



IntelliMix Room

Installation and Deployment Guide

IntelliMix Room install details for system designers and technicians. Learn how to install with mass deployment tools and set up Windows for audio processing.

Version: 2 (2020-B)

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IntelliMix Room Installation and Deployment Guide

Overview of Installation and Deployment

You can install IntelliMix[®] Room on one device at a time, or you can use standard software deployment tools to push it to many devices at the same time.

For more about how to use IntelliMix Room and its features, [visit the user guide: pubs.shure.com/guide/IntelliMixRoom](https://pubs.shure.com/guide/IntelliMixRoom).

System Requirements

You can install IntelliMix Room on any physical device that meets these requirements:

- Windows 10 Pro, Enterprise, or IoT Enterprise (64 bit)
- Processor: i5 quad core 1.9 GHz minimum
- 8 GB RAM minimum
- Solid state drive
- Internet connection (wired or wireless required for licensing)

If you install IntelliMix Room on a hub-type device running Windows, consult the manufacturer's documentation for how to access the operating system and install software.

Devices that don't meet these requirements are not supported. Virtual machines are not supported.

Switch and Cable Recommendations for Dante Networking

Switches and cables determine how well your audio network performs. Use high-quality switches and cables to make your audio network more reliable.

Network switches should have:

- Gigabit ports. 10/100 switches may work on small networks, but gigabit switches perform better.
- Power over Ethernet (PoE) or PoE+ ports for any devices that require power
- Management features to provide information about port speed, error counters, and bandwidth used
- Ability to switch off Energy Efficient Ethernet (EEE). EEE (also known as "Green Ethernet") may cause audio dropouts and problems with clock synchronization.
- Diffserv (DSCP) Quality of Service (QoS) with strict priority and 4 queues

Ethernet cables should be:

- Cat5e or better
- Shielded

Optimizing Windows for Conference Room Audio Processing

These are the recommended Windows settings for conference room audio processing:

- Disable Cortana.

- Disable notifications from Windows and installed programs.
- Turn off automatic Windows updates.
- Use the high performance power plan in Power Options.
 - Make sure this plan uses active cooling in the advanced power options.
- Disable all Sleep and Hibernate settings.
- Disable network throttling.

Additionally, follow these system best practices:

- Reboot the computer regularly.
- Disconnect unused USB devices.
- Remove software with high CPU loads, such as games or streaming apps.
- Make sure the computer's BIOS is updated.
- Check that Ethernet, Wi-Fi, and display drivers are updated.

Installing with Mass Deployment Tools

You can deploy IntelliMix Room using standard software deployment tools. See below for available command line and silent install arguments.

Optional CLI Arguments

- `/S` : Silent mode. Installer runs without GUI and implements default options.
- `/nicindex=[integer]`: NIC index to use for both Shure control and Dante audio network capabilities.
 - `/nicindex_control=[integer]`: NIC index to use for Shure control network capabilities.
 - `/nicindex_audio=[integer]`: NIC index to use for Dante audio network capabilities.
- `/nicipaddress=[integer]`: NIC IP address to use for all IntelliMix Room network capabilities.
 - `/nicipaddress_control=[integer]`: NIC IP address to use for Shure control network capabilities.
 - `/nicipaddress_audio=[integer]`: NIC IP address to use for Dante audio network capabilities.
- `/nicid=[UUID]`: NIC UUID to use for all IntelliMix Room network capabilities.
 - `/nicid_control=[integer]`: NIC UUID to use for Shure control network capabilities.
 - `/nicid_audio=[integer]`: NIC UUID to use for Dante audio network capabilities.

Installation and IntelliMix Room Settings

- `/norestart`: Do not reboot the system after installation. Rebooting is required to implement certain Windows optimizations.
- `/analyticsoptout=[true|false]`: Opt out of analytics data collection.

