

The HDA logo features a black square on the left containing a white audio waveform. To the right of the square, the letters "HDA" are written in a large, bold, black sans-serif font.

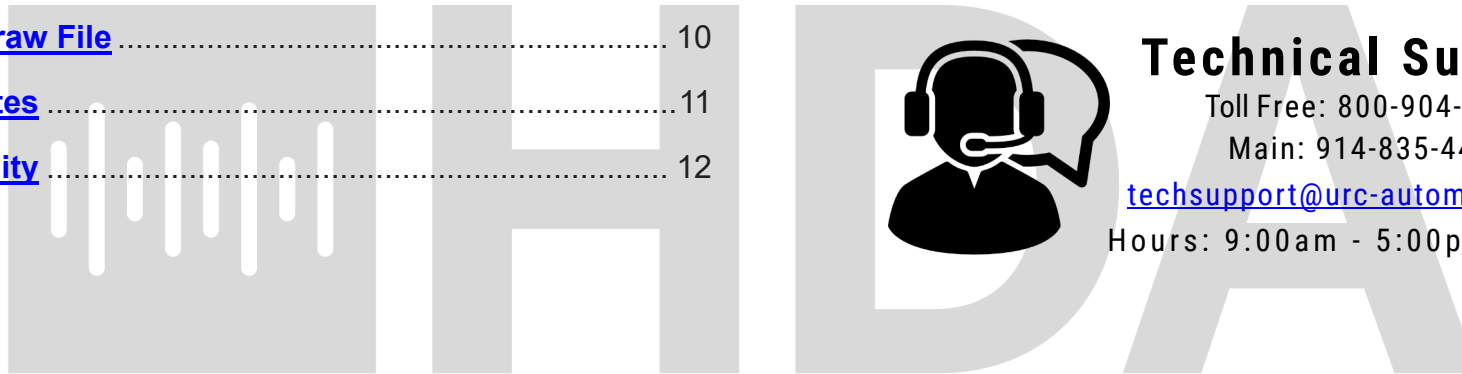
 **High-Definition Audio**

Check HDA State Guide



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### Technical Support

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Hours: 9:00am - 5:00pm EST M-F

### Gathering HDA Audio Logs with the Check HDA State Tool

When experiencing audio issues with an HDA system, it is important to run the “**Check HDA State v1653**” logging tool on the network when you hear audio issues and **when you do not hear audio issues**. Follow the steps listed below. Please **USE WIRED ETHERNET ON YOUR PC** for the best results. This tool must be run onsite with the HDA system.

1. Verify that the HDA-SW5 switches are running firmware v150. If not, please update the HDA-SW5 AVB switches with the firmware linked below.

#### [HDA-SW5 Firmware](#)

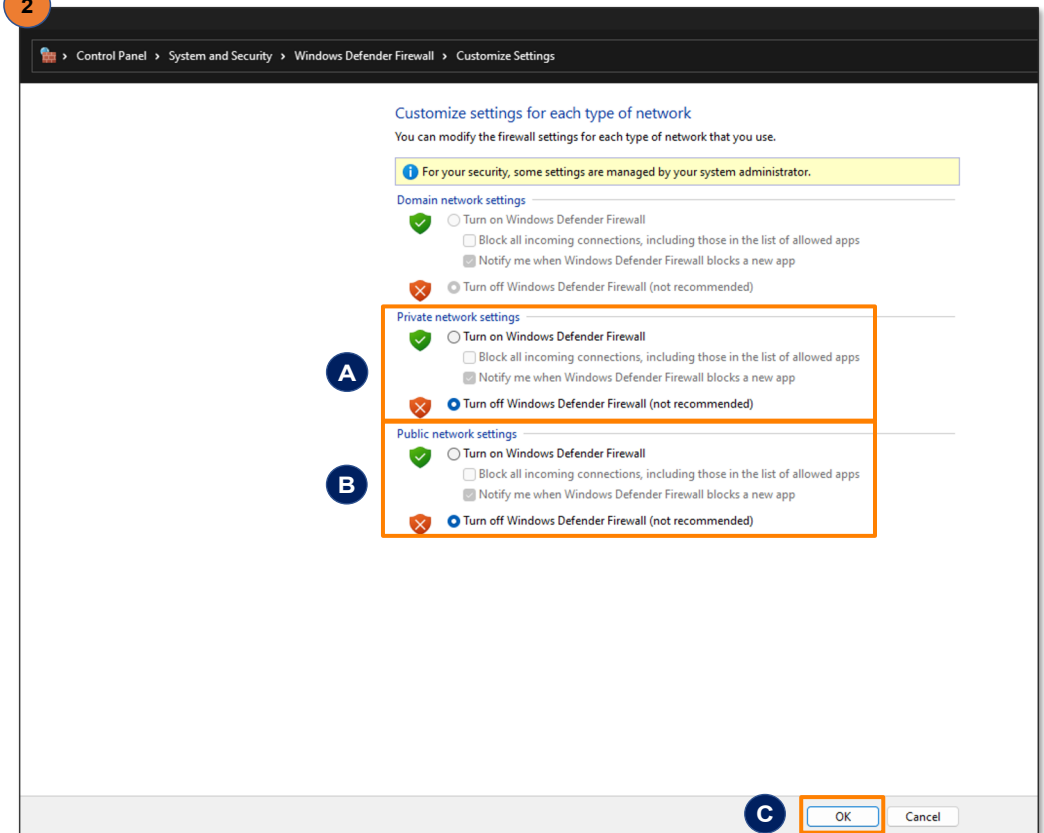
(Do not unzip this file).



Run Accelerator as an “Administrator” and use the HDA-SW5 update tool (Tools -> HDA-SW5 Update) to check the firmware of the HDA-SW5 switch or to load the new v150 firmware into the switch if necessary.

2. Go into “**Windows Defender**” on your PC and **Turn off** the following options to allow the logging tool to gather the logs.
  - A. Private network settings.
  - B. Public network settings.
  - C. Click OK.

