Application Programming Interface (API) Reference Guide

Cisco TelePresence SX80
# What’s in this guide?

The top menu bar and the entries in the table of contents are all hyperlinks, just click on them to go to the topic.

We recommend you visit our web site regularly for updated versions of the user documentation.

Go to: [http://www.cisco.com/go/sx-docs](http://www.cisco.com/go/sx-docs)

## Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td>3</td>
</tr>
<tr>
<td>About this guide</td>
<td>4</td>
</tr>
<tr>
<td>Downloading the user documentation</td>
<td>4</td>
</tr>
<tr>
<td>What’s new in CE8.3</td>
<td>5</td>
</tr>
<tr>
<td>What’s new in CE8.2</td>
<td>10</td>
</tr>
<tr>
<td>What’s new in CE8.1</td>
<td>16</td>
</tr>
<tr>
<td>What’s new in CE8.0</td>
<td>20</td>
</tr>
<tr>
<td><strong>About the API</strong></td>
<td>32</td>
</tr>
<tr>
<td>API fundamentals</td>
<td>33</td>
</tr>
<tr>
<td>Connecting to the API</td>
<td>33</td>
</tr>
<tr>
<td>Password</td>
<td>33</td>
</tr>
<tr>
<td>SSH</td>
<td>33</td>
</tr>
<tr>
<td>Telnet</td>
<td>33</td>
</tr>
<tr>
<td>HTTP/HTTPS</td>
<td>33</td>
</tr>
<tr>
<td>Ethernet port</td>
<td>33</td>
</tr>
<tr>
<td>RS-232 / serial connection</td>
<td>34</td>
</tr>
<tr>
<td>API output</td>
<td>35</td>
</tr>
<tr>
<td>The output modes</td>
<td>35</td>
</tr>
<tr>
<td>Using the command line</td>
<td>36</td>
</tr>
<tr>
<td>API commands</td>
<td>36</td>
</tr>
<tr>
<td>Other commands</td>
<td>36</td>
</tr>
<tr>
<td>Command line shortcuts</td>
<td>37</td>
</tr>
<tr>
<td>Searching</td>
<td>37</td>
</tr>
<tr>
<td>Value types and formats</td>
<td>37</td>
</tr>
<tr>
<td>Commands</td>
<td>38</td>
</tr>
<tr>
<td>Configurations</td>
<td>38</td>
</tr>
<tr>
<td>Status</td>
<td>38</td>
</tr>
<tr>
<td>Events</td>
<td>39</td>
</tr>
<tr>
<td>Feedback mechanism</td>
<td>40</td>
</tr>
<tr>
<td>Feedback expressions</td>
<td>40</td>
</tr>
<tr>
<td>Terminal connections</td>
<td>41</td>
</tr>
<tr>
<td><strong>Using HTTP</strong></td>
<td>42</td>
</tr>
<tr>
<td>HTTP XMLAPI Authentication</td>
<td>42</td>
</tr>
<tr>
<td>HTTP XMLAPI Session Authentication</td>
<td>42</td>
</tr>
<tr>
<td>Getting status and configurations</td>
<td>43</td>
</tr>
<tr>
<td>Sending commands and configurations</td>
<td>43</td>
</tr>
<tr>
<td>Using HTTP POST</td>
<td>43</td>
</tr>
<tr>
<td>Feedback from codec over HTTP</td>
<td>44</td>
</tr>
<tr>
<td>Registering for feedback</td>
<td>44</td>
</tr>
<tr>
<td>Translating from terminal mode to XML</td>
<td>45</td>
</tr>
<tr>
<td>Dos and don’ts</td>
<td>46</td>
</tr>
<tr>
<td><strong>xConfiguration commands</strong></td>
<td>47</td>
</tr>
<tr>
<td>Description of the xConfiguration commands</td>
<td>48</td>
</tr>
<tr>
<td><strong>xCommand commands</strong></td>
<td>112</td>
</tr>
<tr>
<td>Description of the xCommand commands</td>
<td>113</td>
</tr>
<tr>
<td><strong>xStatus commands</strong></td>
<td>169</td>
</tr>
<tr>
<td>Description of the xStatus commands</td>
<td>170</td>
</tr>
<tr>
<td><strong>Appendices</strong></td>
<td>223</td>
</tr>
<tr>
<td>About startup scripts</td>
<td>224</td>
</tr>
<tr>
<td>The SystemTools commands</td>
<td>225</td>
</tr>
<tr>
<td>About disconnect cause types</td>
<td>227</td>
</tr>
<tr>
<td>User documentation on the Cisco web site</td>
<td>228</td>
</tr>
</tbody>
</table>
Chapter 1

Introduction
About this guide

This guide introduces you to the Application Programmer Interface (API) for the Collaboration Endpoint software, and serves as a reference guide for the command line commands for the following product:

- Cisco TelePresence SX80

**NOTE**: This guide doesn’t apply to Cisco Spark registered devices. To find more information on Cisco Spark room devices, visit: [https://help.webex.com/](https://help.webex.com/)

Downloading the user documentation

You can download the user documentation from the Cisco web site, go to: [http://www.cisco.com/go/sx-docs](http://www.cisco.com/go/sx-docs)

Guidelines for how to find the documentation on the Cisco web site are included in the [User documentation on the Cisco web site appendix](#).
What’s new in CE8.3

This section provides an overview of the new and changed system settings, and the new features and improvements in the Cisco Collaboration Endpoint software version 8.3 (CE8.3) compared to CE8.2.

The list of new commands includes all changes from CE8.2 to CE8.3.

As CE software is based on TC7, the structure and main functionality remains the same as in TC software.

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


It is important to consider the upgrade requirements of CE8 before upgrading; otherwise upgrading to CE8 can leave you with a non-functioning deployment that requires you to downgrade.

New features and improvements

Control of an external video switch with additional input sources

You can customize our touch user interfaces to include input sources that are connected to third-party external video switches. These external input sources will appear and behave just as a video source that is connected directly to the video system. You don’t have to swap cables or change the physical input source manually.

The number of external input sources you can create depends on how many inputs the video switches allow. Cisco recommends maximum 50 sources.

The video switch must be supported by a third-party control system, for example from Crestron or AMX, which can interact with the video system’s xAPI. It is the control system, not the video system, that controls the video switch.

For more information about how to customize the user interface, and how to use the xAPI to set up this feature, refer to the user guide: http://www.cisco.com/go/in-room-control-docs

ActiveControl in CMS 2.1 hosted conferences

ActiveControl is a SIP-only feature that has been supported for a while for video systems in Cisco TelePresence Server hosted conferences.

From CE8.3 ActiveControl is also supported in CMS 2.1 hosted conferences. It is enabled by default on the video system, and can be used as long as it is supported by the infrastructure as well (auto-negotiation).

New ActiveControl functionality:

- When the video system is muted from the server side, the mute indicator is shown on screen and the microphone’s mute LED is lit.
- Best effort encryption is used by default.
- An automatic layout is introduced as default. Who is shown in the automatic layout is based on recent active speakers.
- Recording status indicator shown on screen.
- ActiveControl functionality available from the Call Control page on the web interface, for example participant list, participant mute indicator, and drop participant button.

Media channel details available in the xAPI

Media channels contains information about audio, video and data for ongoing calls. You can monitor the channel rate, packet loss, jitter, video frame rate, and more from the xAPI.

Sign in to the xAPI as an admin user and run xStatus MediaChannels to see the media channel details. You can also check the media channel status on the Status page in the web interface.

HTTP feedback in JSON format

HTTP feedback can be sent in JSON (JavaScript Object Notation) format for third-party feedback interpreters, as an alternative to XML (eXtensible Markup Language).

TMS uses XML by default, and does not support JSON formatted feedback.
Keypad for DTMF tones available on the web interface
We have added a keypad to the Call Control page of the web interface. The keypad is available when in call, and can be used to send DTMF tones to the far end when required.

Wireless sharing from laptop enabled by default when using Cisco Proximity
The Content sharing from clients service, which allows a laptop to share content to a video system via Proximity, is now enabled by default. The other services (Content sharing to clients and Basic call control) must be explicitly enabled by the administrator.

As before, Proximity mode must be on in order to pair a laptop to a video system through the Cisco Proximity desktop client. Pairing is required before you can use any of the wireless sharing services.

New languages
We have added support for EnglishUK and SpanishLatin to the on-screen display and user interfaces.
xConfiguration changes in CE8.3

**New configurations**
- Audio Microphone Reinforcement Gain
- Audio Microphone Reinforcement Input Microphone [1..8] Mode
- Audio Microphone Reinforcement Output Line [1..8] Mode
- Audio Microphones Mute Enabled
- Peripherals Profile Control Systems
- Video Input Connector [n] DviType

**Configurations that are removed**
- SIP Ice OfferTcpCandidates

**Configurations that are modified**
- GPIO Pin [1..4] Mode
  - OLD: InputMuteMicrophones / InputNoAction / OutputAllCallsEncrypted / OutputInCall / OutputManualState / OutputMicrophonesMuted / OutputPresentationOn / OutputStandbyActive
  - NEW: InputAcceptAllCalls / InputDisconnectAllCalls / InputMuteMicrophones / InputNoAction / OutputAllCallsEncrypted / OutputInCall / OutputManualState / OutputMicrophonesMuted / OutputPresentationOn / OutputStandbyActive
- H323 Encryption Key Size
  - OLD: Default value: Max1024bit
  - NEW: Default value: Min1024bit
- Network [1] *
  - OLD: User role: Admin
  - NEW: User role: Admin, User
- Proximity Services Content Share From Clients
  - OLD: Default value: Disabled
  - NEW: Default value: Enabled
- Standby Boot Action
  - OLD: User role: Admin
  - NEW: User role: Admin, User
- Standby Wakeup Action
  - OLD: User role: Admin
  - NEW: User role: Admin, User
- User Interface/Language
  - Change: English UK and Spanish Latin added to value space
xCommand changes in CE8.3

New commands
Audio Diagnostics MeasureDelay
Call Forward
Provisioning CUCM ExtensionMobility Login
Provisioning CUCM ExtensionMobility Logout
UserInterface Presentation ExternalSource Add
UserInterface Presentation ExternalSource List
UserInterface Presentation ExternalSource Remove
UserInterface Presentation ExternalSource RemoveAll
UserInterface Presentation ExternalSource Select
UserInterface Presentation ExternalSource State Set

Commands that are removed
None

Commands that are modified
Call Resume
OLD: CallId: required
NEW: CallId: optional
HttpFeedback Register
OLD: FeedbackSlot: optional
NEW: FeedbackSlot: required
Format: XML/JASON
Peripherals List
OLD: User role: Admin
NEW: User role: Admin, RoomControl
SystemUnit SoftReset
OLD: User role: Admin
NEW: User role: Admin, User

UserInterface Message Alert Clear
OLD: User role: Admin, User
NEW: User role: Admin, User, RoomControl
UserInterface Message Alert Display
OLD: User role: Admin
NEW: User role: Admin, RoomControl
UserInterface Message Prompt Clear
OLD: User role: Admin, User
NEW: User role: Admin, User, RoomControl
UserInterface Message Prompt Display
OLD: User role: Admin
NEW: User role: Admin, RoomControl
UserInterface Message Prompt Response
OLD: User role: Admin, User
NEW: User role: Admin, User, RoomControl
UserInterface Message TextLine Clear
OLD: User role: Admin, User
NEW: User role: Admin, User, RoomControl
UserInterface Message TextLine Display
OLD: User role: Admin
NEW: User role: Admin, RoomControl
UserManagement User Passphrase Change
OLD: User role: Admin, User
NEW: User role: Admin, User, Audit, RoomControl
xStatus changes in CE8.3

**New statuses**
- HttpFeedback [n] Format
- MediaChannels Call [n] Channel [n] Audio Channels
- MediaChannels Call [n] Channel [n] Audio Mute
- MediaChannels Call [n] Channel [n] Audio Protocol
- MediaChannels Call [n] Channel [n] Direction
- MediaChannels Call [n] Channel [n] Encryption
- MediaChannels Call [n] Channel [n] Netstat Bytes
- MediaChannels Call [n] Channel [n] Netstat ChannelRate
- MediaChannels Call [n] Channel [n] Netstat Jitter
- MediaChannels Call [n] Channel [n] Netstat LastIntervalLost
- MediaChannels Call [n] Channel [n] Netstat LastIntervalReceived
- MediaChannels Call [n] Channel [n] Netstat Loss
- MediaChannels Call [n] Channel [n] Netstat MaxJitter
- MediaChannels Call [n] Channel [n] Netstat Packets
- MediaChannels Call [n] Channel [n] ParticipantId
- MediaChannels Call [n] Channel [n] Type
- MediaChannels Call [n] Channel [n] Video ChannelRole
- MediaChannels Call [n] Channel [n] Video FrameRate
- MediaChannels Call [n] Channel [n] Video Protocol
- MediaChannels Call [n] Channel [n] Video ResolutionX
- MediaChannels Call [n] Channel [n] Video ResolutionY
- Provisioning CUCM ExtensionMobility Enabled
- Provisioning CUCM ExtensionMobility LastLoggedInUserId
- Provisioning CUCM ExtensionMobility LoggedIn

**Statuses that are removed**
- UserInterface OSD Mode

**Statuses that are modified**
- Diagnostics Message [n] Type
  - **Changed**: ControlSystemConnection and AudioECRefDelay added to value space
- NetworkServices NTP Status
  - **OLD**: Discarded / Synced / NotSynced / Unknown
  - **NEW**: Discarded / Synced / NotSynced / Unknown / Off
What's new in CE8.2

This section provides an overview of the new and changed system settings, and the new features and improvements in the Cisco Collaboration Endpoint software version 8.2 (CE8.2) compared to CE8.1.

The list of new commands includes all changes from CE8.0 to CE8.2.

As CE software is based on TC7, the structure and main functionality remains the same as in TC software.

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


It is important to consider the upgrade requirements of CE8 before upgrading, otherwise upgrading to CE8 can leave you with a non-functioning deployment that requires you to downgrade.

New features and improvements

**LDAP user management**

In CE8.2, you can register users with ADMIN role from an external LDAP service to grant them access to the video system’s web interface and API. This allows for centralized management of ADMIN users. The LDAP server can be configured from the web interface. Authenticating users with the USER role using LDAP is not supported.

LDAP configuration can be set from CUCM. If the video system requires a certificate for login from LDAP, it must be uploaded to the codec manually as CUCM is unable to provision certificates.

**Administrator credentials not needed for remote pairing to a Touch 10**

You no longer need to enter administrator credentials when you remote pair a Touch 10 controller to a video system. All user credentials can be used for this purpose. The administrator doesn't have to visit the site or provide administrator credentials in order to pair or re-pair a touch controller to a video system.

Un-pairing the Touch 10 controller and changing advanced settings still require admin credentials.

**Additional entry points for in-room controls**

In-room controls now have an option for multiple panels that are available depending on the context. This provides more flexibility to add multiple panels for various tasks instead of putting all actions into one panel.

There are now three entry points available for in-room controls: Global (introduced in CE8.1), Homescreen and In-Call. The Homescreen entry point is located on the home screen icon tray, next to the Dial, Contacts, and Share buttons. The In-Call entry point is located in the icon tray, and is accessible when the video system is in a call.

New panel icons have been added.

**Cisco Spark support**

CE8.2 introduces support for Cisco Spark activation for SX10 (CTS-SX10-K9), SX20, SX80, MX200 G2, MX300 G2, MX700, MX800, MX800D, DX70 and DX80. A video system registered to the Cisco Spark service can be used together with Cisco Spark mobile and desktop applications.

To register to Cisco Spark:

- Touch 10 must be directly paired (Touch 10 is not supported for Spark registered SX10N, SX10, SX20, DX70 and DX80)
- Encryption Option key must be installed (Does not apply to DX70 and DX80)

When the video system is activated on Cisco Spark, it downloads the newest version of Cisco Spark Room OS. Cisco Spark Room OS does not have the same management capabilities as Collaboration Endpoint Software as its web and command line interfaces are locked. The Room System is managed by Cisco and if there are any issues, contact Cisco Technical Assistance center through the Cisco Spark mobile application or from the management portal.

For more information on the Cisco Spark Room OS and its features see: https://help.webex.com/
Cisco Proximity updates

The application name has changed from Proximity to Cisco Proximity.

The latest release includes the following improvements:

- First time use tutorial for desktop application
- Updated look for the user interface
- Improved pairing experience
- Increased visibility on the user’s desktop
- Better information and handling of failure scenarios
- Link to support forums on the client

The Cisco Proximity clients for smartphones and tablets (Android and iOS), and laptops (Windows and OS X) can be downloaded from [http://proximity.cisco.com](http://proximity.cisco.com). Clients for smartphones and tablets are also available through Google Play (Android) and Apple App Store (iOS).

Touch 10 user interface changes

A visual update has been applied to the Setup and Pairing Wizard on the Touch 10. The Touch 10 has a new GUI when registered to Cisco Spark, which is similar to the Cisco TelePresence SX10 on-screen user interface. If the endpoint is registered to on-premise infrastructure, the Touch 10 controller has the same user interface as CE8.1.

Default option keys removed

Option keys for features that have become default on all Cisco TelePresence video systems are now removed. The functionalities provided by these options are still present, but the keys are no longer needed.

Removed option keys:

- PremiumResolution
- NaturalPresenter
- DualDisplay
- HighDefinition

Option keys that are still available:

- Encryption
- MultiSite
- RemoteMonitoring

New user role: “RoomControl”

The “RoomControl” user role is added to provide non-admin users or integrators access to the In-Room control editor. The “RoomControl” role can be assigned when a new non-admin user is created from the codec’s web interface.

Added language support

We have added support for Canadian French (Français – Canada) to the on-screen display and Touch controller menus.
xConfiguration changes in CE8.2

New configurations
- Peripherals Profile Cameras
- UserManagement LDAP Mode
- UserManagement LDAP Server Address
- UserManagement LDAP Server Port
- UserManagement LDAP Encryption
- UserManagement LDAP MinimumTLSVersion
- UserManagement LDAP VerifyServerCertificate
- UserManagement LDAP Admin Filter
- UserManagement LDAP Admin Group
- UserManagement LDAP Attribute
- UserManagement LDAP BaseDN

Configurations that are modified
- Conference DefaultCall Protocol
  - OLD: <Auto / H320 / H323 / Sip>
  - NEW: <Auto / H320 / H323 / Sip / Spark>
- Conference MaxTotalReceiveCallRate
  - OLD: Integer (64..10000)
  - Default value: 10000
  - NEW: Integer (64..6000)
  - Default value: 6000
- Conference MaxTotalTransmitCallRate
  - OLD: Integer (64..10000)
  - Default value: 10000
  - NEW: Integer (64..6000)
  - Default value: 6000
- NetworkServices NTP Server [1..3] Address
  - OLD: String (0, 64)
  - NEW: String (0, 255)
- Phonebook Server [1] Type
  - OLD: CUCM / Off / TMS / VCS
  - NEW: CUCM / Off / Spark / TMS / VCS
- Provisioning Connectivity
  - OLD: User Role: ADMIN
  - NEW: User Role: ADMIN, USER
- Provisioning ExternalManager Address
  - OLD: User Role: ADMIN
  - NEW: User Role: ADMIN, USER
- Provisioning ExternalManager AlternateAddress
  - OLD: User Role: ADMIN
  - NEW: User Role: ADMIN, USER
- Provisioning ExternalManager Domain
  - OLD: User Role: ADMIN
  - NEW: User Role: ADMIN, USER
- Provisioning ExternalManager Path
  - OLD: User Role: ADMIN
  - NEW: User Role: ADMIN, USER
- Provisioning ExternalManager Protocol
  - OLD: User Role: ADMIN
  - NEW: User Role: ADMIN, USER
- Provisioning HttpMethod
  - OLD: User Role: ADMIN
  - NEW: User Role: ADMIN, USER
- Provisioning LoginName
  - OLD: User Role: ADMIN
  - NEW: User Role: ADMIN, USER
Provisioning Mode

OLD: Auto / CUCM / Edge / Off / TMS / VCS
User Role: ADMIN

NEW: Auto / CUCM / Edge / Off / Spark / TMS / VCS
User Role: ADMIN, USER

Proximity Mode

OLD: User Role: ADMIN

NEW: User Role: ADMIN, USER

Proximity Services CallControl

OLD: User Role: ADMIN

NEW: User Role: ADMIN, USER

Proximity Services ContentShare FromClients

OLD: User Role: ADMIN

NEW: User Role: ADMIN, USER

Proximity Services ContentShare ToClients

OLD: User Role: ADMIN

NEW: User Role: ADMIN, USER

Time Zone

Change: The list of time zones is updated. The information in the value space is from the tz database, also called the IANA Time Zone Database.

User Interface Language

OLD: Arabic / Catalan / ChineseSimplified / ChineseTraditional / Czech / Danish / Dutch / English / Finnish / French / German / Hebrew / Hungarian / Italian / Japanese / Korean / Norwegian / Polish / PortugueseBrazilian / Russian / Spanish / Swedish / Turkish

NEW: Arabic / Catalan / ChineseSimplified / ChineseTraditional / Czech / Danish / Dutch / English / Finnish / French / FrenchCanadian / German / Hebrew / Hungarian / Italian / Japanese / Korean / Norwegian / Polish / PortugueseBrazilian / Russian / Spanish / Swedish / Turkish

Video Input Connector [n] InputSourceType

OLD: PC / camera / document_camera / mediaplayer / other / whiteboard

NEW: PC / camera / desktop / document_camera / mediaplayer / other / whiteboard

Video Input Connector [n] PresentationSelection

OLD: AutoShare / Manual / OnConnect

NEW: AutoShare / Desktop / Manual / OnConnect
xCommand changes in CE8.2

New commands
Audio VuMeter Start
Audio VuMeter Stop
Audio VuMeter StopAll
Security Session List
Security Session Terminate

Commands that are modified
Dial
OLD: Protocol: <H320 / H323 / Sip>
NEW: Protocol: <H320 / H323 / Sip / Spark>

Peripherals Connect
OLD: Role: <User;Admin>
NEW: Role: <User;Admin;RoomControl>

Peripherals HeartBeat
OLD: Role: <User;Admin>
NEW: Role: <User;Admin;RoomControl>

Peripherals Pairing Unpair
OLD: Role: <Admin>
NEW: Role: <User;Admin>

Phonebook Contact Add
OLD: Protocol: <Auto / H320 / H323 / Sip>
NEW: Protocol: <Auto / H320 / H323 / Sip / Spark>

Phonebook ContactMethod Add
OLD: Protocol: <Auto / H320 / H323 / Sip>
NEW: Protocol: <Auto / H320 / H323 / Sip / Spark>

Phonebook ContactMethod Modify
OLD: Protocol: <Auto / H320 / H323 / Sip>
NEW: Protocol: <Auto / H320 / H323 / Sip / Spark>

SystemUnit FactoryReset
OLD: Role: <Admin>
NEW: Role: <User;Admin>

SystemUnit OptionKey Remove
OLD: Type: <Encryption / MultiSite / PremiumResolution / RemoteMonitoring>
NEW: Type: <Encryption / MultiSite / RemoteMonitoring>

Time DateTime Set
OLD: Role: <Admin>
NEW: Role: <User;Admin>

UserInterface Extensions Clear
OLD: Role: <Admin>
NEW: Role: <Admin;RoomControl>

UserInterface Extensions List
OLD: Role: <User;Admin>
NEW: Role: <User;Admin;RoomControl>

UserInterface Extensions Widget SetValue
OLD: Role: <Admin>
NEW: Role: <Admin;RoomControl>

UserInterface Extensions Widget UnsetValue
OLD: Role: <Admin>
NEW: Role: <Admin;RoomControl>
xStatus changes in CE8.2

New statuses
SystemUnit Hardware Module CompatibilityLevel
Video Layout LayoutFamily Local
Video Layout LayoutFamily Remote

Statuses that are removed
SystemUnit Software OptionKeys PremiumResolution

Statuses that are modified
Call [n] Protocol
   OLD: <H320 / H323 / SIP / Spark>
   NEW: <Unknown / H320 / H323 / SIP / Spark>
Cameras SpeakerTrack LeftCamera VideoInputConnector
   OLD: <0 / 1 / 2 / 3>
   NEW: <0 / 1 / 2 / 3 / 4 / 5>
Cameras SpeakerTrack RightCamera VideoInputConnector
   OLD: <0 / 1 / 2 / 3>
   NEW: <0 / 1 / 2 / 3 / 4 / 5>

Diagnostics Message [n] Type
   OLD: <CAPFOperationState / CTTInstallation / CUCMVendorConfigurationFile
        / CallProtocolDualStackConfig / CallProtocolIPStackPlatformCompatibility / 
        CallProtocolVcs ProvisioningCompatibility / Camerad / CameraPairing / CameraSerial
        / CameraSoftwareVersion / CameraStatus / CamerasDetected / ConfigurationFile / 
        DefaultCallProtocolRegistered / EthernetDuplexMatches / FanStatus / PresenterTrack / 
        H320GatewayStatus / H323GatekeeperStatus / HasValidReleaseKey / IpCameraStatus / 
        IPv4Assignment / IPv6Assignment / IPv6MtU / ISDNLinkCompatibility / ISDNLinkIpStack
        / ALLInstallation / InvalidSIPTransportConfig / LockDown / RoomControl / 
        MediaBlockingDetected / NetLinkStatus / NetSpeedAutoNegotiated / NetworkQuality
        / NTPStatus / OSDVideoOutput / OutputConnectorLocations / ProvisioningStatus / 
        SIPEncryption / SIPListenPortAndOutboundMode / SIPProfileRegistration / SIPProfileType
        / SelectedVideoInputSourceConnected / SipiceAndAnatConflict / TCPMediaFallback / 
        TemperatureCheck / TLSVerifyRequiredCerts / TouchPanelConnection / TurnBandwidth
        / UdpPortRangeViolation / UltrasoundSpeakerAvailability / ValidPasswords / 
        VideoFromInternalCamera / VideoInputStability / SparkSoftwareCompatibility
        / SparkConnectivity / SpeakerTrackFrontPanelMountedCorrectly />
        SpeakerTrackMicrophoneConnection / SpeakerTrackVideoInputPuts /
        SpeakerTrackEthernetConnection / ANAToVCS / EReferenceDelay / AudioPairingNoise / 
        AudioPairingRate / AudioPairingSNR / AudioPairingInterference / AudioPairingTokenDecode
        / AudioInternalSpeakerDisabled / AbnormalCallTermination / HasActiveCallProtocol /
        IpOrH323ButNotBothEnabled / PresentationSourceSelection / SoftwareUpgrade / 
        PlatformSanity / ContactInfoMismatch / ProximityContentShareToClientsWithMultistream>
   NEW: <CAPFOperationState / CTTInstallation / CUCMVendorConfigurationFile
        / CallProtocolDualStackConfig / CallProtocolIPStackPlatformCompatibility / 
        CallProtocolVcs ProvisioningCompatibility / Camerad / CameraPairing / CameraSerial
        / CameraSoftwareVersion / CameraStatus / CamerasDetected / ConfigurationFile / 
        DefaultCallProtocolRegistered / EthernetDuplexMatches / FanStatus / PresenterTrack / 
        H320GatewayStatus / H323GatekeeperStatus / HasValidReleaseKey / IpCameraStatus / 
        IPv4Assignment / IPv6Assignment / IPv6MtU / ISDNLinkCompatibility / ISDNLinkIpStack
        / ALLInstallation / InvalidSIPTransportConfig / LockDown / RoomControl / 
        MediaBlockingDetected / NetLinkStatus / NetSpeedAutoNegotiated / NetworkQuality
        / NTPStatus / OSDVideoOutput / OutputConnectorLocations / ProvisioningStatus / 
        SIPEncryption / SIPListenPortAndOutboundMode / SIPProfileRegistration / SIPProfileType
        / SelectedVideoInputSourceConnected / SipiceAndAnatConflict / TCPMediaFallback / 
        TemperatureCheck / TLSVerifyRequiredCerts / TouchPanelConnection / TurnBandwidth
        / UdpPortRangeViolation / UltrasoundSpeakerAvailability / ValidPasswords / 
        VideoFromInternalCamera / VideoInputStability / SparkSoftwareCompatibility
        / SparkConnectivity / SpeakerTrackFrontPanelMountedCorrectly />

NetworkServices NTP Status
   OLD: <Discarded / Synced / Unknown>
   NEW: <Discarded / Synced / NotSynced / Unknown>
What’s new in CE8.1

This section provides an overview of the new and changed system settings, and the new features and improvements in the Cisco Collaboration Endpoint software version 8.1 (CE8.1) compared to CE8.0.

The list of new commands includes all changes from CE8.0 to CE8.1.

As CE software is based on TC7, the structure and main functionality remains the same as in TC software.

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


It is important to consider the upgrade requirements of CE8 before upgrading; otherwise upgrading to CE8 can leave you with a non-functioning deployment that requires you to downgrade.

New features and improvements

In-Room Control
With the In-Room Control feature you can customize the Touch 10 user interface to allow control of peripherals in your meeting room, for example lights and blinds. You get a consistent user experience when the video system and other peripherals in the room are controlled from the same device.

You can create the user interface extensions for Touch 10 with the In-Room Control Editor. This is an easy to use drag-and-drop editor that you launch from the video system’s web interface. You can also work offline with a stand-alone version of the editor. The editor is available free of charge; no option key is required.

A third-party control system with hardware drivers for the peripherals, for example Crestron, AMX, Apple HomeKit, or Android is required to control the peripherals. The control system connects to the video system’s API, listens for events and executes the programmed actions.

For more information about setting up the In-Room control feature, refer to the user guide:

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

User interface update
A new visual design for the Touch 10 user interface is introduced.

PresenterTrack
You can enable PresenterTrack to automatically zoom in on and follow a presenter while they are moving around in a pre-configured tracking area.

This feature is configured from the video system’s web interface while being present in the room. Select a trigger zone, the area in the overview image that activates PresenterTrack when a person is detected.

PresenterTrack can be enabled on any video system that has a SpeakerTrack 60 or Precision 60 camera connected. SpeakerTrack is temporarily disabled while PresenterTrack is active.

Change in audio only avatar behavior
Full screen avatar for audio only participants has been removed. The audio only participants continue to be visible in the filmstrip during a call.

Intelligent Proximity updates
Sharing a presentation with Cisco Intelligent Proximity desktop application renders the laptop’s mouse pointer on screen. This feature requires the latest version of Cisco Intelligent Proximity for Desktop together with CE8.1.

Direct content sharing
You can configure a video system to automatically share a presentation with the far-end participants when connecting a presentation source during a call. In previous software versions sharing a presentation with the far-end always required you to manually select “Share” with the Touch controller.

If a presentation source is already connected when a call starts, you must manually select “Share” to share the presentation with the far-end.

For further details, refer to xConfiguration Video Input Connector [n] PresentationSelection.
xConfiguration changes in CE8.1

**New configurations**
- Audio Input HDMI [n] VideoAssociation MuteOnInactiveVideo
- Audio Output Line [n] Delay DelayMs
- Audio Output Line [n] Delay Mode
- Cameras Camera [n] Flip
- NetworkServices HTTPS VerifyClientCertificate
- NetworkServices HTTPS VerifyServerCertificate
- SIP Ice OfferTcpCandidates

**Configurations that are removed**
- None

**Configurations that are modified**

All configurations that were associated with the USER user role in CE8.0, are now associated with both the USER and ADMIN user roles. So all configurations that were designated for the USER user role, are now included with the ADMIN role too.

- **OLD:** User role: USER
  - **NEW:** User role: USER, ADMIN
- **Conference DefaultCall Rate**
  - **OLD:** Default value: 1920
  - **NEW:** Default value: 3072
- **Conference DoNotDisturb DefaultTimeout**
  - **OLD:** Integer (0..1440)
  - **NEW:** Integer (1..1440)
- **SIP DisplayName**
  - **OLD:** String (0, 255)
  - **NEW:** String (0, 550)
- **Time Zone**
  - **Change:** The list of time zones is updated. The information in the value space is from the tz database, also called the IANA Time Zone Database.
- **UserInterface OSD Output**
  - **OLD:** Default value: 1
  - **NEW:** Default value: Auto
- **Video Input Connector [n] PresentationSelection**
  - **OLD:** <Manual / OnConnect>
  - **NEW:** <AutoShare / Manual / OnConnect>
xCommand changes in CE8.1

**New commands**
- Bookings Get
- Cameras PresenterTrack ClearPosition
- Cameras PresenterTrack Set
- Cameras PresenterTrack StorePosition
- SystemUnit OptionKey List
- SystemUnit SoftReset
- UserInterface Extensions Clear
- UserInterface Extensions List
- UserInterface Extensions Widget SetValue
- UserInterface Extensions Widget UnsetValue
- Video PresentationView Set

**Commands that are removed**
- Provisioning CUCM CTL Delete
- Provisioning CUCM CTL Show

**Commands that are modified**
All commands that were associated with the USER user role in CE8.0, are now associated with both the USER and ADMIN user roles. So all commands that were designated for the USER user role, are now included with the ADMIN role too.

**Camera Position Control**

<table>
<thead>
<tr>
<th>Old</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pan: &lt;-65535 – 65535&gt;</td>
<td>Pan: &lt;-10000 – 10000&gt;</td>
</tr>
<tr>
<td>Tilt: &lt;-65535 – 65535&gt;</td>
<td>Tilt: &lt;-2500 – 2500&gt;</td>
</tr>
<tr>
<td>Zoom: &lt;0-65535&gt;</td>
<td>Zoom: &lt;0-8000&gt;</td>
</tr>
</tbody>
</table>

**Conference DoNotDisturb Activate**

<table>
<thead>
<tr>
<th>Old</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timeout: &lt;0 – 1440&gt;</td>
<td>Timeout: &lt;1 – 1440&gt;</td>
</tr>
</tbody>
</table>

**SystemUnit SoftwareUpgrade**

<table>
<thead>
<tr>
<th>Old</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forced &lt;False/True&gt;</td>
<td>Forced &lt;False/True&gt;</td>
</tr>
</tbody>
</table>
xStatus changes in CE8.1

**New statuses**

- Audio Output Connectors Line[n] DelayMs
- Bookings Current Id
- SystemUnit Software DisplayName
- UserInterface Extensions Widget[n] Value
- UserInterface Extensions Widget[n] WidgetId

**Statuses that are removed**

- SIP Proxy[n] Secure
- SIP Proxy[n] Verified

**Statuses that are modified**

- Diagnostics Message[n] Type
  - OLD: <CAPFOperationState/CTLinstallation/CUCMVendorConfigurationFile/CallProtocolDualStackConfig/CallProtoColIPStackPlatformCompatibility/CallProtocolVs provisioningCompatibility/CameraId/CameraPairing/CameraSerial/CameraSoftwareVersion/CameraStatus/CamerasDetected/ConfigurationFile/DefaultCallProtocolRegistered/EthernetDuplexMatches/FanStatus/FanStatus/HasValidReleaseKey/IpCameraStatus/IPv4Assignment/IPv6Assignment/IPv6MtulISDNLinkCompatibility/ISDNLinkIpStack/ITLinstallation/InvalidSIPTransportConfig/LockDown/NetLinkStatus/NetSpeedAutoNegotiated/NTPStatus/OSDVideoOutput/OutputConnectorLocations/ProvisioningStatus/SIPEncryption/SIPListenPortAndOutboundMode/SIPProfileRegistration/SIPProfileType/SelectedVideoInputSourceConnected/SipIceAndAnatConflict/TemperatureCheck/TLSVerifyRequiredCerts/TouchPanelConnection/TurnBandwidth/UdpPortRangeViolation/ValidPasswords/VideoFromInternalCamera/VideoInputStability/SparkSoftwareCompatibility/SparkConnectivity/SpeakerTrackFrontPanelMountedCorrectly/SpeakerTrackMicrophoneConnection/SpeakerTrackVideoInputs/SpeakerTrackEthernetConnection/ANATOnVCS/ECReferenceDelay/AudioPairingNoise/AudioPairingRate/AudioPairingSNR/AudioPairingInterference/AudioPairingTokenDecode/AudioInternalSpeakerDisabled/AbnormalCallTermination/HasActiveCallProtocol/SipOrH323ButNotBothEnabled/PresentationSourceSelection/SoftwareUpgrade/PlatformSanity/ContactInfoMismatch/ProximityContentShareToClientsWithMultistream>
  - NEW: <CAPFOperationState/CTLinstallation/CUCMVendorConfigurationFile/CallProtocolDualStackConfig/CallProtocolIPStackPlatformCompatibility/CallProtocolVs provisioningCompatibility/CameraId/CameraPairing/CameraSerial/CameraSoftwareVersion/CameraStatus/CamerasDetected/ConfigurationFile/DefaultCallProtocolRegistered/EthernetDuplexMatches/FanStatus/FanStatus/HasValidReleaseKey/IpCameraStatus/IPv4Assignment/IPv6Assignment/IPv6MtulISDNLinkCompatibility/ISDNLinkIpStack/ITLinstallation/InvalidSIPTransportConfig/LockDown/RoomControl/MediaBlockingDetected/NetLinkStatus/NetSpeedAutoNegotiated/NetworkQuality/NTPStatus/OSDVideoOutput/OutputConnectorLocations/ProvisioningStatus/SIPEncryption/SIPListenPortAndOutboundMode/SIPProfileRegistration/SIPProfileType/SelectedVideoInputSourceConnected/SipIceAndAnatConflict/TCPMediaFallback/TemperatureCheck/TLSVerifyRequiredCerts/TouchPanelConnection/TurnBandwidth/UdpPortRangeViolation/ValidPasswords/VideoFromInternalCamera/VideoInputStability/SparkSoftwareCompatibility/SparkConnectivity/SpeakerTrackFrontPanelMountedCorrectly/SpeakerTrackMicrophoneConnection/SpeakerTrackVideoInputs/SpeakerTrackEthernetConnection/ANATOnVCS/ECReferenceDelay/AudioPairingNoise/AudioPairingRate/AudioPairingSNR/AudioPairingInterference/AudioPairingTokenDecode/AudioInternalSpeakerDisabled/AbnormalCallTermination/HasActiveCallProtocol/SipOrH323ButNotBothEnabled/PresentationSourceSelection/SoftwareUpgrade/PlatformSanity/ContactInfoMismatch/ProximityContentShareToClientsWithMultistream>

- Standby State
  - OLD: <Standby/Off>
  - NEW: <Standby/EnteringStandby/Off>

- Video Monitors
  - OLD: <Dual/DualPresentationOnly/Quadruple/Single/Triple>
  - NEW: <Dual/DualPresentationOnly/Quadruple/Single/Triple/TriplePresentationOnly>
What's new in CE8.0

This section provides an overview of the new and changed system settings, and the new features and improvements in the Cisco Collaboration Endpoint software version 8.0 (CE8.0) compared to TC7.3.

As CE software is based on TC7, the structure and main functionality remains the same as in TC software.

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


It is important to consider the upgrade requirements of CE8 before upgrading; otherwise upgrading to CE8 can leave you with a non-functioning deployment that requires you to downgrade.

New features and improvements

Products

CE8.0 supports the following products:

- MX200 G2
- MX300 G2
- MX700
- MX800
- SX10 Quick Set
- SX20 Quick Set
- SX80

Cisco TelePresence products in EX Series, C Series, and Profile Series are not supported in CE software; use software version TC7.3 or earlier for these products.

User interfaces

Products running CE software, must use the following user interfaces:

- Touch 10 controller, available for all products.
- TRC6 remote control, available for SX10 and SX20.

Touch 8 controller and remote control TRC5 are not supported.

API changes

The number of API commands has been reduced. Some commands have been removed entirely while others are different syntactically to cater for underlying architectural changes.

It is important to consider that current integrations that use the API are likely to need to be reprogrammed in order to work with the new API.

The full list of the changes, as well as a list of new commands are available in this chapter.

Intelligent Proximity for content sharing

Cisco Proximity allows you to automatically pair your device (smartphone, tablet, or laptop) with the video system when the device comes within range. This feature is disabled by default.

Cisco Proximity offers three services: Content sharing to clients, content sharing from clients and basic call control. These services are disabled by default.

The Cisco Proximity clients for smartphones and tablets (Android and iOS), and laptops (Windows and OS X) can be downloaded from http://proximity.cisco.com. Clients for smartphones and tablets are also available through Google Play (Android) and Apple App Store (iOS).

Multistream

The Multistream feature enables the video system to send and receive multiple streams of video in different resolutions simultaneously. The video systems compose layouts locally, to better adapt the layout to all available screens.

While in a conference with multiple participants, this feature enhances the user experience in terms of layout control. A multi-screen system is able to utilize all screens when participating in a Multistream enabled conference, and the layout is improved when presenting and sharing content on all systems.

In this release Multistream is switched Off by default. We recommend the Cisco UCM 11.0.0 and later, and the latest versions of TelePresence Server and TelePresence Conductor for optimal experience.
Microphone LED behavior

The LED behavior on microphones and Touch 10 has changed. The microphone LED glows and the mute button is active in the following scenarios:

- When initiating an outgoing call and until the call is disconnected.
- When receiving an incoming call and until the call is disconnected.
- When activating the VU meter on the web interface to test the audio levels.

The color indications, green for active and red for muted, have not changed.

Resolution changes

Collaboration Endpoint Software only supports displays that support 16:9 or 16:10 resolutions.

Supports WUXGA (1920 × 1200) presentation sharing both locally and in a call.

Remote monitoring

For increased security, it is only possible to take snapshots of the local and far end video streams from the video system’s web interface, when a Remote Monitoring option key is installed on the video system.

Remote monitoring is enabled once the option key is added, and the video system is rebooted.

No warning messages or indicators are sent to the users of the video system. Please provide adequate notice to the users that the system administrator may monitor and control the camera and screen.

Removed features

- MultiWay is no longer supported. CUCM ad hoc conferencing or hosted conferences may be used instead.
- Cisco CTMS is no longer supported. Other multipoint conferencing solutions (involving Cisco TelePresence Server, Cisco TelePresence MCU, and/or Cisco TelePresence Conductor) may be used instead.
- Custom video layouts and video composition using TC Console is not supported.
- MediaNet is no longer supported.
xConfiguration changes in CE8.0

New configurations
Conference MultiStream Mode
Proximity Mode
Proximity Services CallControl
Proximity Services ContentShare FromClients
Proximity Services ContentShare ToClients
Video DefaultMainSource

Configurations that are removed
<path> * means that all configurations starting with <path> are removed.
Audio Input HDMI [n] VideoAssociation MuteOnInactiveVideo
Audio Input HDMI [n] VideoAssociation VideoInputSource
Audio Microphones Mute Enabled
Cameras Camera [n] DHCP
Cameras Camera [n] Flip
Cameras Camera [n] IrSensor
Cameras Camera [n] MotorMoveDetection
Cameras PowerLine Frequency
Conference [1] ActiveControl Mode
Conference [1] CallProtocolIPStack
Conference [1] FarEndControl SignalCapability
Conference [1] IncomingMultisiteCall Mode
Conference [1] Multipoint Mode
Conference [1] Presentation *
Conference [1] VideoBandwidth *
Experimental *
FacilityService *
H323 Profile [1] Gatekeeper Discovery
H323 Profile [1] PortAllocation
Logging Mode
Network [1] DHCP RequestTFTPServerAddress
Network [1] TrafficControl Mode
NetworkServices CTMS Encryption
NetworkServices CTMS Mode
NetworkServices HTTPS Mode
NetworkServices HTTPS OCSP *
NetworkServices HTTPS VerifyClientCertificate
NetworkServices HTTPS VerifyServerCertificate
NetworkServices Medianet Metadata
NetworkServices MultiWay *
NetworkServices SSH AllowPublicKey
NetworkServices XMLAPI Mode
Peripherals Pairing *
RTP *
Security *
SIP ANAT
SIP AuthenticateTransfererr
SIP OCSP *
SIP PreferredIPMedia
SIP PreferredIPSignaling
SIP Profile [1] Line
SIP Profile [1] Mailbox
SIP Profile [1] Outbound
SIP Profile [1] Proxy [n] Discovery
SIP Profile [1] TlsVerify
SIP Profile [1] Turn BandwidthProbe
SIP Profile [1] Turn DiscoverMode
SIP Profile [1] Turn DropRflx
SIP Profile [1] Type
SystemUnit CallLogging Mode
SystemUnit IrSensor
SystemUnit MenuLanguage
Time OlsonZone
UserInterface OSD EncryptionIndicator
UserInterface OSD LanguageSelection
UserInterface OSD LoginRequired
UserInterface TouchPanel DefaultPanel
UserInterface UserPreferences
UserInterface Wallpaper
Video AllowWebSnapshots
Video Input Connector [n] DviType
Video Input Connector [n] OptimalDefinition *
Video Input Connector [n] RGBQuantizationRange
Video Input Connector [n] SignalType
Video Layout DisableDisconnectedLocalOutputs
Video Layout LocalLayoutFamily
Video Layout PresentationDefault View
Video Layout RemoteLayoutFamily
Video Layout ScaleToFrame
Video Layout ScaleToFrameThreshold
Video Layout Scaling

Video OSD EncryptionIndicator
Video OSD LanguageSelection
Video OSD LoginRequired
Video OSD Output
Video Output Connector [n] Location HorizontalOffset
Video Output Connector [n] Location VerticalOffset
Video Output Connector [n] RGBQuantizationRange
Video PIP *
Video Wallpaper

Configurations that are modified

Cameras SpeakerTrack TrackingMode
  OLD: <Default / Fast>
  Default value: Default
  NEW: <Auto / Conservative>
  Default value: Auto

Cameras SpeakerTrack Whiteboard Mode
  OLD: Required user role: ADMIN
  NEW: Required user role: USER

NetworkServices HTTP Mode
  OLD: <Off / On>
  Default value: On
  NEW: <Off / HTTP+HTTPS / HTTPS>
  Default value: HTTP+HTTPS

Phonebook Server[n] Type
  OLD: <VCS / TMS / Callway / CUCM>
  Default value: TMS
  NEW: <Off / VCS / TMS / CUCM>
  Default value: Off

Provisioning Mode
  OLD: <Off / TMS / VCS / Callway / CUCM / Auto / Edge>
  NEW: <Off / TMS / VCS / CUCM / Auto / Edge>
Standby BootAction

OLD: <None / Preset1 / Preset2 / Preset3 / Preset4 / Preset5 / Preset6 / Preset7 / Preset8 / Preset9 / Preset10 / Preset11 / Preset12 / Preset13 / Preset14 / Preset15 / RestoreCameraPosition / DefaultCameraPosition>
NEW: <None / RestoreCameraPosition / DefaultCameraPosition>

Standby WakeupAction

OLD: <None / Preset1 / Preset2 / Preset3 / Preset4 / Preset5 / Preset6 / Preset7 / Preset8 / Preset9 / Preset10 / Preset11 / Preset12 / Preset13 / Preset14 / Preset15 / RestoreCameraPosition / DefaultCameraPosition>
NEW: <None / RestoreCameraPosition / DefaultCameraPosition>

Time Zone

Change: The list of time zones is updated. The information in the value space is from the tz database, also called the IANA Time Zone Database.

