Dante 101
Audio Networking
What is Dante

• Dante is an audio (now video) networking system created by Audinate.
• The system consists of hardware and software packages designed to facilitate the transfer of audio and video over a standard computer network, using standard networking hardware.
• Dante systems (w/o DDM) use mDNS (Bonjour) for discovery and cannot cross subnets; all devices must be on same ip subnet.
• Dante systems (w/o DDM) uses zero-config and apipapa and do not necessarily need DHCP or static IPs to be defined.
• Dante systems do not require STP cabling, but many devices are configured with ethercon connectors.
• 1 Gbps connection can handle 512 bi-directional 24 bit/48 khz dante channels
Dante Domain Manager (DDM)

• DDM allows logical grouping of dante devices into domains to provide security and ease of configuration and management.
• Dante systems with Dante Domain Manager use standard DNS for discovery and can send audio across different networks (subnets).
• Each network requires a clocking source as well as subnet leader clocks.
• DDM is a virtualized application server (linux) and can run in most virtual server environments.
• DDM uses a web interface and can be used on desktops and laptops as well as tablet devices.
The Dante network components begin with A-D and D-A encoding/decoding hardware.

These components typically come in the form of an add-on card for your audio mixer or a stage box. These devices are connected to the computer network then the audio routes are made using the Dante Controller Software.
Dante Components

• Dante devices can have single or dual network ports available
• The secondary network port can be configured for (HA) High-Availability redundancy or providing a control port for device management.
  • Shure ULXD dante ports
  • Redundancy or Shure Control
Dante Controller allows static routes (subscriptions) to be made between Transmitters and Receivers.

A transmitter can send to multiple receivers (up to 3 using unicast and more with multicast)

Once subscriptions are established, they are committed to the transmitter and receiver’s memory, Dante Controller does not have to remain open.

Subscriptions are retained when equipment is powered off.

Successful subscriptions are shown with green check mark.

A subscription with an orange triangle means one of the devices (transmit or receive) has been removed from the network, When the device is reconnected the subscription will show a green check mark again.
All digital audio systems require a clocking source.

The master or leader clock is elected automatically in a Dante system.

You can choose a clock leader if you prefer: “Preferred Leader”
  • This is typically your audio consoles’ Dante card
  • This card can receive external clocking from your audio console:
    • “Enable Sync to External”
The Device Info tab gives you model and product versions as well as IP addressing and network link speed info.

<table>
<thead>
<tr>
<th>Device Name</th>
<th>Model Name</th>
<th>Product Version</th>
<th>Dante Version</th>
<th>Device Lock</th>
<th>Primary Address</th>
<th>Primary Link Speed</th>
<th>Secondary Address</th>
<th>Secondary Link Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>192.168.50.0/24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>AMS-BLU-UND6IO</td>
<td>unD6IO-BT</td>
<td>4.10.0</td>
<td>4.2.0.4</td>
<td>N/A</td>
<td>192.168.50.20</td>
<td>100Mbps</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>AMS-CON-SQ5</td>
<td>SQDanteV2</td>
<td>1.1.2</td>
<td>4.0.10.3</td>
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<td>192.168.50.8</td>
<td>1Gbps</td>
<td>N/A</td>
<td>Link down</td>
</tr>
<tr>
<td>AMS-HAS-FM557</td>
<td>PCB300X Dante Interface</td>
<td>1.0.0</td>
<td>4.1.6.7</td>
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<td>192.168.50.31</td>
<td>100Mbps</td>
<td>N/A</td>
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<tr>
<td>AMS-MIC-ULXD4Q</td>
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<td>192.168.50.15</td>
<td>1Gbps</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
The network status tab gives you primary and secondary link status information as well as network bandwidth consumed and latency.
The Device View has multiple tabs for viewing and configuring your dante device.

The Receive and Transmit tabs display subscription information.
The Device View Status tab displays model and firmware information about your Dante device as well as network interface information.
The Device View Latency tab displays current latency settings as well as network utilization information.
The Device View Device Config tab allows configuration changes to your dante device including renaming the device, changing the sample rate, PCM encoding, latency as well as the ability to reboot the device.
Dante Controller – Device View - Network Config

• The Device View Network Config tab allows configuration of the dante redundancy (secondary) port as well as setting static IP address information or setting the ports to DHCP.
The Dante Updater Button in the menu bar brings up the Updater window that displays the currently installed firmware versions and allow for updates if available.
Thanks for Joining Us!

Chris Moody
• Director IT/AV and Innovation
• cmoody@faylib.org
Resources

• Dante Certification Program:
  • https://www.audinate.com/learning/training-certification/dante-certification-program

• Dante Downloads:
  • https://www.audinate.com/products/software

• Yamaha Guide for Dante switch config - Cisco SG300
  • https://usa.yamaha.com/products/contents/proaudio/docs/dante_network_design_guide/301_setting_sg300.html