

Nuage Setup Guide Version 1.8





Table of Contents

| 1. Introduction | 4 |
|---|----|
| 2. Used Equipment List | 4 |
| 3. Installing primary equipment | 5 |
| 3-1. Installing the controller and console desk | 5 |
| 3-2. Installing video monitors | 11 |
| 3-3. Installing Nuage I/O | 17 |
| 3.4. Installing the computer and peripheral hardware | 17 |
| 3-5. Installing the network switch | 20 |
| 3-6. Installing a KVM switch | 23 |
| 3-7. Installing video-related equipment | 28 |
| 3-8. Installing powered speakers | 34 |
| 3-9. Installing input devices | 36 |
| 4. Connecting equipment | |
| 4-1. Power connections | 37 |
| 4-2. Ethernet connections | 37 |
| 4-3. KVM-switch connections | 41 |
| 4-4. Audio connections | 44 |
| 4-5. AD8HR Connections | 50 |
| 4-6. Video-related equipment connections and other connections | 53 |
| 4-7. Wordclock Connections | 55 |
| 5. Installing software and drivers | 57 |
| 5-1. Installing the eLicenser Control Center | 57 |
| 5-2. Installing NUENDO | 59 |
| 5-3. Installing Tools for Nuage | 62 |
| 5-4. Installing Dante Controller | 67 |
| 5-5. Installing QuickTime 7.7.9 from Apple Software Update (For Windows only) | 71 |
| 5-6. Installing Bonjour (For Windows only) | 73 |
| 5-7. Installing the driver for Dante Accelerator | 76 |
| 5-8. Installing the driver for SyncStation | 78 |
| 6. Starting up & equipment settings | 84 |
| 6-1. Sequence for equipment start-up | 84 |
| 6-2. Starting up controller | 84 |

| 6-3. Starting up computer monitors and computer peripherals | 85 |
|--|-----|
| 6-4. Starting up computers | 85 |
| 6-5. Settings for Windows and Mac OS X | 89 |
| 6-6. Settings for Nuage Workgroup Manager | 95 |
| 6-7. Settings for Dante Controller | 97 |
| 6-8. Setting up and launching NUENDO | 104 |
| 6-9. Device Setup settings | 106 |
| 6-10. Project Synchronization Setup | 109 |
| 6-11. Setting VST Connections | 111 |
| 6-12. HA Remote settings with AD8HR | 120 |
| 6-13. Connecting R Series units | 122 |
| 6-14. Connecting RMio64-D | 129 |
| 6-15. Connecting GPIO units | 131 |
| 6-16. Connecting and setting up Pro Tools system | 136 |
| 6-17. Setting up and configuring Dolby Atmos environment using VST MultiPanner | 148 |

History

| March, 2013 | v1.0 released |
|-----------------|---------------|
| August, 2013 | v1.1 released |
| June, 2014 | v1.5 released |
| June, 2016 | v1.7 released |
| September, 2016 | v1.8 released |

All Yamaha products described in this document are the registered trademarks of Yamaha Corporation.

Also, other products described in this document are either the trademarks or the registered trademarks of each manufacturer or party.

1. Introduction

This guide explains how to build a system using the *Nuage*, the Yamaha Advanced Audio Production System.

The Yamaha Nuage is a complex system that brings together the Nuage Fader/Nuage Master, Nuage I/O, Dante Accelerator, and other Nuage hardware; a computer, video monitor, network switch, and other PC-related equipment; and software such as Steinberg NUENDO and Tools for Nuage. You will need a thorough knowledge of each component, and you will need an accurate understanding of ins and outs of their setup.

This guide will walk you step-by-step through installing each piece of primary equipment, connecting them via the various cables needed, installing software and drivers and all the aspects of setup that need to be handled before the system can be used.

2. Used Equipment List

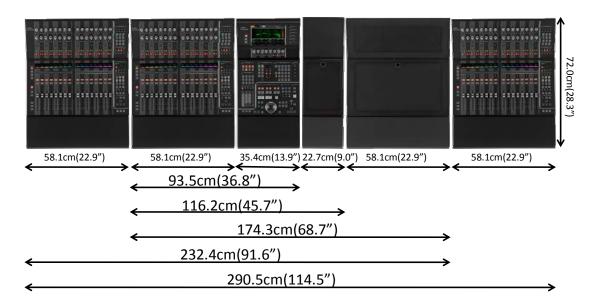
The main devices used in this guide are as follows.

- 1. Nuage Master Unit
- 2. Nuage Fader Unit, 2 units
- 3. Nuage I/O, 3 units (8A/D8/8AD8)
- 4. Nuage Workspace Unit, 2 units (large/small)
- 5. Dante Accelerator Card
- 6. Steinberg SyncStation
- 7. HP z24i, 3 units
- 8. HP Z series Workstation Z840 (Windows 7 Professional)
- 9. Apple Mac Pro (Mac OS X 10.10)
- 10. Gefen 8 × 1 DVI KVM DL Switcher, 3 units
- 11. Gefen 1:4 Video Splitter
- 12. Cisco SG300-08
- 13. Sony DSR-1500A
- 14. JL Cooper GPIO
- 15. External compressor
- 16. Yamaha AD8HR, 2 units
- 17. Yamaha Rio1608-D
- 18. Yamaha HS50M, 5 units with an HS10W

3. Installing primary equipment

3-1. Installing the controller and console desk

Be sure to set aside enough space to allow for your particular Nuage setup. The figure below shows the approximate sizes for the controllers.



We recommend a couple of Nuage console desks shown below for installing your Nuage controllers.

1. Argosy Mirage for Nuage

http://www.argosyconsole.com/html_internal/argosy_studiofurniture_yamahaNuage_mirage32ls.html



2. AKA Design ProWave system

http://www.akadesign.co.uk/site_product/prowave/prowave.html



3. Sound Construction & Supply Custom Console (for Nuage)

http://www.custom-consoles.com/recording-studio-furniture.php

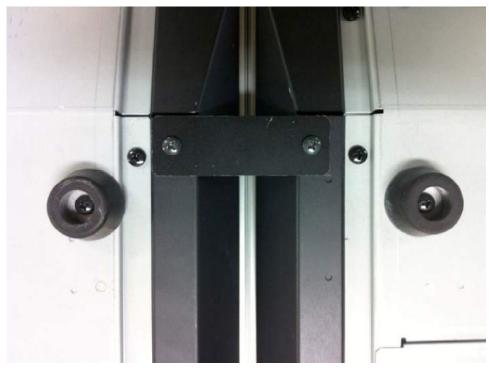


Once you have finished getting the console desk set up, fix each unit in place with joining brackets. To attach a joining bracket, first line up the units and remove the two neighboring screws on their undersides.



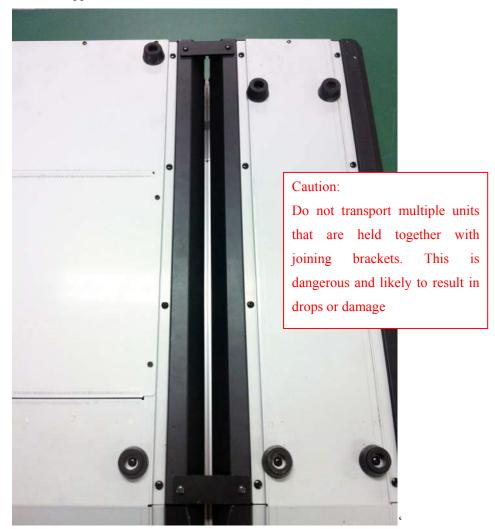
[Remove the screws]

Next, attach the joining bracket using the screws you just removed



[Place the Jointing bracket screwed into place]

Repeat the process at the opposite end of the units

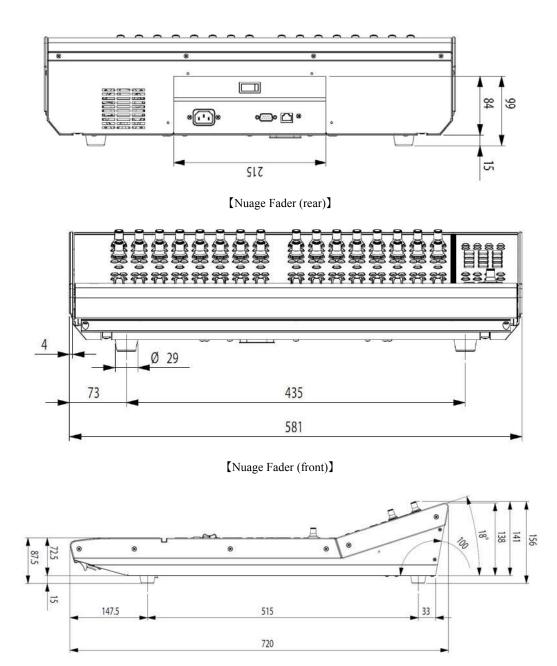


[Brackets installed in two locations]

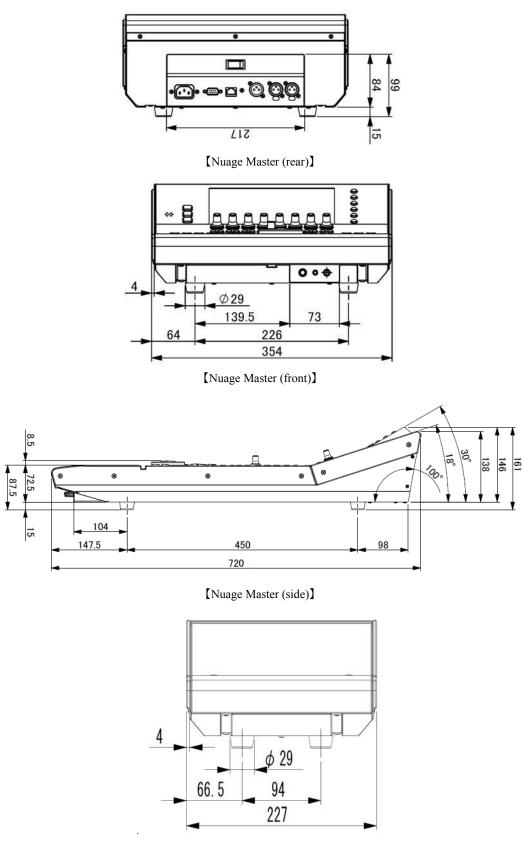
Caution!

When multiple Fader units with Master unit are in use, always make sure to use the jointing brackets

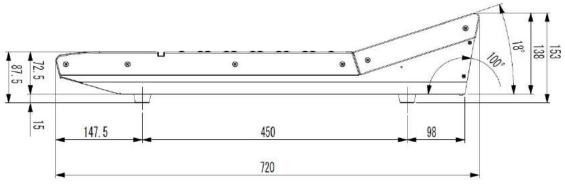
The positions for each rubber foot are as follows:



【Nuage Fader (side)】



[Nuage Workspace Small (rear)]



[Nuage Workspace Small (side)]

%The dimensions and the positions of the rubber feet are the same as those of Nuage Fader

3-2. Installing video monitors

To ensure accurate color reproduction and a wide viewing angle, we recommend that the monitor you use with the Nuage Fader be a professional 24-inch monitor with 1920 x 1200 resolution and in-plane-switching (IPS) technology.

Why use an IPS monitor?

Although there are large LCD monitors available at low prices, these typically use a kind of display technology called "Twisted Nematic" or TN, which has a narrow viewing angle (130–140°); when viewed from outside their viewing angle, the colors and brightness tend to change considerably, making it difficult to read them accurately.



[Good color reproduction on IPS monitors with 178° viewing angles]



[Inaccurate color and brightness on TN

monitors

Following are four recommended video monitors (current as of June 2016).

1. HP z24n

http://www8.hp.com/us/en/products/monitors/product-detail.html?oid=7483063#!tab=features



2. Dell U2413 http://www.dell.com/ed/business/p/dell-u2413/pd



Mounting the video monitor

There are two approaches to mounting video monitors for Nuage.

