LifeSize® Desktop™ Installation Guide

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Welcome to LifeSize Desktop

LifeSize Desktop is a standalone client that provides two-way video calling to other LifeSize systems and other standards-based video devices. LifeSize Desktop is a SIP-based video conferencing application that uses standard SIP signaling; however, you can call directly even if not registered with a SIP server.

Note: For the most current product information refer to lifesize.com/support.

System Requirements

Ensure your environment meets the following specifications.

Operating Systems	Microsoft Windows 7 Home Premium, Professional, and Ultimate, 32- and 64-bit versions Microsoft Windows Vista SP1, Ultimate, Business, and Enterprise, 32- and 64-bit versions Microsoft Windows XP SP2, SP3, 32-bit version
CPU	*Standard definition*: Pentium 4, Pentium M, or equivalent, 1.8 GHz *HD receive and VGA transmit*: Dual Core, 2 GHz *HD receive and HD transmit*: Dual Core, 2.8 GHz
Memory	1 GB
Disk Space	100 MB
Software	Microsoft .NET 3.5, SP 1 or later DirectX v9 or later

Setting up Your Environment

On most routers no changes are necessary. On some, you must open certain ports to enable SIP. The default ports are 5060 and 60000 - 64999. LifeSize recommends VPN or LifeSize Transit for firewall traversal. Refer to the LifeSize Transit documentation at lifesize.com/support.

Managing Licenses

You can deactivate your license on one computer and reuse it for another installation. For example, you might deactivate the installation at your office to reuse it at home. Open the Management Center and select **Environment : About** to deactivate your license.

Installing LifeSize Desktop

1. Access the product page for LifeSize Desktop at lifesize.com/products/LifeSize_Desktop.
2. Click **Download LifeSize Desktop**.
3. Complete the registration form and click **Download Now**.

   The download process automatically begins.
4. Run the installer.

   The first time you install the software, you are prompted for a local installation directory and your activation code.

   If you have installed the 30-day trial version, you are required to enter an activation code after 30 days.

Activating LifeSize Desktop Across the Enterprise

Note: If LifeSize Desktop is part of the hard drive image that you use for enterprise deployments, ensure that LifeSize Desktop is deactivated or uses a trial license. This action prevents the cloned PC user from receiving licensing errors.

If you are an administrator installing LifeSize Desktop on multiple PCs, you can activate LifeSize Desktop by creating a text file that includes the activation codes. If you are including multiple activation codes, separate each code with a newline character. If required in your environment, the final line of the file may contain the URL for the HTTP proxy that enables authorization.

Name this file **license.txt** and place the file in the same directory as **LifeSizeDesktop.exe**. After installation and when LifeSize Desktop starts the first time, the application will use the code for activation.

Note: You can use LifeSize Control to manage LifeSize Desktop preferences remotely. Refer to “Integrating LifeSize Desktop with LifeSize Control” on page 13.

Upgrading LifeSize Desktop

Download the latest software the same way you downloaded and installed your current software. If your maintenance agreement is current, LifeSize Desktop automatically reactivates the new version with your current activation code.

Configuring LifeSize Desktop

LifeSize Desktop can receive and transmit H.264, H.263+ (H.263-1998), and H.263++ (H.263-2000) encoded video formats. The application is limited by the available resolutions, aspect ratios, and frame rates of your camera, USB bandwidth, and CPU resources.

Use the Management Center in LifeSize Desktop to configure the application. The following table summarizes available preferences and lists default values at initial installation. For more information, refer to the Help within the application.

Open the Management Center by clicking from the LifeSize Desktop window.

Note: Before making changes, consult your system administrator.

System Default Values

The following table describes the default values of each of the preferences in the Management Center.

Preference	Default Value
Address Book	
Directory of caller data that you can edit. Names in your Contact list automatically populate your Address Book. You can also transfer entries from the Global Directory to the Address Book.	N/A
Global Directory	
A Global Directory contains the caller data for all contacts in your network whom you can call from LifeSize Desktop. This directory is read-only and is accessed through LDAP servers.	N/A
General. Lets users specify their calling preferences.	
Answer Mode Choose from *Identify Caller*, *Block Calls*, and *Auto Answer*.	Identify Caller

