Application Programmer Interface (API) Reference Guide

Cisco TelePresence System Codec C40/C60
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Chapter 1

Introduction
About this guide

This guide introduces you to the Application Programmer Interface (API) for the TC software in general, and serve as a reference guide for the command line commands for the Codec C Series listed below:

• Cisco TelePresence System Codec C60
• Cisco TelePresence System Codec C40

User documentation

The user documentation for the Cisco TelePresence systems, running the TC software, have several guides suitable to various user groups.

• Video conference room primer
• Video conference room acoustics guidelines
• Installation guides for the TelePresence systems
• Software release notes for the TC software
• Getting started guide for the TelePresence systems
• User guide for the TelePresence systems (Touch controller)
• User guide for the TelePresence systems (Remote Control)
• Quick reference guides for the TelePresence systems
• Administrator guides for the TelePresence systems
• Camera user guide for the PrecisionHD cameras
• API reference guides for the Codec C Series
• TC Console user guide for the Codec C Series
• Physical interfaces guides for the Codec C Series
• Regulatory compliance and safety information guides
• Legal & license information for TC software

To download the user documentation go to:

› http://www.cisco.com/go/cseries-docs
What’s new in this version

This section provides an overview of the new and changed system settings and new features in the TC6.2 software version.

New features and improvements

Cisco Unified Communication Manager (CUCM) redundancy support
The TelePresence endpoints have CUCM redundancy support with failover and fallback. The TelePresence endpoint will automatically register to the next CUCM in the cluster if the connection to the active CUCM is lost.

If the TelePresence endpoint loses its connection to the primary CUCM, the call is preserved, but no additional features like content sharing, putting participants on hold etc. will be available. The next call will be handled by the secondary CUCM and all call features are available again. When the primary CUCM is back online, the endpoint will automatically register with the primary CUCM.

More details can be found in the Administering TC endpoints on CUCM guide for TC6.2.

Improved provisioning from CUCM
Several TelePresence endpoint parameters are added to CUCM and can be provisioned to the endpoint.

More details can be found in the Administering TC endpoints on CUCM guide for TC6.2.

Support for CUCM provisioning of the endpoint password when using the encrypted security profile
TelePresence endpoints can be fully and securely provisioned from CUCM. When the TelePresence endpoint is set up with an encrypted security profile in CUCM, the endpoint will read the admin password from the CUCM. The password can not be empty, and the user name must be admin.

More details can be found in the Administering TC endpoints on CUCM guide for TC6.2.

Support for auto discovery of the CUCM
The TelePresence endpoints have support for auto discovery of the CUCM through DHCP Option 150. If the network provides the CUCM address through DHCP Option 150, the endpoint will automatically register to the CUCM after a factory reset.

More details can be found in the Administering TC endpoints on CUCM guide for TC6.2.

Support for IPv4, IPv6 and dual stack
The video system is able to operate on IPv4, IPv6 or both at the same time (dual stack). This is configured using the xConfiguration Network IPStack setting. Which IP version to use for calls is configured using the xConfiguration Conference CallProtocolIPStack setting.

G.729 audio codec support in H.323 calls
Support for the G.729AB audio codec is added in H.323 calls in order to provide better IP phone interoperability. G.729 has been supported in SIP calls as from software version TC6.1.

Lync 2013 support for point-to-point calls
You can set up video calls between TelePresence systems and Lync 2013 users. HD quality at full frame rate (720p30) is supported in both directions. This feature is disabled by default. It must be enabled using the xConfiguration Conference LyncCompatibility Mode setting. It also requires version X8 of the VCS (Video Communication Server).

You can see the Lync 2013 users in the TelePresence system’s directory (phone book), provided that TMS (TelePresence Management System) version 13.x or later is used.
Interactive Connectivity Establishment (ICE) support

TelePresence systems can use the ICE protocol (RFC 5245) to find the best media path through the network. ICE separates signalling and media, and is a NAT traversal solution that finds the shortest route for audio and video.

This feature is disabled by default. It must be enabled using the \texttt{xConfiguration SIP Profile Ice} settings. Both endpoints in the call must support ICE, and a valid TURN (Traversal Using Relay NAT) server must be defined.

ICE is not supported when registered to the current version of CUCM.

Check the TC6 software release notes for further details.

Active control: Providing end users conference control with TelePresence Server

Active Control gives more control and improved experience for the end user during conferences hosted on a Cisco TelePresence Server. Using your Cisco Touch controller, you can interact with the server to control the local experience of the meeting. You will see the participant list with indicators that show who is the active speaker and who is sharing content, you can change your local video layout, disconnect participants, etc.

This feature is disabled by default. It must be enabled using the \texttt{xConfiguration Experimental Conference ActiveControl Mode} setting.

Active control requires a Cisco TelePresence Server 3.1 or later, and the server must be behind a Conductor (version XC2.2 or later), i.e. not registered directly to VCS or CUCM. CUCM must be version 9.1.2 or later, and VCS must be version 7 or later. The feature is only supported for SIP calls. H.323 interworking scenarios are not supported.

Check the TC6 software release notes for further details.

Extended Binary Floor Control Protocol (BFCP) port range

When using SIP as a call protocol, UDP ports 5070 to 5077 are used for the BFCP connection (presentation channel). If a firewall is blocking ports in this range, the presentation channel will not be established and the presentation will be sent in the main video channel.

In earlier software releases, only port 5070 was used. The range is extended to support ICE.

Overriding manual positioning of the PrecisionHD 1080p12x camera

If the camera position is adjusted by hand, the camera will automatically return to the position it had before. This feature is disabled by default. It must be enabled using the \texttt{xConfiguration Camera Camera[n] MotorMoveDetection} setting.

Web interface enhancements

- A System recovery page is introduced. The page provides access to the following recovery alternatives: software image swapping and factory reset. Easy access to configuration and log file back up is also provided.
- A VU meter (volume meter) is available on the Peripherals page. The VU meter shows the signal level for the microphone(s).

xConfiguration changes

New configurations

- \texttt{xConfiguration Cameras Camera [1..?] MotorMoveDetection: \{Off/On\}}
- \texttt{xConfiguration Conference CallProtocolIPStack: \{IPv4/IPv6\}}
- \texttt{xConfiguration Conference LyncCompatibility: \{Off/On\}}
- \texttt{xConfiguration Network IPv4 Assignment: \{Static/DHCP\}} Replacing \texttt{xConfiguration Network Assignment}
- \texttt{xConfiguration SIP Profile Ice Mode: \{Off/On\}}
- \texttt{xConfiguration SIP Profile Ice DefaultCandidate: \{Host/Rflx/Relay\}}
- \texttt{xConfiguration SIP Profile Turn Server: \{S: 0, 255\}}
- \texttt{xConfiguration SIP Profile Turn UserName: \{S: 0, 128\}}
- \texttt{xConfiguration SIP Profile Turn Password: \{S: 0, 128\}}
- \texttt{xConfiguration Video OSD WallpaperSelection: \{Off/On\}}
- \texttt{xConfiguration Video OSD LanguageSelection: \{Off/On\}}

Configurations that are removed

- \texttt{xConfiguration Network Assignment} Replaced by \texttt{xConfiguration Network IPv4 Assignment}

Configurations that are modified

- \texttt{xConfiguration Network IPStack}
  \texttt{OLD: \{IPv4/IPv6\}}
  \texttt{NEW: \{Dual/IPv4/IPv6\}}
xCommand changes

New commands
xCommand Video Layout Frame List (only C60)
xCommand Video Layout Frame Add (only C60)

Commands that are modified
xCommand Message FarendMessage
   OLD: CallId was required
   NEW: CallId is optional
xCommand Phonebook Search
   ADDED: ContactType: <Any/Folder/Contact>

xCommand Video Layout Frame Update (only C60)
   OLD: VideoSourceType: <graphic/localInput/localMain/ localPresentation/mostSpeaking/otherMain/ownMain/ presentation/remoteMain/remotePresentation/videoFile>
   NEW: VideoSourceType: <graphic/localInput/localMain/ localPresentation/mostSpeaking/ mostSpeaking,_orderedByPartNumb/otherMain/ ownMain/participantNumber/presentation/remoteMain/ remotePresentation/videoFile>

xStatus changes

New status
xStatus Conference Site Hold
xStatus Conference Site Preserved
xStatus ICE Configured
xStatus ICE Defaultcandidate
xStatus ICE Turn IP
xStatus ICE Turn Hostname
xStatus ICE Turn Username
xStatus ICE Call Result
xStatus ICE Call Local Candidate
xStatus ICE Call Remote Candidate
xStatus ICE Call Remote IP
xStatus SIP Profile Turn ServerAddress
xStatus SIP Profile 1 DirectoryURI Primary URI
xStatus SIP Profile 1 DirectoryURI Alias URI
xStatus Video Layout Mode
xStatus Video Input Source [1..n] MediaChannelId

Status that is modified
xStatus Call Status
   OLD: <Idle/Dialling/Ringing/Connecting/Connected/ Disconnecting/OnHold>
   NEW: <Idle/Dialling/Ringing/Connecting/Connected/ Disconnecting/OnHold/EarlyMedia/Preserved/ RemotePreserved>
Chapter 2

About the API
API fundamentals

This chapter contains a top-level view of the mechanisms supported by the codec API. You can use the API to manage all parts of the TelePresence system. 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. Information on how to use the feedback functions that are available for the codec is included in this chapter.

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 stays 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 commands can be set from the System configuration menu in the web interface or on the on-screen-display, or from the command line interface. All of the examples are for the command line interface.

Password

Initially, no password is set for the default admin user. We strongly recommend that you set a password for this user, and any other users possessing an ADMIN role, to restrict access to system configuration. The password can be changed by issuing the following command:

xCommand SystemUnit AdminPassword Set Password: <password>

RS-232/serial connection

This is one of the most used connections to our products for integrators, as it can be used without an IP-address, DNS or a network.

Codec configurations

There are two different configurations that can be changed for serial connections; the baud-rate and whether login is required or not. A reboot of the codec is required for these settings to take effect.

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

xConfiguration SerialPort LoginRequired: <Off/On>

Connecting

On the C Series codecs C40 and C60 connect a standard 9-pin serial cable <38400, N, 8, 1> to the COM port on the codec.

Note:

• For security reasons the password prompting is turned on by default, but it can be turned off if preferred.
• The default baud rate is set to 38400. The reason for this is that the codec can give very much feedback. When using 9600 baud it may cause your integration to appear sluggish. We therefore recommend keeping the connection at this speed or higher.
• During the initial boot sequence, the codec uses a baud rate of 38400 regardless of the application baud rate you have set.

For details regarding the RS-232 pin-out and more, please refer to the Physical Interface Guide for C40 or the Physical Interface Guide for C60.

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.

Codec configuration

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: On

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.

HTTP/HTTPS

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

Codec configuration

In order to enable or disable the HTTP and HTTPS services, configure the following settings on the codec. Changing these settings requires a reboot of the device.

xConfiguration NetworkServices HTTP Mode: <Off/On>

xConfiguration NetworkServices HTTPS Mode: <Off/On>

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 System Configuration > API > XML 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 20 in this document.
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.

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:

```plaintext
xPreferences outputmode xml
```

To revert to terminal mode, issue the command:

```plaintext
xPreferences outputmode terminal
```

Example: Layout command in terminal mode

```
xCommand Video Layout AssignCall CallId: 2 LayoutId: 1
```

Example: Layout command in XML mode

```xml
<Command>
  <Video>
    <Layout>
      <AssignCall command="True">
        <CallId>2</CallId>
        <LayoutId>1</LayoutId>
      </AssignCall>
    </Layout>
  </Video>
</Command>
```
Using the command line

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

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 14.

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 13.

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 15.

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 18.

xPreferences
The xPreferences command is used to set preferences for the RS-232, Telnet and SSH sessions. Refer to “API output” on page 10.

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 no user input is 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 16.

xHistory
The xHistory command returns the call log.

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 18.

Other commands

Systemtools
The systemtools commands are used for administrative control of the codec and are only available from the command line interface. Systemtools are not a part of the programming API. Refer to “The SystemTools commands” on page 207.

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).

WARNING: 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.

Value types and formats

The system supports the following value types (Example 3):

- **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.

**Examples:**

- **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

Example 1: List all configurations that include a word that starts with DVI:

```
xConfiguration //dvi
  *c xConfiguration Video Input DVI 2 RGBQuantizationRange: Full
  *c xConfiguration Video Input DVI 2 Type: AutoDetect
  *c xConfiguration Video Input DVI 3 RGBQuantizationRange: Full
  *c xConfiguration Video Input DVI 3 Type: AutoDetect
  *c xConfiguration Video Output DVI 2 RGBQuantizationRange: Full
  *c xConfiguration Video Output DVI 2 Resolution: 1024 _ 768 _ 60
  *c xConfiguration Video Output DVI 2 OverscanLevel: None
  *c xConfiguration Video Output DVI 2 MonitorRole: Second
** 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 Output HDMI 1 Resolution Width: 1920
  *s Video Output DVI 2 Resolution Width: 1024
  *s Video Output Legacy 3 Resolution Width: 720
** end
```

Example 3: Value types and formats

```
xConfiguration ??
  *? xConfiguration Audio Microphones Mute Enabled: <True/InCallOnly>
  *? xConfiguration Audio Volume: <0..100>
  *? xConfiguration Audio SoundsAndAlerts RingVolume: <0..100>
  
  *? xConfiguration Video Output Composite [3] OverscanLevel: <Medium/High/None>
** end
```
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. The (r) behind the argument name indicates that the argument is required for the command.

When issuing a xCommand, the command consists of one argument and one required parameter.

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 ':'.

xCommand ?

- User Commands -
  Audio          Conference          Key          SystemUnit
  Bookings       Dial               Message       TStringLength
  Boot           DTMFSend           Phonebook     Video
  Call           Experimental       Presentation
  CallLog        FacilityService    Preset        Security
  CamCtrlPip     FarEndControl     Provisioning
  Camera         HttpFeedback       
OK

xCommand ??

xCommand Audio Microphones Mute
xCommand Audio Microphones Unmute
xCommand Audio Sound Play
  Sound(r): <Busy/CallWaiting/Dial/KeyTone/Ringing/SpecialInfo/TelephoneCall/VideoCall>
  Loop: <On/Off>

xCommand Audio Sound Stop

xCommand Audio Vumeter Start
  ConnectorType(r): <HDMI/Line/Microphone>
  ConnectorId(r): <1..4>

xCommand Audio Vumeter Stop
  ConnectorType(r): <HDMI/Line/Microphone>
  ConnectorId(r): <1..4>

xCommand Audio Vumeter StopAll

xCommand Audio Setup Clear
. .
OK
**Configurations**

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

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

Writing `xCConfiguration ??` lists all configurations and their value spaces.

Writing `xCConfiguration` lists all configurations and their current values. To list out only parts of the configuration, write `xCConfiguration` 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
```
Addressing status information with xStatus

To read the status from the system type the root command (xStatus) followed by a path (address expression):

```
xStatus <address expression>
```

Example 1: Query all ongoing Call information:
```
xStatus Call
*s Call 3 Status: Connected
*s Call 3 Direction: Outgoing
*s Call 3 Protocol: "sip"
*s Call 3 RemoteNumber: "firstname.lastname@company.com"
*s Call 3 CallbackNumber: "sip:firstname.lastname@company.com"
*s Call 3 DisplayName: "firstname.lastname@company.com"
*s Call 3 TransmitCallRate: 768
*s Call 3 ReceiveCallRate: 768
*s Call 3 FacilityServiceId: 0
*s Call 3 Encryption Type: "None"
*s Call 3 PlacedOnHold: False
*s Call 3 Duration: 9
** end
```

Example 2: Query the protocol for a call:
```
xStatus Call Protocol
*s Call 3 Protocol: "sip"
```

** end

Writing xStatus ? on the command line lists all top level statuses.

Writing xStatus lists all statuses and their current values.

To list out only some of the statuses, write xStatus followed by the relevant part of the status path.
Events

Event returns information about the events that are available for feedback. This overview presents examples of some 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
  CauseString: "" CauseType: 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
Call history
The xHistory command returns the call logs.

Example with xHistory CallLogs

```plaintext
xHistory
  *h xHistory CallLogs Call 1 CallId: 13
  *h xHistory CallLogs Call 1 Protocol: "h323"
  *h xHistory CallLogs Call 1 Direction: Incoming
  *h xHistory CallLogs Call 1 CallType: Video
  *h xHistory CallLogs Call 1 RemoteNumber: "h323:firstname.lastname.office@company.com"
  *h xHistory CallLogs Call 1 CallbackNumber: "h323:firstname.lastname.office@company.com"
  *h xHistory CallLogs Call 1 DisplayName: "firstname.lastname@company.com"
  *h xHistory CallLogs Call 1 CallRate: 768
  *h xHistory CallLogs Call 1 DisconnectCauseValue: 2
  *h xHistory CallLogs Call 1 DisconnectCause: "Normal"
  *h xHistory CallLogs Call 1 DisconnectCauseType: RemoteDisconnenct
  *h xHistory CallLogs Call 1 DisconnectCauseCode: 16
  *h xHistory CallLogs Call 1 DisconnectCauseOrigin: Q850
  *h xHistory CallLogs Call 1 StartTime: "2012/02/14 11:04:14"
  *h xHistory CallLogs Call 1 Duration: 184
  *h xHistory CallLogs Call 1 Encryption: "None"
  *h xHistory CallLogs Call 1 BookingId: ""
  ...
  *h xHistory CallLogs Recent 6 CounterMissed: 0
  *h xHistory CallLogs Recent 6 Counter: 3
  ...
  *h xHistory CallLogs Outgoing 30 Counter: 1
  ...
  *h xHistory CallLogs Received 40 Counter: 1
  ...
  *h xHistory CallLogs Missed 50 Counter: 2
  *h xHistory CallLogs Missed 50 NewCounter: 0
  ** end
```
Feedback mechanism

To build solutions that can reliably keep the state between the application and the codec synchronized, you need to 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 the user has explicitly told the codec to do so. The user is required to subscribe to all the feedback the application needs. This is done by registering feedback expressions. The way of registering feedback expressions varies according to the connection method used.

Feedback expressions

The expression used when registering for feedback is a variant of the XPath language. This language describes a way to select nodes from an XML document. TC 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, as configuration changes will most likely not occur that often.

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.

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: All video input connectors.

Terminal query

xConfiguration Video Input Source Connector
*c xConfiguration Video Input Source 1 Connector: HDMI
*c xConfiguration Video Input Source 2 Connector: HDMI
*c xConfiguration Video Input Source 3 Connector: HDMI
*c xConfiguration Video Input Source 4 Connector: HDMI
*c xConfiguration Video Input Source 5 Connector: Composite
** end

Equivalent feedback expression

xFeedback register /Configuration/Video/Input/Source/Connector

Example 3: Video input connector for source 3.

Terminal query

xConfiguration Video Input Source 3 Connector
*c xConfiguration Video Input Source 3 Connector: HDMI
** end

Equivalent feedback expression

xFeedback register /Configuration/Video/Input/Source[@item='3']/Connector
Terminal connections

Managing feedback subscriptions

To register, list and deregister feedback expressions you use the command xFeedback and its corresponding subcommands.

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.

### 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>
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</tr>
<tr>
<td>POST</td>
<td>http://&lt;ip-address&gt;/putxml</td>
<td>Configurations and commands in HTTP body</td>
</tr>
<tr>
<td>GET, POST</td>
<td>http://&lt;ip-address&gt;/formputxml?xmldoc=&lt;xml&gt;</td>
<td>Configurations and commands www-urlencoded</td>
</tr>
</tbody>
</table>

### Sending commands and configurations using HTTP GET

It is possible to use HTTP GET when sending commands or configurations to the codec. This makes it easy to test commands using your browser.

#### Example 1: Setting the camera position.

```
http://<ip-address>/formputxml?xmldoc=
<Command>
<Camera>
<PositionSet command="True">
<CameraId>1</CameraId>
<Pan>200</Pan>
<Tilt>200</Tilt>
</PositionSet>
</Camera>
</Command>
```

#### Example 2: Changing the system name.

```
http://<ip-address>/formputxml?xmldoc=
<Configuration>
<SystemUnit>
<Name>newName</Name>
</SystemUnit>
</Configuration>
```

### 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
Connection: close

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

**Response**

```
HTTP/1.1 200 OK
Date: <date>
Server: WSGIServer/0.1 Python/2.5.4
Cache-Control: no-cache
Content-Type: text/xml
Content-Length: 91
Connection: close

<?xml version="1.0"?>
<Command>
  <CameraPositionSetResult item="1" status="OK"/>
</Command>
```

#### Example 2: Setting the camera position.

**Request**

```
POST /putxml HTTP/1.1
Content-Type: text/xml
Connection: close

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

**Response**

```
HTTP/1.1 200 OK
Date: <date>
Server: WSGIServer/0.1 Python/2.5.4
Cache-Control: no-cache
Content-Type: text/xml
Content-Length: 91
Connection: close

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

To get notifications from the codec, you need to register HTTP feedback expressions. The codec will then use HTTP POST to send feedback messages to the supplied IP-address. This means that you have to have a HTTP server running for your application to receive updates from the codec.

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(r): <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>
  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 URI.

Example: Audio volume changed.

```
<Configuration xmlns="http://www.company.com/XML/CUIL/2.0">
  <Identification>
    <SystemName>integrator</SystemName>
    <MACAddress>00:00:de:ad:be:ef</MACAddress>
    <IPAddress>192.168.1.100</IPAddress>
    <ProductType>Cisco Codec</ProductType>
    <ProductID>Cisco Codec C60</ProductID>
    <SWVersion>TC6.0.0.199465</SWVersion>
    <HWBoard>101401-5 [08]</HWBoard>
    <SerialNumber>00000000</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>
    <AssignCall command="True">
      <CallId>2</CallId>
      <LayoutId>1</LayoutId>
    </AssignCall>
  </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 connector for input source 2.

Terminal
xConfiguration Video Input Source 2 Connector: HDMI

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

Here are some issues you should consider when programming the Cisco C- and SX-series API.

AVOID remote control emulation

The use of xCommand Key Press and xCommand Key Click commands is highly discouraged. The commands are still available in the API, but we recommend the use of direct commands, as this ensures backwards compatibility in your integrations. Program against the codec, not the on-screen-display.

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.

DO present one screen to the end user

Avoid making the user look at two menus, one on the control panel and one on the video screen. Do not make the control panel a substitute for the remote control. The on-screen-display in is using the exact same API as you have access to through the command interface.

Do not use the experimental section in production

Under the listing of commands, status and configurations, you can find subsections that start with Experimental.

- xCommand Experimental
- xStatus Experimental
- xConfiguration Experimental

These sections give access to features that we are still working on and have yet to release for official use. This part of the API will NOT stay backwards compatible and the structure WILL CHANGE.

Do not use the experimental section in production - in future versions of the firmware these sections may be hidden or removed.
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 website regularly for updated versions of the manual.

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

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## Audio configuration

### xConfiguration Audio Input HDMI [2] Mode
Determine if the audio channels on the HDMI input shall be enabled. The HDMI input 2 has two audio channels.

**Requires user role:** ADMIN

**Value space:** <Off/On>

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

**Example:** `xConfiguration Audio Input HDMI 2 Mode: On`

### xConfiguration Audio Input HDMI [2] Level
Define the audio level of the HDMI input connector, in steps of 1 dB. See the Audio Level tables in the Physical Interfaces Guide for the codec for a complete overview of the menu values represented in dB.

**Requires user role:** ADMIN

**Value space:** <-24..0>

- **Range:** Select a value from -24 to 0 dB.

**Example:** `xConfiguration Audio Input HDMI 2 Level: 0`

### xConfiguration Audio Input HDMI [2] VideoAssociation MuteOnInactiveVideo
Enable association of a video source to an HDMI audio input.

**Requires user role:** ADMIN

**Value space:** <Off/On>

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

**Example:** `xConfiguration Audio Input HDMI 2 VideoAssociation MuteOnInactiveVideo: Off`

### xConfiguration Audio Input Line [1..2] Equalizer ID
Select the audio input line equalizer ID.

**Requires user role:** ADMIN

**Value space:** <1..8>

- **Range:** Select EqualizerID 1 to 8.

**Example:** `xConfiguration Audio Input Line 1 Equalizer ID: 1`

### xConfiguration Audio Input Line [1..2] Equalizer Mode
Set the audio input line equalizer mode.

**Requires user role:** ADMIN

**Value space:** <Off/On>

- **Off:** No equalizer.
- **On:** Enable the equalizer for the audio input line.

**Example:** `xConfiguration Audio Input Line 1 Equalizer Mode: Off`

### xConfiguration Audio Input Line [1..2] VideoAssociation MuteOnInactiveVideo
Enable association of a video source to a Line audio input.

**Requires user role:** ADMIN

**Value space:** <Off/On>

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

**Example:** `xConfiguration Audio Input Line 1 VideoAssociation MuteOnInactiveVideo: Off`

### xConfiguration Audio Input Line [1..2] VideoAssociation VideoInputSource
Select the associated video input source.

**Requires user role:** ADMIN

**Value space:** <1/2/3>

- **Range:** Select one of the video input sources.

**Example:** `xConfiguration Audio Input Line 1 VideoAssociation VideoInputSource: 1`
xConfiguration Audio Input Line [1..2] Channel
Define whether the Audio Line input is a mono signal or part of a multichannel signal.

Requires user role: ADMIN

Value space: <Right/Left/Mono>
- Right: The Audio Line input signal is the right channel of a stereo signal.
- Left: The Audio Line input signal is the left channel of a stereo signal.
- Mono: The Audio Line input signal is a mono signal.

Example: xConfiguration Audio Input 1 Channel: Left

xConfiguration Audio Input Line [1..2] Level
Define the audio level of the Line input connector, in steps of 1 dB.
See the Audio Level tables in the Physical Interfaces Guide for the codec for a complete overview of the menu values represented in dB.

Requires user role: ADMIN

Value space: <0..24>
- Range: Select a value from 0 to 24 dB.

Example: xConfiguration Audio Input Line 1 Level: 10

xConfiguration Audio Input Line [1..2] LoopSuppression
Codec C40 and C60 currently does not support loop suppression, hence it is always Off.

Requires user role: ADMIN

Value space: <Off>
- Off: Deactivate Loop Suppression.

Example: xConfiguration Audio Input Line 1 LoopSuppression: Off

xConfiguration Audio Input Line [1..2] Mode
Set the audio input line mode.

Requires user role: ADMIN

Value space: <Off/On>
- Off: Disable the Audio Line input.
- On: Enable the Audio Line input.

Example: xConfiguration Audio Input Line 1 Mode: On

xConfiguration Audio Input Microphone [1..2]/[1..4] EchoControl Mode
NOTE: Codec C40 has two microphone connectors. Codec C60 has four microphone connectors.

The echo canceller continuously adjusts itself to the audio characteristics of the room and compensate for any changes it detects in the audio environment. If the changes in the audio conditions are very significant the echo canceller may take a second or two to re-adjust.

Requires user role: ADMIN

Value space: <Off/On>
- Off: Echo Control should be switched Off if external echo cancellation or playback equipment is used.
- On: Echo Control is normally set to On to prevent the far end from hearing their own audio. Once selected, echo cancellation is active at all times.

Example: xConfiguration Audio Input Microphone 1 EchoControl Mode: On

xConfiguration Audio Input Microphone [1..2]/[1..4] EchoControl NoiseReduction
NOTE: Codec C40 has two microphone connectors. Codec C60 has four microphone connectors.

The system has a built-in noise reduction which reduces constant background noise (for example noise from air-conditioning systems, cooling fans etc.). In addition, a high pass filter (Humfilter) reduces very low frequency noise. NOTE: Requires the Echo Control Mode to be enabled for the microphone.

Requires user role: ADMIN

Value space: <Off/On>
- Off: Turn off the Noise Reduction.
- On: The Noise Reduction should be enabled in the presence of low frequency noise.

Example: xConfiguration Audio Input Microphone 1 EchoControl NoiseReduction: On

xConfiguration Audio Input Microphone [1..2]/[1..4] EchoControl Dereverberation
NOTE: Codec C40 has two microphone connectors. Codec C60 has four microphone connectors.

The system has built-in signal processing to reduce the effect of room reverberation. NOTE: Requires the Echo Control Mode to be enabled for the microphone.

Requires user role: ADMIN

Value space: <Off/On>
- Off: Turn off the dereverberation.
- On: Turn on the dereverberation.

Example: xConfiguration Audio Input Microphone 1 EchoControl Dereverberation: On
xConfiguration Audio Input Microphone [1..2]/[1..4] Equalizer ID
NOTE: Codec C40 has two microphone connectors. Codec C60 has four microphone connectors.
Select the audio input microphone equalizer ID.

Requires user role: ADMIN
Value space: <1..8>
Range: Select Equalizer ID 1 to 8.
Example: xConfiguration Audio Input Microphone 1 Equalizer ID: 1

xConfiguration Audio Input Microphone [1..2]/[1..4] Equalizer Mode
NOTE: Codec C40 has two microphone connectors. Codec C60 has four microphone connectors.
Set the audio input microphone equalizer mode.

Requires user role: ADMIN
Value space: <Off/On>
Off: No equalizer.
On: Enable the equalizer for the audio input microphone.
Example: xConfiguration Audio Input Microphone 1 Equalizer Mode: Off

xConfiguration Audio Input Microphone [1..2]/[1..4] VideoAssociation
MuteOnInactiveVideo
NOTE: Codec C40 has two microphone connectors. Codec C60 has four microphone connectors.
Enable association of a video source to a microphone audio input.

Requires user role: ADMIN
Value space: <Off/On>
Off: No video source is associated.
On: A video source is associated, and the audio will be muted if the associated video source is not displayed.
Example: xConfiguration Audio Input Microphone 1 VideoAssociation MuteOnInactiveVideo: On

xConfiguration Audio Input Microphone [1..2]/[1..4] VideoInputSource
NOTE: Codec C40 has two microphone connectors. Codec C60 has four microphone connectors.
Select the associated video input source.

Requires user role: ADMIN
Value space: <1/2/3>
Range: Select one of the video input sources.
Example: xConfiguration Audio Input Microphone 1 VideoAssociation VideoInputSource: 1

xConfiguration Audio Input Microphone [1..2]/[1..4] Level
NOTE: Codec C40 has two microphone connectors. Codec C60 has four microphone connectors.
Define the audio level of the Microphone input connector, in steps of 1 dB.
See the Audio Level tables in the Physical Interfaces Guide for the codec for a complete overview of the values represented in dB.

Requires user role: ADMIN
Value space: <0..24>
Range: Select a value from 0 to 24 dB.
Example: xConfiguration Audio Input Microphone 1 Level: 15

xConfiguration Audio Input Microphone [1..2]/[1..4] Mode
NOTE: Codec C40 has two microphone connectors. Codec C60 has four microphone connectors.
Set the audio input microphone mode.

Requires user role: ADMIN
Value space: <Off/On>
Off: Disable the microphone connector.
On: Enable the microphone connector.
Example: xConfiguration Audio Input Microphone 1 Mode: On
xConfiguration Audio Input Microphone [1..2]/[1..4] Type

NOTE: Codec C40 has two microphone connectors. Codec C60 has four microphone connectors. The microphone connectors are intended for electret type microphones. The microphone connector can be set to line or microphone mode.

**Requires user role:** ADMIN

**Value space:** <Microphone/Line>

- **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.

**Example:** xConfiguration Audio Input Microphone 1 Type: Line

---

xConfiguration Audio Output HDMI [1] Level

Define the output level of the HDMI output connector, in steps of 1 dB. See the Audio Level tables in the Physical Interfaces Guide for the codec for a complete overview of the menu values represented in dB.

**Requires user role:** ADMIN

**Value space:** <-24..0>

**Range:** Select a value from -24 to 0 dB.

**Example:** xConfiguration Audio Output HDMI 1 Level: 0

---

xConfiguration Audio Output HDMI [1] Mode

Determine if the audio channel on the HDMI output connector shall be enabled.

**Requires user role:** ADMIN

**Value space:** <Off/On>

- **Off:** Disable the audio channel on the HDMI output.
- **On:** Enable the audio channel on the HDMI output.

**Example:** xConfiguration Audio Output HDMI 1 Mode: On

---

xConfiguration Audio Output Line [1..2]/[1..4] Type

**Requires user role:** ADMIN

**Value space:** <Microphone/Line>

- **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.

**Example:** xConfiguration Audio Input Microphone 1 Type: Line

---

xConfiguration Audio Output HDMI [1] Equalizer ID

Select the audio output line equalizer ID.

**Requires user role:** ADMIN

**Value space:** <1..8>

**Range:** Select EqualizerID 1 to 8.

**Example:** xConfiguration Audio Output HDMI 1 Equalizer ID: 1

---

xConfiguration Audio Output Line [1..2]/[1..4] Equalizer Mode

Set the audio output line equalizer mode.

**Requires user role:** ADMIN

**Value space:** <Off/On>

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

**Example:** xConfiguration Audio Output Line 1 Equalizer Mode: Off

---

xConfiguration Audio Output Line [1..2]/[1..4] Level

Define the output level of the Audio Output Line connector, in steps of 1 dB. See the Audio Level tables in the Physical Interfaces Guide for the codec for a complete overview of the menu values represented in dB.

**Requires user role:** ADMIN

**Value space:** <-24..0>

**Range:** Select a value from -24 to 0 dB.

**Example:** xConfiguration Audio Output Line 1 Level: -10
xConfiguration Audio Output Line [1..2] Mode
Set the audio output line mode.

Requires user role: ADMIN
Value space: <Off/On>
  Off: Disable the Audio Line output.
  On: Enable the Audio Line output.
Example: xConfiguration Audio Output Line 1 Mode: On

xConfiguration Audio Output Line [1] Type
Determine if the Audio Line output will be analog or digital type output. The digital output on the Cisco TelePresence Profile systems are identified as DNAM (Digital Natural Audio Module).

Requires user role: ADMIN
Value space: <Auto/SPDIF>
  Auto: If a Digital NAM is detected then SPDIF mode will be selected, otherwise analog mode will be selected.
  SPDIF: Set to SPDIF when you want the line output to be in digital mode.
Example: xConfiguration Audio Output Line 1 Type: Auto

xConfiguration Audio Output Line [2] Type
Line output 2 is a dedicated analog output, hence type can be set to analog only.

Requires user role: ADMIN
Value space: <Analog>
  Analog: Can be set to analog only.
Example: xConfiguration Audio Output Line 2 Type: Analog

xConfiguration Audio Microphones Mute Enabled
Determine whether audio-mute is allowed or not. The default value is True.

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

xConfiguration Audio SoundsAndAlerts KeyTones Mode
The system can be configured to make a keyboard click sound effect (key tone) when pressing a key on the remote control, or when typing text or numbers on a Touch controller.

Requires user role: USER
Value space: <Off/On>
  Off: No key tones will be played when you type.
  On: You will hear a key tone when you press a key or type text.
Example: xConfiguration Audio SoundsAndAlerts KeyTones Mode: Off

xConfiguration Audio SoundsAndAlerts RingTone
Select the ring tone for incoming calls.

Requires user role: USER
Value space: <Marbles/IceCrystals/Polaris/Alert/Discreet/Fantasy/Jazz/Nordic/Echo/Rhythmic>
  Range: Select a tone from the list of ring tones.
Example: xConfiguration Audio SoundsAndAlerts RingTone: Jazz

xConfiguration Audio SoundsAndAlerts RingVolume
Sets the ring volume for an incoming call.

Requires user role: USER
Value space: <0..100>
  Range: The value goes in steps of 5 from 0 to 100 (from ~34.5 dB to 15 dB). Volume 0 = Off.
Example: xConfiguration Audio SoundsAndAlerts RingVolume: 50

xConfiguration Audio Volume
Adjust the speaker volume.

Requires user role: USER
Value space: <0..100>
  Range: The value must be between 0 and 100. The values from 1 to 100 correspond to the range from ~34.5 dB to 15 dB (0.5 dB steps). The value 0 means that the audio is switched off.
Example: xConfiguration Audio Volume: 70
Cameras configuration

xConfiguration Cameras PowerLine Frequency
Applies to cameras supporting PowerLine frequency anti-flickering, i.e. PrecisionHD 1080p cameras.

Requires user role: ADMIN
Value space: <50Hz/60Hz>
50Hz: Set to 50 Hz.
60Hz: Set to 60 Hz.
Example: xConfiguration Cameras PowerLine Frequency: 50Hz

xConfiguration Cameras Camera [1..7] Backlight
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
Value space: <Off/On>
Off: Turn off the camera backlight compensation.
On: Turn on the camera backlight compensation.
Example: xConfiguration Cameras Camera 1 Backlight: Off

xConfiguration Cameras Camera [1..7] Brightness Mode
Set the camera brightness mode.

Requires user role: ADMIN
Value space: <Auto/Manual>
Auto: The camera brightness is automatically set by the system.
Manual: Enable manual control of the camera brightness. The brightness level is set using the Cameras Camera Brightness Level setting.
Example: xConfiguration Cameras Camera 1 Brightness Mode: Auto

xConfiguration Cameras Camera [1..7] Brightness Level
Set the brightness level. NOTE: Requires the Camera Brightness Mode to be set to Manual.

Requires user role: ADMIN
Value space: <1..31>
Range: Select a value from 1 to 31.
Example: xConfiguration Cameras Camera 1 Brightness Level: 1

xConfiguration Cameras Camera [1..7] Flip
With Flip mode (vertical flip) you can flip the image upside down.

Requires user role: ADMIN
Value space: <Auto/Off/On>
Auto: When the camera is placed upside down the image is automatically flipped upside down. This setting will only take effect for a camera that automatically detects which way it is mounted.
Off: Display the video on screen the normal way.
On: When enabled the video on screen is flipped. This setting is used when a camera is mounted upside down, but cannot automatically detect which way it is mounted.
Example: xConfiguration Cameras Camera 1 Flip: Off

xConfiguration Cameras Camera [1..7] Focus Mode
Set the camera focus mode.

Requires user role: ADMIN
Value space: <Auto/Manual>
Auto: The camera will auto focus once a call is connected, as well as after moving the camera (pan, tilt, zoom). The system will use auto focus only for a few seconds to set the right focus; then auto focus is turned off to prevent continuous focus adjustments of the camera.
Manual: Turn the autofocus off and adjust the camera focus manually.
Example: xConfiguration Cameras Camera 1 Focus Mode: Auto
xConfiguration Cameras Camera [1..7] Gamma Mode
Applies to cameras which support gamma mode. The Gamma Mode setting enables for gamma corrections. Gamma describes the nonlinear relationship between image pixels and monitor brightness. The Cisco TelePresence PrecisionHD 720p camera supports gamma mode. The PrecisionHD 1080p camera does not support gamma mode.

Requires user role: ADMIN

Value space: <Auto/Manual>

Auto: Auto is the default and the recommended setting.

Manual: In severe light conditions, you may switch mode to manual and specify explicitly which gamma table to use by setting the Gamma Level.

Example: xConfiguration Cameras Camera 1 Gamma Mode: Auto

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. NOTE: Requires the Gamma Mode to be set to Manual.

Requires user role: ADMIN

Value space: <0..7>

Range: Select a value from 0 to 7.

Example: xConfiguration Cameras Camera 1 Gamma Level: 0

xConfiguration Cameras Camera [1..7] IrSensor
The IR sensor LED is located in the front of the camera and flickers when the IR sensor is activated from the remote control. Both the Codec C Series and PrecisionHD camera have IR sensors, and only one of them needs to be enabled at the time.

Requires user role: ADMIN

Value space: <Off/On>

Off: Disable the IR sensor on the camera.

On: Enable the IR sensor on the camera.

Example: xConfiguration Cameras Camera 1 IrSensor: On

xConfiguration Cameras Camera [1..7] Mirror
With Mirror mode (horizontal flip) you can mirror the image on screen.

Requires user role: ADMIN

Value space: <Auto/Off/On>

Auto: When the camera is placed upside down the image is automatically mirrored. Use this setting with cameras that can be mounted upside down, and that can auto detect that the camera is mounted upside down.

Off: See the self view in normal mode, that is the experience of self view is as seeing yourself as other people see you.

On: See the self view in mirror mode, that is the self view is reversed and the experience of self view is as seeing yourself in a mirror.

Example: xConfiguration Cameras Camera 1 Mirror: Off

xConfiguration Cameras Camera [1..7] MotorMoveDetection
This setting applies only when using a Cisco TelePresence PrecisionHD 1080p12x camera. If adjusting the camera position by hand you can configure whether the camera should keep its new position or return to the preset or position it had before.

Requires user role: ADMIN

Value space: <Off/On>

Off: When the camera position is adjusted manually the camera will keep this position until adjusted again. WARNING: If moving the camera by hand, the camera will not register the new pan and tilt values since there is no position feedback. This will result in wrong pan and tilt values when recalling the camera presets subsequently.

On: When the camera position is adjusted manually, or the camera detects that the motors have moved, it will first re-initialize (i.e. go to default position) then return to the preset/position it had before the camera was adjusted.

Example: xConfiguration Cameras Camera 1 MotorMoveDetection: Off

xConfiguration Cameras Camera [1..7] Whitebalance Mode
Set the camera whitebalance mode.

Requires user role: ADMIN

Value space: <Auto/Manual>

Auto: The camera will continuously adjust the whitebalance depending on the camera view.

Manual: Enables manual control of the camera whitebalance. The whitebalance level is set using the Cameras Camera Whitebalance Level setting.

Example: xConfiguration Cameras Camera 1 Whitebalance Mode: Auto
**xConfiguration Cameras Camera [1..7] Whitebalance Level**

Set the whitebalance level. NOTE: Requires the Camera Whitebalance Mode to be set to manual.

- **Requires user role:** ADMIN
- **Value space:** <1..16>
  - **Range:** Select a value from 1 to 16.
- **Example:** `xConfiguration Cameras Camera 1 Whitebalance Level: 1`

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

Applies to cameras which support DHCP (for example the Cisco TelePresence PrecisionHD 1080p 12X camera). The camera must be connected to a LAN. When set, the command enables support for SW upgrade of daisy chained cameras. It will enable the camera’s DHCP function and force start of MAC and IP address retrieval. Remember to reset the DHCP when the camera is no longer connected to a LAN.

- **Requires user role:** ADMIN
- **Value space:** <Off/On>
  - **Off:** Disable DHCP in the camera. NOTE: This setting should be applied when the camera is not connected to a LAN.
  - **On:** Enable DHCP in the camera. The camera is automatically re-booted. After re-boot the DHCP is started and the IP address will be retrieved. Run the command “xStatus Camera” for result.
- **Example:** `xConfiguration Cameras Camera 1 DHCP: Off`

**Conference configuration**

**xConfiguration Conference [1..1] CallProtocolIPStack**

Select if the call protocol (SIP, H323) should use the IPv4 or IPv6 address when the system has IP connectivity on both protocol versions at the same time, e.g. when the network interface (Network IPStack) is set to Dual.

