Cisco TelePresence System EX90/EX60 Administrator Guide

Thank you for choosing Cisco!

Your Cisco TelePresence System EX90/EX60 has been designed to give you many years of safe, reliable operation.

This part of the EX90/EX60 documentation is aimed at administrators working with the setup of the system.

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

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

The user documentation can be found on our web site. Go to: ► http://www.cisco.com/go/telepresence/docs

On our web site you will find an overview of the worldwide Cisco contacts.

Go to: ► http://www.cisco.com/web/siteassets/contacts

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CHAPTER 1

INTRODUCTION

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Patent information

The products described in this manual is covered by the following patents:

US7,499,416, US6,584,077, US5,838,664, US5,600,646, US5,003,532, US5,768,263, US5,991,277, US7,034,860, US7,295,613, US7,283,588, US7,512,708, EP1338127, EP1305927, US7,525,914

An updated list of the patents applying can be found on our web site.
Go to: ► www.tandberg.com/tandberg_pm.jsp

User documentation

The user documentation for the Cisco TelePresence EX series:

- Quick Reference Guides
- User guides
- Administrator guide
- Regulatory compliance and safety information guide
- Legal and license information for products using TC software

Other user documentation you might find useful:

- Video conference room primer
- Video conference room acoustics guidelines

We recommend you visit the Cisco web site regularly for updated versions of the user documentation. Go to: ► http://www.cisco.com/go/telepresence/docs. In the right pane select *TelePresence Personal Endpoints* > *TelePresence Desktop* > *Cisco TelePresence System EX Series*.

What's new in this version

This section provides an overview of the new and changed advanced configuration settings and new features in the TC4.1 software version.

Software release notes

For a complete overview of the news and changes, we recommend reading the Software Release Notes (TC4).

Go to: ► http://www.cisco.com/en/US/products/ps11422/tsd_products_support_series_home.html

Software download

For software download go to: ► http://www.cisco.com/cisco/software/navigator.html

User documentation

The user documentation is available from our web site. Select a product from the list to produce an overview of the user documentation for that product.

Go to: ► http://www.cisco.com/go/telepresence/docs

New features and improvements

Cisco TelePresence Touch for EX Series

The Cisco TelePresence Touch is a touch based user interface that supports Cisco's vision for a natural user experience.

You can make video calls, share content, and access some advanced feature - all with a simple tap of the finger.

New graphical user interface

A new and improved GUI (Graphical User Interface) has been developed for the Cisco TelePresence Touch controller. Existing users of EX60 and EX90 will experience a new user interface when upgrading to TC4.1.0.

Some of the new features of the new GUI includes:

- Overall usability and responsiveness.
- Far end camera control on MultiSite (MultiSite is not supported on EX60).
- EMC resilience mode.
- All in one "search and dial" mechanism.
- Provisioning of system settings and phonebook is supported. Provisioning of software upgrade is not supported in this release.

The Administrator Settings menu on the Touch controller can be password protected. This is done from a command line interface with an API (Application Programmer Interface) command. The password protection options are described in the EX Series Administrator Guide.

The advanced configurations

NOTE: Many of the system configurations are available in the Administrator Settings menu on the touch controller. To access all the system confiurations you must use the web interface. Go to: ► Using the web interface section to see a description of the web interface.

New settings

Video Input Source [1..2]/[1..3] Type

- Note that EX60 has two and EX90 has three video input sources.

Settings that have changed

Cameras Camera 1 Focus Mode (EX90 only)

- Renamed argument "ContinuousAuto"

Provisioning Mode

- Added argument "VCS"

Settings that have been removed

SystemUnit MenuType

SystemUnit Type

Experimental settings

The Experimental settings are beta settings. These settings can be used 'as is', and are not fully documented.

NOTE: The Experimental settings are likely to change.

New settings

Experimental NetworkServices UPnP Mode

Experimental NetworkServices UPnP Timeout

Experimental SystemUnit MenuType

EX90 system overview

The system is delivered with:

- EX90 unit
- Touch screen controller with cable
- Handset with cable
- DVI-D to DVI-I cable (recommended for optimal PC image quality)
- VGA to DVI-I cable
- Stereo audio cable 3.5 mm
- Ethernet cable
- AC adapter and power cable

The camera can be tilted and used as a document camera.

EX90

Touch screen controller

EX90, rear view (without rear cover)

Detach the rear side cover when connecting cables.

When finished, snap on the rear cover.

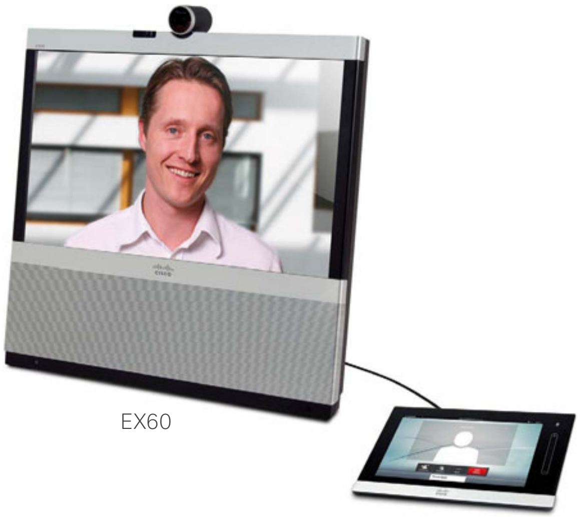
A handset can be mounted to the touch screen controller.

EX60 system overview

The system is delivered with:

- EX60 unit
- Touch screen controller with cable
- Handset with cable
- DVI-D to DVI-I cable (recommended for optimal PC image quality)
- VGA to DVI-I cable
- Stereo audio cable 3.5 mm
- Ethernet cable
- AC adapter and power cable

The camera can be tilted and used as a document camera.



EX60

Touch screen controller

EX60, rear view (without rear cover)

Detach the rear side cover when connecting cables.

When finished, snap on the rear cover.

A handset can be mounted to the touch screen controller.

The Cisco TelePresence System EX90/EX60 can be configured using the touch screen controller and from the web interface.

The touch screen controller and its use are described in the EX90 and EX60 User Guides.

For full access to the configurable parameters, the web interface must be used–the touch screen controller provides access to a limited set of parameters only.

CHAPTER 2

USING THE WEB INTERFACE

The web interface

The web interface allows for remote administration of the system.

Connect to the EX90/EX60

Open a web browser and enter the ***IP address*** of the codec.

How to find the IP address:

- To find the IP address, open the System Information page on the touch screen controller. Tap the ***Settings*** icon, select ***System Information*** and find the ***IP Address***.

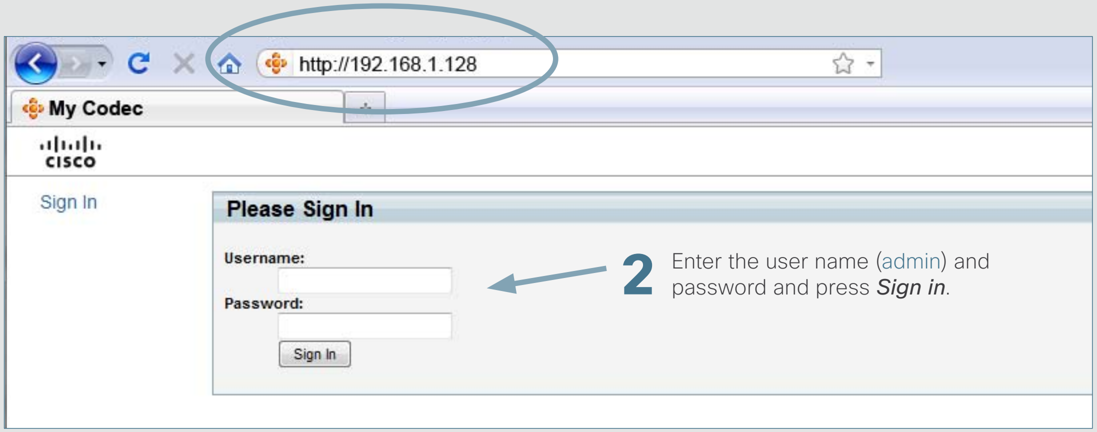
Password protection

The web interface can be password protected. It uses the same user name and password as defined for the codec that is integrated in the EX90/EX60.

Read more about password protection in the ▶ Password Protection section in this guide.

Signing in to the web interface

1 Enter the IP address of the EX90/EX60.



2 Enter the user name (admin) and password and press *Sign in*.

Menu options

You will find the interactive menus on the left hand side of the web interface. When you click a menu option, a corresponding web page will open.

The role of the logged in user determines which menu options are available. You can read more about user roles in the ▶ User management section.

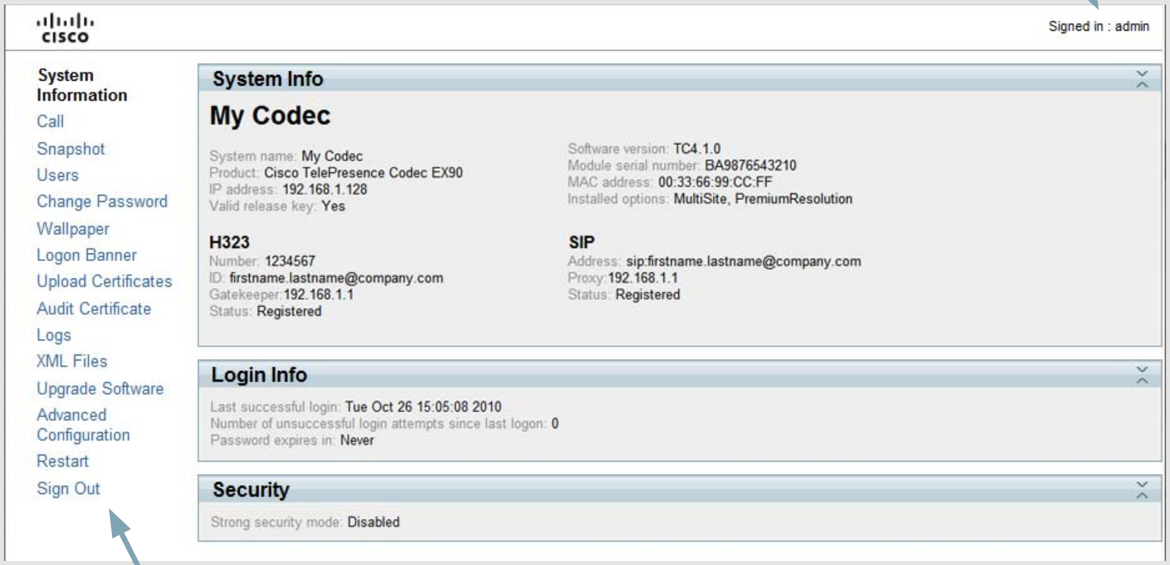
The user name of the signed in user is always displayed in the upper right corner.

The table below shows which menu options are available for users having ADMIN, AUDIT or USER roles. Note that the default admin user holds all three roles.

	ADMIN	AUDIT	USER
System Information	✓	✓	✓
Call			✓
Snapshot (not applicable for EX90/EX60)	✓		
Users	✓		
Change Password	✓	✓	✓
Wallpaper	✓	✓	
Logon Banner	✓		
Upload Certificates	✓		
Audit Certificate		✓	
Logs	✓		
XML Files	✓		
Upgrade Software	✓		
Advanced Configuration	✓	✓	
Restart			✓
Sign Out	✓	✓	✓

System information

The signed in user



System Info

My Codec

System name: My Codec
Product: Cisco TelePresence Codec EX90
IP address: 192.168.1.128
Valid release key: Yes

Software version: TC4.1.0
Module serial number: BA9876543210
MAC address: 00:33:66:99:CC:FF
Installed options: MultiSite, PremiumResolution

H323
Number: 1234567
ID: firstname.lastname@company.com
Gatekeeper:192.168.1.1
Status: Registered

SIP
Address: sip:firstname.lastname@company.com
Proxy:192.168.1.1
Status: Registered

Login Info

Last successful login: Tue Oct 26 15:05:08 2010
Number of unsuccessful login attempts since last logon: 0
Password expires in: Never

Security

Strong security mode: Disabled

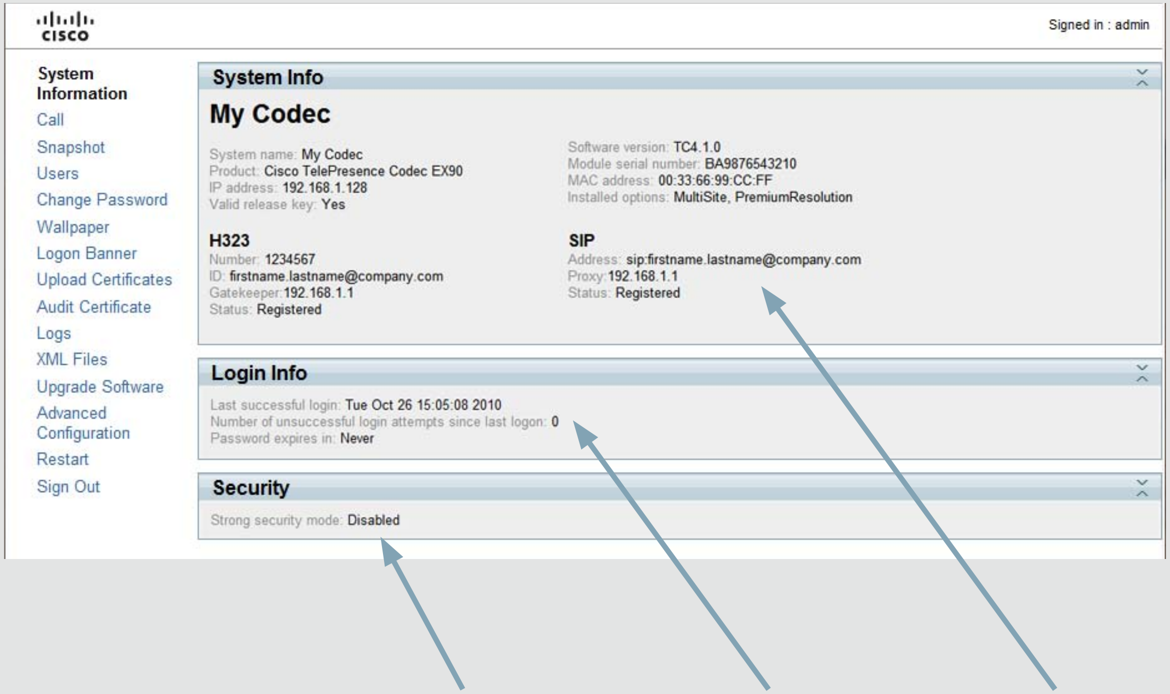
Interactive menus

Click on the menu items to access the pages. Which menu options are available depends on the role of the logged in user.

The system information page

You can find an overview of your video system set-up on the System Information page.

System information



System Info

My Codec

System name: My Codec
Product: Cisco TelePresence Codec EX90
IP address: 192.168.1.128
Valid release key: Yes

Software version: TC4.1.0
Module serial number: BA9876543210
MAC address: 00:33:66:99:CC:FF
Installed options: MultiSite, PremiumResolution

H323

Number: 1234567
ID: firstname.lastname@company.com
Gatekeeper: 192.168.1.1
Status: Registered

SIP

Address: sip:firstname.lastname@company.com
Proxy: 192.168.1.1
Status: Registered

Login Info

Last successful login: Tue Oct 26 15:05:08 2010
Number of unsuccessful login attempts since last logon: 0
Password expires in: Never

Security

Strong security mode: Disabled

Security information

Information about the current security mode.

Login information

Information about recent login attempts and password expiry.

System information

Information about system name, product type, software version, IP address, etc.

Making calls from the web interface

Sometimes, e.g. when you are configuring the system from a remote location, it is convenient to be able to make calls from the video system to ensure everything works as expected.

Make a call

Input field: Enter one or more characters in the input field, until the name you want to call appears in the dynamic search list or, enter the complete name or number.

Dial: Press *Dial* to initiate the call.

Disconnect all: Press *Disconnect all* to end all calls.

Options: Click *Options* to change the bit rate for this call. Select the *Call rate* in the drop down list.

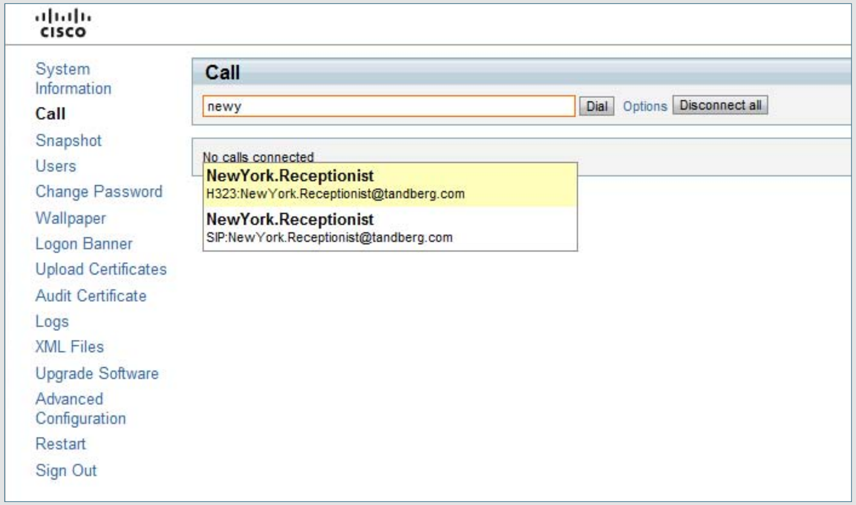
The call status page

The call status page appear when you make a call. Please allow for approximately 30 seconds after the call is up before checking call details.

You will find the following information on the call status page:

- Remote number
- Status: Connected
- Direction: Incoming/Outgoing
- Protocol: H323/SIP
- Transmit and receive call rate
- Encryption
- Audio: transmit and receive protocols
- Video: transmit and receive protocols and resolutions
- Presentation: transmit and receive protocols and resolutions

Call and call status

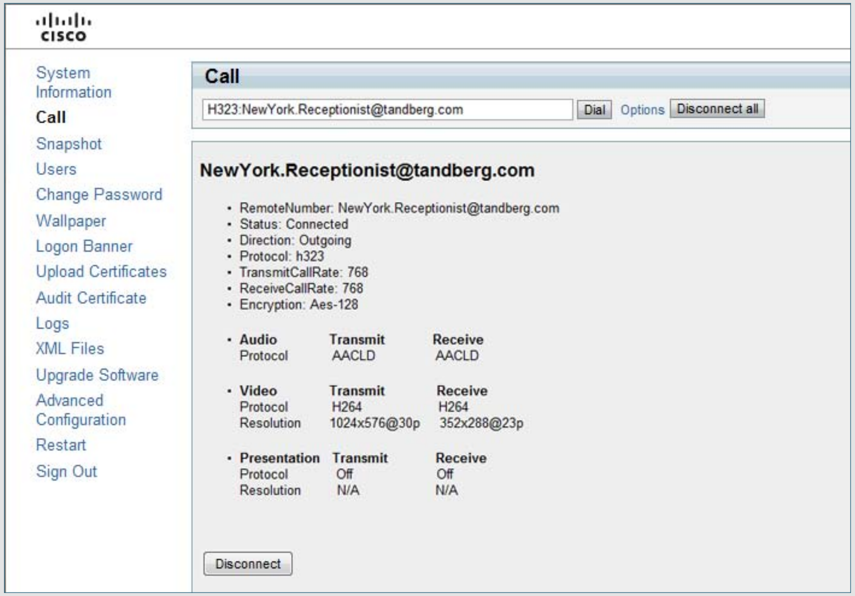


newy

No calls connected

NewYork.Receptionist
H323:NewYork.Receptionist@tandberg.com

NewYork.Receptionist
SIP:NewYork.Receptionist@tandberg.com



H323:NewYork.Receptionist@tandberg.com

NewYork.Receptionist@tandberg.com

- RemoteNumber: NewYork.Receptionist@tandberg.com
- Status: Connected
- Direction: Outgoing
- Protocol: h323
- TransmitCallRate: 768
- ReceiveCallRate: 768
- Encryption: Aes-128

Audio	**Transmit**	**Receive**
Protocol	AACLD	AACLD

Video	**Transmit**	**Receive**
Protocol	H264	H264
Resolution	1024x576@30p	352x288@23p

Presentation	**Transmit**	**Receive**
Protocol	Off	Off
Resolution	N/A	N/A

User management

From this page you can manage the user accounts of your video system. You can create a new user, edit the details of an existing user, and delete a user. You need ADMIN rights to perform these tasks.

User roles

You must assign one or more user roles to a user account. Three user roles, which possess different system rights, are defined:

- ADMIN: A user with ADMIN rights can create a new user and change all settings, except the security audit configurations. This user cannot upload audit certificates.
- USER: A user with USER rights can make calls and search the phonebook.
- AUDIT: A user with AUDIT rights can change the security audit configurations and upload audit certificates.