Preference	Default Value
Incoming Call Ring Timeout	20 seconds
Ringtone	InboundCallRing.wav
Preferred Receive Bandwidth Specify the preferred bandwidth for the incoming call speed. Refer to “Call Bandwidth” on page 12.	512 kb/s
Preferred Transmit Bandwidth Specify the preferred bandwidth for the outgoing call speed. Refer to “Call Bandwidth” on page 12.	384 kb/s
Number of records in Call History	50
Start LifeSize Desktop when starting Windows	Enabled
Always display on top during a call	Disabled
Cancel audio echoes when using analog speakers and microphone	Enabled
Audio/Video : Devices LifeSize Desktop automatically detects the type of devices (headset, speakers, camera, microphone) currently in use.	
Active Profile The Active Profile field displays the name of the profile for the camera and audio devices that you are using. You can define more than one profile to switch between them when relocating. Changes take effect immediately.	Auto
Profile Device	Auto
Aspect Ratio Transmit either a 4x3 or a 16x9 aspect ratio. If you resize the application window, and the aspect ratio of the video window for a call differs from the LifeSize Desktop window, the video display is maximized and retains its aspect ratio, with the remaining area appearing black.	16x9

Preference	Default Value
Audio/Video : Data Sharing While in a call, LifeSize Desktop lets you receive and transmit a second video stream. Refer to “Configuring Data Sharing” on page 12.	
Send Data Using	Data Sharing Channel
Video Bandwidth Balance	Favor Video
Communications : SIP	
Display Name	N/A
Register with SIP server Large networks may use a SIP server to enable users within the network to call each other more easily. When you register with a SIP server, other callers on the network can call you using a SIP URI (*username@domain*).	Disabled
SIP URI	N/A
Registrar	N/A
Username	N/A
Password	N/A
Use Outbound SIP Proxy You can use an outbound SIP proxy to call another registered participant using their SIP URI.	Disabled
Proxy	N/A
Enable TCP Transport	Disabled
Enable TLS Signaling With TLS signaling enabled, LifeSize Desktop attempts to establish an encrypted call during call setup. Refer to “Enabling Call Encryption” on page 13.	Enabled

Preference	Default Value
IP Address	N/A
TLS Address	N/A
Communications : Firewall	
Enable LifeSize Transit Firewall Traversal Allows users to place video calls to other desktop users behind the enterprise network firewall when away from the office. LifeSize Desktop traverses firewalls when configured for use with a LifeSize Transit server. You cannot choose a network interface for VPN connection if you have enabled LifeSize Transit firewall traversal. You must choose one option or the other.	Disabled
Transit Hostname	N/A
Username	N/A
Password	N/A
Media Tunnel Mode	Auto
Select Network Interface	Enabled
Active LAN Interface	N/A
Preferred LAN Interfaces Specify the network adapter to use LifeSize Desktop through a VPN connection. You cannot choose a network interface for VPN connection if you have enabled LifeSize Transit firewall traversal. You must choose one option or the other. If LifeSize Transit is enabled, the default network adapter will be used.	Auto
Communications : Web Proxy Enables networks with high security needs to use a web proxy server for video communications over the Internet. You must enable LifeSize Transit firewall traversal to enable a web proxy.	
Enable Web Proxy	Disabled
Auto Detect	Enabled

Preference	Default Value
Address	N/A
HTTP Proxy Address	N/A
Port	N/A
Domain	N/A
HTTP Proxy User	N/A
HTTP Proxy Password	N/A
Administration : System Management Refer to “Integrating LifeSize Desktop with LifeSize Control” on page 13.	
Enable LifeSize Control	Disabled
Control Server	N/A
Update Frequency (minutes)	30
Last Connect Time	N/A
Password Specify a password to restrict write access to preferences in the Communications and Administration areas of the Management Center. With a password set, users may view all screens but not make changes unless they log in. You may set a password even if you do not enable LifeSize Control.	N/A
Administration : LDAP LifeSize Desktop is based on Microsoft’s .NET framework and uses port 5060 for SIP server communication and port 389 (unless changed during installation) for inbound communication with the LDAP server. You can accept the default port if not already in use, or specify a different port for the server to use. Ensure that any firewalls that are installed are configured to allow incoming traffic on this port.	
Enable LDAP Directory	Disabled
LDAP Server Hostname	N/A