Video Input Connector [n] InputSourceType

OLD: <other / camera / PC / DVD / document_camera / whiteboard>
NEW: <other / camera / PC / mediaplayer / document_camera / whiteboard>

Video Input Connector [n] PresentationSelection

OLD: <Manual / Automatic / OnConnect>
NEW: <Manual / OnConnect>

Video Output Connector [n] MonitorRole

OLD: <Auto / First / Second / PresentationOnly / Third>
NEW: <Auto / First / Second / PresentationOnly / Third / Recorder>

Video Output Connector [n] Resolution

OLD: <Auto / 1280_720_50 / 1280_720_60 / 1920_1080_50 / 1920_1080_60>
NEW: <Auto / 1280_720_50 / 1280_720_60 / 1920_1080_50 / 1920_1080_60 / 1920_1200_50 / 1920_1200_60>

Configurations that are renamed

Audio SoundsAndAlerts KeyTones Mode

Renamed to: UserInterface KeyTones Mode

Cameras Camera [n] Backlight

Renamed to: Cameras Camera [n] Backlight DefaultMode

Cameras Camera [n] Brightness Level

Renamed to: Cameras Camera [n] Brightness DefaultLevel

Conference [1] AutoAnswer Delay

Renamed to: Conference AutoAnswer Delay

Conference [1] AutoAnswer Mode

Renamed to: Conference AutoAnswer Mode

Conference [1] AutoAnswer Mute

Renamed to: Conference AutoAnswer Mute

Conference [1] DefaultCall Protocol

Renamed to: Conference DefaultCall Protocol

Conference [1] DefaultCall Rate

Renamed to: Conference DefaultCall Rate

Conference [1] DoNotDisturb DefaultTimeout

Renamed to: Conference DoNotDisturb DefaultTimeout

Conference [1] Encryption Mode

Renamed to: Conference Encryption Mode

Conference [1] FarEndControl Mode

Renamed to: Conference FarEndControl Mode

Conference [1] MaxReceiveCallRate

Renamed to: Conference MaxReceiveCallRate

Conference [1] MaxTotalReceiveCallRate

Renamed to: Conference MaxTotalReceiveCallRate

Conference [1] MaxTotalTransmitCallRate

Renamed to: Conference MaxTotalTransmitCallRate

Conference [1] MaxTransmitCallRate

Renamed to: Conference MaxTransmitCallRate

H323 Profile [1] Authentication LoginName

Renamed to: H323 Authentication LoginName

H323 Profile [1] Authentication Mode

Renamed to: H323 Authentication Mode

H323 Profile [1] Authentication Password

Renamed to: H323 Authentication Password
<table>
<thead>
<tr>
<th>Renamed to:</th>
<th>Original Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>H323 CallSetup Mode</td>
<td>H323 Profile [1] CallSetup Mode</td>
</tr>
<tr>
<td>H323 Encryption KeySize</td>
<td>H323 Profile [1] Encryption KeySize</td>
</tr>
<tr>
<td>H323 Gatekeeper Address</td>
<td>H323 Profile [1] Gatekeeper Address</td>
</tr>
<tr>
<td>H323Alias E164</td>
<td>H323 Profile [1] H323Alias E164</td>
</tr>
<tr>
<td>NetworkServices NTP Address</td>
<td>NetworkServices NTP Server [n] Address</td>
</tr>
<tr>
<td>SIP Authentication UserName</td>
<td>SIP Profile [1] Authentication [1] LoginName</td>
</tr>
<tr>
<td>SIP DefaultTransport</td>
<td>SIP Profile [1] DefaultTransport</td>
</tr>
<tr>
<td>SIP DisplayName</td>
<td>SIP Profile [1] DisplayName</td>
</tr>
<tr>
<td>SIP Ice DefaultCandidate</td>
<td>SIP Profile [1] Ice DefaultCandidate</td>
</tr>
<tr>
<td>SIP Ice Mode</td>
<td>SIP Profile [1] Ice Mode</td>
</tr>
<tr>
<td>SIP Turn UserName</td>
<td>SIP Profile [1] Turn UserName</td>
</tr>
<tr>
<td>SIP URI</td>
<td>SIP Profile [1] URI</td>
</tr>
<tr>
<td>SystemUnit ContactInfo Type</td>
<td>SystemUnit ContactInfo Type</td>
</tr>
<tr>
<td>Video Selfview Default FullscreenMode</td>
<td>Video SelfviewDefault FullscreenMode</td>
</tr>
<tr>
<td>Video Selfview Default Mode</td>
<td>Video SelfviewDefault Mode</td>
</tr>
<tr>
<td>Video Selfview Default OnMonitorRole</td>
<td>Video SelfviewDefault OnMonitorRole</td>
</tr>
<tr>
<td>Video Selfview Default PIPPosition</td>
<td>Video SelfviewDefault PIPPosition</td>
</tr>
</tbody>
</table>

- **H323 Profile [1]**
  - CallSetup Mode
  - Encryption KeySize
  - Gatekeeper Address
  - H323Alias E164
  - H323Alias ID

- **NetworkServices NTP Address**

- **SIP Profile [1]**
  - Authentication [1] LoginName
  - Authentication [1] Password
  - DefaultTransport
  - DisplayName
  - Ice DefaultCandidate
  - Ice Mode
  - Proxy [n] Address
  - Turn Password
  - Turn Server
xCommand changes in CE8.0

**New commands**
- Camera Preset ActivateDefaultPosition
- Camera Preset Show
- Cameras SpeakerTrack Diagnostics Start
- Cameras SpeakerTrack Diagnostics Stop
- Proximity Services Activate
- Proximity Services Deactivate
- SystemUnit OptionKey Remove
- SystemUnit OptionKey RemoveAll
- UserManagement User Passphrase Change
- UserManagement User Passphrase Set

**Commands that are removed**
- `xCommand <path> *` means that all configurations starting with `xCommand <path>` are removed.
- Audio Equalizer List
- Audio Equalizer Update
- Audio Sound Play
- Audio Sound Stop
- Audio VuMeter *
- Camera PanTiltReset
- Camera PositionActivateFromPreset
- Camera PositionSet
- Camera Preset Snapshot *
- Camera ReconfigureCameraChain
- CamCtrlPip
- Experimental *
- FacilityService Dial
- FarEndControl Preset Store
- Key *
- Logging ExtendedLogging *
- Message Echo
- Message FarendMessage
- Peripherals ManualUpgrade
- Presentation Byod *
- Provisioning CUCM CAPF OperationStart
- Provisioning CUCM ExtensionMobility *
- Provisioning CUCM ITL Show
- Security FIPSMode Activate
- SystemUnit AdminPassword Set
- SystemUnit ConfigurationProfile *
- UserInterface OSD Close
- UserInterface ScreenShot *
- Video AutoPresentationStart *
- Video Layout Add
- Video Layout Assign
- Video Layout AssignCall
- Video Layout AssignLocalOutput
- Video Layout AssignPresentation
- Video Layout Frame *
- Video Layout List
- Video Layout LoadDb
- Video Layout PreviewFilmstrip Set
- Video Layout Remove
- Video Layout RemoveAll
Video Layout Reset
Video Layout SetPresentationView
Video Layout UnAssign
Video Layout UnassignCall
Video Layout UnassignLocalOutput
Video Layout UnassignPresentation
Video OSD Close

Commands that are modified

Audio LocalOutput Add
    NEW: VolumeControlled: <On/Off>

Audio LocalOutput Update
    NEW: VolumeControlled: <On/Off>

Call Accept
    REMOVED: CallType

Call Disconnect
    OLD: Callld (r): <0 – 65534>
    NEW: Callld: <0 – 65534>

Call Hold
    OLD: Callld (r): <0 – 65534>
    NEW: Callld: <0 – 65534>

Camera PositionReset
    NEW: Axis: <All/Focus/PanTilt/Zoom>

Camera Preset Edit
    NEW: DefaultPosition: <False/True>

Camera Preset List
    NEW: CameraId: <1 – 7>
    NEW: DefaultPosition: <False/True>
    REMOVED: PresetId

Camera Preset Store
    NEW: DefaultPosition: <False/True>

Cameras SpeakerTrack Whiteboard ActivatePosition
    OLD: Required user role: ADMIN
    NEW: Required user role: USER
    OLD: WhiteboardId: <0 – 65534>
    NEW: WhiteboardId: <1 – 8>

Cameras SpeakerTrack Whiteboard AlignPosition
    OLD: Required user role: ADMIN
    NEW: Required user role: USER
    OLD: Distance: <3000 - 15000>
    NEW: Distance: <300 - 1500>

Cameras SpeakerTrack Whiteboard SetDistance
    OLD: Required user role: ADMIN
    NEW: Required user role: USER
    OLD: WhiteboardId: <0 – 65534>
    NEW: WhiteboardId: <1 – 8>

Cameras SpeakerTrack Whiteboard StorePosition
    OLD: Required user role: ADMIN
    NEW: Required user role: USER
    OLD: WhiteboardId: <0 – 65534>
    NEW: WhiteboardId: <1 – 8>

HttpFeedback Deregister
    OLD: Required user role: ADMIN
    NEW: Required user role: USER

HttpFeedback Register
    OLD: Required user role: ADMIN
    NEW: Required user role: USER

Peripherals List
    OLD: Type: <All/BluetoothHeadset/ControlSystem/ISDNLink/Other/TouchPanel>
    NEW: Type: <All/ControlSystem/ISDNLink/Other/TouchPanel>
Presentation Stop

NEW: PresentationSource: <1 - 4>

UserInterface Message Alert Clear

OLD: Required user role: ADMIN
NEW: Required user role: USER

UserInterface Message Prompt Clear

OLD: Required user role: ADMIN
NEW: Required user role: USER

UserInterface Message TextLine Clear

OLD: Required user role: ADMIN
NEW: Required user role: USER

UserManagement User Passphrase Set

NEW: YourPassphrase: <S: 0, 255>

Commands that are renamed or replaced

Boot

Renamed to: SystemUnit Boot

Call DisconnectAll

Included in: Call Disconnect

Call HoldAll

Included in: Call Hold

Conference ActiveSpeaker Reset

Renamed to: Conference SpeakerLock Release

Conference ActiveSpeaker Set

Renamed to: Conference SpeakerLock Set

DTMFSend

Renamed to: Call DTMFSend

FarEndControl Camera Move

Renamed to: Call FarEndControl Camera Move

FarEndControl Camera Stop

Renamed to: Call FarEndControl Camera Stop

FarEndControl Preset Activate

Renamed to: Call FarEndControl RoomPreset Activate

FarEndControl Source Select

Renamed to: Call FarEndControl Source Select

Message *

Renamed to: UserInterface Message *

Preset *

Renamed to: RoomPreset *

STextField Send

Renamed to: Call FarEndMessage STextField Send

SystemUnit DateTime Get

Renamed to: Time DateTime Get

SystemUnit DateTime Set

Renamed to: Time DateTime Set

OLD: Year: <2008..2037>
NEW: Year: <2015..2037>

xCommand SystemUnit Diagnostics Run

Renamed to: xCommand Diagnostics Run

xCommand TStringLength Send

Renamed to: xCommand Call FarEndMessage TStringLength Send

xCommand Video Presentation Set

Renamed to: xCommand Video PresentationPIP Set

xCommand Video PIPI ActiveSpeaker Set

Renamed to: xCommand Video ActiveSpeakerPIP Set

xCommand Video PIP Presentation Set

Renamed to: xCommand Video PresentationPIP Set
xStatus changes in CE8.0

New statuses
Audio Output LocalOutput [n] VolumeControlled
Call [n] HoldReason
Conference Call [n] Capabilities FarendMessage Mode
Conference Call [n] Capabilities IxChannel Status
H323 Mode Reason
Proximity Services Availability
Standby State
SIP Mailbox URI
SystemUnit Software OptionKeys RemoteMonitoring
UserInterface ContactInfo ContactMethod [n] Number
UserInterface ContactInfo Name

Statuses that are removed
xStatus <path> * means that all configurations starting with xStatus <path> are removed.
Audio Module [n] *
Call [n] CallPriority
Call [n] ModifyState
Call [n] SecurityStatus
CallDiagnostics [n] * (was Diagnostics Call [n] *)
Cameras Camera [n] DownloadProgress (was Camera [n] DownloadProgress)
Cameras Camera [n] HardwareID (was Camera [n] HardwareID)
Cameras Camera [n] IpAddress (was Camera [n] IpAddress)
Cameras Camera [n] Position * (was Camera [n] Position *)
Cameras Camera [n] UpgradeStatus (was Camera [n] UpgradeStatus)
Cameras SpeakerTrack Whiteboard [n] *
Conference Call [n] Appearance (was Conference Site [n] Appearance)
Conference Call [n] AttendedTransfer (was Conference Site [n] AttendedTransfer)
Conference Call [n] CalText (was Conference Site [n] CalText)
Conference Call [n] Preserved (was Conference Site [n] Preserved)
Conference Call [n] SecurityStatus (was Conference Site [n] SecurityStatus)
Conference Call [n] UnattendedTransfer (was Conference Site [n] UnattendedTransfer)
Conference Line [n] Appearance [n] *
Conference LoudestSite
Conference Presentation LastLocalSource
Conference Presentation LocalSendingMode
Conference Presentation LocalSource
Conference Presentation Protocol
Conference Presentation Resolution *
Conference SelectedCallProtocol
Conference Site [n] ConferenceExtended
Diagnostics LastRun (was SystemUnit Diagnostics LastRun)
Experimental *
H320 *
ICE *
Logging *
MediaChannels Call [n] *
Network [n] IPv4 DHCP *
Network [n] IPv4 DNS *
Network [n] MTU
Peripherals ConnectProgress [n] *
Peripherals ControllableDevice [n] *
Provisioning CUCM *
Provisioning NextRetry
<table>
<thead>
<tr>
<th>Statuses that are modified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provisioning Reason</td>
</tr>
<tr>
<td>Provisioning Server</td>
</tr>
<tr>
<td>Provisioning Software PreviousUpgrade *</td>
</tr>
<tr>
<td>Provisioning Software UpgradeStatus SecondsUntilUpgrade</td>
</tr>
<tr>
<td>RoomPreset [n] * (was Preset [n] *)</td>
</tr>
<tr>
<td>Security Audit Server Port</td>
</tr>
<tr>
<td>SystemUnit Hardware BootSoftware</td>
</tr>
<tr>
<td>SystemUnit Hardware MainBoard *</td>
</tr>
<tr>
<td>SystemUnit Hardware Module CompatibilityLevel</td>
</tr>
<tr>
<td>SystemUnit Hardware Module Identifier</td>
</tr>
<tr>
<td>SystemUnit Hardware MonitoringSoftware</td>
</tr>
<tr>
<td>SystemUnit Hardware TemperatureThreshold</td>
</tr>
<tr>
<td>SystemUnit Hardware UDI</td>
</tr>
<tr>
<td>SystemUnit MenuLogo</td>
</tr>
<tr>
<td>SystemUnit Software Application</td>
</tr>
<tr>
<td>SystemUnit State Subsystem Application</td>
</tr>
<tr>
<td>SystemUnit State System</td>
</tr>
<tr>
<td>Time Zone Olson</td>
</tr>
<tr>
<td>UserInterface OSD Mode</td>
</tr>
<tr>
<td>UserInterface OSD Output</td>
</tr>
<tr>
<td>Video Input LastConnectedSource</td>
</tr>
<tr>
<td>Video Layout *</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Call [n] Protocol</th>
<th>OLD: String</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NEW: &lt;H320/H323/SIP&gt;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Conference Multipoint Mode</th>
<th>OLD: &lt;Auto/CUCMMediaResourceGroupList/MultiSite/MultiWay/Off&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NEW: &lt;Auto/CUCMMediaResourceGroupList/MultiSite/Off&gt;</td>
</tr>
</tbody>
</table>

| Diagnostics Message [n] Type | OLD: String |
|                            | NEW: TemperatureCheck, AudioInternalSpeakerDisabled, and ContactInfoMismatch added to the value space |

<table>
<thead>
<tr>
<th>H323 Mode Status</th>
<th>OLD: String</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NEW: &lt;Enabled/Disabled&gt;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Peripherals ConnectedDevice [n] UpgradeStatus</th>
<th>OLD: &lt;Connected/ResponseTimedOut&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NEW: &lt;Connected/ResponseTimedOut/Unpairing/LostConnection&gt;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Peripherals ConnectedDevice [n] Type</th>
<th>OLD: &lt;BluetoothHeadset/Byod/Camera/ControlSystem/ISDNLink/Other/SpeakerTrack Byod/TouchPanel&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NEW: &lt;Byod/Camera/ControlSystem/ISDNLink/Other/SpeakerTrack Byod/TouchPanel&gt;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Provisioning Status</th>
<th>OLD: &lt;AuthenticationFailed/ConfigError/Failed/Idle/NeedConfig/Provisioned&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NEW: &lt;AuthenticationFailed/ConfigError/Failed/Idle/NeedConfig/Provisioning/Provisioned&gt;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SystemUnit Software OptionKeys Encryption</th>
<th>OLD: String</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NEW: &lt;False/True&gt;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SystemUnit Software OptionKeys MultiSite</th>
<th>OLD: String</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NEW: &lt;False/True&gt;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SystemUnit Software OptionKeys PremiumResolution</th>
<th>OLD: String</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NEW: &lt;False/True&gt;</td>
</tr>
</tbody>
</table>
Statuses that renamed

`xStatus <path>` * means that all configurations starting with `xStatus <path>` are removed.

Camera [n] *
  
  **Renamed to:** Cameras Camera [n] *

Conference ActiveSpeaker Manual SiteId
  
  **Renamed to:** Conference SpeakerLock CallId

Conference ActiveSpeaker Mode
  
  **Renamed to:** Conference SpeakerLock Mode

Conference ActiveSpeaker SiteId
  
  **Renamed to:** Conference ActiveSpeaker CallId

Conference Presentation Instance[n] LocalSendingMode
  
  **Renamed to:** Conference Presentation LocalInstance[n] SendingMode

Conference Presentation Instance[n] LocalSource
  
  **Renamed to:** Conference Presentation LocalInstance[n] Source

Conference Presentation SiteId
  
  **Renamed to:** Conference Presentation CallId

Conference Site [n] *
  
  **Renamed to:** Conference Call [n] *

Conference Site [n] Hold
  
  **Renamed to:** Conference Call [n] Capabilities Hold

NetworkServices NTP Address
  
  **Renamed to:** NetworkServices NTP Server [n] Address

SIP Profile [n] *
  
  **Renamed to:** SIP *

SIP Profile [n] DirectoryURI Alias [n] URI
  
  **Renamed to:** SIP AlternateURI Alias [n] URI

SIP Profile [n] DirectoryURI Primary URI
  
  **Renamed to:** SIP AlternateURI Primary URI

SystemUnit ContactInfo
  
  **Renamed to:** UserInterface ContactInfo ContactMethod [n] Number

SystemUnit ContactName
  
  **Renamed to:** UserInterface ContactInfo Name

SystemUnit Diagnostics Message [n] *
  
  **Renamed to:** Diagnostics Message [n] *

SystemUnit Software MaxAudioCalls
  
  **Renamed to:** Capabilities Conference MaxAudioCalls

SystemUnit Software MaxVideoCalls
  
  **Renamed to:** Capabilities Conference MaxVideoCalls

SystemUnit State MaxNumberOfActiveCalls
  
  **Renamed to:** Capabilities Conference MaxActiveCalls

SystemUnit State MaxNumberOfCalls
  
  **Renamed to:** Capabilities Conference MaxCalls

Video Input Source [n] Resolution FormatStatus
  
  **Renamed to:** Video Input Source [n] FormatStatus

Video Input Source [n] Resolution FormatType
  
  **Renamed to:** Video Input Source [n] FormatType

Video PIP ActiveSpeaker Position
  
  **Renamed to:** Video ActiveSpeaker PIPPosition

Video PIP Presentation Position
  
  **Renamed to:** Video Presentation PIPPosition
Chapter 2

About the API
API fundamentals

This chapter contains a top-level view of the mechanisms supported by the codec API.

Here you can read about how to access the API, how to use the command line and what the different parts of the API can be used for. This chapter also describes how to use the feedback functions that are available for the codec.

The API consists of four major groups:

- Commands
- Configurations
- Status
- Events

These four groups are hierarchically organized, which makes it easier to find related functionality. You can find the complete lists of all commands, configurations and statuses in the following chapters.

Connecting to the API

There are several ways to access the codec API. Regardless of which method you choose, the structure of the API is the same. Choose the connection method that suits your application best. Before you start, please read this section about the different methods, as some of those may require additional configuration changes before being enabled.

The following configurations, apart from password, can be set from the System configuration menu on the web interface or from the command line interface. All of the examples are for the command line interface.

Password

The video system is delivered with a default user account with full credentials. The user name is admin, and initially, no password is set for the default user.

It is mandatory to set a password for the admin user in order to restrict access to system configuration. You should in addition set a password for any other user with similar credentials.

You can set the password on the codec’s web interface. Open a web browser and enter the IP address of the video system in the address bar and log in. Click your user name in the upper right corner and choose Change password in the drop down menu.

For details regarding the RS-232 pin-out and more, please refer to the Administrator Guide.

SSH

SSH is a secure TCP/IP connection and it is enabled by default on the codec. It can be disabled. You need a SSH client, such as PuTTY, to access the API over SSH.

```
xConfiguration NetworkServices SSH Mode: <Off,On>
```

Telnet

Telnet can be viewed as the equivalent of the serial protocol in the TCP/IP world. Telnet is disabled by default. Before connecting to the codec with Telnet you have to enable it.

To enable Telnet service, configure the following setting on the codec. Changing this setting does not require a reboot of the device, but it may take some time to take effect.

```
xConfiguration NetworkServices Telnet Mode: <Off,On>
```

HTTP/HTTPS

As HTTP/HTTPS are connectionless protocols, there is no persistent connection. There are several ways of communicating with the API over HTTP.

In order to enable or disable the HTTP and HTTPS services, configure the following setting on the codec.

```
xConfiguration NetworkServices HTTP Mode: <Off, HTTP+HTTPS, HTTPS>
```

Connecting

You can inspect the API by entering the IP address or host name of the codec in your favorite web browser. In the web interface, you can find the API documents under the menu section Integration > Developer API. The HTTP POST and GET methods are used to execute commands and get feedback from the codec. This is described in "Using HTTP" on page 42 in this document.

Ethernet port

You can connect a non-Cisco controller directly to an SX80 codec. Connect your device to the network port 2 or 3 with an Ethernet cable. This way the device gets a local IP address from the SX80, and is not part of the corporate network.

This method can also be used to connect to the codec with SSH. In this case you can use the IP address 169.254.1.1.

NOTE: Only one non-Cisco device can be connected to the network ports at a time.
RS-232 / serial connection
The codec has a standard COM-port for serial communication. It can be used without an IP address, DNS or a network. Serial connection is allowed by default.

  xConfiguration SerialPort Mode: <Off/On>

Connect a standard 9-pin serial cable <115200, N, 8, 1> to the COM port on the codec.

Baud-rate and other serial port parameters
The serial port uses 8 data bits, no parity and 1 stop bit. The default baud rate is set to 115200 bps.

The codec can give very much feedback. We therefore recommend keeping the connection at this speed to avoid sluggishness.

You can change the baud rate if required.

  xConfiguration SerialPort BaudRate:
  <9600/19200/38400/57600/115200>

Login and password
You can choose whether login is required or not for serial connections. For security reasons the password prompting is turned on by default, but it can be turned off if preferred.

  xConfiguration SerialPort LoginRequired: <Off/On>
API output

The xPreferences is used to set preferences for the RS-232, Telnet and SSH sessions.

The output modes

- **Terminal**: Line based output for use with line based control systems
- **XML**: XML output for use with control systems that understand XML.
- **JSON**: JSON format is convenient when integrating with web based systems.

The default output mode is **terminal**. To change this you have to define your preferences for each session individually. Examples in this guide are in terminal mode.

To set output mode to XML, issue the command:

```
xPreferences outputmode xml
```

To revert to terminal mode, issue the command:

```
xPreferences outputmode terminal
```
Using the command line

Help
To get a list of all supported top level commands you can type `?` or `help` after connecting to the TelePresence System using RS-232, Telnet or SSH (Example 1).

Bye
Typing the `bye` command closes the command line interface.

API commands

**xConfiguration**
Configurations are system settings, such as system name and network settings. These are persistent across boots. Refer to “Configurations” on page 38.

**xCommand**
Commands instruct the codec to execute actions, such as to dial a number or to search the phone book. Refer to “Commands” on page 38.

**xStatus**
A status contains the current state of the codec, such as connected calls, the status of the gatekeeper registration, connected inputs and output sources. Refer to “Status” on page 38.

**xFeedback**
The Feedback commands are used to specify what parts of the configuration and status hierarchies to monitor. Feedback is only issued on the RS-232, Telnet or SSH session for which it is specified. If you are connecting to the codec with multiple sessions, you have to define feedback individually for each session. Refer to “Feedback mechanism” on page 40.

**xPreferences**
The xPreferences command is used to set preferences for the RS-232, Telnet and SSH sessions. Refer to “API output” on page 35.

**Echo <on/off>**
If echo is set to On the key inputs are displayed when entering text in a command line interface.

If echo is set to Off user input is not displayed when entering text in a command line interface.

**xEvent**
The xEvent command returns information on which events are available for feedback. Refer to “Events” on page 39.

**xGetxml**
The xGetxml request returns an XML document based on the location parameter attached to the request. The elements (or a complete document) matching the expression will be returned. Refer to “Feedback mechanism” on page 40.

Other commands

**SystemTools**
The systemtools commands are a set of command line tools for administrative control and diagnostics. The commands can be used for advanced troubleshooting together with Cisco technical support. Systemtools are not a part of the programming API. Refer to “The SystemTools commands” on page 225.

**Log**
The log command is used to enable advanced logs. It is only used for debugging the system.
Command line shortcuts

If your client supports it, there are some timesaving shortcuts you can use:

• Tab-completion to complete the commands and arguments.
• Arrow up and arrow down keys to navigate your command history.
• <CTRL-a>: Jump to the beginning of the line.
• <CTRL-e>: Jump to the end of the line.
• <CTRL-r>: Incremental command history search.
• <CTRL-w>: Erase the current line.

Searching

You can use \// to search for elements anywhere in the status or configuration hierarchy (Example 1).

You can also combine multiple //’s (Example 2).

**NOTE**: The search shortcuts work well for inspecting the API, but should not be used in applications. We recommend that you always use the complete paths to avoid command ambiguity when upgrading to newer firmware releases.

Example 1:

List all configurations that include words that starts with OUT and HDMI:

```
xconfiguration //out//hdmi
```

```
*c xConfiguration Audio Output HDMI 1 Level: 0
*c xConfiguration Audio Output HDMI 1 Mode: On
*c xConfiguration Audio Output HDMI 2 Level: 0
*c xConfiguration Audio Output HDMI 2 Mode: Off
```

** end

Example 2:

Get the resolution width of all connected sources for both inputs and outputs:

```
xStatus //vid//res//wid
```

```
*s Video Input Source 1 Resolution Width: 1920
*s Video Input Source 2 Resolution Width: 0
*s Video Input Source 3 Resolution Width: 0
*s Video Input Source 4 Resolution Width: 0
*s Video Output Connector 1 Resolution Width: 1920
*s Video Output Connector 2 Resolution Width: 1280
*s Video Output Connector 3 Resolution Width: 1280
```

** end

Value types and formats

The system supports the following value types:

• Integer values: <x..y>
  Defines the valid range for an integer input. x = min value, y = max value.

• Literal values: <X/Y/..../Z>
  Defines the possible values for a given configuration.

• String values: <S: x, y>
  Defines that the valid input for this configuration is a string with minimum length of x and maximum length of y characters. Strings can have rules that further specify their format and length.

Input values that contain spaces need to be quoted

Any values for configurations and commands containing spaces must be enclosed in quotes. Quotes are not necessary for values without spaces.

Example:

Correct: xCommand dial number: “my number contains spaces”
Correct: xCommand dial number: 12345
Incorrect: xCommand dial number: my number contains spaces

Case sensitivity

All commands are case-insensitive. All of the following commands will work.

```
XCOMMAND DIAL NUMBER: foo@bar.org
xcommand dial number: foo@bar.org
xCommand Dial Number: foo@bar.org
```
Commands

Commands instruct the codec to execute actions, such as to dial a number or to search the phone book. All commands start with the prefix xCommand followed by a command path.

Writing xCommand ? on the command line will list all the top level commands.

To view the complete list of commands and their parameters, write xCommand ?? on the command line.

Command arguments are key-value pairs.

When issuing a xCommand, the command consists of one argument and one required parameter. In this document the command usage is described for all xCommands, with both required and optional parameters. The optional parameters are in brackets.

Example: xCommand Dial Number: 123

- xCommand is the command prefix. The command to be executed is Dial.
- The example contains one argument, Number: 123. Number is the key and 123 is its value. The key/value pair is separated with ":".

Configurations

Configurations are system settings that are persistent across boots. Like commands, also configurations are structured in a hierarchy.

Writing xConfiguration ? on the command line lists all the top level configurations.

Writing xConfiguration ?? lists all configurations and their value spaces.

Writing xConfiguration lists all configurations and their current values. To list out only some of the configurations, write xConfiguration followed by one or more parts of the configuration paths.

Example: Set the H323 Alias ID

Write in:

```
xConfiguration H323 Profile 1 H323Alias ID: "changed@company.com"
```

Example: Get the H323 Alias ID

Write in:

```
xConfiguration H323 Profile 1 H323Alias ID
```

Result:

```
*<c xConfiguration H323 Profile 1 H323Alias ID: "changed@company.com"
**end
```
Events

Event returns information about the events that are available for feedback. This overview presents examples of some of the events that are available on the API.

To get an overview of the supported events type ?, ?? or help after xEvent:
- xEvent ? Lists the top level events
- xEvent ?? List all of the available events
- xEvent help Lists the top level events

The result for events depends on the state of the codec.

Example 1: Outgoing Call Indication
Outgoing Call Indication is an event reported when an outgoing call is about to be dialled. Returns the CallId the call has been assigned.

```
*e OutgoingCallIndication CallId: x
** end
```

Example 2: Call Disconnect
Call Disconnect is an event reported when a call is disconnected. Returns the CallId of the disconnected call and reason for the call's disconnection.

```
*e CallDisconnect CallId: x CauseValue: 0
  CauseStringValue: "LocalDisconnect"
  OrigCallDirection: "outgoing"
** end
```

Example 3: Call Successful
Call Successful is an event reported when a call is connected successfully, that is when all channels are up and established.

```
*e CallSuccessful CallId: 132 Protocol: "h223"
  Direction: "outgoing"
  CallRate: 768
  RemoteURI: "h223:integratorHQ@company.com"
  EncryptionIn: "off"
  EncryptionOut: "off"
** end
```

Example 4: FECC Action request
FECC Action request is an event reported when far end is sending FECC commands.

```
*e FeccActionInd Id: 132 Req: 1 Pan: 1 PanRight: 1
  Tilt: 0 TiltUp: 0 Zoom: 0 ZoomIn: 0 Focus: 0
  FocusIn: 0 Timeout: 300 VideoSrc: 0 m: 0
** end
```

Example 5: TString message received
TString message received is an event reported when far end has sent a TString message.

```
*e TString CallId: 132 Message: "ee"
** end
```

Example 6: SString message received
SString message received is an event reported when far end has sent a SString message.

```
*e SString String: "ee" Id: 132
** end
```
Feedback mechanism

To build solutions that can reliably keep the state between your application and the codec synchronized, you can set up a notification system to report the changes in the state of the codec.

The API supports notifications on the following:

- Configuration changes
- Status changes
- Event notifications

These notifications will not be sent unless you have explicitly told the codec to do so. You can subscribe to the feedback by registering feedback expressions. How you register feedback expressions varies according to the connection method used.

When using HTTP, the method of handling feedback differs slightly from what is presented in this section. See the "Feedback from codec over HTTP" on page 44 for more information.

Feedback expressions

The expression used when registering for feedback is a variant of the XPath language. The XPath language describes a way to select nodes from an XML/JSON document. The CE software contains three main feedback documents.

<table>
<thead>
<tr>
<th>Document</th>
<th>API command</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>xStatus</td>
<td>/Status</td>
</tr>
<tr>
<td>Configuration</td>
<td>xConfiguration</td>
<td>/Configuration</td>
</tr>
<tr>
<td>Event</td>
<td>xEvent</td>
<td>/Event</td>
</tr>
</tbody>
</table>

The syntax for feedback registering is:

```
xFeedback register <path>
```

Never register for all status feedback by issuing
```
xFeedback register /Status
```

It is safe to register for all configuration changes using
```
xFeedback register /Configuration
```

By going through some examples, we can see how this information can be used to build feedback expressions. A good way to verify the expressions is to point your browser to `http://<ip-address>/getxml?location=path` or to execute `xgetxml <path>` from the terminal, and check that the output matches the nodes you want feedback on.

**WARNING:** A codec may give very much feedback, especially when calls are connected and disconnected. Do only subscribe to the feedback you need.

Never register for all status feedback by issuing `xFeedback register /Status`. This may give the control application too much data to handle, which may lead to sluggish or unpredictable behavior.

---

**Example 1: Microphones Mute status.**

Terminal query
```
xStatus Audio Microphones Mute
*s Audio Microphones Mute: Off
** end
```

Equivalent feedback expression
```
xFeedback register /Status/Audio/Microphones/Mute
```

**Example 2: Name of all video input connectors.**

Terminal query
```
xConfiguration Video Input Connector Name
*c xConfiguration Video Input Connector 1 Name: "NameA"
*c xConfiguration Video Input Connector 2 Name: "NameB"
*c xConfiguration Video Input Connector 3 Name: "NameC"
*c xConfiguration Video Input Connector 4 Name: "NameD"
*c xConfiguration Video Input Connector 5 Name: "NameE"
** end
```

Equivalent feedback expression
```
xFeedback register /Configuration/Video/Input/Connector/Name
```

**Example 3: Name of video input connector 3.**

Terminal query
```
xConfiguration Video Input Connector 3 Name
*c xConfiguration Video Input Connector 3 Name: "NameE"
** end
```

Equivalent feedback expression
```
xFeedback register /Configuration/Video/Input/Connector[@item='3']/Name
```
Terminal connections

Managing feedback subscriptions
To register, list and deregister feedback expressions you use the command `xFeedback` and its corresponding sub commands.

The registered expressions are only valid for the currently active connection. If you open two Telnet sessions and register to get feedback in one session, you do not receive feedback in the other session. This also means that if you disconnect from a session, you have to re-register all expressions after reconnecting.

You can register up to 38 expressions.

Feedback output
The feedback output is exactly the same as you get when querying the system using the `xConfiguration` and `xStatus` commands. E.g., if you issue the command `xStatus Standby Active` on the command line the result is:

```
*s Standby Active: On
** end
```

If you have registered for feedback on status changes the feedback you get when the system goes to standby-mode will be exactly the same:

```
*s Standby Active: On
** end
```

This means that when you are programming against the device you only need to handle one format.

---

Example: Managing feedback subscriptions

A: Register feedback expressions.

Write in: `xFeedback register /Status/Audio`
Result: ** end
** OK

Write in: `xFeedback register /Event/CallDisconnect`
Result: ** end
** OK

Write in: `xFeedback register /Configuration/Video/MainVideoSource`
Result: ** end
** OK

B: List out currently registered expressions.

Write in: `xFeedback list`
Result: `/Configuration/Video/MainVideoSource`  /Event/CallDisconnect  /Status/Audio  ** end
** OK

C: Deregister feedback expressions.

Write in: `xFeedback deregister /Event/CallDisconnect`
Result: ** end
** OK

Write in: `xFeedback deregister /Status/Audio`
Result: ** end
** OK

D: List the new feedback expressions.

Write in: `xFeedback list`
Result: `/Configuration/Video/MainVideoSource`  ** end
** OK
Using HTTP

The codec supports sending commands and configurations over HTTP and HTTPS. It is also possible to retrieve configurations and statuses this way. This interface exposes the same API as the command line, but in XML format.

HTTP XMLAPI Authentication

Access to the XMLAPI requires the user to authenticate using HTTP Basic Access Authentication as a user with 'ADMIN' role. Unauthenticated requests prompt a 401 HTTP response containing a Basic Access Authentication challenge. How to use HTTP Basic Access Authentication varies according to the HTTP library or tool that you are using.

If your application will be issuing multiple commands through the API, we highly recommend that you use Session Authentication (see below). The standard basic authentication does a full re-authentication per request, which may affect the performance of your application.

HTTP XMLAPI Session Authentication

Authenticating with your username and password combination for each API request might introduce too much latency for some use-cases. To mitigate this, the API supports a session-based authentication mechanism.

To open a session, issue a POST to http://<ip-address>/xmlapi/session/begin with Basic Access Authentication. The response sets a SessionId-cookie that can be used with subsequent requests.

Note that when using API Session Authentication, it is important to explicitly close the session when you are done. Failing to do so may cause the device to run out of sessions, as there are a limited number of concurrent sessions available, and they do not time out automatically.

Example: Starting a HTTP XMLAPI session

Request:

```
POST /xmlapi/session/begin HTTP/1.1
Authorization: Basic <Base64 encoded authentication string>
```

Response:

```
HTTP/1.1 204 No Content
Server: nginx/1.8.0
Connection: keep-alive
Set-Cookie: SessionId=f08102c8ce5aaf8fba23a7238cc2ef64b990e18bfb7fbb048820c0e28955c54; Path=/; HttpOnly
```

This session counts toward the systems concurrent sessions limit.

With an open session, provide the SessionId cookie to following requests. Your tool/library may do this automatically.

Example: Using a HTTP XMLAPI session

Request:

```
GET /configuration.xml HTTP/1.1
Cookie: SessionId=f08102c8ce5aaf8fba23a7238cc2ef64b990e18bfb7fbb048820c0e28955c54
```

Response:

```
HTTP/1.1 200 OK
Server: nginx/1.8.0
Content-Type: text/xml; charset=UTF-8
Content-Length: 43549
Connection: keep-alive
<?xml version="1.0"?><Configuration product="Cisco Codec"version="ce8.2.0" apiVersion="4"> ...

Example: Closing a HTTP XMLAPI session

Request:

```
POST /xmlapi/session/end HTTP/1.1
Cookie: SessionId=f08102c8ce5aaf8fba23a7238cc2ef64b990e18bfb7fbb048820c0e28955c54
```

Response:

```
HTTP/1.1 204 No Content
Server: nginx/1.8.0
Connection: keep-alive
Set-Cookie: SessionId=; Max-Age=0; Path=/; HttpOnly
```

URL cheat sheet

The following table contains the main URLs used when accessing the API over HTTP.

<table>
<thead>
<tr>
<th>Method</th>
<th>URL</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>http://&lt;ip-address&gt;/status.xml</td>
<td>Complete status document</td>
</tr>
<tr>
<td>GET</td>
<td>http://&lt;ip-address&gt;/configuration.xml</td>
<td>Complete configuration document</td>
</tr>
<tr>
<td>GET</td>
<td>http://&lt;ip-address&gt;/command.xml</td>
<td>Complete command document</td>
</tr>
<tr>
<td>GET</td>
<td>http://&lt;ip-address&gt;/valuespace.xml</td>
<td>Complete valuespace document</td>
</tr>
<tr>
<td>GET</td>
<td>http://&lt;ip-address&gt;/getxml?location=&lt;path&gt;</td>
<td>Retrieve document based on a path</td>
</tr>
<tr>
<td>POST</td>
<td>http://&lt;ip-address&gt;/putxml</td>
<td>Configurations and commands in HTTP body</td>
</tr>
</tbody>
</table>
Getting status and configurations

Example 1: Get all status entries on the codec.
http://<ip-address>/getxml?location=/Status

Example 2: Get just the audio statuses of the codec.
http://<ip-address>/getxml?location=/Status/Audio

Example 3: Get all configurations of the codec.
http://<ip-address>/getxml?location=/Configuration

Example 4: Get all video configurations of the codec.
http://<ip-address>/getxml?location=/Configuration/Video

Sending commands and configurations

Using HTTP POST

When sending configurations and commands to the codec, it is important that the HTTP header Content-Type is set to text/xml, i.e. Content-Type: text/xml. The body of the POST should contain the XML content.

Example 1: Changing the system name.
Request
POST /putxml HTTP/1.1
Content-Type: text/xml

<Configuration>
  <SystemUnit>
    <Name>newName</Name>
  </SystemUnit>
</Configuration>

Example 2: Setting the camera position.
Request
POST /putxml HTTP/1.1
Content-Type: text/xml

<Command>
  <Camera>
    <PositionSet command="True">
      <CameraId>1</CameraId>
      <Pan>200</Pan>
      <Tilt>200</Tilt>
    </PositionSet>
  </Camera>
</Command>

Response
HTTP/1.1 200 OK
Content-Type: text/xml
Content-Length: 91

<?xml version="1.0"?>
<Command>
  <CameraPositionSetResult item="1" status="OK"/>
</Command>
Feedback from codec over HTTP

You can get the device to post http feedback messages (also known as webhooks) on changes to the API state, e.g. statuses, events and configuration updates. The HTTP Post feedback messages will be sent to the specified ServerURL. You can choose between events being posted in either XML or JSON format. You can subscribe to changes on multiple parts of the API by register up to 15 different feedback expressions.

Registering for feedback

The command for registering is `xCommand HttpFeedback Register`. The syntax for this command and its arguments are described in this section.

HttpFeedback Register syntax:

```
xCommand HttpFeedback Register
  FeedbackSlot: <1..4>
  ServerUrl: <S: 1, 2048>
  Format: <XML/JSON>
  Expression: <S: 1, 255>
  Expression: <S: 1, 255>
  Expression: <S: 1, 255>
  Expression: <S: 1, 255>
  Expression: <S: 1, 255>
  Expression: <S: 1, 255>
  Expression: <S: 1, 255>
  Expression: <S: 1, 255>
  Expression: <S: 1, 255>
  Expression: <S: 1, 255>
```

Feedback output

When the codec notifies the registered HTTP server about changes, the body contains the same XML as when polling. There is however one small difference. The root-node contains an Identification node with children that specify the codec from which the notification originated. This means that you can handle multiple codecs with a single HTTP server URL.

Example: Audio volume changed.

