



LifeSize[®] Communicator User's Guide

Version 1.0

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LifeSize® Communicator Video Calls

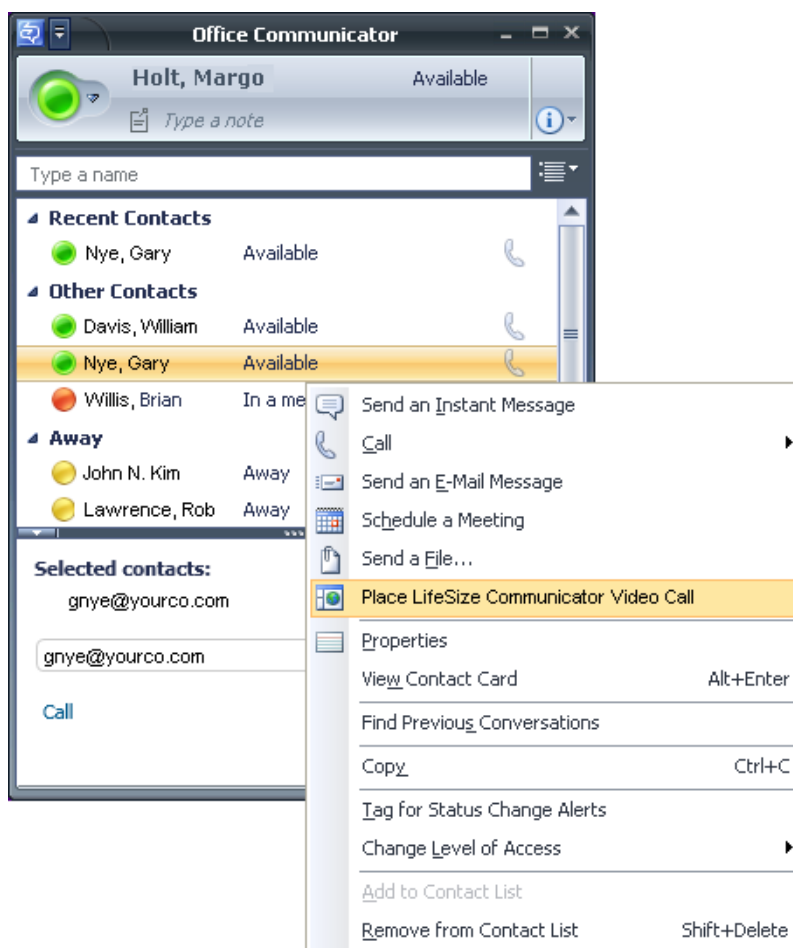
Welcome

LifeSize® Communicator offers clear, crisp high-definition video calls in conjunction with Microsoft Office Communicator. Users can seamlessly participate in video calls to and from other LifeSize® Communicator users and to other standards-based video desktop and conference room (MCU) systems.

LifeSize® Communicator runs on a personal computer with Microsoft Office Communicator installed and running, and a headset or other speaker, a microphone, and a webcam.

Opening LifeSize® Communicator










Start a video call from Microsoft Office Communicator.



The Video Call Window

When you place a call, the LifeSize® Communicator window opens. Below are the main program features and controls:



-  **Full Screen** Expand program window to full screen (page 6).
-  **Picture in Picture** See a small local image in the corner of the remote image (page 6).
-  **Keypad** Open a keypad for entering numbers such as a PIN or extension (page 6).
-  **Volume** Use a pop-up slider to adjust audio output volume (page 7) Click the tool to mute the speaker.
-  **Mute** Mute your microphone (page 7).
-  **Hold** Place the call on hold (page 5).
-  **Transfer** Transfer the call to another contact (page 6).
-  **Hangup** End the call (page 4).
-  **Management Center** Open the Management Center (page 9).

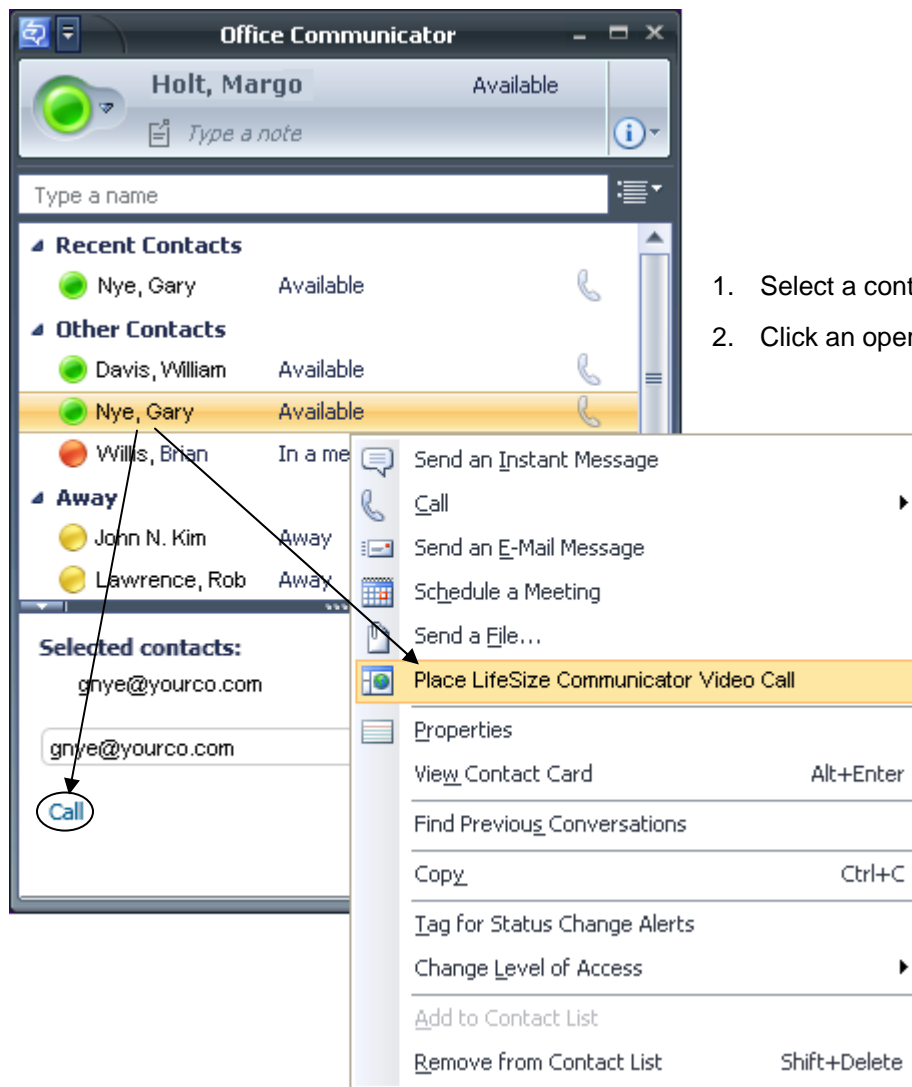
Managing Calls

Starting a Call

1. Open Microsoft Office Communicator.
2. Select a contact. Note that the contact name appears in the LifeSize® Communicator tab at the bottom of your Communicator window.

