113556.1.4.1941:=<group name>). If UserManagement LDAP Admin Filter is set, this setting is ignored.

Requires user role: ADMIN
Default value: "*

Value space: String (0, 255)
   - The distinguishing name of the AD group. Example: "CN=admin_group, OU=company groups, DC=company, DC=com"
Video settings

**Video ActiveSpeaker DefaultPiPPosition**

Define the position on screen of the active speaker picture-in-picture (PiP). The setting only takes effect when using a video layout where the active speaker is a PiP, i.e. the Overlay layout, or possibly a Custom layout (refer to the Video DefaultLayoutFamily Local setting). The setting takes effect from the next call onwards; if changed during a call, it will have no effect on the current call.

Requires user role: ADMIN, INTEGRATOR

Default value: Current

Value space: Current/UpperLeft/UpperCenter/UpperRight/CenterLeft/CenterRight/LowerLeft/LowerRight

- **Current**: The position of the active speaker PiP will be kept unchanged when leaving a call.
- **UpperLeft**: The active speaker PiP will appear in the upper left corner of the screen.
- **UpperCenter**: The active speaker PiP will appear in the upper center position.
- **UpperRight**: The active speaker PiP will appear in the upper right corner of the screen.
- **CenterLeft**: The active speaker PiP will appear in the center left position.
- **CentreRight**: The active speaker PiP will appear in the center right position.
- **LowerLeft**: The active speaker PiP will appear in the lower left corner of the screen.
- **LowerRight**: The active speaker PiP will appear in the lower right corner of the screen.

**Video DefaultLayoutFamily Local**

Select which video layout family to use locally.

Requires user role: ADMIN

Default value: Auto

Value space: Auto/Equal/Prominent/Overlay/Single>

- **Auto**: The default layout family, as given in the layout database provided by the system, will be used as the local layout.
- **Equal**: The Equal layout family will be used as the local layout. All videos have equal size, as long as there is space enough on the screen.
- **Prominent**: The Prominent layout family will be used as the local layout. The active speaker, or the presentation if present, will be a large picture, while the other participants will be small pictures. Transitions between active speakers are voice switched.
- **Overlay**: The Overlay layout family will be used as the local layout. The active speaker, or the presentation if present, will be shown in full screen, while the other participants will be small pictures-in-picture (PiP). Transitions between active speakers are voice switched.
- **Single**: The active speaker, or the presentation if present, will be shown in full screen. The other participants are not shown. Transitions between active speakers are voice switched.
Video DefaultLayoutFamily Remote
Select which video layout family to be used for the remote participants.

Requires user role: ADMIN
Default value: Auto

Value space: Auto/Equal/Prominent/Overlay/Single
- Auto: The default layout family, as given by the local layout database, will be used as the remote layout.
- Equal: The Equal layout family will be used as the remote layout. All videos have equal size, as long as there is space enough on the screen.
- Prominent: The Prominent layout family will be used as the remote layout. The active speaker, or the presentation if present, will be a large picture, while the other participants will be small pictures. Transitions between active speakers are voice switched.
- Overlay: The Overlay layout family will be used as the remote layout. The active speaker, or the presentation if present, will be shown in full screen, while the other participants will be small pictures-in-picture (PiP). Transitions between active speakers are voice switched.
- Single: The active speaker, or the presentation if present, will be shown in full screen. The other participants are not shown. Transitions between active speakers are voice switched.

Video DefaultMainSource
Define which video input source shall be used as the main video source.

Requires user role: ADMIN, USER
Default value: 1

Value space: 1/2/3/4
- Set the source to be used as the main video source.

Video Input Connector [1..5] CameraControl Mode
Define whether the camera that is connected to this video input connector can be controlled or not.

Note that camera control is not available for Connector 5 (S-video/Composite).

Requires user role: ADMIN, INTEGRATOR
Default value: Connector 1, 2, 3: On   Connector 4, 5: Off

Value space: Connector 1, 2, 3, 4: Off/On   Connector 5: Off
- Off: Disable camera control.
- On: Enable camera control.

Video Input Connector [1..5] CameraControl CameraId
The camera ID is a unique identifier of the cameras that are connected to the video input. Use the xStatus Camera API command to see the IDs of the different cameras.

Requires user role: ADMIN, INTEGRATOR
Default value: Connector n: n   Connector 5: 1

Value space: Connector 1, 2, 3, 4: 1/2/3/4/5/6/7   Connector 5: 1
- Select the ID of the camera.
Video Input Connector [4] DviType

The official DVI standard supports both digital and analog signals. In most cases the default AutoDetect setting can detect whether the signal is analog RGB or digital. However, in some rare cases when DVI-I cables are used (these cables can carry both the analog and digital signals) the auto detection fails. This setting makes it possible to override the AutoDetect and select the correct DVI video input.

Requires user role: ADMIN
Default value: AutoDetect
Value space: AutoDetect/Digital/AnalogRGB/AnalogYPbPr
  - AutoDetect: Set to AutoDetect to automatically detect if the signal is analog RGB or digital.
  - Digital: Set to Digital to force the DVI video input to Digital when using DVI-I cables with both analog and digital pins and AutoDetect fails.
  - AnalogRGB: Set to AnalogRGB to force the DVI video input to AnalogRGB when using DVI-I cables with both analog and digital pins and AutoDetect fails.
  - AnalogYPbPr: Set to AnalogYPbPr to force the DVI video input to AnalogYPbPr, as the component (YPbPr) signal cannot be auto detected.

Video Input Connector [5] SignalType

Connector 5 can be used for either S-Video or Composite video input format. Use this setting to configure which video format the BNC connector(s) are used for.

Requires user role: ADMIN
Default value: Composite
Value space: Composite/YC
  - Composite: Connector 5 is configured for composite video input. Only the BNC connector that is labeled "Y" is used.
  - YC: Connector 5 is configured for S-Video input. Both BNC connectors ("Y" and "C") are used.

Video Input Connector [1..5] InputSourceType

Select which type of input source is connected to the video input.

Requires user role: ADMIN, INTEGRATOR
Default value: Connector 1 and 2: camera   Connector 3 and 4: PC   Connector 5: other
Value space: camera/desktop/document_camera/mediaplayer/PC/whiteboard/other
  - Camera: Use this when a camera is connected to the video input.
  - Desktop: Note: The Desktop option is not supported in software version CE9.0.1.
  - Document_camera: Use this when a document camera is connected to the video input.
  - Mediaplayer: Use this when a media player is connected to the video input.
  - PC: Use this when a computer is connected to the video input.
  - Whiteboard: Use this when a whiteboard camera is connected to the video input.
  - Other: Use this when the other options do not match.

Video Input Connector [1..5] Name

Define a name for the video input connector.

Requires user role: ADMIN, INTEGRATOR
Default value: Connector 1: "Camera 1"   Connector 2: "" for single camera systems, "Camera 2" for dual camera systems   Connector 3: "PC (HDMI)"   Connector 4: "PC (VGA)"   Connector 5: ""
Value space: String (0, 50)
  - Name for the video input connector.
Video Input Connector [1..5] Quality

When encoding and transmitting video there is a trade-off between high resolution and high frame rate. For some video sources it is more important to transmit high frame rate than high resolution and vice versa. This setting specifies whether to give priority to high frame rate or to high resolution.

Requires user role: ADMIN, INTEGRATOR
Default value: Connector 1, 2, 5: Motion  Connector 3, 4: Sharpness

Value space: Motion/Sharpness
  Motion: Gives the highest possible frame rate. Used when there is a need for higher frame rates, typically when a large number of participants are present or when there is a lot of motion in the picture.
  Sharpness: Gives the highest possible resolution. Used when you want the highest quality of detailed images and graphics.