- **Requires user role:** ADMIN
- **Value space:** <IPv4/IPv6>
  - **IPv4:** When set to IPv4, the call protocol (SIP, H323) will use IPv4.
  - **IPv6:** When set to IPv6, the call protocol (SIP, H323) will use IPv6.
- **Example:** `xConfiguration Conference 1 CallProtocolIPStack: IPv4`

**xConfiguration Conference [1..1] LyncCompatibility**

The TelePresence endpoints, running TC6.2 software, or later are Lync 2013 ready.

NOTE: Requires version X8 of the VCS (Video Communication Server). You can make calls to Lync 2013 from your TelePresence endpoint and vice versa and the call will have support for audio and video.

NOTE: To make Lync 2013 contacts available in the phonebook on the endpoint the TMS (TelePresence Management System) version 13.x, or later, must be configured.

- **Requires user role:** ADMIN
- **Value space:** <Off/On>
  - **Off:** When set to Off, Lync 2013 compatibility on the endpoint is disabled. This is the default value.
  - **On:** When set to Off, Lync 2013 compatibility on the endpoint is enabled.
- **Example:** `xConfiguration Conference 1 LyncCompatibility: Off`

**xConfiguration Conference [1..1] AutoAnswer Mode**

Set the auto answer mode.

- **Requires user role:** ADMIN
- **Value space:** <Off/On>
  - **Off:** An incoming call must be answered manually by pressing the OK key or the green Call key on the remote control, or by tapping the Accept key on the Touch controller.
  - **On:** Enable auto answer to let the system automatically answer all incoming calls.
- **Example:** `xConfiguration Conference 1 AutoAnswer Mode: Off`
xConfiguration Conference [1..1] AutoAnswer Mute
Determine if the microphone shall be muted when an incoming call is automatically answered.
NOTE: Requires that AutoAnswer Mode is switched on.

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

Example: xConfiguration Conference 1 AutoAnswer Mute: Off

xConfiguration Conference [1..1] AutoAnswer Delay
Define how long (in seconds) an incoming call has to wait before it is answered automatically by the system. NOTE: Requires that AutoAnswer Mode is switched on.

Requires user role: ADMIN
Value space: <0..50>
Range: Select a value from 0 to 50 seconds.

Example: xConfiguration Conference 1 AutoAnswer Delay: 0

xConfiguration Conference [1..1] MicUnmuteOnDisconnect Mode
Determine if the microphones shall be unmuted automatically when all calls are disconnected. In a meeting room or other shared resources this may be done to prepare the system for the next user.

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

Example: xConfiguration Conference 1 MicUnmuteOnDisconnect Mode: On

xConfiguration Conference [1..1] DoNotDisturb Mode
Determine if there should be an alert on incoming calls.

Requires user role: ADMIN
Value space: <Off/On/Timed>
- Off: The incoming calls will come through as normal.
- On: All incoming calls will be rejected and they will be registered as missed calls. The calling side will receive a busy signal. A message telling that Do Not Disturb is switched on will display on the Touch controller or main display. The calls received while in Do Not Disturb mode will be shown as missed calls.
- Timed: Select this option only if using the API to switch Do Not Disturb mode on and off (xCommand Conference DoNotDisturb Activate and xCommand Conference DoNotDisturb Deactivate).

Example: xConfiguration Conference 1 DoNotDisturb Mode: Off

xConfiguration Conference [1..1] 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 (remote control or Touch controller) or the Conference DoNotDisturb Mode setting. The default value is 60 minutes.

Requires user role: ADMIN
Value space: <0..1440>
Range: Select the number of minutes (between 0 and 1440, i.e. 24 hours) before the Do Not Disturb session times out automatically.

Example: xConfiguration Conference 1 DoNotDisturb DefaultTimeOut: 60

xConfiguration Conference [1..1] 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
Value space: <Off/On>
- Off: The far end is not allowed to select your video sources or to control your local camera (pan, tilt, zoom).
- On: Allows the far end to be able to select your video sources and control your local camera (pan, tilt, zoom). You will still be able to control your camera and select your video sources as normal.

Example: xConfiguration Conference 1 FarEndControl Mode: On
xConfiguration Conference [1..1] FarEndControl SignalCapability
Set the far end control (H.224) signal capability mode.

Requires user role: ADMIN
Value space: <Off/On>
Off: Disable the far end control signal capability.
On: Enable the far end control signal capability.
Example: xConfiguration Conference 1 FarEndControl SignalCapability: On

xConfiguration Conference [1..1] Encryption Mode
Set 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.

Requires user role: ADMIN
Value space: <Off/On/BestEffort>
Off: The system will not use encryption.
On: The system will only allow calls that are encrypted.
BestEffort: The system will use encryption whenever possible.
   > In Point to point calls: If the far end system supports encryption (AES-128), the call will be encrypted. If not, the call will proceed without encryption.
   > In MultiSite calls: In order to have encrypted MultiSite conferences, all sites must support encryption. If not, the conference will be unencrypted.
Example: xConfiguration Conference 1 Encryption Mode: BestEffort

xConfiguration Conference [1..1] DefaultCall Protocol
Set the Default Call Protocol to be used when placing calls from the system.

Requires user role: ADMIN
Value space: <H323/Sip/H320>
H323: H323 ensures that calls are set up as H.323 calls.
Sip: Sip ensures that calls are set up as SIP calls.
H320: H320 ensures that calls are set up as H.320 calls (only applicable if connected to a Cisco TelePresence ISDN Link gateway).
Example: xConfiguration Conference 1 DefaultCall Protocol: H323

xConfiguration Conference [1..1] DefaultCall Rate
Set the Default Call Rate to be used when placing calls from the system.

Requires user role: ADMIN
Value space: <64..6000>
Range: Select a value between 64 and 6000 kbps.
Example: xConfiguration Conference 1 DefaultCall Rate: 768

xConfiguration Conference [1..1] MaxTransmitCallRate
Specify 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
Value space: <64..6000>
Range: Select a value between 64 and 6000 kbps.
Example: xConfiguration Conference 1 MaxTransmitCallRate: 6000

xConfiguration Conference [1..1] MaxReceiveCallRate
Specify 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
Value space: <64..6000>
Range: Select a value between 64 and 6000 kbps.
Example: xConfiguration Conference 1 MaxReceiveCallRate: 6000
**xConfiguration Conference [1..1] MaxTotalTransmitCallRate**

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

Specify 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

**Value space:** <64..10000>

**Range:** Select a value between 64 and 10000.

**Example:**
```
xConfiguration Conference 1 MaxTotalTransmitCallRate: 9000
```

---

**xConfiguration Conference [1..1] MaxTotalReceiveCallRate**

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

Specify 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

**Value space:** <64..10000>

**Range:** Select a value between 64 and 10000.

**Example:**
```
xConfiguration Conference 1 MaxTotalReceiveCallRate: 9000
```

---

**xConfiguration Conference [1..1] VideoBandwidth Mode**

Set the conference video bandwidth mode.

**Requires user role:** ADMIN

**Value space:** <Dynamic/Static>

**Dynamic:** The available transmit bandwidth for the video channels are distributed among the currently active channels. If there is no presentation, the main video channels will use the bandwidth of the presentation channel.

**Static:** The available transmit bandwidth is assigned to each video channel, even if it is not active.

**Example:**
```
xConfiguration Conference 1 VideoBandwidth Mode: Dynamic
```

---

**xConfiguration Conference [1..1] VideoBandwidth MainChannel Weight**

The available transmit video bandwidth is distributed on the main channel and presentation channel according to "MainChannel Weight" and "PresentationChannel Weight". If the main channel weight is 2 and the presentation channel weight is 1, then the main channel will use twice as much bandwidth as the presentation channel.

**Requires user role:** ADMIN

**Value space:** <1..10>

**Range:** 1 to 10.

**Example:**
```
xConfiguration Conference 1 VideoBandwidth MainChannel Weight: 5
```

---

**xConfiguration Conference [1..1] VideoBandwidth PresentationChannel Weight**

The available transmit video bandwidth is distributed on the main channel and presentation channel according to "MainChannel Weight" and "PresentationChannel Weight". If the main channel weight is 2 and the presentation channel weight is 1, then the main channel will use twice as much bandwidth as the presentation channel.

**Requires user role:** ADMIN

**Value space:** <1..10>

**Range:** 1 to 10.

**Example:**
```
xConfiguration Conference 1 VideoBandwidth PresentationChannel Weight: 5
```

---

**xConfiguration Conference [1..1] PacketLossResilience Mode**

Set the packetloss resilience mode. This configuration will only take effect for calls initiated after the configuration is set.

**Requires user role:** ADMIN

**Value space:** <Off/On>

**Off:** Disable the packetloss resilience.

**On:** Enable the packetloss resilience.

**Example:**
```
xConfiguration Conference 1 PacketLossResilience Mode: On
```

---

**xConfiguration Conference [1..1] Presentation Policy**

Control how the presentation service is to be performed.

**Requires user role:** ADMIN

**Value space:** <LocalRemote/LocalOnly>

**LocalRemote:** The presentation will be shown locally and sent to remote side.

**LocalOnly:** The presentation will only be shown locally.

**Example:**
```
xConfiguration Conference 1 Presentation Policy: LocalRemote
```
**xConfiguration Conference [1..1] Presentation RelayQuality**

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

Requires user role: ADMIN

Value space: <Motion/Sharpness>

Motion: Gives the highest possible frame rate. Used when there is a need for higher frame rates, typically when there is a lot of motion in the picture.

Sharpness: Gives the highest possible resolution. Used when you want the highest quality of detailed images and graphics.

Example: `xConfiguration Conference 1 Presentation RelayQuality: Sharpness`

**xConfiguration Conference [1..1] Presentation OnPlacedOnHold**

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

Requires user role: ADMIN

Value space: <Stop/NoAction>

Stop: The video system stops the presentation sharing when the remote site puts you on hold. The presentation will not continue when the call is resumed.

NoAction: The video system will not stop the presentation sharing when put on hold. The presentation will not be shared while you are on hold, but it will continue automatically when the call is resumed.

Example: `xConfiguration Conference 1 Presentation OnPlacedOnHold: NoAction`

**xConfiguration Conference [1..1] Multipoint Mode**

Define how the video system handles multiparty video conferences.

If registered to a Cisco TelePresence Video Communication Server (VCS), the video system can either use its own built-in MultiSite feature, or it can rely on the MultiWay network solution. MultiWay requires that the video network includes a multipoint control unit (MCU).

If registered to a Cisco Unified Communications Manager (CUCM) version 8.6.2 or newer, the video system can use either the CUCM conference bridge, or the video system’s own built-in MultiSite feature. Which one to use is set-up by CUCM.

Both Multiway and the CUCM conference bridge allows you to set up conferences with many participants. The MultiSite feature allows up to four participants (yourself included) plus one additional audio call.

Note that the MultiSite feature is optional and may not be available on all video systems.

Requires user role: ADMIN

Value space: <Auto/Off/MultiSite/MultiWay/CUCMMediaResourceGroupList>

Auto: If a MultiWay address is specified in the NetworkServices MultiWay Address setting, MultiWay takes priority over MultiSite. If neither MultiWay nor MultiSite is available, the Multipoint Mode is set to Off automatically.

Off: Multiparty conferences are not allowed.

MultiSite: Multiparty conferences are set up using MultiSite. If MultiSite is chosen when the MultiSite feature is not available, the Multipoint Mode will be set to Off automatically.

MultiWay: Multiparty conferences are set up using MultiWay. The Multipoint Mode will be set to Off automatically if the MultiWay service is unavailable, for example if a server address is not specified in the NetworkServices MultiWay Address setting.

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.

Example: `xConfiguration Conference 1 Multipoint Mode: Auto`

**xConfiguration Conference [1..1] IncomingMultisiteCall Mode**

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

Requires user role: ADMIN

Value space: <Allow/Deny>

Allow: You will be notified when someone calls you while you are already in a call. You can accept the incoming call or not. The ongoing call may be put on hold while answering the incoming call, or you may merge the calls (requires MultiSite or MultiWay support).

Deny: An incoming call will be rejected if you are already in a call. You will not be notified about the incoming call. However, the call will appear as a missed call in the call history list.

Example: `xConfiguration Conference 1 IncomingMultisiteCall Mode: Allow`
FacilityService configuration

xConfiguration FacilityService Service [1..5] Type

Up to five different facility services can be supported simultaneously. With this setting you can select what kind of services they are.
A facility service is not available unless both the FacilityService Service Name and the FacilityService Service Number settings are properly set.
Only FacilityService Service 1 with Type Helpdesk is available on the Touch controller. Facility services are not available when using the remote control and on-screen menu.

Requires user role: ADMIN

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

Example: xConfiguration FacilityService Service 1 Type: Helpdesk

xConfiguration FacilityService Service [1..5] Name

Set the name of each facility service. Up to five different facility services are supported.
A facility service is not available unless both the FacilityService Service Name and the FacilityService Service Number settings are properly set.
Only FacilityService Service 1 is available on the Touch controller, and its Name is used on the facility service call button. Facility services are not available when using the remote control and on-screen menu.

Requires user role: ADMIN

Value space: <S: 0, 255>
- Format: String with a maximum of 255 characters.

Example: xConfiguration FacilityService Service 1 Name: ""

xConfiguration FacilityService Service [1..5] CallType

Set the call type for each facility service. Up to five different facility services are supported.
A facility service is not available unless both the FacilityService Service Name and the FacilityService Service Number settings are properly set.
Only FacilityService Service 1 is available on the Touch controller. Facility services are not available when using the remote control and on-screen menu.

Requires user role: ADMIN

Value space: <Video/Audio>
- Video: Select this option for video calls.
- Audio: Select this option for audio calls.

Example: xConfiguration FacilityService Service 1 CallType: Video
**GPIO configuration**

**xConfiguration GPIO Pin [1..4] Mode**

NOTE: This command is not supported on Codec C40.

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 output, they are set to 0 V. To activate them as input, they must be pulled down to 0 V.

**Requires user role:** ADMIN

**Value space:** <InputNoAction/OutputManualState/OutputInCall/OutputMicrophonesMuted/OutputPresentationOn/OutputAllCallsEncrypted/OutputStandbyActive/InputMuteMicrophones>

- **InputNoAction:** The pin state can be set, but no operation is performed.
- **OutputManualState:** The pin state can be set by "xCommand GPIO ManualState Set PinX: <High/Low>" (to +12 V or 0 V, respectively).
- **OutputInCall:** The pin is activated when in call, deactivated when not in call.
- **OutputMicrophonesMuted:** The pin is activated when microphones are muted, deactivated when not muted.
- **OutputPresentationOn:** The pin is activated when presentation is active, deactivated when presentation is not active.
- **OutputAllCallsEncrypted:** The pin is activated when all calls are encrypted, deactivated when one or more calls are not encrypted.
- **OutputStandbyActive:** The pin is activated when the system is in standby mode, deactivated when no longer in standby.
- **InputMuteMicrophones:** When the pin is activated (0 V), the microphones will be muted. When deactivated (+ 12 V), the microphones are unmuted.

**Example:** xConfiguration GPIO Pin 1 Mode: InputNoAction

**H323 configuration**

**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

**Value space:** <Auto/Off/On>

- **Auto:** The system will determine if the H323 NAT Address or the real IP address should be used in signaling. This makes it possible to place calls to endpoints on the LAN as well as endpoints on the WAN. If the H323 NAT Address is wrong or not set, the real IP address will be used.
- **Off:** The system will signal the real IP address.
- **On:** The system will signal the configured H323 NAT Address instead of its real IP address in Q.931 and H.245. The NAT Server Address will be shown in the startup-menu as: "My IP Address: 10.0.2.1". If the H323 NAT Address is wrong or not set, H.323 calls cannot be set up.

**Example:** xConfiguration H323 NAT Mode: Off

**xConfiguration H323 NAT Address**

Enter 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

**Value space:** <S: 0, 64>

**Format:** A valid IPv4 address or IPv6 address.

**Example:** xConfiguration H323 NAT Address: ""
xConfiguration H323 Profile [1..1] Authentication Mode
Set the authentication mode for the H.323 profile.

**Requires user role:** ADMIN

**Value space:** <Off/On>

*Off:* If the H.323 Gatekeeper Authentication Mode is set to Off the system will not try to authenticate itself to a H.323 Gatekeeper, but will still try a normal registration.

*On:* If the H.323 Gatekeeper Authentication Mode is set to On and a H.323 Gatekeeper indicates that it requires authentication, the system will try to authenticate itself to the gatekeeper. NOTE: Requires the Authentication LoginName and Authentication Password to be defined on both the codec and the Gatekeeper.

**Example:** xConfiguration H323 Profile 1 Authentication Mode: Off

xConfiguration H323 Profile [1..1] Authentication LoginName
The system sends the Authentication Login Name and the Authentication Password to a 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. NOTE: Requires the H.323 Gatekeeper Authentication Mode to be enabled.

**Requires user role:** ADMIN

**Value space:** <S: 0, 50>

*Format:* String with a maximum of 50 characters.

**Example:** xConfiguration H323 Profile 1 Authentication LoginName: ""

xConfiguration H323 Profile [1..1] Authentication Password
The system sends the Authentication Login Name and the Authentication Password to a 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. NOTE: Requires the H.323 Gatekeeper Authentication Mode to be enabled.

**Requires user role:** ADMIN

**Value space:** <S: 0, 50>

*Format:* String with a maximum of 50 characters.

**Example:** xConfiguration H323 Profile 1 Authentication Password: ""

xConfiguration H323 Profile [1..1] CallSetup Mode
The H.323 Call Setup Mode defines whether to use a Gatekeeper or Direct calling when establishing H323 calls.

NOTE: Direct H.323 calls can be made even though the H.323 Call Setup Mode is set to Gatekeeper.

**Requires user role:** ADMIN

**Value space:** <Direct/Gatekeeper>

*Direct:* An IP address must be used when dialing in order to make the H323 call.

*Gatekeeper:* The system will use a Gatekeeper to make a H.323 call. When selecting this option the H323 Profile Gatekeeper Address and H323 Profile Gatekeeper Discovery settings must also be configured.

**Example:** xConfiguration H323 Profile 1 CallSetup Mode: Gatekeeper

xConfiguration H323 Profile [1..1] Gatekeeper Discovery
Determine how the system shall register to a H.323 Gatekeeper.

**Requires user role:** ADMIN

**Value space:** <Manual/Auto>

*Manual:* The system will use a specific Gatekeeper identified by the Gatekeeper’s IP address.

*Auto:* The system will automatically try to register to any available Gatekeeper. If a Gatekeeper responds to the request sent from the codec within 30 seconds this specific Gatekeeper will be used. This requires that the Gatekeeper is in auto discovery mode as well. If no Gatekeeper responds, the system will not use a Gatekeeper for making H.323 calls and hence an IP address must be specified manually.

**Example:** xConfiguration H323 Profile 1 Gatekeeper Discovery: Manual

xConfiguration H323 Profile [1..1] Gatekeeper Address
Enter the IP address of the Gatekeeper. NOTE: Requires the H.323 Call Setup Mode to be set to Gatekeeper and the Gatekeeper Discovery to be set to Manual.

**Requires user role:** ADMIN

**Value space:** <S: 0, 255>

*Format:* A valid IPv4 address, IPv6 address or DNS name.

**Example:** xConfiguration H323 Profile 1 Gatekeeper Address: "192.0.2.0"
xConfiguration H323 Profile [1..1] H323Alias E164
The H.323 Alias E164 defines the address of the system, according to the numbering plan implemented in the H.323 Gatekeeper. The E164 alias is equivalent to a telephone number, sometimes combined with access codes.

Requires user role: ADMIN
Value space: <S: 0, 30>

Format: Compact string with a maximum of 30 characters. Valid characters are 0-9, *, and #.
Example: xConfiguration H323 Profile 1 H323Alias E164: "90550092"

xConfiguration H323 Profile [1..1] H323Alias ID
Lets you specify 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. Example: *firstname.lastname@company.com", "My H.323 Alias ID"

Requires user role: ADMIN
Value space: <S: 0, 49>

Format: String with a maximum of 49 characters.
Example: xConfiguration H323 Profile 1 H323Alias ID: "firstname.lastname@company.com"

xConfiguration H323 Profile [1..1] PortAllocation
The H.323 Port Allocation setting affects the H.245 port numbers used for H.323 call signalling.

Requires user role: ADMIN
Value space: <Dynamic/Static>

Dynamic: The system will allocate which ports to use when opening a TCP connection. The reason for doing this is to avoid using the same ports for subsequent calls, as some firewalls consider this as a sign of attack. When Dynamic is selected, the H.323 ports used are from 11000 to 20999. Once 20999 is reached they restart again at 11000. For RTP and RTCP media data, the system is using UDP ports in the range 2326 to 2487. Each media channel is using two adjacent ports, ie 2330 and 2331 for RTP and RTCP respectively. The ports are automatically selected by the system within the given range. Firewall administrators should not try to deduce which ports are used when, as the allocation schema within the mentioned range may change without any further notice.

Static: When set to Static the ports are given within a static predefined range [5555-6555].
Example: xConfiguration H323 Profile 1 PortAllocation: Dynamic

Network configuration

xConfiguration Network [1..1] IPStack
Select if the system should use IPv4, IPv6 or Dual on the network interface. Dual means that the system will be able to operate on both IP versions at the same time. This means that the system can have both an IPv4 and an IPv6 address at the same time.

NOTE: Restart the system after changing this setting.

Requires user role: ADMIN
Value space: <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.

Example: xConfiguration Network 1 IPStack: IPv4

xConfiguration Network [1..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
Value space: <Static/DHCP>

Static: The addresses must be configured manually using the Network IPv4 Address, Network IPv4 Gateway and Network IPv4 SubnetMask settings (static addresses).
DHCP: The system addresses are automatically assigned by the DHCP server.

Example: xConfiguration Network 1 IPv4 Assignment: DHCP

xConfiguration Network [1..1] IPv4 Address
Enter the static IPv4 network address for the system. This setting is only applicable when Network Assignment is set to Static.

Requires user role: ADMIN
Value space: <S: 0, 64>

Format: A valid IPv4 address.
Example: xConfiguration Network 1 IPv4 Address: "192.0.2.2"
xConfiguration Network [1..1] IPv4 Gateway
Define the IPv4 network gateway. This setting is only applicable when the Network Assignment is set to Static.

Requires user role: ADMIN
Value space: <S: 0, 64>
Format: A valid IPv4 address.
Example: xConfiguration Network 1 IPv4 Gateway: "192.0.2.1"

xConfiguration Network [1..1] IPv4 SubnetMask
Define the IPv4 network subnet mask. This setting is only applicable when the Network Assignment is set to Static.

Requires user role: ADMIN
Value space: <S: 0, 64>
Format: The valid IPv4 address format.
Example: xConfiguration Network 1 IPv4 SubnetMask: "255.255.255.0"

xConfiguration Network [1..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
Value space: <Static/DHCPv6/Autoconf>
Static: The codec and gateway IP addresses must be configured manually using the Network IPv6 Address and Network IPv6 Gateway settings. The options, for example NTP and DNS server addresses, must either be set manually or obtained from a DHCPv6 server. The Network IPv6 DHCPOptions setting determines which method to use.
DHCPv6: All IPv6 addresses, including options, will be obtained from a DHCPv6 server. See RFC 3315 for a detailed description. The Network IPv6 DHCPOptions setting will be ignored.
Autoconf: Enable IPv6 stateless autoconfiguration of the IPv6 network interface. See RFC 4862 for a detailed description. The options, for example NTP and DNS server addresses, must either be set manually or obtained from a DHCPv6 server. The Network IPv6 DHCPOptions setting determines which method to use.

Example: xConfiguration Network 1 IPv6 Assignment: Autoconf

xConfiguration Network [1..1] IPv6 Address
Enter the static IPv6 network address for the system. This setting is only applicable when the Network IPv6 Assignment is set to Static.

Requires user role: ADMIN
Value space: <S: 0, 64>
Format: A valid IPv6 address.
Example: xConfiguration Network 1 IPv6 Address: "2001:0DB8:0000:0000:0000:0000:0000:0002"

xConfiguration Network [1..1] IPv6 Gateway
Define the IPv6 network gateway address. This setting is only applicable when the Network IPv6 Assignment is set to Static.

Requires user role: ADMIN
Value space: <S: 0, 64>
Format: A valid IPv6 address.
Example: xConfiguration Network 1 IPv6 Gateway: "2001:0DB8:0000:0000:0000:0000:0000:0001"

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

Requires user role: ADMIN
Value space: <Off/On>
Off: Disable the retrieval of DHCP options from a DHCPv6 server.
On: Enable the retrieval of a selected set of DHCP options from a DHCPv6 server.
Example: xConfiguration Network 1 IPv6 DHCPOptions: On
xConfiguration Network [1..1] DHCP RequestTFTPServerAddress
This setting is used only for video systems that are registered to a Cisco Unified Communications Manager (CUCM).

The setting determines whether the endpoint should ask the DHCP server for DHCP option 150, so that it can discover the address of the TFTP server (provisioning server) automatically.

If this setting is Off or the DHCP server does not support option 150, the TFTP server address must be set manually using the Provisioning ExternalManager Address setting.

Note: If the Network VLAN Voice Mode setting is Auto and the Cisco Discovery Protocol (CDP) assigns an ID to the voice VLAN, then a request for option 150 will always be sent. That is, the Network DHCP RequestTFTPServerAddress setting will be ignored.

Requires user role: ADMIN
Value space: <Off/On>

Off: The video system will not send a request for DHCP option 150 and the address of the TFTP server must be set manually. See the note above for any exception to this rule.

On: The video system will send a request for option 150 to the DHCP server so that it can automatically discover the address of the TFTP server.

Example: xConfiguration Network 1 DHCP RequestTFTPServerAddress: On

xConfiguration Network [1..1] DNS Domain Name
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
Value space: <S: 0, 64>

Format: String with a maximum of 64 characters.

Example: xConfiguration Network 1 DNS Domain Name: ""

xConfiguration Network [1..1] DNS Server [1..3] Address
Define the network addresses for DNS servers. Up to 3 addresses may be specified. If the network addresses are unknown, contact your administrator or Internet Service Provider.

Requires user role: ADMIN
Value space: <S: 0, 64>

Format: A valid IPv4 address or IPv6 address.

Example: xConfiguration Network 1 DNS Server 1 Address: ""

xConfiguration Network [1..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
Value space: <Off/Diffserv>

Off: No QoS method is used.

Diffserv: When you set the QoS Mode to Diffserv, the Network QoS Diffserv Audio, Network QoS Diffserv Video, Network QoS Diffserv Data, Network QoS Diffserv Signalling, Network QoS Diffserv ICMPv6 and Network QoS Diffserv NTP settings are used to prioritize packets.

Example: xConfiguration Network 1 QoS Mode: Diffserv

xConfiguration Network [1..1] QoS Diffserv Audio
Note: 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
Value space: <0..63>

Range: Select a value between 0 to 63 - the higher the number, the higher the priority. The default value is 0 (best effort).

Example: xConfiguration Network 1 QoS Diffserv Audio: 0
xConfiguration Network [1..1] QoS Diffserv Video

Note: 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
Value space: <0..63>
  Range: Select a value between 0 to 63 - the higher the number, the higher the priority. The default value is 0 (best effort).

Example: xConfiguration Network 1 QoS Diffserv Video: 0

xConfiguration Network [1..1] QoS Diffserv Data

Note: 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
Value space: <0..63>
  Range: Select a value between 0 to 63 - the higher the number, the higher the priority. The default value is 0 (best effort).

Example: xConfiguration Network 1 QoS Diffserv Data: 0

xConfiguration Network [1..1] QoS Diffserv Signalling

Note: 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
Value space: <0..63>
  Range: Select a value between 0 to 63 - the higher the number, the higher the priority. The default value is 0 (best effort).

Example: xConfiguration Network 1 QoS Diffserv Signalling: 0

xConfiguration Network [1..1] QoS Diffserv ICMPv6

Note: 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
Value space: <0..63>
  Range: Select a value between 0 to 63 - the higher the number, the higher the priority. The default value is 0 (best effort).

Example: xConfiguration Network 1 QoS Diffserv ICMPv6: 0
xConfiguration Network [1..1] QoS Diffserv NTP
Note: 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
Value space: <0..63>
Range: Select a value between 0 to 63 - the higher the number, the higher the priority. The default value is 0 (best effort).
Example: xConfiguration Network 1 QoS Diffserv NTP: 0

xConfiguration Network [1..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
Value space: <Off/On>
Off: The 802.1X authentication is disabled (default).
On: The 802.1X authentication is enabled.
Example: xConfiguration Network 1 IEEE8021X Mode: Off

xConfiguration Network [1..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..1] IEEE8021X Eap Tls is enabled (On).
Requires user role: ADMIN
Value space: <Off/On>
Off: When set to Off, TLS connections are allowed without verifying the server-side X.509 certificate against the local CA-list. This should typically be selected if no CA-list has been uploaded to the codec.
On: When set to On, the server-side X.509 certificate will be validated against the local CA-list for all TLS connections. Only servers with a valid certificate will be allowed.
Example: xConfiguration Network 1 IEEE8021X TlsVerify: Off

xConfiguration Network [1..1] IEEE8021X UseClientCertificate
Authentication using a private key/certificate pair during an IEEE8021x 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
Value space: <Off/On>
Off: When set to Off client-side authentication is not used (only server-side).
On: When set to On the client (video system) will perform a mutual authentication TLS handshake with the server.
Example: xConfiguration Network 1 IEEE8021X UseClientCertificate: Off

xConfiguration Network [1..1] IEEE8021X Identity
The 802.1X Identity is the user name needed for 802.1X authentication.
Requires user role: ADMIN
Value space: <S: 0, 64>
Format: String with a maximum of 64 characters.
Example: xConfiguration Network 1 IEEE8021X Identity: ""

xConfiguration Network [1..1] IEEE8021X Password
The 802.1X Password is the password needed for 802.1X authentication.
Requires user role: ADMIN
Value space: <S: 0, 32>
Format: String with a maximum of 32 characters.
Example: xConfiguration Network 1 IEEE8021X Password: ""

xConfiguration Network [1..1] IEEE8021X AnonymousIdentity
The 802.1X Anonymous ID string is to be used as unencrypted identity with EAP (Extensible Authentication Protocol) types that support different tunneled identity, like EAP-PEAP and EAP-TTLS. If set, the anonymous ID will be used for the initial (unencrypted) EAP Identity Request.
Requires user role: ADMIN
Value space: <S: 0, 64>
Format: String with a maximum of 64 characters.
Example: xConfiguration Network 1 IEEE8021X AnonymousIdentity: ""
**xConfiguration Network [1..1] IEEE8021X Eap Md5**

Set 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

Value space: <Off/On>

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

Example: `xConfiguration Network 1 IEEE8021X Eap Md5: On`

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**xConfiguration Network [1..1] IEEE8021X Eap Ttls**

Set 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

Value space: <Off/On>

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

Example: `xConfiguration Network 1 IEEE8021X Eap Ttls: On`

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**xConfiguration Network [1..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

Value space: <Off/On>

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

Example: `xConfiguration Network 1 IEEE8021X Eap Tls: On`

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**xConfiguration Network [1..1] MTU**

Set the Ethernet MTU (Maximum Transmission Unit).

Requires user role: ADMIN

Value space: **<576..1500>**

Range: Select a value from 576 to 1500 bytes.

Example: `xConfiguration Network 1 MTU: 1500`
xConfiguration Network [1..1] TrafficControl Mode
Set the network traffic control mode to decide how to control the video packets transmission speed.

Requires user role: ADMIN
Value space: <Off/On>

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

Example: xConfiguration Network 1 TrafficControl: On

xConfiguration Network [1..1] RemoteAccess Allow
Filter IP addresses for access to ssh/telnet/HTTP/HTTPS.

Requires user role: ADMIN
Value space: <S: 0, 255>

Format: String with a maximum of 255 characters, comma separated IP addresses or IP range.

Example: xConfiguration Network 1 RemoteAccess Allow: "192.168.1.231, 192.168.1.182"

xConfiguration Network [1..1] VLAN Voice Mode
Set the VLAN voice mode. The VLAN Voice Mode will be set to Auto automatically if you choose Cisco UCM (Cisco Unified Communications Manager) as provisioning infrastructure via the Provisioning Wizard on the Touch controller.

Requires user role: ADMIN
Value space: <Auto/Manual/Off>

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

Example: xConfiguration Network 1 VLAN Voice Mode: Off

xConfiguration Network [1..1] VLAN Voice VlanId
Set the VLAN voice ID. This setting will only take effect if VLAN Voice Mode is set to Manual.

Requires user role: ADMIN
Value space: <1..4094>

Range: Select a value from 1 to 4094.

Example: xConfiguration Network 1 VLAN Voice VlanId: 1
NetworkServices configuration

xConfiguration NetworkServices XMLAPI Mode
Enable or disable the video system's XML API. For security reasons this may be disabled. Disabling the XML API will limit the remote manageability with for example TMS, which no longer will be able to connect to the video system.

Requires user role: ADMIN

Value space: <Off/On>
- Off: The XML API is disabled.
- On: The XML API is enabled (default).

Example: xConfiguration NetworkServices XMLAPI Mode: On

xConfiguration NetworkServices MultiWay Address
The MultiWay address must be equal to the Conference Factory Alias, as configured on the Video Communication Server. The Multiway™ conferencing enables video endpoint users to introduce a 3rd party into an existing call.

Multiway™ can be used in the following situations:
1) When you want to add someone else in to your existing call.
2) When you are called by a 3rd party while already in a call and you want to include that person in the call.

Requirements: The Codec C60/C40 must run software version TC4.0 (or later), Video Communication Server (VCS) version X5 (or later) and Codian MCU version 3.1 (or later). Video systems invited to join the Multiway™ conference must support the H.323 routeToMC facility message if in an H.323 call, or SIP REFER message if in a SIP call.

Requires user role: ADMIN

Value space: <S: 0, 255>
- Format: String with a maximum of 255 characters (a valid dial URI).

Example: xConfiguration NetworkServices MultiWay Address: "h323://multiway@company.com"

xConfiguration NetworkServices MultiWay Protocol
Determine the protocol to be used for MultiWay calls.

Requires user role: ADMIN

Value space: <Auto/H323/Sip>
- Auto: The system will select the protocol for MultiWay calls.
- H323: The H323 protocol will be used for MultiWay calls.
- Sip: The SIP protocol will be used for MultiWay calls.

Example: xConfiguration NetworkServices MultiWay Protocol: Auto
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

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

Example: xConfiguration NetworkServices HTTPS VerifyServerCertificate: Off

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

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

Example: xConfiguration NetworkServices HTTPS VerifyClientCertificate: Off

xConfiguration NetworkServices HTTPS OCSP Mode

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

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

Requires user role: ADMIN

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

Example: xConfiguration NetworkServices HTTPS OCSP Mode: Off

xConfiguration NetworkServices HTTPS OCSP URL

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

Requires user role: ADMIN

Value space: <S: 0, 255>
Format: String with a maximum of 255 characters.

Example: xConfiguration NetworkServices HTTPS OCSP URL: "http://ocspserver.company.com:81"

xConfiguration NetworkServices NTP Mode

The Network Time Protocol (NTP) is used to synchronize the time of the system to a reference time server. The time server will subsequently be queried every 24th hour for time updates. The time will be displayed on the top of the screen. The system will use the time to timestamp messages transmitted to Gatekeepers or Border Controllers requiring H.235 authentication. The system will use the time to timestamp messages transmitted to Gatekeepers or Border Controllers that requires H.235 authentication. It is also used for timestamping Placed Calls, Missed Calls and Received Calls.

Requires user role: ADMIN

Value space: <Auto/Off/Manual>
- Auto: The system will use the NTP server, by which address is supplied from the DHCP server in the network. If no DHCP server is used, or the DHCP server does not provide the system with a NTP server address, the system will use the static defined NTP server address specified by the user.
- Off: The system will not use an NTP server.
- Manual: The system will always use the static defined NTP server address specified by the user.

Example: xConfiguration NetworkServices NTP Mode: Manual

xConfiguration NetworkServices NTP Address

Enter the NTP Address to define the network time protocol server address. This address will be used if NTP Mode is set to Manual, or if set to Auto and no address is supplied by a DHCP server.

Requires user role: ADMIN

Value space: <S: 0, 64>
Format: A valid IPv4 address, IPv6 address or DNS name.

Example: xConfiguration NetworkServices NTP Address: "1.ntp.tandberg.com"
xConfiguration NetworkServices SIP Mode
Determine whether the system should be able to place and receive SIP calls or not.

Requires user role: ADMIN
Value space: <Off/On>
Off: Disable the possibility to place and receive SIP calls.
On: Enable the possibility to place and receive SIP calls (default).
Example: xConfiguration NetworkServices SIP Mode: On

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
Value space: <Off/ReadOnly/ReadWrite>
Off: Disable the SNMP network service.
ReadOnly: Enable the SNMP network service for queries only.
ReadWrite: Enable the SNMP network service for both queries and commands.
Example: xConfiguration NetworkServices SNMP Mode: ReadWrite

xConfiguration NetworkServices SNMP Host [1..3] Address
Enter 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
Value space: <S: 0, 64>
Format: A valid IPv4 address, IPv6 address or DNS name.
Example: xConfiguration NetworkServices SNMP Host 1 Address: ""

xConfiguration NetworkServices SNMP CommunityName
Enter 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
Value space: <S: 0, 50>
Format: String with a maximum of 50 characters.
Example: xConfiguration NetworkServices SNMP CommunityName: "public"

xConfiguration NetworkServices SNMP SystemContact
Enter the name of the Network Services SNMP System Contact.

Requires user role: ADMIN
Value space: <S: 0, 50>
Format: String with a maximum of 50 characters.
Example: xConfiguration NetworkServices SNMP SystemContact: ""

xConfiguration NetworkServices SNMP SystemLocation
Enter the name of the Network Services SNMP System Location.

Requires user role: ADMIN
Value space: <S: 0, 50>
Format: String with a maximum of 50 characters.
Example: xConfiguration NetworkServices SNMP SystemLocation: ""

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
Value space: <Off/On>
Off: The SSH protocol is disabled.
On: The SSH protocol is enabled.
Example: xConfiguration NetworkServices SSH Mode: On
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**xConfiguration NetworkServices SSH AllowPublicKey**
Secure Shell (SSH) public key authentication can be used to access the codec.

**Requires user role**: ADMIN

**Value space**: <Off/On>
- **Off**: The SSH public key is not allowed.
- **On**: The SSH public key is allowed.

**Example**: xConfiguration NetworkServices SSH AllowPublicKey: On

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

**Requires user role**: ADMIN

**Value space**: <Off/On>
- **Off**: The Telnet protocol is disabled. This is the factory setting.
- **On**: The Telnet protocol is enabled.

**Example**: xConfiguration NetworkServices Telnet Mode: Off

**xConfiguration NetworkServices CTMS Mode**
This setting determines whether or not to allow multiparty conferences controlled by a Cisco TelePresence Multipoint Switch (CTMS).

Video systems running software TC5.0 or later are able to initiate or join non-encrypted multiparty conferences controlled by CTMS version 1.8 or later. Encrypted conferences are supported as from software versions TC6.0 and CTMS 1.9.1. Encryption is addressed in the NetworkServices CTMS Encryption setting.

**Requires user role**: ADMIN

**Value space**: <Off/On>
- **Off**: Multiparty conferencing via CTMS is prohibited.
- **On**: Multiparty conferencing via CTMS is allowed.

**Example**: xConfiguration NetworkServices CTMS Mode: On

**xConfiguration NetworkServices CTMS Encryption**
This setting indicates whether or not the video system supports encryption when participating in a multiparty meeting controlled by a Cisco TelePresence Multipoint Switch (CTMS).

CTMS allows three security settings for meetings: non-secure (not encrypted), best effort (encrypted if all participants support encryption, otherwise not encrypted) and secure (always encrypted).

**Requires user role**: ADMIN

**Value space**: <Off/BestEffort>
- **Off**: The video system does not allow encryption and therefore cannot participate in a secure CTMS meeting (encrypted). When participating in a best effort CTMS meeting, the meeting will be downgraded to non-secure (not encrypted).
- **BestEffort**: The video system can negotiate encryption parameters with CTMS and participate in a secure CTMS meeting (encrypted). Do not use this value if the CTMS version is older than 1.9.1.

**Example**: xConfiguration NetworkServices CTMS Encryption: Off
Phonebook configuration

**xConfiguration Phonebook Server [1..1] ID**
Enter a name for the external phone book.

*Requires user role:* ADMIN

*Value space:* <S: 0, 64>

*Format:* String with a maximum of 64 characters.

*Example:* `xConfiguration Phonebook Server 1 ID: ""`

**xConfiguration Phonebook Server [1..1] Type**
Select the phonebook server type.

*Requires user role:* ADMIN

*Value space:* <VCS/TMS/Callway/CUCM>

- **VCS:** Select VCS if the phonebook is located on the Cisco TelePresence Video Communication Server.
- **TMS:** Select TMS if the phonebook is located on the Cisco TelePresence Management Suite server.
- **Callway:** Select Callway if the phonebook is to be provided by the WebEx TelePresence subscription service (formerly called CallWay). Contact your WebEx TelePresence provider for more information.
- **CUCM:** Select CUCM if the phonebook is located on the Cisco Unified Communications Manager.

*Example:* `xConfiguration Phonebook Server 1 Type: TMS`

**xConfiguration Phonebook Server [1..1] URL**
Enter the address (URL) to the external phone book server.

*Requires user role:* ADMIN

*Value space:* <S: 0, 255>

*Format:* String with a maximum of 255 characters.


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

*Value space:* <Internal/External/Auto>

- **Internal:** Request internal configuration.
- **External:** Request external configuration.
- **Auto:** Automatically discover using NAPTR queries whether internal or external configurations should be requested. If the NAPTR responses have the "e" flag, external configurations will be requested. Otherwise internal configurations will be requested.

*Example:* `xConfiguration Provisioning Connectivity: Auto`

**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

*Value space:* <Off/TMS/VCS/CallWay/CUCM/Auto>

- **Off:** The video system will not be configured by a provisioning system.
- **TMS:** The video system will be configured using TMS (Cisco TelePresence Management System).
- **VCS:** Not applicable in this version.
- **Callway:** The video system will be configured using the WebEx TelePresence subscription service (formerly called CallWay).
- **CUCM:** The video system will be configured using CUCM (Cisco Unified Communications Manager).
- **Auto:** The provisioning server will automatically be selected by the video system.

*Example:* `xConfiguration Provisioning Mode: TMS`
xConfiguration Provisioning LoginName

This is the user name 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. If Provisioning Mode is Callway (WebEx TelePresence), enter the video number.

- Requires user role: ADMIN
- Value space: <S: 0, 80>
  - Format: String with a maximum of 80 characters.

Example: xConfiguration Provisioning LoginName: ""

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. If Provisioning Mode is Callway (WebEx TelePresence), enter the activation code.

