LifeSize® Video Communications Systems Administrator Guide

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Contacting Customer Support

If you have questions, concerns, or need assistance, contact your LifeSize Channel Partner.

Providing Customer Feedback

LifeSize Communications welcomes your comments regarding our products and services. If you have feedback about this or any LifeSize product, please send it to feedback@lifesize.com. Contact information for LifeSize Communications is as follows:

Method	*Address*
Internet	http://www.lifesize.com
E-mail	support@lifesize.com
Phone	(877) LIFESIZE or (877) 543-3749 (512) 347-9300
Fax	(512) 347-9301

Welcome to LifeSize Video Communications Systems

LifeSize® high definition video communications systems enable anyone with dispersed colleagues and operations to collaborate more clearly and effectively. Each system is designed to make video communication a highly productive, simple, and reliable experience.

This guide explains how to install and administer your LifeSize video communications system. Related documentation is available from the documentation CD included with the product and from the Support page of www.lifesize.com. Release Notes, technical notes, and technical reference publications are available from the Support page of www.lifesize.com.

Preparing for Installation

Before you install your LifeSize system, ensure that your environment meets the following prerequisites.

Supported Display Types and Resolutions

LifeSize video communications systems connect to most displays, including:

- Plasma flat panel displays
- CRT monitors (720p displays)
- Large screen rear projection TV displays (720p displays)
- Front projection displays
- Rear projector A/V room configurations

Supported display resolutions include the following:

- 720p component video output
- VGA 1280 x 720 output
- VGA 1280 x 768 output

If you connect the LifeSize codec to an unsupported display, the user interface may not appear correctly or you may see distorted images. Some displays, though unsupported, may appear to work; however, you may experience significant quality and performance issues and the system may not operate properly. To achieve optimal resolution use the HD-15 to Component RCA cables included with your system.

Note: LifeSize recommends using a dual display configuration for presentations in LifeSize Room.

Placement Behind a Firewall

LifeSize recommends that you place your system behind a firewall and block, at minimum, the following ports:

- 22 (ssh)
- 23 (telnet)
- 80 (http)
- 443 (https)

If you require these ports to remain open, ensure that you change the default administrator and command line interface passwords to be very secure. For information about changing the default administrator password, refer to “Changing the Administrator Password” on page 22. For information about changing the command line interface password, refer to the *LifeSize Automation Command Line Interface* document available on the Support page of www.lifesize.com.

You can also disable ssh and web access on the system by configuring preferences in the user interface. By default, telnet access is disabled. For more information, refer to “Controlling Remote Administration” on page 22.

Network Bandwidth

Poor audio and video quality may result from insufficient bandwidth on your network. LifeSize recommends that your network be capable of at least 1 Mb/s for a high definition video call. During video calls with lower bandwidths, LifeSize systems automatically choose the best resolution that can be achieved with the available bandwidth.

Domain Name Service Server

If you intend to use domain addresses for placing calls you must have a Domain Name Service (DNS) server configured or use a Dynamic Host Configuration Protocol (DHCP) server that automatically sets a DNS server.

Initial Configuration

During the installation process, your LifeSize system prompts you to configure it for the first time. To avoid delays during the installation process, LifeSize recommends that you gather the following information needed to complete the initial configuration screens before you install the system. You can access initial configuration preferences at any time after installing the system.

Note: The initial configuration screens also appear when you perform a system reset. For more information, refer to “Restoring Default Settings” on page 31.

Language

You can select the language to display in the user interface. The default is English.

Administrator and User Passwords

Some functions and preferences available from the user interface are accessible only to administrative users with a password. For security reasons, LifeSize recommends that you change the default administrator password (1 2 3 4) during the initial configuration.

Optionally, you can set a user password to control access to user preferences that enable the user to do the following:

- Change the appearance of the user interface.
- Specify how calls are answered.
- Configure audio settings.
- Change cameras and VGA input settings.
- Reboot the system.

The administrator and user passwords can contain any combination of the numbers 0-9 and the symbols * (star) and # (pound) up to 16 characters in length.

Note: If you set a user password, you can also use the administrator password to access user preferences.

System Identification

Information that identifies the system to users appears throughout the user interface. Select a country for the **Location** preference if you intend to connect a PSTN phone line to the LifeSize codec.

The **Time Zone** preference sets the system time that appears in the status bar on the main page of the user interface. You must set this preference even if you specify an NTP server during the initial configuration (refer to “Network Settings” on page 7).

The **System Name**, **Video Number**, and **Voice Number** appear in the user interface on the main screen. The system name may also appear in the local and corporate directories. LifeSize recommends that you change the default system name to one that meaningfully identifies the system to your users.

Video and Voice Dialing Preferences

LifeSize systems support either the IP or ISDN protocol for video dialing. The default setting for the **Video Dialing** preference is *Auto* which enables the system to determine the best method to use to place calls.

Note: If you select ISDN, you must be using LifeSize Networker with your LifeSize video communications system. Refer to the documentation that accompanies LifeSize Networker for information about how to configure your LifeSize video communications system to function with LifeSize Networker.

If your LifeSize system supports VoIP or PSTN for voice dialing, you can select either *VoIP*, *Touch Tone* or *Pulse* for the **Voice Dialing** preference. For voice calls, *VoIP* uses H.323 or SIP, *Touch Tone* and *Pulse* use PSTN. The default is VoIP.

When placing a call using the **Voice** button on a LifeSize Phone connected to the system and voice dialing is set to touch tone or pulse, you can only dial phone numbers using PSTN connectivity. When voice dialing is set to VoIP, you can dial IP addresses as well as phone numbers.

When placing a call using the remote control or using the **Video** button on the phone you can dial either phone numbers or IP addresses. This enables systems inside a corporate network without access to a gateway to call other LifeSize systems in the network using system IP addresses.

Network Settings

By default, DCHP is enabled on LifeSize systems. If you choose *Disabled* for the **DHCP** preference, you must enter an **IP address** (the locally configured IP address if not assigned by a DHCP server), **Subnet Mask** (used to partition the IP address into a network and host identifier), and **Default Gateway** (the IP address of the default gateway the system uses).

You can enter the **Hostname** of the system. If you do not have a DHCP server that automatically sets a DNS server, you can enter the IP addresses to configure **DNS Servers**. You can also define the domain names to search when resolving hostnames. DNS translates names of network nodes into addresses; specify this preference to use DNS to resolve the hostnames of devices to IP addresses.

If you choose an option other than *Auto* (the default) for the **Network Speed** preference, ensure that the option matches the speed and duplex configured on your network switch.

You can enter the hostname or IP address of a Network Time Protocol (NTP) server to set the system date and time automatically. The LifeSize system ignores the value you specify for the NTP Server Hostname if the **DHCP** preference is set to *Enabled* and the DHCP server can pass an NTP server address to the LifeSize system.

Audio Preferences

If you plan to use display speakers for audio in both video and voice calls, ensure that the **Video Call Audio Output** and **Voice Call Audio Output** preferences are set to *Line Out*. If you are using LifeSize Phone for audio, set these preferences to *Phone*. By default, **Video Call Audio Output** is set to *Line Out*; **Voice Call Audio Output** is set to *Phone*.

Installing LifeSize Systems

Your LifeSize package may include any of the following components:

- Audio component
  - LifeSize Phone—high definition tabletop speakerphone console with integrated keypad and display
  - LifeSize MicPod—an alternative to LifeSize Phone that provides a single microphone and a mute button
- LifeSize Camera—one or more high definition pan/tilt/zoom cameras with wide-angle zoom lens
- LifeSize Codec—high definition audio and video compression and decompression unit with stand
- LifeSize Remote Control—wireless remote control including three AAA batteries
- Cables
- Quick reference cards—graphical depiction of proper cabling and equipment setup
- Documentation CD

Installing a LifeSize Room or LifeSize Team System

If you are installing LifeSize Express, refer to “Installing LifeSize Express” on page 11 for installation instructions.

To install the components of your LifeSize system, remove all components from the product packaging, including cables, and place them in the desired positions in your conference room. Refer to the LifeSize quick reference card included with your system for a visual depiction of the proper setup. The numbers that appear on the quick reference card correspond to the following steps:

1. Open the battery compartment on the back side of the remote control, hold the straps open and insert the three AAA batteries included with your system starting with the outer batteries first.

2. Insert the codec into its stand by aligning the pin holes at the base. Secure the codec in the stand by tightening the bolt on the bottom of the codec stand. *Optional:* Insert the rubber feet on the bottom of the codec stand.

