LifeSize® Conference™

LifeSize® Conference™ Integrator Guide

Software Release v1.1.0

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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 Conference

LifeSize Conference provides integrators and AV consultants the high definition video infrastructure necessary to create custom telepresence suites.

LifeSize Conference is available for authorized partners to customize and design custom room configurations. Accommodating multiple displays, high definition codecs and cameras, a phone, and an integrated touch screen control panel, LifeSize Conference provides a solid telepresence template. This document provides authorized LifeSize partners with a best practice guide for deploying the LifeSize Conference solution.

LifeSize Components

LifeSize Conference is available in a single configuration that is comprised of the following components.

- 3 LifeSize Room codecs
- 1 LifeSize Phone
- 4 LifeSize High Definition Cameras
- Associated power supplies and cabling
- LifeSize Conference AMX software

LifeSize Partner Equipment

Partners must also include the following equipment:

- (3) 58 - 65-inch plasma displays
- (1) 42 - 50-inch plasma display
- (4) plasma wall mounts
- AMX Solutions Controller:
  - NXT-CV7 7" Modero Widescreen ViewPoint Touch Panel
  - NI-3100: NetLinx Integrated Controller

  Note: LifeSize recommends the 7” Modero touch panel only. LifeSize also recommends that the LifeSize Conference software is the only software controlled by this touch panel. If other equipment is controlled by the same NI-3100 system or if a different non-supported touch panel is already installed, add a second recommended touch panel to control the LifeSize Conference systems.

Partners can also optionally include the following recommended components:

- (3) FREE-A001040A Picturephone Universal PTZ high definition camera wall mount shelf
- (1) OMNU2TB Omnimount Universal Tilt Mount
- (3) OMNU3TB Omnimount Universal Tilt Wall Mount
- (3) plasma control cables (for additional AMX programming to plasma displays)
- (1) component to VGA extenders

  Note: If using a rack shelf, provide sufficient airflow for adequate cooling of the systems.

Configuring Your Conference Room

When choosing a conference room for LifeSize Conference you must consider the quality of the overall experience and carefully examine the physical space. LifeSize recommends that you obtain a printed layout of the potential room that includes physical dimensions. Up-front planning prior to installation will ensure the most optimal conference experience. You may need to consult the customer's in-house facilities management to obtain this information, so be sure to allow sufficient time to gather the following data:

- Power Usage
- Environmental specifications
- Acoustics
- Lighting
- Wall Color
- Furniture arrangement

Power Usage

Power consumption from LifeSize Conference will vary by conference room, display size, and rack options. Following are the recommended limitations for power consumption:

- 3600 watts (30 amps at 120 volts or 15 amps at 240 volts).
- 3-4 20 amp circuits must be located on the wall behind the equipment.

Environmental Specifications

Environmental considerations include the size and spatial orientation of the room and the location of windows, doors, and other structures such as built-in desks or cabinets.

The physical dimension and layout of LifeSize Conference requires a medium size conference room. Large or small room deployments may result in sub-optimal acoustics.

LifeSize recommends you follow these environmental specifications:

- Minimum room size of 20 feet × 15 feet (6.096 meters × 4.57 meters). Maximum room size of 35 feet × 25 feet (10.668 meters by 7.62 meters).
- Ceiling height of 8 feet to 14 feet (2.44 meters to 4.2672 meters).
- Rooms without windows are ideal because windows make it difficult to control sound reverberation and lighting within the room.
- Make sure other structures in the room (such as furniture and accessories) do not obstruct or interfere with the camera range.
- Doors into the room should be located outside of the camera field of view.