Now you can place the call in one of two ways:

- In the main Communicator window, right-click the selected contact name. A menu of Office Communicator operations opens. Click **Place LifeSize Communicator Video Call**.
- In the LifeSize® Communicator tab at the bottom of the window, click **Call**.



1. Select a contact.
2. Click an operation.

Either method starts a video call.

If your Contacts list is very large, start typing the name or number you want to call in the **Type a name** field above the list. The list displays matching contacts. Note that you may also type an IP address or hostname into the address field in the LifeSize® Communicator tab. This method is useful for testing the program and for calling a video conference room system.

Ending a Call



To end a call (hang up) click the hangup tool in the toolbar. The call ends. You can also end a call by closing the program window. (Click the **X** in the upper right corner, as you would close any application.)

Receiving Calls

As long as Microsoft Office Communicator is running, even minimized in the system tray, you can receive calls. How you receive a call depends on your answer mode:

- In **Auto-answer** mode, the call simply opens.
- In the default **Identify Caller** mode, an alert pops up from the system tray, and a ring tone plays. You can answer or ignore the call, or you can elect, in a small pop-up window, to redirect the incoming call to an instant message (IM) in Communicator.



In **Block Calls** mode, you receive no call notification, and the caller sees a status message indicating the call is not accepted.

Set the answer mode in the General Preferences dialog in the Management Center (see page 9).

If you are already in a call, you can handle the new incoming call in different ways:

- Answer the new incoming call. Your original call is placed on hold.
- In the pop-up window shown above, redirect the incoming call to an IM.
- The same small pop-up window now lets you merge the calls, so you can create a multi-party call. Your network and your program must be configured to support multi-party calls. See

Conferences on page 13 for information about configuring the program to support multi-party calls.

Inviting Other Users

If your network and your LifeSize® Communicator are configured to support multi-party calls, you can invite additional parties to participate in your video call. The number of users a call can handle depends on your network configuration. Check with your system administrator to find out if this feature is available, and then see *Conferences* on page 13 for information about how to configure the program for multi-party calling.



To expand a two-party call to a multi-party call, click **Invite Users**, at the bottom left of the program window. A list of contacts opens. Click on the party you want to add to the call, and then click **OK**. The program window then displays messages, such as **On Hold**, while the call is connecting. When the added party answers the call, your program window displays both remote parties.

NOTE: At a certain point, the program window cannot display more parties. After that, the program adds parties in audio-only mode.

NOTE: If you are the last party to hang up from a multi-party call, be sure to actually hang up the call. Otherwise, you may keep the call open on the network equipment that handles multi-party calls, thus needlessly occupying network resources. If the call has ended but you have not hung up, you see only yourself in the program window.

Participating in a Video Conference

You can call, and receive calls from, a video conference room system, provided it uses SIP calling protocol. As noted on the previous page, you may type an IP address or hostname into the name field to call a video conference room system. You may need to enter a password or extension with the keypad, described on page 6.

The image that appears in your program window varies according to the type of equipment used in the conference room system. Some systems may show you all the parties in the call; others may show you only the image from the conference room camera. If you see multiple parties, full-screen mode may show them all most clearly.

Holding and Resuming



During an active call, click the Hold tool to place the call on hold. You and the other party can not see or hear each other, but the line is still open. **On Hold** appears at the top of the program window.

Click Hold again to resume the call, or simply hang up to end the call.

Transferring a Call

When you transfer a call, you connect the remote party in your call to a third party. You, then, are no longer in the call.



To transfer the remote party to a third party, click the Transfer tool . A list of your contacts opens. Select the desired contact and click OK. When the third party answers, your call automatically ends, and the call continues between your original caller and the third party.

Managing the Calling Environment

Controlling the Program Window

Changing the Window Size

As with most Windows applications, you can resize the program window by dragging a side or a corner.



Clicking the full screen tool causes the program window to expand to fit your full screen. Click the tool again to return to normal size. This feature is convenient when you are viewing a conference room or all the parties of a multi-party call.

Viewing Picture in Picture



The program window normally shows the party you are calling. To see yourself also, click the Picture in Picture (PIP) tool. Now you see the far-end party in the main window and yourself (near-end) in a small window.

Using the Keypad



When you click the keypad tool, a keypad pops up. Here you can key in numbers if the party you are calling (usually a conference room video calling system) requires an extension number or a password. As you position the cursor on a number and click, numbers and symbols appear in the field at the top of the keypad.

NOTE: Numbers you enter are transmitted in real time, as part of your video call. If you type a wrong number, end the call and start over again.

When you are connected to a multi-party call (often involving a conference room system), pressing 5 on the keypad switches the calling window among available views of the parties in the call; that is, two-party, three-party, etc.

Controlling the Audio

The toolbar has two audio output controls:



Click to adjust the volume of the incoming call. A volume slider pops up. You can also adjust volume in the Audio/Video Settings tab of the Management Center (see page 10).



Click to mute your microphone. You can still hear your caller, but the caller cannot hear you. A slash appears across the microphone tool to remind you that your microphone is muted. Click the tool again to unmute.

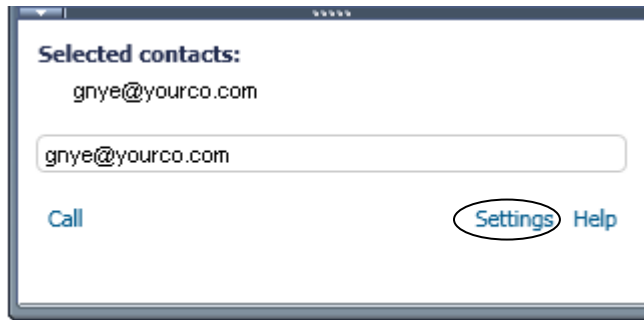
Closing the Program

As with most programs, clicking the small **X** in the upper right corner of the program window closes the window and ends an active call. The program continues running, however, as long as Microsoft Office Communicator is running.

Configuration

Configure operating parameters for LifeSize® Communicator in the Management Center.

You can open the Management Center in two ways:



- Click **Settings** in the LifeSize® Communicator tab at the bottom of the Microsoft Office Communicator window.

This tab appears on the bottom of the Communicator window when LifeSize® Communicator is installed.