   Note: When inserting the necessary cables into the back panel of the codec, use the plastic guide at the bottom of the unit to keep all cables secure.

3. To connect a LifeSize camera to the codec, insert the camera cable into the port on the rear side of the camera and plug the opposite end into the port marked with the camera 1 symbol on the back panel of the codec.

   If you purchased a second LifeSize camera for use with LifeSize Room, insert the camera cable for the second camera into the port on the rear side of the camera and plug the opposite end into the port marked with the camera 2 symbol on the back panel of the codec. For more information about using two cameras with your LifeSize Room system, refer to your *LifeSize Video Communications Systems User Guide*.

   To connect a supported third-party camera using a LifeSize SDI Adapter, refer to the *LifeSize SDI Adapter Installation Guide*.

4. Insert the video display cable into the port on the rear of your display and the opposite end into the port marked with the display 1 symbol on the back panel of the codec. Insert the display power cord into a power outlet on the wall.

   To connect a second display to LifeSize Room, insert the video display cable into the port on the rear of your display and the opposite end into the port marked with the display 2 symbol on the back panel of the codec. Attach the display power cord to a power outlet. By default, the second display shows VGA input if a VGA input device is connected to the codec. Typically, the VGA input port is used to connect a laptop or personal computer for showing data during a presentation. If you do not connect a VGA input device, the second display is blank. You can specify the type of input to show in the secondary display by configuring the **Secondary Display Layout Preference** in **Administrator Preferences : Appearance : Layout**. For more information, refer to the *LifeSize Video Communications Systems User Guide*.

5. Insert the audio cable into the port on your display and the opposite end into the line out port marked with the symbol on the back panel of the codec .

6. Insert the network cable into the network port marked with the LAN symbol on the back panel of the codec. Insert the opposite end of the network cable into a network port on the wall.

7. Depending on your system configuration, do one of the following:

   a. If you are using the LifeSize Phone for audio, insert the phone cable into the port marked with the LAN symbol on the underside of the phone.

      Note: The exterior port marked with the symbol on the LifeSize Phone is reserved for future use.

Insert the opposite end of the phone cable into the port marked with the LifeSize Phone symbol ▶ on the back panel of the codec. Ensure the cables are secured into the guides to avoid damage to them.

Note: When the LifeSize Phone is connected to a LifeSize video communications system, you are unable to configure it as a standalone speakerphone. Configure your system using the LifeSize video communications system interface.

b. If you are using the LifeSize MicPod for audio, insert the end of the cable from the LifeSize MicPod into the microphone port marked with the microphone symbol on the back of the codec.

8. Insert the cord from the power adapter into the power outlet marked **DC 19V** on the back panel of the codec (near the base). Insert one end of the power cord into the power adapter and the opposite end into a power outlet on the wall.

   The LifeSize system starts and a blue LED illuminates on the front of the codec. Refer to the *LifeSize Video Communications System User Guide* for more information about the state of the system as it boots or as conditions change.

   The camera initializes the first time it is connected to a codec; this process takes approximately 90 seconds.

   Caution: Do not disturb or disconnect the devices during this time as you may damage the system.

9. An **Initial Configuration** screen appears and prompts you to configure the system. Use the information that you gathered in “Preparing for Installation” on page 3 to complete the configuration. Use the arrow keys on the remote control to navigate the preferences that appear in the initial configuration screens. Icons that appear at the bottom of each screen correspond to keys on the remote control and indicate what operations are available for the screen or a selected object.

   Note: If the initial configuration screen does not appear and the display is blank, refer to “Troubleshooting Installation Issues” on page 12.

Installing LifeSize Express

To install the components of your LifeSize Express system, remove all components from the product packaging, including cables, and place them in the desired positions in your conference room. Refer to the LifeSize quick reference card included with your system for a visual depiction of the proper setup. The numbers that appear on the quick reference card correspond to the following steps:

1. Open the battery compartment on the back side of the remote control, hold the straps open and insert the three AAA batteries included with your system starting with the outer batteries first.

2. To connect a LifeSize camera to the codec, insert the camera cable into the port on the rear side of the camera and plug the opposite end into the port marked with the camera symbol on the back panel of the codec.

   To connect a supported third-party camera using a LifeSize SDI Adapter, refer to the *LifeSize SDI Adapter Installation Guide*.

3. Insert the video display cable into the port on the rear of your display and the opposite end into the port marked with the display symbol on the back panel of the codec. Insert the display power cord into a power outlet on the wall.

   Note: If you plan to use external speakers that are not built into the display, connect the speakers to the port marked with the line out symbol on the back panel of the codec.

4. Insert the network cable into the network port marked with the LAN symbol on the back panel of the codec. Insert the opposite end of the network cable into a network port on the wall.

5. Depending on your system configuration, do one of the following:

   a. If you are using the LifeSize Phone for audio, insert the phone cable into the port marked with the LAN symbol on the underside of the phone.

      Note: The exterior port marked with the symbol on the LifeSize Phone is reserved for future use.

      Insert the opposite end of the phone cable into the port marked with the LifeSize Phone symbol on the back panel of the codec. Ensure the cables are secured into the guides to avoid damage to them.

      Note: When the LifeSize Phone is connected to a LifeSize video communications system, you are unable to configure it as a standalone speakerphone. Configure your system using the LifeSize video communications system interface.

b. If you are using the LifeSize MicPod for audio, insert the end of the cable from the LifeSize MicPod into the microphone port marked with the microphone symbol on the back of the codec.

6. Insert the cord from the power adapter into the power outlet marked DC 19V on the back panel of the codec. Insert one end of the power cord into the power adapter and the opposite end into a power outlet on the wall.

   The LifeSize system starts and a blue LED illuminates on the front of the codec. Refer to the *LifeSize Video Communications System User Guide* for more information about the state of the system as it boots or as conditions change.

   The camera initializes the first time it is connected to a codec; this process takes approximately 90 seconds.

   Caution: Do not disturb or disconnect the devices during this time as you may damage the system.

7. An **Initial Configuration** screen appears and prompts you to configure the system. Use the information that you gathered in “Preparing for Installation” on page 3 to complete the configuration. Use the arrow keys on the remote control to navigate the preferences that appear in the initial configuration screens. Icons and their descriptions that appear at the bottom of each screen correspond to keys on the remote control and indicate what operations are available for the screen or a selected object.

   If the initial configuration screen does not appear and the display is blank, refer to “Troubleshooting Installation Issues” on page 14.

Post-Installation Configuration

Depending on your environment, you may need to make the following additional adjustments to your LifeSize configuration and your network after you install and before you use the system.

Enabling Communication with Other Systems

If you use static Network Address Translation (NAT) to assign a public IP address to your LifeSize system for communication with devices outside your private network, you must enable static NAT on your LifeSize system before placing calls. For more information refer to “Enabling Network Address Translation (NAT)” on page 25.

If your LifeSize system communicates with other devices through a firewall, you must configure your firewall to allow incoming and outgoing traffic to the LifeSize system through the reserved ports specified in “Restricting Reserved Ports” on page 26 and the required ports specified in “Configuring Firewall Settings” on page 27. Users placing calls through a firewall to systems with IP addresses may experience one-way audio or video if the firewall is not properly configured to allow video and audio traffic.

If you are using H.323 gatekeepers in your environment and want to place calls using a name or extension with the H.323 protocol, configure your LifeSize system using the information in “Specifying H.323 Settings” on page 29.

If you are using Session Initiation Protocol (SIP) servers in your environment to place calls using the SIP protocol, configure your LifeSize system using the information in “Configuring SIP Settings” on page 30.

Connecting a PSTN Phone Line

If your LifeSize system supports PSTN for voice dialing and you chose either the *Touch Tone* or *Pulse* options for the **Voice Dialing** preference during the initial configuration, ensure that you connect an RJ-11 PSTN phone cord to the PSTN phone port labeled on the LifeSize codec and the other end to a phone jack on the wall.

Placing a Test Call to LifeSize Systems

The following default entries appear in the **Redial** list and local directory for a new system:

- **Aquarium HD** (fishtank.lifesize.com)
- **Gumballs** (gumballs.lifesize.com)

You can use these entries to place a test call from your LifeSize system.

Note: To use these entries, you must specify a DNS server in **Administrator Preferences : Network : General** or use DHCP that automatically sets a DNS server. If a DNS server is not configured, a call to either of these entries shows the call status as unavailable, because the call cannot resolve to the IP address.

Locking the LifeSize Codec

You can lock the LifeSize codec with a secure loop to prevent physical removal of the device. For assistance, contact your LifeSize Channel Partner or LifeSize Customer Support.