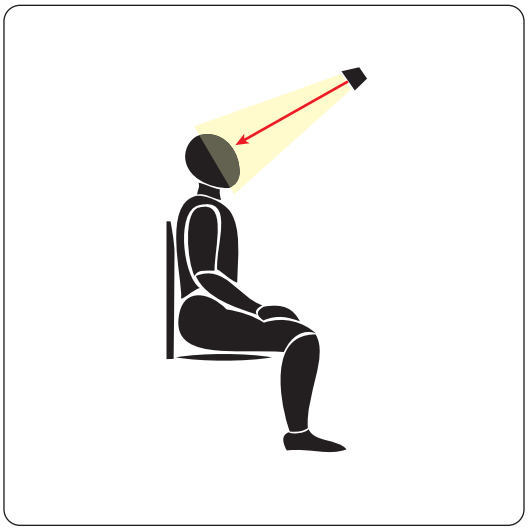
Acoustics

The building materials, room construction, and HVAC systems can all affect the room's acoustical nature. To optimize the conference room for the best acoustics, follow these recommendations whenever possible:

- Wall texture and type: Standard sheetrock or drywall (1/2 inch or 5/8 inch thickness) with a smooth surface is recommended. Wood paneling, windows, or concrete walls are not recommended.
- Ceiling: Standard business office acoustic ceiling tiles are recommended as they help to absorb reverberation and undesired sound.
- Flooring: Standard office carpeting is recommended to reduce reverberation. Sound-reflective surfaces such as Linoleum and hardwood are not recommended.
- HVAC: Sound-dampening registers and baffles are recommended to help reduce noise from the flow of air in the ventilation system.

Lighting

LifeSize Conference is designed to work in a normal conference room with evenly dispersed florescent light. It is better to have the dispersed light centered over the table and directed at the participants faces, rather than directly over the displays or behind the participants.



Lighting recommendations include:

- Use 100% indirect fluorescent fixtures that provide 350-400 lux of vertical face lighting.
- Bulbs should be normal high wattage, 3500 Kelvin, fluorescent bulbs.

Wall Color

Wall color is an important factor in the conference room to help unify the environment. LifeSize recommends partners use a muted blue color for the conference room walls. The following recommended flat BAC colorant is available from most local paint specialists:

BAC COLORANT	0Z	32	64	128
L1-Blue	-	59	-	-
Y1-Yellow	-	18	-	-
R3- Magenta	-	56	-	-
W1-White	-	58	-	-

If you are unable to use these specific color recommendations, ensure all rooms in the LifeSize Conference deployment are the same color.

Positioning Displays and Furniture

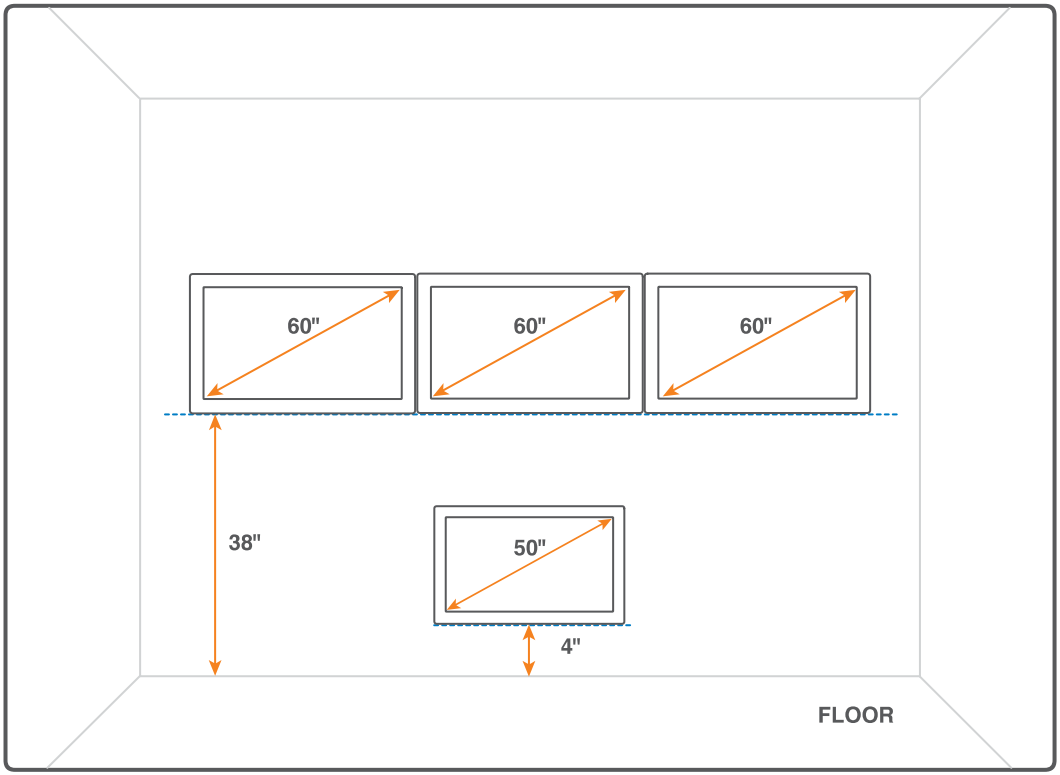
You must carefully arrange the conference room furniture and displays for the ideal telepresence experience.