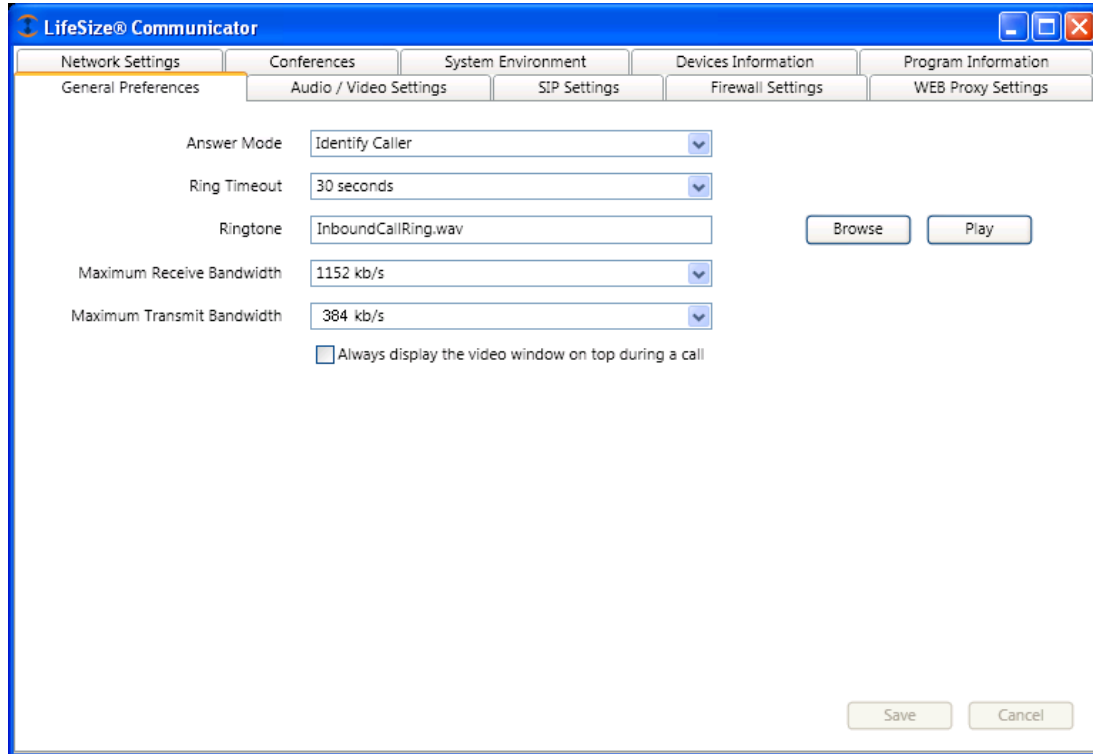


- Click the **Management Center** tool on in the LifeSize® Communicator toolbar.

The first time you open it, the Management Center opens with the General Preferences tab on top. When you return to the Management Center, it opens to the last viewed tab.

General Preferences

This is the default opening tab of the Management Center. Here you set your personal video calling preferences:



Most of these parameters are obvious and self-explanatory; you can experiment with the settings to determine your preferences.

Answer Mode

Select Auto-answer, Identify Caller (default mode), or Block Calls. See *Receiving Calls* on page 4 for a description of each mode.

Ring Timeout

This is the number of seconds (10, 20, 30) an incoming call rings to alert you when you are in Identify Caller answer mode.

Bandwidth Maximum Speeds

These two parameters are primarily of concern in home office and similar environments. Performing a speed test on your network may help you to determine the best settings. Numerous speed tests are available from the Internet, such as <http://www.speedtest.net/>.

Receive

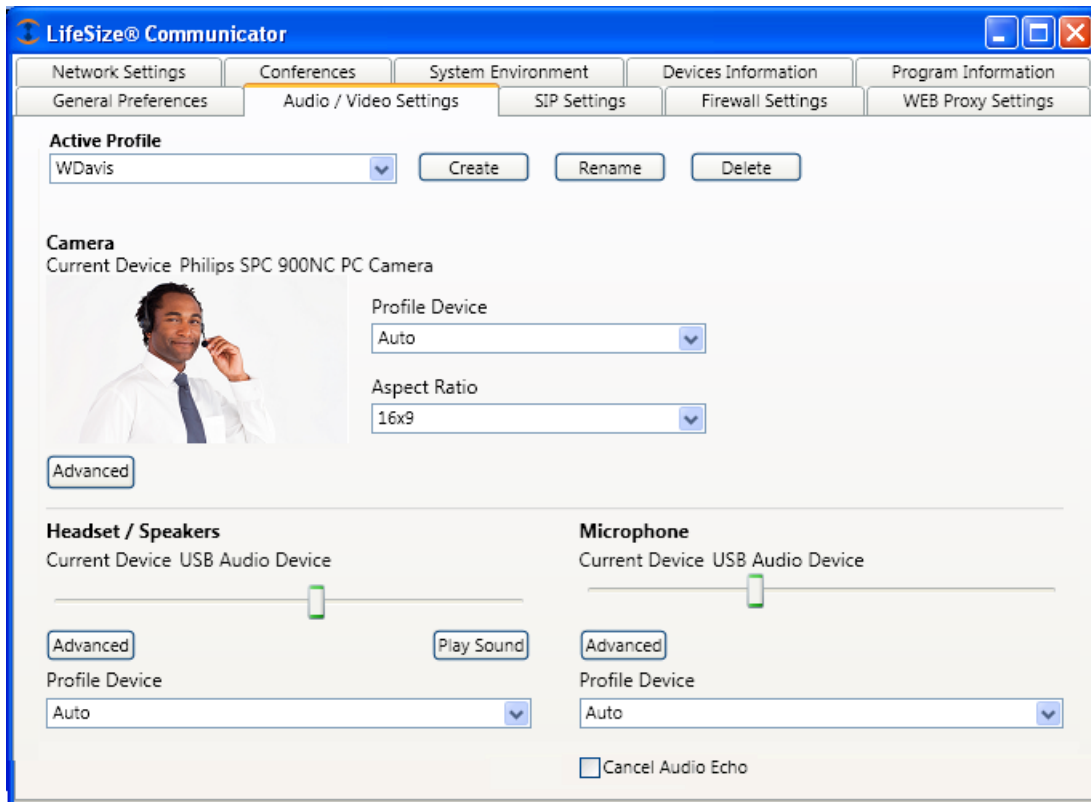
Your Maximum Receive Bandwidth is the highest speed that your particular network connection can achieve. Default setting is 1152 kbps.

Transmit

The call data transmission speed is negotiated between the two video system in a call, so even if your transmission speed is set to a high number, the call data speed may be lower if the other party's system cannot support a high speed. Default setting is 384 kbps.

Audio/Video Settings

Set parameters for your audio devices and camera here. Some options lead to your operating system audio/video setting dialogs, and other options open configuration windows for your specific device.



Active Profile

The Active Profile field shows the name of the profile for the camera and audio devices that you are currently using, with their chosen settings. The default Auto profile is a baseline profile that can be edited but cannot be deleted.

You can have more than one profile, so that you can easily switch between profiles if you want to switch between sets of devices. For example, you may use your notebook computer at the office with one set of devices (such as a speaker and microphone) and at home or while traveling with a different set of devices (different camera and a headset). You can Create, Rename, and Delete profiles.

