Application Programming Interface (API) Reference Guide

Cisco TelePresence SX10
What’s in this guide?

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

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

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

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Chapter 1

Introduction
About this guide

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

- Cisco TelePresence SX10 Quick Set

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

Downloading the user documentation

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

Guidelines for how to find the documentation on the Cisco web site are included in the User documentation on the Cisco web site appendix.
What's new in CE9.0

This section provides an overview of the new and changed system settings, and the new features and improvements in the Cisco Collaboration Endpoint software version 9.0 (CE9.0) compared to CE8.3.

The list of new commands includes all changes from CE8.3 to CE9.0.

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

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


> It is important to consider the upgrade requirements of CE9 before upgrading, otherwise upgrading to CE9 can leave you with a non-functioning deployment that requires you to downgrade.

New features and improvements

Updated user interface

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

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

Wakeup on motion detection

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

xConfiguration Standby WakeupOnMotionDetection

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

Updated In-Room Control Editor

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

Added language support

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

Other changes

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

New configurations
NetworkServices HTTPS Server MinimumTLSVersion
NetworkServices HTTPS StrictTransportSecurity
NetworkServices UPnP Mode

Configurations that are removed
None

Configurations that are modified
Cameras Camera [n] *
  OLD: User role: ADMIN, USER
  NEW: User role: ADMIN, INTEGRATOR
UserInterface Language
  NEW: Portuguese added to value space

Configurations with the new INTERATOR user role
A new user role - INTEGRATOR - is introduced in CE9.0. It has been added to the following configurations:
Audio DefaultVolume
Audio Input Microphone [n] *
Audio Microphones Mute Enabled
Audio Output Line [n] *
Audio SoundsAndAlerts *
Cameras Camera [n] *
Conference DefaultCall Rate
Conference DoNotDisturb DefaultTimeout
Peripherals Profile *
SerialPort Mode
Standby *
SystemUnit Name

Time Zone
UserInterface OSD Output
Video Input Connector [n] CameraControl Camerad
Video Input Connector [n] CameraControl Mode
Video Input Connector [n] InputSourceType
Video Input Connector [n] Name
Video Input Connector [n] PresentationSelection
Video Input Connector [n] Quality
Video Input Connector [n] Visibility
Video Monitors
Video Output Connector [n] CEC Mode
Video Output Connector [n] Resolution
Video Presentation DefaultPIPPosition
Video Selfview Default *
Video Selfview OnCall *

<path> * means that the change applies to all configurations starting with <path>.
xCommand changes in CE9.0

**New commands**
- Audio Microphones ToggleMute
- Audio Volume ToggleMute
- Audio Sound Play
- Audio Sound Stop
- SystemUnit SignInBanner Clear
- SystemUnit SignInBanner Get
- SystemUnit SignInBanner Set

**Commands that are modified**
- SystemUnit FactoryReset
- NEW: Keep: LocalSetup, Network, Spark, Provisioning

**xCommand with INTEGRATOR role**
- Audio Microphones Mute
- Audio Microphones ToggleMute
- Audio Microphones Unmute
- Audio Sound Play
- Audio SoundsAndAlerts Ringtone List
- Audio SoundsAndAlerts Ringtone Play
- Audio Sound Stop
- Cameras AutoFocus Diagnostics Start
- Cameras AutoFocus Diagnostics Stop
- Cameras SpeakerTrack Diagnostics Start
- Peripherals Connect
- Peripherals List
- Standby Activate
- Standby Deactivate
- SystemUnit Boot
- UserInterface Extensions Clear
- UserInterface Extensions List
- UserInterface Extensions Widget SetValue
- UserInterface Extensions Widget UnsetValue
- UserInterface Message Alert Clear
- UserInterface Message Alert Display
- UserInterface Message Prompt Clear
- UserInterface Message Prompt Display
- UserInterface Message Prompt Response
- UserInterface Message TextLine Clear
- UserInterface Message TextLine Display
- UserInterface Presentation ExternalSource Add
- UserInterface Presentation ExternalSource List
- UserInterface Presentation ExternalSource Remove
- UserInterface Presentation ExternalSource RemoveAll
- UserInterface Presentation ExternalSource Select
- UserInterface Presentation ExternalSource State Set
- UserManagement User Passphrase Change
- Video Input SetMainVideoSource
xStatus changes in CE9.0

New statuses
- Video Output Connector \([n]\) ConnectedDevice CEC \([n]\) Name
- Video Output Connector \([n]\) ConnectedDevice CEC \([n]\) VendorId

Statuses that are modified
- Diagnostics Message \([n]\) Type

OLD:
- CAPFOperationState
- CTLinstallation
- CUCMVendorConfigurationFile
- CallProtocolDualStackConfig
- CallProtocolIPStackPlatformCompatibility
- CameraId
- CameraPairing
- CameraSerial
- CameraSoftwareVersion
- CameraStatus
- CamerasDetected
- ConfigurationFile
- DefaultCallProtocolRegistered
- EthernetDuplexMatches
- FanStatus
- PresenterTrack
- H320GatewayStatus
- H323GatekeeperStatus
- IpCameraStatus
- IPv4Assignment
- IPv6Assignment
- IPv6Mtu
- ISDNLinkCompatibility
- ISDNLinkIpStack
- ITLinstallation
- InvalidSIPTransportConfig
- LockDown
- NetworkQuality
- NTPStatus
- OSDVideoOutput
- OutputConnectorLocations
- ProvisioningStatus
- SIPEncryption
- SIPListenPortAndOutboundMode
- SIPProfileRegistration
- SIPProfileType
- SelectedVideoInputSourceConnected
- SipIceAndAnatConflict
- TCPMediaFallback
- TemperatureCheck
- TLSVerifyRequiredCerts
- TouchPanelConnection
- ControlSystemConnection
- TurnBandwidth
- UdpPortRangeViolation
- UltrasoundSpeakerAvailability
- ValidPasswords
- VideoFromInternalCamera
- VideoInputStability
- SpeakerTrackFrontPanelMountedCorrectly
- SpeakerTrackMicrophoneConnection
- SpeakerTrackVideoInputs
- SpeakerTrackEthernetConnection
- ANATOnVCS
- ECReferenceDelay
- AudioECRefDelay
- AudioPairingRate
- AudioPairingSNR
- AudioPairingInterference
- AudioPairingTokenDecode
- AudioInternalSpeakerDisabled
- AbnormalCallTermination
- SIPExperimental
- SipH323ButNotBothEnabled
- PresentationSourceSelection
- SoftwareUpgrade
- PlatformSanity
- ContactInfoMismatch
- MicrophoneReinforcement

NEW:
- CAPFOperationState
- CTLinstallation
- CUCMVendorConfigurationFile
- CallProtocolDualStackConfig
- CallProtocolIPStackPlatformCompatibility
- CameraId
- CameraPairing
- CameraSerial
- CameraSoftwareVersion
- CameraStatus
- CamerasDetected
- ConfigurationFile
- DefaultCallProtocolRegistered
- EthernetDuplexMatches
- FanStatus
- PresenterTrack
- H320GatewayStatus
- H323GatekeeperStatus
- IpCameraStatus
- IPv4Assignment
- IPv6Assignment
- IPv6Mtu
- ISDNLinkCompatibility
- ISDNLinkIpStack
- ITLinstallation
- InvalidSIPTransportConfig
- LockDown
- NetworkQuality
- NTPStatus
- OSDVideoOutput
- OutputConnectorLocations
- ProvisioningDeveloperOptions
- ProvisioningStatus
- SIPEncryption
- SIPListenPortAndOutboundMode
- SIPProfileRegistration

xStatus with INTEGRATOR role

- Audio Input Connectors Microphone\([n]\) ConnectionStatus
- Audio Microphones Mute
- Audio Output Connectors Line\([n]\) DelayMs
- Audio Volume
- Call\([n]\) FacilityServiceld
- Call\([n]\) ReceiveCallRate
- Call\([n]\) TransmitCallRate
- Cameras Camera\([n]\) Capabilities Options
- Cameras Camera\([n]\) Connected
- Cameras Camera\([n]\) Flip
- Cameras Camera\([n]\) HardwareID
- Cameras Camera\([n]\) MacAddress
- Cameras Camera\([n]\) Manufacturer
- Cameras Camera\([n]\) Model
- Cameras Camera\([n]\) Position Focus
- Cameras Camera\([n]\) Position Pan
- Cameras Camera\([n]\) Position Tilt
- Cameras Camera\([n]\) Position Zoom
Cameras Camera[n] SerialNumber
Cameras Camera[n] SoftwareID
Cameras SpeakerTrack Availability
Cameras SpeakerTrack Status
Conference DoNotDisturb
Conference Presentation CallId
Conference Presentation LocalInstance[n] SendingMode
Conference Presentation LocalInstance[n] Source
Conference Presentation Mode
Peripherals ConnectedDevice[n] HardwareInfo
Peripherals ConnectedDevice[n] ID
Peripherals ConnectedDevice[n] Name
Peripherals ConnectedDevice[n] SoftwareInfo
Peripherals ConnectedDevice[n] Status
Peripherals ConnectedDevice[n] Type
Peripherals ConnectedDevice[n] UpgradeStatus
Standby State
SystemUnit State NumberOfActiveCalls
SystemUnit State NumberOfInProgressCalls
Time SystemTime
UserInterface Extensions Widget[n] Value
UserInterface Extensions Widget[n] WidgetId
Video ActiveSpeaker PIPPosition
Video Input Connector[n] Connected
Video Input Connector[n] SignalState
Video Input Connector[n] SourceId
Video Input Connector[n] Type
Video Input Source[n] ConnectorId
Video Input Source[n] FormatStatus
Video Input Source[n] FormatType
Video Input Source[n] Resolution Height
Video Input Source[n] Resolution RefreshRate
Video Input Source[n] Resolution Width
Video Output Connector[n] Connected
Video Output Connector[n] ConnectedDevice CEC[n] DeviceType
Video Output Connector[n] ConnectedDevice CEC[n] Name
Video Output Connector[n] ConnectedDevice CEC[n] PowerControl
Video Output Connector[n] ConnectedDevice CEC[n] PowerStatus
Video Output Connector[n] ConnectedDevice CEC[n] VendorId
Video Output Connector[n] ConnectedDevice Name
Video Output Connector[n] ConnectedDevice PreferredFormat
Video Selfview FullscreenMode
Video Selfview Mode
Video Selfview OnMonitorRole
Video Selfview PIPPosition
Chapter 2

About the API
API fundamentals

This chapter contains a top-level view of the mechanisms supported by the codec API. Here you can read about how to access the API, how to use the command line and what the different parts of the API can be used for. This chapter also describes how to use the feedback functions that are available for the codec.

The API consists of four major groups:

- Commands
- Configurations
- Status
- Events

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

Connecting to the API

There are several ways to access the codec API. Regardless of which method you choose, the structure of the API 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 configurations, apart from password, can be set from the System configuration menu on the web interface or from the command line interface. All of the examples are for the command line interface.

Password

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

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

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

Telnet

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

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

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

SSH

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

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

HTTP/HTTPS

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

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

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

Connecting

You can inspect the API by entering the IP address of the codec in your favorite web browser. In the web interface, you can find the API documents under the menu section Integration > Developer API. The HTTP POST and GET methods are used to execute commands and get feedback from the codec. This is described in “Using HTTP” on page 20 in this document.
Serial connection over micro USB

You can use the micro USB connector for direct communication with the video system. You may need to install a serial port driver on your computer manually.

The serial connection can be used without an IP address, DNS or a network. Serial connection is allowed by default.

xConfiguration SerialPort Mode: <Off/On>

Baud-rate and other serial port parameters

The serial port uses 115200 bps, 8 data bits, no parity and 1 stop bit.

Login and password

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

xConfiguration SerialPort LoginRequired: <Off/On>

User roles

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

These are the user roles:

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

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

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

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

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

Cisco Spark registered systems

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

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

The output modes

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

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

To set output mode to XML, issue the command:
```
xPreferences outputmode xml
```

To revert to terminal mode, issue the command:
```
xPreferences outputmode terminal
```

Example: Layout command in terminal mode

```
xCommand Audio Volume Set Level: 50
```

Example: Layout command in XML mode

```
<Command>
  <Audio>
    <Volume>
      <Set command="True">
        <Level>50</Level>
      </Set>
    </Volume>
  </Audio>
</Command>
```
Using the command line

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

Bye
Typing the bye command closes the command line interface.

Example 1:
```
? - User Commands -
help xcommand xconfiguration xevent xfeedback
xgetxml xdocument xpreferences xtransaction xstatus
bye echo log systemtools
OK
```

API commands

xConfiguration
Configurations are system settings, such as system name and network settings. These are persistent across boots. Refer to "Configurations" on page 16.

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 16.

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 16.

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 13.

Echo <on/off>
If echo is set to On the key inputs are displayed when entering text in a command line interface. If echo is set to Off user input is not displayed when entering text in a command line interface.

xEvent
The xEvent command returns information on which events are available for feedback. Refer to "Events" on page 17.

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 a set of command line tools for administrative control and diagnostics. The commands can be used for advanced troubleshooting together with Cisco technical support. Systemtools are not a part of the programming API. Refer to "The SystemTools commands" on page 180.

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

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

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

Searching

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

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

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

Example 1:
List all configurations that include words that starts with OUT and HDMI:

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

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

Example 2:
Get the resolution width of all connected sources for both inputs and outputs:

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

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

**Value types and formats**

The system supports the following value types:

- **Integer values**: <x..y>
  Defines the valid range for an integer input. \(x\) = min value, \(y\) = max value.

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

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

**Input values that contain spaces need to be quoted**

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

**Example:**

**Correct:**
```
xCommand dial number: "my number contains spaces"
```

**Correct:**
```
xCommand dial number: 12345
```

**Incorrect:**

```
xCommand dial number: my number contains spaces
```

**Case sensitivity**

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

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

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

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

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

Command arguments are key-value pairs.

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

Example: `xCommand Dial Number: 123`

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

Configurations

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

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

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

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

Example: Set the H323 Alias ID

Write in:

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

Example: Get the H323 Alias ID

Write in:

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

Result:

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

Status

A status contains the current state of the codec, such as connected calls, the status of the gatekeeper registration, connected inputs and output sources.

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 (`address expression`):

```
xStatus <address expression>
```
Events

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

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

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

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

*e OutgoingCallIndication CallId: x ** end

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

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

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

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

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

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

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

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

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

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

To build solutions that can reliably keep the state between 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.

When using HTTP, the method of handling feedback differs slightly from what is presented in this section. See the “Feedback from codec over HTTP” on page 22 for more information.

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

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

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. CE software contains three main feedback documents:

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

The syntax for feedback registering is:

```xml
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**

```xml
xStatus Audio Microphones Mute
*s Audio Microphones Mute: Off
** end
```

**Equivalent feedback expression**

```xml
xFeedback register /Status/Audio/Microphones/Mute
```

Example 2: Name of all video input connectors.

**Terminal query**

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

**Equivalent feedback expression**

```xml
xFeedback register /Configuration/Video/Input/Connector/Name
```

Example 3: Name of video input connector 3.

**Terminal query**

```xml
xConfiguration Video Input Connector 3 Name
c xConfiguration Video Input Connector 3 Name: "NameC"
** end
```

**Equivalent feedback expression**

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

Managing feedback subscriptions

To register, list and deregister feedback expressions you use the command xFeedback and its corresponding 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
URL cheat sheet

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

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

Using HTTP

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

HTTP XMLAPI Authentication

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

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

HTTP XMLAPI Session Authentication

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

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

This session counts toward the systems concurrent sessions limit.

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

Example: Starting a HTTP XMLAPI session

Request:

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

Response:

HTTP/1.1 204 No Content
Server: nginx/1.8.0
Connection: keep-alive
Set-Cookie: SessionId=f08102c8ce5aaf8fba23a7238cc2ef464b990e18bfbf7fb048820c0e28955c54; Path=/; HttpOnly

To close a session after use, issue a POST to http://<ip-address>/xmlapi/session/end with the provided cookie.

Example: Closing a HTTP XMLAPI session

Request:

POST /xmlapi/session/end HTTP/1.1
Cookie: SessionId=f08102c8ce5aaf8fba23a7238cc2ef464b990e18bfbf7fb048820c0e28955c54

Response:

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

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

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

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

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

Sending commands and configurations

Using HTTP POST

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

Example 1: Changing the system name.

Request

POST /putxml HTTP/1.1
Content-Type: text/xml

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

Response

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

<?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

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

Response

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

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

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

Registering for feedback

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

HttpFeedback Register syntax:

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

HttpFeedback Register arguments:

- **FeedbackSlot**: The codec can register up to 4 slots of servers requesting HTTP feedback. Set the registering to one of them.
  - **Note**: Avoid using FeedbackSlot 3 in an environment where Cisco TelePresence Management Suite (TMS) is used as TMS uses this feedback slot to register its expressions.
- **ServerUrl**: The URL to the HTTP server where you want the codec to post the HTTP feedback messages to.
- **Format**: Set the format for the feedback from the HTTP server to XML or JSON.
- **Expression 1-15**: The XPath expression specifies which parts of the Status, Configuration or Event documents are monitored. You can have from 1 to 15 XPath expressions.

Register the expressions you want to receive feedback on. See the “Feedback mechanism” on page 18 section for more information about the expression formats.

Example: Registering feedback on configuration changes, disconnect events and call status changes.

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

<Command>
    <HttpFeedback>
        <Register command="True">
            <FeedbackSlot>1</FeedbackSlot>
            <ServerUrl>http://127.0.0.1/myhttppostscripturl</ServerUrl>
            <Format>XML</Format>
            <Expression item="1">/Configuration</Expression>
            <Expression item="2">/Event/CallDisconnect</Expression>
            <Expression item="3">/Status/Call</Expression>
        </Register>
    </HttpFeedback>
</Command>
```

Feedback output

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

Example: Audio volume changed.

```
<Configuration xmlns="http://www.company.com/XML/CUIL/2.0">
    <Identification>
        <SystemName>My System Name</SystemName>
        <MACAddress>00:00:de:ad:be:ef</MACAddress>
        <IPAddress>192.168.1.100</IPAddress>
        <ProductType>Cisco Codec</ProductType>
        <ProductID>Cisco Codec SX10</ProductID>
        <SWVersion>C8.3.0.199465</SWVersion>
        <HWBoard>101401-5 [08]</HWBoard>
        <SerialNumber>PH0000000</SerialNumber>
    </Identification>
    <Audio item="1">
        <Volume item="1">60</Volume>
    </Audio>
</Configuration>
```
Translating from terminal mode to XML

Translating commands

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

Example 1: Setting up a call.
Terminal
xCommand Dial Number: “12345” Protocol: H323

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

Example 2: Assigning volume level
Terminal
xCommand Audio Volume Set Level: 50

XML
<Response>
  <Audio>
    <Volume>
      <Set command="True">
        <Level>50</Level>
      </Set>
    </Volume>
  </Audio>
</Response>

Translating configurations

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

Example: Configuring the input source type for video input connector 2.
Terminal
xConfiguration Video Input Connector 2
InputSourceType: camera

XML
<Response>
  <Video>
    <Input>
      <Connector item="2">
        <InputSourceType>camera</InputSourceType>
      </Connector>
    </Input>
  </Video>
</Response>
Dos and don’ts
Here are some best practices when programming the Cisco SX series API.

AVOID remote control emulation
The use of xCommand UserInterface OSD Key Click and xCommand UserInterface OSD Key Press 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 xconfig vid. The shortcuts can be used for searches in the API on the command line, but not for programming. The reason for this is that you might end up with ambiguous code when additional commands are added to the API.

DO NOT subscribe to unnecessary feedback
Subscribing to too much feedback may congest the control application. Although the amount of feedback may seem fine in the current version, the amount of feedback may grow in future releases.
Chapter 3

xConfiguration commands
Description of the xConfiguration commands

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

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

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Audio configuration

**xConfiguration Audio DefaultVolume**
Define the default volume for the speakers. The volume is set to this value when you switch on or restart the video system. Use the Touch controller or remote control to change the volume while the video system is running. You may also use API commands (xCommand Audio Volume) to change the volume while the video system is running, and to reset to default value.

Requires user role: ADMIN, INTEGRATOR, USER
Default value: 50

**USAGE:**
xConfiguration Audio DefaultVolume: `DefaultVolume`
where
`DefaultVolume`: Integer (0..100)
Select a value between 1 and 100. This corresponds to the dB range from -34.5 dB to 15 dB, in steps of 0.5 dB. If set to 0 the audio is switched off.

**xConfiguration Audio Microphones Mute Enabled**
Define the microphone mute behaviour on the video system.

Requires user role: ADMIN, INTEGRATOR
Default value: True

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

**xConfiguration Audio SoundsAndAlerts RingTone**
Define which ringtone to use for incoming calls.

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

**USAGE:**
xConfiguration Audio SoundsAndAlerts RingTone: `RingTone`
where
`RingTone`: Sunrise/Mischief/Ripples/Reflections/Vibes/Delight/Evolve/Playful/Ascent/Calculation/Mellow/Ringer
Select a ringtone from the list.

**xConfiguration Audio SoundsAndAlerts RingVolume**
Define the ring volume for incoming calls.

Requires user role: ADMIN, INTEGRATOR, USER
Default value: 50

**USAGE:**
xConfiguration Audio SoundsAndAlerts RingVolume: `RingVolume`
where
`RingVolume`: Integer (0..100)
The value goes in steps of 5 from 0 to 100 (from -34.5 dB to 15 dB). Volume 0 = Off.
xConfiguration Audio Input Microphone [2] EchoControl Mode

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

Requires user role: ADMIN, INTEGRATOR
Default value: On

**USAGE:**
xConfiguration Audio Input Microphone [2] EchoControl Mode: Mode

- **Mode**: Off/On
  - Off: Turn off the echo control. Recommended if external echo cancellation or playback equipment is used.
  - On: Turn on the echo control. Recommended, in general, to prevent the far end from hearing their own audio. Once selected, echo cancellation is active at all times.

xConfiguration Audio Input Microphone [2] EchoControl NoiseReduction

The system has built-in noise reduction, which reduces stationary background noise, for example noise from air-conditioning systems, cooling fans etc. In addition, a high pass filter (Humfilter) reduces very low frequency noise. Noise reduction requires that Audio Input Microphone [n] EchoControl Mode is enabled.

Requires user role: ADMIN, INTEGRATOR
Default value: On

**USAGE:**

- **NoiseReduction**: Off/On
  - Off: Turn off the noise reduction.
  - On: Turn on the noise reduction. Recommended in the presence of low frequency noise.

xConfiguration Audio Input Microphone [2] EchoControl Dereverberation

The system has built-in signal processing to reduce the effect of room reverberation. Dereverberation requires that Audio Input Microphone [n] EchoControl Mode is enabled.

Requires user role: ADMIN, INTEGRATOR
Default value: Off

**USAGE:**
xConfiguration Audio Input Microphone [2] EchoControl Dereverberation: Dereverberation

- **Dereverberation**: Off/On
  - Off: Turn off the dereverberation.
  - On: Turn on the dereverberation.

xConfiguration Audio Input Microphone [2] Level

Define the audio level of the Microphone input connector.

Requires user role: ADMIN, INTEGRATOR
Default value: 17

**USAGE:**
xConfiguration Audio Input Microphone [2] Level: Level

- **Level**: Integer (0..24)
  - Select a value between 0 and 24, in steps of 1 dB.
xConfiguration Audio Input Microphone [1..2] Mode

Disable or enable audio on the microphone connector. Note that Microphone [1] is the video system’s internal microphone.

Requires user role: ADMIN, INTEGRATOR
Default value: On

**USAGE:**

xConfiguration Audio Input Microphone \(n\) Mode: Mode

where

\(n\): Unique ID that identifies the microphone input. Range: 1..2

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

xConfiguration Audio Output Line [1] Delay DelayMs

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

Requires user role: ADMIN, INTEGRATOR
Default value: 0

**USAGE:**

xConfiguration Audio Output Line \(n\) Delay DelayMs: DelayMs

where

\(n\): Unique ID that identifies the audio line output. Range: 1..6

DelayMs: Integer (0..290)
  - The delay in milliseconds.

xConfiguration Audio Output Line [1] Delay Mode

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

Requires user role: ADMIN, INTEGRATOR
Default value: RelativeToHDMI

**USAGE:**

xConfiguration Audio Output Line \(n\) Delay Mode: Mode

where

\(n\): Unique ID that identifies the audio line output. Range: 1..6

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

xConfiguration Cameras Camera [1] Backlight DefaultMode
This configuration turns backlight compensation on or off. Backlight compensation is useful when there is much light behind the persons in the room. Without compensation the persons will easily appear very dark to the far end.

Requires user role: ADMIN, INTEGRATOR
Default value: Off

USAGE:
xConfiguration Cameras Camera [1] Backlight DefaultMode: DefaultMode
where
n: Unique ID that identifies the camera. Range: 1..1
DefaultMode: Off/On
  Off: Turn off the camera backlight compensation.
  On: Turn on the camera backlight compensation.

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

Requires user role: ADMIN, INTEGRATOR
Default value: Auto

USAGE:
xConfiguration Cameras Camera [1] Brightness Mode: Mode
where
n: Unique ID that identifies the camera. Range: 1..1
Mode: Auto/Manual
  Auto: The camera brightness is automatically set by the system.

xConfiguration Cameras Camera [1] Brightness DefaultLevel
Define the brightness level. Requires the Cameras Camera [n] Brightness Mode to be set to Manual.

Requires user role: ADMIN, INTEGRATOR
Default value: 20

USAGE:
xConfiguration Cameras Camera [1] Brightness DefaultLevel: DefaultLevel
where
n: Unique ID that identifies the camera. Range: 1..1
DefaultLevel: Integer (1..31)
  The brightness level.

xConfiguration Cameras Camera [1] Flip
With Flip mode (vertical flip) you can flip the image upside down. Flipping applies both to the self-view and the video that is transmitted to the far end.

Requires user role: ADMIN, INTEGRATOR
Default value: Auto

USAGE:
xConfiguration Cameras Camera [1] Flip: Flip
where
n: Unique ID that identifies the camera. Range: 1..1
Flip: Auto
  Auto: If the camera detects that it is mounted upside down, the image is automatically flipped.
xConfiguration Cameras Camera [1] Focus Mode

Define the camera focus mode.

Requires user role: ADMIN, INTEGRATOR
Default value: Auto

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

where

- `n`: Unique ID that identifies the camera. Range: 1..1
- `Mode`: Auto/Manual
  - Auto: The camera will auto focus once a call is connected, as well as after moving the camera (pan, tilt, zoom). The system will use auto focus only for a few seconds to set the right focus; then auto focus is turned off to prevent continuous focus adjustments of the camera.
  - Manual: Turn the autofocus off and adjust the camera focus manually.

xConfiguration Cameras Camera [1] Mirror

With Mirror mode (horizontal flip) you can mirror the image on screen. Mirroring applies both to the self-view and the video that is transmitted to the far end.

Requires user role: ADMIN, INTEGRATOR
Default value: Auto

USAGE:
```
xConfiguration Cameras Camera n Mirror: Mirror
```

where

- `n`: Unique ID that identifies the camera. Range: 1..1
- `Mirror`: Auto/Off/On
  - Auto: If the camera detects that it is mounted upside down, the image is automatically mirrored. If the camera cannot auto-detect whether it is mounted upside down or not, the image is not changed.
  - Off: Display the image as other people see you.
  - On: Display the image as you see yourself in a mirror.

xConfiguration Cameras Camera [1] Whitebalance Mode

Define the camera white balance mode.

Requires user role: ADMIN, INTEGRATOR
Default value: Auto

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

where

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

xConfiguration Cameras Camera [1] Whitebalance Level

Define the white balance level. Requires the Cameras Camera [n] Whitebalance Mode to be set to manual.

Requires user role: ADMIN, INTEGRATOR
Default value: 1

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

where

- `n`: Unique ID that identifies the camera. Range: 1..1
- `Level`: Integer (1..16)
  - The white balance level.
Conference configuration

**xConfiguration Conference AutoAnswer Mode**

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

Requires user role: ADMIN
Default value: Off

**USAGE:**

```plaintext
xConfiguration Conference AutoAnswer Mode: Mode
```

where

- **Mode**: Off/On
  - **Off**: You must answer incoming calls manually by pressing the OK key or the green Call key on the remote control, or by tapping Answer on the Touch controller.
  - **On**: The system automatically answers incoming calls, except if you are already in a call. You must always answer or decline incoming calls manually when you are already engaged in a call.

**xConfiguration Conference AutoAnswer Mute**

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

Requires user role: ADMIN
Default value: Off

**USAGE:**

```plaintext
xConfiguration Conference AutoAnswer Mute: Mute
```

where

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

**xConfiguration Conference AutoAnswer Delay**

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

Requires user role: ADMIN
Default value: 0

**USAGE:**

```plaintext
xConfiguration Conference AutoAnswer Delay: Delay
```

where

- **Delay**: Integer (0..50)
  - The auto answer delay (seconds).

**xConfiguration Conference DefaultCall Rate**

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

Requires user role: ADMIN, INTEGRATOR
Default value: 3072

**USAGE:**

```plaintext
xConfiguration Conference DefaultCall Rate: Rate
```

where

- **Rate**: Integer (64..3072)
  - The default call rate (kbps).
xConfiguration Conference DoNotDisturb DefaultTimeout

This setting determines the default duration of a Do Not Disturb session, i.e. the period when incoming calls are rejected and registered as missed calls. The session can be terminated earlier by using the user interface. The default value is 60 minutes.

Requires user role: ADMIN, INTEGRATOR
Default value: 60

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

xConfiguration Conference Encryption Mode

Define the conference encryption mode. A padlock with the text “Encryption On” or “Encryption Off” displays on screen for a few seconds when the conference starts.

NOTE: If the Encryption Option Key is not installed on the video system, the encryption mode is always Off.

Requires user role: ADMIN
Default value: BestEffort

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

xConfiguration Conference FarEndControl Mode

Lets you decide if the remote side (far end) should be allowed to select your video sources and control your local camera (pan, tilt, zoom).

Requires user role: ADMIN
Default value: On

 USAGE:
 xConfiguration Conference FarEndControl Mode: Mode
 where
 Mode: Off/On
 Off: The far end is not allowed to select your video sources or to control your local camera (pan, tilt, zoom).
 On: Allows the far end to be able to select your video sources and control your local camera (pan, tilt, zoom). You will still be able to control your camera and select your video sources as normal.

xConfiguration Conference MaxReceiveCallRate

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

Requires user role: ADMIN
Default value: 3072

 USAGE:
 xConfiguration Conference MaxReceiveCallRate: MaxReceiveCallRate
 where
 MaxReceiveCallRate: Integer (64..3072)
The maximum receive call rate (kbps).
xConfiguration Conference MaxTransmitCallRate
Define the maximum transmit bit rate to be used when placing or receiving calls. Note that this is the maximum bit rate for each individual call; use the Conference MaxTotalTransmitCallRate setting to set the aggregated maximum for all simultaneous active calls.