- 1. Use the included monitor stand.
- 2. Use a monitor arm



[Included monitor stand]

[Monitor Arm]

The advantages of using monitor arms are that they let you position the monitor with more freedom, in terms of vertical and horizontal position and in terms of angle, and they don't require as much depth on your desk surface as a monitor stand. The disadvantages are that the monitor arm may be less stable, depending on how many monitors it is supporting, how much they weigh, and how far out they are cantilevered. If you can position the monitor at a suitable height and angle using the included stand, as shown above, we recommend using that; if not, we recommend using a monitor arm that supports a single monitor, and positioning it near the centerline of the clamp, to the extent this is possible.

We recommend that the video monitor be angled at 70°, in line with the rear surface of the controller.

Tip:

Adjust all monitors to be at the same height with the correct angle takes a bit of skill and experience. In case of using HP monitors, lock it at its lowest height and find the best angle from there.

When using HP Monitor ZR2440w, it is recommended to use Monitor Arm compliant to VESA100mm. Please find the following list for recommendation

Ergotron LX Desk Mount LCD Arm

http://www.ergotron.com/ProductsDetails/tabid/65/PRDID/351/language/en-US/Default.aspx



Ergotron LX Dual Side-by-Side Arm http://www.ergotron.com/ProductsDetails/tabid/65/PRDID/354/language/en-US/Default.aspx



Humanscale M8

http://www.humanscale.com/products/product_detail.cfm?group=m8



In order to see the information as much as possible, position the lower edge of the LCD panel to sit just above the upper edge of the controller. Note that if the video monitor's height creates acoustic problems, you can position the lower part of the LCD panel to hid it behind the rear of the controller. Adjustments to the display will be explained later



[Set to normal height]





Also note that, depending on the monitor, the power button and screen-adjustment buttons may be along the lower front of the video monitor, and if the monitor is too close to the controller, one of these buttons may get pushed accidentally. Be careful to position the monitor so that this does not happen



[Note the buttons along the lower front]

TIPS:

In order to avoid unexpected power discontinuity, press and hold the power button for ten seconds when the monitor display is on to turn it into Power Button Lockout mode. And in order to turn the mode off, press and hold the power button for 10 seconds again.

3-3. Installing Nuage I/O

Nuage I/O is a 19-inch rack-mount equipment in 2U. Please prepare enough rack space as necessary. Nuage I/O has fan equipped on the rare panel, please install it to the machine room if there is noise from the fan.

Set up UNIT ID

When using multiple Nuage I/Os, it is necessary to set the UNIT ID on each I/O in order. Please set the UNIT ID with the rotary switch on the rear panel.

TIPS:

When other devices such as R series are in use within the same workgroup, please make sure not to use the same UNIT IDs of those devices and choose a unique ID.



[UNIT ID on Nuage I/O]

3.4. Installing the computer and peripheral hardware

Powerful computers generate a lot of fan noise, which can affect your work in a control room or studio where being quiet is required. Therefore, we recommend locating computers in the machine rooms or other isolated spaces, to the extent that is possible. If setting up in an isolated spot is a problem, we recommend setting it up in a distant spot, and that you use a sound-isolating rack.



[Sound Construction and Supply Isobox Post 24-45]

Keyboards, trackballs, etc

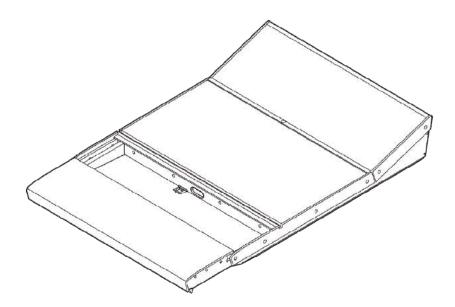
We recommend installing your keyboard on one of the following:

- 1. Nuage Fader/Workspace (large) keyboard tray*
- 2. On a Nuage Workspace (large)
- * Accommodates a keyboard measuring up to $460 \times 138 \times 38$ mm

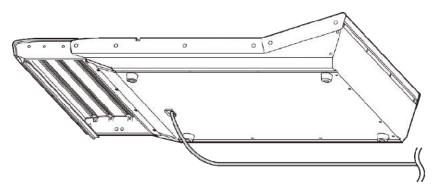
TIPS:

To fit the keyboard into the Nuage Fader or Workspace (Large), the recommend size of the keyboard up to $460 \times 138 \times 38$ mm ($18.11 \times 5.43 \times 1.49$ inch). Please make sure your keyboard fits into the space in advance.

1. The Nuage Fader/Workspace (large) keyboard tray



【Tray in open position】



[Thread keyboard cable through hole on underside]



[Tray with keyboard in place]

2. The Nuage Workspace (large)

If the keyboard is not stored in a tray, but you want to keep it readily accessible, place it on the Workspace (large). The keyboard's cable can be passed through a hole in the Workspace cover to run underneath.



We recommend the Nuage Workspace (small) as a place to set your trackball. The cable can be passed through a hole in the cover in the same way. If you use a mouse, we recommend using a mouse pad rather than using your mouse directly on the cover.



[With trackball in use]



[With mouse in use]

3-5. Installing the network switch

We recommend installing the network switch in a machine room that is not prone to electromagnetic interference.

Switching hub (switch)

Ensure that your network switch fulfills the following requirements for use with Nuage.

- 1. Gigabit switch (1,000 Mbps)
- 2. Managed switch
- 3. No EEE function or off switch

- 4. Good jitter performance
- 5. DiffServ(DSCP) QoS with 4 queues

Following are some desirable (but not mandatory) features

- 1. With or without fan
- 2. Redundant power supply, internal adaptor, universal power supply
- 3. Easy monitoring from computer
- 4. VLAN, Link Aggregation, IGMP Snooping, Multicast Filtering
- 5. Has more ports than you will need

We recommend the following switch based on the above criteria:

- · Yamaha SWP1 Series
- The Cisco SG300 Series



[Yamaha SWP1-16MMF]



【Cisco SG300-10】

QoS Settings

To give clock signals and audio signals priority on a Dante network, set up QoS as follows.

| Priority | Usage | DSCP Label | Hex | Decimal | Binary |
|----------|--------------------------|---------------|------|---------|--------|
| High | Time critical PTP events | CS7 | 0x38 | 56 | 111000 |
| Medium | Audio, PTP | EF | 0x2E | 46 | 101110 |
| Low | (reserved) | CS1 | 0x08 | 8 | 001000 |
| None | Other traffic | BestEffort | 0x00 | 0 | 000000 |

You can set up a Cisco switching hub as shown below using a web browser. For more details on settings, refer to the switch's user manual.

| IIII Small Business | | | | | | O Save cir | sco Language 1 | English | Logout About 1 |
|---|-------------------|--------------------|--------------------|----------------|--------------|--------------|----------------|--------------|----------------|
| ISCO SG 300-20 | 20-Port Gig | abit Mana | aged Switc | h | | | | | |
| Getting Started | DSCP to Qu | 0.110 | | | | | | | |
| Status and Statistics | DSCF 10 QU | eue | | | | | | | |
| Administration | DSCP to Queue | Table | | | | | | | |
| Port Management | Ingress DSCP | Output Queue | Ingress DSCP | Output Queue | Ingress DSCP | Output Queue | Ingress DSCP | Output Queue | |
| Smartport | 0 (BE) | 1 - | 16 (CS2) | 1. | 32 (CS4) | 1 - | 48 (CS6) | 1 - | |
| VLAN Management | 1 | 1 - | 17 | 1 - | 33 | 1 - | 49 | 1 - | |
| Spanning Tree | 2 | 1 - | 18 (AF21) | 1 - | 34 (AF41) | 1 - | 50 | 1 - | |
| MAC Address Tables | 3 | 1 - | 19 | 1. | 35 | 1 + | 51 | 1 - | |
| Multicast | 4 | 1.+ | 20 (AF22) | 1 - | 36 (AF42) | 1 + | 52 | 1 - | |
| IP Configuration | 5 | 1 - | 21 | 1 - | 37 | 1 - | 53 | 1 - | |
| Security | 6 | 1 - | 22 (AF23) | 1 - | 38 (AF43) | 1 - | 54 | 1 - | |
| Access Control | 1 | | 23 | 1 - | 39 | 1 - | 55 | | |
| Quality of Service | 8 (CS1) | 2 - | 24 (CS3) | 1 - | 40 (CS5) | 1 . (| 56 (CS7) | 4 - | |
| General | | | 25 | 1. | 41 | 1 • | 5/ | | |
| QoS Properties Queue | 10 (AF11) | 1 - | 26 (AF31) | 1. | 42 | 1 - | 58 | 1 - | |
| CoS/802.1p to Queue | 11 | 1.* | 27 | 1 - | 43 | 1 * | 59 | 1 - | |
| DSCP to Queue | 12 (AF12) | 1.* | 28 (AF32) | 1.* | 44 | 1 . | 60 | 1.+ | |
| Bandwidth | 42 | 1 - | 29 | 1. | 45 | 4.4 | 61 | 1. | |
| Egress Shaping Per Queue | 13 14 (AF13) | 1.* | 30 (AF33) | 1 - (| 46 (EF) | 3 . | 62 | 1 • | |
| VLAN Ingress Rate Limit TCP Congestion Avoidance | | 1 • | 30 (AP33) 31 | 1. | | 2 | 63 | 1. | |
| QoS Basic Mode | (| | | | 41 | | 03 | 4 | |
| QoS Advanced Mode | Apply | Cancel | Restore De | faults | | | | | |
| | Queue 1 has the I | owest priority, a | ueue 4 has the hid | hest priority. | | | | | |
| QoS Statistics | Queue i nas me i | owest priority, di | ieue 4 nas une nig | inest phonty. | | | | | |
| | 1 | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| OoS Statistics SNMP | | | | | | | | | |

IGMP Snoopingsettings

Turn on if using multicasting.

Using VLANs

Using physically distinct networks (separate network switches, separate network ports, etc) is a sure way to isolate the Nuage/Dante network from other networks, but a person with sufficient knowledge can also set up two separate networks on the same switch using VLANs.

Using Wi-Fi

Do not use Wi-Fi for Dante, controls, or any Nuage connections. If your hardware has built-in Wi-Fi equipment, ensure that it has been disabled. We also recommend that you disable any other forms of wireless networking, such as Bluetooth.

Network cables

We recommend the following types of cables for use with Nuage

Cat 7 to connect the Dante Accelerator card and the network switch

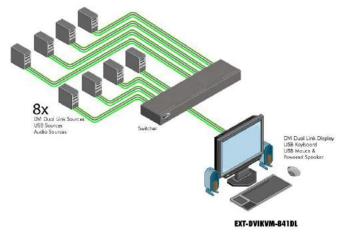
Cat 6 or Cat 5e for all other connections (we recommend the use of shielded cable) Also note that, although Ethernet cables have a theoretical maximum length of 100 m (328 feet), transmissions are not necessarily reliable at that distance. Check the value guaranteed by your cable manufacturer.

Make sure in advance that you have enough Ethernet cables, in sufficient lengths, to connect the controllers, I/O, Dante Accelerator, and computers.

3-6. Installing a KVM switch

What is a KVM switch?

KVM stands for "Keyboard, Video, Mouse," and it is a device that switches a single keyboard, computer monitor, and mouse set to connect to one of several computers.