Video Input Connector [1..5] OptimalDefinition Profile

This setting will only take effect if the corresponding Video Input Connector [n] Quality setting is set to Motion.

The optimal definition profile reflects the lighting conditions in the video conferencing room and the quality of the camera. The better lighting conditions and the better quality of the camera, the higher the profile. Generally, the Normal or Medium profiles are recommended. However, when the lighting conditions are very good, the High profile can be set in order to increase the resolution for a given call rate. The resolution must be supported by both the calling and called systems.

Use the Video Input Connector [n] OptimalDefinition Threshold60fps setting to decide when to use the 60 fps frame rate.

Requires user role: ADMIN, INTEGRATOR
Default value: Medium

Value space: Normal/Medium/High
  Normal: Use this profile for a normally to poorly lit environment. Resolutions will be set rather conservative.
  Medium: Requires good and stable lighting conditions and a good quality video input. For some call rates this leads to higher resolution.
  High: Requires nearly optimal video conferencing lighting conditions and a good quality video input in order to achieve a good overall experience. Rather high resolutions will be used.

Video Input Connector [1..5] OptimalDefinition Threshold60fps

For each video input, this setting tells the system the lowest resolution where it should transmit 60fps. So for all resolutions lower than this, the maximum transmitted frame rate would be 30fps, while above this resolution 60fps would also be possible, if the available bandwidth is adequate.

Requires user role: ADMIN
Default value: 1280_720

Value space: 512_288/768_448/1024_576/1280_720/1920_1080/Never
  512_288: Set the threshold to 512x288.
  768_448: Set the threshold to 768x448.
  1024_576: Set the threshold to 1024x576.
  1280_720: Set the threshold to 1280x720.
  1920_1080: Set the threshold to 1920x1080.
  Never: Do not set a threshold for transmitting 60fps.
Video Input Connector [1..4] PresentationSelection

Define how the video system will behave when you connect a presentation source to the video input. In general, any input source can be used as a presentation source; normally, the main camera will not be used as a presentation source.

If the video system is in standby mode, it will wake up when you connect a presentation source. Sharing the presentation with the far end requires additional action (select Share on the user interface) except when this setting is set to AutoShare.

Requires user role: ADMIN, INTEGRATOR
Default value: Connector 1, 2: Manual   Connector 3, 4: OnConnect


AutoShare: While in a call, the content on the video input will automatically be presented to the far end as well as on the local screen when you connect the cable, or when the source is activated otherwise (for example when a connected computer wakes up from sleep mode). You do not have to select Share on the user interface. If a presentation source is already connected when you make or answer a call, you have to manually select Share on the user interface.

Desktop: Note: The Desktop option is not supported in software version CE9.0.1.
Manual: The content on the video input will not be presented on the screen until you select Share from the user interface.

OnConnect: The content on the video input will be presented on screen when you connect the cable, or when the source is activated otherwise (for example when a connected computer wakes up from sleep mode). Otherwise, the behavior is the same as in manual mode.

Video Input Connector [1..4] RGBQuantizationRange

The devices connected to the video input should follow the rules for RGB video quantization range defined in CEA-861. Unfortunately some devices do not follow the standard and this configuration may be used to override the settings to get a perfect image with any source.

Requires user role: ADMIN, INTEGRATOR
Default value: Connector 1, 2, 3: Auto   Connector 4: Full

Value space: Auto/Full/Limited

Auto: RGB quantization range is automatically selected based on video format according to CEA-861-E. CE video formats will use limited quantization range levels. IT video formats will use full quantization range levels.
Full: Full quantization range. The R, G, B quantization range includes all code values (0 - 255). This is defined in CEA-861-E.
Limited: Limited Quantization Range. R, G, B quantization range that excludes some code values at the extremes (16 - 235). This is defined in CEA-861-E.

Video Input Connector [1..5] Visibility

Define the visibility of the video input connector in the menus on the user interface.

Requires user role: ADMIN, INTEGRATOR
Default value: Connector 1, 2, 3: IfSignal   Connector 4: Always   Connector 5: Never

Value space: Always/IfSignal/Never

Always: The menu selection for the video input connector will always be visible on the user interface.
IfSignal: The menu selection for the video input connector will only be visible when something is connected to the video input.
Never: The input source is not expected to be used as a presentation source, and will not show up on the user interface.
Video Monitors

A role is assigned to each monitor using the Video Output Connector [n] MonitorRole setting. The monitor role decides which layout (call participants and presentation) will appear on the monitor that is connected to this output. Monitors with the same monitor role will get the same layout; monitors with different monitor roles will have different layouts.

The monitor layout mode that is set in the Video Monitors setting should reflect the number of different layouts you want in your room setup. Note that some monitors can be reserved for presentations.

Requires user role: ADMIN, INTEGRATOR
Default value: Auto

Value space: Auto/Single/Dual/DualPresentationOnly/TriplePresentationOnly/Triple

- Auto: The number of monitors connected to the codec is automatically detected, and the layout is distributed on the monitors according to the MonitorRole settings.
- Single: The same layout is shown on all monitors.
- Dual: The layout is distributed on monitors with monitor role First and Second. If a presentation is part of the layout, all participants in the call are shown on monitors with monitor role First, and the presentation is shown on monitors with monitor role Second.
- DualPresentationOnly: All participants in the call are shown on monitors with monitor role First. If a presentation is part of the layout, the presentation is shown on monitors with monitor role Second.
- Triple: The layout is distributed on monitors with monitor role First, Second and Third. If a presentation is part of the layout, all participants in the call are shown on monitors with monitor role First and Second, and the presentation is shown on the monitor with monitor role Third.
- TriplePresentationOnly: All participants in the call are distributed on monitors with monitor role First and Second. If a presentation is part of the layout, the presentation is shown on the monitor with monitor role Third.

Video Output Connector [2] CEC Mode

This setting applies only to MX800 Single.

This video output (HDMI) supports Consumer Electronics Control (CEC). When this setting is On (default is Off), the system will use CEC to set the monitor in standby when the system itself enters standby. Likewise the system will wake up the monitor when the system itself wakes up from standby. For this to happen, the monitor that is connected to the output must be CEC compatible and CEC must be configured on the monitor.

Note that the different manufacturers uses different marketing names for CEC, for example Anynet+ (Samsung); Aquos Link (Sharp); BRAVIA Sync (Sony); HDMI-CEC (Hitachi); Kuro Link (Pioneer); CE-Link and Regza Link (Toshiba); RIHD (Onkyo); HDAVI Control, EZ-Sync, VIERA Link (Panasonic); EasyLink (Philips); and NetCommand for HDMI (Mitsubishi).

Requires user role: ADMIN, INTEGRATOR
Default value: Off

Value space: Off/On

- Off: Disable CEC control
- On: Enable CEC control
Video Output Connector [1..3] Location HorizontalOffset

HorizontalOffset and VerticalOffset settings are associated with each video output. These settings are used to signal the relative position of the displays that are connected to these outputs.

HorizontalOffset = 0 and VerticalOffset = 0 indicates that the display is positioned in center, both horizontally and vertically. A negative horizontal offset indicates that the monitor is left of center, and a positive horizontal offset indicates that the monitor is right of center. A negative vertical offset indicates that the monitor is below center, and a positive vertical offset indicates that the monitor is above center. The magnitude of the offset indicates how far the display is from center (relative to other displays).

Example: You have three displays side by side, with the left and right displays at equal distance from center. Then the following settings will apply: HorizontalOffset = 0 for the center display, HorizontalOffset = -1 for the left display, and HorizontalOffset = 1 for the right display.