Requires user role: ADMIN
Default value: 3072

USAGE:
xConfiguration Conference MaxTransmitCallRate: MaxTransmitCallRate
where
   MaxTransmitCallRate: Integer (64..3072)
       The maximum transmit call rate (kbps).

xConfiguration Conference MaxTotalReceiveCallRate
Define the maximum overall receive bit rate allowed. This product does not support multiple simultaneous calls, so the total receive call rate will be the same as the receive bit rate for one call (ref. Conference MaxReceiveCallRate setting).

Requirements: user role: ADMIN
Default value: 3072

USAGE:
xConfiguration Conference MaxTotalReceiveCallRate: MaxTotalReceiveCallRate
where
   MaxTotalReceiveCallRate: Integer (64..3072)
       The maximum receive call rate (kbps).

xConfiguration Conference MaxTotalTransmitCallRate
Define the maximum overall transmit bit rate allowed. This product does not support multiple simultaneous calls, so the total transmit call rate will be the same as the transmit bit rate for one call (ref. Conference MaxTransmitCallRate setting).

Requirements: user role: ADMIN
Default value: 3072

USAGE:
xConfiguration Conference MaxTotalTransmitCallRate: MaxTotalTransmitCallRate
where
   MaxTotalTransmitCallRate: Integer (64..3072)
       The maximum transmit call rate (kbps).

xConfiguration Conference MultiStream Mode
The video system supports multistream video for conferences, provided that the conference infrastructure supports the feature.

Requirements: user role: ADMIN
Default value: Off

USAGE:
xConfiguration Conference MultiStream Mode: Mode
where
   Mode: Off
       Off: Multistream is disabled.
H323 configuration

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

**USAGE:**

xConfiguration H323 Authentication Mode: 

where

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

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

**USAGE:**

xConfiguration H323 Authentication Password: 

where

- **Password**: String (0, 50)
  - The authentication password.

xConfiguration H323 CallSetup Mode
Defines whether to use a Gatekeeper or Direct calling when establishing H.323 calls.
Direct H.323 calls can be made also when H323 CallSetup Mode is set to Gatekeeper.
Requires user role: ADMIN
Default value: Gatekeeper

**USAGE:**

xConfiguration H323 CallSetup Mode: 

where

- **Mode**: Direct/Gatekeeper
  - Direct: You can only make an H.323 call by dialing an IP address directly.
  - Gatekeeper: The system uses a Gatekeeper to make an H.323 call. When choosing this option, the H323 Gatekeeper Address must also be configured.
xConfiguration H323 Encryption KeySize

Define the minimum or maximum key size for the Diffie–Hellman key exchange method, which is used when establishing the Advanced Encryption Standard (AES) encryption key.

Requires user role: ADMIN
Default value: Min1024bit

**USAGE:**

```
xConfiguration H323 Encryption KeySize: [KeySize]
where
  [KeySize]: Min1024bit/Max1024bit/Min2048bit
    Min1024bit: The minimum size is 1024 bit.
    Max1024bit: The maximum size is 1024 bit.
    Min2048bit: The minimum size is 2048 bit.
```

xConfiguration H323 Gatekeeper Address

Define the IP address of the Gatekeeper. Requires H323 CallSetup Mode to be set to Gatekeeper.

Requires user role: ADMIN
Default value: ""

**USAGE:**

```
xConfiguration H323 Gatekeeper Address: [Address]
where
  [Address]: String (0, 255)
    A valid IPv4 address, IPv6 address or DNS name.
```

xConfiguration H323 H323Alias E164

The H.323 Alias E.164 defines the address of the system, according to the numbering plan implemented in the H.323 Gatekeeper. The E.164 alias is equivalent to a telephone number, sometimes combined with access codes.

Requires user role: ADMIN
Default value: ""

**USAGE:**

```
xConfiguration H323 H323Alias E164: [E164]
where
  [E164]: String (0, 30)
    The H.323 Alias E.164 address. Valid characters are 0–9, * and #.
```

xConfiguration H323 H323Alias ID

Define the H.323 Alias ID, which is used to address the system on a H.323 Gatekeeper and will be displayed in the call lists.

Requires user role: ADMIN
Default value: ""

**USAGE:**

```
xConfiguration H323 H323Alias ID: [ID]
where
  [ID]: String (0, 49)
    The H.323 Alias ID. Example: "firstname.lastname@company.com", "My H.323 Alias ID"
**xConfiguration H323 NAT Mode**

The firewall traversal technology creates a secure path through the firewall barrier, and enables proper exchange of audio/video data when connected to an external video conferencing system (when the IP traffic goes through a NAT router). NOTE: NAT does not work in conjunction with gatekeepers.

Requires user role: ADMIN

Default value: Off

**USAGE:**

```plaintext
xConfiguration H323 NAT Mode: Mode
where
Mode: Auto/Off/On

Auto: The system will determine if the H323 NAT Address or the real IP address should be used in signaling. This makes it possible to place calls to endpoints on the LAN as well as endpoints on the WAN. If the H323 NAT Address is wrong or not set, the real IP address will be used.

Off: The system will signal the real IP address.

On: The system will signal the configured H323 NAT Address instead of its real IP address in Q.931 and H.245. The NAT server address will be shown in the startup-menu as: "My IP Address: 10.0.2.1". If the H323 NAT Address is wrong or not set, H.323 calls cannot be set up.
```

**xConfiguration H323 NAT Address**

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

In the router, the following ports must be routed to the system's IP address:
* Port 1720
* Port 5555–6555
* Port 2326–2487

Requires user role: ADMIN

Default value: ""

**USAGE:**

```plaintext
xConfiguration H323 NAT Address: "Address"
where
Address: String (0, 64)
A valid IPv4 address or IPv6 address.
```
Network configuration

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

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

USAGE:
```
xConfiguration Network n DNS Domain Name: "Name"
```
where
- n: Index that identifies the network. Range: 1..1
- Name: String (0, 64)
  The DNS domain name.

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

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

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

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

Requires user role: ADMIN, USER
Default value: Off

USAGE:
```
xConfiguration Network n IEEE8021X Mode: Mode
```
where
- n: Index that identifies the network. Range: 1..1
- Mode: Off/On
  Off: The 802.1X authentication is disabled (default).
  On: The 802.1X authentication is enabled.

xConfiguration Network [1] IEEE8021X TlsVerify
Verification of the server-side certificate of an IEEE802.1x connection against the certificates in the local CA-list when TLS is used. The CA-list must be uploaded to the video system. This can be done from the web interface.

This setting takes effect only when Network [1] IEEE8021X Eap Tls is enabled (On).

Requires user role: ADMIN, USER
Default value: Off

USAGE:
```
xConfiguration Network n IEEE8021X TlsVerify: TlsVerify
```
where
- n: Index that identifies the network. Range: 1..1
- TlsVerify: Off/On
  Off: When set to Off, TLS connections are allowed without verifying the server-side X.509 certificate against the local CA-list. This should typically be selected if no CA-list has been uploaded to the codec.
  On: When set to On, the server-side X.509 certificate will be validated against the local CA-list for all TLS connections. Only servers with a valid certificate will be allowed.
xConfiguration Network [1] IEEE8021X UseClientCertificate

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

Requires user role: ADMIN, USER
Default value: Off

**USAGE:**

- n: Index that identifies the network. Range: 1..1
- UseClientCertificate: Off/On
  - Off: When set to Off client-side authentication is not used (only server-side).
  - On: When set to On the client (video system) will perform a mutual authentication TLS handshake with the server.

xConfiguration Network [1] IEEE8021X Identity

Define the user name for 802.1X authentication.

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

**USAGE:**

- n: Index that identifies the network. Range: 1..1
- Identity: String (0, 64)
  - The user name for 802.1X authentication.

xConfiguration Network [1] IEEE8021X Password

Define the password for 802.1X authentication.

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

**USAGE:**

- n: Index that identifies the network. Range: 1..1
- Password: String (0, 32)
  - The password for 802.1X authentication.


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

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

**USAGE:**

- n: Index that identifies the network. Range: 1..1
- AnonymousIdentity: String (0, 64)
  - The 802.1X Anonymous ID string.

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

Requires user role: ADMIN, USER
Default value: On

USAGE:
xConfiguration Network \( n \) IEEE8021X Eap Md5: \( \text{Md5} \)

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

xConfiguration Network [1] IEEE8021X Eap Ttls

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

Requires user role: ADMIN, USER
Default value: On

USAGE:
xConfiguration Network \( n \) IEEE8021X Eap Ttls: \( \text{Ttls} \)

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

xConfiguration Network [1] IEEE8021X Eap Tls

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

Requires user role: ADMIN, USER
Default value: On

USAGE:
xConfiguration Network \( n \) IEEE8021X Eap Tls: \( \text{Tls} \)

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

xConfiguration Network [1] IEEE8021X Eap Peap

Define the Peap (Protected Extensible Authentication Protocol) mode. Authenticates LAN clients without the need for client certificates. Developed by Microsoft, Cisco and RSA Security.

Requires user role: ADMIN, USER
Default value: On

USAGE:
xConfiguration Network \( n \) IEEE8021X Eap Peap: \( \text{Peap} \)

where
\( n \): Index that identifies the network. Range: 1..1
\( \text{Peap} \): Off/On
  - Off: The EAP-PEAP protocol is disabled.
  - On: The EAP-PEAP protocol is enabled (default).
xConfiguration Network [1] IPStack
Select if the system should use IPv4, IPv6, or dual IP stack, on the network interface. NOTE: After changing this setting you may have to wait up to 30 seconds before it takes effect.

Requires user role: ADMIN, USER
Default value: Dual

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

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

Requires user role: ADMIN, USER
Default value: DHCP

USAGE:
```
xConfiguration Network n IPv4 Assignment: Assignment
```
where
n: Index that identifies the network. Range: 1..1
Assignment: Static/DHCP
  - Static: The addresses must be configured manually using the Network IPv4 Address, Network IPv4 Gateway and Network IPv4 SubnetMask settings (static addresses).
  - DHCP: The system addresses are automatically assigned by the DHCP server.

xConfiguration Network [1] IPv4 Address
Define the static IPv4 network address for the system. Applicable only when Network IPv4 Assignment is set to Static.

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

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

xConfiguration Network [1] IPv4 Gateway
Define the IPv4 network gateway address. Applicable only when the Network IPv4 Assignment is set to Static.

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

USAGE:
```
xConfiguration Network n IPv4 Gateway: "Gateway"
```
where
n: Index that identifies the network. Range: 1..1
Gateway: String (0, 64)
  - A valid IPv4 address.
xConfiguration Network [1] IPv4 SubnetMask
Define the IPv4 network subnet mask. Applicable only when the Network IPv4 Assignment is set to Static.

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

**USAGE:**
\[
xConfiguration Network \ n\ IPv4 SubnetMask: "\text{SubnetMask}\"
\]
where
\[\ n\]: Index that identifies the network. Range: 1..1
\[\text{SubnetMask}\]: String (0, 64)
A valid IPv4 address.

xConfiguration Network [1] IPv6 Assignment
Define how the system will obtain its IPv6 address and the default gateway address. This setting applies only to systems on IPv6 networks.

Requires user role: ADMIN, USER
Default value: Autoconf

**USAGE:**
\[
xConfiguration Network \ n\ IPv6 Assignment: \text{Assignment}\n\]
where
\[\ n\]: Index that identifies the network. Range: 1..1
\[\text{Assignment}\]: Static/DHCPv6/Autoconf

- **Static:** The codec and gateway IP addresses must be configured manually using the Network IPv6 Address and Network IPv6 Gateway settings. The options, for example NTP and DNS server addresses, must either be set manually or obtained from a DHCPv6 server. The Network IPv6 DHCPOptions setting determines which method to use.

- **DHCPv6:** All IPv6 addresses, including options, will be obtained from a DHCPv6 server. See RFC 3315 for a detailed description. The Network IPv6 DHCPOptions setting will be ignored.

- **Autoconf:** Enable IPv6 stateless autoconfiguration of the IPv6 network interface. See RFC 4862 for a detailed description. The options, for example NTP and DNS server addresses, must either be set manually or obtained from a DHCPv6 server. The Network IPv6 DHCPOptions setting determines which method to use.

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

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

**USAGE:**
\[
xConfiguration Network \ n\ IPv6 Address: "\text{Address}\"
\]
where
\[\ n\]: Index that identifies the network. Range: 1..1
\[\text{Address}\]: String (0, 64)
A valid IPv6 address including a network mask. Example: 2001:DB8::/48

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

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

**USAGE:**
\[
xConfiguration Network \ n\ IPv6 Gateway: "\text{Gateway}\"
\]
where
\[\ n\]: Index that identifies the network. Range: 1..1
\[\text{Gateway}\]: String (0, 64)
A valid IPv6 address.
xConfiguration Network [1] IPv6 DHCPOptions

Retrieve a set of DHCP options, for example NTP and DNS server addresses, from a DHCPv6 server.

Requires user role: ADMIN, USER
Default value: On

**USAGE:**
```
xConfiguration Network n IPv6 DHCPOptions: DHCPOptions
```

where
- `n`: Index that identifies the network. Range: 1..1
- `DHCPOptions`: Off/On
  - Off: Disable the retrieval of DHCP options from a DHCPv6 server.
  - On: Enable the retrieval of a selected set of DHCP options from a DHCPv6 server.

xConfiguration Network [1] MTU

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

Requires user role: ADMIN, USER
Default value: 1500

**USAGE:**
```
xConfiguration Network n MTU: MTU
```

where
- `n`: Index that identifies the network. Range: 1..1
- `MTU`: Integer (576..1500)
  - Set a value for the MTU (bytes).

xConfiguration Network [1] QoS Mode

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

Requires user role: ADMIN, USER
Default value: Diffserv

**USAGE:**
```
xConfiguration Network n QoS Mode: Mode
```

where
- `n`: Index that identifies the network. Range: 1..1
- `Mode`: Off/Diffserv
  - Off: No QoS method is used.
  - Diffserv: When you set the QoS Mode to Diffserv, the Network QoS Diffserv Audio, Network QoS Diffserv Video, Network QoS Diffserv Data, Network QoS Diffserv Signalling, Network QoS Diffserv ICMPv6 and Network QoS Diffserv NTP settings are used to prioritize packets.
xConfiguration Network [1] QoS Diffserv Audio

This setting will only take effect if Network QoS Mode is set to Diffserv. Define which priority Audio packets should have in the IP network. The priority for the packets ranges from 0 to 63 - the higher the number, the higher the priority. The recommended class for Audio is CS4, which equals the decimal value 32. If in doubt, contact your network administrator. The priority set here might be overridden when packets are leaving the network controlled by the local network administrator.

Requires user role: ADMIN, USER
Default value: 0

**USAGE:**

```
```

where

- `n`: Index that identifies the network. Range: 1..1
- `Audio`: Integer (0..63)

Set the priority of the audio packets in the IP network - the higher the number, the higher the priority. The default value is 0 (best effort).

---

xConfiguration Network [1] QoS Diffserv Video

This setting will only take effect if Network QoS Mode is set to Diffserv. Define which priority Video packets should have in the IP network. The packets on the presentation channel (shared content) are also in the Video packet category. The priority for the packets ranges from 0 to 63 - the higher the number, the higher the priority. The recommended class for Video is CS4, which equals the decimal value 32. If in doubt, contact your network administrator. The priority set here might be overridden when packets are leaving the network controlled by the local network administrator.

Requires user role: ADMIN, USER
Default value: 0

**USAGE:**

```
xConfiguration Network [1] QoS Diffserv Video: Video
```

where

- `n`: Index that identifies the network. Range: 1..1
- `Video`: Integer (0..63)

Set the priority of the video packets in the IP network - the higher the number, the higher the priority. The default value is 0 (best effort).
xConfiguration Network [1] QoS Diffserv Data

This setting will only take effect if Network QoS Mode is set to Diffserv.
Define which priority Data packets should have in the IP network.
The priority for the packets ranges from 0 to 63 - the higher the number, the higher the priority.
The recommended value for Data is 0, which means best effort. If in doubt, contact your network administrator.
The priority set here might be overridden when packets are leaving the network controlled by the local network administrator.

Requires user role: ADMIN, USER
Default value: 0

**USAGE:**

```
xConfiguration Network n QoS Diffserv Data: Data
```
where

- `n`: Index that identifies the network. Range: 1..1
- **Data**: Integer (0..63)

Set the priority of the data packets in the IP network - the higher the number, the higher the priority. The default value is 0 (best effort).

---

xConfiguration Network [1] QoS Diffserv Signalling

This setting will only take effect if Network QoS Mode is set to Diffserv.
Define which priority Signalling packets that are deemed critical (time-sensitive) for the real-time operation should have in the IP network.
The priority for the packets ranges from 0 to 63 - the higher the number, the higher the priority.
The recommended class for Signalling is CS3, which equals the decimal value 24. If in doubt, contact your network administrator.
The priority set here might be overridden when packets are leaving the network controlled by the local network administrator.

Requires user role: ADMIN, USER
Default value: 0

**USAGE:**

```
xConfiguration Network n QoS Diffserv Signalling: Signalling
```
where

- `n`: Index that identifies the network. Range: 1..1
- **Signalling**: Integer (0..63)

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

USAGE:
where
  \( n \): Index that identifies the network. Range: 1..1
  ICMPv6: Integer (0..63)
Set the priority of the ICMPv6 packets in the IP network - the higher the number, the higher the priority. The default value is 0 (best effort).

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

USAGE:
where
  \( n \): Index that identifies the network. Range: 1..1
  NTP: Integer (0..63)
Set the priority of the NTP packets in the IP network - the higher the number, the higher the priority. The default value is 0 (best effort).

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

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

Define the Ethernet link speed. We recommend not to change from the default value, which negotiates with the network to set the speed automatically. If you do not use autonegotiation, make sure that the speed you choose is supported by the closest switch in your network infrastructure.

Requires user role: ADMIN, USER
Default value: Auto

USAGE:

xConfiguration Network \text{n} Speed: Speed

where
\text{n}: Index that identifies the network. Range: 1..1

\text{Speed}: Auto/10half/10full/100half/100full

Auto: Autonegotiate link speed.
10half: Force link to 10 Mbps half-duplex.
10full: Force link to 10 Mbps full-duplex.
100half: Force link to 100 Mbps half-duplex.
100full: Force link to 100 Mbps full-duplex.

xConfiguration Network [1] VLAN Voice Mode

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

Requires user role: ADMIN, USER
Default value: Auto

USAGE:

xConfiguration Network \text{n} VLAN Voice Mode: Mode

where
\text{n}: Index that identifies the network. Range: 1..1

\text{Mode}: Auto/Manual/Off

Auto: The Cisco Discovery Protocol (CDP), if available, assigns an id to the voice VLAN. If CDP is not available, VLAN is not enabled.

Manual: The VLAN ID is set manually using the Network VLAN Voice VlanId setting. If CDP is available, the manually set value will be overruled by the value assigned by CDP.

Off: VLAN is not enabled.

xConfiguration Network [1] VLAN Voice VlanId

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

Requires user role: ADMIN, USER
Default value: 1

USAGE:

xConfiguration Network \text{n} VLAN Voice VlanId: VlanId

where
\text{n}: Index that identifies the network. Range: 1..1

\text{VlanId}: Integer (1..4094)

Set the VLAN voice ID.
NetworkServices configuration

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

Requires user role: ADMIN
Default value: On

**USAGE:**

```
xConfiguration NetworkServices CDP Mode: Mode

where

Mode: Off/On
   Off: The CDP daemon is disabled.
   On: The CDP daemon is enabled.
```

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

Requires user role: ADMIN
Default value: Off

**USAGE:**

```
xConfiguration NetworkServices H323 Mode: Mode

where

Mode: Off/On
   Off: Disable the possibility to place and receive H.323 calls.
   On: Enable the possibility to place and receive H.323 calls (default).
```

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

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

Requires user role: ADMIN
Default value: HTTP+HTTPS

**USAGE:**

```
xConfiguration NetworkServices HTTP Mode: Mode

where

Mode: Off/HTTP+HTTPS/HTTPS
   Off: Access to the video system not allowed via HTTP or HTTPS.
   HTTP+HTTPS: Access to the video system allowed via both HTTP and HTTPS.
   HTTPS: Access to the video system allowed via HTTPS, but not via HTTP.
```

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

Requires user role: ADMIN
Default value: TLSv1.1

**USAGE:**

```
xConfiguration NetworkServices HTTPS Server MinimumTLSVersion: MinimumTLSVersion

where

MinimumTLSVersion: TLSv1.1/TLSv1.2
   TLSv1.1: Support of TLS version 1.1 or higher.
   TLSv1.2: Support of TLS version 1.2 or higher.
```
xConfiguration NetworkServices HTTPS StrictTransportSecurity

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

Requires user role: ADMIN
Default value: Off

**USAGE:**

```
xConfiguration NetworkServices HTTPS StrictTransportSecurity : [Off/On]
```

- **Off**: The HTTP strict transport security feature is disabled.
- **On**: The HTTP strict transport security feature is enabled.

xConfiguration NetworkServices HTTPS VerifyServerCertificate

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

Requires user role: ADMIN
Default value: Off

**USAGE:**

```
xConfiguration NetworkServices HTTPS VerifyServerCertificate: [VerifyServerCertificate]
```

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

xConfiguration NetworkServices NTP Mode

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

Requires user role: ADMIN
Default value: Auto

**USAGE:**

```
xConfiguration NetworkServices NTP Mode: [Mode]
```

- **Mode**: Auto/Manual/Off
  - **Auto**: The system will use an NTP server for time reference. As default, the server address will be obtained from the network's DHCP server. If a DHCP server is not used, or if the DHCP server does not provide an NTP server address, the NTP server address that is specified in the NetworkServices NTP Server [n] Address setting will be used.
  - **Manual**: The system will use the NTP server that is specified in the NetworkServices NTP Server [n] Address setting for time reference.
  - **Off**: The system will not use an NTP server. The NetworkServices NTP Server [n] Address setting will be ignored.
xConfiguration NetworkServices NTP Server [1..3] Address

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

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

**USAGE:**

```text
xConfiguration NetworkServices NTP Server n Address: "Address"
```

where

- `n`: Unique ID that identifies the NTP server. Range: 1..3
- `Address`: String (0, 255)
  - A valid IPv4 address, IPv6 address or DNS name.

xConfiguration NetworkServices SIP Mode

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

Requires user role: ADMIN
Default value: On

**USAGE:**

```text
xConfiguration NetworkServices SIP Mode: Mode
```

where

- `Mode`: Off/On
  - Off: Disable the possibility to place and receive SIP calls.
  - On: Enable the possibility to place and receive SIP calls (default).

xConfiguration NetworkServices SNMP Mode

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

Requires user role: ADMIN
Default value: ReadOnly

**USAGE:**

```text
xConfiguration NetworkServices SNMP Mode: Mode
```

where

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

xConfiguration NetworkServices SNMP Host [1..3] Address

Define the address of up to three SNMP Managers.

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

Requires user role: ADMIN
Default value: ""

**USAGE:**

```text
xConfiguration NetworkServices SNMP Host n Address: "Address"
```

where

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

Define the name of the Network Services SNMP Community. SNMP Community names are used to authenticate SNMP requests. SNMP requests must have a password (case sensitive) in order to receive a response from the SNMP Agent in the codec. The default password is "public". If you have the Cisco TelePresence Management Suite (TMS) you must make sure the same SNMP Community is configured there too. NOTE: The SNMP Community password is case sensitive.

Requires user role: ADMIN
Default value: ""

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

xConfiguration NetworkServices SNMP SystemContact

Define the name of the Network Services SNMP System Contact.

Requires user role: ADMIN
Default value: ""

 USAGE:
xConfiguration NetworkServices SNMP SystemContact: "SystemContact"
where
	SystemContact: String (0, 50)
	The name of the SNMP system contact.

xConfiguration NetworkServices SNMP SystemLocation

Define the name of the Network Services SNMP System Location.

Requires user role: ADMIN
Default value: ""

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

xConfiguration NetworkServices SSH Mode

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

Requires user role: ADMIN
Default value: On

 USAGE:
xConfiguration NetworkServices SSH Mode: Mode
where
	Mode: Off/On
	Off: The SSH protocol is disabled.
	On: The SSH protocol is enabled.
xConfiguration NetworkServices Telnet Mode
Telnet is a network protocol used on the Internet or Local Area Network (LAN) connections.

Requires user role: ADMIN
Default value: Off

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

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

The default operation is that UPnP is enabled when you switch on or restart the video system. Then UPnP is automatically disabled after the timeout period that is defined in the NetworkServices UPnP Timeout setting. Use the video system's web interface to set the timeout.

When UPnP is enabled, the video system advertises its presence on the network. The advertisement permits a Touch controller to discover video systems automatically, and you do not need to manually enter the video system's IP address in order to pair the Touch controller.

Requires user role: ADMIN
Default value: On

USAGE:
```
xConfiguration NetworkServices UPnP Mode: Mode
```
where
```
Mode: <Off/On>
```
- Off: UPnP is disabled. The video system does not advertise its presence, and you have to enter the video system's IP address manually in order to pair a Touch controller to the video system.
- On: UPnP is enabled. The video system advertises its presence until the timeout period expires.

xConfiguration NetworkServices WelcomeText
Choose which information the user should see when logging on to the codec through Telnet/SSH.

Requires user role: ADMIN
Default value: On

USAGE:
```
xConfiguration NetworkServices WelcomeText: WelcomeText
```
where
```
WelcomeText: Off/On
```
- Off: The welcome text is: Login successful
- On: The welcome text is: Welcome to <system name>; Software version; Software release date; Login successful.
Peripherals configuration

xConfiguration Peripherals Profile Cameras

Define the number of cameras that are expected to be connected to the video system. This information is used by the video system's diagnostics service. If the number of connected cameras does not match this setting, the diagnostics service will report it as an inconsistency.

Requirements:
- user role: ADMIN, INTEGRATOR
- Default value: Minimum1

Usage:
```
xConfiguration Peripherals Profile Cameras: Cameras
```
where
- Cameras: NotSet/Minimum1/0/1/2/3/4/5/6/7
  - NotSet: No camera check is performed.
  - Minimum1: At least one camera should be connected to the video system.
  - 0-7: Select the number of cameras that are expected to be connected to the video system.

xConfiguration Peripherals Profile ControlSystems

Define if a third-party control system, for example Crestron or AMX, is expected to be connected to the video system. This information is used by the video system's diagnostics service. If the number of connected control systems does not match this setting, the diagnostics service will report it as an inconsistency. Note that only one third-party control system is supported.

Requirements:
- user role: ADMIN, INTEGRATOR
- Default value: NotSet

Usage:
```
xConfiguration Peripherals Profile ControlSystems: ControlSystems
```
where
- ControlSystems: 1/NotSet
  - 1: One third-party control system should be connected to the video system.
  - NotSet: No check for a third-party control system is performed.

xConfiguration Peripherals Profile TouchPanels

Define the number of touch panels that are expected to be connected to the video system. This information is used by the video system's diagnostics service. If the number of connected touch panels does not match this setting, the diagnostics service will report it as an inconsistency. Note that only one Cisco Touch controller is supported in this version.

Requirements:
- user role: ADMIN, INTEGRATOR
- Default value: NotSet

Usage:
```
xConfiguration Peripherals Profile TouchPanels: TouchPanels
```
where
- TouchPanels: NotSet/Minimum1/0/1/2/3/4/5
  - NotSet: No touch panel check is performed.
  - Minimum1: At least one touch panel should be connected to the video system.
  - 0-5: Select the number of Touch controllers that are expected to be connected to the video system.
Phonebook configuration

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

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

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

USAGE:
xConfiguration Phonebook Server n Type: Type
where
n: Unique ID that identifies the phonebook server. Range: 1..1
Type: Off/CUCM/Spark/TMS/VCS
   Off: Do not use a phonebook.
   CUCM: The phonebook is located on the Cisco Unified Communications Manager.
   Spark: The phonebook is located on Spark.
   TMS: The phonebook is located on the Cisco TelePresence Management Suite server.
   VCS: The phonebook is located on the Cisco TelePresence Video Communication Server.

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

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

**xConfiguration Provisioning Connectivity**

This setting controls how the device discovers whether it should request an internal or external configuration from the provisioning server.

Requires user role: ADMIN, USER
Default value: Auto

**USAGE:**

```
xConfiguration Provisioning Connectivity: Connectivity
where
    Connectivity: Internal/External/Auto
    Internal: Request internal configuration.
    External: Request external configuration.
    Auto: Automatically discover using NAPTR queries whether internal or external configurations should be requested. If the NAPTR responses have the "e" flag, external configurations will be requested. Otherwise internal configurations will be requested.
```

**xConfiguration Provisioning Mode**

It is possible to configure a video system using a provisioning system (external manager). This allows video conferencing network administrators to manage many video systems simultaneously. With this setting you choose which type of provisioning system to use. Provisioning can also be switched off. Contact your provisioning system provider/representative for more information.

Requires user role: ADMIN, USER
Default value: Auto

**USAGE:**

```
xConfiguration Provisioning Mode: Mode
where
    Mode: Off/Auto/CUCM/Edge/Spark/TMS/VCS
    Off: The video system is not configured by a provisioning system.
    Auto: Automatically select the provisioning server.
    CUCM: Push configurations to the video system from CUCM (Cisco Unified Communications Manager).
    Edge: Push configurations to the video system from CUCM (Cisco Unified Communications Manager). The system connects to CUCM via the Collaboration Edge infrastructure.
    Spark: Push configurations to the video system from Spark.
    TMS: Push configurations to the video system from TMS (Cisco TelePresence Management System).
    VCS: Push configurations to the video system from VCS (Cisco TelePresence Video Communication Server).
```
xConfiguration Provisioning LoginName
This is the username part of the credentials used to authenticate the video system with the provisioning server. This setting must be used when required by the provisioning server.
Requires user role: ADMIN, USER
Default value: ""

USAGE:
xConfiguration Provisioning LoginName: "LoginName"
   where
       LoginName: String (0, 80)
       A valid username.

xConfiguration Provisioning Password
This is the password part of the credentials used to authenticate the video system with the provisioning server. This setting must be used when required by the provisioning server.

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

USAGE:
xConfiguration Provisioning Password: "Password"
   where
       Password: String (0, 64)
       A valid password.

xConfiguration Provisioning HttpMethod
Select the HTTP method to be used for the provisioning.

Requires user role: ADMIN, USER
Default value: POST

USAGE:
xConfiguration Provisioning HttpMethod: HttpMethod
   where
       HttpMethod: GET/POST
       GET: Select GET when the provisioning server supports GET.
       POST: Select POST when the provisioning server supports POST.

xConfiguration Provisioning ExternalManager Address
Define the IP Address or DNS name of the external manager / provisioning system.
If an External Manager Address (and Path) is configured, the system will send a message to this address when starting up. When receiving this message the external manager / provisioning system can return configurations/commands to the unit as a result.
When using CUCM or TMS provisioning, the DHCP server can be set up to provide the external manager address automatically (DHCP Option 242 for TMS, and DHCP Option 150 for CUCM).
An address set in the Provisioning ExternalManager Address setting will override the address provided by DHCP.

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

USAGE:
xConfiguration Provisioning ExternalManager Address: "Address"
   where
       Address: String (0, 64)
       A valid IPv4 address, IPv6 address or DNS name.
xConfiguration Provisioning ExternalManager AlternateAddress

Only applicable when the endpoint is provisioned by Cisco Unified Communication Manager (CUCM) and an alternate CUCM is available for redundancy. Define the address of the alternate CUCM. If the main CUCM is not available, the endpoint will be provisioned by the alternate CUCM. When the main CUCM is available again, the endpoint will be provisioned by this CUCM.

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

 USAGE:

 xConfiguration Provisioning ExternalManager AlternateAddress: "AlternateAddress"
 where
 AlternateAddress: String (0, 64)
 A valid IPv4 address, IPv6 address or DNS name.

xConfiguration Provisioning ExternalManager Protocol

Define whether to use the HTTP (unsecure communication) or HTTPS (secure communication) protocol when sending requests to the external manager / provisioning system. The selected protocol must be enabled in the NetworkServices HTTP Mode setting.

Requires user role: ADMIN, USER
Default value: HTTP

 USAGE:

 xConfiguration Provisioning ExternalManager Protocol: Protocol
 where
 Protocol: HTTPS/HTTP
 HTTPS: Send requests via HTTPS.
 HTTP: Send requests via HTTP.

xConfiguration Provisioning ExternalManager Path

Define the Path to the external manager / provisioning system. This setting is required when several management services reside on the same server, i.e. share the same External Manager address.

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

 USAGE:

 xConfiguration Provisioning ExternalManager Path: "Path"
 where
 Path: String (0, 255)
 A valid path to the external manager or provisioning system.

xConfiguration Provisioning ExternalManager Domain

Define the SIP domain for the VCS provisioning server.

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

 USAGE:

 xConfiguration Provisioning ExternalManager Domain: "Domain"
 where
 Domain: String (0, 64)
 A valid domain name.
Proximity configuration

xConfiguration Proximity Mode

Determine whether the video system will emit ultrasound pairing messages or not. When the video system emits ultrasound, Proximity clients can detect that they are close to the video system. In order to use a client, at least one of the Proximity services must be enabled (refer to the Proximity Services settings). In general, Cisco recommends enabling all the Proximity services.

Requires user role: ADMIN, USER
Default value: Off

USAGE:

```
xConfiguration Proximity Mode: Mode
```

where

Mode: Off/On

- Off: The video system does not emit ultrasound, and Proximity services cannot be used.
- On: The video system emits ultrasound, and Proximity clients can detect that they are close to the video system. Enabled Proximity services can be used.

xConfiguration Proximity Services CallControl

Enable or disable basic call control features on Proximity clients. When this setting is enabled, you are able to control a call using a Proximity client (for example dial, mute, adjust volume and hang up). This service is supported by mobile devices (iOS and Android). Proximity Mode must be On for this setting to take any effect.

Requires user role: ADMIN, USER
Default value: Disabled

USAGE:

```
xConfiguration Proximity Services CallControl: CallControl
```

where

CallControl: Enabled/Disabled

- Enabled: Call control from a Proximity client is enabled.
- Disabled: Call control from a Proximity client is disabled.

xConfiguration Proximity Services ContentShare FromClients

Enable or disable content sharing from Proximity clients. When this setting is enabled, you can share content from a Proximity client wirelessly on the video system, e.g. share your laptop screen. This service is supported by laptops (OS X and Windows). Proximity Mode must be On for this setting to take any effect.

Requires user role: ADMIN, USER
Default value: Enabled

USAGE:

```
xConfiguration Proximity Services ContentShare FromClients: FromClients
```

where

FromClients: Enabled/Disabled

- Enabled: Content sharing from a Proximity client is enabled.
- Disabled: Content sharing from a Proximity client is disabled.

xConfiguration Proximity Services ContentShare ToClients

Enable or disable content sharing to Proximity clients. When enabled, Proximity clients will receive the presentation from the video system. You can zoom in on details, view previous content and take snapshots. This service is supported by mobile devices (iOS and Android). Proximity Mode must be On for this setting to take any effect.

Requires user role: ADMIN, USER
Default value: Disabled

USAGE:

```
xConfiguration Proximity Services ContentShare ToClients: ToClients
```

where

ToClients: Enabled/Disabled

- Enabled: Content sharing to a Proximity client is enabled.
- Disabled: Content sharing to a Proximity client is disabled.
SerialPort configuration

xConfiguration SerialPort Mode
Enable/disable the serial port (connection via Micro USB to USB cable). The serial port uses 115200 bps, 8 data bits, no parity and 1 stop bit.

Requires user role: ADMIN, INTEGRATOR
Default value: On

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

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

Requires user role: ADMIN
Default value: On

**USAGE:**
```
xConfiguration SerialPort LoginRequired: LoginRequired
where
   LoginRequired: Off/On
   Off: The user can access the codec via the serial port without any login.
   On: Login is required when connecting to the codec via the serial port.
```

SIP configuration

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

Requires user role: ADMIN
Default value: ""

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

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

Requires user role: ADMIN
Default value: ""

**USAGE:**
```
xConfiguration SIP Authentication Password: "Password"
where
   Password: String (0, 128)
   A valid password.
```
xConfiguration SIP DefaultTransport
Select the transport protocol to be used over the LAN.

Requires user role: ADMIN
Default value: Auto

**USAGE:**
```
xConfiguration SIP DefaultTransport: DefaultTransport
```
where
```
DefaultTransport: TCP/UDP/Tls/Auto
```
- **TCP**: The system will always use TCP as the default transport method.
- **UDP**: The system will always use UDP as the default transport method.
- **Tls**: The system will always use TLS as the default transport method. For TLS connections a SIP CA-list can be uploaded to the video system. If no such CA-list is available on the system then anonymous Diffie Hellman will be used.
- **Auto**: The system will try to connect using transport protocols in the following order: TLS, TCP, UDP.

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

Requires user role: ADMIN
Default value:"

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

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

Requires user role: ADMIN
Default value: Auto

**USAGE:**
```
xConfiguration SIP Ice Mode: Mode
```
where
```
Mode: Auto/Off/On
```
- **Auto**: ICE is enabled if a TURN server is provided, otherwise ICE is disabled.
- **Off**: ICE is disabled.
- **On**: ICE is enabled.

xConfiguration SIP Ice DefaultCandidate
The ICE protocol needs some time to reach a conclusion about which media route to use (up to the first 5 seconds of a call). During this period media for the video system will be sent to the Default Candidate as defined in this setting.

Requires user role: ADMIN
Default value: Host

**USAGE:**
```
xConfiguration SIP Ice DefaultCandidate: DefaultCandidate
```
where
```
DefaultCandidate: Host/Rflx/Relay
```
- **Host**: Send media to the video system's private IP address.
- **Rflx**: Send media to the video system's public IP address, as seen by the TURN server.
- **Relay**: Send media to the IP address and port allocated on the TURN server.
xConfiguration SIP ListenPort

Turn on or off the listening for incoming connections on the SIP TCP/UDP ports. If turned off, the endpoint will only be reachable through the SIP registrar (CUCM or VCS).

Requires user role: ADMIN
Default value: On

**USAGE:**
xConfiguration SIP ListenPort: \texttt{ListenPort}

where
- \texttt{ListenPort}: Off/On
  - Off: Listening for incoming connections on the SIP TCP/UDP ports is turned off.
  - On: Listening for incoming connections on the SIP TCP/UDP ports is turned on.

xConfiguration SIP Proxy [1..4] Address

The Proxy Address is the manually configured address for the outbound proxy. It is possible to use a fully qualified domain name, or an IP address. The default port is 5060 for TCP and UDP but another one can be provided.

Requires user role: ADMIN
Default value: ""

**USAGE:**
xConfiguration SIP Proxy \texttt{n} Address: \texttt{"Address"}

where
- \texttt{n}: Index that identifies the proxy (maximum 4 proxys can be defined). Range: 1..4
- \texttt{Address}: String (0, 255)
  - A valid IPv4 address, IPv6 address or DNS name.

xConfiguration SIP Turn Server

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

Requires user role: ADMIN
Default value: ""

**USAGE:**
xConfiguration SIP Turn Server: \texttt{"Server"}

where
- \texttt{Server}: String (0, 255)
  - The preferred format is DNS SRV record (e.g. _turn._udp.<domain>), or it can be a valid IPv4 or IPv6 address.

xConfiguration SIP Turn UserName

Define the user name needed for accessing the TURN server.

Requires user role: ADMIN
Default value: ""

**USAGE:**
xConfiguration SIP Turn UserName: \texttt{"UserName"}

where
- \texttt{UserName}: String (0, 128)
  - A valid user name.

xConfiguration SIP Turn Password

Define the password needed for accessing the TURN server.

Requires user role: ADMIN
Default value: ""

**USAGE:**
xConfiguration SIP Turn Password: \texttt{"Password"}

where
- \texttt{Password}: String (0, 128)
  - A valid password.
xConfiguration SIP URI

The SIP URI (Uniform Resource Identifier) is the address that is used to identify the video system. The URI is registered and used by the SIP services to route inbound calls to the system. The SIP URI syntax is defined in RFC 3261.

Requires user role: ADMIN
Default value: ""

**Usage:**

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

where

- **URI**: String (0, 255)
  - An address (URI) that is compliant with the SIP URI syntax.

---

Standby configuration

xConfiguration Standby Control

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

Requires user role: ADMIN, INTEGRATOR
Default value: On

**Usage:**

```plaintext
xConfiguration Standby Control: Control
```

where

- **Control**: Off/On
  - Off: The system will not enter standby mode.
  - On: The system will enter standby mode when the Standby Delay has timed out.

Requires the Standby Delay to be set to an appropriate value.

xConfiguration Standby Delay

Define how long (in minutes) the system shall be in idle mode before it goes into standby mode.

Requires user role: ADMIN, INTEGRATOR
Default value: 10

**Usage:**

```plaintext
xConfiguration Standby Delay: Delay
```

where

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

Define the camera position after a restart of the codec.

Requires user role: ADMIN, INTEGRATOR, USER

Default value: RestoreCameraPosition

**USAGE:**

```
xConfiguration Standby BootAction: BootAction
where
  BootAction: None/DefaultCameraPosition/RestoreCameraPosition
```

- **None**: No action.
- **RestoreCameraPosition**: When the video system restarts, the camera returns to the position that it had before the restart.
- **DefaultCameraPosition**: When the video system restarts, the camera moves to the factory default position.

**xConfiguration Standby StandbyAction**

Define the camera position when going into standby mode.

Requires user role: ADMIN, INTEGRATOR

Default value: PrivacyPosition

**USAGE:**

```
xConfiguration Standby StandbyAction: StandbyAction
where
  StandbyAction: None/PrivacyPosition
```

- **None**: No action.
- **PrivacyPosition**: When the video system enters standby, the camera turns to a sideways position for privacy.

**xConfiguration Standby WakeupAction**

Define the camera position when leaving standby mode.

Requires user role: ADMIN, INTEGRATOR, USER

Default value: RestoreCameraPosition

**USAGE:**

```
xConfiguration Standby WakeupAction: WakeupAction
where
  WakeupAction: None/RestoreCameraPosition/DefaultCameraPosition
```

- **None**: No action.
- **RestoreCameraPosition**: When the video system leaves standby, the camera returns to the position that it had before entering standby.
- **DefaultCameraPosition**: When the video system leaves standby, the camera moves to the factory default position.
SystemUnit configuration

xConfiguration SystemUnit Name
Define the system name. The system name will be sent as the hostname in a DHCP request and when the codec is acting as an SNMP Agent.

Requires user role: ADMIN
Default value: ""

USAGE:

xConfiguration SystemUnit Name: "Name"

where

   Name: String (0, 50)

   Define the system name.

Time configuration

xConfiguration Time TimeFormat
Define the time format.

Requires user role: ADMIN, USER
Default value: 24H

USAGE:

xConfiguration Time TimeFormat: TimeFormat

where

   TimeFormat: 24H/12H

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

xConfiguration Time DateFormat
Define the date format.

Requires user role: ADMIN, USER
Default value: DD_MM_YY

USAGE:

xConfiguration Time DateFormat: DateFormat

where

   DateFormat: DD_MM_YY/MM_DD_YY/YY_MM_DD

   DD_MM_YY: The date January 30th 2010 will be displayed: 30.01.10
   MM_DD_YY: The date January 30th 2010 will be displayed: 01.30.10
   YY_MM_DD: The date January 30th 2010 will be displayed: 10.01.30
xConfiguration Time Zone

Define the time zone for the geographical location of the video system. The information in the value space is from the tz database, also called the IANA Time Zone Database.

Requires user role: ADMIN, INTEGRATOR, USER

Default value: Etc/UTC

USAGE:

xConfiguration Time Zone: Zone

where

**UserInterface configuration**

**xConfiguration UserInterface ContactInfo Type**

Choose which type of contact information to show in the status field in the upper left corner of the display and Touch controller.

Requires user role: ADMIN

Default value: Auto

**USAGE:**

```
xConfiguration UserInterface ContactInfo Type: Type
```

where

- **Type**: Auto/None/IPv4/IPv6/SipUri/SystemName/DisplayName

  - **Auto**: Show the address which another system can dial to reach this system. The address depends on the system registration.

  - **None**: Do not show any contact information.

  - **IPv4**: Show the system's IPv4 address.

  - **IPv6**: Show the system's IPv6 address.

  - **SipUri**: Show the system's SIP URI (refer to the SIP URI setting).

  - **SystemName**: Show the system’s name (refer to the SystemUnit Name setting).

  - **DisplayName**: Show the system's display name (refer to the SIP DisplayName setting).

**xConfiguration UserInterface KeyTones Mode**

You can configure the system to make a keyboard click sound effect (key tone) when pressing a key on the remote control, or when typing text or numbers on the Touch controller.

Requires user role: ADMIN, USER

Default value: On

**USAGE:**

```
xConfiguration UserInterface KeyTones Mode: Mode
```

where

- **Mode**: Off/On

  - **Off**: There is no key tone sound effect.

  - **On**: The key tone sound effect is turned on.
xConfiguration UserInterface Language

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

Requires user role: ADMIN, USER
Default value: English

**USAGE:**
xConfiguration UserInterface Language: $Language$

where

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

Select a language from the list.

xConfiguration UserInterface OSD Output

Define on which monitor the on-screen menus, information and indicators (OSD) should be displayed. The system supports only one monitor, so this value is fixed and cannot be changed.

Requires user role: ADMIN, INTEGRATOR
Default value: 1

**USAGE:**
xConfiguration UserInterface OSD Output: $Output$

where

$Output$: 1

UserManagement configuration

xConfiguration UserManagement LDAP Mode

The video system supports the use of an LDAP (Lightweight Directory Access Protocol) server as a central place to store and validate user names and passwords. Use this setting to configure whether or not to use LDAP authentication. Our implementation is tested for the Microsoft Active Directory (AD) service.

Requires user role: ADMIN
Default value: Off

**USAGE:**
xConfiguration UserManagement LDAP Mode: $Mode$

where

$Mode$: Off/On

Off: LDAP authentication is not allowed.

On: For client certificate verification to work when LDAP authentication is enabled, the codec requires a CA (Certificate Authority) certificate, and the user must have a Client Certificate that matches their user distinguishing name (DN) in the active directory (AD).

xConfiguration UserManagement LDAP Server Address

Set the IP address or hostname of the LDAP server.

Requires user role: ADMIN
Default value: ""

**USAGE:**
xConfiguration UserManagement LDAP Server Address: "$Address$

where

$Address$: String (0, 255)

A valid IPv4 address, IPv6 address or hostname.
xConfiguration UserManagement LDAP Server Port

Set the port to connect to the LDAP server on. If set to 0, use the default for the selected protocol (see the UserManagement LDAP Encryption setting).

Requires user role: ADMIN
Default value: 0

**USAGE:**
xConfiguration UserManagement LDAP Server Port: Port
where
  Port: Integer (0..65535)
  The LDAP server port number.

xConfiguration UserManagement LDAP Encryption

Define how to secure the communication between the video system and the LDAP server. You can override the port number by using the UserManagement LDAP Server Port setting.

Requires user role: ADMIN
Default value: LDAPS

**USAGE:**
xConfiguration UserManagement LDAP Encryption: Encryption
where
  Encryption: LDAPS/None/STARTTLS
  LDAPS: Connect to the LDAP server on port 636 over TLS (Transport Layer Security).
  None: Connect to LDAP server on port 389 with no encryption.
  STARTTLS: Connect to LDAP server on port 389, then send STARTTLS to enable TLS encryption.

xConfiguration UserManagement LDAP MinimumTLSVersion

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

Requires user role: ADMIN
Default value: TLSv1.2

**USAGE:**
xConfiguration UserManagement LDAP MinimumTLSVersion: MinimumTLSVersion
where
  MinimumTLSVersion: TLSv1.0/TLSv1.1/TLSv1.2
  TLSv1.0: Support TLS version 1.0 or higher.
  TLSv1.1: Support TLS version 1.1 or higher.
  TLSv1.2: Support TLS version 1.2 or higher.

xConfiguration UserManagement LDAP VerifyServerCertificate

When the video system connects to an LDAP server, the server will identify itself to the video system by presenting its certificate. Use this setting to determine whether or not the video system will verify the server certificate.

Requires user role: ADMIN
Default value: On

**USAGE:**
xConfiguration UserManagement LDAP VerifyServerCertificate: VerifyServerCertificate
where
  VerifyServerCertificate: Off/On
  Off: The video system will not verify the LDAP server's certificate.
  On: The video system must verify that the LDAP server's certificate is signed by a trusted Certificate Authority (CA). The CA must be on the list of trusted CAs that are uploaded to the system in advance. Use the video system's web interface to manage the list of trusted CAs (see more details in the administrator guide).
xConfiguration UserManagement LDAP Admin Filter
The LDAP filter is used to determine which users should be granted administrator privileges. If set, this setting takes precedence over the UserManagement LDAP Admin Group setting.

Requires user role: ADMIN
Default value: ""

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

xConfiguration UserManagement LDAP Admin Group
Members of this AD (Active Directory) group will be given administrator access. This setting is a shorthand for saying (memberOf:1.2.840.113556.1.4.1941:=<group name>). If UserManagement LDAP Admin Filter is set, this setting is ignored.

Requires user role: ADMIN
Default value: ""

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

xConfiguration UserManagement LDAP Attribute
The attribute used to map to the provided username. If not set, sAMAccountName is used.

Requires user role: ADMIN
Default value: ""

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

xConfiguration Video DefaultMainSource
Define which video input source shall be used as the main video source.
Requires user role: ADMIN, USER
Default value: 1

**USAGE:**
xConfiguration Video DefaultMainSource: DefaultMainSource
where
DefaultMainSource: 1
Set the source to be used as the main video source.

xConfiguration Video Input Connector [1..3] CameraControl CameraId
The camera ID is a unique identifier of the cameras that are connected to the video input.
Requires user role: ADMIN, INTEGRATOR
Default value: 1

**USAGE:**
xConfiguration Video Input Connector n CameraControl CameraId: CameraId
where
n: Unique ID that identifies the video input connector. Range: 1..3
CameraId: 1
The camera ID is fixed and cannot be changed.

xConfiguration Video Input Connector [1..3] CameraControl Mode
Define whether the camera that is connected to this video input connector can be controlled or not.
Note that camera control is not available for Connector 2 (HDMI) and Connector 3 (VGA).
Requires user role: ADMIN, INTEGRATOR
Default value: Connector 1: On   Connector 2,3: Off

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

xConfiguration Video Input Connector [1..3] InputSourceType
Select which type of input source is connected to the video input.
Note that Connector 1 is the system's integrated camera.
Requires user role: ADMIN, INTEGRATOR
Default value: Connector 1: camera   Other connectors: PC

**USAGE:**
xConfiguration Video Input Connector n InputSourceType: InputSourceType
where
n: Unique ID that identifies the video input connector. Range: 1..3
InputSourceType: Connector 1: camera   Other connectors: PC/camera/desktop/document_camera/mediaplayer/whiteboard/other
Camera: Use this when a camera is connected to the video input.
Desktop: Note: The Desktop option is not supported in software version CE9.0.1.
Document_camera: Use this when a document camera is connected to the video input.
Mediaplayer: Use this when a media player is connected to the video input.
PC: Use this when a computer is connected to the video input.
Whiteboard: Use this when a whiteboard camera is connected to the video input.
Other: Use this when the other options do not match.
xConfiguration Video Input Connector [1..3] Name

Define a name for the video input connector.

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

**USAGE:**

```
xConfiguration Video Input Connector n Name: "Name"
```

where

- **n**: Unique ID that identifies the video input connector. Range: 1..3
- **Name**: String (0, 50)

  Name for the video input connector.

xConfiguration Video Input Connector [2..3] Quality

When encoding and transmitting video there is a trade-off between high resolution and high frame rate. For some video sources it is more important to transmit high frame rate than high resolution and vice versa. This setting specifies whether to give priority to high frame rate or to high resolution.

Requires user role: ADMIN, INTEGRATOR
Default value: Sharpness

**USAGE:**

```
xConfiguration Video Input Connector n Quality: Quality
```

where

- **n**: Unique ID that identifies the video input connector. Range: 2..3
- **Quality**: Motion/Sharpness

  - **Motion**: Gives the highest possible frame rate. Used when there is a need for higher frame rates, typically when a large number of participants are present or when there is a lot of motion in the picture.
  - **Sharpness**: Gives the highest possible resolution. Used when you want the highest quality of detailed images and graphics.

xConfiguration Video Input Connector [2..3] PresentationSelection

Define how the video system will behave when you connect a presentation source to the video input.

If the video system is in standby mode, it will wake up when you connect a presentation source. Sharing the presentation with the far end requires additional action (select Share on the user interface) except when this setting is set to AutoShare.

Requires user role: ADMIN, INTEGRATOR
Default value: OnConnect

**USAGE:**

```
xConfiguration Video Input Connector n PresentationSelection: PresentationSelection
```

where

- **n**: Unique ID that identifies the video input connector. Range: 2..3
- **PresentationSelection**: AutoShare/Desktop/Manual/OnConnect

  - **AutoShare**: While in a call, the content on the video input will automatically be presented to the far end as well as on the local screen when you connect the cable, or when the source is activated otherwise (for example when a connected computer wakes up from sleep mode). You do not have to select Share on the user interface. If a presentation source is already connected when you make or answer a call, you have to manually select Share on the user interface.

  - **Desktop**: Note: The Desktop option is not supported in software version CE9.0.1.

  - **Manual**: The content on the video input will not be presented on the screen until you select Share from the user interface.

  - **OnConnect**: The content on the video input will be presented on screen when you connect the cable, or when the source is activated otherwise (for example when a connected computer wakes up from sleep mode). Otherwise, the behavior is the same as in manual mode.
xConfiguration Video Input Connector [1..3] Visibility

Define the visibility of the video input connector in the menus on the user interface. Note that Connector 1 is the system’s integrated camera, which is not available as a presentation source.

Requires user role: ADMIN, INTEGRATOR
Default value: Connector 1: Never   Connector 2: Always   Connector 3: OnConnect

USAGE:
xConfiguration Video Input Connector n Visibility: Visibility where
  n: Unique ID that identifies the video input connector. Range: 1..3
  Visibility: Connector 1: Never   Connector 2, 3: Always/IfSignal/Never

  Always: The menu selection for the video input connector will always be visible on the user interface.
  IfSignal: The menu selection for the video input connector will only be visible when something is connected to the video input.
  Never: The input source is not expected to be used as a presentation source, and will not show up on the user interface.

xConfiguration Video Monitors

Define the monitor layout mode. Note that this video system supports only one monitor, so this value is fixed and cannot be changed.

Requires user role: ADMIN, INTEGRATOR
Default value: Single

USAGE:
xConfiguration Video Monitors: Monitors where
  Monitors: Single

    Single: The layout is shown on the video system’s monitor.

xConfiguration Video Output Connector [1] CEC Mode

This video output (HDMI) supports Consumer Electronics Control (CEC). When this setting is On, the system will use CEC to set the monitor in standby when the system itself enters standby. Likewise the system will wake up the monitor when the system itself wakes up from standby. For this to happen, the monitor that is connected to the output must be CEC compatible and CEC must be configured on the monitor.

Note that the different manufacturers use different marketing names for CEC, for example Anynet+ (Samsung); Aquos Link (Sharp); BRAVIA Sync (Sony); HDMI-CEC (Hitachi); Kuro Link (Pioneer); CE-Link and Regza Link (Toshiba); RIHD (Onkyo); HDAVI Control, EZ-Sync, ViERa Link (Panasonic), EasyLink (Philips), and NetCommand for HDMI (Mitsubishi).

Requires user role: ADMIN, INTEGRATOR
Default value: Off

USAGE:
xConfiguration Video Output Connector n CEC Mode: Mode where
  n: Unique ID that identifies the video output connector. Range: 1..1
  Mode: Off/On

    Off: Disable CEC control
    On: Enable CEC control
xConfiguration Video Output Connector [1] OverscanLevel

Some monitors may not present the entire image that they receive. This means that the outer parts of the image that is sent from the video system may be cut off when displayed on the monitor.

Use this setting to instruct the video system not to use the outer part of the available frame. This part might be cut off by the monitor. Both the video and messages on screen will be scaled in this case.

Requires user role: ADMIN
Default value: None

 USAGE:
 xConfiguration Video Output Connector n OverscanLevel: OverscanLevel
 where
 n: Unique ID that identifies the video output connector. Range: 1..1
 OverscanLevel: None/Medium/High
 - None: The video system will use all of the output resolution.
 - Medium: The video system will not use the outer 3% of the output resolution.
 - High: The video system will not use the outer 6% of the output resolution.

xConfiguration Video Output Connector [1] Resolution

Define the resolution and refresh rate for the connected screen. This value is fixed and cannot be changed.

Default value: Auto

 USAGE:
 xConfiguration Video Output Connector n Resolution: Resolution
 where
 n: Unique ID that identifies the video output connector. Range: 1..1
 Resolution: Auto
 - Auto: The system will automatically try to set the optimal resolution based on negotiation with the connected monitor.

xConfiguration Video Presentation DefaultSource

Define which video input source to use as a default presentation source. This setting may be used by the API and 3rd party user interfaces. It is not relevant when using the user interfaces provided by Cisco.

Requires user role: ADMIN, USER
Default value: 2

 USAGE:
 xConfiguration Video Presentation DefaultSource: DefaultSource
 where
 DefaultSource: 2
 - The video input source to use as default presentation source.

xConfiguration Video Selfview Default Mode

Define if the main video source (self-view) shall be displayed on screen after a call. The position and size of the self-view window is determined by the Video Selfview Default PIPPosition and the Video Selfview Default FullscreenMode settings respectively.

Requires user role: ADMIN, INTEGRATOR
Default value: Current

 USAGE:
 xConfiguration Video Selfview Default Mode: Mode
 where
 Mode: 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.
xConfiguration Video Selfview Default FullscreenMode

Define if the main video source (self-view) shall be shown in full screen or as a small picture-in-picture (PiP) after a call. The setting only takes effect when self-view is switched on (see the Video Selfview Default Mode setting).

Requires user role: ADMIN, INTEGRATOR
Default value: Current

USAGE:
`xConfiguration Video Selfview Default FullscreenMode: FullscreenMode`

where
- `FullscreenMode`: 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.

xConfiguration Video Selfview Default PIPPosition

Define the position on screen of the small self-view picture-in-picture (PiP) after a call. The setting only takes effect when self-view is switched on (see the Video Selfview Default Mode setting) and fullscreen view is switched off (see the Video Selfview Default FullscreenMode setting).

Requires user role: ADMIN, INTEGRATOR
Default value: Current

USAGE:
`xConfiguration Video Selfview Default PIPPosition: PIPPosition`

where
- `PIPPosition`: Current/UpperLeft/UpperCenter/UpperRight/CentreLeft/CentreRight/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.
  - CentreLeft: The self-view PiP will appear in the center left position.
  - CentreRight: The self-view PiP will appear in the center right position.
  - LowerLeft: The self-view PiP will appear in the lower left corner of the screen.
  - LowerRight: The self-view PiP will appear in the lower right corner of the screen.
xConfiguration Video Selfview OnCall Mode

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

Requires user role: ADMIN, INTEGRATOR
Default value: On

**USAGE:**

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

xConfiguration Video Selfview OnCall Duration

This setting only has an effect when the Video Selfview OnCall Mode setting is switched On. In this case, the number of seconds set here determines for how long self-view is shown before it is automatically switched off.

Requires user role: ADMIN, INTEGRATOR
Default value: 10

**USAGE:**

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

xCommand commands
Description of the xCommand commands

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

We recommend you visit our web site regularly for updated versions of the manual.
Go to: http://www.cisco.com/go/sx-docs

Audio commands
- xCommand Audio Diagnostics MeasureDelay
- xCommand Audio Microphones Mute
- xCommand Audio Microphones ToggleMute
- xCommand Audio Microphones Unmute
- xCommand Audio Sound Play
- xCommand Audio Sound Stop
- xCommand Audio SoundsAndAlerts Ringtone List
- xCommand Audio SoundsAndAlerts Ringtone Play
- xCommand Audio Volume Decrease
- xCommand Audio Volume Increase
- xCommand Audio Volume Mute
- xCommand Audio Volume Set
- xCommand Audio Volume SetToDefault
- xCommand Audio Volume ToggleMute
- xCommand Audio Volume Unmute

Bookings commands
- xCommand Bookings Clear
- xCommand Bookings Get
- xCommand Bookings List

Call commands
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Audio commands

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

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

Requires user role: ADMIN, USER

USAGE:
```
xCommand Audio Diagnostics MeasureDelay [MeasurementLength: MeasurementLength] [Output: Output] [Volume: Volume]
```
where
- **MeasurementLength**: Integer (1..100)
  - The length of the measurement in number of seconds. In a noisy environment a longer measurement time will give a more reliable and robust result.
- **Output**: HDMI/Line/Internal/All
  - HDMI: Measure the delay of the device connected to the HDMI output.
  - Line: Measure the delay of the device connected to the Line output (only available on video systems that have a Line output).
  - Internal: Measure the delay of the internal loudspeaker (only available on video systems that have an internal loudspeaker).
  - All: Will measure the maximum delay of all outputs.
- **Volume**: Integer (1..50)
  - The volume for the test signal. In a noisy environment a higher volume gives more reliable and robust results.

xCommand Audio Microphones Mute
Mute all microphones.

Requires user role: INTEGRATOR, USER

USAGE:
```
xCommand Audio Microphones Mute
```

xCommand Audio Microphones ToggleMute
Toggle the microphone between muted and unmuted.

Requires user role: INTEGRATOR, USER

USAGE:
```
xCommand Audio Microphones ToggleMute
```

xCommand Audio Microphones Unmute
Unmute all microphones.

Requires user role: INTEGRATOR, USER

USAGE:
```
xCommand Audio Microphones Unmute
```

xCommand Audio Sound Play
Play a specified audio sound.

Requires user role: INTEGRATOR, USER

USAGE:
```
xCommand Audio Sound Play Sound: Sound
```
where
- **Sound**: Bump/Busy/CallDisconnect/CallInitiate/CallWaiting/Dial/KeyInput/KeyTone/Nav/NavBack/Notification/OK/PresentationConnect/Ringing/SpecialInfo/TelephoneCall/VideoCall/Voice
  - Choose which ringtone to play.
xCommand Audio Sound Stop

Stop playing audio sound.

Requires user role: INTEGRATOR, USER

USAGE:

xCommand Audio Sound Stop

xCommand Audio SoundsAndAlerts Ringtone List

List all available ringtones. Use the xConfiguration Audio SoundsAndAlerts RingTone setting to choose a ringtone.

Requires user role: INTEGRATOR, USER

USAGE:

xCommand Audio SoundsAndAlerts Ringtone List

xCommand Audio SoundsAndAlerts Ringtone Play

Play one of the available ringtones. Use the xCommand Audio SoundsAndAlerts Ringtone List command to get a list of the available ringtones.

Requires user role: INTEGRATOR, USER

USAGE:

xCommand Audio SoundsAndAlerts Ringtone Play

RingTone: String (1, 100)

The name of the ringtone.

xCommand Audio Volume Decrease

Decrease the volume on the endpoint. By default, the volume is increased by 5 steps (each step is 0.5 dB). Use the Steps parameter if you want to override the default behavior.

Requires user role: ADMIN, USER

USAGE:

xCommand Audio Volume Decrease [Steps: Steps]

Steps: Integer (1..10)

Choose the number of steps to decrease the volume with. One step is 0.5 dB.

xCommand Audio Volume Increase

Increase the volume on the endpoint. By default, the volume is increased by 5 steps (each step is 0.5 dB). Use the Steps parameter if you want to override the default behavior.

Requires user role: ADMIN, USER

USAGE:

xCommand Audio Volume Increase [Steps: Steps]

Steps: Integer (1..10)

Choose the number of steps to increase the volume with. One step is 0.5 dB.

xCommand Audio Volume Mute

Mute the volume on the endpoint.

Requires user role: ADMIN, USER

USAGE:

xCommand Audio Volume Mute
xCommand Audio Volume Set
Set the volume on the endpoint to a specified level.
Requires user role: ADMIN, USER

USAGE:
xCommand Audio Volume Set Level: Level
where
  Level: Integer (0..100)
  Select the gain level. 70 equals 0 dB gain, and 100 equals 15 dB gain.

xCommand Audio Volume SetToDefault
Set the volume to the default level that is defined in the xConfiguration Audio DefaultVolume setting.
Requires user role: ADMIN, USER

USAGE:
xCommand Audio Volume SetToDefault

xCommand Audio Volume ToggleMute
Toggle the loudspeaker between muted and unmuted.
Requires user role: ADMIN, USER

USAGE:
xCommand Audio Volume ToggleMute

xCommand Audio Volume Unmute
Set the volume on the endpoint back on after muting.
Requires user role: ADMIN, USER

USAGE:
xCommand Audio Volume Unmute

xCommand Audio VuMeter Start
Start a VU meter to show the audio signal level on the specified connector. You have to specify both the connector’s type and number (ConnectorType, ConnectorId) to uniquely identify the connector. The VU meter measures the input level for frequencies below 20 kHz.
Requires user role: ADMIN, USER

USAGE:
xCommand Audio VuMeter Start ConnectorID: ConnectorID ConnectorType: ConnectorType
where
  ConnectorID: Integer (1..2) for Microphone; Integer (1..1) for HDMI
  Select a connector number. Together with the ConnectorType it uniquely identifies the connector. Microphone [1] is the built-in microphone, and Microphone [2] is a microphone connected to the mini-jack input connector.
  ConnectorType: HDMI/Microphone
  Select the connector type.

xCommand Audio VuMeter Stop
Stop the VU meter on the specified connector. You have to specify both the connector’s type and number (ConnectorType, ConnectorId) to uniquely identify the connector.
Requires user role: ADMIN, USER

USAGE:
xCommand Audio VuMeter Stop ConnectorID: ConnectorID ConnectorType: ConnectorType
where
  ConnectorID: Integer (1..2) for Microphone; Integer (1..1) for HDMI
  Select a connector number. Together with the ConnectorType it uniquely identifies the connector. Microphone [1] is the built-in microphone, and Microphone [2] is a microphone connected to the mini-jack input connector.
  ConnectorType: HDMI/Microphone
  Select the connector type.
xCommand Audio VuMeter StopAll
Stop all VU meters.
Requires user role: ADMIN, USER

**USAGE:**
```
xCommand Audio VuMeter StopAll
```

Bookings commands

xCommand Bookings Clear
Clear the current stored list of bookings.
Requires user role: ADMIN, USER

**USAGE:**
```
xCommand Bookings Clear
```

xCommand Bookings Get
Get the booking information for a specific ID.
Requires user role: ADMIN, USER

**USAGE:**
```
xCommand Bookings Get Id: "Id"
where
  Id: String (0, 128)
    The booking ID of a call or conference.
```
xCommand Bookings List

List the stored bookings for the system. The list of booking details is received from the management system. All parameters are optional, and can be used to limit the search result. If no parameters are set, past, present and future bookings are all listed. To avoid listing bookings from yesterday and before, use DayOffset = 0.

Requires user role: ADMIN, USER

**USAGE:**

