

Dante Troubleshooting

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In this session we will be covering:

- Several real world troubleshooting scenarios
- An overview of top issues and how to resolve them.
- Tips and techniques to use when analyzing or troubleshooting a Dante network.

Before We Begin...

- It is recommended in general that you ensure all your Dante devices are using the latest firmware.
- And that you are using the latest version of Dante Controller.



- You're in charge of the audio system for a week long sports festival.
 - The numerous Dante enabled mixing consoles, DSP, speaker processors, and switches are supplied by a rental company.
 - It's gear you've worked with before, except for the switches
 - The equipment is set-up, connected and powered on.
 - All of the devices appear as they should on the network.
 - You begin routing some audio.
 - You immediately notice that audio is intermittent throughout the system.

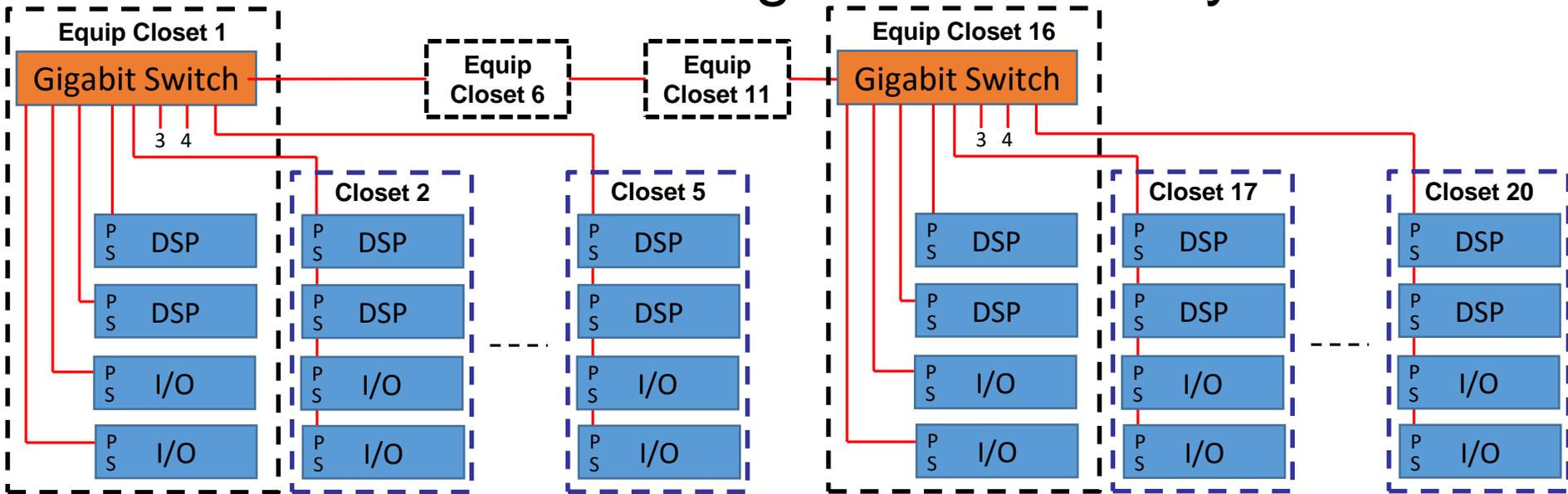
What should you do?

- You check the Clock Status tab find:
 - Multiple devices are appearing as the master clock for the system.
- You can perform a test:
 - Connecting several of the devices in a “daisy-chain” configuration
 - These work fine, so you suspect the switch settings.
- You check the configuration of the switches.
 - Finding that the previous user had blocked all multicast traffic.
 - Preventing the Dante PTP clock from functioning properly
- You correct the setting(s) and the Dante network clocks properly.

Troubleshooting Examples

Scenario 2

- A recent Dante installation has 20 equipment closets located throughout the facility.



- Room combining is an everyday occurrence with this system.
 - Typical of the audio systems used in Hotels & Conference/Convention Centers.
- Your client is complaining of intermittent noise and/or distorted audio.

What should you do?

- You determine certain room combines and overflow combinations can trigger the noise.
- In Device View in Dante Controller you check the latency settings for each of the devices.
 - They are set to the default value of 1ms
- The number of switch hops that occur in certain room configurations well exceeds the default latency setting.
- You change the latency settings for the devices to 2ms.

- Your bringing a system online in a facility which contains many Dante devices
 - Around 30% of the devices use Brooklyn II (Gigabit)
 - The remaining devices all use Ultimo (100Mbps).
 - The audio distribution needs of the facility require the use of numerous multicast Dante flows.
 - The system has been running for several days.
 - It is passing audio but occasionally sounds distorted in certain coverage areas.