Primary Displays

Mount the three primary displays horizontally flush with the video wall. The bottom of the display should be 38 inches (96.52 centimeters) from the top of the floor.

Secondary Display

The secondary display is for viewing presentations during a call. Mount the secondary display 4 inches (10.16 centimeters) from the top of the floor. Ensure that the secondary display is connected to the same LifeSize Room system as the center display above it.



Note: Taller tables may require a higher display mounting height.

Table and Camera Placement

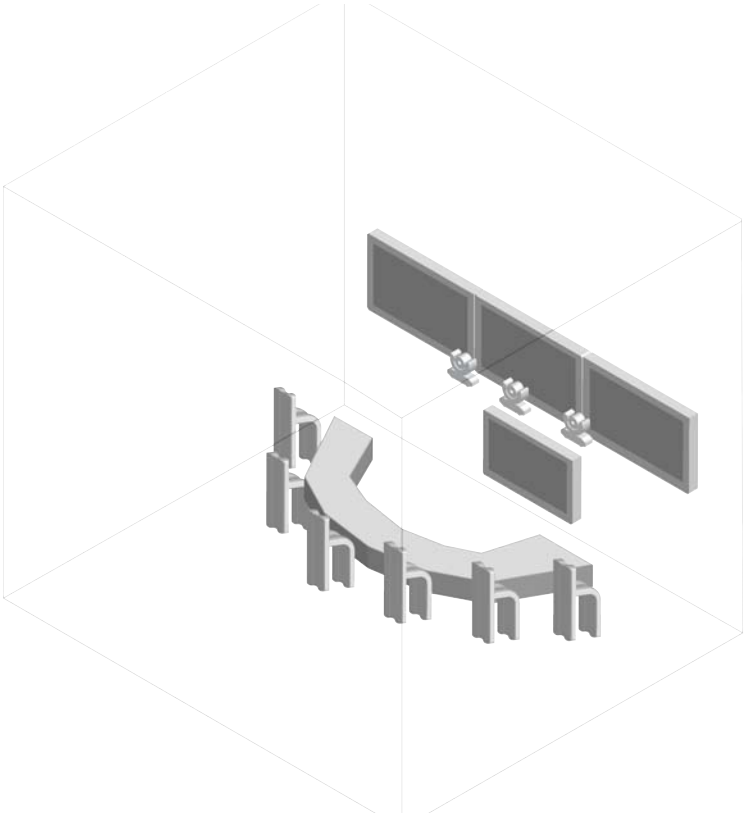
Place a U-shaped table that meets the following dimensions facing the displays:

Length: 165 inches (4.19 meters)

Width: 38 inches (96.52 centimeters)

