

# TEST REPORT LIFESIZE SOFTPHONE

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## GENERAL

### PERIOD

The video conference software LifeSize Softphone was tested between November and December 2012 (Mac version) and January to February 2013 (Windows version) by the VCC.

### SW VERSION

The software was provided in the official version 8.1.

### DEVICE CLASS

The video conference system LifeSize Softphone is, according to the manufacturer, a software client for the operating systems Windows XP/2003/Vista/7 (including the 64 Bit versions) with DirectX 9.0c and Mac OS X 10.5 Leopard or higher. The software only runs with a valid licence file, a test version is available on the website of the manufacturer and can be used without restrictions for 30 days with the test licence.

For error-free operation, the manufacturer recommends minimum requirements for the computer hardware, which should be adhered to:

- P4 with 2,0 GHz (audio conversations / video conversations with high resolution)
- Core 2 Duo class, 2,33 GHz (H.264, video conversations with 720p)
- Core 2 Quad class, 2,66 GHz (H.264, video conversations with 1080p)
- 1GB RAM internal memory (2 GB recommended for Vista) and 30 MB hard drive space.

For the LifeSize Softphone Mac tests, an Apple Mac Pro Mac OS X with 2.66 GHz Quad-Core Intel Xeon was used in combination with a Blackmagic DeckLink HD Extreme and a SONY EVI-HD1 with 720p mode.

For the installation of LifeSize Softphone under Windows 7, an XMG P702 notebook with an Intel Core i7-3940XM @ 3.00GHz Quad Core and an on-board FullHD camera was used.

#### Scope of Delivery

The software is available on the website of the manufacturer. It is operable immediately after the installation and binding of the respective licence file.

Standard web cams as well as high definition web cams with a resolution of up to 1920 x 1080 pixels can be used. The manufacturer suggests the HD Pro C920, C910 or C510 as web cams from Logitech. Other camera models can be configured too in the software, e.g. via Firewire or Capture Card. The ratio is recognized automatically for all options.

#### Bandwidths and Video Format

The video conference system facilitates video conferences in the LAN area with maximum resolutions of 1080p30 and 720p60 up to 4 Mbps.

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## INSTALLATION

When updating Mirial Softphone 7 to LifeSize Softphone 8.1 under Apple Mac OS X, 720p and 1080p are not activated in the *settings* under *codecs*. The available bandwidth for H.239 presentations is set back to the default value of 70%. From experience, a lower value can be set here. The network and H.323 settings are adopted from the previous installation.

The re-installation of LifeSize Softphone 8.1 under Windows 7 proceeded smoothly in combination with the licence file of the year 2008 for the Mirial Softphone 6. After the installation, a one-time configuration wizard starts to set all system properties (camera, protocols, H.323 properties, network parameters...). Under *codecs* 4CIF, 720p and 1080p have to be activated to be able to use the software in its entirety. The default value for H.239 of 70% can be reduced here as well.

A detailed manual is provided [here](#) by Hans-Ulrich Kiel (TU Clausthal).

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## TEST

### Operation

The user interface of the software (GUI) has been revised completely. The basic structure is now functionally similar to the current software clients [Polycom TP m100](#) or Cisco Jabber Video, where the latter belongs to a client server solution though. After the start-up, a very straightforward [user interface](#) is shown. Here you can establish a call via the *search box* or via *contacts*. *History* protocols the incoming and outgoing calls. Before the dial-up, you can display the self view as a separate window in the bottom menu bar via *video*. The user interface is self-explanatory and does not show any similarities to its predecessor Mirial Softphone.

In the new version, the remote side's camera can now also be controlled in the video window via mouse, apart from the usual cursor keys. The statistics window can only be called with the 'S' key though. Unfortunately, structure and minimum font size of the statistics window did not change either.

LifeSize Softphone still facilitates being connected to two different remote sides at once ([image](#)), which works well in both call directions. The [remote sides](#) see the video of LifeSize Softphone as primary image and in the right upper corner the 2. remote side is displayed as a small image. During the connection, one or both participants can be placed "On Hold" by LifeSize Softphone, who then receive a [freeze image](#).

Furthermore, there is the option to record and archive ongoing calls. A big red bar indicates the state of the recording. The recordings can be exported to the Windows Media Video format (WMV) or under Mac OS X to the Quicktime format (MOV).

### Audio/Video

All test connections, except for one, were G.722.1C encoded. The majority of them had a very good audio quality.