2



### Gathering HDA Audio Logs with the Check HDA State Tool (cont'd)

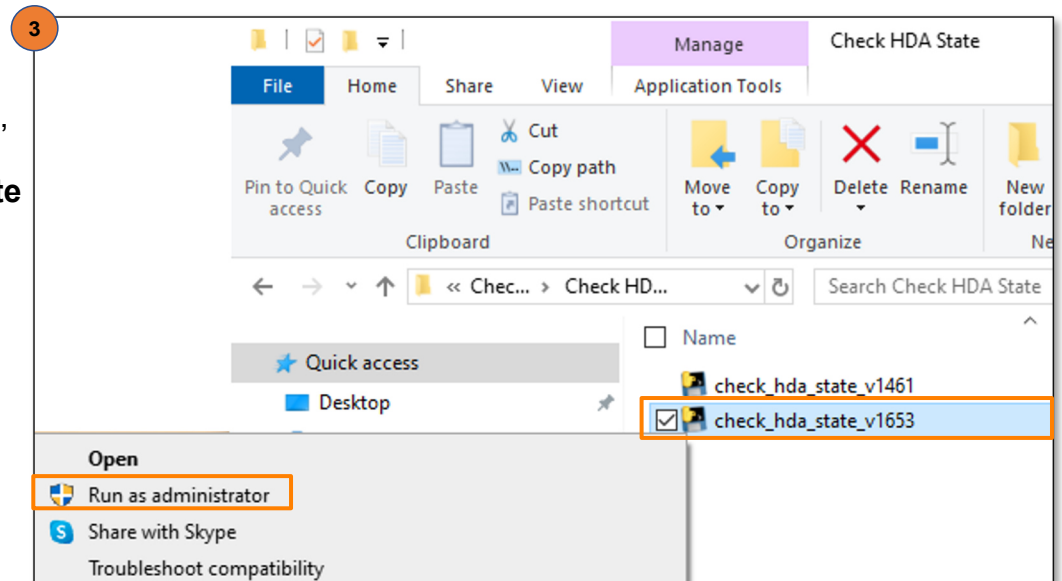
3. **When not hearing audio issues**, and then again **while hearing audio issues**, run the logging tool linked below when at the job site, on a PC connected to the network.  
**Please note that the logging tool CANNOT be ran from an offsite location.**

Download the logging tool using the following link.

[Check HDA State v1653](#)



When opening the tool on your PC, run the tool as an "Administrator".



### Gathering HDA Audio Logs with the Check HDA State Tool (cont'd)

- **Make sure you are on a wired network and not wifi.** Please don't make changes to the system, run a scanning tool like "Wireshark", download from Accelerator or reboot devices during the scan.
- When executed a terminal window will appear. It will collect information about all HDA devices on the network. **This will take about 10 minutes** (note: this greatly depends on the number of HDA devices on the network).
- The window will print out "**ALL DONE, press Enter to exit**". Please take a screenshot of the data in the window.
- Press "**enter**" to exit and a file labeled something similar to the following, *hda\_state\_20231121\_162545.raw* will be created in the same directory as the *check\_hda\_state* executable.
- Please provide this file to tech support

4. While the logging tool is running, you will see a debug window open, as shown below. Please take a screenshot of the below information for each log captured and provide it to URC Tech Support.

```

4
The following devices responded:

Switches: 4
HDA: 192.168.1.144 dhcp:1 v150 HDA-SWS () MAC: 001fb846002b SN: 43 HW: 0.9
HDA: 192.168.1.195 dhcp:1 v150 HDA-SWS () MAC: 001fb84603b1 SN: 945 HW: 0.9
HDA: 192.168.1.213 dhcp:1 v150 HDA-SWS () MAC: 001fb8460070 SN: 112 HW: 0.9
HDA: 192.168.1.241 dhcp:1 v150 HDA-SWS () MAC: 001fb8460c2c SN: 3116 HW: 0.9

HDAs: 7
HDA: 192.168.1.11 dhcp:0 v1653 HDA_IO (HDA-I/O) MAC: 001fb84502c2 SN: 706 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.12 dhcp:0 v1653 HDA_130 (HDA-130) MAC: 001fb8410024 SN: 36 HW: 2, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.21 dhcp:0 v1653 HDA_8100 (HDA-8100) MAC: 001fb844002e SN: 46 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, MASTER
HDA: 192.168.1.32 dhcp:0 v1653 HDA_130 (HDA-130) MAC: 001fb8410048 SN: 72 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.37 dhcp:0 v1653 HDA_4100 (HDA-4100) MAC: 001fb843002e SN: 46 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.4 dhcp:0 v1653 HDA_1600 (HDA-1600-70V) MAC: 001fb842005a SN: 90 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.7 dhcp:0 v1653 HDA_IO (HDA-I/O) MAC: 001fb8450037 SN: 55 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE

PTP Diagnostics:
-----
device      role  as_cap  state  pdval  pdelay  lostr  ex      lr_ann_v  ltr_ann  ltr_sync  lt_ann  lt_sync  lt_pd_req
-----
192.168.1.37 2,2,2 1,1,1   2,2,2  1,1,1  218,218,218  0,0,0  2464,2465,2466  1,1,1  1000,1000  1251,1126  0,0  0,0  1000,1000
192.168.1.21 0,0,0 1,1,1   0,0,0  1,1,1  213,212,212  0,0,0  2484,2486,2487  0,0,0  0,0  0,0  2000,1000  1251,1251  2000,1000
192.168.1.32 2,2,2 1,1,1   2,2,2  1,1,1  222,222,222  0,0,0  2442,2443,2445  1,1,1  999,2000  1251,1251  0,0  0,0  1000,2000
192.168.1.12 2,2,2 1,1,1   2,2,2  1,1,1  229,229,229  0,0,0  703166,703167,703168  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
192.168.1.11 2,2,2 1,1,1   2,2,2  1,1,1  217,217,217  0,0,0  2482,2483,2484  1,1,1  1000,1000  1251,1251  0,0  0,0  1000,1000
192.168.1.7  2,2,2 1,1,1   2,2,2  1,1,1  224,224,224  0,0,0  703207,703208,703209  1,1,1  1002,998  1251,1126  0,0  0,0  1000,1000
192.168.1.4  2,2,2 1,1,1   2,2,2  1,1,1  215,215,215  0,0,0  2520,2521,2522  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000

writing log to: C:\Users\ppittner\Desktop\Virtual Desktop\HDA Test Tools\Check HDA State v1653 010324\hda_state_20240118_150556.raw
ALL DONE, press Enter to exit

