

## Troubleshooting Packet Loss

Use this document to troubleshoot video or audio packet loss you may encounter during calls with your LifeSize video communications system.

Symptoms of packet loss include one or more of the following:

- poor frame rate
- choppy/jerky video
- frozen video
- audio warbling/slurring
- robotic voice

View the **Call Statistics** screen to assess the effect of packet loss on your call. The following statistics are included for both video and audio:

- **jitter** – caused by network congestion, timing drift, or route changes
- **packet loss** – shows the number of data packets that fail to reach their destination
- **cumulative** – shows the number of packets lost since the beginning of the call
- **percentage** – shows the percent of packets lost in the last sampling interval

If **percentage** remains 1 or higher during a call, follow these guidelines to troubleshoot packet loss:

Possible Causes	Corrective Action
<b>Bandwidth</b>	<p>Check your network speed. The minimum speeds are as follows:</p> <ul style="list-style-type: none"> <li>• 128 kb/s for standard definition</li> <li>• 768 kb/s for high definition on LifeSize 220 series systems and LifeSize Room 200. 1,152 kb/s for LifeSize Passport and all other video systems.</li> </ul> <p>Ensure that your network switches and your LifeSize systems have the same bandwidth settings.</p> <p>Ensure the Adaptive Motion Control (AMC) preference is enabled on your LifeSize system. For packet loss of 5% or less, this feature eliminates or greatly reduces video artifacts. This feature is enabled by default. Navigate to <b>Administrator Preferences : Video : Video Quality : Adaptive Motion Control</b>.</p> <p>On bonded T1 circuits, place a test call at 256kb/s. If you continue to experience packet loss at 256kb/s, check your router configuration.</p>
<b>Corrupt Network Cable</b>	<p>Ensure that your Ethernet cables, including those from your video system to the wall connector, are reliable. A Category 5e Ethernet cable is the minimum acceptable cable. LifeSize recommends a Category 6 Ethernet cable.</p>

<b>Duplex Mismatch</b>	Duplex mismatch occurs when the network switch and the LifeSize system are not configured to use the same settings. LifeSize recommends that you set both sides to auto-negotiate speed/duplex. The default setting for LifeSize <b>Network Speed</b> is <i>Auto</i> . If the network switch is not set to <i>Auto</i> , a misconfiguration can result in a duplex mismatch and create packet loss. If you continue to experience packet loss after setting both devices to <i>Auto</i> , set the switch port to 100 Mb/s (full-duplex). On your LifeSize system, navigate to <b>Administrator Preferences : Network : General</b> and set <b>Network Speed</b> to <i>100 Mb/s (full-duplex)</i> .
<b>Large Packet Size</b>	The packet size may be too large for the network to handle. Certain network technologies such as MPLS add information to the video packets that result in a large packet size, which certain network devices are unable to handle. See your network administrator for the recommended MTU size. If you are unable to obtain the number, decrease the size of the packets transmitted by the codec by setting <b>Administrator Preferences : Video : Video Quality : Video MTU</b> to 1350. If you continue to encounter packet loss, test lower values; however, do not set the preference to a value lower than 900. Small packets consume available bandwidth without providing visual benefits.
<b>QoS Setting</b>	<p>QoS mismatch may occur on calls within your private network when the QoS settings on your LifeSize systems do not match your network settings. Ask your network administrator to provide the network's DiffServ or IP Precedence (IntServ) values and navigate to <b>Administrator Preferences : Network : Network QoS</b> and change the setting to match the network values.</p> <p>Ensure that AF41 tagging is used on your router when enabling QoS for video and that Expedited Forwarding is used for audio. LifeSize systems are pre-configured with an AF41 tagging scheme for video and Expedited Forwarding for audio.</p>