Troubleshooting Installation Issues

Installation issues that you may encounter with your LifeSize system typically involve issues with VGA output, improperly connected cables, or network bandwidth or connectivity. For information about troubleshooting other issues that users may encounter with LifeSize systems refer to the *LifeSize Video Communications Systems User Guide*.

Improperly connected or loose cables are common causes of problems with hardware units. When investigating a system problem, first inspect all the external controls and cable connections. Ensure that connections are correct and secure, and that nothing is obstructing the cables.

Display Issues with VGA Output

Some displays do not support automatic detection of their VGA display capabilities and LifeSize systems are unable to detect the monitor. The following conditions may occur with some VGA monitors:

- Failure to read the Extended Display Identification Data (EDID) of the display.

  LifeSize systems detect the display as VGA, but cannot determine its supported resolutions. LifeSize systems configure the display output to VGA at 1280x768. EDID is a VESA standard data format that contains general information about a display and its capabilities, including vendor information, maximum image size, color characteristics, factory pre-set timings, frequency range limits, and character strings for the display name and serial number.

- Failure to detect the display as a VGA device.

  LifeSize systems configure the output to 720p. Most VGA monitors display this signal; however, the data is not centered and may be tinted green. You must manually configure the appropriate display as VGA to resolve this issue.

- The resolution of the display is unsupported.

  LifeSize systems require displays that support 1280x720 or 1280x768 resolutions. If a VGA display EDID does not contain one of these resolutions, LifeSize systems automatically configure it for 1280x768. Most multi-sync VGA displays can adjust to this resolution and scale the data to fit the screen, which is typically 4x3. If scaling occurs, the resulting image may be slightly distorted. For example, a display that only supports 1024x768 will scale the 1280x768 image causing it to appear narrow. If a display cannot adjust to the 1280x768 resolution, its screen remains blank. LifeSize systems do not support displays that do not support 1280x768.

When LifeSize systems do not automatically address one of these conditions, you must manually configure the display output. You can configure the display output from the LifeSize user interface or from the LCD interface on the LifeSize Phone connected to your LifeSize system as described in the following sections.

Configuring Display Output from the LifeSize Interface

If your display shows the initial configuration screen but the image is distorted and unusable or the display is blank, you must configure the display from the LifeSize Phone. Refer to “Configuring Display Output from LifeSize Phone” on page 15.

To resolve problems with monitors from the LifeSize interface, follow these steps:

1. Ensure that no calls are in progress.
2. From the main screen, press the button on the remote control to access the **System Menu**.
3. Select the **Administrator Preferences** button and press **OK**.
4. Enter the administrator password and press **OK**.
5. Select the **Appearance** button and press **OK**.
6. Select the **Displays** button and press **OK**.
7. If you are resolving problems with a VGA monitor, select *VGA* for the **Display Type** preference for the display you wish to manually configure.
8. If your display supports both 1280x720 and 1280x768, you can manually configure the system to use one of these resolutions by setting the **Display Resolution** preference for the display you wish to manually configure.

Configuring Display Output from LifeSize Phone

If the initial configuration screen appears distorted and unusable or the attached display is blank, you must configure your display from the administrator interface on the LifeSize Phone.

To resolve problems with monitors from the LifeSize Phone interface, follow these steps:

1. Ensure that no calls are in progress.
2. Log in to the **Admin Menu** on your LifeSize Phone.
   a. Press add add sequentially when the phone is idle.
   b. Enter the administrator password (1 2 3 4 by default) and press .
3. Press **1** on the keypad to select **Preferences**.
4. Press **1** or **2** to select the display you wish to configure.
5. If you are resolving problems with a VGA monitor, select *VGA* for the **Display Type** to manually set the display to VGA.
6. If your display supports both 1280x720 and 1280x768, you can manually configure the system to use one of these resolutions by setting the **Display Resolution** preference.

IP Address Displays Invalid Value

After you complete the initial configuration, if the IP address that appears at the top of the main screen displays an invalid value, one of the following conditions may exist:

Condition	Resolution
The unit is configured to obtain an address using DHCP and no DHCP server is available.	Verify that the unit is plugged into a network that has a DHCP server present.
Faulty Ethernet cable connection.	Replace the Ethernet cable with a high quality cable.
The unit is configured to use a static IP address, but no IP address has been entered.	Identify and enter the necessary IP information if you disable DHCP.
Network connection is unavailable. A red network symbol appears in the status bar on the main screen.	Inspect your network connection.

Poor Quality Video

During a call, the LifeSize system automatically selects the best video algorithm based on the video source and capabilities of the remote system. If you experience poor motion handling or visible tiling in the far end picture during a video call, verify the following:

- You have adequate bandwidth for the data rate at which you are trying to establish the call.
- The Internet or private line connection you are using is optimized for video calls.
- The switch/router configuration in your network is configured for full duplex 100-base T.

The video quality metrics selected as the priority for source video in **Administrator Preferences : Video : Video Quality** can affect the quality of video displayed. For more information, refer to “Selecting Priority of Quality Metrics for Source Video” on page 39.

Audio Issues

You may experience the following issues which are related to audio quality.

Buzzing Sound with External Speakers

If you experience a high frequency buzzing sound when you plug your LifeSize system into external powered speakers, insert an Isolation Transformer (also called a Ground Loop Eliminator) from your local electronics store between the line output and the loudspeaker input.

Audio Echoes with External Speakers

If you experience audio that echoes after connecting external speakers to your LifeSize system, ensure that the speakers are connected to the line out on the codec. Refer to the quick reference card included with your system for a visual depiction of the proper setup.

Adjusting Priority Order of the Audio Codecs

Adjust the priority order for your audio codec if you have chosen a low-bandwidth audio codec to be first. Ensure that the far end caller has configured the phone correctly and is in an acoustically benign environment. Audio quality from your LifeSize system may vary when calling a non-LifeSize audio or video unit. LifeSize systems use the audio codec that the non-LifeSize system supports.

Absent Dial Tone

An absent dial tone may result from an unavailable analog phone line connection when **Voice Dialing** is set to *Touch Tone* or *Pulse*. If you are connecting with PSTN, ensure the analog phone connection is secure and that it is connected to an active phone line jack.

Camera Issues

Video from the camera appears in a small window on the main screen of the user interface above the **Redial** list. If no video from the camera appears, do the following:

- Ensure that the camera is properly connected to the LifeSize codec as described in “Installing LifeSize Systems” on page 8.
- Verify that the blue LED on the front of the camera is lit and not blinking, indicating that power is active.
- From the main screen of the user interface, press the button to access the **System Menu**. Press the button to access page 2 of the **System Information** page. Ensure that the status of the camera is **Ready**.
- Ensure that the primary input is set to the high definition camera by pressing the **near** button on the remote control. If **Primary Input : HD Camera** does not appear at the top of the screen, press the **near** button again to display the **Primary Input** selection dialog. Use the arrow keys on the remote control to select the appropriate high definition camera and press **OK**.

Optional Peripherals

You can connect the following optional peripherals to enhance your LifeSize system:

Peripheral	Supported	Usage
Serial RS-232	LifeSize Room	For use with a LifeSize SDI Adapter, supported third-party cameras, and for automation control with Crestron/AMX controllers.
Composite and SD Interfaces	LifeSize Room LifeSize Team LifeSize Team MP	Standard video for use with a third party camera or DVD player.
HD Camera 2	LifeSize Room	For use with a second camera.
Document Camera In	LifeSize Room LifeSize Team LifeSize Team MP	Standard video for use with a third party camera.
VGA In	LifeSize Room LifeSize Team LifeSize Team MP LifeSize Express	VGA port for connecting laptops for presentations or to share PC data.

Peripheral	Supported	Usage
Audio In (Line In)	LifeSize Room LifeSize Team LifeSize Team MP LifeSize Express	For use with an external line level audio input, in addition to the LifeSize Phone or LifeSize MicPod.
Networker	LifeSize Room LifeSize Team MP	For use with LifeSize Networker. **Note**: Applies to LifeSize Team MP codecs that have a Networker port.
Analog phone line in	LifeSize Room LifeSize Team LifeSize Team MP	For PSTN connectivity.
Auxiliary Audio In	LifeSize Room	Stereo line input for connecting an audio device with line level output.[a]
Auxiliary Video In	LifeSize Room	Standard composite or s-video input for connecting a device that outputs composite or s-video.
Auxiliary Audio Out	LifeSize Room	Stereo line level output for connecting a device that has a line level input.[b]
Auxiliary Video Out	LifeSize Room	Standard composite or s-video output for connecting a device that has composite or s-video inputs.

a. Auxiliary Audio In and Auxiliary Video In are typically used to connect a DVD or VCR to share standard video and audio content with the far end during a presentation or to view the content locally.
b. Auxiliary Audio Out and Auxiliary Video Out are typically used to connect a DVR or VCR to record the video and audio from a call in Standard Video format.