```

### Interpreting the Important Data in the Log

- A. dhcp:0** means the device is set to a Static IP. URC recommends that all HDA amplifiers and HDA-IO devices are set to a Static IP. This does not apply to an HDA-SW5 AVB Switch which should be left as a DHCP device (without any type of MAC reservation in the router).  
**dhcp:1** means the device is set to DHCP.

**A**

```
The following devices responded:
Switches: 4
HDA: 192.168.1.144 dhcp:1 v150 HDA-SW5 () MAC: 001fb846002b SN: 43 HW: 0.9
HDA: 192.168.1.195 dhcp:1 v150 HDA-SW5 () MAC: 001fb84603b1 SN: 945 HW: 0.9
HDA: 192.168.1.213 dhcp:1 v150 HDA-SW5 () MAC: 001fb8460070 SN: 112 HW: 0.9
HDA: 192.168.1.241 dhcp:1 v150 HDA-SW5 () MAC: 001fb8460c2c SN: 3116 HW: 0.9
HDAs: 7
HDA: 192.168.1.11 dhcp:0 v1653 HDA_IO (HDA-I/O) MAC: 001fb84502c2 SN: 706 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.12 dhcp:0 v1653 HDA_130 (HDA-130) MAC: 001fb8410024 SN: 36 HW: 2, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.21 dhcp:0 v1653 HDA_8100 (HDA-8100) MAC: 001fb844002e SN: 46 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, MASTER
HDA: 192.168.1.32 dhcp:0 v1653 HDA_130 (HDA-130) MAC: 001fb8410048 SN: 72 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.37 dhcp:0 v1653 HDA_4100 (HDA-4100) MAC: 001fb843002e SN: 46 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.4 dhcp:0 v1653 HDA_1600 (HDA-1600-70V) MAC: 001fb842005a SN: 90 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.7 dhcp:0 v1653 HDA_IO (HDA-I/O) MAC: 001fb8450037 SN: 55 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
```

- B. Firmware version:** The minimum firmware version for HDA amplifiers and HDA-IOs should be **v1653**. The minimum firmware version for HDA-SW5 switches is v150.

**B**

```
The following devices responded:
Switches: 4
HDA: 192.168.1.144 dhcp:1 v150 HDA-SW5 () MAC: 001fb846002b SN: 43 HW: 0.9
HDA: 192.168.1.195 dhcp:1 v150 HDA-SW5 () MAC: 001fb84603b1 SN: 945 HW: 0.9
HDA: 192.168.1.213 dhcp:1 v150 HDA-SW5 () MAC: 001fb8460070 SN: 112 HW: 0.9
HDA: 192.168.1.241 dhcp:1 v150 HDA-SW5 () MAC: 001fb8460c2c SN: 3116 HW: 0.9
HDAs: 7
HDA: 192.168.1.11 dhcp:0 v1653 HDA_IO (HDA-I/O) MAC: 001fb84502c2 SN: 706 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.12 dhcp:0 v1653 HDA_130 (HDA-130) MAC: 001fb8410024 SN: 36 HW: 2, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.21 dhcp:0 v1653 HDA_8100 (HDA-8100) MAC: 001fb844002e SN: 46 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, MASTER
HDA: 192.168.1.32 dhcp:0 v1653 HDA_130 (HDA-130) MAC: 001fb8410048 SN: 72 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.37 dhcp:0 v1653 HDA_4100 (HDA-4100) MAC: 001fb843002e SN: 46 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.4 dhcp:0 v1653 HDA_1600 (HDA-1600-70V) MAC: 001fb842005a SN: 90 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.7 dhcp:0 v1653 HDA_IO (HDA-I/O) MAC: 001fb8450037 SN: 55 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
```

## Interpreting the Important Data in the Log (cont'd)

**C. AS:1** means that the HDA amplifier or HDA-IO is seeing a gigabit network connection. This is required for HDA audio streaming to work. If the “**AS**” parameter is showing a value other than “**1**”, the HDA amplifier or HDA-IO is not seeing a gigabit connection and HDA audio streaming will not work or can possibly be distorted. Check your CAT5e/ Cat6 cabling and endpoints. The “**AS**” parameter does not apply to the HDA-SW5 switches. Using some non-AVB fiber transceivers, patch bays and improperly shielded Cat5e/6 cable can cause the failure of a gigabit connection.

**C**

```
HDA: 7
HDA: 192.168.1.11 dhcp:0 v1653 HDA_IO (HDA-I/O) MAC: 001fb84502c2 SN: 706 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.12 dhcp:0 v1653 HDA_130 (HDA-130) MAC: 001fb8410024 SN: 36 HW: 2, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.21 dhcp:0 v1653 HDA_8100 (HDA-8100) MAC: 001fb844002e SN: 46 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, MASTER
HDA: 192.168.1.32 dhcp:0 v1653 HDA_130 (HDA-130) MAC: 001fb8410048 SN: 72 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.37 dhcp:0 v1653 HDA_4100 (HDA-4100) MAC: 001fb843002e SN: 46 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.4 dhcp:0 v1653 HDA_1600 (HDA-1600-70V) MAC: 001fb842005a SN: 90 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.7 dhcp:0 v1653 HDA_IO (HDA-I/O) MAC: 001fb8450037 SN: 55 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
```

**D. MASTER/SLAVE:** In a system where multiple HDA amplifiers and HDA-IOs are being used, only one HDA unit should be listed as a **MASTER**. All other HDA units in the installation should be listed as a **SLAVE**. This applies when using an HDA-SW5 AVB switch, and other third-party AVB switches. Inform URC Tech support if you are using a third-party AVB switch.