- Requires user role: ADMIN
- Value space: <S: 0, 64>
  - Format: A valid IPv4 address, IPv6 address or DNS name.

Example: xConfiguration Provisioning Password: ""

xConfiguration Provisioning HttpMethod

Select the HTTP method to be used for the provisioning.

- Requires user role: ADMIN
- Value space: <GET/POST>
  - GET: Select GET when the provisioning server supports GET.
  - POST: Select POST when the provisioning server supports POST.

Example: xConfiguration Provisioning HttpMethod: POST

xConfiguration Provisioning ExternalManager Address

Enter 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.

- Requires user role: ADMIN
- Value space: <S: 0, 64>
  - Format: A valid IPv4 address, IPv6 address or DNS name.

Example: xConfiguration Provisioning ExternalManager Address: ""

xConfiguration Provisioning ExternalManager Protocol

Determine whether to use secure management or not.

- Requires user role: ADMIN
- Value space: <HTTP/HTTPS>
  - HTTP: Set to HTTP to disable secure management. Requires HTTP to be enabled in the NetworkServices HTTP Mode setting.
  - HTTPS: Set to HTTPS to enable secure management. Requires HTTPS to be enabled in the NetworkServices HTTPS Mode setting.

Example: xConfiguration Provisioning ExternalManager Protocol: HTTP

xConfiguration Provisioning ExternalManager Path

Set 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
- Value space: <S: 0, 255>
  - Format: String with a maximum of 255 characters.

Example: xConfiguration Provisioning ExternalManager Path: "tms/public/external/management/SystemManagementService.asmx"
xConfiguration Provisioning ExternalManager Domain
Enter the SIP domain for the VCS provisioning server.

Reequires user role: ADMIN
Value space: <S: 0, 64>
Format: String with a maximum of 64 characters.
Example: xConfiguration Provisioning ExternalManager Domain: "any.domain.com"

RTP configuration

xConfiguration RTP Ports Range Start
Specify the first port in the range of RTP ports. Also see the H323 Profile [1..1] PortAllocation setting.
NOTE: Restart the system for any change to this setting to take effect.

Reequires user role: ADMIN
Value space: <1024..65502>
Range: Select a value from 1024 to 65502.
Example: xConfiguration RTP Ports Range Start: 2326

xConfiguration RTP Ports Range Stop
Specify the last RTP port in the range. Also see the H323 Profile [1..1] PortAllocation setting.
NOTE: Restart the system for any change to this setting to take effect.

Reequires user role: ADMIN
Value space: <1056..65535>
Range: Select a value from 1056 to 65535.
Example: xConfiguration RTP Ports Range Stop: 2486
Security configuration

xConfiguration Security Audit Logging Mode
Determine where to record or transmit the audit logs. When using the External or ExternalSecure modes, you also must enter the address and port number for the audit server in the Security Audit Server Address and Security Audit Server Port settings.

NOTE: Restart the system for any change to this setting to take effect.

Requires user role: AUDIT
Value space: <Off/Internal/External/ExternalSecure>
Off: No audit logging is performed.
Internal: The system records the audit logs to internal logs, and rotates logs when they are full.
External: The system sends the audit logs to an external audit server (syslog server). The audit server must support TCP.
ExternalSecure: The system sends encrypted audit logs to an external audit server (syslog server) that is verified by a certificate in the Audit CA list. The Audit CA list file must be uploaded to the codec using the web interface. The common_name parameter of a certificate in the CA list must match the IP address of the audit server.

Example: xConfiguration Security Audit Logging Mode: Off

xConfiguration Security Audit Server Address
Enter the IP address of the audit server. Only valid IPv4 or IPv6 address formats are accepted. Host names are not supported. This setting is only relevant when Security Audit Logging Mode is set to External or ExternalSecure.

NOTE: Restart the system for any change to this setting to take effect.

Requires user role: AUDIT
Value space: <S: 0, 64>
Format: A valid IPv4 address or IPv6 address.

Example: xConfiguration Security Audit Server Address: ""

xConfiguration Security Audit Server Port
Enter the port of the audit server that the system shall send its audit logs to. The default port is 514. This setting is only relevant when Security Audit Logging Mode is set to External or ExternalSecure.

NOTE: Restart the system for any change to this setting to take effect.

Requires user role: AUDIT
Value space: <0..65535>
Range: Select a value from 0 to 65535.

Example: xConfiguration Security Audit Server Port: 514

xConfiguration Security Audit OnError Action
Determine what happens when the connection to the audit server is lost. This setting is only relevant when Security Audit Logging Mode is set to ExternalSecure.

NOTE: Restart the system for any change to this setting to take effect.

Requires user role: AUDIT
Value space: <Halt/Ignore>
Halt: If a halt condition is detected the system is rebooted and only the auditor is allowed to operate the unit until the halt condition has passed. When the halt condition has passed the audit logs are re-spooled to the audit server. Halt conditions are: A network breach (no physical link), no audit server running (or wrong audit server address or port), TLS authentication failed (if in use), local backup (re-spooling) log full.
Ignore: The system will continue its normal operation, and rotate internal logs when full. When the connection is restored it will again send its audit logs to the audit server.

Example: xConfiguration Security Audit OnError Action: Ignore

xConfiguration Security Session ShowLastLogon
When logging in to the system using SSH or Telnet you will see the UserId, time and date of the last session that did a successful login.

Requires user role: ADMIN
Value space: <Off/On>
On: Show information about the last session.
Off: Do not show information about the last session.

Example: xConfiguration Security Session ShowLastLogon: Off

xConfiguration Security Session InactivityTimeout
Determine how long the system will accept inactivity from the user before he is automatically logged out.

Requires user role: ADMIN
Value space: <0..10000>
Range: Select a value between 1 and 10000 seconds; or select 0 when inactivity should not enforce automatic logout.

Example: xConfiguration Security Session InactivityTimeout: 0
SerialPort configuration

**xConfiguration SerialPort Mode**
Enable/disable the serial port (COM port).

Requires user role: ADMIN

Value space: <Off/On>

*Off:* Disable the serial port.

*On:* Enable the serial port.

Example: xConfiguration SerialPort Mode: On

**xConfiguration SerialPort BaudRate**
Specify the baud rate (data transmission rate, bits per second) for the serial port. The default value is 38400.

Other connection parameters for the serial port are: Data bits: 8; Parity: None; Stop bits: 1; Flow control: None.

Requires user role: ADMIN

Value space: <9600/19200/38400/57600/115200>

Range: Select a baud rate from the baud rates listed (bps).

Example: xConfiguration SerialPort BaudRate: 38400

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

Requires user role: ADMIN

Value space: <Off/On>

*Off:* The user can access the codec via the serial port without any login.

*On:* Login is required when connecting to the codec via the serial port.

Example: xConfiguration SerialPort LoginRequired: On

SIP configuration

**xConfiguration SIP Profile [1..1] Ice**
ICE (Interactive Connectivity Establishment, RFC 5245) is a NAT traversal solution that the endpoints can use to discover the optimized media path. Thus the shortest route for audio and video is always secured between the endpoints.

NOTE: ICE is not supported when registered to CUCM (Cisco Unified Communication Manager).

Requires user role: ADMIN

Value space: <Off/On>

*Off:* Set to Off to disable ICE.

*On:* Set to On, to enable ICE.

Example: xConfiguration SIP Profile 1 Ice: Off

**xConfiguration SIP Profile [1..1] IceDefaultCandidate**
This is the default IP address that the endpoint will receive media on until ICE has reached a conclusion about which media route to use (up to the first 5 seconds of a call).

Requires user role: ADMIN

Value space: <Off/On>

*Host:* The endpoint will receive media on its own IP address.

*Rflx:* The endpoint will receive media on its public IP address as seen by the TURN server.

*Relay:* The endpoint will receive media on the IP address and port allocated on the TURN server, and is used as a fallback until ICE has concluded.

Example: xConfiguration SIP Profile 1 IceDefaultCandidate: Host

**xConfiguration SIP Profile [1..1] Turn Server**
This is the address of the TURN (Traversal Using Relay NAT) server that the endpoints will use. It is used as a media relay fallback and it is also used to discover the endpoint’s own public IP address.

Requires user role: ADMIN

Value space: <S: 0, 255>

*Format:* The preferred format is DNS SRV record (e.g. _turn._udp.<domain>), or it can be a valid IPv4 or IPv6 address.

Example: xConfiguration SIP Profile 1 Turn Server: "_turn._udp.example.com"
**xConfiguration SIP Profile [1..1] Turn UserName**

The user name needed for accessing the TURN server.

*Requires user role: ADMIN*

*Value space: <S: 0, 128>*

*Format: String with a maximum of 128 characters.*

*Example: xConfiguration SIP Profile 1 Turn UserName: ""*

**xConfiguration SIP Profile [1..1] Turn Password**

The password needed for accessing the TURN server.

*Requires user role: ADMIN*

*Value space: <S: 0, 128>*

*Format: String with a maximum of 128 characters.*

*Example: xConfiguration SIP Profile 1 Turn Password: ""*

**xConfiguration SIP Profile [1..1] 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*

*Value space: <S: 0, 255>*

*Format: String with maximum 255 characters and compliant with the SIP URI syntax.*

*Example: xConfiguration SIP Profile 1 URI: "sip:firstname.lastname@company.com"*

**xConfiguration SIP Profile [1..1] DisplayName**

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

*Requires user role: ADMIN*

*Value space: <S: 0, 255>*

*Format: String with a maximum of 255 characters.*

*Example: xConfiguration SIP Profile 1 DisplayName: ""*

**xConfiguration SIP Profile [1..1] Authentication [1..1] LoginName**

This is the user name part of the credentials used to authenticate towards the SIP proxy.

*Requires user role: ADMIN*

*Value space: <S: 0, 128>*

*Format: String with a maximum of 128 characters.*

*Example: xConfiguration SIP Profile 1 Authentication 1 LoginName: ""*

**xConfiguration SIP Profile [1..1] Authentication [1..1] Password**

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

*Requires user role: ADMIN*

*Value space: <S: 0, 128>*

*Format: String with a maximum of 128 characters.*

*Example: xConfiguration SIP Profile 1 Authentication 1 Password: ""*

**xConfiguration SIP Profile [1..1] DefaultTransport**

Select the transport protocol to be used over the LAN.

*Requires user role: ADMIN*

*Value space: <TCP/UDP/Tls/Auto>*

*TCP: The system will always use TCP as the default transport method.*

*UDP: The system will always use UDP as the default transport method.*

*Tls: The system will always use TLS as the default transport method. For TLS connections a SIP CA-list can be uploaded to the video system. If no such CA-list is available on the system then anonymous Diffie Hellman will be used.*

*Auto: The system will try to connect using transport protocols in the following order: TLS, TCP, UDP.*

*Example: xConfiguration SIP Profile 1 DefaultTransport: Auto*
xConfiguration SIP Profile [1..1] TlsVerify
For TLS connections a SIP CA-list can be uploaded to the video system. This can be done from the web interface.

Requires user role: ADMIN
Value space: <Off/On>
  Off: Set to Off to allow TLS connections without verifying them. The TLS connections are allowed to be set up without verifying the x.509 certificate received from the server against the local CA-list. This should typically be selected if no SIP CA-list has been uploaded.
  On: Set to On to verify TLS connections. Only TLS connections to servers, whose x.509 certificate is validated against the CA-list, will be allowed.
Example: xConfiguration SIP Profile 1 TlsVerify: Off

xConfiguration SIP Profile [1..1] Outbound
Turn on or off the client initiated connections mechanism for firewall traversal, connection reuse and redundancy. The current version supports RFC 5626.

Requires user role: ADMIN
Value space: <Off/On>
  Off: Connect to the single proxy configured first in Proxy Address list.
  On: Set up multiple outbound connections to servers in the Proxy Address list.
Example: xConfiguration SIP Profile 1 Outbound: Off

xConfiguration SIP Profile [1..1] 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. If SIP Profile Outbound is enabled, multiple proxies can be addressed.

Requires user role: ADMIN
Value space: <S: 0, 255>
  Format: A valid IPv4 address, IPv6 address or DNS name.
Example: xConfiguration SIP Profile 1 Proxy 1 Address: ""

xConfiguration SIP Profile [1..1] Proxy [1..4] Discovery
Select if the SIP Proxy address is to be obtained manually or by using Dynamic Host Configuration Protocol (DHCP).

Requires user role: ADMIN
Value space: <Auto/Manual>
  Auto: When Auto is selected, the SIP Proxy address is obtained using Dynamic Host Configuration Protocol (DHCP).
  Manual: When Manual is selected, the manually configured SIP Proxy address will be used.
Example: xConfiguration SIP Profile 1 Proxy 1 Discovery: Manual

xConfiguration SIP Profile [1..1] Type
Enables SIP extensions and special behaviour for a vendor or provider.

Requires user role: ADMIN
Value space: <Standard/Alcatel/Avaya/Cisco/Microsoft/Nortel>
  Standard: To be used when registering to standard SIP Proxy (tested with Cisco TelePresence VCS and Broadsoft)
  Alcatel: To be used when registering to Alcatel-Lucent OmniPCX Enterprise. NOTE: This mode is not fully supported.
  Avaya: To be used when registering to Avaya Communication Manager. NOTE: This mode is not fully supported.
  Cisco: To be used when registering to Cisco Unified Communication Manager.
  Microsoft: To be used when registering to Microsoft LCS or OCS. NOTE: This mode is not fully supported.
  Nortel: To be used when registering to Nortel MCS 5100 or MCS 5200 PBX. NOTE: This mode is not fully supported.
Example: xConfiguration SIP Profile 1 Type: Standard

xConfiguration SIP Profile [1..1] Mailbox
When registered to a Cisco Unified Communications Manager (CUCM) you may be offered the option of having a private voice mailbox. Enter the number (address) of the mailbox in this setting, or leave the string empty if you do not have a voice mailbox.

Requires user role: ADMIN
Value space: <S: 0, 255>>
  Format: String with a maximum of 255 characters.
Example: xConfiguration SIP Profile 1 Mailbox: "12345678"
xConfiguration SIP Profile [1..1] Line

When registered to a Cisco Unified Communications Manager (CUCM) the endpoint may be part of a shared line. This means that several devices share the same directory number. The different devices sharing the same number receive status from the other appearances on the line as defined in RFC 4235.

Note that shared lines are set up by CUCM, not by the endpoint. Therefore do not change this setting manually; CUCM pushes this information to the endpoint when required.

Requires user role: ADMIN

Value space: <Private/Shared>
- Shared: The system is part of a shared line and is therefore sharing its directory number with other devices.
- Private: This system is not part of a shared line (default).

Example: xConfiguration SIP Profile 1 Line: Private

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

Value space: <On/Off>
- On: Listening for incoming connections on the SIP TCP/UDP ports is turned on.
- Off: Listening for incoming connections on the SIP TCP/UDP ports is turned off.

Example: xConfiguration SIP ListenPort: On

Standby configuration

xConfiguration Standby Control

Determine whether the system should go into standby mode or not.

Requires user role: ADMIN

Value space: <Off/On>
- Off: The system will not enter standby mode.
- On: Enter standby mode when the Standby Delay has timed out. NOTE: Requires the Standby Delay to be set to an appropriate value.

Example: xConfiguration Standby Control: On

xConfiguration Standby Delay

Define how long (in minutes) the system shall be in idle mode before it goes into standby mode. NOTE: Requires the Standby Control to be enabled.

Requires user role: ADMIN

Value space: <1..480>

Range: Select a value from 1 to 480 minutes.

Example: xConfiguration Standby Delay: 10

xConfiguration Standby BootAction

Define the camera position after a restart of the codec.

Requires user role: ADMIN

Value space: <None/Preset1/Preset2/Preset3/Preset4/Preset5/Preset6/Preset7/Preset8/Preset9/Preset10/Preset11/Preset12/Preset13/Preset14/Preset15/RestoreCameraPosition/DefaultCameraPosition>
- None: No action.
- Preset1 to Preset15: After a reboot the camera position will be set to the position defined by the selected preset.
- RestoreCameraPosition: After a reboot the camera position will be set to the position it had before the last boot.
- DefaultCameraPosition: After a reboot the camera position will be set to the factory default position.

Example: xConfiguration Standby BootAction: DefaultCameraPosition
**xConfiguration Standby StandbyAction**

Define the camera position when going into standby mode.

**Requires user role:** ADMIN

**Value space:** <None/PrivacyPosition>

- **None:** No action.
- **PrivacyPosition:** Turns the camera to a sideways position for privacy.

**Example:** `xConfiguration Standby StandbyAction: PrivacyPosition`

**xConfiguration Standby WakeupAction**

Define the camera position when leaving standby mode.

**Requires user role:** ADMIN

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

- **None:** No action.
- **Preset1 to Preset15:** When leaving standby the camera position will be set to the position defined by the selected preset.
- **RestoreCameraPosition:** When leaving standby the camera position will be set to the position it had before entering standby.
- **DefaultCameraPosition:** When leaving standby the camera position will be set to the factory default position.

**Example:** `xConfiguration Standby WakeupAction: RestoreCameraPosition`

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**SystemUnit configuration**

**xConfiguration SystemUnit Name**

Enter a System Name to define a name of the system unit. If the H.323 Alias ID is configured on the system then this ID will be used instead of the system name. The system name will be displayed:

1) When the codec is acting as an SNMP Agent.
2) Towards a DHCP server.

**Requires user role:** ADMIN

**Value space:** <S: 0, 50>

**Format:** String with a maximum of 50 characters.

**Example:** `xConfiguration SystemUnit Name: "Meeting Room"`

**xConfiguration SystemUnit MenuLanguage**

Select the language to be used in the menus on screen or on the Touch controller.

**Requires user role:** USER

**Value space:** <English/ChineseSimplified/ChineseTraditional/Czech/Danish/Dutch/Finnish/French/
German/Hungarian/Italian/Japanese/Korean/Norwegian/Polish/PortugueseBrazilian/Russian/
Spanish/SpanishLatin/Swedish/Turkish>

**Example:** `xConfiguration SystemUnit MenuLanguage: English`
xConfiguration SystemUnit ContactInfo Type
Choose which type of contact information to show in the status field in the upper left corner of the main display and Touch controller. The information can also be read with the command xStatus SystemUnit ContactInfo.

Requires user role: ADMIN

Value space: <Auto/None/IPv4/IPv6/H323Id/E164Alias/H320Number/SipUri/SystemName/DisplayName>

- Auto: Show the address which another system can dial to reach this system. The address depends on the default call protocol and system registration.
- None: Do not show any contact information in the status field.
- IPv4: Show the IPv4 address as contact information.
- IPv6: Show the IPv6 address as contact information.
- H323Id: Show the H.323 ID as contact information (see the H323 Profile [1..1] H323Alias ID setting).
- E164Alias: Show the H.323 E164 Alias as contact information (see the H323 Profile [1..1] H323Alias E164 setting).
- H320Number: Show the H.320 number as contact information (only applicable if connected to a Cisco TelePresence ISDN Link gateway).
- SipUri: Show the SIP URI as contact information (see the SIP Profile [1..1] URI setting).
- SystemName: Show the system name as contact information (see the SystemUnit Name setting).
- DisplayName: Show the display name as contact information (see the SIP Profile [1..1] DisplayName setting).

Example: xConfiguration SystemUnit ContactInfo Type: Auto

xConfiguration SystemUnit CallLogging Mode
Set the call logging mode for calls that are received or placed by the system. The call logs may then be viewed via the web interface or using the xHistory command.

Requires user role: ADMIN

Value space: <Off/On>

- Off: Disable logging.
- On: Enable logging.

Example: xConfiguration SystemUnit CallLogging Mode: On

xConfiguration SystemUnit IrSensor
Both the Codec C Series and PrecisionHD camera have IR sensors, and only one of them needs to be enabled at the time. The IR sensor LED is located on the front of the codec and the camera and flickers when an IR signal is received from the remote control.

Requires user role: ADMIN

Value space: <Auto/Off/On>

- Auto: The system will automatically disable the IR sensor on the codec if the IR sensor at camera is enabled. Otherwise, the IR sensor on the codec will be enabled.
- Off: Disable the IR sensor on the codec.
- On: Enable the IR sensor on the codec.

Example: xConfiguration SystemUnit IrSensor: Auto
Time configuration

xConfiguration Time Zone
Set the time zone where the system is located, using Windows time zone description format.

Requires user role: USER

Value space: <GMT-12:00 (International Date Line West)/GMT-11:00 (Midway Island, Samoa)/GMT-10:00 (Hawaii)/GMT-09:00 (Alaska)/GMT-08:00 (Pacific Time (US & Canada), Tijuana)/GMT-07:00 (Arizona)/GMT-06:00 (Mountain Time (US & Canada), Chihuahua, Mazatlan)/GMT-06:00 (Central America)/GMT-06:00 (Saskatchewan)/GMT-06:00 (Guadalajara, Mexico City, Monterrey)/GMT-06:00 (Central Time (US & Canada))/GMT-05:00 (Indiana (East))/GMT-05:00 (Bogota, Lima, Quito)/GMT-05:00 (Eastern Time (US & Canada))/GMT-04:30 (Caracas)/GMT-04:00 (La Paz)/GMT-04:00 (Santiago)/GMT-03:30 (Newfoundland)/GMT-03:00 (Buenos Aires, Georgetown)/GMT-03:00 (Greenland)/GMT-03:00 (Brasilia)/GMT-02:00 (Mid-Atlantic)/GMT-01:00 (Cape Verde Is.)/GMT-01:00 (Azores)/GMT-01:00 (Casablanca, Monrovia)/GMT (Coordinated Universal Time)/GMT (Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London)/GMT+01:00 (West Central Africa)/GMT+01:00 (Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna)/GMT+01:00 (Brussels, Copenhagen, Madrid, Paris)/GMT+01:00 (Sarajevo, Skopje, Warsaw, Zagreb)/GMT+01:00 (Belgrade, Bratislava, Budapest, Ljubljana, Prague)/GMT+02:00 (Harare, Pretoria)/GMT+02:00 (Jerusalem)/GMT+02:00 (Athens, Istanbul, Minsk)/GMT+02:00 (Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius)/GMT+02:00 (Cairo)/GMT+02:00 (Bucharest)/GMT+03:00 (Nairobi)/GMT+03:00 (Kuwait, Riyadh)/GMT+03:00 (Moscow, St. Petersburg, Volgograd)/GMT+03:00 (Baghdad)/GMT+03:30 (Tehran)/GMT+04:00 (Abu Dhabi, Muscat)/GMT+04:00 (Baku, Tbilisi, Yerevan)/GMT+04:30 (Kabul)/GMT+05:00 (Islamabad, Karachi, Tashkent)/GMT+05:00 (Ekaterinburg)/GMT+05:30 (Chennai, Kolkata, Mumbai, New Delhi)/GMT+05:45 (Kathmandu)/GMT+06:00 (Sri Jayawardenepura)/GMT+06:00 (Aстанa, Dhaka)/GMT+06:00 (Almaty, Novosibirsk)/GMT+06:30 (Rangoon)/GMT+07:00 (Bangkok, Hanoi, Jakarta)/GMT+07:00 (Krasnoyarsk)/GMT+08:00 (Perth)/GMT+08:00 (Taipei)/GMT+08:00 (Kuala Lumpur, Singapore)/GMT+08:00 (Beijing, Chongqing, Hong Kong, Urumqi)/GMT+08:00 (Ulaan Bataar)/GMT+09:00 (Osaka, Sapporo, Tokyo)/GMT+09:00 (Seoul)/GMT+09:00 (Yakutsk)/GMT+09:30 (Darwin)/GMT+09:30 (Adelaide)/GMT+10:00 (Guam, Port Moresby)/GMT+10:00 (Brisbane)/GMT+10:00 (Vladivostok)/GMT+10:00 (Hobart)/GMT+10:00 (Canberra, Melbourne, Sydney)/GMT+11:00 (Magadan, Solomon Is., New Caledonia)/GMT+12:00 (Fiji, Kamchatka, Marshall Is.)/GMT+12:00 (Auckland, Wellington)/GMT+13:00 (Nuku alofa)>

Range: Select a time zone from the list time zones. If using a command line interface; watch up for typos.

Example: xConfiguration Time Zone: "GMT (Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London)"

xConfiguration Time TimeFormat
Set the time format.

Requires user role: USER

Value space: <24H/12H>

Example: xConfiguration Time TimeFormat: 24H

xConfiguration Time DateFormat
Set the date format.

Requires user role: USER

Value space: <DD_MM_YY/MM_DD_YY/YY_MM_DD>

Example: xConfiguration Time DateFormat: DD _ MM _ YY
User Interface configuration

**xConfiguration UserInterface TouchPanel DefaultPanel**
Select whether to display the list of contacts, the list of scheduled meetings, or a dial pad on the Touch controller as default.

*Requires user role:* USER

*Value space:* `<ContactList/MeetingList/Dialpad>`
- **ContactList:** The contact list (favorites, directory and history) will appear as default on the Touch controller.
- **MeetingList:** The list of scheduled meetings will appear as default on the Touch controller.
- **Dialpad:** A dial pad will appear as default on the Touch controller.

*Example:* `xConfiguration UserInterface TouchPanel DefaultPanel: ContactList`

Video configuration

**xConfiguration Video Input Source [1..3] Name**
Enter a name for the video input source.

*Requires user role:* ADMIN

*Value space:* `<S: 0, 50>`

*Format:* String with a maximum of 50 characters.

*Example:* `xConfiguration Video Input Source 1 Name: ""`

**xConfiguration Video Input Source [1] Connector**
Select which video input connector to be active on video input source 1.

*Requires user role:* ADMIN

*Value space:* `<HDMI>`

*Example:* `xConfiguration Video Input Source 1 Connector: HDMI`

**xConfiguration Video Input Source [2] Connector**

*NOTE:* Codec C40 has one DVI input (DVI-I 3). Codec C60 has two DVI inputs (DVI-I 2 and 3).
Select which video input connector to be active on video input source 2.

*Requires user role:* ADMIN

*Value space:* `<HDMI/DVI>`

*Example:* `xConfiguration Video Input Source 2 Connector: HDMI`
xConfiguration Video Input Source [3] Connector

NOTE: Codec C40 has one DVI input (DVI-I 3). Codec C60 has two DVI inputs (DVI-I 2 and 3). Select which video input connector to be active on video input source 3.

Requires user role: ADMIN

Value space: <DVI/Composite/YC>

DVI: Select DVI-I when you want to use the DVI-I 3 as input source 3.
Composite: Select Composite when you want to use the Composite as input source 3.
YC: Select YC when you want to use the S-Video (YC) as input source 3. Connect to the two connectors marked Y/Comp and C.

Example: xConfiguration Video Input Source 3 Connector: DVI

xConfiguration Video Input Source [1..3] Type

Set which type of input source is connected to the video input.

Requires user role: ADMIN

Value space: <Other/camera/PC/DVD/document_camera>

Other: Select Other when some other type of equipment is connected to the selected video input.
Camera: Select Camera when you have a camera connected to the selected video input.
PC: Select PC when you have a PC connected to the selected video input.
DVD: Select DVD when you have a DVD player connected to the selected video input.
Document_Camera: Select Document_Camera when you have a document camera connected to the selected video input.

Example: xConfiguration Video Input Source 1 Type: PC

xConfiguration Video Input Source [1..3] PresentationSelection

In general, any input source can be used as a presentation source; normally, the main camera (self view) will not be used as a presentation source.

This setting is used to define whether to display the presentation source on the local video system's display automatically or not. To share the presentation with the far end always requires additional action (tap Start Presenting on the Touch controller or the Presentation key on the remote control).

The default values for all input sources are Manual.

Requires user role: ADMIN

Value space: <Manual/Automatic/Hidden>

Manual: The content on the input source will not be presented on the local video system's display before you select it. Use either the remote control or the Touch controller to choose which input source to present.
Automatic: Any content on the input source will be presented on the local video system's display automatically. If there is active content on more than one input source (which is set to Automatic) the most recent one will be used.
Hidden: The input source is not expected to be used as a presentation source.

Example: xConfiguration Video Input Source 1 PresentationSelection: Manual

xConfiguration Video Input Source [1..3] CameraControl Mode

Select whether or not to enable camera control for the selected video input source when the video input is active.

Requires user role: ADMIN

Value space: <Off/On>

Off: Disable camera control.
On: Enable camera control.

Example: xConfiguration Video Input Source 1 CameraControl Mode: On

xConfiguration Video Input Source [1..3] CameraControl CameraId

Select the ID of the camera in the Visca chain that is connected to this camera source. The CameraId setting represents the camera's position in the Visca chain.

Requires user role: ADMIN

Value space: <1/2/3/4/5/6/7>

Range: Select the ID of the camera in the Visca chain.

Example: xConfiguration Video Input Source 1 CameraControl CameraId: 1
xConfiguration Video Input Source [1..3] OptimalDefinition Profile

The Video Input Source Quality setting must be set to Motion for the optimal definition settings to take any effect.

The optimal definition profile should reflect the lighting conditions in your room and the quality of the video input (camera); the better the lighting conditions and video input, the higher the profile. Then, in good lighting conditions, the video encoder will provide better quality (higher resolution or frame rate) for a given call rate.

Generally, we recommend using the Normal or Medium profiles. However, when the lighting conditions are good, the High profile can be set in order to increase the resolution for a given call rate.

Some typical resolutions used for different optimal definition profiles, call rates and transmit frame rates are shown in the table below. It is assumed that dual video is not used. The resolution must be supported by both the calling and called systems.

Use the Video Input Source OptimalDefinition Threshold60fps setting to decide when to use the 60 fps frame rate.

| Typical resolutions used for different optimal definition profiles, call rates and frame rates |
|---|---|---|---|---|---|---|
| Frame rate | Optimal Definition Profile | Call rate |
|---|---|---|---|---|---|---|
| 30 fps | Normal | 256 kbps | 768 kbps | 1152 kbps | 1472 kbps | 2560 kbps | 4 Mbps | 6 Mbps |
| | Medium | 640x360 | 1280x720 | 1280x720 | 1280x720 | 1280x720 | 1280x720 |
| | High | 768x448 | 1280x720 | 1280x720 | 1280x720 | 1280x720 | 1280x720 |
| 60 fps | Normal | 256x144 | 512x288 | 768x448 | 1024x576 | 1280x720 | 1280x720 | 1280x720 |
| | Medium | 256x144 | 768x448 | 1024x576 | 1280x720 | 1280x720 | 1280x720 |
| | High | 512x288 | 1024x576 | 1280x720 | 1280x720 | 1280x720 | 1280x720 |

* The resolution will be 1920 x 1080 for 1080p60 capable C60 codecs (main board rev F and later).

Value space: <Normal/Medium/High>

Normal: Use this profile for a normally to poorly lit environment. Resolutions will be set rather conservative.

Medium: Requires good and stable lighting conditions and a good quality video input. For some call rates this leads to higher resolution.

High: Requires nearly optimal video conferencing lighting conditions and a good quality video input in order to achieve a good overall experience. Rather high resolutions will be used.

Example: xConfiguration Video Input Source 1 OptimalDefinition Profile: Normal

xConfiguration Video Input Source [1..3] OptimalDefinition Threshold60fps

For each video input, this setting tells the system the lowest resolution where it should transmit 60fps. So for all resolutions lower than this, the maximum transmitted framerate would be 30fps, while above this resolution 60fps would also be possible, if the available bandwidth is adequate.

Requires user role: ADMIN

Value space: <512_288/768_448/1024_576/1280_720/1920_1080/Never>

512_288: Set the threshold to 512x288.
768_448: Set the threshold to 768x448.
1024_576: Set the threshold to 1024x576.
1280_720: Set the threshold to 1280x720.
1920_1080: Set the threshold to 1920x1080.
Never: Do not set a threshold for transmitting 60fps.

Example: xConfiguration Video Input Source 1 OptimalDefinition Threshold60fps: 1280_720

xConfiguration Video Input Source [1..3] Quality

When encoding and transmitting video there will be a trade-off between high resolution and high framerate. For some video sources it is more important to transmit high framerate than high resolution and vice versa. The Quality setting specifies whether to give priority to high framerate or to high resolution for a given source.

Requires user role: ADMIN

Value space: <Motion/Sharpness>

Motion: Gives the highest possible framerate. 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.

Example: xConfiguration Video Input Source 1 Quality: Motion

xConfiguration Video MainVideoSource

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

Requires user role: USER

Value space: <1/2/3>

Range: Select the source to be used as the main video source.

Example: xConfiguration Video MainVideoSource: 1
xConfiguration Video DefaultPresentationSource
Define which video input source shall be used as the default presentation source when you press the Presentation key on the remote control. If using a Touch controller this setting has no effect. The Video Input Source n Connector setting defines which input connector to use for input source n.

Requires user role: USER
Value space: <1/2/3>
Range: Select the video source to be used as the presentation source.
Example: xConfiguration Video DefaultPresentationSource: 3

xConfiguration Video Input HDMI [1..2] RGBQuantizationRange
All devices with HDMI inputs should follow the rules for RGB video quantization range defined in CEA-861. Unfortunately some devices do not follow the standard and this configuration may be used to override the settings to get a perfect image with any source.

Requires user role: ADMIN
Value space: <Auto/Full/Limited>
Auto: RGB quantization range is automatically selected based on video format according to CEA-861-E. CE video formats will use limited quantization range levels. IT video formats will use full quantization range levels.
Full: Full quantization range. The R, G, B quantization range includes all code values (0 – 255). This is defined in CEA-861-E.
Limited: Limited Quantization Range. R, G, B quantization range that excludes some code values at the extremes (16 – 235). This is defined in CEA-861-E.
Example: xConfiguration Video Input 1 HDMI 1 RGBQuantizationRange: Auto

xConfiguration Video Input DVI [3]/[2,3] RGBQuantizationRange
NOTE: Codec C40 has one DVI input (DVI-I 3). Codec C60 has two DVI inputs (DVI-I 2 and 3).
All devices with DVI inputs should follow the rules for RGB video quantization range defined in CEA-861. Unfortunately some devices do not follow the standard and this configuration may be used to override the settings to get a perfect image with any source. The default value is set to Full because most DVI sources expects full quantization range.

Requires user role: ADMIN
Value space: <Auto/Full/Limited>
Auto: RGB quantization range is automatically selected based on video format according to CEA-861-E. CE video formats will use limited quantization range levels. IT video formats will use full quantization range levels.
Full: Full quantization range. The R, G, B quantization range includes all code values (0 – 255). This is defined in CEA-861-E.
Limited: Limited Quantization Range. R, G, B quantization range that excludes some code values at the extremes (16 – 235). This is defined in CEA-861-E.
Example: xConfiguration Video Input 1 DVI 3 RGBQuantizationRange: Full

xConfiguration Video Input DVI [3]/[2,3] Type
NOTE: Codec C40 has one DVI input (DVI-I 3). Codec C60 has two DVI inputs (DVI-I 2 and 3).
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. This setting should also be used if the video input is an analog component (YPbPr) type signal. This is used by some cameras (Sony EVI-HD1) and DVD/Blu-ray players. Since it is not possible to auto detect the difference between AnalogRGB and AnalogYPbPr, the AnalogYPbPr setting must be selected.

Requires user role: ADMIN
Value space: <AutoDetect/Digital/AnalogRGB/AnalogYPbPr>
AutoDetect: Set to AutoDetect to automatically detect if the signal is analog RGB or digital.
Digital: Set to Digital to force the DVI video input to Digital when using DVI-I cables with both analog and digital pins and AutoDetect fails.
AnalogRGB: Set to AnalogRGB to force the DVI video input to AnalogRGB when using DVI-I cables with both analog and digital pins and AutoDetect fails.
AnalogYPbPr: Set to AnalogYPbPr to force the DVI video input to AnalogYPbPr, as the component (YPbPr) signal cannot be auto detected.
Example: xConfiguration Video Input DVI 3 Type: AutoDetect
xConfiguration Video Layout Scaling
Define how the system shall adjust the aspect ratio for images or frames when there is a difference between the image and the frame it is to be placed in.

Requires user role: ADMIN
Value space: <Off/On>
- Off: No adjustment of the aspect ratio.
- On: Let the system automatically adjust aspect ratio.

Example: xConfiguration Video Layout Scaling: On

xConfiguration Video Layout ScaleToFrame
Define what to do if the aspect ratio of a video input source doesn’t match the aspect ratio of the corresponding image frame in a composition. For example if you have a 4:3 input source (like XGA) to be displayed on a 16:9 output (like HD720).

Requires user role: ADMIN
Value space: <Manual/MaintainAspectRatio/StretchToFit>
- Manual: If the difference in aspect ratio between the video input source and the target image frame is less than the Video Layout ScaleToFrameThreshold setting (in percent), the image is stretched to fit. If not, the system will maintain the original aspect ratio.
- MaintainAspectRatio: Maintain the aspect ratio of the input source, and fill in black in the rest of the frame (letter boxing or pillar boxing).
- StretchToFit: Stretch (horizontally or vertically) the input source to fit into the image frame. NOTE: The general limitation is that you cannot upscale in one direction and at the same time downscale in the other direction. In such situations the codec will apply letterboxing.

Example: xConfiguration Video Layout ScaleToFrame: MaintainAspectRatio

xConfiguration Video Layout ScaleToFrameThreshold
Only applicable if the Video Layout ScaleToFrame setting is set to manual. If the difference in aspect ratio between the video input source and the target image frame is less than the ScaleToFrameThreshold setting (in percent), the image is stretched to fit. If not, the system will maintain the original aspect ratio.

Requires user role: ADMIN
Value space: <0..100>
Range: Select a value from 0 to 100 percent.

Example: xConfiguration Video Layout ScaleToFrameThreshold: 5

xConfiguration Video Selfview
Determine if the main video source (self view) shall be displayed on screen. This setting is obsoleted by the Video SelfviewDefault Mode setting as from TC6.0.

Requires user role: USER
Value space: <Off/On>
- Off: Do not display self view on screen.
- On: Display self view on screen.

Example: xConfiguration Video Selfview: On

xConfiguration Video SelfviewPosition
Select where the small self view PiP (Picture-in-Picture) will appear on screen. This setting is obsoleted by the Video SelfviewDefault PIPPosition setting as from TC6.0.

Requires user role: ADMIN
Value space: <UpperLeft/UpperCenter/UpperRight/CenterLeft/CenterRight/LowerLeft/LowerRight>
- 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 of the screen.
- UpperRight: The self view PiP will appear in the upper right corner of the screen.
- CenterLeft: The self view PiP will appear on the left side of the screen, in center.
- CenterRight: The self view PiP will appear on the right side of the screen, in center.
- 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.

Example: xConfiguration Video SelfviewPosition: LowerRight

xConfiguration Video SelfviewControl AutoResizing
The size of the self view frame can be configured to automatically change according to the following rules. The size is reduced from full screen to PiP (picture-in-picture) when there is a change in a frame that overlaps with the self view frame. The size is increased from PiP to full screen when nothing else is displayed on the monitor. The last rule does not apply to monitors with MonitorRole set to First.

Requires user role: ADMIN
Value space: <Off/On>
- Off: Self view will not be automatically resized.
- On: Self view is automatically resized as described above.

Example: xConfiguration Video SelfviewControl AutoResizing: On
xConfiguration Video SelfviewDefault Mode
Determine 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 SelfviewDefault PIPPosition and the Video Selfview FullscreenMode settings respectively.

This setting obsoletes the Video Selfview setting as from TC6.0.

Requires user role: ADMIN
Value space: <Off/Current/On>
   Off: Self view is switched off when leaving a call.
   Current: Self view is left as is, i.e. if it was on during the call, it remains on after the call; if it was off during the call, it remains off after the call.
   On: Self view is switched on when leaving a call.

Example: xConfiguration Video SelfviewDefault Mode: Current

xConfiguration Video SelfviewDefault FullscreenMode
Determine 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 SelfviewDefault Mode setting).

This setting obsoletes the Video SelfviewPosition setting as from TC6.0.

Requires user role: ADMIN
Value space: <Off/Current/On>
   Off: Self view will be shown as a PiP.
   Current: The size of the self view picture will be kept unchanged when leaving a call, i.e. if it was a PiP during the call, it remains a PiP after the call; if it was fullscreen during the call, it remains fullscreen after the call.
   On: The self view picture will be shown in fullscreen.

Example: xConfiguration Video SelfviewDefault FullscreenMode: Current

xConfiguration Video SelfviewDefault PIPPosition
Determine 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 SelfviewDefault Mode setting) and fullscreen view is switched off (see the Video SelfviewDefault FullscreenMode setting).

This setting obsoletes the Video SelfviewPosition setting as from TC6.0.

Requires user role: ADMIN
Value space: <Current/UpperLeft/UpperCenter/UpperRight/CenterLeft/CenterRight/LowerLeft/LowerRight>
   Current: The position of the self view PiP will be kept unchanged when leaving a call.
   UpperLeft: The self view PiP will appear in the upper left corner of the screen.
   UpperCenter: The self view PiP will appear in the upper center position.
   UpperRight: The self view PiP will appear in the upper right corner of the screen.
   CenterLeft: The self view PiP will appear in the center left position.
   CenterRight: 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.

Example: xConfiguration Video SelfviewDefault PIPPosition: Current

xConfiguration Video SelfviewDefault OnMonitorRole
Determine 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 HDMI/DVI/Composite MonitorRole settings.

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.

Requires user role: ADMIN
Value space: <First/Second/Current>
   First: The self view picture will be shown on outputs with the Video Output HDMI/DVI/Composite MonitorRole set to First.
   Second: The self view picture will be shown on outputs with the Video Output HDMI/DVI/Composite MonitorRole set to Second.
   Current: When leaving the call, the self view picture will be kept on the same output as during the call.

Example: xConfiguration Video SelfviewDefault OnMonitorRole: Current
xConfiguration Video CamCtrlPip CallSetup Mode

This setting is used to switch on self view for a short while when setting up a call. The Video CamCtrlPip CallSetup Duration setting determines for how long it remains on. This applies when self view in general is switched off.

Requires user role: ADMIN

Value space: <Off/On>

- Off: Self view is not shown automatically during call setup.
- On: Self view is shown automatically during call setup.

Example: xConfiguration Video CamCtrlPip CallSetup Mode: Off

xConfiguration Video CamCtrlPip CallSetup Duration

This setting only has an effect when the Video CamCtrlPip CallSetup 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

Value space: <1..60>

Range: Choose for how long self view remains on. The valid range is between 1 and 60 seconds.

Example: xConfiguration Video CamCtrlPip CallSetup Duration: 10

xConfiguration Video PIP ActiveSpeaker DefaultValue Position

Determine the position on screen of the active speaker picture-in-picture (PiP). The setting only takes effect when using a video layout where the active speaker is a PiP, i.e. the Overlay layout, or possibly a Custom layout (see the Video Layout LocalLayoutFamily setting). The setting takes effect from the next call onwards; if changed during a call, it will have no effect on the current call.