Example: You have two displays, one in center and one below. Then the following settings will apply: VerticalOffset = 0 for the center display, VerticalOffset = -1 for the lower display. The default values for the different outputs are:

Video Output Connector [1] Location: HorizontalOffset = -1, VerticalOffset = 0
Video Output Connector [2] Location: HorizontalOffset = 0, VerticalOffset = 0
Video Output Connector [3] Location: HorizontalOffset = 1, VerticalOffset = 0

Requires user role: ADMIN, INTEGRATOR
Default value: Connector [1]: -1 Connector [2]: 0 Connector [3]: 1

Value space: Integer (-100..100)
  Range: The value must be between -100 and 100.

Video Output Connector [1..3] Location VerticalOffset

HorizontalOffset and VerticalOffset settings are associated with each video output. These settings are used to signal the relative position of the displays that are connected to these outputs.

HorizontalOffset = 0 and VerticalOffset = 0 indicates that the display is positioned in center, both horizontally and vertically. A negative horizontal offset indicates that the monitor is left of center, and a positive horizontal offset indicates that the monitor is right of center. A negative vertical offset indicates that the monitor is below center, and a positive vertical offset indicates that the monitor is above center. The magnitude of the offset indicates how far the display is from center (relative to other displays).

Example: You have three displays side by side, with the left and right displays at equal distance from center. Then the following settings will apply: HorizontalOffset = 0 for the center display, HorizontalOffset = -1 for the left display, and HorizontalOffset = 1 for the right display.

Example: You have two displays, one in center and one below. Then the following settings will apply: VerticalOffset = 0 for the center display, Vertical Offset = -1 for the lower display. The default values for the different outputs are:

Video Output Connector [1] Location: HorizontalOffset = -1, VerticalOffset = 0
Video Output Connector [2] Location: HorizontalOffset = 0, VerticalOffset = 0
Video Output Connector [3] Location: HorizontalOffset = 1, VerticalOffset = 0

Requires user role: ADMIN, INTEGRATOR
Default value: 0

Value space: Integer (-100..100)
  Range: The value must be between -100 and 100.
Video Output Connector [1..3] MonitorRole

The monitor role describes which video streams will be shown on the monitor connected to this video output connector. Together the Video Monitors setting and the MonitorRole settings for all outputs define which layout (video streams) will be shown on each monitor.

Requires user role: ADMIN, INTEGRATOR
Default value: Auto

Value space: Auto/First/Second/PresentationOnly/Third/Recorder
Auto: The system will detect when a monitor is connected, and a monitor role (First, Second, Third) that corresponds with the Video Monitors setting will be assigned automatically.
First/Second/Third: Define the role of the monitor in a multi-monitor setup. In a single-monitor setup, there is no difference between First, Second and Third.
PresentationOnly: Show presentation video stream if active, and nothing else. Monitors/outputs with this monitor role are disregarded by the Video Monitors setting.
Recorder: Show all participants, including the local main video (self-view). If active, also show the presentation. Monitors/outputs with this monitor role are disregarded by the Video Monitors setting.

Video Output Connector [n] Resolution

This setting applies to Connector [2..3] for MX800 Single. Define the resolution and refresh rate for the connected screen.

Requires user role: ADMIN, INTEGRATOR, USER
Default value: Auto

Value space: Auto/1280_720_50/1280_720_60/1920_1080_50/1920_1080_60/1920_1200_50/1920_1200_60
Auto: The system will automatically try to set the optimal resolution based on negotiation with the connected monitor.
1280_720_50: The resolution is 1280 x 720, and the refresh rate is 50 Hz.
1280_720_60: The resolution is 1280 x 720, and the refresh rate is 60 Hz.
1920_1080_50: The resolution is 1920 x 1080, and the refresh rate is 50 Hz.
1920_1080_60: The resolution is 1920 x 1080, and the refresh rate is 60 Hz.
1920_1200_50: The resolution is 1920 x 1200, and the refresh rate is 50 Hz.
1920_1200_60: The resolution is 1920 x 1200, and the refresh rate is 60 Hz.

Video Output Connector [n] RGBQuantizationRange

This setting applies to Connector [2..3] for MX800, and Connector [3] for MX700. Devices connected to an HDMI output should follow the rules for RGB video quantization range defined in CEA-861. Unfortunately some devices do not follow the standard and this configuration may be used to override the settings to get a perfect image with any display. Most HDMI displays expects full quantization range.

Requires user role: ADMIN, INTEGRATOR
Default value: Full

Value space: Auto/Full/Limited
Auto: RGB quantization range is automatically selected based on the RGB Quantization Range bits (Q0, Q1) in the AVI infoframe. If no AVI infoframe is available, RGB quantization range is selected based on video format according to CEA-861-E.
Full: Full quantization range. The R, G, B quantization range includes all code values (0 – 255). This is defined in CEA-861-E.
Limited: Limited Quantization Range. R, G, B quantization range that excludes some code values at the extremes (16 – 235). This is defined in CEA-861-E.

Video Presentation DefaultPIPPosition

Define the position on screen of the presentation picture-in-picture (PiP). The setting only takes effect when the presentation is explicitly minimized to a PiP, for example using the user interface. The setting takes effect from the next call onwards; if changed during a call, it will have no effect on the current call.

Requires user role: ADMIN, INTEGRATOR
Default value: Current

Value space: Current/UpperLeft/UpperCenter/UpperRight/CenterLeft/CenterRight/LowerLeft/LowerRight
Current: The position of the presentation PiP will be kept unchanged when leaving a call.
UpperLeft: The presentation PiP will appear in the upper left corner of the screen.
UpperCenter: The presentation PiP will appear in the upper center position.
UpperRight: The presentation PiP will appear in the upper right corner of the screen.
CenterLeft: The presentation PiP will appear in the center left position.
CenterRight: The presentation PiP will appear in the center right position.
LowerLeft: The presentation PiP will appear in the lower left corner of the screen.
LowerRight: The presentation PiP will appear in the lower right corner of the screen.
Video Presentation DefaultSource

Define which video input source to use as a default presentation source. This setting may be used by the API and 3rd party user interfaces. It is not relevant when using the user interfaces provided by Cisco.

Requires user role: ADMIN, USER
Default value: 3
Value space: 1/2/3/4
The video input source to use as default presentation source.

Video Selfview Default Mode

Define if the main video source (self-view) shall be displayed on screen after a call. The position and size of the self-view window is determined by the Video Selfview Default PIPPosition and the Video Selfview Default FullscreenMode settings respectively.

Requires user role: ADMIN, INTEGRATOR
Default value: Current
Value space: Off/Current/On
- Off: self-view is switched off when leaving a call.
- Current: self-view is left as is, i.e. if it was on during the call, it remains on after the call; if it was off during the call, it remains off after the call.
- On: self-view is switched on when leaving a call.

Video Selfview Default FullscreenMode

Define if the main video source (self-view) shall be shown in full screen or as a small picture-in-picture (PiP) after a call. The setting only takes effect when self-view is switched on (see the Video Selfview Default Mode setting).

Requires user role: ADMIN, INTEGRATOR
Default value: Current
Value space: Off/Current/On
- Off: self-view will be shown as a PiP.
- Current: The size of the self-view picture will be kept unchanged when leaving a call, i.e. if it was a PiP during the call, it remains a PiP after the call; if it was fullscreen during the call, it remains fullscreen after the call.
- On: The self-view picture will be shown in fullscreen.

Video Selfview Default OnMonitorRole

Define which monitor/output to display the main video source (self-view) on after a call. The value reflects the monitor roles set for the different outputs in the Video Output Connector [n] MonitorRole setting.
The setting applies both when self-view is displayed in full screen, and when it is displayed as picture-in-picture (PiP), but only if the Video Monitors setting is set to Dual or Triple.