```
<Configuration xmlns="http://www.company.com/XML/CUIL/2.0">
  <Identification>
    <SystemName>My System Name</SystemName>
    <MACAddress>00:00:de:ad:be:ef</MACAddress>
    <IPAddress>192.168.1.100</IPAddress>
    <ProductType>Cisco Codec</ProductType>
    <ProductID>Cisco Codec SX80</ProductID>
    <SWVersion>CE8.3.0.199465</SWVersion>
    <HWBoard>101401-5 \[08\]</HWBoard>
    <SerialNumber>PH0000000</SerialNumber>
  </Identification>
  <Audio item="1">
    <Volume item="1">60</Volume>
  </Audio>
</Configuration>
```
Translating from terminal mode to XML

Translating commands

The XML commands maintain the same structure as the terminal commands, but they use a parent-child relationship to describe the hierarchy. You can see this structure in the examples below.

Example 1: Setting up a call.

Terminal
   xCommand Dial Number: "12345" Protocol: H323

XML
   <Command>
   <Dial command="True">
      <Number>12345</Number>
      <Protocol>H323</Protocol>
   </Dial>
   </Command>

Example 2: Assigning video layout to a call.

Terminal
   xCommand Video Layout AssignCall CallId: 2
      LayoutId: 1

XML
   <Command>
   <Video>
      <Layout>
         <AssignCall command="True">
            <CallId>2</CallId>
            <LayoutId>1</LayoutId>
         </AssignCall>
      </Layout>
   </Video>
   </Command>

Translating configurations

Translating from xConfiguration to XML is similar to commands, but with the addition of a special attribute item="NN" for specifying the index in arrays.

Example: Configuring the input source type for video input connector 2.

Terminal
   xConfiguration Video Input Connector 2
      InputSourceType: camera

XML
   <Configuration>
   <Video>
      <Input>
         <Connector item="2">
            <InputSourceType>camera</InputSourceType>
         </Connector>
      </Input>
   </Video>
   </Configuration>
Dos and don’ts

Here are some best practices when programming the Cisco SX series API.

DO use complete commands

You should always use complete commands when programming, i.e., always use xConfiguration Video instead of xconf vid. The shortcuts can be used for searches in the API on the command line, but not for programming. The reason for this is that you might end up with ambiguous code when additional commands are added to the API.

DO NOT subscribe to unnecessary feedback

Subscribing to too much feedback may congest the control application. Although the amount of feedback may seem fine in the current version, the amount of feedback may grow in future releases.
Chapter 3

xConfiguration commands
Description of the xConfiguration commands

In this chapter, you can find a complete list of the xConfiguration commands. The examples show either the default value or an example of a value.

We recommend you visit our web site regularly for updated versions of the manual.

Go to:  http://www.cisco.com/go/sx-docs

Audio configuration ........................................................................................................................................... 52
  xConfiguration Audio DefaultVolume ........................................................................................................... 52
  xConfiguration Audio Microphones Mute Enabled......................................................................................... 52
  xConfiguration Audio MicrophoneReinforcement Input Microphone [1..8] Mode ............................................... 52
  xConfiguration Audio MicrophoneReinforcement Output Line [1..4] Mode ....................................................... 52
  xConfiguration Audio MicrophoneReinforcement Gain .................................................................................. 53
  xConfiguration Audio SoundsAndAlerts RingTone ......................................................................................... 53
  xConfiguration Audio SoundsAndAlerts RingVolume ................................................................................... 53
  xConfiguration Audio Input HDMI [1..3] Level ............................................................................................... 53
  xConfiguration Audio Input HDMI [1..3] Mode ............................................................................................. 54
  xConfiguration Audio Input HDMI [1..3] VideoAssociation MuteOnInactiveVideo ........................................ 54
  xConfiguration Audio Input Line [1..4] Equalizer ID ..................................................................................... 54
  xConfiguration Audio Input Line [1..4] Equalizer Mode ................................................................................ 54
  xConfiguration Audio Input Line [1..4] VideoAssociation MuteOnInactiveVideo ........................................... 55
  xConfiguration Audio Input Line [1..4] VideoAssociation VideoInputSource ................................................ 55
  xConfiguration Audio Input Line [1..4] Channel .......................................................................................... 55
  xConfiguration Audio Input Line [1..4] Level ............................................................................................... 55
  xConfiguration Audio Input Line [1..4] Mode .............................................................................................. 56
  xConfiguration Audio Input Microphone [1..8] EchoControl Mode ............................................................... 56
  xConfiguration Audio Input Microphone [1..8] EchoControl NoiseReduction ............................................... 56
  xConfiguration Audio Input Microphone [1..8] EchoControl Dereverberation ................................................. 56
  xConfiguration Audio Input Microphone [1..8] Equalizer ID ........................................................................ 57
  xConfiguration Audio Input Microphone [1..8] Equalizer Mode ................................................................... 57
  xConfiguration Audio Input Microphone [1..8] VideoAssociation MuteOnInactiveVideo .............................. 57
  xConfiguration Audio Input Microphone [1..8] VideoAssociation VideoInputSource ..................................... 57
  xConfiguration Audio Input Microphone [1..8] Level ................................................................................... 58
  xConfiguration Audio Input Microphone [1..8] Mode .................................................................................. 58

Cameras configuration ................................................................................................................................. 61
  xConfiguration Cameras Camera [1..7] AssignedSerialNumber .................................................................... 61
  xConfiguration Cameras Camera [1..7] Backlight DefaultMode .................................................................... 61
  xConfiguration Cameras Camera [1..7] Brightness Mode ............................................................................ 61
  xConfiguration Cameras Camera [1..7] Brightness DefaultLevel ................................................................. 62
  xConfiguration Cameras Camera [1..7] Flip ................................................................................................. 62
  xConfiguration Cameras Camera [1..7] Focus Mode .................................................................................... 62
  xConfiguration Cameras Camera [1..7] Gamma Mode .................................................................................. 62
  xConfiguration Cameras Camera [1..7] Gamma Level .................................................................................. 63
  xConfiguration Cameras Camera [1..7] Mirror ............................................................................................ 63
  xConfiguration Cameras Camera [1..7] Whitebalance Mode ........................................................................ 63
  xConfiguration Cameras Camera [1..7] Whitebalance Level ...................................................................... 63
  xConfiguration Cameras Preset TriggerAutofocus ....................................................................................... 64
  xConfiguration Cameras SpeakerTrack Mode .............................................................................................. 64
  xConfiguration Cameras SpeakerTrack TrackingMode ................................................................................. 64
  xConfiguration Cameras SpeakerTrack ConnectorDetection Mode .............................................................. 64
Conference configuration ................................. 66
  xConfiguration Conference AutoAnswer Mode ...................... 66
  xConfiguration Conference AutoAnswer Mute ......................... 66
  xConfiguration Conference AutoAnswer Delay ....................... 66
  xConfiguration Conference DefaultCall Protocol .................... 66
  xConfiguration Conference DefaultCall Rate ......................... 67
  xConfiguration Conference DoNotDisturb DefaultTimeout .......... 67
  xConfiguration Conference Encryption Mode ........................ 67
  xConfiguration Conference FarEndControl Mode .................... 67
  xConfiguration Conference MaxReceiveCallRate ..................... 68
  xConfiguration Conference MaxTransmitCallRate .................... 68
  xConfiguration Conference MaxTotalReceiveCallRate ............... 68
  xConfiguration Conference MaxTotalTransmitCallRate .............. 68
  xConfiguration Conference MultiStream Mode ....................... 69

GPIO configuration ............................................ 69
  xConfiguration GPIO Pin [1..4] Mode ................................. 69

H323 configuration .............................................. 70
  xConfiguration H323 Authentication Mode ............................ 70
  xConfiguration H323 Authentication LoginName ..................... 70
  xConfiguration H323 Authentication Password ....................... 70
  xConfiguration H323 CallSetup Mode .................................. 70
  xConfiguration H323 Encryption KeySize ............................. 71
  xConfiguration H323 Gatekeeper Address ............................. 71
  xConfiguration H323 H323Alias E164 .................................. 71
  xConfiguration H323 H323Alias ID ..................................... 71
  xConfiguration H323 NAT Mode ......................................... 72
  xConfiguration H323 NAT Address ...................................... 72

Network configuration ....................................... 73
  xConfiguration Network [1] DNS Domain Name ....................... 73
  xConfiguration Network [1] IEEE8021X Mode ........................ 73
  xConfiguration Network [1] IEEE8021X TlsVerify ..................... 73
  xConfiguration Network [1] IEEE8021X UseClientCertificate .... 74
  xConfiguration Network [1] IEEE8021X Identity ..................... 74
  xConfiguration Network [1] IEEE8021X Password .................... 74
  xConfiguration Network [1] IEEE8021X AnonymousIdentity .... 74
  xConfiguration Network [1] IEEE8021X Eap Md5 ..................... 75
  xConfiguration Network [1] IEEE8021X Eap Peap .................... 75
  xConfiguration Network [1] IEEE8021X Eap Tls ..................... 75
  xConfiguration Network [1] IEEE8021X Eap Tls ..................... 75
  xConfiguration Network [1] IEEE8021X Eap Tls ..................... 75
  xConfiguration Network [1] IEEE8021X Eap Tls ..................... 75
  xConfiguration Network [1] IPv4 Assignment ......................... 76
  xConfiguration Network [1] IPv4 Address .............................. 76
  xConfiguration Network [1] IPv4 Gateway .............................. 76
  xConfiguration Network [1] IPv4 SubnetMask ......................... 77
  xConfiguration Network [1] IPv6 Assignment ......................... 77
  xConfiguration Network [1] IPv6 Address .............................. 77
  xConfiguration Network [1] IPv6 Dhcpoptions ....................... 78
  xConfiguration Network [1] MTU ...................................... 78
  xConfiguration Network [1] QoS Mode ................................ 78
  xConfiguration Network [1] QoS Diffserv Audio ..................... 79
  xConfiguration Network [1] QoS Diffserv Video ...................... 79
  xConfiguration Network [1] QoS Diffserv Data ....................... 80
  xConfiguration Network [1] QoS Diffserv Signalling ................ 80
  xConfiguration Network [1] QoS Diffserv Icmpv6 .................... 81
  xConfiguration Network [1] QoS Diffserv Ntp ......................... 81
  xConfiguration Network [1] RemoteAccess Allow ..................... 81
  xConfiguration Network [1] Speed .................................... 82
  xConfiguration Network [1] Vlan Voice Mode ......................... 82
  xConfiguration Network [1] Vlan Voice VlanId ...................... 82

<table>
<thead>
<tr>
<th>Configuration section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetworkServices configuration</td>
<td>83</td>
</tr>
<tr>
<td>xConfiguration NetworkServices CDP Mode</td>
<td>83</td>
</tr>
<tr>
<td>xConfiguration NetworkServices H323 Mode</td>
<td>83</td>
</tr>
<tr>
<td>xConfiguration NetworkServices HTTP Mode</td>
<td>83</td>
</tr>
<tr>
<td>xConfiguration NetworkServices HTTPS VerifyServerCertificate</td>
<td>83</td>
</tr>
<tr>
<td>xConfiguration NetworkServices HTTPS VerifyClientCertificate</td>
<td>84</td>
</tr>
<tr>
<td>xConfiguration NetworkServices NTP Mode</td>
<td>84</td>
</tr>
<tr>
<td>xConfiguration NetworkServices NTP Server [1..3] Address</td>
<td>84</td>
</tr>
<tr>
<td>xConfiguration NetworkServices SIP Mode</td>
<td>84</td>
</tr>
<tr>
<td>xConfiguration NetworkServices SNMP Mode</td>
<td>85</td>
</tr>
<tr>
<td>xConfiguration NetworkServices SNMP Host [1..3] Address</td>
<td>85</td>
</tr>
<tr>
<td>xConfiguration NetworkServices SNMP CommunityName</td>
<td>85</td>
</tr>
<tr>
<td>xConfiguration NetworkServices SNMP SystemContact</td>
<td>85</td>
</tr>
<tr>
<td>xConfiguration NetworkServices SNMP SystemLocation</td>
<td>86</td>
</tr>
<tr>
<td>xConfiguration NetworkServices SSH Mode</td>
<td>86</td>
</tr>
<tr>
<td>xConfiguration NetworkServices Telnet Mode</td>
<td>86</td>
</tr>
<tr>
<td>xConfiguration NetworkServices WelcomeText</td>
<td>86</td>
</tr>
<tr>
<td>Peripherals configuration</td>
<td>87</td>
</tr>
<tr>
<td>xConfiguration Peripherals Profile Cameras</td>
<td>87</td>
</tr>
<tr>
<td>xConfiguration Peripherals Profile ControlSystems</td>
<td>87</td>
</tr>
<tr>
<td>xConfiguration Peripherals Profile TouchPanels</td>
<td>87</td>
</tr>
<tr>
<td>Phonebook configuration</td>
<td>88</td>
</tr>
<tr>
<td>xConfiguration Phonebook Server [1] ID</td>
<td>88</td>
</tr>
<tr>
<td>xConfiguration Phonebook Server [1] Type</td>
<td>88</td>
</tr>
<tr>
<td>xConfiguration Phonebook Server [1] URL</td>
<td>88</td>
</tr>
<tr>
<td>Provisioning configuration</td>
<td>89</td>
</tr>
<tr>
<td>xConfiguration Provisioning Connectivity</td>
<td>89</td>
</tr>
<tr>
<td>xConfiguration Provisioning Mode</td>
<td>89</td>
</tr>
<tr>
<td>xConfiguration Provisioning LoginName</td>
<td>90</td>
</tr>
<tr>
<td>xConfiguration Provisioning Password</td>
<td>90</td>
</tr>
<tr>
<td>xConfiguration Provisioning HttpMethod</td>
<td>90</td>
</tr>
<tr>
<td>xConfiguration Provisioning ExternalManager Address</td>
<td>90</td>
</tr>
<tr>
<td>xConfiguration Provisioning ExternalManager AlternateAddress</td>
<td>91</td>
</tr>
<tr>
<td>xConfiguration Provisioning ExternalManager Protocol</td>
<td>91</td>
</tr>
<tr>
<td>xConfiguration Provisioning ExternalManager Path</td>
<td>91</td>
</tr>
<tr>
<td>xConfiguration Provisioning ExternalManager Domain</td>
<td>91</td>
</tr>
<tr>
<td>xConfiguration Provisioning ExternalManager Address</td>
<td>90</td>
</tr>
<tr>
<td>xCommand Configuration</td>
<td>83</td>
</tr>
<tr>
<td>xCommand Provisioning ExternalManager Address</td>
<td>90</td>
</tr>
<tr>
<td>xCommand Provisioning ExternalManager AlternateAddress</td>
<td>91</td>
</tr>
<tr>
<td>xCommand Provisioning ExternalManager Protocol</td>
<td>91</td>
</tr>
<tr>
<td>xCommand Provisioning ExternalManager Path</td>
<td>91</td>
</tr>
<tr>
<td>xCommand Provisioning ExternalManager Domain</td>
<td>91</td>
</tr>
<tr>
<td>xStatus Configuration</td>
<td>88</td>
</tr>
<tr>
<td>xStatus Provisioning ExternalManager Address</td>
<td>90</td>
</tr>
<tr>
<td>xStatus Provisioning ExternalManager AlternateAddress</td>
<td>91</td>
</tr>
<tr>
<td>xStatus Provisioning ExternalManager Protocol</td>
<td>91</td>
</tr>
<tr>
<td>xStatus Provisioning ExternalManager Path</td>
<td>91</td>
</tr>
<tr>
<td>xStatus Provisioning ExternalManager Domain</td>
<td>91</td>
</tr>
<tr>
<td>Appendices</td>
<td>97</td>
</tr>
<tr>
<td>xAppendix Provisioning ExternalManager Address</td>
<td>90</td>
</tr>
<tr>
<td>xAppendix Provisioning ExternalManager AlternateAddress</td>
<td>91</td>
</tr>
<tr>
<td>xAppendix Provisioning ExternalManager Protocol</td>
<td>91</td>
</tr>
<tr>
<td>xAppendix Provisioning ExternalManager Path</td>
<td>91</td>
</tr>
<tr>
<td>xAppendix Provisioning ExternalManager Domain</td>
<td>91</td>
</tr>
</tbody>
</table>
### SystemUnit configuration
- **xConfiguration SystemUnit Name** .......................................................... 98

### Time configuration
- **xConfiguration Time TimeFormat** .......................................................... 99
- **xConfiguration Time Date_format** .......................................................... 99
- **xConfiguration Time TimeZone** ............................................................. 99

### UserInterface configuration
- **xConfiguration UserInterface ContactInfo Type** .................................. 101
- **xConfiguration UserInterface KeyTones Mode** ........................................ 101
- **xConfiguration UserInterface Language** .................................................. 101
- **xConfiguration UserInterface OSD Output** .............................................. 102

### UserManagement configuration
- **xConfiguration UserManagement LDAP Mode** ....................................... 102
- **xConfiguration UserManagement LDAP Server Address** ......................... 102
- **xConfiguration UserManagement LDAP Server Port** ............................... 103
- **xConfiguration UserManagement LDAP Encryption** ............................... 103
- **xConfiguration UserManagement LDAP MinimumTLSVersion** ................. 103
- **xConfiguration UserManagement LDAP VerifyServerCertificate** ............. 103

### Video configuration
- **xConfiguration Video DefaultMainSource** .............................................. 105
- **xConfiguration Video Input Connector [1..5] CameraControl Mode** .......... 105
- **xConfiguration Video Input Connector [1..5] CameraControl CameraId** .... 105
- **xConfiguration Video Input Connector [1..5] InputSourceType** .................. 106
- **xConfiguration Video Input Connector [1..5] Name** ................................ 106
- **xConfiguration Video Input Connector [1..5] Quality** ............................. 106
- **xConfiguration Video Input Connector [1..4] PresentationSelection** ......... 107
- **xConfiguration Video Input Connector [1..5] Visibility** ........................... 107
- **xConfiguration Video Monitors** ............................................................. 108
- **xConfiguration Video Output Connector [1..2] CEC Mode** ....................... 108
- **xConfiguration Video Output Connector [1..3] MonitorRole** ..................... 109
- **xConfiguration Video Output Connector [1..3] Resolution** ....................... 109
- **xConfiguration Video Selfview Default Source** ..................................... 109
- **xConfiguration Video Selfview Default OnMonitorRole** .......................... 110
- **xConfiguration Video Selfview Default FullscreenMode** ........................ 110
- **xConfiguration Video Selfview Default PIPPosition** ............................... 111
- **xConfiguration Video Selfview Default OnCall Mode** ............................. 111
- **xConfiguration Video Selfview OnCall Duration** .................................... 111
Audio configuration

**xConfiguration 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, USER
Default value: 50

**USAGE:**

```plaintext
xConfiguration Audio DefaultVolume: DefaultVolume

where

DefaultVolume: 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.
```

**xConfiguration Audio Microphones Mute Enabled**

Define the microphone mute behaviour on the video system.

Requires user role: ADMIN
Default value: True

**USAGE:**

```plaintext
xConfiguration Audio Microphones Mute Enabled: Enabled

where

Enabled: 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.
```

**xConfiguration 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
Default value: Off

**USAGE:**

```plaintext
xConfiguration Audio MicrophoneReinforcement Input Microphone n Mode: Mode

where

Mode: 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.
```

**xConfiguration 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
Default value: Off

**USAGE:**

```plaintext
xConfiguration Audio MicrophoneReinforcement Output Line n Mode: Mode

where

Mode: 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.
```
xConfiguration Audio MicrophoneReinforcement Gain

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

Requires user role: ADMIN
Default value: -54

**USAGE:**

xConfiguration Audio MicrophoneReinforcement Gain: Gain

where

Gain: 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.

xConfiguration Audio SoundsAndAlerts RingTone

Define which ringtone to use for incoming calls.

Requires user role: ADMIN, USER
Default value: Sunrise

**USAGE:**

xConfiguration Audio SoundsAndAlerts RingTone: RingTone

where

RingTone: Sunrise/Mischief/Ripples/Reflections/Vibes/Playful/Ascent/Calculation/Mellow/Ringer

Select a ringtone from the list.

xConfiguration Audio SoundsAndAlerts RingVolume

Define the ring volume for incoming calls.

Requires user role: ADMIN, USER
Default value: 50

**USAGE:**

xConfiguration Audio SoundsAndAlerts RingVolume: RingVolume

where

RingVolume: Integer (0..100)

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

xConfiguration Audio Input HDMI [1..3] Level

Define the audio level of the HDMI input connector.

Requires user role: ADMIN
Default value: 0

**USAGE:**

xConfiguration Audio Input HDMI n Level: Level

where

n: Unique ID that identifies the HDMI input. Range: 1..3
Level: Integer (-24..0)

Select a value between -24 and 0, in steps of 1 dB.
xConfiguration Audio Input HDMI [1..3] Mode
Define if the audio channels on the HDMI input shall be enabled. The HDMI inputs have two audio channels.

Requires user role: ADMIN
Default value: HDMI [1..2]: Off   HDMI [3]: On

USAGE:
xConfiguration Audio Input HDMI \n Mode:
where
  \n: Unique ID that identifies the HDMI input. Range: 1..3
Mode: Off/On
  Off: Disable audio on the HDMI input.
  On: Enable audio on the HDMI input.

xConfiguration Audio Input HDMI [1..3] VideoAssociation MuteOnInactiveVideo
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
Default value: On

USAGE:
xConfiguration Audio Input HDMI \n VideoAssociation MuteOnInactiveVideo:
where
  \n: Unique ID that identifies the HDMI input. Range: 1..3
MuteOnInactiveVideo: 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.

xConfiguration 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
Default value: 1

USAGE:
xConfiguration Audio Input Line \n Equalizer ID: ID
where
  \n: Unique ID that identifies the audio line input. Range: 1..4
ID: Integer (1..8)
  Set the equalizer ID.

xConfiguration 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
Default value: Off

USAGE:
xConfiguration Audio Input Line \n Equalizer Mode: Mode
where
  \n: Unique ID that identifies the audio line input. Range: 1..4
Mode: Off/On
  Off: No equalizer.
  On: Enable the equalizer for the audio source that is connected to the line input.
xConfiguration 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
Default value: Line [1, 2]: On   Line [3, 4]: Off

**USAGE:**

```
xConfiguration Audio Input Line n VideoAssociation MuteOnInactiveVideo:
MuteOnInactiveVideo
where
n: Unique ID that identifies the audio line input. Range: 1..4
MuteOnInactiveVideo: 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.
```

xConfiguration Audio Input Line [1..4] VideoAssociation VideoInputSource

The audio source can be associated with a video source on the video input connector.

Requires user role: ADMIN
Default value: Line [1, 2]: 4   Line [3, 4]: 1

**USAGE:**

```
xConfiguration Audio Input Line n VideoAssociation VideoInputSource:
VideoInputSource
where
n: Unique ID that identifies the audio line input. Range: 1..4
VideoInputSource: 1/2/3/4/5
  Select the video input connector to associate the audio source with.
```

xConfiguration 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
Default value: Left

**USAGE:**

```
xConfiguration Audio Input Line n Channel: Channel
where
n: Unique ID that identifies the audio line input. Range: 1..4
Channel: 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.
```

xConfiguration 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 the codec for a complete overview of the values represented in dB.

Requires user role: ADMIN
Default value: 10

**USAGE:**

```
xConfiguration Audio Input Line n Level: Level
where
n: Unique ID that identifies the audio line input. Range: 1..4
Level: Integer (0..24)
  Select a value between 0 and 24, in steps of 1 dB.
```
xConfiguration Audio Input Line [1..4] Mode
Define the mode for the audio input line.

Requires user role: ADMIN
Default value: On

USAGE:
xConfiguration Audio Input Line \( n \) Mode: \( \text{Mode} \)
where
\( n \): Unique ID that identifies the audio line input. Range: 1..4

Mode: Off/On
  Off: Disable the Audio Line input.
  On: Enable the Audio Line input.

xConfiguration 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
Default value: On

USAGE:
xConfiguration Audio Input Microphone \( n \) EchoControl Mode: \( \text{Mode} \)
where
\( n \): Unique ID that identifies the microphone input. Range: 1..8

Mode: 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.

xConfiguration 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
Default value: On

USAGE:
xConfiguration Audio Input Microphone \( n \) EchoControl NoiseReduction: \( \text{NoiseReduction} \)
where
\( n \): Unique ID that identifies the microphone input. Range: 1..8

\( \text{NoiseReduction} \): Off/On
  Off: Turn off the noise reduction.
  On: Turn on the noise reduction. Recommended in the presence of low frequency noise.

xConfiguration 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
Default value: Off

USAGE:
xConfiguration Audio Input Microphone \( n \) EchoControl Dereverberation: \( \text{Dereverberation} \)
where
\( n \): Unique ID that identifies the microphone input. Range: 1..8

\( \text{Dereverberation} \): Off/On
  Off: Turn off the dereverberation.
  On: Turn on the dereverberation.
xConfiguration 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
Default value: 1

**USAGE:**
```
xConfiguration Audio Input Microphone n Equalizer ID: ID
```  
where

- **n**: Unique ID that identifies the microphone input. Range: 1..8
- **ID**: Integer (1..8)

Set the equalizer ID.

xConfiguration 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
Default value: Off

**USAGE:**
```
xConfiguration Audio Input Microphone n Equalizer Mode: Mode
```  
where

- **n**: Unique ID that identifies the microphone input. Range: 1..8
- **Mode**: Off/On

    - Off: No equalizer.
    - On: Enable the equalizer for the source that is connected to the microphone input.

xConfiguration 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
Default value: On

**USAGE:**
```
xConfiguration Audio Input Microphone n Video Association MuteOnInactiveVideo: MuteOnInactiveVideo
```  
where

- **n**: Unique ID that identifies the microphone input. Range: 1..8
- **MuteOnInactiveVideo**: 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.

xConfiguration Audio Input Microphone [1..8] Video Association VideoInputSource
Select the video input connector to associate the audio source with.

Requires user role: ADMIN
Default value: 1

**USAGE:**
```
xConfiguration Audio Input Microphone n Video Association VideoInputSource: VideoInputSource
```  
where

- **n**: Unique ID that identifies the microphone input. Range: 1..8
- **VideoInputSource**: 1/2/3/4/5

Select the video input connector to associate the audio source with.
xConfiguration Audio Input Microphone [1..8] Level
Define the audio level of the Microphone input connector.
See the Audio Level table in the Physical Interface Guide for the codec for a complete overview
of the values represented in dB.
Requires user role: ADMIN
Default value: 58

**USAGE:**
xConfiguration Audio Input Microphone n Level: Level
where
  n: Unique ID that identifies the microphone input. Range: 1..8
  Level: Integer (0..70)
    Select a value between 0 and 70, in steps of 1 dB.

xConfiguration Audio Input Microphone [1..8] Mode
Disable or enable audio on the microphone connector.
Requires user role: ADMIN
Default value: On

**USAGE:**
xConfiguration Audio Input Microphone n Mode: Mode
where
  n: Unique ID that identifies the microphone input. Range: 1..8
  Mode: Off/On
    Off: Disable the audio input microphone connector.
    On: Enable the audio input microphone connector.

xConfiguration 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
Default value: Line

**USAGE:**
xConfiguration Audio Input Microphone n Type: Type
where
  n: Unique ID that identifies the microphone input. Range: 1..8
  Type: 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.

xConfiguration Audio Output HDMI [1..2] Level
Define the output level of the HDMI output connector, in steps of 1 dB.
Requires user role: ADMIN
Default value: 0

**USAGE:**
xConfiguration Audio Output HDMI n Level: Level
where
  n: Unique ID that identifies the HDMI output. Range: 1..2
  Level: Integer (-24..0)
    Select a value between -24 and 0, in steps of 1 dB.
xConfiguration Audio Output HDMI [1..2] Mode
Define if the audio channel on the HDMI output connector shall be enabled.

Requires user role: ADMIN
Default value: On

**USAGE:**
```
xConfiguration Audio Output HDMI n Mode: Mode
```
where
- \( n \): Unique ID that identifies the HDMI output. Range: 1..2
- \( Mode \): Off/On
  - Off: Disable the audio channel on the HDMI output.
  - On: Enable the audio channel on the HDMI output.

xConfiguration 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
Default value: Left

**USAGE:**
```
xConfiguration Audio Output Line n Channel: Channel
```
where
- \( n \): Unique ID that identifies the audio line output. Range: 1..6
- \( Channel \): 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.

xConfiguration 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
Default value: 0

**USAGE:**
```
xConfiguration Audio Output Line n Delay DelayMs: DelayMs
```
where
- \( n \): Unique ID that identifies the audio line output. Range: 1..6
- \( DelayMs \): Integer (0..290)
  - The delay in milliseconds.

xConfiguration 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
Default value: Fixed

**USAGE:**
```
xConfiguration Audio Output Line n Delay Mode: Mode
```
where
- \( n \): Unique ID that identifies the audio line output. Range: 1..6
- \( Mode \): Fixed/RelativeToHDMI
  - Fixed: Any extra delay (DelayMs) added to the output, will be a fixed number of milliseconds.
  - 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.
xConfiguration 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
Default value: 1

**USAGE:**
xConfiguration Audio Output Line n Equalizer ID: ID
where
n: Unique ID that identifies the audio line output. Range: 1..6
ID: Integer (1..8)
Set the equalizer ID.

xConfiguration 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
Default value: Off

**USAGE:**
xConfiguration Audio Output Line n Equalizer Mode: Mode
where
n: Unique ID that identifies the audio line output. Range: 1..6
Mode: Off/On
Off: No equalizer.
On: Enable the equalizer for the audio output line.

xConfiguration 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 the codec for a complete overview of the menu values represented in dB.
Requires user role: ADMIN
Default value: -10

**USAGE:**
xConfiguration Audio Output Line n Level: Level
where
n: Unique ID that identifies the audio line output. Range: 1..6
Level: Integer (-24..0)
Select a value between -24 and 0, in steps of 1 dB.

xConfiguration Audio Output Line [1..6] Mode
Define the mode for the audio output line.
Requires user role: ADMIN
Default value: On

**USAGE:**
xConfiguration Audio Output Line n Mode: Mode
where
n: Unique ID that identifies the audio line output. Range: 1..6
Mode: Off/On
Off: Disable the audio output line.
On: Enable the audio output line.
Cameras configuration

xConfiguration 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 1080p4xS2) 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, USER

Default value: ""

USAGE:

xConfiguration Cameras Camera n AssignedSerialNumber: "AssignedSerialNumber"

where

n: Unique ID that identifies the camera. Range: 1..7

AssignedSerialNumber: String (0, 20)

The camera's serial number.

xConfiguration 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, USER

Default value: Off

USAGE:

xConfiguration Cameras Camera n Backlight DefaultMode: DefaultMode

where

n: Unique ID that identifies the camera. Range: 1..7

DefaultMode: Off/On

Off: Turn off the camera backlight compensation.

On: Turn on the camera backlight compensation.

xConfiguration Cameras Camera [1..7] Brightness Mode

Define the camera brightness mode.

Requires user role: ADMIN, USER

Default value: Auto

USAGE:

xConfiguration Cameras Camera n Brightness Mode: Mode

where

n: Unique ID that identifies the camera. Range: 1..7

Mode: Auto/Manual

Auto: The camera brightness is automatically set by the system.

**xConfiguration 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, USER
Default value: 20

**USAGE:**

```
xConfiguration Cameras Camera n \ Brightness DefaultLevel: DefaultLevel
```

where

- `n`: Unique ID that identifies the camera. Range: 1..7
- `DefaultLevel`: Integer (1..31)
  - The brightness level.

**xConfiguration Cameras Camera [1..7] Flip**

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, USER
Default value: Auto

**USAGE:**

```
xConfiguration Cameras Camera n \ Flip: Flip
```

where

- `n`: Unique ID that identifies the camera. Range: 1..7
- `Flip`: 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.

**xConfiguration Cameras Camera [1..7] Focus Mode**

Define the camera focus mode.

Requires user role: ADMIN, USER
Default value: Auto

**USAGE:**

```
xConfiguration Cameras Camera n \ Focus Mode: Mode
```

where

- `n`: Unique ID that identifies the camera. Range: 1..7
- `Mode`: 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.

**xConfiguration 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, USER
Default value: Auto

**USAGE:**

```
xConfiguration Cameras Camera n \ Gamma Mode: Mode
```

where

- `n`: Unique ID that identifies the camera. Range: 1..7
- `Mode`: 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.
xConfiguration 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, USER
Default value: 0

**USAGE:**

```plaintext
xConfiguration Cameras Camera n Gamma Level: Level
```

where
- `n`: Unique ID that identifies the camera. Range: 1..7
- `Level`: Integer (0..7)
  
  Define the gamma level.

xConfiguration Cameras Camera [1..7] Mirror

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, USER
Default value: Auto

**USAGE:**

```plaintext
xConfiguration Cameras Camera n Mirror: Mirror
```

where
- `n`: Unique ID that identifies the camera. Range: 1..7
- `Mirror`: 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.

xConfiguration Cameras Camera [1..7] Whitebalance Mode

Define the camera white balance mode.

Requires user role: ADMIN, USER
Default value: Auto

**USAGE:**

```plaintext
xConfiguration Cameras Camera n Whitebalance Mode: Mode
```

where
- `n`: Unique ID that identifies the camera. Range: 1..7
- `Mode`: Auto/Manual
  
  Auto: The camera will continuously adjust the white balance depending on the camera view.
  

xConfiguration 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, USER
Default value: 1

**USAGE:**

```plaintext
xConfiguration Cameras Camera n Whitebalance Level: Level
```

where
- `n`: Unique ID that identifies the camera. Range: 1..7
- `Level`: Integer (1..16)
  
  The white balance level.
xConfiguration Cameras Preset TriggerAutofocus

The current position (pan and tilt), zoom and focus are stored with a preset. Use this setting to determine if the camera should refocus or use the focus value that is stored with the preset.

Requires user role: ADMIN
Default value: Auto

**USAGE:**

xConfiguration Cameras Preset TriggerAutofocus: \texttt{TriggerAutofocus}  
where  
\texttt{TriggerAutofocus}: \texttt{Auto}/\texttt{Off}/\texttt{On}  
- \texttt{Auto}: Whether the camera refocuses or not when selecting a preset, depends on the camera type.  
- \texttt{Off}: The focus value that is stored with the preset will be used. The camera will not refocus when selecting a preset.  
- \texttt{On}: The camera will refocus when selecting a preset. The focus value that is stored with the preset may be overridden.

xConfiguration Cameras SpeakerTrack Mode

This setting applies only when using a Cisco TelePresence SpeakerTrack 60 camera.
The SpeakerTrack 60 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, USER
Default value: Auto

**USAGE:**

xConfiguration Cameras SpeakerTrack Mode: \texttt{Mode}  
where  
\texttt{Mode}: \texttt{Auto}/\texttt{Off}  
- \texttt{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.  
- \texttt{Off}: The cameras operate as two individual cameras. Speaker tracking is not used.

xConfiguration Cameras SpeakerTrack TrackingMode

This setting applies only when using a Cisco TelePresence SpeakerTrack 60 camera, 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, USER
Default value: Auto

**USAGE:**

xConfiguration Cameras SpeakerTrack TrackingMode: \texttt{TrackingMode}  
where  
\texttt{TrackingMode}: \texttt{Auto}/\texttt{Conservative}  
- \texttt{Auto}: Normal tracking mode.  
- \texttt{Conservative}: The camera view will change to a new speaker later than in Normal mode.

xConfiguration Cameras SpeakerTrack ConnectorDetection Mode

This setting applies only when a Cisco TelePresence SpeakerTrack 60 camera is connected to the codec (video system).
Define whether to automatically detect or manually configure which video input each individual camera is connected to. You should choose manual configuration in situations where the codec does not receive EDID information from the cameras. Typically, this will be when you use HDMI repeaters that do not pass on EDID information.

Requires user role: ADMIN, USER
Default value: Auto

**USAGE:**

xConfiguration Cameras SpeakerTrack ConnectorDetection Mode: \texttt{Mode}  
where  
\texttt{Mode}: \texttt{Auto}/\texttt{Manual}  
- \texttt{Auto}: Automatically detect which video inputs the cameras are connected to.  
- \texttt{Manual}: Manually define which video inputs the cameras are connected to. Use the Cameras SpeakerTrack ConnectorDetection CameraLeft and Cameras SpeakerTrack ConnectorDetection CameraRight settings.
xConfiguration Cameras SpeakerTrack ConnectorDetection CameraLeft

This setting applies only when a Cisco TelePresence SpeakerTrack 60 camera is connected to the codec (video system). Furthermore, Cameras SpeakerTrack ConnectorDetection Mode must be set to Manual.

Define the number of the video input that SpeakerTrack 60's left camera is connected to.

Requires user role: ADMIN, USER
Default value: 1

**USAGE:**

```
xConfiguration Cameras SpeakerTrack ConnectorDetection CameraLeft: CameraLeft
```

where

```
CameraLeft: Integer (1..5)
```

Set a valid video input number. For example, set to 1 if the left camera is connected to video input 1.

xConfiguration Cameras SpeakerTrack ConnectorDetection CameraRight

This setting applies only when a Cisco TelePresence SpeakerTrack 60 camera is connected to the codec (video system). Furthermore, Cameras SpeakerTrack ConnectorDetection Mode must be set to Manual.

Define the number of the video input that SpeakerTrack 60's right camera is connected to.

Requires user role: ADMIN, USER
Default value: 2

**USAGE:**

```
xConfiguration Cameras SpeakerTrack ConnectorDetection CameraRight: CameraRight
```

where

```
CameraRight: Integer (1..5)
```

Set a valid video input number. For example, set to 2 if the right camera is connected to video input 2.

xConfiguration Cameras SpeakerTrack Whiteboard Mode

This setting applies only when a Cisco TelePresence SpeakerTrack 60 camera is connected to the codec.

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, USER
Default value: Off

**USAGE:**

```
xConfiguration Cameras SpeakerTrack Whiteboard Mode: Mode
```

where

```
Mode: Off/On
```

- Off: The Snap to Whiteboard feature is disabled.
- On: The Snap to Whiteboard feature is enabled.
Conference configuration

xConfiguration 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

USAGE:
xConfiguration Conference AutoAnswer Mode: 

where

Mode: 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.

xConfiguration 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

USAGE:

xConfiguration Conference AutoAnswer Mute: 

where

Mute: Off/On

- Off: The incoming call will not be muted.
- On: The incoming call will be muted when automatically answered.

xConfiguration 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

USAGE:

xConfiguration Conference AutoAnswer Delay: Delay

where

Delay: Integer (0..50)

The auto answer delay (seconds).

xConfiguration Conference DefaultCall Protocol

Define the Default Call Protocol to be used when placing calls from the system.

Requires user role: ADMIN
Default value: Auto

USAGE:

xConfiguration Conference DefaultCall Protocol: Protocol

where

Protocol: 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.
xConfiguration Conference DefaultCall Rate
Define the Default Call Rate to be used when placing calls from the system.
Requires user role: ADMIN
Default value: 3072

**USAGE:**
xConfiguration Conference DefaultCall Rate: Rate

where

Rate: Integer (64..6000)
The default call rate (kbps).

xConfiguration Conference DoNotDisturb DefaultTimeout
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
Default value: 60

**USAGE:**
xConfiguration Conference DoNotDisturb DefaultTimeout: DefaultTimeout

where

DefaultTimeout: Integer (1..1440)
The number of minutes (maximum 1440 minutes = 24 hours) before the Do Not Disturb session times out automatically.

xConfiguration 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

**USAGE:**
xConfiguration Conference Encryption Mode: Mode

where

Mode: 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.

xConfiguration Conference FarEndControl 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

**USAGE:**
xConfiguration Conference FarEndControl Mode: Mode

where

Mode: 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.
xConfiguration 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

**USAGE:**
```plaintext
xConfiguration Conference MaxReceiveCallRate: MaxReceiveCallRate
```
where
```
MaxReceiveCallRate: Integer (64 .. 6000)
```
- The maximum receive call rate (kbps).

xConfiguration 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

**USAGE:**
```plaintext
xConfiguration Conference MaxTransmitCallRate: MaxTransmitCallRate
```
where
```
MaxTransmitCallRate: Integer (64 .. 6000)
```
- The maximum transmit call rate (kbps).

xConfiguration 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

**USAGE:**
```plaintext
xConfiguration Conference MaxTotalReceiveCallRate: MaxTotalReceiveCallRate
```
where
```
MaxTotalReceiveCallRate: Integer (64 .. 6000)
```
- The maximum receive call rate (kbps).

xConfiguration 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

**USAGE:**
```plaintext
xConfiguration Conference MaxTotalTransmitCallRate: MaxTotalTransmitCallRate
```
where
```
MaxTotalTransmitCallRate: Integer (64 .. 6000)
```
- The maximum transmit call rate (kbps).
xConfiguration Conference MultiStream Mode

The video system supports multistream video for conferences, provided that the conference infrastructure supports the feature (Cisco TelePresence Server 4.2 or later). This means that the video system can compose the video streams locally into a conference layout which utilizes all available screens. This results in an enhanced user experience.

Multistream video is supported only via SIP.

Requires user role: ADMIN
Default value: Off

Usage:

xConfiguration Conference MultiStream Mode: Mode
where

- **Mode**: Auto/Off
  - **Auto**: Use local composition of video streams if the feature is supported by the conference infrastructure.
  - **Off**: Local composition is disabled. Layouts will be transcoded by the conference infrastructure (Cisco TelePresence Server).

GPIO configuration

xConfiguration 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
Default value: InputNoAction

Usage:

xConfiguration GPIO Pin n Mode: Mode
where

- **n**: GPIO pin number. Range: 1..4
- **Mode**: 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 configuration

xConfiguration H323 Authentication Mode
Define the authentication mode for the H.323 profile.
Requires user role: ADMIN
Default value: Off

**USAGE:**
xConfiguration H323 Authentication Mode: 

\[Mode\]

where

\[Mode\]: 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.

xConfiguration 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 user role: ADMIN
Default value: 

**USAGE:**
xConfiguration H323 Authentication LoginName: "LoginName"

where

\[LoginName\]: String (0, 50)

The authentication login name.

xConfiguration 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 user role: ADMIN
Default value: 

**USAGE:**
xConfiguration H323 Authentication Password: "Password"

where

\[Password\]: String (0, 50)

The authentication password.

xConfiguration 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

**USAGE:**
xConfiguration H323 CallSetup Mode: 

\[Mode\]

where

\[Mode\]: 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.
xConfiguration 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

**USAGE:**

```
xConfiguration H323 Encryption KeySize: KeySize

where

  KeySize: Min1024bit/Max1024bit/Min2048bit
    - Min1024bit: The minimum size is 1024 bit.
    - Max1024bit: The maximum size is 1024 bit.
    - Min2048bit: The minimum size is 2048 bit.
```

xConfiguration 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: ""

**USAGE:**

```
xConfiguration H323 Gatekeeper Address: "Address"

where

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

xConfiguration 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: ""

**USAGE:**

```
xConfiguration H323 H323Alias E164: "E164"

where

  E164: String (0, 30)
    - The H.323 Alias E.164 address. Valid characters are 0–9, *, and #.
```

xConfiguration 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: ""

**USAGE:**

```
xConfiguration H323 H323Alias ID: "ID"

where

  ID: String (0, 49)
    - The H.323 Alias ID. Example: "firstname.lastname@company.com", "My H.323 Alias ID"
xConfiguration 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

**USAGE:**

```
xConfiguration H323 NAT Mode: Mode
```

where

- **Mode**: 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.

xConfiguration 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: ""

**USAGE:**

```
xConfiguration H323 NAT Address: "Address"
```

where

- **Address**: String (0, 64)
  - A valid IPv4 address or IPv6 address.
Network configuration

xConfiguration 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: ""

USAGE:
```
xConfiguration Network n DNS Domain Name: "Name"
```

where
- n: Index that identifies the network. Range: 1..1
- Name: 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: ""

USAGE:
```
xConfiguration Network n DNS Server m Address: "Address"
```

where
- n: Index that identifies the network. Range: 1..1
- m: Index that identifies the DNS server. Maximum three DNS servers are allowed. Range: 1..3
- Address: String (0, 64)
  A valid IPv4 address or IPv6 address.

xConfiguration 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

USAGE:
```
xConfiguration Network n IEEE8021X Mode: Mode
```

where
- n: Index that identifies the network. Range: 1..1
- Mode: Off/On
  - Off: The 802.1X authentication is disabled (default).
  - On: The 802.1X authentication is enabled.

xConfiguration 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

USAGE:
```
xConfiguration Network n IEEE8021X TlsVerify: TlsVerify
```

where
- n: Index that identifies the network. Range: 1..1
- TlsVerify: 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.
xConfiguration Network [1] IEEE8021X UseClientCertificate

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

**USAGE:**

\[ xConfiguration Network \_n IEEE8021X UseClientCertificate: UseClientCertificate \]

where

\[ n: Index that identifies the network. Range: 1..1 \]

UseClientCertificate: 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.

xConfiguration Network [1] IEEE8021X Identity

Define the user name for 802.1X authentication.

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

**USAGE:**

\[ xConfiguration Network \_n IEEE8021X Identity: Identity \]

where

\[ n: Index that identifies the network. Range: 1..1 \]

Identity: String (0, 64)

The user name for 802.1X authentication.

xConfiguration Network [1] IEEE8021X Password

Define the password for 802.1X authentication.

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

**USAGE:**

\[ xConfiguration Network \_n IEEE8021X Password: Password \]

where

\[ n: Index that identifies the network. Range: 1..1 \]

Password: String (0, 32)

The password for 802.1X authentication.


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: ""

**USAGE:**

\[ xConfiguration Network \_n IEEE8021X AnonymousIdentity: AnonymousIdentity \]

where

\[ n: Index that identifies the network. Range: 1..1 \]

AnonymousIdentity: String (0, 64)

The 802.1X Anonymous ID string.

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

USAGE:

```
xConfiguration Network n IEEE8021X Eap Md5: Md5
```

where

- `n`: Index that identifies the network. Range: 1..1
- `Md5`: Off/On
  - Off: The EAP-MD5 protocol is disabled.
  - On: The EAP-MD5 protocol is enabled (default).

xConfiguration 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

USAGE:

```
xConfiguration Network n IEEE8021X Eap Ttls: Ttls
```

where

- `n`: Index that identifies the network. Range: 1..1
- `Ttls`: Off/On
  - Off: The EAP-TTLS protocol is disabled.
  - On: The EAP-TTLS protocol is enabled (default).

xConfiguration 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

USAGE:

```
xConfiguration Network n IEEE8021X Eap Tls: Tls
```

where

- `n`: Index that identifies the network. Range: 1..1
- `Tls`: Off/On
  - Off: The EAP-TLS protocol is disabled.
  - On: The EAP-TLS protocol is enabled (default).

xConfiguration 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

USAGE:

```
xConfiguration Network n IEEE8021X Eap Peap: Peap
```

where

- `n`: Index that identifies the network. Range: 1..1
- `Peap`: Off/On
  - Off: The EAP-PEAP protocol is disabled.
  - On: The EAP-PEAP protocol is enabled (default).
xConfiguration 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

USAGE:
xConfiguration Network [1] IPStack: IPStack
where
  n: Index that identifies the network. Range: 1..1
  IPStack: Dual/IPv4/IPv6
    Dual: When set to Dual, the network interface can operate on both IP versions at the same time, and can have both an IPv4 and an IPv6 address at the same time.
    IPv4: When set to IPv4, the system will use IPv4 on the network interface.
    IPv6: When set to IPv6, the system will use IPv6 on the network interface.

xConfiguration Network [1] IPv4 Assignment
Define how the system will obtain its IPv4 address, subnet mask and gateway address. This setting only applies to systems on IPv4 networks.

Requires user role: ADMIN, USER
Default value: DHCP

USAGE:
xConfiguration Network [1] IPv4 Assignment: Assignment
where
  n: Index that identifies the network. Range: 1..1
  Assignment: 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.

xConfiguration 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: "" (empty string)

USAGE:
xConfiguration Network [1] IPv4 Address: "Address"
where
  n: Index that identifies the network. Range: 1..1
  Address: String (0, 64)
    A valid IPv4 address.

xConfiguration 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: "" (empty string)

USAGE:
xConfiguration Network [1] IPv4 Gateway: "Gateway"
where
  n: Index that identifies the network. Range: 1..1
  Gateway: String (0, 64)
    A valid IPv4 address.
xConfiguration 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: ""

USAGE:
exConfiguration Network n IPv4 SubnetMask: "SubnetMask"
where
  n: Index that identifies the network. Range: 1..1
  SubnetMask: String (0, 64)
    A valid IPv4 address.

xConfiguration Network [1] IPv6 Assignment
Define how the system will obtain its IPv6 address and the default gateway address. This setting only applies to systems on IPv6 networks.
Requires user role: ADMIN, USER
Default value: Autoconf

USAGE:
exConfiguration Network n IPv6 Assignment: Assignment
where
  n: Index that identifies the network. Range: 1..1
  Assignment: 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.

xConfiguration 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: ""

USAGE:
exConfiguration Network n IPv6 Address: "Address"
where
  n: Index that identifies the network. Range: 1..1
  Address: 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: ""

USAGE:
exConfiguration Network n IPv6 Gateway: "Gateway"
where
  n: Index that identifies the network. Range: 1..1
  Gateway: String (0, 64)
    A valid IPv6 address.
xConfiguration 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

 USAGE:
xConfiguration Network [1] IPv6 DHCPOptions: DHCPOptions
where
n: Index that identifies the network. Range: 1..1
DHCPOptions: 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.

xConfiguration 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

 USAGE:
xConfiguration Network [1] MTU: MTU
where
n: Index that identifies the network. Range: 1..1
MTU: Integer (576..1500)
    Set a value for the MTU (bytes).

xConfiguration 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

 USAGE:
xConfiguration Network [1] QoS Mode: Mode
where
n: Index that identifies the network. Range: 1..1
Mode: 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.
xConfiguration 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

USAGE:

xConfiguration Network 1 QoS Diffserv Audio: Audio

where

1: Index that identifies the network. Range: 1..1
Audio: 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).

xConfiguration 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

USAGE:

xConfiguration Network 1 QoS Diffserv Video: Video

where

1: Index that identifies the network. Range: 1..1
Video: 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).
xConfiguration 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

USAGE:

xConfiguration Network \[ \text{n} \] QoS Diffserv Data: \text{Data} \\\\
where \\
\text{n}: Index that identifies the network. Range: 1..1 \\
Data: 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).

xConfiguration 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

USAGE:

xConfiguration Network \[ \text{n} \] QoS Diffserv Signalling: \text{Signalling} \\\\
where \\
\text{n}: Index that identifies the network. Range: 1..1 \\
Signalling: 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).
xConfiguration 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

USAGE:
xConfiguration Network \(n\) QoS Diffserv ICMPv6: \(ICMPv6\)
where
\(n\): Index that identifies the network. Range: 1..1
\(ICMPv6\): 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).

xConfiguration 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

USAGE:
xConfiguration Network \(n\) QoS Diffserv NTP: \(NTP\)
where
\(n\): Index that identifies the network. Range: 1..1
\(NTP\): 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: ""

USAGE:
xConfiguration Network \(n\) RemoteAccess Allow: "Allow"
where
\(n\): Index that identifies the network. Range: 1..1
Allow: String (0, 255)
A valid IPv4 address or IPv6 address.
xConfiguration 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

USAGE:
xConfiguration Network n Speed: Speed
where
  n: Index that identifies the network. Range: 1..1
  Speed: 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.

xConfiguration 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

USAGE:
xConfiguration Network n VLAN Voice Mode: Mode
where
  n: Index that identifies the network. Range: 1..1
  Mode: 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.

xConfiguration 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

USAGE:
xConfiguration Network n VLAN Voice VlanId: VlanId
where
  n: Index that identifies the network. Range: 1..1
  VlanId: Integer (1..4094)
    Set the VLAN voice ID.
NetworkServices configuration

xConfiguration 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

USAGE:
xConfiguration NetworkServices CDP Mode: Mode
where
Mode: Off/On
  Off: The CDP daemon is disabled.
  On: The CDP daemon is enabled.

xConfiguration 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

USAGE:
xConfiguration NetworkServices H323 Mode: Mode
where
Mode: 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).

xConfiguration 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

USAGE:
xConfiguration NetworkServices HTTP Mode: Mode
where
Mode: 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.

xConfiguration 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

USAGE:
xConfiguration NetworkServices HTTPS VerifyServerCertificate: VerifyServerCertificate
where
VerifyServerCertificate: 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.
xConfiguration 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

USAGE:
```plaintext
xConfiguration NetworkServices HTTPS VerifyClientCertificate:
VerifyClientCertificate
where
  VerifyClientCertificate: 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.
```

xConfiguration 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

USAGE:
```plaintext
xConfiguration NetworkServices NTP Mode: Mode
where
  Mode: 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.
```

xConfiguration 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

USAGE:
```plaintext
xConfiguration NetworkServices NTP Server n Address: "Address"
where
  n: Unique ID that identifies the NTP server. Range: 1..3
  Address: String (0, 255)
    A valid IPv4 address, IPv6 address or DNS name.
```

xConfiguration NetworkServices SIP Mode

Define whether the system should be able to place and receive SIP calls or not.

Requires user role: ADMIN
Default value: On

USAGE:
```plaintext
xConfiguration NetworkServices SIP Mode: Mode
where
  Mode: Off/On
    Off: Disable the possibility to place and receive SIP calls.
    On: Enable the possibility to place and receive SIP calls (default).
```
xConfiguration 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

 USAGE:
 xConfiguration NetworkServices SNMP Mode: Mode
 where
   Mode: 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.

xConfiguration 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: 

 USAGE:
 xConfiguration NetworkServices SNMP Host n Address: "Address"
 where
   n: Identifies the SNMP host. Maximum three SNMP hosts are allowed. Range: 1..3
   Address: String (0, 255)
     A valid IPv4 address, IPv6 address or DNS name.

xConfiguration 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: ""

 USAGE:
 xConfiguration NetworkServices SNMP CommunityName: "CommunityName"
 where
   CommunityName: String (0, 50)
     The SNMP community name.

xConfiguration NetworkServices SNMP SystemContact

Define the name of the Network Services SNMP System Contact.

Requires user role: ADMIN
Default value: ""

 USAGE:
 xConfiguration NetworkServices SNMP SystemContact: "SystemContact"
 where
   SystemContact: String (0, 50)
     The name of the SNMP system contact.
xConfiguration NetworkServices SNMP SystemLocation
Define the name of the Network Services SNMP System Location.
Requires user role: ADMIN
Default value: ""

**USAGE:**
```
xConfiguration NetworkServices SNMP SystemLocation: "SystemLocation"
```
where
```
SystemLocation: String (0, 50)
```
The name of the SNMP system location.

xConfiguration 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

**USAGE:**
```
xConfiguration NetworkServices SSH Mode: Mode
```
where
```
Mode: Off/On
```
Off: The SSH protocol is disabled.
On: The SSH protocol is enabled.

xConfiguration 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

**USAGE:**
```
xConfiguration NetworkServices Telnet Mode: Mode
```
where
```
Mode: Off/On
```
Off: The Telnet protocol is disabled. This is the factory setting.
On: The Telnet protocol is enabled.

xConfiguration 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

**USAGE:**
```
xConfiguration NetworkServices WelcomeText: WelcomeText
```
where
```
WelcomeText: 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.
Peripherals configuration

xConfiguration 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
Default value: Minimum1

**USAGE:**

```
xConfiguration Peripherals Profile Cameras: Cameras
```

where

- **Cameras**
  - 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.

xConfiguration 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 heart beats to the video system using `xCommand` Peripherals 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
Default value: NotSet

**USAGE:**

```
xConfiguration Peripherals Profile ControlSystems: ControlSystems
```

where

- **ControlSystems**
  - 1: One third-party control system should be connected to the video system.
  - NotSet: No check for a third-party control system is performed.

xConfiguration 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
Default value: NotSet

**USAGE:**

```
xConfiguration Peripherals Profile TouchPanels: TouchPanels
```

where

- **TouchPanels**
  - 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 configuration

xConfiguration Phonebook Server [1] ID
Define a name for the external phone book.
Requires user role: ADMIN
Default value: ""

**USAGE:**
xConfiguration Phonebook Server n ID: "ID"
where
  n: Unique ID that identifies the phonebook server. Range: 1..1
  ID: String (0, 64)
  The name for the external phone book.

xConfiguration Phonebook Server [1] Type
Select the phonebook server type.
Requires user role: ADMIN
Default value: Off

**USAGE:**
xConfiguration Phonebook Server n Type: Type
where
  n: Unique ID that identifies the phonebook server. Range: 1..1
  Type: 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.

xConfiguration Phonebook Server [1] URL
Define the address (URL) to the external phone book server.
Requires user role: ADMIN
Default value: ""

**USAGE:**
xConfiguration Phonebook Server n URL: "URL"
where
  n: Unique ID that identifies the phonebook server. Range: 1..1
  URL: String (0, 255)
  A valid address (URL) to the phone book server.
Provisioning configuration

xConfiguration 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

USAGE:

```
xConfiguration Provisioning Connectivity: Connectivity
where
  Connectivity: 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.
```

xConfiguration 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

USAGE:

```
xConfiguration Provisioning Mode: Mode
where
  Mode: 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).
```
xConfiguration 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: ""

**USAGE:**

```
xConfiguration Provisioning LoginName: "LoginName"
```

where

- **LoginName**: String (0, 80)
  - A valid username.

xConfiguration 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: ""

**USAGE:**

```
xConfiguration Provisioning Password: "Password"
```

where

- **Password**: String (0, 64)
  - A valid password.

xConfiguration Provisioning HttpMethod

Select the HTTP method to be used for the provisioning.

Requires user role: ADMIN, USER
Default value: POST

**USAGE:**

```
xConfiguration Provisioning HttpMethod: HttpMethod
```

where

- **HttpMethod**: GET/POST
  - GET: Select GET when the provisioning server supports GET.
  - POST: Select POST when the provisioning server supports POST.

xConfiguration 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: ""

**USAGE:**

```
xConfiguration Provisioning ExternalManager Address: "Address"
```

where

- **Address**: String (0, 64)
  - A valid IPv4 address, IPv6 address or DNS name.
xConfiguration 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: ""

**USAGE:**

```
xConfiguration Provisioning ExternalManager AlternateAddress: "AlternateAddress"
```

where

```
AlternateAddress: String (0, 64)
```

A valid IPv4 address, IPv6 address or DNS name.

xConfiguration 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 chosen protocol must be enabled in the NetworkServices HTTP Mode setting.

Requires user role: ADMIN, USER
Default value: HTTP

**USAGE:**

```
xConfiguration Provisioning ExternalManager Protocol: Protocol
```

where

```
Protocol: HTTPS/HTTP
```

HTTPS: Send requests via HTTPS.
HTTP: Send requests via HTTP.

xConfiguration 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: ""

**USAGE:**

```
xConfiguration Provisioning ExternalManager Path: "Path"
```

where

```
Path: String (0, 255)
```

A valid path to the external manager or provisioning system.

xConfiguration Provisioning ExternalManager Domain

Define the SIP domain for the VCS provisioning server.

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

**USAGE:**

```
xConfiguration Provisioning ExternalManager Domain: "Domain"
```

where

```
Domain: String (0, 64)
```

A valid domain name.
Proximity configuration

xConfiguration 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: Off

**USAGE:**

xConfiguration Proximity Mode: \texttt{Mode}

- \texttt{Mode}: 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.

xConfiguration 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

**USAGE:**

xConfiguration Proximity Services CallControl: \texttt{CallControl}

- \texttt{CallControl}: Enabled/Disabled
  - Enabled: Call control from a Proximity client is enabled.
  - Disabled: Call control from a Proximity client is disabled.

xConfiguration 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

**USAGE:**

xConfiguration Proximity Services ContentShare FromClients: \texttt{FromClients}

- \texttt{FromClients}: Enabled/Disabled
  - Enabled: Content sharing from a Proximity client is enabled.
  - Disabled: Content sharing from a Proximity client is disabled.

xConfiguration 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

**USAGE:**

xConfiguration Proximity Services ContentShare ToClients: \texttt{ToClients}

- \texttt{ToClients}: Enabled/Disabled
  - Enabled: Content sharing to a Proximity client is enabled.
  - Disabled: Content sharing to a Proximity client is disabled.
SerialPort configuration

xConfiguration SerialPort Mode
Enable/disable the serial port (COM port).
Requires user role: ADMIN
Default value: On

**USAGE:**

```plaintext
xConfiguration SerialPort Mode: Mode
where
Mode: Off/On
    Off: Disable the serial port.
    On: Enable the serial port.
```

xConfiguration 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
Default value: 115200

**USAGE:**

```plaintext
xConfiguration SerialPort BaudRate: BaudRate
where
BaudRate: 9600/19200/38400/57600/115200
    Set a baud rate from the baud rates listed (bps).
```

xConfiguration SerialPort LoginRequired
Define if login shall be required when connecting to the serial port.

Requires user role: ADMIN
Default value: On

**USAGE:**

```plaintext
xConfiguration SerialPort LoginRequired: LoginRequired
where
LoginRequired: 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 configuration

xConfiguration 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: ""

USAGE:
```
xConfiguration SIP Authentication UserName: "UserName"
```
where
```
UserName: String (0, 128)
  A valid username.
```

xConfiguration SIP Authentication Password
This is the password part of the credentials used to authenticate towards the SIP proxy.

Requires user role: ADMIN
Default value: ""

USAGE:
```
xConfiguration SIP Authentication Password: "Password"
```
where
```
Password: String (0, 128)
  A valid password.
```

xConfiguration SIP DefaultTransport
Select the transport protocol to be used over the LAN.

Requires user role: ADMIN
Default value: Auto

USAGE:
```
xConfiguration SIP DefaultTransport: DefaultTransport
```
where
```
DefaultTransport: 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.
```

xConfiguration SIP DisplayName
When configured the incoming call will report the display name instead of the SIP URI.

Requires user role: ADMIN
Default value: ""

USAGE:
```
xConfiguration SIP DisplayName: DisplayName
```
where
```
DisplayName: String (0, 550)
  The name to be displayed instead of the SIP URI.
```
**xConfiguration 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

**USAGE:**

```xConfiguration SIP Ice Mode: Mode```

where

- **Mode**: 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.

**xConfiguration 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

**USAGE:**

```xConfiguration SIP Ice DefaultCandidate: DefaultCandidate```

where

- **DefaultCandidate**: 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.

**xConfiguration 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). It is recommended to leave this setting at its default value.

Requires user role: ADMIN
Default value: On

**USAGE:**

```xConfiguration SIP ListenPort: ListenPort```

where

- **ListenPort**: 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.

**xConfiguration 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: ""

**USAGE:**

```xConfiguration SIP Proxy n Address: "Address"```

where

- **n**: Index that identifies the proxy (maximum 4 proxys can be defined). Range: 1..4
- **Address**: String (0, 255)
  - A valid IPv4 address, IPv6 address or DNS name.
xConfiguration SIP Turn Server

Define the address of the TURN (Traversal Using Relay NAT) server. It is used as a media relay
tallback and it is also used to discover the endpoint’s own public IP address.

Requires user role: ADMIN
Default value: ""

**USAGE:**

```
xConfiguration SIP Turn Server: "Server"
```

where

```
Server: 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.

xConfiguration SIP Turn UserName

Define the user name needed for accessing the TURN server.

Requires user role: ADMIN
Default value: ""

**USAGE:**

```
xConfiguration SIP Turn UserName: "UserName"
```

where

```
UserName: String (0, 128)
```

A valid user name.

xConfiguration SIP Turn Password

Define the password needed for accessing the TURN server.

Requires user role: ADMIN
Default value: ""

**USAGE:**

```
xConfiguration SIP Turn Password: "Password"
```

where

```
Password: String (0, 128)
```

A valid password.

xConfiguration 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: ""

**USAGE:**

```
xConfiguration SIP URI: "URI"
```

where

```
URI: String (0, 255)
```

An address (URI) that is compliant with the SIP URI syntax.
Standby configuration

xConfiguration Standby Control
Define whether the system should go into standby mode or not.
Requires user role: ADMIN
Default value: On

**USAGE:**
xConfiguration Standby Control: **Control**
where
   Control: 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.

xConfiguration 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
Default value: 10

**USAGE:**
xConfiguration Standby Delay: **Delay**
where
   Delay: Integer (1..480)
      Set the standby delay (minutes).

xConfiguration Standby BootAction
Define the camera position after a restart of the codec.
Requires user role: ADMIN, USER
Default value: DefaultCameraPosition

**USAGE:**
xConfiguration Standby BootAction: **BootAction**
where
   BootAction: 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.

xConfiguration Standby StandbyAction
Define the camera position when going into standby mode.
Requires user role: ADMIN
Default value: PrivacyPosition

**USAGE:**
xConfiguration Standby StandbyAction: **StandbyAction**
where
   StandbyAction: None/PrivacyPosition
      None: No action.
      PrivacyPosition: When the video system enters standby, the camera turns to a sideways position for privacy.
xConfiguration Standby WakeupAction
Define the camera position when leaving standby mode.

Requires user role: ADMIN, USER
Default value: RestoreCameraPosition

USAGE:
xConfiguration Standby WakeupAction: \texttt{WakeupAction}
where
\texttt{WakeupAction}: \texttt{None}/\texttt{RestoreCameraPosition}/\texttt{DefaultCameraPosition}
- \texttt{None}: No action.
- \texttt{RestoreCameraPosition}: When the video system leaves standby, the camera returns to the position that it had before entering standby.
- \texttt{DefaultCameraPosition}: When the video system leaves standby, the camera moves to the factory default position.

SystemUnit configuration

xConfiguration 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: ""

USAGE:
xConfiguration SystemUnit Name: "\texttt{Name}"
where
\texttt{Name}: \texttt{String} (0, 50)
- Define the system name.
Time configuration

**xConfiguration Time TimeFormat**

Define the time format.

Requires user role: ADMIN, USER

Default value: 24H

**USAGE:**

```
xConfiguration Time TimeFormat: TimeFormat
```

where

- **TimeFormat:** 24H/12H
  - 24H: Set the time format to 24 hours.
  - 12H: Set the time format to 12 hours (AM/PM).

**xConfiguration Time DateFormat**

Define the date format.

Requires user role: ADMIN, USER

Default value: DD_MM_YY

**USAGE:**

```
xConfiguration Time DateFormat: DateFormat
```

where

- **DateFormat:** 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

**xConfiguration 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, USER

Default value: Etc/UTC

**USAGE:**

```
xConfiguration Time Zone: Zone
```

where

UserInterface configuration

xConfiguration 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

**USAGE:**

xConfiguration UserInterface ContactInfo Type: *Type*

where

*Type*: 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).

xConfiguration 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

**USAGE:**

xConfiguration UserInterface KeyTones Mode: *Mode*

where

*Mode*: Off/On

Off: There is no key tone sound effect.

On: The key tone sound effect is turned on.

xConfiguration 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

**USAGE:**

xConfiguration UserInterface Language: *Language*

where

*Language*: Arabic/Catalan/ChineseSimplified/ChineseTraditional/Czech/Danish/Dutch/English/EnglishUK/Finnish/French/FrenchCanadian/German/Hebrew/Hungarian/Italian/Japanese/Korean/Norwegian/Polish/PortugueseBrazilian/Russian/Spanish/SpanishLatin/Swedish/Turkish

Select a language from the list.
xConfiguration UserInterface OSD Output

Define on which monitor the on-screen information and indicators (OSD) should be displayed.

Requires user role: ADMIN
Default value: Auto

**Usage:**

xConfiguration UserInterface OSD Output: *Output*

where

- **Output**: Auto/1/2/3
  - Auto: The system detects when a monitor is connected to a video output, and sends the on-screen information and indicators to the first monitor you connect. If you have a multi-monitor setup, and all monitors are connected before switching on the system, the on-screen information and indicators are sent to the video output with the lowest number, starting with Output Connector 1 (HDMI 1).
  - 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.

UserManagement configuration

xConfiguration 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

**Usage:**

xConfiguration UserManagement LDAP Mode: *Mode*

where

- **Mode**: Off/On
  - Off: LDAP authentication is not allowed.
  - On: Use LDAP authentication.

xConfiguration UserManagement LDAP Server Address

Set the IP address or hostname of the LDAP server.

Requires user role: ADMIN
Default value: ""

**Usage:**

xConfiguration UserManagement LDAP Server Address: "Address"

where

- **Address**: String (0, 255)
  - A valid IPv4 address, IPv6 address or hostname.
xConfiguration 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

**USAGE:**

xConfiguration UserManagement LDAP Server Port: \texttt{Port}

where

\texttt{Port}: Integer (0..65535)

The LDAP server port number.

xConfiguration 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

**USAGE:**

xConfiguration UserManagement LDAP Encryption: \texttt{Encryption}

where

\texttt{Encryption}: 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.

xConfiguration 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

**USAGE:**

xConfiguration UserManagement LDAP MinimumTLSVersion: \texttt{MinimumTLSVersion}

where

\texttt{MinimumTLSVersion}: 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.

xConfiguration 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

**USAGE:**

xConfiguration UserManagement LDAP VerifyServerCertificate: \texttt{VerifyServerCertificate}

where

\texttt{VerifyServerCertificate}: 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).
xConfiguration 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: ""

**USAGE:**
xConfiguration UserManagement LDAP Admin Filter: "Filter"
   where
   Filter: String (0, 1024)
   Refer to the LDAP specification for the syntax of this string. Example: "(CN=adminuser)"

xConfiguration 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: ""

**USAGE:**
xConfiguration UserManagement LDAP Admin Group: "Group"
   where
   Group: String (0, 255)
   The distinguishing name of the AD group. Example: "CN=admin_group, OU=company groups, DC=company, DC=com"

xConfiguration UserManagement LDAP Attribute

The attribute used to map to the provided username. If not set, sAMAccountName is used.

Requires user role: ADMIN
Default value: ""

**USAGE:**
xConfiguration UserManagement LDAP Attribute: "Attribute"
   where
   Attribute: String (0, 255)
   The attribute name.
Video configuration

**xConfiguration Video DefaultMainSource**

Define which video input source shall be used as the main video source.

Requires user role: ADMIN, USER
Default value: 1

**USAGE:**

```plaintext
xConfiguration Video DefaultMainSource: DefaultMainSource
where
DefaultMainSource: 1/2/3/4
Set the source to be used as the main video source.
```

**xConfiguration 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
Default value: Connector 1, 2, 3: On   Connector 4, 5: Off

**USAGE:**

```plaintext
xConfiguration Video Input Connector n CameraControl Mode: Mode
where
n: Unique ID that identifies the video input connector. Range: 1..5
Mode: Connector 1, 2, 3, 4: Off/On   Connector 5: Off
Off: Disable camera control.
On: Enable camera control.
```

**xConfiguration 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
Default value: Connector n: n   Connector 5: 1

**USAGE:**

```plaintext
xConfiguration Video Input Connector n CameraControl CameraId: CameraId
where
n: Unique ID that identifies the video input connector. Range: 1..5
CameraId: Connector 1, 2, 3, 4: 1/2/3/4/5/6/7   Connector 5: 1
Select the ID of the camera.
```

**xConfiguration 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

**USAGE:**

```plaintext
xConfiguration Video Input Connector n DviType: DviType
where
DviType: 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.
```
xConfiguration Video Input Connector [1..5] InputSourceType
Select which type of input source is connected to the video input.

Requires user role: ADMIN
Default value: Connector 1 and 2: camera Connector 3 and 4: PC Connector 5: other

USAGE:
```
xConfiguration Video Input Connector n InputSourceType: InputSourceType
```
where
- `n`: Unique ID that identifies the video input connector. Range: 1..5
- `InputSourceType`: camera/desktop/document_camera/mediaplayer/PC/whiteboard/other
camera: Use this when a camera is connected to the video input.
desktop: Use this when the video system's monitor is the main screen for the PC / laptop that is connected to this input. The Video Input Connector [n] PresentationSelection setting must then also be set to desktop.
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.

xConfiguration Video Input Connector [1..5] Name
Define a name for the video input connector.

Requires user role: ADMIN
Default value: ""

USAGE:
```
xConfiguration Video Input Connector n Name: "Name"
```
where
- `n`: Unique ID that identifies the video input connector. Range: 1..5
- `Name`: String (0, 50)
  - Name for the video input connector.

xConfiguration 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
Default value: Connector 1, 2, 5: Motion Connector 3, 4: Sharpness

USAGE:
```
xConfiguration Video Input Connector n Quality: Quality
```
where
- `n`: Unique ID that identifies the video input connector. Range: 1..5
- `Quality`: 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.
xConfiguration 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
Default value: Connector 1, 2: Manual   Connector 3, 4: OnConnect

USAGE:
\[
\text{xConfiguration Video Input Connector } n \text{ PresentationSelection: }
\]

\[
\text{where}
\]

\[
n\text{: Unique ID that identifies the video input connector. Range: 1..4}
\]

\[
\text{PresentationSelection: AutoShare/Desktop/Manual/OnConnect}
\]

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: The content on the video input will be presented on the screen when you connect the cable, or when the source is activated otherwise (for example when a connected computer wakes up from sleep mode). This applies both when idle and in a call. Also, the content on the video input will stay on the screen when you leave the call, provided that it was the active input at the time of leaving.

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.

xConfiguration 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
Default value: Connector 1, 2, 3: IfSignal   Connector 4: Always   Connector 5: Never

USAGE:
\[
\text{xConfiguration Video Input Connector } n \text{ Visibility: Visibility}
\]

\[
\text{where}
\]

\[
n\text{: Unique ID that identifies the video input connector. Range: 1..5}
\]

\[
\text{Visibility: Never/Always/IfSignal}
\]

Never: When the input source is not expected to be used as a presentation source, set to Never.

Always: When set to Always, the menu selection for the video input connector will always be visible on the graphical user interface.

IfSignal: When set to IfSignal, the menu selection for the video input connector will only be visible when something is connected to the video input.
xConfiguration 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
Default value: Auto

**USAGE:**

xConfiguration Video Monitors: **Monitors**

where

- **Monitors**: 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.

xConfiguration Video Output Connector [1..2] CEC Mode

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, ViIERA Link (Panasonic), EasyLink (Philips), and NetCommand for HDMI (Mitsubishi).

Requires user role: ADMIN
Default value: Off

**USAGE:**

xConfiguration Video Output Connector n CEC Mode: **Mode**

where

- n: Unique ID that identifies the video output connector. Range: 1..2
- **Mode**: Off/On
  - Off: Disable CEC control
  - On: Enable CEC control
xConfiguration 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
Default value: Auto

**USAGE:**
xConfiguration Video Output Connector n MonitorRole: MonitorRole
where
- **n**: Unique ID that identifies the video output connector. Range: 1..3
- **MonitorRole**: 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.

xConfiguration Video Output Connector [1..3] Resolution

Define the resolution and refresh rate for the connected screen.

Requires user role: ADMIN, USER
Default value: Auto

**USAGE:**
xConfiguration Video Output Connector n Resolution: Resolution
where
- **n**: Unique ID that identifies the video output connector. Range: 1..3
- **Resolution**: 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.

xConfiguration 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

**USAGE:**
xConfiguration Video Presentation DefaultSource: DefaultSource
where
- **DefaultSource**: 1/2/3/4

The video input source to use as default presentation source.
xConfiguration 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
Default value: Current

**USAGE:**

```
xConfiguration Video Selfview Default Mode: Mode
```
where

- **Mode**
  - 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.

xConfiguration 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
Default value: Current

**USAGE:**

```
xConfiguration Video Selfview Default FullscreenMode: FullscreenMode
```
where

- **FullscreenMode**
  - 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 full screen during the call, it remains full screen after the call.
  - On: The self-view picture will be shown in fullscreen.

xConfiguration 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
Default value: Current

**USAGE:**

```
xConfiguration Video Selfview Default OnMonitorRole: OnMonitorRole
```
where

- **OnMonitorRole**
  - 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.
xConfiguration 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
Default value: Current

 USAGE:

 xConfiguration Video Selfview Default PIPPosition: PIPPosition
 where
    PIPPosition: 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.

xConfiguration 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
Default value: On

 USAGE:

 xConfiguration Video Selfview OnCall Mode: Mode
 where
    Mode: Off/On
        Off: self-view is not shown automatically during call setup.
        On: self-view is shown automatically during call setup.

xConfiguration 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
Default value: 10

 USAGE:

 xConfiguration Video Selfview OnCall Duration: Duration
 where
    Duration: Integer (1..60)
        Range: Choose for how long self-view remains on. The valid range is between 1 and 60 seconds.
Chapter 4

xCommand commands
Description of the xCommand commands

In this chapter, you can find a complete list of all xCommand type commands with parameters.

We recommend you visit our web site regularly for updated versions of the manual.

Go to:  http://www.cisco.com/go/sx-docs

---

Audio commands

xCommand Audio Diagnostics MeasureDelay ................................................................. 117
xCommand Audio LocalInput Add ........................................................................... 117
xCommand Audio LocalInput AddConnector ............................................................. 118
xCommand Audio LocalInput Remove ..................................................................... 118
xCommand Audio LocalInput RemoveConnector ..................................................... 119
xCommand Audio LocalInput Update ...................................................................... 119
xCommand Audio LocalOutput Add ........................................................................ 120
xCommand Audio LocalOutput AddConnector .......................................................... 120
xCommand Audio LocalOutput ConnectInput ............................................................ 121
xCommand Audio LocalOutput DisconnectInput ...................................................... 121
xCommand Audio LocalOutput Remove .................................................................. 122
xCommand Audio LocalOutput RemoveConnector ................................................... 122
xCommand Audio LocalOutput Update ................................................................... 123
xCommand Audio LocalOutput UpdateInputGain ...................................................... 124
xCommand Audio RemoteOutput ConnectInput ........................................................ 124
xCommand Audio RemoteOutput DisconnectInput .................................................... 125
xCommand Audio RemoteOutput UpdateInputGain ................................................... 125
xCommand Audio Setup Clear .............................................................................. 125
xCommand Audio Microphones Mute .................................................................... 126
xCommand Audio Microphones Unmute ................................................................. 126
xCommand Audio SoundsAndAlerts Ringtone List .................................................... 126
xCommand Audio SoundsAndAlerts Ringtone Play ................................................... 126
xCommand Audio Volume Decrease ....................................................................... 126
xCommand Audio LocalOutput AddConnector .......................................................... 127
xCommand Bookings Clear ..................................................................................... 128
xCommand Call Accept ............................................................................................ 129
xCommand Call DTMFSend ..................................................................................... 129
xCommand Call Disconnect .................................................................................... 130
xCommand Call FarEndControl Camera Move ........................................................ 130
xCommand Call FarEndControl Camera Stop .......................................................... 130
xCommand Call FarEndControl RoomPreset Activate ............................................ 130
xCommand Call FarEndControl Source Select ....................................................... 131
xCommand Call FarEndMessage SStringSend ......................................................... 131
xCommand Call FarEndMessage TStringSend ......................................................... 131
xCommand Call Forward ......................................................................................... 131
xCommand CallHold .............................................................................................. 132
Cameras commands

- xCommand Camera TriggerAutofocus
- xCommand Camera Ramp
- xCommand Camera Preset Store
- xCommand Camera Preset Edit
- xCommand Camera PositionReset
- xCommand Camera PositionSet
- xCommand Camera Preset Activate
- xCommand Camera Preset ActivateDefaultPosition
- xCommand Camera Preset Edit
- xCommand Camera Preset List
- xCommand Camera Preset Remove
- xCommand Camera Preset Show
- xCommand Camera Preset Store
- xCommand Camera TriggerAutofocus

Diagnostics commands

- xCommand Diagnostics Run

GPIO commands

- xCommand GPIO ManualState Set

HttpFeedback commands

- xCommand HttpFeedback Deregister
- xCommand HttpFeedback Register

Peripherals commands

- xCommand Peripherals Connect
- xCommand Peripherals HeartBeat
- xCommand Peripherals List
- xCommand Peripherals Pairing DeviceDiscovery Start
- xCommand Peripherals Pairing Pair
- xCommand Peripherals Pairing Unpair
- xCommand Peripherals Purge

Phonebook commands

- xCommand Phonebook Contact Add
- xCommand Phonebook Contact Delete
<table>
<thead>
<tr>
<th>Security commands</th>
<th>155</th>
</tr>
</thead>
<tbody>
<tr>
<td>xCommand Security Persistency</td>
<td>155</td>
</tr>
<tr>
<td>xCommand Security Session List</td>
<td>155</td>
</tr>
<tr>
<td>xCommand Security Session Terminate</td>
<td>156</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UserInterface commands</th>
<th>159</th>
</tr>
</thead>
<tbody>
<tr>
<td>xCommand UserInterface Extensions Widget SetValue</td>
<td>159</td>
</tr>
<tr>
<td>xCommand UserInterface Extensions Widget UnsetValue</td>
<td>159</td>
</tr>
<tr>
<td>xCommand UserInterface Extensions Clear</td>
<td>159</td>
</tr>
<tr>
<td>xCommand UserInterface Extensions List</td>
<td>160</td>
</tr>
<tr>
<td>xCommand UserInterface Message Alert Clear</td>
<td>160</td>
</tr>
<tr>
<td>xCommand UserInterface Message Alert Display</td>
<td>160</td>
</tr>
<tr>
<td>xCommand UserInterface Message Prompt Clear</td>
<td>160</td>
</tr>
<tr>
<td>xCommand UserInterface Message Prompt Display</td>
<td>161</td>
</tr>
<tr>
<td>xCommand UserInterface Message Prompt Response</td>
<td>161</td>
</tr>
<tr>
<td>xCommand UserInterface Message TextLine Clear</td>
<td>161</td>
</tr>
<tr>
<td>xCommand UserInterface Message TextLine Display</td>
<td>162</td>
</tr>
<tr>
<td>xCommand UserInterface Presentation ExternalSource Add</td>
<td>162</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SystemUnit commands</th>
<th>157</th>
</tr>
</thead>
<tbody>
<tr>
<td>xCommand SystemUnit Boot</td>
<td>157</td>
</tr>
<tr>
<td>xCommand SystemUnit FactoryReset</td>
<td>157</td>
</tr>
<tr>
<td>xCommand SystemUnit Notifications RemoveAll</td>
<td>157</td>
</tr>
<tr>
<td>xCommand SystemUnit OptionKey Add</td>
<td>157</td>
</tr>
<tr>
<td>xCommand SystemUnit OptionKey List</td>
<td>157</td>
</tr>
<tr>
<td>xCommand SystemUnit OptionKey Remove</td>
<td>157</td>
</tr>
<tr>
<td>xCommand SystemUnit OptionKey RemoveAll</td>
<td>158</td>
</tr>
<tr>
<td>xCommand SystemUnit SoftReset</td>
<td>158</td>
</tr>
<tr>
<td>xCommand SystemUnit SoftwareUpgrade</td>
<td>158</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time commands</th>
<th>159</th>
</tr>
</thead>
<tbody>
<tr>
<td>xCommand Time DateTime Get</td>
<td>159</td>
</tr>
<tr>
<td>xCommand Time DateTime Set</td>
<td>159</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Provisioning commands</th>
<th>153</th>
</tr>
</thead>
<tbody>
<tr>
<td>xCommand Provisioning CompleteUpgrade</td>
<td>153</td>
</tr>
<tr>
<td>xCommand Provisioning PostponeUpgrade</td>
<td>153</td>
</tr>
<tr>
<td>xCommand Provisioning StartUpgrade</td>
<td>153</td>
</tr>
<tr>
<td>xCommand Provisioning ExtensionMobility Login</td>
<td>153</td>
</tr>
<tr>
<td>xCommand Provisioning ExtensionMobility Logout</td>
<td>153</td>
</tr>
</tbody>
</table>

| xCommand Presentation Start | 152 |
| xCommand Presentation Stop | 152 |

<table>
<thead>
<tr>
<th>Presentation commands</th>
<th>152</th>
</tr>
</thead>
</table>

| xCommand Phonebook Contact Modify | 148 |
| xCommand Phonebook ContactMethod Add | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |

| xCommand Phonebook ContactMethod Modify | 149 |
| xCommand Phonebook ContactMethod Delete | 149 |
| xCommand Phonebook ContactMethod Modify | 150 |
| xCommand Phonebook Folder Add | 150 |
| xCommand Phonebook Folder Delete | 150 |
| xCommand Phonebook Folder Modify | 151 |
| xCommand Phonebook Search | 151 |
**xCommand UserInterface**

- UserInterface Presentation ExternalSource Remove .......................................................... 162
- UserInterface Presentation ExternalSource RemoveAll .................................................... 163
- UserInterface Presentation ExternalSource Select ............................................................ 163
- UserInterface Presentation ExternalSource State Set ......................................................... 163

**UserManagement commands** ......................................................................................... 164

- UserManagement RemoteSupportUser Create ................................................................ 164
- UserManagement RemoteSupportUser Delete ................................................................. 164
- UserManagement RemoteSupportUser DisablePermanently ........................................ 164
- UserManagement RemoteSupportUser GetState ............................................................. 164
- UserManagement User Passphrase Change ...................................................................... 164
- UserManagement User Passphrase Set ............................................................................. 165

**Video commands** .............................................................................................................. 165

- Video ActiveSpeakerPIP Set .............................................................................................. 165
- Video Input SetMainVideoSource .................................................................................... 165
- Video Input Source SetActiveConnector .......................................................................... 166
- Video Layout LayoutFamily Set .......................................................................................... 166
- Video Matrix Assign ........................................................................................................... 166
- Video Matrix Reset ............................................................................................................. 166
- Video Matrix Swap .............................................................................................................. 167
- Video Matrix Unassign ....................................................................................................... 167
- Video PresentationPIP Set ................................................................................................. 167
- Video PresentationView Set ............................................................................................... 167
- Video Selfview Set ............................................................................................................. 168
Audio commands

The xCommand Audio LocalInput, xCommand Audio LocalOutput, xCommand Audio RemoteOutput commands are mainly intended for internal use by the CE Console application. CE Console provides a graphical interface for the setup and configuration of audio chains.

An audio chain consists of a physical input connector that is assigned to a virtual local input, which in turn is connected to a virtual local output, to which a physical output connector is assigned. The commands listed above define the logical connection between the physical connectors and the virtual input and outputs, and also how the virtual inputs impose such things as gain, equalization and channel mixing to the signal.

When a call is made, the remote (from the far end) input signal is automatically added to all local outputs. Likewise, all local inputs are automatically added to the remote (to the far end) output gate.

Remember that xCommands are not persistent over a reboot. Therefore you have to include the commands in a startup script in order to make the audio chain configuration persistent. A startup script is automatically generated and activated if you use CE Console to set up the audio chains.

For more information about startup scripts and CE Console see the video system's Administrator Guide and the CE Console User Guide.

xCommand Audio Diagnostics MeasureDelay

This command will measure the audio delay/latency in a device connected to the video system. A typical use case is to measure the delay in a TV connected to the video system via the HDMI connector. If the delay in a TV is too high, the real-time experience of a video call will be substantially degraded. If the delay is more than 50 ms we recommend the user to find a TV setting that has shorter delay. Typical TV settings that can reduce the delay are: Gaming Mode and PC Mode.

This command will measure the delay between output and input (microphone). This means that if you are using an external acoustic echo canceller or audio mixer, this command will also measure the delay of these devices.

Requires user role: ADMIN, USER

USAGE:

xCommand Audio Diagnostics MeasureDelay [MeasurementLength: MeasurementLength] [Output: Output] [Volume: Volume]

where

MeasurementLength: Integer (1..100)  
The length of the measurement in number of seconds. In a noisy environment a longer measurement time will give a more reliable and robust result.

Output: HDMI/Line/Internal/All  
HDMI: Measure the delay of the device connected to the HDMI output.

Line: Measure the delay of the device connected to the Line output (only available on video systems that have a Line output).

Internal: Measure the delay of the internal loudspeaker (only available on video systems that have an internal loudspeaker).

All: Will measure the maximum delay of all outputs.

Volume: Integer (1..50)  
The volume of the test signal. In a noisy environment a higher volume will give more reliable and robust results.
xCommand Audio LocalInput Add

Create a virtual local input, and generate an identifier for it (InputId). A local input is associated with a set of input connectors, and you can specify the following: a name for the local input, how to mix the signals from the associated input connectors, the use of Automatic Gain Control (AGC), mute, and whether to make a mono or stereo signal.

The maximum number of local input modules is 8. You get an error message if you exceed the limit.

This command is mainly intended for internal use by the CE Console. If you don’t use CE Console, you need to manually add the command in a startup script in order to make the definition persistent over a reboot.

Requires user role: ADMIN

USAGE:

```
xCommand Audio LocalInput Add [InputId: InputId] [Name: "Name"] [MixerMode: MixerMode] [AGC: AGC] [Mute: Mute] [Channels: Channels]
```

where

- **InputId**: Integer (0..65534)
  A unique identifier for the local input. If you don’t specify an InputId, the system will automatically create one for you. We recommend that you specify the InputId yourself in case you need to refer to the local input at a later stage.

- **Name**: String (0, 255)
  Choose a name that describes the local input. If you don’t specify a name, the string will be empty.

- **MixerMode**: Auto/Fixed/GainShared
  - Auto: If one input signal is dominating, the signal on the other connectors are attenuated with 20 dB each.
  - Fixed: The input signals all have the same weight, and consequently they are mixed together with equal gains (default).
  - GainShared: If one or some of the input signals dominate, the rest of the input signals are attenuated by a few dB so that the total gain of the mixed signal remains the same all the time.

  Auto and GainShared are intended for the microphone inputs; Fixed is recommended for Line and HDMI inputs.

- **AGC**: On/Off
  - On: Adjusts the gain continuously to maintain a constant sound level (default).
  - Off: No automatic gain control.

- **Mute**: On/Off
  - On: Mutes the mix of input signals (default).
  - Off: No muting.

- **Channels**: Integer (1..2)
  - 1: Mixes the input signals into a mono signal (default).
  - 2: Mixes the input signals into a stereo signal.

xCommand Audio LocalInput AddConnector

Attach an input connector to the local input given by the input ID. You have to specify both the connector’s type and number (ConnectorType, ConnectorId) to uniquely identify the connector. A connector can only be attached to one local input.

Run xStatus Audio Input LocalInput to get an overview of all local inputs.

This command is mainly intended for internal use by the CE Console. If you don’t use CE Console, you need to manually add the command in a startup script in order to make the definition persistent over a reboot.

Requires user role: ADMIN

USAGE:

```
xCommand Audio LocalInput AddConnector InputId: InputId ConnectorType: ConnectorType ConnectorId: ConnectorId
```

where

- **InputId**: Integer (0..65534)
  The unique identifier of the local input. It was generated when the local input was created with the xCommand Audio LocalInput Add command.

- **ConnectorType**: HDMI/Line/Microphone
  - Select the connector type.

- **ConnectorId**: Integer (1..3) for an HDMI connector; Integer (1..4) for a Line connector; Integer (1..8) for a microphone connector
  - Select a connector. The connectors are numbered from left to right on the codec connector panel (as seen from rear).
**xCommand Audio LocalInput Remove**

Remove the local input given by the input ID.

Run `xStatus Audio Input LocalInput` to get an overview of all local inputs.

This command is mainly intended for internal use by the CE Console. If you don’t use CE Console, you need to manually add the command in a startup script in order to make the definition persistent over a reboot.

Requires user role: ADMIN

**USAGE:**

```plaintext
xCommand Audio LocalInput Remove InputId: InputId
```

where

- **InputId**: Integer (0..65534)
  - The unique identifier of the local input. It was generated when the local input was created with the `xCommand Audio LocalInput Add` command.

---

**xCommand Audio LocalInput RemoveConnector**

Detach an input connector from the local input given by the input ID. You need to enter both the connector’s type and number (ConnectorType, ConnectorId) to uniquely identify the connector.

Run `xStatus Audio Input LocalInput` to get an overview of all local inputs.

This command is mainly intended for internal use by the CE Console. If you don’t use CE Console, you need to manually add the command in a startup script in order to make the definition persistent over a reboot.

Requires user role: ADMIN

**USAGE:**

```plaintext
xCommand Audio LocalInput RemoveConnector InputId: InputId ConnectorType: ConnectorType ConnectorId: ConnectorId
```

where

- **InputId**: Integer (0..65534)
  - The unique identifier for the local input. It was generated when the local input was created with the `xCommand Audio LocalInput Add` command.

- **ConnectorType**: HDMI/Line/Microphone
  - Select the connector type.

- **ConnectorId**: Integer (1..3) for an HDMI connector; Integer (1..4) for a Line connector; Integer (1..8) for a microphone connector
  - Select a connector. The connectors are numbered from left to right on the codec connector panel (as seen from rear).
xCommand Audio LocalInput Update

Update the settings of the local input given by the input ID.

Run xStatus Audio Input LocalInput to get an overview of all local inputs. This command is mainly intended for internal use by the CE Console. If you don't use CE Console, you need to manually add the command in a startup script in order to make the definition persistent over a reboot.

Requires user role: ADMIN

**USAGE:**

```
xCommand Audio LocalInput Update InputId: <InputId> Name: "<Name>" MixerMode: <MixerMode>
AGC: <AGC> Mute: <Mute> Channels: <Channels>
```

**where**

- **InputId**: Integer (0..65534)
  The unique identifier for the local input. It was generated when the local input was created with the xCommand Audio LocalInput Add command.

- **Name**: String (0, 255)
  Choose a name that describes the local input.

- **MixerMode**: Auto/Fixed/GainShared
  - **Auto**: If one input signal is dominating, the signal on the other connectors are attenuated with 20 dB each.
  - **Fixed**: The input signals all have the same weight, and consequently they are mixed together with equal gains.
  - **GainShared**: If one or some of the input signals dominate, the rest of the input signals are attenuated by a few dB so that the total gain of the mixed signal remains the same all the time.
  
  Auto and GainShared are intended for the microphone—; Fixed is recommended for Line and HDMI inputs.

- **AGC**: On/Off
  - **On**: Adjust the gain continuously to maintain a constant sound level.
  - **Off**: No automatic gain control.

- **Mute**: On/Off
  - **On**: Mutes the mix of input signals.
  - **Off**: No muting.

- **Channels**: Integer (1..2)
  1: Mix the input signals into a mono signal.
  2: Mix the input signals into a stereo signal.
xCommand Audio LocalOutput Add

Create a virtual local output, and generate an identifier for it (OutputId). A local output is a mix of local inputs and the remote input signals. Use the xCommand Audio LocalOutput ConnectInput command to specify which local inputs to include; the remote input signal (from far-end) is automatically added to all local outputs when in a call. A local output is associated with a set of output connectors, which all receive the same signal.

The maximum number of local output modules is 6. You get an error message if you exceed the limit.

This command is mainly intended for internal use by the CE Console. If you don’t use CE Console, you need to manually add the command in a startup script in order to make the definition persistent over a reboot.

Requires user role: ADMIN

USAGE:

xCommand Audio LocalOutput Add [OutputId: OutputId] [Name: "Name"] [Loudspeaker: Loudspeaker] [Channels: Channels] [VolumeControlled: VolumeControlled]

where

OutputId: Integer (0..65534)
   A unique identifier for the local output. If you don’t specify an OutputId, the system will automatically create one for you. We recommend that you specify the OutputId yourself in case you need to refer to the output module at a later stage.

Name: String (0, 255)
   Choose a name that describes the local output.

Loudspeaker: On/Off
   On: Choose On if at least one of the associated connectors are connected to a loudspeaker. This is important because it tells the echo canceler to use this signal as a reference signal.
   Off: Choose Off if no loudspeaker is connected to the associated connectors.
   Note that only one of the local outputs should have a loudspeaker connected.