Administering LifeSize Systems

You can manage your LifeSize video communications system using the remote control or remotely using a web browser, telnet session, or secure shell (ssh) session.

Administration Using the Remote Control

To access administrator preferences for configuring the system using the remote control, follow these steps:

1. From the main screen of the user interface, press the button on the remote control to access the **System Menu**.
2. Select **Administrator Preferences** and press **OK**.
3. Enter the administrator password and press **OK**.

   Note: The default administrator password is 1 2 3 4. To change the administrator password, refer to "Changing the Administrator Password" on page 24. If you enter an incorrect password, press the button on the remote control to clear the **Login Attempt Failed** message.

Administration from a Web Browser

You can configure your LifeSize system from a web browser. You must have Flash Player version 8 or greater installed and configured on your web browser. You can download the Flash Player from **www.adobe.com**.

By default, remote access to a LifeSize system through a web browser is enabled. To disable remote access through a web browser, select *Disabled* for the **HTTP** preference in **Administrator Preferences : Security : Remote Administration**.

To access the web administration interface of a LifeSize system, follow these steps.

1. Open a web browser and enter the IP address of the LifeSize system in the web address field. The IP address of the system appears at the top of the main screen in the user interface.

   A login screen appears.

   Note: This is a secure Internet connection, and you may receive an unknown certificate warning.

2. In the login screen, do the following:
   a. Choose the language in which to display the interface.
   b. Enter the administrator password.
   c. Click **Submit**.
3. When you are finished administering the system, click the **Log out** button at the bottom of the screen, and then close your web browser.

You can perform the same administrative configuration from a web browser that is available from the user interface, with the following exceptions:

- You can add or remove custom background images only from a web browser. Access **Preferences : Backgrounds** and click **Add** at the bottom of the screen to add a new background image. To apply the new image, select it and then click the display to which to apply it. Images must be 1280 x 720, JPG file type, and have unique display names.
- Advanced usage of the directory is available only from a web browser. On the **Directory** tab, the **List All** button retrieves the current directory data. You can import and export entries to and from the local directory using the **Import** and **Export** buttons; you can export entries from the corporate directory. **Clear All** deletes all entries in the local directory. **Search** enables you to locate a specific entry in the directory.
- You can upgrade your system software only from a web browser. To perform an upgrade, refer to "Upgrading your System Software" on page 48.

You can place calls from the **Directory** tab by selecting an entry and clicking **Dial**. Dialing an entry from the directory invokes the **Call Manager**. The **Call Manager** tab includes the following functions which are also available through the user interface during calls:

- Manually dial calls and select the protocol and bandwidth to use.
- Place calls from the **Redial** list and change parameters before dialing.
- View and select primary and secondary inputs.
- Control connected and far end cameras.
- View call connection status.
- View caller ID and call statistics.
- Hang up calls.
- Mute and unmute the system.
- Answer or ignore incoming calls.
- Start and stop presentations.

Administration from a Telnet Session

You can manage your LifeSize system from a telnet session. By default, remote access through a telnet session is disabled. LifeSize recommends that you use the web administration interface or an ssh session to manage your system remotely. To enable remote access through a telnet session, select *Enabled* for the **Telnet** preference in **Administrator Preferences : Security : Remote Administration**. Use the automation command line interface to manage the system through a telnet session. For more information, refer to the *LifeSize Automation Command Line Interface* manual on the Support page of www.lifesize.com.

Administration from an SSH Session

You can manage your LifeSize system from an ssh session. By default, remote access through an ssh session is enabled. Log in through an ssh session and enter commands to remotely manage your LifeSize system. Use the automation command line interface to manage the system through an ssh session. For more information, refer to the *LifeSize Automation Command Line Interface* manual on the Support page of www.lifesize.com. To disable remote access through an ssh session, select *Disabled* for the **SSH** preference in **Administrator Preferences : Security : Remote Administration**.

Configuring Security Preferences

You can set preferences in **Administrator Preferences: Security** to manage the administrator and user passwords and control remote access to the system through the web, telnet, and ssh sessions.

Changing the Administrator Password

LifeSize recommends that you protect the administrator preferences with a secure password to prevent occasional users from changing them. To change the administrator password, follow these steps:

1. From the **System Menu**, access **Administrator Preferences : Security : Passwords**.
2. Enter a new password in the **New Password** field below **Administrator Password** and press **OK**.

   Note: If you did not change the administrator password during initial configuration, the default password is 1 2 3 4.

3. Re-enter the new password in the **Confirm Password** field and press **OK**.
4. Select the **Set New Password** button and press **OK**.

Setting the User Password

You can set a user password to control access to **User Preferences** screens. By default, the user password is not set.

Note: If you set a user password, you can access the **User Preferences** screens with the administrator password.

To set the user password, follow these steps:

1. From the **System Menu**, access **Administrator Preferences** : **Security** : **Passwords**.
2. Enter a new password in the **New Password** field below **User Password** and press **OK**.
3. Re-enter the new password in the **Confirm Password** field and press **OK**.
4. Select the **Set New Password** button and press **OK**.

Controlling Remote Administration

By default, remote access to a LifeSize system through the web (http) and ssh is enabled; remote access through a telnet session is disabled. To enable or disable remote access through any of these mechanisms, configure preferences in **Administrator Preferences : Security : Remote Administration**.

Configuring Network Usage

To configure preferences that affect how your LifeSize system functions with other servers and devices on your local network, access **Administrator Preferences : Network : General**.

Note: If you change IP settings, the system may automatically restart.

Specifying a Locally Configured IP Address

Dynamic Host Configuration Protocol (DHCP) is used to dynamically allocate and assign IP addresses. DHCP allows you to move network devices from one subnet to another without administrative attention. You can choose to enable DHCP if a DHCP server is present. If you disable DHCP, you must enter an IP address (the locally configured IP address if not assigned by a DHCP server), subnet mask (used to partition the IP address into a network and host identifier), and gateway (IP address of the default gateway the system uses).

Specifying the Hostname and Domain Name Service (DNS) Servers

You can enter the hostname of the system and the IP addresses to configure DNS servers. You can also enter the domain names to search when resolving hostnames. Domain Name System (DNS) translates names of network nodes into addresses; specify this preference to use DNS to resolve the hostnames of devices to IP addresses.

Specifying Network Speed

If you choose an option other than *Auto* for the **Administrator Preferences : Network : Network Speed** preference, ensure that it matches the speed and duplex configured on your network switch.

Note: If your Ethernet switch is configured for half duplex, you may experience poor quality video when placing calls greater than 512 Kb/s. To work around this issue, change your Ethernet switch configuration to a setting other than half duplex when using *Auto* for the **Network Speed** preference.

Specifying an NTP Server

The system date and time appear in the user interface and are automatically set if one of the following conditions exists:

- The **Administrator Preferences : Network : General : DHCP** preference is set to *Enabled*, and the DHCP server can pass an NTP server address to your system.

  - or -

- The hostname or IP address of an NTP server is specified in **Administrator Preferences : Network : General : NTP Server Hostname**.

  Note: An NTP server address that a DHCP server passes to your system overrides an NTP server hostname or address specified in the **NTP Server Hostname** preference.

The **System Information** page displays the IP address of the NTP server that the system uses.

Note: The time zone is not set automatically. If you did not specify the time zone for your system during the initial configuration, the time that appears in the user interface may not be correct. To specify the time zone manually, refer to "Manually Setting System Date and Time" on page 33.

Enabling IPv6 Addressing

LifeSize systems support dual configuration of IPv4 and IPv6 addressing for the system IP address only. You cannot disable IPv4 addressing on your system. Calls placed with an IPv6 address use the H.323 protocol.

In addition to specifying a local IPv4 IP address (through either DHCP or by manually specifying a static IP address), you can assign an IPv6 address to your system if you are using IPv6 addressing on your network. Access **Administrator Preferences : Network : General** and choose *Enabled* for the **IPv6** preference.

If your IPv6 network sends router advertisements, select *Auto* for the **IPv6 Configuration** preference to automatically assign the IPv6 address to the system. The default option is *Auto*. If you select *Manual* for this preference, you must specify a static IPv6 address for the system in the **IPv6 Address** preference and the address of your IPv6 router in the **IPv6 Router** preference.