Requires user role: ADMIN, INTEGRATOR
Default value: Current
Value space: First/Second/Third/Current
- First: The self-view picture will be shown on outputs with the Video Output Connector [n] MonitorRole set to First.
- Second: The self-view picture will be shown on outputs with the Video Output Connector [n] MonitorRole set to Second.
- Third: The self-view picture will be shown on outputs with the Video Output Connector [n] MonitorRole set to Third.
- Current: When leaving a call, the self-view picture will be kept on the same output as it was during the call.
Video Selfview Default PiPPosition

Define the position on screen of the small self-view picture-in-picture (PiP) after a call. The setting only takes effect when self-view is switched on (see the Video Selfview Default Mode setting) and fullscreen view is switched off (see the Video Selfview Default FullscreenMode setting).

Requires user role: ADMIN, INTEGRATOR
Default value: Current
Value space: Current/UpperLeft/UpperCenter/UpperRight/CenterLeft/CenterRight/LowerLeft/LowerRight
  - Current: The position of the self-view PiP will be kept unchanged when leaving a call.
  - UpperLeft: The self-view PiP will appear in the upper left corner of the screen.
  - UpperCenter: The self-view PiP will appear in the upper center position.
  - UpperRight: The self-view PiP will appear in the upper right corner of the screen.
  - CenterLeft: The self-view PiP will appear in the center left position.
  - CentreRight: The self-view PiP will appear in the center right position.
  - LowerLeft: The self-view PiP will appear in the lower left corner of the screen.
  - LowerRight: The self-view PiP will appear in the lower right corner of the screen.

Video Selfview OnCall Duration

This setting only has an effect when the Video Selfview OnCall Mode setting is switched On. In this case, the number of seconds set here determines for how long self-view is shown before it is automatically switched off.

Requires user role: ADMIN, INTEGRATOR
Default value: 10
Value space: Integer (1..60)
  Range: Choose for how long self-view remains on. The valid range is between 1 and 60 seconds.

Video Selfview OnCall Mode

This setting is used to switch on self-view for a short while when setting up a call. The Video Selfview OnCall Duration setting determines for how long it remains on. This applies when self-view in general is switched off.

Requires user role: ADMIN, INTEGRATOR
Default value: On
Value space: Off/On
  - Off: Self-view is not shown automatically during call setup.
  - On: Self-view is shown automatically during call setup.
Experimental settings

The Experimental settings are for testing only and should not be used unless agreed with Cisco. These settings are not documented and WILL change in later releases.
Appendices
How to use Touch 10

The Touch 10 user interface and its use are described in full detail in the User guide for the video system.

Indicates whether or not the Proximity feature is available.

Press the Microphone button to mute and unmute microphones.

Entry point for in-room controls, if available (your system may have a different entry icon).

Tap the Camera icon to activate self-view and camera control.

Time of day.

Tap ? to contact Help desk or access other facility services, if available.

Entry point for in-room controls, if available (your system may have different text and icon).

Press and hold the left side of the Volume button to decrease the loudspeaker volume and the right side to increase the volume.

Tap Share to start sharing content and to conduct presentations.

Entry point for in-room controls, if available (your system may have different text and icon).

Press the Microphone button to mute and unmute microphones.
Set up remote monitoring

Requirement:
- RemoteMonitoring option

Remote monitoring is useful when you want to control the video system from another location. Snapshots from input sources appear in the web interface, so you can check the camera view and control the camera without being in the room.

If enabled, snapshots are refreshed automatically approximately every 5 seconds.

Check whether or not the video system has the RemoteMonitoring option

1. Sign in to the web interface.
2. Check the Home page to see if RemoteMonitoring is on the list of installed options.
   If not on the list, remote monitoring is not available.

Enable remote monitoring

Install the RemoteMonitoring option key. How to install option keys are described in the Add option keys chapter.

PLEASE BE AWARE THAT IF YOU ENABLE THE REMOTE MONITORING OPTION YOU MUST MAKE SURE THAT YOU COMPLY WITH LOCAL LAWS AND REGULATIONS WITH REGARD TO PRIVACY AND PROVIDE ADEQUATE NOTICE TO USERS OF THE SYSTEM THAT THE SYSTEM ADMINISTRATOR MAY MONITOR AND CONTROL THE CAMERA AND SCREEN. IT IS YOUR RESPONSIBILITY TO COMPLY WITH PRIVACY REGULATIONS WHEN USING THE SYSTEM AND CISCO DISCLAIMS ALL LIABILITY FOR ANY UNLAWFUL USE OF THIS FEATURE.

About snapshots

Local input sources

Snapshots of the local input sources of the video system appear on the Call Control page.

Snapshots appear both when the video system is idle, and when in a call.

Far end snapshots

When in call, you may also see snapshots from the far end camera. It does not matter whether or not the far end video system has the RemoteMonitoring option.

Far end snapshots are not displayed if the call is encrypted.
Access call information while using the web interface

Open the Call Information window
Click the Call state indicator to open the Call Information window manually.
As default, the Call Information window pops up automatically when the video system receives a call.

Switch incoming call notifications on or off
Click Ignore incoming call notices, to decide whether or not the Call Information window should pop up automatically when the video system receives a call.
When the check box is checked, the Call Information window will not open automatically.

Open the Call Control page
Click Open Call Control to go straight to the Call Control page.

About the call state indicator
The call state indicator shows whether the system is in a call or not, and how many calls it is engaged in. You may also be notified about incoming calls.
The call state indicator is available on all pages except the Call Control page.

Control the call(s)
Relevant control buttons appear in the Call Information window. Use the buttons to:
- Show call details
- Put the call on hold
- Answer the call
- Disconnect the call
Place a call using the web interface (page 1 of 2)

Sign in to the web interface and navigate to Call Control.

Place a call

- Even if the web interface is used to initiate the call, it is the video system (display, microphones and loudspeakers) that is used for the call; it is not the PC running the web interface.

1. Navigate the Favorites, Directory or Recents lists to find the correct entry; or enter one or more characters in the Search or Dial field*. Click the correct contact name.
2. Click Call in the contact card.

Alternatively, enter the complete URI or number in the Search and Dial field. Then click the Call button that appears next to the URI or number.

Send DTMF tones
Click to open a key pad that you can use if your application requires DTMF (dual-tone multi-frequency) signaling.

Show/hide call details
Click the information button to show details about the call.
Click the button again to hide the information.

Hold and resume a call
Use the button next to a participant’s name to put that participant on hold.
To resume the call, use the button that is present when a participant is on hold.

End a call
If you want to terminate a call or conference, click Disconnect all. Confirm your choice in the dialog that appears.
To disconnect just one participant in a conference, click the button for that participant.

* When searching, matching entries from the Favorites, Directory and Recents lists will be listed as you type.
Place a call using the web interface  (page 2 of 2)

Sign in to the web interface and navigate to Call Control.

Calling more than one

A point-to-point video call (a call involving two parties only) can be expanded to include one more participant on audio-only.

If your system is using the optional built-in MultiSite feature, up to five participants, yourself included, can join the video call (conference). In addition, one more participant can join on audio-only.

Follow the same procedure to call the next conference participant as you did when calling the first participant.

Calling more than one using a conference bridge (CUCM ad hoc conferencing) is not supported from the web interface, even if it is supported by the video system itself.

Adjust the volume

Mute the microphone

Click Microphone: On to mute the microphone. Then the text changes to Microphone: Off.

Click Microphone: Off to unmute.

Volume down

Volume up
Share content using the web interface

Sign in to the web interface and navigate to Call Control.

Share content

1. Choose which content source to share in the Presentation source drop down list.
2. Click Start Presentation. Then the text changes to Stop Presentation.

Stop content sharing:

Click the Stop Presentation button that is present while sharing.

About content sharing

You can connect a presentation source to one of the video inputs of your video system. Most often a PC is used as presentation source, but other options may be available depending on your system setup.