The roles ADMIN, USER and AUDIT have non-overlapping rights, but a user can be created with one or more roles to combine the rights of more than one role.

NOTE: It is very important that at least one user has ADMIN rights at all times.

The default user account

The system comes with a default user account. The user name is admin with no password set. The admin user possesses USER, ADMIN and AUDIT roles.

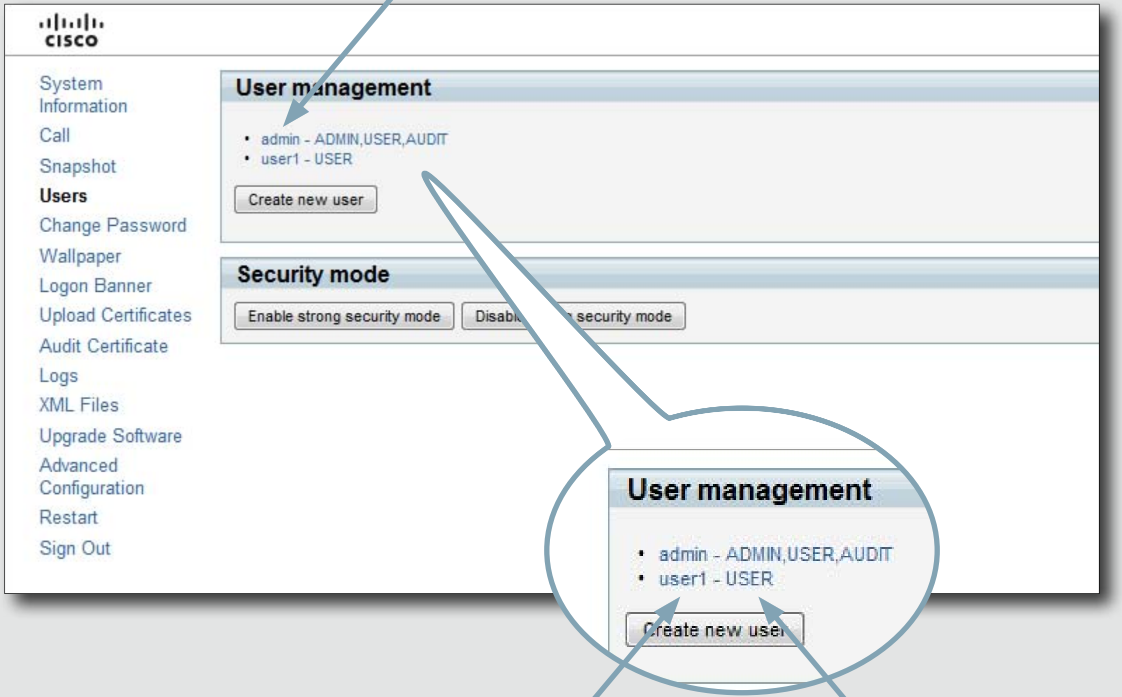
It is highly recommended to set a password for this user.

Security mode

You can enable/disable the strong security mode from this page. Strong security mode sets very strict password requirements, and requires all users to change their password on next login.

User management

The system comes with admin as default user account. The admin user possesses USER, ADMIN and AUDIT roles.



User name

You can create as many user accounts as you like on your system.

User role(s)

Each user must have one or more roles.

User management, continued...

If you have ADMIN rights you can manage users as described below.

Create a new user account

1. Press *Create new user*.
2. Fill in the Username, Password and PIN code, and select the user role(s) for this user account. As a default the user have to change the password and PIN code when signing in for the first time.
3. Set the *Status* to Active to activate the user.
4. Press *Save* to save the changes.

Edit user details

1. Select the name of an existing user to open the Editing user window.
2. Edit the details.
3. Press *Save* to save the changes or *Cancel* to go back one step without storing the information.

Deactivate a user account

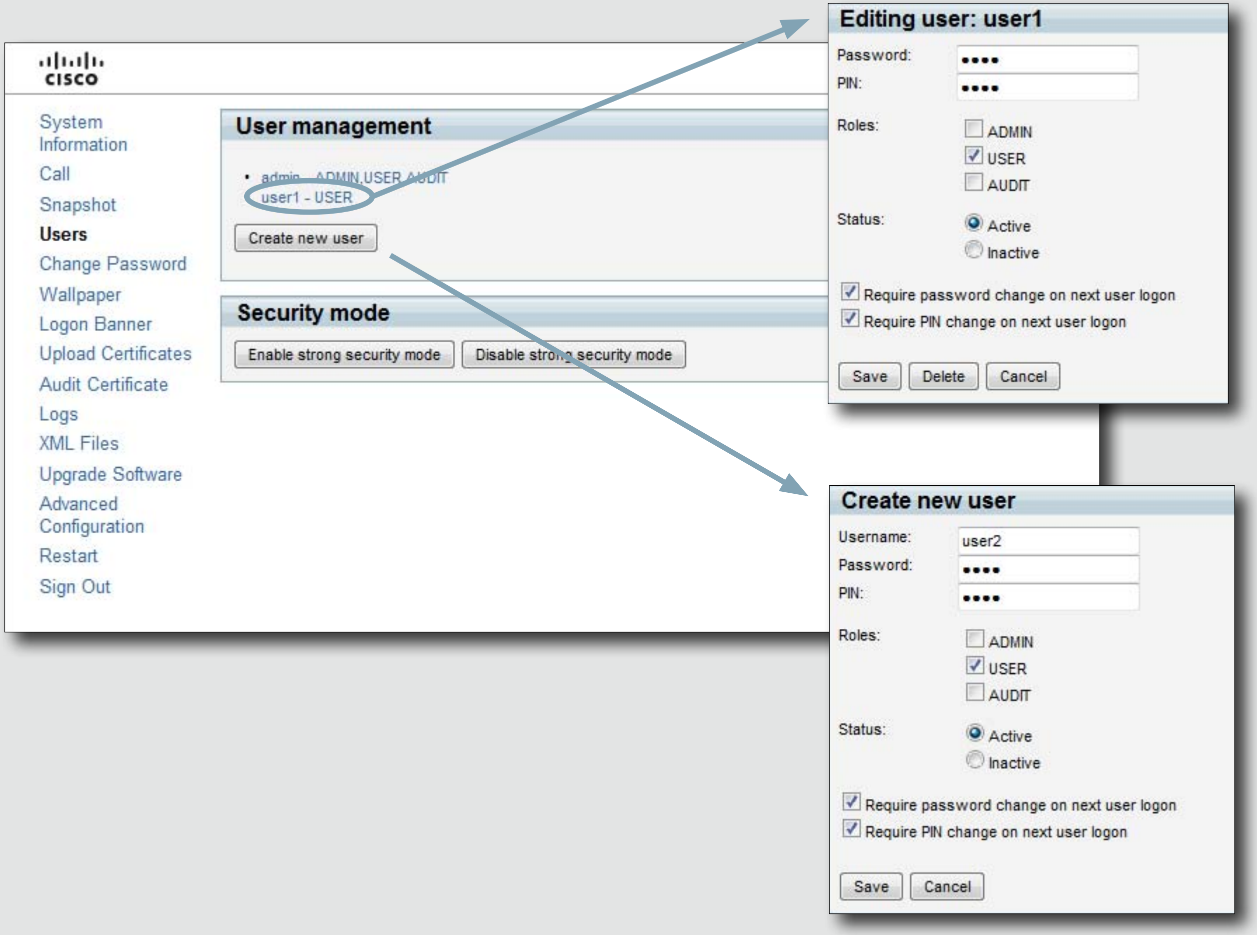
1. Select the name of an existing user to open the Editing user window.
2. Set the *Status* to Inactive.
3. Press *Save* to save the changes.

Delete a user account

1. Select the name of the user to open the Editing user window.
2. Press *Delete*.

NOTE: Do not delete all users with ADMIN rights.

Creating and editing users



User management

- admin - ADMIN,USER,AUDIT
- user1 - USER

Security mode

Editing user: user1

Password: ••••
PIN: ••••
Roles: □ ADMIN ☑ USER □ AUDIT
Status: ● Active ○ Inactive
☑ Require password change on next user logon
☑ Require PIN change on next user logon

Create new user

Username: user2
Password: ••••
PIN: ••••
Roles: □ ADMIN ☑ USER □ AUDIT
Status: ● Active ○ Inactive
☑ Require password change on next user logon
☑ Require PIN change on next user logon

Changing your password

When you are signed in, you can change your own password. In the example to the right, the admin user is signed in.

NOTE: It is highly recommended to set a password for all users with ADMIN rights.

The password is a string with 0–255 characters.

Change your password

1. Enter your current password, your new password, and repeat the new password in the input fields.

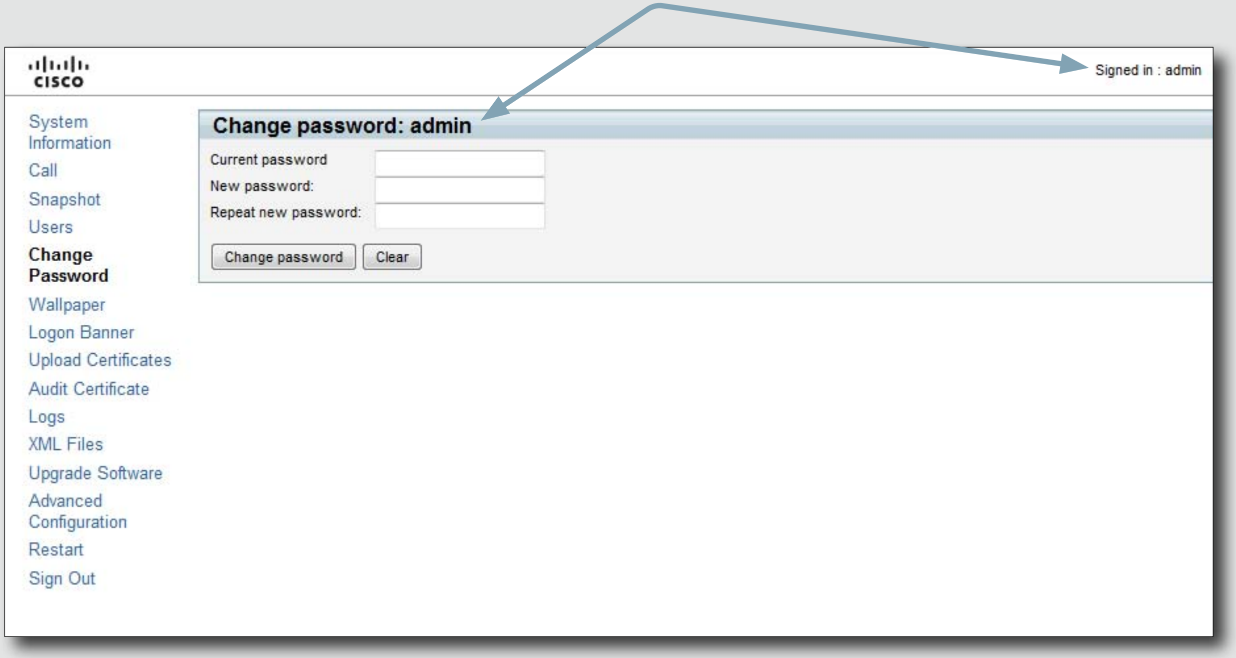
   If no password is set, leave the current password input field empty.

   If you want to remove a password, leave the new password input fields empty.

2. Press *Change password* to change the password.

Changing the password

The signed in user can change his own password.



Signed in : admin

Change password: admin

Current password

New password:

Repeat new password:

Custom wallpaper

If you want the company logo or a custom picture to be displayed on the main screen, you may use a custom wallpaper.

NOTE: The custom wall paper applies to the main screen only and will not appear on the touch screen controller. When you choose a new predefined wallpaper on the touch screen, it will appear on both screens and replace your custom wall paper.

File format and picture size

The picture file format for the custom wallpaper is PNG. The maximum size is 1920 × 1200 pixels.

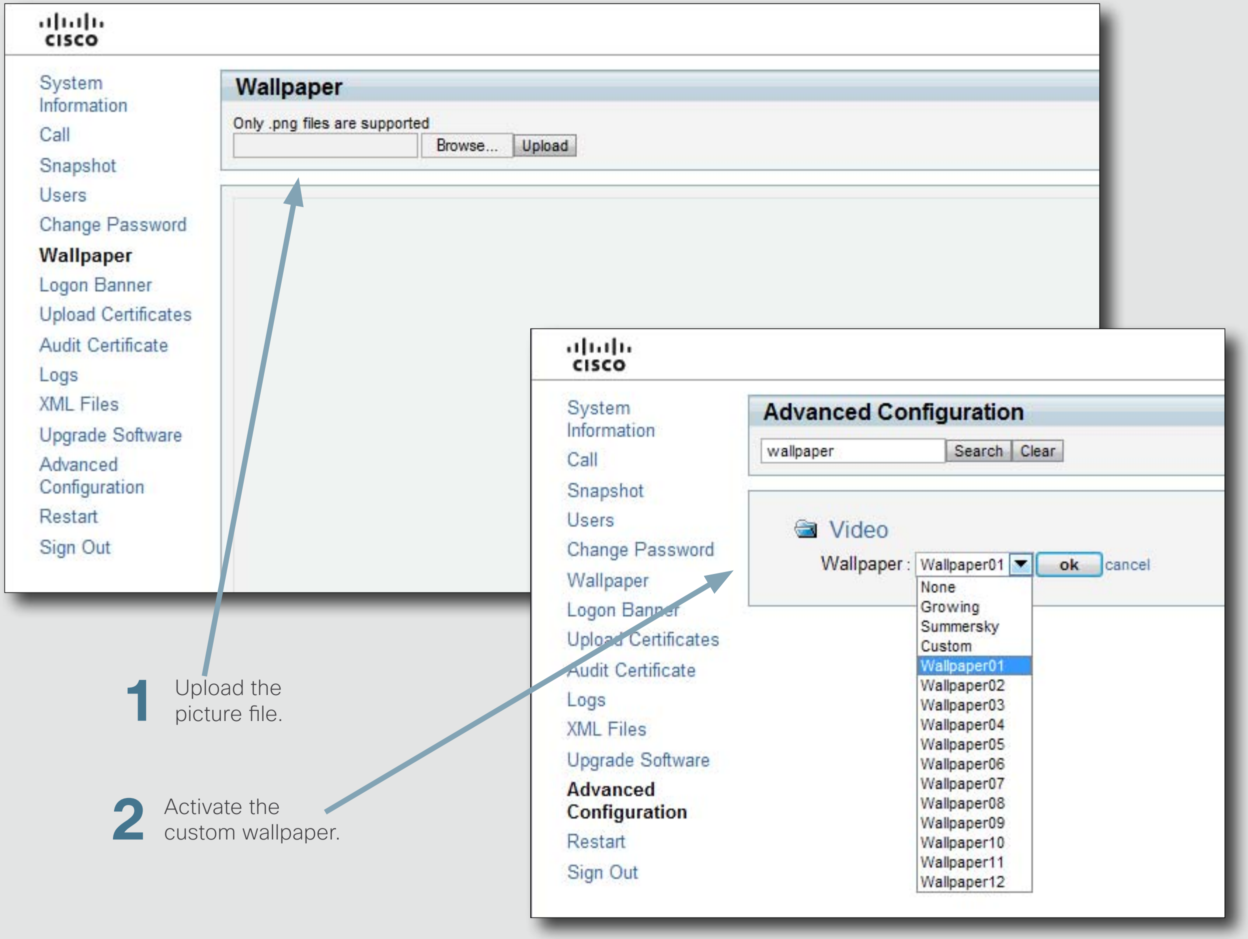
Upload the custom wallpaper file

1. Press *Browse...* and locate the wallpaper file (.PNG)
2. Press *Upload* to save the file to the codec.
3. Refresh the web page to see the wallpaper you just uploaded.

Activate the new wallpaper

1. Move to the *Advanced configuration* page and enter `wallpaper` in the search field. From the drop down list, select *Custom*. The new wallpaper will be displayed on screen.
2. If the new wallpaper does not show on screen, you may have to toggle once between Wallpaper: *None* and *Custom* to put the change into effect.

Wallpaper



Only .png files are supported

wallpaper

Wallpaper : Wallpaper01

1 Upload the picture file.

2 Activate the custom wallpaper.

Adding a logon banner

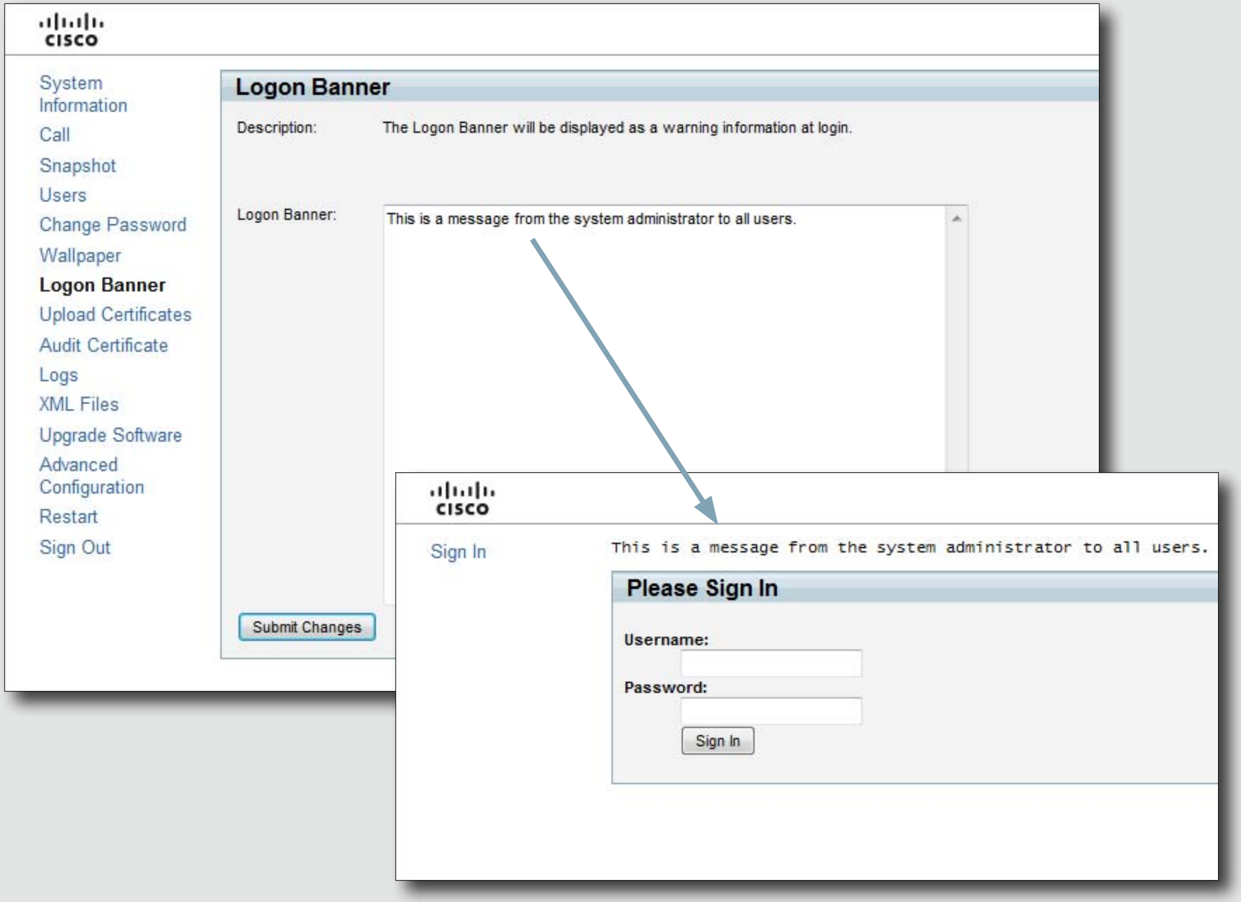
If the system administrator wants to provide initial information to all users, he can create a logon banner. A logon banner is a message that is displayed to the user before signing in.

The message will be shown, whether the user signs in using the menu system, the web interface or the command line interface.

Add a logon banner

1. Enter the text message, which you want to present to the user prior to signing in, in the Logon Banner text area.
2. Press *Submit Changes* to activate the message.

Logon banner



Logon Banner

Description: The Logon Banner will be displayed as a warning information at login.

Logon Banner: This is a message from the system administrator to all users.

This is a message from the system administrator to all users.

Please Sign In

Username:

Password:

Uploading certificates

The SSL certificate is a text file which verifies the authenticity of your codec. The certificate may be issued by a certificate authority (CA). Other parties can check this certificate before setting up communication with you.