The IP address that appears at the top of the main screen in the user interface is the IPv4 address.The IPv6 address of the system appears on the **System Menu** in the **System Information** page.

All other configuration preferences that require an IP address (for example, the NTP and DNS servers, H.323 gatekeeper, and SIP server) must be IPv4 addresses. You must also use the IPv4 address for your system to access the system remotely through the web administration interface and an ssh session.

The directory supports IPv6 addresses. Users can also manually dial IPv6 addresses using the **Video Call** or **Voice Call** buttons on the main screen of the user interface and the **0x1a** text entry method or screen keyboard. Refer to the *LifeSize Video Communications Systems User Guide* for information about changing the text entry mode.

Enabling Network Address Translation (NAT)

Network Address Translation (NAT) enables communication between devices on your LAN that have private IP addresses and devices that are accessed through a public IP network. Static NAT ensures that the same public IP address always maps to a system's private IP address so that data from the public network intended for the private system can be routed to the system reliably.

If you are using static NAT to associate a public IP address with the private IP address of your LifeSize system, you must configure your LifeSize system to work with your static NAT server. Access **Administrator Preferences : Network : NAT** and select *Enabled* for the **Static NAT** preference. Enter the public IP address of your system in **NAT Public IP Address**.

Note: If you are using a static firewall or NAT with fixed ports, you cannot register to a public gatekeeper.

The following functions are not supported if your system is accessed from a web browser outside a firewall and static NAT is enabled:

- System Upgrade
- Directory Import
- LifeSize Networker upgrade and reboot
- Background Image Import

To work around this issue, execute these functions from within the firewall.

Restricting Reserved Ports

By default, LifeSize systems communicate through TCP and UDP ports in the range 60000 - 64999 for video, audio, presentations, and camera control. Ports in this range are assigned as needed and at random rather than sequentially. LifeSize systems use only a small number of these ports during a call. The exact number depends on the number of participants in the call, the protocol used, and the number of ports required for the type (video or audio) of call.

To minimize the number of UDP and TCP ports that are available for communication, you can restrict the range by entering values in **Administrator Preferences : Network : Reserved Ports**. LifeSize recommends that the range you choose, if other than a subset of the default range, begins with a port number greater than 10000.

Note: Changing the TCP range causes an automatic reboot of the system.

An H.323 video call with a presentation requires more ports than other types of calls. The following table identifies the number of UDP and TCP ports needed for an H.323 video call with a presentation based on the maximum number of connections that LifeSize systems support. Depending on the maximum number of connections that your LifeSize system supports, use this information as a guide when determining the range of port numbers to enter in the **Reserved Ports** preferences.

Maximum Connections	Required Ports for an H.323 Call
Six-way video call[a] and a presentation (LifeSize Room only)	40 UDP 10 TCP
Four-way video call and a presentation	24 UDP 6 TCP
Point-to-point video call with a presentation and an audio call	10 UDP 4 TCP

a. Available only when the **Administrator Preferences : Appearance : Layout : Multiway Call Layout** preference is set to *Last Speaker*.

The following tables identify the number of ports required per connection by protocol and the type (video or audio) of call. Use this information if you need to further restrict the port range.

H.323 point-to-point call required ports:

Call Type	Number of Required UDP and TCP Ports
Video[a]	8 UDP ports (6 if presentations are disabled) 2 TCP ports
Audio[b]	2 UDP ports 2 TCP ports

a. Each additional video participant requires 8 UDP ports and 2 TCP ports.
b. Each additional audio participant requires 2 UDP and 2 TCP ports.

SIP point-to-point call required ports:

Call Type	Number of Required UDP and TCP Ports
Video[a]	6 UDP ports
Audio[b]	2 UDP port

a. Each additional video participant requires 6 UDP ports.
b. Each additional audio participant requires 2 UDP ports.

Configuring Firewall Settings

If your LifeSize system communicates with other systems through a firewall, you must configure your firewall to allow incoming and outgoing traffic to the system through:

- TCP port 1720 (for H.323 call setup)
- UDP port 5060 (for SIP call setup)
- Required TCP and UDP ports in the range specified in **Administrator Preferences : Network : Reserved Ports**. For more information about specifying the range of required TCP and UDP ports, refer to "Restricting Reserved Ports" on page 28.

Configuring Quality of Service

You can specify network Quality of Service (QoS) settings in the **Administrator Preferences : Network : Network QoS** preferences. Set these preferences according to the settings used in your network.

Note: Network QoS preferences are supported with IPv4 addressing only. If you enable IPv6 addressing on your LifeSize system, QoS preferences are ignored for IPv6 calls. For more information about IPv6 addressing, refer to "Enabling IPv6 Addressing" on page 26.

You can specify DiffServ (differentiated services) or IntServ (integrated services) values for audio, video, and data packets. You can also set the IntServ Type of Service (ToS) preference.

Configuring LifeSize Transit Preferences

If you are using LifeSize Transit with your LifeSize video communications system, refer to your LifeSize Transit documentation for information about how to configure preferences in **Administrator Preferences : Security : LifeSize Transit**.

Configuring Communications Preferences

Communications preferences in **Administrator Preferences : Communications** enable you to specify dialing options, H.323 settings, and SIP settings.

Configuring Dialing Options

You can choose voice and video dialing options during the initial configuration or at any other time by accessing **Administrator Preferences : Communications : General**. Refer to "Video and Voice Dialing Preferences" on page 6 for more information.

Enabling Presentations

Users can share data during a call through a secondary H.239 media channel, typically from a laptop or personal computer that is connected to the VGA input on the LifeSize codec. By default, the presentation function is enabled on a LifeSize system. To disable presentations access **Administrator Preferences : Communications : General : Presentations**. Consider disabling the presentation function if your system experiences interoperability issues with third party systems that do not support presentations.

Specifying H.323 Settings

To place a call using a name or extension with the H.323 protocol, set preferences in **Administrator Preferences : Communications : H.323**. Enter the name and extension of the device used when making calls with H.323. These are optional values that identify the device to the gatekeeper. Any registered device can dial another using this ID and phone number.

H.323 Name	Also referred to as H.323 ID. This optional value is used when a gatekeeper is configured and requires the system to register with an H.323 ID. If the gatekeeper administrator assigns an H.323 ID for the system, this field should contain that ID.
H.323 Extension	This optional value is used when a gatekeeper is configured and requires the system to register with an E164 number or extension. If the gatekeeper administrator assigns an E164 number or extension for the system, this field should contain that number.

If the system is registered to a gatekeeper, the system displays its status. If you wish LifeSize Room to automatically discover an H.323 gatekeeper, set the **Gatekeeper Mode** preferences to *Auto*. You can also set the gatekeeper to *Manual* to manually choose a gatekeeper. If set to *Manual*, specify the IP address and port for the primary gatekeeper. Configuring a secondary H.323 gatekeeper is optional.

Set the **Gatekeeper ID** only if the gatekeeper requires it (for example, configurations with multiple gatekeepers). The **Gatekeeper ID** must match the gatekeeper ID configured for the gatekeeper to which the system is registering. Do not configure this preference if the gatekeeper does not require it, as this may result in failure to register with the gatekeeper.

When you select the **Register** button in **Administrator Preferences : Communications : H.323**, icons appear at the bottom of the screen to indicate the status of the registration process with the H.323 gatekeeper. The yellow H.323 icon H.323 appears when your LifeSize system is trying to register with the gatekeeper. If the registration fails, the red H.323 icon H.323 appears.

Configuring SIP Settings

Session Initiation Protocol (SIP) is the Internet Engineering Task Force's (IETF's) standard for multimedia conferencing over IP. SIP is an ASCII-based, application-layer control protocol that establishes, maintains, and terminates calls between two or more devices.

To configure SIP as the protocol to use for placing calls, access **Administrator Preferences : Communications.** Configure **SIP Server** preferences before configuring **SIP Advanced** preferences.

For the server, enter the username, SIP server authorization name, and password for the device, if required. The authorization name and password are the values the LifeSize system uses for authentication; these values are only required if the registrar or proxy require authentication.

You can also configure proxy settings to enable and configure the SIP proxy and SIP registrar. SIP devices use register settings to dynamically register their current location.

SIP Advanced preferences enable you to change the SIP UDP or TCP signaling ports and the communication path to use for SIP registration.