Channels: Integer (1..2)
   1: Mix the local and remote input signals into a mono signal.
   2: Mix the local and remote input signals into a stereo signal.

VolumeControlled: On/Off
   On: The volume will change according to the level set with the volume controls on the user interface, or with the xCommand Audio Volume commands.

xCommand Audio LocalOutput AddConnector

Attach an output connector to the local output given by the output ID. You have to specify both the connector’s type and number (ConnectorType, ConnectorId) to uniquely identify the connector. A connector can only be attached to one local output.

Run xStatus Audio Output LocalOutput to get an overview of all local outputs.

This command is mainly intended for internal use by the CE Console. If you don’t use CE Console, you need to manually add the command in a startup script in order to make the definition persistent over a reboot.

Requires user role: ADMIN

USAGE:

xCommand Audio LocalOutput AddConnector OutputId: OutputId ConnectorType: ConnectorType ConnectorId: ConnectorId

where

OutputId: Integer (0..65534)
   The unique identifier of the local output. It was generated when the local output was created with the xCommand Audio LocalOutput Add command.

ConnectorType: HDMI/Line
   Select the connector type.

ConnectorId: Integer (1..2) for an HDMI connector; Integer (1..6) for a Line connector
   Select a connector. The connectors are numbered from left to right on the codec connector panel (as seen from rear).
xCommand Audio LocalOutput ConnectInput

Connect a local or remote input to a local output by giving their IDs as parameters. A local input can be connected to any number of local outputs. Likewise, any number of local inputs can be connected to each local output. Note that the remote input signal (from far-end) is automatically added to all local outputs when a call is made, and automatically disconnected when the call is ended.

Run xStatus Audio Output LocalOutput to get an overview of all local outputs, xStatus Audio Input LocalInput to get an overview of all local inputs, and xStatus Audio Input RemoteInput to see the remote input details.

This command is mainly intended for internal use by the CE Console. If you don’t use CE Console, you need to manually add the command in a startup script in order to make the definition persistent over a reboot.

Requires user role: ADMIN

**USAGE:**

```
xCommand Audio LocalOutput ConnectInput OutputId: OutputId InputId: InputId [InputGain: InputGain]
```

where

- **OutputId**: Integer (0..65534)
  - The unique identifier of the local output. It was generated when the local output was created with the xCommand Audio LocalOutput Add command.

- **InputId**: Integer (0..65534)
  - The unique identifier of the local or remote input. The local input’s ID was generated when the local input was created with the xCommand Audio LocalInput Add command. The remote input’s ID was generated automatically when the call was made.

- **InputGain**: Integer (-54..15)
  - Set the gain on the input signal. The gain can also be negative (attenuation). The value -54 dB equals Off.

xCommand Audio LocalOutput DisconnectInput

Disconnect a local or remote input from a local output. Note that the remote input signal (from far-end) is automatically disconnected when a call is ended.

Run xStatus Audio Output LocalOutput to get an overview of all local outputs, xStatus Audio Input LocalInput to get an overview of all local inputs, and xStatus Audio Input RemoteInput to see the remote input details.

This command is mainly intended for internal use by the CE Console. If you don’t use CE Console, you need to manually add the command in a startup script in order to make the definition persistent over a reboot.

Requires user role: ADMIN

**USAGE:**

```
xCommand Audio LocalOutput DisconnectInput OutputId: OutputId InputId: InputId
```

where

- **OutputId**: Integer (0..65534)
  - The unique identifier of the local output. It was generated when the local output was created with the xCommand Audio LocalOutput Add command.

- **InputId**: Integer (0..65534)
  - The unique identifier of the local or remote input. The local input’s ID was generated when the local input was created with the xCommand Audio LocalInput Add command. The remote input’s ID was generated automatically when the call was made.

xCommand Audio LocalOutput Remove

Remove the local output given by the output ID.

Run xStatus Audio Output LocalOutput to get an overview of all local outputs.

This command is mainly intended for internal use by the CE Console. If you don’t use CE Console, you need to manually add the command in a startup script in order to make the definition persistent over a reboot.

Requires user role: ADMIN

**USAGE:**

```
xCommand Audio LocalOutput Remove OutputId: OutputId
```

where

- **OutputId**: Integer (0..65534)
  - The unique identifier of the local output. It was generated when the local output was created with the xCommand Audio LocalOutput Add command.
xCommand Audio LocalOutput RemoveConnector

Detach an output connector from the local output given by the output ID. You need to enter both the connector's type and number (ConnectorType, ConnectorId) to uniquely identify the connector.

Run xStatus Audio Output LocalOutput to get an overview of all local outputs.

This command is mainly intended for internal use by the CE Console. If you don’t use CE Console, you need to manually add the command in a startup script in order to make the definition persistent over a reboot.

Requires user role: ADMIN

**USAGE:**

```
xCommand Audio LocalOutput RemoveConnector OutputId: OutputId ConnectorType: ConnectorType ConnectorId: ConnectorId
```

where

- **OutputId**: Integer (0..65534)
  - The unique identifier of the local output. It was generated when the local output was created with the xCommand Audio LocalOutput Add command.

- **ConnectorType**: HDMI/Line
  - Select the connector type.

- **ConnectorId**: Integer (1..2) for an HDMI connector, Integer (1..6) for a Line connector
  - Select a connector. The connectors are numbered from left to right on the codec connector panel (as seen from rear).

xCommand Audio LocalOutput Update

Update the settings of the local output given by the output ID.

Run xStatus Audio Output LocalOutput to get an overview of all local outputs.

This command is mainly intended for internal use by the CE Console. If you don’t use CE Console, you need to manually add the command in a startup script in order to make the definition persistent over a reboot.

Requires user role: ADMIN

**USAGE:**

```
xCommand Audio LocalOutput Update OutputId: OutputId Name: "Name" Loudspeaker: Loudspeaker Channels: Channels VolumeControlled: VolumeControlled
```

where

- **OutputId**: Integer (0..65534)
  - The unique identifier of the local output. It was generated when the local output was created with the xCommand Audio LocalOutput Add command.

- **Name**: String (0, 255)
  - Choose a name that describes the local output.

- **Loudspeaker**: On/Off
  - **On**: Choose On if at least one of the associated connectors are connected to a loudspeaker. This is important because it tells the echo canceler to use this signal as a reference signal.
  - **Off**: Choose Off if no loudspeaker is connected to the associated connectors.
  - Note that only one of the local outputs should have a loudspeaker connected.

- **Channels**: Integer (1..2)
  - 1: Mix the local and remote input signals into a mono signal.
  - 2: Mix the local and remote input signals into a stereo signal.

- **VolumeControlled**: On/Off
  - **On**: The volume will change according to the level set by the volume controls on the user interface, or the xCommand Audio Volume commands.
  - **Off**: The volume is neither influenced by the volume controls on the user interface, nor the xCommand Audio Volume commands.
**xCommand Audio LocalOutput UpdateInputGain**

Update the gain of a local or remote input that is connected to a local output. Note that the remote input signal (from far-end) is automatically added to all local outputs when a call is made, and automatically disconnected when the call is ended.

Run `xStatus Audio Output LocalOutput` to get an overview of all local outputs, `xStatus Audio Input LocalInput` to get an overview of all local inputs, and `xStatus Audio Input RemoteInput` to see the remote input details.

This command is mainly intended for internal use by the CE Console. If you don't use CE Console, you need to manually add the command in a startup script in order to make the definition persistent over a reboot.

Requires user role: ADMIN

**USAGE:**

```bash
xCommand Audio LocalOutput UpdateInputGain OutputId: OutputId InputId: InputId [InputGain: InputGain]
```

where

- **OutputId**: Integer (0..65534)
  - The unique identifier of the local output. It was generated when the local output was created with the `xCommand Audio LocalOutput Add` command.

- **InputId**: Integer (0..65534)
  - The unique identifier of the local or remote input. The local input's ID was generated when the local input was created with the `xCommand Audio LocalInput Add` command. The remote input's ID was generated automatically when the call was made.

- **InputGain**: Integer (-54..15)
  - Set the gain on the input signal. The gain can also be negative (attenuation). The value -54 dB equals Off.

**xCommand Audio RemoteOutput ConnectInput**

Connect an input to a remote output by giving their IDs as parameters. An input can be connected to any number of remote output gates, and any number of inputs can be connected to one remote output gate. Note that all local inputs are automatically added to all remote output gates when a call is made, and automatically disconnected when the call is ended.

Run `xStatus Audio Input LocalInput` to get an overview of all local inputs.

This command is mainly intended for internal use by the CE Console. It is only applicable during a call.

Requires user role: ADMIN

**USAGE:**

```bash
xCommand Audio RemoteOutput ConnectInput OutputId: OutputId InputId: InputId [InputGain: InputGain]
```

where

- **OutputId**: Integer (0..65534)
  - The unique identifier of the remote output. It was automatically generated when the call was made.

- **InputId**: Integer (0..65534)
  - The unique identifier of the input. It was either generated when the input was created with the `xCommand Audio Local Input Add` command, or when the call was set up (remote input).

- **InputGain**: Integer (-54..15)
  - Set the gain on the input signal. The gain can also be negative (attenuation). The value -54 dB equals Off.
xCommand Audio RemoteOutput DisconnectInput

Disconnect an input from a remote output by giving their IDs as parameters. Note that the remote output is automatically removed when the call has ended.

Run xStatus Audio Output RemoteOutput to get an overview of the remote outputs, and xStatus Audio Input LocalInput to get an overview of all local inputs.

This command is mainly intended for internal use by the CE Console. It is only applicable during a call.

Requires user role: ADMIN

**USAGE:**

```bash
xCommand Audio RemoteOutput DisconnectInput OutputId: OutputId InputId: InputId
```

where

- **OutputId**: Integer (0..65534)
  - The unique identifier of the remote output. It was automatically generated when the call was made.
- **InputId**: Integer (0..65534)
  - The unique identifier of the input. It was either generated when the input was created with the xCommand Audio Local Input Add command, or when the call was set up (remote input).

xCommand Audio RemoteOutput UpdateInputGain

Update the gain of an input that is connected to a remote output. Note that the remote output is automatically removed when the call has ended.

Run xStatus Audio Output RemoteOutput to get an overview of the remote outputs, and xStatus Audio Input LocalInput to get an overview of all local inputs.

This command is mainly intended for internal use by the CE Console. It is only applicable during a call.

Requires user role: ADMIN

**USAGE:**

```bash
xCommand Audio RemoteOutput UpdateInputGain OutputId: OutputId InputId: InputId [InputGain: InputGain]
```

where

- **OutputId**: Integer (0..65534)
  - The unique identifier of the remote output. It was automatically generated when the call was made.
- **InputId**: Integer (0..65534)
  - The unique identifier of the input. It was either generated when the input was created with the xCommand Audio Local Input Add command, or when the call was set up (remote input).
- **InputGain**: Integer (-54..15)
  - Set the gain on the input signal. The gain can also be negative (attenuation). The value -54 dB equals Off.

xCommand Audio Setup Clear

Remove all local inputs and local outputs.

Requires user role: ADMIN

**USAGE:**

```bash
xCommand Audio Setup Clear
```
xCommand Audio Microphones Mute
Mute all microphones.
Requires user role: ADMIN, USER

**USAGE:**
xCommand Audio Microphones Mute

xCommand Audio Microphones Unmute
Unmute all microphones.
Requires user role: ADMIN, USER

**USAGE:**
xCommand Audio Microphones Unmute

xCommand Audio SoundsAndAlerts Ringtone List
List all available ringtones. Use the xConfiguration Audio SoundsAndAlerts RingTone setting to choose a ringtone.
Requires user role: ADMIN, USER

**USAGE:**
xCommand Audio SoundsAndAlerts Ringtone List

xCommand Audio SoundsAndAlerts Ringtone Play
Play one of the available ringtones. Use the xCommand Audio SoundsAndAlerts Ringtone List command to get a list of the available ringtones.
Requires user role: ADMIN, USER

**USAGE:**
xCommand Audio SoundsAndAlerts Ringtone Play RingTone: "RingTone"

where

* RingTone: String (1, 100)
  The name of the ringtone.

xCommand Audio Volume Decrease
Decrease the volume on the endpoint. By default, the volume is increased by 5 steps (each step is 0.5 dB). Use the Steps parameter if you want to override the default behavior.
Requires user role: ADMIN, USER

**USAGE:**
xCommand Audio Volume Decrease [Steps: Steps]

where

* Steps: Integer (1..10)
  Choose the number of steps to decrease the volume with. One step is 0.5 dB.

xCommand Audio Volume Increase
Increase the volume on the endpoint. By default, the volume is increased by 5 steps (each step is 0.5 dB). Use the Steps parameter if you want to override the default behavior.
Requires user role: ADMIN, USER

**USAGE:**
xCommand Audio Volume Increase [Steps: Steps]

where

* Steps: Integer (1..10)
  Choose the number of steps to increase the volume with. One step is 0.5 dB.

xCommand Audio Volume Set
Set the volume on the endpoint to a specified level.
Requires user role: ADMIN, USER

**USAGE:**
xCommand Audio Volume Set Level: Level

where

* Level: Integer (0..100)
  Select the gain level. 70 equals 0 dB gain, and 100 equals 15 dB gain.
xCommand Audio Volume SetToDefault
Set the volume to the default level that is defined in the xConfiguration Audio DefaultVolume setting.
Requires user role: ADMIN, USER

USAGE:
   xCommand Audio Volume SetToDefault

xCommand Audio Volume Mute
Mute the volume on the endpoint.
Requires user role: ADMIN, USER

USAGE:
   xCommand Audio Volume Mute

xCommand Audio Volume Unmute
Set the volume on the endpoint back on after muting.
Requires user role: ADMIN, USER

USAGE:
   xCommand Audio Volume Unmute

xCommand Audio VuMeter Start
Start a VU meter to show the audio signal level on the specified connector. You have to specify both the connector’s type and number (ConnectorType, ConnectorId) to uniquely identify the connector. The VU meter measures the input level for frequencies below 20 kHz.
Requires user role: ADMIN, USER

USAGE:
   xCommand Audio VuMeter Start ConnectorID: ConnectorID ConnectorType: ConnectorType
   where
   ConnectorID: Integer (1..8) for Microphone; Integer (1..4) for Line; Integer (1..3) for HDMI
   Select a connector number. Together with the ConnectorType it uniquely identifies the connector.
   ConnectorType: HDMI/Line/Microphone
   Select the connector type.

xCommand Audio VuMeter Stop
Stop the VU meter on the specified connector. You have to specify both the connector’s type and number (ConnectorType, ConnectorId) to uniquely identify the connector.
Requires user role: ADMIN, USER

USAGE:
   xCommand Audio VuMeter Stop ConnectorID: ConnectorID ConnectorType: ConnectorType
   where
   ConnectorID: Integer (1..8) for Microphone; Integer (1..4) for Line; Integer (1..3) for HDMI
   Select a connector number. Together with the ConnectorType it uniquely identifies the connector.
   ConnectorType: HDMI/Line/Microphone
   Select the connector type.
xCommand Audio VuMeter StopAll
Stop all VU meters.
Requires user role: ADMIN, USER

**USAGE:**
xCommand Audio VuMeter StopAll

Bookings commands

xCommand Bookings Clear
Clear the current stored list of bookings.
Requires user role: ADMIN, USER

**USAGE:**
xCommand Bookings Clear

xCommand Bookings Get
Get the booking information for a specific ID.
Requires user role: ADMIN, USER

**USAGE:**
xCommand Bookings Get Id: "Id"
where

<table>
<thead>
<tr>
<th>Id</th>
<th>String (0, 128)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The booking ID of a call or conference.</td>
</tr>
</tbody>
</table>
xCommand Bookings List

List the stored bookings for the system. The list of booking details is received from the management system. All parameters are optional, and can be used to limit the search result. If no parameters are set, past, present and future bookings are all listed. To avoid listing bookings from yesterday and before, use DayOffset = 0.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Bookings List [Days: Days] [DayOffset: DayOffset] [Limit: Limit] [Offset: Offset]
```

where

- **Days**: Integer (1..365)
  - Number of days to retrieve bookings from.
- **DayOffset**: Integer (0..365)
  - Which day to start the search from (today: 0, tomorrow: 1...).
- **Limit**: Integer (1..65534)
  - Max number of bookings to list.
- **Offset**: Integer (0..65534)
  - Offset number of bookings for this search.

Call commands

**xCommand Call Accept**

Accept an incoming call. If no CallId is specified, all incoming calls are accepted.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Call Accept [CallId: CallId]
```

where

- **CallId**: Integer (0..65534)
  - The CallId is returned when the xCommand Dial command is run. During the call you can run the xStatus Call command to see the CallId.

**xCommand Call DTMFSend**

Send DTMF tones to the far end.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Call DTMFSend [CallId: CallId] DTMFString: "DTMFString"
```

where

- **CallId**: Integer (0..65534)
  - The CallId is returned when the xCommand Dial command is run. During the call you can run the xStatus Call command to see the CallId.
- **DTMFString**: String (0, 32)
  - Enter the DTMF string.
xCommand Call Disconnect

Disconnect a call.

Requires user role: ADMIN, USER

**USAGE:**

```plaintext
xCommand Call Disconnect [CallId: CallId]
```


**xCommand Call FarEndControl Camera Move**

Move the far end camera (the remote camera).

**NOTE:** The far end camera moves in the specified direction until the stop command (ref: xCommand FarEndControl Camera Stop) is issued.

Requires user role: ADMIN, USER

**USAGE:**

```plaintext
xCommand Call FarEndControl Camera Move [CallId: CallId] Value: Value
```

**xCommand Call FarEndControl Camera Stop**

Stop the far end camera after the xCommand FarEndControl Camera Move has been issued.

Requires user role: ADMIN, USER

**USAGE:**

```plaintext
xCommand Call FarEndControl Camera Stop [CallId: CallId]
```

**xCommand Call FarEndControl RoomPreset Activate**

While in a call, this command is used to activate a preset on the far end codec. The preset covers the far end codec’s camera positions and input video switcher settings.

The preset must be stored on the far end codec beforehand, either by using the xCommand Preset Store command locally on the far end codec, or by using the xCommand FarEndControl Preset Store command from a remote codec.

**NOTE:** The far end codec’s xConfiguration Conference FarEndControl Mode setting must be switched On for the FarEndControl commands to work.

Requires user role: ADMIN, USER

**USAGE:**

```plaintext
xCommand Call FarEndControl RoomPreset Activate [CallId: CallId] PresetId: PresetId
```
xCommand Call FarEndControl Source Select
Select which video input source to use as the main source on the far end system.
Requires user role: ADMIN, USER

**USAGE:**
xCommand Call FarEndControl Source Select [CallId: CallId] SourceId: SourceId
where

CallId: Integer (0..65534)
The CallId is returned when the xCommand Dial command is run. During a call you can run the xStatus Call command to see the CallId.

SourceId: Integer (0..15)
Select a video input source on the far end.

xCommand Call FarEndMessage SStringSend
Send data to the far end, e.g. for control systems. Uses the H.224 data channel (UDP).
Requires user role: ADMIN, USER

**USAGE:**
xCommand Call FarEndMessage SStringSend Message: "Message" [CallId: CallId]
where

Message: String (0, 255)
Enter the message to be sent to the far end.

CallId: Integer (0..65534)
The CallId is returned when the xCommand Dial command is run. During a call you can run the xStatus Call command to see the CallId.

xCommand Call FarEndMessage TStringSend
Send data to far end, e.g. for TelePresence control systems. Uses the H.245 control channel (TCP). Works with H.323 calls only.
Requires user role: ADMIN, USER

**USAGE:**
xCommand Call FarEndMessage TStringSend Message: "Message" CallId: CallId
where

Message: String (0, 255)
Enter the message to be sent to the far end.

CallId: Integer (0..65534)
The CallId is returned when the xCommand Dial command is run. During a call you can run the xStatus Call command to see the CallId.

xCommand Call Forward
Specifies what number or URI you want to forward your incoming calls to. The display name is a local reference for the forwarded destination. A message, together with the local reference, is shown on screen when you have configured the system to forward all calls.
Requires user role: ADMIN, USER

**USAGE:**
xCommand Call Forward DisplayName: "DisplayName" Number: "Number"
where

DisplayName: String (0, 255)
The local reference for the forwarded destination.

Number: String (0, 255)
The directory number or URI which you want to forward the incoming calls to.
xCommand Call Hold
Put a call on hold.
Requires user role: ADMIN, USER

**USAGE:**
```
xCommand Call Hold [CallId: CallId] [Reason: Reason]
```
where
- **CallId:** Integer (0..65534)
  The CallID is returned when the xCommand Dial command is run. During a call you can run the xStatus Call command to see the CallId.
- **Reason:** Conference/Transfer/Other
  Internal usage only.

xCommand Call Ignore
Turns off the ringtone for the incoming call. The call can still be answered.
Requires user role: ADMIN, USER

**USAGE:**
```
xCommand Call Ignore CallId: CallId
```
where
- **CallId:** Integer (0..65534)
  The CallID is returned when the xCommand Dial command is run. During a call you can run the xStatus Call command to see the CallId.

xCommand Call Join
Internal usage only.
Requires user role: ADMIN, USER

**USAGE:**
```
xCommand Call Join CallId: CallId
```
where
- **CallId:** Integer (0..65534)
  The CallID is returned when the xCommand Dial command is run. During a call you can run the xStatus Call command to see the CallId.

xCommand Call Reject
Reject incoming call. If no call id is specified, all incoming calls are rejected.
Requires user role: ADMIN, USER

**USAGE:**
```
xCommand Call Reject [CallId: CallId]
```
where
- **CallId:** Integer (0..65534)
  The CallID is returned when the xCommand Dial command is run. During a call you can run the xStatus Call command to see the CallId.

xCommand Call Resume
Resume a call that have been put on hold.
Requires user role: ADMIN, USER

**USAGE:**
```
xCommand Call Resume [CallId: CallId]
```
where
- **CallId:** Integer (0..65534)
  The CallID is returned when the xCommand Dial command is run. During a call you can run the xStatus Call command to see the CallId.

xCommand Call UnattendedTransfer
Transfers an ongoing call to another participant. Fully supported for SIP calls only.
Requires user role: ADMIN, USER

**USAGE:**
```
xCommand Call UnattendedTransfer CallId: CallId Number: "Number"
```
where
- **CallId:** Integer (0..65534)
  The CallID is returned when the xCommand Dial command is run. During a call you can run the xStatus Call command to see the CallId.
- **Number:** String (0, 255)
  The number the call is transfered to.
CallHistory commands

xCommand CallHistory AcknowledgeAllMissedCalls
 Turns off the missed calls indicator on the touch controller for all missed calls.
 Requires user role: ADMIN, USER

**USAGE:**
 xCommand CallHistory AcknowledgeAllMissedCalls

xCommand CallHistory AcknowledgeMissedCall
 Turns off the missed calls indicator on the touch controller for the specified call.
 Requires user role: ADMIN, USER

**USAGE:**
 xCommand CallHistory AcknowledgeMissedCall CallHistoryId: CallHistoryId
 [AcknowledgeConsecutiveDuplicates: AcknowledgeConsecutiveDuplicates]
 where
 CallHistoryId: Integer (1..2147483647)
 CallHistoryId for the call in question. Run xCommand CallHistory Get to get the id number.
 AcknowledgeConsecutiveDuplicates: False/True
 You can include or exclude all surrounding calls with duplicate information.

xCommand CallHistory DeleteEntry
 Deletes all information on the specified call.
 Requires user role: ADMIN, USER

**USAGE:**
 xCommand CallHistory DeleteEntry CallHistoryId: CallHistoryId
 [AcknowledgeConsecutiveDuplicates: AcknowledgeConsecutiveDuplicates]
 where
 CallHistoryId: Integer (1..2147483647)
 CallHistoryId for the call in question. Run xCommand CallHistory Get to get the id number.
 AcknowledgeConsecutiveDuplicates: False/True
 You can include or exclude all surrounding calls with duplicate information.

xCommand CallHistory DeleteAll
 Deletes all information on previous calls.
 Requires user role: ADMIN, USER

**USAGE:**
 xCommand CallHistory DeleteAll [Filter: Filter]
 where
 Filter: All/Missed/Placed/Received
 You can filter which calls to delete.
xCommand CallHistory Get
Retrieve all information on previous calls made on the video system.

Requires user role: ADMIN, USER

USAGE:
```
xCommand CallHistory Get [Filter: Filter] [Offset: Offset] [Limit: Limit] [DetailLevel: DetailLevel] [SearchString: "SearchString"] [CallHistoryId: CallHistoryId]
```

where
- **Filter**: All/Missed/AnsweredElsewhere/Forwarded/Placed/NoAnswer/Received/Rejected/UnacknowledgedMissed
  
  You can filter which calls to retrieve.
- **Offset**: Integer (0..65534)
  
  Sets the call from which to start.
- **Limit**: Integer (0..65534)
  
  Defines the amount of calls in the output.
- **DetailLevel**: Basic/Full
  
  Sets the level of detail for the information on these calls.
- **SearchString**: String (0, 255)
  
  Allows you to set the command to apply to a specified display name or call back number.
- **CallHistoryId**: Integer (0..65534)
  
  CallHistoryId for the call in question.

xCommand CallHistory Recents
Retrieve aggregated information on previous calls made on the video system.

Requires user role: ADMIN, USER

USAGE:
```
xCommand CallHistory Recents [Filter: Filter] [Offset: Offset] [Limit: Limit] [DetailLevel: DetailLevel] [SearchString: "SearchString"] [CallHistoryId: CallHistoryId] [Order: Order]
```

where
- **Filter**: All/Missed/AnsweredElsewhere/Forwarded/Placed/NoAnswer/Received/Rejected/UnacknowledgedMissed
  
  You can filter which calls to retrieve.
- **Offset**: Integer (0..65534)
  
  Sets the call from which to start.
- **Limit**: Integer (0..65534)
  
  Defines the amount of calls in the output.
- **DetailLevel**: Basic/Full
  
  Sets the level of detail for the information on these calls.
- **SearchString**: String (0, 255)
  
  Allows you to set the command to apply to a specified display name or call back number.
- **CallHistoryId**: Integer (0..65534)
  
  CallHistoryId for the call in question.
- **Order**: OccurrenceTime/OccurrenceFrequency
  
  Define the order in which the previous calls are presented.
Camera commands

xCommand Camera PositionReset
Reset the camera position to default position.
Requires user role: ADMIN, USER

USAGE:
```
xCommand Camera PositionReset [Axis: Axis] CameraId: CameraId
```
where
- **Axis:** All/Focus/PanTilt/Zoom
  Select which motor to reset. If not specified all are reset.
- **CameraId:** Integer (1..7)
  The ID of the camera preset you want to reset.

xCommand Camera PositionSet
Set the camera position.
Requires user role: ADMIN, USER

USAGE:
```
xCommand Camera PositionSet CameraId: CameraId [Focus: Focus] [Pan: Pan] [Tilt: Tilt] [Zoom: Zoom]
```
where
- **CameraId:** Integer (1..7)
  The ID of the camera preset you want to reset.
- **Focus:** Integer (0..65535)
  Focus the camera near or far.
- **Pan:** Integer (-10000..10000)
  Move the camera to the left or right.
- **Tilt:** Integer (-2500..2500)
  Move the camera up or down.
- **Zoom:** Integer (0..8500)
  Zoom in or out.

xCommand Camera Preset Activate
Activate one of the stored camera presets.
Note that the xCommand Camera Preset commands applies to an individual camera. This is in contrast to the xCommand Preset commands where a single preset covers ALL connected cameras plus the Video Input switcher settings.
Requires user role: ADMIN, USER

USAGE:
```
xCommand Camera Preset Activate PresetId: PresetId
```
where
- **PresetId:** Integer (1..35)
  The ID of the camera preset you want to activate.

xCommand Camera Preset ActivateDefaultPosition
Sets the cameras to their default position, if one is defined. The default position is defined by xCommand Camera Preset Store or by xCommand Camera Preset Edit. Only one default position can be defined per camera.
Requires user role: ADMIN, USER

USAGE:
```
xCommand Camera Preset ActivateDefaultPosition [CameraId: CameraId]
```
where
- **CameraId:** Integer (1..7)
  The ID of the camera preset you want to activate. If CameraId is not specified, all cameras will be set in their respective default position, if one is defined.
xCommand Camera Preset Edit

Edit a stored camera preset. You can change the name of the camera preset and its position in the list that is returned by the xCommand Camera Preset List command. You can also change whether or not this preset is the default position for the associated camera.

Note that the xCommand Camera Preset commands applies to an individual camera. This is in contrast to the xCommand Preset commands where a single preset covers ALL connected cameras and the Video Input switcher settings.

Requires user role: ADMIN, USER

USAGE:

xCommand Camera Preset Edit PresetId: PresetId [ListPosition: ListPosition] [Name: "Name"] [DefaultProsition: DefaultProsition]

where

PresetId: Integer (1..35)
   The ID of the camera preset you want to edit.

ListPosition: Integer (1..35)
   The position in the list returned by the xCommand Camera Preset List command.

Name: String (0, 255)
   The name of the camera preset. It will be used in the list returned by the xCommand Camera Preset List command.

DefaultProsition: False/True
   Defines whether or not this preset is the default position for the associated camera. Note that each camera can only have one default position, so if set, the old default preset will automatically be marked as not default.

xCommand Camera Preset List

List information about available camera presets.

Note that the xCommand Camera Preset commands applies to an individual camera. This is in contrast to the xCommand Preset commands where a single preset covers ALL connected cameras plus the Video Input switcher settings.

Requires user role: ADMIN, USER

USAGE:

xCommand Camera Preset List CameraId: CameraId [DefaultPosition: DefaultPosition]

where

CameraId: Integer (1..7)
   Only list presets for the specified camera.

DefaultPosition: False/True
   List default positions only, or only those that are not default positions.

xCommand Camera Preset Remove

Remove a camera preset.

Note that the xCommand Camera Preset commands applies to an individual camera. This is in contrast to the xCommand Preset commands where a single preset covers ALL connected cameras plus the Video Input switcher settings.

Requires user role: ADMIN, USER

USAGE:

xCommand Camera Preset Remove PresetId: PresetId

where

PresetId: Integer (1..35)
   The ID of the camera preset you want to remove.
xCommand Camera Preset Show

Shows the preset details for the requested PresetId.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Camera Preset Show PresetId: PresetId
```

Where

- **PresetId**: Integer (1..35)
  - The ID of the camera preset you wish to see.

---

xCommand Camera Preset Store

Store the current position (pan and tilt), zoom and focus of the chosen camera. The camera is identified by the CameraId parameter.

Note that the xCommand Camera Preset commands applies to an individual camera. This is in contrast to the xCommand Preset commands where a single preset covers ALL connected cameras plus the Video Input switcher settings. The xCommand Camera Preset commands are useful when you want to handle multiple camera positions individually per camera, rather than working with complete sets of camera positions. The individual camera presets are not available for far end control.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Camera Preset Store [PresetId: PresetId] CameraId: CameraId
[ListPosition: ListPosition] [Name: "Name"] [TakeSnapshot: TakeSnapshot]
[DefaultProsition: DefaultProsition]
```

Where

- **PresetId**: Integer (1..35)
  - The ID of this camera preset. If not set explicitly, the codec will assign a preset ID automatically.

- **CameraId**: Integer (1..7)
  - Select the camera for which to store the preset position.

- **ListPosition**: Integer (1..35)
  - The new camera preset’s position in the list returned by the xCommand Camera Preset List command.

- **Name**: String (0, 255)
  - The name of the new camera preset. It will be used in the list returned by the xCommand Camera Preset List command.

- **TakeSnapshot**: False/True
  - Allow or disallow snapshot of the preview.

- **DefaultProsition**: False/True
  - Defines whether or not this preset shall be the default position of the associated camera. Note that each camera can hold only one default position, so if set, the old default preset will automatically be marked as not default.
**xCommand Camera Ramp**

Move the camera in a specified direction. The camera moves at specified speed until a stop command is issued. In a daisy chain, you need to know the CameraId for the camera you want to address. Be aware that pan and tilt can be operated simultaneously, but no other combinations. In the latter case only the first operation specified is executed. For example, if you try to run both zoom and pan at the same time, only zoom is executed.

**NOTE:** You must run a stop command to stop the camera, see the example below.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Camera Ramp CameraId: CameraId [Pan: Pan] [PanSpeed: PanSpeed] [Tilt: Tilt] [TiltSpeed: TiltSpeed] [Zoom: Zoom] [ZoomSpeed: ZoomSpeed] [Focus: Focus]
```

where

- **CameraId**: Integer (1..7)
  - Select the camera.
- **Pan**: Left/Right/Stop
  - Move the camera to the Left or Right, followed by Stop.
- **PanSpeed**: Integer (1..15)
  - Set the pan speed.
- **Tilt**: Down/Up/Stop
  - Move the camera Up or Down, followed by Stop.
- **TiltSpeed**: Integer (1..15)
  - Set the tilt speed.
- **Zoom**: In/Out/Stop
  - Zoom the camera In or Out, followed by Stop.
- **ZoomSpeed**: Integer (1..15)
  - Set the zoom speed.
- **Focus**: Far/Near/Stop
  - Focus the camera Far or Near, followed by Stop.

---

**xCommand Camera TriggerAutofocus**

Trigger the auto-focus functionality. The camera must support auto-focus functionality. If the camera is daisy chained, the CameraId is given by its place in the chain.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Camera TriggerAutofocus CameraId: CameraId
```

where

- **CameraId**: Integer (1..7)
  - Select the camera to auto-focus.
Cameras commands

**xCommand Cameras PresenterTrack ClearPosition**

This setting applies only when using a Cisco TelePresence SX80 with a Precision 60 camera or SpeakerTrack 60 camera.

Clear the stored presenter tracking camera position for the overview image of the stage. The PresenterTrack feature will still work after the camera position has been cleared, but the camera will not view a predefined position upon activation.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Cameras PresenterTrack ClearPosition
```

**xCommand Cameras PresenterTrack StorePosition**

This setting applies only when using a Cisco TelePresence SX80 with a Precision 60 camera or SpeakerTrack 60 camera.

Store the current position of the presenter tracking camera for the overview image of the stage. The presenter tracking camera will move to this position when activating the feature.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Cameras PresenterTrack StorePosition
```

**xCommand Cameras PresenterTrack Set**

This setting applies only when using a Cisco TelePresence SX80 with a Precision 60 camera or SpeakerTrack 60 camera.

Set the presenter tracking mode. This command takes effect only if the PresenterTrack feature is enabled. Sign in to the video system’s web interface and use the Cameras PresenterTrack Enabled setting to enable or disable the feature.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Cameras PresenterTrack Set Mode: Mode
```

where

- **Mode**: Off/Follow/Diagnostic/Background/Setup/Persistent
  - Off: Turn off presenter tracking.
  - Follow: Turn on presenter tracking. This is the default mode when the feature is activated from the Touch user interface. Presenter tracking is automatically turned off when camera moves to a different preset, when another camera is selected, or when standby is activated.
  - Diagnostic: Turn on diagnostic mode in order to troubleshoot presenter tracking, or to see exactly what happens on the video system screen. In diagnostics mode there are several activities on the screen. The screen will show the overview image, and the rectangles/squares listed below will be visible:
    - * RED: The trigger zone.
    - * YELLOW: The cropped image of the presenter. Visible only when a face is being tracked.
    - * GREEN: Indicates that a face is detected and that it is tracked.
    - * GREEN BLINKING FILLED: Indicates a positive face detection. If the tracked individual does not get a valid face-read the square becomes red.
    - * RED BLINKING FILLED: Indicates a false face detection. After some seconds the tracking stops.
    - * BLUE: A face is detected but the face is not tracked.
  - Background: This setting is used by the codec’s internal scripts. Turns on presenter tracking with no cropping of the image.
  - Setup: This setting is used by the codec’s web interface to show the trigger zone on the video system screen when setting up the PresenterTrack feature.
Persistent: This setting is used by the codec’s internal scripts. Turns on presenter tracking in persistent mode. Persistent mode is automatically turned off when camera moves to a different preset.

### xCommand Cameras SpeakerTrack Activate
Activate SpeakerTrack mode. Requires that xConfiguration Cameras SpeakerTrack Mode is set to Auto (default).

This setting applies only when using a Cisco TelePresence SpeakerTrack 60 camera.

The SpeakerTrack 60 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.

Requires user role: ADMIN, USER

**USAGE:**

```plaintext
xCommand Cameras SpeakerTrack Activate
```

### xCommand Cameras SpeakerTrack Deactivate
Deactivate SpeakerTrack mode.

This setting applies only when using a Cisco TelePresence SpeakerTrack 60 camera.

The SpeakerTrack 60 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.

Requires user role: ADMIN, USER

**USAGE:**

```plaintext
xCommand Cameras SpeakerTrack Deactivate
```

### xCommand Cameras SpeakerTrack Diagnostics Start
Starts diagnostics on the SpeakerTrack cameras’ tracking.

Requires user role: ADMIN

**USAGE:**

```plaintext
xCommand Cameras SpeakerTrack Diagnostics Start Tracking: Tracking
where

- Tracking: On/Off
  - On: Displays diagnostics from both cameras simultaneously. In this mode the tracking is determined by who is talking in the room identical to SpeakerTrack’s standard behaviour.
  - Off: Displays diagnostics from one camera at a time. Diagnostics is switched from one camera to the other in 15 seconds intervals, and camera related diagnostics are shown for the active camera. Both cameras stay in full wide position. Use Tracking: Off when you wish to see the tracking diagnostics from one camera at a time.

xCommand Cameras SpeakerTrack Diagnostics Stop
```

Stops diagnostics on the SpeakerTrack cameras.

Requires user role: ADMIN

**USAGE:**

```plaintext
xCommand Cameras SpeakerTrack Diagnostics Stop
```
xCommand Cameras SpeakerTrack Whiteboard ActivatePosition

Moves the specified camera in a SpeakerTrack 60 to the position stored with xCommand Cameras SpeakerTrack Whiteboard StorePosition.

Requires user role: ADMIN, USER

USAGE:

xCommand Cameras SpeakerTrack Whiteboard ActivatePosition Camera: \texttt{Camera} [WhiteboardId: \texttt{WhiteboardId}]

where

\texttt{Camera}: Left/Right

Select either right or left camera.

\texttt{WhiteboardId}: Integer (1..8)

The id set for the camera position used for the snap-to-whiteboard feature. Currently only id 1 can be used.

xCommand Cameras SpeakerTrack Whiteboard AlignPosition

Align the position of the other camera on a SpeakerTrack 60 to the first cameras stored position. You must also set the distance to a whiteboard.

Requires user role: ADMIN, USER

USAGE:

xCommand Cameras SpeakerTrack Whiteboard AlignPosition Camera: \texttt{Camera} Distance: \texttt{Distance} [WhiteboardId: \texttt{WhiteboardId}]

where

\texttt{Camera}: Left/Right

Select either right or left camera.

\texttt{Distance}: Integer (300..1500)

Set distance to whiteboard in millimeters. Use an accurate measurement for the feature to work seamlessly.

\texttt{WhiteboardId}: Integer (1..8)

The id set for the camera position used for the snap-to-whiteboard feature. Currently only id 1 can be used.

xCommand Cameras SpeakerTrack Whiteboard StorePosition

Store the position of one of the cameras on a SpeakerTrack 60 as the Snap to Whiteboard position. Frame the image so that there is room around the whiteboard for the speaker. To use the Snap to Whiteboard feature it must be enabled with xConfiguration Cameras SpeakerTrack Whiteboard Mode and tracking must be enabled with xConfiguration Cameras SpeakerTrack Mode.

Note: You must store a snap-to-whiteboard position for both cameras.

Requires user role: ADMIN, USER

USAGE:

xCommand Cameras SpeakerTrack Whiteboard StorePosition Camera: \texttt{Camera} [WhiteboardId: \texttt{WhiteboardId}]

where

\texttt{Camera}: Left/Right

Select the camera which position you wish to store.

\texttt{WhiteboardId}: Integer (1..8)

You can give the position an id number. Currently the only id that can be used is 1.

xCommand Cameras SpeakerTrack Whiteboard SetDistance

Set the cameras distance to the whiteboard. This information is needed by the SpeakerTrack 60 to frame the whiteboard automatically.

Requires user role: ADMIN, USER

USAGE:

xCommand Cameras SpeakerTrack Whiteboard SetDistance Distance: \texttt{Distance} [WhiteboardId: \texttt{WhiteboardId}]

where

\texttt{Distance}: Integer (0..65534)

Set distance to whiteboard in centimeters. Use a distance between 0-2000 cm. Use an accurate measurement for the feature to work seamlessly.

\texttt{WhiteboardId}: Integer (1..8)

The id set for the camera position used for the snap-to-whiteboard feature. Currently only id 1 can be used.
Conference commands

**xCommand Conference DoNotDisturb Activate**

This command switches on the Do Not Disturb mode, and the Timeout parameter allows you to control when it is switched off again. When Do Not Disturb is switched on, all incoming calls are rejected and registered as missed calls. The calling side receives a busy signal.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Conference DoNotDisturb Activate [Timeout: Timeout]
```

where

```
Timeout: Integer (1..1440)
```

Set the number of minutes before Do Not Disturb is switched off. If not set, Do Not Disturb times out after 1440 minutes (24 hours).

**xCommand Conference DoNotDisturb Deactivate**

Switch off the Do Not Disturb mode. When Do Not Disturb is switched off incoming calls come through as normal.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Conference DoNotDisturb Deactivate
```

**xCommand Conference SpeakerLock Set**

For manually locking one of the speakers to the prominent speaker position. This overrides the default voice switching.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Conference SpeakerLock Set Target: Target [CallId: CallId]
```

where

```
Target: local/remote
```

Identifies local or remote participant.

```
CallId: Integer (0..65534)
```

Identify CallID for the remote participant. Only relevant if Target is set to "remote".

**xCommand Conference SpeakerLock Release**

Releases locked speaker set by xCommand Conference SpeakerLock Set. Default voice switching is switched back on.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Conference SpeakerLock Release
```
Diagnostics commands

xCommand Diagnostics Run
This command runs self-diagnostics commands on the system.
Requires user role: ADMIN

USAGE:
```
xCommand Diagnostics Run [ResultSet: ResultSet]
```
where
- `ResultSet`: Alerts/All/None
  - You can filter the diagnostics results to alerts, all or none. If not set, the result will show all results.

Dial commands

xCommand Dial
Dial out from the system. Returns information about the CallId and ConferenceId, which are required for some of the other commands.
Requires user role: ADMIN, USER

USAGE:
```
xCommand Dial Number: "Number" [Protocol: Protocol] [CallRate: CallRate] [CallType: CallType] [BookingId: "BookingId"] [Appearance: Appearance] [DisplayName: "DisplayName"]
```
where
- `Number`: String (0, 255)
  - Enter the number or address.
- `Protocol`: H320/H323/Sip/Spark
  - Select the call protocol.
- `CallRate`: Integer (64..6000)
  - Set the call rate.
- `CallType`: Audio/Video
  - Select the call type.
- `BookingId`: String (0, 255)
  - Any identifier that an external booking system (e.g. TMS, CTS-MAN) can use for its own references to match placed calls with the booking systems internal identifier for a meeting. This can be any string, e.g. a GUID. The booking Id is supplied in call logs, call events etc for the call.
- `Appearance`: Integer (1..999999999)
  - Internal usage only.
- `DisplayName`: String (0, 255)
  - The display name of the remote participant.
GPIO commands

xCommand GPIO ManualState Set
Set the state of a GPIO pin that is configured to OutputManualState mode (ref. xConfiguration GPIO Pin [1..4] Mode).
Requires user role: ADMIN, USER

USAGE:
where
 Pin1: High/Low
 Pin2: High/Low
 Pin3: High/Low
 Pin4: High/Low

HttpFeedback commands

xCommand HttpFeedback Deregister
Deregister the HTTP feedback over HTTP(S).
Requires user role: ADMIN

USAGE:
xCommand HttpFeedback Deregister FeedbackSlot: FeedbackSlot
where
 FeedbackSlot: Integer (1..4)
 Deregister the feedback slot that was registered using the xCommand HttpFeedback Register command.
xCommand HttpFeedback Register

Register the system to a HTTP(S) server to return XML feedback over HTTP(S) to specific URLs.

Requires user role: ADMIN

**USAGE:**

```
```

where

- **FeedbackSlot**: Integer (1..4)
  - The codec can register up to 4 slots of servers requesting HTTP feedback. Set the registering to one of them.

- **ServerUrl**: String (1, 2048)
  - The URL to the HTTP server where you want the codec to post the HTTP feedback messages to.

- **Expression[1..15]**: String (1, 255)
  - The XPath expression specifies which parts of the Status, Configuration or Event XML documents are monitored. You can have from 1 to 15 XPath expressions.

**Peripherals commands**

xCommand Peripherals Connect

Register peripherals that are connected to the codec, such as control systems and touch panels. The registered peripherals are displayed on the web interface under Configuration > Peripherals.

This command should be used when the peripheral connects to the codec for the first time or when the software version on the peripheral has changed. The list of connected devices is available with the command xStatus Peripherals ConnectedDevice [n] Status.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Peripherals Connect [HardwareInfo: "HardwareInfo"] ID: "ID" [Name: "Name"] [NetworkAddress: "NetworkAddress"] [SerialNumber: "SerialNumber"] [SoftwareInfo: "SoftwareInfo"] Type: Type
```

where

- **HardwareInfo**: String (0, 100)
  - The device’s hardware number.

- **ID**: String (1, 100)
  - A unique ID for the device you are connecting to, typically a MAC address.

- **Name**: String (0, 100)
  - Define a name for the device.

- **NetworkAddress**: String (0, 100)
  - Network address for the device you are connecting to.

- **SerialNumber**: String (0, 100)
  - The device’s serial number.

- **SoftwareInfo**: String (0, 100)
  - Software version the device is running.

- **Type**: Byod/ControlSystem/Other/TouchPanel
  - Define the type of device you are connecting to.
**xCommand Peripherals HeartBeat**

When a peripheral is registered as a connected device, you can set it to send a heartbeat to the codec to let the codec know that it is still connected.

This will keep the device on the xStatus Peripherals ConnectedDevice list. If the peripheral is not set to send a heartbeat, the device will disappear from the list after a while.

**Note:** Does not apply to cameras.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Peripherals HeartBeat ID: "ID" [Timeout: Timeout]
```

where

- **ID**: String (1, 100)
  - A unique ID for the device you are connecting to, typically a MAC address.
- **Timeout**: Integer (1..65535)
  - Set how long the device will send heartbeat.