The list of trusted CA certificates is a list containing the SSL certificates of all parties that you want your codec to trust.

Upload the SSL certificate

To install the SSL certificate, you will need the following:

- HTTPS certificate (.PEM format)
- Private key (.PEM format)
- Passphrase (optional)

Contact your system administrator to obtain the required files.

- Press *Browse...* and locate the HTTPS certificate file (.PEM format).
- Press *Browse...* and locate the Private key file (.PEM format)
- Enter the *Passphrase*.
- Press *Upload* to upload the certificate to the codec.

Upload the trusted CA certificates list

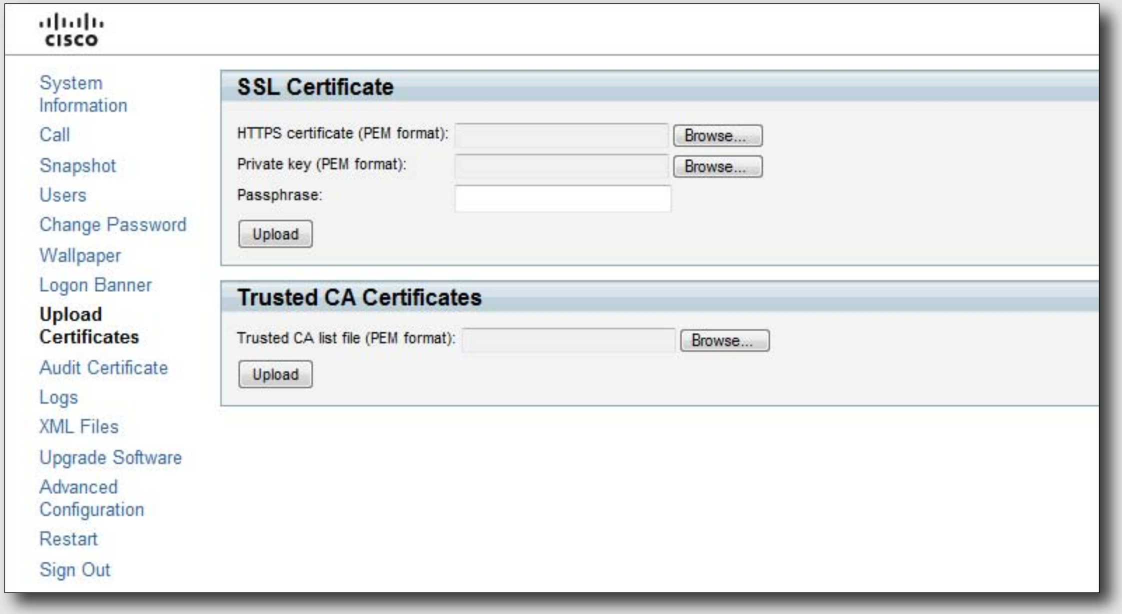
To install the trusted CA certificates list, you will need the following:

- Trusted CA list file (.PEM format).

Contact your system administrator to obtain the required file.

- Press *Browse...* and locate the file with the Trusted CA list (.PEM format).
- Press *Upload* to upload the certificate to the codec.

Certificates



Audit certificate

If you want to use the ExternalSecure audit logging mode, you must upload a list of trusted audit certificates to the codec. This list covers all audit servers that your codec shall trust.

In the ExternalSecure audit logging mode audit logging information will only be sent to entities holding a valid audit certificate.

NOTE: You should always upload the audit certificate list before enabling secure audit logging

About audit logging

Audit logging records all login activity and configuration changes on the codec.

Audit logging is disabled by default, and must be enabled using the on screen menu, the web interface or the command line interface.

Upload the audit certificate list

To install the audit certificate, you will need:

- Audit list file (.PEM format)

Contact your system administrator to obtain the required file.

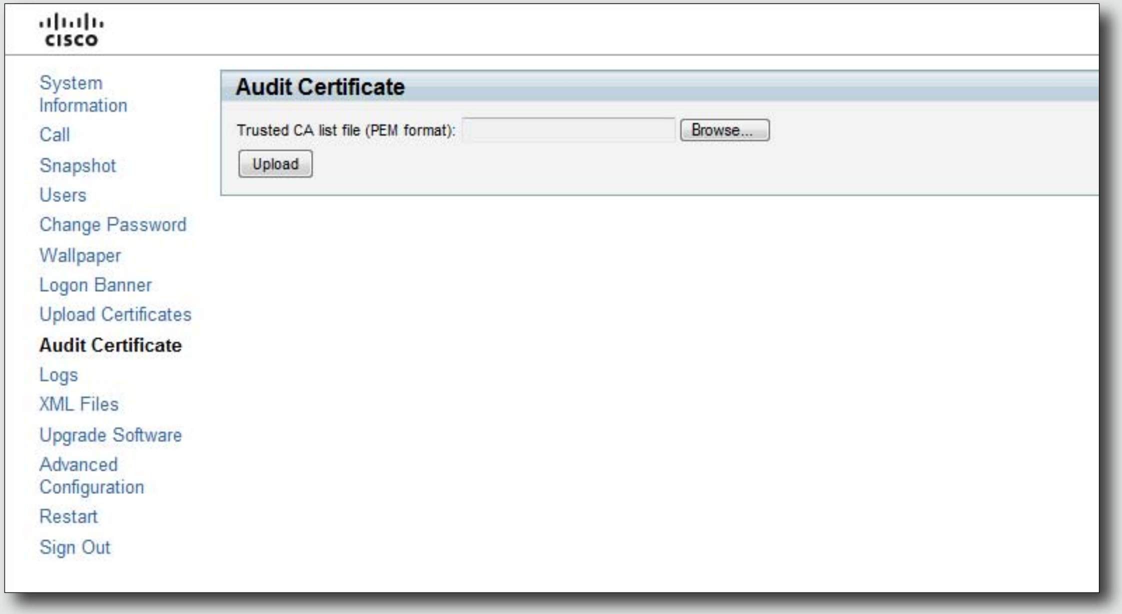
- Press *Browse...* and locate the file with the audit list file (.PEM format).
- Press *Upload* to upload the certificate to the codec.

Enable secure audit logging

When you have uploaded the audit certificate list you must enable secure audit logging:

1. Navigate to *Advanced Configuration > Security > Audit > Server* and enter the IP address of the audit server.
2. Navigate to *Advanced Configuration > Security > Audit > Logging > Mode* and set it to ExternalSecure.

Certificates for secure logging



Log files

The log files are Cisco specific debug files which may be requested by the Cisco support organization if you need technical support.

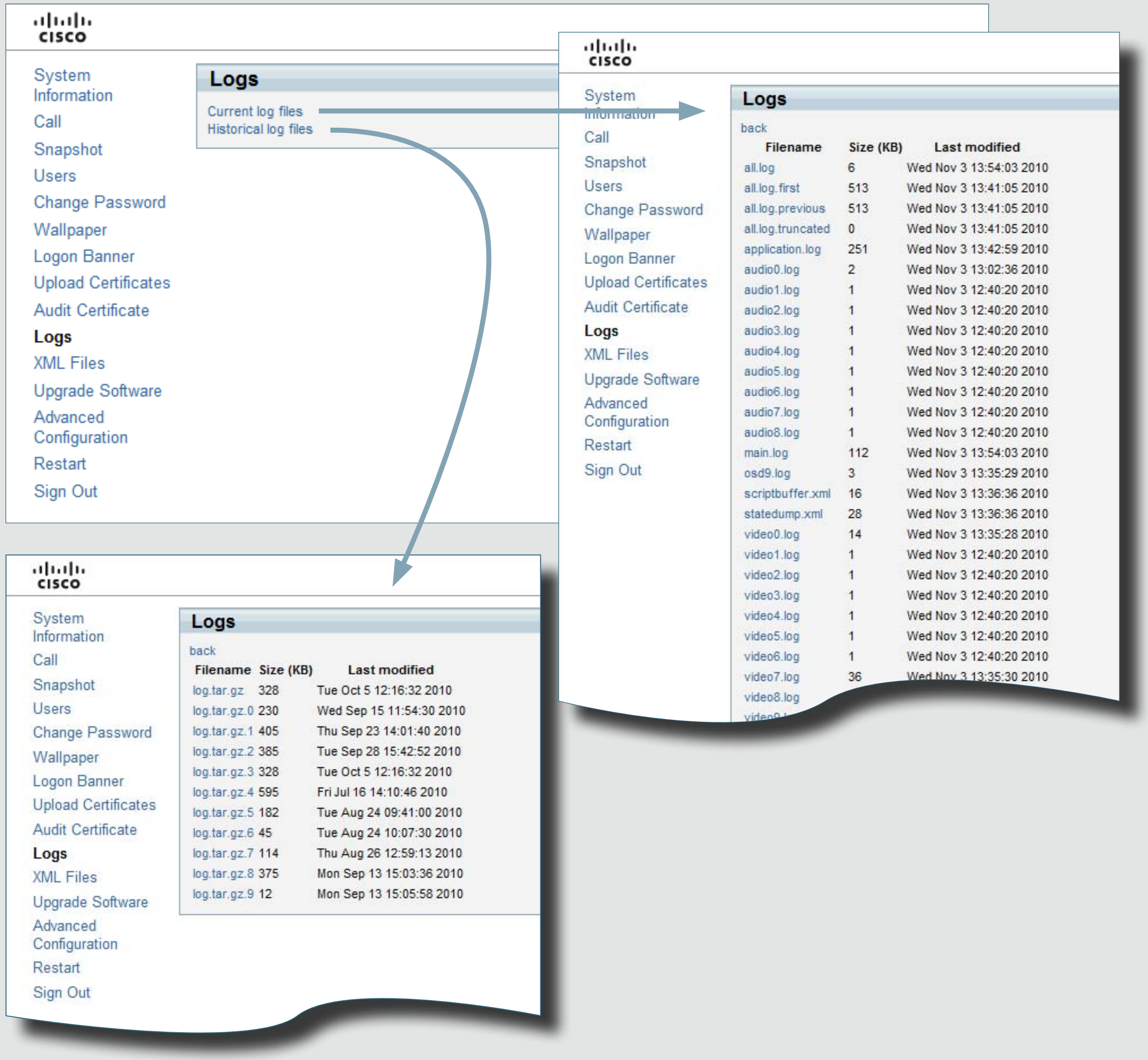
Current log files

Time stamped event log files. Select *Current log files* and click on a text file to view the file. Right click on a file and follow the instructions in the dialog box to save the file.

Historical log files

Time stamped historical log files. Select *Historical log files*, click on a file and follow the instructions in the dialog box to save the file.

Log files



Logs

Filename	Size (KB)	Last modified
all.log	6	Wed Nov 3 13:54:03 2010
all.log.first	513	Wed Nov 3 13:41:05 2010
all.log.previous	513	Wed Nov 3 13:41:05 2010
all.log.truncated	0	Wed Nov 3 13:41:05 2010
application.log	251	Wed Nov 3 13:42:59 2010
audio0.log	2	Wed Nov 3 13:02:36 2010
audio1.log	1	Wed Nov 3 12:40:20 2010
audio2.log	1	Wed Nov 3 12:40:20 2010
audio3.log	1	Wed Nov 3 12:40:20 2010
audio4.log	1	Wed Nov 3 12:40:20 2010
audio5.log	1	Wed Nov 3 12:40:20 2010
audio6.log	1	Wed Nov 3 12:40:20 2010
audio7.log	1	Wed Nov 3 12:40:20 2010
audio8.log	1	Wed Nov 3 12:40:20 2010
main.log	112	Wed Nov 3 13:54:03 2010
osd9.log	3	Wed Nov 3 13:35:29 2010
scriptbuffer.xml	16	Wed Nov 3 13:36:36 2010
statedump.xml	28	Wed Nov 3 13:36:36 2010
video0.log	14	Wed Nov 3 13:35:28 2010
video1.log	1	Wed Nov 3 12:40:20 2010
video2.log	1	Wed Nov 3 12:40:20 2010
video3.log	1	Wed Nov 3 12:40:20 2010
video4.log	1	Wed Nov 3 12:40:20 2010
video5.log	1	Wed Nov 3 12:40:20 2010
video6.log	1	Wed Nov 3 12:40:20 2010
video7.log	36	Wed Nov 3 13:35:30 2010
video8.log		

Logs

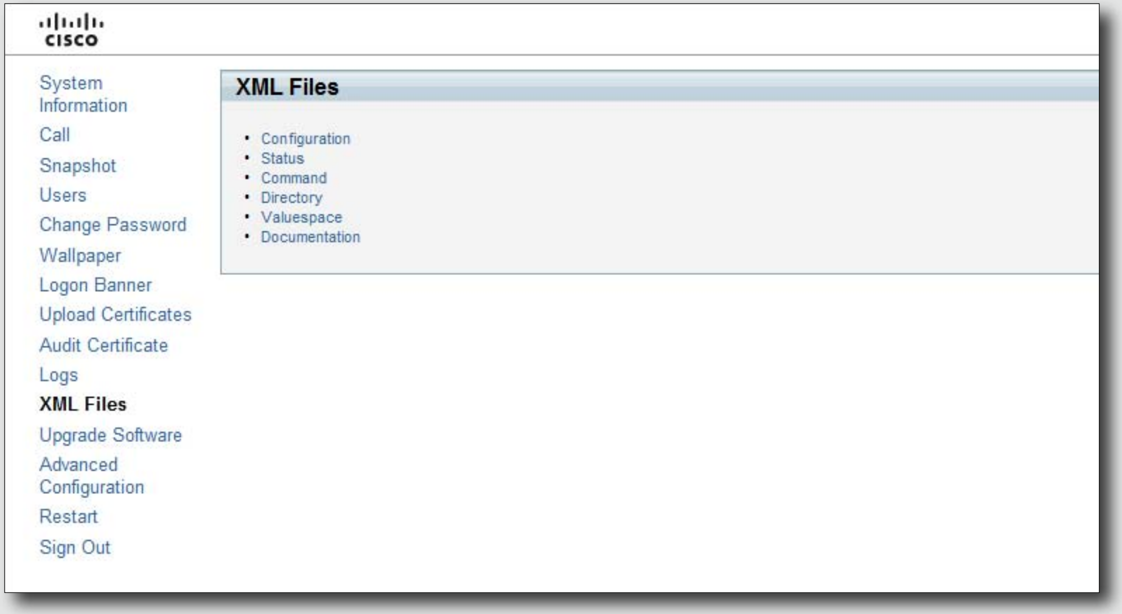
Filename	Size (KB)	Last modified
log.tar.gz	328	Tue Oct 5 12:16:32 2010
log.tar.gz.0	230	Wed Sep 15 11:54:30 2010
log.tar.gz.1	405	Thu Sep 23 14:01:40 2010
log.tar.gz.2	385	Tue Sep 28 15:42:52 2010
log.tar.gz.3	328	Tue Oct 5 12:16:32 2010
log.tar.gz.4	595	Fri Jul 16 14:10:46 2010
log.tar.gz.5	182	Tue Aug 24 09:41:00 2010
log.tar.gz.6	45	Tue Aug 24 10:07:30 2010
log.tar.gz.7	114	Thu Aug 26 12:59:13 2010
log.tar.gz.8	375	Mon Sep 13 15:03:36 2010
log.tar.gz.9	12	Mon Sep 13 15:05:58 2010

Viewing XML files

The XML files are structured in a hierarchy building up a database of information about the codec.

- Select *Configuration* to see an overview of the system settings, which are controlled from the web interface, or from the API (Application Programmer Interface).
- The *Status* information is constantly updated by the system to reflect system and process changes. The status information is normally monitored from the API.
- Select *Command* to see an overview of the commands available to instruct the system to perform an action. The commands are issued from the API.
- The *Directory* file will be described later.
- Select *Valuespace* to see an overview of the value spaces.
- The *Documentation* file will be described later.

XML files



Software upgrade

From this page you can do software upgrades and add a release key and option keys.

Software versions

EX90/EX60 are using the TC software.

NOTE: Contact your system administrator if you have questions about the software version.

Software release notes and upgrade files

For a complete overview of the news and changes, we recommend reading the Software Release Notes (TC4).

Go to: ▶ http://www.cisco.com/en/US/products/ps11422/tsd_products_support_series_home.html

Software download

For software download go to: ▶ http://www.cisco.com/cisco/software/navigator.html

Release key

The release key is required to be able to use any of the released software.

Contact your Cisco representative to obtain the release key.

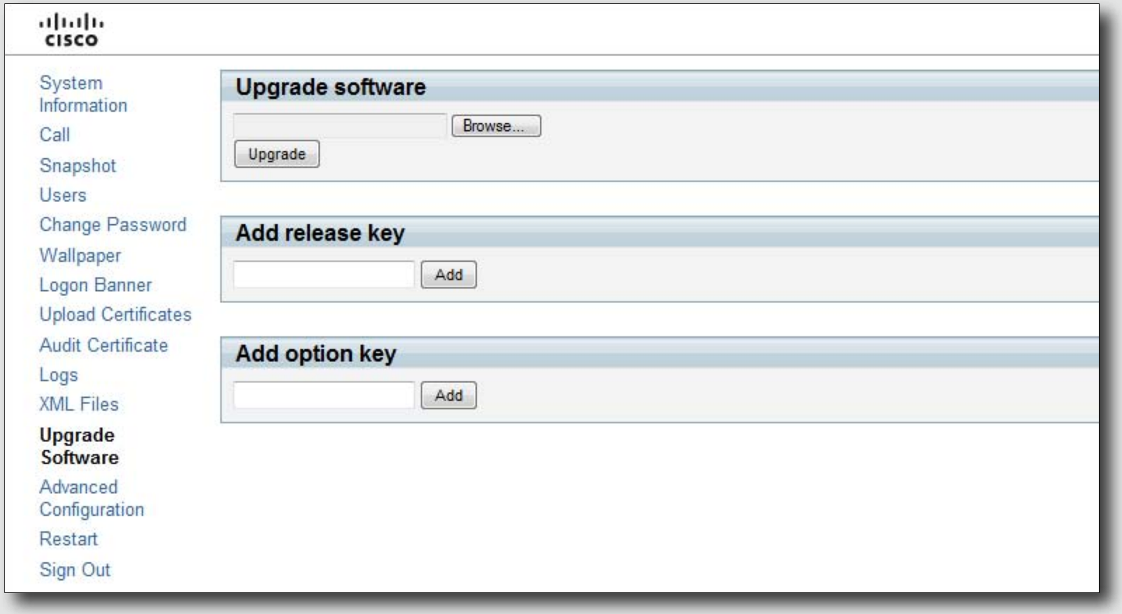
Option key

An option key is required to activate any optional functionality, and you may have several option keys in your system. The options available are:

- Premium resolution
- Multisite (only EX90)
- Dual display (only EX90)

Contact your Cisco representative to obtain the option key(s).

Upgrade software



Add the release and option keys

Contact your Cisco representative to obtain the required key(s). If you will add both a release key and one or more option keys, the valid procedure will be:

1. Enter the ***release key*** and press ***Add***.
The key format: “1TC001-1-0C22E348” (each system will have a unique key).
2. Enter the ***option key*** and press ***Add***.
The key format: “1N000-1-AA7A4A09” (each system will have a unique key).
3. If you have more than one option key, add the remaining keys.

Upgrade the software on the codec

4. Before you can start the upgrade you must download the software upgrade file. The file format: “s52000tc4_0_0.pkg” (each software version has a unique file name).
5. Press ***Browse...*** and select the .PKG file.
6. Press the ***Upgrade*** button to start the installation.
7. Leave the system to allow the installation process to complete. You can follow the progress on this page. When the upgrade is successfully completed a message will appear. The installation process may take up to 30 minutes.