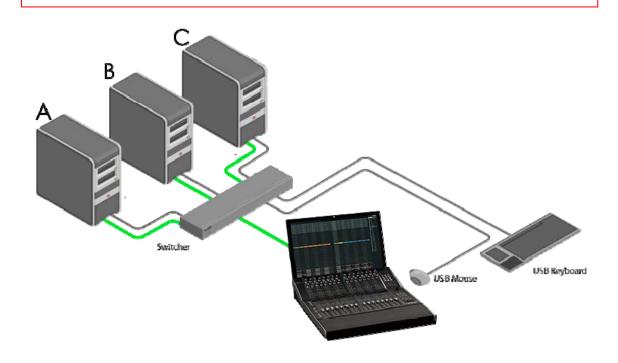


【KVM switch setup】

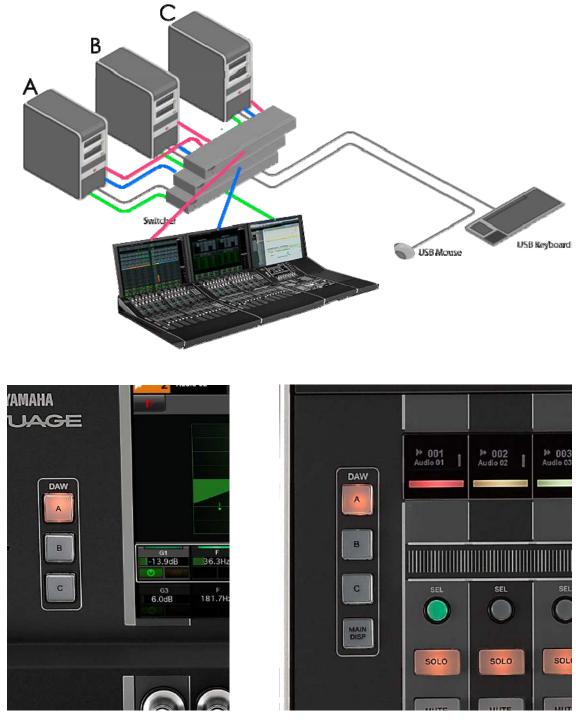
With Nuage, the DAW switch buttons on the Nuage Fader and Nuage Master let you switch among three Windows or Mac computers.

TIPS:

If there is only one set of keyboard and mouse (or trackball) to be used, the second KVM switcher and on can be replaced with less expensive video switchers (details will follow). KVM switchers should be installed in the machine room when not necessary. In that case, please use cable extenders such as USB extenders for keyboard and mouse, and DVI extenders for display monitors.



If your Nuage system uses multiple computer monitors and controllers, you will need a separate KVM for each monitor. Also, each computer will need a separate graphics card for each monitor



[Nuage Master]

[Nuage Fader]

About the MAIN DISP button on the Nuage Fader

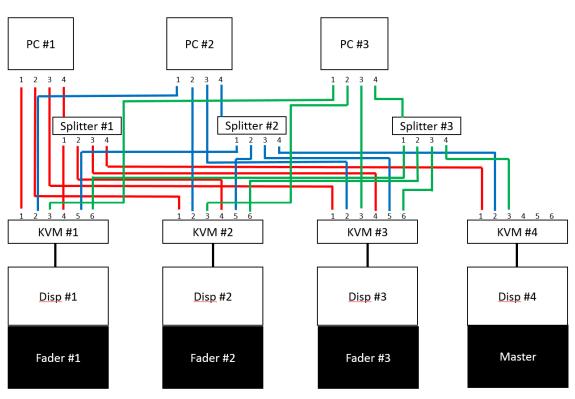
The Nuage Fader has a "MAIN DISP" button; this is used to temporarily show the main screen (Project window) being displayed on the Nuage Master monitor on the Fader monitor as well.

TIPS:

Although each computer can only output one main screen, it is necessary to use the MAIN DISP to choose which main screen to be displayed. Therefore, refer to the following figure and use the video splitter and assign the main screen to the KMV switcher.

TIPS:

A set of mouse and keyboard can only connect to either KVM switcher. Even though each Nuage Fader can switch its monitor display independently, the only computer to be controlled with that mouse and keyboard is the one that is currently selected and displayed on the KVM switch to which the mouse and keyboard are connected.



[KVM Switcher Connection Diagram]

| Network Inte | rface | | | | Network Inte | erface | | |
|--------------|--------------|---------------|--------|--------|--------------|--------------|--------------|--------|
| Intel(R) PR | O/1000 MT Ne | etwork Connec | tion • | 8 6 | Intel(R) PR | 0/1000 MT Ne | twork Connec | ction |
| Auto Regi | ster | | | | Auto Regi | ster | | |
| FADER 1 | FADER 2 | FADER 3 | MASTER | | FADER 1 | FADER 2 | FADER 3 | MASTER |
| KVM Seria | al Data | | | | KVM Seria | al Data | | |
| DAWA | 1 | | | | DAW A | 1 | | |
| MAIN A | 4 | | | | DAW B | | | |
| DAW B | 2 | | - | | DAW C | | | |
| MAIN B | 6 | |] | | Di il O | • | | |
| DAW C | 3 | | | | | | | |
| | 5 | | | | | | | |
| RS232C F | Parameters | | | | RS232C | Parameters | | |
| Bit Rate[b | ps] 19200 | • | | | Bit Rate[b | ops] 19200 | • | |
| Data Bits | 8 | • | | | Data Bits | 8 | • | |
| Stop Bits | 1 | • | | | Stop Bits | 1 | • | |
| Parity Bits | NONE | • | | | Parity Bit | NONE | • | |
| | | ОК | Cancel | | | | ОК | Cance |

[Workgroup Manager Setup (FADER1-3)]

[Workgroup Manager Setup (MASTER)]

Recommended KVM switch

We recommend the following KVM switches and video switchers

Switch 8 dual link DVI computers



【Gefen 8x1DVIKVMDL/SL】

Switch any 4 single link or dual link DVI sources with USB and audio to one display

| Gefen | | | | 4x1DVIKVMDL | | | |
|-------|---------|---|-----|-------------|------|---|--------------|
| | • | | 1.4 | | - 41 | 0 | |
| | Bas III | 1 | 70 | 1 | 100 | | Salari Press |
| | | | | | | | |

[Gefen 4x1DVIKVMDL]



[Adder AV4PRO-DVI]

Recommended Video Splitter

We recommend the following video splitter



【Gefen 1:4 DVI DL Splitter】

TIPS:

When KVM switchers and splitters are being used, it might be the case that the screen resolution is lowered depending on what type of display cable is used. If that is the case, make sure to use a dual-link DVI display cable for each DVI connection and see if the problem is fixed.

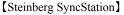
3-7. Installing video-related equipment

The following are the main types of video-related equipment for use with Nuage

- a. Synchronizer
- b. Video-sync generator
- c. SMPTE timecode generator
- d. Nonlinear/linear video recorder
- e. Video monitor
- f. GPIO equipment
- g. Word-clock generator

3-7-a. Synchronizer



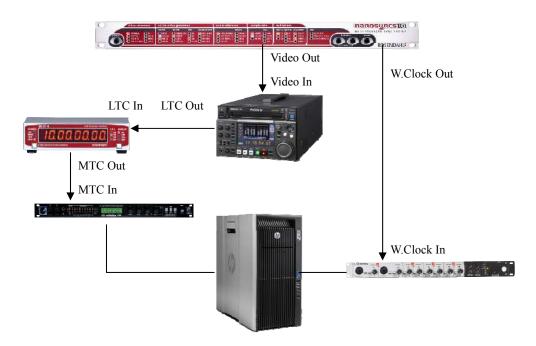


What is a SyncStation?

Three critical elements in any audio/video production environment are reliable audio/video synchronization, accurate phase matching, and machine control. The SyncStation provides bi-level and tri-level syncing between SD/HD video devices, generates and distributes word clock at up to 192 kHz, and synchronizes and controls external devices using 9-pin or MMC (MIDI machine control), or time codes.

Why do you need a SyncStation?

If you use a synchronizer from another company (eg the Rosendahl NanoSync) and not the SyncStation, you will need to use the MIDI interface, because these generally use MTC (MIDI Time Code) for syncing with a computer. And because MTC is generated based on LTC time codes, you will also need a MTC/LTC converter (eg the Rosendahl MIF4). Furthermore, you will need an audio I/O that can receive the audio sync signal (word clock) output by the synchronizer



(the NanoSync HD can directly acquire MTC from the main unit over a USB connection). However, the precision of MTC is lower than that of SMPTE time codes (LTC), which can cause sync accuracy problems. The SyncStation can sync with even more precise frame-level precision, resulting in a clear difference in the amount of time needed for a video machine to lock on during editing. This is a key feature for stress-free editing.

Installing the SyncStation

The SyncStation is a "fanless" machine, so it can be installed and used in the editing room (settings can be set remotely using NUENDO). Because it connects to the computer via a USB cable, it can be placed anywhere the cable can reach. In case if the SyncStation is going to be installed in a machine room, look into using a USB extender.

The SyncStation uses an external AC adaptor, and its DC connector does not have a latch, so it can easily be pulled out. Run your wiring in such a way that it won't be pulled out easily.



3-7-b. Video-sync generator



[Rosendahl Nanosync HD]



[Blackmagic Design Sync Generator]

In order to sync Nuage to video equipment, the SyncStation will need an input sync signal for video (NTSC/PAL/HD). A vide-sync generator is the device that generates this video sync signal

3-7-c. SMPTE timecode generator

Video equipment runs on timecodes, synchronization signals that include time information, and a device that generates SMPTE timecodes such as LTC and VITC and sends video-equipment sync signals is a timecode generator. The SyncStation has XLR jacks for timecode I/O, and timecodes are calculated based on the NUENDO's position and sent to video equipment. Also, video equipment send timecodes to the SyncStation, and let NUENDO to sync to that.



3-7-d. Nonlinear/linear video recorder



[SONY DSR1500-A]



[Blackmagic Design Hyperdeck Studio Pro]

The NUENDO is capable of importing video files (QuickTime, etc) as reference when editing audio, but the conventional post-production workflow for editing audio for video has involved copying the master to a tape (or hard drive) for editing, and copying the audio to NUENDO (Track lay-down). The finished audio from the editing process is then used to overwrite the master (Track lay-back). While that is the conventional tape-based process, now that nonlinear editing systems are common, and with SSD-based cameras such as those from Blackmagic Design, there are a number of solutions that create a seamless process from shooting to video editing to audio editing. The HyperDeck Studio Pro does not come standard with a SSD, and we encourage you to get 2.5" SSDs separately

3-7-e. Video monitor



[Blackmagic Design SmartView DUO]

Synchronous editing requires video monitors for reviewing video. While SDI and HDMI are the most common formats, there is also composite video, and we recommend using a monitor that is compatible with video recorder

3-7-f. GPIO equipment

The SyncStation is equipped with GPIO (general-purpose input/output) jacks, and can take input from external devices to operate NUENDO, or can operate external devices based on NUENDO operations. The GPIO pin assignments and functions are as follows

| GPI-IN | Function (Active Low) | GPI-OUT | Function(Active Low) |
|--------|-----------------------|---------|----------------------|
| 3 | Stop Momentary | 17 | SyncStation Lock |
| 4 | Play Momentary | 18 | Record Off Momentary |
| 5 | Record Off Momentary | 19 | Record On Momentary |
| 6 | Record On Momentary | 20 | Record Continuous |
| 7 | Record Continuous | 21 | On-Line |
| 8 | On-Line | 22 | NUENDO Lock |

Possibilities for external devices

Foot switch, transporter, "Now recording" red light, etc

3-7-g. Word-clock generator





Although the SyncStation takes sync-signal input from a video-sync generator to synchronize video signals, to synchronize audio from audio equipment, a sync signal from a word-clock generator is taken as input, and the two are brought into sync. The SyncStation has a word-clock input jack and multiple output jacks, as shown below, and can send the input master word-clock signal to multiple audio devices.



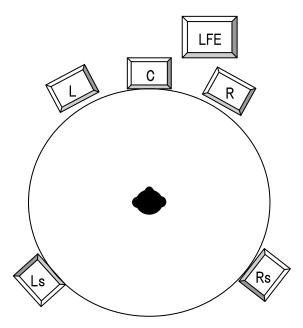
3-8. Installing powered speakers

Nuage systems allow for a variety of speaker configurations needed for monitoring environments; what follows is a walk-through of setting up 5.1-channel speakers for a typical surround-sound environment.

What is 5.1-channel surround??

This is the most common surround-sound format, used both by movie theaters and DVDs. It is used in multiple encoding formats, including Dolby Digital, AC-3, and DTS. It uses the following six speakers.