**xCommand Peripherals List**

Lists all currently and previously connected peripherals.

Requires user role: ADMIN, ROOMCONTROL

**USAGE:**

```
xCommand Peripherals List [Connected: Connected] [Type: Type]
```

where

- **Connected**: False/True
  - Limit the search to currently connected devices.
- **Type**: All/ControlSystem/ISDNLink/OtherTouchPanel
  - Limit the search by device type.

**xCommand Peripherals Pairing DeviceDiscovery Start**

Start device discovery to detect ISDN Links in the same network.

Requires user role: ADMIN

**USAGE:**

```
xCommand Peripherals Pairing DeviceDiscovery Start [AutoPairing: AutoPairing] [DeviceType: DeviceType] [Timeout: Timeout]
```

where

- **AutoPairing**: On/Off
  - You can select to automatically pair the detected device to the endpoint.
- **DeviceType**: ISDNLink
  - Only look for ISDN Link.
- **Timeout**: Integer (3..60)
  - Set a maximum time for the search from 3 to 60 seconds.

**xCommand Peripherals Pairing Pair**

Pair an ISDN Link to an endpoint.

Requires user role: ADMIN

**USAGE:**

```
xCommand Peripherals Pairing Pair MacAddress: "MacAddress"
```

where

- **MacAddress**: String (1, 1450)
  - Enter the MAC address for the ISDN Link you wish to pair to the endpoint.
xCommand Peripherals Pairing Unpair

Unpair endpoint from an ISDN Link, when the two have contact.

Requires user role: ADMIN

**USAGE:**

```
xCommand Peripherals Pairing Unpair MacAddress: "MacAddress"
```

where

```
MacAddress: String (1, 100)
```

MacAddress: Enter the MAC address for the ISDN Link you wish to unpair from the endpoint.

xCommand Peripherals Purge

Force unpair an endpoint from an ISDN Link when a connection has been lost. Note: You must also unpair the ISDN Link to be able to pair it to another endpoint.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Peripherals Purge ID: "ID"
```

where

```
ID: String (1, 100)
```

ID: Mac address of the ISDN Link in the format "xxxx:xxxx:xxxx:xxxx:xxxx:xxxx".

Phonebook commands

xCommand Phonebook Contact Add

Add a new contact to the local phonebook. The command returns the ContactId, which is a unique string that identifies the contact; typically the format is "localContactId-n".

You can add several contact methods to a contact using the xCommand Phonebook ContactMethod Add command. Note that only the first contact method will appear in the Favorites list on the Cisco TelePresence Touch controller. All contact methods are available in the API and on the web interface.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Phonebook Contact Add Name: "Name" [FolderId: "FolderId"] [ImageURL: "ImageURL"] [Title: "Title"] [Number: "Number"] [Protocol: "Protocol"] [CallRate: "CallRate"] [CallType: CallType] [Device: Device] [Tag: Tag]
```

where

```
Name: String (0, 255)
```

Name: The name of the contact.

```
FolderId: String (0, 255)
```

FolderId: The unique identifier for the folder that you want to store the contact in. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Folder Add command was issued to make the folder.

```
ImageURL: String (0, 255)
```

ImageURL: Currently not in use.

```
Title: String (0, 255)
```

Title: The title of the contact.

```\nNumber: String (0, 255)
```

Number: The phone number or address of the contact.

```
Protocol: Auto/H320/H323/SIP/Spark
```

Protocol: Select the Auto, Spark, SIP, H323 or H320 protocol.

```
CallRate: Integer (0..6000)
```

CallRate: Set a call rate.

```
CallType: Audio/Video
```

CallType: Select a call type (audio or video).
Device: Mobile/Other/Telephone/Video
  Select the device type.

Tag: Untagged/Favorite
  Tag the contact as a Favorite, or untag an already tagged contact.

xCommand Phonebook Contact Delete
Delete an existing contact from the local phonebook.

Requires user role: ADMIN, USER

USAGE:
xCommand Phonebook Contact Delete ContactId: "ContactId"
  where
  ContactId: String (0, 255)
    The unique identifier for the contact. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Contact Add command was issued to make the contact.

xCommand Phonebook Contact Modify
Modify contact details of an existing contact in the local phonebook. The following parameters can be changed using this command: Name, FolderId, ImageURL and Title. You must use the xCommand Phonebook ContactMethod Modify command to change the other parameters: Number, Protocol, CallRate, CallType and Device.

Requires user role: ADMIN, USER

USAGE:
xCommand Phonebook Contact Modify ContactId: "ContactId" [Name: "Name"] [FolderId: "FolderId"] [ImageURL: "ImageURL"] [Title: "Title"] [Tag: Tag]
  where
  ContactId: String (0, 255)
    The unique identifier for the contact you want to modify. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Contact Add command was issued to make the contact.
  Name: String (0, 255)
    The name of the contact.
  FolderId: String (0, 255)
    A unique identifier for the folder. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Folder Add command was issued.
  ImageURL: String (0, 255)
    Currently not in use.
  Title: String (0, 255)
    The title of the contact.
  Tag: Untagged/Favorite
    Tag the contact as a Favorite, or untag an already tagged contact.
xCommand Phonebook ContactMethod Add

Add contact details for an existing contact in the local phonebook. The command returns the ContactMethodId, which is a unique string that identifies the contact method, typically the format is "n".

You can add several contact methods to a contact. Note that only the first contact method will appear in the Favorites list on the Cisco TelePresence Touch controller. The first contact method may have been created when issuing the xCommand Phonebook Contact Add command to make the contact. All contact methods are available in the API and on the web interface.

Requires user role: ADMIN, USER

**USAGE:**

```bash
xCommand Phonebook ContactMethod Add ContactId: "ContactId" [Device: Device] Number: "Number" [Protocol: Protocol] [CallRate: CallRate] [CallType: CallType]
```

- **ContactId**: String (0, 255)
  - The unique identifier for the contact that you want to add a contact method to. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Contact Add command was issued to make the contact.
- **Device**: Mobile/Other/Telephone/Video
  - Set which type of device to call to.
- **Number**: String (0, 255)
  - The phone number or address of the contact.
- **Protocol**: Auto/H320/H323/SIP/Spark
  - Select protocol.
- **CallRate**: Integer (0..6000)
  - Set a call rate.
- **CallType**: Audio/Video
  - Select a call type (audio or video).

xCommand Phonebook ContactMethod Delete

Delete a contact method from an existing contact in the local phonebook.

Requires user role: ADMIN, USER

**USAGE:**

```bash
xCommand Phonebook ContactMethod Delete ContactId: "ContactId" ContactMethodId: "ContactMethodId"
```

- **ContactId**: String (0, 255)
  - The unique identifier for the contact you want to change. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Contact Add command was issued to make the contact.
- **ContactMethodId**: String (0, 255)
  - The unique identifier for the contact method you want to delete. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook ContactMethod Add command was issued to make the contact method.
xCommand Phonebook ContactMethod Modify
Modify details about the contact method for an existing contact in the local phonebook.
Requires user role: ADMIN, USER

**USAGE:**
xCommand Phonebook ContactMethod Modify ContactId: "ContactId" ContactMethodId: "ContactMethodId" [Device: Device] [Number: "Number"] [Protocol: Protocol] [CallRate: CallRate] [CallType: CallType]

where
- **ContactId**: String (0, 255)
  The unique identifier for the contact. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Contact Add command was issued to make the contact.
- **ContactMethodId**: String (0, 255)
  The unique identifier for the contact method you want to modify. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook ContactMethod Add command was issued to make the contact.
- **Device**: Mobile/Other/Telephone/Video
  Set which type of device to call to.
- **Number**: String (0, 255)
  The phone number or address of the contact.
- **Protocol**: Auto/H320/H323/SIP/Spark
  Select protocol.
- **CallRate**: Integer (0..6000)
  Set a call rate.
- **CallType**: Audio/Video
  Select a call type (audio or video).

xCommand Phonebook Folder Add
Phonebook entries can be stored in folders. Use this command to add a folder to the local phonebook. The command returns the FolderId, which is a unique string that identifies the folder; typically the format is "localGroupId-n".
Requires user role: ADMIN, USER

**USAGE:**
xCommand Phonebook Folder Add Name: "Name" [ParentFolderId: "ParentFolderId"]

where
- **Name**: String (0, 255)
  The name of the folder.
- **ParentFolderId**: String (0, 255)
  The unique identifier for the parent folder. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Folder Add command was issued to make the parent folder.

xCommand Phonebook Folder Delete
Delete an existing folder from the local phonebook.
Requires user role: ADMIN, USER

**USAGE:**
xCommand Phonebook Folder Delete FolderId: "FolderId"

where
- **FolderId**: String (0, 255)
  The unique identifier for the folder. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Folder Add command was issued to make the folder.
xCommand Phonebook Folder Modify

Modify an existing phonebook folder.

Requires user role: ADMIN, USER

**USAGE:**

```xCommand Phonebook Folder Modify FolderId: "FolderId" [Name: "Name"] [ParentFolderId: "ParentFolderId"]
```

where

- **FolderId**: String (0, 255)
  - The unique identifier for the folder. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Folder Add command was issued to make the folder.
- **Name**: String (0, 255)
  - The name of the contact.
- **ParentFolderId**: String (0, 255)
  - The unique identifier for the parent folder. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Folder Add command was issued to make the parent folder.

xCommand Phonebook Search

The search command lets you search in both the local and corporate phone books. A search gives a ResultSet.

The total number of folders and contacts (TotalRows) is always included in the result set when searching the local phone book. When searching a corporate phonebook the total number of folders and contacts may not be included. Whether it is included or not depends on the backend corporate phonebook service (e.g. CUCM, VCS, TMS) and its version.

Requires user role: ADMIN, USER

**USAGE:**

```xCommand Phonebook Search [PhonebookId: "PhonebookId"] [PhonebookType: Corporate/Local] [SearchString: "SearchString"] [SearchField: Name/Number] [Offset: Integer (0..65534)] [FolderId: "FolderId"] [Limit: Integer (0..65534)] [Recursive: Recursive] [ContactType: ContactType] [Tag: Tag]
```

where

- **PhonebookId**: String (0, 255)
  - The identifier of the phonebook server that will be searched. See the xConfiguration Phonebook Server ID setting.
- **PhonebookType**: Corporate/Local
  - Define whether to search the local phone book or the corporate phonebook.
- **SearchString**: String (0, 255)
  - Search for entries containing this string (note that the entry does not have to begin with the string). If no FolderId is specified, all folders / phonebook directories will be searched.
- **SearchField**: Name/Number
  - Currently not in use.
- **Offset**: Integer (0..65534)
  - Get records starting with this offset in a search. The default value is 0. Offset is used together with Limit to support paging.
- **FolderId**: String (0, 255)
  - Search only in the specified folder. The FolderId (string) is listed in the ResultSet of a search result containing folders.
- **Limit**: Integer (0..65534)
  - Limit the number of records in the result set to this number. For example, if the limit is set to 10, the ResultSet will contain only 10 entries (Contacts and Folders) even if the total number of hits is larger. The maximum limit is 1000.
Recursive: False/True

This parameter will only have effect when searching the local phone book. The setting determines whether a local phone book search should be limited to the given FolderId, or also recursively search in its subfolders. If not specified, the search will be recursive.

When issuing the command without specifying any parameters, all folders, contacts and contact methods in the local phone book will be returned.

ContactType: Any/Folder/Contact

Search all contact types, or limit the search to folders or individual contacts.

Tag: Untagged/Favorite

Limits the search to either contacts that have been tagged as favorite or the untagged contacts.

Presentation commands

xCommand Presentation Start

Open a media stream from the selected presentation source.

Requires user role: ADMIN, USER

USAGE:

```plaintext
xCommand Presentation Start [PresentationSource: PresentationSource] [SendingMode: SendingMode] [ConnectorId: ConnectorId] [Instance: Instance]
```

where

- **PresentationSource**: Integer (1..4)
  - Select the video input source to be used for presentation, identified by source number.
- **SendingMode**: LocalRemote/LocalOnly
  - Select whether the presentation is shown locally or locally and remotely.
- **ConnectorId**: Integer (1..5)
  - Select the video input source to be used for presentation, identified by connectorId.
- **Instance**: New/1/2/3/4/5/6
  - Select which local presentation instance you wish to start.

xCommand Presentation Stop

Stop the media stream from the presentation source.

Requires user role: ADMIN, USER

USAGE:

```plaintext
xCommand Presentation Stop [Instance: Instance] [PresentationSource: PresentationSource]
```

where

- **Instance**: 1/2/3/4/5/6
  - Select which local presentation you wish to stop, identified by presentation instance.
- **PresentationSource**: Integer (1..4)
  - Select which local presentation you wish to stop, identified by source number.
Provisioning commands

xCommand Provisioning CompleteUpgrade
Starts installing the software upgrade if you wish to install it before it is set to do so.
Requires user role: ADMIN, USER

USAGE:
  xCommand Provisioning CompleteUpgrade

xCommand Provisioning PostponeUpgrade
Postpones the installing of the software upgrade.
Requires user role: ADMIN, USER

USAGE:
  xCommand Provisioning PostponeUpgrade SecondsToPostpone: SecondsToPostpone
  where
    SecondsToPostpone: Integer (0..65534)
    Set how long to postpone the upgrade. The value is in seconds.

xCommand Provisioning StartUpgrade
The codec software can be upgraded from the provisioning server. When starting the upgrade
the software is automatically downloaded and installed. The codec reboots to complete the
software upgrade.
Requires user role: ADMIN, USER

USAGE:
  xCommand Provisioning StartUpgrade

xCommand Provisioning ExtensionMobility Login
Login command for the Extension Mobility service. You log in to the Extension Mobility service
with a user name (UserId) and pin code (Pin). The user name and pin code are set up in CUCM.
CUCM also supports multiple profiles for a user.
If you, for a user that has multiple profiles, submit a login command with only user name and
pin code, CUCM will send a list of available profiles back to the video system. Then the video
system will create corresponding ExtensionMobilityProfileSelection Profile events, so that a
new login command, which contains the Profile parameter in addition to the user name and pin
code, can be submitted.
Requires user role: ADMIN, USER

USAGE:
  xCommand Provisioning ExtensionMobility Login UserId: "UserId" Pin: "Pin"
  [Profile: "Profile"]
  where
    UserId: String (1, 255)
    A valid user name, as set up in CUCM.
    Pin: String (1, 255)
    A valid pin code for the user, as set up in CUCM.
    Profile: String (1, 255)
    A valid profile for the user, as set up in CUCM. This parameter applies only if the user
    has multiple profiles.

xCommand Provisioning ExtensionMobility Logout
This command will log you out of your Extension Mobility profile.
Requires user role: ADMIN, USER

USAGE:
  xCommand Provisioning ExtensionMobility Logout
Proximity commands

xCommand Proximity Services Activate
Reactivate the Proximity services that were deactivated with xCommand Proximity Services Deactivate.
Requires user role: ADMIN, USER

```bash
xCommand Proximity Services Activate
```

xCommand Proximity Services Deactivate
This command deactivates all proximity services on the endpoint. To reactivate proximity services use the command xCommand Proximity Services Activate.
Requires user role: ADMIN, USER

```bash
xCommand Proximity Services Deactivate
```

RoomPreset commands

xCommand RoomPreset Activate
Activate one of the locally stored presets.
Note that information about all video input sources, and pan, tilt, zoom and focus values for all cameras are included in the same preset. In contrast, the xCommand Camera Preset commands applies to individual cameras only.
Requires user role: ADMIN, USER

```bash
xCommand RoomPreset Activate PresetId: PresetId
```

where

- **PresetId**: Integer (1..15)
  The ID of the preset you want to activate.

xCommand RoomPreset Clear
Delete a preset.
Note that information about all video input sources, and pan, tilt, zoom and focus values for all cameras are included in the same preset. In contrast, the xCommand Camera Preset commands applies to individual cameras only.
Requires user role: ADMIN, USER

```bash
xCommand RoomPreset Clear PresetId: PresetId
```

where

- **PresetId**: Integer (1..15)
  The ID of the preset you want to delete.
xCommand RoomPreset Store

Store the connector selections for all video input sources and the current position (pan and tilt), zoom and focus values for all cameras.

Note that information about all video input sources, and pan, tilt, zoom and focus values for all cameras are included in the same preset. The system may hold 15 such predefined video input presets. These presets are available for far end control, i.e. they are referred in the PresetId parameter of the xCommand FarEndControl Preset Activate command. In contrast, the xCommand Camera Preset commands applies to individual cameras only. Those presets are not available for far end control.

Requires user role: ADMIN, USER

**USAGE:**

```plaintext
xCommand RoomPreset Store [Description: "Description"] PresetId: PresetId Type: 
where

Description: String (0, 255)
  Enter a description of the camera preset.

PresetId: Integer (1..15)
  The ID of this preset.

Type: All/Camera
  Not applicable. If you want to ensure that a preset only affects camera positions we recommend that you select Camera.
```

Security commands

xCommand Security Persistency

Set the following features to persistent or non-persistent mode. In non-persistent mode the information gathered by the specified feature does not persist a reboot of the system. Persistent mode is the default. This command reboots the system.

Requires user role: ADMIN

**USAGE:**

```plaintext
xCommand Security Persistency Configurations: Configurations CallHistory: CallHistory InternalLogging: InternalLogging LocalPhonebook: LocalPhonebook DHCP: DHCP ConfirmAndReboot: ConfirmAndReboot

where

- Configurations: NonPersistent/Persistent
  In non-persistent mode, all configurations are set back to default when the system reboots.

- CallHistory: NonPersistent/Persistent
  In non-persistent mode call history is deleted when the system reboots.

- InternalLogging: NonPersistent/Persistent
  In non-persistent mode eventlog is deleted when the system reboots.

- LocalPhonebook: NonPersistent/Persistent
  In non-persistent mode local phone book is deleted when the system reboots.

- DHCP: NonPersistent/Persistent
  In non-persistent mode all IP related information is deleted when the system reboots.

- ConfirmAndReboot: Yes
  Reboots the system.
```

xCommand Security Session List

List active sessions.

Requires user role: ADMIN, USER

**USAGE:**

```plaintext
xCommand Security Session List
```
xCommand Security Session Terminate

Terminate a session.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Security Session Terminate SessionId: "SessionId"
```

where

```
SessionId: String (0, 32)
```

The session ID number.

---

**Standby commands**

**xCommand Standby Activate**

Set the system in standby mode, which turns off the video outputs and puts the camera into sleep mode.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Standby Activate
```

**xCommand Standby Deactivate**

Bring the system out of standby mode.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Standby Deactivate
```

**xCommand Standby ResetTimer**

Set a temporary standby delay. If the system is in standby mode when the reset timer is set, the system is brought out of standby mode. When left idle for the given delay the system goes into standby mode. Setting the reset timer does not affect the Standby Delay in the Advanced configuration menu (or by xConfiguration Standby Delay). Next time this delay is the valid standby delay.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Standby ResetTimer Delay: Delay
```

where

```
Delay: Integer (1..480)
```

Set the delay in minutes.
SystemUnit commands

xCommand SystemUnit Boot
Reboot the system.
Requires user role: ADMIN, USER

 USAGE:
xCommand SystemUnit Boot [Action: Action] where
   Action: Restart/Shutdown
           As a default the system restarts after a reboot. By selecting Shutdown, the system will
           not restart.

xCommand SystemUnit FactoryReset
Reset the codec to factory default settings. The call logs are deleted and all system parameters
are reset to default values. All files that have been uploaded to the codec are deleted. Option
key(s) are not affected.
As a default the system restarts after the factory reset, but other behaviour can be forced by
selecting a different TrailingAction.
Requires user role: ADMIN, USER

 USAGE:
xCommand SystemUnit FactoryReset Confirm: Confirm [TrailingAction: TrailingAction] where
   Confirm: Yes
           Include to confirm your choice.
   TrailingAction: NoAction/Restart/Shutdown
           Select Shutdown or NoAction to override the default behaviour (Restart).

xCommand SystemUnit OptionKey Add
Add an option key to support additional features.
Requires user role: ADMIN

 USAGE:
xCommand SystemUnit OptionKey Add Key: "Key"
   where
       Key: String (16, 24)
           The key you have received for the option you wish to switch on.

xCommand SystemUnit OptionKey List
List all option keys.
Requires user role: ADMIN

 USAGE:
xCommand SystemUnit OptionKey List

xCommand SystemUnit OptionKey Remove
Remove a specified option key.
Requires user role: ADMIN

 USAGE:
xCommand SystemUnit OptionKey Remove Type: Type
   where
       Type: Encryption/MultiSite/RemoteMonitoring

xCommand SystemUnit Notifications RemoveAll
Clears the list of system notifications that are reported by xStatus SystemUnit Notifications
Text/Type.
Requires user role: ADMIN

 USAGE:
xCommand SystemUnit Notifications RemoveAll

xCommand SystemUnit OptionKey RemoveAll
Remove all option keys.
Requires user role: ADMIN

USAGE:
xCommand SystemUnit OptionKey RemoveAll Confirm: Confirm
where
  Confirm: Yes

xCommand SystemUnit SoftReset
Reset most parameters to their default values. This does not include parameters associated with room setup, such as camera position, language, and volume.
Requires user role: ADMIN, USER

USAGE:
xCommand SystemUnit SoftReset Confirm: Confirm
where
  Confirm: Yes

xCommand SystemUnit SoftwareUpgrade
Initiate a software upgrade by fetching the software from a given URL. If the server requires username and password these parameters must be included.
Requires user role: ADMIN

USAGE:
xCommand SystemUnit SoftwareUpgrade URL: URL [UserName: UserName] [Password: Password] [Forced: Forced]
where
  URL: String (0, 255)
  The software package location
  UserName: String (0, 255)
  User name to access the server location, if needed.
  Password: String (0, 255)
  Password to access the server location, if needed.
  Forced: False/True
  You can force a system to accept a software upgrade immediately, without giving users a chance to acknowledge or postpone the update.
**Time commands**

**xCommand Time DateTime Get**

Read the time and date from the system.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Time DateTime Get
```

**xCommand Time DateTime Set**

Set the date and time for the system, if not available from NTP (Network Time Protocol).

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Time DateTime Set
[Year: Year]
[Month: Month]
[Day: Day]
[Hour: Hour]
[Minute: Minute]
[Second: Second]
```

where

- **Year**: Integer (2015..2037)
- **Month**: Integer (1..12)
- **Day**: Integer (1..31)
- **Hour**: Integer (0..23)
- **Minute**: Integer (0..59)
- **Second**: Integer (0..59)

**UserInterface commands**

**xCommand UserInterface Extensions Widget SetValue**

Set the value of the given widget. Updates the UserInterface Extensions status tree. Returns an error if the value is out of range.

Requires user role: ADMIN

**USAGE:**

```
xCommand UserInterface Extensions Widget SetValue Value: "Value" WidgetId: "WidgetId"
```

where

- **Value**: String (0, 255)
- **WidgetId**: String (0, 40)

The value of the widget. The range of values depends on the widget type.

- **WidgetId**: The unique identifier for the widget.

**xCommand UserInterface Extensions Widget UnsetValue**

Empties the value of the given widget. Updates the UserInterface Extensions status tree and notifies the user interface that this widget is no longer selected.

Requires user role: ADMIN

**USAGE:**

```
xCommand UserInterface Extensions Widget UnsetValue WidgetId: "WidgetId"
```

where

- **WidgetId**: String (0, 40)

The unique identifier for the widget.

**xCommand UserInterface Extensions Clear**

Delete all user interface extensions (widgets) from the video system.

Requires user role: ADMIN

**USAGE:**

```
xCommand UserInterface Extensions Clear
```
xCommand UserInterface Extensions List
List all user interface extensions (widgets) that exist on the video system.
Requires user role: ADMIN

**USAGE:**
- xCommand UserInterface Extensions List

xCommand UserInterface Message Alert Clear
Remove the message which was displayed using the xCommand Message Alert Display command. This is required when the Duration parameter is not set.
Requires user role: ADMIN, USER, ROOMCONTROL

**USAGE:**
- xCommand UserInterface Message Alert Clear

xCommand UserInterface Message Alert Display
Display a message on screen, for a specified duration of time (in seconds).
NOTE: If Duration is not set, the command must be followed by xCommand Message Alert Clear.
Use the xFeedback commands to monitor the feedback from the user. Read more about the xFeedback commands in the API introduction section in this guide.
Requires user role: ADMIN, ROOMCONTROL

**USAGE:**
```plaintext
xCommand UserInterface Message Alert Display [Title: "Title"] Text: "Text"
[Duration: Duration]
```
where
- **Title**: String (0, 255)
  Enter a message title.
- **Text**: String (0, 255)
  Enter the message to be displayed. The <p> and <br> HTML tags will result in line breaks as normal; any other tags will appear as plain text.
- **Duration**: Integer (0..3600)
  Set how long (in seconds) the message is to be displayed on the screen. If set to 0 (zero) the message does not disappear until a xCommand Message Alert Clear message has been sent.

xCommand UserInterface Message Prompt Clear
Remove the window displayed using the xCommand Message Alert Display command.
Use the xFeedback commands to monitor the feedback from the user. Read more about the xFeedback commands in the API introduction section in this guide.
Requires user role: ADMIN, USER, ROOMCONTROL

**USAGE:**
```plaintext
xCommand UserInterface Message Prompt Clear [FeedbackId: "FeedbackId"]
```
where
- **FeedbackId**: String (0, 255)
  The FeedbackId corresponds to the FeedbackId given by the xCommand Message Prompt Display command.
xCommand UserInterface Message Prompt Display

Display a small window on screen with a title, text and up to five options for response from the user. The message is displayed on screen until the user gives a response, or until the system receives the following command xCommand Message Prompt Clear.

Use the xFeedback commands to monitor the feedback from the user. Read more about the xFeedback commands in the API introduction section in this guide.

Title:
Text:
FeedbackId:
Option.1 to Option.5:

Requires user role: ADMIN, ROOMCONTROL

USAGE:

xCommand UserInterface Message Prompt Display [Title: "Title"] [Text: "Text"] [FeedbackId: "FeedbackId"] [Option.1: "Option.1"] [Option.2: "Option.2"] [Option.3: "Option.3"] [Option.4: "Option.4"] [Option.5: "Option.5"]

where

Title: String (0, 255)
     Enter the message title.

Text: String (0, 255)
     Enter the text line to be displayed. The <p> and <br> HTML tags will result in line breaks as normal; any other tags will appear as plain text.

FeedbackId: String (0, 255)
     To identify the feedback enter a FeedbackId.

Option.1: String (0, 255)
     Enter the text to appear on the feedback options.

Option.2: String (0, 255)
     Enter the text to appear on the feedback options.

Option.3: String (0, 255)
     Enter the text to appear on the feedback options.

Option.4: String (0, 255)
     Enter the text to appear on the feedback options.

Option.5: String (0, 255)
     Enter the text to appear on the feedback options.

xCommand UserInterface Message Prompt Response

Give a response to the xCommand Message Prompt Display.

Use the xFeedback commands to monitor the feedback from the user. Read more about the xFeedback commands in the API introduction section in this guide.

Requires user role: ADMIN, USER, ROOMCONTROL

USAGE:

xCommand UserInterface Message Prompt Response [FeedbackId: "FeedbackId"] [OptionId: OptionId]

where

FeedbackId: String (0, 255)
     The FeedbackId corresponds to the FeedbackId given by the xCommand Message Prompt Display command.

OptionId: Integer (1..5)
     The OptionId corresponds to the OptionIds given as possible responses in the xCommand Message Prompt Display command.

xCommand UserInterface Message TextLine Clear

Clears the text line which was defined by the xCommand Message TextLine Display command.

Requires user role: ADMIN, USER, ROOMCONTROL

USAGE:

xCommand UserInterface Message TextLine Clear
xCommand UserInterface Message TextLine Display

Display a text line on screen. Optionally you can place the text line at a specified location and for a specified duration of time (in seconds).

NOTE: If Duration is not set, the command must be followed by xCommand Message TextLine Clear.

Requires user role: ADMIN, ROOMCONTROL

**USAGE:**

```plaintext
xCommand UserInterface Message TextLine Display Text: "Text" [X: X] [Y: Y] [Duration: Duration]
```

where

- **Text**: String (0, 140)
  - Enter the text line to be displayed. The `<p>` and `<br>` HTML tags will result in line breaks as normal; any other tags will appear as plain text.
- **X**: Integer (1..10000)
  - Enter the X-coordinate (horizontal) on screen. X=0 is in the upper left corner.
- **Y**: Integer (1..10000)
  - Enter the Y-coordinate (vertical) on screen. Y=0 is in the upper left corner.
- **Duration**: Integer (0..3600)
  - Set how long (in seconds) the text line is to be displayed on the screen. If set to 0 (zero) the text line is displayed until a xCommand Message TextLine Clear command has been sent.

xCommand UserInterface Presentation ExternalSource Add

Establish and set up an input source that is connected to the video system via an external switch.

Requires user role: ADMIN, ROOMCONTROL

**USAGE:**

```plaintext
xCommand UserInterface Presentation ExternalSource Add ConnectorId: ConnectorId SourceIdentifier: "SourceIdentifier" Name: "Name" Type: Type
```

where

- **ConnectorId**: Integer (1..5)
  - The ID of the video system connector that the external switch is connected to.
- **SourceIdentifier**: String (0, 40)
  - A unique string that identifies the input source. The identifier is used by other commands and events when addressing this specific input source.
- **Name**: String (0, 40)
  - The name of the input source. This name will be displayed on the user interface.
- **Type**: camera/desktop/document_camera/mediaplayer/PC/whiteboard/other
  - The type of input source. The type determines which icon to display on the user interface.

xCommand UserInterface Presentation ExternalSource Remove

Remove the input source (specified by the SourceIdentifier) from the list of external input sources.

Requires user role: ADMIN, ROOMCONTROL

**USAGE:**

```plaintext
xCommand UserInterface Presentation ExternalSource Remove SourceIdentifier: "SourceIdentifier"
```

where

- **SourceIdentifier**: String (0, 40)
  - The unique string that identifies this input source. It was defined when the source was created with the UserInterface Presentation ExternalSource Add command.
xCommand UserInterface Presentation ExternalSource RemoveAll
Remove all input sources from the list of external input sources.
Requires user role: ADMIN, ROOMCONTROL

**USAGE:**
```
xCommand UserInterface Presentation ExternalSource RemoveAll
```

xCommand UserInterface Presentation ExternalSource Select
Starts to present the input source (specified by the SourceIdentifier) if it is in Ready state (see the UserInterface Presentation ExternalSource State Set command). The input source will be shown in the user interface sharetray as "Presenting".
Requires user role: ADMIN, USER, ROOMCONTROL

**USAGE:**
```
xCommand UserInterface Presentation ExternalSource Select SourceIdentifier: "SourceIdentifier"
```
where
```
SourceIdentifier: String (0, 40)
The unique string that identifies this input source. It was defined when the source was created with the UserInterface Presentation ExternalSource Add command.
```

xCommand UserInterface Presentation ExternalSource State Set
Set or change the state of the input source (specified by the SourceIdentifier).
Requires user role: ADMIN, ROOMCONTROL

**USAGE:**
```
xCommand UserInterface Presentation ExternalSource State Set SourceIdentifier: "SourceIdentifier" State: State [ErrorReason: "ErrorReason"]
```
where
```
SourceIdentifier: String (0, 40)
The unique string that identifies this input source. It was defined when the source was created with the UserInterface Presentation ExternalSource Add command.
```
```
State: Hidden/Ready/NotReady/Error
Ready: The input source will be presented when someone selects it (taps it on the user interface, or when the UserInterface Presentation ExternalSource Select command is issued).
NotReady: The input source is not ready, and cannot be selected.
Error: The input source is in an erroneous state. The ErrorReason parameter may be used to inform the user about the reason for failure.
Hidden: The input source will not be displayed in the user interface sharetray.
```
```
ErrorReason: String (0, 80)
This string is displayed in the user interface sharetray, given that the State parameter is set to Error.
```
UserManagement commands

**xCommand UserManagement RemoteSupportUser Create**
Create a remote support user passphrase that Technical Assistance Center (TAC) can use to access the system for troubleshooting.

Requires user role: ADMIN

**USAGE:**
```
```
where

- `ExpiryDays`: Integer (1..31)
  - Define the duration for the passphrase validity. Default is 7 days.

**xCommand UserManagement RemoteSupportUser Delete**
Delete the remote support user created with the command xCommand UserManagement RemoteSupportUser Create.

Requires user role: ADMIN

**USAGE:**
```
xCommand UserManagement RemoteSupportUser Delete
```

**xCommand UserManagement RemoteSupportUser DisablePermanently**
Disable the creation of new remote support users. To enable the remote support user again you must factory reset your system.

Requires user role: ADMIN

**USAGE:**
```
xCommand UserManagement RemoteSupportUser DisablePermanently Confirm: Confirm
```
where

- `Confirm`: Yes

**xCommand UserManagement RemoteSupportUser GetState**
Retrieves the state of the generated remote support user, if one exists.

Requires user role: ADMIN

**USAGE:**
```
xCommand UserManagement RemoteSupportUser GetState
```

**xCommand UserManagement User Passphrase Change**
Change the passphrase for the user you logged in as. If you are logged in as the administrator, this will change the administrator passphrase.

Requires user role: ADMIN, USER

**USAGE:**
```
xCommand UserManagement User Passphrase Change NewPassphrase: NewPassphrase
OldPassphrase: OldPassphrase
```
where

- `NewPassphrase`: String (0, 255)
- `OldPassphrase`: String (0, 255)
xCommand UserManagement User Passphrase Set

Set a user passphrase for the specified user. You must be logged in as an administrator to set a user passphrase.

Requires user role: ADMIN

**USAGE:**

```xCommand UserManagement User Passphrase Set
NewPassphrase: "NewPassphrase"
Username: "Username" YourPassphrase: "YourPassphrase"
```

where

- **NewPassphrase**: String (0, 255)
- **Username**: String (0, 127)
- **YourPassphrase**: String (0, 255)

Video commands

**xCommand Video ActiveSpeakerPIP Set**

Sets position for the active speakers PiP (picture in picture).

Requires user role: ADMIN, USER

**USAGE:**

```xCommand Video ActiveSpeakerPIP Set
Position: Position
```

where

- **Position**: CenterLeft/CenterRight/LowerLeft/LowerRight/UpperCenter/UpperLeft/UpperRight

Select one of the predefined positions.

**xCommand Video Input SetMainVideoSource**

Set which input source is the main video source. You can identify the source either by the identifier of the connector that it is connected to; or by the identifier of the source itself.

This command requires the use of one, and only one, of these parameters: ConnectorId or SourceId.

Requires user role: ADMIN, USER

**USAGE:**

```xCommand Video Input SetMainVideoSource [ConnectorId: ConnectorId] [SourceId: SourceId]
```

where

- **ConnectorId**: Integer (1..5)
  - The identifier (ID) of the connector. Connector [n] has ID n. Run the following API command to find the ID: xStatus Video Input Connector. The connector ID is also printed on the codec connector panel.

- **SourceId**: Integer (1..4)
  - The identifier (ID) of the input source. Input Source [n] has ID n. Run the following API command to find the ID: xStatus Video Input Source.
xCommand Video Input Source SetActiveConnector
Select which connector is active. Input Connector 4 (DVI-I) and Connector 5 (S-Video/Composite) cannot be active simultaneously.

Requires user role: ADMIN, USER

USAGE:
xCommand Video Input Source SetActiveConnector [ConnectorId: \text{ConnectorId}]

\text{ConnectorId}: \text{Integer (4..5)}
The identifier (ID) of the connector. Connector \text{n} has ID \text{n}. Check the Video Input Connector status to find the connector IDs. The connector ID is also printed on the codec connector panel.

xCommand Video Layout LayoutFamily Set
Select the screen layout mode.

Requires user role: ADMIN, USER

USAGE:
xCommand Video Layout LayoutFamily Set [Target: \text{Target}] [CallId: \text{CallId}]

\text{Target}: \text{local/remote}
Select if the target is the local layout or the remote layout.

\text{CallId}: \text{Integer (0..65534)}
The CallID is returned when the xCommand Dial command is run. During the call you can run the xStatus Call command to see the CallId.

\text{LayoutFamily}: \text{auto/custom/equal/overlay/prominent/single}
Select a layout family.

\text{CustomLayoutName}: \text{String (1, 128)}
Enter a name for the layout.

xCommand Video Matrix Assign
xCommand Video Matrix commands are a smart overlay to the xCommand Video Layout commands to make it easy to do simple video compositions.

Requires user role: ADMIN, USER

USAGE:
xCommand Video Matrix Assign [Mode: \text{Mode}] Output: \text{Output} SourceId: \text{SourceId}

\text{Mode}: \text{Add/Replace}
Choose whether to replace the existing source on that output rendered full screen or to add it. Using Add, the layout engine will recompose the multiple sources automatically. Replace is the default value.

\text{Output}: \text{Integer (1..3)}
Choose the output you wish to use for this layout.

\text{SourceId}: \text{Integer (1..4)}
The identifier (ID) of the input source. Input Source \text{n} has ID \text{n}. Run the following API command to find the ID: xStatus Video Input Source.

xCommand Video Matrix Reset
Reset the content on the output to the default layout
xCommand Video Matrix commands are a smart overlay to the xCommand Video Layout commands to make it easy to do simple video compositions.

Requires user role: ADMIN, USER

USAGE:
xCommand Video Matrix Reset [Output: \text{Output}]

\text{Output}: \text{Integer (1..3)}
Choose the output you want to reset.
**xCommand Video Matrix Swap**

Swap the content defined with xCommand Video Matrix Assign between two outputs. xCommand Video Matrix commands are a smart overlay to the xCommand Video Layout commands to make it easy to do simple video compositions.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Video Matrix Swap OutputA: OutputA OutputB: OutputB
```

*OutputA*: Integer (1..3)

The output you are swapping from.

*OutputB*: Integer (1..3)

The output you are swapping to.

**xCommand Video Matrix Unassign**

Remove a source from an output. Just as with xCommand Video Matrix Assign the layout engine will recompose the remaining sources automatically. xCommand Video Matrix commands are a smart overlay to the xCommand Video Layout commands to make it easy to do simple video compositions.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Video Matrix Unassign Output: Output SourceId: SourceId
```

*Output*: Integer (1..3)

Choose the output you wish to remove the source from.

*SourceId*: Integer (1..4)

The identifier (ID) of the input source. Input Source \[n\] has ID \(n\). Run the following API command to find the ID: xStatus Video Input Source.

**xCommand Video PresentationPIP Set**

Sets position for the presentation PiP (picture in picture).

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Video PresentationPIP Set Position: Position
```

*Position*: CenterLeft/CenterRight/LowerLeft/LowerRight/UpperCenter/UpperLeft/UpperRight

Select one of the predefined positions.

**xCommand Video PresentationView Set**

Set the presentation view mode

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Video PresentationView Set View: View
```

*View*: Default/Maximized/Minimized

Select Default when you want the presentation to be viewed with the default settings for the codec. Select Maximized when you want the presentation to be displayed in full screen. Select Minimized when you want the presentation to be displayed in a small picture on screen.
xCommand Video Selfview Set