Preference	Default Value
Port	389
Authentication Type	None
LDAP User Name	N/A
LDAP Password	N/A
LDAP Base	N/A
LDAP Filter	N/A
LDAP Refresh Interval	Never
Administration : Network Specify network Quality of Service (QoS) settings according to the settings used in your network. You can also specify the port numbers for Real Time Protocol (RTP). RTP data is carried on an even UDP port number. Applications may use any such UDP port pair. For example, the port pair may be allocated randomly by a session management program. You can specify the lowest and highest port numbers for RTP on this page.	
Maximum Receive Bandwidth Specify the maximum bandwidth for the incoming call speed. Refer to “Call Bandwidth” on page 12.	1152 kb/s
Maximum Transmit Bandwidth Specify the maximum bandwidth for the outgoing call speed. Refer to “Call Bandwidth” on page 12.	1152 kb/s
DiffServ Audio Priority	46
DiffServ Video Priority	34
Maximum Packet Size (MTU)	1440
RTP Lowest Port Number	60000
RTP Highest Port Number	64999

Preference	Default Value
Call Statistics	
Identifies packet and frame information for audio, video, and data during a call. Values for the call's video frame rate and video resolution are also listed.	N/A
Environment : System	
Displays information about your system.	N/A
Environment : Devices	
Displays information about your system’s audio and video devices.	N/A
Environment : About	
Displays information about the active installation of LifeSize Desktop.	N/A

Linking to a SIP URI

You can include a link to a SIP URI in an email or another application that accepts hyperlinks. Clicking the link initiates a call through LifeSize Desktop to the address in the link. Use the following format for the address:

```
sip:10.10.10.10
```

Call Bandwidth

Preferred and maximum bandwidth settings operate together to let you configure SIP transmission speeds (ranging from 128 kb/s to 10240 kb/s). You can set the receive and transmit bandwidths independently, allowing PC users to view incoming video at 1 Mb/s even if the transmit capability is only 384 kb/s.

Specify the maximum bandwidth for both the incoming and outgoing call speeds with the **Maximum Receive Bandwidth** and **Maximum Transmit Bandwidth** settings (**Administration : Network** in the Management Center). You can set the preferred bandwidth for incoming and outgoing call speeds on the **General** page. PC users may change the preferred settings to accommodate changing call speeds. The maximum settings constrain the highest available preferred values. For example, if **Maximum Receive Bandwidth** is set to 768 kb/s, the highest available value for **Preferred Receive Bandwidth** is also 768 kb/s.

Note: If the **Administration** area is password protected, you must log in to change the maximum values.

Configuring Data Sharing

While in a call, LifeSize Desktop can receive and transmit a second video stream.

Note: If you transmit presentation data to a video communications system that does not support presentations, the presentation data will replace the primary video on the far end.

When you share data from your computer, you may specify an application or the complete desktop image. LifeSize Desktop supports sharing presentation data at the following resolutions:

640 x 480	1024 x 768	1280 x 1024	1440 x 900	1920 x 1080
800 x 600	1280 x 720	1366 x 768	1600 x 1200	1920 x 1200
960 x 600	1280 x 768	1400 x 1050	1680 x 1050	

By default, LifeSize Desktop sends presentation data over a secondary media channel and allocates bandwidth, favoring video, between the data sharing and video conferencing channels. The video bandwidth balance depends on the transmit bandwidth of the call.

You can change the configuration at **Audio/Video : Data Sharing** in the Management Center. With **Send Data Using** set to *Data Sharing Channel*, you can change the video bandwidth balance to *Favor Data* or *Favor Video* (the default). Consider changing the video bandwidth balance to *Favor Data* when the video stream from the presentation video includes motion.

Enabling Call Encryption

LifeSize Desktop uses Transport Layer Security (TLS) signaling to encrypt SIP calls. With TLS signaling enabled, the application attempts to use Secure Real-time Transport Protocol (SRTP) with Advanced Encryption Standard (AES) for media encryption. If the far side supports SRTP, the media is encrypted and a lock icon appears on the upper right border of the LifeSize Desktop window. Click the lock icon to show information about the certificate.

If the far end does not support SRTP, the media is not encrypted, and the lock icon does not appear.

If TLS signaling is disabled, encrypted calls are not allowed.

Note: If you enable or disable TLS signaling during a call, the change takes effect on a subsequent call.

Integrating LifeSize Desktop with LifeSize Control

Enabling system management through LifeSize Control allows administrators to manage LifeSize Desktop preferences remotely.

You can enable LifeSize Control after you install LifeSize Desktop by opening the Management Center and selecting **Administration : System Management**. Alternately, you can enable system management when you install LifeSize Desktop. Refer to “Enabling LifeSize Control Across the Enterprise” on page 15.

Configuration Updates

With system management enabled, LifeSize Desktop contacts LifeSize Control and attempts to register and validate LifeSize Control.