```bash
xCommand Bookings List [Days: Days] [DayOffset: DayOffset] [Limit: Limit] [Offset: Offset]
```

where

- **Days**: Integer (1..365)
  - Number of days to retrieve bookings from.
- **DayOffset**: Integer (0..365)
  - Which day to start the search from (today: 0, tomorrow: 1...).
- **Limit**: Integer (1..65534)
  - Max number of bookings to list.
- **Offset**: Integer (0..65534)
  - Offset number of bookings for this search.

Call commands

xCommand Call Accept

Accept an incoming call. If no CallId is specified, all incoming calls are accepted.

Requires user role: ADMIN, USER

**USAGE:**

```bash
xCommand Call Accept [CallId: CallId]
```

where

- **CallId**: Integer (0..65534)
  - The CallId is returned when the xCommand Dial command is run. During the call you can run the xStatus Call command to see the CallId.

xCommand Call Disconnect

Disconnect a call.

Requires user role: ADMIN, USER

**USAGE:**

```bash
xCommand Call Disconnect [CallId: CallId]
```

where

- **CallId**: Integer (0..65534)
  - The CallId is returned when the xCommand Dial command is run. During the call you can run the xStatus Call command to see the CallId.
xCommand Call DTMFSend
Send DTMF tones to the far end.
Requires user role: ADMIN, USER

**USAGE:**
```
xCommand Call DTMFSend [CallId: CallId] DTMFString: "DTMFString"
```
where  
**CallId**: Integer (0..65534)  
The CallId is returned when the xCommand Dial command is run. During the call you can run the xStatus Call command to see the CallId.

**DTMFString**: String (0.32)  
Enter the DTMF string.

xCommand Call FarEndControl Camera Move
Move the far end camera (the remote camera).
NOTE: The far end camera moves in the specified direction until the stop command (ref: xCommand FarEndControl Camera Stop) is issued.
Requires user role: ADMIN, USER

**USAGE:**
```
xCommand Call FarEndControl Camera Move [CallId: CallId] Value: Value
```
where  
**CallId**: Integer (0..65534)  
The CallId is returned when the xCommand Dial command is run. During the call you can run the xStatus Call command to see the CallId.

**Value**: Left/Right/Up/Down/ZoomIn/ZoomOut  
Select the action for how to move the camera.

xCommand Call FarEndControl Camera Stop
Stop the far end camera after the xCommand FarEndControl Camera Move has been issued.
Requires user role: ADMIN, USER

**USAGE:**
```
xCommand Call FarEndControl Camera Stop [CallId: CallId]
```
where  
**CallId**: Integer (0..65534)  
The CallId is returned when the xCommand Dial command is run. During a call you can run the xStatus Call command to see the CallId.

xCommand Call FarEndControl RoomPreset Activate
While in a call, this command is used to activate a preset on the far end codec. The preset covers the far end codec’s camera positions and input video switcher settings.
The preset must be stored on the far end codec beforehand, either by using the xCommand Preset Store command locally on the far end codec, or by using the xCommand FarEndControl Preset Store command from a remote codec.
Note: The far end codec's xConfiguration Conference FarEndControl Mode setting must be switched On for the FarEndControl commands to work.
Requires user role: ADMIN, USER

**USAGE:**
```
xCommand Call FarEndControl RoomPreset Activate [CallId: CallId] PresetId: PresetId
```
where  
**CallId**: Integer (0..65534)  
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 a call you can run the xStatus Call command to see the CallId.

**PresetId**: Integer (1..15)  
The ID of the preset that is stored on the far end codec.
xCommand Call FarEndControl Source Select
Select which video input source to use as the main source on the far end system.
Requires user role: ADMIN, USER

**USAGE:**
xCommand Call FarEndControl Source Select [CallId: \[CallId\] SourceId: \[SourceId\] where
- **CallId**: Integer (0..65534)
  - The CallID is returned when the xCommand Dial command is run. During a call you can run the xStatus Call command to see the CallId.
- **SourceId**: Integer (0..15)
  - Select a video input source on the far end.

xCommand Call Forward
Specifies what number or URI you want to forward your incoming calls to. The display name is a local reference for the forwarded destination. A message, together with the local reference, is shown on screen when you have configured the system to forward all calls.
Requires user role: ADMIN, USER

**USAGE:**
xCommand Call Forward DisplayName: \"\[DisplayName\]\" Number: \"\[Number\]\" where
- **DisplayName**: String (0, 255)
  - The local reference for the forwarded destination.
- **Number**: String (0, 255)
  - The directory number or URI which you want to forward the incoming calls to.

xCommand Call Hold
Put a call on hold.
Requires user role: ADMIN, USER

**USAGE:**
xCommand Call Hold [CallId: \[CallId\] [Reason: \[Reason\] where
- **CallId**: Integer (0..65534)
  - The CallID is returned when the xCommand Dial command is run. During a call you can run the xStatus Call command to see the CallId.
- **Reason**: Conference/Transfer/Other
  - Internal usage only.

xCommand Call Ignore
Turns off the ringtone for the incoming call. The call can still be answered.
Requires user role: ADMIN, USER

**USAGE:**
xCommand Call Ignore CallId: \[CallId\] where
- **CallId**: Integer (0..65534)
  - The CallID is returned when the xCommand Dial command is run. During a call you can run the xStatus Call command to see the CallId.

xCommand Call Join
Internal usage only.
Requires user role: ADMIN, USER

**USAGE:**
xCommand Call Join CallId: \[CallId\] where
- **CallId**: Integer (0..65534)
xCommand Call Reject
Reject incoming call. If no call id is specified, all incoming calls are rejected.
Requires user role: ADMIN, USER

USAGE:
xCommand Call Reject [CallId: CallId]
where
  CallId: Integer (0..65534)
The CallID is returned when the xCommand Dial command is run. During a call you can run the xStatus Call command to see the CallId.

xCommand Call Resume
Resume a call that have been put on hold.
Requires user role: ADMIN, USER

USAGE:
xCommand Call Resume [CallId: CallId]
where
  CallId: Integer (0..65534)
The CallID is returned when the xCommand Dial command is run. During a call you can run the xStatus Call command to see the CallId.

xCommand Call UnattendedTransfer
Transfers an ongoing call to another participant. Fully supported for SIP calls only.
Requires user role: ADMIN, USER

USAGE:
xCommand Call UnattendedTransfer CallId: CallId Number: "Number"
where
  CallId: Integer (0..65534)
The CallID is returned when the xCommand Dial command is run. During a call you can run the xStatus Call command to see the CallId.

  Number: String (0, 255)
The number the call is transfered to.

CallHistory commands

xCommand CallHistory AcknowledgeAllMissedCalls
Turns off the missed calls indicator on the touch controller for all missed calls.
Requires user role: ADMIN, USER

USAGE:
xCommand CallHistory AcknowledgeAllMissedCalls

xCommand CallHistory AcknowledgeMissedCall
Turns off the missed calls indicator on the touch controller for the specified call.
Requires user role: ADMIN, USER

USAGE:
xCommand CallHistory AcknowledgeMissedCall CallHistoryId: CallHistoryId
where
  CallHistoryId: Integer (1..2147483647)
  CallHistoryId for the call in question. Run xCommand CallHistory Get to get the id number.
  AcknowledgeConsecutiveDuplicates: False/True
  You can include or exclude all surrounding calls with duplicate information.

xCommand CallHistory DeleteAll
Deletes all information on previous calls.
Requires user role: ADMIN, USER

USAGE:
xCommand CallHistory DeleteAll [Filter: Filter]
where
  Filter: All/Missed/Placed/Received
  You can filter which calls to delete.
**xCommand CallHistory DeleteEntry**

Deletes all information on the specified call.

Requires user role: ADMIN, USER

**USAGE:**

```plaintext
xCommand CallHistory DeleteEntry CallHistoryId: CallHistoryId [AcknowledgeConsecutiveDuplicates: AcknowledgeConsecutiveDuplicates]
```

where

- **CallHistoryId**: Integer (1..2147483647)
  - CallHistoryId for the call in question. Run xCommand CallHistory Get to get the id number.

- **AcknowledgeConsecutiveDuplicates**: False/True
  - You can include or exclude all surrounding calls with duplicate information.

**xCommand CallHistory Get**

Retrieve all information on previous calls made on the video system.

Requires user role: ADMIN, USER

**USAGE:**

```plaintext
xCommand CallHistory Get [Filter: Filter] [Offset: Offset] [Limit: Limit] [DetailLevel: DetailLevel] [SearchString: "SearchString"] [CallHistoryId: CallHistoryId]
```

where

- **Filter**: All/Missed/AnsweredElsewhere/Forwarded/Placed/NoAnswer/Received/Rejected/UnacknowledgedMissed
  - You can filter which calls to retrieve.

- **Offset**: Integer (0..65534)
  - Sets the call from which to start.

- **Limit**: Integer (0..65534)
  - Defines the amount of calls in the output.

- **DetailLevel**: Basic/Full
  - Sets the level of detail for the information on these calls.

- **SearchString**: String (0, 255)
  - Allows you to set the command to apply to a specified display name or call back number.

- **CallHistoryId**: Integer (0..65534)
  - CallHistoryId for the call in question.
xCommand CallHistory Recents

Retrieve aggregated information on previous calls made on the video system.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand CallHistory Recents [Filter: Filter] [Offset: Offset] [Limit: Limit] [DetailLevel: DetailLevel] [SearchString: "SearchString"] [CallHistoryId: CallHistoryId] [Order: Order]
```

- **Filter**: All/Missed/AnsweredElsewhere/Forwarded/Placed/NoAnswer/Received/Rejected/UnacknowledgedMissed
  - You can filter which calls to retrieve.
- **Offset**: Integer (0..65534)
  - Sets the call from which to start.
- **Limit**: Integer (0..65534)
  - Defines the amount of calls in the output.
- **DetailLevel**: Basic/Full
  - Sets the level of detail for the information on these calls.
- **SearchString**: String (0, 255)
  - Allows you to set the command to apply to a specified display name or call back number.
- **CallHistoryId**: Integer (0.65534)
  - CallHistoryId for the call in question.
- **Order**: OccurrenceTime/OccurrenceFrequency
  - Define the order in which the previous calls are presented.

Camera commands

xCommand Camera PositionReset

Reset the camera position to default position.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Camera PositionReset [Axis: Axis] CameraId: CameraId
```

- **Axis**: All/Focus/PanTilt/Zoom
  - Select which motor to reset. If not specified all are reset.
- **CameraId**: Integer (1..1)
  - The ID of the camera preset you want to reset.

xCommand Camera PositionSet

Set the camera position.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Camera PositionSet CameraId: CameraId [Focus: Focus] [Pan: Pan] [Tilt: Tilt] [Zoom: Zoom]
```

- **CameraId**: Integer (1..1)
  - The ID of the camera preset you want to reset.
- **Focus**: Integer (0..65535)
  - Focus the camera near or far.
- **Pan**: Integer (-10000..10000)
  - Move the camera to the left or right.
- **Tilt**: Integer (-2500..2500)
  - Move the camera up or down.
- **Zoom**: Integer (0..8500)
  - Zoom in or out.
xCommand Camera Preset Activate

Activate one of the stored camera presets.
Note that the xCommand Camera Preset commands applies to an individual camera. This is in contrast to the xCommand Preset commands where a single preset covers ALL connected cameras plus the Video Input switcher settings.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Camera Preset Activate PresetId: PresetId
```

 where

- **PresetId**: Integer (1..35)
  - The ID of the camera preset you want to activate.

xCommand Camera Preset ActivateDefaultPosition

Sets the cameras to their default position, if one is defined. The default position is defined by xCommand Camera Preset Store or by xCommand Camera Preset Edit. Only one default position can be defined per camera.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Camera Preset ActivateDefaultPosition [CameraId: CameraId]
```

 where

- **CameraId**: Integer (1..1)
  - The ID of the camera preset you want to activate. If CameraId is not specified, all cameras will be set in their respective default position, if one is defined.

xCommand Camera Preset Edit

Edit a stored camera preset. You can change the name of the camera preset and its position in the list that is returned by the xCommand Camera Preset List command. You can also change whether or not this preset is the default position for the associated camera.

Note that the xCommand Camera Preset commands applies to an individual camera. This is in contrast to the xCommand Preset commands where a single preset covers ALL connected cameras and the Video Input switcher settings.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Camera Preset Edit PresetId: PresetId [ListPosition: ListPosition] [Name: "Name"] [DefaultProsition: DefaultProsition]
```

 where

- **PresetId**: Integer (1..35)
  - The ID of the camera preset you want to edit.

- **ListPosition**: Integer (1..35)
  - The position in the list returned by the xCommand Camera Preset List command.

- **Name**: String (0, 255)
  - The name of the camera preset. It will be used in the list returned by the xCommand Camera Preset List command.

- **DefaultProsition**: False/True
  - Defines whether or not this preset is the default position for the associated camera.
  - Note that each camera can only have one default position, so if set, the old default preset will automatically be marked as not default.
xCommand Camera Preset List

List information about available camera presets. Note that the xCommand Camera Preset commands applies to an individual camera. This is in contrast to the xCommand Preset commands where a single preset covers ALL connected cameras plus the Video Input switcher settings.

Requires user role: ADMIN, USER

**USAGE:**
```
xCommand Camera Preset List CameraId: CameraId [DefaultPosition: DefaultPosition]
```
where
- **CameraId**: Integer (1..1)
  - Only list presets for the specified camera.
- **DefaultPosition**: False/True
  - List default positions only, or only those that are not default positions.

xCommand Camera Preset Remove

Remove a camera preset. Note that the xCommand Camera Preset commands applies to an individual camera. This is in contrast to the xCommand Preset commands where a single preset covers ALL connected cameras plus the Video Input switcher settings.

Requires user role: ADMIN, USER

**USAGE:**
```
xCommand Camera Preset Remove PresetId: PresetId
```
where
- **PresetId**: Integer (1..35)
  - The ID of the camera preset you want to remove.

xCommand Camera Preset Show

Shows the preset details for the requested PresetId.

Requires user role: ADMIN, USER

**USAGE:**
```
xCommand Camera Preset Show PresetId: PresetId
```
where
- **PresetId**: Integer (1..35)
  - The ID of the camera preset you wish to see.
xCommand Camera Preset Store

Store the current position (pan and tilt), zoom and focus of the chosen camera. The camera is identified by the CameraId parameter.

Note that the xCommand Camera Preset commands apply to an individual camera. This is in contrast to the xCommand Preset commands where a single preset covers ALL connected cameras plus the Video Input switcher settings. The xCommand Camera Preset commands are useful when you want to handle multiple camera positions individually per camera, rather than working with complete sets of camera positions. The individual camera presets are not available for far end control.

Requires user role: ADMIN, USER

**USAGE:**

```xCommand Camera Preset Store [PresetId: \[PresetId\] CameraId: \[CameraId\] ListPosition: \[ListPosition\] Name: \"\[Name\]\" [TakeSnapshot: \[TakeSnapshot\]] [DefaultProsition: \[DefaultProsition\]]
```

where

- **PresetId**: Integer (1..35)
  - The ID of this camera preset. If not set explicitly, the codec will assign a preset ID automatically.

- **CameraId**: Integer (1..1)
  - Select the camera for which to store the preset position.

- **ListPosition**: Integer (1..35)
  - The new camera preset's position in the list returned by the xCommand Camera Preset List command.

- **Name**: String (0, 255)
  - The name of the new camera preset. It will be used in the list returned by the xCommand Camera Preset List command.

- **TakeSnapshot**: False/True
  - Allow or disallow snapshot of the preview.

- **DefaultProsition**: False/True
  - Defines whether or not this preset shall be the default position of the associated camera. Note that each camera can hold only one default position, so if set, the old default preset will automatically be marked as not default.

xCommand Camera Ramp

Move the camera in a specified direction. The camera moves at specified speed until a stop command is issued. In a daisy chain, you need to know the CameraId for the camera you want to address. Be aware that pan and tilt can be operated simultaneously, but no other combinations. In the latter case only the first operation specified is executed. For example, if you try to run both zoom and pan at the same time, only zoom is executed.

**NOTE:** You must run a stop command to stop the camera, see the example below.

Requires user role: ADMIN, USER

**USAGE:**

```xCommand Camera Ramp CameraId: \[CameraId\] [Pan: \[Pan\] PanSpeed: \[PanSpeed\]] [Tilt: \[Tilt\] TiltSpeed: \[TiltSpeed\]] [Zoom: \[Zoom\] ZoomSpeed: \[ZoomSpeed\]] [Focus: \[Focus\]]
```

where

- **CameraId**: Integer (1..1)
  - Select the camera.

- **Pan**: Left/Right/Stop
  - Move the camera to the Left or Right, followed by Stop.

- **PanSpeed**: Integer (1..15)
  - Set the pan speed.

- **Tilt**: Down/Up/Stop
  - Move the camera Up or Down, followed by Stop.

- **TiltSpeed**: Integer (1..15)
  - Set the tilt speed.

- **Zoom**: In/Out/Stop
  - Zoom the camera In or Out, followed by Stop.

- **ZoomSpeed**: Integer (1..15)
  - Set the zoom speed.

- **Focus**: Far/Near/Stop
  - Focus the camera Far or Near, followed by Stop.
xCommand Camera TriggerAutofocus

Trigger the auto-focus functionality. The camera must support auto-focus functionality. If the camera is daisy chained, the CameraId is given by its place in the chain.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Camera TriggerAutofocus CameraId: CameraId
```

where

```
CameraId: Integer (1..1)
```

Select the camera to auto-focus.

---

Conference commands

**xCommand Conference DoNotDisturb Activate**

This command switches on the Do Not Disturb mode, and the Timeout parameter allows you to control when it is switched off again. When Do Not Disturb is switched on, all incoming calls are rejected and registered as missed calls. The calling side receives a busy signal.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Conference DoNotDisturb Activate [Timeout: Timeout]
```

where

```
Timeout: Integer (1..1440)
```

Set the number of minutes before Do Not Disturb is switched off. If not set, Do Not Disturb times out after 1440 minutes (24 hours).

**xCommand Conference DoNotDisturb Deactivate**

Switch off the Do Not Disturb mode. When Do Not Disturb is switched off incoming calls come through as normal.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Conference DoNotDisturb Deactivate
```

**xCommand Conference SpeakerLock Release**

Releases locked speaker set by xCommand Conference SpeakerLock Set. Default voice switching is switched back on.

Requires user role: ADMIN, USER

**USAGE:**

```
xCommand Conference SpeakerLock Release
```
xCommand Conference SpeakerLock Set
For manually locking one of the speakers to the prominent speaker position. This overrides the
default voice switching.
Requires user role: ADMIN, USER

USAGE:
xCommand Conference SpeakerLock Set Target: Target [CallId: CallId]
where
  Target: local/remote
    Identifies local or remote participant.
  CallId: Integer (0..65534)
    Identify CallID for the remote participant. Only relevant if Target is set to "remote".

Diagnostics commands

xCommand Diagnostics Run
This command runs self-diagnostics commands on the system.
Requires user role: ADMIN

USAGE:
xCommand Diagnostics Run [ResultSet: ResultSet]
where
  ResultSet: Alerts/All/None
    You can filter the diagnostics results to alerts, all or none. If not set, the result will show all results.
Dial commands

xCommand Dial

Dial out from the system. Returns information about the CallId and ConferenceId, which are required for some of the other commands.

Requires user role: ADMIN, USER

USAGE:

xCommand Dial Number: "Number" [Protocol: Protocol] [CallRate: CallRate] [CallType: CallType] [BookingId: "BookingId"] [Appearance: Appearance] [DisplayName: "DisplayName"]

where

Number: String (0, 255)
Enter the number or address.

Protocol: H320/H323/Sip/Spark
Select the call protocol.

CallRate: Integer (64..3072)
Set the call rate.

CallType: Audio/Video
Select the call type.

BookingId: String (0, 255)
Any identifier that an external booking system (e.g. TMS, CTS-MAN) can use for its own references to match placed calls with the booking systems internal identifier for a meeting. This can be any string, e.g. a GUID. The booking Id is supplied in call logs, call events etc for the call.

Appearance: Integer (1..999999999)
Internal usage only.

DisplayName: String (0, 255)
The display name of the remote participant.

HttpFeedback commands

xCommand HttpFeedback Deregister

Deregister the HTTP feedback over HTTP(S).

Requires user role: ADMIN

USAGE:

xCommand HttpFeedback Deregister FeedbackSlot: FeedbackSlot
where

FeedbackSlot: Integer (1..4)
Deregister the feedback slot that was registered using the xCommand HttpFeedback Register command.
xCommand HttpFeedback Register

Register the system to a HTTP(S) server to return XML feedback over HTTP(S) to specific URLs.

Requires user role: ADMIN

**USAGE:**

```
```  

where

- **FeedbackSlot**: Integer (1..4)
  - The codec can register up to 4 slots of servers requesting HTTP feedback. Set the registering to one of them.
  
  **Note**: Avoid using FeedbackSlot 3 in an environment where Cisco TelePresence Management Suite (TMS) is used as TMS uses this feedback slot to register its expressions.

- **Format**: XML/JSON
  - Set the format for the feedback from the HTTP server to XML or JSON.

- **ServerUrl**: String (1, 2048)
  - The URL to the HTTP server where you want the codec to post the HTTP feedback messages to.

- **Expression[1..15]**: String (1, 255)
  - The XPath expression specifies which parts of the Status, Configuration or Event XML documents are monitored. You can have from 1 to 15 XPath expressions.

**Peripherals commands**

xCommand Peripherals Connect

Register peripherals that are connected to the codec, such as control systems and touch panels. The registered peripherals are displayed on the web interface under Configuration > Peripherals.

This command should be used when the peripheral connects to the codec for the first time or when the software version on the peripheral has changed. The list of connected devices is available with the command xStatus Peripherals ConnectedDevice [n] Status.

Requires user role: ADMIN, INTEGRATOR, ROOMCONTROL, USER

**USAGE:**

```
xCommand Peripherals Connect [HardwareInfo: "HardwareInfo"] ID: "ID" [Name: "Name"] [NetworkAddress: "NetworkAddress"] [SerialNumber: "SerialNumber"] [SoftwareInfo: "SoftwareInfo"] Type: Type
```  

where

- **HardwareInfo**: String (0, 100)
  - The device’s hardware number.

- **ID**: String (1, 100)
  - A unique ID for the device you are connecting to, typically a MAC address.

- **Name**: String (0, 100)
  - Define a name for the device.

- **NetworkAddress**: String (0, 100)
  - Network address for the device you are connecting to.

- **SerialNumber**: String (0, 100)
  - The device’s serial number.

- **SoftwareInfo**: String (0, 100)
  - Software version the device is running.

- **Type**: Byod/ControlSystem/Other/TouchPanel
  - Define the type of device you are connecting to.
xCommand Peripherals HeartBeat

When a peripheral is registered as a connected device, you can set it to send a heartbeat to the codec to let the codec know that it is still connected. This will keep the device on the xStatus Peripherals ConnectedDevice list. If the peripheral is not set to send a heartbeat, the device will disappear from the list after a while.

Note: Does not apply to cameras.

Requires user role: ADMIN, INTEGRATOR, ROOMCONTROL, USER

USAGE:
```plaintext
xCommand Peripherals HeartBeat ID: "ID" [Timeout: Timeout]
```

where
- **ID**: String (1, 100)
  A unique ID for the device you are connecting to, typically a MAC address.
- **Timeout**: Integer (1..65535)
  Set how long the device will send heartbeat.

xCommand Peripherals List

Lists all currently and previously connected peripherals.

Requires user role: ADMIN, INTEGRATOR, ROOMCONTROL

USAGE:
```plaintext
xCommand Peripherals List [Connected: Connected] [Type: Type]
```

where
- **Connected**: False/True
  Limit the search to currently connected devices.
- **Type**: All/ControlSystem/ISDNLink/Other/TouchPanel
  Limit the search by device type.

xCommand Peripherals Pairing DeviceDiscovery Start

Start device discovery to detect ISDN Links in the same network.

Requires user role: ADMIN

USAGE:
```plaintext
xCommand Peripherals Pairing DeviceDiscovery Start [AutoPairing: AutoPairing] [DeviceType: DeviceType] [Timeout: Timeout]
```

where
- **AutoPairing**: On/Off
  You can select to automatically pair the detected device to the endpoint.
- **DeviceType**: ISDNLink
  Only look for ISDN Link.
- **Timeout**: Integer (3..60)
  Set a maximum time for the search from 3 to 60 seconds.

xCommand Peripherals Pairing Pair

Pair an ISDN Link to an endpoint.

Requires user role: ADMIN

USAGE:
```plaintext
xCommand Peripherals Pairing Pair MacAddress: "MacAddress"
```

where
- **MacAddress**: String (1, 1450)
  Enter the MAC address for the ISDN Link you wish to pair to the endpoint.
**xCommand Peripherals Pairing Unpair**

Unpair endpoint from an ISDN Link, when the two have contact.

Requires user role: ADMIN

**USAGE:**

```cmd
xCommand Peripherals Pairing Unpair MacAddress: "MacAddress"
```

where

- `MacAddress`: String (1, 100)
  - MacAddress: Enter the MAC address for the ISDN Link you wish to unpair from the endpoint.

**xCommand Peripherals Purge**

Force unpair an endpoint from an ISDN Link when a connection has been lost. Note: You must also unpair the ISDN Link to be able to pair it to another endpoint.

Requires user role: ADMIN, USER

**USAGE:**

```cmd
xCommand Peripherals Purge ID: "ID"
```

where

- `ID`: String (1, 100)
  - Mac address of the ISDN Link in the format "xxxx:xxxx:xxxx:xxxx:xxxx:xxxx".