- 1. Center speaker (dialog)
- 2. Left speaker (main stereo)
- 3. Right speaker (main stereo)
- 4. Left-surround speaker (sound effects)
- 5. Right-surround speaker (sound effects)
- 6. Low-frequency effects speaker



[Typical setup for 5.1-channel surround speakers]

We are going to omit a discussion of setting up and measuring surround speakers here, but to achieve a suitable monitoring environment, the speakers need to be located at appropriate distances, angles, and heights, and you should lay in a sufficient supply of speaker cable to do that

Recommended speakers are the Yamaha MSP Studio series (shown below, from the left, are the SW10 subwoofer, MSP7 Studio, and MSP5 Studio) and HS series (shown below, from the left, are the HS5, HS7, HS8 and HS8S subwoofer)



3-9. Installing input devices

About mic input

The Nuage's I/O system does not have a built-in mic preamp, so you cannot plug a mic into it directly. Use a separate mic preamp. We recommend the Yamaha AD8HR

| O QYAMAHA | | AS COMPARIES WITH SEALTH PROPER ADDRESS | |
|------------------|---|---|------|
| S0N14 28.3191 | 1 - 277 2 - 277 3 - 577 4 - 377 5 - 577 6 - 371 7 - 577 8 - 577 - 489 - 28 - 489 - 48 - 48 - 48 - 48 - 48 - 48 - | | |
| 40.000 (00.00 H) | | | 12-2 |
| WIGRD CLOCK | | OFF ON street | |

[Yamaha AD8HR mic preamp/AD converter]

Nuage V1.1 enables the following parameters for each channel of AD8HR to be remotely controlled using HA Remote functionality:

- +48V on/off
- HA Gain
- HPF (High Pass Filter) on/off
- HPF (High Pass Filter) frequency

TIPS:

Since AD8HR is an A/D converter and the input signal is converted to AES/EBU digital signal up to 96kHz, you cannot use Nio500-A16 with it. In that case, please use an Nio500-D16 or Nio500-8A8D. Also, AD8HR cannot operate at 192kHz so, if Nuage I/O needs to operate at 192kHz, please use an analog mic-pre such as MLA8

Outboard gear

Install any outboard gear that you will want to use for inserts, such as compressors or reverb, in your rack. If you have a reverb with a remote control, you can install the box in your machine room and the controller in the control room; if you have a compressor that cannot be run by remote control, you can install that so that it can be manipulated directly

Miscellaneous

The Nuage Master does have a built-in headphone amp. Headphones are essential when a headphone is needed for monitoring, or when monitoring and recording both need to happen in the same space

4. Connecting equipment

4-1. Power connections

Connect all equipment mentioned in the previous sections to power. Because there are so many pieces of equipment that need to be connected to power—the controller, computer monitors, I/O, computers, network switches, KVM switches, video-related equipment, powered speakers, mic preamps, outboard gear, etc—make sure in advance that you have enough power outlets and that the circuit they are on can supply enough power. Do not use low-price mass-market outlet strips—always use power conditioners or power distributors with noise filtering that are intended specifically for use in audio applications.

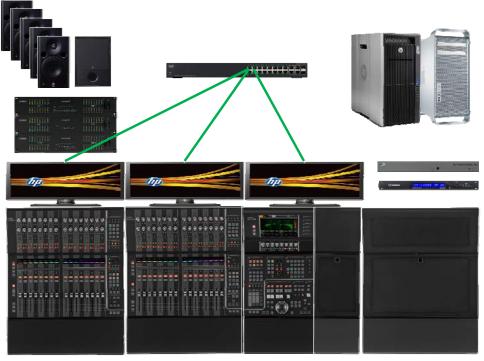
4-2. Ethernet connections

Apart from the connection between the Dante Accelerator and network switch, use Cat 5e or Cat 6 cable for all Ethernet connections. Use Cat 7, which has superior shielding against electromagnetic interference, for the connection between the Dante Accelerator and network switch.



【CAT7 cable】

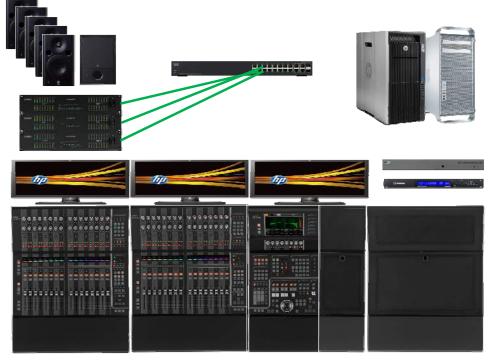
First, connect the Nuage Fader/Nuage Master to the switch



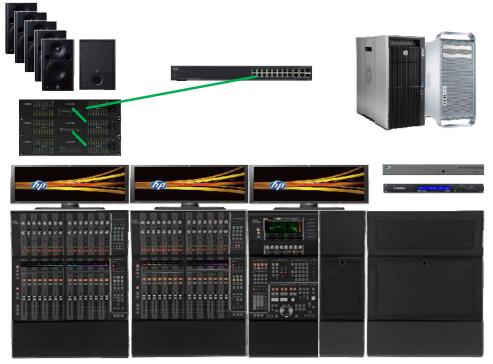
[Connection between switch and controller]

Next, connect the Nuage I/O to the network switch.

(When redundant mode is chosen)



[Connection between switch and I/O(Redundant Mode)]



If the NIO units are connected in the Daisy chain mode:

[Connection between switch and I/O(Daisy-chain Mode)]

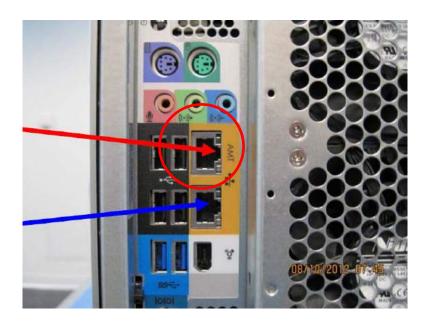
Next, connect the computers to the network switch.



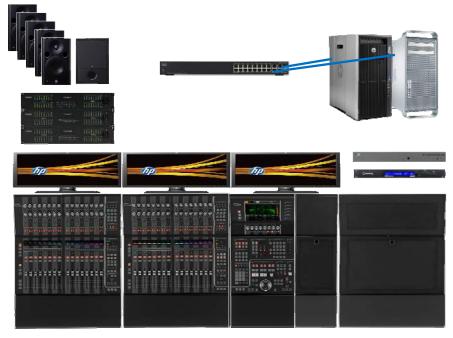
[Connection between switch and computers]

TIPS:

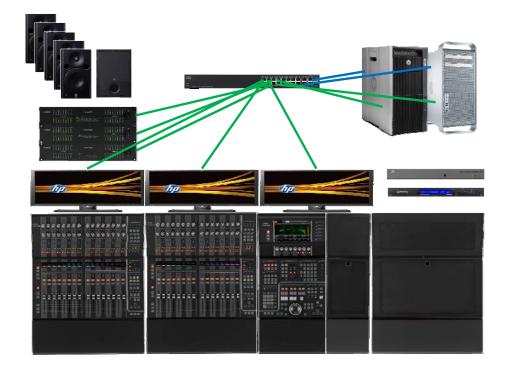
HP Z840 has two LAN ports, and it is always recommended to use the port labeled "AMT" and disable the AMT function.(Regarding AMT, it will be explained in another chapter)



Next, connect the Dante Accelerator to the network switch (using Cat 7 cable)



[Connection between switch and Dante Accelerator]



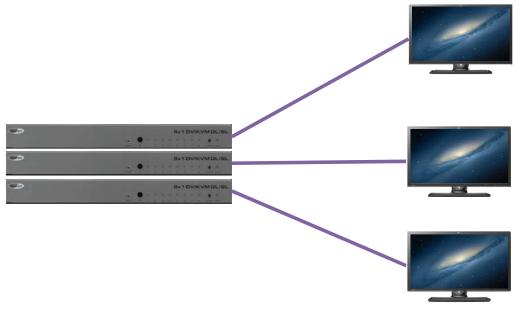
The Ethernet cable connections are now complete

4-3. KVM-switch connections

To control KVM switches from the Nuage Fader/Nuage Master, you will need one 9-pin RS-232-C cable for each controller.



[RS-232-C cable]



First, connect each KVM switch to one computer monitor.

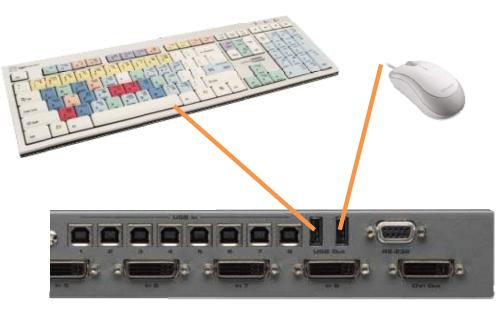
[Connections between KVM switches and computer monitors]

Next, connect RS-232-C cables to the RS-232-C jacks on the Nuage Fader/Nuage Master rear panels, and to the RS-232-C jacks on the back of the KVM switches.



[Connection between KVM switch and computers]

Next, connect the keyboard and mouse to the USB OUT jacks on a KVM switch.

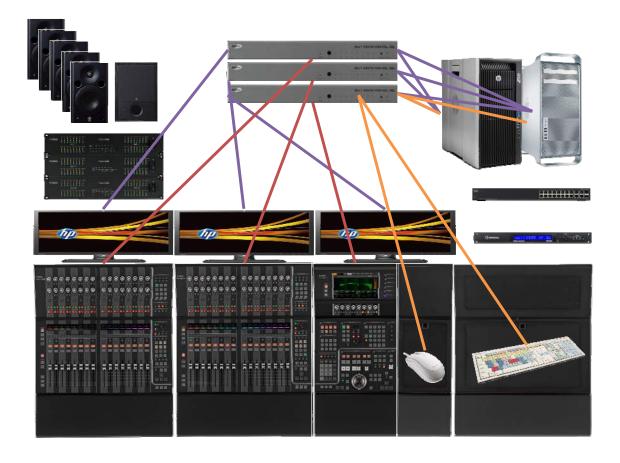


[Connection between KVM switch and keyboard/mouse]

Next, connect the computers' USB jacks to the KVM switch's USB IN jack.



[Connection between KVM switch and computers]



The KVM switch connections are now complete.

TIPS:

When using multiple KVM switches, each switch can take input from the keyboard and mouse, but they should be connected to the one serving the main display (as a rule, the one positioned at the Nuage Master). Ensure that there are USB connections between that switch and the computers. In this type of arrangement, you only need to use a KVM switch for that station; you can use less expensive video switches for the other two stations. We currently do not recommend the use of matrix KVM switches, as they do not accept independent screen-switching control from the Nuage Fader/Master.