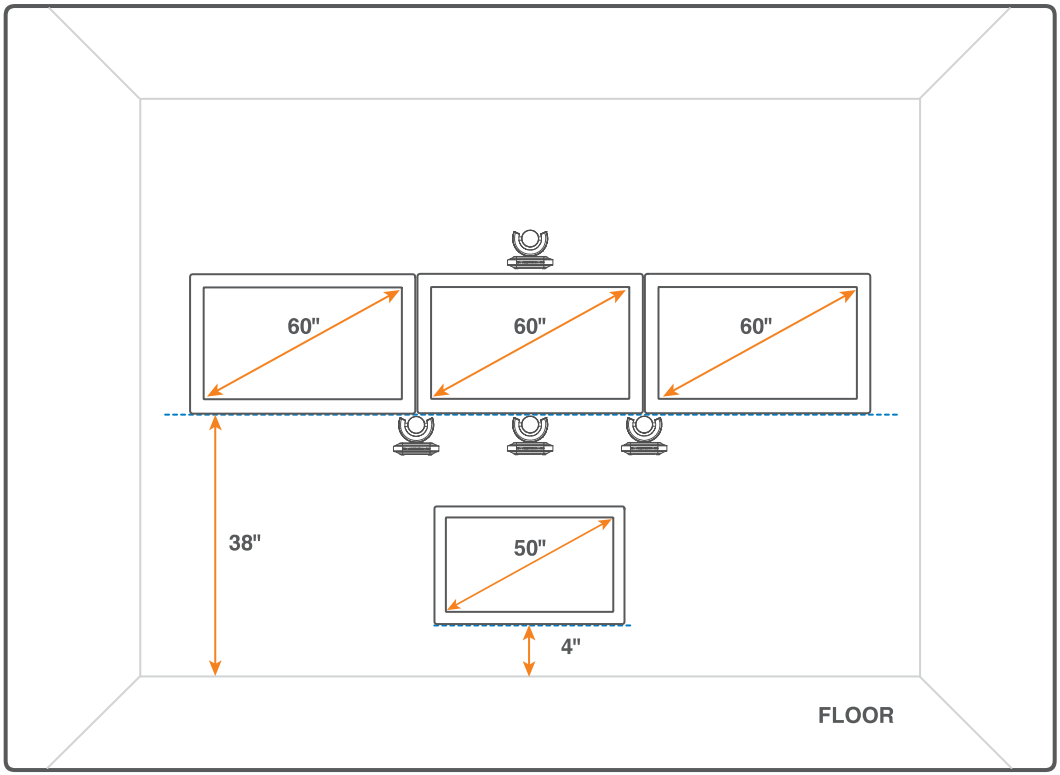
Height: 32 inches (81.28 centimeters)

Distance from Middle of Table (across from center display) to Center Display: 72 inches (1.83 meters)



Mount three of the cameras below the primary displays as follows:

- Position the center camera directly below the center display, flush with the manufacturer's badge.
- Mount the left and right cameras directly below the displays, aligned at the seams where the displays meet.
- Place these cameras no more than 20 inches (50.8 centimeters) apart.
- Mount the cameras slightly below eye level of the participants. Mounting cameras any higher may result in increased wall distortions. The field of view for each camera should be such that the viewable portion equals a leveled image of two participants or 55 inches (1.397 meters) wide. Each camera should encompass a level picture with minimal image overlap at the back of the conference table.



Mount the fourth camera directly above the center display. Connect the fourth camera to the second camera port on the back of the LifeSize Room codec that is connected to the center camera and center display. The fourth camera becomes the active camera when users

choose to place a point-to-point or multipoint call using the center LifeSize Room system. This feature is enabled by default. For more information about configuring the LifeSize Room feature, refer to “Configuring LifeSize Conference Software” on page 18. For more information about using the LifeSize Room feature, refer to “Placing a Call with LifeSize Room” on page 22.

Carefully place any objects you wish to display to the far side to avoid dead zones. The closer together the cameras are placed, the fewer resulting dead areas. The wall behind the participants should be clear of objects to ensure that duplicates do not appear on the far side. Adding a curved wall behind the speakers improves the illusion of a single display as there are fewer edges to reveal the vanishing points.

Audio Devices

Connect audio output and audio input devices for calls to the LifeSize Room codec that is connected to the center display and center cameras only. Ensure that the **Video Call Audio Output** preference in **Administrator Preferences : Audio** is set to *Line Out* (the default) for use with display or external speakers.

Adjusting Camera Positions

Once cameras are mounted, you must adjust the positions of the three cameras that are mounted below the left, right, and center displays and lock them in place for a consistent telepresence experience.