Windows Optimizations

- `/skipoptimizations`: Skip all optimizations.
- `/disablecortana=[true|false]`
- `/disablepushnotifications=[true|false]`
- `/disableautoupdate=[true|false]`
- `/optimizepowerplan=[true|false]`
- `/neversleep=[true|false]`
- `/disablenetworkthrottling=[true|false]`

Installer Default Settings

Option	Default Value	Notes
NIC index	0	The 0th found NIC using the lookup <code>GetEnabledNetworkAdaptersIds</code>
Analytics opt out	False	Users have data collection enabled by default.
Disable Cortana	True	
Disable push notifications	True	
Disable auto update	True	
Optimize power plan	True	
Never sleep	True	
Disable network throttling	True	

IntelliMix Room Firewall Changes

During installation, the software modifies your firewall to allow access for all Shure .exes. These changes are required to run the software.

- Shure_IntelliMix_Room.exe
- Shure PTP.exe
- Shure mDNSResponder.exe
- Shure Common_Server.exe
- Shure APEC3.exe

Choosing Networks for Shure Control and Dante Audio

This software sends 2 types of data over the network: Shure control data and Dante audio data. You can use the same NIC (network interface card) for both, or use 2 different NICs to separate the traffic.

During installation, you will be asked to choose a network for each one.

Shure control NIC:

- Choose the network that Designer uses.
- Used for device discovery and control

Dante audio NIC:

- Choose the same network as other Dante devices to send audio between devices.
- Cannot use Wi-Fi
- Used to carry Dante digital audio

To change the NICs after installation, click the IntelliMix Room icon in the system tray of the computer running IntelliMix Room.

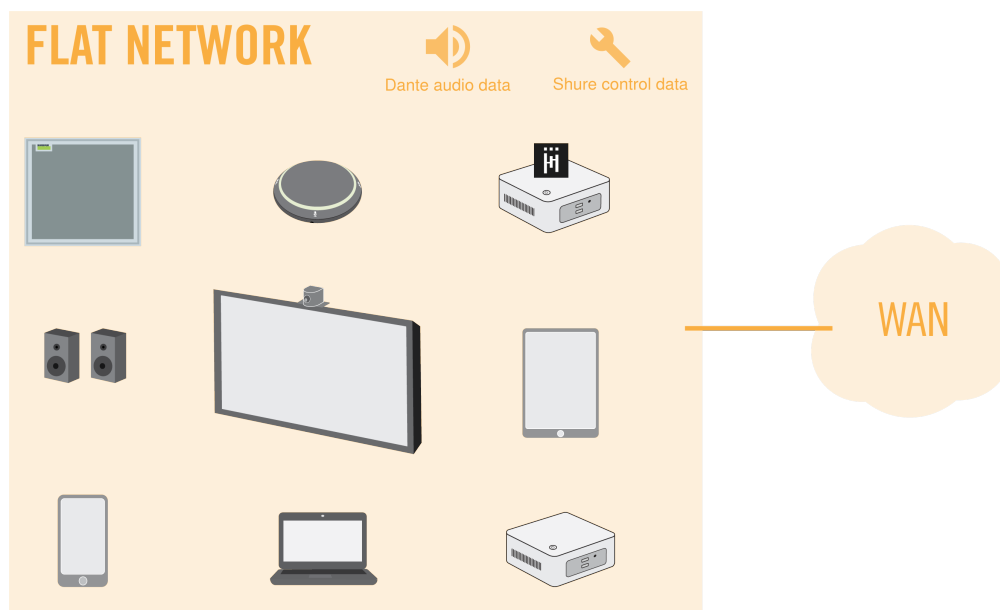
To change Designer's NIC, go to Settings.