When you select the **Register** button in the **Administrator Preferences : Communications : SIP Server** screen, icons appear in the status bar to indicate the status of the registration process with the SIP server. The yellow SIP icon SIP appears when your LifeSize system is trying to register with the SIP server. If the registration fails, the red SIP icon SIP appears.

Configuring System Settings

You can change settings that identify the system to users in the user interface, set the system date and time, and reset the system to its factory default settings by accessing **Administrator Preferences : System**.

Identifying the System

To change the system name, dialing numbers, and geographic location specified for the system, access **Administrator Preferences : System : Identification**.

Manually Setting System Date and Time

You can set the system date and time manually as follows:

1. From the **System Menu**, access **Administrator Preferences : System : Date and Time**.
2. Set the time zone.
3. Set the month, day, and year for the date.
4. Set the hour, minute, and second for the time.
5. Select the **Set Date and Time** button and press **OK** to save your changes.

Restoring Default Settings

Administrator preferences contain the configuration of the entire system. You may need to reset the system to its default state to correct unknown problems you may be experiencing or to return to a known configuration.

To reset the system from the user interface, follow these steps:

1. From the **System Menu**, access **Administrator Preferences : System : System Reset**.
2. Enter the administrator password.

The system automatically restarts and the administrator password is reset to the default value (1 2 3 4). The user password also resets to a blank password, enabling users to access **User Preferences** without a password. The **Initial Configuration** screen appears. You must complete the initial configuration screens to complete the reset.

Note: If you reset the system using a remote access method, you must complete the reset from the user interface by navigating the initial configuration screens and pressing **OK** on the remote control when prompted to save the configuration.

If this reset fails or if you do not have access to the user interface, you can manually reset the system using the **Reset** button on the back panel of the codec.

If power is connected to the system, press and hold the **Reset** button until the LED on the front begins to flash, and then release the button. The system restarts.

If the system is unplugged or power is unavailable when you press the **Reset** button and you then apply power, the red LED illuminates and one of the following occurs:

- If you press the button for more than 5 seconds but less than 10 seconds, the LED turns solid red and then flashes. The system restarts at the initial configuration and resets values to default settings.
- If you press the button for more than 10 seconds but less than 15 seconds, the LED turns solid red and then flashes blue and red. The blue flashes for a longer time than the red during the first 5 seconds. The red flashes for a longer time than the blue after 10 seconds. The system restarts at the initial configuration using the previous installed version of software, and resets values to default settings.
- If you press the button for more than 15 seconds, the LED turns solid red and then flashes blue and red. The blue flashes for a longer time than the red during the first 5 seconds. The red flashes for a longer time than the blue after 10 seconds. The LED turns solid blue after 15 seconds. The system starts and stops in diagnostic mode. Contact Customer Support for assistance with diagnostics.

Configuring Call Preferences

All users can set auto answer options for calls and specify the maximum number of entries to appear in the **Redial** list. Refer to the *LifeSize Video Communications Systems User Guide* for more information.

Administrators can configure the maximum call time and bandwidth, and enable or disable H.235 AES security in **Administrator Preferences : Calls**.

Managing Bandwidth

By default, calls automatically detect the available bandwidth in the connection and connect at that rate. If a device with lower bandwidth joins a call, the call slows to the highest common bandwidth of all devices in the call. If a device with the lowest bandwidth in a call disconnects from the call, the call increases its speed to the originating common bandwidth.

You can specify the maximum call speed for a call, or set the bandwidth to *Auto* for the system to automatically select the available bandwidth, by setting incoming and outgoing bandwidth preferences in **Administrator Preferences : Calls**.

Enabling H.235 AES Security

LifeSize systems support H.235 128-bit AES security using the Diffie Hellman key exchange protocol in H.323 calls. AES interoperability is supported with the third party devices identified in the Release Notes on the Support page of www.lifesize.com.

To enable AES security, you must set the **Administrator Preferences : Calls : H.235 AES Security** preference to either *Enabled* or *Strict*. When set to *Enabled*, calls connect, but are encrypted only if the far end supports AES encryption. When set to *Strict*, calls do not connect if the far end does not support AES security.

Note: The system ignores the **H.235 AES Security** preference and calls are not encrypted if the **Multiway Call Layout** preference is set to *Last Speaker* in **User Preferences : Appearance** or **Administrator Preferences : Appearance : Layout** in LifeSize Room.

Encrypted calls are indicated by encryption icons in the caller ID, Call Manager list, and Call Statistics list. Refer to the *LifeSize Video Communications Systems User Guide* for a description of the icons.

Enabling Telepresence

You can configure a LifeSize system for use in telepresence rooms in which a conference administrator controls calls from a control panel (such as LifeSize Control or the Call Manager in the web administration interface) and users interact with the system using an attached phone.

Enabling telepresence removes the user interface from view. When the system is idle, only the background image appears in the display. An administrator can access the user interface by pressing **OK** and entering the administrator password.

During a call, users see the video from the call and the mute indicators. The navigation bar, PIP windows, caller ID information, and call status messages do not appear on the screen.

Users can invoke the **Call Manager** dialog and call statistics and choose video input with the **near** and **far** keys on the remote control. The numeric keys on the remote control play touch tones. Users can change this behavior from the **Call Manager**.

Enabling telepresence automatically locks all cameras connected to the system. You can unlock cameras individually. You can also lock cameras independently of the telepresence setting. To enable or disable telepresence and lock or unlock cameras, configure preferences in **Administrator Preferences : Telepresence**.

Configuring Audio Behaviors

You can adjust audio behaviors by configuring preferences in **Administrator Preferences : Audio**.

Configuring Audio Codec Order

To change the order of available audio codecs for the system to use to place calls, select the **Audio Codec Order** preference, select a codec, and press the right arrow to move the entry up in the list or press the left arrow to move the entry down in the list.

Selecting Audio Output

By default, audio in a voice call is sent to the LifeSize Phone attached to the LifeSize codec. If you want the audio in a voice call to be sent to the line out, set the preference in **Administrator Preferences : Audio : Voice Call Audio Output.** If LifeSize Phone is not connected to the LifeSize codec, audio in a voice call is sent to the line out regardless of the preference selected.

By default, audio in a video call is sent to the line out (typically, your display). If you want audio in a video call to be sent to the attached phone, set the preference in **Administrator Preferences : Audio : Video Call Audio Output**.

Configuring Audio In (Line In)

The following preferences are available to set the Line In according to your environment.

Preference	Default	Description
Line In	Enabled (default for LifeSize Room) Enabled (stereo) (default for LifeSize Team, LifeSize Team MP) (default for LifeSize Express)	Choose *Enabled* to enable the line input. If you are using LifeSize Team or LifeSize Team MP, select stereo or mono according to the type of line input signal you are using.
Line In to Line Out	Disabled (default for LifeSize Room) Enabled (default for LifeSize Team, LifeSize Team MP) (default for LifeSize Express)	Choose *Enabled* to send the line input signal to the line output. Choose *Disabled* to send the signal to the far end only.
Line In Acoustic Echo Canceller	Enabled (default)	Available only with codecs that do not have a microphone input. Choose *Enabled* to enable the acoustic echo canceller for the line input. For example, if the line input is a microphone, choose *Enabled*. Choose *Disabled* to disable the acoustic echo canceller for the line input. For example, choose *Disabled* if the line input is a microphone that has its own acoustic echo canceller.
Line In Volume	5	Select the volume level for the audio sent through Line In.

Following are example scenarios of how to set Line In preferences for your environment.

If you connect an audio source such as a personal computer to Line In and want to send its signal to the far end while simultaneously hearing it from the local speakers (either the phone or external speakers), set the Line In preferences as follows:

Line In - Enabled

Line In to Line Out - Enabled

Line In Acoustic Echo Canceller - Disabled (if available on your system)

If you connect an external microphone to Line In on a LifeSize codec that does not have a microphone input and want to send that signal to the far side but do not want to hear the signal from the local speakers, set the Line In preferences as follows:

Line In - Enabled

Line In to Line Out - Disabled

Line In Acoustic Echo Canceller - Enabled

If you connect an external microphone that has its own acoustic echo canceller to Line In on a LifeSize codec that does not have a microphone input, and want to send the signal to the far end but do not want to hear it from the local speakers at the same time, set the Line In preferences as follows:

Line Input - Enabled

Line In to Line Out - Disabled

Line In Acoustic Echo Canceller - Disabled

Configuring the Microphone Input

If your LifeSize system has a microphone input on the back panel of the codec, you can adjust the following preferences for a connected microphone.