Devices: Current vs. Profile

Note that for the Camera and for the Headset/Speaker and Microphone, the current device (device now in use) is shown beneath the device heading, and a pull-down menu of installed devices lets you name the Profile Device.

The *profile device* is the default device for the current Active Profile. Your computer automatically selects this device, if it is available, when you select a profile. For example, you may have multiple devices of one type (audio output, perhaps) connected to your computer. Naming one as the profile device ensures that the program always selects that device, if it is available, when you select the profile where it is named as profile device. Or, if, for example, you are frequently connecting and disconnecting a headset to test it, you can create a profile named Test and name the headset you are testing as the profile device, thus ensuring that LifeSize® Communicator uses the headset each time you plug it in, instead of using your computer's sound card or other default device.

Selecting a Profile Device

Install all devices that you may want to use, following the manufacturer's instructions for each device. For each type of device (camera, audio input, audio output), select your profile device from the pull-down menu of installed devices.

Now the program always selects the profile device when it is available. When the profile device is not available, LifeSize® Communicator selects the Windows default device. (You can manage the Windows default device in the Advanced dialog for each device type.)

The default profile device is **Auto**. Many users have just one device of a given type in each different working environment. In such a case, LifeSize® Communicator automatically uses the one available device, and there is no need to select a profile device.

Audio Echo

You may need to enable the Cancel Audio Echo feature if other users complain that they hear an echo when calling you, and you are using the microphone built into a camera. If enabling echo cancellation

doesn't fix the problem, we recommend that you use a headset. (If you are using a headset, or a speakerphone device with hardware echo canceling, then you should not need echo cancellation.)

Note that enabling echo cancellation is effective primarily with Windows XP. Windows Vista or Windows 7 users who encounter a problem should use a headset or standalone speakerphone box, not a camera microphone.

NOTE: The default **Auto** profile always reverts to echo cancellation disabled. To permanently use echo cancellation, create a named profile and enable it in the profile.

SIP Settings

You must register with the SIP server before you can successfully make video calls. Items starred in red are required.

The screenshot shows the 'SIP Settings' tab in the LifeSize Communicator application. The window title is 'LifeSize® Communicator'. The tabs at the top are: Network Settings, Conferences, System Environment, Devices Information, Program Information, General Preferences, Audio / Video Settings, SIP Settings (selected), Firewall Settings, and WEB Proxy Settings. The SIP Settings section contains the following fields and options:

- Display Name: Hunt, Margo
- IP Address: 172.16.12.32
- SIP URI: mhunt@yourco.com
- Status: Registered (with a 'Register' button)
- Register with SIP server (indicated by a red star)
- Registrar: sip.yourco.com (indicated by a red star)
- Custom Port: 5060
- Username: (empty field)
- Password: (empty field)
- Use Outbound SIP Proxy (indicated by a red star)
- Proxy: sip.yourco.com (indicated by a red star)
- Custom Port: 5060

At the bottom right, there are 'Save' and 'Cancel' buttons.

LifeSize® Communicator automatically enters your Display Name, IP Address, and SIP URI, using your Microsoft Office Communicator ID, the IP address of your computer, and your Windows login name.

After you check the boxes and enter information, click Save to save your values and automatically register. The Register button in the Status window is only if, for some reason, you need to reregister.

Register with SIP Server

Ask your network administrator the name of the SIP server, and enter it in the Registrar field. The default value for Custom Port is 5060. Your administrator should tell you the Username and Password, if one is needed.

Outbound SIP Proxy

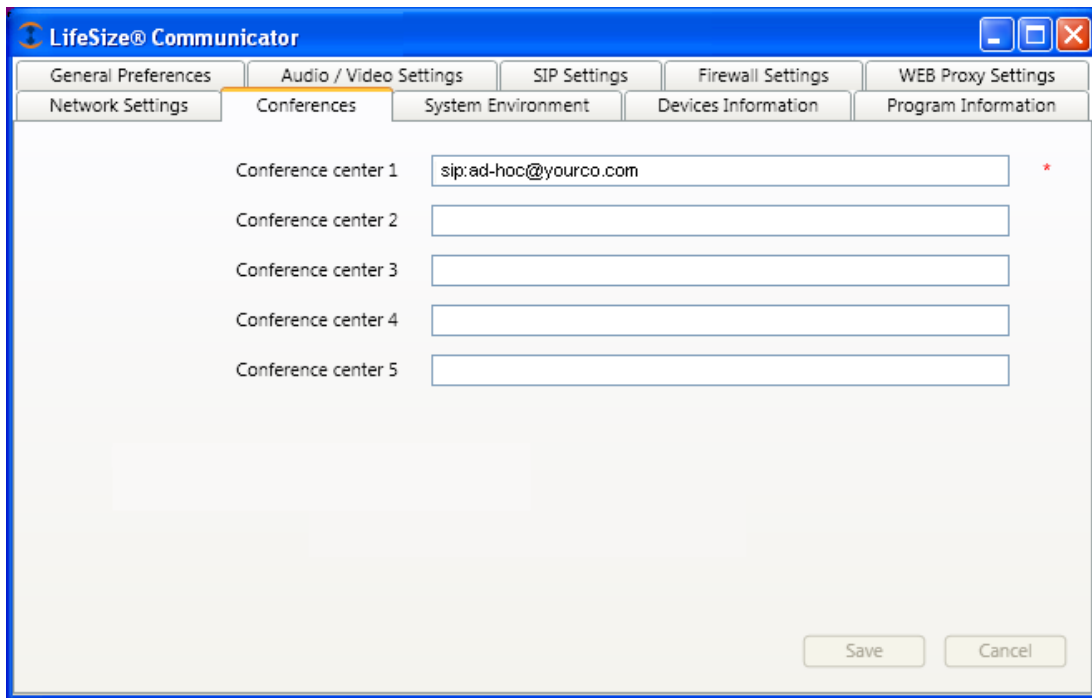
If your network has a SIP server and you check Use Outbound SIP proxy, outbound calls are directed through a SIP proxy server instead of the (default) Registrar server. The default value for Custom Port is 5060.

Whether or not to check Use Outbound SIP proxy depends on the location of the SIP server. If it is inside your firewall, enable (check) Use Outbound SIP proxy. If your SIP server is outside your firewall (in the "Internet cloud"), and you are enabling firewall traversal, do not check the box.

Ask your system administrator for information about SIP registration and proxy use.