Network Setup Examples

IntelliMix Room works with many different types of networks. Here are some of the most common network setups:

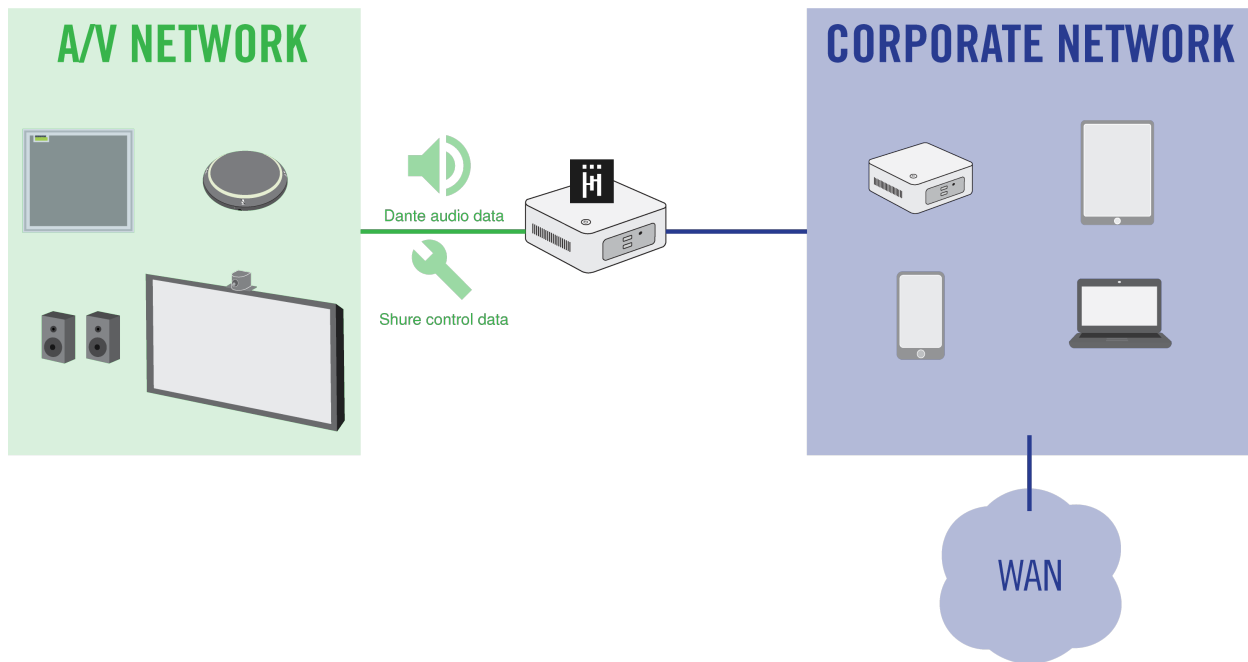
- **Flat Network**

- All A/V and corporate devices are on the same network.
- Use one network for Shure control and Dante audio data.