**D**

```
HDA: 7
HDA: 192.168.1.11 dhcp:0 v1653 HDA_IO (HDA-I/O) MAC: 001fb84502c2 SN: 706 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.12 dhcp:0 v1653 HDA_130 (HDA-130) MAC: 001fb8410024 SN: 36 HW: 2, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.21 dhcp:0 v1653 HDA_8100 (HDA-8100) MAC: 001fb844002e SN: 46 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, MASTER
HDA: 192.168.1.32 dhcp:0 v1653 HDA_130 (HDA-130) MAC: 001fb8410048 SN: 72 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.37 dhcp:0 v1653 HDA_4100 (HDA-4100) MAC: 001fb843002e SN: 46 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.4 dhcp:0 v1653 HDA_1600 (HDA-1600-70V) MAC: 001fb842005a SN: 90 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
HDA: 192.168.1.7 dhcp:0 v1653 HDA_IO (HDA-I/O) MAC: 001fb8450037 SN: 55 HW: 3, AS: 1, PTP: 001f b8ff fe44 002e, SLAVE
```

# Total Control

### PTP Diagnostics

**PTP diagnostics will give us valuable PTP information when troubleshooting audio issues in an HDA system.**

Each HDA device is sampled three times for every run (and there will be three runs in total). Each device (that has firmware v1653 or later) should have some PTP diagnostics presented in a table.

We sample once every second. Each sample is separated by a comma, so all three samples are shown in each cell of the table.

**A.** In the accompanying image notice how the MASTER unit (192.168.1.21) does not have any values for *lr\_ann\_v*, *ltr\_ann*, *ltr\_sync*, and how the rest doesn't have values for *lt\_ann* and *lt\_sync* - this is expected, see the description for each field below.

```

PTP Diagnostics:
device      role      as_cap    state    pdval    pdelay    lostr    ex          lr_ann_v  ltr_ann  ltr_sync  lt_ann  lt_sync  lt_pd_req
-----
192.168.1.37 2,2,2    1,1,1     2,2,2    1,1,1    218,218,218 0,0,0    2464,2465,2466 1,1,1     1000,1000 1251,1126 0,0      0,0      1000,1000
192.168.1.21 0,0,0    1,1,1     0,0,0    1,1,1    213,212,212 0,0,0    2484,2486,2487 0,0,0     0,0      0,0      2000,1000 1251,1251 2000,1000
192.168.1.32 2,2,2    1,1,1     2,2,2    1,1,1    222,222,222 0,0,0    2442,2443,2445 1,1,1     999,2000 1251,1251 0,0      0,0      1000,2000
192.168.1.12 2,2,2    1,1,1     2,2,2    1,1,1    229,229,229 0,0,0    703166,703167,703168 1,1,1     1000,1000 1126,1251 0,0      0,0      1000,1000
192.168.1.11 2,2,2    1,1,1     2,2,2    1,1,1    217,217,217 0,0,0    2482,2483,2484 1,1,1     1000,1000 1251,1251 0,0      0,0      1000,1000
192.168.1.7  2,2,2    1,1,1     2,2,2    1,1,1    224,224,224 0,0,0    703207,703208,703209 1,1,1     1002,998 1251,1126 0,0      0,0      1000,1000
192.168.1.4  2,2,2    1,1,1     2,2,2    1,1,1    215,215,215 0,0,0    2520,2521,2522 1,1,1     1000,1000 1126,1251 0,0      0,0      1000,1000

writing log to: C:\Users\ppittner\Desktop\Virtual Desktop\HDA Test Tools\Check HDA State v1653 010324\hda_state_20240118_150556.raw

ALL DONE, press Enter to exit
  
```

**B. role:** Current PTP role, see the accompanying table.

```

PTP Diagnostics:
device      role      as_cap    state    pdval    pdelay    lostr    ex          lr_ann_v  ltr_ann  ltr_sync  lt_ann  lt_sync  lt_pd_req
-----
192.168.1.37 2,2,2    1,1,1     2,2,2    1,1,1    218,218,218 0,0,0    2464,2465,2466 1,1,1     1000,1000 1251,1126 0,0      0,0      1000,1000
192.168.1.21 0,0,0    1,1,1     0,0,0    1,1,1    213,212,212 0,0,0    2484,2486,2487 0,0,0     0,0      0,0      2000,1000 1251,1251 2000,1000
192.168.1.32 2,2,2    1,1,1     2,2,2    1,1,1    222,222,222 0,0,0    2442,2443,2445 1,1,1     999,2000 1251,1251 0,0      0,0      1000,2000
192.168.1.12 2,2,2    1,1,1     2,2,2    1,1,1    229,229,229 0,0,0    703166,703167,703168 1,1,1     1000,1000 1126,1251 0,0      0,0      1000,1000
192.168.1.11 2,2,2    1,1,1     2,2,2    1,1,1    217,217,217 0,0,0    2482,2483,2484 1,1,1     1000,1000 1251,1251 0,0      0,0      1000,1000
192.168.1.7  2,2,2    1,1,1     2,2,2    1,1,1    224,224,224 0,0,0    703207,703208,703209 1,1,1     1002,998 1251,1126 0,0      0,0      1000,1000
192.168.1.4  2,2,2    1,1,1     2,2,2    1,1,1    215,215,215 0,0,0    2520,2521,2522 1,1,1     1000,1000 1126,1251 0,0      0,0      1000,1000
  