---

**Phonebook commands**

**xCommand Phonebook Contact Add**

Requires user role: ADMIN, USER

**USAGE:**

```cmd
xCommand Phonebook Contact Add Name: "Name" [FolderId: "FolderId"] [ImageURL: "ImageURL"] [Title: "Title"] [Number: "Number"] [Protocol: Protocol] [CallRate: CallRate] [CallType: CallType] [Device: Device] [Tag: Tag]
```

where

- `Name`: String (0, 255)
  - The name of the contact.
- `FolderId`: String (0, 255)
  - The unique identifier for the folder that you want to store the contact in. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Folder Add command was issued to make the folder.
- `ImageURL`: String (0, 255)
  - Currently not in use.
- `Title`: String (0, 255)
  - The title of the contact.
- `Number`: String (0, 255)
  - The phone number or address of the contact.
- `Protocol`: Auto/H320/H323/SIP/Spark
  - Select the Auto, Spark, SIP, H323 or H320 protocol.
- `CallRate`: Integer (0..6000)
  - Set a call rate.
- `CallType`: Audio/Video
  - Select a call type (audio or video).
- `Device`: Mobile/Other/Telephone/Video
  - Select the device type.
- `Tag`: Untagged/Favorite
  - Tag the contact as a Favorite, or untag an already tagged contact.
**xCommand Phonebook Contact Delete**

Delete an existing contact from the local phonebook.

Requires user role: ADMIN, USER

**USAGE:**

```bash
xCommand Phonebook Contact Delete ContactId: "ContactId"
```

where

- **ContactId**: String (0, 255)
  
  The unique identifier for the contact. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Contact Add command was issued to make the contact.

**xCommand Phonebook Contact Modify**

Modify contact details of an existing contact in the local phonebook. The following parameters can be changed using this command: Name, FolderId, ImageURL and Title. You must use the xCommand Phonebook ContactMethod Modify command to change the other parameters: Number, Protocol, CallRate, CallType and Device.

Requires user role: ADMIN, USER

**USAGE:**

```bash
xCommand Phonebook Contact Modify ContactId: "ContactId" [Name: "Name"] [FolderId: "FolderId"] [ImageURL: "ImageURL"] [Title: "Title"] [Tag: Tag]
```

where

- **ContactId**: String (0, 255)
  
  The unique identifier for the contact you want to modify. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Contact Add command was issued to make the contact.

- **Name**: String (0, 255)
  
  The name of the contact.

- **FolderId**: String (0, 255)
  
  A unique identifier for the folder. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Contact Add command was issued.

- **ImageURL**: String (0, 255)
  
  Currently not in use.

- **Title**: String (0, 255)
  
  The title of the contact.

- **Tag**: Untagged/Favorite
  
  Tag the contact as a Favorite, or untag an already tagged contact.
xCommand Phonebook ContactMethod Add

Add contact details for an existing contact in the local phonebook. The command returns the ContactMethodId, which is a unique string that identifies the contact method, typically the format is "n".

You can add several contact methods to a contact. Note that only the first contact method will appear in the Favorites list on the Cisco TelePresence Touch controller. The first contact method may have been created when issuing the xCommand Phonebook Contact Add command to make the contact. All contact methods are available in the API, on the web interface and when using the remote control.

Requires user role: ADMIN, USER

USAGE:

```
xCommand Phonebook ContactMethod Add ContactId: "ContactId" [Device: "Device"] Number: "Number" [Protocol: "Protocol"] [CallRate: "CallRate"] [CallType: "CallType"]
```

where

- **ContactId**: String (0, 255)
  The unique identifier for the contact that you want to add a contact method to. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Contact Add command was issued to make the contact.

- **Device**: Mobile/Other/Telephone/Video
  Set which type of device to call to.

- **Number**: String (0, 255)
  The phone number or address of the contact.

- **Protocol**: Auto/H320/H323/SIP/Spark
  Select protocol.

- **CallRate**: Integer (0..6000)
  Set a call rate.

- **CallType**: Audio/Video
  Select a call type (audio or video).

xCommand Phonebook ContactMethod Delete

Delete a contact method from an existing contact in the local phonebook.

Requires user role: ADMIN, USER

USAGE:

```
xCommand Phonebook ContactMethod Delete ContactId: "ContactId" ContactMethodId: "ContactMethodId"
```

where

- **ContactId**: String (0, 255)
  The unique identifier for the contact you want to change. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Contact Add command was issued to make the contact.

- **ContactMethodId**: String (0, 255)
  The unique identifier for the contact method you want to delete. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Contact Method Add command was issued to make the contact method.
xCommand Phonebook ContactMethod Modify

Modify details about the contact method for an existing contact in the local phonebook.

Requires user role: ADMIN, USER

USAGE:

\[xCommand\ \text{Phonebook ContactMethod Modify}\ \text{ContactId}: \ "ContactId"\ \text{ContactMethodId}: \ "ContactMethodId"\ [\text{Device}: \ \text{Device}]\ [\text{Number}: \ "Number"]\ [\text{Protocol}: \ \text{Protocol}]\ [\text{CallRate}: \ \text{CallRate}]\ [\text{CallType}: \ \text{CallType}]\]

where

- \text{ContactId}: String (0, 255)
  
  The unique identifier for the contact. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Contact Add command was issued to make the contact.

- \text{ContactMethodId}: String (0, 255)
  
  The unique identifier for the contact method you want to modify. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook ContactMethod Add or xCommand Phonebook Contact Add commands were issued to make the contact.

- \text{Device}: Mobile/Other/Telephone/Video
  
  Set which type of device to call to.

- \text{Number}: String (0, 255)
  
  The phone number or address of the contact.

- \text{Protocol}: Auto/H320/H323/SIP/Spark
  
  Select protocol.

- \text{CallRate}: Integer (0..6000)
  
  Set a call rate.

- \text{CallType}: Audio/Video
  
  Select a call type (audio or video).

xCommand Phonebook Folder Add

Phonebook entries can be stored in folders. Use this command to add a folder to the local phonebook. The command returns the FolderId, which is a unique string that identifies the folder; typically the format is "localGroupId-n".

Requires user role: ADMIN, USER

USAGE:

\[xCommand\ \text{Phonebook Folder Add}\ \text{Name}: \ "Name"\ [\text{ParentFolderId}: \ "ParentFolderId"]\]

where

- \text{Name}: String (0, 255)
  
  The name of the folder.

- \text{ParentFolderId}: String (0, 255)
  
  The unique identifier for the parent folder. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Folder Add command was issued to make the parent folder.

xCommand Phonebook Folder Delete

Delete an existing folder from the local phonebook.

Requires user role: ADMIN, USER

USAGE:

\[xCommand\ \text{Phonebook Folder Delete}\ \text{FolderId}: \ "FolderId"\]

where

- \text{FolderId}: String (0, 255)
  
  The unique identifier for the folder. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Folder Add command was issued to make the folder.
**xCommand Phonebook Folder Modify**

Modify an existing phonebook folder.

Requires user role: ADMIN, USER

**USAGE:**

- **xCommand Phonebook Folder Modify**
  - FolderId: "FolderId" [Name: "Name"]
  - ParentFolderId: "ParentFolderId"

  **where**
  - **FolderId**
    - String (0, 255)
    - The unique identifier for the folder. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Folder Add command was issued to make the folder.
  - **Name**
    - String (0, 255)
    - The name of the contact.
  - **ParentFolderId**
    - String (0, 255)
    - The unique identifier for the parent folder. The identifier will be returned by an xCommand Phonebook Search command. It was also returned when the xCommand Phonebook Folder Add command was issued to make the parent folder.

**xCommand Phonebook Search**

The search command lets you search in both the local and corporate phone books. A search gives a ResultSet.

The total number of folders and contacts (TotalRows) is always included in the result set when searching the local phone book. When searching a corporate phonebook the total number of folders and contacts may not be included. Whether it is included or not depends on the backend corporate phonebook service (e.g. CUCM, VCS, TMS) and its version.

Requires user role: ADMIN, USER

**USAGE:**

- **xCommand Phonebook Search**
  - [PhonebookId: "PhonebookId"]
  - [PhonebookType: Corporate/Local]
  - [SearchString: "SearchString"]
  - [SearchField: Name/Number]
  - [Offset: Integer (0..65534)]
  - [FolderId: "FolderId"]
  - [Limit: Integer (0..65534)]

  **where**
  - **PhonebookId**
    - String (0, 255)
    - The identifier of the phonebook server that will be searched. See the xConfiguration Phonebook Server ID setting.
  - **PhonebookType**
    - Corporate/Local
    - Define whether to search the local phone book or the corporate phonebook.
  - **SearchString**
    - String (0, 255)
    - Search for entries containing this string (note that the entry does not have to begin with the string). If no FolderId is specified, all folders / phonebook directories will be searched.
  - **SearchField**
    - Name/Number
    - Currently not in use.
  - **Offset**
    - Integer (0..65534)
    - Get records starting with this offset in a search. The default value is 0. Offset is used together with Limit to support paging.
  - **FolderId**
    - String (0, 255)
    - Search only in the specified folder. The FolderId (string) is listed in the ResultSet of a search result containing folders.
  - **Limit**
    - Integer (0..65534)
    - Limit the number of records in the result set to this number. For example, if the limit is set to 10, the ResultSet will contain only 10 entries (Contacts and Folders) even if the total number of hits is larger. The maximum limit is 1000.
Recursive: False/True

This parameter will only have effect when searching the local phone book. The setting determines whether a local phone book search should be limited to the given FolderId, or also recursively search in its subfolders. If not specified, the search will be recursive.

When issuing the command without specifying any parameters, all folders, contacts and contact methods in the local phone book will be returned.

ContactType: Any/Folder/Contact

Search all contact types, or limit the search to folders or individual contacts.

Tag: Untagged/Favorite

Limits the search to either contacts that have been tagged as favorite or the untagged contacts.

**Presentation commands**

**xCommand Presentation Start**

Open a media stream from the selected presentation source.

Requires user role: ADMIN, USER

**USAGE:**

```plaintext
xCommand Presentation Start [PresentationSource: PresentationSource] [SendingMode: SendingMode] [ConnectorId: ConnectorId] [Instance: Instance]
```

where

- **PresentationSource**: Integer (2..2)
  - Select the video input source to be used for presentation, identified by source number.
- **SendingMode**: LocalRemote/LocalOnly
  - Select whether the presentation is shown locally or locally and remotely.
- **ConnectorId**: Integer (2..3)
  - Select the video input source to be used for presentation, identified by connectorId.
- **Instance**: 1/2/3/4/5/6
  - Select which local presentation instance you wish to start.

**xCommand Presentation Stop**

Stop the media stream from the presentation source.

Requires user role: ADMIN, USER

**USAGE:**

```plaintext
xCommand Presentation Stop [Instance: Instance] [PresentationSource: PresentationSource]
```

where

- **Instance**: 1/2/3/4/5/6
  - Select which local presentation you wish to stop, identified by presentation instance.
- **PresentationSource**: Integer (2..2)
  - Select which local presentation you wish to stop, identified by source number.
Provisioning commands

xCommand Provisioning CompleteUpgrade
Starts installing the software upgrade if you wish to install it before it is set to do so.
Requires user role: ADMIN, USER

USAGE:
xCommand Provisioning CompleteUpgrade

xCommand Provisioning PostponeUpgrade
Postpones the installing of the software upgrade.
Requires user role: ADMIN, USER

USAGE:
xCommand Provisioning PostponeUpgrade SecondsToPostpone: SecondsToPostpone
where
  SecondsToPostpone: Integer (0..65534)
  Set how long to postpone the upgrade. The value is in seconds.

xCommand Provisioning StartUpgrade
The codec software can be upgraded from the provisioning server. When starting the upgrade
the software is automatically downloaded and installed. The codec reboots to complete the
software upgrade.
Requires user role: ADMIN, USER

USAGE:
xCommand Provisioning StartUpgrade

xCommand Provisioning ExtensionMobility Login
Login command for the Extension Mobility service. You log in to the Extension Mobility service
with a user name (UserId) and pin code (Pin). The user name and pin code are set up in CUCM.
CUCM also supports multiple profiles for a user.
If you, for a user that has multiple profiles, submit a login command with only user name and
pin code, CUCM will send a list of available profiles back to the video system. Then the video
system will create corresponding ExtensionMobilityProfileSelection Profile events, so that a
new login command, which contains the Profile parameter in addition to the user name and pin
code, can be submitted.
Requires user role: ADMIN, USER

USAGE:
xCommand Provisioning ExtensionMobility Login UserId: "UserId" Pin: "Pin"
[Profile: "Profile"]
where
  UserId: String (1, 255)
  A valid user name, as set up in CUCM.
  Pin: String (1, 255)
  A valid pin code for the user, as set up in CUCM.
  Profile: String (1, 255)
  A valid profile for the user, as set up in CUCM. This parameter applies only if the user
  has multiple profiles.

xCommand Provisioning ExtensionMobility Logout
This command will log you out of your Extension Mobility profile.
Requires user role: ADMIN, USER

USAGE:
xCommand Provisioning ExtensionMobility Logout
Proximity commands

xCommand Proximity Services Activate
Reactivate the Proximity services that were deactivated with xCommand Proximity Services Deactivate.

Requires user role: ADMIN, USER

 USAGE:
xCommand Proximity Services Activate

xCommand Proximity Services Deactivate
This command deactivates all proximity services on the endpoint. To reactivate proximity services use the command xCommand Proximity Services Activate.

Requires user role: ADMIN, USER

 USAGE:
xCommand Proximity Services Deactivate

RoomPreset commands

xCommand RoomPreset Activate
Activate one of the locally stored presets.
Note that information about all video input sources, and pan, tilt, zoom and focus values for all cameras are included in the same preset. In contrast, the xCommand Camera Preset commands applies to individual cameras only.

Requires user role: ADMIN, USER

 USAGE:
xCommand RoomPreset Activate PresetId: PresetId
where

PresetId: Integer (1..15)
The ID of the preset you want to activate.

xCommand RoomPreset Clear
Delete a preset.
Note that information about all video input sources, and pan, tilt, zoom and focus values for all cameras are included in the same preset. In contrast, the xCommand Camera Preset commands applies to individual cameras only.

Requires user role: ADMIN, USER

 USAGE:
xCommand RoomPreset Clear PresetId: PresetId
where

PresetId: Integer (1..15)
The ID of the preset you want to delete.
xCommand RoomPreset Store

Store the connector selections for all video input sources and the current position (pan and tilt), zoom and focus values for all cameras.

Note that information about all video input sources, and pan, tilt, zoom and focus values for all cameras are included in the same preset. The system may hold 15 such predefined video input presets. These presets are available for far end control, i.e. they are referred in the PresetId parameter of the xCommand FarEndControl Preset Activate command. In contrast, the xCommand Camera Preset commands applies to individual cameras only. Those presets are not available for far end control.

Requires user role: ADMIN, USER

USAGE:

```plaintext
xCommand RoomPreset Store [Description: "Description"] PresetId: PresetId Type: Type
where
  Description: String (0, 255)
    Enter a description of the camera preset.
  PresetId: Integer (1..15)
    The ID of this preset.
  Type: All/Camera
    Not applicable. If you want to ensure that a preset only affects camera positions we recommend that you select Camera.
```

Security commands

xCommand Security Persistency

Set the following features to persistent or non-persistent mode. In non-persistent mode the information gathered by the specified feature does not persist a reboot of the system. Persistent mode is the default. This command reboots the system.

Requires user role: ADMIN

USAGE:

```plaintext
xCommand Security Persistency Configurations: Configurations CallHistory: CallHistory InternalLogging: InternalLogging LocalPhonebook: LocalPhonebook DHCP: DHCP ConfirmAndReboot: ConfirmAndReboot
where
  Configurations: NonPersistent/Persistent
    In non-persistent mode, all configurations are set back to default when the system reboots.
  CallHistory: NonPersistent/Persistent
    In non-persistent mode call history is deleted when the system reboots.
  InternalLogging: NonPersistent/Persistent
    In non-persistent mode eventlog is deleted when the system reboots.
  LocalPhonebook: NonPersistent/Persistent
    In non-persistent mode local phone book is deleted when the system reboots.
  DHCP: NonPersistent/Persistent
    In non-persistent mode all IP related information is deleted when the system reboots.
  ConfirmAndReboot: Yes
    Reboots the system.
```

xCommand Security Session List

List active sessions.

Requires user role: ADMIN, USER

USAGE:

```plaintext
xCommand Security Session List
```
xCommand Security Session Terminate

Terminate a session.

Requires user role: ADMIN, USER

**USAGE:**

```plaintext
xCommand Security Session Terminate SessionId: "SessionId"
```

where

- **SessionId**: String (0, 32)
  - The session ID number.

Standby commands

xCommand Standby Activate

Set the system in standby mode, which turns off the video outputs and put the camera into sleep mode.

Requires user role: ADMIN, INTEGRATOR, USER

**USAGE:**

```plaintext
xCommand Standby Activate
```

xCommand Standby Deactivate

Bring the system out of standby mode.

Requires user role: ADMIN, INTEGRATOR, USER

**USAGE:**

```plaintext
xCommand Standby Deactivate
```

xCommand Standby ResetTimer

Set a temporary standby delay. If the system is in standby mode when the reset timer is set, the system is brought out of standby mode. When left idle for the given delay the system goes into standby mode. Setting the reset timer does not affect the Standby Delay in the Advanced configuration menu (or by xConfiguration Standby Delay). Next time this delay is the valid standby delay.

Requires user role: ADMIN, USER

**USAGE:**

```plaintext
xCommand Standby ResetTimer Delay: Delay
```

where

- **Delay**: Integer (1..480)
  - Set the delay in minutes.
SystemUnit commands

xCommand SystemUnit Boot
Reboot the system.
Requires user role: INTEGRATOR, USER

**USAGE:**
xCommand SystemUnit Boot [Action: Action]
where
  - **Action**: Restart/Shutdown
    - As a default the system restarts after a reboot. By selecting Shutdown, the system will not restart.

xCommand SystemUnit FactoryReset
Reset the codec to factory default settings. The call logs are deleted and all system parameters are reset to default values. All files that have been uploaded to the codec are deleted. Option key(s) are not affected.
As a default the system restarts after the factory reset, but other behaviour can be forced by selecting a different TrailingAction.
Requires user role: ADMIN, USER

**USAGE:**
xCommand SystemUnit FactoryReset Confirm: Confirm [Keep: Keep] [TrailingAction: TrailingAction]
where
  - **Confirm**: Yes
    - Include to confirm your choice.
  - **Keep**: LocalSetup/Network/Spark/Provisioning
    - Select which configurations to keep when you factory reset the system.
      - LocalSetup:
        - xConfiguration Audio DefaultVolume
        - xConfiguration Audio SoundsAndAlerts RingVolume
        - xConfiguration Time Zone
        - xConfiguration UserInterface Language
        - xConfiguration Video Output Connector OverscanLevel
        - xCommand Camera Preset Store
      - Network:
        - xConfiguration Network 1
        - xConfiguration NetworkServices Wifi Allowed
        - xConfiguration NetworkServices Wifi Enabled
      - Spark:
        - xConfiguration Spark ServiceOverrides GdsBaseUrl
        - xConfiguration Spark ServiceOverrides U2CBaseUrl
        - xConfiguration Spark ServiceOverrides WdmBaseUrl
Provisioning:

xConfiguration Provisioning Mode

**TrailingAction:** NoAction/Restart/Shutdown

Select Shutdown or NoAction to override the default behaviour (Restart).

**xCommand SystemUnit Notifications RemoveAll**
Clears the list of system notifications that are reported by xStatus SystemUnit Notifications Text/Type.

Requires user role: ADMIN

**USAGE:**

xCommand SystemUnit Notifications RemoveAll

**xCommand SystemUnit OptionKey Add**
Add an option key to support additional features.

Requires user role: ADMIN

**USAGE:**

xCommand SystemUnit OptionKey Add Key: "Key"

where

**Key:** String (16, 24)

The key you have received for the option you wish to switch on.

**xCommand SystemUnit OptionKey List**
List all option keys.

Requires user role: ADMIN

**USAGE:**

xCommand SystemUnit OptionKey List

**xCommand SystemUnit OptionKey Remove**
Remove a specified option key.

Requires user role: ADMIN

**USAGE:**

xCommand SystemUnit OptionKey Remove Type: Type

where

**Type:** RemoteMonitoring

**xCommand SystemUnit OptionKey RemoveAll**
Remove all option keys.

Requires user role: ADMIN

**USAGE:**

xCommand SystemUnit OptionKey RemoveAll Confirm: Confirm

where

**Confirm:** Yes

**xCommand SystemUnit SignInBanner Clear**
Clear the sign in banner set with xCommand SystemUnit SignInBanner Set.

Requires user role: ADMIN

**USAGE:**

xCommand SystemUnit SignInBanner Clear

**xCommand SystemUnit SignInBanner Get**
Get the custom message set with xCommand SystemUnit SignInBanner Set.

Requires user role: ADMIN

**USAGE:**

xCommand SystemUnit SignInBanner Get
xCommand SystemUnit SignInBanner Set
Set a sign in banner with a custom message on the system's user interface.
Use:
xCommand SystemUnit SignInBanner Set <enter>
Banner text <enter> . <enter>
Requires user role: ADMIN

USAGE:
xCommand SystemUnit SignInBanner Set

xCommand SystemUnit SoftReset
Reset most parameters to their default values. This does not include parameters associated
with room setup, such as camera position, language, and volume.
Requires user role: ADMIN, USER

USAGE:
xCommand SystemUnit SoftReset Confirm: Confirm
where
    Confirm: Yes

xCommand SystemUnit SoftwareUpgrade
Initiate a software upgrade by fetching the software from a given URL. If the server requires
username and password these parameters must be included.

Requires user role: ADMIN

USAGE:
xCommand SystemUnit SoftwareUpgrade URL: "URL" [UserName: "UserName"] [Password: "Password"] [Forced: Forced]
where
    URL: String (0, 255)
        The software package location
    UserName: String (0, 255)
        User name to access the server location, if needed.
    Password: String (0, 255)
        Password to access the server location, if needed.
    Forced: False/True
        You can force a system to accept a software upgrade immediately, without giving users
        a chance to acknowledge or postpone the update.
Time commands

xCommand Time DateTime Get
Read the time and date from the system.
Requires user role: ADMIN, USER

USAGE:
  xCommand Time DateTime Get

xCommand Time DateTime Set
Set the date and time for the system, if not available from NTP (Network Time Protocol).
Requires user role: ADMIN, USER

USAGE:
  xCommand Time DateTime Set [Year: Year] [Month: Month] [Day: Day] [Hour: Hour]
  [Minute: Minute] [Second: Second]
  where
  Year: Integer (2015..2037)
  Month: Integer (1..12)
  Day: Integer (1..31)
  Hour: Integer (0..23)
  Minute: Integer (0..59)
  Second: Integer (0..59)

UserInterface commands

xCommand UserInterface Extensions Clear
Delete all user interface extensions (widgets) from the video system.
Requires user role: ADMIN

USAGE:
  xCommand UserInterface Extensions Clear

xCommand UserInterface Extensions List
List all user interface extensions (widgets) that exist on the video system.
Requires user role: INTEGRATOR, ROOMCONTROL, USER

USAGE:
  xCommand UserInterface Extensions List

xCommand UserInterface Extensions Widget SetValue
Set the value of the given widget. Updates the UserInterface Extensions status tree. Returns an error if the value is out of range.
Requires user role: ADMIN, INTEGRATOR, ROOMCONTROL

USAGE:
  xCommand UserInterface Extensions Widget SetValue Value: "Value" WidgetId: "WidgetId"
  where
  Value: String (0, 255)
    The value of the widget. The range of values depends on the widget type.
  WidgetId: String (0, 40)
    The unique identifier for the widget.
**xCommand UserInterface Extensions Widget UnsetValue**

Empties the value of the given widget. Updates the UserInterface Extensions status tree and notifies the user interface that this widget is no longer selected.

Requires user role: ADMIN, INTEGRATOR, ROOMCONTROL

**USAGE:**

```
xCommand UserInterface Extensions Widget UnsetValue WidgetId: "WidgetId"
```

where

- **WidgetId**: String (0, 40)
  - The unique identifier for the widget.

---

**xCommand UserInterface Message Alert Clear**

Remove the message which was displayed using the xCommand Message Alert Display command. This is required when the Duration parameter is not set.

Requires user role: ADMIN, INTEGRATOR, ROOMCONTROL, USER

**USAGE:**

```
xCommand UserInterface Message Alert Clear
```

---

**xCommand UserInterface Message Alert Display**

Display a message on screen, for a specified duration of time (in seconds).

NOTE: If Duration is not set, the command must be followed by xCommand Message Alert Clear.

Use the xFeedback commands to monitor the feedback from the user. Read more about the xFeedback commands in the API introduction section in this guide.

Requires user role: ADMIN, INTEGRATOR, ROOMCONTROL

**USAGE:**

```
xCommand UserInterface Message Alert Display [Title: "Title"] Text: "Text" [Duration: Duration]
```

where

- **Title**: String (0, 255)
  - Enter a message title.
- **Text**: String (0, 255)
  - Enter the message to be displayed. The <p> and <br> HTML tags will result in line breaks as normal; any other tags will appear as plain text.
- **Duration**: Integer (0..3600)
  - Set how long (in seconds) the message is to be displayed on the screen. If set to 0 (zero) the message does not disappear until a xCommand Message Alert Clear message has been sent.

---

**xCommand UserInterface Message Prompt Clear**

Remove the window displayed using the xCommand Message Alert Display command. Use the xFeedback commands to monitor the feedback from the user. Read more about the xFeedback commands in the API introduction section in this guide.

Requires user role: ADMIN, INTEGRATOR, ROOMCONTROL, USER

**USAGE:**

```
xCommand UserInterface Message Prompt Clear [FeedbackId: "FeedbackId"]
```

where

- **FeedbackId**: String (0, 255)
  - The FeedbackId corresponds to the FeedbackId given by the xCommand Message Prompt Display command.
xCommand UserInterface Message Prompt Display

Display a small window on screen with a title, text and up to five options for response from the user. The message is displayed on screen until the user gives a response, or until the system receives the following command xCommand Message Prompt Clear.

Use the xFeedback commands to monitor the feedback from the user. Read more about the xFeedback commands in the API introduction section in this guide.

Title:
Text:
FeedbackId:
Option.1 to Option.5:

Requires user role: ADMIN, INTEGRATOR, ROOMCONTROL

USAGE:
xCommand UserInterface Message Prompt Display [Title: "Title"] Text: "Text" [FeedbackId: "FeedbackId"] [Option.1: "Option.1"] [Option.2: "Option.2"] [Option.3: "Option.3"] [Option.4: "Option.4"] [Option.5: "Option.5"]

where
Title: String (0, 255)
Enter the message title.

Text: String (0, 255)
Enter the text line to be displayed. The <p> and <br> HTML tags will result in line breaks as normal; any other tags will appear as plain text.

FeedbackId: String (0, 255)
To identify the feedback enter a FeedbackId.

Option.1: String (0, 255)
Enter the text to appear on the feedback options.

Option.2: String (0, 255)
Enter the text to appear on the feedback options.

Option.3: String (0, 255)
Enter the text to appear on the feedback options.

Option.4: String (0, 255)
Enter the text to appear on the feedback options.

Option.5: String (0, 255)
Enter the text to appear on the feedback options.

xCommand UserInterface Message Prompt Response

Give a response to the xCommand Message Prompt Display.

Use the xFeedback commands to monitor the feedback from the user. Read more about the xFeedback commands in the API introduction section in this guide.

Requires user role: ADMIN, INTEGRATOR, ROOMCONTROL, USER

USAGE:
xCommand UserInterface Message Prompt Response [FeedbackId: "FeedbackId"]

where
FeedbackId: String (0, 255)
The FeedbackId corresponds to the FeedbackId given by the xCommand Message Prompt Display command.

OptionId: Integer (1..5)
The OptionId corresponds to the OptionIds given as possible responses in the xCommand Message Prompt Display command.

xCommand UserInterface Message TextLine Clear

Clears the text line which was defined by the xCommand Message TextLine Display command.

Requires user role: ADMIN, INTEGRATOR, ROOMCONTROL, USER

USAGE:
xCommand UserInterface Message TextLine Clear
**xCommand UserInterface Message TextLine Display**

Display a text line on screen. Optionally you can place the text line at a specified location and for a specified duration of time (in seconds).

**NOTE:** If Duration is not set, the command must be followed by xCommand Message TextLine Clear.

**Requires user role:** ADMIN, INTEGRATOR, ROOMCONTROL

**USAGE:**

```plaintext
xCommand UserInterface Message TextLine Display Text: "Text" [X: X] [Y: Y] [Duration: Duration]
```

- **Text**: String (0, 140)
  - Enter the text line to be displayed. The `<p>` and `<br>` HTML tags will result in line breaks as normal; any other tags will appear as plain text.

- **X**: Integer (1..10000)
  - Enter the X-coordinate (horizontal) on screen. X=0 is in the upper left corner.

- **Y**: Integer (1..10000)
  - Enter the Y-coordinate (vertical) on screen. Y=0 is in the upper left corner.

- **Duration**: Integer (0..3600)
  - Set how long (in seconds) the text line is to be displayed on the screen. If set to 0 (zero) the text line is displayed until a xCommand Message TextLine Clear command has been sent.

**xCommand UserInterface OSD Key Click**

Emulates a remote control key press, followed by a key release.

**Requires user role:** ADMIN

**USAGE:**

```plaintext
xCommand UserInterface OSD Key Click Key: Key
```

- **Key**: 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/+/-
  - Define the remote key to press.

**xCommand UserInterface OSD 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

**USAGE:**

```plaintext
xCommand UserInterface OSD Key Press Key: Key
```

- **Key**: 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/+/-
  - Define the remote key to press.

**xCommand UserInterface OSD Key Release**

Emulates a remote control key release. The Key Release command is issued after a Key Press command.

**Requires user role:** ADMIN

**USAGE:**

```plaintext
xCommand UserInterface OSD Key Release Key: Key
```

- **Key**: 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/+/-
  - Define the remote control key to release.
**xCommand UserInterface Presentation ExternalSource Add**

Establish and set up an input source that is connected to the video system via an external switch.

Requires user role: ADMIN, INTEGRATOR, ROOMCONTROL

**USAGE:**

```
xCommand UserInterface Presentation ExternalSource Add ConnectorId: ConnectorId
SourceIdentifier: "SourceIdentifier" Name: "Name" Type: Type
```

where

- **ConnectorId**: Integer (2..3)
  - The ID of the video system connector that the external switch is connected to.
- **SourceIdentifier**: String (0, 40)
  - A unique string that identifies the input source. The identifier is used by other commands and events when addressing this specific input source.
- **Name**: String (0, 40)
  - The name of the input source. This name will be displayed on the user interface.
- **Type**: camera/desktop/document_camera/mediaplayer/PC/whiteboard/other
  - The type of input source. The type determines which icon to display on the user interface.

**xCommand UserInterface Presentation ExternalSource List**

Returns the current list of external input sources.

Requires user role: ADMIN, INTEGRATOR, ROOMCONTROL

**USAGE:**

```
xCommand UserInterface Presentation ExternalSource List
```

**xCommand UserInterface Presentation ExternalSource Remove**

Remove the input source (specified by the SourceIdentifier) from the list of external input sources.

Requires user role: ADMIN, INTEGRATOR, ROOMCONTROL

**USAGE:**

```
xCommand UserInterface Presentation ExternalSource Remove SourceIdentifier: "SourceIdentifier"
```

where

- **SourceIdentifier**: String (0, 40)
  - The unique string that identifies this input source. It was defined when the source was created with the UserInterface Presentation ExternalSource Add command.