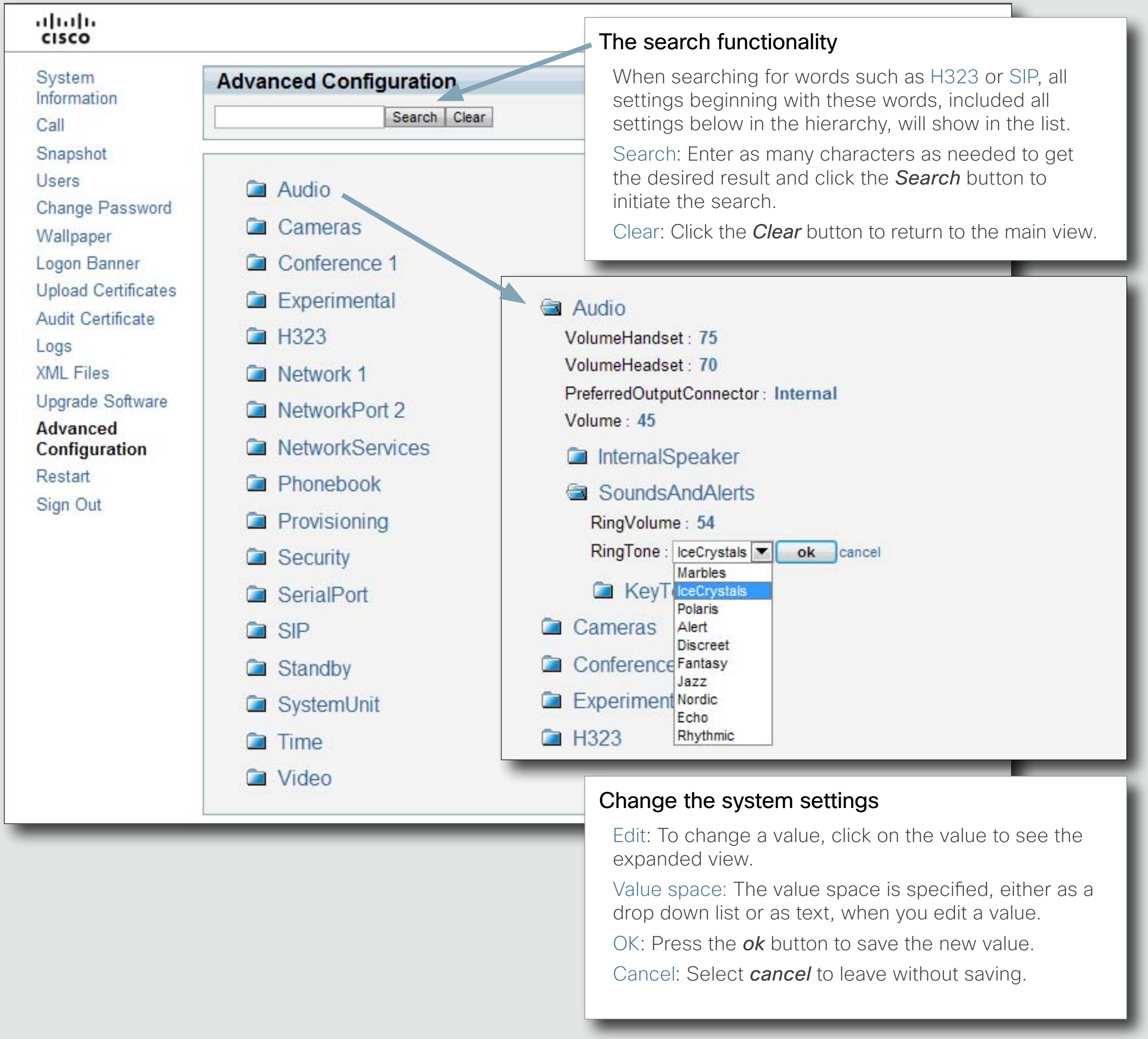
Advanced configuration

The web interface allows for remote administration of the system.

The Advanced configuration defines the system settings and are structured in a hierarchy, making up a database of system settings.

The system settings are further explained in the ▶ Advanced configuration chapter in this guide.

Advanced configuration



VolumeHandset : 75

VolumeHeadset : 70

PreferredOutputConnector : Internal

Volume : 45

RingVolume : 54

RingTone : IceCrystals

The search functionality

When searching for words such as H323 or SIP, all settings beginning with these words, included all settings below in the hierarchy, will show in the list.

Search: Enter as many characters as needed to get the desired result and click the ***Search*** button to initiate the search.

Clear: Click the ***Clear*** button to return to the main view.

Change the system settings

Edit: To change a value, click on the value to see the expanded view.

Value space: The value space is specified, either as a drop down list or as text, when you edit a value.

OK: Press the ***ok*** button to save the new value.

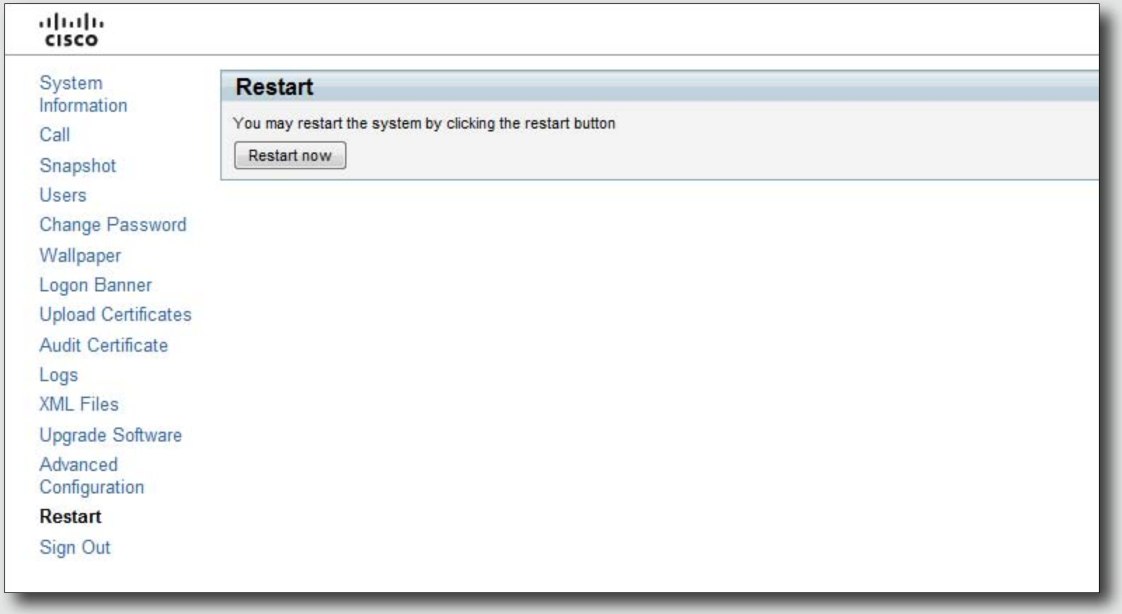
Cancel: Select ***cancel*** to leave without saving.

Restarting the system

To restart the system, press *Restart now*.

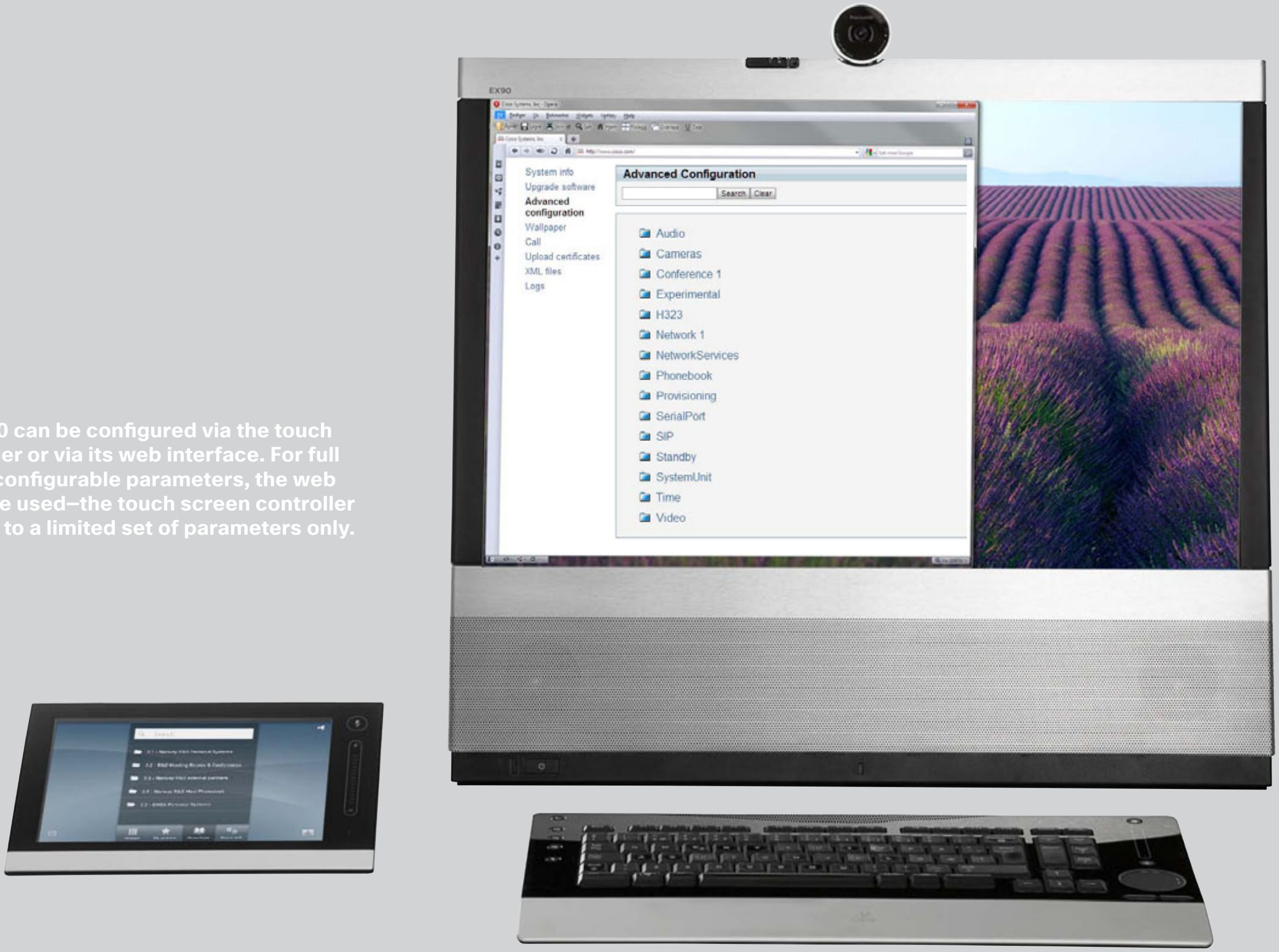
Restarting the system takes a few minutes.

Restarting the system



Restart

You may restart the system by clicking the restart button



The EX90/EX60 can be configured via the touch screen controller or via its web interface. For full access to the configurable parameters, the web interface must be used–the touch screen controller provides access to a limited set of parameters only.

CHAPTER 3

THE ADVANCED CONFIGURATION

Description of the advanced configuration settings

In the following pages you will find a complete list of the system settings which are configured from the Advanced configuration page on the web interface. The examples shows either the default value or an example of a value.

Open a web browser and enter the IP address of the EX90/EX60. To find the IP address, open the System Information page on the touch screen controller. Tap the ***Settings*** icon, select ***System Information*** and find the ***IP Address***.

The Audio settings

Audio VolumeHandset

Set the volume on the handset.

Requires user role: `ADMIN`

Value space: `<0..100>`

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

Example: `Audio VolumeHandset: 70`

Audio VolumeHeadset

Set the volume on the headset.

Requires user role: `ADMIN`

Value space: `<0..100>`

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

Example: `Audio VolumeHeadset: 70`

Audio PreferredOutputConnector

Select the preferred connector for the audio out. When the handset is in use the audio out goes to the handset, and when hanged up the audio out goes to the preferred output connector.

Requires user role: `ADMIN`

Value space: `<None/HDMI/Internal/BlueTooth/Handset/Headset>`

None: The default audio output is the internal speaker.

HDMI: The audio out goes to the HDMI audio channel.

Internal: The audio out goes to the internal loudspeaker. NOTE: Requires the "Audio InternalSpeaker Mode" to be enabled.

BlueTooth: The audio out goes to the Bluetooth device (for future use).

Handset: The audio out goes to the handset only.

Headset: The audio out goes to the headset.

Example: `Audio PreferredOutputConnector: Internal`

Audio Volume

Set the volume on the loudspeaker.

Requires user role: `USER`

Value space: `<0..100>`

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

Example: `Audio Volume: 70`

Audio InternalSpeaker Mode

Set the internal loudspeaker mode.

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: The internal speakers are enabled.

Off: The internal speakers are disabled.

Example: `Audio InternalSpeaker Mode: On`

Audio SoundsAndAlerts RingVolume

Sets the ring tone volume for an incoming call. The value goes in steps of 5 from 0 to 100 (from -34.5 dB to 15 dB). Volume 0 = Off.

Requires user role: `USER`

Value space: `<0..100>`

Range: Select a value from 0 to 100.

Example: `Audio SoundsAndAlerts RingVolume: 50`

Audio SoundsAndAlerts RingTone

Selects the ringtone for incoming calls.

Requires user role: `USER`

Value space: `<Marbles/IceCrystals/Polaris/Alert/Discreet/Fantasy/Jazz/Nordic/Echo/Rhythmic>`

Select a tone from the list of ringtones.

Example: `Audio SoundsAndAlerts RingTone: Jazz`

Audio SoundsAndAlerts KeyTones Mode

Not applicable in this version.

The Cameras settings

Cameras PowerLine Frequency

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

Requires user role: `ADMIN`

Value space: `<Auto/50Hz/60Hz>`

Auto: Set to Auto to enable power frequency auto detection in the camera.

50Hz/60Hz: Set to 50 Hz or 60 Hz.

```
Example: Cameras PowerLine Frequency: Auto
```

Cameras Camera [1..1] Backlight

The backlight functionality compensates for lights shining directly at the camera (usually the sun entering the window) to avoid a too dark image from the room.

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: Turn on the camera backlight.

Off: Turn off the camera backlight.

```
Example: Cameras Camera 1 Backlight: Off
```

Cameras Camera [1..1] Mirror

Not applicable in this version.

Cameras Camera [1..1] Flip

Not applicable in this version.

Cameras Camera [1..1] IrSensor

Not applicable in this version.

Cameras Camera [1..1] FrameRate

Set the frame rate frequency.

Requires user role: `ADMIN`

Value space: `<60Hz/30Hz>`

60Hz: Set the frame rate to 60 Hz.

30Hz: Set the frame rate to 30 Hz.

```
Example: Cameras Camera 1 FrameRate: 30Hz
```

Cameras Camera [1..1] Brightness Mode

Set the camera brightness mode.

Requires user role: `ADMIN`

Value space: `<Auto/Manual>`

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

Manual: Enable manual control of the camera brightness, e.g. the level of the brightness level setting will be used for the camera.

```
Example: Cameras Camera 1 Brightness Mode: Auto
```

Cameras Camera [1..1] Brightness Level

Set the brightness level. NOTE: Requires the Camera Brightness Mode to be set to Manual.

Requires user role: `ADMIN`

Value space: `<1..31>`

Range: Select a value from 1 to 31.

```
Example: Cameras Camera 1 Brightness Level: 1
```

Cameras Camera [1..1] Whitebalance Mode

Set the camera whitebalance mode.

Requires user role: `ADMIN`

Value space: `<Auto/Manual>`

Auto: When set to Auto, the camera will continuously adjust the whitebalance depending on the camera view.

Manual: Set to Manual to enable manual control of the camera whitebalance, e.g. the level of the whitebalance level setting will be used for the camera.

```
Example: Cameras Camera 1 Whitebalance Mode: auto
```

Cameras Camera [1..1] Whitebalance Level

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

Requires user role: `ADMIN`

Value space: `<1..16>`

Range: Select a value from 1 to 16.

```
Example: Cameras Camera 1 Whitebalance Level: 1
```

Cameras Camera [1..1] Focus Mode

Set the camera focus mode. When moving the camera, the system will use auto focus for a few seconds to set the right focus of the new camera position.

Requires user role: `ADMIN`

Value space: `<Auto/Manual/ContinuousAuto>`

Auto: The focus will be updated throughout the call. After a few seconds auto focus is turned off to prevent continuous focus adjustments of the camera.

Manual: Turn the autofocus off and adjust the camera focus manually.

ContinuousAuto: The focus is updated throughout the call, without being turned off. NOTE: Applies to EX90 only.

Example: `Cameras Camera 1 Focus Mode: Auto`

Cameras Camera [1..1] Gamma Mode

The Gamma Mode setting enables for gamma corrections. Gamma describes the nonlinear relationship between image pixels and monitor brightness.

Requires user role: `ADMIN`

Value space: `<Auto/Manual>`

Auto: Auto is the default and the recommended setting.

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

Example: `Cameras Camera 1 Gamma Mode: Auto`

Cameras Camera [1..1] Gamma Level

By setting the Gamma Level you can select which gamma correction table to use. This setting may be useful in difficult lighting conditions, where changes to the brightness setting does not provide satisfactory results. NOTE: Requires the Gamma Mode to be set to Manual.

Requires user role: `ADMIN`

Value space: `<0..7>`

Range: Select a value from 0 to 7.

Example: `Cameras Camera 1 Gamma Level: 0`

The Conference settings

Conference [1..1] TelephonyPrefix

Enter the prefix to be used for telephony calls.

Requires user role: `ADMIN`

Value space: `<S: 0, 80>`

Format: String with a maximum of 80 characters.

Example: `Conference 1 TelephonyPrefix: "520"`

Conference [1..1] MaxTransmitCallRate

Specify the maximum transmit call rate to be used when placing or receiving calls.

Requires user role: `ADMIN`

Value space: `<64..6000>`

Range: Select a value from 64 to 6000 kbps.

Example: `Conference 1 MaxTransmitCallRate: 6000`

Conference [1..1] MaxReceiveCallRate

Specify the maximum receive call rate to be used when placing or receiving calls.

Requires user role: `ADMIN`

Value space: `<64..6000>`

Range: Select a value from 64 to 6000 kbps.

Example: `Conference 1 MaxReceiveCallRate: 6000`

Conference [1..1] IncomingMultisiteCall Mode

Set the incoming MultiSite call mode. The MultiSite feature allows participants from more than two locations to join a meeting – by video and/or telephone.

Requires user role: `ADMIN`

Value space: `<Allow/Deny>`

Allow: Accept incoming calls to an already active call/conference. The incoming call will be added to the MCU conference.

Deny: The system will not accept incoming calls when you are in a call. The calling side will receive a busy signal.

Example: `Conference 1 IncomingMultisiteCall Mode: Allow`

Conference [1..1] AutoAnswer Mode

Set the AutoAnswer mode.

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: Enable AutoAnswer to let the system automatically answer all incoming calls.

Off: The incoming calls must be answered manually by pressing the green Accept key on the touch controller.

```
Example: Conference 1 AutoAnswer Mode: Off
```

Conference [1..1] AutoAnswer Mute

Determine if the microphone shall be muted when an incoming call is automatically answered. NOTE: Requires the AutoAnswer Mode to be enabled.

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: The incoming call will be muted when automatically answered.

Off: The incoming call will not be muted.

```
Example: Conference 1 AutoAnswer Mute: Off
```

Conference [1..1] AutoAnswer Delay

Define how long (in seconds) an incoming call has to wait before it is answered automatically by the system. NOTE: Requires the AutoAnswer Mode to be enabled.

Requires user role: `ADMIN`

Value space: `<0..50>`

Range: Select a value from 0 to 50 seconds.

```
Example: Conference 1 AutoAnswer Delay: 0
```

Conference [1..1] MicUnmuteOnDisconnect

Determine if the microphones should be unmuted automatically when all calls are disconnected. In a meeting room or other shared resource this could be done to prepare the system for the next user.

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: Un-mute the microphones after the call is disconnected.

Off: If muted, let the microphones remain muted after the call is disconnected.

```
Example: Conference 1 MicUnmuteOnDisconnect: On
```

Conference [1..1] DoNotDisturb Mode

Determine if there should be an alert on incoming calls.

Requires user role: `USER`

Value space: `<On/Off>`

On: On: All incoming calls will be rejected, with no alert. The calling side will receive a busy signal when trying to call the codec. A message will display on screen, telling that Do not disturb is turned on, together with an option to turn off the Do not disturb. When turning off the Do not disturb mode you will see a list of the calls that have been rejected.

Off: The incoming calls will be alerted.

```
Example: DoNotDisturb Mode: Off
```

Conference [1..1] FarEndControl Mode

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

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: Set to On when you want 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.

Off: When set to Off the far end can not access any of the features above on your system.

```
Example: Conference 1 FarEndControl Mode: On
```

Conference [1..1] FarEndControl SignalCapability

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

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: Enable the far end control signal capability.

Off: Disable the far end control signal capability.

```
Example: Conference 1 FarEndControl SignalCapability: On
```

Conference [1..1] Encryption Mode

Set the conference encryption mode. A padlock with the text "Encryption On" or "Encryption Off" displays on screen, for a few seconds, when the conference starts.

Requires user role: `ADMIN`

Value space: `<BestEffort/On/Off>`

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.

On: The system will only allow calls that are encrypted.

Off: The system will not use encryption.

`Example: Conference 1 Encryption Mode: BestEffort`

Conference [1..1] DefaultCall Protocol

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

Requires user role: `ADMIN`

Value space: `<H323/SIP>`

H.323: Select H.323 to ensure that calls are set up as H.323 calls.

SIP: Select SIP to ensure that calls are set up as SIP calls.

`Example: Conference 1 DefaultCall Protocol: H323`

Conference [1..1] DefaultCall Rate

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

Requires user role: `ADMIN`

Value space: `<64..6000>`

Range: Enter a value from 64 to 6000 kbps.