Note: LifeSize Control does not discover LifeSize Desktop installations. Instead, LifeSize Desktop initiates contact with the LifeSize Control server defined at **Administration : System Management**.

If registration and validation are successful, and the LifeSize Desktop installation is actively managed, LifeSize Desktop retrieves and applies the latest template configuration defined in LifeSize Control.

LifeSize Desktop contacts LifeSize Control when LifeSize Desktop starts and at the frequency you specify at **Administration : System Management**.

LifeSize Control administrators define the template configuration that the managed LifeSize Desktop retrieves and applies. These preferences correspond to the preferences in the LifeSize Desktop interface, with the following exceptions:

- LifeSize Control supports only LDAP port 389, the default.
- LifeSize Control does not change the preferred LAN.

LifeSize Control administrators can change all or selected settings through templates. If a preference is not set in the template, the preference set in LifeSize Desktop does not change when the template is applied.

Note: LifeSize Control does not schedule events that start a call automatically for LifeSize Desktop. To join a video conference, LifeSize Desktop callers can use the SIP URI included in the email confirmation that LifeSize Control sends.

Setting and Changing the Administrator Password

With an administrator password set, you are required to log into the LifeSize Desktop Management Center to make changes to the **Communications** and **Administration** pages. You may view these pages even if you are not logged in.

Manage the password from LifeSize Desktop or LifeSize Control:

- Open the LifeSize Desktop Management Center and select **Administration : System Management** and click **Change Password**. Enter and confirm the password and click **OK**. From the **System Management** page, click **Save**. This action also sets the password, if it is not set already.

  Note: Ensure that you store your password in a safe place. If you forget your password, it cannot be retrieved. If LifeSize Desktop is managed, administrators can reset the password through LifeSize Control.

- In LifeSize Control navigate to the LifeSize Desktop page. Select one or multiple LifeSize Desktop installations, click ▶, and then click **Change password**. This action also sets the password, if it is not set already.

Call Data Records

After completing a call, LifeSize Desktop sends the call data record (CDR) to LifeSize Control. If LifeSize Control is not actively managing LifeSize Desktop, the installation sends the CDR at a later time.

Enabling LifeSize Control Across the Enterprise

Use the **LifeSizeDesktop.exe.config** file to enable LifeSize Control on multiple LifeSize Desktop installations. This file is located in the same directory as **LifeSizeDesktop.exe** and includes the **ControlServerHostname** setting, undefined by default:

```
....
<setting name="ControlServerHostname" serializeAs="String">
    <value />
</setting>
....
```

Add the LifeSize Control address, as in the following example:

```
....
<setting name="ControlServerHostname" serializeAs="String">
    <value>lifesize-control.example.com</value>
</setting>
....
```

Troubleshooting

The following sections describe symptoms, possible causes, and potential solutions for common problems you may encounter with LifeSize Desktop.

Connections

Improperly connected or loose cables are common causes of problems with headsets, external cameras, and microphones. Ensure an audio and video device are available and properly connected. Inspect all the external controls and cable connections. Ensure that connections are correct and secure, and that nothing is obstructing the cables.

Power and Connectivity Issues

System Requirements

Because LifeSize Desktop is SIP-only, the system you are calling must be SIP compatible. If you are attempting to reach a LifeSize system and want to use the full LifeSize Desktop feature set, ensure that the LifeSize system software is at version 4.7.10 or later.

Firewalls

Check with your network administrator to determine if firewalls separate your PC from the system you are attempting to reach. Refer to “Firewall Traversal” on page 16.

Calls not Connecting

If a call does not successfully connect, verify that you have dialed a working number and that the far end destination is powered on and available. Verify that the network is ready and available. Network status is indicated at all times in the status bar.

If LifeSize Desktop displays *Ringing*, but the call does not connect, check the following:

- Ensure that you are connected to the internet and that no firewalls are blocking the call.
- Ensure that the system you are calling is SIP-enabled.
- If you are using LifeSize Transit, ensure that your authorization credentials are not used in two places. For example: on LifeSize Desktop and on LifeSize Room 220.

Connection Speed and Packet Loss

If a call takes a long time to connect and you experience major packet loss, your network connection speed may be lower than the bandwidth configured in LifeSize Desktop. Change the preferred bandwidth by opening the Management Center and selecting **General**.

Remote Desktop

You cannot use LifeSize Desktop remotely. LifeSize Desktop must be running on the local PC.

VPN

To configure LifeSize Desktop for use over your corporate VPN, set your VPN adapter as the preferred LAN interface. Open the Management Center and select **Communications : Firewall**.