4-4. Audio connections

Connect audio devices in the following order:

- ♦ Decide the I/O channel setup
- \diamond Set aside the required cables
- ♦ Make connections to output devices

- ♦ Make connections needed for headphone monitoring
- ♦ Make connections needed for talkback mic
- ♦ Make all connections to input devices

This guide presupposes an I/O channel setup using the Nio500-A16 (16 analog channels) and the Nio500-D16 (16 digital channels).

| Input # | I/O | Channel # | Device | Input # | I/O | Channel # | Deviœ |
|---------|---------|-----------|----------------|---------|---------|-----------|--------|
| 1 | | 1 | DVD L | 17 | | 1 | Mic 1 |
| 2 | | 2 | DVD R | 18 | | 2 | Mic 2 |
| 3 | | 3 | DVD C | 19 | | 3 | Mic 3 |
| 4 | | 4 | DVD Lfe | 20 | | 4 | Mic 4 |
| 5 | | 5 | DVD Ls | 21 | | 5 | Mic5 |
| 6 | | 6 | DVD Rs | 22 | | 6 | Mic 6 |
| 7 | | 7 | CDL | 23 | | 7 | Mic 7 |
| 8 | Nio500- | 8 | CD R | 24 | Nio500- | 8 | Mic 8 |
| 9 | A16 | 9 | Talkback | 25 | D16 | 9 | Mic 9 |
| 10 | | 10 | | 26 | | 10 | Mic10 |
| 11 | | 11 | Video Out 1 | 27 | | 11 | Mic 11 |
| 12 | | 12 | Video Out 2 | 28 | | 12 | Mic 12 |
| 13 | | 13 | Video Out 3 | 29 | | 13 | Mic 13 |
| 14 | | 14 | Video Out 4 | 30 | | 14 | Mic14 |
| 15 | | 15 | Outboard Out L | 31 | | 15 | Mic 15 |
| 16 | | 16 | Outboard Out R | 32 | | 16 | Mic 16 |

| | | | Linput chainer | F | | | |
|----------|---------|-----------|----------------|----------|---------|-----------|--------------|
| Output # | I/O | Channel # | Deviœ | Output # | I/O | Channel # | Device |
| 1 | | 1 | Speaker L | 17 | | 1 | |
| 2 | | 2 | Speaker R | 18 | | 2 | |
| 3 | | 3 | Speaker C | 19 | | 3 | |
| 4 | | 4 | Speaker Lfe | 20 | | 4 | |
| 5 | | 5 | Speaker Ls | 21 | | 5 | |
| 6 | | 6 | Speaker Rs | 22 | | 6 | |
| 7 | | 7 | Cue L | 23 | | 7 | |
| 8 | Nio500- | 8 | Cue R | 24 | Nio500- | 8 | (not in use) |
| 9 | A16 | 9 | Headphone L | 25 | D16 | 9 | (not in use) |
| 10 | | 10 | Headphone R | 26 | | 10 | |
| 11 | | 11 | Video In 1 | 27 | | 11 | |
| 12 | | 12 | Video In 2 | 28 | | 12 | |
| 13 | | 13 | Video In 3 | 29 | | 13 | |
| 14 | | 14 | Video In 4 | 30 | | 14 | |
| 15 | | 15 | Outboard In L | 31 | | 15 | |
| 16 | | 16 | Outboard In R | 32 | | 16 | |

【Input-channel setup example】

[Output-channel setup example]

Use XLR cables for the following connections

- > Audio-input devices (several for mics, musical instruments, etc)
- > Audio-output devices (several for speakers, etc)
- Headphone monitoring (2)
- \succ Talkback mic (1)
- > 25-pin D-sub cable (for AES/EBU digital connection).



[XLR cable]

Use a female 25-pin D-sub cable for Nuage I/O input.



[D-sub25pin cable (female)]

Use a male 25-pin D-sub cable for Nuage I/O output



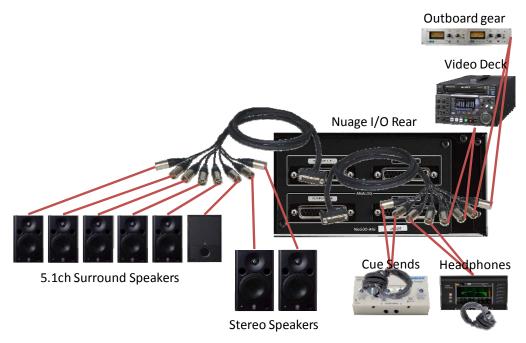
[D-sub25pin cable (male)]

When using the AD8HR for the mic preamp, connect to the Nuage I/O's digital input with a 25-pin D-sub cable.



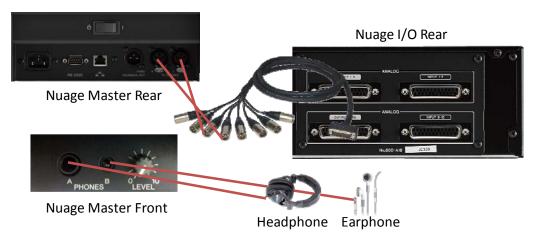
[Connection between Nuage I/O and MLA8]

Ensure that you have the appropriate number, length, and type of cables, and then connect the output devices to the Nuage I/O's analog output.



[Connection between Nuage I/O and output devices]

The outputs for headphone amp, which are assigned to channels 11 and 12, connect the two Nuage I/O outputs to the "TO PHONES" jack on the Nuage Master rear panel, which in turn connect to the "PHONES" jacks on the lower front of the Nuage Master. There are two jacks, one quarter-inch and one 3.5-mm, to accommodate headphones and in-ear earphones (both output L/R sound in stereo, being connected to "TO HOST"). Note that headphone volume can be controlled by the headphone amp's "LEVEL" knob; as a rule, you should set volume to an appropriate level beforehand as part of control-room adjustments, discussed later on.

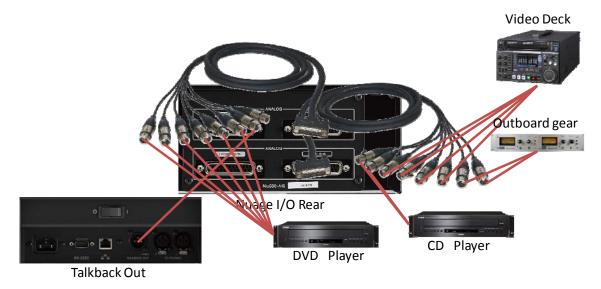


[Headphone output connections]

Next, connect the talkback mic to the Nuage I/O. The Nuage Master has a built-in talkback mic. Its output is at the "TALKBACK OUT" jack on the Nuage Master's rear panel; connect that to any input on the Nuage I/O.

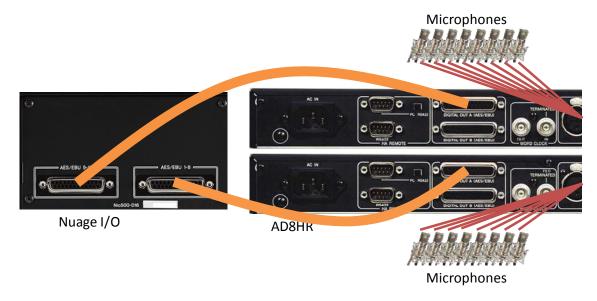


Connect other line-level input devices, such as a DVD player, to the Nuage I/O's inputs.



[Connection between Nuage I/O and other audio input devices]

Now, connect all the microphone inputs to AD8HR to Nuage I/O's inputs.



The audio connections are now complete.

4-5. AD8HR Connections

In this setup guide, we will introduce how to connect two AD8HR units (#1, #2) to Nio500-D16 and remotely control them from Nuendo.

Connect HA Remote Connectors



【AH8HR Rear Panel】

First, connect the Remote connector on the AD8HR #1 and the serial connector on the computer. Please make sure the switch next to the connector is set to "PC".





TIPS:

Among our recommended computers for Nuage, hp's Z840 has a serial connector while Z440, Z240 and Apple's Mac Pro don't. If you need to use this feature with those computers, use a USB-serial adapter cable or a PCle card.



【USB-Serial Adapter Cable】

Next, connect the bottom connector of the first AD8HR unit and the top connector of second unit (Make sure the switches on the second unit and on are all set to "RS422").



Then, connect each AES/EBU output connector on AD8HR to the AES/EBU input on Nuage I/O.



Finally, connect the wordclock distributed from the clock master to each AD8HR unit and also Nuage I/O unit.



4-6. Video-related equipment connections and other connections

House-sync and video reference signal connections

First, connect the house sync, which provides video syncing (video sync signal), to each video device and to the SyncStation. Use a 75 Ω BNC cable.



[BNC Cable]



[House sync connected to SyncStation]

Connect your video devices to the sync signal similarly.

The SyncStation can generate and distribute a word clock to use as a master, but if you have a separate master word clock, connect that to the SyncStation.

Connect your video devices and SyncStation to transmit SMPTE timecode as well.

If you have video equipment that uses a 9-pin machine control, connect the video recorder and SyncStation with a 9-pin D-sub cable. If the machine control uses MMC, connect with a MIDI cable.

Connect the computers and SyncStation with USB cables. Driver installation is discussed later on.

Connect any GPIO-based devices or other equipment as needed.

About Extended System Link

Expanded System Link is SyncStation's proprietary protocol expanding on Steinberg's VST System Link. After connecting a computer running NUENDO with a SyncStation over USB, the Nuage I/O and SyncStation are connected, and Expanded System Link lets you exchange sample-level position information between audio (audio system) and video (synchronizer). Expanded system link requires one digital-signal channel. The SyncStation has two types of 2-channel AES (XLR, BNC), and two types of S/PDIF (optical, coaxial) interfaces; the Nuage I/O's VST System Link output uses BNC, so if you are using AES2, connect one BNC cable.



[SyncStation Digital Inputs]



[Nuage I/O System Link Out]

TIPS:

When using multiple Nuage I/Os, simply connecting the Extended System Link output from one of them to the AES2 input on the SyncStation will provide sample syncing on all the Nuage I/Os. You can select a channel for the Expanded System Link on the NUENDO's VST Connections, as discussed later on, but take special note that under current specifications, this requires that you select two channels at a time. Also note that because you can use digital channels (two at a time) patched to Expanded System Link as audio channels, you don't end up wasting scarce audio channels, and can use them more efficiently.

4-7. Wordclock Connections

Workdclock signals output from the clock master device will need to be distributed to each of the following digital audio devices

- Nuage I/O
- SyncStation
- Other digital audio devices such as CD player (if needed)

TIPS:

When multiple Nuage I/O units are used, apply the same wordclock signal to each unit. If that's the case, choose "BNC IN" as Wordclock Source on the Nuage Workgroup Manager, and also make sure you turn both "Preferred Master" and "Slave To External Word Clock" on the Dante Controller's Clock on for only one of the Nuage I/O units, and turn them off for the other units.

| Name : | Y002IO-D16 | | |
|---------------------|----------------------------------|-------|---------|
| Version : | 1.10 Check for Upda | ite | |
| MAC Address : | 00:A0:DE:81:DE:42 | | |
| Status: | | | |
| Word Clock Source : | Dante | • | |
| | Dante | | |
| AES/EBU 1-8 | BNCIN | | |
| | AES/EBU IN 1/2 | | |
| Dual Wire : | AES/EBU IN 3/4 | AD8 | HR: 1 🔹 |
| | AES/EBU IN 5/6 AES/EBU IN 7/8 | | |
| Input: | AES/EBU IN 9/10 | | |
| mput. | AES/EBU IN 11/12 | | |
| Ch1 | AES/EBU IN 13/14 | 5 Ch6 | Ch7 Ch8 |
| SRC Off | AES/EBU IN 15/16 | Off | Off |

[Nuage Workgroup Manager NIO Properties]

| S 🔁 🗟 🔌 | | Master Clock | c AIC128-D | |
|------------------|-----------------------------------|-------------------------------------|--------------------|--------------------------------|
| Routing Device S | tatus Clock Status Events | | | |
| Device Name | Primary Interface Clock Status | Secondary Interface Clock Status | Clock Role | Slave To Externa Word Clock |
| AIC128-D | Master | Not Supported | Preferred Master | Not Supported |
| Y001IO-A16 | Slave | Not Supported | V Preferred Master | V Yes |
| Y002IO-D16 | Slave | Not Supported | Preferred Master | Yes |
| Y003IO-A8D8 | Slave | Not Supported | Preferred Master | Yes |

[Dante Controller Clock Status window]

5. Installing software and drivers

For current software/driver compatibility list, please refer to the following page: http://www.yamahaproaudio.com/global/en/products/daw_systems/nuage/downloads.jsp

5-1. Installing the eLicenser Control Center

The eLicenser Control Center (eLCC) is software from Steinberg for managing licenses and enforcing copy protection, using either the USB eLicenser (included in the NUENDO/Cubase package) or the soft eLicenser.



[Steinberg USB-eLicenser]

Begin by downloading eLCC from Steinberg's website and installing it.

http://www.elicenser.net/en/latest_downloads.html

Once installation is complete, launch eLCC.

Click the "Enter Activation Code" button and type in the 32-character activation code for NUENDO.