Requires user role: ADMIN

Value space: <Current/UpperLeft/UpperCenter/UpperRight/CenterLeft/CenterRight/LowerLeft/LowerRight>

- Current: The position of the active speaker PiP will be kept unchanged when leaving a call.
- UpperLeft: The active speaker PiP will appear in the upper left corner of the screen.
- UpperCenter: The active speaker PiP will appear in the upper center position.
- UpperRight: The active speaker PiP will appear in the upper right corner of the screen.
- CenterLeft: The active speaker PiP will appear in the center left position.
- CentreRight: The active speaker PiP will appear in the center right position.
- LowerLeft: The active speaker PiP will appear in the lower left corner of the screen.
- LowerRight: The active speaker PiP will appear in the lower right corner of the screen.

Example: xConfiguration Video PIP ActiveSpeaker DefaultValue Position: Current

xConfiguration Video PIP Presentation DefaultValue Position

Determine the position on screen of the presentation picture-in-picture (PiP). The setting only takes effect when the presentation is explicitly minimized to a PiP, for example using the remote control or the Touch controller. The setting takes effect from the next call onwards; if changed during a call, it will have no effect on the current call.

Requires user role: ADMIN

Value space: <Current/UpperLeft/UpperCenter/UpperRight/CenterLeft/CenterRight/LowerLeft/LowerRight>

- Current: The position of the presentation PiP will be kept unchanged when leaving a call.
- UpperLeft: The presentation PiP will appear in the upper left corner of the screen.
- UpperCenter: The presentation PiP will appear in the upper center position.
- UpperRight: The presentation PiP will appear in the upper right corner of the screen.
- CenterLeft: The presentation PiP will appear in the center left position.
- CentreRight: The presentation PiP will appear in the center right position.
- LowerLeft: The presentation PiP will appear in the lower left corner of the screen.
- LowerRight: The presentation PiP will appear in the lower right corner of the screen.

Example: xConfiguration Video PIP Presentation DefaultValue Position: Current
xConfiguration Video Layout LocalLayoutFamily
Select which video layout family to use locally.

Requires user role: ADMIN

Value space: <Auto/FullScreen/Equal/PresentationSmallSpeaker/PresentationLargeSpeaker/
Prominent/Overlay/Single>

Auto: The default layout family, as given by the layout database, will be used as the local layout. For more information about the layout database, see the xCommand Video Layout LoadDb command.

FullScreen: The FullScreen layout family will be used as the local layout. It means that the active speaker or presentation will be shown in full screen. Using this value is not recommended as from TC6.0.

Equal: The Equal layout family will be used as the local layout. All videos have equal size, as long as there is space enough on the screen(s).

PresentationSmallSpeaker: The PresentationSmallSpeaker layout family will be used as the local layout. Using this value is not recommended as from TC6.0.

PresentationLargeSpeaker: The PresentationLargeSpeaker layout family will be used as the local layout. Using this value is not recommended as from TC6.0.

Prominent: The Prominent layout family will be used as the local layout. The active speaker, or the presentation if present, will be a large picture, while the other participants will be small pictures. Transitions between active speakers are voice switched.

Overlay: The Overlay layout family will be used as the local layout. The active speaker, or the presentation if present, will be shown in full screen, while the other participants will be small pictures-in-picture (PiP). Transitions between active speakers are voice switched.

Single: The active speaker, or the presentation if present, will be shown in full screen. The other participants are not shown. Transitions between active speakers are voice switched.

Example: xConfiguration Video Layout LocalLayoutFamily: Auto

xConfiguration Video Layout RemoteLayoutFamily
Select which video layout family to be used for the remote participants.

Requires user role: ADMIN

Value space: <Auto/FullScreen/Equal/PresentationSmallSpeaker/PresentationLargeSpeaker/
Prominent/Overlay/Single>

Auto: The default layout family, as given by the local layout database, will be used as the remote layout. For more information about the layout database, see the command: xCommand Video Layout LoadDb.

FullScreen: The FullScreen layout family will be used as the remote layout. It means that the active speaker or presentation will be shown in full screen. Using this value is not recommended as from TC6.0.

Equal: The Equal layout family will be used as the remote layout. All videos have equal size, as long as there is space enough on the screen.

PresentationSmallSpeaker: The PresentationSmallSpeaker layout family will be used as the remote layout. Using this value is not recommended as from TC6.0.

PresentationLargeSpeaker: The PresentationLargeSpeaker layout family will be used as the remote layout. Using this value is not recommended as from TC6.0.

Prominent: The Prominent layout family will be used as the remote layout. The active speaker, or the presentation if present, will be a large picture, while the other participants will be small pictures. Transitions between active speakers are voice switched.

Overlay: The Overlay layout family will be used as the remote layout. The active speaker, or the presentation if present, will be shown in full screen, while the other participants will be small pictures-in-picture (PiP). Transitions between active speakers are voice switched.

Single: The active speaker, or the presentation if present, will be shown in full screen. The other participants are not shown. Transitions between active speakers are voice switched.

Example: xConfiguration Video Layout RemoteLayoutFamily: Auto

xConfiguration Video Monitors
Set the monitor layout mode.

Requires user role: ADMIN

Value space: <Single/Dual/DualPresentationOnly>

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.

Example: xConfiguration Video Monitors: Single
**xConfiguration Video OSD Mode**
The Video OSD (On Screen Display) Mode lets you define if information and icons should be displayed on screen.

_Requirements:_
- **User role:** ADMIN

_Parameters:_
- **Value space:** <Off/On>
  - _Off:_ Hide the on screen menus, icons and indicators.
  - _On:_ Display the on screen menus, icons and indicators.

_Example:_
```
xConfiguration Video OSD Mode: On
```

**xConfiguration Video OSD WallPaperSelection**
Applies to the on screen menu (OSD). The wallpaper selection menu can be hidden outside the administrator settings menu and visible inside, or it can be visible both inside and outside the administrator settings menu. The administrator settings menu can be password protected.

_Requirements:_
- **User role:** ADMIN

_Parameters:_
- **Value space:** <Off/On>
  - _Off:_ The wallpaper selection menu is hidden outside the administrator settings menu and visible inside. To change the wallpaper, navigate to: Home > Settings > Administrator Settings. If required log in with your username and password. Then navigate to Wall Paper.
  - _On:_ The wallpaper selection menu is visible both inside and outside the administrator settings menu. To change the wallpaper, navigate to: Home > Settings > Wall Paper. Or navigate to Home > Settings > Administrator Settings. If required log in with your username and password. Then navigate to Wall Paper.

_Example:_
```
xConfiguration Video OSD WallPaperSelection: On
```

**xConfiguration Video OSD LanguageSelection**
Applies to the on screen menu (OSD). The language selection menu can be hidden outside the administrator settings menu and visible inside, or it can be visible both inside and outside the administrator settings menu. The administrator settings menu can be password protected.

_Requirements:_
- **User role:** ADMIN

_Parameters:_
- **Value space:** <Off/On>
  - _Off:_ The language selection menu is hidden outside the administrator settings menu and visible inside. To change the language, navigate to: Home > Settings > Administrator Settings. If required log in with your username and password. Then navigate to Language.
  - _On:_ The language selection menu is visible both inside and outside the administrator settings menu. To change the language, navigate to: Home > Settings > Language. Or navigate to Home > Settings > Administrator Settings. If required log in with your username and password. Then navigate to Language.

_Example:_
```
xConfiguration Video OSD LanguageSelection: On
```

**xConfiguration Video OSD MenuStartupMode**
Configures the state of the OSD (On Screen Display) menu after a video system / codec boot. The setting only applies when the video system is operated by a remote control and the on-screen menu.

_Requirements:_
- **User role:** ADMIN

_Parameters:_
- **Value space:** <Closed/Home>
  - _Closed:_ The OSD menu will NOT expand automatically. This setting is recommended for 3rd party integrations that need full control of what is shown on the OSD.
  - _Home:_ The OSD menu will show the home menu expanded.

_Example:_
```
xConfiguration Video OSD MenyStartUpMode: Home
```

**xConfiguration Video OSD VirtualKeyboard**
Determine whether or not the virtual keyboard will automatically show on screen when text is to be entered in an input field. The setting only applies when the video system is operated by a remote control and the on-screen menu.

_Requirements:_
- **User role:** ADMIN

_Parameters:_
- **Value space:** <UserSelectable/AlwaysOn>
  - _UserSelectable:_ The user has to press a softbutton to open or close the virtual keyboard.
  - _AlwaysOn:_ The virtual keyboard is automatically shown on screen as long as text can be entered in an input field.

_Example:_
```
xConfiguration Video OSD VirtualKeyboard: UserSelectable
```

**xConfiguration Video OSD EncryptionIndicator**
Define for how long the encryption indicator (a padlock) will be shown on screen. The setting applies to both encrypted and non-encrypted calls, i.e. both to secure and non-secure conferences. The icon for encrypted calls is a locked padlock, and the icon for non-encrypted calls is a crossed out locked padlock.

_Requirements:_
- **User role:** ADMIN

_Parameters:_
- **Value space:** <Auto/AlwaysOn/AlwaysOff>
  - _Auto:_ If the Conference Encryption Mode setting is set to BestEffort and the call is encrypted, the encryption indicator is shown during the first seconds of a call. If the Conference Encryption Mode setting is set to BestEffort and the call is non-encrypted, the crossed out encryption indicator is shown during the entire call. If the Conference Encryption Mode setting is NOT set to BestEffort, the encryption indicator is not shown at all.
  - _AlwaysOn:_ The encryption indicator is displayed on screen during the entire call. This applies to both encrypted and non-encrypted calls for all Conference Encryption Mode settings.
  - _AlwaysOff:_ The encryption indicator is never displayed on screen. This applies to both encrypted and non-encrypted calls for all Conference Encryption Mode settings.

_Example:_
```
xConfiguration Video OSD EncryptionIndicator: Auto
```
xConfiguration Video OSD MissedCallsNotification
Determine whether or not the OSD (On Screen Display) shall display a missed calls notification dialog box if there have been incoming calls that have not been answered. The setting only applies when the video system is operated by a remote control and the on-screen menu. When using a Touch controller the notification dialog box will appear on the Touch display, and not on the OSD.

Requires user role: ADMIN
Value space: <Off/On>
  Off: The OSD will NOT show any indication that there have been any missed calls. This setting is recommended for 3rd party integrations that need full control of what is shown on the OSD.
  On: The OSD will show a notification of missed calls.

Example: xConfiguration Video OSD MissedCallsNotifications: On

xConfiguration Video OSD AutoSelectPresentationSource
Determine if the presentation source should be automatically selected.

Requires user role: ADMIN
Value space: <Off/On>
  Off: Disable automatic selection of the presentation source.
  On: Enable automatic selection of the presentation source.

Example: xConfiguration Video OSD AutoSelectPresentationSource: Off

xConfiguration Video OSD TodaysBookings
This setting can be used to display the system's bookings for today on the main OSD menu. This requires that the system is bookable by an external booking system, like Cisco TelePresence Management Suite (TMS).

Requires user role: ADMIN
Value space: <Off/On>
  Off: Do not display todays bookings.
  On: Displays information about this systems bookings on screen.

Example: xConfiguration Video OSD TodaysBookings: Off

xConfiguration Video OSD MyContactsExpanded
Set how the local contacts will be displayed in the phone book dialog in the OSD (On Screen Display).

Requires user role: ADMIN
Value space: <Off/On>
  Off: The local contacts will be placed in a separate folder called MyContacts in the phonebook dialog.
  On: The local contacts in the phone book will be shown in the top level of the phonebook dialog.

Example: xConfiguration Video OSD MyContactsExpanded: Off

xConfiguration Video OSD Output
The Video OSD (On Screen Display) Output lets you define which monitor should display the on screen menus, information and icons. By default the OSD is sent to the monitor connected to the Video OSD Output 1. If you cannot see the OSD on screen, then you must re-configure the OSD Output. You can do this by entering a key sequence on the remote control, from the web interface, or by a command line interface.

Using the remote control: Press the Disconnect key followed by: * # * # 0 x # (where x is output 1 to 2).

Using the web interface: Open a web browser and enter the IP address of the codec. Open the Advanced Configuration menu and navigate to Video OSD Output and select the video output. Using a command line interface: Open a command line interface and connect to the codec (if in doubt of how to do this, see the API Guide for the codec). Enter the command: xConfiguration Video OSD Output [1..2] (select the OSD Output)

Requires user role: ADMIN
Value space: <1/2>
  Range: Select 1 for HDMI 1 output, or select 2 for DVI-I 2 output.

Example: xConfiguration Video OSD Output: 1

xConfiguration Video OSD InputMethod InputLanguage
The codec can be enabled for Cyrillic input characters in the menus on screen. NOTE: Requires that xConfiguration Video OSD inputMethod Cyrillic is set to On.

Requires user role: ADMIN
Value space: <Latin/Cyrillic>
  Latin: Latin characters can be entered when using the remote control (default).
  Cyrillic: Cyrillic characters can be entered using the remote control. NOTE: Requires a Cisco TelePresence Remote Control with Cyrillic fonts.

Example: xConfiguration Video OSD InputMethod InputLanguage: Latin
**xConfiguration Video OSD InputMethod Cyrillic**
Set the Cyrillic mode for the menu input language in the menus on screen.

**Requires user role:** ADMIN

**Value space:** <Off/On>

- **Off:** Cyrillic mode is NOT available as a menu input language in the menus on screen.
- **On:** Cyrillic mode is available as a menu input language in the menus on screen. This will enable the setting Video OSD InputMethod InputLanguage.

**Example:** xConfiguration Video OSD InputMethod Cyrillic: Off

**xConfiguration Video OSD LoginRequired**
Determine if the system should require the user to login before accessing the On Screen Display (OSD). If enabled, the user must enter his username and his PIN. After the user has logged in he can only execute to the configurations changes and commands allowed by his Role.

**Requires user role:** ADMIN

**Value space:** <Off/On>

- **Off:** No login to the OSD is required.
- **On:** The user must log in to access the On Screen Display (OSD).

**Example:** xConfiguration Video OSD LoginRequired: Off

**xConfiguration Video AllowWebSnapshots**
Allow or disallow snapshots being taken of the local input sources, remote sites and presentation channel. If allowed, the web interface Call Control page will show snapshots both when idle and in a call.

**NOTE:** This feature is disabled by default, and must be enabled from the On Screen Display (OSD), from a directly connected Touch controller, or via the codec's serial port (COM).

**Requires user role:** ADMIN

**Value space:** <Off/On>

- **Off:** Capturing web snapshots is not allowed.
- **On:** Web snapshots can be captured and displayed on the web interface.

**Example:** xConfiguration Video AllowWebSnapshots: Off

**xConfiguration Video Output HDMI [1] RGBQuantizationRange**
All devices with HDMI outputs should follow the rules for RGB video quantization range defined in CEA-861. Unfortunately some devices do not follow the standard and this configuration may be used to override the settings to get a perfect image with any display. The default value is set to Full because most HDMI displays expects full quantization range.

**Requires user role:** ADMIN

**Value space:** <Auto/Full/Limited>

- **Auto:** RGB quantization range is automatically selected based on the RGB Quantization Range bits (Q0, Q1) in the AVI infoframe. If no AVI infoframe is available, RGB quantization range is selected based on video format according to CEA-861-E.
- **Full:** Full quantization range. The R, G, B quantization range includes all code values (0 - 255). This is defined in CEA-861-E.
- **Limited:** Limited Quantization Range. R, G, B quantization range that excludes some code values at the extremes (16 - 235). This is defined in CEA-861-E.

**Example:** xConfiguration Video Output HDMI 1 RGBQuantizationRange: Full

**xConfiguration Video Output HDMI [1] CEC Mode**
The HDMI outputs support Consumer Electronics Control (CEC). When set to on (default is off), and the monitor connected to the HDMI output is CEC compatible and CEC is configured, the system will use CEC to set the monitor in standby when the system enters standby. Likewise the system will wake up the monitor when the system wakes up from standby. Please note that the different manufacturers uses different marketing names for CEC, for example Anynet+ (Samsung); Aquos Link (Sharp); BRAVIA Sync (Sony); HDMI-CEC (Hitachi); Kuro Link (Pioneer); CE-Link and Regza Link (Toshiba); RIHD (Onkyo); HDAVI Control, EZ-Sync, VIERA Link (Panasonic); EasyLink (Philips); and NetCommand for HDMI (Mitsubishi).

**Requires user role:** ADMIN

**Value space:** <Off/On>

- **Off:** Disable CEC control.
- **On:** Enable CEC control.

**Example:** xConfiguration Video Output HDMI 1 CEC Mode: Off
xConfiguration Video Output HDMI [1] MonitorRole
The HDMI monitor role describes which video stream will be shown on the monitor connected to the video output HDMI connector.

Requires user role: ADMIN
Value space: <First/Second/PresentationOnly/Recorder>
- First/Second: Define the role of the monitor in a multi-monitor setup. In a single-monitor setup, there is no difference between First and Second.
- PresentationOnly: Show presentation video stream if active, and nothing else.
- Recorder: Show all participants, including the local main video. If active, also show the presentation.

Example: xConfiguration Video Output HDMI 1 MonitorRole: First

xConfiguration Video Output HDMI [1] OverscanLevel
Some TVs or other monitors may not display the whole image sent out on the systems video output, but cuts the outer parts of the image. In this case this setting can be used to let the system not use the outer parts of video resolution. Both the video and the OSD menu will be scaled in this case.

Requires user role: ADMIN
Value space: <Medium/High/None>
- Medium: The system will not use the outer 3% of the output resolution.
- High: The system will not use the outer 6% of the output resolution.
- None: The system will use all of the output resolution.

Example: xConfiguration Video Output HDMI 1 OverscanLevel: None

xConfiguration Video Output HDMI [1] Resolution
Select the preferred resolution for the monitor connected to the video output HDMI connector. This will force the resolution on the monitor.

Requires user role: ADMIN
Value space: <Auto/640_480_60/800_600_60/1024_768_60/1280_1024_60/1280_720_50/1280_720_60/1920_1080_60/1920_1080_50/1280_768_60/1360_768_60/1366_768_60/1600_1200_60/1680_1050_60/1920_1200_60/1280_768_60/1366_768_60/1600_1200_60/1680_1050_60/1920_1200_60/1280_768_60/1366_768_60/1600_1200_60/1680_1050_60/1920_1200_60>
- Auto: The system will automatically try to set the optimal resolution based on negotiation with the connected monitor.
- Range: 640x480@60p, 800x600@60p, 1024x768@60p, 1280x1024@60p, 1280x720@50p, 1280x720@60p, 1920x1080@50p, 1920x1080@60p, 1280x768@60p, 1360x768@60p, 1366x768@60p, 1600x1200@60p, 1680x1050@60p, 1920x1200@60p

Example: xConfiguration Video Output HDMI 1 Resolution: Auto

xConfiguration Video Output DVI [2] RGBQuantizationRange
All devices with DVI outputs should follow the rules for RGB video quantization range defined in CEA-861. Unfortunately some devices do not follow the standard and this configuration may be used to override the settings to get a perfect image with any display. The default value is set to Full because most DVI displays expects full quantization range.

Requires user role: ADMIN
Value space: <Auto/Full/Limited>
- Auto: RGB quantization range is automatically selected based on video format according to CEA-861-E. CE video formats will use limited quantization range levels. IT video formats will use full quantization range levels.
- Full: Full quantization range. The R, G, B quantization range includes all code values (0 - 255). This is defined in CEA-861-E.
- Limited: Limited Quantization Range. R, G, B quantization range that excludes some code values at the extremes (16 - 235). This is defined in CEA-861-E.

Example: xConfiguration Video Output DVI 2 RGBQuantizationRange: Full

xConfiguration Video Output DVI [2] MonitorRole
The DVI monitor role describes which video stream will be shown on the monitor connected to the video output DVI-I connector.

Requires user role: ADMIN
Value space: <First/Second/PresentationOnly/Recorder>
- First/Second: Define the role of the monitor in a multi-monitor setup. In a single-monitor setup, there is no difference between First and Second.
- PresentationOnly: Show presentation video stream if active, and nothing else.
- Recorder: Show all participants, including the local main video. If active, also show the presentation.

Example: xConfiguration Video Output DVI 2 MonitorRole: Second

xConfiguration Video Output DVI [2] OverscanLevel
Some TVs or other monitors may not display the whole image sent out on the systems video output, but cuts the outer parts of the image. In this case this setting can be used to let the system not use the outer parts of video resolution. Both the video and the OSD menu will be scaled in this case.

Requires user role: ADMIN
Value space: <Medium/High/None>
- Medium: The system will not use the outer 3% of the output resolution.
- High: The system will not use the outer 6% of the output resolution.
- None: The system will use all of the output resolution.

Example: xConfiguration Video Output DVI 2 OverscanLevel: None
xConfiguration Video Output DVI [2] Resolution
Select the preferred resolution for the monitor connected to the video output DVI-I connector. This will force the resolution on the monitor.

Requires user role: ADMIN

Value space: <Auto/640_480_60/800_600_60/1024_768_60/1280_1024_60/1280_720_50/1280_720_60/1920_1080_50/1280_1200_60>
Auto: The system will automatically try to set the optimal resolution based on negotiation with the connected monitor.
Range: 640x480@60p, 800x600@60p, 1024x768@60p, 1280x1024@60p, 1280x720@50p, 1280x720@60p, 1920x1080@50p, 1920x1200@60p

Example: xConfiguration Video Output DVI 2 Resolution: Auto

xConfiguration Video Output Composite [3] MonitorRole
NOTE: This command is not supported on Codec C40.
The Composite monitor role describes which video stream will be shown on the monitor connected to the video output Composite connector.

Requires user role: ADMIN

Value space: <First/Second/PresentationOnly/Recorder>
First/Second: Define the role of the monitor in a multi-monitor setup. In a single-monitor setup, there is no difference between First and Second.
PresentationOnly: Show presentation video stream if active, and nothing else.
Recorder: Show all participants, including the local main video. If active, also show the presentation.

Example: xConfiguration Video Output Composite 3 MonitorRole: First

xConfiguration Video Output Composite [3] OverscanLevel
NOTE: This command is not supported on Codec C40.
Some TVs or other monitors may not display the whole image sent out on the systems video output, but cuts the outer parts of the image. In this case this setting can be used to let the system not use the outer parts of video resolution. Both the video and the OSD menu will be scaled in this case.

Requires user role: ADMIN

Value space: <Medium/High/None>
Medium: The system will not use the outer 3% of the output resolution.
High: The system will not use the outer 6% of the output resolution.
None: The system will use all of the output resolution.

Example: xConfiguration Video Output Composite 3 OverscanLevel: None

xConfiguration Video Output Composite [3] Resolution
NOTE: This command is not supported on Codec C40.
Select the preferred resolution for the monitor connected to the video output Composite connector. This will force the resolution on the monitor.

Requires user role: ADMIN

Value space: <PAL/NTSC>
Range: PAL, NTSC

Example: xConfiguration Video Output Composite 3 Resolution: NTSC

xConfiguration Video Wallpaper
Select a background image (wallpaper) for the video screen when idle.

Requires user role: USER

Value space: <None/Custom/Growing/Summersky/Waves>
None: There is no background image on the screen, i.e. the background is black.
Custom: Use the custom wallpaper that is stored on the system as background image on the screen. As default, there is no custom wallpaper stored and the background will be black. You can upload a custom wallpaper to the system using the web interface. The maximum supported resolution is 1920x1200.
Summersky, Growing, Waves: The chosen background image is shown on the screen.

Example: xConfiguration Video Wallpaper: Summersky
Experimental configuration

The Experimental settings are for testing only and should not be used unless agreed with Cisco. These settings are not documented and WILL change in later releases.
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/cseries-docs

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Experimental commands
Audio commands

xCommand Audio Equalizer List
Shows the current equalizer settings for the codec.

Requires user role: ADMIN

Parameters:
- EqualizerId: <1..8>

Example:
```
xCommand Audio Equalizer List EqualizerId: 1
  *r AudioEqualizerListResult Equalizer 1 Section 1 FilterType: "Peaking"
  *r AudioEqualizerListResult Equalizer 1 Section 1 Frequency: "100"
  *r AudioEqualizerListResult Equalizer 1 Section 1 Q: "4"
  *r AudioEqualizerListResult Equalizer 1 Section 1 Gain: "0"
  *r AudioEqualizerListResult Equalizer 1 Section 2 FilterType: "Peaking"
  *r AudioEqualizerListResult Equalizer 1 Section 2 Frequency: "200"
  *r AudioEqualizerListResult Equalizer 1 Section 2 Q: "4"
  *r AudioEqualizerListResult Equalizer 1 Section 2 Gain: "0"
  *r AudioEqualizerListResult Equalizer 1 Section 3 FilterType: "Peaking"
  *r AudioEqualizerListResult Equalizer 1 Section 3 Frequency: "500"
  *r AudioEqualizerListResult Equalizer 1 Section 3 Q: "4"
  *r AudioEqualizerListResult Equalizer 1 Section 3 Gain: "0"
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  *r AudioEqualizerListResult Equalizer 1 Section 4 Frequency: "1000"
  *r AudioEqualizerListResult Equalizer 1 Section 4 Q: "4"
  *r AudioEqualizerListResult Equalizer 1 Section 4 Gain: "0"
  *r AudioEqualizerListResult Equalizer 1 Section 5 FilterType: "Peaking"
  *r AudioEqualizerListResult Equalizer 1 Section 5 Frequency: "2000"
  *r AudioEqualizerListResult Equalizer 1 Section 5 Q: "4"
  *r AudioEqualizerListResult Equalizer 1 Section 5 Gain: "0"
  *r AudioEqualizerListResult Equalizer 1 Section 6 FilterType: "Peaking"
  *r AudioEqualizerListResult Equalizer 1 Section 6 Frequency: "5000"
  *r AudioEqualizerListResult Equalizer 1 Section 6 Q: "4"
  *r AudioEqualizerListResult Equalizer 1 Section 6 Gain: "0"
** end
```

xCommand Audio Equalizer Update
The system has eight user defined equalizers, each made up of six second order IIR sections. Each
of the eight equalizers can be applied to one or more of the audio input and output connectors on
the codec. Each IIR section can be modified independently.

There are five filter types, and the frequency response variations dependent on some of the
parameter variations. The Q-value for low pass, high pass, low shelf and high shelf filters should
be set to 1/sqrt(2) in order to get maximally flat responses. The Q-value (or Q-factor) is defined as
Q=f0/bw. Where f0=resonance frequency in Hz; and bw=filter bandwidth in Hz.

To switch off one of the six equalizer sections; set the second order section to have a flat frequency
response. This can be done by setting the filter type to "none" or by setting the filter type to
"peaking" and the gain to "0" (zero).

We recommend using the TC Console tool, with the embedded equalizer GUI, to modify the
equalizers. The TC Console software is found on the Developer Zone web page. Go to: http://
developer.cisco.com/web/telepresence-developer/tools/integrators/tc-console.

Requires user role: ADMIN

Parameters:
- EqualizerId: <1..8>
- Section: <1..6>
- FilterType: <highpass/highshelf/lowpass/lowshelf/none/peaking>
- Frequency: <S: 0, 32>
- Q: <S: 0, 32>
- Gain: <S: 0, 32>

Example:
```
xCommand Audio Equalizer Update
  EqualizerId: 1
  Section: 1
  FilterType: "Peaking"
  Frequency: "100"
  Q: "4"
  Gain: "0"
  *r AudioEqualizerListResult Equalizer 1 Section 1 FilterType: "Peaking"
  *r AudioEqualizerListResult Equalizer 1 Section 1 Frequency: "100"
  *r AudioEqualizerListResult Equalizer 1 Section 1 Q: "4"
  *r AudioEqualizerListResult Equalizer 1 Section 1 Gain: "0"
  *r AudioEqualizerListResult Equalizer 1 Section 2 FilterType: "Peaking"
  *r AudioEqualizerListResult Equalizer 1 Section 2 Frequency: "200"
  *r AudioEqualizerListResult Equalizer 1 Section 2 Q: "4"
  *r AudioEqualizerListResult Equalizer 1 Section 2 Gain: "0"
  *r AudioEqualizerListResult Equalizer 1 Section 3 FilterType: "Peaking"
  *r AudioEqualizerListResult Equalizer 1 Section 3 Frequency: "500"
  *r AudioEqualizerListResult Equalizer 1 Section 3 Q: "4"
  *r AudioEqualizerListResult Equalizer 1 Section 3 Gain: "0"
  *r AudioEqualizerListResult Equalizer 1 Section 4 FilterType: "Peaking"
  *r AudioEqualizerListResult Equalizer 1 Section 4 Frequency: "1000"
  *r AudioEqualizerListResult Equalizer 1 Section 4 Q: "4"
  *r AudioEqualizerListResult Equalizer 1 Section 4 Gain: "0"
  *r AudioEqualizerListResult Equalizer 1 Section 5 FilterType: "Peaking"
  *r AudioEqualizerListResult Equalizer 1 Section 5 Frequency: "2000"
  *r AudioEqualizerListResult Equalizer 1 Section 5 Q: "4"
  *r AudioEqualizerListResult Equalizer 1 Section 5 Gain: "0"
  *r AudioEqualizerListResult Equalizer 1 Section 6 FilterType: "Peaking"
  *r AudioEqualizerListResult Equalizer 1 Section 6 Frequency: "5000"
  *r AudioEqualizerListResult Equalizer 1 Section 6 Q: "4"
  *r AudioEqualizerListResult Equalizer 1 Section 6 Gain: "0"
** end
```
xCommand Audio Microphones Mute

Mute all microphones.

Requires user role: USER

Example:

```plaintext
xCommand Audio Microphones Mute
*r AudioMicrophonesMuteResult (status=OK):
** end
```

xCommand Audio Microphones Unmute

Unmute microphones.

Requires user role: USER

Example:

```plaintext
xCommand Audio Microphones Unmute
*r AudioMicrophonesUnmuteResult (status=OK):
** end
```

xCommand Audio LocalInput Add

Create a local input and generate the local input id. A local input is a mix of input connectors with the following settings: Name, MixerMode, AGC, Mute and Channels.

InputId: A unique identifier for the local input.
Name: Choose a name that describes the mix of input connectors.
MixerMode Auto: The microphone with the strongest speaker is active and the others are strongly attenuated.
MixerMode Fixed: The input connector signals are mixed together with equal gains.
MixerMode GainShared: The microphones are given a normalized gain factor relative to the strongest speaker before being mixed together.
AGC: Automatic Gain Control.
Mute: Mutes the mix of input connectors.
Channels: Set channels to 1 to mix the input connectors into a mono signal. To mix the input connectors into a stereo signal, set channels to 2.

Requires user role: ADMIN

Parameters:
- InputId: <0..65534>
- Name: <S: 0, 255>
- MixerMode: <Auto/Fixed/GainShared>
- AGC: <On/Off>
- Mute: <On/Off>
- Channels: <1..2>

Example:

```plaintext
xCommand Audio LocalInput Add
OK
*r AudioInputGroupAddResult (status=OK):
  InputId: 2
** end
```
**xCommand Audio LocalInput Update**

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

**InputId**: A unique identifier for the local input.

**Name**: Choose a name that describes the mix of input connectors.

**MixerMode Auto**: The microphone with the strongest speaker is active and the others are strongly attenuated.

**MixerMode Fixed**: The input connector signals are mixed together with equal gains.

**MixerMode GainShared**: The microphones are given a normalized gain factor relative to the strongest speaker before being mixed together.

**AGC**: Automatic Gain Control.

**Mute**: Mutes the mix of input connectors.

**Channels**: Set channels to 1 to mix the input connectors into a mono signal. To mix the input connectors into a stereo signal, set channels to 2.

**Requires user role**: ADMIN

**Parameters**:

- **InputId(r)**: <0..65534>
- **Name(r)**: <S: 0, 255>
- **MixerMode(r)**: <Auto/Fixed/GainShared>
- **AGC(r)**: <On/Off>
- **Mute(r)**: <On/Off>
- **Channels(r)**: <1..2>

**Example**:

```plaintext
xCommand Audio LocalInput Update
InputId: 2
Name: "Microphone"
MixerMode: GainShared
AGC: Off
Mute: Off
Channels: 1
OK
```

```
*r AudioInputGroupUpdateResult (status=OK):
** end
```

**xCommand Audio LocalInput Remove**

Remove the local input given by the input ID.

**InputId**: A unique identifier for the local input.

**Requires user role**: ADMIN

**Parameters**:

- **InputId(r)**: <0..65534>

**Example**:

```plaintext
xCommand Audio LocalInput Remove
InputID: 2
OK
```

```
*r AudioInputGroupRemoveResult (status=OK):
** end
```

**xCommand Audio LocalInput AddConnector**

Attach an input connector to the local input given by the input ID. A connector is defined by its type and ID.

**InputId**: A unique identifier for the local input.

**ConnectorType**: Select the connector type.

**ConnectorId**: Select a connector.

**Requires user role**: ADMIN

**Parameters**:

- **InputId(r)**: <0..65534>
- **ConnectorType(r)**: <HDMI/Line/Microphone>
- **ConnectorId(r)**: <1..8>

**Example**:

```plaintext
xCommand Audio LocalInput AddConnector
InputId: 3
ConnectorType: Line
ConnectorId: 1
OK
```

```
*r AudioInputGroupAddConnectorResult (status=OK):
** end
```
**xCommand Audio LocalInput RemoveConnector**

Detach an input connector from the local input given by the input ID. A connector is defined by its type and ID.

- **InputId**: A unique identifier for the local input.
- **ConnectorType**: Select the connector type.
- **ConnectorId**: Select the connector.

**Requires user role**: ADMIN

**Parameters**:  
- `InputId(r)`: <0..65534>  
- `ConnectorType(r)`: <HDMI/Line/Microphone>  
- `ConnectorId(r)`: <1..8>

**Example**:  
```
xCommand Audio LocalInput RemoveConnector InputId: 3 ConnectorType: Line ConnectorId: 1 OK *r AudioInputGroupRemoveConnectorResult (status=OK):
** end
```

**xCommand Audio LocalOutput Add**

Create a local output and generate the local output id. A local output is a mix of local input and remote input signals. All connectors attached to the local output receive the same signal.

- **OutputId**: A unique identifier for the local output.
- **Name**: Choose a name that describes the local output.
- **Loudspeaker**: If one or more of the output connectors are connected to a loudspeaker, this signal should be a reference signal to the echo canceler. Hence set loudspeaker to On. NOTE: When microphone reinforcement is disabled there should only be one loudspeaker local output.
- **Channels**: Set channels to 1 to mix the local and remote inputs into a mono signal. To mix the inputs into a stereo signal, set channels to 2.

**Requires user role**: ADMIN

**Parameters**:  
- `OutputId`: <0..65534>  
- `Name`: <S: 0, 255>  
- `Loudspeaker`: <On/Off>  
- `Channels`: <1..2>

**Example**:  
```
xCommand Audio LocalOutput Add OutputId: 47 OK *r AudioOutputGroupAddResult (status=OK):
```

**xCommand Audio LocalInput RemoveConnector**

```
xCommand Audio LocalOutput Add
OK
*r AudioOutputGroupAddResult (status=OK):
OutputId: 47
** end
```
**xCommand Audio LocalOutput Update**

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

OutputId: A unique identifier for the local output.

Name: Choose a name that describes the local output.

Loudspeaker: If one or more of the output connectors are connected to a loudspeaker, this signal should be a reference signal to the echo canceler. Hence set loudspeaker to On. NOTE: When microphone reinforcement is disabled there should only be one loudspeaker local output.

Channels: Set channels to 1 to mix the local and remote inputs into a mono signal. To mix the inputs into a stereo signal, set channels to 2.

**Requires user role:** ADMIN

**Parameters:**

- **OutputId(r):** <0..65534>
- **Name(r):** <S: 0, 255>
- **Loudspeaker(r):** <On/Off>
- **Channels(r):** <1..2>

**Example:**

```
xCommand Audio LocalOutput Update
OutputId: 5 Name: "Loudspeaker"
Loudspeaker: On Channels: 2
OK
*r AudioOutputGroupUpdateResult (status=OK):
** end
```

**xCommand Audio LocalOutput AddConnector**

Attach an output connector to the local output given by the output ID. A connector is defined by its type and ID.

OutputId: A unique identifier for the local output.

ConnectorType: Select the connector type.

ConnectorId: Select a connector.

**Requires user role:** ADMIN

**Parameters:**

- **OutputId(r):** <0..65534>
- **ConnectorType(r):** <HDMI/Line>
- **ConnectorId(r):** <1..8>

**Example:**

```
xCommand Audio LocalOutput AddConnector
OutputId:5 ConnectorType: Line
ConnectorId:1
OK
*r AudioOutputGroupAddConnectorResult (status=OK):
** end
```

**xCommand Audio LocalOutput RemoveConnector**

Detach an output connector from the local output given by the output ID. A connector is defined by its type and ID.

OutputId: A unique identifier for the local output.

ConnectorType: Select the connector type.

ConnectorId: Select a connector.

**Requires user role:** ADMIN

**Parameters:**

- **OutputId(r):** <0..65534>
- **ConnectorType(r):** <HDMI/Line>
- **ConnectorId(r):** <1..8>

**Example:**

```
xCommand Audio LocalOutput RemoveConnector
OutputId:5 ConnectorType: Line
ConnectorId:1
OK
*r AudioOutputGroupRemoveConnectorResult (status=OK):
** end
```

---

**xCommand Audio LocalOutput Remove**

Remove the local output given by the output ID.

OutputId: A unique identifier for the local output.

**Requires user role:** ADMIN

**Parameters:**

- **OutputId(r):** <0..65534>

**Example:**

```
xCommand Audio LocalOutput Remove
OutputId: 6
OK
*r AudioOutputGroupRemoveResult (status=OK):
** end
```
xCommand Audio LocalOutput ConnectInput

Connect a local or remote input to a local output by giving their IDs as parameters.

OutputId: A unique identifier for the local output.
InputId: A unique identifier for the local input.
InputGain: Set a gain on the input signal in the range from -54dB to 15dB. The value -54dB equals Off.

Requires user role: ADMIN

Parameters:
- OutputId(r): <0..65534>
- InputId(r): <0..65534>
- InputGain: <-54..15>

Example:
```
xCCommand Audio LocalOutput ConnectInput OutputId:6 InputId:3
OK
*r AudioOutputGroupConnectInputResult (status=OK):
** end
```

xCommand Audio LocalOutput UpdateInputGain

Update the gain of a local or remote input connected to a local output. The gain on the input signal is in the range from -54dB to 15dB. The value -54dB equals Off.

OutputId: A unique identifier for the local output.
InputId: A unique identifier for the local input.
InputGain: Set a gain on the input signal in the range from -54dB to 15dB. The value -54dB equals Off.

Requires user role: ADMIN

Parameters:
- OutputId(r): <0..65534>
- InputId(r): <0..65534>
- InputGain: <-54..15>

Example:
```
xCCommand Audio LocalOutput UpdateInputGain OutputId:6 InputId:3
OK
*r AudioOutputGroupUpdateInputGainResult (status=OK):
** end
```

xCommand Audio LocalOutput DisconnectInput

Disconnect a local or remote input from a local output.

OutputId: A unique identifier for the local output.
InputId: A unique identifier for the local or remote input.

Requires user role: ADMIN

Example:
```
xCCommand Audio LocalOutput DisconnectInput OutputId:6 InputId:3
OK
*r AudioOutputGroupDisconnectInputResult (status=OK):
** end
```

xCommand Audio RemoteOutput ConnectInput

Connect a local or remote input to a remote output with their IDs as parameters. When a call is made a remote input and remote output pair is created.

OutputId: A unique identifier for the local output.
InputId: A unique identifier for the local or remote input.
InputGain: Set a gain on the input signal in the range from -54dB to 15dB. The value -54dB equals Off.

Requires user role: ADMIN

Parameters:
- OutputId(r): <0..65534>
- InputId(r): <0..65534>
- InputGain: <-54..15>

Example:
```
xCCommand Audio RemoteOutput ConnectInput OutputId:10 InputId:8
OK
*r AudioRemoteOutputGroupConnectInputResult (status=OK):
** end
```
xCommand Audio RemoteOutput UpdateInputGain
Update the gain of a local or remote input connected to a remote output.
OutputId: A unique identifier for the local output.
InputId: A unique identifier for the local or remote input.
InputGain: Set a gain on the input signal in the range from -54dB to 15dB. The value -54dB equals Off.
Requires user role: ADMIN
Parameters:
  OutputId(r): <0..65534>
  InputId(r): <0..65534>
  InputGain: <-54..15>
Example:
xCommand Audio RemoteOutput UpdateInputGain OutputId:6 InputId:3
  OK
  *r AudioRemoteOutputGroupUpdateInputGainResult (status=OK):
    ** end

xCommand Audio RemoteOutput DisconnectInput
Disconnect a local or remote input from a remote output with their IDs as parameters.
OutputId: A unique identifier for the local output.
InputId: A unique identifier for the local or remote input.
Requires user role: USER
Parameters:
  OutputId(r): <0..65534>
  InputId(r): <0..65534>
Example:
xCommand Audio RemoteOutput DisconnectInput OutputId:10 InputId:8
  OK
  *r AudioRemoteOutputGroupDisconnectInputResult (status=OK):
    ** end

xCommand Audio Setup Clear
Remove all local inputs and local outputs.
Requires user role: ADMIN
Example:
xCommand Audio Setup Clear
  *r AudioSetupClearResult (status=OK):
    ** end

xCommand Audio Sound Play
Play a specified audio sound.
Requires user role: USER
Parameters:
  Sound(r): <Busy/CallWaiting/Dial/KeyTone/Ringing/SpecialInfo/TelephoneCall/VideoCall>
  Loop: <On/Off>
Example:
xCommand Audio Sound Play Sound: Ringing
  *r AudioSoundPlayResult (status=OK):
    ** end

xCommand Audio Sound Stop
Stop playing audio sound.
Requires user role: USER
Example:
xCommand Audio Sound Stop
  *r AudioSoundStopResult (status=OK):
    ** end
xCommand Audio VUMeter Start
Start collecting VU meter information for connector given by type and ID.

**Requires user role:** USER

**Parameters:**
- ConnectorType(r): <HDMI/Line/Microphone>
- ConnectorId(r): <1..8>

**Example:**
- xCommand Audio VUMeter Start ConnectorType: Microphone ConnectorId: 1
  *r AudioVumeterStartResult (status=OK):
  ** end

xCommand Audio VUMeter Stop
Stop collecting VU meter information for connector given by type and ID.

**Requires user role:** USER

**Parameters:**
- ConnectorType(r): <HDMI/Line/Microphone>
- ConnectorId(r): <1..8>

**Example:**
- xCommand Audio VUMeter Stop ConnectorType: Microphone ConnectorId: 1
  *r AudioVumeterStopResult (status=OK):
  ** end

xCommand Audio VUMeter StopAll
Stop collecting VU meter information for all connectors.