1. To properly adjust the alignment of the edge of the table across the three displays, do the following:
   - Connect the display cable from the left display to the LifeSize codec that is connected to the right camera as you are facing the displays.
   - Connect the display cable from the right display to the LifeSize codec that is connected to the left camera as you are facing the displays.

   Note: You will change these connections upon completion of the camera adjustments.

2. Ensure that the **Telepresence** preference on each LifeSize system is disabled and the cameras are unlocked. Access the user interface of each video communications system with the remote control and navigate to **Administrator Preferences : Telepresence**.

   Set the following preferences:

Preference	Value
Telepresence	Disabled
HD Camera 1	Unlocked
HD Camera 2	Unlocked

   Note: You can also set these preference from the web administration interface of each LifeSize system. Refer to the *LifeSize Video Communications Systems Administrator Guide* for information about using the web administration interface.

3. Exit **Administrator Preferences** by pressing the **Back** button on the remote control.

4. Press the **Near** button to display the local view of each camera.

5. Adjust the zoom and focus for the center camera to the desired position using the remote control. To obtain the appropriate zoom, place an object with a known size in front of the camera at the participant's distance or at the far edge of the table in front of a participant and zoom in or out until it is the appropriate height on the display.

6. Place another object on the table in front of the camera at the participant's distance or at the far edge of the table at each of the seams between the displays.

7. Adjust the images that appear in the right display. Begin by obtaining the IP address of the left system by pressing the button on the remote control. The user interface appears and shows the IP address. The IP address for the left system appears in the right screen.

8. From a command line prompt, enter the following command:

   ```
   ssh auto@<ip address>
   ```

9. When prompted, enter the password for the system.

10. Enter the following command to obtain a reference of where the camera is currently positioned.

    ```
    get camera position -N 1 -e -V
    ```

    Three values return for the pan, tilt, and zoom position. For example:

    ```
    Pan      Tilt     Zoom
    -43.84   -26.72   33.05
    ```

11. Enter the following command to adjust the pan, tilt, and zoom positions of the camera to align with the center camera.

    ```
    set camera position -N <value> -p <value> -t <value> -z <value>
    ```

    where:

    `-N` <*value*> specifies the camera to control (the value is `1`)

    `-p` <*value*> specifies the absolute pan angle in degrees (the range is -45 to 45)

    `-t` <*value*> specifies the absolute tilt angle in degrees (the range is -30 to 30)

    `-z` <*value*> specifies the absolute zoom position (the range is 0 to 100)

    For example:

    ```
    set camera position -N 1 -p 10.1 -t 0.4 -z 40
    ```

    Note: The camera may not be able to reach the maximum and minimum values for each parameter (for example, sending a command to the camera to pan to -45 may return a value other than -45). This is normal. Due to sensor resolution limits, one of the camera position parameters may change slightly when another position is modified (for example, adjusting the tilt angle may slightly affect the pan position).

    Adjust these values until the test object is aligned on both the center and right displays; you may need to try several values until it appears correctly. If the other systems are idle and a screen saver appears during the adjustments, press any button on the remote control to remove it.

To move the image in the display....	**Adjust this value...**
Left	Increase pan
Right	Decrease pan
Down	Increase tilt
Up	Decrease tilt

    If the value you enter for the camera adjustment is not large enough, the camera will not respond to the change. For example, if the camera is set to position 0.5 on pan or tilt and you change the value to 0.6, the increment is not large enough to invoke a change.

To work around this issue, enter a value for the current setting that is incrementally larger than the value you wish to enter. Then re-enter the value you wish to enter to invoke the change.

When you are finished adjusting the camera, LifeSize recommends that you make note of the pan, tilt, and zoom values.

12. Disable auto exposure on the camera and adjust the brightness of the video image by executing the following commands:

    ```
    set camera autoexposure disable
    set camera autoexposure-gain n
    ```

    where *n* is a number in the range 0-30. The default is 15. Higher values increase video image brightness; lower values decrease video image brightness.

    If the brightness of the video image is not acceptable after adjusting the exposure gain, you can set the exposure integration time by executing the following command:

    ```
    set camera autoexposure-itime n
    ```

    where *n* is a number in the range 0-13. Exposure integration time controls the number of sensor rows in which to accumulate charge for a single pixel in the video image. The default is 5. Higher values increase video image brightness; lower values decrease video image brightness.