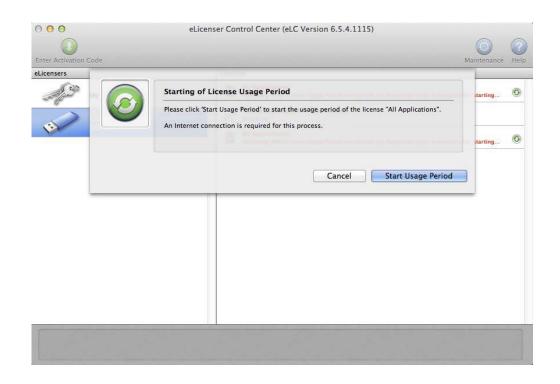
| 000 | eLicenser Control Center (eLC Version 6.5.4.1115) | | |
|---------------------------|---|-----------------------|-------------|
| Enter Activation Code | | Maintenance | (2) Help |
| eLicensers My Licenses | Enter Activation Code Please enter an activation code into the text fields below and click 'Continue'. Enter Activation Code: ABCD EFGH JKL MNOP QRST UVWX YZ012 3456 Image: All Applications Steinberg, NFR, License Usage Period not started yet, Expiration Date: 4 months after startin Image: Cancel Continue | months after starting | © |
| | | | |

[Steinberg eLicense Control Center (sample screen)]

Once you have correctly entered the code, the license will be downloaded; select the eLicenser to which you want the license to be downloaded, and click the "Download License" button.



Simply downloading the license does not actually make the software available for use, so start the usage period.



When you see the screen shown below, the eLicenser is working.

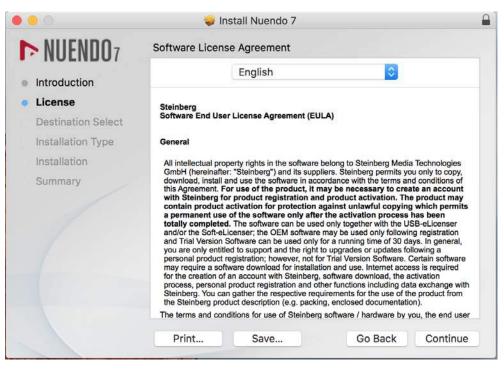
| Enter Activation Code | eLicenser Control Center (eLC Version 6.5.4.1115) | Maintenance Help |
|-----------------------|--|------------------|
| eLicensers My Li | Starting of License Usage Period The usage period of the license has been started. | after starting O |
| 1223 USB-c | | after starting 🞯 |
| | | |
| Starting | of license usage period successful. | Close |
| | | |
| | | |

5-2. Installing NUENDO

Next, launch the installer to install NUENDO. Follow the steps in the installation window.

| 0 | 🥪 Install Nuendo 7 |
|--------------------|--|
| NUENDO7 | Welcome to the Nuendo 7 Installer |
| Introduction | You will be guided through the steps necessary to install this software. |
| License | |
| Destination Select | |
| Installation Type | |
| Installation | |
| Summary | |
| | |
| | Go Back Continue |

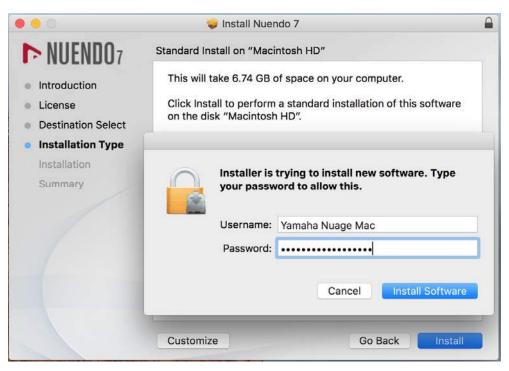
[NUENDO Installer]



[Software License Agreement]

| | 🥪 Install Nuen | do 7 |
|---|--|--|
| NUENDO7 | Standard Install on "Macir | ntosh HD" |
| Introduction | This will take 6.74 GB o | f space on your computer. |
| License Destination Select | Click Install to perform on the disk "Macintosh | a standard installation of this software HD". |
| Installation Type | | |
| Installation | | |
| Summary | | |
| | | Change Install Location |
| | Customize | Go Back Install |

[Choose Install Location]



[Enter Password to Proceed]

| • • • | 🥪 Install Nuendo 7 🛛 🔒 |
|--|---|
| NUENDO7 Introduction License Destination Select Installation Type Installation Summary | The installation was completed successfully. The installation was successful . The software was installed. |
| | Go Back Close |

【Installation Completed】

Installation of NUENDO is now complete.

TIPS:

After installing NUENDO from DVD, it is necessary to download the latest updater from Steinberg website and install the version after v6.0.3. It is possible that the NAUGE doesn't work properly if the version is not up to date, so please update.

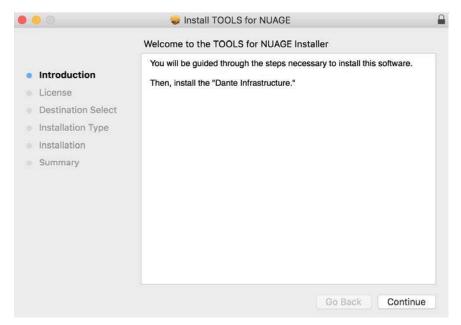
5-3. Installing Tools for Nuage

Tools for Nuage bundles into one package all the various applications and drivers that Nuage needs, including Nuage Workgroup Manager, for managing Nuage systems; Nuage Extension for communications between NUENDO and Nuage; and Nuage PT Bridge, driver software that connects to third-party DAWs and switches Nuage controllers. Please download the latest version of Tools for Nuage from the Yamaha Pro Audio website (<u>http://www.yamahaproaudio.com/</u>) and install it.



【TOOLS for NUAGE Installer image file】

Follow the steps in the installation window.



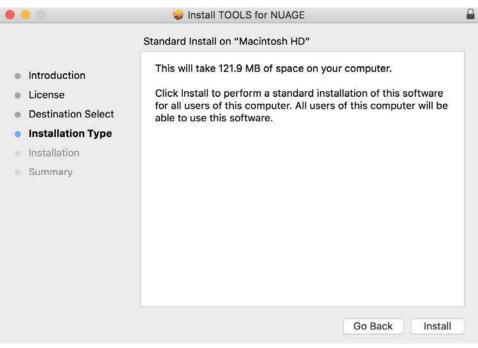
【TOOLS for NUAGE Installer】

| | Software License Agreement |
|--------------------|--|
| Introduction | English |
| License | ATTENTION |
| Destination Select | SOFTWARE LICENSE AGREEMENT |
| Installation Type | PLEASE READ THIS SOFTWARE LICENSE AGREEMENT "CAGREEMENT" CAREFULLY BEFORE USING THIS SOFTWARE. YOU ARE ONLY PERMITTED TO USE THIS SOFTWARE PURSUANT TO THE TERMS AND |
| Installation | CONDITIONS OF THIS AGREEMENT. THIS AGREEMENT IS BETWEEN YOU (AS AN INDIVIDUAL OR LEGAL ENTITY) AND YAMAHA |
| Summary | CORPORATION ("YAMAHA"). |
| | BY DOWNLOADING, INSTALLING, COPYING, OR OTHERWISE USING THIS SOFTWARE, YOU ARE AGREEING TO BE BOUND BY THE TERMS O THIS LICENSE. IF YOU DO NOT AGREE WITH THE TERMS, DO NOT INSTALL, COPY, DOWNLOAD, OR OTHERWISE USE THIS SOFTWARE. IF YOU HAVE DOWNLOADED OR INSTALLED THE SOFTWARE AND DO NO AGREE TO THE TERMS, PROMPTLY DELETE THE SOFTWARE. 1. GRANT OF LICENSE AND COPYRIGHT Yamaha hereby grants you the right to use the software program(s) and data ("SOFTWARE") accompanying this Agreement. The term SOFTWARE shall encompass any updates to the accompanying software and data. The |

[Software License Agreement]

| | Custom Install on "Macintosh HD" | | |
|---|---|-------------------------------|----------------------------|
| | Package Name | Action | Size |
| Introduction License Destination Select Installation Type Installation Summary | NUAGE Workgroup Manager NUAGE Extension NUAGE PT Bridge | Upgrade Upgrade Upgrade | 46.8 MB 71.4 MB 3 MB |
| | Space Required: 121.9 MB | Remaining: | 72.15 GB |
| | | Go Back | Continue |

【Choose Programs To Be Installed】

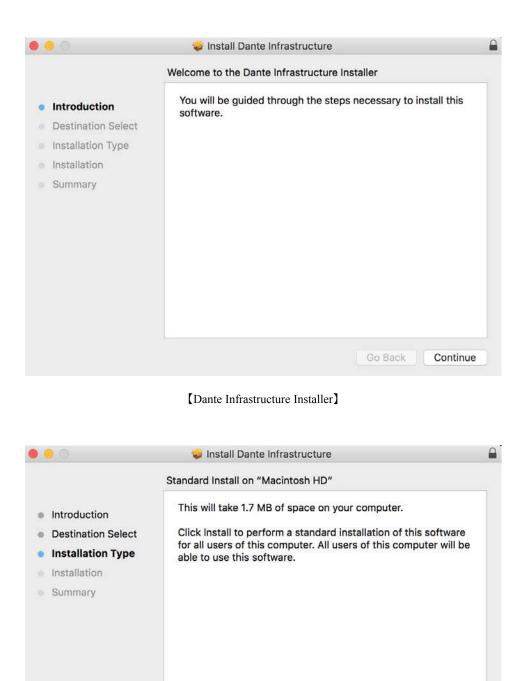


[Check Disk Space and Start Installation (Password Required)]

| • • • | 🥪 Install TOOLS for NUAGE | |
|---|--|--|
| Introduction License Destination Select Installation Type Installation Summary | The installation was completed successfully. | |
| | Go Back Close | |

【Installations Completed】

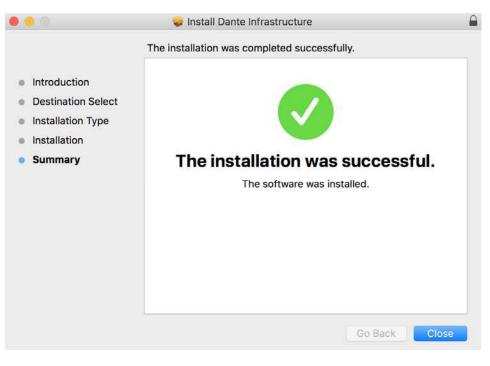
Next, move on to Dante Infrastructure installation.



【Installation Type】

Go Back

Install



【Installation Completed】

For Windows, after installing TOOLS for NUAGE, the firewall setting for Nuage Workgroup Manager will pop up, allow the following access settings.

| Windows Secu | rity Alert | And the owner of the | X |
|--|------------------------------|---|-------|
| Windo progra | | all has blocked some features of this | |
| Windows Firewall h private and domain | | me features of NUAGE Workgroup Manager on all public, | |
| | Name: | NUAGE Workgroup Manager | |
| (D) | Publisher: | Yamaha Corporation | |
| | Path: | C:¥program files (x86)¥yamaha¥nuage¥nuage workgroupmanager.exe | |
| This program has a | already been b | locked or unblocked for a different network location. | |
| Allow NUAGE Work | group Manage | r to communicate on these networks: | |
| 📝 Domain netv | vorks, <mark>s</mark> uch as | a workplace network | |
| Private netw | orks, such as | my home or work network | |
| because the | | nose in airports and coffee shops (not recommended ten have little or no security). The firewall is already c location. | |
| What are the risks | of allowing a p | program through a firewall? | |
| | | Allow access Ca | ancel |

[Windows Security Alert]

TIPS:

Only one Workgroup Manager is needed to be installed and started up for Nuage system. For example, If Workgroup Manager is already installed for DAW A, it is not necessary to install it again. If it is necessary to install Extension and Nuage PT Bridge for Mac, uncheck the Workgroup Manager from the installation options mentioned above and continue.

5-4. Installing Dante Controller

Download Dante Controller from either the Audinate website (<u>www.audinate.com</u>) or from the Yamaha Pro Audio website (<u>http://www.yamahaproaudio.com/</u>).