For the connection with the Sony PCS-XG80, only G.711 was negotiated, which is not sufficient for current conference systems. Moreover, the received sound on the part of the Sony PCS-XG80 in the connection with LifeSize Softphone Mac was not always understandable due to variations in signal strength. Accordingly, the sound was only rated as satisfactory.

The video was very good in almost all of the tested connections. It was always sent according to H.264 and usually received with 720p as image format. Less frequently, 4CIF (704x576), W488p (768x448) or VGA (640x480) was transmitted. During the tests with LifeSize Softphone Windows, the image format 1080p was also achieved.

Im Zusammenspiel mit dem Grafikchip Intel HD Graphics 4000 kann es zu Problemen mit dem Eigenbild und während der Darstellung von Präsentationen mit dem Bild der Gegenstelle kommen. Diese Probleme werden durch die seit April 2015 verfügbaren Treiber von Intel gelöst. Diese Treiber (Intel HD Graphics Driver, Version 15.33.35.4176) sind auf den Supportseiten von Intel verfügbar.

### H.239

The bandwidth for the transmission of the slides can be adjusted individually in the setup. For higher image rates or remote sites without H.239 support, presentations can also be transmitted in the video stream. In that case, the self view is not sent.

Presentations according to H.239 were very good in transmitting slides, with few exceptions. During the qualitatively very good transmissions, the font size was easily readable beginning with 8px-10px. In these test connections, slides changed swiftly. The resolutions that were reached when transmitting the presentation varied from XGA (1024x768) over 1280x768 to maximum 1280x1024, the data stream was mainly encoded in H.264.

The following errors only concern the call direction of the dial-up. During the connection with LifeSizeRoom, there were repeatedly sudden connection aborts when testing with LifeSize Softphone Mac. In the connection with RADVISION XT 5000, the video is not sent anymore after ending the data presentation on part of the XT 5000. It is recommended to restart the connection. During the connection of the LifeSize Softphone Mac with the Polycom m100, the data presentation of the Polycom m100 cannot be closed. In the connection of LifeSize Softphone Mac to the Tandberg 6000MXP, the slides do not arrive complete and they show colour errors.

Between LifeSize Softphone Windows and Cisco Jabber Video, data presentation does not work. More detailed information to individual tests can be found in the [compatibility matrix](#).

When transmitting SD and HD videos, about 50% of transmitted films are recognized as such at the remote side. The transmission of the other 50% is too slow, rather resulting in slide show quality.

### **Camera Control**

The camera remote control has always worked in sending direction as long as the technical requirements were met at the remote sides, but for technical reasons it did not work in the opposite direction.

### **Service DFNVideoConference**

Tests were performed with the DFN MCU, a Cisco TelePresence MCU 4500 Series. The connection worked error-free up to the maximum bandwidth of 4 Mbps. Video was sent with H.264 in FullHD resolution 1080p and received in HD resolution 720p.

### **Gatekeepers**

The collaboration with the gatekeepers GNU-GK 2.3.2 and Cisco MCM proceeded faultlessly and stable, with one exception. When the SW client LifeSize Softphone Mac is registered with the GNU-GK 2.3.2, running in routed mode, DFN MCU dial-out is not possible. When the GNU-GK runs in direct mode, the DFN MCU dial-out works.

### **SIP**

SIP calls to the DFN MCU work. Video was sent with H.264 in FullHD resolution 1080p and received in HD resolution 720p. Data presentations are sent via the video channel.

### **URI Dialling**

URI dialling works with LifeSize Softphone Windows when the client is not registered with the gatekeeper. It does not work with LifeSize Softphone Mac.

### **Encryption**

All connections were H.235 AES encrypted, with one exception. When testing LifeSize Softphone Windows with Radvision XT5000, the encryption only works when LifeSize Softphone Windows initiates the dial-up. H.235 AES now works, as opposed to the previous Mirial Softphone version.

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## **CONCLUSION**

The system LifeSize Softphone is a software-based VC system, which can be used as a workstation system for video and audio conferences in the HD domain with H.239 functionality. The availability of 1080p depends on the performance of the computer and camera that are used. During the data presentation with H.239, errors can occur from time to time.

### **Documentation**

Manufacturer: LifeSize

<b>Supported General Standards</b>	H.323, H.239, SIP
<b>Audio Encodings</b>	G.711 $\mu$ -law, A-law, G.722.1, G.722.1 Annex C
<b>Video Compression</b>	H.263, H.263+, H264
<b>Bandwidth</b>	4 Mbps IP

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