While in a call you can share content with the other participant(s) in the call (far end).

If you are not in a call, the content is shared locally.
Local layout control

Sign in to the web interface and navigate to *Call Control*.

Change the layout

Click *Layout*, and choose your preferred layout in the window that opens.

The set of layouts to choose from depends on the system configuration.

You may change the layout both when idle and in a call.

About layouts

The term layout is used to describe the various ways presentations and videos can appear on the screens. Different types of meetings may require different layouts.

The number of call or conference participants are reflected in the available choices.
Control a local camera

Sign in to the web interface and navigate to Call Control.

Prerequisites
- The Video > Input > Connector n > CameraControl > Mode setting is switched On.
- The camera has pan, tilt or zoom functionality.
- Speaker tracking is switched Off.

Move the camera using the pan/tilt/zoom controls
1. Choose which camera to control in the Main source drop down list.
2. Click the camera icon to open the camera control window.
   Video snapshots from the room are only displayed for video systems that have the Remote Monitoring option.
3. Use the left and right arrows to pan the camera; the up and down arrows to tilt it; and + and - to zoom in and out.
   Only relevant controls appear in the window.

Move the camera to a preset position
1. Choose which camera to control in the Main source drop down list.
2. Click Presets... to open a list of available presets.
   If no presets are defined, the button is disabled and named No presets.
3. Click a preset’s name to move the camera to the preset position.
4. Click OK to close the window.

You cannot use the web interface to define a preset; you should use the Touch controller.
When you select a preset, speaker tracking will be switched off automatically.

Notes:
- Automatically refresh snapshots
- Main source drop down list
- Snapshot area
- Move the camera to a preset position
Control a far end camera

Sign in to the web interface and navigate to Call Control.

Prerequisites

While in a call, you can control the remote participant’s camera (far end) provided that:

- The Conference > FarEndControl > Mode setting is switched On on the far end video system.
- The far end camera has pan, tilt or zoom functionality. Only the relevant controls will appear.
- Speaker tracking is not switched On on the far end camera.
- The local video system has the Remote Monitoring option.

Control the remote participant’s camera

1. Click the camera icon to open the remote camera control window.
2. Use the left and right arrows to pan the camera; the up and down arrows to tilt it; and + and - to zoom in and out.
   
   If you are not allowed to control the far end camera, the controls will not appear in the image.
   
   If the call is encrypted, the far end snapshot behind the controls are not displayed.
Add in-room controls to Touch 10

You can customize our Touch 10 user interface to allow control of peripherals in a meeting room, for example lights and blinds. This allows for the powerful combination of a control system’s functionality and the user-friendly Touch 10 user interface.

Consult the In-Room Control guide for full details about how to design an in-room control panel using the In–Room Control editor, and how to use the video system’s API to program the in-room controls. Go to:

► http://www.cisco.com/go/in-room-control-docs

Architecture

You need a Cisco video system with a Touch controller, and a third-party control system, for example Crestron or AMX, with hardware drivers for the peripherals. It is the control system, not the video system, that controls the peripherals.

When you program the control system you must use the video system’s API (events and commands) in order to connect with the controls on the Touch controller.

An easy to use drag-and-drop editor, which you should use to compose the custom in-room control panel, comes free of charge with the video system’s software.

The In-Room Control editor

You can use the In–Room Control editor to compose your custom in-room control panels for the Touch controller.

Sign in* to the web interface, and navigate to Integration > In–Room Control.

• Click Launch Editor to launch the editor directly from the video system’s web interface.

You can push a new in-room control panel to the video system, and see the result immediately on the Touch controller.

• Click Download Editor to download a stand-alone version that you can use to work offline.

The room simulator

You can use the room simulator to visualise how the in-room controls on Touch 10 changes the state of the room.

• Click Launch Simulator to open a room simulator in your browser.

The room simulator contains a predefined in-room control configuration that you can push to the video system. Then you can control the virtual meeting room from your real Touch 10 user interface.

* You need a user that holds the ROOMCONTROL, INTEGRATOR, or ADMIN user roles in order to access the In–Room Control editor and the API commands that you need when programming the control system.
Manage startup scripts

Sign in to the web interface, and navigate to Integration > Startup Scripts.

List of startup scripts
You can create one or more startup scripts.
A green dot appears next to an active startup script; a red ring appears next to an inactive startup script.
If you have more than one startup script, they will run in the order from top to bottom of the list.

Create a startup script
1. Click Create new...
2. Enter a name for the startup script in the title input field.
3. Enter the commands (xConfiguration or xCommand) in the command input area. Start each command on a new line.
4. Click Save.
5. Click On to activate the startup script.
If you want to use an existing script as a starting point for editing, select that script and click Copy.

Run a startup script immediately
1. Select the startup script from the list.
2. Click Run.
Both active and inactive startup scripts can be run immediately.

Activate or deactivate a startup script
1. Select the startup script from the list.
2. Click On to activate, or Off to deactivate a script.
Active startup scripts will run every time the video system starts up.

Delete a startup script
1. Select the startup script from the list.
2. Click Delete.

About startup scripts
A startup script contains commands (xCommand) and configurations (xConfiguration) that will be executed as part of the start up procedure.
A few commands and configurations cannot be placed in a startup script, for example xCommand SystemUnit Boot. It is not possible to save a script that contains illegal commands and configurations.
Syntax and semantics for xCommand and xConfiguration are explained in the API guide for the product.
Access the video system's XML files

Sign in to the web interface and navigate to Integration > Developer API.

The XML files are part of the video system's API. They structure information about the system in a hierarchy.

- **Configuration.xml** contains the current system settings (configuration). These settings are controlled from the web interface or from the API (Application Programmer Interface).
- The information in **status.xml** is constantly updated by the video system to reflect system and process changes. The status information is monitored from the web interface or from the API.
- **Command.xml** contains an overview of the commands available to instruct the system to perform an action. The commands are issued from the API.
- **Valuespace.xml** contains an overview of all the value spaces of system settings, status information, and commands.

Open an XML file

Click the file name to open the XML file.

About the API

The application programming interface (API) is a tool for integration professionals and developers working with the video system. The API is described in detail in the API guide for the video system.
Execute API commands and configurations from the web interface

Sign in to the web interface and navigate to Integration > Developer API.

Commands (xCommand) and configurations (xConfiguration) can be executed from the web interface. Syntax and semantics are explained in the API guide for the video system.

Execute API commands and configurations

1. Enter a command (xCommand or xConfiguration), or a sequence of commands, in the text area.
2. Click Execute to issue the command(s).
Notes regarding screen technology

Cisco are using professional screens in MX700 and MX800. These screens have longer lifetime and operating hours than consumer screens.

MX700 and MX800 use LED edge backlit LCD panels with Vertical Alignment technology. This allows for high contrast ratios and fast response times. The nature of all LCD panels is that the contrast ratio drops rapidly with an increasing viewing angle (both horizontally and vertically). Color coordinates will also change with increased viewing angle resulting in some color shift. LCD panels may therefore appear to have different shades when comparing images viewed perpendicular and at an angle to the screen.

MX700 and MX800 screens are individually color calibrated during manufacturing using spectrometers. This ensures that all screens shipped from the manufacturing site are equal with respect to color reproduction, when judged on axis. The calibration process has some tolerances, but this is considered to be hard, if not impossible, to judge with the naked eye. A small change in the viewing angle will to a larger extent affect the perceived color differences.

Over time the screen's LED backlights will drift. This is valid for all LCD panels with LED backlight. Luminance will decay resulting in darker image over time. For the LCD panels in MX700 and MX800, the luminance will be halved after 50000 operating hours.
GPIO interface

The codec within the video system has a General Purpose Input/Output (GPIO) port in the form of a 6 pin Euroblock connector.