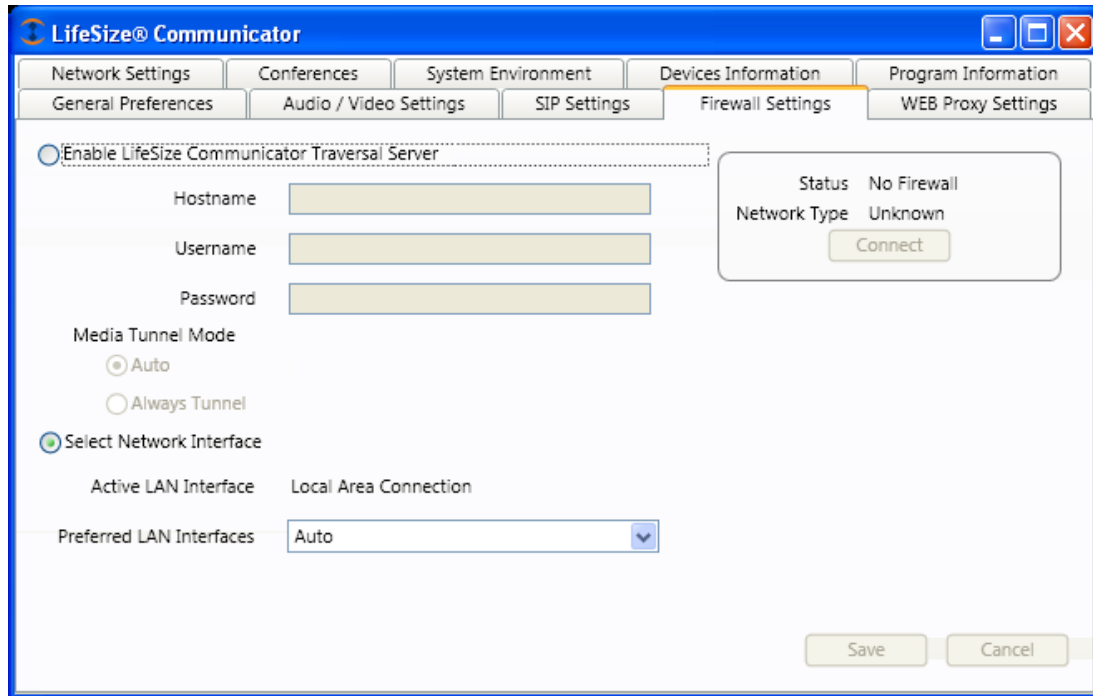
Conferences

A conference center URL is necessary if you want the ability to place multi-party calls (Invite Other Users) whenever desired (ad hoc). Ask your system administrator for the URL of one or more conference centers.



Firewall Settings

Enabling firewall traversal is advisable only in certain situations. Your system administrator can advise you about whether or not you need firewall traversal.



NOTE: You must register with a SIP server if you register with a firewall traversal server.

1. Check **Enable LifeSize Communicator Traversal Server**.
2. Enter the Hostname. You probably need to ask your network administrator for this information.
3. Enter the Username and Password for a firewall server account. Again, you probably need to ask your network administrator for this information.
4. When you select Auto for **Media Tunnel Mode**, the program software attempts to find the shortest media path, but Always Tunnel can be more reliable on some networks. If you are experiencing video problems, try changing from Auto to Always Tunnel.
5. Check **Select Network Interface** and enter parameters to tell the program which LAN interface to use for its traffic. *This option disables firewall traversal.* It is especially useful if the corporate LAN

interface is not the default network route, as may be the case when split tunnel VPN is used in your enterprise network.

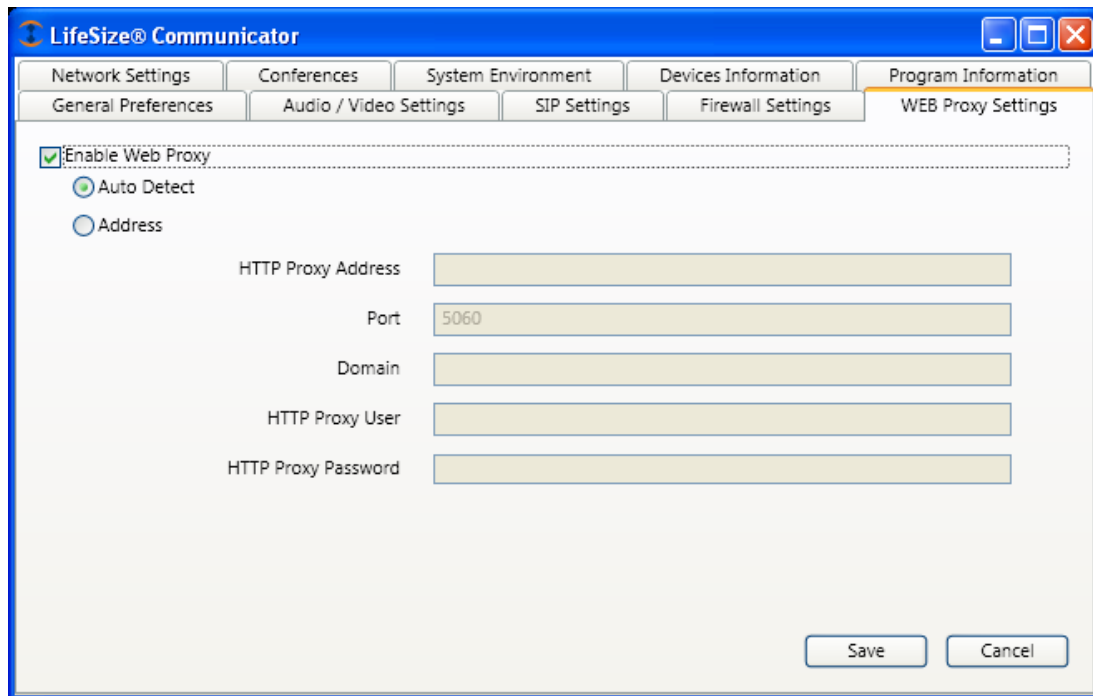
6. Save your settings.

The Cancel button returns to your previous settings, if you have not yet attempted to use (Connect) the new settings.

The box in the upper right shows your firewall connectivity status and has a Connect button that you can click if you have, for one reason or another, lost connectivity.