**Requires user role:** USER

**Example:**
- xCommand Audio VUMeter StopAll
  *r AudioVumeterStopResult (status=OK):
  ** end

---

**Bookings commands**

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 used, past, present and future bookings are all listed. To avoid listing bookings from yesterday and before, use DayOffset = 0.

**Days:** Number of days to retrieve bookings from.
**DayOffset:** Which day to start the search from (today: 0, tomorrow: 1...).
**Limit:** Max number of bookings to list.
**Offset:** Offset number of bookings for this search.

**Requires user role:** USER

**Parameters:**
- Days: <1..365>
- DayOffset: <0..365>
- Limit: <1..65534>
- Offset: <0..65534>

**Example:**
- Example 1 (One booking in list)
  xCommand Bookings List
  OK
  *r Bookings ResultInfo TotalRows: 1
  *r Bookings LastUpdated: "2011-09-02T11:19:01Z"
  *r Bookings Booking 1 Id: "273"
  *r Bookings Booking 1 Title: "Sales meeting"
  *r Bookings Booking 1 Agenda: "Describe this command"
  *r Bookings Booking 1 Privacy: Public
  *r Bookings Booking 1 Organizer FirstName: "Ola"
  *r Bookings Booking 1 Organizer LastName: "Normann"
  *r Bookings Booking 1 Organizer Email: "ola.normann@domain.com"
  *r Bookings Booking 1 Time StartTime: "2011-09-02T13:00:00Z"
  *r Bookings Booking 1 Time StartTimeBuffer: 600
  *r Bookings Booking 1 Time EndTime: "2011-09-02T13:30:00Z"
  *r Bookings Booking 1 Time EndTimeBuffer: 0
  *r Bookings Booking 1 MaximumMeetingExtension: 30
  *r Bookings Booking 1 MeetingExtensionAvailability: Guaranteed
  *r Bookings Booking 1 BookingStatus: OK
Example 2 (When no bookings have been received, or after all bookings have been removed by the command xCommand Bookings Clear)

xCommand Bookings Clear
Clear the current stored list of bookings.

Requires user role: USER

Example:
  xCommand Bookings Clear
  ** end
  OK
Boot commands

xCmmand Boot
Reboot system.
Action: As a default the system restarts after a reboot. By selecting Shutdown, the system will not restart.

Requires user role: USER

Parameters:
  Action: <Restart/Shutdown>

Example:
  xCommand Boot
  *r BootResult (status=OK):
  ** end
  OK
  CUIL reboot request, restarting
  Connection closed by foreign host.

Call commands

xCmmand Call Accept
Accept an incoming call. If no CallId is specified, all incoming calls are accepted. 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.

Requires user role: USER

Parameters:
  CallId: <0..65534>
  CallType(o): <Audio/Video>

Example:
  xCommand Call Accept CallId:19
  OK
  *r CallAcceptResult (status=OK):
  ** end

xCmmand Call Reject
Reject incoming call. If no call id is specified, all incoming calls are rejected. 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.

Requires user role: USER

Parameters:
  CallId: <0.65534>

Example:
  xCommand Call Reject CallId:20
  OK
  *r CallRejectResult (status=OK):
  ** end
xCommand Call Disconnect
Disconnect a call. 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.

Requires user role: USER
Parameters:
  CallId(r): <0..65534>

Example:
  xCommand Call Disconnect CallId:17
  OK
  *r DisconnectCallResult (status=OK):
  ** end

xCommand Call DisconnectAll
Disconnect all active calls.

Requires user role: USER

Example:
  xCommand Call DisconnectAll
  OK
  *r DisconnectAllResult (status=OK):
  ** end

xCommand Call Hold
Put a call on hold. 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.

Requires user role: USER
Parameters:
  CallId(r): <0..65534>
  Reason(o): <Conference/Transfer/Other>

Example:
  xCommand Call Hold CallId:19
  OK
  *r CallHoldResult (status=OK):
  ** end

xCommand Call Join
Join all existing calls, active and on hold. For this command to work, you have to configure Multiway™ first, see xConfiguration NetworkServices MultiWay Address and xConfiguration Conference 1 Multipoint Mode.

Requires user role: USER
Parameters:
  CallId(r): <0..65534>

Example:
  xCommand Call Join
  OK
  *r CallJoinResult (status=OK):
  ** end

xCommand Call Resume
Resume a call that have been put on hold. 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.

Requires user role: USER
Parameters:
  CallId(r): <0..65534>

Example:
  xCommand Call Resume CallId:19
  OK
  *r CallResumeResult (status=OK):
  ** end
**xCommand Call ExtendConference**

Request to extend the conference for the call with the specified CallId.

For this command to apply, the following are required:

1) The result from the xStatus Conference Site <CallId> ConferenceExtended must be NotExtended:
   "s Conference Site <CallId> ConferenceExtended: NotExtended"
2) The following tag from the bookings list command must have a value > 0:
   "r Bookings Booking <bookingNumber> MaximumMeetingExtension: "30"

Note: The command returns the result from the command itself, not the result from the extension request to far end. A separate event returns the result from the extension request.

CallId: Callld for the call in question.

Requires user role: USER

Parameters:

CallId(r): <0..65534>

Example:

```plaintext
xCommand Call ExtendConference CallId: 1

OK

*r CallExtendConferenceResult (status=OK)
** end
```

**xCommand Call UnattendedTransfer**

Transfers an ongoing call to another participant. 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. Fully supported for SIP calls only.

Requires user role: USER

Parameters:

CallId(r): <0..65534>
Number(r): <S: 0, 255>

Example:

```plaintext
xCommand Call UnattendedTransfer CallId: 2 Number: destination@example.com

*r TransferUriResult (status=OK):
** end
```

**xCommand Call HoldAll**

Puts all ongoing calls on hold.

Requires user role: USER

Parameters:

None

Example:

```plaintext
xCommand Call HoldAll

*x Command Call HoldAll
```

**xCommand Call Ignore**

Turns off the ringtone for the incoming call. The call can still be answered.

Requires user role: USER

Parameters:

CallId(r): <0..65534>

Example:

```plaintext
xCommand Call Ignore CallId: 22

*r IgnoreResult (status=OK):
** end
```

**xCommand Call Modify**

Modifies the call type of the current call, to either an audio call or a video call. Not in use in this software version.

Requires user role: USER

Parameters:

CallId(r): <0..65534>
CallType(r): <Audio/Video>

Example:

```plaintext
xCommand Call Modify CallType: Audio CallId: 16

*r CallModifyResult (status=Error):
  Reason: Callescalation not enabled
** end
```
CallLog commands

xCCommand CallLog Clear
Clear call logs stored in the system. If a logtag is given as argument, that specific call is deleted from the logs. If no logtag is given the system deletes all call logs. The LogTag values for the calls are found by issuing the xHistory CallLog Call command.

Requires user role: USER

Parameters:
LogTag: <0..2147483647>

Example:
xCommand CallLog Clear
  *r ClearResult (status=OK):
  ** end

xCCommand CallLog Recent Delete
Delete the call log of recent calls. If a logtag is given as argument, that specific call is deleted from the log. If no logtag is given the system deletes all call logs. The LogTag values for recent calls are found by issuing the xHistory CallLog Recent command.

Requires user role: USER

Parameters:
LogTag: <0..2147483647>

Example:
xCommand CallLog Recent Delete
  *r DeleteResult (status=OK):
  ** end

xCCommand CallLog Outgoing Delete
Delete the call log of outgoing calls. If a logtag is given as argument, that specific call is deleted from the log. If no logtag is given the system deletes the complete outgoing calls log. The LogTag values for outgoing calls are found by issuing the xHistory CallLog Outgoing command.

Requires user role: USER

Parameters:
LogTag: <0..2147483647>

Example:
xCommand CallLog Outgoing Delete LogTag:202
  *r DeleteResult (status=OK):
  ** end

xCCommand CallLog Received Delete
Delete the call log of received calls. If a logtag is given as argument, that specific call is deleted from the log. If no logtag is given the system deletes the complete received calls log. The LogTag values for received calls are found by issuing the xHistory CallLog Received command.

Requires user role: USER

Parameters:
LogTag: <0..2147483647>

Example:
xCommand CallLog Received Delete LogTag:126
  *r DeleteResult (status=OK):
  ** end

xCCommand CallLog Missed Delete
Delete the call log of missed calls. If a logtag is given as argument, that specific call is deleted from the log. If no logtag is given the system deletes the complete missed calls log. The LogTag values for missed calls are found by issuing the xHistory CallLog Missed command.

Requires user role: USER

Parameters:
LogTag: <0..2147483647>

Example:
xCommand CallLog Missed Delete LogTag:119
  *r DeleteResult (status=OK):
  ** end
xCommand CallLog Missed Dismiss

Review the call log of dismissed calls. If a logtag is given as argument, that specific call is deleted from the log. If no logtag is given the system deletes the complete missed calls log. The LogTag values for missed calls are found by issuing the xHistory CallLog Missed command.

Requires user role: USER

Parameters:
- LogTag: \(<0..2147483647>\)

Example:
```
xCommand CallLog Missed Dismiss LogTag:119
*rd DismissResult (status=OK):
  ** end
```

CamCtrlPip commands

xCommand CamCtrlPip

Show or hide the camera self-view in a small window (picture in picture).

Mode: Select whether the self-view picture in picture is on or off.
Duration: Set how long the self-view is shown for on screen.

Requires user role: USER

Parameters:
- Mode(r): \(<\text{On/Off}>\)
- Duration: \(<0..60>\)

Example:
```
xCommand CamCtrlPip Mode: On
  *r CamCtrlPipResult (status=OK):
  ** end
```
Camera commands

xCommand Camera PanTiltReset
The camera is reset to its default values for pan and tilt. If the camera is daisy chained, the CameraId is given by its place in the chain.

Requirements user role: USER

Parameters:
- CameraId(r): <1..7>

Example:
```
xCommand Camera PanTiltReset CameraId:1
OK
*r PanTiltResetResult (status=OK):
** end
```

xCommand Camera PositionReset
Reset the camera position to the default position.

Requirements user role: USER

Parameters:
- CameraId(r): <1..7>

Example:
```
xCommand Camera PositionReset CameraId:1
OK
*r CameraPositionResetResult (status=OK):
** end
```

xCommand Camera PositionSet
Position the camera by defining the pan, tilt, zoom and focus parameters. If the camera is placed in a daisy chain you need to know the CameraId for the camera you want to address.

Requirements user role: USER

Parameters:
- CameraId(r): <1..7>
- Pan: <-65535..65535>
- Tilt: <-65535..65535>
- Zoom: <0..65535>
- Focus: <0..65535>

Example:
```
xCommand Camera PositionSet CameraId:1 Pan:200 Tilt:300
OK
*r CameraPositionSetResult (status=OK):
** end
```
**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.

**CameraId:** Give the camera id.

**Pan:** Move the camera to the Left or Right, followed by Stop.

**PanSpeed:** Set the pan speed.

**Tilt:** Move the camera Up or Down, followed by Stop.

**TiltSpeed:** Set the tilt speed.

**Zoom:** Zoom the camera In or Out, followed by Stop.

**ZoomSpeed:** Set the zoom speed.

**Focus:** Focus the camera Far or Near, followed by Stop.

**Requires user role:** USER

**Parameters:**

- CameraId(r): <1..7>
- Pan: <Left/Right/Stop>
- PanSpeed: <1..15>
- Tilt: <Down/Up/Stop>
- TiltSpeed: <1..15>
- Zoom: <In/Out/Stop>
- ZoomSpeed: <1..15>
- Focus: <Far/Near/Stop>

**Example:**

```
xCommand Camera Ramp CameraId:1 Pan:left PanSpeed:1
OK
```

```
*r RampResult (status=OK):
** end
```

```
xCommand Camera Ramp CameraId:1 Pan:stop
OK
```

```
*r RampResult (status=OK):
** end
```

**xCommand Camera ReconfigureCameraChain**

Reinitialize the daisy chain of cameras and updates the CameraId parameter. The CameraId parameter holds information of which camera is sitting in what position in the camera chain.

**Requires user role:** USER

**Example:**

```
xCommand Camera ReconfigureCameraChain
```

```
*r ReconfigureCameraChainResult (status=OK):
** end
```

**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:** USER

**Parameters:**

- CameraId(r): <1..7>

**Example:**

```
xCommand Camera TriggerAutofocus CameraId:1
```

```
OK
```

```
*r TriggerAutofocusResult (status=OK):
** end
```

**xCommand Camera PositionActivateFromPreset**

Selects pan, tilt, zoom and focus parameters for the given camera id from the selected preset.

**CameraId:** Give the camera id.

**PresetId:** Select preset 1 to 15.

**Requires user role:** USER

**Parameters:**

- CameraId(r): <1..7>
- PresetId(r): <1..15>

**Example:**

```
xCommand Camera PositionActivateFromPreset CameraId:1 PresetID:1
```

```
OK
```

```
*r PositionActivateFromPresetResult (status=OK):
** end
```
**xCommand Camera Preset Activate**

Activate one of the stored camera preset.

Note: 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.

PresetId: The ID of the camera preset you want to activate.

Requires user role: USER

Parameters:

- PresetId(r): <1..35>

Example:

```plaintext
xCommand Camera Preset Activate PresetId: 1
OK
*r CameraPresetActivateResult (status=OK)
** end
```

**xCommand Camera Preset List**

List information about available camera presets.

Note: The xCommand Camera Preset commands are used to store camera positions for individual cameras. This is in contrast to the xCommand Preset commands where a single preset stores/recalls ALL connected cameras plus the Video Input switcher settings. This makes it more usable for integrations where one wants to store multiple camera positions individually per camera rather than a complete camera position set.

PresetId: Filter on specified preset.

Requires user role: USER

Parameters:

- PresetId: <1..35>

Example:

```plaintext
xCommand Camera Preset List PresetId: 1
OK
*r CameraPresetListResult (status=OK)
** end
```

**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.

Note: 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.

PresetId: The ID of the camera preset you want to edit.

ListPosition: The position in the list returned by the xCommand Camera Preset List command.

Name: The name of the camera preset. It will be used in the list returned by the xCommand Camera Preset List command.

Requires user role: ADMIN

Parameters:

- PresetId(r): <1..35>
- ListPosition: <1..35>
- Name: <S: 0, 255>

Example:

```plaintext
xCommand Camera Preset Edit PresetId: 1 ListPosition: 1 Name: ""
OK
*r CameraPresetEditResult (status=OK)
** end
```

**xCommand Camera Preset Remove**

Remove a camera preset.

Note: 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.

PresetId: The ID of the camera preset you want to remove.

Requires user role: USER

Parameters:

- PresetId(r): <1..35>

Example:

```plaintext
xCommand Camera Preset Remove PresetId: 1
OK
*r CameraPresetRemoveResult (status=OK)
** end
```
xCommand Camera Preset Store

Store the current position of the chosen camera. The camera is identified by the CameraId parameter.

Note: 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.

PresetId: The ID of this camera preset. If not set explicitly, the codec will assign a preset ID automatically.

CameraId: Which camera to store the position of.

ListPosition: The new camera preset’s position in the list returned by the xCommand Camera Preset List command.

Name: The name of the new camera preset. It will be used in the list returned by the xCommand Camera Preset List command.

Requires user role: ADMIN

Parameters:
- PresetId: <1..35>
- CameraId: <1..7>
- ListPosition: <1..35>
- Name: <S: 0, 255>

Example:
```
xCommand Camera Preset Store
PresetId: 1
CameraId: 1
ListPosition: 1
Name: ""
```
OK
```
*r CameraPresetStoreResult (status=OK)
** end
```

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. It only takes effect when xConfiguration Conference DoNotDisturb Mode is set to Timed.

When Do Not Disturb is switched on, all incoming calls are rejected and registered as missed calls. The calling side receives a busy signal.

Timeout: The number of minutes before Do Not Disturb is switched off. If not set, Do Not Disturb times out after 1440 minutes (24 hours).

Requires user role: USER

Parameters:
- Timeout: <0..1440>

Example:
```
xCommand Conference DoNotDisturb Activate
```
```
*r ActivateResult:
** end
```

xCommand Conference DoNotDisturb Deactivate

This command switches off the Do Not Disturb mode. This command only takes effect when xConfiguration Conference DoNotDisturb Mode is set to Timed. When Do Not Disturb is switched off incoming calls come through as normal.

Requires user role: USER

Example:
```
xCommand Conference DoNotDisturb Deactivate
```
```
*r DeactivateResult:
** end
```

xCommand Conference ActiveSpeaker Reset

Resets ActiveSpeaker. Normal voice switching is switched back on.

Requires user role: USER

Example:
```
xCommand Conference ActiveSpeaker Reset
```
```
*r ConferenceActiveSpeakerResetResult (status=OK):
** end
```

### xCommand Conference ActiveSpeaker Set

For manually setting the active speaker in a conference. Overrides normal voice switching.

- **Target**: Identifies local or remote participant.
- **CallId**: Identifies CallID for remote participant. Only relevant if Target is set to "remote".

**Requires user role**: USER

**Parameters:**

- **Target(r)**: `<local/remote>`
- **CallId**: `<0..65534>`

**Example:**

Example 1

```
xCommand Conference ActiveSpeaker Set Target: local
*r ConferenceActiveSpeakerSetResult (status=OK):
  ** end
```

Example 2

```
xCommand Conference ActiveSpeaker Set Target: remote CallID: 3
*r ConferenceActiveSpeakerSetResult (status=OK):
  ** end
```

### Dial commands

#### xCommand Dial

Dial out from the system. Returns information about the CallId and ConferenceId, which are required for some other commands.

- **Number**: Enter the number or address.
- **Protocol**: Select the SIP, H323 or H320 protocol.
- **CallRate**: Set a call rate.
- **CallType**: Select the audio or video call type.
- **BookingId**: 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.

**Requires user role**: USER

**Parameters:**

- **Number(r)**: `<S: 0, 255>`
- **Protocol**: `<H320/H323/Sip>`
- **CallRate**: `<64..6000>`
- **CallType**: `<Audio/Video>`
- **BookingId**: `<S: 0, 255>`
- **Appearance(o)**: `<1..999999999>`

**Example:**

```
xCommand Dial Number:543210 Protocol:h323
OK
*r DialResult (status=OK):
CallId: 2
ConferenceId: 1
  ** end
```
DTMFSend commands

xCommand DTMFSend
Send DTMF tones to the far end.
CallId: 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: Enter the DTMF string.

Requires user role: USER

Parameters:
CallId: <0..65534>
DTMFString(r): <S: 0, 32>

Example:
```
xCommand DTMFSend CallId:2 DTMFString:1234
*r DTMFSendResult (status=OK):
** end
```
FarEndControl commands

xCommand 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.
CallId: 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.
Value: Select the action for how to move the camera.

Requirements: user role

Parameters:
- CallId: <0..65534>
- Value(r): <Left/Right/Up/Down/ZoomIn/ZoomOut>

Example:
```
xCommand FarEndControl Camera Move CallId:3 Value:left
```
```
** r FECCMoveResult (status=OK):
** end
```

xCommand FarEndControl Camera Stop
Stop the far end camera after the xCommand FarEndControl Camera Move has been issued.
CallId: 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.

Requirements: user role

Parameters:
- CallId: <0..65534>

Example:
```
xCommand FarEndControl Camera Stop CallId:3
```
```
** r FECCMoveResult (status=OK):
** end
```

xCommand FarEndControl Preset 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.
Calld: The CallId is required to identify the far end codec only when in a Multipoint call. The CallId is returned when issuing the xCommand Dial command. During the call you can run the xStatus Call command to see the CallId.
PresetId: The PresetId must be retrieved from the far end codec since this is the ID of the preset that is stored on that codec.

Requirements: user role

Parameters:
- CallId: <0..65534>
- PresetId: <1..15>

Example:
```
xCommand FarEndControl Preset Activate CallId:3 PresetId:1
```
```
** r FECCPresetActivateResult (status=OK):
** end
```
xCommand FarEndControl Preset Store

While in a call, this command is used to store a preset on the far end codec. The preset covers the far end codec’s camera positions and input video switcher settings.

Note: The far end codec’s xConfiguration Conference FarEndControl Mode setting must be switched On for the FarEndControl commands to work.

Calld: The CallId is required to identify the far end codec only when in a Multipoint call. The CallId is returned when issuing the xCommand Dial command. During the call you can run the xStatus Call command to see the Calld.

PresetId: The PresetId must be retrieved from the far end codec since this is the ID of the preset that is stored on that codec.

Requires user role: ADMIN

Parameters:
- CallId: <0..65534>
- PresetId: (r): <0..15>

Example:
```c
xCommand FarEndControl Preset Store CallId:3 PresetId:1
```
```
*r FECCPresetStoreResult (status=OK):
** end
```

xCommand FarEndControl Source Select

Select which video input source to use as the main source on the far end system.

Calld: The CallId is returned when the xCommand Dial command is run. During the call you can run the xStatus Call command to see the Calld.

SourceId: Select a video input source on the far end.

Requires user role: USER

Parameters:
- CallId: <0..65534>
- SourceId: (r): <0..15>

Example:
```c
xCommand FarEndControl Source Select CallId:3 SourceId:1
```
```
*r FECCSelectSourceResult (status=OK):
** end
```

GPIO commands

xCommand GPIO ManualState Set

NOTE: This command is not supported on Codec C40.

Set the status of a GPIO pin that is configured to OutputManualState mode (ref. xConfiguration GPIO Pin [1..4] Mode).

Requires user role: USER

Parameters:
- Pin1: <High/Low>
- Pin2: <High/Low>
- Pin3: <High/Low>
- Pin4: <High/Low>

Example:
```c
xCommand GPIO ManualState Set Pin1: High
```
```
*r GpioStateSetResult (status=OK):
** end
```
HttpFeedback commands

**xCommand HttpFeedback Register**
Register the system to a HTTP(S) server to return XML feedback over HTTP(S) to specific URLs.

**FeedbackSlot**: You can have from 1 to 4 slots for feedback.

**ServerUrl**: Define the URL for the HTTP(S) server.

**Expression[1..15]**: What parts of the Status and Configuration XML documents to monitor are specified by XPath expressions. You can have from 1 to 15 XPath expressions.

**Requires user role**: USER

**Parameters**:
- **FeedbackSlot**: <1..4>
- **ServerUrl(r)**: <S: 1, 2048>
- **Expression[1..15]**: <S: 1, 255>

**Example**:
```
xCommand HttpFeedback Register FeedbackSlot:1 ServerUrl:10.47.19.41 Expression[1]:Status/Video Expression[2]:Status/Audio Expression[3]:Status/Call Expression[4]:Status/Conference OK
```
```
*r FeedbackRegisterResult (status=OK):
FeedbackSlot: 1
** end
```

**xCommand HttpFeedback Deregister**
Deregister XML feedback over HTTP(S).

**Requires user role**: USER

**Parameters**:
- **FeedbackSlot(r)**: <1..4>

**Example**:
```
xCommand HttpFeedback Deregister FeedbackSlot:1 OK
```
```
*r FeedbackDeregisterResult (status=OK):
FeedbackSlot: 1
** end
```

Key commands

**xCommand Key Click**
Emulates a remote control key press, followed by a key release.

**Requires user role**: ADMIN

**Parameters**:
- **Key(r)**: <0/1/2/3/4/5/6/7/8/9/C/Call/Disconnect/Down/F1/F2/F3/F4/F5/Grab/Home/Layout/Left/Mute/MuteMic/Ok/PhoneBook/Presentation/Right/Selfview/Square/SrcAux/SrcCamera/SrcDocCam/SrcPc/SrcVcr/Star/Up/VolumeDown/VolumeUp/ZoomIn/ZoomOut>

**Example**:
```
xCommand Key Click Key:Down
*r KeyClickResult (status=OK):
** end
```

**xCommand Key Press**
Emulates a remote control key press without releasing it. The Key Press command must be followed by a Key Release command to emulate releasing the key.

**Requires user role**: ADMIN

**Parameters**:
- **Key(r)**: <0/1/2/3/4/5/6/7/8/9/C/Call/Disconnect/Down/F1/F2/F3/F4/F5/Grab/Home/Layout/Left/Mute/MuteMic/Ok/PhoneBook/Presentation/Right/Selfview/Square/SrcAux/SrcCamera/SrcDocCam/SrcPc/SrcVcr/Star/Up/VolumeDown/VolumeUp/ZoomIn/ZoomOut>

**Example**:
```
xCommand Key Press Key:Home
*r KeyPressResult (status=OK):
** end
```
xCommand Key Release
Emulates a remote control key release. The Key Release command is issued after a Key Press command.

Requires user role: ADMIN

Parameters:
- **Key(r)**: 0/1/2/3/4/5/6/7/8/9/C/Call/Disconnect/Down/F1/F2/F3/F4/F5/Grab/Home/Layout/Left/Mute/MuteMic/Ok/PhoneBook/Presentation/Right/Selfview/Square/SrcAux/SrcCamera/SrcDocCam/SrcPc/SrcVcr/Star/Up/VolumeDown/VolumeUp/ZoomIn/ZoomOut

Example:
```plaintext
xCommand Key Release Key:Home
```
```
*r KeyReleaseResult (status=OK):
** end
```

Message commands

xCommand 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.

Title: Enter a message title.
Text: 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: 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.

Requires user role: ADMIN

Parameters:
- **Title**: <S: 0, 255>
- **Text(r)**: <S: 0, 255>
- **Duration**: <0..3600>

Example:
```plaintext
xCommand Message Alert Display Title: "Message" Text: "The meeting will end in 5 minutes." Duration: 20
```
```
OK
*r MessageAlertDisplayResult (status=OK):
** end
```

xCommand 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

Example:
```plaintext
xCommand Message Alert Clear
```
```
OK
*r MessageAlertClearResult (status=OK):
** end
```
xCommand 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.

Text: 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: Enter the X-coordinate (horizontal) on screen. X=0 is in the upper left corner.

Y: Enter the Y-coordinate (vertical) on screen. Y=0 is in the upper left corner.

Duration: 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.

Requires user role: ADMIN

Parameters:

- Text(r): <S: 0, 140>
- X: <1..10000>
- Y: <1..10000>
- Duration: <0..3600>

Example:

```
OK
*r MessageTextLineDisplayResult (status=OK):
** end
```

xCommand Message TextLine Clear

Clears the text line which was defined by the xCommand Message TextLine Display command.

Requires user role: ADMIN

Example:

```
xCommand Message TextLine Clear
OK
*r MessageTextLineClearResult (status=OK):
** end
```

xCommand 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: Enter the title of the message.

Text: 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: To identify the feedback enter a FeedbackId.

Option.1 to Option.5: Enter the text to appear on the feedback options.

Requires user role: ADMIN

Parameters:

- Title: <S: 0, 255>
- Text(r): <S: 0, 255>
- FeedbackId: <S: 0, 255>
- Option.1: <S: 0, 255>
- Option.2: <S: 0, 255>
- Option.3: <S: 0, 255>
- Option.4: <S: 0, 255>
- Option.5: <S: 0, 255>

Example:

```
xCommand Message Prompt Display Title: "Meeting extension" Text: "The meeting is about to end. Do you want to extend the meeting?" Option.1: "No" Option.2: "Yes, extend with 5 minutes" Option.3: "Yes, extend with 10 minutes"
OK
*r MessagePromptDisplayResult (status=OK):
** end
```

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**xCommand 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.

FeedbackId: The FeedbackId corresponds to the FeedbackId given by the xCommand Message Prompt Display command.

**Requires user role:** ADMIN

**Parameters:**
- FeedbackId: <S: 0, 255>

**Example:**
- `xCommand Message Prompt Clear`  
  OK  
  *r MessagePromptClearResult (status=OK):  
  ** end

**xCommand 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.

FeedbackId: The FeedbackId corresponds to the FeedbackId given by the xCommand Message Prompt Display command.

OptionId: The OptionId corresponds to the OptionIds given as possible responses in the xCommand Message Prompt Display command.

**Requires user role:** ADMIN

**Parameters:**
- FeedbackId: <S: 0, 255>
- OptionId(r): <1..5>

**Example:**
- `xCommand Message Prompt Response OptionId: 1`  
  OK  
  *r MessagePromptResponseResult (status=OK):  
  ** end

**xCommand Message Echo**

Issuing the command makes the API raise a message-echo event. The command has no other impact on the codec. Usage can be to poll the codec from a control system or any external device/system to check for connectivity. To monitor the feedback use the xFeedback command. You can read more about the xFeedback command in the general API introduction section.

Text: Enter the text to be echoed.

**Requires user role:** ADMIN

**Parameters:**
- Text: <S: 0, 255>

**Example:**
- `xCommand Message Echo Text:" MyEchoListener99"`  
  *** end  
  * e Message Echo Text: "MyEchoListener99"

**xCommand Message FarendMessage**

This command is used to send generic messages to the participants in a conference. Not in use in this software version.

CallId: The remote participant to whom the message needs to be sent.

Type: Type of the message.

Text: Enter the text line to be displayed.

**Requires user role:** ADMIN

**Parameters:**
- CallId(o): <0..65534>
- Type(r): <S: 0, 255>
- Text(r): <S: 1, 1450>
- LocalEcho(o): <On/Off>

**Example:**
- `xCommand Message FarendMessage CallId: 3 Type: 3 Text: Hello`  
  *r FarendMessageResult (status=Error):  
  Reason: Generic Message mode not enabled  
  ** end
Phonebook commands

**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".

- **Name(r):** The name of the folder.
- **ParentFolderId:** 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.

**Requires user role:** ADMIN

**Parameters:**
- **Name(r):** <S: 0, 255>
- **ParentFolderId:** <S: 0, 255>

**Example:**
```cisco
xCommand Phonebook Folder Add Name: "New York Office"
OK
```
```
*r PhonebookFolderAddResult (status=OK):
Name: localGroupId-3
** end
```

**xCommand Phonebook Folder Modify**
Modify an existing phonebook folder.

- **FolderId:** 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(r):** The name of the contact.
- **ParentFolderId:** 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.

**Requires user role:** ADMIN

**Parameters:**
- **FolderId(r):** <S: 0, 255>
- **Name:** <S: 0, 255>
- **ParentFolderId:** <S: 0, 255>

**Example:**
```cisco
xCommand Phonebook Folder Modify FolderId:localGroupId-3 Name: "New York Head Office"
OK
```
```
*r PhonebookFolderModifyResult (status=OK):
** end
```

**xCommand Phonebook Folder Delete**
Delete an existing folder from the local phonebook.

- **FolderId:** 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.

**Requires user role:** ADMIN

**Parameters:**
- **FolderId(r):** <S: 0, 255>

**Example:**
```cisco
xCommand Phonebook Folder Delete FolderId:localGroupId-3
OK
```
```
*r PhonebookFolderDeleteResult (status=OK):
** end
```
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, on the web interface and when using the remote control.

Name: The name of the contact.
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: Currently not in use.
Title: The title of the contact.
Number: The phone number or address of the contact.
Protocol: Select Auto, SIP, H323 or H320 protocol.
CallRate: Set a call rate.
CallType: Select a call type (audio or video).
Device: Select the device type.

Requires user role: ADMIN

Parameters:
- Name(r): <S: 0, 255>
- FolderId: <S: 0, 255>
- ImageURL: <S: 0, 255>
- Title: <S: 0, 255>

Example:
```
xCommand Phonebook Contact Add Name: "John Doe" Number:12345
OK
```

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.

ContactId: 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: The name of the contact.
FolderId: 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: Currently not in use.
Title: The title of the contact.

Requires user role: ADMIN

Parameters:
- ContactId(r): <S: 0, 255>
- Name: <S: 0, 255>
- FolderId: <S: 0, 255>
- ImageURL: <S: 0, 255>
- Title: <S: 0, 255>

Example:
```
xCommand Phonebook Contact Modify ContactId:localContactId-1 Name: "John Doe - office"
OK
```

Example:
```
xCommand Phonebook Contact Add Name: "John Doe" Number:12345
OK
*r PhonebookContactAddResult (status=OK):
Name: localContactId-1
** end
```
xCommand Phonebook Contact Delete
Delete an existing contact from the local phonebook.
ContactId: 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.

Requires user role: ADMIN

Parameters:
ContactId(r): <S: 0, 255>

Example:
```
xCommand Phonebook Contact Delete ContactId:localContactId-1
    OK
    *r PhonebookContactDeleteResult (status=OK):
    ** end
```

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, on the web interface and when using the remote control.

ContactId: 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: Set which type of device to call to.
Number(r): The phone number or address of the contact.
Protocol: Select Auto, SIP, H323 or H320 protocol.
CallRate: Set a call rate.
CallType: Select a call type (audio or video).

Requires user role: ADMIN

Parameters:
ContactId(r): <S: 0, 255>
Device: <Mobile/Other/Telephone/Video>
Number(r): <S: 0, 255>
Protocol: <Auto/H320/H323/SIP>
CallRate: <0..6000>
CallType: <Audio/Video>

Example:
```
xCommand Phonebook ContactMethod Add ContactId:localContactId-2
    Number:54321 Protocol:H323
    OK
    *r PhonebookContactMethodAddResult (status=OK):
    Name: 1
    ** end
```
xCommand Phonebook ContactMethod Modify

Modify details about the contact method for an existing contact in the local phonebook.

ContactId: 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: 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 or xCommand Phonebook Contact Add commands were issued to make the contact method.

Device: Set which type of device to call to.

Number: The phone number or address of the contact.

Protocol: Select Auto, SIP, H323 or H320 protocol.

CallRate: Set a call rate.

CallType: Select a call type (audio or video).

Requires user role: ADMIN

Parameters:

- ContactId(r): <S: 0, 255>
- ContactMethodId(r): <S: 0, 255>
- Device: <Mobile/Other/Telephone/Video>
- Number: <S: 0, 255>
- Protocol: <Auto, H320/H323/SIP>
- CallRate: <0..6000>
- CallType: <Audio/Video>

Example:

xCommand Phonebook ContactMethod Modify ContactMethodId:117
ContactId:localContactId-10 Number:"newnumber@cisco.com"
OK

xCommand Phonebook ContactMethod Delete

Delete a contact method from an existing contact in the local phonebook.

ContactId: 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: 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.

Requires user role: ADMIN

Parameters:

- ContactId(r): <S: 0, 255>
- ContactMethodId(r): <S: 0, 255>

Example:

xCommand Phonebook ContactMethod Delete ContactId:localContactId-2
ContactMethodId:1
OK
* r PhonebookContactMethodDeleteResult (status=OK):
** end
xCommand Phonebook Search


PhonebookId: The identifier of the phonebook server that will be used. See the xConfiguration Phonebook Server ID setting. Not necessary to use.

PhonebookType: Define whether to search the local phone book or the corporate phonebook.

SearchString: 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. The SearchString parameter is optional for software version TC2.0 and later.

SearchField: Currently not in use.

Offset: Get records starting with this offset in a search. The default value is 0. Offset is used together with Limit to support paging.

FolderId: Search only in the specified folder. The FolderId (string) is listed in the ResultSet of a search result containing folders.

Limit: 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: 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.

Requires user role: USER

Parameters:

- PhonebookId: <S: 0, 255>
- PhonebookType: <Corporate/Local>
- SearchString: <S: 0, 255>
- SearchField: <Name/Number>
- Offset: <0..65534>
- FolderId: <S: 0, 255>
- Limit: <0..65534>
- Recursive: <False/True>
- ContactType(o): <Any/Folder/Contact>

Example:

```
xCommand Phonebook Search PhonebookType:Corporate Limit:2
FolderId: "corporate _ 001"
*ResultSet Contact 1 ContactId: "localContactId-3"
*ResultSet Contact 1 ContactMethod 1 ContactMethodId: "1"
*ResultSet Contact 1 ContactMethod 1 Number: "H323:John.Doe.Office@company.com"
*ResultSet Contact 1 ContactMethod 1 Protocol: H323
*ResultSet Contact 1 ContactMethod 2 ContactMethodId: "2"
*ResultSet Contact 1 ContactMethod 2 Number: "SIP:John.Doe.Office@company.com"
*ResultSet Contact 1 ContactMethod 2 Protocol: SIP
*ResultSet Contact 2 Name: "John Doe (home)"
*ResultSet Contact 2 ContactId: "localContactId-4"
*ResultSet Contact 2 ContactMethod 1 ContactMethodId: "3"
*ResultSet Contact 2 ContactMethod 1 Number: "H323:John.Doe.Home@company.com"
*ResultSet Contact 2 ContactMethod 1 Protocol: H323
*ResultSet Contact 2 ContactMethod 2 ContactMethodId: "4"
*ResultSet Contact 2 ContactMethod 2 Number: "SIP:John.Doe.Home@company.com"
*ResultSet Contact 2 ContactMethod 2 Protocol: SIP
** end
```
Presentation commands

xCommand Presentation Start
Open a media stream from the selected presentation source.
PresentationSource: Select the video input source to be used for presentation.
SendingMode: Select whether the presentation is shown locally or locally and remotely.

Requires user role: USER

Parameters:
- PresentationSource: <1..3>
- SendingMode: <LocalRemote/LocalOnly>

Example:
```
xCommand Presentation Start PresentationSource:2
OK
```
```
*r PresentationStartResult (status=OK):
** end
```

xCommand Presentation Stop
Stop the media stream from the presentation source.

Requires user role: USER

Example:
```
xCommand Presentation Stop
OK
```
```
*r PresentationStopResult (status=OK):
** end
```

Preset commands

xCommand Preset Store
Store the connector selections for all video input sources and the current position for all cameras.
Note that information about all video input sources and all camera positions are included in the same preset. The system may hold 15 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.

PresetId: The ID of this preset.
Type: Currently it makes no difference if you select Camera or All. However, this may change in the future (other audio or video settings may be included in a preset). If you want to ensure that a preset only affects camera positions we recommend that you select Camera.
Description: Enter a description of the camera preset.

Requires user role: ADMIN

Parameters:
- PresetId(r): <1..15>
- Type(r): <All/Camera>
- Description: <S: 0, 255>

Example:
```
xCommand Preset Store PresetId:3 Type:Camera Description:"Left view"
OK
```
```
*r PresetStoreResult (status=OK):
** end
```

xCommand Preset Activate
Activate one of the stored local presets.

Requires user role: USER

Parameters:
- PresetId(r): <1..15>

Example:
```
xCommand Preset Activate PresetId:3
OK
```
```
*r PresetActivateResult (status=OK):
** end
```
Provisioning commands

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

Example:

```
xCommand Provisioning StartUpgrade
  *r StartUpgradeResult (status=OK):
    ** end
```

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

Example:

```
xCommand Provisioning CompleteUpgrade
  *r CompleteUpgradeResult (status=OK):
    ** end
```

xCommand Provisioning PostponeUpgrade
Postpones the installing of the software upgrade.

Requires user role: ADMIN

Parameters:

  SecondsToPostpone(r): <0..65534>

Example:

```
xCommand Provisioning PostponeUpgrade SecondsToPostpone: 60
  *r PostponeUpgradeResult (status=OK):
    ** end
```
xCommand Provisioning CUCM CAPF OperationStart

Starts a pending CAPF (Certificate Authority Proxy Function) operation toward the CUCM. When the CUCM administrator initiates an operation that the endpoint should perform (like installing, updating or deleting certificates), this command can be used to start the CAPF operation.

AuthString: Set the authentication string required for the CAPF operation.

Requires user role: USER

Parameters:

AuthString(o): <S: 4, 10>

Example:

xCommand Provisioning CUCM CAPF OperationStart AuthString: 123456
* r CAPFStartResult (status=OK):
  ** end

Security commands

xCommand Security FIPSMode Activate

Activate FIPS (140-2) mode. NOTE: Activating FIPS mode implies a reset to factory defaults. While in FIPS mode, software upgrade is disabled and the following limitations apply: All calls are encrypted, unencrypted communication protocols like Telnet and HTTP cannot be used. IEEE802.1x and SNMP are disabled. The SIP Profile Type setting cannot be Microsoft. The root user is not available (root settings cannot be changed).

To exit FIPS mode, perform a factory reset.

Confirm: <Yes>

Requires user role: ADMIN

Parameters:

Confirm(r): <Yes>

Example:

xCommand Security FIPSMode Activate Confirm: "Yes"
  OK
  *r SecurityFIPSModeActivateConfirmResult (status=OK)
  ** end

xCommand Provisioning CUCM CTL Delete

Delete the stored CTL and ITL files (CTL: Certificate Trust List, ITL: Identity Trust List).

Requires user role: USER

Example:

xCommand Provisioning CUCM CTL Delete

* r DeleteResult (status=OK):
   ** end
SStringSend commands

xCommand SStringSend
Send data to the far end, e.g. for control systems. Uses the H.224 data channel (UDP).
Message: Enter the message to be sent to the far end.
CallId: 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.

Requirements user role: ADMIN

Parameters:
- Message(r): <S: 0, 255>
- CallId: <0..65534>

Example:
```
xCommand SStringSend CallId:4 Message:"This is a test"
*r SStringSendResult (status=OK):
** end
```

Standby commands

xCommand Standby Activate
Set the system in standby mode, which turns off the video outputs and put the camera into sleep mode.

Requirements user role: USER

Example:
```
xCommand Standby Activate
*r ActivateResult (status=OK):
** end
```

xCommand Standby Deactivate
Bring the system out of standby mode.

Requirements user role: USER

Example:
```
xCommand Standby Deactivate
*r DeactivateResult (status=OK):
** end
```

xCommand Standby ResetTimer
Set a temporary standby delay (in minutes). 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.

Requirements user role: USER

Parameters:
- Delay(r): <1..480>

Example:
```
xCommand Standby ResetTimer Delay:10
*r ResetResult (status=OK):
** end
```
SystemUnit commands

xCommand SystemUnit OptionKey Add
Add an option key to support additional features.

Requires user role: ADMIN

Parameters:
- Key(r): <S: 16, 24>

Example:
```
xCommand SystemUnit OptionKey Add Key:******************
```
```
*r OptionKeyResult (status=OK):
** end
```

xCommand SystemUnit OptionKey RemoveAll
Removes all Option keys.

Requires user role: ADMIN

Parameters:
- Confirm(r): <Yes>

Example:
```
xCommand SystemUnit OptionKey RemoveAll Confirm: Yes
```
```
*r OptionKeyResult (status=OK):
** end
```

xCommand SystemUnit ReleaseKey Add
Add the software release key. Used to enable new software (applicable for main software releases).

Requires user role: ADMIN

Parameters:
- Key(r): <S: 16, 24>

Example:
```
xCommand SystemUnit ReleaseKey Add Key:******************
```
```
*r ReleaseKeyResult (status=OK):
** end
```

xCommand SystemUnit ReleaseKey RemoveAll
Removes all Release keys.

Requires user role: ADMIN

Parameters:
- Confirm(r): <Yes>

Example:
```
xCommand SystemUnit ReleaseKey RemoveAll Confirm: Yes
```
```
*r ReleaseKeyResult (status=OK):
** end
```

xCommand SystemUnit AdminPassword Set
Set an administrator password to restrict access the codec. After a restart of the codec this password also applies to the web interface.