    CAUTION: Changing the default for this setting may affect the frame rate of the video. Values 0-5 produce video at 30 frames per second (f/s); values 6-9 produce video at 15 f/s; and values 10-13 produce video at 7.5 f/s. Below 30 f/s, video motion may be choppy. LifeSize recommends that you set this target to a value equal to or less than 5. If the video motion is choppy after setting `autoexposure-itime` to a value other than 5, set it to 5.

    Note: Changing the value of `autoexposure-itime` may require that you change the value of `autoexposure-gain` again to achieve an acceptable level of video image brightness.

13. Repeat steps 7 - 12 for adjusting images that appear in the left display. For step 7, the IP address for the right system appears in the left display.

14. Ensure that all cameras are in focus at the distance where video conference participants will be sitting at the table.

15. Enable telepresence and lock the camera positions. Navigate to **Administrator Preferences : Telepresence** and choose *Enabled* for the **Telepresence** preference and *Locked* for the **HD Camera 1 Movement** preference.

    Note: Locking a camera automatically locks the camera focus and ensures that the focus and exposure settings persist after the camera initializes.

16. Connect the display cable from the left display to the LifeSize codec that is connected to the left camera as you are facing the displays.
17. Connect the display cable from the right display to the LifeSize codec that is connected to the right camera as you are facing the displays.

Adjusting Camera White Balance

To ensure consistent color balancing across all cameras during a call, change the **HD Camera 1 White Balance** preference in **User Preferences** or **Administrator Preferences : Diagnostics : High Definition Camera 1** to a setting other than *Auto* (the default). Ensure that the setting you choose for this preference is the same on all systems.

Installing the Software

Only trained professionals should perform installation and configuration of the software.

Obtaining the Package

To obtain the LifeSize Conference software, go to www.lifesize.com/support/conference_download for instructions on how to download the LifeSize Conference v1.1 .AXW file.

The download site prompts you to save the file `package.zip`. Save this file to your hard drive and extract the .AXW file before you install the software.

Note: If you are upgrading from a previous release, the installation procedure overwrites existing LifeSize Conference software.

Prerequisites

Ensure you meet the following requirements prior to installation:

- The LifeSize Conference software uses AMX port 11. LifeSize recommends that you reserve AMX port 11 exclusively for LifeSize Conference.
- Configure the 7” Modero touch panel as device ID 1001.
- Obtain the NetLinx Studio 2 software, available free of charge from the AMX web site (www.amx.com).
- Note the IP address of the AMX NI-3100.
- Note the IP addresses of each of the LifeSize video communications systems.

Installing the Software Package

To install the software package, follow these steps:

1. Install the NetLinx Studio 2 software.
2. Double click the LifeSize Conference .AXW file.

   NetLinx Studio 2 starts.
3. Follow the prompts to unpack the file.
4. Select **Settings – Master Communication Settings**.
5. Enter the IP address of your AMX NI-3100.
6. Select **Tools – File Transfer**.
7. Select **Add**.

8. Mark the checkbox for **Project** and press **OK**.
9. Verify that the **Reboot** checkbox for the first entry (**LSConference.tkn** file) is marked.
10. Press **Send** to transfer the files and reboot the system.

Configuring the Video Communications Systems

You must individually configure each LifeSize video communications system included in your LifeSize Conference deployment as described in the following sections. The video communications systems included in your LifeSize Conference configuration must be running version 3.5.3 or later software.

Enabling the **Telepresence** preference automatically hides the user interface for each system. To access the user interface, press **OK** on the remote control and log in with your administrator password.

Specifying System Names

LifeSize recommends that you change the default system names to ones that meaningfully identify the system to your users. As well, LifeSize recommends that you name all three systems the same name. If you wish to maintain distinct names, be aware that the name of the left system appears at the far side during a call. Ensure you name this system to appropriately reflect the conference room.

To change the system name, access **Administrator Preferences : System : Identification**.