```

Value	Role
0	PTP MASTER
1	PTP UNCERTAIN
2	PTP SLAVE
3	PTP DISABLED



# Total Control

Check HDA State Guide

## PTP Diagnostics (cont'd)

C. **as\_cap**: 802.1AS capable. Is 1 if we can the network to be capable of PTP or 0 otherwise.

**C**

```
PTP Diagnostics:
device  role  as_cap  state  pdval  pdelay  lostr  ex  lr_ann_v  ltr_ann  ltr_sync  lt_ann  lt_sync  lt_pd_req
-----
192.168.1.37  2,2,2  1,1,1  2,2,2  1,1,1  218,218,218  0,0,0  2464,2465,2466  1,1,1  1000,1000  1251,1126  0,0  0,0  1000,1000
192.168.1.21  0,0,0  1,1,1  0,0,0  1,1,1  213,212,212  0,0,0  2484,2486,2487  0,0,0  0,0  2000,1000  1251,1251  2000,1000
192.168.1.32  2,2,2  1,1,1  2,2,2  1,1,1  222,222,222  0,0,0  2442,2443,2445  1,1,1  999,2000  1251,1251  0,0  0,0  1000,2000
192.168.1.12  2,2,2  1,1,1  2,2,2  1,1,1  229,229,229  0,0,0  703166,703167,703168  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
192.168.1.11  2,2,2  1,1,1  2,2,2  1,1,1  217,217,217  0,0,0  2482,2483,2484  1,1,1  1000,1000  1251,1251  0,0  0,0  1000,1000
192.168.1.7  2,2,2  1,1,1  2,2,2  1,1,1  224,224,224  0,0,0  703207,703208,703209  1,1,1  1002,998  1251,1126  0,0  0,0  1000,1000
192.168.1.4  2,2,2  1,1,1  2,2,2  1,1,1  215,215,215  0,0,0  2520,2521,2522  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
```

D. **state**: Same as **role** but from a different part of the system. Value should match up with the role.

**D**

```
PTP Diagnostics:
device  role  as_cap  state  pdval  pdelay  lostr  ex  lr_ann_v  ltr_ann  ltr_sync  lt_ann  lt_sync  lt_pd_req
-----
192.168.1.37  2,2,2  1,1,1  2,2,2  1,1,1  218,218,218  0,0,0  2464,2465,2466  1,1,1  1000,1000  1251,1126  0,0  0,0  1000,1000
192.168.1.21  0,0,0  1,1,1  0,0,0  1,1,1  213,212,212  0,0,0  2484,2486,2487  0,0,0  0,0  2000,1000  1251,1251  2000,1000
192.168.1.32  2,2,2  1,1,1  2,2,2  1,1,1  222,222,222  0,0,0  2442,2443,2445  1,1,1  999,2000  1251,1251  0,0  0,0  1000,2000
192.168.1.12  2,2,2  1,1,1  2,2,2  1,1,1  229,229,229  0,0,0  703166,703167,703168  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
192.168.1.11  2,2,2  1,1,1  2,2,2  1,1,1  217,217,217  0,0,0  2482,2483,2484  1,1,1  1000,1000  1251,1251  0,0  0,0  1000,1000
192.168.1.7  2,2,2  1,1,1  2,2,2  1,1,1  224,224,224  0,0,0  703207,703208,703209  1,1,1  1002,998  1251,1126  0,0  0,0  1000,1000
192.168.1.4  2,2,2  1,1,1  2,2,2  1,1,1  215,215,215  0,0,0  2520,2521,2522  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
```

E. **pdval**: Peer delay valid, 0 or 1.

**E**

```
PTP Diagnostics:
device  role  as_cap  state  pdval  pdelay  lostr  ex  lr_ann_v  ltr_ann  ltr_sync  lt_ann  lt_sync  lt_pd_req
-----
192.168.1.37  2,2,2  1,1,1  2,2,2  1,1,1  218,218,218  0,0,0  2464,2465,2466  1,1,1  1000,1000  1251,1126  0,0  0,0  1000,1000
192.168.1.21  0,0,0  1,1,1  0,0,0  1,1,1  213,212,212  0,0,0  2484,2486,2487  0,0,0  0,0  2000,1000  1251,1251  2000,1000
192.168.1.32  2,2,2  1,1,1  2,2,2  1,1,1  222,222,222  0,0,0  2442,2443,2445  1,1,1  999,2000  1251,1251  0,0  0,0  1000,2000
192.168.1.12  2,2,2  1,1,1  2,2,2  1,1,1  229,229,229  0,0,0  703166,703167,703168  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
192.168.1.11  2,2,2  1,1,1  2,2,2  1,1,1  217,217,217  0,0,0  2482,2483,2484  1,1,1  1000,1000  1251,1251  0,0  0,0  1000,1000
192.168.1.7  2,2,2  1,1,1  2,2,2  1,1,1  224,224,224  0,0,0  703207,703208,703209  1,1,1  1002,998  1251,1126  0,0  0,0  1000,1000
192.168.1.4  2,2,2  1,1,1  2,2,2  1,1,1  215,215,215  0,0,0  2520,2521,2522  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
```

F. **pdelay**: Peer delay (in nanoseconds). This figure is of importance, we wouldn't expect this to be 800 or more. If that is the case it could for instance be that the device has been connected to a non-PTP capable switch.

**F**

```
PTP Diagnostics:
device  role  as_cap  state  pdval  pdelay  lostr  ex  lr_ann_v  ltr_ann  ltr_sync  lt_ann  lt_sync  lt_pd_req
-----
192.168.1.37  2,2,2  1,1,1  2,2,2  1,1,1  218,218,218  0,0,0  2464,2465,2466  1,1,1  1000,1000  1251,1126  0,0  0,0  1000,1000
192.168.1.21  0,0,0  1,1,1  0,0,0  1,1,1  213,212,212  0,0,0  2484,2486,2487  0,0,0  0,0  2000,1000  1251,1251  2000,1000
192.168.1.32  2,2,2  1,1,1  2,2,2  1,1,1  222,222,222  0,0,0  2442,2443,2445  1,1,1  999,2000  1251,1251  0,0  0,0  1000,2000
192.168.1.12  2,2,2  1,1,1  2,2,2  1,1,1  229,229,229  0,0,0  703166,703167,703168  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
192.168.1.11  2,2,2  1,1,1  2,2,2  1,1,1  217,217,217  0,0,0  2482,2483,2484  1,1,1  1000,1000  1251,1251  0,0  0,0  1000,1000
192.168.1.7  2,2,2  1,1,1  2,2,2  1,1,1  224,224,224  0,0,0  703207,703208,703209  1,1,1  1002,998  1251,1126  0,0  0,0  1000,1000
192.168.1.4  2,2,2  1,1,1  2,2,2  1,1,1  215,215,215  0,0,0  2520,2521,2522  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
```