`Example: Conference 1 DefaultCall Rate: 768`

Conference [1..1] VideoBandwidth Mode

Set the conference video bandwidth mode.

Requires user role: `ADMIN`

Value space: `<Dynamic/Static>`

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

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

`Example: Conference 1 VideoBandwidth Mode: Dynamic`

Conference [1..1] VideoBandwidth MainChannel Weight

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

Requires user role: `ADMIN`

Value space: `<1..10>`

Range: 1 to 10.

`Example: Conference 1 VideoBandwidth MainChannel Weight: 5`

Conference [1..1] VideoBandwidth PresentationChannel Weight

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

Requires user role: `ADMIN`

Value space: `<1..10>`

Range: 1 to 10.

`Example: Conference 1 VideoBandwidth PresentationChannel Weight: 5`

Conference [1..1] PacketLossResilience Mode

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

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: Enable the packetloss resilience.

Off: Disable the packetloss resilience.

`Example: Conference 1 PacketLossResilience Mode: On`

The H323 settings

H323 NAT Mode

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

Requires user role: `ADMIN`

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

Auto: The system will determine if the "NAT Address" or the real IP-address should be used within signalling. This is done to make it possible to place calls to endpoints on the LAN as well as endpoints on the WAN.

On: The system will signal the configured "NAT Address" in place of its own IP-address within Q.931 and H.245. The NAT Server Address will be shown in the startup-menu as: "My IP Address: 10.0.2.1".

Off: The system will signal the real IP Address.

Example: `H323 NAT Mode: Off`

H323 NAT Address

Enter the external/global IP-address to the router with NAT support. Packets sent to the router will then be routed to the system.

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

* Port 1720

* Port 5555-5574

* Port 2326-2485

Requires user role: `ADMIN`

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

Format: String with a maximum of 64 characters.

Example: `H323 NAT Address: ""`

H323 Profile [1..1] PortAllocation

The H.323 Port Allocation setting affects the H.245 port numbers used for H.323 call signalling.

Requires user role: `ADMIN`

Value space: `<Dynamic/Static>`

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

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

Example: `H323 Profile 1 PortAllocation: Dynamic`

H323 Profile [1..1] 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`

Value space: `<S: 0, 30>`

Format: Compact string with a maximum of 30 characters. Valid characters are 0-9, * and #.

Example: `H323 Profile 1 H323Alias E164: "90550092"`

H323 Profile [1..1] H323Alias ID

Lets you specify the H.323 Alias ID which is used to address the system on a H.323 Gatekeeper and will be displayed in the call lists. Example: "firstname.surname@company.com", "My H.323 Alias ID"

Requires user role: `ADMIN`

Value space: `<S: 0, 49>`

Format: String with a maximum of 49 characters

Example: `H323 Profile 1 H323Alias ID: "firstname.surname@company.com"`

H323 Profile [1..1] CallSetup Mode

The H.323 Call Setup Mode defines whether to use a Gatekeeper or Direct calling when establishing H323 calls.

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

Requires user role: `ADMIN`

Value space: `<Direct/Gatekeeper>`

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

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

Example: `H323 Profile 1 CallSetup Mode: Gatekeeper`

H323 Profile [1..1] Gatekeeper Discovery

Determine how the system shall register to a H.323 Gatekeeper.

Requires user role: `ADMIN`

Value space: `<Manual/Auto>`

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

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

Example: `H323 Profile 1 Gatekeeper Discovery: Manual`

H323 Profile [1..1] Gatekeeper Address

Enter the IP address of the Gatekeeper. NOTE: Requires the H.323 Call Setup Mode to be set to Gatekeeper and the Gatekeeper Discovery to be set to Manual.

Requires user role: `ADMIN`

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

Format: Only the valid IP address format is accepted. An IP address that contains letters (192.a.2.0) or unvalid IP addresses (192.0.1234.0) will be rejected.

Example: `H323 Profile 1 Gatekeeper Address: "192.0.2.0"`

H323 Profile [1..1] Authentication LoginName

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

Requires user role: `ADMIN`

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

Format: String with a maximum of 50 characters.

Example: `H323 Profile 1 Authentication LoginName: ""`

H323 Profile [1..1] Authentication Password

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

Requires user role: `ADMIN`

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

Format: String with a maximum of 50 characters.

Example: `H323 Profile 1 Authentication Password:`

H323 Profile [1..1] Authentication Mode

Set the authentication mode for the H.323 profile.

Requires user role: `ADMIN`

Value space: `<On/Off>`

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

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

Example: `H323 Profile 1 Authentication Mode: Off`

The Network settings

Network [1..1] Speed

Set the Ethernet link speed.

Requires user role: `ADMIN`

Value space: `<Auto/10half/10full/100half/100full/1000full>`

Auto: Autonegotiate link speed.

10half: Force link to 10 Mbps half-duplex.

10full: Force link to 10 Mbps full-duplex.

100half: Force link to 100 Mbps half-duplex.

100full: Force link to 100 Mbps full-duplex.

1000full: Force link to 1 Gbps full-duplex.

`Example: Network 1 Speed: Auto`

Network [1..1] Assignment

Define whether to use DHCP or Static IPv4 assignment.

Requires user role: `ADMIN`

Value space: `<Static/DHCP>`

Static: Set the network assignment to Static and configure the static IPv4 settings (IP Address, SubnetMask and Gateway).

DHCP: The system addresses are automatically assigned by the DHCP server.

`Example: Network 1 Assignment: DHCP`

Network [1..1] IPStack

Select which internet protocols the system will support.

Requires user role: `ADMIN`

Value space: `<IPv4/IPv6>`

IPv4: IP version 4 is supported.

IPv6: IP version 6 is supported. The IPv4 settings (IP Address, IP Subnet Mask and Gateway) will be disabled.

`Example: Network 1 IPStack: IPv4`

Network [1..1] MTU

Set the Ethernet MTU (Maximum Transmission Unit).

Requires user role: `ADMIN`

Value space: `<400..1500>`

Range: Select a value from 400 to 1500 bytes.

`Example: Network 1 MTU: 1500`

Network [1..1] VLAN Voice Mode

Set the VLAN voice mode.

Requires user role: `ADMIN`

Value space: `<Tagged/Untagged>`

Tagged: The voice packets in the VLAN network are tagged with VlanId and Priority.

Untagged: The voice packets in the VLAN network are untagged.

`Example: Network 1 VLAN Voice Mode: Untagged`

Network [1..1] VLAN Voice VlanId

Set the VLAN voice ID.

Requires user role: `ADMIN`

Value space: `<0..4096>`

Range: Select a value from 0 to 4096.

`Example: Network 1 VLAN Voice VlanId: 0`

Network [1..1] VLAN Voice Priority

Set the VLAN voice priority.

Requires user role: `ADMIN`

Value space: `<0..7>`

Range: Select a value from 0 to 7.

`Example: Network 1 VLAN Voice Priority: 0`

Network [1] VLAN Data Mode

Set the VLAN data mode.

Requires user role: `ADMIN`

Value space: `<Tagged/Untagged>`

Tagged: The data packets in the VLAN network are tagged with Data VlanId and Data Priority.

Untagged: The data packets in the VLAN network are untagged.

`Example: Network 1 VLAN Data Mode: Untagged`

Network [1] VLAN Data VlanId

Set the VLAN data ID.

Requires user role: `ADMIN`

Value space: `<0..4096>`

Range: Select a value from 0 to 4096.

`Example: Network 1 VLAN Data VlanId: 0`

Network [1] VLAN Data Priority

Set the VLAN data priority.

Requires user role: `ADMIN`

Value space: `<0..7>`

Range: Select a value from 0 to 7.

Example: `Network 1 VLAN Data Priority: 0`

Network [1..1] IPv6 Address

Enter the static IPv6 network address for the system. Only applicable if the Network IPv6 Assignment is set to Static.

Requires user role: `ADMIN`

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

Format: The IPv6 address of host name.

Example: `Network 1 IPv6 Address: "ffff:ffff:ffff:ffff:ffff:ffff:ffff:ffff"`

Network [1..1] IPv6 Gateway

Define the IPv6 network gateway address. Only applicable if the Network IPv6 Assignment is set to Static.

Requires user role: `ADMIN`

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

Format: The IPv6 address of host name.

Example: `Network 1 IPv6 Gateway: "ffff:ffff:ffff:ffff:ffff:ffff:ffff:ffff"`

Network [1..1] IPv6 Assignment

Define whether to use Autoconf or Static IPv6 assignment.

Requires user role: `ADMIN`

Value space: `<Static/Autoconf>`

Static: Set the network assignment to Static and configure the static IPv6 settings (IP Address and Gateway).

Autoconf: Enable IPv6 stateless autoconfiguration of the IPv6 network interface. See RFC4862 for a detailed description.

Example: `Network 1 IPv6 Assignment: Autoconf`

Network [1..1] IPv6 DHCPOtions

Retrieves a set of DHCP options from a DHCPv6 server.

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: Enable the retrieval of a selected set of DHCP options from a DHCPv6 server.

Off: Set to Off when IPv6 Assignment is set to Static.

Example: `Network 1 IPv6 Gateway: On`

Network [1..1] IPv4 Address

Enter the static IP network address for the system. Only applicable if the Network Assignment is set to Static.

Requires user role: `ADMIN`

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

Format: Only the valid IP address format is accepted. An IP address that contains letters (192.a.2.0) or unvalid IP addresses (192.0.1234.0) will be rejected.

Example: `Network 1 IPv4 Address: "192.0.2.0"`

Network [1..1] IPv4 Gateway

Define the IP network gateway. Only applicable if the Network Assignment is set to Static.

Requires user role: `ADMIN`

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

Format: Compact string with a maximum of 64 characters.

Example: `Network 1 IPv4 Gateway: "192.0.2.0"`

Network [1..1] IPv4 SubnetMask

Define the IP network subnet mask. Only applicable if the Network Assignment is set to Static.

Requires user role: `ADMIN`

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

Format: Compact string with a maximum of 64 characters.

Example: `Network 1 IPv4 SubnetMask: "255.255.255.0"`

Network [1..1] QoS Mode

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

Requires user role: `ADMIN`

Value space: `<Off/Diffserv>`

Off: No QoS method is used.

Diffserv: When you set the QoS Mode to Diffserv you must configure the Diffserv sub menu settings (Audio, Data, Signalling and Video).

Example: `Network 1 QoS Mode: diffserv`

Network [1..1] QoS Diffserv Audio

The Diffserv Audio defines which priority Audio packets should have in an IP network. Enter a priority, which ranges from 0 to 63 for the packets. The higher the number, the higher the priority. These priorities might be overridden when packets are leaving the network controlled by the local network administrator. NOTE: Requires the Network QoS Mode to be set to Diffserv.

Requires user role: `ADMIN`

Value space: `<0..63>`

Audio: A recommended value is Diffserv Code Point (DSCP) AF41, which equals the value 34. If in doubt, contact your network administrator.

Range: Select a value from 0 to 63.

```
Example: Network 1 QoS Diffserv Audio: 0
```

Network [1..1] QoS Diffserv Data

The Diffserv Data defines which priority Data packets should have in an IP network. Enter a priority, which ranges from 0 to 63 for the packets. The higher the number, the higher the priority. These priorities might be overridden when packets are leaving the network controlled by the local network administrator. NOTE: Requires the Network QoS Mode to be set to Diffserv.

Requires user role: `ADMIN`

Value space: `<0..63>`

Data: A recommended value is Diffserv Code Point (DSCP) AF23, which equals the value 22. If in doubt, contact your network administrator.

Range: Select a value from 0 to 63.

```
Example: Network 1 QoS Diffserv Data: 0
```

Network [1..1] QoS Diffserv Signalling

The Diffserv Signalling defines which priority Signalling packets should have in an IP network. Enter a priority, which ranges from 0 to 63 for the packets. The higher the number, the higher the priority. These priorities might be overridden when packets are leaving the network controlled by the local network administrator. NOTE: Requires the Network QoS Mode to be set to Diffserv.

Requires user role: `ADMIN`

Value space: `<0..63>`

Signalling: A recommended value is Diffserv Code Point (DSCP) AF31, which equals the value 26. If in doubt, contact your network administrator.

Range: Select a value from 0 to 63.

```
Example: Network 1 QoS Diffserv Signalling: 0
```

Network [1..1] QoS Diffserv Video

The Diffserv Video defines which priority Video packets should have in an IP network. Enter a priority, which ranges from 0 to 63 for the packets. The higher the number, the higher the priority. These priorities might be overridden when packets are leaving the network controlled by the local network administrator. NOTE: Requires the Network QoS Mode to be set to Diffserv.

Requires user role: `ADMIN`

Value space: `<0..63>`

Video: A recommended value is Diffserv Code Point (DSCP) AF41, which equals the value 34. If in doubt, contact your network administrator.

Range: Select a value from 0 to 63.

```
Example: Network 1 QoS Diffserv Video: 0
```

Network [1..1] DNS Server [1..5] Address

Define the network addresses for DNS servers. Up to 5 addresses may be specified. If the network addresses are unknown, contact your administrator or Internet Service Provider.

Requires user role: `ADMIN`

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

Format: String with a maximum of 64 characters.

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

Network [1..1] DNS Domain Name

DNS Domain Name is the default domain name suffix which is added to unqualified names.

Example: If the DNS Domain Name is "company.com" and the name to lookup is "MyVideoSystem", this will result in the DNS lookup "MyVideoSystem.company.com".

Requires user role: `ADMIN`

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

Format: String with a maximum of 64 characters.

```
Example: Network 1 DNS Domain Name: ""
```

Network [1..1] IEEE8021X Mode

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

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: The 802.1X authentication is enabled.

Off: The 802.1X authentication is disabled (default).

```
Example: Network 1 IEEE8021X Mode: Off
```

Network [1..1] IEEE8021X AnonymousIdentity

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

Requires user role: `ADMIN`

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

Format: String with a maximum of 64 characters.

Example: `Network 1 IEEE8021X AnonymousIdentity: ""`

Network [1..1] IEEE8021X Identity

The 802.1X Identity is the user name needed for 802.1X authentication.

Requires user role: `ADMIN`

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

Format: String with a maximum of 64 characters.

Example: `Network 1 IEEE8021X Identity: ""`

Network [1..1] IEEE8021X Password

The 802.1X Password is the password needed for 802.1X authentication.

Requires user role: `ADMIN`

Value space: `<S: 0, 32>`

Format: String with a maximum of 32 characters.

Example: `Network 1 IEEE8021X Password: "***"`

Network [1..1] IEEE8021X Eap Md5

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

Requires user role: `ADMIN`

Value space: `<On/Off>`

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

Off: The EAP-MD5 protocol is disabled.

Example: `Network 1 IEEE8021X Eap Md5: On`

Network [1..1] IEEE8021X Eap TTLS

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

Requires user role: `ADMIN`

Value space: `<On/Off>`

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

Off: The EAP-TTLS protocol is disabled.

Example: `Network 1 IEEE8021X Eap TTLS: On`

Network [1..1] IEEE8021X Eap Peap

Set 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`

Value space: `<On/Off>`

On: The EAP-PEAP protocol is enabled (default).

Off: The EAP-PEAP protocol is disabled.

Example: `Network 1 IEEE8021X Eap Peap: On`

Network [1..1] TrafficControl Mode

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

Requires user role: `ADMIN`

Value space: `<On/Off>`

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

Off: Transmit video packets at link speed.

Example: `Network 1 TrafficControl: On`

Network [1..1] RemoteAccess Allow

Filter IP addresses for access to ssh/telnet/HTTP/HTTPS.

Requires user role: `ADMIN`

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

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

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

The NetworkServices settings

NetworkServices Telnet Mode

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

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: The Telnet protocol is enabled.

Off: The Telnet protocol is disabled. This is the factory setting.

Example: `NetworkServices Telnet Mode: Off`

NetworkServices SSH Mode

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

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: The SSH protocol is enabled.

Off: The SSH protocol is disabled.

Example: `NetworkServices SSH Mode: On`

NetworkServices SSH AllowPublicKey

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

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: The SSH public key is allowed.

Off: The SSH public key is not allowed.

Example: `NetworkServices SSH AllowPublicKey: On`

NetworkServices HTTP Mode

Set the HTTP mode to enable/disable access to the system through a web browser. The web interface is used for system management, call management such as call transfer, diagnostics and software uploads.

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: The HTTP protocol is enabled.

Off: The HTTP protocol is disabled.

Example: `NetworkServices HTTP Mode: On`

NetworkServices HTTPS Mode

HTTPS is a web protocol that encrypts and decrypts user page requests as well as the pages that are returned by the web server.

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: The HTTPS protocol is enabled.

Off: The HTTPS protocol is disabled.

Example: `NetworkServices HTTPS Mode: On`

NetworkServices HTTPS VerifyServerCertificate

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

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: Requires the system to verify that the server certificate is signed by a trusted Certificate Authority (CA). This requires that list of trusted CA's are uploaded to the system in advance.

Off: Do not verify server certificates.

Example: `NetworkServices HTTPS VerifyServerCertificate: Off`

NetworkServices HTTPS VerifyClientCertificate

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

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: Requires the client to present a certificate that is signed by a trusted Certificate Authority (CA). This requires that list of trusted CA's are uploaded to the system in advance.

Off: Do not verify client certificates.

Example: `NetworkServices HTTPS VerifyClientCertificate: Off`

NetworkServices SNMP Mode

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

Requires user role: `ADMIN`

Value space: `<Off/ReadOnly/ReadWrite>`

Off: Disable the SNMP network service.

ReadOnly: Enable the SNMP network service for queries only.

ReadWrite: Enable the SNMP network service for both queries and commands.

Example: `NetworkServices SNMP Mode: ReadWrite`

NetworkServices SNMP CommunityName

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

Requires user role: `ADMIN`

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

Format: String with a maximum of 50 characters.

```
Example: NetworkServices SNMP CommunityName: "public"
```

NetworkServices SNMP SystemContact

Enter the name of the Network Services SNMP System Contact.

Requires user role: `ADMIN`

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

Format: String with a maximum of 50 characters.

```
Example: NetworkServices SNMP SystemContact: ""
```

NetworkServices SNMP SystemLocation

Enter the name of the Network Services SNMP System Location.

Requires user role: `ADMIN`

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

Format: String with a maximum of 50 characters.

```
Example: NetworkServices SNMP SystemLocation: ""
```

NetworkServices SNMP Host [1..3] Address

Enter the address of up to three SNMP Managers. All traps will then be sent to the hosts listed.

The system's SNMP Agent (in the codec) responds to requests from SNMP Managers (a PC program etc.). SNMP Traps are generated by the SNMP Agent to inform the SNMP Manager about important events. Can be used to send event created messages to the SNMP agent about different events like: system reboot, system dialling, system disconnecting, MCU call, packet loss etc. Traps can be sent to multiple SNMP Trap Hosts.

Requires user role: `ADMIN`

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

Format: String with a maximum of 64 characters.

```
Example: NetworkServices SNMP Host 1 Address: ""
```

NetworkServices H323 Mode

Determine whether the system should be able to place and receive H.323 calls. NOTE: Requires a restart of the codec.

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: Enable the possibility to place and receive H.323 calls (default).

Off: Disable the possibility to place and receive H.323 calls.

```
Example: NetworkServices H323 Mode: On
```

NetworkServices SIP Mode

Determine whether the system should be able to place and receive SIP calls. NOTE: Requires a restart of the codec.

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: Enable the possibility to place and receive SIP calls (default).

Off: Disable the possibility to place and receive SIP calls.

```
Example: NetworkServices SIP Mode: On
```

NetworkServices NTP Mode

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

Requires user role: `ADMIN`

Value space: `<Auto/Manual>`

Auto: The system will use the NTP server, by which address is supplied from the DHCP server in the network. If no DHCP server is used, or the DHCP server does not provide the system with a NTP server address, the system will use the static defined NTP server address specified by the user.

Manual: The system will always use the static defined NTP server address specified by the user.

```
Example: NetworkServices NTP Mode: Manual
```

NetworkServices NTP Address

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

Requires user role: `ADMIN`

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

Format: String with a maximum of 64 characters.

```
Example: NetworkServices NTP Address: "1.tandberg.pool.ntp.org"
```

The Phonebook settings

Phonebook Server [1..1] ID

Enter a name for the external phonebook.

Requires user role: `ADMIN`

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

Format: String with a maximum of 64 characters.

Example: `Phonebook Server 1 ID: ""`

Phonebook Server [1..1] Type

Select the phonebook server type.

Requires user role: `ADMIN`

Value space: `<VCS/TMS/Callway>`

VCS: Select VCS if the phonebook is located on the Cisco TelePresence Video Communication Server.

TMS: Select TMS if the phonebook is located on the Cisco TelePresence Management Suite server.