Enabling Telnet

The LifeSize Conference software controls the LifeSize video communications systems through Telnet. By default, telnet access is disabled. To enable it, navigate to **Administrator Preferences : Security : Remote Administration** on each system. Select **Telnet** and choose *Enabled*.

Configuring AMX Settings

The current date and time appear on the right in the touch panel. During a call, the call timer appears in place of the date. To reset the date and time, follow the directions for your AMX NI-3100.

LifeSize recommends that you disable the AMX default panel sounds for button hit and button miss. To adjust the volume or disable the default panel sounds, follow the directions for your AMX touch panel.

Configuring LifeSize Conference Software

At the bottom of the touch panel, three system status icons display representing each of the LifeSize video communications systems that comprise the LifeSize Conference deployment.

Color	Status
Red	LifeSize Conference does not have a connection to the system.
Yellow	LifeSize Conference is attempting to initialize a connection to the system.
Green	LifeSize Conference has a valid connection to the system.
Blue	LifeSize Conference has a valid connection to the system and a call is connected.

System Configuration

Integrators can configure the LifeSize Conference software from a hidden Configuration menu that is not available to end users on the touch panel. To access this menu, press and hold the **LifeSize Conference** tab at the top left corner of the touch panel for five seconds. Enter the administrator password for LifeSize Conference. (The default is 1234). Press **Done**.

Note: LifeSize recommends that you change this password to prevent users from changing preferences and the administrator and system passwords. Use the **Security** button on the Configuration menu to change the password. The password can be any length, including a blank password (no characters) or any combination of the numbers 0 through 9.

Administrators can also access hidden functionality during a call by pressing and holding this tab. While a call is in progress, pressing and holding the tab displays the **Presentation Input** and **Statistics** buttons even if they are configured to be hidden from the user. Pressing and holding the tab again hides these features if they are configured to be hidden.

To configure system settings, follow these steps:

1. From the **Configuration** menu, select **System**.
2. Touch any field to view the onscreen keyboard for text entry.
3. Enter the IP address for each of the LifeSize video communications systems.
4. Set the **Auto Answer** preference; the default value *Enabled* is recommended.
5. Set the **Presentation Input**. Values are: VGA, HD Camera 1, HD Camera 2, SD1, SD2.

To change the Lifesize Conference administrator or LifeSize system command line interface passwords, follow these steps:

1. From the **Configuration** menu, select **Security.**
2. To change the LifeSize Conference administrator password, select **Administrator** and follow the prompts.
3. To change the LifeSize system command line interface password for all three LifeSize systems, select **LifeSize System** and follow the prompts.

User Access Configuration

To configure user access settings, follow these steps:

1. From the **Configuration** menu, select **User Access**.
2. Enable or hide the **Presentation Input** preference.

   If enabled, the name of the input appears during a call, allowing users to switch from a VGA input to a DVD input, for example.

   If there is only one type of input, you can remove access to this feature by choosing *Hidden* (the default).
3. Enable or hide the **Statistics** preference.

   If enabled, **Show Statistics** appears on the touch panel during a call allowing users to view statistics for each of the video communications systems on the corresponding displays. The default is *Hidden*.
4. Enable or hide the **LifeSize Room** preference.

   If enabled, **LifeSize Room** appears in the lower left corner of the touch panel when the system is idle allowing users to place to place a point-to-point or multipoint call using the center LifeSize Room system to one or more systems that do not support a multi-system telepresence call. When users press the **LifeSize Room** button, the left and right systems go to sleep, telepresence is disabled on the center LifeSize Room system, and

the second camera connected to the center LifeSize Room system becomes the active camera. For more information, refer to “Placing a Call with LifeSize Room” on page 22. The default is *Enabled*.

Directory Configuration

To configure directory settings, follow these steps:

1. From the **Configuration** menu, select **Directory**.
2. Select **New Entry**.
3. In the **Edit** screen, enter values for name, left number, center number, and right number using the onscreen keyboard.

   Note: You must specify values for all number fields to create a valid entry. LifeSize Conference does not attempt to dial an invalid entry.