# Total Control

## PTP Diagnostics (cont'd)

G. **lostr**: Lost responses.

**G**

```

PTP Diagnostics:
device  role  as_cap  state  pdval  pdelay  lostr  ex  lr_ann_v  ltr_ann  ltr_sync  lt_ann  lt_sync  lt_pd_req
-----  ---  -
192.168.1.37  2,2,2  1,1,1  2,2,2  1,1,1  218,218,218  0,0,0  2464,2465,2466  1,1,1  1000,1000  1251,1126  0,0  0,0  1000,1000
192.168.1.21  0,0,0  1,1,1  0,0,0  1,1,1  213,212,212  0,0,0  2484,2486,2487  0,0,0  0,0  2000,1000  1251,1251  2000,1000
192.168.1.32  2,2,2  1,1,1  2,2,2  1,1,1  222,222,222  0,0,0  2442,2443,2445  1,1,1  999,2000  1251,1251  0,0  0,0  1000,2000
192.168.1.12  2,2,2  1,1,1  2,2,2  1,1,1  229,229,229  0,0,0  703166,703167,703168  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
192.168.1.11  2,2,2  1,1,1  2,2,2  1,1,1  217,217,217  0,0,0  2482,2483,2484  1,1,1  1000,1000  1251,1251  0,0  0,0  1000,1000
192.168.1.7  2,2,2  1,1,1  2,2,2  1,1,1  224,224,224  0,0,0  703207,703208,703209  1,1,1  1002,998  1251,1126  0,0  0,0  1000,1000
192.168.1.4  2,2,2  1,1,1  2,2,2  1,1,1  215,215,215  0,0,0  2520,2521,2522  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
    
```

H. **ex**: Number of peer delay exchanges.

**H**

```

PTP Diagnostics:
device  role  as_cap  state  pdval  pdelay  lostr  ex  lr_ann_v  ltr_ann  ltr_sync  lt_ann  lt_sync  lt_pd_req
-----  ---  -
192.168.1.37  2,2,2  1,1,1  2,2,2  1,1,1  218,218,218  0,0,0  2464,2465,2466  1,1,1  1000,1000  1251,1126  0,0  0,0  1000,1000
192.168.1.21  0,0,0  1,1,1  0,0,0  1,1,1  213,212,212  0,0,0  2484,2486,2487  0,0,0  0,0  2000,1000  1251,1251  2000,1000
192.168.1.32  2,2,2  1,1,1  2,2,2  1,1,1  222,222,222  0,0,0  2442,2443,2445  1,1,1  999,2000  1251,1251  0,0  0,0  1000,2000
192.168.1.12  2,2,2  1,1,1  2,2,2  1,1,1  229,229,229  0,0,0  703166,703167,703168  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
192.168.1.11  2,2,2  1,1,1  2,2,2  1,1,1  217,217,217  0,0,0  2482,2483,2484  1,1,1  1000,1000  1251,1251  0,0  0,0  1000,1000
192.168.1.7  2,2,2  1,1,1  2,2,2  1,1,1  224,224,224  0,0,0  703207,703208,703209  1,1,1  1002,998  1251,1126  0,0  0,0  1000,1000
192.168.1.4  2,2,2  1,1,1  2,2,2  1,1,1  215,215,215  0,0,0  2520,2521,2522  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
    
```

I. **lr\_ann\_v**: Last received PTP announce valid. Is 1 if the last announce was valid. Note that only the MASTER, or devices aspiring to become MASTER will send out announce messages. That means that it is expected and normal for this to be 0 for the MASTER.

**I**

```

PTP Diagnostics:
device  role  as_cap  state  pdval  pdelay  lostr  ex  lr_ann_v  ltr_ann  ltr_sync  lt_ann  lt_sync  lt_pd_req
-----  ---  -
192.168.1.37  2,2,2  1,1,1  2,2,2  1,1,1  218,218,218  0,0,0  2464,2465,2466  1,1,1  1000,1000  1251,1126  0,0  0,0  1000,1000
192.168.1.21  0,0,0  1,1,1  0,0,0  1,1,1  213,212,212  0,0,0  2484,2486,2487  0,0,0  0,0  2000,1000  1251,1251  2000,1000
192.168.1.32  2,2,2  1,1,1  2,2,2  1,1,1  222,222,222  0,0,0  2442,2443,2445  1,1,1  999,2000  1251,1251  0,0  0,0  1000,2000
192.168.1.12  2,2,2  1,1,1  2,2,2  1,1,1  229,229,229  0,0,0  703166,703167,703168  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
192.168.1.11  2,2,2  1,1,1  2,2,2  1,1,1  217,217,217  0,0,0  2482,2483,2484  1,1,1  1000,1000  1251,1251  0,0  0,0  1000,1000
192.168.1.7  2,2,2  1,1,1  2,2,2  1,1,1  224,224,224  0,0,0  703207,703208,703209  1,1,1  1002,998  1251,1126  0,0  0,0  1000,1000
192.168.1.4  2,2,2  1,1,1  2,2,2  1,1,1  215,215,215  0,0,0  2520,2521,2522  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
    
```

J. **ltr\_ann**: Last time *received*, PTP announce. All values are sampled three times. This will show the difference in time (in milliseconds) between the [second - first], and [third - second] samples. Expected periodicity around 1000 ms, but only if PTP SLAVE. A value of 0 means that the value did not change between samples.