Preference	Default	Description
Microphone Volume	5	Select the volume level for the audio sent through the microphone input.
Microphone to Line Out	Disabled	Choose *Enabled* to send the signal from the connected microphone to an audio device connected to the line output. Choose *Disabled* to send the signal to the far end only.
Microphone Acoustic Echo Canceller	Enabled	Choose *Enabled* to enable the acoustic echo canceller for a microphone connected to Microphone In. Choose *Disabled* if the microphone has its own acoustic echo canceller.

Adjusting Audio Levels

In addition to adjusting the audio volume for Line In and Microphone In, you can adjust levels associated with the following preferences:

- **Auxiliary Audio Input Volume** (LifeSize Room only)—Select the volume level for the audio sent through the auxiliary line input.
- **Line Out Treble** (dB)—Select the higher frequencies in the sound range for the audio line output.
- **Line Out Bass** (dB)—Select the lower frequencies in the sound range for the audio line output.
- **Ring Tone Volume**—Select the volume level of the ring and busy tones.
- **DTMF Tone Volume—**Select the volume level of the DTMF and key click tones.
- **Status Tone Volume**—Select the volume level of status tones.

Associating Auxiliary Audio Input in LifeSize Room

If you connect auxiliary audio input devices to the LifeSize Room codec, you can choose the video input to associate with the device by configuring **Administrator Preferences : Audio : Auxiliary Audio Input Association**. By default, the auxiliary audio input is only heard when an auxiliary video input device is connected and the video image appears in the display. If you choose *Any Input*, the device attached to the auxiliary audio input is always audible. If you choose a specific video input from the preference options, the device attached to the auxiliary audio input is only audible when the video image from the selected video input appears in the display.

Configuring Video Behaviors

Administrators can adjust video behaviors to control cameras and video quality by configuring preferences in **Administrator Preferences : Video**.

Controlling Camera Use by Far End Users

To prevent far end users from controlling your near end camera, including configuring and controlling camera presets, choose *Disabled* for the **Administrator Preferences : Video : Video Control : Far Control of Near Camera** preference. If you choose *Enabled*, you can still prevent far end users from configuring and using near end camera presets by choosing *Disabled* for the **Far Set of Camera Presets** and **Far Move to Camera Presets** preferences.

Locking Camera Presets

By default, all users can configure camera presets. To prevent all users (near and far end) from configuring camera presets, select *Locked* for the **Administrator Preferences : Video : Video Control : Camera Presets Lock** preference. To prevent only far end users from configuring camera presets, choose *Disabled* for the **Far Control of Near Camera** or **Far Set of Camera Presets** preferences.

Controlling Camera Pan Direction

You can define the pan direction of the camera relative to the physical arrangement of the camera by setting **Administrator Preferences : Video : Video Control : Camera Pan Direction**. Select *Perceived* for the camera to pan left or right from the user's perspective, when facing the camera. Select *Reversed* for the camera to pan to the camera's actual left or right.

Customizing Input Device Names

You can define custom input names by changing the default values for the following preferences in **Administrator Preferences : Video : Video Control**. Customized names for inputs are limited to 16 characters.

Preference	Support	Default
HD Camera 1 Name	LifeSize Room LifeSize Team LifeSize Team MP LifeSize Express	HD Camera 1
HD Camera 2 Name	LifeSize Room	HD Camera 2
Document Camera Name	LifeSize Room LifeSize Team LifeSize Team MP	Doc Camera
HD Input Name	LifeSize Express	HD 1
Auxiliary Video Input Name	LifeSize Room	DVD
VGA Input Name	LifeSize Room LifeSize Team LifeSize Team MP LifeSize Express	PC

Balancing Primary and Secondary Video Bandwidth

For video images sent to the far side during a presentation, you can allocate bandwidth to the primary and secondary video input streams as percentages of the total available bit rate for the video streams. Select the percentage to allocate in **Administrator Preferences : Video : Video Quality : Video Bandwidth Balance**. The first percentage in each option applies to the primary video input stream, typically the high definition camera. The second percentage applies to the secondary video input stream, typically a laptop or personal computer connected to the VGA input. The system allocates the bandwidth based on the selected option when only the system sends video images during a presentation. Consider adjusting this preference when the video stream from the secondary video input includes motion, for example a slide show that includes several animations or video input from a DVD player.

Selecting Priority of Quality Metrics for Source Video

You can favor sharpness or motion as a priority for the quality of primary and secondary video that the LifeSize system sends to the far end during a call. If you favor sharpness by selecting a smaller number for the **Administrator Preferences : Video : Video Quality : Primary Video Motion** preference, in lower bandwidth calls the system sends the primary video at a lower frame rate and a higher resolution. The default value (10) favors motion. Consider adjusting this preference if bandwidth is limited.

If you are sending a presentation, select the priority for the quality of the presentation video in **Administrator Preferences : Video : Video Quality : Secondary Video Sharpness**. The default value (10) favors sharpness. Typically, presentation data does not include motion (for example, a spread sheet or slide show). When you favor motion for presentation video by selecting a smaller number for this preference, the system sends the video at a higher frame rate and a lower resolution.

Adjusting Video Encoder Quality

You can adjust the quality of the video image sent to the far end during a call by specifying a relative lower or higher resolution in the **Administrator Preferences : Video : Video Quality : Video Encoder Quality** preference. Moving the slider to the right decreases the resolution of the video sent to the far end and improves the quality of the video image. Consider using this preference to make minor adjustments to the quality of the video image sent to the far end.

Enabling H.241 MaxStaticMBPS

The ITU-T Recommendation H.241 includes definitions of optional parameters that decoders can support and communicate as their capabilities to other devices. When you set the **H.241 MaxStaticMBPS** preference in **Administrator Preferences : Video : Video**

Quality to *Enabled*, the LifeSize codec can send near end video at a higher resolution to third party far end devices that communicate support for the MaxStaticMBPS optional parameter.

Adjusting the MTU of Video Packets

Video packets that exceed the maximum transmission unit (MTU) size for any router or segment along the network path may be fragmented or dropped. This results in poor quality video at the receiving device. You can set the MTU of video packets that your LifeSize system sends. The default value is 1440 bytes. The allowed range is 900 -1500 bytes. To set the MTU for video packets, access **Administrator Preferences : Video : Video Quality : Video MTU**.

Populating the Corporate Directory

Users can place calls from the directory by selecting a number to dial from a list of stored numbers. The corporate directory is H.350 compliant and can store up to 1000 entries in both an alphabetical and hierarchical format. All users can manage entries in the local and meetings directories. Only administrators can manage entries in the corporate directory. You can populate the corporate directory by configuring **Auto Discovery** preferences or Lightweight Directory Access Protocol (**LDAP**) preferences in **Administrator Preferences : Directory**. By default, auto discovery is enabled on a LifeSize system. If you configure the **LDAP** preferences, the LifeSize system automatically disables auto discovery to prevent duplicate entries from appearing in the corporate directory.

Configuring Auto Discovery

Auto discovery enables LifeSize systems on your network to pass address information to other LifeSize systems automatically. By default, when a LifeSize system joins a network, it sends a broadcast packet to the local subnet to announce its presence. Any LifeSize system on the local subnet that receives the packet and has **Auto Discovery** set to *Enabled* replies by sending address information about itself and a list of IP addresses of other LifeSize systems that it has discovered. The LifeSize system creates an entry in its corporate directory for every system on the local subnet from which it received a response**.** It then queries the list of other IP addresses that it received and the IP addresses that are stored in its own Redial list, but only if those addresses are allowed by the filters that you specify in the **Auto Discovery Subnets** and **Auto Discovery Ignored Subnets** preferences. By default, the system replies and sends queries to other LifeSize systems in the local subnet only.

Configure the **Auto Discovery Subnets** and **Auto Discovery Ignored Subnets** preferences to enable the system to discover other LifeSize systems outside the local subnet and share that information with other LifeSize systems. Specify subnet filters (separated by spaces) in the **Auto Discovery Subnets** preference to identify the subnets to which the LifeSize system can send queries and replies. By default, the preference is empty; the system sends queries and replies to other LifeSize systems on the local subnet only. To exclude subnets from auto discovery, specify subnet filters in the **Auto Discovery Ignored Subnets** preference. If a destination address does not match one of the filters in the **Auto Discovery Subnets** preference, or if it matches one of the filters in the **Auto Discovery Ignored Subnets** preference, then the LifeSize system does not query or reply to the LifeSize system at that address.