Home > Support > Software Downloads > Dante Controller

| Products | Dante Controller |
|--------------------------|---|
| Technology and Solutions | Dante Controller configuration and control software is available for both Windows and Mac OS X. |
| Support | |
| Software Downloads | Dante Controller UPDATE: October 2012 |
| Dante Virtual Soundcard | Dante Controller v3.2.9.2 has been released for both Windows and Mac, up from previous release 3.2.8. |
| Dante Controller | The new software is available for download below. |
| Partners | Mindows 7 Professional users: If you are unable to uninstall a previous version of Dante Controller, you may be |
| News | experiencing a Windows bug that was introduced in a recent Windows 7 update. Please see the Microsoft Support knowledgebase article for more information: http://support.microsoft.com/kb/2564571 |
| About Us | What's new in v3.2.9.2 |
| Contact Us | Dante Controller now supports HA Remote mode toggling for supported devices. Dante Controller for Mac now supports OS X 10.8. |
| | For more information, please see the Release Notes, |

[Audinate Website (registration required)]

| EXAMAHA | Global Europe North America China Japan Other Countries |
|---------------------------------------|---|
| Products - Applic | ations Resources Downloads Training & Support News & Events About |
| Home > Downloads > Firmware a | and Software > Dante Utilities |
| → Firmware and Software | Audinate Dante Controller v3.2.9 |
| → Compatibility Info. | |
| → MIDI Drivers | Important Notice |
| A Network Drivers | |
| Audio Drivers | Please do not use EEE function("1) of Ethernet switches in a Dante network. It has been reported that using some Ethernet switches whose EEE function is enabled can cause audio dropouts or noise in a |
| → Studio Manager V2 Host | Dante network. |
| → Yamaha Steinberg USB Driver | This is because the EEE function has a bad influence on the clock synchronization of Dante making real-time communication. Please avoid the EEE function as stated below. |
| → Other Utilities | I)For "Managed" switches, disable the EEE function. (You can enable/disable EEE function by application software etc.) 2)For "Unmanaged" switches, do not use Ethernet switches that support the EEE function. (Because you cannot disable EEE |
| Dante Utilities | function.) *1: EEE (Energy Efficient Ethernet) function is the technology that will allow for less power consumption during periods of low |
| EtherSound Utilities | network traffic. |
| $\rightarrow Y\text{-}S^{\textbf{s}}$ | Installing or Updating Dante Controller |
| → CL Series | |
| → PM5D V2 | To uninstall or install Dante Controller you will need to be logged on with administrator privileges for both Windows and Mac systems. |
| → DSP5D | Windows |
| → M7CL V3 | Previous versions must be uninstalled prior to this installation. |
| → LS9 | To uninstall a previous version, please use the Control Panel (click Start > Control Panel > Programs). |
| → DM2000VCM | To install Dante Controller on Windows: Double-click the DanteController-3.2.9.2.msi file. This will run the installer. |
| → DM2000V2 | Bodule-click the Dathecontoller-3.2.5.2.1% life. This will full the installer. Read the license text, and if you accept the terms of the agreement, click Agree. |
| → DM1000VCM | If you do not accept these terms, click Disagree to terminate the installation. |

[Yamaha Pro Audio Website (Downloads->Other Utilities->Dante Utilities)]

If the following window appears when you attempt to install Dante Controller on a Macintosh by double-clicking on the installer icon, you will not be able to install it. This is because of a feature in Mac OS X called Gatekeeper. The easiest way to circumvent this is to hold down the Control key and click on the installer icon, and then select Open. A warning message will appear: click on the "Open" button to run the installer.

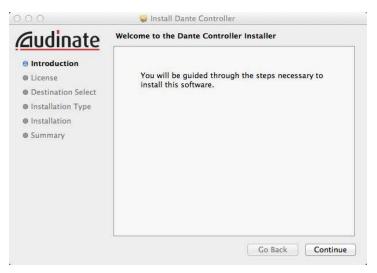


[Gatekeeper Alert]



[Open with Ctrl Key]

If this happens when installing NUENDO, you can circumvent it in the same way.



[Dante Controller Installer]

| <u>iudinate</u> | | | | |
|--------------------|---|--|--|--|
| Introduction | English \$ | | | |
| License | END USER LICENSE AGREEMENT | | | |
| Destination Select | NOTICE: CAREFULLY READ THE FOLLOWING LEGAL AGREEMENT WHICH CONTAINS RIGHTS AND RESTRICTIONS ASSOCIATED WITH YOUR USE OF THE AUDINATE* SOFTWARE (THE "SOFTWARE") | | | |
| Installation Type | AND DOCUMENTATION PROVIDED TO YOU BY AUDINATE PTY, LTD (THE "LICENSOR"). INSTALLING OR USING THE SOFTWARE CONSTITUTES YOUR ACCEPTANCE OF THESE TERMS. IF YOU (THE "END- | | | |
| Installation | USER') DO NOT AGREE TO THE TERMS OF THIS AGREEMENT, DO NOT INSTALL OR USE THE SOFTWARE. THIS AGREEMENT IS ENTERED INTO IN CONJUNCTION WITH THE END-USER'S | | | |
| Summary | PURCHASE OF LICENSOR PRODUCTS AND AS SUCH THE GENERAL AND/OR MISCELLANEOUS TEMMS AND CONDITIONS OF THE PURCHASE AGREEMENT GOVERNING SUCH TRANSACTIONS WHICH ARE NOT INCONSISTENT WITH THE TERMS OF THIS AGREEMENT SHALL BE INCORPORATED HEREIN BY REFERENCE. | | | |
| | The Software is created and licensed by AUDINATE, and as such is designed to function only with AUDINATE's products, or licensed implementations of AUDINATE's other DANTE" enabled products. The Software is licensed, not soid, to you, the End-User. If the Ind-User fails to reject the Software with written notice to Licensor within ten (10) days after the Software is delivered to or downloaded by the End-User. the Software will be deemed accepted by the End-User. THE END-USER SOLE ASON EXCLUSIVE REMEDY IN THE EVENT THE END-USER REJECTS THE SOFTWARE SHALL BE A REFUND OF THE SOFTWARE LICENSE PER PAD BY THE END-USER REJECTS THE SOFTWARE SHALL BE A REFUND OF THE SOFTWARE LICENSE PER PAD BY THE END-USER REJECTS THE SOFTWARE SHALL BE A REFUND OF THE SOFTWARE LICENSE PER PAD BY THE END-USER REJECTS THE SOFTWARE SHALL BE A REFUND OF THE SOFTWARE LICENSE PER PAD BY THE END-USER REJECTS THE SOFTWARE SHALL BE A REFUND | | | |
| | Subject to the terms of this Agreement, the Licensor grants to the End-User a non-exclusive, non- transferable, limited license to (i) install and use the Software in object code form only on a single computer as a single end-user, (ii) make one (1) copy of the Software for backup and archival purposes, and (iii) use the documentation provided with the Software only in conjunction with the use | | | |

[Software License Agreement]



[Choose Install Location]



[Enter Password to proceed]



[Installation Completed]

5-5. Installing QuickTime 7.7.9 from Apple Software Update (For Windows only)

NUENDO has video tracks, allow to import video file as video reference for audio playback, recording and editing. And for this, QuickTime technology from Apple is used as video engine. QuickTime is being installed on Mac OSX as default, but it may not be installed as default in case of Windows, so please make sure to install the latest version of QuickTime Essentials. You may download QuickTime 7.7.9 for Windows via Apple Software Update.

TIPS:

Official support for QuickTime for Windows has already been discontinued, and it is recommended that the previous version of QuickTime Player is updated to the latest version, since there was a serious security issues with the latest versions older than QuickTime 7.7.9.

| | New software is available from Ap Select the items you want, then click I | 49. 11 | |
|---|--|---|-----------------------------|
| Updates | Name | Version | Size |
| E | Bluetooth Update for Windows 7 | 6.0 | 2.07 MB |
| V | QuickTime | 7.7.9 | 47.57 MB |
| | Apple Software Update | 2.2 | 2.30 MB |
| New Software | Name | Version | Size |
| 199 199 | iTunes | 12.5.1 | 177.64 ME |
| | iCloud for Windows | 6.0 | 120.14 ME |
| | | | |
| QuickTime 7 u no longer insta version of Qui you can add it For informatio website: <u>http:</u> Important Noti ote: Use of this | 7.9 improves security and is recommend users on Windows. The QuickTime web alled by default and is removed if you ckTime on your PC. If you still need thi back using the custom setup option in n on the security content of this update (/support.apple.com/kb/HT201222. ice to OuickTime 6 Pro Users software is subject to the original Software is subject is subject to the original Software is subject is subjec | b browser plu have a previc s legacy plug in the installer e, please visit tware License | us : -in, - this |
| QuickTime 7 u no longer insta version of Quia you can add it For informatio website: <u>http:</u> Important Not ote: Use of this greement(s) th | Isers on Windows. The QuickTime web alled by default and is removed if you ckTime on your PC. If you still need thi back using the custom setup option in n on the security content of this update (/support.apple.com/kb/HT201222. ice to OuickTime 6 Pro Users | b browser plu have a previc s legacy plug in the installer e, please visit tware License | us : -in, - : this |

[Apple Software Update to install QuickTime 7.7.9]

Follow the steps in the installation window.

| English | | |
|---|-----------------------|--------------|
| APPLE INC. | | |
| SOFTWARE LICENSE AGREEME | NT FOR QUICKTIME | |
| NEADTHIT NATION TO ANNOUS | | |
| MPORTANT NOTICE TO QUICKT NSTALLATION OF QUICKTIME 7 | | |
| UNCTIONALITY IN PRIOR VERS | | |
| WITH THIS INSTALLATION, YOU | | |
| PRO KEY TO REGAIN QUICKTIM | E PRO FUNCTIONALITY. | AFTER |
| NSTALLATION, VISIT www.apple | .com/quicktime TO PUR | CHASE A |
| QUICKTIME 7 PRO KEY. | | |
| PLEASE READ THIS SOFTWARE | LICENSE AGREEMENT | ("LICENSE") |
| CAREFULLY BEFORE USING TH | E APPLE SOFTWARE. | BY USING THE |
| APPLE SOFTWARE, YOU ARE A | | |
| TERMS OF THIS LICENSE. IF YO THIS LICENSE, DO NOT USE TH | | |
| TO THE TERMS OF THE LICENS | | |
| SOFTWARE TO THE PLACE WH | | |

[License Agreement]

| | Name | Version | Size |
|---------------|---|---------|----------|
| ** | QuickTime | 7.7.9 | 47.57 MB |
| Territo Al | kTime nloading (8.70 MB / 20.40 MB) | | |

[Downloading QuickTime 7.7.9]

| Ap | o <mark>ple</mark> Sof | tware | e Up | date | | | | | 8 |
|---|--|---|---|--|---|---|------------------------|--|---|
| le | Edit T | ools | He | elp | | | | | |
| | | | | | | able from / | | 67 A. | |
| | Name | : | | | | Versi | on | Size | |
| 0 | QuickT | ime | | | | 7.7.9 | | 47.57 MB | |
| _ | Apple S | oftwa | are | Update | e | | | × | |
| | (| | | softwa | re has b | een succes | sfu | lly installed. | |
| 90 | | | | softwa | re has b | een succes | sfu | Illy installed. | |
| you For | rsion of C u can ado | Y(| our ime ick u | on your sing the | r PC. If yo e custom ty content | u still need t setup optior | his i in ate | | |
| you For we Imu | rsion of Q a can add r informa bsite: htt poortant N | Yo yo J it ba tion or p://su lotice | ime ick u n the uppo to O | on your sing the securit ort.appl uickTim | r PC. If yo e custom ty content e.com/kb ne 6 Pro l | u still need t setup optior of this upda / <u>HT201222</u> Isers | his in ate | OK legacy plug-in, the installer. , please visit this | |
| you For we Imi Note: Agree | rsion of Q u can ado r informa bsite: <u>htt</u> oortant N : Use of t ement(s) | Ya uickT f it ba otice his so that z | our inte ick u ppo to O ftwa acco | on your sing the securit ort.appl uickTim re is su mpanied | r PC. If yo e custom ty content <u>e.com/kt</u> ne 6 Pro l bject to tl | u still need t setup optior of this upda /HT201222 Isers ne original S | his in ate 2- | OK legacy plug-in, the installer. | _ |

【Installation Completed】

5-6. Installing Bonjour (For Windows only)

Dante Controller assumes that Bonjour is available. This is included by default with Mac OS X—only Windows users will need to install Bonjour.