**J**

```

PTP Diagnostics:
device  role  as_cap  state  pdval  pdelay  lostr  ex  lr_ann_v  ltr_ann  ltr_sync  lt_ann  lt_sync  lt_pd_req
-----  ---  -
192.168.1.37  2,2,2  1,1,1  2,2,2  1,1,1  218,218,218  0,0,0  2464,2465,2466  1,1,1  1000,1000  1251,1126  0,0  0,0  1000,1000
192.168.1.21  0,0,0  1,1,1  0,0,0  1,1,1  213,212,212  0,0,0  2484,2486,2487  0,0,0  0,0  2000,1000  1251,1251  2000,1000
192.168.1.32  2,2,2  1,1,1  2,2,2  1,1,1  222,222,222  0,0,0  2442,2443,2445  1,1,1  999,2000  1251,1251  0,0  0,0  1000,2000
192.168.1.12  2,2,2  1,1,1  2,2,2  1,1,1  229,229,229  0,0,0  703166,703167,703168  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
192.168.1.11  2,2,2  1,1,1  2,2,2  1,1,1  217,217,217  0,0,0  2482,2483,2484  1,1,1  1000,1000  1251,1251  0,0  0,0  1000,1000
192.168.1.7  2,2,2  1,1,1  2,2,2  1,1,1  224,224,224  0,0,0  703207,703208,703209  1,1,1  1002,998  1251,1126  0,0  0,0  1000,1000
192.168.1.4  2,2,2  1,1,1  2,2,2  1,1,1  215,215,215  0,0,0  2520,2521,2522  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
    
```

# Total Control

## PTP Diagnostics (cont'd)

**K. ltr\_sync:** Last time *received*, PTP sync. All values are sampled three times. This will show the difference in time (in milliseconds) between the [second - first], and [third - second] samples. Expected periodicity around 125 ms, but only if PTP SLAVE. A value of 0 means that the value did not change between samples.

**K**

```
PTP Diagnostics:
device  role  as_cap  state  pdval  pdelay  lostr  ex  lr_ann_v  ltr_ann  ltr_sync  lt_ann  lt_sync  lt_pd_req
-----
192.168.1.37  2,2,2  1,1,1  2,2,2  1,1,1  218,218,218  0,0,0  2464,2465,2466  1,1,1  1000,1000  1251,1126  0,0  0,0  1000,1000
192.168.1.21  0,0,0  1,1,1  0,0,0  1,1,1  213,212,212  0,0,0  2484,2486,2487  0,0,0  0,0  0,0  2000,1000  1251,1251  2000,1000
192.168.1.32  2,2,2  1,1,1  2,2,2  1,1,1  222,222,222  0,0,0  2442,2443,2445  1,1,1  999,2000  1251,1251  0,0  0,0  1000,2000
192.168.1.12  2,2,2  1,1,1  2,2,2  1,1,1  229,229,229  0,0,0  703166,703167,703168  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
192.168.1.11  2,2,2  1,1,1  2,2,2  1,1,1  217,217,217  0,0,0  2482,2483,2484  1,1,1  1000,1000  1251,1251  0,0  0,0  1000,1000
192.168.1.7  2,2,2  1,1,1  2,2,2  1,1,1  224,224,224  0,0,0  703207,703208,703209  1,1,1  1002,998  1251,1126  0,0  0,0  1000,1000
192.168.1.4  2,2,2  1,1,1  2,2,2  1,1,1  215,215,215  0,0,0  2520,2521,2522  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
```

**L. lt\_ann:** Last time *sent*, PTP announce. All values are sampled three times. This will show the difference in time (in milliseconds) between the [second - first], and [third - second] samples. Expected periodicity around 1000 ms, but only if PTP MASTER. A value of 0 means that the value did not change between samples.

**L**

```
PTP Diagnostics:
device  role  as_cap  state  pdval  pdelay  lostr  ex  lr_ann_v  ltr_ann  ltr_sync  lt_ann  lt_sync  lt_pd_req
-----
192.168.1.37  2,2,2  1,1,1  2,2,2  1,1,1  218,218,218  0,0,0  2464,2465,2466  1,1,1  1000,1000  1251,1126  0,0  0,0  1000,1000
192.168.1.21  0,0,0  1,1,1  0,0,0  1,1,1  213,212,212  0,0,0  2484,2486,2487  0,0,0  0,0  0,0  2000,1000  1251,1251  2000,1000
192.168.1.32  2,2,2  1,1,1  2,2,2  1,1,1  222,222,222  0,0,0  2442,2443,2445  1,1,1  999,2000  1251,1251  0,0  0,0  1000,2000
192.168.1.12  2,2,2  1,1,1  2,2,2  1,1,1  229,229,229  0,0,0  703166,703167,703168  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
192.168.1.11  2,2,2  1,1,1  2,2,2  1,1,1  217,217,217  0,0,0  2482,2483,2484  1,1,1  1000,1000  1251,1251  0,0  0,0  1000,1000
192.168.1.7  2,2,2  1,1,1  2,2,2  1,1,1  224,224,224  0,0,0  703207,703208,703209  1,1,1  1002,998  1251,1126  0,0  0,0  1000,1000
192.168.1.4  2,2,2  1,1,1  2,2,2  1,1,1  215,215,215  0,0,0  2520,2521,2522  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
```

**M. lt\_sync:** Last time *sent*, PTP sync. All values are sampled three times. This will show the difference in time (in milliseconds) between the [second - first], and [third - second] samples. Expected periodicity around 125 ms, but only if PTP MASTER. A value of 0 means that the value did not change between samples.