**xCommand UserInterface Presentation ExternalSource RemoveAll**

Remove all input sources from the list of external input sources.

Requires user role: ADMIN, INTEGRATOR, ROOMCONTROL

**USAGE:**

```
xCommand UserInterface Presentation ExternalSource RemoveAll
```

**xCommand UserInterface Presentation ExternalSource Select**

Starts to present the input source (specified by the SourceIdentifier) if it is in Ready state (see the UserInterface Presentation ExternalSource State Set command). The input source will be shown in the user interface sharetray as "Presenting".

Requires user role: ADMIN, INTEGRATOR, ROOMCONTROL, USER

**USAGE:**

```
xCommand UserInterface Presentation ExternalSource Select SourceIdentifier: "SourceIdentifier"
```

where

- **SourceIdentifier**: String (0, 40)
  - The unique string that identifies this input source. It was defined when the source was created with the UserInterface Presentation ExternalSource Add command.
xCommand UserInterface Presentation ExternalSource State Set
Set or change the state of the input source (specified by the SourceIdentifier).

Requires user role: ADMIN, INTEGRATOR, ROOMCONTROL

**USAGE:**
```
xCommand UserInterface Presentation ExternalSource State Set SourceIdentifier: "SourceIdentifier" State: State [ErrorReason: "ErrorReason"]
```

where

- **SourceIdentifier**: String (0, 40)
  - The unique string that identifies this input source. It was defined when the source was created with the UserInterface Presentation ExternalSource Add command.

- **State**: Hidden/Ready/NotReady/Error
  - Ready: The input source will be presented when someone selects it (taps it on the user interface, or when the UserInterface Presentation ExternalSource Select command is issued).
  - NotReady: The input source is not ready, and cannot be selected.
  - Error: The input source is in an erroneous state. The ErrorReason parameter may be used to inform the user about the reason for failure.
  - Hidden: The input source will not be displayed in the user interface sharetray.

- **ErrorReason**: String (0, 80)
  - This string is displayed in the user interface sharetray, given that the State parameter is set to Error.

**UserManagement commands**

**xCommand UserManagement RemoteSupportUser Create**
Create a remote support user passphrase that Technical Assistance Center (TAC) can use to access the system for troubleshooting.

Requires user role: ADMIN

**USAGE:**
```
```

where

- **ExpiryDays**: Integer (1..31)
  - Define the duration for the passphrase validity. Default is 7 days.

**xCommand UserManagement RemoteSupportUser Delete**
Delete the remote support user created with the command `xCommand UserManagement RemoteSupportUser Create`.

Requires user role: ADMIN

**USAGE:**
```
xCommand UserManagement RemoteSupportUser Delete
```

**xCommand UserManagement RemoteSupportUser DisablePermanently**
Disable the creation of new remote support users. To enable the remote support user again you must factory reset your system.

Requires user role: ADMIN

**USAGE:**
```
xCommand UserManagement RemoteSupportUser DisablePermanently Confirm: Confirm
```

where

- **Confirm**: Yes
xCommand UserManagement RemoteSupportUser GetState
Retrieves the state of the generated remote support user, if one exists.
Requires user role: ADMIN

USAGE:
  xCommand UserManagement RemoteSupportUser GetState

xCommand UserManagement User Passphrase Change
Change the passphrase for the user you logged in as. If you are logged in as the administrator, this will change the administrator passphrase.
Requires user role: ADMIN, AUDIT, INTEGRATOR, ROOMCONTROL, USER

USAGE:
  xCommand UserManagement User Passphrase Change
  NewPassphrase: "NewPassphrase"
  OldPassphrase: "OldPassphrase"
  where
    NewPassphrase: String (0, 255)
    OldPassphrase: String (0, 255)

  Username: String (0, 127)
  YourPassphrase: String (0, 255)

xCommand UserManagement User Passphrase Set
Set a user passphrase for the specified user. You must be logged in as an administrator to set a user passphrase.
Requires user role: ADMIN

USAGE:
  xCommand UserManagement User Passphrase Set
  NewPassphrase: "NewPassphrase"
  Username: "Username" YourPassphrase: "YourPassphrase"
  where
    NewPassphrase: String (0, 255)
    Username: String (0, 127)
    YourPassphrase: String (0, 255)
Video commands

xCommand Video ActiveSpeakerPIP Set
Sets position for the active speakers PiP (picture in picture).

Requires user role: ADMIN, USER

USAGE:
```
xCommand Video ActiveSpeakerPIP Set Position: Position
where
  Position: CenterLeft/CenterRight/LowerLeft/LowerRight/UpperCenter/UpperLeft/
           UpperRight
```
Select one of the predefined positions.

xCommand Video Input Source SetActiveConnector
Select which connector is active.

Requires user role: ADMIN, USER

USAGE:
```
xCommand Video Input Source SetActiveConnector [ConnectorId: ConnectorId]
where
  ConnectorId: Integer (2..3)
  The identifier (ID) of the connector. Connector [n] has ID n. Check the Video Input
  Connector status to find the connector IDs.
```

xCommand Video PresentationPIP Set
Sets position for the presentation PiP (picture in picture).

Requires user role: ADMIN, USER

USAGE:
```
xCommand Video PresentationPIP Set Position: Position
where
  Position: CenterLeft/CenterRight/LowerLeft/LowerRight/UpperCenter/UpperLeft/
           UpperRight
```
Select one of the predefined positions.

xCommand Video Layout LayoutFamily Set
Select the screen layout mode.

Requires user role: ADMIN, USER

USAGE:
```
xCommand Video Layout LayoutFamily Set [Target: Target] [CallId: CallId]
LayoutFamily: LayoutFamily [CustomLayoutName: "CustomLayoutName"]
where
  Target: local/remote
    Select if the target is the local layout or the remote layout.
  CallId: Integer (0..65534)
    The CallID is returned when the xCommand Dial command is run. During the call you
    can run the xStatus Call command to see the CallId.
  LayoutFamily: auto/custom/equal/overlay/prominent/single
    Select a layout family.
  CustomLayoutName: String (1, 128)
    Enter a name for the layout.
xCommand Video PresentationView Set

Set the presentation view mode

Requires user role: ADMIN, USER

**USAGE:**

xCommand Video PresentationView Set View: View
where

View: Default/Maximized/Minimized

Select Default when you want the presentation to be viewed with the default settings for the codec. Select Maximized when you want the presentation to be displayed in full screen. Select Minimized when you want the presentation to be displayed in a small picture on screen.

xCommand Video Selfview Set

Sets self-view on/off and specifies its size and position. If the parameter is not specified, current value is used.

Requires user role: ADMIN, USER

**USAGE:**

xCommand Video Selfview Set [Mode: Mode] [FullscreenMode: FullscreenMode] [PIPPosition: PIPPosition] [OnMonitorRole: OnMonitorRole]
where

Mode: On/Off

Selfview is set to on or off.

FullscreenMode: On/Off

Choose between displaying the self-view in full screen or as picture-in-picture.

PIPPosition: CenterLeft/CenterRight/LowerLeft/LowerRight/UpperCenter/UpperLeft/UpperRight

Select the position for the self-view image.

OnMonitorRole: First/Fourth/Second/Third

Displays self-view on monitors with this role.
Chapter 5

xStatus commands
Description of the xStatus commands

In this chapter, you can find all of the xStatus commands and the responses. Status type commands return information about the system and system processes. You can query all information or just some of it.

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

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

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Audio status

xStatus Audio Input Connectors HDMI [n] EcReferenceDelay
Returns the detected latency for each loudspeaker to microphone path for systems supporting HDMI input used as microphone input. The result is in milliseconds.
Requires user role: ADMIN, USER
Value space of the result returned:
Integer
Example:
```
xStatus Audio Input Connectors HDMI 1 EcReferenceDelay
*s Audio Connectors HDMI 1 EcReferenceDelay: 0
** end
```

xStatus Audio Input Connectors Microphone [n] ConnectionStatus
Indicates whether a microphone is detected on the microphone input connector.
Requires user role: ADMIN, INTEGRATOR, USER
Value space of the result returned:
Connected/NotConnected/Unknown
Example:
```
xStatus Audio Input Connectors Microphone ConnectionStatus
*s Audio Input Connectors Microphone 1 ConnectionStatus: NotConnected
*s Audio Input Connectors Microphone 2 ConnectionStatus: Connected
** end
```

xStatus Audio Input RemoteInput [n] CallId
Shows the CallId for the remote audio input.
You can run the command xStatus Audio Input RemoteInput to find the identity [n] of the input.
Requires user role: ADMIN, USER
Value space of the result returned:
0..65534
Example:
```
xStatus Audio Input RemoteInput 8 CallId
*s Audio Input RemoteInput 8 CallId: 28
** end
```

xStatus Audio Microphones Mute
Shows whether the microphones are muted.
Requires user role: ADMIN, INTEGRATOR, USER
Value space of the result returned:
On/Off
Example:
```
xStatus Audio Microphones Mute
*s Audio Microphones Mute: Off
** end
```
xStatus Audio Output Connectors Line [n] DelayMs
Shows the delay in milliseconds.
Requires user role: ADMIN, INTEGRATOR, USER

Value space of the result returned:
Integer (0..290)

Example:
  xStatus Audio Output Connectors Line 1
  *s Audio Output Connectors Line 1 DelayMs: 60
  ** end

xStatus Audio Volume
Shows the volume level (dB) of the loudspeaker output.
Requires user role: ADMIN, INTEGRATOR, USER

Value space of the result returned:
0..100

Example:
  xStatus Audio Volume
  *s Audio Volume: 70
  ** end

xStatus Audio VolumeMute
Shows whether the endpoint volume is set to mute.
Requires user role: ADMIN, USER

Value space of the result returned:
Off/On

Example:
  xStatus Audio VolumeMute
  *s Audio VolumeMute: Off
  ** end

---

Bookings status

xStatus Bookings Current Id
The ID of the on going booking event, if any.
Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
  xStatus Bookings Current Id
  *s Bookings Current Id: "123"
  ** end
**Call status**

**xStatus Call [n] AnswerState**
Indicates if a call is answered, ignored or has been automatically answered by a system.

Requires user role: ADMIN, USER

**Value space of the result returned:**
Unanswered/Ignored/Autoanswered/Answered

**Example:**
```
xStatus Call AnswerState
's Call 5 AnswerState: Answered
** end
```

**xStatus Call [n] AttendedTransferFrom**
Shows the CallId for the call the current call was transferred from.

Requires user role: ADMIN, USER

**Value space of the result returned:**
Integer

**Example:**
```
xStatus Call 1 AttendedTransferFrom
's Call 1 AttendedTransferFrom: 1234
** end
```

**xStatus Call [n] CallbackNumber**
Shows the remote (far end) number or URI of an incoming or outgoing call, including the call protocol, for call back. You can run the command xStatus Call to find the call identity.

Requires user role: ADMIN, USER

**Value space of the result returned:**
String

**Example:**
```
xStatus Call 27 CallbackNumber
's Call 27 CallbackNumber: "h323:firstname.lastname@company.com"
** end
```

**xStatus Call [n] CallType**
Shows the call type of the incoming or outgoing call. You can run the command xStatus Call to find the call identity.

Requires user role: ADMIN, USER

**Value space of the result returned:**
Video/Audio/AudioCanEScan/ForwardAllCall/Unknown

**Example:**
```
xStatus Call 27 CallType
's Call 27 CallType: Video
** end
```

**xStatus Call [n] DeviceType**
Indicates whether the remote system is a single endpoint or an MCU. Some Cisco endpoints (SX20, SX80, MX200 G2, MX300 G2) have built-in MCU capabilities.

Requires user role: ADMIN, USER

**Value space of the result returned:**
Endpoint/MCU

**Example:**
```
xStatus Call DeviceType
's Call 4 DeviceType: Endpoint
** end
```

**xStatus Call [n] Direction**
States the direction of the call initiation. You can run the command xStatus Call to find the call identity.

Requires user role: ADMIN, USER

**Value space of the result returned:**
Incoming/Outgoing

**Example:**
```
xStatus Call 27 Direction
's Call 27 Direction: Outgoing
** end
```
xStatus Call [n] DisplayName
Shows the name of the remote (far end) participant in an incoming or outgoing call. You can run the command xStatus Call to find the call identity.

Requires user role: ADMIN, USER

**Value space of the result returned:**
String

**Example:**
```plaintext
xStatus Call 27 DisplayName
*s Call 27 DisplayName: "firstname.lastname@company.com"
** end
```

xStatus Call [n] Duration
Shows the duration of a call (in seconds). You can run the command xStatus Call to find the call identity.

Requires user role: ADMIN, USER

**Value space of the result returned:**
Integer

**Example:**
```plaintext
xStatus Call 27 Duration
*s Call 27 Duration: 2354
** end
```

xStatus Call [n] Encryption Type
Shows the encryption type of the call. You can run the command xStatus Call to find the call identity.

Requires user role: ADMIN, USER

**Value space of the result returned:**
None/Aes-128

**Example:**
```plaintext
xStatus Call 27 Encryption Type
*s Call 27 Encryption Type: "None"
** end
```

xStatus Call [n] FacilityServiceId
When calling a facility service, the facility service id is shown. Otherwise the value 0 is returned.

Requires user role: ADMIN, INTEGRATOR, USER

**Value space of the result returned:**
0..5

**Example:**
```plaintext
xStatus Call FacilityServiceId
*s Call 3 FacilityServiceId: 1
** end
```

xStatus Call [n] HoldReason
Shows the reason the current outgoing call was put on hold.
Conference: On hold while the call is being merged into a conference.
Transfer: On hold while the call is being transferred.
None: All other instances.

Requires user role: ADMIN, USER

**Value space of the result returned:**
Conference/Transfer/None

**Example:**
```plaintext
xStatus Call 2 HoldReason
*s Call 2 HoldReason: None
** end
```
**xStatus Call \[n\] PlacedOnHold**

Shows the placed on hold status of the call. You can run the command `xStatus Call` to find the call identity.

Requires user role: ADMIN, USER

**Value space of the result returned:** True/False

**Example:**
```
xStatus Call 27 PlacedOnHold
's Call 27 PlacedOnHold: False
** end
```

**xStatus Call \[n\] Protocol**

Shows the call protocol of the incoming or outgoing call. You can run the command `xStatus Call` to find the call identity.

Requires user role: ADMIN, USER

**Value space of the result returned:** H320/H323/SIP/Spark/Unknown

**Example:**
```
xStatus Call 27 Protocol
's Call 27 Protocol: "h323"
** end
```

**xStatus Call \[n\] ReceiveCallRate**

Shows the receive bandwidth in the call in kilobits per second (kbps). You can run the command `xStatus Call` to find the call identity.

Requires user role: ADMIN, INTEGRATOR, USER

**Value space of the result returned:** Integer

**Example:**
```
xStatus Call 27 ReceiveCallRate
's Call 27 ReceiveCallRate: 4000
** end
```

**xStatus Call \[n\] RemoteNumber**

Shows the remote (far end) number or URI of an incoming or outgoing call. You can run the command `xStatus Call` to find the call identity.

Requires user role: ADMIN, USER

**Value space of the result returned:** String

**Example:**
```
xStatus Call 27 RemoteNumber
's Call 27 RemoteNumber: "5585232"
** end
```

**xStatus Call \[n\] Status**

Shows the status of a call. You can run the command `xStatus Call` to find the call identity.

Requires user role: ADMIN, USER

**Value space of the result returned:** Idle/Dialling/Ringing/Connecting/Connected/Disconnecting/OnHold/EarlyMedia/Preserved/RemotePreserved

**Example:**
```
xStatus Call 27 Status
's Call 27 Status: Connected
** end
```

**xStatus Call \[n\] TransmitCallRate**

Shows the transmit bandwidth in the call in kilobits per second (kbps). You can run the command `xStatus Call` to find the call identity.

Requires user role: ADMIN, INTEGRATOR, USER

**Value space of the result returned:** Integer

**Example:**
```
xStatus Call 27 TransmitCallRate
's Call 27 TransmitCallRate: 768
** end
```
Cameras status

**xStatus Cameras Camera [n] Capabilities Options**
Shows the camera capabilities (ptzf = pan, tilt, zoom, focus).

Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL

**Value space of the result returned:**
String

**Example:**
```
xStatus Cameras Camera 1 Capabilities Options
*s Camera 1 Capabilities Options: "ptzf"
** end
```

**xStatus Cameras Camera [n] Connected**
Shows if the camera is connected or not.

Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL

**Value space of the result returned:**
True/False

**Example:**
```
xStatus Cameras Camera 1 Connected
*s Camera 1 Connected: True
** end
```

**xStatus Cameras Camera [n] Flip**
In Flip mode (vertical flip) the image can be flipped upside down.

Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL

**Value space of the result returned:**
Auto/On/Off

**Example:**
```
xStatus Cameras Camera 1 Flip
*s Camera 1 Flip: "Off"
** end
```

**xStatus Cameras Camera [n] HardwareID**
Shows the hardware identity of the camera.

Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL

**Value space of the result returned:**
String

**Example:**
```
xStatus Cameras Camera 1 HardwareID
*s Camera 1 HardwareID: "50000000"
** end
```

**xStatus Cameras Camera [n] MacAddress**
Shows the MAC (Media Access Control) address for the camera.

Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL

**Value space of the result returned:**
String

**Example:**
```
xStatus Cameras Camera 1 MacAddress
*s Camera 1 MacAddress: ""
** end
```

**xStatus Cameras Camera [n] Manufacturer**
Shows the manufacturer of the camera.

Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL

**Value space of the result returned:**
String

**Example:**
```
xStatus Cameras Camera 1 Manufacturer
*s Camera 1 Manufacturer: "Cisco"
** end
```
xStatus Cameras Camera [n] Model
Shows the camera model.
Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL
Value space of the result returned:
String
Example:
  xStatus Cameras Camera 1 Model
  "Camera 1 Model: "Precision 40"
  ** end

xStatus Cameras Camera [n] Position Focus
Shows the current focus position of the camera. The value range depends on camera type.
Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL
Value space of the result returned:
0..65535
Example:
  xStatus Cameras Camera 1 Position Focus
  "Camera 1 Position Focus: 4597"
  ** end

xStatus Cameras Camera [n] Position Pan
Shows the current pan (move left and right) position of the camera. The value range depends on camera type.
Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL
Value space of the result returned:
-65535..65535
Example:
  xStatus Cameras Camera 1 Position Pan
  "Camera 1 Position Pan: 412"
  ** end

xStatus Cameras Camera [n] Position Tilt
Shows the current tilt (move up and down) position of the camera. The value range depends on camera type.
Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL
Value space of the result returned:
-65535..65535
Example:
  xStatus Cameras Camera 1 Position Tilt
  "Camera 1 Position Tilt: 106"
  ** end

xStatus Cameras Camera [n] Position Zoom
Shows the current zoom (zoom in and out) position of the camera. The value range depends on camera type.
Requires user role: ADMIN, INTEGRATOR, USER
Value space of the result returned:
0..65535
Example:
  xStatus Cameras Camera 1 Position Zoom
  "Camera 1 Position Zoom: 828"
  ** end

xStatus Cameras Camera [n] SerialNumber
Shows the camera serial number.
Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL
Value space of the result returned:
String
Example:
  xStatus Cameras Camera 1 SerialNumber
  "Camera 1 SerialNumber: "B1AB26B00010"
  ** end
xStatus Cameras Camera [n] SoftwareID
Shows the software identity of the camera.
Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL
Value space of the result returned:
String
Example:
xStatus Cameras Camera 1 SoftwareID
*s Camera 1 SoftwareID: "S01718-4.0FINAL [ID:40063] 2014-10-20"** end

Capabilities status

xStatus Capabilities Conference MaxActiveCalls
Shows the the maximum number of simultaneous active calls. Calls that are set on hold/transfer
are not counted as active.
Requires user role: ADMIN, USER
Value space of the result returned:
0..5
Example:
xStatus Capabilities Conference MaxNumberOfActiveCalls
*s Capabilities Conference MaxNumberOfActiveCalls: 3
** end

xStatus Capabilities Conference MaxAudioCalls
Shows the the maximum number of simultaneous audio calls that is supported.
Requires user role: ADMIN, USER
Value space of the result returned:
Integer
Example:
xStatus Capabilities Conference MaxAudioCalls
*s Capabilities Conference MaxAudioCalls: 3
** end

xStatus Capabilities Conference MaxCalls
Shows the the maximum number of simultaneous calls.
Requires user role: ADMIN, USER
Value space of the result returned:
0..5
Example:
xStatus Capabilities Conference MaxCalls
*s Capabilities Conference MaxCalls: 3
** end
xStatus Capabilities Conference MaxVideoCalls
Shows the maximum number of simultaneous video calls that is supported.
Requires user role: ADMIN, USER

Value space of the result returned:
Integer

Example:
```
xStatus Capabilities Conference MaxVideoCalls
  *s Capabilities Conference MaxVideoCalls: 3
** end
```

Conference status

xStatus Conference ActiveSpeaker CallId
Shows the CallId of the current active speaker.
Requires user role: ADMIN, USER

Value space of the result returned:
Integer

Example:
```
xStatus Conference ActiveSpeaker CallId
  *s Conference ActiveSpeaker CallId: 3
** end
```

xStatus Conference Call [n] BookingId
Shows the booking ID of a conference (if assigned). The booking ID can be used for easy identification of a call or conference.
Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
```
xStatus Conference Call 2 BookingId
  *s Conference Call 2 BookingId: "$MyConference"
** end
```

xStatus Conference Call [n] Capabilities FarendMessage Mode
Not applicable in this release.
Requires user role: ADMIN, USER

Value space of the result returned:
On/Off

Example:
```
xStatus Conference Call Capabilities FarendMessage Mode
  *s Conference Call 4 Capabilities FarendMessage Mode: Off
** end
```
xStatus Conference Call [n] Capabilities FECC Mode
Shows whether or not you have permission to control the input sources at a far end site.
On: Far end input source control is permitted.
Off: Far end input source control is not permitted.
Requires user role: ADMIN, USER
Value space of the result returned:
On/Off
Example:
xStatus Conference Call 2 Capabilities FECC Mode
  *'s Conference Call 2 Capabilities FECC Mode: On
  ** end

xStatus Conference Call [n] Capabilities FECC NumberOfPresets
Shows the number of presets available for the input sources at a far end site.
Requires user role: ADMIN, USER
Value space of the result returned:
1..15
Example:
xStatus Conference Call 2 Capabilities FECC NumberOfPresets
  *'s Conference Call 2 Capabilities FECC NumberOfPresets: 15
  ** end

xStatus Conference Call [n] Capabilities FECC NumberOfSources
Shows the number of input sources that can be connected at a far end site.
Requires user role: ADMIN, USER
Value space of the result returned:
1..5
Example:
xStatus Conference Call 2 Capabilities FECC NumberOfSources
  *'s Conference Call 2 Capabilities FECC NumberOfSources: 5
  ** end
xStatus Conference Call [n] Capabilities Hold
Indicates whether the far-end site can be placed on hold or not.
Requires user role: ADMIN, USER
Value space of the result returned:
True/False
Example:
```
xStatus Conference Call Capabilities Hold
's Conference Call 2 Capabilities Hold: True
** end
```

xStatus Conference Call [n] Capabilities IxChannel Status
Not applicable in this release.
Requires user role: ADMIN, USER
Value space of the result returned:
Active/Failed/Off
Example:
```
xStatus Conference Call 4 Capabilities IxChannel Status
's Conference Call 4 Capabilities IxChannel Status: Active
** end
```

xStatus Conference Call [n] Capabilities Presentation
Lists the presentation capabilities for other participants in the conference.
Requires user role: ADMIN, USER
Value space of the result returned:
True/False
Example:
```
xStatus Conference Call 2 Capabilities Presentation
's Conference Call 2 Capabilities Presentation: True
** end
```

xStatus Conference Call [n] Manufacturer
Shows the manufacturer of the video system at a far end site.
Requires user role: ADMIN, USER
Value space of the result returned:
String
Example:
```
xStatus Conference Call 2 Manufacturer
's Conference Call 2 Manufacturer: "Cisco"
** end
```

xStatus Conference Call [n] MicrophonesMuted
Lists the audio mute status for other participants in the conference.
Requires user role: ADMIN, USER
Value space of the result returned:
True/False
Example:
```
xStatus Conference Call 2 MicrophonesMuted
's Conference Call 2 MicrophonesMuted: True
** end
```

xStatus Conference Call [n] SoftwareID
Shows the ID of the software running on the video system at a far end site.
Requires user role: ADMIN, USER
Value space of the result returned:
String
Example:
```
xStatus Conference Call 2 SoftwareID
's Conference Call 2 SoftwareID: "CE8"
** end
```
xStatus Conference DoNotDisturb
Shows whether DoNotDisturb mode is switched on or not.
Requires user role: ADMIN, INTEGRATOR, USER
Value space of the result returned:
Active/Inactive
Example:
xStatus Conference DoNotDisturb
`s Conference DoNotDisturb: Inactive
** end

xStatus Conference Line [n] Mode
Indicates whether the system is configured as private or shared line on CUCM.
Requires user role: ADMIN, USER
Value space of the result returned:
Shared/Private
Example:
xStatus Conference Line Mode
`s Conference Line 1 Mode: Private
** end

xStatus Conference Multipoint Mode
Shows how the Multipoint video conferences are handled.
Auto: The multipoint method available will be chosen automatically; if none are available the Multipoint Mode will automatically be set to Off. If both MultiWay and MultiSite are available, the MultiWay service takes priority over the built-in MultiSite.
Off: Multiparty conferences are not allowed.
MultiSite: Multiparty conferences are set up using the built-in MultiSite feature. If MultiSite is chosen when the MultiSite feature is not available, the Multipoint Mode will automatically be set to Off.
CUCMMediaResourceGroupList: Multiparty conferences (ad hoc conferences) are hosted by the CUCM configured conference bridge. This setting is provisioned by CUCM in a CUCM environment and should never be set manually by the user.
Requires user role: ADMIN, USER
Value space of the result returned:
Auto/CUCMMediaResourceGroupList/MultiSite/Off
Example:
xStatus Conference Multipoint Mode
`s Conference Multipoint Mode: "Auto"
** end

xStatus Conference Presentation CallId
Shows the identity of the system that sends the presentation.
Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL
Value space of the result returned:
Integer
Example:
xStatus Conference Presentation CallId
`s Conference Presentation CallId: 0
** end
xStatus Conference Presentation LocalInstance [n] SendingMode

Shows whether a presentation source is shared locally or with a remote participant. There can be multiple local presentations which all have their own instance.

Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL

Value space of the result returned:
LocalOnly/LocalRemote/Off

Example:
```
xStatus Conference Presentation LocalInstance 1 SendingMode
's Conference Presentation LocalInstance 1 SendingMode: LocalOnly
'' end
```

xStatus Conference Presentation LocalInstance [n] Source

Shows the SourceId for a current presentation. There can be multiple local presentations which all have their own instance.

Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL

Value space of the result returned:
Integer

Example:
```
xStatus Conference Presentation LocalInstance 1 Source
's Conference Presentation LocalInstance 1 Source: 1
'' end
```

xStatus Conference Presentation Mode

Shows the status of the secondary video stream.

Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL

Value space of the result returned:
On/Off

Example:
```
xStatus Conference Presentation Mode
's Conference Presentation Mode: Off
'' end
```

xStatus Conference SpeakerLock CallId

Shows the CallId for the participant locked as the prominent speaker in the conference.

Requires user role: ADMIN, USER

Value space of the result returned:
Integer

Example:
```
xStatus Conference SpeakerLock CallId
's Conference SpeakerLock CallId: 0
'' end
```

xStatus Conference SpeakerLock Mode

Shows whether a speaker lock is set or not.

Requires user role: ADMIN, USER

Value space of the result returned:
On/Off

Example:
```
xStatus Conference SpeakerLock Mode
's Conference SpeakerLock Mode: Off
'' end
```
Diagnostics status

xStatus Diagnostics Message [n] Description
Shows a description of the current diagnostics alerts.
Requires user role: ADMIN, USER
Value space of the result returned:
String
Example:
xStatus Diagnostics Message Description
's DiagnosticsResult Message 1 Description: "IP configuration incomplete"
** end

xStatus Diagnostics Message [n] Level
Shows the level of importance of the diagnostics message.
Error: There is an error in the system. The system can still be used, but there can be some restrictions.
Warning: A problem is detected and a more specific report follows indicating the exact problem.
Critical: The warning level is critical. The system cannot be used.
Requires user role: ADMIN, USER
Value space of the result returned:
Error/Warning/Critical
Example:
xStatus Diagnostics Message 4 Level
's Diagnostics Message 4 Level: Warning
** end

xStatus Diagnostics Message [n] References
Additional information on the diagnostics alert, if available.
Requires user role: ADMIN, USER
Value space of the result returned:
String
Example:
xStatus Diagnostics Message 10 References
's Diagnostics Message 10 References: "delay=190"
** end
xStatus Diagnostics Message [n] Type
Shows information on the results of the latest diagnostics on the system.

Requires user role: ADMIN, USER

Value space of the result returned:
- CAPFOperationState/CTLinstallation/CUCMVendorConfigurationFile/
- CallProtocolDualStackConfig/CallProtocolIPStackPlatformCompatibility/
- CallProtocolVcsProvisioningCompatibility/CameraId/CameraPairing/
- CameraSoftwareVersion/CameraStatus/CamerasDetected/ConfigurationFile/
- DefaultCallProtocolRegistered/EthernetDuplexMatches/FanStatus/
- FanSpeedAutoNegotiated/HasValidReleaseKey/
- IpCameraStatus/IPv4Assignment/IPv6Assignment/IPv6Mtu/ISDNLinkCompatibility/
- ISDNLinkIpStack/ITLinstallation/InvalidSIPTransportConfig/
- LockDown/RoomControl/
- MediaBlockingDetected/NetLinkStatus/NetSpeedAutoNegotiated/NetworkQuality/
- NTPStatus/OSDVideoOutput/OutputConnectorLocations/ProvisioningStatus/
- SIPProfileType/SelectedVideoInputSourceConnected/SipIceAndAnatConflict/
- TCPMediaFallback/TemperatureCheck/TLSVerifyRequiredCerts/TouchPanelConnection/
- UdpPortRangeViolation/UltraSoundSpeakerAvailability/ValidPasswords/
- VideoFromInternalCamera/VideoInputStability/
- VideoInputSignalQuality/SparkConnectivity/SpeakerTrackFrontPanelMountedCorrectly/
- SpeakerTrackMicrophoneConnection/SpeakerTrackVideoInputs/
- SpeakerTrackEthernetConnection/ANATonVCS/ECReferenceDelay/AudioECRefDelay/
- AudioPairingNoise/AudioPairingRate/AudioPairingSNR/AudioPairingInterference/
- AudioPairingTokenDecode/AudioInternalSpeakerDisabled/AbnormalCallTermination/
- HASActiveCallProtocol/SipOrH323ButNotBothEnabled/PresentationSourceSelection/
- SoftwareUpgrade/PlatformSanity/ContactInfoMismatch/MicrophoneReinforcement/
- FirstTimeWizardNotCompleted/CaptivePortalDetected/MonitorDelay

Example:
```
xStatus Diagnostics Message 1 Type: CamerasDetected
** end
```

H323 status

xStatus H323 Gatekeeper Address
Displays the IP address of the gatekeeper where the system is registered.

Requires user role: ADMIN, USER

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.

Requires user role: ADMIN, USER

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.

Requires user role: ADMIN, USER

Value space of the result returned:
- String

Example:
```
xStatus H323 Gatekeeper Reason
*s H323 Gatekeeper Reason: ""
** end
```
xStatus H323 Gatekeeper Status
Shows the gatekeeper registration status.
Requires user role: ADMIN, USER

**Value space of the result returned:**
Required/Discovering/Discovered/Authenticating/Authenticated/Registering/Registered/
Inactive/Rejected

**Example:**
```plaintext
xStatus H323 Gatekeeper Status
*s H323 Gatekeeper Status: Registered
** end
```

xStatus H323 Mode Reason
Shows whether there is a conflict between H.323 settings and xStatus H323 Mode Status.

****: When H.323 is set to On and there is no conflict between H.323 Mode configuration and
the rest of the system settings.
*SIP is enabled*: When H.323 Mode is set to On and SIP is enabled on a system that does not
support the two simultaneously.
*Not available*: When a system does not support H.323.

 Requires user role: ADMIN, USER

**Value space of the result returned:**
String

**Example:**
```plaintext
xStatus H323 Mode Reason
*s H323 Mode Reason: "***
** end
```

xStatus H323 Mode Status
Shows the status for H.323 registration.
Enabled: Registration is enabled.
Disabled: Registration is disable, because SIP is enabled.

Requires user role: ADMIN, USER

**Value space of the result returned:**
Enabled/Disabled

**Example:**
```plaintext
xStatus H323 Mode Status
*s H323 Mode Status: "Disabled"
** end
```
HttpFeedback status

xStatus HttpFeedback [1..4] Expression [1..15]
Shows the feedback from the HTTP server. There can be up to 15 expressions for each URL. See the xCommand HttpFeedback commands for more information.
Requires user role: ADMIN, USER
Value space of the result returned:
String

xStatus HttpFeedback [1..4] Format
Shows the format of the HTTP Feedback feedback from the HTTP server.
Requires user role: ADMIN, USER
Value space of the result returned:
XML/JSON
Example:
  xStatus HttpFeedback 1 Format
  *s HttpFeedback 1 Format: XML
  ** end

xStatus HttpFeedback [1..4] URL
Shows the URL (Uniform Resource Locator) of the HTTP server. There can be up to three HTTP servers, specified by the URL.
Requires user role: ADMIN, USER
Value space of the result returned:
String
Example:
  xStatus HttpFeedback 1 URL
  ** end

MediaChannels status

xStatus MediaChannels Call [n] Channel [n] Audio Channels
Shows the number of incoming or outgoing audio channels.
Requires user role: ADMIN, USER
Value space of the result returned:
Integer
Example:
  xStatus MediaChannels Call 27 Channel 327 Audio Channels
  *s MediaChannels Call 27 Channel 327 Audio Channels: 1
  ** end

xStatus MediaChannels Call [n] Channel [n] Audio Mute
Audio mute status of the incoming audio.
Requires user role: ADMIN, USER
Value space of the result returned:
True/False
Example:
  xStatus MediaChannels Call 27 Channel 327 Audio Mute
  *s MediaChannels Call 27 Channel 327 Audio Mute: False
  ** end
xStatus MediaChannels Call [n] Channel [n] Audio Protocol

Shows the audio algorithm of the incoming or outgoing audio.

AACLD: The AAC-LD is an MPEG-4 Low Delay Audio Coder audio compression format.
G711A: The G.711 A-law algorithm is an ITU-T standard for audio compression.
G711Mu: The G.711 Mu-law algorithm is an ITU-T standard for audio compression.
G722: The G.722 algorithm is an ITU-T standard for audio compression.
G722.1: The G.722.1 algorithm is an ITU-T standard for audio compression.
G722C1: The G.722.1 annex C algorithm is an ITU-T standard for audio compression.
G723.1: The G.723.1 algorithm is an ITU-T standard for audio compression.
G728: The G.728 algorithm is an ITU-T standard for audio compression.
G729: The G.729 algorithm is an ITU-T standard for audio compression.
G729AB: The G.729 annex A and B algorithm is an ITU-T standard for audio compression.
Off: No audio.
Opus: Opus is a royalty-free IETF standard for audio compression.

Requires user role: ADMIN, USER

Value space of the result returned:

Example:
xStatus MediaChannels Call 27 Channel 327 Audio Protocol
*s MediaChannels Call 27 Channel 327 Audio Protocol: AACLD
** end

xStatus MediaChannels Call [n] Channel [n] Direction

Shows the direction of the call.

Incoming: The call is an incoming call.
Outgoing: The call is an outgoing call.

Requires user role: ADMIN, USER

Value space of the result returned:
Incoming/Outgoing

Example:
xStatus MediaChannels Call 27 Channel 327 Direction
*s MediaChannels Call 27 Channel 327 Direction: Incoming
** end

xStatus MediaChannels Call [n] Channel [n] Encryption

Shows the encryption status for audio or video on the incoming or outgoing call.

Requires user role: ADMIN, USER

Value space of the result returned:
On/Off

Example:
xStatus MediaChannels Call 27 Channel 327 Encryption
*s MediaChannels Call 27 Channel 327 Encryption: On
** end

xStatus MediaChannels Call [n] Channel [n] NetStat Bytes

Shows the number of bytes for audio, video or data on the incoming or outgoing channel.

Requires user role: ADMIN, USER

Value space of the result returned:
Integer

Example:
xStatus MediaChannels Call 27 Channel 327 NetStat Bytes
*s MediaChannels Call 27 Channel 327 NetStat Bytes: 496640
** end
xStatus MediaChannels Call [n] Channel [n] NetStat ChannelRate
Shows the bandwidth for audio, video or data on the incoming or outgoing channel.
Requires user role: ADMIN, USER

Value space of the result returned:
Integer

Example:
xStatus MediaChannels Call 27 Channel 327 NetStat ChannelRate
*s MediaChannels Call 27 Channel 327 NetStat ChannelRate: 128000
** end

xStatus MediaChannels Call [n] Channel [n] NetStat Jitter
Shows the jitter for audio, video or data at the present moment on the incoming or outgoing channel, as specified by RFC 3550.
Requires user role: ADMIN, USER

Value space of the result returned:
Integer

Example:
xStatus MediaChannels Call 27 Channel 327 NetStat Jitter
*s MediaChannels Call 27 Channel 327 NetStat Jitter: 2
** end

xStatus MediaChannels Call [n] Channel [n] NetStat LastIntervalLost
Shows the number of packets lost for audio, video or data during the last interval on the incoming or outgoing channels.
Requires user role: ADMIN, USER

Value space of the result returned:
Integer

Example:
xStatus MediaChannels Call 27 Channel 327 NetStat LastIntervalLost
*s MediaChannels Call 27 Channel 327 NetStat LastIntervalLost: 0
** end

xStatus MediaChannels Call [n] Channel [n] NetStat LastIntervalReceived
Shows the number of packets received for audio, video or data during the last interval on the incoming or outgoing channels.
Requires user role: ADMIN, USER

Value space of the result returned:
Integer

Example:
xStatus MediaChannels Call 27 Channel 327 NetStat LastIntervalReceived
*s MediaChannels Call 27 Channel 327 NetStat LastIntervalReceived: 289
** end

xStatus MediaChannels Call [n] Channel [n] NetStat LastIntervalLost
Shows the number of packets lost for audio, video or data during the last interval on the incoming or outgoing channels.
Requires user role: ADMIN, USER

Value space of the result returned:
Integer

Example:
xStatus MediaChannels Call 27 Channel 327 NetStat LastIntervalLost
*s MediaChannels Call 27 Channel 327 NetStat LastIntervalLost: 0
** end

xStatus MediaChannels Call [n] Channel [n] NetStat MaxJitter
Shows the maximum jitter for audio, video or data that has been measured during last interval (about 5 seconds).
Requires user role: ADMIN, USER

Value space of the result returned:
Integer

Example:
xStatus MediaChannels Call 27 Channel 327 NetStat MaxJitter
*s MediaChannels Call 27 Channel 327 NetStat MaxJitter: 2
** end
xStatus MediaChannels Call [n] Channel [n] NetStat Packets
Shows the number of packets that was received or sent for audio, video or data on the incoming or outgoing channels.
Requires user role: ADMIN, USER
Value space of the result returned:
Integer
Example:
xStatus MediaChannels Call 27 Channel 327 NetStat Packets
  "s MediaChannels Call 27 Channel 327 NetStat Packets: 1551
  ** end

xStatus MediaChannels Call [n] Channel [n] ParticipantId
Shows the ID of the Active Control participant on the incoming audio or video channel.
Requires user role: ADMIN, USER
Value space of the result returned:
String
Example:
xStatus MediaChannels Call 27 Channel 327 ParticipantId
  "s MediaChannels Call 27 Channel 327 ParticipantId: ""
  ** end

xStatus MediaChannels Call [n] Channel [n] Type
Shows the media type on the incoming or outgoing channel.
Audio: The media type on the incoming or outgoing channel is audio.
Video: The media type on the incoming or outgoing channel is video.
Data: The media type on the incoming or outgoing channel is data.
Requires user role: ADMIN, USER
Value space of the result returned:
Audio/Video/Data
Example:
xStatus MediaChannels Call 27 Channel 327 Type
  "s MediaChannels Call 27 Channel 327 Type: Audio
  ** end

xStatus MediaChannels Call [n] Channel [n] Video ChannelRole
Shows the role of the incoming or outgoing video channel.
Main: The main video is on the incoming or outgoing video channel.
Presentation: The presentation is on the incoming or outgoing video channel.
Requires user role: ADMIN, USER
Value space of the result returned:
Main/Presentation
Example:
xStatus MediaChannels Call 27 Channel 327 Video ChannelRole
  "s MediaChannels Call 27 Channel 327 Video ChannelRole: Main
  ** end
xStatus MediaChannels Call [n] Channel [n] Video FrameRate
Shows the frame rate of the incoming or outgoing video channel.
Requires user role: ADMIN, USER
Value space of the result returned:
Integer
Example:
```
xStatus MediaChannels Call 27 Channel 327 Video FrameRate
*s MediaChannels Call 27 Channel 327 Video FrameRate: 30
** end
```

xStatus MediaChannels Call [n] Channel [n] Video Protocol
Shows the video algorithm of the incoming or outgoing video channel.
Shows the video algorithm on the incoming/outgoing video channel.
H261: The H.261 algorithm is an ITU-T standard for video compression.
H263: The H.263 algorithm is an ITU-T standard for video compression.
H263p: The H.263p (H.263+) algorithm is an ITU-T standard for video compression.
H264: The H.264 algorithm (MPEG-4 AVC) is an ITU-T and ISE/IEC standard for video compression.
HEVC: The HEVC (H.265) algorithm (MPEG-4 AVC) is an ITU-T and ISE/IEC standard for video compression.
JPEG: The JPEG algorithm is an ISO/IEC standard for video compression.
MP4V: The MP4V format is an ISO/IEC file format for video compression.
Off: No video.
Requires user role: ADMIN, USER
Value space of the result returned:
H261/H263/H263p/H263pp/H264/HEVC/JPEG/MP4V/Off
Example:
```
xStatus MediaChannels Call 27 Channel 327 Video Protocol
*s MediaChannels Call 27 Channel 327 Video Protocol: H264
** end
```

xStatus MediaChannels Call [n] Channel [n] Video ResolutionX
Shows the width (resolution in direction X) of the incoming or outgoing video.
Requires user role: ADMIN, USER
Value space of the result returned:
Integer
Example:
```
xStatus MediaChannels Call 27 Channel 327 Video ResolutionX
*s MediaChannels Call 27 Channel 327 Video ResolutionX: 1920
** end
```

xStatus MediaChannels Call [n] Channel [n] Video ResolutionY
Shows the width (resolution in direction Y) of the incoming or outgoing video.
Requires user role: ADMIN, USER
Value space of the result returned:
Integer
Example:
```
xStatus MediaChannels Call 27 Channel 327 Video ResolutionY
*s MediaChannels Call 27 Channel 327 Video ResolutionY: 1080
** end
```
Network status

**xStatus Network 1 CDP Address**

Returns the first network address of both receiving and sending devices.

Requires user role: ADMIN, USER

*Value space of the result returned:*

String

*Example:

  xStatus Network CDP Address
  "s Network 1 CDP Address: "192.0.1.20"
  ** end

**xStatus Network 1 CDP Capabilities**

Describes the functional capability for the switch in form of a device type. See documentation for CDP protocol for more information.

Requires user role: ADMIN, USER

*Value space of the result returned:*

String

*Example:

  xStatus Network CDP Capabilities
  "s Network 1 CDP Capabilities: "0x0029"
  ** end

**xStatus Network 1 CDP DeviceId**

Identifies the name of the switch in form of a character string.

Requires user role: ADMIN, USER

*Value space of the result returned:*

String

*Example:

  xStatus Network CDP DeviceId
  "s Network 1 CDP DeviceId: "123456.company.com"
  ** end

**xStatus Network 1 CDP Duplex**

Indicates the status (duplex configuration) of the CDP broadcast interface. Used by network operators to diagnose connectivity problems between adjacent network elements.

Requires user role: ADMIN, USER

*Value space of the result returned:*

String

*Example:

  xStatus Network CDP Duplex
  "s Network 1 CDP Duplex: "Full"
  ** end

**xStatus Network 1 CDP Platform**

Returns the hardware platform name of the switch connected to the endpoint.

Requires user role: ADMIN, USER

*Value space of the result returned:*

String

*Example:

  xStatus Network CDP Platform
  "s Network 1 CDP Platform: "cisco WS-C3750X-48P"
  ** end

**xStatus Network 1 CDP PortID**

Returns the identification the switch uses of the port the endpoint is connected to.

Requires user role: ADMIN, USER

*Value space of the result returned:*

String

*Example:

  xStatus Network CDP PortID
  "s Network 1 CDP PortID: "GigabitEthernet1/0/23"
  ** end
xStatus Network 1 CDP PrimaryMgmtAddress

Returns the management address used to configure and monitor the switch the endpoint is connected to.

Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
```
xStatus Network CDP PrimaryMgmtAddress
*s Network 1 CDP PrimaryMgmtAddress: "10.1.1.2"
** end
```

xStatus Network 1 CDP SysName

Returns the SysName as configured in the switch the endpoint is connected to.

Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
```
xStatus Network CDP SysName
*s Network 1 CDP SysName: ""
** end
```

xStatus Network 1 CDP SysObjectID

Returns the SysObjectID as configured in the switch the endpoint is connected to.

Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
```
xStatus Network CDP SysObjectID
*s Network 1 CDP SysObjectID: ""
** end
```

xStatus Network 1 CDP Version

Returns information about the software release version the switch is running.

Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
```
xStatus Network 1 CDP Version
** end
```

xStatus Network 1 CDP VoIPApplianceVlanID

Identifies the VLAN used for VoIP traffic from the endpoint to the switch. For more information see documentation of the IEEE 802.1Q protocol.

Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
```
xStatus Network CDP VoIPApplianceVlanID
*s Network 1 CDP VoIPApplianceVlanID: "300"
** end
```

xStatus Network 1 CDP VTPMgmtDomain

Returns the switch's configured VTP management domain name-string.

Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
```
xStatus Network CDP VTPMgmtDomain
*s Network 1 CDP VTPMgmtDomain: "anyplace"
** end
```
xStatus Network 1 DNS Domain Name
Shows the domain name.
Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:

```
xStatus Network 1 DNS Domain Name
's Network 1 DNS Domain Name: "www.example.com www.example.int"
** end
```

xStatus Network 1 DNS Server [1..5] Address
Shows the IP address of the DNS server.
Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:

```
xStatus Network 1 DNS Server 1. Address
's Network 1 DNS Server 1 Address: "192.0.2.60"
** end
```

xStatus Network 1 Ethernet MacAddress
Shows the MAC (Media Access Control) address for the Ethernet interface.
Requires user role: ADMIN, USER

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.
Requires user role: ADMIN, USER

Value space of the result returned:
10half/10full/100half/100full/1000full

Example:

```
xStatus Network 1 Ethernet Speed
's Network 1 Ethernet Speed: "100full"
** end
```

xStatus Network 1 IPv4 Address
Shows the IPv4 address that uniquely identifies this system.
Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:

```
xStatus Network 1 IPv4 Address
's Network 1 IPv4 Address: "192.0.2.149"
** end
```

xStatus Network 1 IPv4 Gateway
Shows the address of the IPv4 gateway.
Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:

```
xStatus Network 1 IPv4 Gateway
's Network 1 IPv4 Gateway: "192.0.2.149"
** end
```
xStatus Network 1 IPv4 SubnetMask
Shows the subnet mask which determines which subnet an IPv4 address belongs to.
Requires user role: ADMIN, USER
Value space of the result returned:
String
Example:
  xStatus Network 1 IPv4 SubnetMask
  *s Network 1 IPv4 SubnetMask: "255.255.255.0"
  ** end

xStatus Network 1 IPv6 Address
Shows the IPv6 address that uniquely identifies this system.
Requires user role: ADMIN, USER
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.
Requires user role: ADMIN, USER
Value space of the result returned:
String
Example:
  xStatus Network 1 IPv6 Gateway
  *s Network 1 IPv6 Gateway: ""
  ** end

xStatus Network 1 VLAN Voice VlanId
The feedback shows the VLAN Voice ID; or Off if the VLAN Voice Mode is not enabled.
Requires user role: ADMIN, USER
Value space of the result returned:
Off/1..4094
Example:
  xStatus Network 1 VLAN Voice VlanId
  *s Network 1 VLAN Voice VlanId: "Off"
  ** end
NetworkServices status

xStatus NetworkServices NTP CurrentAddress
Returns the address of the NTP server that is currently in use.
Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
```
xStatus NetworkServices NTP CurrentAddress
's NetworkServices NTP CurrentAddress: "123.254.15.121"
** end
```

xStatus NetworkServices NTP Server [n] Address
Returns the address of the NTP server(s) the codec is using.
Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
```
xStatus NetworkServices NTP Address
's NetworkServices NTP Address: "12.104.193.12 64.104.222.16 144.254.15.121"
** end
```
**Peripherals status**

xStatus Peripherals ConnectedDevice [n] HardwareInfo
Shows hardware information about connected device.
Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL

*Value space of the result returned:*
String

*Example:*
xStatus Peripherals ConnectedDevice 1007 HardwareInfo
"1122330-0"
** end

xStatus Peripherals ConnectedDevice [n] ID
Shows the MAC-address of the connected device.
Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL

*Value space of the result returned:*
String

*Example:*
xStatus Peripherals ConnectedDevice 1007 ID
"00:10:20:20:be:21"
** end

xStatus Peripherals ConnectedDevice [n] Name
Shows the product name of connected device.
Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL

*Value space of the result returned:*
String

*Example:*
xStatus Peripherals ConnectedDevice 1007 Name
"Cisco TelePresence Touch"
** end

xStatus Peripherals ConnectedDevice [n] SoftwareInfo
Shows information of the software version running on the connected device.
Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL

*Value space of the result returned:*
String

*Example:*
xStatus Peripherals ConnectedDevice 1007 SoftwareInfo
"TI7.2.0"
** end

xStatus Peripherals ConnectedDevice [n] Status
Shows peripheral devices that are currently connected to the endpoint.
Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL

*Value space of the result returned:*
Connected/ResponseTimedOut

*Example:*
xStatus Peripherals ConnectedDevice 1001 Status
"Connected"
** end

xStatus Peripherals ConnectedDevice [n] Type
Shows the peripheral types that are connected to the endpoint.
Note: The value space Camera only shows Precision 60 cameras.
Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL

*Value space of the result returned:*
Byod/Camera/ControlSystem/ISDNLink/Other/SpeakerTrack/TouchPanel

*Example:*
xStatus Peripherals ConnectedDevice 1001 Type
"TouchPanel"
** end
xStatus Peripherals ConnectedDevice [n] UpgradeStatus
Shows the status of the previous software upgrade on the currently connected peripherals.
Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL

Value space of the result returned:
- Downloading
- Failed
- Installing
- InstallationReady
- None
- Succeeded
- Rebooting
- Retrying
- Aborted
- Paused

Example:
```
xStatus Peripherals ConnectedDevice 1001 UpgradeStatus
** Provisionals ConnectedDevice 1001 UpgradeStatus: None
** end
```

Provisioning status

xStatus Provisioning CUCM ExtensionMobility Enabled
Shows if Extension Mobility is enabled for a CUCM registered device.
Requires user role: ADMIN, USER

Value space of the result returned:
- True
- False

Example:
```
xStatus Provisioning CUCM ExtensionMobility Enabled
  ** Provisioning CUCM ExtensionMobility Enabled: False
  ** end
```

xStatus Provisioning CUCM ExtensionMobility LastLoggedInUserId
Returns the user id that was last logged in to the system. Only in use if CUCM Extension Mobility is enabled, and CUCM is configured to remember the last logged in user on an endpoint.
Requires user role: ADMIN, USER

Value space of the result returned:
- String

Example:
```
xStatus Provisioning CUCM ExtensionMobility LastLoggedInUserId
  ** Provisioning CUCM ExtensionMobility LastLoggedInUserId: "User 1"
  ** end
```
**xStatus Provisioning CUCM ExtensionMobility LoggedIn**
Shows if someone is logged in to Extension Mobility or not.
Requires user role: ADMIN, USER

**Value space of the result returned:**
True/False

**Example:**
```plaintext
xStatus Provisioning CUCM ExtensionMobility LoggedIn
*s Provisioning CUCM ExtensionMobility LoggedIn: False
** end
```

**xStatus Provisioning Software Current CompletedAt**
Shows date and time for when the current software upgrade was completed.
Requires user role: ADMIN, USER

**Value space of the result returned:**
String

**Example:**
```plaintext
xStatus Provisioning Software Current CompletedAt
*s Provisioning Software Current CompletedAt: "2011-06-07T07:20:03Z"
** end
```

**xStatus Provisioning Software Current URL**
Shows the URL that the current software was uploaded from.
Requires user role: ADMIN, USER

**Value space of the result returned:**
String

**Example:**
```plaintext
xStatus Provisioning Software Current URL
*s Provisioning Software Current URL: "http://.../s52020ce8_0_0.pkg"
** end
```
xStatus Provisioning Software UpgradeStatus Phase
Shows the phase of the software upgrade.

Requires user role: ADMIN, USER

**Value space of the result returned:**
None/DownloadPending/FormingHierarchy/Downloading/DownloadPaused/DownloadDone/
Seeding/AboutToInstallUpgrade/Postponed/PeripheralsReady/UpgradingPeripherals/Installing/
InstallingPeripherals

**Example:**
```
xStatus Provisioning Software UpgradeStatus Phase
  *s Provisioning Software UpgradeStatus Phase: None
** end
```

xStatus Provisioning Software UpgradeStatus SessionId
Shows the ID of the session for the software upgrade.

Requires user role: ADMIN, USER

**Value space of the result returned:**
String

**Example:**
```
xStatus Provisioning Software UpgradeStatus SessionId
  *s Provisioning Software UpgradeStatus SessionId: ""
** end
```

xStatus Provisioning Software UpgradeStatus Status
Shows the status of the software upgrade.

Requires user role: ADMIN, USER

**Value space of the result returned:**
None/InProgress/Failed/InstallationFailed/Succeeded

**Example:**
```
xStatus Provisioning Software UpgradeStatus Status
  *s Provisioning Software UpgradeStatus Status: None
** end
```

xStatus Provisioning Software UpgradeStatus URL
Shows the URL that the new software currently is being uploaded and installed from.

Requires user role: ADMIN, USER

**Value space of the result returned:**
String

**Example:**
```
xStatus Provisioning Software UpgradeStatus URL
  *s Provisioning Software UpgradeStatus URL: "http://.../s52020ce8_0_0.pkg"
** end
```

xStatus Provisioning Software UpgradeStatus VersionId
Shows the version ID of the software currently being uploaded and installed.

Requires user role: ADMIN, USER

**Value space of the result returned:**
String

**Example:**
```
xStatus Provisioning Software UpgradeStatus VersionId
  *s Provisioning Software UpgradeStatus VersionId: "s52010ce8_0_0.pkg"
** end
```
xStatus Provisioning Status

Shows the status of the provisioning.
Failed: The provisioning failed.
AuthenticationFailed: The authentication failed.
Provisioned: The endpoint is provisioned.
Idle: The provisioning is not active.
NeedConfig: The endpoint needs to be configured.
ConfigError: An error occurred during configuration.

Requires user role: ADMIN, USER

Value space of the result returned:
Failed/AuthenticationFailed/Provisioned/Idle/NeedConfig/ConfigError

Example:
xStatus Provisioning Status
*s Provisioning Status: Provisioned
** end

Proximity status

xStatus Proximity Services Availability

Shows whether proximity services are available on the endpoint.
Available: Proximity mode has been enabled with the command xConfiguration Proximity Mode and one or more of the proximity services have been enabled with xConfiguration Proximity Services commands.
Disabled: Proximity mode has been disabled with xConfiguration Proximity Mode, or none of the services have been enabled with the xConfiguration Proximity Services commands.
Deactivated: Proximity services have been deactivated with the command xCommand Proximity Services Deactivate.

Requires user role: ADMIN, USER

Example:
xStatus Proximity Services Availability
*s Proximity Services Availability: Disabled
** end
Security status

xStatus Security FIPS Mode
Shows the FIPS mode status.
Requires user role: ADMIN, USER
Value space of the result returned: On/Off
Example:
  xStatus Security FIPS Mode
  *s Security FIPS Mode: Off
  ** end

xStatus Security Persistency CallHistory
Shows whether call history logging is set to persistent or non-persistent mode. Persistent is the default mode.
Requires user role: ADMIN, USER
Value space of the result returned: NonPersistent/Persistent
Example:
  xStatus Security Persistency CallHistory
  *s Security Persistency CallHistory: Persistent
  ** end

xStatus Security Persistency Configurations
Shows whether the systems all configurations are set to persistent or non-persistent mode. Persistent is the default mode.
Requires user role: ADMIN, USER
Value space of the result returned: NonPersistent/Persistent
Example:
  xStatus Security Persistency Configurations
  *s Security Persistency Configurations: Persistent
  ** end

xStatus Security Persistency DHCP
Shows whether DHCP logging is set to persistent or non-persistent mode. Persistent is the default mode.
Requires user role: ADMIN, USER
Value space of the result returned: NonPersistent/Persistent
Example:
  xStatus Security Persistency DHCP
  *s Security Persistency DHCP: Persistent
  ** end

xStatus Security Persistency InternalLogging
Shows whether internal logging is set to persistent or non-persistent mode. Persistent is the default mode.
Requires user role: ADMIN, USER
Value space of the result returned: NonPersistent/Persistent
Example:
  xStatus Security Persistency InternalLogging
  *s Security Persistency InternalLogging: Persistent
  ** end
xStatus Security Persistency LocalPhonebook
Shows whether local phone book is set to persistent or non-persistent mode. Persistent is the default mode.

Requires user role: ADMIN, USER

Value space of the result returned:
NonPersistent/Persistent

Example:
xStatus Security Persistency LocalPhonebook
  *s Security Persistency LocalPhonebook: Persistent
  ** end

SIP status

xStatus SIP AlternateURI Alias [n] URI

Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
xStatus SIP AlternateURI Alias
  *S SIP AlternateURI Alias URI: ""
  ** end

xStatus SIP AlternateURI Primary [n] URI

Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
xStatus SIP AlternateURI Primary
  *S SIP AlternateURI Primary URI: ""
  ** end

xStatus SIP Authentication
Shows which authentication mechanism is used when registering to the SIP Proxy Server.
Digest: Uses the Digest access authentication method, as specified by RFC 2069.
NTLM: Uses the NTLM authentication method, which is a Microsoft authentication protocol.
Off: No authentication mechanism is used.

Requires user role: ADMIN, USER

Value space of the result returned:
Digest/Off

Example:
xStatus SIP Authentication
  *S SIP Authentication: Off
  ** end
xStatus SIP CallForward DisplayName

Returns the URI that is displayed on the user interface for the forwarded call.

Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
```
xStatus SIP CallForward DisplayName
  *s SIP CallForward DisplayName: ""
  ** end
```

xStatus SIP CallForward Mode

Indicates whether the call forward mode for SIP is set to on or off.

Requires user role: ADMIN, USER

Value space of the result returned:
On/Off

Example:
```
xStatus SIP CallForward Mode
  *s SIP CallForward Mode: Off
  ** end
```

xStatus SIP CallForward URI

Indicates the address the incoming calls are directed to when call forward mode is set on.

Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
```
xStatus SIP CallForward URI
  *s SIP CallForward URI: ""
  ** end
```

xStatus SIP Mailbox MessagesWaiting

Indicates how many new messages are in the mailbox.

Requires user role: ADMIN, USER

Value space of the result returned:
Integer

Example:
```
xStatus SIP Mailbox MessagesWaiting
  *s SIP Mailbox MessagesWaiting: 0
  ** end
```

xStatus SIP Mailbox URI

Returns the URI for your SIP mailbox.

Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
```
xStatus SIP Mailbox URI
  *s SIP Mailbox URI: "12345678"
  ** end
```

xStatus SIP Proxy [n] Address

Shows the address of the SIP Proxy that the system communicates with.

Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
```
xStatus SIP Proxy 1 Address
  *s SIP Proxy 1 Address: "192.0.2.50"
  ** end
```
xStatus SIP Proxy [n] Status
Shows the status of the communication between the endpoint and the SIP Proxy server.
Active: The communication between the endpoint and the SIP Proxy is active.
DNSFailed: The attempt to establish communication to the DNS server failed.
Off: There is no communication between the endpoint and the SIP Proxy.
Timeout: The attempt to establish communication to the SIP Proxy timed out.
UnableTCP: The system is unable to use TCP as the transport method.
UnableTLS: The system is unable to use TLS as the transport method.
Unknown: The status of the communication is not known.
AuthenticationFailed: Wrong user name or password.

Requires user role: ADMIN, USER

Value space of the result returned:
Active/DNSFailed/Off/Timeout/UnableTCP/UnableTLS/Unknown/AuthenticationFailed

Example:
```
xStatus SIP Proxy 1 Status
*s SIP Proxy 1 Status: Active
** end
```

xStatus SIP Registration [n] Authentication
Shows which authentication mechanism is used when registering to the SIP Proxy Server.
Digest: Uses the Digest access authentication method, as specified by RFC 2069.
NTLM: Uses the NTLM authentication method, which is a Microsoft authentication protocol.
Off: No authentication mechanism is used.

Requires user role: ADMIN, USER

Value space of the result returned:
Digest/Off

Example:
```
xStatus SIP Registration 1 Authentication
*s SIP Registration 1 Authentication: Off
** end
```

xStatus SIP Proxy [n] Status
Shows the status of the communication between the endpoint and the SIP Proxy server.
Active: The communication between the endpoint and the SIP Proxy is active.
DNSFailed: The attempt to establish communication to the DNS server failed.
Off: There is no communication between the endpoint and the SIP Proxy.
Timeout: The attempt to establish communication to the SIP Proxy timed out.
UnableTCP: The system is unable to use TCP as the transport method.
UnableTLS: The system is unable to use TLS as the transport method.
Unknown: The status of the communication is not known.
AuthenticationFailed: Wrong user name or password.

Requires user role: ADMIN, USER

Value space of the result returned:
Active/DNSFailed/Off/Timeout/UnableTCP/UnableTLS/Unknown/AuthenticationFailed

Example:
```
xStatus SIP Proxy 1 Status
*s SIP Proxy 1 Status: Active
** end
```

xStatus SIP Registration [n] Reason
Shows a message to explain the reason why the SIP registration failed.

Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
```
xStatus SIP Registration 1 Reason
*s SIP Registration 1 Reason: "404 Not Found"
** end
```

xStatus SIP Registration [n] Status
Shows the status of the registration to the SIP Proxy Server.
Deregister: The system is in the process of de-registering to the SIP Proxy.
Failed: The system failed to register to the SIP Proxy.
Inactive: The system is not registered to any SIP Proxy.
Registered: The system is registered to the SIP Proxy.
Registering: The system is in the process of registering to the SIP Proxy.

Requires user role: ADMIN, USER

Value space of the result returned:
Deregister/Failed/Inactive/Registered/Registering

Example:
```
xStatus SIP Registration 1 Status
*s SIP Registration 1 Status: Registered
** end
```
xStatus SIP Registration [n] URI
Shows the URI used for registration to the SIP Proxy server.
Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
  xStatus SIP Registration 1 URI
  *s SIP Registration 1 URI: "firstname.lastname@company.com"
  ** end

xStatus SIP Secure
Shows the encryption status of the signaling with the SIP Proxy server.
Requires user role: ADMIN, USER

Value space of the result returned:
True/False

Example:
  xStatus SIP Secure
  *s SIP Secure: True
  ** end

xStatus SIP Verified
Shows whether or not the SSL certificate of the server that the video system / codec tries to register to is included in the codec’s trusted CA-list. The server is typically a Cisco VCS or CUCM.
True: The server’s SIP certificate is checked against the trusted CA-list on the codec and found valid. Additionally, the fully qualified domain name of the server matches the valid certificate.
False: A TLS connection is not set up because the SIP certificate verification failed or the domain name did not match. Note that the status also returns False when TLS is not used (xConfiguration SIP DefaultTransport not set to TLS) or certificate verification is switched off (SIP TlsVerify: Off. This setting is accessible through your products web interface).
Requires user role: ADMIN, USER

Value space of the result returned:
True/False

Example:
  xStatus SIP Verified
  *s SIP Verified: False
  ** end
Standby status

xStatus Standby State

Shows whether the system is in standby mode or not.

Standby: The system is in standby state.
EnteringStandby: The system is entering the standby state.
Off: The system is not in standby.

Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL

Value space of the result returned:
Standby/EnteringStandby/Off

Example:
xStatus Standby State
  *s Standby State: Off
  ** 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.

Requires user role: ADMIN, USER

Value space of the result returned:
1/0

Example:
xStatus SystemUnit Hardware Module CompatibilityLevel
  *s SystemUnit Hardware Module CompatibilityLevel: 1
  ** end

xStatus SystemUnit Hardware Module SerialNumber

Shows the serial number of the hardware module in the codec.

Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
xStatus SystemUnit Hardware Module SerialNumber
  *s SystemUnit Hardware Module SerialNumber: "F9AA99A00090"
  ** end
xStatus SystemUnit Hardware Monitoring Fan [n] Status

The feedback shows the speed (rpm) for the specified fan.

Requires user role: ADMIN, USER

**Value space of the result returned:**

String

**Example:**