Requires user role: ADMIN

Parameters:
- Password(r): <S: 0, 64>

Example:
```
xCommand SystemUnit AdminPassword Set Password:***********
```
```
*r AdminPasswordSetResult (status=OK):
** end
```

xCommand SystemUnit Diagnostics Run
This command runs all self-diagnostics commands on the system.

Requires user role: ADMIN

Parameters:
- ResultSet(o): <Alerts/All/None>

Example:
```
xCommand SystemUnit Diagnostics Run
```
```
*r DiagnosticsResult (status=OK):
** end
```
xCommand SystemUnit MenuPassword Set
Set a menu password to restrict access to Administrator Settings menu. If you have a remote control the password can also be set from the on screen menu. If you have a Cisco TelePresence Touch controller the menu password is set from the command line interface.

Requires user role: ADMIN

Parameters:
Password(r): <S: 0, 255>

Example:
  xCommand SystemUnit MenuPassword Set Password:*************
  *r MenuPasswordSetResult (status=OK):
      ** end

xCommand SystemUnit MenuPassword Validate
Validate that the supplied password is correct.

Requires user role: ADMIN

Parameters:
Password(r): <S: 0, 255>

Example:
  xCommand SystemUnit MenuPassword Validate Password:*************
  *r MenuPasswordValidateResult (status=OK):
      ** end

xCommand SystemUnit DateTime Set
Set the date and time for the system, if not available from NTP (Network Time Protocol).

Requires user role: ADMIN

Parameters:
Year: <2008..2037>
Month: <1..12>
Day: <1..31>
Hour: <0..23>
Minute: <0..59>
Second: <0..59>

Example:
  xCommand SystemUnit DateTime Set Year:2012 Month:7 Day:3 Hour:12 Minute:0 Second:0
  *r DateTimeSetResult (status=OK):
      ** end

xCommand SystemUnit DateTime Get
Read the time and date from the system.

Requires user role: USER

Example:
  xCommand SystemUnit DateTime get
  *r DateTimeGetResult (status=OK):
      Year: 2012
      Month: 7
      Day: 3
      Hour: 12
      Minute: 0
      Second: 0
      ** end
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. The Release key and Option key are not affected.

As a default the system restarts after the factory reset, but other behavior can be forced by selecting a different TrailingAction.

TrailingAction: Select Shutdown or NoAction to override the default behavior (Restart).

Requires user role: ADMIN

Parameters:
- Confirm(r): <Yes>
- TrailingAction: <NoAction/Restart/Shutdown>

Example:
```
xCommand SystemUnit FactoryReset Confirm: Yes
```

xCommand SystemUnit SoftwareUpgrade

Initiate a software upgrade by fetching the software on a given URL. If the server requires username and password these parameters must be included.

Requires user role: ADMIN

Parameters:
- URL(r): <S: 0, 255>
- UserName: <S: 0, 255>
- Password: <S: 0, 255>

Example:
```
xCommand SystemUnit SoftwareUpgrade URL: "ftp://<ftp_server_ip_address>/s52000tc4_0_0.pkg" UserName: testDownload Password: 1234
```

xCommand SystemUnit ConfigurationProfile Change

Select a previously saved configuration profile. NOTE: Requires a restart of the codec.

Requires user role: ADMIN

Parameters:
- Name(r): <S: 0, 255>

Example:
```
xCommand SystemUnit ConfigurationProfile Change Name: "MyConfigurationProfile_1"
```
```
*r ConfigurationProfileChangeResult (status=OK):
Warning: New configuration profile will be active after next boot.
** end
```

xCommand SystemUnit ConfigurationProfile Remove

Delete a configuration profile that has been stored in the system.

Requires user role: ADMIN

Parameters:
- Name(r): <S: 0, 255>

Example:
```
xCommand SystemUnit ConfigurationProfile Remove Name: "MyConfigurationProfile_1"
```
```
*r ConfigurationProfileRemoveResult (status=OK):
** end
```

xCommand SystemUnit ConfigurationProfile SaveCurrentConfigurationAs

Save the current system settings into a configuration profile. Assign a name to the new profile. The name is the unique identifier of the profile.

Requires user role: ADMIN

Parameters:
- Name(r): <S: 0, 255>

Example:
```
xCommand SystemUnit ConfigurationProfile SaveCurrentConfigurationAs Name: "MyConfigurationProfile_1"
```
```
*r ConfigurationProfileSaveCurrentConfigurationResult (status=OK):
** end
```
**xCommand SystemUnit ConfigurationProfile List**

List configuration profiles that have been stored in the system.

*Requires user role:* ADMIN

**Example:**

```
xCommand SystemUnit ConfigurationProfile List
  *r ConfigurationProfileListResult (status=OK):
    Profile: My _ ConfigurationProfile _ 1
    Profile: My _ ConfigurationProfile _ 2
  ** end
```

**xCommand SystemUnit ConfigurationProfile CancelChange**

Cancel the "ConfigurationProfile Change" command, that would otherwise take effect after next system boot.

*Requires user role:* ADMIN

**Example:**

```
xCommand SystemUnit ConfigurationProfile CancelChange
  *r ConfigurationProfileCancelChangeResult (status=OK):
  ** end
```

**xCommand SystemUnit Notifications RemoveAll**

Clears the list of system notifications that are reported by xStatus SystemUnit Notifications Text/Type.

*Requires user role:* ADMIN

**Example:**

```
xCommand SystemUnit Notifications RemoveAll
  *r NotificationsRemoveAllResult (status=OK):
  ** end
```

**xCommand SystemUnit ReleaseKey List**

List all software versions that the system has a valid release key for.

*Requires user role:* ADMIN

**Example:**

```
xCommand SystemUnit ReleaseKey List
  *r SystemUnit ReleaseKey 1 Version: "TC1"
  *r SystemUnit ReleaseKey 2 Version: "TC2"
  *r SystemUnit ReleaseKey 3 Version: "TC3"
  *r SystemUnit ReleaseKey 4 Version: "TC4"
  *r SystemUnit ReleaseKey 5 Version: "TC5"
  ** end
```
TStringSend commands

xCommand 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.
Message: Enter the message to be sent to the far end.
CallId: 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.

Requires user role: USER

Parameters:
- CallId(r): <0..65534>
- Message(r): <S: 1, 1450>

Example:
```
xCommand TStringSend CallId:1 Message:"This is an example"
```
```
xCommand TStringSendResult (status=OK):
** end
```

Video commands

xCommand Video PictureLayoutSet
Select the screen layout mode.
Target: Select if the target is the local layout or the remote layout.
CallId: 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.
LayoutFamily: Select a layout family.
CustomLayoutName: Enter a name for the layout.

Requires user role: USER

Parameters:
- Target: <local/remote>
- CallId: <0..65534>
- LayoutFamily(r): <auto/custom/equal/fullscreen/overlay/presentation/largespeaker/presentationsmallspeaker/prominent/single/speaker_full>
- CustomLayoutName: <S: 1, 128>

Example:
```
xCommand Video PictureLayoutSet Target: Local LayoutFamily: equal
```
```
xCommand Video PictureLayoutSetResult (status=OK):
** end
```

xCommand Video Layout Add
NOTE: This command is not supported on Codec C40.
Add a new empty video layout composition. Returns the LayoutId. When the command has been issued you can use the result, the LayoutId of the newly created layout, to add frames with different video sources to the layout.

Requires user role: ADMIN

Parameters:
- LayoutId: <1..2147483647>

Example:
```
xCommand Video Layout Add
```
```
xCommand Video Layout AddResult (status=OK):
LayoutId: 1
** end
```

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### xCommand Video Layout Remove

NOTE: This command is not supported on Codec C40.

Removes an existing video layout.

**Requirements:**
- LayoutId: A unique identifier for the layout, which was created when the xCommand Video Layout Add command was issued.

**Parameters:**
- LayoutId(r): \(<1..2147483647>\)

**Example:**
```
xCommand Video Layout Remove LayoutId: 1
```
```
*r VideoLayoutRemoveResult (status=OK):
** end
```

### xCommand Video Layout RemoveAll

NOTE: This command is not supported on Codec C40.

Removes all the existing video layouts.

**Requirements:**
- ADMIN

**Example:**
```
xCommand Video Layout RemoveAll
```
```
*r VideoLayoutRemoveAllResult (status=OK):
** end
```

### xCommand Video Layout Reset

NOTE: This command is not supported on Codec C40.

Resets all the layout compositions to factory default.

**Requirements:**
- ADMIN

**Example:**
```
xCommand Video Layout Reset
```
```
*r VideoLayoutResetResult (status=OK):
** end
```

### xCommand Video Layout Frame Add

NOTE: This command is not supported on Codec C40.

Add a Video frame to an existing layout. Returns the FrameId. Select size and position of the frame, and the video source to be shown in the frame.

**Requirements:**
- LayoutId: A unique identifier for the layout, which was created when the xCommand Video Layout Add command was issued.
- FrameId: A unique identifier of the frame.
- PositionX: The top-left X position of the frame.
- PositionY: The top-left Y position of the frame.
- Width: The width of the frame.
- Height: The height of the frame.
- Layer: The stacking order of the frames (1-5). Must be unique per frame per layout. Layer 5 is on top.
- Border: Select whether or not the frame should have a border.
- VideoSourceType: Select the video source to be used as the content of the frame. The parameter arguments are explained below:
  - Graphic: Not in use.
  - LocalInput: Select one of the local input sources.
  - LocalMain: Select what is currently the main source on the local side.
  - LocalPresentation: Select what is currently the default presentation source on the local side.
  - MostSpeaking: Select the current loudest speaker in the conference.
  - OtherMain: Select another remote site in a call. This involves logic in the codec to ensure that a site does not see itself. You can add several frames with OtherMain. The source and the layout engine automatically populate the frame content with one of the other sites main video, making sure that you do not see the same site more than once, nor yourself.
  - OwnMain: Select that each site can see its own self-view.
  - Presentation: Select what is currently the presentation source (there is always only one active H.239 content in a conference).
  - RemoteMain: Select the main source of remote site. The CallId must then be specified in the VideoSourceId parameter.
  - RemotePresentation: Select the presentation source of remote site. The CallId must then be specified in the VideoSourceId parameter.
  - VideoFile: Not in use.
  - VideoSourceId: A unique identifier of the video source.

**Example:**
```
xCommand Video Layout Frame Add
```
```
*r VideoLayoutFrameAddResult (status=OK):
** end
```

**Requires user role:** ADMIN
**Parameters:**

- **LayoutId(r):** \(<1..2147483647>\)
- **FrameId:** \(<1..65535>\)
- **PositionX(o):** \(<0..10000>\)
- **PositionY(o):** \(<0..10000>\)
- **Width(o):** \(<1..10000>\)
- **Height(o):** \(<1..10000>\)
- **Layer(0):** \(<1..5>\)
- **Border:** \(<On/Off>\)
- **VideoSourceType(o):**<graphic/localInput/localMain/localPresentation/mostSpeaking/mostSpeaking_orderedByPartNumb/otherMain/ownMain/participantNumber/presentation/remoteMain/remotePresentation/videoFile>
- **VideoSourceId:** \(<0..2147483647>\)

**Example:**

```
xCommand Video Layout Frame Add LayoutId:1 PositionX:100 PositionY:100 Width:9800 Height:9800 Layer:1 Border:off VideoSourceType:localInput VideoSourceId:1
OK
*r VideoLayoutFrameAddResult (status=OK):
  FrameId: 1
** end
```

---

**xCommand Video Layout Frame Update**

**NOTE:** This command is not supported on Codec C40.

Change the details of an existing frame in a video layout.

- **LayoutId:** A unique identifier for the layout, which was created when the xCommand Video Layout Add command was issued.
- **FrameId:** A unique identifier of the frame, which was created when the xCommand Video Frame Add command was issued.
- **PositionX:** The top-left X position of the frame.
- **PositionY:** The top-left Y position of the frame.
- **Width:** The width of the frame.
- **Height:** The height of the frame.
- **Layer:** The stacking order of the frames (1-5). Must be unique per frame per layout. Layer 5 is on top.
- **Border:** Select whether or not the frame should have a border.
- **VideoSourceType:** Select the video source to be used as the content of the frame. The parameter arguments are explained below:
  - **Graphic:** Not in use.
  - **LocalInput:** Select one of the local input sources.
  - **LocalMain:** Select what is currently the main source on the local side.
  - **LocalPresentation:** Select what is currently the default presentation source on the local side.
  - **MostSpeaking:** Select the current loudest speaker in the conference.
  - **OtherMain:** Select another remote site in a call. This involves logic in the codec to ensure that a site does not see itself. You can add several frames with OtherMain. The source and the layout engine automatically populate the frame content with one of the other sites main video, making sure that you do not see the same site more than once, nor yourself.
  - **OwnMain:** Select that each site can see its own self-view.
  - **Presentation:** Select what is currently the presentation source (there is always only one active H.239 content in a conference).
  - **RemoteMain:** Select the main source of remote site. The CallId must then be specified in the VideoSourceId parameter.
  - **RemotePresentation:** Select the presentation source of remote site. The CallId must then be specified in the VideoSourceId parameter.
- **VideoSourceId:** A unique identifier of the video source.
  - If the VideoSourceType is set to RemoteMain the VideoSourceId is the CallId of the remote site.
  - If the VideoSourceType is set to LocalInput the VideoSourceId is the video input Sourceld.
- **Requires user role:** ADMIN

**Parameters:**

- **LayoutId(r):** \(<1..2147483647>\)
- **FrameId(r):** \(<1..65535>\)

**Example:**

```
xCommand Video Layout Frame Remove LayoutId:1 FrameId:1
*r VideoLayoutFrameRemoveResult (status=OK):
  FrameId: 1
** end
```

---

**xCommand Video Layout Frame Remove**

**NOTE:** This command is not supported on Codec C40.

Remove a video frame from an existing layout.

- **LayoutId:** A unique identifier for the layout, which was created when the xCommand Video Layout Add command was issued.
- **FrameId:** A unique identifier of the frame, which was created when the xCommand Video Frame Add command was issued.

**Requires user role:** ADMIN

**Parameters:**

- **LayoutId(r):** \(<1..2147483647>\)
- **FrameId(r):** \(<1..65535>\)

**Example:**

```
xCommand Video Layout Frame Remove LayoutId:1 FrameId:1
*r VideoLayoutFrameRemoveResult (status=OK):
  FrameId: 1
** end
```
Parameters:
- LayoutId(r): <1..2147483647>
- FrameId(r): <1..65535>
- PositionX: <0..10000>
- PositionY: <0..10000>
- Width: <1..10000>
- Height: <1..10000>
- Layer: <1..5>
- Border: <On/Off>
- VideoSourceType: <graphic/localInput/localMain/localPresentation/mostSpeaking/mostSpeaking_orderedByPartNumb/otherMain/ownMain/participantNumber/presentation/remoteMain/remotePresentation/videoFile>
- VideoSourceId: <0..2147483647>

Example:
```
xCommand Video Layout Frame Update LayoutId:1 FrameId:1
  VideoSourceType:localInput VideoSourceId:1
OK
```

** xCommand Video Layout Assign

NOTE: This command is not supported on Codec C40.

Assign an existing layout to any local or remote output. The defined video composition appears on the specified local output or in the specified remote video stream.

- CallId: A unique identifier for the call. 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.
- OutputId: A unique identifier for the local output, which was created when the xCommand Audio LocalOutput Add command was issued.
- LayoutId: A unique identifier for the layout, which was created when the xCommand Video Layout Add command was issued.

Requirements:
- Requires user role: ADMIN

Parameters:
- CallId(r): <0..65534>
- OutputId(r): <0..65534>
- LayoutId(r): <1..2147483647>

Example:
```
xCommand Video Layout Assign CallId:1 OutputId:1 LayoutId:2
OK
```

** xCommand Video Layout AssignLocalOutput

NOTE: This command is not supported on Codec C40.

Assign an existing layout to a local output. The defined video composition appears on the specified local output.

- LayoutId: A unique identifier for the layout, which was created when the xCommand Video Layout Add command was issued.
- OutputId: A unique identifier for the local output, which was created when the xCommand Audio LocalOutput Add command was issued.

Requirements:
- Requires user role: ADMIN

Parameters:
- LayoutId(r): <1..2147483647>
- OutputId(r): <0..65534>

Example:
```
xCommand Video Layout AssignLocalOutput OutputId:1 LayoutId:2
OK
```

** end
xCommand Video Layout AssignCall
NOTE: This command is not supported on Codec C40.
Assign the call layout (main stream) to the remote output. The defined video composition appears
on the remote main video stream.
LayoutId: A unique identifier for the layout, which was created when the xCommand Video Layout
Add command was issued.
CallId: A unique identifier for the call. 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.
Requires user role: ADMIN
Parameters:
  LayoutId(r): <1..2147483647>
  CallId: <0..65534>
Example:
  xCommand Video Layout AssignCall LayoutId:2 CallId:1
  OK
  *r VideoLayoutAssignCallResult (status=OK):
  ** end

xCommand Video Layout AssignPresentation
NOTE: This command is not supported on Codec C40.
Assign the presentation layout (dual stream) to the remote output. The defined video composition
appears on the remote dual video stream. This layout must be full-screen and contain only one
frame.
LayoutId: A unique identifier for the layout, which was created when the xCommand Video Layout
Add command was issued.
Requires user role: ADMIN
Parameters:
  LayoutId(r): <1..2147483647>
Example:
  xCommand Video Layout AssignPresentation LayoutId:2
  OK
  *r VideoLayoutAssignPresentationResult (status=OK):
  ** end

xCommand Video Layout UnAssign
NOTE: This command is not supported on Codec C40.
Remove the defined video layout, and go back to default.
CallId: A unique identifier for the call. 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.
OutputId: A unique identifier for the local output, which was created when the xCommand Audio
LocalOutput Add command was issued.
Requires user role: ADMIN
Parameters:
  CallId(r): <0..65534>
  OutputId(r): <0..65534>
Example:
  xCommand Video Layout UnAssign CallId: 1 OutputId: 1
  *r VideoLayoutUnassignResult (status=OK):
  ** end

xCommand Video Layout UnAssignLocalOutput
NOTE: This command is not supported on Codec C40.
Remove the defined video layout, and go back to default.
OutputId: A unique identifier for the local output, which was created when the xCommand Audio
LocalOutput Add command was issued.
Requires user role: ADMIN
Parameters:
  OutputId(r): <0..65534>
Example:
  xCommand Video Layout UnAssignLocalOutput OutputId:1
  OK
  *r VideoLayoutUnAssignLocalOutputResult (status=OK):
  ** end
xCommand Video Layout UnAssignCall

NOTE: This command is not supported on Codec C40.
Remove the defined video layout, and go back to default.
CallId: A unique identifier for the call. 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.

Requires user role: ADMIN

Parameters:
CallId: <0..65534>

Example:
```c
xCommand Video Layout UnAssignCall CallId:1
OK
*r VideoLayoutUnAssignCallResult (status=OK):
** end
```

xCommand Video Layout UnAssignPresentation

NOTE: This command is not supported on Codec C40.
Remove the defined video layout, and go back to default.

Requires user role: ADMIN

Example:
```c
xCommand Video Layout UnAssignPresentation
OK
*r VideoLayoutUnAssignPresentationResult (status=OK):
** end
```

xCommand Video Layout SetPresentationView

Set the presentation view mode.
View: 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.

Requires user role: ADMIN

Parameters:
View(r): <Default/Maximized/Minimized>

Example:
```c
xCommand Video Layout SetPresentationView View:Default
OK
*r VideoLayoutSetPresentationViewResult (status=OK):
** end
```

xCommand Video Layout Load Db

Loads and starts using the specified video layout database. The default video layout database is initially provided by the system. The custom database is generated by the Cisco TC Console tool and is made available to the codec from within the TC Console tool. The TC Console software is found at the Developer Zone web page. Go to: http://developer.cisco.com/web/telepresence-developer/tools/integrators/tc-console.

Custom: The system uses the custom video layout database which generated by the Cisco TC Console tool.
CustomAutoModes: The system uses the auto mode part of the custom video layout database.
Default: The system use the default video layout database which is provided by the system.

Requires user role: ADMIN

Parameters:
Type(r): <Custom/CustomAutoModes/Default>

Example:
```c
xCommand Video Layout LoadDb Type: Default
OK
*r VideoLayoutLoadDbResult (status=OK):
** end
```
xCommand Video Layout Frame List

Lists the data related to all layout frames created by command 'xCommand Video Layout Frame Add' for a specific layout identified by 'LayoutId'

Requires user role: ADMIN

Parameters:
   LayoutId(o): <1..2147483647>

Example:
   xCommand Video Layout Frame List LayoutId: 1
   OK
   *r VideoLayoutFrameListResult LayoutId 1 FrameId 1 PositionX: 0
   *r VideoLayoutFrameListResult LayoutId 1 FrameId 1 PositionY: 0
   *r VideoLayoutFrameListResult LayoutId 1 FrameId 1 Width: 10000
   *r VideoLayoutFrameListResult LayoutId 1 FrameId 1 Height: 10000
   *r VideoLayoutFrameListResult LayoutId 1 FrameId 1 Layer: 1
   *r VideoLayoutFrameListResult LayoutId 1 FrameId 1 Border: Off
   *r VideoLayoutFrameListResult LayoutId 1 FrameId 1 VideoSourceType: localInput
   *r VideoLayoutFrameListResult LayoutId 1 FrameId 1 VideoSourceId: 1
   ** end

xCommand Video Layout List

Lists all identification numbers for layouts created by command 'xCommand Video Layout Add'.

Requires user role: ADMIN

Example:
   xCommand Video Layout List
   OK
   *r VideoLayoutListResult LayoutId: 1
   *r VideoLayoutListResult LayoutId: 3
   ** end

xCommand Video OSD Close

Closes all menus on the on-screen display.

Element: The on-screen menu.

Requires user role: ADMIN

Parameters:
   Element(r): <Menu>

Example:
   xCommand Video OSD Close Element: Menu
   *r OsdCloseElementResult (status=OK):
   ** end

xCommand Video PIP ActiveSpeaker Set

Sets position for the active speakers PIP (picture in picture).

Position: Predefined positions.
   CenterLeft: The ActiveSpeaker PIP appears on the left side of the screen, in center.
   CenterRight: The ActiveSpeaker PIP appears on the right side of the screen, in center.
   LowerLeft: The ActiveSpeaker PIP appears in the lower left corner of the screen.
   LowerRight: The ActiveSpeaker PIP appears in the lower right corner of the screen.
   UpperCenter: The ActiveSpeaker PIP appears on top of the screen, in center.
   UpperLeft: The ActiveSpeaker PIP appears in the upper left corner of the screen.
   UpperRight: The ActiveSpeaker PIP appears in the upper right corner of the screen.

Requires user role: ADMIN

Parameters:
   Position(r): <CenterLeft/CenterRight/LowerLeft/LowerRight/UpperCenter/UpperLeft/UpperRight>

Example:
   xCommand Video PIP ActiveSpeaker Set Position: UpperRight
   *r ActiveSpeakerPipSetResult (status=OK):
   ** end
xCommand Video PIP Presentation Set
Sets position for the presentation PiP (picture in picture).
Position: Predefined positions.
CenterLeft: The presentation PiP appears on the left side of the screen, in center.
CenterRight: The presentation PiP appears on the right side of the screen, in center.
LowerLeft: The presentation PiP appears in the lower left corner of the screen.
LowerRight: The presentation PiP appears in the lower right corner of the screen.
UpperCenter: The presentation PiP appears on top of the screen, in center.
UpperLeft: The presentation PiP appears in the upper left corner of the screen.
UpperRight: The presentation PiP appears in the upper right corner of the screen.
Requires user role: ADMIN
Parameters:
Position(r): <CenterLeft/CenterRight/LowerLeft/LowerRight/UpperCenter/UpperLeft/UpperRight>
Example:
xCommand Video PIP Presentation Set Position: LowerLeft
*r PresentationPipSetResult (status=OK):
** end

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.
Mode: Selfview on/off
FullscreenMode: Self-view in fullscreen or pip.
PIPPosition: Predefined PIP positions.
FullscreenMode: Choose between displaying the self-view in full screen or not.
PIPPosition: Select the position for the self-view image.
CenterLeft: The self-view PiP appears on the left side of the screen, in center.
CenterRight: The self-view PiP appears on the right side of the screen, in center.
LowerLeft: The self-view PiP appears in the lower left corner of the screen.
LowerRight: The self-view PiP appears in the lower right corner of the screen.
UpperCenter: The self-view PiP appears on top of the screen, in center.
UpperLeft: The self-view PiP appears in the upper left corner of the screen.
UpperRight: The self-view PiP appears in the upper right corner of the screen.
OnMonitorRole: Displays self-view on monitors with this role.
Requires user role: ADMIN
Parameters:
Mode(o): <On/Off>
FullscreenMode(o): <On/Off>
PIPPosition(o): <CenterLeft/CenterRight/LowerLeft/LowerRight/UpperCenter/UpperLeft/UpperRight>
OnMonitorRole(o): <First/Fourth/Second/Third>
Example:
Example 1
xCommand Video Selfview Set Mode: On FullscreenMode: Off PIPPosition:
CenterLeft OnMonitorRole: First
OK
*r SelfviewSetResult (status=OK):
** end
Example 2
xCommand Video Selfview Set FullscreenMode: On OnMonitorRole: Second
OK
*r SelfviewSetResult (status=OK):
** end
**xCommand Video PIP Presentation Set**
Sets position for the presentation PiP (picture in picture).

Position: Predefined positions.
- CenterLeft: The presentation PiP appears on the left side of the screen, in center.
- CenterRight: The presentation PiP appears on the right side of the screen, in center.
- LowerLeft: The presentation PiP appears in the lower left corner of the screen.
- LowerRight: The presentation PiP appears in the lower right corner of the screen.
- UpperCenter: The presentation PiP appears on top of the screen, in center.
- UpperLeft: The presentation PiP appears in the upper left corner of the screen.
- UpperRight: The presentation PiP appears in the upper right corner of the screen.

**Requires user role:** ADMIN

**Parameters:**
- Position(r): <CenterLeft/CenterRight/LowerLeft/LowerRight/UpperCenter/UpperLeft/UpperRight>

**Example:**
```
xCommand Video PIP Presentation Set Position: LowerLeft
^r PresentationPipSetResult (status=OK):
  ** end
```

**xCommand Video PreviewFilmstrip Set**
Moves the location of the filmstrip associated with the layouts used in presentation preview mode.

Not in use in this software version.
- LowerCenter: The preview appears on the bottom of the screen, in center.
- LowerLeft: The preview appears in the lower left corner of the screen.
- LowerRight: The preview appears in the lower right corner of the screen.
- UpperCenter: The preview appears on top of the screen, in center.
- UpperLeft: The preview appears in the upper left corner of the screen.
- UpperRight: The preview appears in the upper right corner of the screen.

**Requires user role:** ADMIN

**Parameters:**
- Position(r): <LowerCenter/LowerLeft/LowerRight/UpperCenter/UpperLeft/UpperRight>

**Example:**
```
xCommand Video PreviewFilmstrip Set Position: LowerCenter
^r PreviewFilmstripSetResult (status=OK):
  ** end
```

**Experimental commands**
The Experimental commands are for testing only and should not be used unless agreed with Cisco. These commands are not documented and WILL change in later releases.
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/cseries-docs
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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 Microphones Mute**
Shows the microphones mute mode.
**Value space of the result returned:**
<On/Off>
**Example:**
```bash
xStatus Audio Microphones Mute
*s Audio Microphones Mute: Off
** end
```

**xStatus Audio Volume**
Shows the volume level (dB) of the loudspeaker output.
**Value space of the result returned:**
<0..100>
**Example:**
```bash
xStatus Audio Volume
*s Audio Volume: 70
** end
```

**xStatus Audio Input LocalInput [1..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 [1..n] of the input.
**Value space of the result returned:**
<String>
**Example:**
```bash
xStatus Audio Input LocalInput 1 Name
*s Audio Input LocalInput 1 Name: "Microphone"
** end
```

**xStatus Audio Input LocalInput [1..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 [1..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:**
```bash
xStatus Audio Input LocalInput 1 MixerMode
*s Audio Input LocalInput 1 MixerMode: "Auto"
** end
```

**xStatus Audio Input LocalInput [1..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 [1..n] of the input.
**Value space of the result returned:**
<"On"/"Off">
**Example:**
```bash
xStatus Audio Input LocalInput 1 Mute
*s Audio Input LocalInput 1 Mute: "Off"
** end
```

**xStatus Audio Input LocalInput [1..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 [1..n] of the input.
**Value space of the result returned:**
<1..2>
**Example:**
```bash
xStatus Audio Input LocalInput 1 Channels
*s Audio Input LocalInput 1 Channels: 1
** end
```
xStatus Audio Input LocalInput [1..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 [1..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 [1..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 [1..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 RemoteInput [1..n] CallId
Shows the CallId for the remote audio input.
You can run the command xStatus Audio Input RemoteInput to find the identity [1..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 Output LocalOutput [1..n] Name
Shows the name of the local output.
You can run the command xStatus Audio Output LocalOutput to find the identity [1..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 [1..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 [1..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 [1..n] Channels
States if the local output channels are mixed into a mono signal (1) or stereo signal (2).
You can run the command xStatus Audio Output LocalOutput to find the identity [1..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 [1..n] Connector**

Lists the connectors that are attached to the local output. You can run the command `xStatus Audio Output LocalOutput` to find the identity [1..n] of the output.

**Value space of the result returned:**

<"Line.1"/"Line.2"/"HDMI.1"/"HDMI.2">

**Example:**

```
xCMD Audio Output LocalOutput 4 Connector
*x Status Audio Output LocalOutput 4 Connector: "Line.1"
** end
```

**xStatus Audio Output LocalOutput [1..n] Input [1..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 [1..n] of the output and input.

**Value space of the result returned:**

<-54..15>

**Example:**

```
xCMD Audio Output LocalOutput 4 Input 2 Gain
*x Status Audio Output LocalOutput 4 Input 2 Gain: 0
** end
```

**xStatus Audio Output RemoteOutput [1..n] CallId**

Shows the CallId for the remote audio output. You can run the command `xStatus Audio Output RemoteOutput` to find the identity [1..n] of the output.

**Value space of the result returned:**

<1..65534>

**Example:**

```
xCMD Audio Output RemoteOutput 9 CallId
*x Status Audio Output RemoteOutput 9 CallId: 28
** end
```

**xStatus Audio Output RemoteOutput [1..n] Input [1..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 [1..n] of the output and input.

**Value space of the result returned:**

<-54..15>

**Example:**

```
xCMD Audio Output RemoteOutput 9 Input 1 Gain
*x Status Audio Output RemoteOutput 9 Input 1 Gain: 0
** end
```

**xStatus Audio Module [0] Type**

Shows the audio module type. If the module type is DigitalNAM (Digital Natural Audio Module) you can also read the SoftwareId and HardwareId.

**Value space of the result returned:**

<DigitalNAM/Unknown>

**Example:**

```
xCMD Audio Module 0 Type
*x Status Audio Module 0 Type: DigitalNAM
** end
```

**xStatus Audio Module [0] SoftwareID**

Shows the SoftwareID of the DNAM dsp software.

**Value space of the result returned:**

<String>

**Example:**

```
xCMD Audio Module 0 SoftwareID
*x Status Audio Module 0 SoftwareID: "114"
** end
```
Call status

xStatus Call
Shows the top level overview of the call status. The call identity is used when query for additional information about the call.

xStatus Call [1..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 [1..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 [1..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:
"H323/SIP"

Example:
   xStatus Call 27 Protocol
   *s Call 27 Protocol: "h323"
   ** end
xStatus Call [1..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 [1..n] RemoteNumber
Shows the remote (far end) number or URI of 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 RemoteNumber
*s Call 27 RemoteNumber: "5585232"
** end
```

xStatus Call [1..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 [1..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 [1..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
```

xStatus Call [1..n] ReceiveCallRate
Shows the receive 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 ReceiveCallRate
*s Call 27 ReceiveCallRate: 4000
** end
```
xStatus Call [1..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 [1..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 [1..n] PlacedOnHold
Shows the placed on hold status of the call. You can run the command xStatus Call to find the call identity.

Value space of the result returned:
<True/False>

Example:
```
xStatus Call 27 PlacedOnHold
*s Call 27 PlacedOnHold: False
** end
```

xStatus Call [1..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 [1..n] SecurityStatus
Security status of a call represents the least of the security statuses of all the endpoints involved in a CUCM call.

Value space of the result returned:
<Invalid/Unknown/NotAuthenticated/Authenticated>

xStatus Call [1..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 [1..n] ModifyState
Shows the current state of a pending Call Modify operation. Not in use in this software version.
OutgoingModify: a request CallEscalate to Video is pending.
IncomingModify: a peer has requested to escalate the call to Video.
Idle: No Call Modify operation is pending.

Value space of the result returned:
<Idle/Outgoing/Incoming>

Example:
```
xStatus Call ModifyState
*s Call 11 ModifyState: Idle
** end
```
xStatus Call [1..n] DeviceType
Indicates whether the remote system is a single endpoint or a MCU. Some Cisco endpoints (EX90, C40, C60, C90, SX20) have built-in MCU capabilities.

Value space of the result returned:
<Endpoint/MCU>

Example:
  xStatus Call DeviceType
  *s Call 4 DeviceType: Endpoint
  ** end

Camera status

xStatus Camera
Shows the top level overview of the camera status.

xStatus Camera [1..7] Connected
Shows if the camera is connected or not.

Value space of the result returned:
<True/False>

Example:
  xStatus Camera 1 Connected
  *s Camera 1 Connected: True
  ** end

xStatus Camera [1..7] HardwareID
Shows the hardware identity of the camera.

Value space of the result returned:
<String>

Example:
  xStatus Camera 1 HardwareID
  *s Camera 1 HardwareID: "50000000"
  ** end

xStatus Camera [1..7] Manufacturer
Shows the manufacturer of the camera.

Value space of the result returned:
<String>

Example:
  xStatus Camera 1 Manufacturer
  *s Camera 1 Manufacturer: "TANDBERG"
  ** end
**xStatus Camera [1..7] Model**
Shows the camera model.

Value space of the result returned:
<String>

Example:
```plaintext
xStatus Camera 1 Model
's Camera 1 Model: "PrecisionHD 1080p 12X"
** end
```

**xStatus Camera [1..7] SoftwareID**
Shows the software identity of the camera.

Value space of the result returned:
<String>

Example:
```plaintext
xStatus Camera 1 SoftwareID
's Camera 1 SoftwareID: "S01718-4.0FINAL [ID:40063] 2010-10-20"
** end
```

**xStatus Camera [1..7] SerialNumber**
Shows the camera serial number.

Value space of the result returned:
<String>

Example:
```plaintext
xStatus Camera 1 SerialNumber
's Camera 1 SerialNumber: "B1AB26B00010"
** end
```

**xStatus Camera [1..7] IpAddress**
Shows the camera IP address.

Value space of the result returned:
<String>

Example:
```plaintext
xStatus Camera 1 IpAddress
's Camera 1 IpAddress: ""
** end
```

**xStatus Camera [1..7] MacAddress**
Shows the MAC (Media Access Control) address for the camera.

Value space of the result returned:
<String>

Example:
```plaintext
xStatus Camera 1 MacAddress
's Camera 1 MacAddress: ""
** end
```

**xStatus Camera [1..7] Position Pan**
Shows the current pan (move left and right) position of the camera. The value range depends on camera type.

Value space of the result returned:
<-65535..65535>

Example:
```plaintext
xStatus Camera 1 Position Pan
's Camera 1 Position Pan: 412
** end
```

**xStatus Camera [1..7] Position Tilt**
Shows the current tilt (move up and down) position of the camera. The value range depends on camera type.

Value space of the result returned:
<-65535..65535>

Example:
```plaintext
xStatus Camera 1 Position Tilt
's Camera 1 Position Tilt: 106
** end
```
xStatus Camera [1..7] Position Zoom
Shows the current zoom (zoom in and out) position of the camera. The value range depends on camera type.

Value space of the result returned:
<0..65535>

Example:
xStatus Camera 1 Position Zoom
*s Camera 1 Position Zoom: 828
** end

xStatus Camera [1..7] Position Focus
Shows the current focus position of the camera. The value range depends on camera type.

Value space of the result returned:
<0..65535>

Example:
xStatus Camera 1 Position Focus
*s Camera 1 Position Focus: 4597
** end

xStatus Camera [1..7] Capabilities Options
Shows the camera capabilities (ptzf = pan, tilt, zoom, focus).

Value space of the result returned:
<String>

Example:
xStatus Camera 1 Capabilities Options
*s Camera 1 Capabilities Options: "ptzf"
** end

xStatus Camera [1..7] Flip
In Flip mode (vertical flip) the image can be flipped upside down.

Value space of the result returned:
<"Auto"/"On"/"Off">

Example:
xStatus Camera 1 Flip
*s Camera 1 Flip: "Off"
** end

Conference status

xStatus Conference
Shows the top level overview of the conference status. The identity of the Conference Site can only be read during a call.

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 Presentation Protocol
Shows the video protocol used when transmitting the presentation.

Value space of the result returned:
<String>

Example:
xStatus Conference Presentation Protocol
*s Conference Presentation Protocol: "H264"
** end

xStatus Conference Presentation Resolution Height
Shows the height of the the presentation.

Value space of the result returned:
<0..3000>

Example:
xStatus Conference Presentation Resolution Height
*s Conference Presentation Resolution Height: 0
** end
xStatus Conference Presentation Resolution Width
Shows the width of the presentation.

Value space of the result returned:
<0..4000>

Example:
```plaintext
xStatus Conference Presentation Resolution Width
*s Conference Presentation Resolution Width: 0
** end
```

xStatus Conference Presentation SiteId
Shows the identity of the system that sends the presentation.

Value space of the result returned:
<0..65535>

Example:
```plaintext
xStatus Conference Presentation SiteId
*s Conference Presentation SiteId: 0
** end
```

xStatus Conference Presentation LocalSource
Shows the local video input source that is used when the presentation is sent from the local site.

Value space of the result returned:
<1..5>

Example:
```plaintext
xStatus Conference Presentation LocalSource
*s Conference Presentation LocalSource: 0
** end
```

xStatus Conference Presentation LocalSendingMode
Shows whether the presentations are set to be shown locally and sent to remote side, only shown locally or not shown at all.

Value space of the result returned:
<Off/LocalRemote/LocalOnly>

Example:
```plaintext
xStatus Conference Presentation LocalSendingMode
*s Conference Presentation LocalSendingMode: Off
** end
```

xStatus Conference Presentation LastLocalSource
Identifies the last used local presentation source.

Value space of the result returned:
<Integer>

Example:
```plaintext
xStatus Conference Presentation LastLocalSource
*s Conference Presentation LastLocalSource: 2
** end
```

xStatus Conference Site [1..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:
```plaintext
xStatus Conference Site 2 Capabilities FECC NumberOfPresets
*s Conference Site 2 Capabilities FECC NumberOfPresets: 15
** end
```

xStatus Conference Site [1..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:
```plaintext
xStatus Conference Site 2 Capabilities FECC NumberOfSources
*s Conference Site 2 Capabilities FECC NumberOfSources: 5
** end
```

xStatus Conference Site [1..n] Capabilities FECC Source [1..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:
```plaintext
xStatus Conference Site 2 Capabilities FECC Source 1 SourceId
*s Conference Site 2 Capabilities FECC Source 1 SourceId: 6
** end
```
xStatus Conference Site [1..n] Capabilities FECC Source [1..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:
```
xStatus Conference Site 2 Capabilities FECC Source 1 Name
*s Conference Site 2 Capabilities FECC Source 1 Name: "Main camera"
** end
```

xStatus Conference Site [1..n] Capabilities FECC Source [1..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:
```
xStatus Conference Site 2 Capabilities FECC Source 1 Options
*s Conference Site 2 Capabilities FECC Source 1 Options: "ptzf"
** end
```

xStatus Conference Site [1..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:
```
xStatus Conference Site 2 Capabilities FECC Mode
*s Conference Site 2 Capabilities FECC Mode: On
** end
```

xStatus Conference Site [1..n] Capabilities Presentation
Lists the presentation capabilities for other participants in the conference.

Value space of the result returned:
<True/False>

Example:
```
xStatus Conference Site 2 Capabilities Presentation
*s Conference Site 2 Capabilities Presentation: True
** end
```

xStatus Conference Site [1..n] MicrophonesMuted
Lists the audio mute status for other participants in the conference.

Value space of the result returned:
<True/False>

Example:
```
xStatus Conference Site 2 MicrophonesMuted
*s Conference Site 2 MicrophonesMuted: True
** end
```

xStatus Conference Site [1..n] Manufacturer
Shows the manufacturer of the video system at a far end site.

Value space of the result returned:
<String>

Example:
```
xStatus Conference Site 2 Manufacturer
*s Conference Site 2 Manufacturer: "Cisco"
** end
```

xStatus Conference Site [1..n] SoftwareID
Shows the ID of the software running of the video system at a far end site.

Value space of the result returned:
<String>

Example:
```
xStatus Conference Site 2 SoftwareID
*s Conference Site 2 SoftwareID: "TC5"
** end
```
xStatus Conference Site [1..n] BlackScreenCause
Shows the reason why the screen is black while in a CTMS (Cisco TelePresence Multipoint Switch) managed conference.
- FirstParticipant: You are the first and only participant in the meeting.
- LastParticipant: You are the only remaining participant in the meeting.
- NoResources: The conference started with insufficient resources.
- EarlyJoin: The scheduled conference has not started yet.
- HostNotJoined: The conference is waiting for the host to join.
- SecurityIssues: The video is blocked due to security issues.
- NoVideo: It is a conference without video.
- WebexOnly: It is a Webex only conference.

Value space of the result returned:
- <None/Other/FirstParticipant/LastParticipant/NoResources/EarlyJoin/HostNotJoined/SecurityIssues/NoVideo/WebexOnly>

Example:
nStatus Conference Site 2 BlackScreenCause
*s Conference Site 17 BlackScreenCause: None
** end

xStatus Conference Site [1..n] ConferenceExtended
Shows the status of conference extension (only relevant for conferences scheduled from CTS-MAN (Cisco TelePresence Manager); they can be extended only once).
- Unsupported: Conference extension is not supported.
- NotExtended: The conference is not (yet) extended.
- Extended: The conference has been extended, and is currently in the extended phase.

Value space of the result returned:
- <Unsupported/NotExtended/Extended>

Example:
nStatus Conference Site 2 ConferenceExtended
*s Conference Site 21 ConferenceExtended: NotExtended
** end

xStatus Conference Site [1..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:
nStatus Conference Site 2 BookingId
*s Conference Site 33 BookingId: "MyConference"
** end

xStatus Conference Site [1..n] SecurityStatus
Security status of a call represents the least of the security statuses of all the endpoints involved in a CUCM call.
- Invalid: Initial status.
- Unknown: In the absence of the Call-Info header, that CUCM uses to pass this status to the phone, the phone assumes a value of Unknown.
- NotAuthenticated: The current connected call is not signaling authenticated. This call is not secure.
- Authenticated: The current connected call is signaling authenticated. This is not a fully secured call.
- Encrypted: Encrypted indicates the current connected call is signaling/media encrypted. This call is secure.

Value space of the result returned:
- <Invalid/Unknown/Authenticated/NotAuthenticated>

Example:
nStatus Conference Site SecurityStatus
*s Conference Site 21 SecurityStatus: Unknown
** end

xStatus Conference Site [1..n] UnattendedTransfer
Indicates whether Unattended Transfer is available for the call.

Value space of the result returned:
- <True/False>

Example:
nStatus Conference Site UnattendedTransfer
*s Conference Site 14 UnattendedTransfer: True
** end
**xStatus Conference Site [1..n] AttendedTransfer**
Indicates whether Attended Transfer is available for the call.

Value space of the result returned:
<True/False>

Example:
```
*xStatus Conference Site AttendedTransfer
's Conference Site 14 AttendedTransfer: True
** end
```

**xStatus Conference Site [1..n] Appearance**
Returns identification for the shared line appearance in the call.

Value space of the result returned:
<Integer>

Example:
```
*xStatus Conference Site Appearance
's Conference Site 14 Appearance: 0
** end
```

**xStatus Conference Site [1..n] GCI**
Returns Global Call Identification (GCI) of the call. The GCI is used to identify whether the call is remote or local and it is provided by CUCM.

Value space of the result returned:
<String>

Example:
```
*xStatus Conference Site GCI
's Conference Site 14 GCI: ""
** end
```

**xStatus Conference Site [1..n] CalText**
Returns the Confidential Access Level (CAL) of the session sent by vendors that support AS-SIP.

Value space of the result returned:
<String>

Example:
```
*xStatus Conference Site CalText
's Conference Site 14 CalText: ""
** end
```

**xStatus Conference Site [1..n] Hold**
Indicates whether the far-end site can be placed on hold or not.

Value space of the result returned:
<True/False>

Example:
```
*xStatus Conference Site Hold
's Conference Site 2 Hold: True
** end
```

**xStatus Conference Site [1..n] Preserved**
Indicates if the far end site is having connection issues, and has been preserved to avoid invoking features that can break the call.

Value space of the result returned:
<Off/Local/Remote>

Example:
```
*xStatus Conference Site Preserved
's Conference Site 3 Preserved: Off
** end
```

**xStatus Conference Line [1..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 Line [1..n] Appearance Status**
Returns the status of the shared line call.

Value space of the result returned:
<Idle/Private/Trying/Progressing/Alerting/Active/Held/HeldPrivate/Unknown>

Example:
```
*xStatus Conference Line 1 Appearance Status
's Conference Line 1 Appearance Status: Held
** end
```
xStatus Conference Line [1..n] Appearance URI
Returns the URI of the shared line call. Not visible for a private call.

Value space of the result returned:
<String>

Example:
*xStatus Conference Line 1 Appearance URI
"s Conference Line 1 Appearance 5464 URI: "12345@cisco.com"
** end

xStatus Conference Line [1..n] Appearance GCI
Returns Global Call Identification (GCI) of the shared line call. The GCI is used to identify whether the call is remote or local and it is provided by CUCM.

Value space of the result returned:
<String>

Example:
*xStatus Conference Line 1 Appearance GCI
"s Conference Line 1 Appearance 5464 GCI: "1-161386"
** end

xStatus Conference Multipoint Mode
Shows how the Multipoint video conferences are handled. See xConfiguration Conference Multipoint Mode for more information.

Value space of the result returned:
<Off/MultiWay/MultiSite/Auto/CUCMMediaResourceGroupList>

Example:
*xStatus Conference Multipoint Mode
"s Conference Multipoint Mode: "MultiWay"
** 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 ActiveSpeaker Mode
Shows whether the ActiveSpeaker mode is switched on or not.

Value space of the result returned:
<On/Off>

Example:
*xStatus Conference ActiveSpeaker Mode
"s Conference ActiveSpeaker Mode: Off
** end

xStatus Conference ActiveSpeaker SiteId
Returns the SiteId (CallId) of the current active speaker.

Value space of the result returned:
<Integer>

Example:
*xStatus Conference ActiveSpeaker SiteId
"s Conference ActiveSpeaker SiteId: 0
** 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 Call [1..n] Channels IncomingAudioChannel [1..n] Netstat 1 Jitter
xStatus Diagnostics Call [1..n] Channels IncomingVideoChannel [1..n] Netstat 1 Jitter
xStatus Diagnostics Call [1..n] Channels IncomingDataChannel [1..n] Netstat 1 Jitter
xStatus Diagnostics Call [1..n] Channels OutgoingAudioChannel [1..n] Netstat 1 Jitter
xStatus Diagnostics Call [1..n] Channels OutgoingVideoChannel [1..n] Netstat 1 Jitter
xStatus Diagnostics Call [1..n] Channels OutgoingDataChannel [1..n] Netstat 1 Jitter

Shows the jitter at the present moment in the incoming/outgoing channel, as specified by RFC 3550.

Value space of the result returned:
<Integer>

Example:
```
xStatus Diagnostics Call 27 Channels OutgoingDataChannel 327 Netstat 1 Jitter
*s Diagnostics Call 27 Channels OutgoingDataChannel 327 Netstat 1 Jitter: 0
** end
```
xStatus Diagnostics Call [1..n] Channels IncomingAudioChannel [1..n] Netstat 1 Loss
xStatus Diagnostics Call [1..n] Channels IncomingVideoChannel [1..n] Netstat 1 Loss
xStatus Diagnostics Call [1..n] Channels IncomingDataChannel [1..n] Netstat 1 Loss
xStatus Diagnostics Call [1..n] Channels OutgoingAudioChannel [1..n] Netstat 1 Loss
xStatus Diagnostics Call [1..n] Channels OutgoingVideoChannel [1..n] Netstat 1 Loss
xStatus Diagnostics Call [1..n] Channels OutgoingDataChannel [1..n] Netstat 1 Loss

Shows the number of packets lost in the incoming/outgoing channels.

Value space of the result returned:
<Integer>

Example:
```
xStatus Diagnostics Call 27 Channels OutgoingDataChannel 327 Netstat 1 Loss
  *s Diagnostics Call 27 Channels OutgoingDataChannel 327 Netstat 1 Loss: 96
** end
```

xStatus Diagnostics Call [1..n] Channels IncomingAudioChannel [1..n] Netstat 1
LastIntervalLost
xStatus Diagnostics Call [1..n] Channels IncomingVideoChannel [1..n] Netstat 1
LastIntervalLost
xStatus Diagnostics Call [1..n] Channels IncomingDataChannel [1..n] Netstat 1
LastIntervalLost
xStatus Diagnostics Call [1..n] Channels OutgoingAudioChannel [1..n] Netstat 1
LastIntervalLost
xStatus Diagnostics Call [1..n] Channels OutgoingVideoChannel [1..n] Netstat 1
LastIntervalLost
xStatus Diagnostics Call [1..n] Channels OutgoingDataChannel [1..n] Netstat 1
LastIntervalLost

Shows the number of packets lost during the last interval for the incoming/outgoing channels.

Value space of the result returned:
<Integer>

Example:
```
xStatus Diagnostics Call 27 Channels OutgoingDataChannel 327 Netstat 1 LastIntervalLost
  *s Diagnostics Call 27 Channels OutgoingDataChannel 327 Netstat 1 LastIntervalLost: 0
** end
```
xStatus Diagnostics Call [1..n] Channels IncomingAudioChannel [1..n] Netstat 1 LastIntervalReceived

xStatus Diagnostics Call [1..n] Channels IncomingVideoChannel [1..n] Netstat 1 LastIntervalReceived

xStatus Diagnostics Call [1..n] Channels IncomingDataChannel [1..n] Netstat 1 LastIntervalReceived

xStatus Diagnostics Call [1..n] Channels OutgoingAudioChannel [1..n] Netstat 1 LastIntervalReceived

xStatus Diagnostics Call [1..n] Channels OutgoingVideoChannel [1..n] Netstat 1 LastIntervalReceived

xStatus Diagnostics Call [1..n] Channels OutgoingDataChannel [1..n] Netstat 1 LastIntervalReceived

Shows the number of packets received during the last interval for the incoming/outgoing channels.

Value space of the result returned:
<Integer>

Example:

```
xStatus Diagnostics Call 27 Channels IncomingDataChannel 327 Netstat 1 LastIntervalReceived
*s Diagnostics Call 27 Channels IncomingDataChannel 327 Netstat 1 LastIntervalReceived: 84
** end
```
xStatus Diagnostics Call [1..n] Channels IncomingAudioChannel [1..n] Netstat 1 Bytes
xStatus Diagnostics Call [1..n] Channels IncomingVideoChannel [1..n] Netstat 1 Bytes
xStatus Diagnostics Call [1..n] Channels IncomingDataChannel [1..n] Netstat 1 Bytes
xStatus Diagnostics Call [1..n] Channels OutgoingAudioChannel [1..n] Netstat 1 Bytes
xStatus Diagnostics Call [1..n] Channels OutgoingVideoChannel [1..n] Netstat 1 Bytes
xStatus Diagnostics Call [1..n] Channels OutgoingDataChannel [1..n] Netstat 1 Bytes

Shows the number of bytes received/sent in the incoming/outgoing channel.

Value space of the result returned:
<Integer>

Example:
xStatus Diagnostics Call 27 Channels OutgoingDataChannel 327 Netstat 1 Bytes
  *s Diagnostics Call 27 Channels OutgoingDataChannel 327 Netstat 1 Bytes: 129920
  ** end

xStatus Diagnostics Call [1..n] Channels IncomingAudioChannel [1..n] Netstat 1 ChannelRate
xStatus Diagnostics Call [1..n] Channels IncomingVideoChannel [1..n] Netstat 1 ChannelRate
xStatus Diagnostics Call [1..n] Channels IncomingDataChannel [1..n] Netstat 1 ChannelRate
xStatus Diagnostics Call [1..n] Channels OutgoingAudioChannel [1..n] Netstat 1 ChannelRate
xStatus Diagnostics Call [1..n] Channels OutgoingVideoChannel [1..n] Netstat 1 ChannelRate
xStatus Diagnostics Call [1..n] Channels OutgoingDataChannel [1..n] Netstat 1 ChannelRate

Shows the bandwidth for the incoming/outgoing channel.

Value space of the result returned:
<Integer>

Example:
xStatus Diagnostics Call 27 Channels OutgoingDataChannel 327 Netstat 1 ChannelRate
  *s Diagnostics Call 27 Channels OutgoingDataChannel 327 Netstat 1 ChannelRate: 128000
  ** end
**GPIO status**

**xStatus GPIO Pin [1..4] State**

NOTE: This command is not supported on Codec C40.

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
```
H320 status

xStatus H320 Gateway Status
Returns the state of the H320 Gateway, if the codec is paired with an ISDN Link.

Value space of the result returned:
<OK/OKWithWarning/Error/Inactive/Warning>

Example:
```
xStatus H320 Gateway status
*s H320 Gateway Status: Error
** end
```

xStatus H320 Gateway Address
Returns the IPv4 address of the ISDN Gateway, if the endpoint is paired to one.

Value space of the result returned:
<OK/OKWithWarning/Error/Inactive>

Example:
```
xStatus H320 Gateway Address
*s H320 Gateway Status: Inactive
** end
```

xStatus H320 Gateway Number
Returns the IPv6 address of the ISDN Gateway if the endpoint is paired to one.

Value space of the result returned:
<String>

Example:
```
xStatus H320 Gateway Number
*s H320 Gateway Number: 
** end
```

xStatus H320 Gateway Mode
Returns information on the type of calls the ISDN Gateway is configured for, if the codec is paired with an ISDN Link.

Value space of the result returned:
<Unknown/PRI/BRI/External/G703>

Example:
```
xStatus H320 Gateway Mode
*s H320 Gateway Mode: Unknown
** end
```

xStatus H320 Gateway Reason
Shows the reason for rejected Gateway registration. Only available if the codec is connected to an ISDN Link.

Value space of the result returned:
<String>

Example:
```
xStatus H320 Gateway Reason
*s H320 Gateway Reason: 
** end
```

xStatus H320 Gateway Id
Returns the unique identification of the H320 Gateway, if the codec is paired with an ISDN Link.

Value space of the result returned:
<String>

Example:
```
xStatus H320 Gateway Id
*s H320 Gateway Id: "00:50:60:0B:EF:11"
** end
```
**H323 status**

**xStatus H323**
Shows the top level overview of the H323 status.

**xStatus H323 Gatekeeper Status**
Shows the gatekeeper registration status.

**Value space of the result returned:**
<Required/Discovering/Authenticating/Authenticated/Registering/Registered/
Inactive/Rejected>

**Example:**
```
xStatus H323 Gatekeeper Status
*s H323 Gatekeeper Status: Registered
** end
```

**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
```
HttpFeedback status

xStatus HttpFeedback
  Shows the top level overview of the HTTP status.

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
  ```

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 URL
  ** end
  ```

ICE status

xStatus ICE Configured
  Shows the ICE configuration status. ICE (Interactive Connectivity Establishment, RFC 5245) is a NAT traversal solution that the endpoints can use to discover the optimized media path. Thus the shortest route for audio and video is always secured between the endpoints.

  Value space of the result returned:
  <On/Off>

  Example:
  ```
  xStatus ICE Configured
  *s ICE Configured: "Off"
  ** end
  ```

xStatus ICE Defaultcandidate
  Returns the default candidate where the endpoint initially receives media.

  Value space of the result returned:
  <Host/Rfx/Relay>

  Example:
  ```
  xStatus ICE Defaultcandidate
  *s ICE Defaultcandidate: "Host"
  ** end
  ```

xStatus ICE Turn IP
  Returns the IP address of the TURN server that is currently in use.

  Value space of the result returned:
  <String>

  Example:
  ```
  xStatus ICE Turn IP
  *s ICE Turn IP: "192.0.1.20"
  ** end
  ```
xStatus ICE Turn Hostname
Returns the hostname, or IP address, that is configured as the TURN server.

Value space of the result returned:
<String>

Example:
```cisco
xStatus ICE Turn Hostname
*s ICE Turn Hostname: "callway.medianetworkservices.com"
** end
```

xStatus ICE Turn Username
Returns the user name used for accessing the TURN server.

Value space of the result returned:
<String>

Example:
```cisco
xStatus ICE Turn Username
*s ICE Turn Username: "username"
** end
```

xStatus ICE Call Result
Shows the state of the ICE routing in the present call.
Succeeded: The ICE routing is in use.
Failed: The ICE routing has failed.
Unsupported: ICE routing is not supported.
Mangled: ICE cannot route the media, because a server, such as VCS, is set to handle it.

Value space of the result returned:
<Succeeded/Failed/Unsupported/Mangled>

Example:
```cisco
xStatus ICE Call Result
*s ICE Call 0 Result: "Unsupported"
** end
```

xStatus ICE Call Local Candidate
Returns the network interface type the local system is using to send media.
HOST: The endpoint sends media from its own IP address.
PRFLX: The endpoint sends media from its public IP address as seen by the remote Peer.
SRFLX: The endpoint sends media from its public IP address as seen by the TURN server.
RELAY: The endpoint sends media from the IP address and port allocated on the TURN server, and is used as a fallback until ICE has concluded.

Value space of the result returned:
<String>

Example:
```cisco
xStatus ICE Call Local Candidate
*s ICE Call 1 Local Candidate: "HOST"
** end
```

xStatus ICE Call Local IP
Returns the IP address the local system is using for media routing in the present call.

Value space of the result returned:
<String>

Example:
```cisco
xStatus ICE Call Local IP
*s ICE Call 1 Local IP: "192.0.1.20"
** end
```

xStatus ICE Call Remote Candidate
Returns the network interface type the remote system is using to send media.
HOST: The far-end receives media on its own IP address.
PRFLX: The far-end receives media on its public IP address as seen by the remote Peer.
SRFLX: The far-end receives media on its public IP address as seen by the TURN server.
RELAY: The far-end receives media on the IP address and port allocated on the TURN server, and is used as a fallback until ICE has concluded.

Value space of the result returned:
<String>

Example:
```cisco
xStatus ICE Call Remote Candidate
*s ICE Call 1 Remote Candidate: "SRFLX"
** end
```
xStatus ICE Call Remote IP
Returns the IP address the remote system is using for media routing in the present call.

Value space of the result returned:
<String>

Example:
```
xStatus ICE Call Remote IP
*s ICE Call 1 Remote IP: "192.0.1.20"
** 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 [1..n] IncomingAudioChannel [1..n] Encryption Status
Shows the encryption status on the incoming channel.

Value space of the result returned:
<On/Off>

Example:
```
xStatus MediaChannels Call 27 IncomingAudioChannel 327 Encryption Status
*s MediaChannels Call 27 IncomingAudioChannel 327 Encryption Status: Off
** end
```

xStatus MediaChannels Call [1..n] IncomingAudioChannel [1..n] Audio Protocol
Shows the audio algorithm for the incoming audio channel.

AACLD: The AAC-LD is an MPEG-4 Low Delay Audio Coder audio compression format.
G722: The G.722 algorithm is an ITU standard.
G7221: The G.722.1 algorithm is a licensed royalty-free ITU-T standard.
G711Mu: The G.711 Mu-law compression algorithm is used in North America and Japan.
G711A: The G.711 A-law compression algorithm is used in Europe and the rest of the world.
G729: The G.729 algorithm is an ITU standard.
G729AB: The G.729 annex A and B is an ITU standard.

Value space of the result returned:
<AACLD/G722/G7221/G711Mu/G711A/G729/G729AB>

Example:
```
xStatus MediaChannels Call 27 IncomingAudioChannel 327 Audio Protocol
*s MediaChannels Call 27 IncomingAudioChannel 327 Audio Protocol: AACLD
** end
```
xStatus MediaChannels Call [1..n] IncomingAudioChannel [1..n] Audio Mute
Audio mute status of incoming audio.

Value space of the result returned:
<True/False>

Example:
```
xStatus MediaChannels Call 27 IncomingAudioChannel 327 Audio Mute
*s MediaChannels Call 27 IncomingAudioChannel 327 Audio Mute: True
** end
```

xStatus MediaChannels Call [1..n] IncomingAudioChannel [1..n] Audio Channels
Shows the number of incoming audio channels.

Value space of the result returned:
<Integer>

Example:
```
xStatus MediaChannels Call 27 IncomingAudioChannel 327 Audio Channels
*s MediaChannels Call 27 IncomingAudioChannel 327 Audio Channels: 1
** end
```

xStatus MediaChannels Call [1..n] IncomingAudioChannel [1..n] Transport RTP Local IpAddress
Shows the local 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 Local IpAddress
*s MediaChannels Call 27 IncomingAudioChannel 327 Transport RTP Local IpAddress: "192.168.24.190"
** end
```

xStatus MediaChannels Call [1..n] IncomingAudioChannel [1..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
```

xStatus MediaChannels Call [1..n] IncomingAudioChannel [1..n] Transport RTP Local Port
Shows the local UDP port number of the Real-time Transport Protocol (RTP) port for the incoming audio in the media channel.

Value space of the result returned:
<Integer>

Example:
```
xStatus MediaChannels Call 27 IncomingAudioChannel 327 Transport RTP Local Port
*s MediaChannels Call 27 IncomingAudioChannel 327 Transport RTP Local Port: 16404
** end
```

xStatus MediaChannels Call [1..n] IncomingAudioChannel [1..n] Transport RTP Remote Port
Shows the remote UDP port number of the Real-time Transport Protocol (RTP) port for the incoming audio in the media channel.

Value space of the result returned:
<Integer>

Example:
```
xStatus MediaChannels Call 27 IncomingAudioChannel 327 Transport RTP Remote Port
*s MediaChannels Call 27 IncomingAudioChannel 327 Transport RTP Remote Port: 50932
** end
```
xStatus MediaChannels Call [1..n] IncomingAudioChannel [1..n] Transport RTCP Local IpAddress
Shows the local IP address of the Real-time Transport Control Protocol (RTCP) port for the incoming audio in the media channel.

Value space of the result returned:
<String>

Example:
```plaintext
xStatus MediaChannels Call 27 IncomingAudioChannel 327 Transport RTCP Local IpAddress
*s MediaChannels Call 27 IncomingAudioChannel 327 Transport RTCP Local IpAddress: "192.168.24.190"
** end
```

xStatus MediaChannels Call [1..n] IncomingAudioChannel [1..n] Transport RTCP Local Port
Shows the local UDP port number of the Real-time Transport Control Protocol (RTCP) port for the incoming audio in the media channel.

Value space of the result returned:
<Integer>

Example:
```plaintext
xStatus MediaChannels Call 27 IncomingAudioChannel 327 Transport RTCP Local Port
*s MediaChannels Call 27 IncomingAudioChannel 327 Transport RTCP Local Port: 16405
** end
```

xStatus MediaChannels Call [1..n] IncomingAudioChannel [1..n] Transport RTCP Remote IpAddress
Shows the remote IP address of the Real-time Transport Control Protocol (RTCP) port for the incoming audio in the media channel.

Value space of the result returned:
<String>

Example:
```plaintext
xStatus MediaChannels Call 27 IncomingAudioChannel 327 Transport RTCP Remote IpAddress
*s MediaChannels Call 27 IncomingAudioChannel 327 Transport RTCP Remote IpAddress: "192.168.136.130"
** end
```

xStatus MediaChannels Call [1..n] IncomingAudioChannel [1..n] Transport RTCP Remote Port
Shows the remote UDP port number of the Real-time Transport Control Protocol (RTCP) port for the incoming audio in the media channel.

Value space of the result returned:
<Integer>

Example:
```plaintext
xStatus MediaChannels Call 27 IncomingAudioChannel 327 Transport RTCP Remote Port
*s MediaChannels Call 27 IncomingAudioChannel 327 Transport RTCP Remote Port: 50933
** end
```

xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Encryption Status
Shows the encryption status on the incoming channel.

Value space of the result returned:
<On/Off>

Example:
```plaintext
xStatus MediaChannels Call 27 IncomingVideoChannel 330 Encryption Status
*s MediaChannels Call 27 IncomingVideoChannel 330 Encryption Status: Off
** end
```

xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] ChannelRole
Shows if the incoming channel is the main video channel or presentation channel.

Value space of the result returned:
<Main/Presentation>

Example:
```plaintext
xStatus MediaChannels Call 27 IncomingVideoChannel 330 ChannelRole
*s MediaChannels Call 27 IncomingVideoChannel 330 ChannelRole: Main
** end
```
xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Video Protocol
Shows the video algorithm for the incoming video channel.
- H264: The H.264 algorithm is an ITU-T standard for video compression.
- H263: The H.263 algorithm is an ITU-T standard for video compression.

Value space of the result returned:
<H264/H263pp/H263/H261/HEVC>

Example:
```
xStatus MediaChannels Call 27 IncomingVideoChannel 330 Video Protocol
*s MediaChannels Call 27 IncomingVideoChannel 330 Video Protocol: H264
** end
```

xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Video FrameRate
Shows the video frame rate of the incoming channel.

Value space of the result returned:
<Integer>

Example:
```
xStatus MediaChannels Call 27 IncomingVideoChannel 330 Video FrameRate
*s MediaChannels Call 27 IncomingVideoChannel 330 Video FrameRate: 25
** end
```

xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Video ResolutionX
Shows the width (resolution in direction X) of the incoming video.

Value space of the result returned:
<Integer>

Example:
```
xStatus MediaChannels Call 27 IncomingVideoChannel 330 Video ResolutionX
*s MediaChannels Call 27 IncomingVideoChannel 330 Video ResolutionX: 768
** end
```

xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Video ResolutionY
Shows the height (resolution in direction Y) of the incoming video.

Value space of the result returned:
<Integer>

Example:
```
xStatus MediaChannels Call 27 IncomingVideoChannel 330 Video ResolutionY
*s MediaChannels Call 27 IncomingVideoChannel 330 Video ResolutionY: 448
** end
```

xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Transport RTP Local IpAddress
Shows the local IP address of the Real-time Transport Protocol (RTP) port for the incoming video in the media channel.

Value space of the result returned:
<String>

Example:
```
xStatus MediaChannels Call 27 IncomingVideoChannel 330 Transport RTP Local IpAddress
*s MediaChannels Call 27 IncomingVideoChannel 330 Transport RTP Local IpAddress: "192.168.24.190"
** end
```

xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Transport RTP Local Port
Shows the local UDP port number of the Real-time Transport Protocol (RTP) port for the incoming video in the media channel.

Value space of the result returned:
<Integer>

Example:
```
xStatus MediaChannels Call 27 IncomingVideoChannel 330 Transport RTP Local Port
*s MediaChannels Call 27 IncomingVideoChannel 330 Transport RTP Local Port: 16404
** end
```
**xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Transport RTP Remote IpAddress**
Shows the remote IP address of the Real-time Transport Protocol (RTP) port for the incoming video in the media channel.

**Value space of the result returned:**
<String>

**Example:**
```plaintext
xStatus MediaChannels Call 27 IncomingVideoChannel 330 Transport RTP Remote IpAddress
`s MediaChannels Call 27 IncomingVideoChannel 330 Transport RTP Remote IpAddress: "192.168.136.130"
** end
```

**xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Transport RTP Remote Port**
Shows the remote UDP port number of the Real-time Transport Protocol (RTP) port for the incoming video in the media channel.

**Value space of the result returned:**
<Integer>

**Example:**
```plaintext
xStatus MediaChannels Call 27 IncomingVideoChannel 330 Transport RTP Remote Port
`s MediaChannels Call 27 IncomingVideoChannel 330 Transport RTP Remote Port: 50932
** end
```

**xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Transport RTCP Local IpAddress**
Shows the local IP address of the Real-time Transport Control Protocol (RTCP) port for the incoming video in the media channel.

**Value space of the result returned:**
<String>

**Example:**
```plaintext
xStatus MediaChannels Call 27 IncomingVideoChannel 330 Transport RTCP Local IpAddress
`s MediaChannels Call 27 IncomingVideoChannel 330 Transport RTCP Local IpAddress: "192.168.24.190"
** end
```

**xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Transport RTCP Remote IpAddress**
Shows the remote IP address of the Real-time Transport Control Protocol (RTCP) port for the incoming video in the media channel.

**Value space of the result returned:**
<String>

**Example:**
```plaintext
xStatus MediaChannels Call 27 IncomingVideoChannel 330 Transport RTCP Remote IpAddress
`s MediaChannels Call 27 IncomingVideoChannel 330 Transport RTCP Remote IpAddress: "192.168.136.130"
** end
```

**xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Transport RTCP Remote Port**
Shows the remote UDP port number of the Real-time Transport Control Protocol (RTCP) port for the incoming video in the media channel.

**Value space of the result returned:**
<Integer>

**Example:**
```plaintext
xStatus MediaChannels Call 27 IncomingVideoChannel 330 Transport RTCP Remote Port
`s MediaChannels Call 27 IncomingVideoChannel 330 Transport RTCP Remote Port: 50933
** end
```
xStatus MediaChannels Call [1..n] OutgoingAudioChannel [1..n] Encryption Status
Shows the encryption status on the outgoing channel.

Value space of the result returned:
<On/Off>

Example:
```
xStatus MediaChannels Call 27 OutgoingAudioChannel 328 Encryption Status
```
```
*s MediaChannels Call 27 OutgoingAudioChannel 328 Encryption Status: Off
** end
```

xStatus MediaChannels Call [1..n] OutgoingAudioChannel [1..n] Audio Protocol
Shows the audio algorithm for the outgoing audio channel.

AACLD: The AAC-LD is an MPEG-4 Low Delay Audio Coder audio compression format.
G722: The G.722 algorithm is an ITU standard.
G7221: The G.722.1 algorithm is a licensed royalty-free ITU-T standard.
G711Mu: The G.711 Mu-law compression algorithm is used in North America and Japan.
G711A: The G.711 A-law compression algorithm is used in Europe and the rest of the world.
G729: The G.729 algorithm is an ITU standard.
G729AB: The G.729 annex A and B is an ITU standard.

Value space of the result returned:
<AACLD/G722/G7221/G711Mu/G711A/G729/G729AB>

Example:
```
xStatus MediaChannels Call 27 OutgoingAudioChannel 328 Audio Protocol
```
```
*s MediaChannels Call 27 OutgoingAudioChannel 328 Audio Protocol: AACLD
** end
```

xStatus MediaChannels Call [1..n] OutgoingAudioChannel [1..n] Audio Channels
Shows the number of outgoing audio channels.

Value space of the result returned:
<Integer>

Example:
```
xStatus MediaChannels Call 27 OutgoingAudioChannel 328 Audio Channels
```
```
*s MediaChannels Call 27 OutgoingAudioChannel 328 Audio Channels: 1
** end
```

xStatus MediaChannels Call [1..n] OutgoingAudioChannel [1..n] Transport RTP Local IpAddress
Shows the local IP address of the Real-time Transport Protocol (RTP) port for the outgoing audio in the media channel.

Value space of the result returned:
<String>

Example:
```
xStatus MediaChannels Call 27 OutgoingAudioChannel 328 Transport RTP Local IpAddress
```
```
*s MediaChannels Call 27 OutgoingAudioChannel 328 Transport RTP Local IpAddress: "192.168.24.190"
** end
```

xStatus MediaChannels Call [1..n] OutgoingAudioChannel [1..n] Transport RTP Local Port
Shows the local UDP port number of the Real-time Transport Protocol (RTP) port for the outgoing audio in the media channel.

Value space of the result returned:
<Integer>

Example:
```
xStatus MediaChannels Call 27 OutgoingAudioChannel 328 Transport RTP Local Port
```
```
*s MediaChannels Call 27 OutgoingAudioChannel 328 Transport RTP Local Port: 16404
** end
```

xStatus MediaChannels Call [1..n] OutgoingAudioChannel [1..n] Transport RTP Remote IpAddress
Shows the remote IP address of the Real-time Transport Protocol (RTP) port for the outgoing audio in the media channel.

Value space of the result returned:
<String>

Example:
```
xStatus MediaChannels Call 27 OutgoingAudioChannel 328 Transport RTP Remote IpAddress
```
```
*s MediaChannels Call 27 OutgoingAudioChannel 328 Transport RTP Remote IpAddress: "192.168.136.130"
** end
```
xStatus MediaChannels Call [1..n] OutgoingAudioChannel [1..n] Transport RTP Remote Port
Shows the remote UDP port number of the Real-time Transport Protocol (RTP) port for the outgoing audio in the media channel.

Value space of the result returned:
<Integer>

Example:
xStatus MediaChannels Call 27 OutgoingAudioChannel 328 Transport RTP Remote Port
*s MediaChannels Call 27 OutgoingAudioChannel 328 Transport RTP Remote Port: 50932
** end

xStatus MediaChannels Call [1..n] OutgoingAudioChannel [1..n] Transport RTCP Local IpAddress
Shows the local IP address of the Real-time Transport Control Protocol (RTCP) port for the outgoing audio in the media channel.

Value space of the result returned:
<String>

Example:
xStatus MediaChannels Call 27 OutgoingAudioChannel 328 Transport RTCP Local IpAddress
*s MediaChannels Call 27 OutgoingAudioChannel 328 Transport RTCP Local IpAddress: "192.168.24.190"
** end

xStatus MediaChannels Call [1..n] OutgoingAudioChannel [1..n] Transport RTCP Remote Port
Shows the remote UDP port number of the Real-time Transport Control Protocol (RTCP) port for the outgoing audio in the media channel.

Value space of the result returned:
<Integer>

Example:
xStatus MediaChannels Call 27 OutgoingAudioChannel 328 Transport RTCP Remote Port
*s MediaChannels Call 27 OutgoingAudioChannel 328 Transport RTCP Remote IpAddress: "192.168.136.130"
** end

xStatus MediaChannels Call [1..n] OutgoingAudioChannel [1..n] Encryption Status
Shows the encryption status on the outgoing channel.

Value space of the result returned:
<On/Off>

Example:
xStatus MediaChannels Call 27 OutgoingAudioChannel 331 Encryption Status
*s MediaChannels Call 27 OutgoingAudioChannel 331 Encryption Status: Off
** end
xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] ChannelRole
Shows if the outgoing channel is the main video channel or presentation channel.

Value space of the result returned:

-<Main/Presentation>

Example:
```plaintext
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 ChannelRole
's MediaChannels Call 27 OutgoingVideoChannel 331 ChannelRole: Main
'' end
```

xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Video Protocol
Shows the video algorithm for the outgoing video channel.
H264: The H.264 algorithm is an ITU-T standard for video compression.
H263: The H.263 algorithm is an ITU-T standard for video compression.
H261: The H.261 algorithm is an ITU-T standard for video compression.

Value space of the result returned:

-<H264/H263pp/H263/H261/HEVC>

Example:
```plaintext
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Video Protocol
's MediaChannels Call 27 OutgoingVideoChannel 331 Video Protocol: "H264"
'' end
```

xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Video FrameRate
Shows the video frame rate of the outgoing channel.

Value space of the result returned:

-<Integer>

Example:
```plaintext
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Video FrameRate
's MediaChannels Call 27 OutgoingVideoChannel 331 Video FrameRate: 30
'' end
```

xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Video ResolutionX
Shows the width (resolution in direction X) of the outgoing video.

Value space of the result returned:

-<Integer>

Example:
```plaintext
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Video ResolutionX
's MediaChannels Call 27 OutgoingVideoChannel 331 Video ResolutionX: 768
'' end
```

xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Video ResolutionY
Shows the height (resolution in direction Y) of the outgoing video.

Value space of the result returned:

-<Integer>

Example:
```plaintext
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Video ResolutionY
's MediaChannels Call 27 OutgoingVideoChannel 331 Video ResolutionY: 448
'' end
```

xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Transport RTP Local IpAddress
Shows the local IP address of the Real-time Transport Protocol (RTP) port for the outgoing video in the media channel.

Value space of the result returned:

-<String>

Example:
```plaintext
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Transport RTP Local IpAddress
's MediaChannels Call 27 OutgoingVideoChannel 331 Transport RTP Local IpAddress: "192.168.24.190"
'' end
```
xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Transport RTP Local Port
Shows the local UDP port number of the Real-time Transport Protocol (RTP) port for the outgoing video in the media channel.

Value space of the result returned:
<Integer>

Example:
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Transport RTP Local Port
 *s MediaChannels Call 27 OutgoingVideoChannel 331 Transport RTP Local Port: 16404
 ** end

xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Transport RTP Remote IpAddress
Shows the remote IP address of the Real-time Transport Protocol (RTP) port for the outgoing video in the media channel.

Value space of the result returned:
<String>

Example:
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Transport RTP Remote IpAddress
 *s MediaChannels Call 27 OutgoingVideoChannel 331 Transport RTP Remote IpAddress: "192.168.136.130"
 ** end

xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Transport RTP Remote Port
Shows the remote UDP port number of the Real-time Transport Protocol (RTP) port for the outgoing video in the media channel.

Value space of the result returned:
<Integer>

Example:
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Transport RTP Remote Port
 *s MediaChannels Call 27 OutgoingVideoChannel 331 Transport RTP Remote Port: 50932
 ** end

xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Transport RTCP Local IpAddress
Shows the local IP address of the Real-time Transport Control Protocol (RTCP) port for the outgoing video in the media channel.

Value space of the result returned:
<String>

Example:
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Transport RTCP Local IpAddress
 *s MediaChannels Call 27 OutgoingVideoChannel 331 Transport RTCP Local IpAddress: "192.168.24.190"
 ** end

xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Transport RTCP Local Port
Shows the local UDP port number of the Real-time Transport Control Protocol (RTCP) port for the outgoing video in the media channel.

Value space of the result returned:
<Integer>

Example:
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Transport RTCP Local Port
 *s MediaChannels Call 27 OutgoingVideoChannel 331 Transport RTCP Local Port: 16405
 ** end

xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Transport RTCP Remote IpAddress
Shows the remote IP address of the Real-time Transport Control Protocol (RTCP) port for the outgoing video in the media channel.

Value space of the result returned:
<String>

Example:
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Transport RTCP Remote IpAddress
 *s MediaChannels Call 27 OutgoingVideoChannel 331 Transport RTCP Remote IpAddress: "192.168.136.130"
 ** end

xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Transport RTCP Remote Port
Shows the remote UDP port number of the Real-time Transport Control Protocol (RTCP) port for the outgoing video in the media channel.

Value space of the result returned:
<Integer>

Example:
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Transport RTCP Remote Port
 *s MediaChannels Call 27 OutgoingVideoChannel 331 Transport RTCP Remote Port: 50932
 ** end
xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Transport RTCP Remote Port

Shows the remote UDP port number of the Real-time Transport Control Protocol (RTCP) port for the outgoing video in the media channel.

Value space of the result returned:

<integer>

Example:

xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Transport RTCP Remote Port
*s MediaChannels Call 27 OutgoingVideoChannel 331 Transport RTCP Remote Port: 50933
** end

Network status

xStatus Network

Shows the top level overview of the network status.

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:

<"10 half"/"10 full"/"100 half"/"100 full"/"1000 full">

Example:

xStatus Network 1 Ethernet Speed
*s Network 1 Ethernet Speed: "100 full"
** 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 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 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 DNS Domain Name**
Shows the domain name.

**Value space of the result returned:**
<String>

**Example:**
```
xStatus Network 1 IPv4 DNS Domain Name
* s Network 1 IPv4 DNS Domain Name: "www.example.com www.example.int"
** end
```

**xStatus Network 1 IPv4 DNS Server [1..5] Address**
Shows the IP address of the DNS server.

**Value space of the result returned:**
<String>

**Example:**
```
xStatus Network 1 IPv4 DNS Server 1. Address
* s Network 1 IPv4 DNS Server 1 Address: "192.0.2.60"
** end
```

**xStatus Network 1 IPv4 DHCP TftpServerAddress**
Returns the IP address of the TFTP server (provisioning server) as assigned by DHCP, provided that the DHCP server supports option 150. This status is used only when xConfiguration Provisioning Mode is CUCM.

**Value space of the result returned:**
<String>

**Example:**
```
xStatus Network 1 IPv4 DHCP TftpServerAddress
* s Network 1 IPv4 DHCP TftpServerAddress: "192.0.2.0"
** end
```

**xStatus Network 1 IPv4 DHCP TmsServer**
Returns the IP address of the TMS server (provisioning server) as assigned by DHCP, provided that the DHCP server supports option 242. This status is used only when xConfiguration Provisioning Mode is TMS.

**Value space of the result returned:**
<String>

**Example:**
```
xStatus Network 1 IPv4 DHCP TmsServer
* s Network 1 IPv4 DHCP TmsServer: "192.0.2.0"
** end
```

**xStatus Network 1 IPv4 DHCP ProvisioningServer**
Returns the IP address of the VCS provisioning server as assigned by DHCP, provided the provisioning server address is defined as a vendor encapsulated option in the DHCP server. This status is used only when xConfiguration Provisioning Mode is VCS.

**Value space of the result returned:**
<String>

**Example:**
```
xStatus Network 1 IPv4 DHCP ProvisioningServer
* s Network 1 IPv4 DHCP ProvisioningServer: "192.0.2.0"
** end
```
xStatus Network 1 IPv4 DHCP ProvisioningDomain
Returns the SIP domain of the VCS provisioning server as assigned by DHCP, provided the provisioning server address is defined as a vendor encapsulated option in the DHCP server. This status is used only when xConfiguration Provisioning Mode is VCS.

Value space of the result returned:
<String>

Example:
```
xStatus Network 1 IPv4 DHCP ProvisioningDomain
*s Network 1 IPv4 DHCP ProvisioningDomain: "1234@company.com"
** end
```

xStatus Network 1 IPv4 DHCP TftpServer
Returns the IP address or DNS name of the TFTP server (provisioning server) as assigned by DHCP, provided the DHCP server sets the option 66. This status is used only when xConfiguration Provisioning Mode is CUCM.

Value space of the result returned:
<String>

Example:
```
xStatus Network 1 IPv4 DHCP TftpServer
*s Network 1 IPv4 DHCP TftpServerAddress: "192.0.2.0"
*s Network 1 IPv4 DHCP TftpServer: "1234@company.com"
** 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 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
```

xStatus Network 1 MTU
Shows the MTU (Maximum Transmission Unit) size for the network.

Value space of the result returned:
<Integer>

Example:
```
xStatus Network 1 MTU
*s Network 1 MTU: 1500
** 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 VLAN Native VlanId
Identifies the VLAN associated with any untagged traffic between the switch and the endpoint. For more information see documentation for the IEEE 802.1Q protocol.

Value space of the result returned:
<String>

Example:
```
xStatus Network VLAN Native VlanId
*s Network 1 VLAN Native VlanId: "200"
** end
```
xStatus Network 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 CDP Version

Returns information about the software release version the switch is running.

Value space of the result returned:
<String>

Example:
```
xStatus Network CDP Version
*s Network 1 CDP Version: "Cisco IOS Software, C3750E Software (C3750E-UNIVERSALK9-M), Version 15.0(1)SE2, RELEASE SOFTWARE (fc3)*Technical Support: http://www.cisco.com/techsupport*Copyright (c) 1986-2011 by Cisco Systems, Inc.*Compiled Thu 22-Dec-11 00:05 by prod_rel_team"
** end
```

xStatus Network 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 CDP DeviceId

Identifies the name of the switch in form of a character string.

Value space of the result returned:
<String>

Example:
```
xStatus Network CDP DeviceId
*s Network 1 CDP DeviceId: "123456.company.com"
** end
```

xStatus Network 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 CDP Duplex

Indicates the status (duplex configuration) of the CDP broadcast interface. Used by network operators to diagnose connectivity problems between adjacent network elements.

Value space of the result returned:
<String>

Example:
```
xStatus Network CDP Duplex
*s Network 1 CDP Duplex: "Full"
** end
```

xStatus Network 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 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 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 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 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 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
```
NetworkServices status

xStatus NetworkServices NTP 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: "64.104.193.12 64.104.222.16 144.254.15.121"
  ** end

Preset status

xStatus Preset
Shows the top level overview of the camera presets status.

xStatus Preset[1..15] Defined
Shows if a camera preset is stored at this position.

Value space of the result returned:
<Ture/False>

Example:
  xStatus Preset 1 Defined
  *s Preset 1 Defined: True
  ** end

xStatus Preset[1..15] Type
Shows the camera preset type.

Value space of the result returned:
<All/Camera>

Example:
  xStatus Preset 1 Type
  *s Preset 1 Type: All
  ** end

xStatus Preset[1..15] Description
Lists the configured name for the specific preset.

Value space of the result returned:
<String>

Example:
  xStatus Preset 1 Description
  *s Preset 1 Description: "Zoom in"
  ** end
Provisioning status

xStatus Provisioning
Shows the top level overview of the provisioning status.

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.