Some MX700/MX800 systems have been shipped with the label for the pins of the GPIO port in reverse order.

Correct GPIO labeling.

Incorrect GPIO labeling.

Remove the left side cover to get access to the connectors.
Serial interface

The video system has a standard COM-port for serial communication. Connect a standard 9-pin RS-232 serial cable to the COM-port. If the computer does not have a standard serial connector, you need an RS-232 adapter on the computer side.

The serial connection can be used without an IP-address, DNS, or a network.

Parameters:
- Baud rate: Configurable. Default 115200 bps
- Data bits: 8
- Parity: None
- Stop bit: 1

Video system settings

Serial communication is enabled by default. Use the following configuration to change the behavior:

```
SerialPort > Mode
```

For security reasons, you are asked to sign in before using the serial interface. Use the following setting to change the behavior:

```
SerialPort > LoginRequired
```

We recommend using the default baud rate because the video system may give much feedback. Use the following setting if you want to adjust the baud rate.

```
SerialPort > BaudRate
```

Restart the video system when you have made changes to the serial port settings.

If your video system is provisioned by CUCM, the serial port settings should be configured from CUCM.

Remove the left side cover to get access to the connectors.
Technical specification (page 1 of 4)

PRODUCT SPECIFICATION

SOFTWARE COMPATIBILITY
MX700 and MX800 Single:
- Cisco TelePresence Software Version TC7.1.2 or later
- Collaboration Endpoint Software Version 8.0 or later

MX800 Dual:
- Cisco TelePresence Software Version TC7.3.1 or later
- Collaboration Endpoint Software Version 8.0 or later

COMPONENTS

Fully integrated unit including:
- Codec
- Display
- Camera (2 cameras as option)
- Loudspeakers
- Cisco TelePresence Table Microphone 60 (two microphones are included in base package)
- Cables included: DVI-I-to-VGA cable with Euroblock to 3.5-mm jack audio cable, HDMI to HDMI, LAN cable, and power cable

DISPLAY

MX700:
- Two 55 inch TFT-LCD monitors, edge LED backlight
  - Resolution: 1920 × 1080 (16:9)
  - Contrast ratio: Typical 4000:1
  - Viewing angle: ±176°
  - Response time: Typical 8 ms
  - Brightness: 350 cd/m²

MX800 Single:
- One 70 inch TFT-LCD monitor, edge LED backlight
  - Resolution: 1920 × 1080 (16:9)
  - Contrast ratio: Typical 4000:1
  - Viewing angle: ±176°
  - Response time: Typical 8 ms
  - Brightness: 350 cd/m²

MX800 Dual:
- Two 70 inch TFT-LCD monitor, edge LED backlight
  - Resolution: 1920 × 1080 (16:9)

• Contrast ratio: Typical 4000:1
• Viewing angle: ±176°
• Response time: Typical 8 ms
• Brightness: 350 cd/m²

PC AND SECOND-SOURCE VIDEO INPUT
- DVI-I
- Two HDMI (if Dual camera option is installed, only one HDMI)
- One standard definition (composite or S-video)

SUPPORTED PC INPUT RESOLUTIONS
- SVGA (800 x 600) up to 1080p (1920 x 1080)

CAMERA OVERVIEW
- 20x total zoom (10x optical,2x digital zoom)
- Motorized +12.7°/-14.5° tilt, +58°/-90° pan
- 80° horizontal field of view
- 48.8° vertical field of view
- F 1.5
- Resolutions: 1080p60 and 720p60
- Automatic or manual focus, brightness, and white balance
- Far-end camera control
- Camera control over Ethernet
- Focus distance 3.28 ft (1 m) to infinity

AUDIO SYSTEM

Integrated multichannel loudspeaker system

MX700 with single camera:
- 12 loudspeakers in total
- 10 closed box full range loudspeakers
- 2 balanced dual driver folded bass horns (one behind each screen)
- 400W amplifier system
- Individual digital processing for each speaker
- Frequency response 65-18000 Hz ±3 dB
- Frequency response 55-20000 Hz ±10 dB
- Max continuous sound pressure 100 dB @ 1 m

MX700 with dual camera:
- 11 loudspeakers in total
- 9 closed box full range loudspeakers
- 2 balanced dual driver folded bass horns (one behind each screen)
- 400W amplifier system
- Individual digital processing for each speaker
- Frequency response 65-18000 Hz ±3 dB
- Frequency response 55-20000 Hz ±10 dB
- Max continuous sound pressure 100 dB @ 1 m

MX800 Single with single camera:
- 7 loudspeakers in total
- 6 closed box full range loudspeakers
- 1 balanced quad driver folded bass horn (2.2 meter long)
- 200W amplifier system
- Individual digital processing for each speaker
- Frequency response 47-18000 Hz ±3 dB
- Frequency response 38-20000 Hz ±10 dB
- Max continuous sound pressure 100 dB @ 1 m

MX800 Single with dual camera:
- 5 loudspeakers in total
- 5 closed box full range loudspeakers
- 1 balanced quad driver folded bass horn (2.2 meters long)
- 200W amplifier system
- Individual digital processing for each speaker
- Frequency response 47-18000 Hz ±3 dB
- Frequency response 38-20000 Hz ±10 dB
- Max continuous sound pressure 100 dB @ 1 m

MX800 Dual:
- 13 loudspeakers in total
- 11 closed box full range loudspeakers
- 2 balanced quad driver folded bass horn (2.2 meters long)
- 400W amplifier system
- Individual digital processing for each speaker
- Frequency response 47-18000 Hz ±3 dB
- Frequency response 38-20000 Hz ±10 dB
- Max continuous sound pressure 100 dB @ 1 m

USER INTERFACE

Cisco TelePresence Touch 10 interface
- 10 inch projected capacitive touch screen
- Resolution: 1280 x 800

LANGUAGE SUPPORT
(depends on software version)
- Arabic, Catalan, Chinese–Simplified, Chinese–Traditional, Czech, Danish, Dutch, English, English–UK, Finnish, French, French–Canadian, German, Hebrew, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Portuguese–Brazilian, Russian, Spanish, Spanish–Latin, Swedish, Turkish

SYSTEM MANAGEMENT

- Support for the Cisco TelePresence Management Suite (TMS)
- Total management via embedded Telnet, SSH, XML and SOAP
- Remote software upload via web server, SCP, HTTP and HTTPS
- One RS-232 for local control and diagnostics
- Support for Cisco TelePresence Touch 10

DIRECTORY SERVICES

- Support for local directories (Favorites / Local contacts)
- Corporate directory (through CUCM and Cisco TMS)
- Server directory supporting LDAP and H.320 (requires Cisco TMS)
- Call history with received, placed and missed calls with date and time
Technical specification (page 2 of 4)

**POWER**
MX700:
- Auto-sensing power supply
- 100-240VAC, 50/60Hz
- Standby power consumption single camera/dual camera: 129W/140W
- Average power consumption single camera/dual camera: 547W/560W (under normal operating conditions as defined in IEC 60950-1)
- Maximum power consumption single camera/dual camera: 567W/580W

MX800 Single:
- Auto-sensing power supply
- 100-240VAC, 50/60Hz
- Standby power consumption single camera/dual camera: 106W/118W
- Average power consumption single camera/dual camera: 320W/333W (under normal operating conditions as defined in IEC 60950-1)
- Max power consumption single camera/dual camera: 330W/343W

MX800 Dual:
- Auto-sensing power supply
- 100-240VAC, 50/60Hz
- Standby power consumption dual camera: 157W (under normal operating conditions as defined in IEC 60950-1)
- Max power consumption dual camera: 590W