```
xStatus SystemUnit Hardware Monitoring Fan 1 Status
*s SystemUnit Hardware Monitoring Fan 1 Status: "locked on 1096 rpm"
** end
```

xStatus SystemUnit Hardware Temperature

Shows the current maximum temperature (degree Celsius) measured in the codec/system.

Requires user role: ADMIN, USER

**Value space of the result returned:**

String

**Example:**

```
xStatus SystemUnit Hardware Temperature
*s SystemUnit Hardware Temperature: "64.0"
** end
```

xStatus SystemUnit Notifications Notification [n] Text

Lists text related to important system notifications. Notifications are issued e.g. when a system was rebooted because of a software upgrade, or when a factory reset has been performed. All the notifications can be removed from the list by issuing the xCommand SystemUnit Notifications RemoveAll command.

Requires user role: ADMIN, USER

**Value space of the result returned:**

String

**Example:**

```
xStatus SystemUnit Notifications Notification 1 Text
*s SystemUnit Notifications Notification 1 Text: "OK"
** end
```

xStatus SystemUnit Notifications Notification [n] Type

Lists the system notification types. Notifications are issued e.g. when a system is rebooted because of a software upgrade, or when a factory reset is performed.

FactoryResetOK: This value is returned after a successful factory reset.

FactoryResetFailed: This value is returned after a failed factory reset attempt.

SoftwareUpgradeOK: This value is returned after a successful software upgrade.

SoftwareUpgradeFailed: This value is returned after a failed software upgrade attempt.

RebootRequired: This value is returned when a reboot is required.

Other: This value is returned for any other notifications.

All the notifications can be removed from the list by issuing the xCommand SystemUnit Notifications RemoveAll command.

Requires user role: ADMIN, USER

**Value space of the result returned:**

FactoryResetOK, FactoryResetFailed, SoftwareUpgradeOK, SoftwareUpgradeFailed, RebootRequired, Other

**Example:**

```
xStatus SystemUnit Notifications Notification 1 Type
*s SystemUnit Notifications Notification 1 Type: SoftwareUpgradeOK
** end
```

xStatus SystemUnit ProductId

Shows the product identity.

Requires user role: ADMIN, USER

**Value space of the result returned:**

String

**Example:**

```
xStatus SystemUnit ProductId
*s SystemUnit ProductId: "Cisco TelePresence Codec SX80"
** end
```
xStatus SystemUnit ProductPlatform
Shows the product platform.
Requires user role: ADMIN, USER
Value space of the result returned: String
Example:
  xStatus SystemUnit ProductPlatform
  "s SystemUnit ProductPlatform: "SX80"
  ** end

xStatus SystemUnit ProductType
Shows the product type.
Requires user role: ADMIN, USER
Value space of the result returned: String
Example:
  xStatus SystemUnit ProductType
  "s SystemUnit ProductType: "Cisco Codec"
  ** end

xStatus SystemUnit Software DisplayName
Shows the name of the software that is installed on the codec, as it is displayed in the UI.
Requires user role: ADMIN, USER
Value space of the result returned: String
Example:
  xStatus SystemUnit Software DisplayName
  "s SystemUnit Software DisplayName: "Display Name"
  ** end

xStatus SystemUnit Software Name
Shows the name of the software that is installed on the codec.
Requires user role: ADMIN, USER
Value space of the result returned: String
Example:
  xStatus SystemUnit Software Name
  "s SystemUnit Software Name: "s52010"
  ** end

xStatus SystemUnit Software OptionKeys Encryption
Shows if the system has the option key installed that supports the encryption functionality.
Requires user role: ADMIN, USER
Value space of the result returned: False/True
Example:
  xStatus SystemUnit Software OptionKeys Encryption
  "s SystemUnit Software OptionKeys Encryption: "true"
  ** end

xStatus SystemUnit Software OptionKeys RemoteMonitoring
Shows whether the system has the remote monitoring option key installed. Remote monitoring option key enables snapshots from the web interface, and from a remote paired Touch 10.
Requires user role: ADMIN, USER
Value space of the result returned: False/True
Example:
  xStatus SystemUnit Software OptionKeys RemoteMonitoring
  "s SystemUnit Software OptionKeys RemoteMonitoring: "true"
  ** end
xStatus SystemUnit Software ReleaseDate
Shows the release date of the software installed on the codec.
Requires user role: ADMIN, USER
Value space of the result returned:
String
Example:
xStatus SystemUnit Software ReleaseDate
  *s SystemUnit Software ReleaseDate: "2015-05-05"
  ** end

xStatus SystemUnit Software Version
Shows the software version installed on the codec.
Requires user role: ADMIN, USER
Value space of the result returned:
String
Example:
xStatus SystemUnit Software Version
  *s SystemUnit Software Version: "CE8.0.0"
  ** end

xStatus SystemUnit State NumberOfActiveCalls
Shows the number of active calls.
Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL
Value space of the result returned:
0..5
Example:
xStatus SystemUnit State NumberOfActiveCalls
  *s SystemUnit State NumberOfActiveCalls: 0
  ** end

xStatus SystemUnit State NumberOfInProgressCalls
Shows the number of calls in progress.
Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL
Value space of the result returned:
0..5
Example:
xStatus SystemUnit State NumberOfInProgressCalls
  *s SystemUnit State NumberOfInProgressCalls: 0
  ** end

xStatus SystemUnit State NumberOfSuspendedCalls
Shows the number of suspended calls.
Requires user role: ADMIN, USER
Value space of the result returned:
0..5
Example:
xStatus SystemUnit State NumberOfSuspendedCalls
  *s SystemUnit State NumberOfSuspendedCalls: 0
  ** end

xStatus SystemUnit Uptime
Shows the number of seconds since the last restart of the codec.
Requires user role: ADMIN, USER
Value space of the result returned:
Integer
Example:
xStatus SystemUnit Uptime
  *s SystemUnit Uptime: 597095
  ** end
Time status

xStatus Time SystemTime
Returns the date and time set on the system.
Requires user role: ADMIN, INTEGRATOR, USER
Value space of the result returned:
String
Example:
```
xStatus Time SystemTime
*s Time SystemTime: "2014-04-25T10:04:03Z"
** end
```

UserInterface status

xStatus UserInterface ContactInfo ContactMethod [n] Number
Returns the system's active contact information. This address is used to reach this endpoint.
Requires user role: ADMIN, USER
Value space of the result returned:
String
Example:
```
xStatus UserInterface ContactInfo ContactMethod Number
*s UserInterface ContactInfo ContactMethod 1 Number: "12345678"
** end
```

xStatus UserInterface ContactInfo Name
Returns the system's active contact name. The result depends on which protocol, if any, the system is registered on. The automatically set contact name may have been overridden with the command xConfiguration UserInterface ContactInfo Type. This results in a diagnostics warning about contact mismatch.
Requires user role: ADMIN, USER
Value space of the result returned:
String
Example:
```
xStatus UserInterface ContactInfo Name
*s UserInterface ContactInfo Name: "MySystem"
** end
```

xStatus UserInterface Extensions Widget [n] Value
Returns the value for a widget. Widgets are used in custom panels, for example in-room controls, that are added to the user interface. The value space depends on the widget type. The value is an empty string until a value is set with the UserInterface Extensions Widget SetValue command.
Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL
Value space of the result returned:
String
xStatus UserInterface Extensions Widget [n] WidgetId
Returns the unique identifier for a widget. Widgets are used in custom panels, for example in-room controls, that are added to the user interface.

Requires user role: ADMIN, INTEGRATOR, USER, ROOMCONTROL

Value space of the result returned:
String

Video status

xStatus Video ActiveSpeaker PIPPosition
Shows the position of the active speaker’s image on the screen.

Requires user role: ADMIN, INTEGRATOR, USER

Value space of the result returned:
UpperLeft/UpperCenter/UpperRight/CenterLeft/CenterRight/LowerLeft/LowerRight

Example:
xStatus Video ActiveSpeaker PIPPosition
*s Video PIP ActiveSpeaker Position: UpperCenter
** end

xStatus Video Input Connector [n] Connected
Shows whether something is connected to the specified connector. Not all connections can be detected.

Requires user role: ADMIN, INTEGRATOR, USER

Value space of the result returned:
False/True/Unknown

Example:
xStatus Video Input Connector 1 Connected
*s Video Input Connector 1 Connected: True
** end
xStatus Video Input Connector [n] SignalState
Shows the signal state for the specified input.
- Unknown: The signal format is unknown.
- OK: A signal is detected and the signal format is supported.
- Unsupported: A signal is detected, but the signal format is not supported.
Requires user role: ADMIN, INTEGRATOR, USER
Value space of the result returned:
OK/Unknown/Unsupported
Example:
```
xStatus Video Input Connector 1 SignalState
*s Video Input Connector 1 SignalState: OK
** end
```

xStatus Video Input Connector [n] SourceId
Shows the identifier of the input source that the connector is associated with.
Requires user role: ADMIN, INTEGRATOR, USER
Value space of the result returned:
Integer
Example:
```
xStatus Video Input Connector 1 SourceId
*s Video Input Connector 1 SourceId: 1
** end
```

xStatus Video Input Connector [n] Type
Shows which connector type it is.
Requires user role: ADMIN, INTEGRATOR, USER
Value space of the result returned:
Composite/DVI/HDMI/Unknown/YC
Example:
```
xStatus Video Input Connector 1 Type
*s Video Input Connector 1 Type: HDMI
** end
```

xStatus Video Input MainVideoSource
Returns the local video input currently used as the main source. The main video source is set with the xConfiguration Video DefaultMainSource command.
Requires user role: ADMIN, USER
Value space of the result returned:
Integer
Example:
```
xStatus Video Input MainVideoSource
*s Video Input MainVideoSource: 1
** end
```

xStatus Video Input Source [n] ConnectorId
Shows the identifier of the connector that is associated with the input source.
Requires user role: ADMIN, INTEGRATOR, USER
Value space of the result returned:
Integer
Example:
```
xStatus Video Input Source 1 ConnectorId
*s Video Input Source 1 ConnectorId: 1
** end
```

xStatus Video Input Source [n] FormatStatus
Shows the resolution format status for the video input source.
Requires user role: ADMIN, INTEGRATOR, USER
Value space of the result returned:
Ok/OutOfRange/NotFound/Interlaced/Error/Unknown
Example:
```
xStatus Video Input Source 1 FormatStatus
*s Video Input Source 1 Resolution FormatStatus: Ok
** end
```
xStatus Video Input Source [n] FormatType
Shows the resolution format type for the video input source.
Requires user role: ADMIN, INTEGRATOR, USER

Value space of the result returned:
Unknown/AnalogCVTBlanking/AnalogCVTReducedBlanking/AnalogGTFDefault/
AnalogGTFSecondary/AnalogDiscreteTiming/AnalogDMTBlanking/AnalogCEABlanking/Digital

Example:
xStatus Video Input Source 1 FormatType
*s Video Input Source 1 Resolution FormatType: Digital
** end

xStatus Video Input Source [n] MediaChannelId
For internal use only.
Requires user role: ADMIN, USER

Value space of the result returned:
Integer

Example:
xStatus Video Input Source MediaChannelId
*s Video Input Source 1 MediaChannelId: 2
*s Video Input Source 2 MediaChannelId: 3
** end

xStatus Video Input Source [n] Resolution Height
Shows the resolution height (in pixels) for the video input source.
Requires user role: ADMIN, INTEGRATOR, USER

Value space of the result returned:
0..3000

Example:
xStatus Video Input Source 1 Resolution Height
*s Video Input Source 1 Resolution Height: 1080
** end

xStatus Video Input Source [n] Resolution RefreshRate
Shows the resolution refresh rate (Hz) for the video input source.
Requires user role: ADMIN, INTEGRATOR, USER

Value space of the result returned:
0..300

Example:
xStatus Video Input Source 1 Resolution RefreshRate
*s Video Input Source 1 Resolution RefreshRate: 50
** end

xStatus Video Input Source [n] Resolution Width
Shows the resolution width (in pixels) for the video input source.
Requires user role: ADMIN, INTEGRATOR, USER

Value space of the result returned:
0..4000

Example:
xStatus Video Input Source 1 Resolution Width
*s Video Input Source 1 Resolution Width: 1920
** end

xStatus Video Layout LayoutFamily Local
Shows the local screen layout family.
Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
xStatus Video Layout LayoutFamily Local
*s Video Layout LayoutFamily Local: "equal"
** end
xStatus Video Layout LayoutFamily Remote

Shows the remote screen layout family.

Requires user role: ADMIN, USER

Value space of the result returned:
String

Example:
xStatus Video Layout LayoutFamily Remote
*s Video Layout LayoutFamily Remote: "equal"
** end

xStatus Video Monitors

Returns the monitor layout mode.

Single: The same layout is shown on all monitors.

Dual: The layout is distributed on two monitors.

DualPresentationOnly: All participants in the call will be shown on the first monitor, while the presentation (if any) will be shown on the second monitor.

Quadruple: The layout is distributed on four monitors, so that each remote participant and the presentation will be shown on separate monitors.

Requires user role: ADMIN, USER

Value space of the result returned:
Single/Dual/DualPresentationOnly/Triple/TriplePresentationOnly/Quadruple

Example:
xStatus Video Monitors
*s Video Monitors: Single
** end

xStatus Video Output Connector [n] Connected

Describes whether a device (for example a display) is connected to the output connector or not. When a display enters standby mode, the endpoint may not be able to detect it. The connector status will then return False/Unknown even if the display is physically connected.

True: A device is connected to the video output connector.
False: Nothing is connected to the video output connector.

Requires user role: ADMIN, INTEGRATOR, USER

Value space of the result returned:
True/False

Example:
xStatus Video Output Connector 1 Connected
*s Video Output Connector 1 Connected: True
** end

xStatus Video Output Connector [n] ConnectedDevice CEC DeviceType

Shows the type of CEC enabled device connected to the HDMI output the codec has detected.

This information is only available when the device connected to the HDMI output has the CEC feature configured on and the codec has the configuration xConfiguration Video Output Connector [n] CEC Mode set to on.

Requires user role: ADMIN, INTEGRATOR, USER

Value space of the result returned:
Unknown/TV/Reserved/Recorder/Tuner/Playback/Audio

Example:
xStatus Video Output Connector 1 ConnectedDevice CEC DeviceType
*s Video Output Connector 1 ConnectedDevice CEC DeviceType: TV
** end
xStatus Video Output Connector [n] ConnectedDevice CEC Name

Returns the name of the connected device.

Requires user role: ADMIN, INTEGRATOR, USER

Value space of the result returned:
String

Example:

```
xStatus Video Output Connector 1 ConnectedDevice CEC Name
  *s Video Output Connector 1 ConnectedDevice CEC 1 Name: "LG SIGNAGE TV"
  ** end
```

xStatus Video Output Connector [n] ConnectedDevice CEC PowerControl

Shows whether the codec is controlling the CEC enabled device connected to the HDMI output. This information is only available when the device connected to the HDMI output has the CEC feature configured on and the codec has the configuration xConfiguration Video Output Connector CEC Mode set to on.

Requires user role: ADMIN, INTEGRATOR, USER

Value space of the result returned:
Unknown/Ok/In progress/Failed to power on/Failed to standby

Example:

```
xStatus Video Output Connector 1 ConnectedDevice CEC PowerControl
  *s Video Output Connector 1 ConnectedDevice CEC PowerControl: Ok
  ** end
```

xStatus Video Output Connector [n] ConnectedDevice CEC VendorId

Returns the vendor ID for the connected device.

Requires user role: ADMIN, INTEGRATOR, USER

Value space of the result returned:
String

Example:

```
xStatus Video Output Connector 1 ConnectedDevice CEC VendorId
  *s Video Output Connector 1 ConnectedDevice CEC 1 VendorId: "57489"
  ** end
```

xStatus Video Output Connector [n] ConnectedDevice Name

Shows the name of the monitor connected to the HDMI port as defined in the monitors EDID.

Requires user role: ADMIN, INTEGRATOR, USER

Value space of the result returned:
String

Example:

```
xStatus Video Output Connector 1 ConnectedDevice Name
  *s Video Output Connector 1 ConnectedDevice Name: "G2420HDBL"
  ** end
```
xStatus Video Output Connector [n] ConnectedDevice PreferredFormat
Shows the preferred input format of the monitor connected to the HDMI port as defined in the monitors EDID. This is not necessarily the format the codec is sending out.

Requires user role: ADMIN, INTEGRATOR, USER

Value space of the result returned:
String

Example:
xStatus Video Output Connector 1 ConnectedDevice PreferredFormat
*s Video Output Connector 1 ConnectedDevice PreferredFormat: "1920x1080@60Hz"
** end

xStatus Video Output Connector [n] MonitorRole
Describes which video stream is shown on the device that is connected to the video output connector.
First/Second/Third: The role of the monitor in a multimonitor setup. In a singlemonitor setup, there is no difference between First, Second and Third.
PresentationOnly: Shows presentation video stream if active.
Recorder: Shows all participants, including the local main video. If active, shows also the presentation.

Requires user role: ADMIN, USER

Value space of the result returned:
First/Second/Third/PresentationOnly/Recorder

Example:
xStatus Video Output Connector 1 MonitorRole
*s Video Output Connector 1 MonitorRole: First
** end

xStatus Video Output Connector [n] Resolution Height
Shows the resolution height (in pixels) for the video output connector.

Requires user role: ADMIN, USER

Value space of the result returned:
120..3000

Example:
xStatus Video Output Connector 1 Resolution Height
*s Video Output Connector 1 Resolution Height: 1080
** end

xStatus Video Output Connector [n] Resolution RefreshRate
Shows the resolution refresh rate (Hz) for the video output connector.

Requires user role: ADMIN, USER

Value space of the result returned:
1..300

Example:
xStatus Video Output Connector 1 Resolution RefreshRate
*s Video Output Connector 1 Resolution RefreshRate: 60
** end

xStatus Video Output Connector [n] Resolution Width
Shows the resolution width (in pixels) for the video output connector.

Requires user role: ADMIN, USER

Value space of the result returned:
176..4000

Example:
xStatus Video Output Connector 1 Resolution Width
*s Video Output Connector 1 Resolution Width: 1920
** end
xStatus Video Output Connector [n] Type
Shows the type of connector.
HDMI: It is an HDMI connector.
DVI: It is a DVI connector.
Requires user role: ADMIN, USER

**Value space of the result returned:**
- HDMI
- DVI

**Example:**
```
xStatus Video Output Connector 1 Type
*s Video Output Connector 1 Type: HDMI
** end
```

xStatus Video Presentation PIPPosition
Shows the position of the presentation image on the screen.
Requires user role: ADMIN, USER

**Value space of the result returned:**
- UpperLeft
- UpperCenter
- UpperRight
- CenterLeft
- CenterRight
- LowerLeft
- LowerRight

**Example:**
```
xStatus Video Presentation PIPPosition
*s Video PIP Presentation Position: CenterLeft
** end
```

xStatus Video Selfview FullscreenMode
Shows whether selfview is set on full screen mode or not.
Requires user role: ADMIN, INTEGRATOR, USER

**Value space of the result returned:**
- On
- Off

**Example:**
```
xStatus Video Selfview FullscreenMode
*s Video Selfview FullscreenMode: Off
** end
```

xStatus Video Selfview Mode
Shows whether selfview mode is set on or not.
Requires user role: ADMIN, INTEGRATOR, USER

**Value space of the result returned:**
- On
- Off

**Example:**
```
xStatus Video Selfview Mode
*s Video Selfview Mode: Off
** end
```

xStatus Video Selfview OnMonitorRole
Identifies which monitor(s) contains the selfview, if present.
Requires user role: ADMIN, INTEGRATOR, USER

**Value space of the result returned:**
- First
- Second
- Third
- Fourth

**Example:**
```
xStatus Video Selfview OnMonitorRole
*s Video Selfview OnMonitorRole: First
** end
```

xStatus Video Selfview PIPPosition
Shows the position of the selfview image on the screen.
Requires user role: ADMIN, INTEGRATOR, USER

**Value space of the result returned:**
- UpperLeft
- UpperCenter
- UpperRight
- CenterLeft
- CenterRight
- LowerLeft
- LowerRight

**Example:**
```
xStatus Video Selfview PIPPosition
*s Video Selfview PIPPosition: LowerRight
** end
```
Chapter 6

Appendices
About startup scripts

You can add one or more startup scripts to the codec. A startup script contains commands (xCommand) and configurations (xConfiguration) that will be executed as part of the start up procedure every time the codec boots. A few commands and configurations cannot be placed in a startup script, e.g. xCommand SystemUnit Boot.

Use the codec’s web interface to create and manage startup scripts.

Read more about the web interface and startup scripts in the Administrator guide for your product.
The SystemTools commands

**NOTE:** The systemtools commands are used for administrative control of the codec and are only available from a command line interface. Systemtools should not be used to program the codec.

Required parameters in angle brackets: `<text>`

Optional parameters in square brackets: `[text]`

To get an overview of the supported commands type “systemtools ?”.

**Example:**

```
$ systemtools ?
```

- systemtools idefixversion
  - Returns the software version of a Touch controller that is connected to the codec.

- systemtools touchpanelversion
  - Returns the software version the connected Touch controller should have. Used when upgrading to CE8.0 or later.

- systemtools license list
  - Lists all the licenses for the codec.

- systemtools license show <name>
  - Shows the content of a license file, defined by the name. `<name>`: The name of the license file.

- systemtools network ping <hostname>
  - Network debug command. `<hostname>`: The IP address or URL of the host.

- systemtools network traceroute <hostname>
  - Network debug command. `<hostname>`: The IP address or URL of the host.

- systemtools network netstat
  - Network debug command.

- systemtools network addrs
  - Check the systems IP address.

- systemtools network ifconfig
  - Network debug command.

- systemtools pairing unpair
  - Remove association with Cisco TelePresence Touch controller.

- systemtools passwd
  - Change the password for the logged in user.

- systemtools pki list
  - Lists the codec certificate and CA list if they exist.

- systemtools pki delete <cert-name>
  - Delete the codec certificate and CA list if they exist. `<cert-name>`: The name of the certificate.

- systemtools securitysettings jitc
  - Set up security requirements so they meet JITC. Set password and PIN polices enforced on the codec.

- systemtools securitysettings isjitc
  - Check if the current settings are JTIC compliant.

- systemtools securitysettings default
  - Revert to default security settings.

- systemtools securitysettings ask
  - Query for the separate configurations. When issuing this command you can see each policy separately.
    - Press enter to keep the current value.
    - Enter a number and press enter to change the given policy.
    - The default value “0” indicates no restrictions.

Max failed login attempts [0]?
  - Number of failed logins until a user is set inactive.

To see the usage of the commands add a question mark after the command.

**Example:**

```
$ systemtools network ?
```

- usage: network ping <hostname> | traceroute <hostname> | netstat | addrs | ifconfig
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 time between PIN renewals (days) [0]?
- If the user has not changed the PIN within the renewal time the user will be set inactive.

Minimum time between PIN renewals (hours) [0]?
- The user can only change PIN once within this limit.

Maximum time between logins (days) [0]?
- If the user has not logged in within this limit the user will be set inactive.

Max consecutive equal digits in PINs [0]?
- Maximum consecutive equal digits in PINs.

Minimum number of digits in PINs [0]?
- Minimum number of digits in PINs.

Maximum number of digits in PINs [0]?
- Maximum number of digits in PINs.

Max consecutive identical characters in passwords [0]?
- Maximum consecutive identical characters in passwords.

Minimum number of characters in passwords [0]?
- Minimum number of characters in passwords.

Maximum number of characters in passwords [0]?
- Maximum number of characters in passwords.

Minimum number of lower-case letters in passwords [0]?
- Minimum number of lower-case letters in passwords.

Minimum number of upper-case letters in passwords [0]?
- Minimum number of upper-case letters in passwords.

Minimum number of numerical characters in passwords [0]?
- Minimum number of numerical characters in passwords.

Minimum number of special characters in passwords [0]?
- Minimum number of special characters in passwords.

Minimum number of character groups in passwords [0]?
- Minimum number of character groups in passwords.

Minimum number of character changed from previous password [0]?
- Minimum number of character changed from previous password.

systemtools selectsw
Select which of the available software images to use. Changing the software image will restart the codec.

No argument given: Lists the version of the available software images, and shows which one is active.

image name: Swap to the software with this name.

systemtools sudo on
Changes the user role of the current session to the role of the specified user

<username>: The name of the sudo user.
<password>: The password for the sudo user.

systemtools sudo off
Reverts back to the user role of the signed in user.

systemtools whoami
Lists the name and id of the signed in user, and the user roles held by this user.

systemtools securitystatus
Shows the security status for the codec.
About disconnect cause types

The following parameters are logged when a call is disconnected. The disconnect cause types are used in disconnect events (xEvent).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CauseValue</td>
<td>Proprietary. We recommend the use of CauseType and CauseCode.</td>
</tr>
<tr>
<td>CauseType</td>
<td>Describes why the call was disconnected. The value space is { OtherLocal, LocalDisconnect, UnknownRemoteSite, LocalBusy, LocalReject, InsufficientSecurity, OtherRemote, RemoteDisconnect, RemoteBusy, RemoteRejected, RemoteNoAnswer, CallForwarded, NetworkRejected }</td>
</tr>
<tr>
<td>CauseString</td>
<td>Describes the Cause Code.</td>
</tr>
<tr>
<td>CauseCode</td>
<td>The disconnect Cause Codes are defined in SIP and Q.850.</td>
</tr>
<tr>
<td>CauseOrigin</td>
<td>SIP, Q.850, internal.</td>
</tr>
</tbody>
</table>

Example:

```plaintext
xEvent DisconnectEvent
*e CallDisconnect CauseValue: 1
  CauseType: "LocalDisconnect"
  CauseString: ""
  OrigCallDirection: "outgoing"
  RemoteURI: "firstname.lastname@company.com"
  CallId: 89
  CauseCode: 0
  CauseOrigin: SIP
** end
```
User documentation for the Cisco TelePresence products is available at
http://www.cisco.com/go/telepresence/docs

Choose a product category in the right pane until you find the correct product. This is the path you have to follow:

TelePresence Integration Solutions >
TelePresence SX Series

Alternatively, use the following short-link to find the documentation: http://www.cisco.com/go/sx-docs

The documents are organized in the following categories:

**Install and Upgrade > Install and Upgrade Guides**
- Installation guides: How to install the product
- Getting started guide: Initial configurations required to get the system up and running
- RCSI guide: Regulatory compliance and safety information

**Maintain and Operate > Maintain and Operate Guides**
- Getting started guide: Initial configurations required to get the system up and running
- Administrator guide: Information required to administer your product
- Administering CE Endpoints on CUCM: Tasks to perform to start using the product with the Cisco Unified Communications Manager (CUCM)

**Maintain and Operate > End-User Guides**
- User guides: How to use the product
- Quick reference guides: How to use the product

**Reference Guides | Command references**
- API reference guides: Reference guide for the Application Programmer Interface (API)

**Reference Guides > Technical References**
- CAD drawings: 2D CAD drawings with measurements

**Design > Design Guides**
- Video conferencing room guidelines: General guidelines for room design and best practice
- Video conferencing room guidelines: Things to do to improve the perceived audio quality

**Software Downloads, Release and General Information > Licensing Information**
- Open source documentation: Licenses and notices for open source software used in this product

**Software Downloads, Release and General Information > Release Notes**
- Software release notes
Cisco TelePresence SX10

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Corporate Headquarters
Cisco Systems, Inc.
170 West Tasman Dr.
San Jose, CA 95134 USA