



Troubleshooting Audio Quality

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Troubleshoot Audio Quality Using Check Telephony Configuration Test



Note The Check Telephony Configuration test does not test IPv6 connectivity. (IPv6 is supported in Cisco Unity Connection for Cisco Unified Communications Manager integrations.) The test confirms that Unity Connection can communicate with the phone system using IPv4 addressing.

Using the Check Telephony Configuration Test to Troubleshoot Audio Quality

Step 1 In Cisco Unity Connection Administration, in the Related Links box in the upper right corner of any Telephony Integrations page, select **Check Telephony Configuration** and select **Go**.

If the test is not successful, the Task Execution Results displays one or more messages with troubleshooting steps. After correcting the problems, run the test again.

Step 2 In the Task Execution Results window, select **Close**.

Problem with Choppy Audio

Use the troubleshooting information in this section if the audio you hear from Unity Connection is choppy. Consider the following possible causes:

- The hard disk from which Unity Connection is playing a recording is full. To resolve the situation, eliminate unnecessary files from the hard disk.
- The network Unity Connection to the Unity Connection server is not adequate. To resolve the situation, improve the network Unity Connection.

- The Unity Connection platform has a malfunctioning component. To resolve the situation, identify the malfunctioning hardware component, then repair or replace it.
- Another process is using too much CPU time. To resolve the situation, stop the process and run it when phone traffic is lighter.
- You can check if there are any VMware snapshots. If yes, remove the snapshots.
- Stratum of NTP should be less than 5. You can check the stratum using the `utils ntp status` command.
- Toggle the settings for Audio Normalization for Recordings and Messages and Noise Reduction Settings on port group > Advanced Settings page.

Problem with Garbled Recordings

Use the troubleshooting information in this section if recordings sound garbled. See the following possible scenarios:

- The audio stream sounded garbled when Unity Connection created the recording. See the [Troubleshooting a Garbled Audio Stream in the Network](#).
- The audio stream did not sound garbled when Unity Connection created the recording, but became garbled later. See the [Troubleshooting How Unity Connection Makes Recordings](#).

Troubleshooting a Garbled Audio Stream in the Network

When the audio stream is garbled when Unity Connection created the recording, use the following task list to determine the cause and to resolve the problem.

Follow the tasks to troubleshoot a garbled audio stream in the network:

1. Confirm that the Unity Connection to the caller is clear. Calls that have bad PSTN connections or calls from mobile phones may sometimes have garbled audio streams. Unity Connection cannot correct for a garbled audio stream.
2. Determine whether the garbled audio stream is caused by problems with the network. Use network analysis tools to do the following:
 - Check for latency, packet loss, and so on.
 - Search for devices on the network that are causing garbled audio streams. Some examples are routers, gateways, transcoders, and gateways that are configured for one packet size (such as G.711 30ms) while Unity Connection is configured for another packet size (such as G.711 20ms).
3. Determine whether the audio stream is garbled at the closest point to the Unity Connection server by obtaining a sniffer capture at that point. If the audio stream from the sniffer capture is not garbled, Unity Connection may not be handling the audio stream correctly. See the [Troubleshooting How Unity Connection Makes Recordings](#).

Troubleshooting How Unity Connection Makes Recordings

When the audio stream did not sound garbled when Unity Connection created the recording, but became garbled later, use the following task list to determine the cause and to resolve the problem.

Follow the tasks to troubleshoot how Unity Connection makes recordings:

1. Enable the Media (Wave) Traces macro traces in Cisco Unity Connection Serviceability. For detailed instructions on enabling the macro trace and viewing the trace logs, see the [Using Diagnostic Traces for Troubleshooting](#).
2. Obtain a snapshot of CPU usage on the Unity Connection server using the CPU and Memory display in the Real-Time Monitoring Tool (RTMT). For detailed information on using RTMT, see the applicable *Cisco Unified Real-Time Monitoring Tool Administration Guide* at http://www.cisco.com/en/US/products/ps6509/prod_maintenance_guides_list.html.
3. Contact Cisco TAC.

Problem with Garbled Prompts on Phone

When Unity Connection prompts sound garbled or jittery when heard on the phone, use the following task list to determine the cause and to resolve the problem.