Value space of the result returned:
<Failed/AuthenticationFailed/Provisioned/Idle/NeedConfig>

Example:
```
xStatus Provisioning Status
  *s Provisioning Status: Provisioned
  ** end
```

xStatus Provisioning Reason
Shows the cause when provisioning has failed.

Value space of the result returned:
<String>

Example:
```
xStatus Provisioning Reason
  *s Provisioning Reason: ""
  ** 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 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 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 Phase
Shows the phase of the software upgrade.

Value space of the result returned:

None/DownloadPending/Downloading/DownloadPaused/DownloadDone/
AboutToInstallUpgrade/Postponed/Installing

Example:

xStatus Provisioning Software UpgradeStatus Phase
*s Provisioning Software UpgradeStatus Phase: None
** 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 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: "s52000tc5_1_0.pkg"
** 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://.../s52000tc5_1_0.pkg"
** end

xStatus Provisioning Software UpgradeStatus SecondsUntilUpgrade
Indicates how many seconds remain before the software upgrade is automatically installed. The upgrade installation can be started manually by issuing the command xCommand Provisioning CompleteUpgrade or postponed with the command xCommand Provisioning PostponeUpgrade.

Value space of the result returned:

Integer

Example:

xStatus Provisioning Software UpgradeStatus SecondsUntilUpgrade
*s Provisioning Software UpgradeStatus SecondsUntilUpgrade: 0
** 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: "s52000tc5_1_0.pkg"
** 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://.../s52000tc5_1_0.pkg"
** 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 CUCM CAPF Mode
Shows the authentication mode required for a pending CAPF operation, if any.
IgnoreAuth: No pending or ongoing CAPF operation.
NullAuth: Pending or ongoing CAPF operation that does not require authentication.
StringAuth: Pending or ongoing CAPF operation that requires string authentication.
LSCAuth: Pending or ongoing CAPF operation that requires authentication by Locally Significant Certificate.
MICAUth: Pending or ongoing CAPF operation that requires authentication by Manufacturer Installed Certificate.

Value space of the result returned:
<IgnoreAuth/NullAuth/StringAuth/LSCAuth/MICAuAuth>

Example:
```
xStatus Provisioning CUCM CAPF Mode
*s Provisioning CUCM CAPF Mode: IgnoreAuth
** end
```

xStatus Provisioning CUCM CAPF ServerName
Shows the CAPF server name. This can be a hostname, a FQDN or an IP address.

Value space of the result returned:
<IgnoreAuth/NullAuth/StringAuth/LSCAuth/MICAuAuth>

Example:
```
xStatus Provisioning CUCM CAPF ServerName
*s Provisioning CUCM CAPF ServerName: "192.168.0.1"
** end
```

xStatus Provisioning CUCM CAPF ServerPort
Shows the port number to be used for CAPF operations.

Value space of the result returned:
<Integer>

Example:
```
xStatus Provisioning CUCM CAPF ServerPort
*s Provisioning CUCM CAPF ServerPort: 3804
** end
```

xStatus Provisioning CUCM CAPF LSC
Shows whether a Locally Significant Certificate (LSC) is installed or not.

Value space of the result returned:
<NotInstalled/Installed>

Example:
```
xStatus Provisioning CUCM CAPF LSC
*s Provisioning CUCM CAPF LSC: NotInstalled
** end
```

xStatus Provisioning CUCM CAPF OperationState
Shows the state of the current CAPF operation, if any.
Pending: A CAPF operation is pending.
NonPending: There is no CAPF operation in process.
InProgress: A CAPF operation is in progress.
Failed: The CAPF operation has failed.

Value space of the result returned:
<Pending/NonPending/InProgress/Failed>

Example:
```
xStatus Provisioning CUCM CAPF OperationState
*s Provisioning CUCM CAPF OperationState: NonPending
** end
```
**xStatus Provisioning CUCM CAPF OperationResult**

Shows the result of the last CAPF operation.
- NotSet: No CAPF operation has been executed yet.
- CAPFUnknown: Unknown CAPF failure.
- CAPFInvalidAuthStrLen: Invalid length of authentication string (should be 4–10 digits).
- CAPFInvalidInitReason: Invalid init reason specified.
- CAPFInvalidAuthMode: Invalid authentication mode.
- CAPFNotNone: Last CAPF session is still running.
- CAPFNullClnt: Invalid client.
- CAPFNullClntContext: Invalid client context.
- CAPFInvalidUsageStartSession: Session context data is empty.
- CAPFInvalidSession: Invalid CAPF session.
- CAPFNullParameters: Invalid server parameters.
- CAPFNoStat: Empty status.
- CAPFTimeout: The operation has timed out.
- CAPFConnLost: Connection to the CAPF server has been lost.
- CAPFAbort: CAPF operation has been terminated.
- CAPFKeyGenFailed: Key generation has failed.
- CAPFConnectFailed: Failed to connect to CAPF server.
- CAPFFenceError: Unknown internal CAPF failure.
- CAPFServerBusy: CAPF server is busy.
- CAPFAuthRejected: Authentication has been rejected.
- CAPFInvalidParms: Invalid parameters.
- CAPFCancelled: CAPF operation has been canceled.
- CAPFFailed: CAPF operation has failed.
- CAPFSuccess: CAPF operation has succeeded.
- CAPFLSCUpdated: Locally Significant Certificate (LSC) has been updated. CAPF operation has succeeded.

**Value space of the result returned:**

```
```

**Example:**

```
xStatus Provisioning CUCM CAPF OperationResult: NotSet
** end
```

**xStatus Provisioning CUCM ProvisionSecurity**

Shows the provisioned configuration file type.
- None: The provisioned configuration file is plain text or the endpoint has not been provisioned.
- Signed: The provisioned configuration file is signed.
- Encrypted: The provisioned configuration file is signed and encrypted.

**Value space of the result returned:**

```
<None/Signed/Encrypted>
```

**Example:**

```
xStatus Provisioning CUCM ProvisionSecurity: None
** end
```

**xStatus Provisioning CUCM CTL State**

Shows whether the Certificate Trust List (CTL) file is installed or not.

**Value space of the result returned:**

```
<NotInstalled/Installed>
```

**Example:**

```
xStatus Provisioning CUCM CTL State: Installed
** end
```
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
```

SIP status

xStatus SIP
Shows the top level overview of the SIP status.

xStatus SIP Proxy [1] 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.

Value space of the result returned:
<Active/DNSFailed/Off/Timeout/UnableTCP/UnableTLS/Unknown>

Example:
```
xStatus SIP Proxy 1 Status
*s SIP Proxy 1 Status: Active
** end
```

xStatus SIP Proxy [1] 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 [1] Secure
Shows the encryption status of the signaling with the SIP Proxy server.

Value space of the result returned:
<True/False>

Example:
xs SIP Proxy 1 Secure: True
** end

xStatus SIP Proxy [1] 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 Profile 1 DefaultTransport not set to TLS) or certificate verification is switched off (xConfiguration SIP Profile TlsVerify set to Off).

Value space of the result returned:
<True/False>

Example:
xs SIP Proxy 1 Verified: False
** end

xStatus SIP Registration [1..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:
xs SIP Registration 1 Status: Registered
** end

xStatus SIP Registration [1..n] Reason
Shows a message to explain the reason why the SIP registration failed.

Value space of the result returned:
<String>

Example:
xs SIP Registration 1 Reason: "404 Not Found"
** end

xStatus SIP Registration [1..n] URI
Shows the URI used for registration to the SIP Proxy server.

Value space of the result returned:
<String>

Example:
xS SIP Registration 1 URI: "firstname.lastname@company.com"
** end
xStatus SIP Registration [1..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/NTLM/Off>

Example:
xStatus SIP Registration 1 Authentication
*s SIP Registration 1 Authentication: Off
** end

xStatus SIP Profile 1 Proxy [1] 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.

Value space of the result returned:
<Active/DNSFailed/Off/Timeout/UnableTCP/UnableTLS/Unknown>

Example:
xStatus SIP Profile 1 Proxy 1 Status
*s SIP Profile 1 Proxy 1 Status: Active
** end

xStatus SIP Profile 1 Proxy [1] Address
Shows the address of the SIP Proxy that the system communicates with.

Value space of the result returned:
<String>

Example:
xStatus SIP Profile 1 Proxy 1 Address
*s SIP Profile 1 Proxy 1 Address: "192.0.2.50"
** end

xStatus SIP Profile 1 Secure
Shows the encryption status of the signaling with the SIP Proxy server.

Value space of the result returned:
<True/False>

Example:
xStatus SIP Profile 1 Secure
*s SIP Profile 1 Secure: True
** end

xStatus SIP Profile 1 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 Profile 1 DefaultTransport not set to TLS) or certificate verification is switched off (xConfiguration SIP Profile TlsVerify set to Off).

Value space of the result returned:
<True/False>

Example:
xStatus SIP Profile 1 Verified
*s SIP Profile 1 Verified: False
** end

xStatus SIP Profile 1 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/NTLM/Off>

Example:
xStatus SIP Profile 1 Authentication
*s SIP Profile 1 Authentication: Off
** end
xStatus SIP Profile 1 Mailbox MessagesWaiting
Indicates how many new messages are in the mailbox.
Value space of the result returned:
<integer>
Example:
  xStatus SIP Profile 1 Mailbox MessagesWaiting
  *s SIP Profile 1 Mailbox MessagesWaiting: 0
  ** end

xStatus SIP Profile 1 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 Profile 1 CallForward Mode
  *s SIP Profile 1 CallForward Mode: Off
  ** end

xStatus SIP Profile 1 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 Profile 1 CallForward URI
  *s SIP Profile 1 CallForward URI: ""
  ** end

xStatus SIP Profile 1 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 Profile 1 CallForward DisplayName
  *s SIP Profile 1 CallForward DisplayName: ""
  ** end

xStatus SIP Profile 1 Registration [1..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 Profile 1 Registration 1 Status
  *s SIP Profile 1 Registration 1 Status: Registered
  ** end

xStatus SIP Profile 1 Registration [1..n] Reason
Shows a message to explain the reason why the SIP registration failed.
Value space of the result returned:
<string>
Example:
  xStatus SIP Profile 1 Registration 1 Reason
  *s SIP Profile 1 Registration 1 Reason: "404 Not Found"
  ** end

xStatus SIP Profile 1 Registration [1..n] URI
Shows the URI used for registration to the SIP Proxy server.
Value space of the result returned:
<string>
Example:
  xStatus SIP Profile 1 Registration 1 URI
  *s SIP Profile 1 Registration 1 URI: "firstname.lastname@company.com"
  ** end

xStatus SIP Profile 1 Turn ServerAddress
Not in use in this release.
Value space of the result returned:
<string>
Example:
  xStatus SIP Profile 1 Turn ServerAddress
  *s SIP Profile 1 Turn ServerAddress: ""
  ** end
**xStatus SIP Profile 1 DirectoryURI Primary URI**

Returns the primary directory URI set for the endpoint in UCM. Directory URI is associated with a directory number, and can be used to make calls and identify callers. Up to five directory URIs can be set, but only one of them can be set as primary.

**Value space of the result returned:**

<String>

**Example:**

```plaintext
xStatus SIP Profile 1 DirectoryURI Primary URI
*s SIP Profile 1 DirectoryURI Primary URI: "123456@company.com"
** end
```

**xStatus Standby Active**

Shows if the system is in standby or not.

**Value space of the result returned:**

<On/Off>

**Example:**

```plaintext
xStatus Standby Active
*s Standby Active: Off
** end
```
SystemUnit status

xStatus SystemUnit
Shows the top level overview of the system unit status.

xStatus SystemUnit ProductType
Shows the product type.
Value space of the result returned:
<String>
Example:
   *s SystemUnit ProductType: "Cisco TelePresence Codec"
   ** end

xStatus SystemUnit ProductId
Shows the product identity.
Value space of the result returned:
<String>
Example:
   *s SystemUnit ProductId: "Cisco TelePresence Codec C90"
   ** end

xStatus SystemUnit ProductPlatform
Shows the product platform.
Value space of the result returned:
<String>
Example:
   *s SystemUnit ProductPlatform: "C90"
   ** end

xStatus SystemUnit Uptime
Shows the number of seconds since the last restart of the codec.
Value space of the result returned:
<Integer>
Example:
   xStatus SystemUnit Uptime
   *s SystemUnit Uptime: 597095
   ** end

xStatus SystemUnit Software Application
Shows which software application is running on the codec.
Value space of the result returned:
<String>
Example:
   xStatus SystemUnit Software Application
   *s SystemUnit Software Application: "Endpoint"
   ** 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: "TC5.1.0"
   ** 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: "s52000"
   ** 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: "2012-02-22"
** end
```

**xStatus SystemUnit Software MaxVideoCalls**
Shows the maximum number of simultaneous video calls that is supported.

Value space of the result returned:
<Integer>

Example:
```
xStatus SystemUnit Software MaxVideoCalls
  s SystemUnit Software MaxVideoCalls: 3
** end
```

**xStatus SystemUnit Software MaxAudioCalls**
Shows the maximum number of simultaneous audio calls that is supported.

Value space of the result returned:
<Integer>

Example:
```
xStatus SystemUnit Software MaxAudioCalls
  s SystemUnit Software MaxAudioCalls: 4
** end
```

**xStatus SystemUnit Software ReleaseKey**
Shows if there is a valid releasekey for the software version that is installed on the codec.

Value space of the result returned:
<String>

Example:
```
xStatus SystemUnit Software ReleaseKey
  s SystemUnit Software ReleaseKey: "true"
** end
```

**xStatus SystemUnit Software OptionKeys NaturalPresenter**
Shows if the system has the option key installed that supports the NaturalPresenter functionality.

Value space of the result returned:
<String>

Example:
```
xStatus SystemUnit Software OptionKeys NaturalPresenter
  s SystemUnit Software OptionKeys NaturalPresenter: "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:
<String>

Example:
```
xStatus SystemUnit Software OptionKeys MultiSite
  s SystemUnit Software OptionKeys MultiSite: "true"
** end
```

**xStatus SystemUnit Software OptionKeys PremiumResolution**
Shows if the system has the option key installed that supports the PremiumResolution functionality.

Value space of the result returned:
<String>

Example:
```
xStatus SystemUnit Software OptionKeys PremiumResolution
  s SystemUnit Software OptionKeys PremiumResolution: "true"
** end
```

**xStatus SystemUnit Software OptionKeys DualDisplay**
Shows if the system has the option key installed that supports the DualDisplay functionality (applicable for C40 only).

Value space of the result returned:
<String>

Example:
```
xStatus SystemUnit Software OptionKeys DualDisplay
  s SystemUnit Software OptionKeys DualDisplay: "true"
** 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:
```plaintext
xStatus SystemUnit Hardware Module SerialNumber
"s SystemUnit Hardware Module SerialNumber: "F9AA99A00090"
** end
```

xStatus SystemUnit Hardware Module Identifier
Shows the revision of the hardware module in the codec.

Value space of the result returned:
<String>

Example:
```plaintext
xStatus SystemUnit Hardware Module Identifier
"s SystemUnit Hardware Module Identifier: "1"
** end
```

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:
```plaintext
xStatus SystemUnit Hardware Module CompatibilityLevel
"s SystemUnit Hardware Module CompatibilityLevel: 1
** end
```

xStatus SystemUnit Hardware MainBoard SerialNumber
Shows the serial number of the main board in the codec.

Value space of the result returned:
<String>

Example:
```plaintext
xStatus SystemUnit Hardware MainBoard SerialNumber
"s SystemUnit Hardware MainBoard SerialNumber: "PH0999989"
** end
```

xStatus SystemUnit Hardware MainBoard Identifier
Shows the revision of the main board in the codec.

Value space of the result returned:
<String>

Example:
```plaintext
xStatus SystemUnit Hardware MainBoard Identifier
"s SystemUnit Hardware MainBoard Identifier: "101400-5 [06]"
** end
```

xStatus SystemUnit Hardware VideoBoard SerialNumber
Shows the serial number of the video board in the codec.

Value space of the result returned:
<String>

Example:
```plaintext
xStatus SystemUnit Hardware VideoBoard SerialNumber
"s SystemUnit Hardware VideoBoard SerialNumber: "PH0999999"
** end
```

xStatus SystemUnit Hardware VideoBoard Identifier
Shows the revision of the video board in the codec.

Value space of the result returned:
<String>

Example:
```plaintext
xStatus SystemUnit Hardware VideoBoard Identifier
"s SystemUnit Hardware VideoBoard Identifier: "101410-4 [07]"
** end
```
**xStatus SystemUnit Hardware BootSoftware**
Shows the version of the boot software that is installed on the codec.

Value space of the result returned:

<String>

Example:
```
xStatus SystemUnit Hardware BootSoftware
*s SystemUnit Hardware BootSoftware: "U-Boot 2010.04-30"
** end
```

**xStatus SystemUnit Hardware MonitoringSoftware**
The feedback shows the monitoring software id.

Value space of the result returned:

<String>

Example:
```
xStatus SystemUnit Hardware MonitoringSoftware
*s SystemUnit Hardware MonitoringSoftware: "39"
** end
```

**xStatus SystemUnit Hardware Monitoring Fan [1..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**
The feedback 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 Hardware TemperatureThreshold**
Returns information on the maximum temperature for the codec. If this temperature is exceeded the system automatically shuts down.

Value space of the result returned:

<String>

Example:
```
xStatus SystemUnit Hardware TemperatureThreshold
*s SystemUnit Hardware TemperatureThreshold: "85"
** end
```

**xStatus SystemUnit State System**
Shows what state the system is in.

InCall: The system is in a call.
Initialized: The system is ready for use.
Initializing: The system is initializing.
Multisite: The system is in a Multisite conference.
Sleeping: The system is in sleep mode.

Value space of the result returned:

<InCall/Initialized/Initializing/Multisite/Sleeping>

Example:
```
xStatus SystemUnit State System
*s SystemUnit State System: Initialized
** end
```

**xStatus SystemUnit State MaxNumberOfCalls**
Shows the the maximum number of simultaneous calls.

Value space of the result returned:

<0..5>

Example:
```
xStatus SystemUnit State MaxNumberOfCalls
*s SystemUnit State MaxNumberOfCalls: 3
** end
```
xStatus SystemUnit State MaxNumberOfActiveCalls
Shows 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:
```c
xStatus SystemUnit State MaxNumberOfActiveCalls
*s SystemUnit State MaxNumberOfActiveCalls: 3
** end
```

xStatus SystemUnit State NumberOfActiveCalls
Shows the number of active calls.

Value space of the result returned:
<0..5>

Example:
```c
xStatus SystemUnit State NumberOfActiveCalls
*s SystemUnit State NumberOfActiveCalls: 0
** end
```

xStatus SystemUnit State NumberOfSuspendedCalls
Shows the number of suspended calls.

Value space of the result returned:
<0..5>

Example:
```c
xStatus SystemUnit State NumberOfSuspendedCalls
*s SystemUnit State NumberOfSuspendedCalls: 0
** end
```

xStatus SystemUnit State NumberOfInProgressCalls
Shows the number of calls in progress.

Value space of the result returned:
<0..5>

Example:
```c
xStatus SystemUnit State NumberOfInProgressCalls
*s SystemUnit State NumberOfInProgressCalls: 0
** end
```

xStatus SystemUnit State Subsystem Application
Shows the status of the sub system application.

Initialized: The sub-system application is initialized.
Initializing: The sub-system application is initializing.

Value space of the result returned:
<Initialized/Initializing>

Example:
```c
xStatus SystemUnit State Subsystem Application
*s SystemUnit State Subsystem Application: Initialized
** end
```

xStatus SystemUnit ContactInfo
Returns the system’s active contact information. This is the address which is used to reach this
system.

Value space of the result returned:
<String>

Example:
```c
xStatus SystemUnit ContactInfo
*s SystemUnit ContactInfo: "firstname.lastname@company.com"
** end
```

XStatus SystemUnit ContactName
Returns the system’s active contact name. The result depends on which protocol, if any, the system
is registered on. Unlike Contact Info, Contact Name is not configurable and is automatically set by
the system.

Value space of the result returned:
<String>

Example 1: Not registered to a protocol
```c
xStatus SystemUnit ContactName: "192.0.2.0"
```

Example 2: Registered on SIP
```c
xStatus SystemUnit ContactName: "1234@192.0.2.0"
```
xStatus SystemUnit Notifications Notification [1..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 Notifications Notification [1..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 Diagnostics LastRun
Shows when the SystemUnit diagnostics was last run on the codec.
Value space of the result returned:
<String>
Example:
xStatus SystemUnit Diagnostics LastRun
*s SystemUnit Diagnostics LastRun: "2012-08-17, 16:23:27"
** end

xStatus SystemUnit Diagnostics Message Type
Returns information on the results of the latest diagnostics on the system.
Value space of the result returned:
Example:
xStatus SystemUnit Diagnostics Message type
*s SystemUnit Diagnostics Message 1 Type: InvalidAdminPassword
** end

xStatus SystemUnit Diagnostics Message Level
Returns information on the level 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 SystemUnit Diagnostics Message Level
*r Status (status=Error):
    Reason: No match on address expression
    XPath: Status/SystemUnit/Diagnostics/Message/Level
** end
xStatus SystemUnit Diagnostics Message Description
A description of the current diagnostics alerts.

Value space of the result returned:
<String>

Example:
```
xStatus SystemUnit Diagnostics Message Description
* SystemUnit DiagnosticsResult Message 1 Description: "IP configuration incomplete"
** end
```

xStatus SystemUnit Diagnostics Message References
Additional information on the diagnostics alert, if available.

Value space of the result returned:
<String>

Example:
```
xStatus SystemUnit Diagnostics Message References
* SystemUnit DiagnosticsResult Message 1 References: ""
** end
```

Time status

xStatus Time Zone Olson
Shows the current time zone on Olson format.

Value space of the result returned:
<String>

Example:
```
xStatus Time Zone Olson
* Time Olson: Europe/Berlin
** end
```
Video status

xStatus Video Input
Shows the top level overview of the video input status.

xStatus Video Input LastConnectedSource
Shows the last connected video input source.

Value space of the result returned:
<1..3>

Example:
   xStatus Video Input LastConnectedSource
   *s Video Input LastConnectedSource: 0
   ** end

xStatus Video Input Source [1..3] 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 [1..3] 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 Input Source [1..3] 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 [1..3] Resolution 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 Resolution FormatType
   *s Video Input Source 1 Resolution FormatType: Digital
   ** end

xStatus Video Input Source [1..3] Resolution FormatStatus
Shows the resolution format status for the video input source.

Value space of the result returned:
<Ok/AnalogOutOfRange/AnalogNotFound/Interlaced/Error/Unknown>

Example:
   xStatus Video Input Source 1 Resolution FormatStatus
   *s Video Input Source 1 Resolution FormatStatus: Ok
   ** end
xStatus Video Input Source [1..3] MediaChannelId
Not in use in this release.

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 HDMI [1..2] Connected
Shows if there is something connected to the HDMI connector. Not all connections can be detected.

Value space of the result returned:
<True/False/Unknown>

Example:
```
xStatus Video Input HDMI 1 Connected
's Video Input HDMI 1 Connected: True
** end
```

xStatus Video Input HDMI [1..2] SignalState
Shows the signal state for the HDMI 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:
<Unknown/OK/Unsupported>

Example:
```
xStatus Video Input HDMI 2 SignalState
's Video Input HDMI 2 SignalState: OK
** end
```

xStatus Video Input Legacy [3] Connected
Shows if there is something connected to the Legacy, which are the Y/Comp and C connectors. Not all connections can be detected.

Value space of the result returned:
<True/False/Unknown>

Example:
```
xStatus Video Input Legacy 3 Connected
's Video Input Legacy 3 Connected: False
** end
```
Shows the signal state for the Legacy, which are the Y/Comp and C inputs.
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:
<Unknown/OK/Unsupported>

Example:
```plaintext
xStatus Video Input Legacy 3SignalState
*s Video Input Legacy 3SignalState: OK
** end
```

xStatus Video Output
Shows the top level overview of the video output status.

xStatus Video Output HDMI [1] Resolution Height
Shows the resolution height (in pixels) for the video output HDMI.

Value space of the result returned:
<120..3000>

Example:
```plaintext
xStatus Video Output HDMI 1 Resolution Height
*s Video Output HDMI 1 Resolution Height: 720
** end
```

xStatus Video Output HDMI [1] Resolution Width
Shows the resolution width (in pixels) for the video output HDMI.

Value space of the result returned:
<176..4000>

Example:
```plaintext
xStatus Video Output HDMI 1 Resolution Width
*s Video Output HDMI 1 Resolution Width: 1280
** end
```

xStatus Video Output HDMI [1] Resolution RefreshRate
Shows the resolution refresh rate (Hz) for the video output HDMI.

Value space of the result returned:
<1..300>

Example:
```plaintext
xStatus Video Output HDMI 1 Resolution RefreshRate
*s Video Output HDMI 1 Resolution RefreshRate: 60
** end
```

xStatus Video Output HDMI [1] Connected
Indicates whether a display is connected to the HDMI video output or not. NOTE: 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 display is connected to the video output connector.
False - No display is connected to the video output.

Value space of the result returned:
<True/False>

Example:
```plaintext
xStatus Video Output HDMI Connected
*s Video Output HDMI 1 Connected: False
** end
```

xStatus Video Output DVI [2] Resolution Height
Shows the resolution height (in pixels) for the video output DVI.

Value space of the result returned:
<120..3000>

Example:
```plaintext
xStatus Video Output DVI 2 Resolution Height
*s Video Output DVI 2 Resolution Height: 720
** end
```
**xStatus Video Output DVI [2] Resolution Width**
Shows the resolution width (in pixels) for the video output DVI.

**Value space of the result returned:**
<176..4000>

**Example:**
```
xStatus Video Output DVI 2 Resolution Width
*s Video Output DVI 2 Resolution Width: 1280
** end
```

**xStatus Video Output DVI [2] Resolution RefreshRate**
Shows the resolution refresh rate (Hz) for the video output DVI.

**Value space of the result returned:**
<1..300>

**Example:**
```
xStatus Video Output DVI 2 Resolution RefreshRate
*s Video Output DVI 2 Resolution RefreshRate: 60
** end
```

**xStatus Video Output DVI [2] Connected**
Indicates whether a display is connected to the DVI video output or not. NOTE: 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 display is connected to the video output connector
False - No display is connected to the video output. Applicable to digital outputs only.
Unknown - Because both digital and analog are supported on the DVI-I connector, in some situations it is uncertain whether a display is connected or not. Therefore, the state is Unknown by default. However, when EDID is received from a display the state will be True.

**Value space of the result returned:**
<True/False/Unknown>

**Example:**
```
xStatus Video Output DVI Connected
*s Video Output DVI 2 Connected: Unknown
** end
```

**xStatus Video Output Legacy [3] Resolution Height**
Shows the resolution height (in pixels) for the video output Legacy (Composite).

**Value space of the result returned:**
<120..3000>

**Example:**
```
xStatus Video Output Legacy 3 Resolution Height
*s Video Output Legacy 3 Resolution Height: 480
** end
```

**xStatus Video Output Legacy [3] Resolution Width**
Shows the resolution width (in pixels) for the video output Legacy (Composite).

**Value space of the result returned:**
<176..4000>

**Example:**
```
xStatus Video Output Legacy 3 Resolution Width
*s Video Output Legacy 3 Resolution Width: 720
** end
```

**xStatus Video Output Legacy [3] Resolution RefreshRate**
Shows the resolution refresh rate (Hz) for the video output Legacy (Composite).

**Value space of the result returned:**
<1..300>

**Example:**
```
xStatus Video Output Legacy 3 Resolution RefreshRate
*s Video Output Legacy 3 Resolution RefreshRate: 60
** end
```

**xStatus Video Layout**
Shows the top level overview of the video layout status.
xStatus Video Layout Mode
Indicates type of layout currently used by the codec, custom or default.

Value space of the result returned:
<Default/Custom>

Example:
xStatus Video Layout Mode
*s Video Layout Mode: Default
** end

xStatus Video Layout PresentationView
Returns information about the presentation view mode.

Value space of the result returned:
<Default/Maximized/Minimized>

Example:
xStatus Video Layout PresentationView
*s Video Layout PresentationView: "Default"
** end

xStatus Video Layout Site [1..n] Output [1..3] FamilyName
Shows the name of the video layout family.

Value space of the result returned:
<String>

Example:
xStatus Video Layout Site 1 Output 1 FamilyName
*s Video Layout Site 1 Output 1 FamilyName: "fullscreen"
** end

xStatus Video Layout Site [1..n] Output [1..3] FullFamilyName
Shows the name, included information about self-view on/off, for the video layout family.

Value space of the result returned:
<String>

Example:
xStatus Video Layout Site 1 Output 1 FullFamilyName
*s Video Layout Site 1 Output 1 FamilyName: "fullscreen-local-single-camctrl"
** end

xStatus Video Layout Site [1..n] Output [1..3] GraphicName
Shows the name of the graphic layout. The name identifies the layout used right now at the specified output.

NOTE: Note that while the FamilyName is constant as the long as the configurations on the system does not change, the GraphicName varies depending on system state (the number of participants for instance).

Value space of the result returned:
<String>

Example:
xStatus Video Layout Site 1 Output 1 GraphicName
*s Video Layout Site 1 Output 1 GraphicName: "full-pip"
** end

xStatus Video Layout Site [1..n] Output [1..3] Frame [1..6] PositionX
Shows the horizontal position of the upper left corner of the frame.

Value space of the result returned:
<0..10000>

Example:
xStatus Video Layout Site 1 Output 1 Frame 1 PositionX
*s Video Layout Site 1 Output 1 Frame 1 PositionX: 0
** end

xStatus Video Layout Site [1..n] Output [1..3] Frame [1..6] PositionY
Shows the vertical position of the upper left corner of the frame.

Value space of the result returned:
<0..10000>

Example:
xStatus Video Layout Site 1 Output 1 Frame 1 PositionY
*s Video Layout Site 1 Output 1 Frame 1 PositionY: 0
** end
Shows the width of the frame.
Value space of the result returned:
<0..10000>
Example:
-xStatus Video Layout Site 1 Output 1 Frame 1 Width
  *s Video Layout Site 1 Output 1 Frame 1 Width: 10000
  ** end

xStatus Video Layout Site [1..n] Output [1..3] Frame [1..6] Height
Shows the height of the frame.
Value space of the result returned:
<0..10000>
Example:
-xStatus Video Layout Site 1 Output 1 Frame 1 Height
  *s Video Layout Site 1 Output 1 Frame 1 Height: 10000
  ** end

xStatus Video Layout Site [1..n] Output [1..3] Frame [1..6] Layer
Shows the layer of the frame.
Value space of the result returned:
<1..6>
Example:
-xStatus Video Layout Site 1 Output 1 Frame 1 Layer
  *s Video Layout Site 1 Output 1 Frame 1 Layer: 1
  ** end

xStatus Video Layout Site [1..n] Output [1..3] Frame [1..6] VideoSourceType
Describes the video source type in the frame.
Value space of the result returned:
<String>
Example:
-xStatus Video Layout Site 1 Output 1 Frame 1 VideoSourceType
  *s Video Layout Site 1 Output 1 Frame 1 VideoSourceType: "graphic"
  ** end

xStatus Video Layout Site [1..n] Output [1..3] Frame [1..6] VideoSourceId
Shows the video source Id which is used when adding or updating frames. See the xCommand
Video Layout Frame Add and xCommand Video Layout Frame Update.
Value space of the result returned:
<1..3>
Example:
-xStatus Video Layout Site 1 Output 1 Frame 1 VideoSourceId
  *s Video Layout Site 1 Output 1 Frame 1 VideoSourceId: 0
  ** end

xStatus Video Layout Site [1..n] Output [1..3] Frame [1..6] InputNumber
Shows the layout input number.
Value space of the result returned:
<1..3>
Example:
-xStatus Video Layout Site 1 Output 1 Frame 1 InputNumber
  *s Video Layout Site 1 Output 1 Frame 1 InputNumber: 0
  ** end

xStatus Video Layout Site [1..n] Output [1..3] Frame [1..6] Filename
Shows the filename of the layout frame.
Value space of the result returned:
<String>
Example:
-xStatus Video Layout Site 1 Output 1 Frame 1 Filename
  *s Video Layout Site 1 Output 1 Frame 1 Filename: "/user/posters/wallpaper.png"
  ** end
xStatus Video Layout Site Output Frame VideoSourceContent
Shows the video source content type of each layout frame.

Value space of the result returned:
- noSource: There is no source.
- black: The frame is black.
- main: The frame displays the main image from a local or a remote user.
- selfview: The frame displays the self-view image.
- selfviewPip: The frame displays the self-view image in PiP format.
- speaker: The frame displays the image of the speaker.
- speakerPip: The frame displays the image of the speaker in PiP format.
- presentation: The frame displays the image of the presentation.
- presentationPip: The frame displays the image of the presentation in PiP format.
- presentationPreview: The frame displays the preview image of the presentation.
- localInput: The frame displays the image of the local input source.
- wallpaper: The frame displays the wallpaper.
- gui: The frame displays the user interface.
- internal: For internal use.

Example:
```plaintext
*xStatus Video Layout Site 1 Output 1 Frame 1 VideoSourceContent: wallpaper
*xStatus Video Layout Site 1 Output 2 Frame 1 VideoSourceContent: wallpaper
*xStatus Video Layout Site 1 Output 3 Frame 1 VideoSourceContent: wallpaper
*xStatus Video Layout Site 1 Output 3 Frame 2 VideoSourceContent: gui
*xStatus Video Layout Site 1 Output 4 Frame 1 VideoSourceContent: wallpaper
*xStatus Video Layout Site 1 Output 5 Frame 1 VideoSourceContent: wallpaper
```

xStatus Video Selfview FullscreenMode
Shows whether selfview is set on full screen mode or not.

Value space of the result returned:
- On/Off

Example:
```plaintext
*xStatus Video Selfview FullscreenMode
  *s Video Selfview FullscreenMode: Off
  ** 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:
```plaintext
*xStatus Video Selfview PIPPosition
  *s Video Selfview PIPPosition: LowerRight
  ** 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:
```plaintext
*xStatus Video Selfview OnMonitorRole
  *s Video Selfview OnMonitorRole: First
  ** end
```

xStatus Video PIP ActiveSpeaker Position
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:
```plaintext
*xStatus Video PIP ActiveSpeaker Position
  *s Video PIP ActiveSpeaker Position: UpperCenter
  ** end
```
xStatus Video PIP Presentation Position

Shows the position of the presentation image on the screen.

Value space of the result returned:

<UpperLeft/UpperCenter/UpperRight/CenterLeft/CenterRight/LowerLeft/LowerRight>

Example:

```markdown
xStatus Video PIP Presentation Position
`s Video PIP Presentation Position: CenterLeft
** end
```

Experimental status

The Experimental status is for testing only and should not be used unless agreed with Cisco. These settings are not documented and WILL change in later releases.
Chapter 6

Appendices
About startup scripts

You can add a startup script on the codec to execute certain commands from the API during boot up.

Adding a startup script

The startup script can be used to execute certain commands from the API during boot up. To enable this feature one must log in to the codec as root and follow the steps below.

Login to the codec

1. Connect to the codec through the network, using a command line interface (SSH, Telnet or SCP) and login as root
2. Make a user directory using the following command:
   "mkdir /user/scripts.d"
3. Put an executable file (permission must be changed to executable) in this directory.

Example of the text in such a file:

```
#!/usr/bin/env tsh
xCommand Audio LocalInput Update InputId: 1 MixerMode:Fixed
```

The startup script file

- The file must start with the following sequence:
  `#!/usr/bin/env tsh`
- The file can contain any xCommand or xConfiguration command
- The system executes the commands and configurations in sequence.
- The file can have any name as long as it is placed in this directory.
- For multiple commands you must use Unix end of line (LF). Windows end of line does not work.
Cisco TelePresence Remote Control

Microphone: Press the key to mute/unmute the microphones.

Volume: Press plus (+) or minus (−) on the volume key to adjust the volume.

Mute the ringtone: Press minus (−) on the volume key to mute the ringtone on an incoming call.

OK/Select: Press the key to confirm your choice or selection.

Phone book: Press the key to display the local Phone book.

Home: Press the key to show the menu on screen.

Call: Using the key:
INITIATE A CALL: Select a name from the Phone book or enter the name, number or URI and press the Call key to initiate the call.
SHORTCUT TO RECENT CALLS: Use the Call key as a shortcut to Recent Calls when the Call menu is not visible.

Clear: Press the C key to remove characters in a text field.

Function keys: Represents shortcuts and advanced functions. Each key reflects a soft key on screen.

Presentation: Press the key to show/hide a presentation.

Zoom: Press the + or − on the key to zoom the camera in and out.

Arrows:
• Up/Down: Use the ▲ and ▼ arrow keys to navigate in the menu.
• Arrow Right: Press the ▶ arrow key to expand the selected menu item or to move to the right in a text field.
• Arrow Left: Press the ◄ arrow key to go one step back in the menu or to move to the left in a text field.

Layout: Press the R key to display the Layout menu, then select a view in the menu.

End call/Standby: Press the key to end a call, or when idle, press and hold the key to go into standby mode.

Alphanumeric keypad: Use the keypad in the same way as you would use a cellular phone.
• 0−9, a−z, period (.), @, space, #: Press a key repeatedly to toggle between the options displayed on each key.
• abc/123 #: Press the # key to toggle between touch tones mode (long press), lower case characters and numbers.

IR transmitter range (DIP switch setting)
The IR transmitter has a short and long range. Open the battery cover and remove the batteries to set the DIP switch.
• Short range (1 m): Move the DIP switch down.
• Longer range: Move the DIP switch up.

Waking up the system
Grab the remote control and make sure your hand touches the rubber line sensors going along both sides of the remote control.
or: Press any key on the remote control.
Remote control key map

The Cisco TelePresence Remote Control 5 has the following button codes and IR signal parameters.

<table>
<thead>
<tr>
<th>Button codes - Remote control 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dec</strong></td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
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<tr>
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<tr>
<td>29</td>
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<tr>
<td>30</td>
</tr>
</tbody>
</table>

IR Signal parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protocol</td>
<td>Siemens SDA2208</td>
</tr>
<tr>
<td>Reference frequency</td>
<td>485 kHz</td>
</tr>
<tr>
<td>Address</td>
<td>4 and 7</td>
</tr>
<tr>
<td>IR wavelength</td>
<td>940 nm</td>
</tr>
<tr>
<td>IR carrier frequency</td>
<td>30 kHz</td>
</tr>
</tbody>
</table>
The SystemTools commands

**Note:** The systemtools commands are used for administrative control of the codec and is 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 authorizedkeys
authorizedkeys
boothalt
license
network
pairing
passwd
pki
rootsettings
securitysettings
securitystatus

OK
```

To see the usage of the commands add a question mark after the command.

Example:

```
systemtools authorizedkeys
usage: authorizedkeys <add <method> <key> [comment]>

OK
```

**systemtools authorizedkeys add <method> <key> [comment]**
Add the SSH keys on the codec.

- `method(r)`: The encryption method used, which can be SSH-rsa or SSH-dss.
- `key(r)`: The public key as it is in the SSH public key file.
- `comment`: Optional comment.

**systemtools authorizedkeys delete <id>**
Delete the given SSH key on the codec, defined by the id.

- `id(r)`: The id as as displayed in the authorized keys list.

**systemtools authorizedkeys list**
List the SSH keys on the codec.

**systemtools authorizedkeys clear**
Clear all SSH keys on the codec.

**systemtools boothalt allow**
Allow the user to stop the system during the boot loader startup sequence using a serial console.

**systemtools boothalt prevent**
Prevent the user from stopping the system during the boot loader startup sequence using a serial console.

**systemtools boothalt status**
Show whether or not the system can be stopped during a boot loader startup sequence.

**systemtools license list**
Lists all the licenses for the codec.

**systemtools license show <name>**
Shows the content of a license file, define by the name.

- `name(r)`: The name of the license file.

**systemtools network ping <hostname>**
Network debug command.

- `hostname(r)`: The IP address or URL of the host.

**systemtools network traceroute <hostname>**
Network debug command.

- `hostname(r)`: The IP address or URL of the host.

**systemtools network netstat**
Network debug command.

**systemtools network addr**
Check the systems IP address.

**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(r)`: The name of the certificate.

**systemtools rootsettings get**
Obtain the current setting for the systemtools rootsetting.
**systemtools rootsettings on [password]**
Command to control the root user availability.
Enable access to the system for the root user on all ports.
password: The root user password.

**systemtools rootsettings serial [password]**
Command to control the root user availability.
Enable access to the system for the root user on the serial port.
password: The root user password.

**systemtools rootsettings off**
Command to control the root user availability.
Disable access to the system for the root user on all ports.

**systemtools rootsettings never**
Command to control the root user availability.
NOTE: The root user is permanently turned off.
To get back the root user the system must be reset to factory defaults, ref. xCommand SystemUnit FactoryReset.

**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 simultaneously to web and maximum number of users that can be logged in simultaneously 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 number of digits in PINs [0]?
- Maximum number of digits in PINs.

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 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) and also logged in xHistory CallLogs.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CauseValue</strong></td>
<td>Proprietary. We recommend the use of CauseType and CauseCode.</td>
</tr>
<tr>
<td><strong>CauseType</strong></td>
<td>Describes why the call was disconnected. Value space is { OtherLocal, LocalDisconnect, UnknownRemoteSite, LocalBusy, LocalReject, InsufficientSecurity, OtherRemote, RemoteDisconnect, RemoteBusy, RemoteRejected, RemoteNoAnswer, CallForwarded, NetworkRejected }</td>
</tr>
<tr>
<td><strong>CauseString</strong></td>
<td>Describes the Cause Code.</td>
</tr>
<tr>
<td><strong>CauseCode</strong></td>
<td>The disconnect Cause Codes are defined in SIP and Q.850.</td>
</tr>
<tr>
<td><strong>CauseOrigin</strong></td>
<td>SIP, Q.850, internal.</td>
</tr>
</tbody>
</table>

Example 1:
```
xHistory CallLogs Call 694
  ...
  *h xHistory CallLogs Call 694 DisconnectCauseValue: 2
  *h xHistory CallLogs Call 694 DisconnectCause: "Normal"
  *h xHistory CallLogs Call 694 DisconnectCauseType: RemoteDisconnect
  *h xHistory CallLogs Call 694 DisconnectCauseCode: 16
  *h xHistory CallLogs Call 694 DisconnectCauseOrigin: Q850
  ...
  ** end
```

Example 2:
```
xEvent DisconnectEvent
  ...
  *e CallDisconnect CauseValue: 1
    CauseType: "LocalDisconnect"
    CauseString: ""
    OrigCallDirection: "outgoing"
    RemoteURI: "firstname.lastname@company.com"
    CallId: 89
    CauseCode: 0
    CauseOrigin: SIP
  ** end
```
On our web site you will find an overview of the worldwide Cisco contacts.

Go to: [http://www.cisco.com/web/siteassets/contacts](http://www.cisco.com/web/siteassets/contacts)

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San Jose, CA 95134 USA