4. Based on network bandwidth availability, choose a bandwidth for each of the systems for each directory entry using the **Left bandwidth**, **Center bandwidth**, and **Right bandwidth** fields. Ensure that the bandwidth selection is the same for all three fields.

   Note: Each system uses the selected bandwidth during a call. For example, if you select 2000 kb/s, then the bandwidth for a call is 6000 kb/s. Selecting a bandwidth that exceeds network capacity for the participants in a call may result in packet loss.

5. Press **Save** to save the changes.
6. Repeat these steps as needed to create all the required directory entries.

To manage entries in the directory:

- Press **Delete** to remove the current directory entry.
- Press **Move Up** to move the current entry up in the list.
- Press **Move Down** to move the current entry down in the list.

Using LifeSize Conference

After configuring the LifeSize Conference software and creating directory entries, users can begin to use the system. Users interact with the system using the AMX touch panel.

Note: Do not use the LifeSize Phone or LifeSize remote control to adjust the systems. LifeSize recommends that you either remove the remote control from the conference room or otherwise make it inaccessible to users.

Answering Calls

The system automatically answers incoming calls by default. An administrator can configure the system such that auto answer is disabled. Refer to “System Configuration” on page 18. If auto answer is disabled, incoming telepresence calls are indicated on the touch panel. The user accepts or ignores the call by touching the associated button on the panel.

Placing a Call

Users place outgoing telepresence calls by selecting a number from the touch panel. The list of available numbers is pre-established by an administrator (users cannot manually dial a telepresence call.) Refer to “Directory Configuration” on page 20. All three system status icons must be green to place a call. If one or more is not, the panel beeps indicating an error. If a call fails to connect, an error screen appears.

To cancel a call before it connects, users can press the **Cancel** button.

Managing a Call

Once a call connects, the following occurs:

- The Do Not Disturb feature is enabled on all systems. This prevents any other calls from interrupting the current call. The caller hears a busy signal.
- The **In Call** screen appears in the touch panel. The name of the call appears and users can perform any of the following operations:
  - Press **Hang Up** to hang up the call.
  - Press **Mute** to mute or unmute the call.
  - Press **-** or **+** to decrease or increase the volume, or use the volume level bar to adjust the volume.
  - Press **Start Presentation** to begin a presentation.
  - If enabled, press the arrows for the **Presentation Input** field to change the presentation input.

    Note: If you set the **Presentation Input** to an invalid value, for example, if there is no HD Camera 2, it is ignored and remains on the previous value.
  - If enabled, press **Show Statistics** on the touch panel. Statistics for each of the video communications systems appear as an overlay in the call screen on the corresponding displays. Pressing **Hide Statistics** removes the statistics.

Placing a Call with LifeSize Room

LifeSize Conference supports a point-to-point call using all three LifeSize systems and displays with telepresence enabled. To place a point-to-point call to a system that does not support a multi-system telepresence call or to place a multipoint call, users can press the **LifeSize Room** button in the lower left corner of the touch panel.

Note: The **LifeSize Room** button appears by default when LifeSize Conference is not in a call. You can disable this feature and hide the **LifeSize Room** button by selecting *Hidden* for the **LifeSize Room** preference in the User Access screen. Refer to “User Access Configuration” on page 19.

The touch panel shows icons that correspond to icons and functions that appear in the navigation bar of the user interface in the center display. The icons and functions change depending on how users interact with the system. These are the same icons that appear on the LifeSize remote control. Users can obtain more information about using LifeSize Room from the *LifeSize Video Communications System User Guide* and the *Getting Started with LifeSize Video* quick start card. These documents are available on the Support page for LifeSize Room at www.lifesize.com.

Incoming calls must be placed using the video number or IP address of the center LifeSize Room system. An incoming call to the left or right LifeSize system does not connect.

When LifeSize Room is in use, the **LifeSize Conference** button appears in the lower left corner of the touch panel. To return to **LifeSize Conference**, users can press the **LifeSize Conference** button. Pressing the **LifeSize Conference** wakes the left and right LifeSize systems, enables telepresence on the center system, and makes camera 1 the active camera on the center system. Any calls still connected to the center system remain connected until the user dials a LifeSize Conference call.