**OPERATING TEMPERATURE AND HUMIDITY:**
- Ambient temperature: 32°F to 104°F (0°C to 40°C)
- Relative humidity (RH): 10% to 90%

**STORAGE AND TRANSPORT TEMPERATURE:**
- -4°F to 140°F (-20°C to 60°C) at RH 10% to 90% (non-condensing)

**PRODUCT DIMENSIONS AND WEIGHT**
MX700, free standing floor stand:
- Height: 64.2 in. (163.1 cm)
- Width: 99.1 in. (251.7 cm)
- Depth: 36.2 in. (92.0 cm) including feet
- Weight, single camera: 339.5 lbs (154 kg)
- Weight, dual camera: 348.3 lbs (158 kg)

MX700, floor stand secured to the wall:
- Height: 64.2 in. (163.1 cm)
- Width: 99.1 in. (251.7 cm)
- Depth: 6.2 in. or 8.5 in. (15.6 cm or 21.5 cm)
- Weight, single camera: 339.5 lbs (154 kg)
- Weight, dual camera: 348.3 lbs (158 kg)

MX700, wall mount:
- Height: 42.2 in. (107.1 cm)
- Width: 99.1 in. (251.7 cm)
- Depth: 5.8 in. (14.8 cm)
- Weight, single camera: 357.1 lbs (162 kg)
- Weight, dual camera: 366.0 lbs (168 kg)

MX800 Single, free standing floor stand:
- Height: 71.6 in. (181.8 cm)
- Width: 62.8 in. (159.6 cm)
- Depth: 36.2 in. (92.0 cm) including feet
- Weight, single camera: 240.3 lbs (109 kg)
- Weight, dual camera: 249.1 lbs (113 kg)

MX800 Dual, free standing floor stand:
- Height: 71.6 in. (181.8 cm)
- Width: 124.8 in. (316.9 cm)
- Depth: 36.2 in. (92.0 cm) including feet
- Weight: 524.7 lbs (238 kg)

MX800 Dual, floor stand secured to the wall:
- Height: 71.6 in. (181.8 cm)
- Width: 124.8 in. (316.9 cm)
- Depth: 6.2 in. or 8.5 in. (15.6 cm or 21.5 cm)
- Weight: 524.7 lbs (238 kg)

MX800 Dual, wall mount:
- Height: 49.5 in. (125.8 cm)
- Width: 124.8 in. (316.9 cm)
- Depth: 5.8 in. (14.8 cm)
- Weight: 537.9 lbs (244 kg)

**PACKAGING DIMENSIONS AND WEIGHT**
MX700:
- Height: 71.6 in. (181.8 cm)
- Width: 62.8 in. (159.6 cm)
- Depth: 36.2 in. (92.0 cm) including feet
- Weight, single camera: 244.7 lbs (111 kg)
- Weight, dual camera: 253.5 lbs (115 kg)

MX800 Single, floor stand secured to the wall:
- Height: 71.6 in. (181.8 cm)
- Width: 62.8 in. (159.6 cm)
- Depth: 6.2 in. or 8.5 in. (15.6 cm or 21.5 cm)
- Weight, single camera: 240.3 lbs (109 kg)
- Weight, dual camera: 249.1 lbs (113 kg)

MX800 Single, wall mount:
- Height: 49.5 in. (125.8 cm)
- Width: 62.8 in. (159.6 cm)
- Depth: 5.8 in. (14.8 cm)
- Weight, single camera: 240.3 lbs (109 kg)
- Weight, dual camera: 249.1 lbs (113 kg)

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MX800 Dual, wall mount:
- Height: 49.5 in. (125.8 cm)
- Width: 124.8 in. (316.9 cm)
- Depth: 5.8 in. (14.8 cm)
- Weight: 537.9 lbs (244 kg)

**APPROVALS AND COMPLIANCE**
- Directive 2014/35/EU (Low-Voltage Directive)
- Directive 2014/30/EU (EMC Directive) – Class A
- Directive 2011/65/EU (RoHS)
- Directive 2014/35/EU (EMC Directive) – Class A
- Directive 2002/96/EC (WEEE)
- NRTL approved (Product Safety)
- FCC CFR 47 Part 15B (EMC) – Class A

Please check Product Approval Status Database www.ciscofax.com for approval documents per country.
Three HDMI inputs; support formats up to maximum 1920 × 1080@60Hz (WXGA)
• 640 × 480@60Hz (480p60)
• 1280 × 1024@60, and 75Hz (SXGA)
• 1024 × 768@60, 70, 75, and 85Hz (XGA)
• 800 × 600@60, 60, 72, 75, and 85Hz (SVGA)
• 1280 × 1024@50 and 60Hz (WUXGA)
• 1680 × 1050@60Hz (WUXGA+)
• 1440 × 900@60Hz (WXGA+)
• 1280 × 768@60Hz (WXGA)

One Composite/S-Video Input (BNC Connectors)
• PAL/NTSC

Systems with single camera: HDMI input 1 is used for the camera
Systems with dual camera: HDMI inputs 1 and 2 are used for the cameras

VIDEO OUTPUTS (THREE OUTPUTS)
Two HDMI outputs and one DVI-I output; supports formats up to maximum 1920 × 1080@60 fps (1080p60), including:
• 1920 × 1080@60 Hz (1080p)
• 1920 × 1080@50 Hz (1080p)
• 1280 × 720@60 Hz (720p)
• 1280 × 720@50 Hz (720p)

MX700 and MX800 Dual: HDMI outputs 1 and 2 are used for the two integrated screens
MX800 Single: HDMI output 1 is used for the integrated screen

VESA Monitor Power Management
Extended Display Identification Data (EDID)

ENCODE/DECODE VIDEO FORMATS
Supports encode/decode video formats up to maximum 1920 × 1080@60fps (HD1080p60), including:
• 176 × 144@30 frames per second (fps) (QCIF)
• 352 × 288@30 fps (CIF)
• 512 × 288@30 fps (w288p)
• 784 × 448@30 fps (448p)
• 768 × 448@30 fps (w448p)
• 768 × 448@30 fps (w448p)
• 704 × 576@30fps (4CIF)
• 1024 × 576@30fps (w576p)
• 1280 × 720@30fps (VGA)
• 1024 × 768@30fps (SVGA)

DUAL STREAM
• H.264 (H.263) dual stream
• BFCP (SIP) dual stream
• Support for resolutions up to 1080p30, independent of main stream resolution

PRODUCT DELIVERED COMPLETE WITH:
• One mounting option, single or dual camera option, Cisco Touch 10, codec, complete audio system, 2 × Cisco Microphone 60, 2 presentation cables.

BANDWIDTH
• H.323 and SIP up to 6 Mbps point-to-point
• Up to 6 Mbps total MultiSite bandwidth

MINIMUM BANDWIDTH FOR RESOLUTION / FRAME RATE (H.264)
• 720p30 from 768kbps
• 720p60 from 1152kbps
• 1080p30 from 1472kbps
• 1080p60 from 2560kbps

FIREWALL TRAVERSAL
• Cisco TelePresence Expressway technology
• H.460.18 and H.460.19 firewall traversal
• SIP ICE (Interactive Connectivity Establishment)

VIDEO STANDARDS
• H.261, H.263, H.264+, H.264
• H.265 (5IP)

VIDEO FEATURES
• Advanced screen layouts
• Local auto layout

VIDEO INPUTS (FIVE INPUTS)
Extended Display Identification Data (EDID) HDCP is not supported
Three HDMI inputs; support formats up to maximum 1920 × 1080@60fps, including:
• 1920 × 1080@60, 59.94 Hz (1080p60)
• 1920 × 1080@50Hz (1080p50)
• 1920 × 1080@30, 29.97 Hz (1080p30)
• 1920 × 1080@25Hz (1080p25)
• 1920 × 1080@24, 23.97 Hz (1080p24)
• 1280 × 720@60, 59.94 Hz (720p60)
• 1280 × 720@50Hz (720p50)