Web Proxy Settings

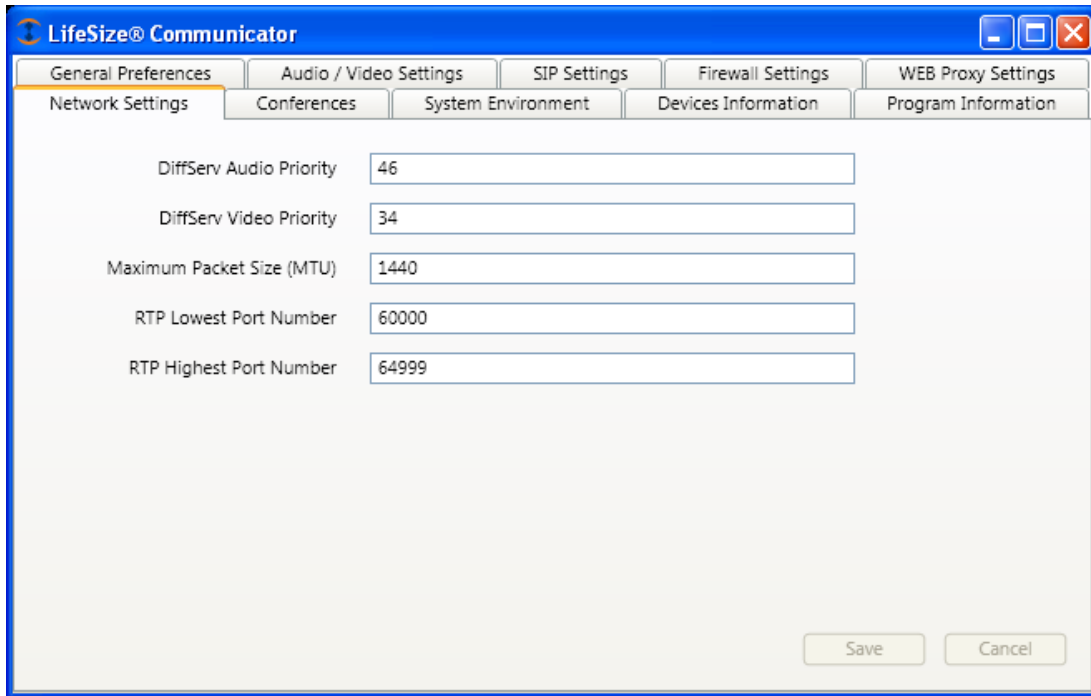
Some networks with very high security needs (e.g., financial institution networks) require the use of a web proxy server for video communication over the Internet.



In such cases, your system administrator should let you know that you need to enable a web proxy in this screen. He should also tell you how to fill in the fields in this screen.

Network Settings

Do not adjust any of these settings without specific instructions from your system administrator.



The screenshot shows the 'LifeSize® Communicator' application window with the 'Network Settings' tab selected. The window has a blue title bar and standard Windows window controls. The 'Network Settings' tab is active, showing five configuration fields with their current values:

Setting	Value
DiffServ Audio Priority	46
DiffServ Video Priority	34
Maximum Packet Size (MTU)	1440
RTP Lowest Port Number	60000
RTP Highest Port Number	64999

At the bottom right of the dialog, there are 'Save' and 'Cancel' buttons.

Technical Data

This section covers procedures and issues that relate to the LifeSize® Communicator client program.

System Prerequisites

The specifications listed below assume that your computer network is configured with LifeSize® Communicator software to support video calling.

System Specifications

Host system specifications for LifeSize® Communicator are quite simple:

1. Microsoft Office Communicator is installed.
2. Microsoft .NET Framework 3.5 SP1 is installed. This requirement may be an issue with older computers running Windows XP; Windows Vista and Windows 7 include this program.
3. Audio and video devices are installed. See the next section for device specifications.

Audio/Video Device Specifications

LifeSize® Communicator software requires a third-party web camera and audio input and output devices. These audio and video devices must be installed and properly connected to the host computer.

The following table shows the minimum requirements for these peripheral devices:

Resource	Requirements
Camera	Resolution: 320 x 240 Color space: I420 or YUY2 Frame rate: at least 10 fps Must have own driver or support Windows UVC driver
Audio input/output device(s)	DirectSound-compatible input and output devices capable of 16-bit mono or stereo sound at 16,000, 32,000, or 44,100 samples per second.

LifeSize recommends using a headset for the audio input and output device.

Installation and Licensing

This section tells how to install LifeSize® Communicator and activate its license.

In many cases, your system administrator already will have installed and licensed the program. However, some small- and medium-sized businesses may need to install and license the program on a per-machine basis.

Installation

Running LifeSize® Communicator on Windows 7 or Windows Vista Systems

Before you install LifeSize® Communicator on a PC that is running the Windows 7 or Windows Vista operating system, turn off Administrator mode for Microsoft Office Communicator:

1. Right-click on the Microsoft Office Communicator shortcut, which may be on your Desktop or in the list of programs in the Start Menu.
2. In the menu that opens, select **Properties**. In the Properties dialog, click the **Compatibility** tab:



3. Ensure that the checkbox for **Run this program as an administrator** is NOT checked.

Running the Installation Program

The installation program is LifeSizeCommunicator.**msi**. You may run the program on the host computer or from a remote network location.

The installation program is a standard Windows installer application. The only selection available to the installer is the location of the program files. The program suggests a default directory, but you are free to select or create another.

Restart the computer after installing LifeSize® Communicator client software.

Licensing

LifeSize® Communicator client software includes a 30-day trial license. Therefore, the program need not be licensed at the time of the initial installation. Each instance of LifeSize® Communicator client software must be licensed within 30 days of installation.

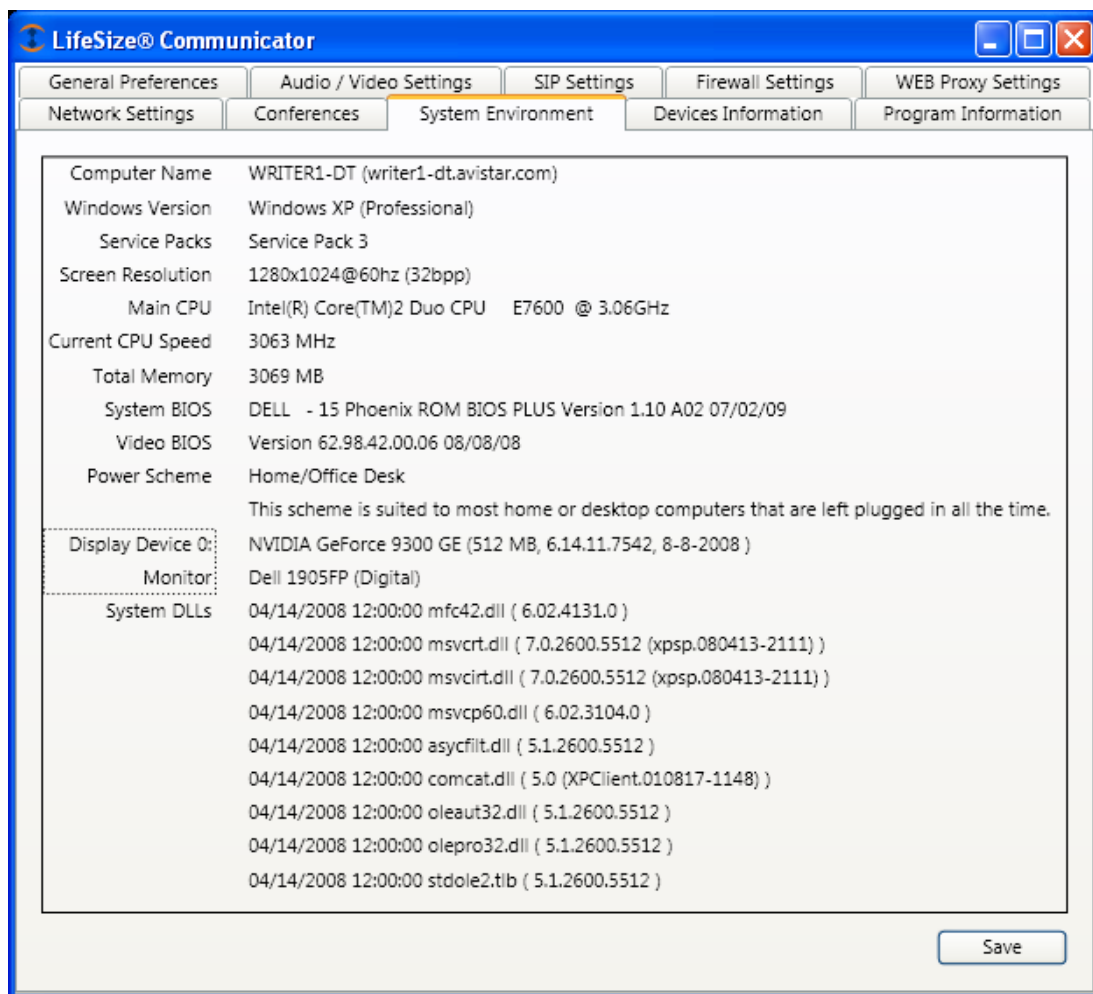
When you decide to license your program, place the text file **license.txt** in the *same directory* as the program file, LifeSizeCommunicator.**exe**. The next time you start LifeSize® Communicator, it reads the license code from the text file, and your program is licensed.