Callway: Select Callway if the phonebook is to be provided by the Callway subscription service. Contact your Callway provider for more information.

Example: `Phonebook Server 1 Type: TMS`

Phonebook Server [1..1] URL

Enter the address (URL) to the external phonebook server.

Requires user role: `ADMIN`

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

Format: String with a maximum of 255 characters.

Example: `Phonebook Server 1 URL: "http://tms.company.com/tms/public/external/phonebook/phonebook.asmx"`

The Provisioning settings

Provisioning Mode

Provides the possibility of managing the codec (endpoint) by using an external manager/management system.

Requires user role: `ADMIN`

Value space: `<Off/TMS/VCS/Callway>`

Off: The system will not try to register to any management system.

TMS: If set to TMS (Cisco TelePresence Management System) the system will try to register with a TMS server. Contact your Cisco representative for more information.

VCS: If set to VCS (Cisco TelePresence Video Communication Server) the system will try to register with a VCS. Contact your Cisco representative for more information.

Callway: If set to Callway the system will try to register with the Callway subscription provider. Contact your Callway provider for more information.

Example: `Provisioning Mode: TMS`

Provisioning LoginName

Enter the user id provided by the provisioning server. This is the user name part of the credentials used to authenticate towards the HTTP server when using HTTP provisioning.

Requires user role: `ADMIN`

Value space: `<S: 0, 80>`

Format: String with a maximum of 80 characters.

Example: `Provisioning LoginName: ""`

Provisioning Password

Enter the password provided by the provisioning server. This is the password part of the credentials used to authenticate towards the HTTP server when using HTTP provisioning.

Requires user role: `ADMIN`

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

Format: String with a maximum of 64 characters.

Example: `Provisioning Password: ""`

Provisioning HttpMethod

Select the HTTP method to be used for the provisioning.

Requires user role: `ADMIN`

Value space: `<GET/POST>`

GET: Select GET when the provisioning server supports GET.

POST: Select POST when the provisioning server supports POST.

Example: `Provisioning HttpMethod: POST`

Provisioning ExternalManager Address

Enter the IP Address to the External Manager/Management system. If an External Manager address and a path is configured, the system will post an HTTP message to this address when starting up. When receiving this HTTP posting the External Manager (typically a management system) can return configurations/commands to the unit as a result. If the DHCP Option 242 is returned in the DHCP response from the DHCP server the system will interpret this as the External Manager address to use.

Requires user role: `ADMIN`

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

Format: Only the valid IP address format is accepted. An IP address that contains letters (192.a.2.0) or unvalid IP addresses (192.0.1234.0) will be rejected.

```
Example: Provisioning ExternalManager Address: ""
```

Provisioning ExternalManager Protocol

Determine whether or not to use secure management.

Requires user role: `ADMIN`

Value space: `<HTTP/HTTPS>`

HTTP: Set to HTTP to disable secure management. Requires HTTP to be enabled in the NetworkServices HTTP Mode setting.

HTTPS: Set to HTTPS to enable secure management. Requires HTTPS to be enabled in the NetworkServices HTTPS Mode setting.

```
Example: Provisioning ExternalManager Protocol: HTTP
```

Provisioning ExternalManager Path

Set the path to the External Manager/Management system. If an External Manager address and a path is configured, the system will post an HTTP message to this address when starting up. When receiving this HTTP posting the External Manager (typically a management system) can return configurations/commands to the unit as a result. If the DHCP Option 242 is returned in the DHCP response from the DHCP server the system will interpret this as the External Manager address to use.

Requires user role: `ADMIN`

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

Format: String with a maximum of 255 characters.

```
Example: Provisioning ExternalManager Path: "tms/public/external/management/
SystemManagementService.asmx"
```

Provisioning ExternalManager Domain

Enter the SIP domain for the provisioning server.

Requires user role: `ADMIN`

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

Format: String with a maximum of 64 characters.

```
Example: Provisioning ExternalManager Domain: "any.domain.com"
```

The Security settings

Security Audit Server Address

Enter the external/global IP-address to the audit syslog server.

Requires user role: `AUDIT`

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

Format: String with a maximum of 64 characters.

```
Example: Security Audit Server Address: ""
```

Security Audit Server Port

Enter the port of the syslog server that the system shall send its audit logs to. A user with AUDIT rights is required to change this setting.

Requires user role: `AUDIT`

Value space: `<0..65535>`

Range: Select a value from 0 to 65535.

```
Example: Security Audit Server Port: 514
```

Security Audit OnError Action

Describes what actions will be taken if connection to the syslog server is lost. A user with AUDIT rights is required to change this setting.

Requires user role: `AUDIT`

Value space: `<Halt/Ignore>`

Halt: If the connection to the syslog server is lost for more than a few seconds, the system will reboot and try to establish connection. If connection is restored, the audit logs are respooled to the syslog server, and the system starts up again.

Ignore: The system will continue its normal operation, and rotate internal logs when full. When connection is restored it will again sends its audit logs to the syslog server.

```
Example: Security Audit OnError Action: Ignore
```

Security Audit Logging Mode

Describes where the audit logs are recorded or transmitted. A user with AUDIT rights is required to change this setting.

Requires user role: `AUDIT`

Value space: `<Off/Internal/External/ExternalSecure>`

Off: No audit logging is performed.

Internal: The system records the audit logs to internal logs, and rotates logs when they are full.

External: The system sends the audit logs to an external audit server.

ExternalSecure: The system sends the audit logs to an external audit server that is verified by the Audit CA list.

```
Example: Security Audit Logging Mode: Off
```

Security Session InactivityTimeout

Determines how long the system will accept inactivity from the user before he is automatically logged out.

Requires user role: `AUDIT`

Value space: `<0..10000>`

Range: Select a value from 0 to 10000 seconds. 0 means the that inactivity will not enforce automatically logout.

`Example: Security Session InactivityTimeout: 0`

The SerialPort settings

SerialPort Mode

Set the COM 1 serial port to be enabled/disabled.

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: Enable the COM 1 serial port.

Off: Disable the COM 1 serial port.

`Example: SerialPort Mode: On`

SerialPort BaudRate

Specify the baud rate (data transmission rate, bits per second) for the COM port on the codec. The default value is 38400.

Connection parameters for the COM port: Data bits: 8. Parity: None. Stop bits: 1. Flow control: None.

Requires user role: `ADMIN`

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

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

`Example: SerialPort BaudRate: 38400`

SerialPort LoginRequired

Determine if login shall be required when connecting to the COM port at the codec.

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: Login is required when connecting to the codec through COM port.

Off: The user can access the codec through COM port without any login.

`Example: SerialPort LoginRequired: On`

The SIP settings

SIP Profile [1..1] URI

The SIP URI or number is used to address the system. This is the URI that is registered and used by the SIP services to route inbound calls to the system. A Uniform Resource Identifier (URI) is a compact string of characters used to identify or name a resource.

Requires user role: `ADMIN`

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

Format: Compact string with a maximum of 255 characters.

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

SIP Profile [1..1] DefaultTransport

Select the transport protocol to be used over the LAN.

Requires user role: `ADMIN`

Value space: `<UDP/TCP/TLS/Auto>`

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

TCP: The system will always use TCP 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 using the web interface. If no such CA-list is available on the system then anonymous Diffie Hellman will be used.

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

Example: `SIP Profile 1 DefaultTransport: Auto`

SIP Profile [1..1] TlsVerify

For TLS connections a SIP CA-list can be uploaded using the web interface.

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: Set to On to verify TLS connections. Only TLS connections to servers, whom x.509 certificate is validated against the CA-list, will be allowed.

Off: Set to Off to allow TLS connections without verifying them. The TLS connections are allowed to be set up without verifying the x.509 certificate received from the server against the local CA-list. This should typically be selected if no SIP CA-list has been uploaded.

Example: `SIP Profile 1 TlsVerify: Off`

SIP Profile [1..1] Type

Enables SIP extensions and special behavior for a vendor or provider.

Requires user role: `ADMIN`

Value space: `<Standard/Alcatel/Avaya/Cisco/Microsoft/Nortel/Experimental/Siemens>`

Standard: Should be used when registering to standard SIP proxy like OpenSer.

Alcatel: Must be used when registering to a Alcatel-Lucent OmniPCX Enterprise R7 or later.

Avaya: Must be used when registering to a Avaya Communication Manager.

Cisco: Must be used when registering to a Cisco CallManager version 5 or later.

Microsoft: Must be used when registering to a Microsoft LCS or OCS server.

Nortel: Must be used when registering to a Nortel MCS 5100 or MCS 5200 PBX.

Experimental: Can be used if auto is not working. NOTE: This mode is for testing purposes only.

Example: `SIP Profile 1 Type: Standard`

SIP Profile [1..1] Outbound

The client initiated connections mechanism for firewall traversal, connection reuse and redundancy. The current version supports http://tools.ietf.org/html/draft-ietf-sip-outbound-20.

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: Set up multiple outbound connections to servers in the Proxy Address list.

Off: Connect to the single proxy configured first in Proxy Address list.

Example: `SIP Profile 1 Outbound: Off`

SIP Profile [1..1] Proxy [1..4] Discovery

Select if the SIP Proxy address is to be obtained manually or by using Dynamic Host Configuration Protocol (DHCP).

Requires user role: `ADMIN`

Value space: `<Auto/Manual>`

Manual: When Manual is selected, the manually configured SIP Proxy address will be used.

Auto: When Auto is selected, the SIP Proxy address is obtained using Dynamic Host Configuration Protocol (DHCP).

Example: `SIP Profile 1 Proxy 1 Discovery: Manual`

SIP Profile [1..1] Proxy [1..4] Address

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

Requires user role: `ADMIN`

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

Format: Compact string with a maximum of 255 characters. An IP address that contains letters (192.a.2.0) or unvalid IP addresses (192.0.1234.0) will be rejected.

Example: `SIP Profile 1 Proxy 1 Address: ""`

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

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

Requires user role: `ADMIN`

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

Format: String with a maximum of 50 characters.

Example: `SIP Profile 1 Authentication 1 LoginName: ""`

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

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

Requires user role: `ADMIN`

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

Format: String with a maximum of 50 characters.

Example: `SIP Profile 1 Authentication 1 Password:`

The Standby settings

Standby Control

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

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: Enter standby mode when the Standby Delay has timed out. NOTE: Requires the Standby Delay to be set to an appropriate value.

Off: The system will not enter standby mode.

Example: `Standby Control: On`

Standby Delay

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

Requires user role: `ADMIN`

Value space: `<1..480>`

Range: Select a value from 1 to 480 minutes.

Example: `Standby Delay: 10`

Standby WakeupAction

Not applicable in this version.

Standby BootAction

Not applicable in this version.

Standby StandbyAction

Not applicable in this version.

The SystemUnit settings

SystemUnit Name

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

1) When the codec is acting as an SNMP Agent.

2) Towards a DHCP server.

Requires user role: `ADMIN`

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

Format: String with a maximum of 50 characters.

Example: `SystemUnit Name: "Meeting Room"`

SystemUnit MenuLanguage

Select the language to be used in the menus on screen.

Requires user role: `USER`

Value space: `<English>`

Example: `SystemUnit MenuLanguage: English`

SystemUnit IrSensor Mode

Not applicable in this version.

SystemUnit ContactInfo Type

Not applicable in this version.

SystemUnit CallLogging Mode

Set the call logging mode for calls that are received or placed by the system. The call logs may then be viewed via the GUI or using the xHistory command.

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: Enable logging.

Off: Disable logging.

Example: `SystemUnit CallLogging Mode: On`

The Time settings

Time Zone

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

Requires user role: `USER`

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

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

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

Time TimeFormat

Set the time format.

Requires user role: USER

Value space: `<24H/12H>`

24H: Set the time format to 24 hours.

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

Example: `Time TimeFormat: 24H`

Time DateFormat

Set the date format.

Requires user role: USER

Value space: `<DD_MM_YY/MM_DD_YY/YY_MM_DD>`

DD_MM_YY: The date January 30th 2010 will be displayed: 30.01.10

MM_DD_YY: The date January 30th 2010 will be displayed: 01.30.10

YY_MM_DD: The date January 30th 2010 will be displayed: 10.01.30

Example: `Time DateFormat: DD_MM_YY`

The Video settings

Video Selfview

Determine if the main video source (selfview) shall be displayed on screen.

Requires user role: ADMIN

Value space: `<On/Off>`

On: Set to On when you want selfview to be displayed on screen.

Off: Set to Off when you do not want selfview to be displayed on screen.

Example: `Video Selfview: On`

Video WallPaper

Determine which background picture to show on the touch screen and main screen when idle. It is recommended to use Wallpaper01 to Wallpaper12.

Requires user role: USER

Value space: `<None/Growing/Summersky/Custom/Wallpaper01/Wallpaper02/Wallpaper03/Wallpaper04/Wallpaper05/Wallpaper06/Wallpaper07/Wallpaper08/Wallpaper09/Wallpaper10/Wallpaper11/Wallpaper12/>`

Wallpaper01 to Wallpaper12: Select one of the predefined wallpapers to be displayed on the main screen and touch screen. The wallpaper will be shown on both screens.

None: No wallpaper will be displayed on the main screen. NOTE: When you change the wallpaper on the touch screen, it will also set the wallpaper for the main screen.

Summersky, Growing: Select one of the predefined wallpapers to be displayed on the main screen. It will not be displayed on the touch screen. NOTE: When you change the wallpaper on the touch screen, it will also change the wallpaper for the main screen.

Custom: The custom wallpaper will only show on the main screen, not the touch screen. It must be uploaded to the codec from the web interface before selecting Custom.

1) On the video system: Find the IP address of the codec. Open the menu on screen and go to Home > Settings > System information to find the IP Address.

2) On your computer: Open a web browser and enter the IP address of the codec. Select "Wallpaper" from the menu, browse for the file, and press the "Upload" button.

3) On the web interface: Log in and go to Advanced Configuration > Video > Wallpaper and select Custom. Give it a few seconds to display the new picture. If the picture does not show, toggle once between "None" and "Custom" wallpaper to make the change take effect. NOTE: When you change the wallpaper on the touch screen, it will also change the wallpaper for the main screen.

Example: `Video Wallpaper: Wallpaper01`

Video MainVideoSource

Not applicable in this version.

Video DefaultPresentationSource

NOTE: EX90 has Video Input Source [1..3] and EX60 has Video Input Source [1..2].

Define which video input source shall be used as the default presentation source (e.g. when you tap View followed by Present on the touch screen). The input source is configured to a video input connector.

Requires user role: `USER`

Value space: `<1..3>/<1..2>`

Range: Select the video input source to be used as the presentation source.

Example: `Video DefaultPresentationSource: 1`

Video Monitors

Set the monitor layout mode.

Requires user role: `ADMIN`

Value space: `<Single/Dual/DualPresentationOnly>`

Single: The same layout is shown on all monitors.

Dual: The layout is distributed on two monitors.

DualPresentationOnly: All participants in the call will be shown on the first monitr, while the presentation (if any) will be shown on the second monitor.

Example: `Video Monitors: Single`

Video Input Source [1..3]/[1..2] Name

NOTE: EX90 has Video Input Source [1..3] and EX60 has Video Input Source [1..2].

Enter a name for the video input source.

Requires user role: `ADMIN`

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

Format: String with a maximum of 50 characters.

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

Video Input Source 1 Connector

NOTE: EX90 has Video Input Source [1..3]. EX60 has Video Input Source [1..2].

Select which video input connector to be active on video input source 1.

Requires user role: `ADMIN`

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

HDMI (EX90): Select HDMI when you want to use the HDMI as the video input source 1.

DVI (EX60): Select DVI when you want to use the DVI as the video input source 1.

Example: `Video Input Source 1 Connector: HDMI`

Video Input Source 2 Connector

NOTE: EX90 has Video Input Source [1..3] and EX60 has Video Input Source [1..2].

Select which video input connector to be active on video input source 2.

Requires user role: `ADMIN`

Value space: `<DVI>/<CAMERA>`

DVI (EX90): Select DVI when you want to use the DVI-I as input source 2.

CAMERA (EX60): Select CAMERA when you want to use the CAMERA as input source 2.

Example: `Video Input Source 2 Connector: DVI`

Video Input Source 3 Connector

NOTE: EX90 has Video Input Source [1..3] and EX60 has Video Input Source [1..2].

Select which video input connector to be active on video input source 3.

Requires user role: `ADMIN`

Value space: `<CAMERA>`

CAMERA (EX90): Select CAMERA when you want to use the camera as input source 3.

Example: `Video Input Source 3 Connector: CAMERA`

Video Input Source [1..3]/[1..2] Type

NOTE: EX90 has Video Input Source [1..3] and EX60 has Video Input Source [1..2].

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

Requires user role: `ADMIN`

Value space: `<camera/PC/DVD/document _ camera/other>`

Camera: Select Camera when you have a camera connected to the selected video input.

PC: Select PC when you have a PC connected to the selected video input.

DVD: Select DVD when you have a DVD player connected to the selected video input.

Document_Camera: Select Document_Camera when you have a document camera connected to the selected video input.

Other: Select Other when other equipment is connected to the selected video input.

Example: `Video Input Source 1 Type: Camera`

Video Input Source [1..3]/[1..2] Quality

NOTE: EX90 has Video Input Source [1..3] and EX60 has Video Input Source [1..2].

When encoding and transmitting video there will be 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. The Quality setting specifies whether to give priority to high frame rate or to high resolution for a given source.

Requires user role: `ADMIN`

Value space: `<Motion/Sharpness>`

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

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

`Example: Video Input Source 1 Quality: Motion`

Video Input Source [1..3]/[1..2] CameraControl Mode

Not applicable in this version.

Video Input Source [1..3]/[1..2] CameraControl CameraId

Not applicable in this version.

Video Input Source [1..3]/[1..2] OptimalDefinition Profile

NOTE: EX90 has Video Input Source [1..3] and EX60 has Video Input Source [1..2].

Adjust how rapidly the system will increase the transmitted resolution when increasing the bandwidth. NOTE: Requires that the Video Input Source Quality is set to Motion.

NOTE: The default transmit frame rate is set to 30 fps which is recommended for normal light conditions. In good light conditions you can also consider to allow 60 fps. To do this you need to enable 60 Hz capture frequency on the camera, which is done with the Cameras Camera 1 FrameRate setting (Cameras Camera 1 FrameRate: 60Hz).

Normal: Use this setting for normal to poorly lit environment. If the source is a camera with 1920x1080p60, the system will transmit 720p60 at about 2.2 Mb/sec and above when the Video Input Source [1..3]/[1..2] OptimalDefinition Threshold60fps is set to 1280_720 or lower.

Medium: Requires better than normal and consistent lighting and good quality video inputs. If the source is a camera with 1920x1080p60, the system will transmit 720p60 at about 1.9 Mb/sec and above when the Video Input Source [1..3]/[1..2] OptimalDefinition Threshold60fps is set to 1280_720 or lower.

High: Requires good lighting conditions for a good overall experience and good quality video inputs. If the source is a camera with 1920x1080p60, the system will transmit 720p60 at about 1.1 Mb/sec and above when the Video Input Source [1..3]/[1..2] OptimalDefinition Threshold60fps is set to 1280_720 or lower.

Requires user role: `ADMIN`

Value space: `<Normal/Medium/High>`

Ref: Table 1 and Table 2.

`Example: Video Input Source 1 OptimalDefinition Profile: Normal`

Table 1: Optimal definition, for systems supporting 1080p

	w288p30	*w448p30*	*w576p30*	*720p30*	*1080p30*
Normal	256 kbit/s	512 kbit/s	768 kbit/s	1152 kbit/s	2560 kbit/s
Medium	128 kbit/s	384 kbit/s	512 kbit/s	1152 kbit/s	1920 kbit/s
High	128 kbit/s	256 kbit/s	512 kbit/s	768 kbit/s	1472 kbit/s

Table 2: Optimal definition, for systems supporting 720p60

	w144p60	*w288p60*	*w448p60*	*w576p60*	*720p60*
Normal	128 kbit/s	512 kbit/s	1152 kbit/s	1472 kbit/s	2240 kbit/s
Medium	128 kbit/s	384 kbit/s	768 kbit/s	1152 kbit/s	1920 kbit/s
High	128 kbit/s	256 kbit/s	512 kbit/s	768 kbit/s	1152 kbit/s

Video Input Source [1..3]/[1..2] OptimalDefinition Threshold60fps

NOTE: EX90 has Video Input Source [1..3] and EX60 has Video Input Source [1..2].

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

NOTE: The default transmit frame rate is set to 30 fps which is recommended for normal light conditions. In good light conditions you can also consider to allow 60 fps. To do this you need to enable 60 Hz capture frequency on the camera, which is done with the Cameras Camera 1 FrameRate setting (Cameras Camera 1 FrameRate: 60Hz).