Sets self-view on/off and specifies its size and position. If the parameter is not specified, current value is used.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Video Selfview Set [Mode: Mode] [FullscreenMode: FullscreenMode] [PIPPosition: PIPPosition] [OnMonitorRole: OnMonitorRole]
```

where

- **Mode**: On/Off
  - Selfview is set to on or off.
- **FullscreenMode**: On/Off
  - Choose between displaying the self-view in full screen or as picture-in-picture.
- **PIPPosition**: CenterLeft/CenterRight/LowerLeft/LowerRight/UpperCenter/UpperLeft/UpperRight
  - Select the position for the self-view image.
- **OnMonitorRole**: First/Fourth/Second/Third
  - Displays self-view on monitors with this role.
Chapter 5

xStatus commands
### Description of the xStatus commands

In this chapter, you can find all of the xStatus commands and the responses. Status type commands return information about the system and system processes. You can query all information or just some of it.

We recommend you visit our web site regularly for updated versions of the manual.

Go to:  [http://www.cisco.com/go/sx-docs](http://www.cisco.com/go/sx-docs)

<table>
<thead>
<tr>
<th>Audio status</th>
<th>175</th>
</tr>
</thead>
<tbody>
<tr>
<td>xStatus Audio</td>
<td>175</td>
</tr>
<tr>
<td>xStatus Audio Input Connectors HDMI [n]</td>
<td>175</td>
</tr>
<tr>
<td>xStatus Audio Input Connectors Microphone [n]</td>
<td>175</td>
</tr>
<tr>
<td>xStatus Audio Input LocalInput [n]</td>
<td>175</td>
</tr>
<tr>
<td>xStatus Audio Input LocalInput [n] AGC</td>
<td>175</td>
</tr>
<tr>
<td>xStatus Audio Input LocalInput [n] Channels</td>
<td>175</td>
</tr>
<tr>
<td>xStatus Audio Input LocalInput [n] Connector</td>
<td>175</td>
</tr>
<tr>
<td>xStatus Audio Input LocalInput [n] Mute</td>
<td>176</td>
</tr>
<tr>
<td>xStatus Audio Input LocalInput [n] Name</td>
<td>176</td>
</tr>
<tr>
<td>xStatus Audio Input RemoteInput [n] CallId</td>
<td>176</td>
</tr>
<tr>
<td>xStatus Audio Microphones Mute</td>
<td>176</td>
</tr>
<tr>
<td>xStatus Audio Output Connectors Line [n] DelayMs</td>
<td>176</td>
</tr>
<tr>
<td>xStatus Audio Output LocalOutput [n] Channels</td>
<td>177</td>
</tr>
<tr>
<td>xStatus Audio Output LocalOutput [n] Connector [n]</td>
<td>177</td>
</tr>
<tr>
<td>xStatus Audio Output LocalOutput [n] Input [n] Gain</td>
<td>177</td>
</tr>
<tr>
<td>xStatus Audio Output LocalOutput [n] Loudspeaker</td>
<td>177</td>
</tr>
<tr>
<td>xStatus Audio Output LocalOutput [n] Name</td>
<td>177</td>
</tr>
<tr>
<td>xStatus Audio Output LocalOutput [n] VolumeControlled</td>
<td>177</td>
</tr>
<tr>
<td>xStatus Audio Output RemoteOutput [n] CallId</td>
<td>178</td>
</tr>
<tr>
<td>xStatus Audio Output RemoteOutput [n] Input [n] Gain</td>
<td>178</td>
</tr>
<tr>
<td>xStatus Audio Volume</td>
<td>178</td>
</tr>
<tr>
<td>xStatus Audio VolumeMute</td>
<td>178</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bookings status</th>
<th>179</th>
</tr>
</thead>
<tbody>
<tr>
<td>xStatus Bookings Current</td>
<td>179</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Call status</th>
<th>179</th>
</tr>
</thead>
<tbody>
<tr>
<td>xStatus Call [n]</td>
<td>179</td>
</tr>
<tr>
<td>xStatus Call [n] AnswerState</td>
<td>179</td>
</tr>
<tr>
<td>xStatus Call [n] AttendedTransferFrom</td>
<td>179</td>
</tr>
<tr>
<td>xStatus Call [n] CallId</td>
<td>179</td>
</tr>
<tr>
<td>xStatus Call [n] CallType</td>
<td>180</td>
</tr>
<tr>
<td>xStatus Call [n] DeviceType</td>
<td>180</td>
</tr>
<tr>
<td>xStatus Call [n] Direction</td>
<td>180</td>
</tr>
<tr>
<td>xStatus Call [n] DisplayName</td>
<td>180</td>
</tr>
<tr>
<td>xStatus Call [n] Encryption</td>
<td>180</td>
</tr>
<tr>
<td>xStatus Call [n] EncryptionType</td>
<td>180</td>
</tr>
<tr>
<td>xStatus Call [n] FacilityServiceId</td>
<td>181</td>
</tr>
<tr>
<td>xStatus Call [n] HoldReason</td>
<td>181</td>
</tr>
<tr>
<td>xStatus Call [n] PlacedOnHold</td>
<td>181</td>
</tr>
<tr>
<td>xStatus Call [n] Protocol</td>
<td>181</td>
</tr>
<tr>
<td>xStatus Call [n] ReceiveCallRate</td>
<td>181</td>
</tr>
<tr>
<td>xStatus Call [n] RemoteNumber</td>
<td>181</td>
</tr>
<tr>
<td>xStatus Call [n] Status</td>
<td>182</td>
</tr>
<tr>
<td>xStatus Call [n] TransmitCallRate</td>
<td>182</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cameras status</th>
<th>182</th>
</tr>
</thead>
<tbody>
<tr>
<td>xStatus Cameras Camera</td>
<td>182</td>
</tr>
<tr>
<td>xStatus Cameras Camera [n] Capabilities Options</td>
<td>182</td>
</tr>
<tr>
<td>xStatus Cameras Camera [n] Connected</td>
<td>182</td>
</tr>
<tr>
<td>xStatus Cameras Camera [n] Flip</td>
<td>182</td>
</tr>
<tr>
<td>xStatus Cameras Camera [n] MacAddress</td>
<td>183</td>
</tr>
</tbody>
</table>
xStatus Cameras Camera [n] Manufacturer
xStatus Cameras Camera [n] Model
xStatus Cameras Camera [n] SerialNumber
xStatus Cameras Camera [n] SoftwareID
xStatus Cameras SpeakerTrack Availability
xStatus Cameras SpeakerTrack LeftCamera VideoInputConnector
xStatus Cameras SpeakerTrack RightCamera VideoInputConnector
xStatus Cameras SpeakerTrack Status

Capabilities status
xStatus Capabilities
xStatus Capabilities Conference MaxActiveCalls
xStatus Capabilities Conference MaxAudioCalls
xStatus Capabilities Conference MaxCalls
xStatus Capabilities Conference MaxVideoCalls

Conference status
xStatus Conference
xStatus Conference ActiveSpeaker CallId
xStatus Conference Call [n] BookingId
xStatus Conference Call [n] Capabilities FarendMessage Mode
xStatus Conference Call [n] Capabilities FECC Mode
xStatus Conference Call [n] Capabilities FECC NumberOfPresets
xStatus Conference Call [n] Capabilities FECC NumberOfSources
xStatus Conference Call [n] Capabilities FECC Source [n] Name
xStatus Conference Call [n] Capabilities FECC Source [n] Options
xStatus Conference Call [n] Capabilities FECC Source [n] SourceId
xStatus Conference Call [n] Capabilities Hold
xStatus Conference Call [n] Capabilities ixChannel Status
xStatus Conference Call [n] Capabilities Presentation
xStatus Conference Call [n] Manufacturer
xStatus Conference Call [n] MicrophonesMuted
xStatus Conference Call [n] SoftwareID
xStatus Conference DoNotDisturb

xStatus Conference Line [n] Mode
xStatus Conference Multipoint Mode
xStatus Conference Presentation CallId
xStatus Conference Presentation LocalInstance [n] SendingMode
xStatus Conference Presentation LocalInstance [n] Source
xStatus Conference Presentation Mode
xStatus Conference SpeakerLock CallId
xStatus Conference SpeakerLock Mode

Diagnostics status
xStatus Diagnostics
xStatus Diagnostics Message [n] Description
xStatus Diagnostics Message [n] Level
xStatus Diagnostics Message [n] References
xStatus Diagnostics Message [n] Type

GPIO status
xStatus GPIO Pin [1..4] State

H323 status
xStatus H323 Gatekeeper Reason
xStatus H323 Gatekeeper Address
xStatus H323 Gatekeeper Port
xStatus H323 Gatekeeper Reason
xStatus H323 Mode Reason
xStatus H323 Mode Status

HttpFeedback status
xStatus HttpFeedback [1..4] Expression [1..15]
xStatus HttpFeedback [1..4] Format
xStatus HttpFeedback [1..4] URL
Proximity status

xStatus Proximity
xStatus Proximity Services Availability

Security status

xStatus Security
xStatus Security FIPS Mode
xStatus Security Persistency CallHistory
xStatus Security Persistency Configurations
xStatus Security Persistency DHCP
xStatus Security Persistency InternalLogging
xStatus Security Persistency LocalPhonebook

SIP status

xStatus SIP
xStatus SIP AlternateURI Alias [n] URI
xStatus SIP AlternateURI Primary [n] URI
xStatus SIP Authentication
xStatus SIP CallForward DisplayName
xStatus SIP CallForward Mode
xStatus SIP CallForward URI
xStatus SIP Mailbox MessagesWaiting
xStatus SIP Mailbox URI

SystemUnit status

xStatus SystemUnit
xStatus SystemUnit Hardware Module CompatibilityLevel
xStatus SystemUnit Hardware Module SerialNumber
xStatus SystemUnit Hardware Monitoring Fan [n] Status
xStatus SystemUnit Hardware Monitoring Fan [n] Text
xStatus SystemUnit Hardware Monitoring Fan [n] Type
xStatus SystemUnit ProductId
xStatus SystemUnit ProductPlatform
xStatus SystemUnit ProductType
xStatus SystemUnit Software DisplayName
xStatus SystemUnit Software Name
xStatus SystemUnit Software OptionKeys Encryption
xStatus SystemUnit Software OptionKeys MultiSite
xStatus SystemUnit Software OptionKeys RemoteMonitoring
xStatus SystemUnit Software ReleaseDate
xStatus SystemUnit Software Version
xStatus SystemUnit State NumberOfActiveCalls
xStatus SystemUnit State NumberOfInactiveProgressCalls
xStatus SystemUnit State NumberOfSuspendedCalls
xStatus SystemUnit Uptime
Time status

UserInterface status

Video status

xStatus Video Output Connector [n] ConnectedDevice Name

xStatus Video Output Connector [n] ConnectedDevice PreferredFormat

xStatus Video Output Connector [n] MonitorRole

xStatus Video Output Connector [n] Resolution Height

xStatus Video Output Connector [n] Resolution RefreshRate

xStatus Video Output Connector [n] Resolution Width

xStatus Video Output Connector [n] Type

xStatus Video Presentation PIPPosition

xStatus Video Selfview FullscreenMode

xStatus Video Selfview Mode

xStatus Video Selfview OnMonitorRole

xStatus Video Selfview PIPPosition
Audio status

xStatus Audio
Shows the top level overview of the audio status. The identities of the LocalInput, RemoteInput, LocalOutput and RemoteOutput are used when querying additional information.

xStatus Audio Input Connectors HDMI [n] EcReferenceDelay
Returns the detected latency for each loudspeaker to microphone path for systems supporting HDMI input used as microphone input. The result is in milliseconds.
Value space of the result returned:
Integer
Example:
xStatus Audio Input Connectors HDMI 1 EcReferenceDelay
*s Audio Connectors HDMI 1 EcReferenceDelay: 0
** end

xStatus Audio Input Connectors Microphone [n] EcReferenceDelay
Returns the detected latency for each loudspeaker to microphone path. The result is in milliseconds.
Value space of the result returned:
Integer
Example:
xStatus Audio Input Connectors Microphone 1 EcReferenceDelay
*s Audio Connectors Microphone 1 EcReferenceDelay: 120
** end

xStatus Audio Input LocalInput [n] AGC
Shows the AGC (Automatic Gain Control) mode on the local input.
You can run the command xStatus Audio Input LocalInput to find the identity [n] of the input.
Value space of the result returned:
On/Off
Example:
xStatus Audio Input LocalInput 1 AGC
*s Audio Input LocalInput 1 AGC: "On"
** end

xStatus Audio Input LocalInput [n] Channels
States if the local input channels are mixed into into a mono signal (1) or stereo signal (2).
You can run the command xStatus Audio Input LocalInput to find the identity [n] of the input.
Value space of the result returned:
1..2
Example:
xStatus Audio Input LocalInput 1 Channels
*s Audio Input LocalInput 1 Channels: 1
** end

xStatus Audio Input LocalInput [n] Connector
Lists the connectors that are attached to the local input.
You can run the command xStatus Audio Input LocalInput to find the identity [n] of the input.
Value space of the result returned:
Microphone.1/..Microphone.4/Line.1/Line.2/HDMI.2
Example:
xStatus Audio Input LocalInput 1 Connector
*s Audio Input LocalInput 1 Connector: "Microphone.1"
** end
xStatus Audio Input LocalInput [n] MixerMode
Shows how the local input connectors have been mixed together. You can run the command xStatus Audio Input LocalInput to find the identity [n] of the input.
Auto: The microphone with the strongest speaker is active and the others are strongly attenuated.
Fixed: The input connector signals are mixed together with equal gains.
GainShared: The microphones are given a normalized gain factor relative to the strongest speaker before being mixed together.
Value space of the result returned: Auto/Fixed/GainShared
Example:
xStatus Audio Input LocalInput 1 MixerMode
*s Audio Input LocalInput 1 MixerMode: "Auto"
** end

xStatus Audio Input LocalInput [n] Mute
Shows the mute mode for the local inputs. A local input is a mix of input connectors. You can run the command xStatus Audio Input LocalInput to find the identity [n] of the input.
Value space of the result returned: On/Off
Example:
xStatus Audio Input LocalInput 1 Mute
*s Audio Input LocalInput 1 Mute: "Off"
** end

xStatus Audio Input LocalInput [n] Name
Shows the name of the local input. A local input is a mix of input connectors. You can run the command xStatus Audio Input LocalInput to find the identity [n] of the input.
Value space of the result returned: String
Example:
xStatus Audio Input LocalInput 1 Name
*s Audio Input LocalInput 1 Name: "Microphone"
** end

xStatus Audio Input RemoteInput [n] CallId
Shows the CallId for the remote audio input. You can run the command xStatus Audio Input RemoteInput to find the identity [n] of the input.
Value space of the result returned: 0..65534
Example:
xStatus Audio Input RemoteInput 8 CallId
*s Audio Input RemoteInput 8 CallId: 28
** end

xStatus Audio Microphones Mute
Shows whether the microphones are muted.
Value space of the result returned: On/Off
Example:
xStatus Audio Microphones Mute
*s Audio Microphones Mute: Off
** end

xStatus Audio Output Connectors Line [n] DelayMs
Shows the delay in milliseconds.
Value space of the result returned: Integer (0..290)
Example:
xStatus Audio Output Connectors Line 1
*s Audio Output Connectors Line 1 DelayMs: 60
** end
xStatus Audio Output LocalOutput [n] Channels
States if the local output channels are mixed into into a mono signal (1) or stereo signal (2).
You can run the command xStatus Audio Output LocalOutput to find the identity [n] of the output.

Value space of the result returned:
1..2

Example:
  xStatus Audio Output LocalOutput 4 Channels
  *s Audio Output LocalOutput 4 Channels: "1"
  ** end

xStatus Audio Output LocalOutput [n] Connector [n]
Lists the connectors that are attached to the local output.
You can run the command xStatus Audio Output LocalOutput to find the identity [n] of the output.

Value space of the result returned:
String

Example:
  xStatus Audio Output LocalOutput 4 Connector
  *s Audio Output LocalOutput 4 Connector: "Line.1"
  ** end

xStatus Audio Output LocalOutput [n] Input [n] Gain
Shows the gain (dB) on the input, when it is connected to the local output. Range from -54 dB to 15 dB, where -54 dB equals Off.
You can run the command xStatus Audio Output LocalOutput to find the identity [n] of the output and input.

Value space of the result returned:
-54..15

Example:
  xStatus Audio Output LocalOutput 4 Input 2 Gain
  *s Audio Output LocalOutput 4 Input 2 Gain: 0
  ** end

xStatus Audio Output LocalOutput [n] Loudspeaker
Shows the Loudspeaker mode on the local output. If one or more of the output connectors that are attached to the local output are connected to a loudspeaker, then this signal should be a reference signal to the echo canceler and Loudspeaker should be set to On.
You can run the command xStatus Audio Output LocalOutput to find the identity [n] of the output.

Value space of the result returned:
On/Off

Example:
  xStatus Audio Output LocalOutput 4 Loudspeaker
  *s Audio Output LocalOutput 4 Loudspeaker: "Off"
  ** end

xStatus Audio Output LocalOutput [n] Name
Shows the name of the local output.
You can run the command xStatus Audio Output LocalOutput to find the identity [n] of the output.

Value space of the result returned:
String

Example:
  xStatus Audio Output LocalOutput 4 Name
  *s Audio Output LocalOutput 4 Name: "MyLocalOutput1"
  ** end

xStatus Audio Output LocalOutput [n] VolumeControlled
Shows whether this output’s volume is controlled by global audio control (Off), or if it is at the level defined with xCommand Audio Volume Set (On).

Value space of the result returned:
String

Example:
  xStatus Audio Output LocalOutput 5 VolumeControlled
  *s Audio Output LocalOutput 5 VolumeControlled: "On"
  ** end
xStatus Audio Output RemoteOutput [n] CallId
Shows the CallId for the remote audio output.
You can run the command xStatus Audio Output RemoteOutput to find the identity [n] of the output.

Value space of the result returned:
1..65534

Example:
   xStatus Audio Output RemoteOutput 9 CallId
   *s Audio Output RemoteOutput 9 CallId: 28
   ** end

xStatus Audio Output RemoteOutput [n] Input [n] Gain
Shows the gain (dB) on the input, when input is connected to the remote output. Range from -54 dB to 15 dB, where -54 dB equals Off.
You can run the command xStatus Audio Output RemoteOutput to find the identity [n] of the output and input.

Value space of the result returned:
-54..15

Example:
   xStatus Audio Output RemoteOutput 9 Input 1 Gain
   *s Audio Output RemoteOutput 9 Input 1 Gain: 0
   ** end

xStatus Audio Volume
Shows the volume level (dB) of the loudspeaker output.

Value space of the result returned:
0..100

Example:
   xStatus Audio Volume
   *s Audio Volume: 70
   ** end

xStatus Audio VolumeMute
Shows whether the endpoint volume is set to mute.

Value space of the result returned:
Off/On

Example:
   xStatus Audio VolumeMute
   *s Audio VolumeMute: Off
   ** end
Bookings status

xStatus Bookings Current
The ID of the on going booking event, if any.

Value space of the result returned:
String

Example:
```
xStatus Bookings Current Id
*s Bookings Current Id: "123"
** end
```

Call status

xStatus Call [n]
Shows the top level overview of the call status. The call identity is used when query for additional information about the call.

xStatus Call [n] AnswerState
Indicates if a call is answered, ignored or has been automatically answered by a system.

Value space of the result returned:
Unanswered/Ignored/Autoanswered/Answered

Example:
```
xStatus Call AnswerState
*s Call 5 AnswerState: Answered
** end
```

xStatus Call [n] AttendedTransferFrom
Shows the CallId for the call the current call was transferred from.

Value space of the result returned:
Integer

Example:
```
xStatus Call 1 AttendedTransferFrom
*s Call 1 AttendedTransferFrom: 1234
** end
```

xStatus Call [n] CallbackNumber
Shows the remote (far end) number or URI of an incoming or outgoing call, including the call protocol, for call back. You can run the command xStatus Call to find the call identity.

Value space of the result returned:
String

Example:
```
xStatus Call 27 CallbackNumber
*s Call 27 CallbackNumber: "h323:firstname.lastname@company.com"
** end
```
xStatus Call \[n\] CallType

Shows the call type of the incoming or outgoing call. You can run the command xStatus Call to find the call identity.

Value space of the result returned:
Video/Audio/AudioCanEscalate/ForwardAllCall/Unknown

Example:
```
xStatus Call 27 CallType
*s Call 27 CallType: Video
** end
```

xStatus Call \[n\] DeviceType

Indicates whether the remote system is a single endpoint or an MCU. Some Cisco endpoints (SX20, SX80, MX200 G2, MX300 G2) have built-in MCU capabilities.

Value space of the result returned:
Endpoint/MCU

Example:
```
xStatus Call DeviceType
*s Call DeviceType: Endpoint
** end
```

xStatus Call \[n\] Direction

States the direction of the call initiation. You can run the command xStatus Call to find the call identity.

Value space of the result returned:
Incoming/Outgoing

Example:
```
xStatus Call 27 Direction
*s Call 27 Direction: Outgoing
** end
```

xStatus Call \[n\] DisplayName

Shows the name of the remote (far end) participant in an incoming or outgoing call. You can run the command xStatus Call to find the call identity.

Value space of the result returned:
String

Example:
```
xStatus Call 27 DisplayName
*s Call 27 DisplayName: "firstname.lastname@company.com"
** end
```

xStatus Call \[n\] Duration

Shows the duration of a call (in seconds). You can run the command xStatus Call to find the call identity.

Value space of the result returned:
Integer

Example:
```
xStatus Call 27 Duration
*s Call 27 Duration: 2354
** end
```

xStatus Call \[n\] Encryption Type

Shows the encryption type of the call. You can run the command xStatus Call to find the call identity.

Value space of the result returned:
None/Aes-128

Example:
```
xStatus Call 27 Encryption Type
*s Call 27 Encryption Type: "None"
** end
```
xStatus Call [n] FacilityServiceId
When calling a facility service, the facility service id is shown. Otherwise the value 0 is returned.

Value space of the result returned:
0..5

Example:
  xStatus Call FacilityServiceId
  *s Call 3 FacilityServiceId: 1
  ** end

xStatus Call [n] HoldReason
Shows the reason the current outgoing call was put on hold.
Conference: On hold while the call is being merged into a conference.
Transfer: On hold while the call is being transferred.
None: All other instances.

Value space of the result returned:
Conference/Transfer/None

Example:
  xStatus Call 2 HoldReason
  *s Call 2 HoldReason: None
  ** end

xStatus Call [n] PlacedOnHold
Shows the placed on hold status of the call. You can run the command xStatus Call to find the
value space of the result returned:
True/False

Example:
  xStatus Call 27 PlacedOnHold
  *s Call 27 PlacedOnHold: False
  ** end

xStatus Call [n] Protocol
Shows the call protocol of the incoming or outgoing call. You can run the command xStatus Call
to find the call identity.

Value space of the result returned:
H320/H323/SIP/Spark/Unknown

Example:
  xStatus Call 27 Protocol
  *s Call 27 Protocol: "h323"
  ** end

xStatus Call [n] ReceiveCallRate
Shows the receive bandwidth in the call in kilobits per second (kbps). You can run the
value space of the result returned:
Integer

Example:
  xStatus Call 27 ReceiveCallRate
  *s Call 27 ReceiveCallRate: 4000
  ** end

xStatus Call [n] RemoteNumber
Shows the remote (far end) number or URI of an incoming or outgoing call. You can run the
value space of the result returned:
String

Example:
  xStatus Call 27 RemoteNumber
  *s Call 27 RemoteNumber: "5585232"
  ** end
xStatus Call [n] Status
Shows the status of a call. You can run the command xStatus Call to find the call identity.

Value space of the result returned:
Idle/Dialling/Ringing/Connecting/Connected/Disconnecting/OnHold/EarlyMedia/Preserved/RemotePreserved

Example:
```
xStatus Call 27 Status
*s Call 27 Status: Connected
** end
```

xStatus Call [n] TransmitCallRate
Shows the transmit bandwidth in the call in kilobits per second (kbps). You can run the command xStatus Call to find the call identity.

Value space of the result returned:
Integer

Example:
```
xStatus Call 27 TransmitCallRate
*s Call 27 TransmitCallRate: 768
** end
```

Cameras status

xStatus Cameras Camera
Shows the top level overview of the camera status.

xStatus Cameras Camera [n] Capabilities Options
Shows the camera capabilities (ptzf = pan, tilt, zoom, focus).

Value space of the result returned:
String

Example:
```
xStatus Cameras Camera 1 Capabilities Options
*s Camera 1 Capabilities Options: "ptzf"
** end
```

xStatus Cameras Camera [n] Connected
Shows if the camera is connected or not.

Value space of the result returned:
True/False

Example:
```
xStatus Cameras Camera 1 Connected
*s Camera 1 Connected: True
** end
```

xStatus Cameras Camera [n] Flip
In Flip mode (vertical flip) the image can be flipped upside down.

Value space of the result returned:
Auto/On/Off

Example:
```
xStatus Cameras Camera 1 Flip
*s Camera 1 Flip: "Off"
** end
```
xStatus Cameras Camera [n] MacAddress
Shows the MAC (Media Access Control) address for the camera.

Value space of the result returned:
String

Example:
xStatus Cameras Camera 1 MacAddress
'*s Camera 1 MacAddress: ""
** end

xStatus Cameras Camera [n] Manufacturer
Shows the manufacturer of the camera.

Value space of the result returned:
String

Example:
xStatus Cameras Camera 1 Manufacturer
'*s Camera 1 Manufacturer: "Cisco"
** end

xStatus Cameras Camera [n] Model
Shows the camera model.

Value space of the result returned:
String

Example:
xStatus Cameras Camera 1 Model
'*s Camera 1 Model: "Precision 40"
** end

xStatus Cameras Camera [n] SerialNumber
Shows the camera serial number.

Value space of the result returned:
String

Example:
xStatus Cameras Camera 1 SerialNumber
'*s Camera 1 SerialNumber: "B1AB26B00010"
** end

xStatus Cameras Camera [n] SoftwareID
Shows the software identity of the camera.

Value space of the result returned:
String

Example:
xStatus Cameras Camera 1 SoftwareID
'*s Camera 1 SoftwareID: "S01718-4.0FINAL [ID:40063] 2014-10-20"
** end

xStatus Cameras SpeakerTrack Availability
Shows whether speaker tracking is available.
Off: Speaker tracking is turned off with the command xConfiguration Cameras SpeakerTrack Mode: Off
Unavailable: Speaker tracking hardware is not found.
Available: Speaker tracking hardware and the two cameras are found, and it is possible to turn speaker tracking on or off.

Value space of the result returned:
Off/Unavailable/Available

Example:
xStatus Cameras SpeakerTrack Availability
'*s Cameras SpeakerTrack Availability: Unavailable
** end
xStatus Cameras SpeakerTrack LeftCamera VideoInputConnector
Returns the number of the HDMI connector used for the left camera on a SpeakerTrack camera.

Value space of the result returned:
0/1/2/3/4/5

Example:
```
xStatus Cameras SpeakerTrack LeftCamera VideoInputConnector
's Cameras SpeakerTrack LeftCamera VideoInputConnector: 0
** end
```

xStatus Cameras SpeakerTrack RightCamera VideoInputConnector
Returns the number of the HDMI connector used for the right camera on a SpeakerTrack camera.

Value space of the result returned:
0/1/2/3/4/5

Example:
```
xStatus Cameras SpeakerTrack RightCamera VideoInputConnector
's Cameras SpeakerTrack RightCamera VideoInputConnector: 0
** end
```

xStatus Cameras SpeakerTrack Status
Shows whether speaker tracking is set to active or inactive.

Value space of the result returned:
Active/Inactive

Example:
```
xStatus Cameras SpeakerTrack Status
's Cameras SpeakerTrack Status: Active
** end
```

Capabilities status

xStatus Capabilities
Shows the top level overview of the capabilities status.

xStatus Capabilities Conference MaxActiveCalls
Shows the the maximum number of simultaneous active calls. Calls that are set on hold/transfer are not counted as active.

Value space of the result returned:
0..5

Example:
```
xStatus Capabilities Conference MaxNumberOfActiveCalls
's Capabilities Conference MaxNumberOfActiveCalls: 3
** end
```

xStatus Capabilities Conference MaxAudioCalls
Shows the the maximum number of simultaneous audio calls that is supported.

Value space of the result returned:
Integer

Example:
```
xStatus Capabilities Conference MaxAudioCalls
's Capabilities Conference MaxAudioCalls: 4
** end
```

xStatus Capabilities Conference MaxCalls
Shows the the maximum number of simultaneous calls.

Value space of the result returned:
0..5

Example:
```
xStatus Capabilities Conference MaxCalls
's Capabilities Conference MaxCalls: 3
** end
```
xStatus Capabilities Conference MaxVideoCalls
Shows the maximum number of simultaneous video calls that is supported.

Value space of the result returned:
Integer

Example:
xStatus Capabilities Conference MaxVideoCalls
*s Capabilities Conference MaxVideoCalls: 3
** end

Conference status

xStatus Conference
Shows the top level overview of the conference status. The identity of the Conference Call can only be read during a call.

Value space of the result returned:
Integer

Example:
xStatus Conference ActiveSpeaker CallId
*s Conference ActiveSpeaker CallId: 3
** end

xStatus Conference Call [n] BookingId
Shows the booking ID of a conference (if assigned). The booking ID can be used for easy identification of a call or conference.

Value space of the result returned:
String

Example:
xStatus Conference Call 2 BookingId
*s Conference Call 2 BookingId: "MyConference"
** end

xStatus Conference Call [n] Capabilities FarendMessage Mode
Not applicable in this release.

Value space of the result returned:
On/Off

Example:
xStatus Conference Call Capabilities FarendMessage Mode
*s Conference Call 4 Capabilities FarendMessage Mode: Off
** end
xStatus Conference Call [n] Capabilities FECC Mode
Shows whether or not you have permission to control the input sources at a far end site.
On: Far end input source control is permitted.
Off: Far end input source control is not permitted.
Value space of the result returned:
On/Off
Example:
*s Conference Call 2 Capabilities FECC Mode
** end

xStatus Conference Call [n] Capabilities FECC NumberOfPresets
Shows the number of presets available for the input sources at a far end site.
Value space of the result returned:
1..15
Example:
*x Status Conference Call 2 Capabilities FECC NumberOfPresets
  *s Conference Call 2 Capabilities FECC NumberOfPresets: 15
  ** end

xStatus Conference Call [n] Capabilities FECC NumberOfSources
Shows the number of input sources that can be connected at a far end site.
Value space of the result returned:
1..5
Example:
*x Status Conference Call 2 Capabilities FECC NumberOfSources
  *s Conference Call 2 Capabilities FECC NumberOfSources: 5
  ** end

xStatus Conference Call [n] Capabilities FECC Source [n] Name
Shows the name of an input source that can be connected at a far end site.
Value space of the result returned:
String
Example:
*x Status Conference Call 2 Capabilities FECC Source 1 Name
  *s Conference Call 2 Capabilities FECC Source 1 Name: "Main camera"
  ** end

xStatus Conference Call [n] Capabilities FECC Source [n] Options
Shows available options for an input source that can be connected at a far end site (for a camera: p=pan; t=tilt; z=zoom; f=focus).
Value space of the result returned:
String
Example:
*x Status Conference Call 2 Capabilities FECC Source 1 Options
  *s Conference Call 2 Capabilities FECC Source 1 Options: "ptzf"
  ** end

xStatus Conference Call [n] Capabilities FECC Source [n] SourceId
Shows the ID of an input source that can be connected at a far end site.
Value space of the result returned:
Integer
Example:
*x Status Conference Call 2 Capabilities FECC Source 1 SourceId
  *s Conference Call 2 Capabilities FECC Source 1 SourceId: 6
  ** end
xStatus Conference Call [n] Capabilities Hold
Indicates whether the far-end site can be placed on hold or not.

**Value space of the result returned:**
True/False

**Example:**
```c
xStatus Conference Call Capabilities Hold
's Conference Call 2 Capabilities Hold: True
** end
```

xStatus Conference Call [n] Capabilities IxChannel Status
Not applicable in this release.

**Value space of the result returned:**
Active/Failed/Off

**Example:**
```c
xStatus Conference Call 4 Capabilities IxChannel Status
's Conference Call 4 Capabilities IxChannel Status: Active
** end
```

xStatus Conference Call [n] Capabilities Presentation
Lists the presentation capabilities for other participants in the conference.

**Value space of the result returned:**
True/False

**Example:**
```c
xStatus Conference Call 2 Capabilities Presentation
's Conference Call 2 Capabilities Presentation: True
** end
```

xStatus Conference Call [n] Manufacturer
Shows the manufacturer of the video system at a far end site.

**Value space of the result returned:**
String

**Example:**
```c
xStatus Conference Call 2 Manufacturer
's Conference Call 2 Manufacturer: "Cisco"
** end
```

xStatus Conference Call [n] MicrophonesMuted
Lists the audio mute status for other participants in the conference.

**Value space of the result returned:**
True/False

**Example:**
```c
xStatus Conference Call 2 MicrophonesMuted
's Conference Call 2 MicrophonesMuted: True
** end
```

xStatus Conference Call [n] SoftwareID
Shows the ID of the software running on the video system at a far end site.

**Value space of the result returned:**
String

**Example:**
```c
xStatus Conference Call 2 SoftwareID
's Conference Call 2 SoftwareID: "CE8"
** end
```
xStatus Conference DoNotDisturb
Shows whether DoNotDisturb mode is switched on or not.

Value space of the result returned:
Active/Inactive

Example:
xStatus Conference DoNotDisturb
*s Conference DoNotDisturb: Inactive
** end

xStatus Conference Line [n] Mode
Indicates whether the system is configured as private or shared line on CUCM.

Value space of the result returned:
Shared/Private

Example:
xStatus Conference Line Mode
*s Conference Line 1 Mode: Private
** end

xStatus Conference Multipoint Mode
Shows how the Multipoint video conferences are handled.

Auto: The multipoint method available will be choosen automatically; if none are available the Multipoint Mode will automatically be set to Off. If both MultiWay and MultiSite are available, the MultiWay service takes priority over the built-in MultiSite.

Off: Multiparty conferences are not allowed.

MultiSite: Multiparty conferences are set up using the built-in MultiSite feature. If MultiSite is chosen when the MultiSite feature is not available, the Multipoint Mode will automatically be set to Off.

CUCMMediaResourceGroupList: Multiparty conferences (ad hoc 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.

Value space of the result returned:
Auto/CUCMMediaResourceGroupList/MultiSite/Off

Example:
xStatus Conference Multipoint Mode
*s Conference Multipoint Mode: "Auto"
** end

xStatus Conference Presentation CallId
Shows the identity of the system that sends the presentation.

Value space of the result returned:
Integer

Example:
xStatus Conference Presentation CallId
*s Conference Presentation CallId: 0
** end
xStatus Conference Presentation LocalInstance [n] SendingMode

Shows whether a presentation source is shared locally or with a remote participant. There can be multiple local presentations which all have their own instance.

Value space of the result returned:
LocalOnly/LocalRemote/Off

Example:
```
xStatus Conference Presentation LocalInstance 1 SendingMode
's Conference Presentation LocalInstance 1 SendingMode: LocalOnly
** end
```

xStatus Conference Presentation LocalInstance [n] Source

Shows the SourceId for a current presentation. There can be multiple local presentations which all have their own instance.

Value space of the result returned:
Integer

Example:
```
xStatus Conference Presentation LocalInstance 1 Source
's Conference Presentation LocalInstance 1 Source: 1
** end
```

xStatus Conference Presentation Mode

Shows the status of the secondary video stream.

Value space of the result returned:
Off/Sending/Receiving

Example:
```
xStatus Conference Presentation Mode
's Conference Presentation Mode: Off
** end
```

xStatus Conference SpeakerLock CallId

Shows the CallId for the participant locked as the prominent speaker in the conference.

Value space of the result returned:
Integer

Example:
```
xStatus Conference SpeakerLock CallId
's Conference SpeakerLock CallId: 0
** end
```

xStatus Conference SpeakerLock Mode

Shows whether a speaker lock is set or not.

Value space of the result returned:
On/Off

Example:
```
xStatus Conference SpeakerLock Mode
's Conference SpeakerLock Mode: Off
** end
```

Diagnostics status

xStatus Diagnostics
Shows the top level overview of the diagnostics. The example shows the status for an ongoing call. The identities of the call and channels are used when querying additional information.

xStatus Diagnostics Message [n] Description
Shows a description of the current diagnostics alerts.

Value space of the result returned:
String

Example:
```
xStatus Diagnostics Message Description
*s DiagnosticsResult Message 1 Description: "IP configuration incomplete"
** end
```

xStatus Diagnostics Message [n] Level
Shows the level of importance of the diagnostics message.

Error: There is an error in the system. The system can still be used, but there can be some restrictions.
Warning: A problem is detected and a more specific report follows indicating the exact problem.
Critical: The warning level is critical. The system cannot be used.

Value space of the result returned:
Error/Warning/Critical

Example:
```
xStatus Diagnostics Message 4 Level
*s Diagnostics Message 4 Level: Warning
** end
```

xStatus Diagnostics Message [n] References
Additional information on the diagnostics alert, if available.

Value space of the result returned:
String

Example:
```
xStatus Diagnostics Message 10 References
*s Diagnostics Message 10 References: "delay=190"
** end
```

xStatus Diagnostics Message [n] Type
Shows information on the results of the latest diagnostics on the system.

Value space of the result returned:
CAPFOperationState/CTLinstallation/UCMVendorConfigurationFile/CallProtocolDualStackConfig/CallProtocolIPStackPlatformCompatibility/CallProtocolVcsProvisioningComaptibility/CameraId/CameraPairing/CameraSerial/CameraSoftwareVersion/CameraStatus/CamerasDetected/ConfigurationFile/DefaultCallProtocolRegistered/EthernetDuplexMatches/FanStatus/PresenterTrack/H320GatewayStatus/H323GatekeeperStatus/HasValidReleaseKey/IpCameraStatus/IpV4Assignment/IpV6Assignment/IpV6Mtu/ISDNLinkCompatibility/ISDNLinkIpStack/ITLinstallation/InvalidSIPTransportConfig/LockDown/RoomControl/MediaBlockingDetected/NetLinkStatus/NetSpeedAutoNegotiated/NetworkQuality/NTPStatus/OSDVideoOutput/OutputConnectorLocations/ProvisioningStatus/SIPEncryption/SIPListenPortAndOutboundMode/SIPProfileRegistration/SIPProfileType/SelectedVideoInputSourceConnected/SipIceAndAnatConflict/TCPMediaFallback/TemperatureCheck/TLSVerifyRequiredCerts/TouchPanelConnection/ControlSystemConnection/TurnBandwidth/UdpPortRangeViolation/UltrasoundSpeakerAvailability/ValidPasswords/VideoFromInternalCamera/VideoInputStability/SparkConnectivity/SpeakerTrackFrontPanelMountedCorrectly/SpeakerTrackMicrophoneConnection/SpeakerTrackVideoInputs/SpeakerTrackEthernetConnection/ANATonVCS/ECDelayReference/AudioECRefDelay/AudioPairingNoise/AudioPairingRate/AudioPairingSNR/AudioPairingInterference/AudioPairingTokenDecode/AudioECRefDelay/AudioInternalSpeakerDisabled/AbnormalCallTermination/HasActiveCallProtocol/SipOrH323ButNotBothEnabled/PresentationSourceSelection/SoftwareUpgrade/PlatformSanity/ContactInfoMismatch/MicrophoneReinforcement

Example:
```
xStatus Diagnostics Message Type
*s Diagnostics Message 1 Type: CamerasDetected
** end
GPIO status

xStatus GPIO Pin [1..4] State
Shows the current state of each GPIO pin. The default state is High (+12V). When activated the state is Low (0V).

Value space of the result returned:
- High/Low

Example:
```
xStatus GPIO Pin 1 State
*s GPIO Pin 1 State: High
** end
```

H323 status

xStatus H323
Shows the top level overview of the H323 status.

xStatus H323 Gatekeeper Address
Displays the IP address of the gatekeeper where the system is registered.

Value space of the result returned:
- String

Example:
```
xStatus H323 Gatekeeper Address
*s H323 Gatekeeper Address: "192.0.1.20"
** end
```

xStatus H323 Gatekeeper Port
Shows the port which is used when connecting to on the gatekeeper.

Value space of the result returned:
- Integer

Example:
```
xStatus H323 Gatekeeper Port
*s H323 Gatekeeper Port: 1719
** end
```

xStatus H323 Gatekeeper Reason
Shows the reason for rejected registration.

Value space of the result returned:
- String

Example:
```
xStatus H323 Gatekeeper Reason
*s H323 Gatekeeper Reason: ""
** end
```
xStatus H323 Gatekeeper Status
Shows the gatekeeper registration status.

**Value space of the result returned:**
Required/Discovering/Authenticated/Registering/Registered/Inactive/Rejected

**Example:**
```
xStatus H323 Gatekeeper Status
  *s H323 Gatekeeper Status: Registered
  ** end
```

xStatus H323 Mode Reason
Shows whether there is a conflict between H.323 settings and xStatus H323 Mode Status.

```
*: When H.323 is set to On and there is no conflict between H.323 Mode configuration and the rest of the system settings.

*SIP is enabled*: When H.323 Mode is set to On and SIP is enabled on a system that does not support the two simultaneously.

*Not available*: When a system does not support H.323.
```

**Value space of the result returned:**
String

**Example:**
```
xStatus H323 Mode Reason
  *s H323 Mode Reason: ""
  ** end
```

xStatus H323 Mode Status
Shows the status for H.323 registration.

```
Enabled: Registration is enabled.

Disabled: Registration is disable, because SIP is enabled.
```

**Value space of the result returned:**
Enabled/Disabled

**Example:**
```
xStatus H323 Mode Status
  *s H323 Mode Status: "Disabled"
  ** end
```

HttpFeedback status

xStatus HttpFeedback
Shows the top level overview of the HTTP status.

xStatus HttpFeedback [1..4] Expression [1..15]
Shows the feedback from the HTTP server. There can be up to 15 expressions for each URL. See the xCommand HttpFeedback commands for more information.

**Value space of the result returned:**
String

**Example:**
```
xStatus HttpFeedback 1 Expression
  *s HttpFeedback 1 Expression: "Feedback"
  ** end
```

xStatus HttpFeedback [1..4] Format
Shows the format of the HTTP Feedback feedback from the HTTP server.

**Value space of the result returned:**
XML/JSON

**Example:**
```
xStatus HttpFeedback 1 Format
  *s HttpFeedback 1 Format: XML
  ** end
```

xStatus HttpFeedback [1..4] URL
Shows the URL (Uniform Resource Locator) of the HTTP server. There can be up to three HTTP servers, specified by the URL.

**Value space of the result returned:**
String

**Example:**
```
xStatus HttpFeedback 1 URL
  ** end
```
MediaChannels status

xStatus MediaChannels
Shows the top level overview of the media channel status. The example shows the status for an ongoing call. The identities of the call and channels are used when querying additional information.

xStatus MediaChannels Call [n] Channel [n] Audio Channels
Shows the number of incoming or outgoing audio channels.

Value space of the result returned:
Integer

Example:
xStatus MediaChannels Call 27 Channel 327 Audio Channels
*s MediaChannels Call 27 Channel 327 Audio Channels: 1
** end

xStatus MediaChannels Call [n] Channel [n] Audio Mute
Audio mute status of the incoming audio.

Value space of the result returned:
True/False

Example:
xStatus MediaChannels Call 27 Channel 327 Audio Mute
*s MediaChannels Call 27 Channel 327 Audio Mute: False
** end

xStatus MediaChannels Call [n] Channel [n] Audio Protocol
Shows the audio algorithm of the incoming or outgoing audio.

Value space of the result returned:

Example:
xStatus MediaChannels Call 27 Channel 327 Audio Protocol
*s MediaChannels Call 27 Channel 327 Audio Protocol: AACLD
** end

xStatus MediaChannels Call [n] Channel [n] Direction
Shows the direction of the call.

Value space of the result returned:
Incoming/Outgoing

Example:
xStatus MediaChannels Call 27 Channel 327 Direction
*s MediaChannels Call 27 Channel 327 Direction: Incoming
** end
xStatus MediaChannels Call [n] Channel [n] Encryption

Shows the encryption status for audio or video on the incoming or outgoing call.

Value space of the result returned:
On/Off

Example:
```
xStatus MediaChannels Call 27 Channel 327 Encryption
*s MediaChannels Call 27 Channel 327 Encryption: On
** end
```

xStatus MediaChannels Call [n] Channel [n] NetStat Bytes

Shows the number of bytes for audio, video or data on the incoming or outgoing channel.

Value space of the result returned:
Integer

Example:
```
xStatus MediaChannels Call 27 Channel 327 NetStat Bytes
*s MediaChannels Call 27 Channel 327 NetStat Bytes: 496640
** end
```

xStatus MediaChannels Call [n] Channel [n] NetStat ChannelRate

Shows the bandwidth for audio, video or data on the incoming or outgoing channel.

Value space of the result returned:
Integer

Example:
```
xStatus MediaChannels Call 27 Channel 327 NetStat ChannelRate
*s MediaChannels Call 27 Channel 327 NetStat ChannelRate: 128000
** end
```

xStatus MediaChannels Call [n] Channel [n] NetStat Jitter

Shows the jitter for audio, video or data at the present moment on the incoming or outgoing channel, as specified by RFC 3550.

Value space of the result returned:
Integer

Example:
```
xStatus MediaChannels Call 27 Channel 327 NetStat Jitter
*s MediaChannels Call 27 Channel 327 NetStat Jitter: 2
** end
```

xStatus MediaChannels Call [n] Channel [n] NetStat LastIntervalLost

Shows the number of packets lost for audio, video or data during the last interval on the incoming or outgoing channels.

Value space of the result returned:
Integer

Example:
```
xStatus MediaChannels Call 27 Channel 327 NetStat LastIntervalLost
*s MediaChannels Call 27 Channel 327 NetStat LastIntervalLost: 0
** end
```

xStatus MediaChannels Call [n] Channel [n] NetStat LastIntervalReceived

Shows the number of packets received for audio, video or data during the last interval on the incoming or outgoing channels.

Value space of the result returned:
Integer

Example:
```
xStatus MediaChannels Call 27 Channel 327 NetStat LastIntervalReceived
*s MediaChannels Call 27 Channel 327 NetStat LastIntervalReceived: 289
** end
```
xStatus MediaChannels Call [n] Channel [n] NetStat Loss

Shows the number of packets lost for audio, video or data on the incoming or outgoing channels.

**Value space of the result returned:**
- Integer

**Example:**
```plaintext
xStatus MediaChannels Call 27 Channel 327 NetStat Loss
'*s MediaChannels Call 27 Channel 327 NetStat Loss: 0
** end
```

xStatus MediaChannels Call [n] Channel [n] NetStat MaxJitter

Shows the maximum jitter for audio, video or data that has been measured during last interval (about 5 seconds).

**Value space of the result returned:**
- Integer

**Example:**
```plaintext
xStatus MediaChannels Call 27 Channel 327 NetStat MaxJitter
'*s MediaChannels Call 27 Channel 327 NetStat MaxJitter: 2
** end
```

xStatus MediaChannels Call [n] Channel [n] NetStat Packets

Shows the number of packets that was received or sent for audio, video or data on the incoming or outgoing channels.

**Value space of the result returned:**
- Integer

**Example:**
```plaintext
xStatus MediaChannels Call 27 Channel 327 NetStat Packets
'*s MediaChannels Call 27 Channel 327 NetStat Packets: 1551
** end
```

xStatus MediaChannels Call [n] Channel [n] ParticipantId

Shows the ID of the Active Control participant on the incoming audio or video channel.

**Value space of the result returned:**
- String

**Example:**
```plaintext
xStatus MediaChannels Call 27 Channel 327 ParticipantId
'*s MediaChannels Call 27 Channel 327 ParticipantId: ""
** end
```

xStatus MediaChannels Call [n] Channel [n] Type

Shows the media type on the incoming or outgoing channel.
- Audio: The media type on the incoming or outgoing channel is audio.
- Video: The media type on the incoming or outgoing channel is video.
- Data: The media type on the incoming or outgoing channel is data.

**Value space of the result returned:**
- Audio/Video/Data

**Example:**
```plaintext
xStatus MediaChannels Call 27 Channel 327 Type
'*s MediaChannels Call 27 Channel 327 Type: Audio
** end
```

xStatus MediaChannels Call [n] Channel [n] Video ChannelRole

Shows the role of the incoming or outgoing video channel.
- Main: The main video is on the incoming or outgoing video channel.
- Presentation: The presentation is on the incoming or outgoing video channel.

**Value space of the result returned:**
- Main/Presentation

**Example:**
```plaintext
xStatus MediaChannels Call 27 Channel 327 Video ChannelRole
'*s MediaChannels Call 27 Channel 327 Video ChannelRole: Main
** end
```
xStatus MediaChannels Call [n] Channel [n] Video FrameRate
Shows the frame rate of the incoming or outgoing video channel.

Value space of the result returned:
Integer

Example:
```
xStatus MediaChannels Call 27 Channel 327 Video FrameRate
*s MediaChannels Call 27 Channel 327 Video FrameRate: 30
** end
```

xStatus MediaChannels Call [n] Channel [n] Video Protocol
Shows the video algorithm of the incoming or outgoing video channel.

Value space of the result returned:
String

Example:
```
xStatus MediaChannels Call 27 Channel 327 Video Protocol
*s MediaChannels Call 27 Channel 327 Video Protocol: H264
** end
```

xStatus MediaChannels Call [n] Channel [n] Video ResolutionX
Shows the width (resolution in direction X) of the incoming or outgoing video.

Value space of the result returned:
Integer

Example:
```
xStatus MediaChannels Call 27 Channel 327 Video ResolutionX
*s MediaChannels Call 27 Channel 327 Video ResolutionX: 1920
** end
```

xStatus MediaChannels Call [n] Channel [n] Video ResolutionY
Shows the width (resolution in direction Y) of the incoming or outgoing video.

Value space of the result returned:
Integer

Example:
```
xStatus MediaChannels Call 27 Channel 327 Video ResolutionY
*s MediaChannels Call 27 Channel 327 Video ResolutionY: 1080
** end
```

xStatus MediaChannels Call [n] IncomingAudioChannel [n] Transport RTP Remote IpAddress
Shows the remote IP address of the Real-time Transport Protocol (RTP) port for the incoming audio in the media channel.

Value space of the result returned:
String

Example:
```
xStatus MediaChannels Call 27 IncomingAudioChannel 327 Transport RTP Remote IpAddress
*s MediaChannels Call 27 IncomingAudioChannel 327 Transport RTP Remote IpAddress: "192.168.136.130"
** end
```
Network status

xStatus Network
Shows the top level overview of the network status.

xStatus Network 1 CDP Address
Returns the first network address of both receiving and sending devices.
**Value space of the result returned:**
 String
 **Example:**
xStatus Network CDP Address
 *s Network 1 CDP Address: "192.0.1.20"
 ** end

xStatus Network 1 CDP Capabilities
Describes the functional capability for the switch in form of a device type. See documentation for CDP protocol for more information.
**Value space of the result returned:**
 String
 **Example:**
xStatus Network CDP Capabilities
 *s Network 1 CDP Capabilities: "0x0029"
 ** end

xStatus Network 1 CDP Platform
Returns the hardware platform name of the switch connected to the endpoint.
**Value space of the result returned:**
 String
 **Example:**
xStatus Network CDP Platform
 *s Network 1 CDP Platform: "cisco WS-C3750X-48P"
 ** end

xStatus Network 1 CDP PortID
Returns the identification the switch uses of the port the endpoint is connected to.
**Value space of the result returned:**
 String
 **Example:**
xStatus Network CDP PortID
 *s Network 1 CDP PortID: "GigabitEthernet1/0/23"
 ** end
xStatus Network 1 CDP PrimaryMgmtAddress

Returns the management address used to configure and monitor the switch the endpoint is connected to.

Value space of the result returned:
String

Example:
```
xStatus Network CDP PrimaryMgmtAddress
*s Network 1 CDP PrimaryMgmtAddress: "10.1.1.2"
** end
```

xStatus Network 1 CDP SysName

Returns the SysName as configured in the switch the endpoint is connected to.

Value space of the result returned:
String

Example:
```
xStatus Network CDP SysName
*s Network 1 CDP SysName: ""
** end
```

xStatus Network 1 CDP SysObjectID

Returns the SysObjectID as configured in the switch the endpoint is connected to.

Value space of the result returned:
String

Example:
```
xStatus Network CDP SysObjectID
*s Network 1 CDP SysObjectID: ""
** end
```

xStatus Network 1 CDP VoIPApplianceVlanID

Identifies the VLAN used for VoIP traffic from the endpoint to the switch. For more information see documentation of the IEEE 802.1Q protocol.

Value space of the result returned:
String

Example:
```
xStatus Network CDP VoIPApplianceVlanID
*s Network 1 CDP VoIPApplianceVlanID: "300"
** end
```

xStatus Network 1 CDP VTPMgmtDomain

Returns the switch's configured VTP management domain name-string.