Follow the tasks to troubleshoot garbled prompts on the phone:

1. Determine whether the audio stream is garbled at the closest point to the phone by obtaining a sniffer capture at that point. If the audio stream from the sniffer capture is not garbled, the cause may be in the network or with Unity Connection.
2. Determine whether the garbled audio stream is caused by problems with the network. Use network analysis tools to do the following:
 - Check for latency, packet loss, and so on.
 - Search for devices on the network that are causing garbled audio streams. Some examples are routers, gateways, transcoders, and gateways that are configured for one packet size (such as G.711 30ms) while Unity Connection is configured for another packet size (such as G.711 20ms).
3. Determine whether the audio stream is garbled at the closest point to the Unity Connection server by obtaining a sniffer capture at that point. If the audio stream from the sniffer capture is not garbled, Unity Connection may not be handling the audio stream correctly.
4. Enable the Media (Wave) Traces macro traces in Cisco Unity Connection Serviceability. For detailed instructions on enabling the macro trace and viewing the trace logs, see the [Using Diagnostic Traces for Troubleshooting](#).
5. Obtain a snapshot of CPU usage on the Unity Connection server using the CPU and Memory display in the Real-Time Monitoring Tool (RTMT). For detailed information on using RTMT, see the applicable *Cisco Unified Real-Time Monitoring Tool Administration Guide* at http://www.cisco.com/en/US/products/ps6509/prod_maintenance_guides_list.html.
6. Contact Cisco TAC.

Problem with Volume of Recordings

Use the troubleshooting information in this section if the volume of recordings is too loud or too soft, or if the recordings do not have any sound. Consider the following:

- Verify the audio level at each hardware point in the network by obtaining a sniffer capture at each point.

- If the audio level from the sniffer capture at one point is too soft or too loud, the cause may be the configuration of the hardware (such as routers, gateways, transcoders) at that point. Check the automatic gain control (AGC) settings for the applicable hardware.
- If the audio level from the sniffer capture at all points is too loud or too soft, see the [Changing the Volume for Unity Connection Recordings](#).
- Disable automatic gain control (AGC) for Unity Connection so that Unity Connection does not automatically adjust the volume of recordings. See the [Disabling Automatic Gain Control \(AGC\) for Unity Connection](#).
- If the recordings do not have any sound, confirm that the advertised codec settings are correct. See the [Confirming the Advertised Codec Settings, on page 4](#).

Changing the Volume for Unity Connection Recordings

- Step 1** In Cisco Unity Connection Administration, expand **System Settings** > **and** select **General Configuration**.
- Step 2** On the Edit General Configuration page, in the Automatic Gain Control (AGC) Target Decibels field, enter the applicable number and select Save.
- Note** AGC decibel levels are set in negative numbers. For example, -26 db is louder than -45 db.
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Disabling Automatic Gain Control (AGC) for Unity Connection

- Step 1** In Cisco Unity Connection Administration, expand **Telephony Integrations** > **and** select **Port Group**. On the Search Port Groups page, select the name of the applicable port group.
- Step 2** On the Port Group Basics page, in the Edit menu, select **Advanced Settings**.
- Step 3** On the Edit Advanced Settings page, under Automatic Gain Control (AGC) Settings, uncheck the **Enable AGC** check box and select **Save**.
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Confirming the Advertised Codec Settings

Verifying the Advertised Codec Settings

- Step 1** In Cisco Unity Connection Administration, expand **Telephony Integrations** and select **Port Group**. On the Search Port Groups page, select the name of the applicable port group.
- Step 2** On the Port Group Basics page, under Advertised Codec Settings, determine whether the list of codecs is correct.
- Step 3** If the list is correct, skip to [Step 7](#). Otherwise, select **Change Advertising**.
- Step 4** Select the **Up** and **Down** arrows to change the order of the codecs or to move codecs between the Advertised Codec box and the Unadvertised Codecs box.

If only one codec is in the Advertised Codecs box, Unity Connection sends the audio stream in that audio format. If the phone system does not use this audio format, the phone system drops the call.

If two or more codecs are in the Advertised Codecs box, Unity Connection advertises its preference for the first codec in the list but sends the audio stream in the audio format from the list that the phone system selects.

Step 5 Select **Save**.

Step 6 On the Edit menu, select **Port Group Basics**.

Step 7 On the Search Port Groups page, if you want to change the packet size that is used by the advertised codecs, under Advertised Codec Settings, select the applicable packet setting for each codec and select **Save**.

Using Traces to Troubleshoot Audio Quality Issues

You can use traces to troubleshoot audio quality issues. For detailed instructions on enabling the applicable traces and viewing the trace logs, see the [Using Diagnostic Traces for Troubleshooting](#).