Requires user role: `ADMIN`

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

512_288: Set the threshold to 512x288.

768_448: Set the threshold to 768x448.

1024_576: Set the threshold to 1024x576.

1280_720: Set the threshold to 1280x720.

Never: Do not set a threshold for transmitting 60 fps.

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

Video Input DVI [2]/[1] Type

NOTE: EX90 has the DVI 2 input connector and EX60 has the DVI 1 input connector.

The official DVI standard supports both digital and analog signals. In most cases the default AutoDetect setting can detect whether the signal is analog RGB or digital. However, in some rare cases when DVI-I cables are used (these cables can carry both the analog and digital signals) the auto detection fails. This setting makes it possible to override the AutoDetect and select the correct DVI video input.

Requires user role: `USER`

Value space: `<AutoDetect/Digital/AnalogRGB/AnalogYPbPr>`

AutoDetect: Set to AutoDetect to automatically detect if the signal is analog RGB or digital.

Digital: Set to Digital to force the DVI video input to Digital when using DVI-I cables with both analog and digital pins and AutoDetect fails.

AnalogRGB: Set to AnalogRGB to force the DVI video input to AnalogRGB when using DVI-I cables with both analog and digital pins and AutoDetect fails.

AnalogYPbPr: Set to AnalogYPbPr to force the DVI video input to AnalogYPbPr, as the component (YPbPr) signal cannot be auto detected.

`Example: Video Input DVI 2 Type: AutoDetect`

Video Output HDMI [1] Resolution

NOTE: Applies to EX90.

Select the preferred resolution for the monitor connected to the video output HDMI connector. This will force the resolution on the monitor.

Requires user role: `ADMIN`

Value space: `<Auto/640_480_60/800_600_60/1024_768_60/1280_1024_60/1280_720_60/1920_1080_60/1280_768_60/1360_768_60/1366_768_60/1600_1200_60/1920_1200_60>`

Auto: The system will automatically try to set the optimal resolution based on negotiation with the connected monitor.

Range: 640x480@60p, 800x600@60p, 1024x768@60p, 1280x1024@60p, 1280x720@60p, 1920x1080@60p, 1280x768@60p, 1360x768@60p, 1366x768@60p, 1600x1200@60p, 1920x1200@60p

`Example: Video Output HDMI 1 Resolution: 1920_1080_60`

Video Output HDMI [1] MonitorRole

NOTE: Applies to EX90.

The HDMI monitor role describes what video stream will be shown on the monitor connected to the video output HDMI connector. Applicable only if the "Video > Monitors" configuration is set to dual.

Requires user role: `ADMIN`

Value space: `<First/Second/PresentationOnly>`

First: Show main video stream.

Second: Show presentation video stream if active, or other participants.

PresentationOnly: Show presentation video stream if active, and nothing else.

`Example: Video Output HDMI 1 MonitorRole: First`

Video Output HDMI [1] OverscanLevel

NOTE: Applies to EX90.

Some TVs or other monitors may not display the whole image sent out on the systems video output, but cuts the outer parts of the image. In this case this setting can be used to let the system not use the outer parts of video resolution. The video will be scaled in this case.

Requires user role: `ADMIN`

Value space: `<Medium/High/None>`

Medium: The system will not use the outer 3% of the output resolution.

High: The system will not use the outer 6% of the output resolution

None: The system will use all of the output resolution.

`Example: Video Output HDMI 1 OverscanLevel: None`

Video Output LCD [2]/[1] Resolution

NOTE: EX90 has the LCD 2 connector and EX60 has the LCD 1 connector.

Set the screen resolution.

Requires user role: `ADMIN`

Value space: `<1920 _ 1200 _ 60>`

Range: The screen resolution is 1920 x 1200 60 Hz.

`Example: Video Output LCD 2 Resolution: 1920 _ 1200 _ 60`

Video Output LCD [2]/[1] MonitorRole

NOTE: EX90 has the LCD 2 connector and EX60 has the LCD 1 connector.

Set the LCD monitor role. NOTE: The settings made here will be overruled by the touch controller.

Requires user role: `ADMIN`

Value space: `<First/Second/PresentationOnly/InternalSetup>`

First: Show main video stream.

Second: Show presentation video stream if active, or other participants.

PresentationOnly: Show presentation video stream if active, and nothing else.

InternalSettings: Internal settings from the touch controller will be used.

`Example: Video Output LCD 2 MonitorRole: InternalSetup`

Video Output LCD [2]/[1] Brightness

NOTE: EX90 has the LCD 2 connector and EX60 has the LCD 1 connector.

Set the brightness level for the monitor.

Requires user role: `ADMIN`

Value space: `<S: 0, 100>`

Range: Select a value from 0 to 100.

`Example: Video Output LCD 2 Brightness: 50`

Video Output LCD [2]/[1] Red

NOTE: EX90 has the LCD 2 connector and EX60 has the LCD 1 connector.

Set the Red color level for the monitor.

Requires user role: `ADMIN`

Value space: `<S: 0, 100>`

Range: Select a value from 0 to 100.

`Example: Video Output LCD 2 Red: 50`

Video Output LCD [2]/[1] Green

NOTE: EX90 has the LCD 2 connector and EX60 has the LCD 1 connector.

Set the Green color level for the monitor.

Requires user role: `ADMIN`

Value space: `<S: 0, 100>`

Range: Select a value from 0 to 100.

`Example: Video Output LCD 2 Green: 50`

Video Output LCD [2]/[1] Blue

NOTE: EX90 has the LCD 2 connector and EX60 has the LCD 1 connector.

Set the Blue color level for the monitor.

Requires user role: `ADMIN`

Value space: `<S: 0, 100>`

Range: Select a value from 0 to 100.

`Example: Video Output LCD 2 Blue: 50`

Video ControlPanel Brightness

Set the brightness level for the touch screen.

Requires user role: `ADMIN`

Value space: `<S: 0, 100>`

Range: Select a value from 0 to 100.

`Example: Video ControlPanel Brightness: 100`

Video Layout Scaling

Define how the system shall adjust the aspect ratio for images or frames when there is a difference between the image and the frame it is to be placed in.

Requires user role: `ADMIN`

Value space: `<On/Off>`

On: Let the system automatically adjust aspect ratio.

Off: No adjustment of the aspect ratio.

`Example: Video Layout Scaling: On`

Video Layout ScaleToFrame

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

Requires user role: `ADMIN`

Value space: `<Manual/MaintainAspectRatio/StretchToFit>`

Manual: If the difference in aspect ratio between the video input source and the target image frame is less than the ScaleToFrameThreshold configuration (in percent), the image is stretched to fit. If not, the system will maintain the original aspect ratio.

MaintainAspectRatio: Will maintain the aspect ratio of the input source, and fill in black in the rest of the frame (letter boxing or pillar boxing).

StretchToFit: Will stretch (horizontally or vertically) the input source to fit into the image frame. NOTE: The general limitation is that you cannot upscale in one direction and at the same time downscale in the other direction. In such situations the codec will apply letterboxing.

```
Example: Video Layout ScaleToFrame: MaintainAspectRatio
```

Video Layout ScaleToFrameThreshold

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

Requires user role: `ADMIN`

Value space: `<0..100>`

Range: Select a value from 0 to 100 percent.

```
Example: Video Layout ScaleToFrameThreshold: 5
```

Video Layout LocalLayoutFamily

Select which video layout family to be used locally.

Requires user role: `ADMIN`

Value space: `<Auto/FullScreen/Equal/PresentationSmallSpeaker/PresentationLargeSpeaker>`

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

FullScreen: The FullScreen layout family will be used as the local layout.

Equal: The Equal layout family will be used as the local layout.

PresentationSmallSpeaker: The PresentationSmallSpeaker layout family will be used as the local layout.

PresentationLargeSpeaker: The PresentationLargeSpeaker layout family will be used as the local layout.

```
Example: Video Video Layout LocalLayoutFamily: Auto
```

Video Layout RemoteLayoutFamily

Select which video layout family to be used for the remote participants.

Requires user role: `ADMIN`

Value space: `<Auto/FullScreen/Equal/PresentationSmallSpeaker/PresentationLargeSpeaker>`

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

FullScreen: The FullScreen layout family will be used as the remote layout.

Equal: The Equal layout family will be used as the remote layout.

PresentationSmallSpeaker: The PresentationSmallSpeaker layout family will be used as the remote layout.

PresentationLargeSpeaker: The PresentationLargeSpeaker layout family will be used as the remote layout.

```
Example: Video Video Layout RemoteLayoutFamily: Auto
```

Video OSD Mode

Not applicable in this version.

Video OSD TodaysBookings

Not applicable in this version.

Video OSD MyContactsExpanded

Not applicable in this version.

Video OSD Output

Not applicable in this version.

Video OSD LoginRequired

Not applicable in this version.

Video OSD InputMethod InputLanguage

Not applicable in this version.

Video OSD InputMethod Cyrillic

Not applicable in this version.

The Experimental settings

The Experimental settings are beta preview features and can be used 'as is'. They are not fully documented.

NOTE: The Experimental settings are likely to change without further notice.

Experimental Video OSD AlertOnIncomingCall

Not applicable in this version.

Experimental Conference [1..1] PacketLossResilience ForwardErrorCorrection

NOTE: This Experimental command can be used 'as is' and will not be further documented. The Experimental settings WILL change.

Will enable ForwardErrorCorrection (RFC5109) mechanism as part of the PacketLossResilience mechanism. Default value is On.

On: Forward error correction will be used as part of the PacketLossResilience mechanism.

Off: Forward error correction will NOT be used as part of the PacketLossResilience mechanism.

Requires user role: `ADMIN`

Value space: `<On/Off>`

Example: `Experimental Conference 1 PacketLossResilience ForwardErrorCorrection: On`

Experimental Conference [1..1] PacketLossResilience RateAdaption

NOTE: This Experimental command can be used 'as is' and will not be further documented. The Experimental settings WILL change.

Will use the a RateAdaption algorithm adapted to the PacketLossResilience mechanism. Default value is On.

On: RateAdaption will be used as part of the PacketLossResilience mechanism.

Off: RateAdaption will NOT be used as part of the PacketLossResilience mechanism.

Requires user role: `ADMIN`

Value space: `<On/Off>`

Example: `Experimental Conference 1 PacketLossResilience RateAdaption: On`

Experimental Audio Panning Mode

NOTE: This Experimental command can be used 'as is' and will not be further documented. The Experimental settings WILL change.

Requires user role: `ADMIN`

Value space: `<Auto/Off>`

Example: `Experimental Audio Panning Mode: Off`

Experimental Audio Panning MaxAngle

NOTE: This Experimental command can be used 'as is' and will not be further documented. The Experimental settings WILL change.

Requires user role: `ADMIN`

Value space: `<0..90>`

Example: `Experimental Audio Panning MaxAngle: 60`

Experimental Audio Panning MonitorLeft

NOTE: This Experimental command can be used 'as is' and will not be further documented. The Experimental settings WILL change.

Requires user role: `ADMIN`

Value space: `<1..5>`

Example: `Experimental Audio Panning Mode: 1`

Experimental Audio Panning MonitorRight

NOTE: This Experimental command can be used 'as is' and will not be further documented. The Experimental settings WILL change.

Requires user role: `ADMIN`

Value space: `<0..5>`

Example: `Experimental Audio Panning Mode: 1`

Experimental SoftwareUpgrade Mode

NOTE: This Experimental command can be used 'as is' and will not be further documented. The Experimental settings WILL change.

Requires user role: `ADMIN`

Value space: `<Auto/Manual>`

Example: `Experimental SoftwareUpgrade Mode: Auto`

Experimental SoftwareUpgrade ServerAddress

NOTE: This Experimental command can be used 'as is' and will not be further documented. The Experimental settings WILL change.

Requires user role: `ADMIN`

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

Example: `Experimental SoftwareUpgrade ServerAddress: "http://csupdate.tandberg.com/getswlist.py"`

Experimental CapsetFilter

NOTE: This Experimental command can be used 'as is' and will not be further documented. The Experimental settings WILL change.

Requires user role: `ADMIN`

Value space: `<S: 0, 100>`

```
Example: Experimental CapsetFilter: ""
```

Experimental NetworkServices UPnP Mode

NOTE: This Experimental command can be used 'as is' and will not be further documented. The Experimental settings WILL change.

Requires user role: `ADMIN`

Value space: `<On/Off>`

```
Example: Experimental NetworkServices UPnP Mode: Off
```

Experimental NetworkServices UPnP Timeout

NOTE: This Experimental command can be used 'as is' and will not be further documented. The Experimental settings WILL change.

Requires user role: `ADMIN`

Value space: `<0..3600>`

```
Example: Experimental NetworkServices UPnP Timeout: 0
```

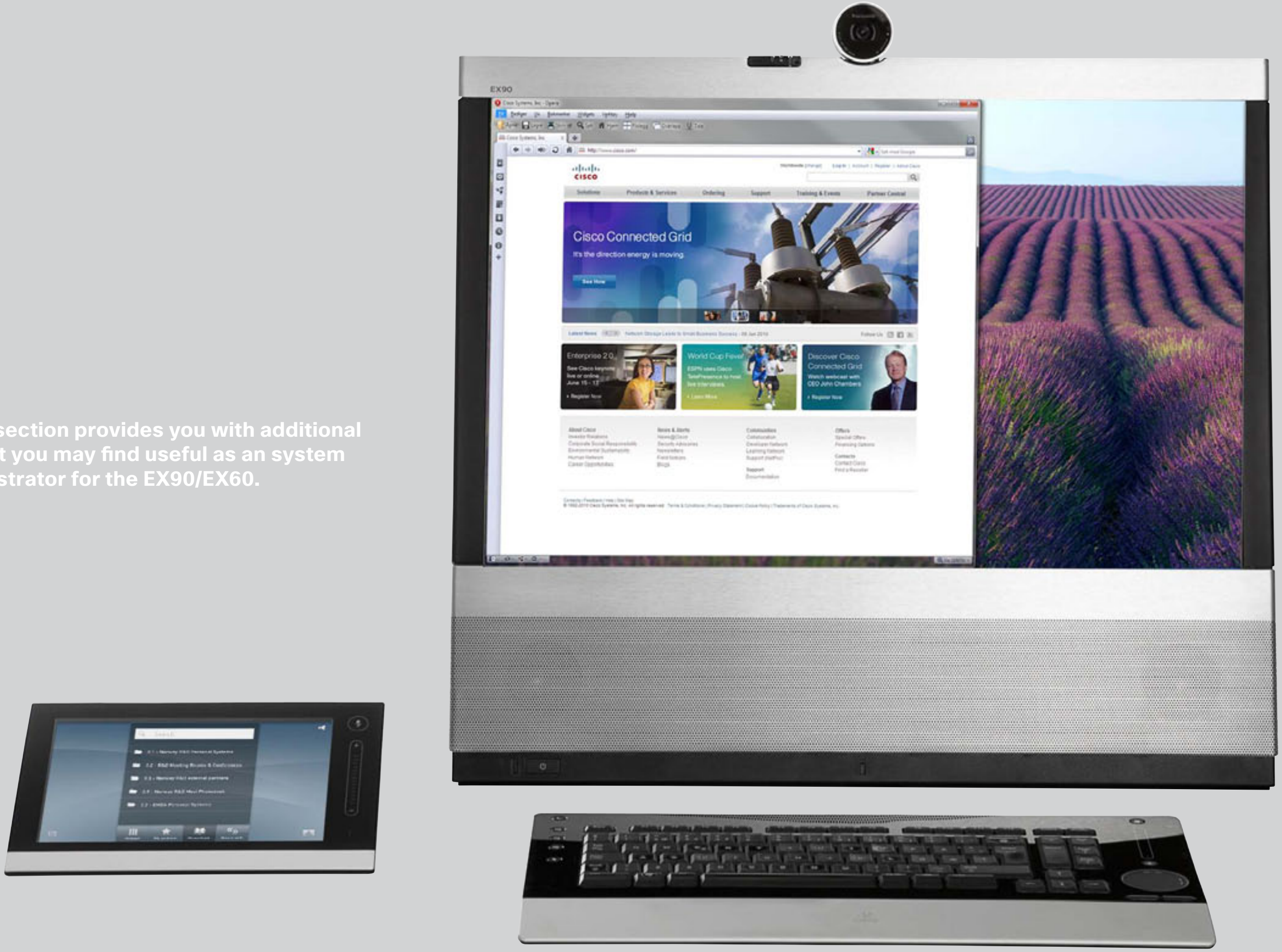
Experimental SystemUnit MenuType

NOTE: This Experimental command can be used 'as is' and will not be further documented. The Experimental settings WILL change.

Requires user role: `ADMIN`

Value space: `<Indicators/Full>`

```
Example: Experimental SystemUnit MenuType: Full
```



The appendices section provides you with additional information that you may find useful as an system administrator for the EX90/EX60.

CHAPTER 4

APPENDICES

Password protection

The Codec is password protected. You always need to enter a username to log in.

The same username and password is used for the web and command line interfaces.

- The default username is admin with no password set.

  NOTE: We recommend that you set a password for the admin user - see how to **Change your codec password** to the right.

- New user accounts with username and password can be created using the web interface.

  Read more about user rights and how to add, edit and delete a user account in the ▶ User management section.

You can also protect the File system of the codec by setting a password for the root user. The root user is disabled by default.

NOTE: When a new administrator password has been defined make sure you keep a copy of the password in a safe place. Contact your Cisco representative if you have forgotten the password.

Password settings

Change your codec password

A user, including the default admin user, can change his codec password using the web interface or the command line interface.

If a password is not currently set, use the procedure below with a blank current password.

Change the password using the web interface:

1. Log in to the web interface with your username and current password.
2. Go to the ***Change password*** page.
3. Enter the current password, the new password, and repeat the new password in the appropriate input fields.

   The password format is a string with 0–255 characters.
4. Click *Save*.

Change the password using the command line interface:

1. Connect to the codec through the network or the serial data port, using a command line interface (SSH or Telnet).
2. Log in to the codec with your username and current password.
3. Run the following API command and when prompted enter the current password, the new password, and confirm the new password:

   ```
   systemtools passwd
   ```

   The password format is a string with 0–255 characters.

Set the Administrator settings password

You can set a password to restrict access to the Administrator Settings on the touch controller.

Open a command line interface, for example PuTTY, and run the following command:

```
xCommand SystemUnit MenuPassword Set
Password: <password>
```

Change the user passwords

All users can change their own codec password as described to the right.

If you have ADMIN rights, you can change all users' passwords by performing the following steps:

1. Log in to the web interface with username and password.
2. Go to the ***Users*** page.
3. Select the appropriate user from the list.
4. Enter a new password and PIN code.
5. Click *Save*.

Set a root password

If you log in to the command line interface as root, you can access the codec's file system.

The root user is disabled by default.

Perform the following steps to activate the root user and set a password:

1. Connect to the codec through the network or the serial data port, using a command line interface (SSH or Telnet).
2. Log in to the codec with the username (admin) and password. You need ADMIN rights.
3. Run the following API command:

   ```
   systemtools rootsettings on <password>
   ```

NOTE: The root password is not the same as the administrator password.

Optimal definition profiles

Under ideal lighting conditions the bandwidth requirements can be substantially reduced with the optimal definitions profiles.

Generally, we recommend the Optimal Definition set at Normal.

If lighting conditions are good we recommend that you test the endpoint on the various Optimal Definition settings before deciding on a profile.

Go to Advanced Configuration on the web interface and navigate to *Video > Input > Source [1..n] > OptimalDefinition > Profile* and select the optimal definition profile.

You can set a resolution threshold below which the maximum frame rate will be 30 fps.

Go to Advanced Configuration on the web interface and navigate to *Video > Input > Source [1..n] > OptimalDefinition > Threshold60fps* and select a threshold.

The video input quality settings must be set to Motion for the Optimal Definition to work. With the video input quality set to Sharpness, the endpoint will transmit the highest resolution possible, regardless of frame rate.

Go to Advanced Configuration on the web interface and navigate to *Video > Input > Source [1..n] > Quality* and set the video quality parameter.

You can read more about the video settings in the Advanced configuration section. Go to: ▶ Advanced configuration

Optimal definition profile

High (720p60)

Typically used in dedicated video conferencing rooms. Requires good lighting conditions for a good overall experience.

Under ideal conditions the bandwidth requirements can be reduced by up to 50%.

Medium (w576p60)

Typically used in rooms with better than normal, and consistent lighting.

The bandwidth requirements can be reduced by up to 25%.

Normal (w448p60)

This setting is typically used in office environments where the environment is normal to poorly lit.

Generally, we recommend the Optimal Definition set at Normal.