Value space of the result returned:
String

Example:
```
xStatus Network CDP VTPMgmtDomain
*s Network 1 CDP VTPMgmtDomain: "anyplace"
** end
```
xStatus Network 1 DNS Domain Name
Shows the domain name.

Value space of the result returned:
String

Example:
xStatus Network 1 DNS Domain Name
's Network 1 DNS Domain Name: "www.example.com www.example.int"
** end

xStatus Network 1 DNS Server [1..5] Address
Shows the IP address of the DNS server.

Value space of the result returned:
String

Example:
xStatus Network 1 DNS Server 1 Address
's Network 1 DNS Server 1 Address: "192.0.2.60"
** end

xStatus Network 1 Ethernet MacAddress
Shows the MAC (Media Access Control) address for the Ethernet interface.

Value space of the result returned:
String

Example:
xStatus Network 1 Ethernet MacAddress
's Network 1 Ethernet MacAddress: "00:50:60:02:FD:C7"
** end

xStatus Network 1 Ethernet Speed
Shows the Ethernet speed in Mbps. The speed can be in full-duplex or half-duplex.

Value space of the result returned:
10half/10full/100half/100full/1000full

Example:
xStatus Network 1 Ethernet Speed
's Network 1 Ethernet Speed: "100full"
** end

xStatus Network 1 IPv4 Address
Shows the IPv4 address that uniquely identifies this system.

Value space of the result returned:
String

Example:
xStatus Network 1 IPv4 Address
's Network 1 IPv4 Address: "192.0.2.149"
** end

xStatus Network 1 IPv4 Gateway
Shows the address of the IPv4 gateway.

Value space of the result returned:
String

Example:
xStatus Network 1 IPv4 Gateway
's Network 1 IPv4 Gateway: "192.0.2.10"
** end
xStatus Network 1 IPv4 SubnetMask
Shows the subnet mask which determines which subnet an IPv4 address belongs to.

Value space of the result returned:
String

Example:
  xStatus Network 1 IPv4 SubnetMask
  *s Network 1 IPv4 SubnetMask: "255.255.255.0"
  ** end

xStatus Network 1 IPv6 Address
Shows the IPv6 address that uniquely identifies this system.

Value space of the result returned:
String

Example:
  xStatus Network 1 IPv6 Address
  *s Network 1 IPv6 Address: ""
  ** end

xStatus Network 1 VLAN Voice VlanId
The feedback shows the VLAN Voice ID; or Off if the VLAN Voice Mode is not enabled.

Value space of the result returned:
Off/1..4094

Example:
  xStatus Network 1 VLAN Voice VlanId
  *s Network 1 VLAN Voice VlanId: "Off"
  ** end

xStatus Network 1 IPv6 Gateway
Shows the address of the IPv6 gateway.

Value space of the result returned:
String

Example:
  xStatus Network 1 IPv6 Gateway
  *s Network 1 IPv6 Gateway: ""
  ** end
NetworkServices status

xStatus NetworkServices
Shows the top level overview of the network services status.

xStatus NetworkServices NTP CurrentAddress
Returns the address of the NTP server that is currently in use.

Value space of the result returned:
String

Example:
```
xStatus NetworkServices NTP CurrentAddress
*s NetworkServices NTP CurrentAddress: "123.254.15.121"
** end
```

xStatus NetworkServices NTP Server [n] Address
Returns the address of the NTP server(s) the codec is using.

Value space of the result returned:
String

Example:
```
xStatus NetworkServices NTP Address
*s NetworkServices NTP Address: "12.104.193.12 64.104.222.16 144.254.15.121"
** end
```

xStatus NetworkServices NTP Status
Returns the status of the endpoints synchronizing with the NTP server.

Discarded: The NTP result has been discarded.
Synced: The system is in sync with the NTP server.
NotSynced: The system is not in sync with the NTP server.
Unknown: The state of the synchronization is unknown.
Off: No synchronization with the NTP server.

Value space of the result returned:
Discarded/Synced/NotSynced/Unknown/Off

Example:
```
xStatus NetworkServices NTP Status
*s NetworkServices NTP Status: Synced
** end
```
Peripherals status

xStatus Peripherals
Shows the top level overview of the peripherals status.

xStatus Peripherals ConnectedDevice [n] HardwareInfo
Shows hardware information about connected device.

Value space of the result returned:
String

Example:
```
xStatus Peripherals ConnectedDevice 1007 HardwareInfo
's Peripherals ConnectedDevice 1007 HardwareInfo: "1122330-0"
** end
```

xStatus Peripherals ConnectedDevice [n] ID
Shows the MAC-address of the connected device.

Value space of the result returned:
String

Example:
```
xStatus Peripherals ConnectedDevice 1007 ID
's Peripherals ConnectedDevice 1007 ID: "00:10:20:20:be:21"
** end
```

xStatus Peripherals ConnectedDevice [n] Name
Shows the product name of connected device.

Value space of the result returned:
String

Example:
```
xStatus Peripherals ConnectedDevice 1007 Name
's Peripherals ConnectedDevice 1007 Name: "Cisco TelePresence Touch"
** end
```

xStatus Peripherals ConnectedDevice [n] SoftwareInfo
Shows information of the software version running on the connected device.

Value space of the result returned:
String

Example:
```
xStatus Peripherals ConnectedDevice 1007 SoftwareInfo
's Peripherals ConnectedDevice 1007 SoftwareInfo: "TI7.2.0"
** end
```

xStatus Peripherals ConnectedDevice [n] Status
Shows peripheral devices that are currently connected to the endpoint.

Value space of the result returned:
Connected/ResponseTimedOut

Example:
```
xStatus Peripherals ConnectedDevice 1001 Status
's Peripherals ConnectedDevice 1001 Status: Connected
** end
```

xStatus Peripherals ConnectedDevice [n] Type
Shows the peripheral types that are connected to the endpoint.
Note: The value space Camera only shows Precision 60 cameras.

Value space of the result returned:
Byod/Camera/ControlSystem/ISDNLink/Other/SpeakerTrack/TouchPanel

Example:
```
xStatus Peripherals ConnectedDevice 1001 Type
's Peripherals ConnectedDevice 1001 Type: TouchPanel
** end
```
xStatus Peripherals ConnectedDevice [n] UpgradeStatus
Shows the status of the previous software upgrade on the currently connected peripherals.

Value space of the result returned:
Downloading/Failed/Installing/InstallationReady/None/Succeeded/Rebooting/Retrying/Aborted/Paused

Example:
```
> xStatus Peripherals ConnectedDevice 1001 UpgradeStatus
*xs Peripherals ConnectedDevice 1001 UpgradeStatus: None
** end
```

Provisioning status

xStatus Provisioning
Shows the top level overview of the provisioning status.

xStatus Provisioning CUCM ExtensionMobility Enabled
Shows if Extension Mobility is enabled for a CUCM registered device.

Value space of the result returned:
True/False

Example:
```
> xStatus Provisioning CUCM ExtensionMobility Enabled
*xs Provisioning CUCM ExtensionMobility Enabled: False
** end
```

xStatus Provisioning CUCM ExtensionMobility LastLoggedInUserId
Returns the user id that was last logged in to the system. Only in use if CUCM Extension Mobility is enabled, and CUCM is configured to remember the last logged in user on an endpoint.

Value space of the result returned:
String

Example:
```
> xStatus Provisioning CUCM ExtensionMobility LastLoggedInUserId
*xs Provisioning CUCM ExtensionMobility LastLoggedInUserId: "User 1"
** end
```

xStatus Provisioning CUCM ExtensionMobility LoggedIn
Shows if someone is logged in to Extension Mobility or not.

Value space of the result returned:
True/False

Example:
```
> xStatus Provisioning CUCM ExtensionMobility LoggedIn
*xs Provisioning CUCM ExtensionMobility LoggedIn: False
** end
```
xStatus Provisioning Software Current CompletedAt
Shows date and time for when the current software upgrade was completed.

Value space of the result returned:
String

Example:
```
xStatus Provisioning Software Current CompletedAt
*s Provisioning Software Current CompletedAt: "2011-06-07T07:20:03Z"
** end
```

xStatus Provisioning Software Current URL
Shows the URL that the current software was uploaded from.

Value space of the result returned:
String

Example:
```
xStatus Provisioning Software Current URL
*s Provisioning Software Current URL: "http://.../s52020ce8_0_0.pkg"
** end
```

xStatus Provisioning Software Current VersionId
Shows the version ID of the current software.

Value space of the result returned:
String

Example:
```
xStatus Provisioning Software Current VersionId
*s Provisioning Software Current VersionId: "s52020ce8_0_0.pkg"
** end
```

xStatus Provisioning Software UpgradeStatus LastChange
Shows the date and time for the latest software upgrade.

Value space of the result returned:
String

Example:
```
xStatus Provisioning Software UpgradeStatus LastChange
*s Provisioning Software UpgradeStatus LastChange: "2011-06-07T07:20:03Z"
** end
```

xStatus Provisioning Software UpgradeStatus Message
Shows the system message for the software upgrade.

Value space of the result returned:
String

Example:
```
xStatus Provisioning Software UpgradeStatus Message
*s Provisioning Software UpgradeStatus Message: 
** end
```

xStatus Provisioning Software UpgradeStatus Phase
Shows the phase of the software upgrade.

Value space of the result returned:
None/DownloadPending/FormingHierarchy/Downloading/DownloadPaused/DownloadDone/Seeding/AboutToInstallUpgrade/Postponed/PeripheralsReady/UpgradingPeripherals/Installing/InstallingPeripherals

Example:
```
xStatus Provisioning Software UpgradeStatus Phase
*s Provisioning Software UpgradeStatus Phase: None
** end
```
xStatus Provisioning Software UpgradeStatus SessionId
Shows the ID of the session for the software upgrade.

**Value space of the result returned:**
String

**Example:**
```
xStatus Provisioning Software UpgradeStatus SessionId
's Provisioning Software UpgradeStatus SessionId: ""
** end
```

xStatus Provisioning Software UpgradeStatus Status
Shows the status of the software upgrade.

**Value space of the result returned:**
None/InProgress/Failed/InstallationFailed/Succeeded

**Example:**
```
xStatus Provisioning Software UpgradeStatus Status
's Provisioning Software UpgradeStatus Status: None
** end
```

xStatus Provisioning Software UpgradeStatus URL
Shows the URL that the new software currently is being uploaded and installed from.

**Value space of the result returned:**
String

**Example:**
```
xStatus Provisioning Software UpgradeStatus URL
's Provisioning Software UpgradeStatus URL: "http://.../s52010ce8_0_0.pkg"
** end
```

xStatus Provisioning Software UpgradeStatus VersionId
Shows the version ID of the software currently being uploaded and installed.

**Value space of the result returned:**
String

**Example:**
```
xStatus Provisioning Software UpgradeStatus VersionId
's Provisioning Software UpgradeStatus VersionId: "s52010ce8_0_0.pkg"
** end
```

xStatus Provisioning Status
Shows the status of the provisioning.

Failed: The provisioning failed.
AuthenticationFailed: The authentication failed.
Provisioned: The endpoint is provisioned.
Idle: The provisioning is not active.
NeedConfig: The endpoint needs to be configured.
ConfigError: An error occurred during configuration.

**Value space of the result returned:**
Failed/AuthenticationFailed/Provisioned/Idle/NeedConfig/ConfigError

**Example:**
```
xStatus Provisioning Status
's Provisioning Status: Provisioned
** end
```
Proximity status

xStatus Proximity
Shows the top level overview of the proximity status.

xStatus Proximity Services Availability
Shows whether proximity services are available on the endpoint.
Available: Proximity mode has been enabled with the command xConfiguration Proximity Mode and one or more of the proximity services have been enabled with xConfiguration Proximity Services commands.
Disabled: Proximity mode has been disabled with xConfiguration Proximity Mode, or none of the services have been enabled with the xConfiguration Proximity Services commands.
Deactivated: Proximity services have been deactivated with the command xCommand Proximity Services Deactivate.

Example:
  xStatus Proximity Services Availability
  *s Proximity Services Availability: Disabled
  ** end

Security status

xStatus Security
Shows the top level overview of the security status.

xStatus Security FIPS Mode
Shows the FIPS mode status.

Value space of the result returned:
On/Off

Example:
  xStatus Security FIPS Mode
  *s Security FIPS Mode: Off
  ** end

xStatus Security Persistency CallHistory
Shows whether call history logging is set to persistent or non-persistent mode. Persistent is the default mode.

Value space of the result returned:
NonPersistent/Persistent

Example:
  xStatus Security Persistency CallHistory
  *s Security Persistency CallHistory: Persistent
  ** end

xStatus Security Persistency Configurations
Shows whether the systems all configurations are set to persistent or non-persistent mode. Persistent is the default mode.

Value space of the result returned:
NonPersistent/Persistent

Example:
  xStatus Security Persistency Configurations
  *s Security Persistency Configurations: Persistent
  ** end
xStatus Security Persistency DHCP

Shows whether DHCP logging is set to persistent or non-persistent mode. Persistent is the default mode.

Value space of the result returned:
NonPersistent/Persistent

Example:
```
xStatus Security Persistency DHCP
*s Security Persistency DHCP: Persistent
** end
```

xStatus Security Persistency InternalLogging

Shows whether internal logging is set to persistent or non-persistent mode. Persistent is the default mode.

Value space of the result returned:
NonPersistent/Persistent

Example:
```
xStatus Security Persistency InternalLogging
*s Security Persistency InternalLogging: Persistent
** end
```

xStatus Security Persistency LocalPhonebook

Shows whether local phone book is set to persistent or non-persistent mode. Persistent is the default mode.

Value space of the result returned:
NonPersistent/Persistent

Example:
```
xStatus Security Persistency LocalPhonebook
*s Security Persistency LocalPhonebook: Persistent
** end
```

xStatus SIP

Shows the top level overview of the SIP status.

xStatus SIP AlternateURI Alias [n] URI

Value space of the result returned:
String

Example:
```
xStatus SIP AlternateURI Alias
*s SIP AlternateURI Alias URI: ""
** end
```

xStatus SIP AlternateURI Primary [n] URI

Value space of the result returned:
String

Example:
```
xStatus SIP AlternateURI Primary
*s SIP AlternateURI Primary URI: ""
** end
```

xStatus SIP Authentication

Shows which authentication mechanism is used when registering to the SIP Proxy Server. Digest: Uses the Digest access authentication method, as specified by RFC 2069. NTLM: Uses the NTLM authentication method, which is a Microsoft authentication protocol. Off: No authentication mechanism is used.

Value space of the result returned:
Digest/Off

Example:
```
xStatus SIP Authentication
*s SIP Authentication: Off
** end
```
xStatus SIP CallForward DisplayName
Returns the URI that is displayed on the user interface for the forwarded call.

Value space of the result returned:
String

Example:
xStatus SIP CallForward DisplayName
's SIP CallForward DisplayName: ""
** end

xStatus SIP CallForward Mode
Indicates whether the call forward mode for SIP is set to on or off.

Value space of the result returned:
On/Off

Example:
xStatus SIP CallForward Mode
's SIP CallForward Mode: Off
** end

xStatus SIP CallForward URI
Indicates the address the incoming calls are directed to when call forward mode is set on.

Value space of the result returned:
String

Example:
xStatus SIP CallForward URI
's SIP CallForward URI: ""
** end

xStatus SIP Mailbox MessagesWaiting
Indicates how many new messages are in the mailbox.

Value space of the result returned:
Integer

Example:
xStatus SIP Mailbox MessagesWaiting
's SIP Mailbox MessagesWaiting: 0
** end

xStatus SIP Mailbox URI
Returns the URI for your SIP mailbox.

Value space of the result returned:
String

Example:
xStatus SIP Mailbox URI
's SIP Mailbox URI: "12345678"
** end

xStatus SIP Proxy [n] Address
Shows the address of the SIP Proxy that the system communicates with.

Value space of the result returned:
String

Example:
xStatus SIP Proxy 1 Address
's SIP Proxy 1 Address: "192.0.2.50"
** end
xStatus SIP Proxy [n] Status
Shows the status of the communication between the endpoint and the SIP Proxy server.
Active: The communication between the endpoint and the SIP Proxy is active.
DNSFailed: The attempt to establish communication to the DNS server failed.
Off: There is no communication between the endpoint and the SIP Proxy.
Timeout: The attempt to establish communication to the SIP Proxy timed out.
UnableTCP: The system is unable to use TCP as the transport method.
UnableTLS: The system is unable to use TLS as the transport method.
Unknown: The status of the communication is not known.
AuthenticationFailed: Wrong user name or password.

Value space of the result returned:
Active/DNSFailed/Off/Timeout/UnableTCP/UnableTLS/Unknown/AuthenticationFailed

Example:
xStatus SIP Proxy 1 Status
*s SIP Proxy 1 Status: Active
** end

xStatus SIP Registration [n] Authentication
Shows which authentication mechanism is used when registering to the SIP Proxy Server.
Digest: Uses the Digest access authentication method, as specified by RFC 2069.
NTLM: Uses the NTLM authentication method, which is a Microsoft authentication protocol.
Off: No authentication mechanism is used.

Value space of the result returned:
Digest/Off

Example:
xStatus SIP Registration 1 Authentication
*s SIP Registration 1 Authentication: Off
** end

xStatus SIP Registration [n] Reason
Shows a message to explain the reason why the SIP registration failed.

Value space of the result returned:
String

Example:
xStatus SIP Registration 1 Reason
*s SIP Registration 1 Reason: "404 Not Found"
** end

xStatus SIP Registration [n] Status
Shows the status of the registration to the SIP Proxy Server.
Deregister: The system is in the process of de-registering to the SIP Proxy.
Failed: The system failed to register to the SIP Proxy.
Inactive: The system is not registered to any SIP Proxy.
Registered: The system is registered to the SIP Proxy.
Registering: The system is in the process of registering to the SIP Proxy.

Value space of the result returned:
Deregister/Failed/Inactive/Registered/Registering

Example:
xStatus SIP Registration 1 Status
*s SIP Registration 1 Status: Registered
** end

xStatus SIP Registration [n] URI
Shows the URI used for registration to the SIP Proxy server.

Value space of the result returned:
String

Example:
xStatus SIP Registration 1 URI
*s SIP Registration 1 URI: "firstname.lastname@company.com"
** end
xStatus SIP Secure
Shows the encryption status of the signaling with the SIP Proxy server.

**Value space of the result returned:**
True/False

**Example:**
xStatus SIP Secure
  *s SIP Secure: True
  ** end

xStatus SIP Verified
Shows whether or not the SSL certificate of the server that the video system / codec tries to register to is included in the codec’s trusted CA-list. The server is typically a Cisco VCS or CUCM.

True: The server’s SIP certificate is checked against the trusted CA-list on the codec and found valid. Additionally, the fully qualified domain name of the server matches the valid certificate.
False: A TLS connection is not set up because the SIP certificate verification failed or the domain name did not match. Note that the status also returns False when TLS is not used (xConfiguration SIP DefaultTransport not set to TLS) or certificate verification is switched off (SIP TlsVerify: Off. This setting is accessible through your products web interface).

**Value space of the result returned:**
True/False

**Example:**
xStatus SIP Verified
  *s SIP Verified: False
  ** end

Standby status

xStatus Standby
Shows the top level overview of the standby status.

xStatus Standby State
Shows whether the system is in standby mode or not.
Standby: The system is in standby state.
EnteringStandby: The system is entering the standby state.
Off: The system is not in standby.

**Value space of the result returned:**
Standby/EnteringStandby/Off

**Example:**
xStatus Standby State
  *s Standby State: Off
  ** end
SystemUnit status

**xStatus SystemUnit**
Shows the top level overview of the system unit status.

**xStatus SystemUnit Hardware Module CompatibilityLevel**
The Cisco TelePresence endpoints are using a NAND flash memory for general storage. The endpoints running TC software are manufactured with a new version of the flash memory. Endpoints having the new version of the flash memory must run software TC4.2.1 or later. Some previous TC software versions are updated to support the new flash memory. Please check the release note to find if the new version of the flash memory is supported. If your endpoint does not have the CompatibilityLevel command it does not have the new flash memory installed.

The result returned when running the command is either 0 or 1:

0 = The system does not have the new flash memory installed.
1 = The system has the new flash memory installed. If downgraded, it can only be downgraded to previous TC software versions having support for the new version of the flash memory.

**Value space of the result returned:**
1/0

**Example:**
```
xStatus SystemUnit Hardware Module CompatibilityLevel
's SystemUnit Hardware Module CompatibilityLevel: 1
** end
```

**xStatus SystemUnit Hardware Module SerialNumber**
Shows the serial number of the hardware module in the codec.

**Value space of the result returned:**
String

**Example:**
```
xStatus SystemUnit Hardware Module SerialNumber
's SystemUnit Hardware Module SerialNumber: "FTT123456A1"
** end
```

**xStatus SystemUnit Hardware Monitoring Fan [n] Status**
The feedback shows the speed (rpm) for the specified fan.

**Value space of the result returned:**
String

**Example:**
```
xStatus SystemUnit Hardware Monitoring Fan 1 Status
's SystemUnit Hardware Monitoring Fan 1 Status: "locked on 1096 rpm"
** end
```

**xStatus SystemUnit Hardware Temperature**
Shows the current maximum temperature (degree Celsius) measured in the codec/system.

**Value space of the result returned:**
String

**Example:**
```
xStatus SystemUnit Hardware Temperature
's SystemUnit Hardware Temperature: "64.0"
** end
```

**xStatus SystemUnit Notifications Notification [n] Text**
Lists text related to important system notifications. Notifications are issued e.g. when a system was rebooted because of a software upgrade, or when a factory reset has been performed. All the notifications can be removed from the list by issuing the xCommand SystemUnit Notifications RemoveAll command.

**Value space of the result returned:**
String

**Example:**
```
xStatus SystemUnit Notifications Notification 1 Text
's SystemUnit Notifications Notification 1 Text: "OK"
** end
```
xStatus SystemUnit Notifications Notification [n] Type
Lists the system notification types. Notifications are issued e.g. when a system is rebooted because of a software upgrade, or when a factory reset is performed.
FactoryResetOK: This value is returned after a successful factory reset.
FactoryResetFailed: This value is returned after a failed factory reset attempt.
SoftwareUpgradeOK: This value is returned after a successful software upgrade.
SoftwareUpgradeFailed: This value is returned after a failed software upgrade attempt.
RebootRequired: This value is returned when a reboot is required.
Other: This value is returned for any other notifications.
All the notifications can be removed from the list by issuing the xCommand SystemUnit
Notifications RemoveAll command.

Value space of the result returned:
FactoryResetOK, FactoryResetFailed, SoftwareUpgradeOK, SoftwareUpgradeFailed,
RebootRequired, Other

Example:
```
xStatus SystemUnit Notifications Notification 1 Type
's SystemUnit Notifications Notification 1 Type: SoftwareUpgradeOK
** end
```

xStatus SystemUnit ProductId
Shows the product identity.

Value space of the result returned:
String

Example:
```
xStatus SystemUnit ProductId
's SystemUnit ProductId: "Cisco TelePresence Codec SX80"
** end
```

xStatus SystemUnit Software DisplayName
Shows the name of the software that is installed on the codec, as it is displayed in the UI.

Value space of the result returned:
String

Example:
```
xStatus SystemUnit Software DisplayName
's SystemUnit Software DisplayName: "Display Name"
** end
```

xStatus SystemUnit ProductPlatform
Shows the product platform.

Value space of the result returned:
String

Example:
```
xStatus SystemUnit ProductPlatform
's SystemUnit ProductPlatform: "SX80"
** end
```

xStatus SystemUnit ProductType
Shows the product type.

Value space of the result returned:
String

Example:
```
xStatus SystemUnit ProductType
's SystemUnit ProductType: "Cisco Codec"
** end
```

xStatus SystemUnit Software Name
Shows the name of the software that is installed on the codec.

Value space of the result returned:
String

Example:
xStatus SystemUnit Software Name
  *s SystemUnit Software Name: "s52020"
  ** end

xStatus SystemUnit Software OptionKeys Encryption
Shows if the system has the option key installed that supports the encryption functionality.

Value space of the result returned:
False/True

Example:
xStatus SystemUnit Software OptionKeys Encryption
  *s SystemUnit Software OptionKeys Encryption: "true"
  ** end

xStatus SystemUnit Software OptionKeys MultiSite
Shows if the system has the option key installed that supports the MultiSite functionality.

Value space of the result returned:
False/True

Example:
xStatus SystemUnit Software OptionKeys MultiSite
  *s SystemUnit Software OptionKeys MultiSite: "true"
  ** end

xStatus SystemUnit Software OptionKeys RemoteMonitoring
Shows whether the system has the remote monitoring option key installed. Remote monitoring option key enables snapshots from the web interface, and from a remote paired Touch 10.

Value space of the result returned:
False/True

Example:
xStatus SystemUnit Software OptionKeys RemoteMonitoring
  *s SystemUnit Software OptionKeys RemoteMonitoring: "true"
  ** end

xStatus SystemUnit Software ReleaseDate
Shows the release date of the software installed on the codec.

Value space of the result returned:
String

Example:
xStatus SystemUnit Software ReleaseDate
  *s SystemUnit Software ReleaseDate: "2015-05-05"
  ** end

xStatus SystemUnit Software Version
Shows the software version installed on the codec.

Value space of the result returned:
String

Example:
xStatus SystemUnit Software Version
  *s SystemUnit Software Version: "CE8.0.0"
  ** end
xStatus SystemUnit State NumberOfActiveCalls
Shows the number of active calls.

Value space of the result returned:
0..5

Example:
```cisco
xStatus SystemUnit State NumberOfActiveCalls
*s SystemUnit State NumberOfActiveCalls: 0
** end
```

xStatus SystemUnit State NumberOfInProgressCalls
Shows the number of calls in progress.

Value space of the result returned:
0..5

Example:
```cisco
xStatus SystemUnit State NumberOfInProgressCalls
*s SystemUnit State NumberOfInProgressCalls: 0
** end
```

xStatus SystemUnit State NumberOfSuspendedCalls
Shows the number of suspended calls.

Value space of the result returned:
0..5

Example:
```cisco
xStatus SystemUnit State NumberOfSuspendedCalls
*s SystemUnit State NumberOfSuspendedCalls: 0
** end
```

xStatus SystemUnit Uptime
Shows the number of seconds since the last restart of the codec.

Value space of the result returned:
Integer

Example:
```cisco
xStatus SystemUnit Uptime
*s SystemUnit Uptime: 597095
** end
```
Time status

xStatus Time
Shows the top level overview of the time status.

xStatus Time SystemTime
Returns the date and time set on the system.

Value space of the result returned:
String

Example:
xStatus Time SystemTime
*s Time SystemTime: "2014-04-25T10:04:03Z"
** end

UserInterface status

xStatus UserInterface
Shows the top level overview of the video status.

xStatus UserInterface ContactInfo ContactMethod [n] Number
Returns the system's active contact information. This address is used to reach this endpoint.

Value space of the result returned:
String

Example:
xStatus UserInterface ContactInfo ContactMethod Number
*s UserInterface ContactInfo ContactMethod 1 Number: "12345678"
** end

xStatus UserInterface ContactInfo Name
Returns the system's active contact name. The result depends on which protocol, if any, the system is registered on. The automatically set contact name may have been overridden with the command xConfiguration UserInterface ContactInfo Type. This results in a diagnostics warning about contact mismatch.

Value space of the result returned:
String

Example:
xStatus UserInterface ContactInfo Name
*s UserInterface ContactInfo Name: "MySystem"
** end

xStatus UserInterface Extensions Widget [n] WidgetId
Returns the unique identifier for a widget. Widgets are used in custom panels, for example in-room controls, that are added to the user interface.

Value space of the result returned:
String
xStatus UserInterface Extensions Widget [n] Value

Returns the value for a widget. Widgets are used in custom panels, for example in-room controls, that are added to the user interface. The value space depends on the widget type. The value is an empty string until a value is set with the UserInterface Extensions Widget SetValue command.

Value space of the result returned:
String

Video status

xStatus Video

Shows the top level overview of the video status.

xStatus Video ActiveSpeaker PIPPosition

Shows the position of the active speaker’s image on the screen.

Value space of the result returned:
UpperLeft/UpperCenter/UpperRight/CenterLeft/CenterRight/LowerLeft/LowerRight

Example:
xStatus Video ActiveSpeaker PIPPosition
*s Video PIP ActiveSpeaker Position: UpperCenter
** end

xStatus Video Input

Shows the top level overview of the video input status.

xStatus Video Input Connector [n] Connected

Shows whether something is connected to the specified connector. Not all connections can be detected.

Value space of the result returned:
False/True/Unknown

Example:
xStatus Video Input Connector 1 Connected
*s Video Input Connector 1 Connected: True
** end
xStatus Video Input Connector [n] SignalState
Shows the signal state for the specified input.
Unknown: The signal format is unknown.
OK: A signal is detected and the signal format is supported.
Unsupported: A signal is detected, but the signal format is not supported.

Value space of the result returned:
OK/Unknown/Unsupported

Example:
```
xStatus Video Input Connector 1 SignalState
*s Video Input Connector 1 SignalState: OK
** end
```

xStatus Video Input Connector [n] SourceId
Shows the identifier of the input source that the connector is associated with.

Value space of the result returned:
Integer

Example:
```
xStatus Video Input Connector 1 SourceId
*s Video Input Connector 1 SourceId: 1
** end
```

xStatus Video Input Connector [n] Type
Shows which connector type it is.

Value space of the result returned:
Composite/DVI/HDMI/Unknown/YC

Example:
```
xStatus Video Input Connector 1 Type
*s Video Input Connector 1 Type: HDMI
** end
```

xStatus Video Input MainVideoSource
Returns the local video input currently used as the main source. The main video source is set with the xConfiguration Video DefaultMainSource command.

Value space of the result returned:
Integer

Example:
```
xStatus Video Input MainVideoSource
*s Video Input MainVideoSource: 1
** end
```

xStatus Video Input Source [n] ConnectorId
Shows the identifier of the connector that is associated with the input source.

Value space of the result returned:
Integer

Example:
```
xStatus Video Input Source 1 ConnectorId
*s Video Input Source 1 ConnectorId: 1
** end
```

xStatus Video Input Source [n] FormatStatus
Shows the resolution format status for the video input source.

Value space of the result returned:
Ok/OutOfRange/NotFound/Interlaced/Error/Unknown

Example:
```
xStatus Video Input Source 1 FormatStatus
*s Video Input Source 1 Resolution FormatStatus: Ok
** end
```
xStatus Video Input Source [n] FormatType
Shows the resolution format type for the video input source.

Value space of the result returned:
Unknown/AnalogCVTBlanking/AnalogCVTReducedBlanking/AnalogGTFDefault/
AnalogGTFSecondary/AnalogDiscreteTiming/AnalogDMTBlanking/AnalogCEABlanking/Digital

Example:
xStatus Video Input Source 1 FormatType
*s Video Input Source 1 Resolution FormatType: Digital
** end

xStatus Video Input Source [n] MediaChannelId
For internal use only.

Value space of the result returned:
Integer

Example:
xStatus Video Input Source MediaChannelId
*s Video Input Source 1 MediaChannelId: 2
*s Video Input Source 2 MediaChannelId: 3
** end

xStatus Video Input Source [n] Resolution Height
Shows the resolution height (in pixels) for the video input source.

Value space of the result returned:
0..3000

Example:
xStatus Video Input Source 1 Resolution Height
*s Video Input Source 1 Resolution Height: 1080
** end

xStatus Video Input Source [n] Resolution RefreshRate
Shows the resolution refresh rate (Hz) for the video input source.

Value space of the result returned:
0..300

Example:
xStatus Video Input Source 1 Resolution RefreshRate
*s Video Input Source 1 Resolution RefreshRate: 50
** end

xStatus Video Input Source [n] Resolution Width
Shows the resolution width (in pixels) for the video input source.

Value space of the result returned:
0..4000

Example:
xStatus Video Input Source 1 Resolution Width
*s Video Input Source 1 Resolution Width: 1920
** end

xStatus Video Layout LayoutFamily Local
Shows the local screen layout family.

Value space of the result returned:
String

Example:
xStatus Video Layout LayoutFamily Local
*s Video Layout LayoutFamily Local: "equal"
** end
xStatus Video Layout LayoutFamily Remote

Shows the remote screen layout family.

Value space of the result returned:
String

Example:
```plaintext
xStatus Video Layout LayoutFamily Remote
*s Video Layout LayoutFamily Remote: "equal"
** end
```

xStatus Video Monitors

Returns the monitor layout mode.

Single: The same layout is shown on all monitors.
Dual: The layout is distributed on two monitors.
DualPresentationOnly: All participants in the call will be shown on the first monitor, while the presentation (if any) will be shown on the second monitor.
Quadruple: The layout is distributed on four monitors, so that each remote participant and the presentation will be shown on separate monitors.

Value space of the result returned:
Single/Dual/DualPresentationOnly/Triple/TriplePresentationOnly/Quadruple

Example:
```plaintext
xStatus Video Monitors
*s Video Monitors: Single
** end
```

xStatus Video Output

Shows the top level overview of the video output status.

xStatus Video Output Connector [n] Connected

Describes whether a device (for example a display) is connected to the output connector or not. When a display enters standby mode, the endpoint may not be able to detect it. The connector status will then return False/Unknown even if the display is physically connected.

True: A device is connected to the video output connector.
False: Nothing is connected to the video output connector.

Value space of the result returned:
True/False

Example:
```plaintext
xStatus Video Output Connector 1 Connected
*s Video Output Connector 1 Connected: True
** end
```

xStatus Video Output Connector [n] ConnectedDevice CEC DeviceType

Shows the type of CEC enabled device connected to the HDMI output the codec has detected. This information is only available when the device connected to the HDMI output has the CEC feature configured on and the codec has the configuration xConfiguration Video Output Connector [n] CEC Mode set to on.

Value space of the result returned:
Unknown/TV/Reserved/Recorder/Tuner/Playback/Audio

Example:
```plaintext
xStatus Video Output Connector 1 ConnectedDevice CEC DeviceType
*s Video Output Connector 1 ConnectedDevice CEC DeviceType: TV
** end
```
xStatus Video Output Connector [n] ConnectedDevice CEC PowerControl
Shows whether the codec is controlling the CEC enabled device connected to the HDMI output.
This information is only available when the device connected to the HDMI output has the CEC feature configured on and the codec has the configuration xConfiguration Video Output Connector CEC Mode set to on.

Value space of the result returned:
Unknown/Ok/In progress/Failed to power on/Failed to standby

Example:
xStatus Video Output Connector 1 ConnectedDevice CEC PowerControl
  *s Video Output Connector 1 ConnectedDevice CEC PowerControl: Ok
  ** end

xStatus Video Output Connector [n] ConnectedDevice CEC PowerStatus
Shows the state of the CEC enabled device connected to the HDMI output.
This information is only available when the device connected to the HDMI output has the CEC feature configured on and the codec has the configuration xConfiguration Video Output Connector CEC Mode set to on.

Value space of the result returned:
Unknown/Ok/In progress/Failed to power on/Failed to standby

Example:
xStatus Video Output Connector 1 ConnectedDevice CEC PowerStatus
  *s Video Output Connector 1 ConnectedDevice CEC PowerStatus: Ok
  ** end

xStatus Video Output Connector [n] ConnectedDevice Name
Shows the name of the monitor connected to the HDMI port as defined in the monitors EDID.

Value space of the result returned:
String

Example:
xStatus Video Output Connector 1 ConnectedDevice Name
  *s Video Output Connector 1 ConnectedDevice Name: "G2420HDBL"
  ** end

xStatus Video Output Connector [n] ConnectedDevice PreferredFormat
Shows the preferred input format of the monitor connected to the HDMI port as defined in the monitors EDID. This is not necessarily the format the codec is sending out.

Value space of the result returned:
String

Example:
xStatus Video Output Connector 1 ConnectedDevice PreferredFormat
  *s Video Output Connector 1 ConnectedDevice PreferredFormat: "1920x1080@60Hz"
  ** end

xStatus Video Output Connector [n] MonitorRole
Describes which video stream is shown on the device that is connected to the video output connector.
First/Second/Third: The role of the monitor in a multimonitor setup. In a singlemonitor setup, there is no difference between First, Second and Third.
PresentationOnly: Shows presentation video stream if active.
Recorder: Shows all participants, including the local main video. If active, shows also the presentation.

Value space of the result returned:
First/Second/Third/PresentationOnly/Recorder

Example:
xStatus Video Output Connector 1 MonitorRole
  *s Video Output Connector 1 MonitorRole: First
  ** end

xStatus Video Output Connector [n] Resolution Height
Shows the resolution height (in pixels) for the video output connector.

Value space of the result returned:
120..3000

Example:
xStatus Video Output Connector 1 Resolution Height
  *s Video Output Connector 1 Resolution Height: 1080
  ** end
xStatus Video Output Connector [n] Resolution RefreshRate
Shows the resolution refresh rate (Hz) for the video output connector.

**Value space of the result returned:**
1..300

**Example:**
```
xStatus Video Output Connector 1 Resolution RefreshRate
*s Video Output Connector 1 Resolution RefreshRate: 60
** end
```

xStatus Video Output Connector [n] Resolution Width
Shows the resolution width (in pixels) for the video output connector.

**Value space of the result returned:**
176..4000

**Example:**
```
xStatus Video Output Connector 1 Resolution Width
*s Video Output Connector 1 Resolution Width: 1920
** end
```

xStatus Video Output Connector [n] Type
Shows the type of connector.
HDMI: It is an HDMI connector.
DVI: It is an DVI connector.

**Value space of the result returned:**
HDMI/DVI

**Example:**
```
xStatus Video Output Connector 1 Type
*s Video Output Connector 1 Type: HDMI
** end
```

xStatus Video Presentation PIPPosition
Shows the position of the presentation image on the screen.

**Value space of the result returned:**
UpperLeft/UpperCenter/UpperRight/CenterLeft/CenterRight/LowerLeft/LowerRight

**Example:**
```
xStatus Video Presentation PIPPosition
*s Video PIP Presentation Position: CenterLeft
** end
```

xStatus Video Selfview FullscreenMode
Shows whether selfview is set on full screen mode or not.

**Value space of the result returned:**
On/Off

**Example:**
```
xStatus Video Selfview FullscreenMode
*s Video Selfview FullscreenMode: Off
** end
```

xStatus Video Selfview Mode
Shows whether selfview mode is set on or not.

**Value space of the result returned:**
On/Off

**Example:**
```
xStatus Video Selfview Mode
*s Video Selfview Mode: Off
** end
```
**xStatus Video Selfview OnMonitorRole**

Identifies which monitor(s) contains the selfview, if present.

**Value space of the result returned:**

First/Second/Third/Fourth

**Example:**

```
xStatus Video Selfview OnMonitorRole
  *s Video Selfview OnMonitorRole: First
  ** end
```

**xStatus Video Selfview PIPPosition**

Shows the position of the selfview image on the screen.

**Value space of the result returned:**

UpperLeft/UpperCenter/UpperRight/CenterLeft/CenterRight/LowerLeft/LowerRight

**Example:**

```
xStatus Video Selfview PIPPosition
  *s Video Selfview PIPPosition: LowerRight
  ** end
```
Chapter 6

Appendices
About startup scripts

You can add one or more startup scripts to the codec. A startup script contains commands (xCommand) and configurations (xConfiguration) that will be executed as part of the start up procedure every time the codec boots. A few commands and configurations cannot be placed in a startup script, e.g. xCommand SystemUnit Boot.

Use the codec’s web interface to create and manage startup scripts.

Read more about the web interface and startup scripts in the Administrator guide for your product.
The SystemTools commands

**NOTE:** The systemtools commands are used for administrative control of the codec and are only available from a command line interface. Systemtools should not be used to program the codec.

Required parameters in angle brackets: <text>
Optional parameters in square brackets: [text]

To get an overview of the supported commands type “systemtools ?”.

Example:

```
systemtools ?
idefixversion
touchpanelversion
touchpanelversion
license
network
ntp
pairing
passwd
pki
rootsettings
securitysettings
securitystatus
selectsw
sudo
whoami
```

To see the usage of the commands add a question mark after the command.

Example:

```
systemtools network ?
usage: network ping <hostname> | traceroute <hostname> | netstat | addr | ifconfig
```

**systemtools idefixversion**

Returns the software version the connected Touch controller should have. Used when downgrading to TC7.3 or earlier.

**systemtools touchpanelversion**

Returns the software version the connected Touch controller should have. Used when upgrading to CE8.0 or later.

**systemtools license list**

Lists all the licenses for the codec.

**systemtools license show <name>**

Shows the content of a license file, defined by the name.  
<name>: The name of the license file.

**systemtools network ping <hostname>**

Network debug command. 
<hostname>: The IP address or URL of the host.

**systemtools network traceroute <hostname>**

Network debug command.  
<hostname>: The IP address or URL of the host.

**systemtools network netstat**

Network debug command.

**systemtools network ifconfig**

Network debug command.

**systemtools ntp**

Shows the NTP status.

**systemtools pairing unpair**

Remove association with Cisco TelePresence Touch controller.

**systemtools passwd**

Change the password for the logged in user.

**systemtools pki list**

Lists the codec certificate and CA list if they exist.

**systemtools pki delete <cert-name>**

Delete the codec certificate and CA list if they exist.  
<cert-name>: The name of the certificate.

**systemtools securitysettings jitc**

Set up security requirements so they meet JITC. 
Set password and PIN polices enforced on the codec.

**systemtools securitysettings isjitc**

Check if the current settings are JTIC compliant.

**systemtools securitysettings default**

Revert to default security settings.

**systemtools securitysettings ask**

Query for the separate configurations. When issuing this command you can see each policy separately.  
- Press enter to keep the current value.  
- Enter a number and press enter to change the given policy.  
- The default value “0” indicates no restrictions.

Max failed login attempts [0]?
- Number of failed logins until a user is set inactive.
Suspend-time after max failed login attempts (minutes) [0]?
  • Number of minutes the user is set inactive after maximum failed login attempts have been exceeded.

Max simultaneous sessions total [0]?
  • Maximum number of users that can be logged in simultaneous to web and maximum number of users that can be logged in simultaneous to ssh/Telnet.

Max simultaneous sessions per user [0]?
  • Maximum number of simultaneous sessions per user.

Number of passwords to remember [0]?
  • Number of previous passwords that the new password must differ from.

Number of PINs to remember [0]?
  • Number of previous PINs that the new PIN must differ from.

Maximum time between password renewals (days) [0]?
  • If the user has not changed the password within the renewal time the user will be set inactive.

Minimum time between password renewals (hours) [0]?
  • The user can only change password once within this limit.

Maximum time between PIN renewals (days) [0]?
  • If the user has not changed the PIN within the renewal time the user will be set inactive.

Minimum time between PIN renewals (hours) [0]?
  • The user can only change PIN once within this limit.

Maximum time between logins (days) [0]?
  • If the user has not logged in within this limit the user will be set inactive.

Max consecutive equal digits in PINs [0]?
  • Maximum number of digits in PINs.

Minimum number of digits in PINs [0]?
  • Minimum number of digits in PINs.

Maximum number of digits in PINs [0]?
  • Maximum number of digits in PINs.

Max consecutive identical characters in passwords [0]?
  • Maximum consecutive identical characters in passwords.

Minimum number of characters in passwords [0]?
  • Minimum number of characters in passwords.

Maximum number of characters in passwords [0]?
  • Maximum number of characters in passwords.

Minimum number of lower-case letters in passwords [0]?
  • Minimum number of lower-case letters in passwords.

Minimum number of upper-case letters in passwords [0]?
  • Minimum number of upper-case letters in passwords.

Minimum number of numerical characters in passwords [0]?
  • Minimum number of numerical characters in passwords.

Minimum number of special characters in passwords [0]?
  • Minimum number of special characters in passwords.

Minimum number of character groups in passwords [0]?
  • Minimum number of character groups in passwords.

Minimum number of character changed from previous password [0]?
  • Minimum number of character changed from previous password.

systemtools selectsw
Select which of the available software images to use. Changing the software image will restart the codec.
  No argument given: Lists the version of the available software images, and shows which one is active.
  image name: Swap to the software with this name.

systemtools sudo on
Changes the user role of the current session to the role of the specified user
  <username>: The name of the sudo user.
  <password>: The password for the sudo user.

systemtools sudo off
Reverts back to the user role of the signed in user.

systemtools whoami
Lists the name and id of the signed in user, and the user roles held by this user.

systemtools securitystatus
Shows the security status for the codec.
### About disconnect cause types

The following parameters are logged when a call is disconnected. The disconnect cause types are used in disconnect events (xEvent).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CauseValue</td>
<td>Proprietary. We recommend the use of CauseType and CauseCode.</td>
</tr>
<tr>
<td>CauseType</td>
<td>Describes why the call was disconnected. The value space is { OtherLocal, LocalDisconnect, UnknownRemoteSite, LocalBusy, LocalReject, InsufficientSecurity, OtherRemote, RemoteDisconnect, RemoteBusy, RemoteRejected, RemoteNoAnswer, CallForwarded, NetworkRejected }</td>
</tr>
<tr>
<td>CauseString</td>
<td>Describes the Cause Code.</td>
</tr>
<tr>
<td>CauseCode</td>
<td>The disconnect Cause Codes are defined in SIP and Q.850.</td>
</tr>
<tr>
<td>CauseOrigin</td>
<td>SIP, Q.850, internal.</td>
</tr>
</tbody>
</table>

#### Example:

```plaintext
xEvent DisconnectEvent

*e CallDisconnect CauseValue: 1
  CauseType: "LocalDisconnect"
  CauseString: ""
  OrigCallDirection: "outgoing"
  RemoteURI: "firstname.lastname@company.com"
  CallId: 89
  CauseCode: 0
  CauseOrigin: SIP
** end
```
User documentation on the Cisco web site

User documentation for the Cisco TelePresence 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. This is the path you have to follow:

TelePresence Integration Solutions > TelePresence SX Series

Alternatively, use the following short-link to find the documentation:

http://www.cisco.com/go/sx-docs

The documents are organized in the following categories:

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
- Administering CE Endpoints on CUCM: Tasks to perform to start using the product with the Cisco Unified Communications Manager (CUCM)

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 product’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

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
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