Digital (DVI-D); support formats up to maximum 1920 × 1080@60fps, including:
• 1920 × 1080@60, 59.94 Hz (1080p60)
• 1920 × 1080@50Hz (1080p50)
• 1920 × 1080@30, 29.97 Hz (1080p30)
• 1920 × 1080@25Hz (1080p25)
• 1920 × 1080@24, 23.97 Hz (1080p24)
• 1280 × 720@60, 59.94 Hz (720p60)
• 1280 × 720@50Hz (720p50)

VESA Monitor Power Management
Extended Display Identification Data (EDID)

ENCODE/DECODE VIDEO FORMATS
Supports encode/decode video formats up to maximum 1920 × 1080@60fps (HD1080p60), including:
• 176 × 144@30 frames per second (fps) (QCIF)
• 352 × 288@30 fps (CIF)
• 512 × 288@30 fps (w288p)
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• 768 × 448@30 fps (w448p)
• 704 × 576@30fps (4CIF)
• 1024 × 576@30fps (w576p)
• 1280 × 720@30fps (VGA)
• 1024 × 768@30fps (SVGA)

DUAL STREAM
• H.264 (H.263) dual stream
• BFCP (SIP) dual stream
• Support for resolutions up to 1080p30, independent of main stream resolution

• HDMI version 1.4

Cisco TelePresence MX700 and MX800 Administrator Guide

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MULTIPOINT SUPPORT
- Five-way embedded SIP/H.323 MultiPoint, ref. MultiSite
- Cisco Ad-Hoc Conferencing (requires Cisco Unified Communications Manager (CUCM), Cisco TelePresence Server and Conductor)
- Cisco Conferencing Active Control

MULTISITE FEATURES
- Five-way 720p30, three-way and four-way 1080p30
- Full individual audio and video transcoding
- Individual layouts in MultiSite continuous presence
- H.323/SIP/voIP in the same conference
- Support for Presentation (H.239/BFCP) from any participant at resolutions up to 1080p15
- IPv4 and IPv6 support from any site
- IP downspeeding
- Dial in and dial out
- Conference rates up to 10Mbps

PROTOCOLS
- H.323 and SIP (dual call stack support)
- ISDN (requires Cisco TelePresence ISDN Link)

EMBEDDED ENCRYPTION
- H.323 and SIP point-to-point and MultiSite
- Standards-based: H.235 v3 and Advanced Encryption Standard (AES)
- Automatic key generation and exchange
- Supported in dual stream

IP NETWORK FEATURES
- DNS lookup for service configuration
- Differentiated services (QoS)
- IP adaptive bandwidth management (including flow control)
- Auto gatekeeper discovery
- Dynamic playout and lip-sync buffering
- H.245 DTMF tones in H.323
- RFC 4733 DTMF tones in SIP
- Date and time support via NTP
- Packet loss based downspeeding
- URI dialing
- TCP/IP
- DHCP (Dynamic Host Configuration Protocol)
- IEEE 802.1x network authentication
- IEEE 802.1q VLAN
- IEEE 802.1p QoS and class of service
- ClearPath

IPv6 NETWORK SUPPORT
- Dual-stack IPv4 and IPv6 for DHCP, SSH, HTTP, HTTPS, DNS and DiffServ
- Support for static IP address assignment, stateless autoconfiguration and DHCPv6

SECURITY FEATURES
- Management using HTTPS and SSH
- IP administration password
- Administration menu password
- Disable IP services
- Network settings protection

NETWORK INTERFACES
- One LAN/Ethernet (RJ-45) 10/100/1000 Mbps
- Two LAN/Ethernet (RJ-45) interfaces to be used for Cisco TelePresence peripherals

OTHER INTERFACES
- Two USB host (one is in use; one is for future use)
- GPIO

All specifications are subject to change without notice, system specifics may vary.
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April 2017
Supported RFCs

The RFC (Request for Comments) series contains technical and organizational documents about the Internet, including the technical specifications and policy documents produced by the Internet Engineering Task Force (IETF).

CE software supports a range of RFCs, including the following:

- RFC 2782 DNS RR for specifying the location of services (DNS SRV)
- RFC 3261 SIP: Session Initiation Protocol
- RFC 3263 Locating SIP Servers
- RFC 3361 DHCP Option for SIP Servers
- RFC 3550 RTP: A Transport Protocol for Real-Time Applications
- RFC 3711 The Secure Real-time Transport Protocol (SRTP)
- RFC 4091 The Alternative Network Address Types (ANAT) Semantics for the Session Description Protocol (SDP) Grouping Framework
- RFC 4092 Usage of the Session Description Protocol (SDP) Alternative Network Address Types (ANAT) Semantics in the Session Initiation Protocol (SIP)
- RFC 4582 The Binary Floor Control Protocol
- RFC 4733 RTP Payload for DTMF Digits, Telephony Tones and Telephony Signals
- RFC 5245 Interactive Connectivity Establishment (ICE): A Protocol for Network Address Translator (NAT) Traversal for Offer/Answer Protocols
- RFC 5589: SIP Call Control Transfer
- RFC 5766 Traversal Using Relays around NAT (TURN): Relay Extensions to Session Traversal Utilities for NAT (STUN)
User documentation on the Cisco web site

User documentation for the Cisco Collaboration products is available at ➤ http://www.cisco.com/go/telepresence/docs

Choose a product category in the right pane until you find the correct product. These are the paths you have to follow for the different product series:

Collaboration Room Endpoints > Spark Room Kit Series
Collaboration Room Endpoints > TelePresence MX Series
Collaboration Room Endpoints > TelePresence SX Series
Collaboration Desk Endpoints > DX Series

Alternatively, use the following short-links to find the documentation:

➤ http://www.cisco.com/go/roomkit-docs
➤ http://www.cisco.com/go/mx-docs
➤ http://www.cisco.com/go/sx-docs
➤ http://www.cisco.com/go/dx-docs

The documents are organized in the following categories - some documents are not available for all products:

Install and Upgrade > Install and Upgrade Guides
• Installation guides: How to install the product
• Getting started guide: Initial configurations required to get the system up and running
• RCSI guide: Regulatory compliance and safety information

Maintain and Operate > Maintain and Operate Guides
• Getting started guide: Initial configurations required to get the system up and running
• Administrator guide: Information required to administer your product
• Deployment guide for TelePresence endpoints on CUCM: Tasks to perform to start using the video system with the Cisco Unified Communications Manager (CUCM)
• Spare parts overview, Spare parts replacement guides, Cable schemas: Useful information when replacing spare parts

Maintain and Operate > End-User Guides
• User guides: How to use the product
• Quick reference guides: How to use the product
• Physical interface guide: Details about the codec’s physical interface, including the connector panel and LEDs

Reference Guides > Command references
• API reference guides: Reference guide for the Application Programmer Interface (API)

Reference Guides > Technical References
• CAD drawings: 2D CAD drawings with measurements

Configure > Configuration Guides
• In-room control guide: How to design an in-room control panel, and how to use the video system’s API to program the in-room controls
• CE Console user guide: How to use the CE Console application, which provides a graphical interface to advanced customizable features of the video system

Design > Design Guides
• Video conferencing room guidelines: General guidelines for room design and best practice
• Video conferencing room guidelines: Things to do to improve the perceived audio quality

Software Downloads, Release and General Information > Licensing Information
• Open source documentation: Licenses and notices for open source software used in this product

Software Downloads, Release and General Information > Release Notes
• Software release notes
Cisco TelePresence MX700 and MX800

Administrator Guide

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Cisco product security overview

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