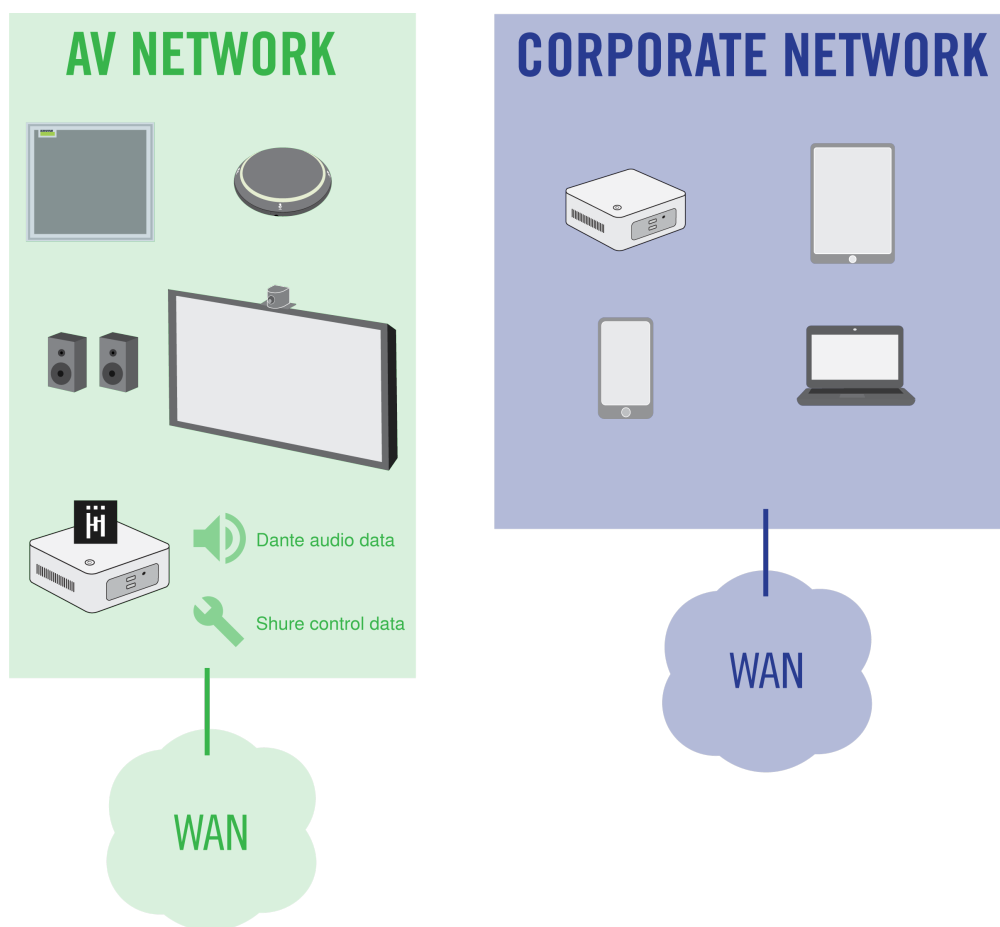
- **Corporate and AV Network**

- All A/V devices are on a separate network from the corporate network.
- The computer running IntelliMix Room uses the A/V network for Dante audio and Shure control data.
- The computer uses a wired connection to the corporate network for internet. USB 3.0 to gigabit Ethernet adapters are a common way to connect to 2 NICs.



- **Corporate and AV Network with Separate Internet Connections**

- IntelliMix Room and all other A/V devices are on a separate network that has its own internet connection, which is completely separate from the corporate network.
- Use the A/V network for both Dante audio and Shure control data.



Licensing

Activating IntelliMix Room

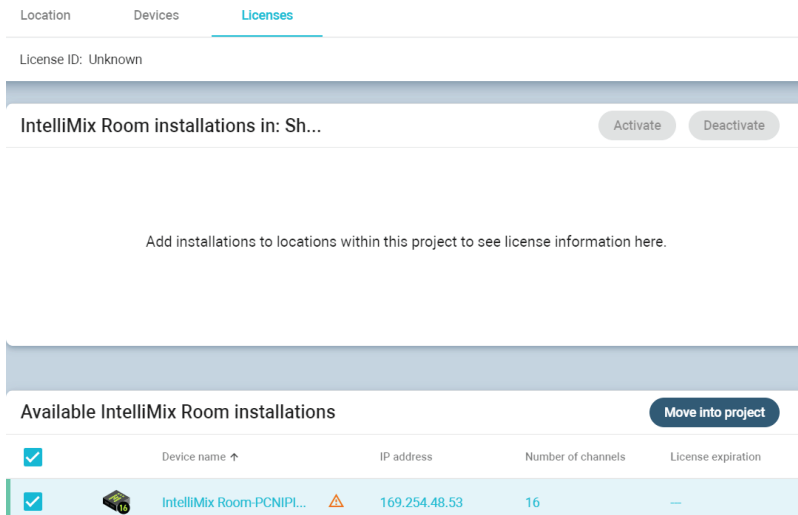
To activate the software, you need:

- A license for each installation
 - Licenses are based on the channel count (8 or 16 channels) for each installation of the software.
- Your license ID
 - A license ID activates all licenses in your account.
 - Find in your purchase confirmation email, or in your account at software.shure.com.
- Internet connection for all devices running IntelliMix Room

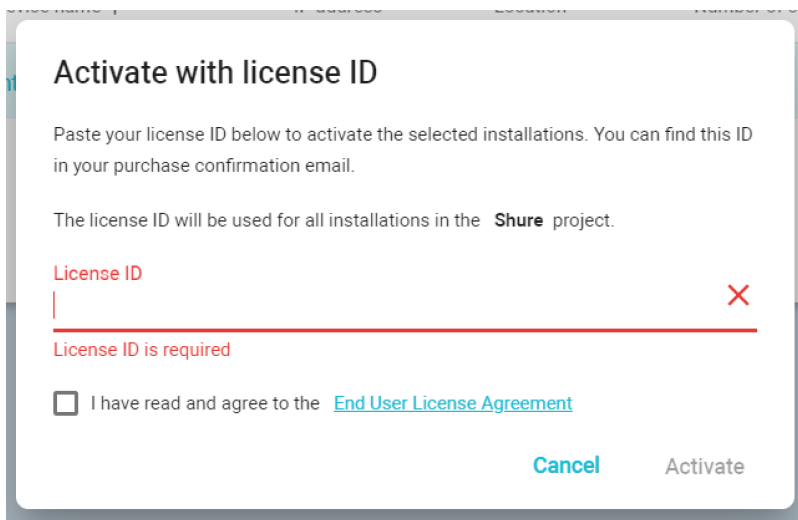
IntelliMix Room must be installed on a device before you can activate that license.

1. In Designer, go to Online devices. Check that you can discover all installations.
 - Each installation appears as a separate device. The device name matches the PC's name.
 - If you don't see all installations, check the Shure control NIC settings on the computer running IntelliMix Room. Use the same network as Designer.
2. Create a new project in Designer.
 - If you have many license IDs to manage, create a separate project for each license ID.

3. Go to the project's Licenses page. From the list of available installations, select one to move into the project. Click Move into project.
 - If you add multiple installations to a project at the same time, choose installations that all use the same license type. For example, move all 8-channel licenses into the project first, and then repeat the process for your 16-channel licenses.



4. Click Activate. Choose the license type for the installation and click Next.
5. Add your license ID and click Activate. This license ID is used for all installations in the project. If the device running IntelliMix Room has an internet connection, the installation activates and is ready to use.



Next steps:

- Create locations and add IntelliMix Room installations to them.
- Route audio to IntelliMix Room to apply DSP.

License Server Details

IntelliMix Room uses a cloud license server managed by Flexera. To see information about available licenses and your account, sign in at software.shure.com. Use the username and password you set up during purchase.

IntelliMix Room requires a continuous internet connection to verify each installation's license status. Every 12 hours, the installation checks in with the license server to validate its license. If a device running IntelliMix Room can't contact the cloud license server for 7 days, the installation becomes unlicensed and audio stops passing.

IntelliMix Room Free Trial

Before purchasing, you can try out a 16-channel version of IntelliMix Room. The software runs exactly like a purchased version during the trial.

To download a trial version, contact your local Shure sales representative (find yours at [shure.com](https://www.shure.com)).

Once you set up a trial license, you'll get a license ID for the software. Enter that ID in Designer to activate the trial.

Renewing a License

To renew your IntelliMix Room licenses, [contact your Shure sales representative](#).

After you renew your licenses, your license ID stays the same. You won't need to make any changes to any existing room setups. All installations will continue running normally.

What Happens When My License Expires?

IntelliMix Room stops passing audio when your license expires.

You will receive email reminders to renew your license 90 days before it expires.

Moving or Reassigning Licenses

After purchasing, you might need to install IntelliMix Room on a different device than it was originally installed on.