What should you do?

- You look at the Multicast Bandwidth usage on the Status Bar in Dante Controller
 - It says that you have 90 Mbps of multicast traffic on the network.
- A majority of the Dante equipment being used is has 100Mb ports (Ultimo)
 - The amount of multicast traffic is nearing the capacity of the 100Mb Dante interfaces.
 - Running out of bandwidth.
- You turn on IGMP snooping to manage the multicast traffic.
 - Leaving you with plenty of headroom for the Ultimo devices.

- You've been using the same 200' length of CAT-5e cable
 - For connection between the stage and FOH mixer for gigs.
- You used it the night before
 - It worked for at a smaller event (24Rx and 12Tx).
- Today its being used at a larger event.
 - 256 x 256
- But you are having problems connecting all of the channels

What should you do?

- The cable appears to be good
 - After all, it worked yesterday
- You disconnect the cable and plug in a spare.
 - All channels are working properly.
- You determined that the bandwidth of the cable was compromised.
 - It worked for lower channel counts (requiring less bandwidth) but did not function at higher channel counts.

Overview: Dante Troubleshooting FAQs

- Many Dante issues are very simple to resolve.
- These issues tend to fall into one of the following categories:
 - Connectivity
 - Dante Controller - devices not appearing properly.
 - Audio artifacts or distortion on certain devices
 - Loss of audio / Audio muting

Connectivity & Device Appearance

- Check that the network cable is plugged in
 - And that the activity lights are flashing (fairly rapidly).
- Check that the correct network interface is selected.
 - Using the 'interface selection' button in the toolbar of Dante Controller:
- Check that your network interface has the correct IP address.
 - Or that it is set to DHCP
- If there are two different wired network interfaces on your computer:
 - Ensure that they are in different subnets – or disable the unused network interface.

Connectivity & Device Appearance

- Check that you have no Antivirus software installed or firewall active
 - Please see Dante controller user guide for details of how to safely configure a firewall for use in a deployed network.
- If an item/feature is greyed out:
 - It is because that Dante enabled device you are using does not support changing that feature
 - Or the feature is unavailable in that Dante enabled device.
 - For further information, contact the device manufacturer's technical support, or visit the support pages of their website.

Audio Artifacts and Distortion

- Probably caused by the input not being synchronous to Dante. Either:
 - 1 - Set the input source to clock to Dante (in most consoles this is a card slot option).
 - 2 - Set Dante to slave to external word clock on this device (external being external to the Dante Network – it is not normally a visible cable).
- Can also be caused by bandwidth limitations caused by network traffic on 100Mb nodes.

Loss of Audio / Audio Muting

- Typically caused by clock issues.
- Dante will mute the audio of a device if it loses sync.
 - Any muting of audio will be listed in the Event Log.
 - Once synced, it will un-mute.
- Use the Clock Status Monitor to analyse the performance history of all the Dante devices on the network.

Tips & Techniques

- Audio professionals' typically have acquired various test tools and devices over the years.
 - Especially if your in the field service department
 - Things that make troubleshooting and commissioning audio systems easier
- For analog systems, you might have in your kit:
 - Impedance meter
 - Cable tester
 - Signal generator
 - Telephone Butt-Set
 - Spare microphone
 - Spare cables & adapters
 - DMM
 - Laptop computer

Tips & Techniques

- For networked audio systems, you might have in your kit:
 - Your laptop
 - A long CAT-5e cable
 - Not much else.

Tips & Techniques

- Some things to add to your toolbox:
 - A spare Gigabit switch
 - To quickly determine where the problem resides
 - In the switch configuration
 - Or the equipment
 - 4 or 8-port
 - Various lengths of network cable.
 - Dante Virtual Soundcard or Dante Via loaded on your computer.
 - A small Ultimo-based I/O device is very handy to have.

Tips & Techniques

- Work smarter, not harder
 - Bring the system up several devices at a time
 - It's easier to detect any issues (if they appear)
 - For rentals and installations:
 - Do an initial configuration at the shop
 - Not always possible, but it saves time in the field.

Tips & Techniques

- Work smarter, not harder
 - For redundant networks:
 - Bring the primary network online first
 - Get it 100% functional
 - Make sure all of the devices (that have primary and secondary) are set to redundant mode.
 - Then begin work on the secondary.
 - Do not assume every store bought cable is good.

Q & A



Thank You!