**M**

```
PTP Diagnostics:
device  role  as_cap  state  pdval  pdelay  lostr  ex  lr_ann_v  ltr_ann  ltr_sync  lt_ann  lt_sync  lt_pd_req
-----
192.168.1.37  2,2,2  1,1,1  2,2,2  1,1,1  218,218,218  0,0,0  2464,2465,2466  1,1,1  1000,1000  1251,1126  0,0  0,0  1000,1000
192.168.1.21  0,0,0  1,1,1  0,0,0  1,1,1  213,212,212  0,0,0  2484,2486,2487  0,0,0  0,0  0,0  2000,1000  1251,1251  2000,1000
192.168.1.32  2,2,2  1,1,1  2,2,2  1,1,1  222,222,222  0,0,0  2442,2443,2445  1,1,1  999,2000  1251,1251  0,0  0,0  1000,2000
192.168.1.12  2,2,2  1,1,1  2,2,2  1,1,1  229,229,229  0,0,0  703166,703167,703168  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
192.168.1.11  2,2,2  1,1,1  2,2,2  1,1,1  217,217,217  0,0,0  2482,2483,2484  1,1,1  1000,1000  1251,1251  0,0  0,0  1000,1000
192.168.1.7  2,2,2  1,1,1  2,2,2  1,1,1  224,224,224  0,0,0  703207,703208,703209  1,1,1  1002,998  1251,1126  0,0  0,0  1000,1000
192.168.1.4  2,2,2  1,1,1  2,2,2  1,1,1  215,215,215  0,0,0  2520,2521,2522  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
```

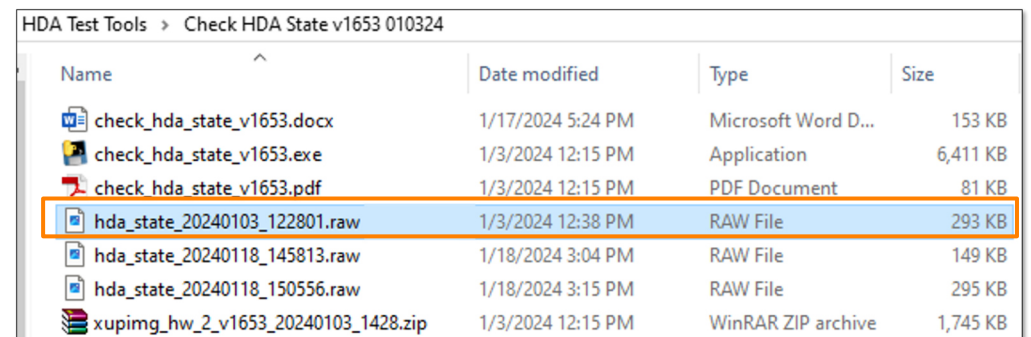
**N. ltr\_pd\_req:** Last time *sent*, PTP peer delay request. All values are sampled three times. This will show the difference in time (in milliseconds) between the [second first], and [third - second] samples. Expected periodicity around 1000 ms. A value of 0 means that the value did not change between samples.

**N**

```
PTP Diagnostics:
device  role  as_cap  state  pdval  pdelay  lostr  ex  lr_ann_v  ltr_ann  ltr_sync  lt_ann  lt_sync  lt_pd_req
-----
192.168.1.37  2,2,2  1,1,1  2,2,2  1,1,1  218,218,218  0,0,0  2464,2465,2466  1,1,1  1000,1000  1251,1126  0,0  0,0  1000,1000
192.168.1.21  0,0,0  1,1,1  0,0,0  1,1,1  213,212,212  0,0,0  2484,2486,2487  0,0,0  0,0  0,0  2000,1000  1251,1251  2000,1000
192.168.1.32  2,2,2  1,1,1  2,2,2  1,1,1  222,222,222  0,0,0  2442,2443,2445  1,1,1  999,2000  1251,1251  0,0  0,0  1000,2000
192.168.1.12  2,2,2  1,1,1  2,2,2  1,1,1  229,229,229  0,0,0  703166,703167,703168  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
192.168.1.11  2,2,2  1,1,1  2,2,2  1,1,1  217,217,217  0,0,0  2482,2483,2484  1,1,1  1000,1000  1251,1251  0,0  0,0  1000,1000
192.168.1.7  2,2,2  1,1,1  2,2,2  1,1,1  224,224,224  0,0,0  703207,703208,703209  1,1,1  1002,998  1251,1126  0,0  0,0  1000,1000
192.168.1.4  2,2,2  1,1,1  2,2,2  1,1,1  215,215,215  0,0,0  2520,2521,2522  1,1,1  1000,1000  1126,1251  0,0  0,0  1000,1000
```

### Working with the .raw File

When the log window closes, a “.raw” file is created in the same folder you placed the logging tool. URC Tech Support will need to view the “.raw” files created by the logging tool when no static is heard, and when static is heard. It wouldn't hurt to run 2 or 3 logging sessions when you hear audio issues.



Name	Date modified	Type	Size
check_hda_state_v1653.docx	1/17/2024 5:24 PM	Microsoft Word D...	153 KB
check_hda_state_v1653.exe	1/3/2024 12:15 PM	Application	6,411 KB
check_hda_state_v1653.pdf	1/3/2024 12:15 PM	PDF Document	81 KB
hda_state_20240103_122801.raw	1/3/2024 12:38 PM	RAW File	293 KB
hda_state_20240118_145813.raw	1/18/2024 3:04 PM	RAW File	149 KB
hda_state_20240118_150556.raw	1/18/2024 3:15 PM	RAW File	295 KB
xupimg_hw_2_v1653_20240103_1428.zip	1/3/2024 12:15 PM	WinRAR ZIP archive	1,745 KB

## Network Setup Notes

- Always connect the HDA-SW5 AVB Switches directly to the router, not to another network switch.
- Equally important is that “VLAN 2” is not used anywhere in the network. VLAN 2 should not be set to be used in the router or any managed switch. VLAN 2 should be reserved for HDA audio streaming. This VLAN is created by the HDA-SW5 AVB Switches.
- Do not use a MAC reservation with your HDA-SW5 switches. Let these switches run as pure DHCP devices.
- Verify IGMP snooping is disabled.

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- E. In no event shall URC be liable to any counter party with the Dealer.
- F. In no event shall URC be liable to the end user of the Products.
- G. In no event shall URC be liable for any events beyond its control.