To reassign a license to a new device:

1. In your project, go to Licenses. This page shows all IntelliMix Room installations in the project.
2. Select the license that you want to move to a different device.
3. Click Deactivate. If the device running IntelliMix Room has an internet connection, it will deactivate quickly and you can reuse the license. If it does not have an internet connection, the license won't deactivate until the device is connected to the internet, or for up to 7 days.
4. Install IntelliMix Room on the new device.
5. In Designer, find the new installation of IntelliMix Room. Add it to the same project as the old installation.
6. When prompted, choose the channel count that matches the old installation. Your license is now reassigned to the new device.

Deactivating Licenses

Deactivating the license for an IntelliMix Room installation causes that installation to stop passing audio.

After deactivation, the license is available to be used again on another installation of IntelliMix Room.

To deactivate licenses:

1. In your project, go to Licenses. This page shows all IntelliMix Room installations in the project.
2. Select the installations you want to deactivate.
3. Click Deactivate. If the devices being deactivated have internet connections, you can reuse those licenses. If the devices being deactivated do not have internet connections, the licenses won't be available for reuse until they have an internet connection, or for up to 7 days.
4. Deactivated licenses are now available to be assigned to other installations.

IntelliMix Room IP Ports and Protocols

Protocol	Port	Inbound or out-bound?	Description	Applicable .exe
UDP	319, 320	Both	PTP clocking	Shure PTP.exe
UDP	34441	Both	ARCP (audio routing)	apec3.exe
UDP	34455	Both	DBCP (audio routing)	apec3.exe
UDP	39900	Both	CMCP (ConMon)	common_server.exe
UDP	5353	Both	mDNS (used by mDNSResponder.exe)	Shure mDNSResponder.exe
UDP	38801-38810	Both	ConMon channels (unicast)	Shure Common_Server.exe
UDP	8702, 8703, 8708	Both	ConMon channels (multicast)	Shure Common_Server.exe
UDP	34336-34591	Both	Audio channels	apec3.exe
UDP	5568	Both	Session Data Transport (SDT), part of ACN	Shure_IntelliMix_Room.exe
UDP	8427	Both	Shure SLP (discovery) (multicast)	Shure_IntelliMix_Room.exe
TCP	443	Outbound	HTTPS	Shure_IntelliMix_Room.exe

Using Command Strings with IntelliMix Room

To control IntelliMix Room with third-party control systems, turn on command strings in Designer. You must choose an open port on the computer running IntelliMix Room to send and receive command strings.

Default port: 2202

Port range: 1025-65534

1. In Designer, open the installation of IntelliMix Room you want to control and go to Settings > Command strings.
2. Turn on command strings.
3. Enter an available port to send and receive the command strings. Make sure that the port isn't being used by any other programs installed on the computer.

To test if the port is available:

- Send a command to IntelliMix Room. Make sure you are targeting IntelliMix Room's control IP address.
- If you don't receive a response, the port is being used by another program.
- Try a different port number and send the command until you receive a response.

- For best results, install all software on the computer before choosing a port for command strings. Adding new software after setting up command strings can change how the computer's ports are used, which can affect command strings.

A complete list of command strings is available at pubs.shure.com/command-strings/IntelliMixRoom.

Troubleshooting

Event Logs

There are 2 different event logs to help with troubleshooting: the IntelliMix Room-level event log, and the Designer-level event log. Each one logs different types of events.

IntelliMix Room Event Log

To access, open IntelliMix Room from the system tray and select Event log.

IntelliMix Room's event log collects detailed information about the license status, CPU performance, audio performance, and other possible issues. If you need to contact Shure's support team, this event log provides the most detail about each installation.

Designer Event Log

To access, open Designer and select Event log.

Designer's event log collects high-level information about all devices and software controlled by Designer. This event log isn't as detailed as the device-specific event logs.

Event logs collect up to 1,000 entries. Select Export log to create a CSV (comma separated values) document to save and sort the log data.

Severity Level

Information

An action or event has been successfully completed.