Firewall Traversal

If you are experiencing problems connecting while behind a network firewall, ensure that the LifeSize system you are attempting to reach is at system software version 4.2 or later. (To use the full LifeSize Desktop feature set, ensure that the LifeSize system software is at version 4.7.10 or later.)

LifeSize Desktop supports the following firewall traversal methods:

- through LifeSize Transit (version 3.0 or later)
- through a VPN connection

Bridge Menu Navigation

If you do not have far end camera control, use the keypad DTMF tones to navigate menus for most bridges. Refer to the manual for your bridge for the supported commands.

Video Issues

Frame Rates

If your video transmission frame rate is not at 30 frames per second (f/s), check the following:

- Ensure that your webcam is capable of delivering 30 f/s.
- Turn off applications that may be using your webcam; or that may be affecting your webcam drivers.
- Upgrade your webcam drivers.
- *Logitech cameras*: In the Logitech software, disable **RightLight**; and turn **Low Light Boost** to zero. When **RightLight** or **Low Light Boost** is turned on, the camera is capped at 15 f/s.
- *Laptop users*: Ensure that your power scheme (**Control Panel > Power Options**) is set to **Maximum Performance**.

Resolution

Each time LifeSize Desktop starts, it assesses your PC performance. If your PC fails this performance test, LifeSize Desktop will not be able to transmit and receive video at the maximum resolution: 720p30 for both transmit and receive. If you are unable to transmit or receive 720p30 video, check the following:

- Ensure that your PC is configured for the maximum performance. *Laptop users*: Plug it into a wall and ensure that the power scheme (**Control Panel > Power Options**) is set to **Maximum Performance**.
- Ensure that the LifeSize Desktop bandwidth preferences are set high enough for 720p30 video. Start with 1024 kb/s.
- Exit and restart LifeSize Desktop to have it reassess your PC performance.
- Examine the Call Statistics from the Management Center to determine if the webcam, bandwidth, or CPU is limiting the video quality.

If you continue to experience issues with resolution, your PC configuration may not be capable of transmitting or receiving 720p30 video.

Room Lighting

You can assist the system to maintain the best possible image quality by altering the lighting and background colors of your environment. If light levels are too low you may consider adding artificial lighting. Indirect light from shaded sources or reflected light from pale walls often produces excellent results.

Avoid the following:

- Direct sunlight on the subject matter, the background, or the camera which creates harsh contrasts
- Direct illumination of the subject matter and camera
- Colored lighting
- Harsh side lighting or strong light from above

Audio Issues

Muffled audio reception from the far side may be caused by highly reverberant rooms. If you are experiencing poor audio reception, add more sound absorbency to the room and speak in close proximity to the microphone. Degradation in the audio quality can also be caused by faulty microphones or dust and debris on the microphones.

USB Webcams

Avoid adding or removing USB webcams while in a call or while video appears in the Management Center. A known issue with hot swapping USB devices while they are in use may lead to a system crash.

Error Types

The following table lists common errors and their probable causes. Contact your administrator for assistance.

Error or Warning	Probable Cause/Workaround
Server errors	The application or call failed to start due to an internal server error. Reopen or redial the call. Check your network connection and ensure service is available. Ensure an audio and video device are available and properly connected.

Error or Warning	Probable Cause/Workaround
Network errors	Redial the call. Check your network connection; service may be unavailable.
Call failures	Headset is not available; switching audio output. Check that your headset is properly connected. Video is not available; check that your camera is properly connected. Ensure the number you dialed is correct.
Bad requests Invalid or incomplete entries	Ensure the information you provided is correct (extension, location, usernames, passwords, etc.) Ensure the entry is not too long, too short, too large or small.
Authorization or authentication errors	Payment may be required. The trial application may have expired. Method is not allowed. Authentication is required; supply a valid username and password.

Network Health

The Network Health button indicates the status of your network. When there are no issues, the button displays three green arcs. If any of the arcs appear gray or red, contact your system administrator.

The Network Health page identifies the audio, video and total values for network parameters. You may need to report the network parameters as listed on this page. Click **Save** to write the parameters to a text file; the default name of the files is **call_statistics_<date>.txt**.

- packet loss percentage
- packets lost
- late packets
- dropped packets
- skipped frames
- jitter buffer size
- average data sent
- average data received

The following transmitted and received values are also listed:

- video frame rate
- video resolution
- limited by
- audio codec
- video codec

Values that appear in bold are exceeding a threshold.