Table 1: Optimal definition for systems supporting 1080p

	w288p30	*w448p30*	*w576p30*	*720p30*	*1080p30*
Normal	256 kbit/s	512 kbit/s	768 kbit/s	1152 kbit/s	2560 kbit/s
Medium	128 kbit/s	384 kbit/s	512 kbit/s	1152 kbit/s	1920 kbit/s
High	128 kbit/s	256 kbit/s	512 kbit/s	768 kbit/s	1472 kbit/s

Table 2: Optimal definition for systems supporting 720p60

	w144p60	*w288p60*	*w448p60*	*w576p60*	*720p60*
Normal	128 kbit/s	512 kbit/s	1152 kbit/s	1472 kbit/s	2240 kbit/s
Medium	128 kbit/s	384 kbit/s	768 kbit/s	1152 kbit/s	1920 kbit/s
High	128 kbit/s	256 kbit/s	512 kbit/s	768 kbit/s	1152 kbit/s

ClearPath – Packet loss resilience

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

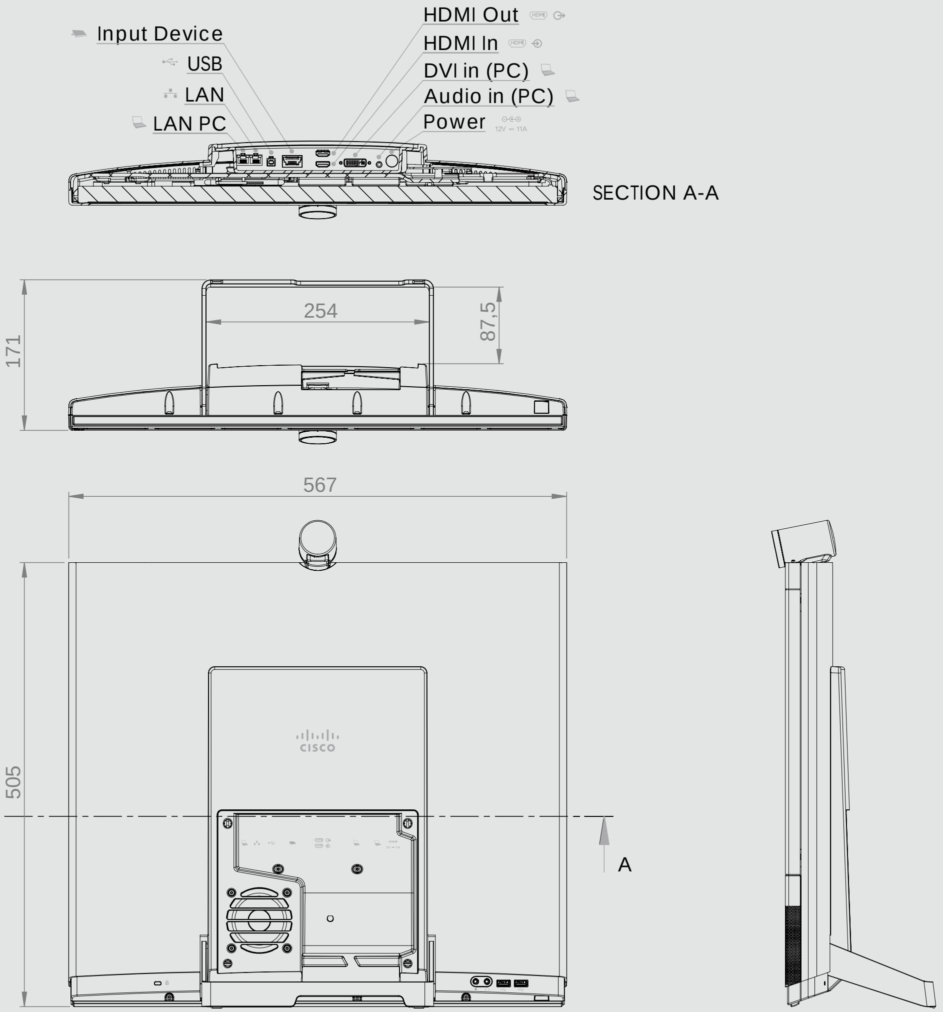
To configure ClearPath select ***Advanced Configuration*** on the web interface and navigate to ***Conference 1 > PacketLossResilience > Mode.*** Select Off to disable ClearPath and select On to enable ClearPath.

We recommend that you keep ClearPath enabled on your video system.

Dimensions of the EX90

The illustration shows the EX90 dimensions.

Dimensions of the EX90



All dimensions are in mm.

EX90 weight: 11 kg (24.2 lb)

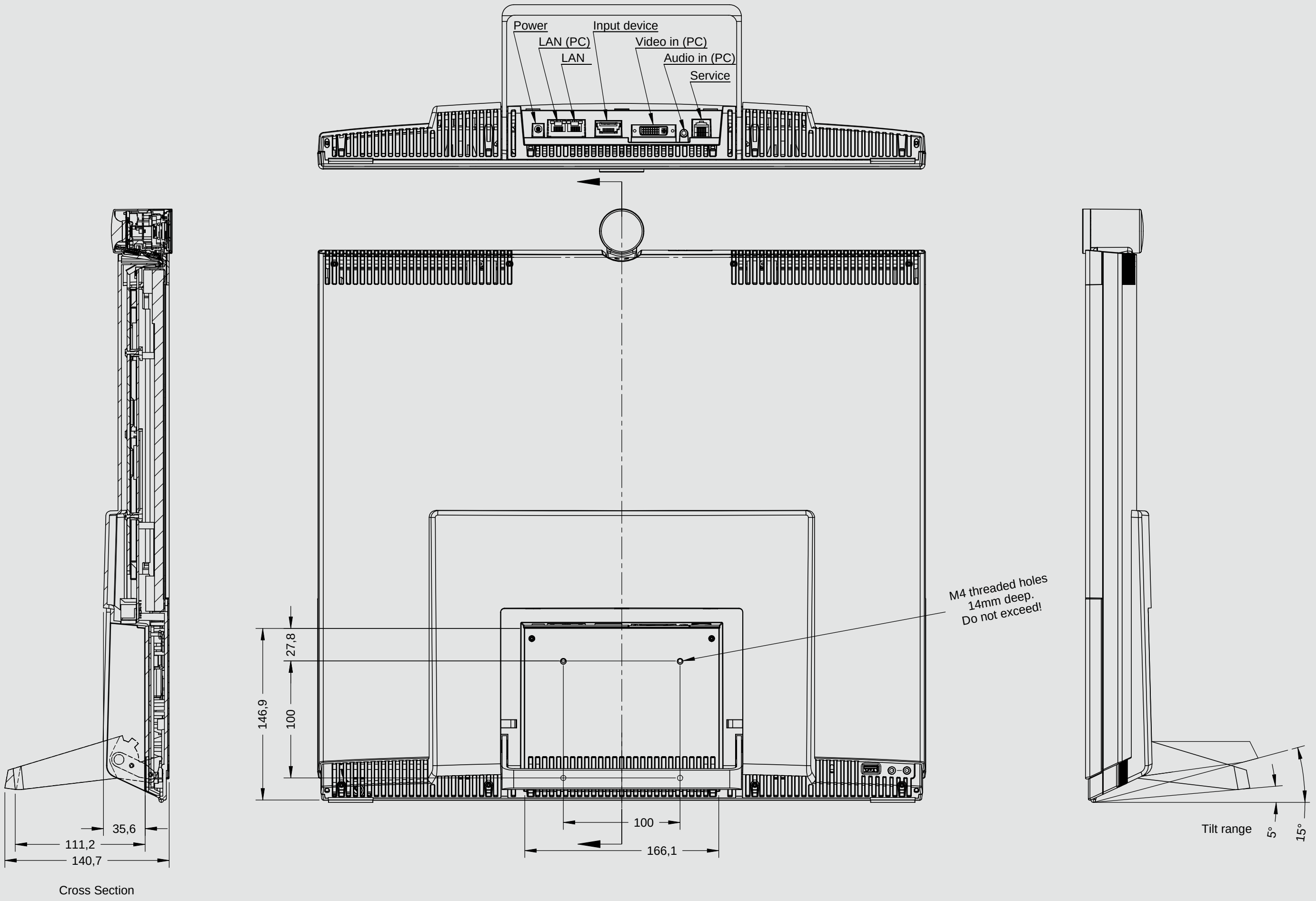
Wall mounting or arm mounting the EX60

The EX60 can be attached to a variety of 100 mm × 100 mm VESA compatible wall mounts and arms.

When choosing a mounting solution, consider the mounting pattern, the EX60 dimensions and obstructions.

NOTE: Not all VESA compatible products will easily fit with the EX60.

Dimensions of the EX60



All dimensions are in mm.

EX60 weight: 5.85 kg (12.9 lb).

Technical specifications

The EX90/EX60 units are delivered with a fully integrated codec, display, camera, microphone and loudspeakers, and a touch screen controller with a detachable wideband handset.

Technical specifications for EX90

PRODUCT COMPATIBILITY

Fully compatible with standards-compliant telepresence and video systems

SOFTWARE COMPATIBILITY

Cisco TelePresence Software Version TC3.1 or later

COMPONENTS

Fully integrated unit including codec, display, camera, microphone and loudspeakers

Cables including: DVI-I-to-VGA cable, DVI-D cable, 3.5 mm jack audio cable, LAN cable, power adapter, and power cable

DISPLAY

24 in. LCD monitor

Resolution: 1920 x 1200 (16:9)

Contrast ratio: 1000:1

Viewing angle: 160°

Response time: 5 ms

Brightness: 300 cd/m^2

5° - 15° tilt

PC AND SECOND SOURCE VIDEO INPUTS

DVI-I

HDMI In

SUPPORTED PC INPUT RESOLUTIONS

SVGA (800 x 600) to WUXGA (1920 x 1200)

CAMERA

Cisco TelePresence PrecisionHD design

Resolutions: 1080p30 and 720p60

Auto focus

Integrated privacy shutter

Document camera mode

Multicoated all-glass optics

1/3-in., 2.1 megapixel CMOS sensor

Horizontal field of view: 45°-65°

Vertical field of view: 40°-27°

Focus distance 0.3-infinity

Optical, motorized zoom

AUDIO SYSTEM

Two stereo front speakers

Integrated full-range microphone

One 3.5-mm line-in jack for PC or other audio source

Two 3.5-mm jack for headset

Wideband handset

Bluetooth-ready

Integrated subwoofer

Support for Performance Mic 20

HDMI audio input/output

USER INTERFACE

Cisco TelePresence touch screen

Eight-inch projected capacitive touch screen

Resolution: 480 x 800

LANGUAGE SUPPORT

English

EX90 MAIN UNIT DIMENSIONS

Height: 54.5 cm (21.4”)

Length: 56.7 cm (22.3”)

Depth: 17.3 cm (6.8”)

Weight: 11 kg (24.2 lb)

TOUCH SCREEN DIMENSIONS

Height: 4.4 cm (1.7”). 7.7 cm (3.0”) with handset

Length: 22.8 cm (9.0”). 29.0 cm (11.4”) with handset

Depth: 14.5 cm (5.7”). 18.7 cm (7.4”) with handset

Weight: 0.64 kg (1.4 lb). 0.94 kg (2.1 lb) with handset

Cable length: 120 cm (47”)

POWER

Autosensing power supply

100–240 VAC, 50/60 Hz

150 watts max

OPERATING TEMPERATURE AND HUMIDITY

Ambient temperature: 32° F to 95° F (0° C to 35° C)

Relative Humidity (RH): 10 to 90%

Storage and transport temperature at RH 10–90% (non-condensing): -20° C to 60° C (-4° F to 140° F)

APPROVALS

EU/EEC

Directive 2006/95/EC (Low Voltage Directive)

- Standard EN 60950-1

Directive 2004/108/EC (EMC Directive)

- Standard EN 55022, Class A
- Standard EN 55024
- Standard EN 61000-3-2/-3-3

Warning: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

USA

Approved according to UL 60950-1

Complies with FCC15B Class A

Canada

Approved according to CAN/CSA C22.2 No. 60950-1

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Technical specifications for EX90, *continued...*

BANDWIDTH

H.323/SIP up to 6 Mbps point-to-point

VIDEO STANDARDS

H.261, H.263, H.263+, H.264

VIDEO FEATURES

Widescreen: 16:9

Advanced screen layouts

Intelligent video management

Local auto layout

LIVE VIDEO RESOLUTIONS (ENCODE/ DECODE)

176 x 144@30 fps (QCIF)

352 x 288@30 fps (CIF)

512 x 288@30 fps (w288p)

576 x 448@30 fps (448p)

768 x 448@30 fps (w448p)

704 x 576@30 fps (4CIF)

1024 x 576@30 fps (w576p)

640 x 480@30 fps (VGA)

800 x 600@30 fps (SVGA)

1024 x 768@30 fps (XGA)

1280 x 1024@30 fps (SXGA)

1280 x 720@30 fps (720p30)

1280 x 768@30 fps (WXGA)

1920 x 1080@30 fps (1080p30)*

1920 x 1200@25fps (WUXGA)*

1440 x 900@30 fps (WXGA+)*

1680 x 1050@30 fps (WSXGA+)*

1600 x 1200@30 fps (UXGA)*

512 x 288@60 fps (w288p60)*

768 x 448@60 fps (w448p60)*

1024x576@60 fps (w576p60)*

1280x720@60 fps (720p60)*

* Requires premium resolution option

AUDIO STANDARDS

G.711, G.722, G.722.1, 64/128 kbps MPEG4 AAC-LD, AAC-LD stereo

AUDIO FEATURES

CD-quality 20 kHz stereo

Acoustic echo canceling

Automatic gain control

Automatic noise reduction

Active lip synchronization

DUAL STREAM

H.239 (H.323) dual stream

BFCP (SIP) dual stream

Supports resolutions up to 1080p in both main stream and dual stream simultaneously

PROTOCOLS

H.323

SIP

NETWORK INTERFACES

Internal 2-port Ethernet switch

1 x LAN/Ethernet (RJ-45) 10/100/1000 Mbit for PC

1 x LAN/Ethernet (RJ-45) 10/100/1000 Mbit for LAN

OTHER INTERFACES

Bluetooth for future applications

2x USB device for future applications

IP NETWORK FEATURES

Domain Name System (DNS) lookup for service configuration

Differentiated Services (QoS)

IP adaptive bandwidth management (including flow control)

Auto gatekeeper discovery

Dynamic playout and lip-sync buffering

H.245 DTMF tones in H.323

Date and time support with Network Time Protocol (NTP)

Packet loss based downspeeding

DNS-based URI dialing

TCP/IP

Dynamic Host Configuration Protocol (DHCP)

IEEE 802.1x network authentication

IEEE 802.1q VLAN

FIREWALL TRAVERSAL

Cisco TelePresence Expressway Technology

H.460.18 and H.460.19 Firewall Traversal

EMBEDDED ENCRYPTION

H.323/SIP point-to-point

Standards-based: H.235 v2 and v3 and Advanced Encryption Standard (AES)

Automatic key generation and exchange

Supported in dual stream

SECURITY FEATURES

Management via Secure HTTP (HTTPS) and Secure Shell (SSH) protocol

IP administration password

Menu administration password

Disable IP services

Network settings protection

MULTISITE

4-way 720p30 Continuous Presence (CP) MultiSite

Full individual audio and video transcoding

Individual layouts for each participant (CP layout without self view)

H.323/SIP/VoIP in the same conference

Best Impression (Automatic CP layouts)

H.264, encryption and dual stream from any site

IP downspeeding

Dial in/Dial out

SYSTEM MANAGEMENT

Support for the Cisco TelePresence Management Suite

Total management through embedded Simple Network Management Protocol (SNMP), Telnet, SSH, XML, and Simple Object Access Protocol (SOAP)

Remote software upload: Through web server, Secure Copy Protocol, HTTP, and HTTPS

DIRECTORY SERVICES

Support for local directories (My Contacts)

Corporate directory

Unlimited entries using server directory supporting

Lightweight Directory Access Protocol (LDAP) and H.350

Unlimited number for corporate directory (available with Cisco TelePresence Management Suite)

Received calls with date and time

Placed calls with date and time

Missed calls with date and time

All specifications are subject to change without notice, system specifics may vary.

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MTBF PRODUCT RELIABILITY/MTBF

The predicted reliability is expressed in the expected random Mean Time Between Failures (MTBF) for the electronic components based on the Power On Hours:

- Power On Hours (POH) > 69 000 hours.
- Useful Life Cycle > 6 years.

ISO 9001 certificate is available upon request

February 2011

Technical specifications, continued...

Technical specifications for EX60

PRODUCT COMPATIBILITY

Fully compatible with standards-compliant telepresence and video systems

SOFTWARE COMPATIBILITY

Cisco TelePresence Software Version TC4.0 or later

COMPONENTS

Fully integrated unit including codec, display, camera, microphone and loudspeakers

Cables including: DVI-I-to-VGA cable, DVI-D cable, 3.5 mm jack audio cable, LAN cable, power adapter, and power cable

DISPLAY

21.5 in. LCD monitor (with LED backlight)

Resolution: 1920 x 1080 (16:9)

Contrast ratio: 1000:1

Viewing angle: 170°

Response time: 5 ms

Brightness: 225 cd/m^2

PC AND SECOND SOURCE VIDEO INPUTS

DVI-I

SUPPORTED PC INPUT RESOLUTIONS

SVGA (800 x 600) to 1080p (1920 x 1080)

CAMERA

Cisco TelePresence PrecisionHD design

Resolutions: 1080p30 and 720p60

Auto focus

Integrated privacy shutter

Document camera mode

Multicoated all-glass optics

1/3-in., 2.1 megapixel CMOS sensor

Horizontal field of view: 50°

Vertical field of view: 29°

Focus distance 0.1-infinity

AUDIO SYSTEM

Two stereo front speakers

Integrated full-range microphone

One 3.5-mm line-in jack for PC or other audio source

Two 3.5-mm jack for headset

Wideband handset

Bluetooth-ready

USER INTERFACE

Cisco TelePresence touch screen

Eight-inch projected capacitive touch screen

Resolution: 480 x 800

LANGUAGE SUPPORT

English

EX60 MAIN UNIT DIMENSIONS

Height: 50.8 cm (20.0")

Length: 52.0 cm (20.5")

Depth: 13.8 cm (5.4")

Weight: 5.85 kg (12.9 lb)

TOUCH SCREEN DIMENSIONS

Height: 4.4 cm (1.7"). 7.7 cm (3.0") with handset

Length: 22.8 cm (9.0"). 29.0 cm (11.4") with handset

Depth: 14.5 cm (5.7"). 18.7 cm (7.4") with handset

Weight: 0.64 kg (1.4 lb). 0.94 kg (2.1 lb) with handset

Cable length: 120 cm (47")

POWER

Autosensing power supply

100–240 VAC, 50/60 Hz

75 watts max

OPERATING TEMPERATURE AND HUMIDITY

Ambient temperature: 32° F to 95° F (0° C to 35° C)

Relative Humidity (RH): 10 to 90%

Storage and transport temperature at RH 10–90% (non-condensing): -20° C to 60° C (-4° F to 140° F)

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- Standard EN 55022, Class A
- Standard EN 55024
- Standard EN 61000-3-2/-3-3

Warning: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

USA

Approved according to UL 60950-1

Complies with FCC15B Class A

Canada

Approved according to CAN/CSA C22.2 No. 60950-1

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Technical specifications for EX60, *continued...*

BANDWIDTH

H.323/SIP up to 6 Mbps point-to-point

VIDEO STANDARDS

H.261, H.263, H.263+, H.264

VIDEO FEATURES

Widescreen: 16:9

Advanced screen layouts

Intelligent video management

Local auto layout

LIVE VIDEO RESOLUTIONS (ENCODE/ DECODE)

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512 x 288@30 fps (w288p)

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704 x 576@30 fps (4CIF)

1024 x 576@30 fps (w576p)

640 x 480@30 fps (VGA)

800 x 600@30 fps (SVGA)

1024 x 768@30 fps (XGA)

1280 x 1024@30 fps (SXGA)

1280 x 720@30 fps (720p30)

1280 x 768@30 fps (WXGA)

1920 x 1080@30 fps (1080p30)*

1440 x 900@30 fps (WXGA+)*

1680 x 1050@30 fps (WSXGA+)*

1600 x 1200@30 fps (UXGA)*

512 x 288@60 fps (w288p60)*

768 x 448@60 fps (w448p60)*

1024x576@60 fps (w576p60)*

1280x720@60 fps (720p60)*

* Requires premium resolution option

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G.711, G.722, G.722.1, 64/128 kbps MPEG4 AAC-LD, AAC-LD stereo

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EMBEDDED ENCRYPTION

H.323/SIP point-to-point

Standards-based: H.235 v2 and v3 and Advanced Encryption Standard (AES)

Automatic key generation and exchange

Supported in dual stream

SECURITY FEATURES

Management via Secure HTTP (HTTPS) and Secure Shell (SSH) protocol

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Menu administration password

Disable IP services

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