Warning

An action cannot be completed, but overall functionality is stable.

Error

A problem has occurred that could inhibit functionality.

Log Details

Description

Provides details on events and errors, including IP address and subnet mask

Time Stamp

Time since most recent boot-up

Event ID

Indicates event type for internal reference

Troubleshooting

Problem	Solution
<p>IntelliMix Room installations won't show up in Designer</p>	<ol style="list-style-type: none"> 1. On the device running IntelliMix Room, click the system tray icon. Check that the installation is using the same Shure control network as Designer. 2. Check if other Shure devices appear in Designer. If they do, open the Windows Task Manager and go to Services. Restart IntelliMix Room. 3. Open Dante Controller. Check if the installation appears in Dante Controller. 4. If the installation appears in Dante Controller, check firewall settings. Make sure it's not blocking any Shure traffic. 5. Contact Shure support if it still doesn't appear in Designer.
<p>Licenses won't activate in Designer</p>	<ol style="list-style-type: none"> 1. Check that the device running IntelliMix Room has an internet connection. This is required for license activation. 2. Go to your account at software.shure.com and check that you have enough licenses. If you don't have enough licenses or need a different channel count, purchase more from your Shure sales representative. 3. Contact Shure support.
<p>Clicked IntelliMix Room icon in system tray, and the screen loads continuously</p>	<p>This means IntelliMix Room isn't running properly. Try the following solutions:</p> <ol style="list-style-type: none"> 1. Open the Windows Task Manager and go to Services. 2. Check if IntelliMix Room is running. If it's stopped, right-click to start the service. If it's running, right-click to stop the service and then restart it. 3. Restart the computer and reopen from the system tray. 4. Check if you can discover this IntelliMix Room installation in Designer or Dante Controller. If you can't discover the installation, uninstall it and then reinstall. 5. Contact Shure support if it still doesn't run correctly.
<p>IntelliMix Room won't pass audio</p>	<ol style="list-style-type: none"> 1. Open the installation in Designer and check that it's unmuted. 2. Check if the installation has a license that isn't expired. If it has a valid license, check the audio signal chain for inputs that are muted or routed incorrectly.

Problem	Solution
	<ol style="list-style-type: none"> 3. If it doesn't have a license, find your license ID and add it to the project. Make sure the device with IntelliMix Room has a working internet connection. Find the license ID in your purchase email or in your account at software.shure.com. If you don't have enough licenses or need a different channel count, purchase more from your Shure sales representative. 4. Check that the installation has the same channel count as what is available in your account for that license ID. For example, if your installation has 8 channels, but your license ID only has one 16-channel license available, you need to purchase an 8-channel license. 5. On the device running IntelliMix Room, try to access software.shure.com. If you can't access it, try visiting another website. If you can, your firewall could be blocking traffic from the cloud license server. Adjust settings to allow traffic from Shure. If you can access it, contact Shure support. The firewall is not interfering with the cloud license server.
<p>Far end hears wispy echo sounds coming from room using IntelliMix Room</p>	<p>This is likely caused by latency introduced to the signal chain after the AEC reference signal. We have observed devices like soundbars or displays adding extra latency to the signal after it leaves IntelliMix Room. This difference between the AEC reference signal and what comes through the speakers causes problems for the echo canceler's training, and results in a wispy sound.</p> <p>To fix this problem, delay your AEC reference signal so that it's closer to the signal coming out of the speakers.</p> <ol style="list-style-type: none"> 1. Using the matrix mixer, route the far-end signal (virtual audio input) to an unused Dante output. 2. Set this Dante output as the AEC reference signal. 3. Add delay to the Dante output. Start with 50-100 ms, and listen for echo artifacts on the far end. To provoke the artifacts, a single talker on the far end should make sibilant sounds ("Psst" or "Shhh") and observe the echo coming back. 4. Continue to increase or decrease the delay until the echo artifacts disappear from the perspective of the far-end participant.