For example, you can configure the **Auto Discovery Subnets** preference to include a large subnet and the **Auto Discovery Ignored Subnets** preference to exclude a subset of the subnet. Consider a network that has several subnets with the IP address 10.* and a slow network connection to devices that have a 10.85.* address. If you enter 10.* in the **Auto Discovery Subnets** and 10.85.* in the **Auto Discovery Ignored Subnets** preference, the LifeSize system queries and replies to all LifeSize systems that have a 10.* address, except those that have a 10.85.* address.

If you set **Auto Discovery** to *Disabled*, the LifeSize system does not send a broadcast message to the local subnet and cannot discover or be discovered by other LifeSize systems.

Reading from an LDAP Server

When you configure **LDAP** preferences to populate the corporate directory, you specify the hostname, login and query parameters, and the refresh interval for reading data from a preconfigured LDAP server. You must install your LDAP server with an H.350 compliant schema. Refer to the *Release Notes* for a list of third-party LDAP servers supported with LifeSize video communications systems.

Configuring Appearance Preferences

All users can configure preferences that affect the appearance or behavior of the following:

- screen saver that appears when the system is idle
- timeout interval for the appearance of the user interface after a call connects
- language that appears in the user interface
- LCD contrast on the display of a connected phone
- background image that appears in the user interface

Refer to the *LifeSize Video Communications Systems User Guide* for more information about these preferences. Administrators can access these preferences in **User Preferences** or **Administrator Preferences : Appearance** and **Backgrounds**.

Only administrators can add or remove custom background images. Refer to "Administering LifeSize Systems" on page 21.

Video Layout Preferences

All users can configure the following preferences that affect the appearance of video in displays:

- **Picture in Picture**
- **Secondary Display Layout** (LifeSize Room only)
- **Multiway Call Layout** (LifeSize Room only)

Refer to the *LifeSize Video Communications Systems User Guide* for more information about setting these preferences.

Only administrators can configure auxiliary video output preferences for LifeSize Room. By default, the auxiliary video outputs in LifeSize Room are enabled. You can specify the source of the video that appears in a video device connected to the auxiliary video outputs or disable auxiliary video output by configuring the following preferences in **Administrator Preferences : Appearance : Layout**:

Preference	Default	Description
Auxiliary Video Output	Enabled	Select *Disabled* to disable video from being sent to a device connected to the auxiliary video outputs.
Idle Auxiliary Output Layout	No Inputs	Select the video source to show in the device connected to the auxiliary video output when the system is idle. *No Inputs* shows nothing in the connected device. *HD Camera* shows video from the high definition camera. *HD Camera* + *Auxiliary* shows video from the high definition camera and from a device connected to the auxiliary video inputs. *HD Camera* + *Auxiliary* + *Document* shows video from the high definition camera, a device connected to the auxiliary video inputs, and the document camera. *All Inputs* shows video from all connected video input devices or nothing if devices are not connected.
Active Call Auxiliary Output Layout	Received	Select the video source to show in the device connected to the auxiliary video output during a call. *Received* shows video received from the far end. *Transmitted* shows video sent to the far end. *HD Camera* shows video from the selected high definition camera.

Configuring Display Types and Resolutions

Only administrators can configure preferences that affect display types and resolutions. Typically, you configure these settings only when you install your system or change a display and only to troubleshoot display issues. Refer to "Troubleshooting Installation Issues" on page 14 for more information.

Viewing Recent Configuration Changes

As an aid to troubleshooting issues that you may encounter with your LifeSize system or to quickly access a preference that has been recently changed, view the preferences in **Administrator Preferences : Recent**.

Note: Preferences that have dependencies on other preference settings, such as H.323 and SIP server preferences, may not appear in **Recent**.

Using Diagnostics Preferences and Tools

Diagnostic preferences and tools that are available to all users include high-definition camera and VGA input diagnostics and rebooting the system. For information about using these preferences and tools, refer to the *LifeSize Video Communications Systems User Guide*. Administrators can access these preferences and tools through **User Preferences** or **Administrator Preferences : Diagnostics**.

Diagnostic preferences and tools available only to administrators in **Administrator Preferences : Diagnostics** include call counter statistics, color bar settings, and network utilities.

Using Network Utilities

You can troubleshoot network connection issues with your system using the ping and traceroute utilities in **Administrator Preferences : Diagnostics: Network Diagnostics**. The **ping** command tests responsiveness between two devices. The **traceroute** command tests responsiveness and traces the path of a packet from one device to the other.

Restarting the System

The system restarts under the following circumstances:

- When you reboot the system (**Administrator Preferences** or **User Preferences : Diagnostics : System Reboot**).
- When you reset the system to its default state (**Administrator Preferences : System : System Reset**).
- When you change an IP address in network preferences (**Administrator Preferences : Network : General**).
- When you change TCP reserved ports (**Administrator Preferences : Network : Reserved Ports**).

All users can reboot the system by accessing **User Preferences : Diagnostics : System Reboot** from the main screen. Administrators can also reboot the system by accessing **Administrator Preferences : Diagnostics : System Reboot**. Select **Yes** when prompted to confirm the restart.

To reset the system to its default state, refer to "Restoring Default Settings" on page 33.

Note: If the user interface is not responding and you are unable to restart the system by following these instructions, you can restart the system by pressing the reset button on the back panel of the codec as described in "Restoring Default Settings" on page 33. LifeSize recommends you do not unplug power from the codec to reboot it.

Upgrading your System Software

Before you upgrade your LifeSize system software, ensure that you connect all cameras and LifeSize SDI Adapters that you intend to use with the system.

> ***Note:*** Cameras and LifeSize SDI Adapters not connected to a LifeSize system before an upgrade may not function properly after an upgrade.

To upgrade the software for your system, follow these steps:

1. Download the upgrade file from the directory on the LifeSize web site to a local directory on your system.

   www.lifesize.com/support

2. Reboot the system.

3. Access the web administration interface for your system. Refer to "Administration from a Web Browser" on page 21.

4. Click the **Maintenance** tab.

5. Click **System Upgrade**.

6. If your upgrade requires you to reset the system to the original default settings, select the **Reset to Default State** checkbox.

7. Browse for the upgrade file you downloaded in step 1.

8. Click **Upgrade**.

   Note: If calls are connected to the system, a dialog appears prompting you to continue or cancel the upgrade. Click **Yes**, to continue with the upgrade and disconnect the active calls. The upgrade may take several minutes; do not disrupt the upgrade process. During an upgrade, a status screen appears in the display connected to the system. Users cannot cancel the screen. The system rejects incoming calls.

9. A system upgrade status message displays when the upgrade is complete. Close the status window and close the administrator configuration window.

10. Your system is ready to use. If you selected the **Reset to Default State** checkbox in step 6, you must first reconfigure your system. Refer to "Initial Configuration" on page 5.

Troubleshooting Upgrade Failures

If attempts to upgrade software for your LifeSize system fail, follow these steps:

1. Ensure you have a valid upgrade image.
2. Reboot the system.
3. Attempt the upgrade again.
4. If a second attempt fails, note the error code returned.
5. If problems persist, contact Customer Support.

Upgrade Error Codes

Following are the error codes you may receive when an upgrade fails.

Code	Problem	Description
1	Internal error	The system is missing critical files.
2	Switch to upgrade failed	The command to set the active partition failed.
3	Write failed	A write failure occurred during copying of the image to the upgrade partition. This typically occurs when using an upgrade image for another LifeSize product.
4	Read failed	Reading incoming data failed during uploading of the image. This typically occurs if the connection is broken during the upload.
5	Upgrade script failed	After the image has been successfully uploaded the system runs an upgrade script for final processing. This error indicates a failure in that script. This typically occurs when using an upgrade image for another LifeSize product.
6	Unable to run upgrade script	The system was unable to run the upgrade script. This typically occurs when using an upgrade image for another LifeSize product.
7	Unable to mount upgrade partition	After the image has been copied to the system, the system failed to mount the image. The typically occurs if the upgrade image is corrupt or when using an upgrade image for another LifeSize product.
8	No permission	The system failed to read the upgrade partition.
9	Corrupt image	The upgrade image is corrupt and unusable. This typically occurs due to a bad image or errors during upload to the device.

Code	Problem	Description
10	Bad argument	An invalid argument was submitted to the upgrade process. This typically occurs when using an upgrade image for another LifeSize product.
11	Invalid signature	The encryption signature is invalid. This typically occurs if the image is corrupt or compromised.
12	Decrypt failed	The system was unable to decrypt the upgrade image. This typically occurs if the image is corrupt or compromised.
13	Developer system	The system is configured for development and can only be upgraded by a LifeSize representative.
14	Upgrade in progress	An upgrade is already in progress. The system only supports one upgrade at a time.