System Monitoring and Performance Information

LifeSize® Communicator offers several screens that let you monitor system activity and check on system statistics. Data from the three information screens in the Management Center is concatenated into one file, **SystemEnvironment.txt**. Your system administrator can use this file for diagnostics and troubleshooting.

System Environment

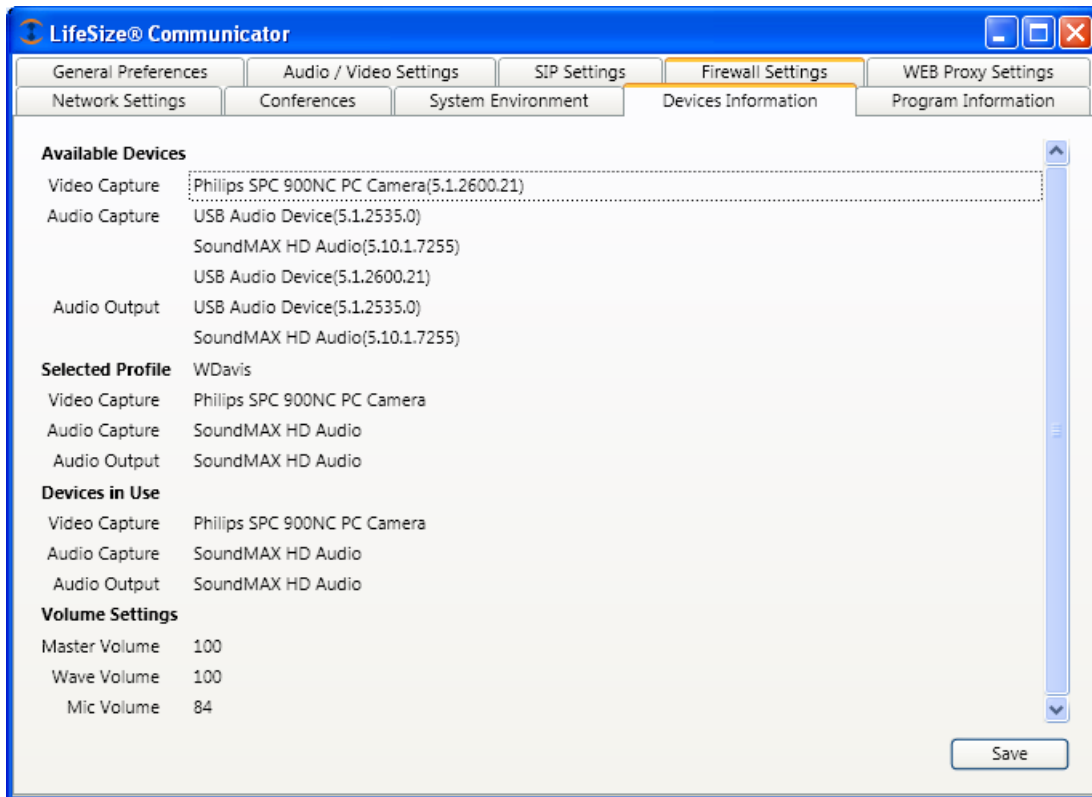
This screen contains information about your system. Data here can help your system administrator improve performance or diagnose and troubleshoot problems.



When you click Save, a dialog opens where you can save this information to a text file named **SystemEnvironment.txt**, whose location you are prompted to select.

Devices Information

This screen contains information about your audio and video devices. You can change audio and video settings in the Audio/Video Settings dialog on page 10. When you click Save, a dialog opens where you can save information about the system environment and devices to a text file, whose default name is **SystemEnvironment.txt** and whose location you are prompted to select. Data from this screen is concatenated with data from the System Environment and Program Devices screen in the text file.



Program Information

This screen shows information about your copy of LifeSize® Communicator. Do not click on **Deactivate License** without direction from your system administrator.

The screenshot shows the 'LifeSize® Communicator' application window with the 'Program Information' tab selected. The window contains several sections of information:

- LifeSize® Communicator Information:**
 - Product Name: LifeSize® Communicator
 - Version: 1.0.0.11
 - Date: 05/11/2010 03:59:16
 - Path: C:\Program Files\LifeSize\Communicator\LifeSizeCommunicator.exe
 - License Key: 258000-000012-382513
 - ID: 11184153951443916730853881910681
- Windows DirectX Version:**
 - DirectX Version: DX9.0c, 4.09.00.0904, Overlay OK
 - ddraw.dll: 04/14/2008 12:00:00, 5.03.2600.5512 (xpsp.080413-0845)
 - d3d9.dll: 04/14/2008 12:00:00, 5.03.2600.5512 (xpsp.080413-0845)
 - d3d8.dll: 04/14/2008 12:00:00, 5.03.2600.5512 (xpsp.080413-0845)
- Program DLLs:**
 - 05/11/2010 03:59:00 MediaEngine.dll (1.2.0.d.39)
 - 05/11/2010 03:55:18 libeay32_0.9.8l.dll (1.2.0.d.39)
 - 05/11/2010 02:01:22 libssl.dll (1.2.0.d.39)
 - 05/11/2010 02:00:52 rtcSdk.dll (4.0.1-0023)
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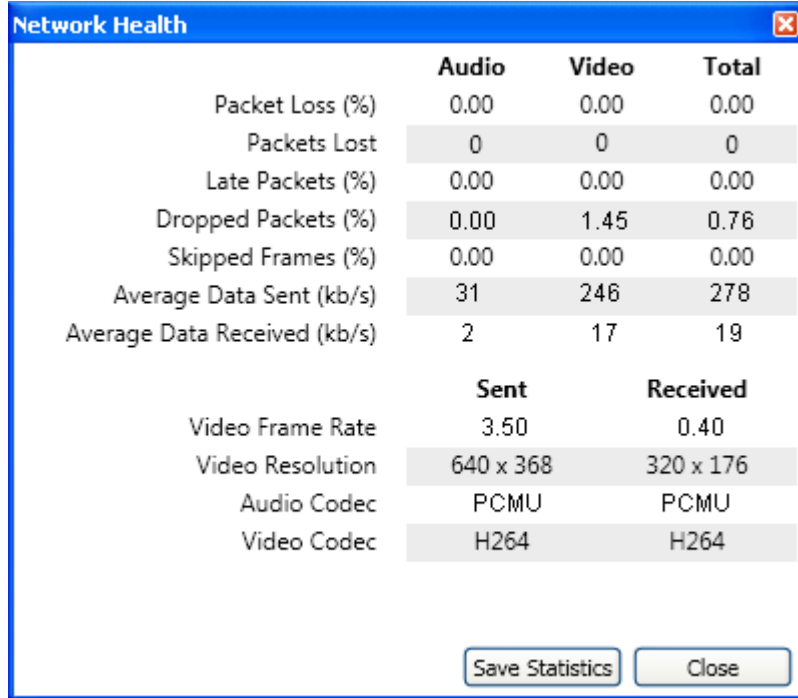
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Network Health



The Network Health tool is available during a call. When you click the tool, a Network Health window opens:

A screenshot of a software window titled "Network Health" with a blue title bar and a close button. The window contains a table of network statistics. The table has columns for "Audio", "Video", and "Total". The first section lists various metrics like Packet Loss, Dropped Packets, and Average Data Sent/Received. The second section lists Video Frame Rate, Video Resolution, Audio Codec, and Video Codec, with sub-columns for "Sent" and "Received". At the bottom right, there are two buttons: "Save Statistics" and "Close".

	Audio	Video	Total
Packet Loss (%)	0.00	0.00	0.00
Packets Lost	0	0	0
Late Packets (%)	0.00	0.00	0.00
Dropped Packets (%)	0.00	1.45	0.76
Skipped Frames (%)	0.00	0.00	0.00
Average Data Sent (kb/s)	31	246	278
Average Data Received (kb/s)	2	17	19
	Sent	Received	
Video Frame Rate	3.50	0.40	
Video Resolution	640 x 368	320 x 176	
Audio Codec	PCMU	PCMU	
Video Codec	H264	H264	

Values in red indicate possible problems with the network. Click **Save Statistics** to write the values to a text file whose default name is **call_statistics_<date>.txt**. Your system administrator may want this file for diagnostic and troubleshooting purposes.

Optimizing Performance

Making the Best Impression

The following suggestions can help you present the best, clearest possible sound and image to your colleagues.

Lighting

Adequate lighting is important for image clarity. Most cameras are designed for use in moderate to bright lighting situations such as you might find in a standard office environment, with comfortably bright lighting. No special lights are required; however, offices kept darker than normal (as is sometimes the case for viewing color presentations) may not have enough ambient light to provide a clear image.

In addition to quantity of light, consider the direction and reflections.

For instance:

- Try not to position yourself with your back to a window. The extra light coming in behind you can make the camera underexpose your face, losing image clarity and details. Make sure there is more light in front of you than behind you.
- If you wear glasses, make sure that the primary light source is at an angle, not straight in front of you. Strongly directional light sources from straight ahead can cause full-width reflections across the lenses of your glasses.
- Watch out for glare from picture frames, glass cabinets, whiteboards or even posters with reflective surfaces. Stray reflections can cause flares on the video image and make it difficult for your caller to see you.
- If possible, pick a good, neutral background for your image. This may not always be possible in the standard office environment, in which you may be sitting in front of your office wall, your cubicle partition, or even the back of your neighbor's computer in an open-floor office. But the fewer distractions you can put behind your own image, the clearer your message is at the other end of the conversation.

Camera Focus

Your camera should give good image clarity to nearby subjects. You also need to make sure that your camera is aimed properly and located a suitable distance from your normal working location at your computer.

During camera testing, large variations in the native zoom of web cameras were found. In general, webcams for laptops expect a user to sit close to camera, whereas desktop cameras expect the user to sit further away.

Some other things to remember for video conferences:

- Consider where you aim the camera. One way to get the camera aligned properly is to enable Picture in Picture mode, or view your image in the Audio/Video dialog in the Management Center. Then align the camera until it lets you sit in a natural, comfortable location in front of your computer. Sit relatively close to the camera to get the sharpest focus. If necessary, adjust the focus until you are satisfied with the sharpness of your image.
- Make sure you are always in position. Framing your image correctly makes your video more effective. Try to put yourself in the center of the frame. Directors sometimes put tape marks on a stage so that the actors know where to stand for the camera. Take note of where your desk chair should be in relation to the camera.
- Remember that left and right are not mirrored in the video image – what you see is the view that someone else would have while standing in front of you. This can be disconcerting until you get used to it. (To see what this means, view your image and then try to brush or comb your hair.)

Sound

Setting Volume Levels: The best way to set volume levels to your own preference is to start a video conference and make adjustments while talking to the other party. Adjust the volume with the volume slider on the tool bar.

Muting Sounds: Toggle the mute button in the tool bar. Do NOT disconnect your microphone to ensure audio privacy. Disconnecting confuses echo cancellation circuits and causes noise bursts.

Performance Issues

Check Your Cables First

Many problems come about when cables are loosened or unplugged by accident, or plugged into the wrong socket. Be particularly suspicious of connection integrity if you lose audio but still have video, or if you lose video but still have audio. Whenever you have a problem with transmission or reception of video images through your video network,

first check all the cable connections to make sure that they are not loose, disconnected, or plugged into the wrong socket.

As a general suggestion, try to locate your hardware (camera, audio devices) just as you would any electronic equipment: in a spot where the cables are protected from accidental disconnection, yet where you can get to them if you need to move, maintain, or upgrade your workstation.

Supporting High Definition Video

LifeSize® Communicator can support video calls in high-definition (HD) video. The program measures the speed of your computer and then encodes HD video if the camera, the host computer, the bandwidth setting and the remote endpoint support high-definition specifications.

In addition to a high-speed computer, HD encoding requires that the camera must support HD capture at a minimum of 23 frames per second, and the bandwidth must be set at ≥ 1024 kbps.

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