Bonjour can be downloaded from Apple's website. http://support.apple.com/kb/DL999



Follow the steps in the installation window.



[Bonjour Installer]

| icense Agreement | | |
|---------------------------------------|---------------------|---------|
| Please read the following license agr | eement carefully. | |
| English | | * 11 |
| APPLE INC. | | |
| SOFTWARE LICENSE | AGREEMENT FOR BON | JOUR |
| | OFTWARE LICENSE AG | REEMENT |
| ("LICENSE") CAREFUL | LY BEFORE USING TH | EAPPLE |
| ("LICENSE") CAREFUL | LY BEFORE USING THE | EAPPLE |
| ("LICENSE") CAREFUL | LY BEFORE USING THE | EAPPLE |

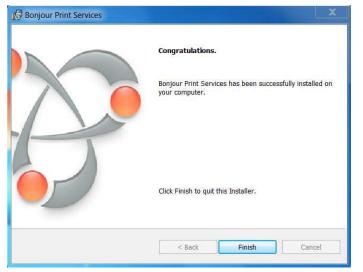
[License Agreement]



[System Requirements etc.]

| Bonjour Print Services | X |
|--|---------|
| Installation Options | |
| Select folder where Bonjour Print Services files will be installed and choose installation of | ptions. |
| 🗹 Create Bonjour Printer Wizard desktop shortcut | |
| 📝 Automatically update Bonjour Print Services and other Apple software | |
| Select this option if you want to schedule Apple Software Update to check for upda automatically. | ates |
| | |
| Destination Folder | |
| C:\Program Files\Bonjour Print Services\ | e |
| | |
| < Back Install | Cancel |
| | |

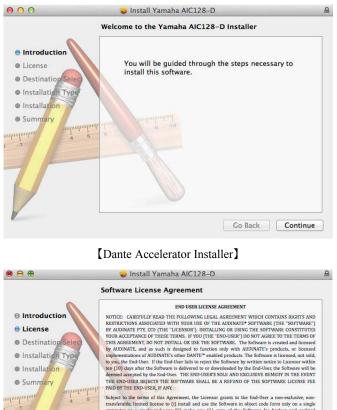
【Installation Options】



[Installation Completed]

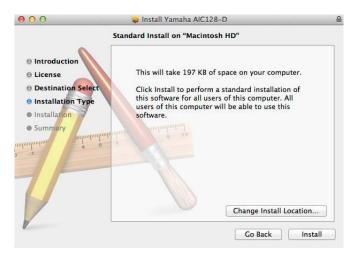
5-7. Installing the driver for Dante Accelerator

Next, download the driver for Dante Accelerator from the Yamaha Pro Audio website (http://www.yamahaproaudio.com/) and run the installer.

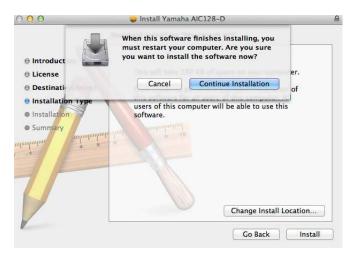




[Software License Agreement]



[Choose Install Location]



[Rebooting Required After Installation]



【Installation Completed (and Reboot)】

5-8. Installing the driver for SyncStation

Download the latest driver for SyncStation from the Steinberg website and run the installer.

http://www.steinberg.net/en/support/downloads_hardware/downloads_NUENDO_syncstation.html



| NUENDO SYNCSTATION 1.0.0 | |
|--|--|
| February 10th 2010 | |
| This version includes: | |
| Driver (Windows: 32/64-bit, Mac: 32-bit) | |
| Firmware Uploader | |
| Installation Readme (updated on April 26th 2012) | |
| | |
| Mac OS X | Mindows |
| Mac OS X 10.4 - 10.5 - 10.6 - 10.7 - 10.8 | Windows XP - Windows Vista - Windows 7 - Windows 8 |

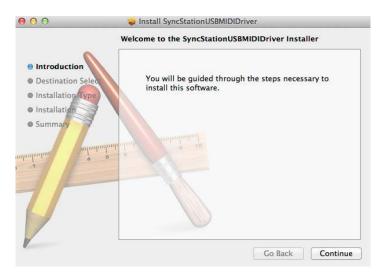
From this point on, download what is shown below, and follow the instructions in the installer to perform the installation.

1. SyncStation driver and firmware uploader

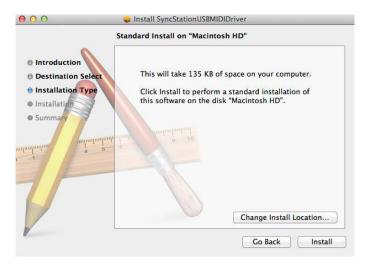


[Gatekeeper]

As described earlier, to bypass Gatekeeper, hold down the Control key, click on the installer icon, and select "Open."



[SyncStation Driver Installer]



[Choose Install Location]



【Installation Completed】

2. Download latest firmware

While you do not need to install the firmware updater, you should keep the firmware on hand, so download the latest firmware (Firmware will be located at the same place as the driver). The file name and dot-extension for the downloaded file should be something like this: syncstation-sw130123-hw120302.chf

3. Launch the firmware updater and run the firmware update.

Launch the updater downloaded in Step 1 (SyncStation Firmware Updater).

| syncStation | |
|--------------------|--------------|
| Not Connected | ✓ MIDI Input |
| Not Connected | MIDI Output |
| Core Version: | |
| lardware Version: | |
| oftware Version: | |
| Verify SyncStation | |
| New Firmware | |
| | Browse |
| ile Date and Name: | |
| lardware Version: | |
| oftware Version: | |
| Upload Firmware | Qu |

[SyncStation Firmware Updater]

Select "SyncStation" as the MIDI Input/MIDI Output ports.

| | rmware Uploader |
|--------------------|--------------------------|
| SyncStation | |
| SyncStation | ► MIDI Input |
| SyncStation | MIDI Output |
| Core Version: | |
| Hardware Version: | |
| oftware Version: | |
| Verify SyncStation | |
| | Browse |
| ile Date and Name: |), <u>to increase of</u> |
| tardware Version: | |
| lardware version: | |

[Choose MIDI Ports]

Click "Verify SyncStation"; the SyncStation's current version information will be displayed.

| ncStation | | |
|------------------|------------------|-------------|
| syncStation | | MIDI Input |
| SyncStation | | MIDI Output |
| ore Version: | 01.02 - 26/10/09 | |
| ardware Version: | 24 | |
| oftware Version: | 00.04 - 06/01/12 | |
| | | |
| ew Firmware | | |
| ew Firmware | | Browse |
| ew Firmware | e: | Browse |
| | e: | Browse |

[Verify SyncStation Firmware Versions]

Next, navigate to the location of the latest firmware data (the .chf file), select it, confirm that it is the version to be used for the update, and begin the update.

| SyncStation | |
|--------------------------------------|--------------------------------|
| SyncStation | - MIDI Input |
| SyncStation | MIDI Output |
| Core Version: | 01.02 - 26/10/09 |
| Hardware Version: | 24 |
| Software Version: | 00.04 - 26/10/09 |
| Verify SyncSta | |
| · | |
| New Firmware | skto120106-hw090923.chf Browse |
| New Firmware /Users/ ***** /Des | |
| New Firmware /Users/ ***** /Des | skto120106-hw090923.chf Browse |

[Specify New Firmware]

If the update finishes without incident, you will see the following message.

| SyncStation | | | | |
|---------------|---|-------------------------------|--|--|
| SyncStation | | → MIDI Input | | |
| SyncStation | MIDI Output | | | |
| Core Version: | 01.02 - 26/10/09 | | | |
| Har | | | | |
| Soft | Firmware Upload w | as successful. | | |
| | | | | |
| | | | | |
| | | | | |
| Nev | | ОК | | |
| Nev /U | | ОК | | |
| /U | e: 06/03/2012 - syncstat | ОК ion-sw120106-hw090923.c | | |
| /U | e: 06/03/2012 - syncstat 24 - 23/09/09 | | | |

[Firmware Successfully Uploaded]

After uploading firmware, you should always perform a factory reset. Hold down the down-arrow button on the SyncStation to display the menu, and then press the down-arrow button repeatedly from the "Unit" line to open "Unit07-InstallTemplate", select "Factory," and hold down the down-arrow button.



[SyncStation Factory Reset]

Then turn the SyncStation off, wait for 5 seconds, and turn it back on. The SyncStation update should now be complete.

6. Starting up & equipment settings

6-1. Sequence for equipment start-up

To avoid any hearing damage caused by loud noises when turning on equipment, follow the sequence shown below for starting up Nuage and other equipment.

- 1. Nuage controller (Nuage Fader/Nuage Master)
- 2. Computer monitors and computer peripherals
- 3. Computers
- 4. Video equipment, SyncStation, outboard gear
- 5. Nuage I/O
- 6. NUENDO
- 7. Powered speakers (or power amp)

When shutting off power, reverse the above order.

- 1. Powered speakers (or power amp)
- 2. NUENDO
- 3. Nuage I/O
- 4. Video equipment, SyncStation, outboard gear
- 5. Computers, computer monitors, and computer peripherals
- 6. Nuage controller (Nuage Fader/Nuage Master)

6-2. Starting up controller

Switch on the Nuage Fader/Nuage Master, in any order.

Tip:

The Nuage Controller has an "all-lit" mode for operational checks; when started up in "all-lit" mode, all buttons, LEDs, and other visual-feedback elements will be lit at maximum power. Holding down the DAW "A" and "B" buttons when turning it on and continuing to press them will put it into "all-lit" mode. To return it to normal mode, turn it off and back on again.

6-3. Starting up computer monitors and computer peripherals

Before turning on the computers, turn on the computer monitors and peripherals. Check again to ensure that the monitor power switches do not come in contact with the Nuage Controller, which might accidentally turn them off. Make sure if the Power Button Lockout mode is on.



6-4. Starting up computers

BIOS settings (with the HP Z series)

If you are using the HP Z840/Z440/Z240, switch AMT off in BIOS.

What is AMT?

AMT, or Active Management Technology, is Intel's remote-management function intended for client computers used in a corporate environment. This makes it possible to remotely start up and troubleshoot a computer. Nuage does not use this function, and moreover, because it periodically transmits data used for remote monitoring, that traffic can interfere with communications between the Nuage Controller and computers. This is why we recommend disabling AMT in BIOS. The Z820 is equipped with two networking ports, one of which, labelled "AMT" is specifically for AMT monitoring. But use this port after disabling AMT (because that port has better hardware performance than the other.)

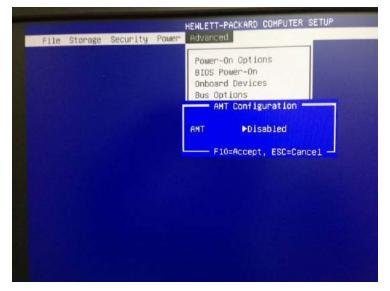
BIOS Setup

Turn on the PC Power supply, hold down "F10" on the keyboard when the HP logo appears to access BIOS Setup mode. In BIOS Setup mode, Select AMT Configuration from Advanced menu and press Enter.



[HP Z series BIOS Setup]

Select "Disabled" for AMT and press "F10" to accept.



[Disable AMT]

Next, select "OS Power Management" from Power menu.



[OS Power Management]

Set "Idle Power Savings" to Normal and press F10 to accept it.

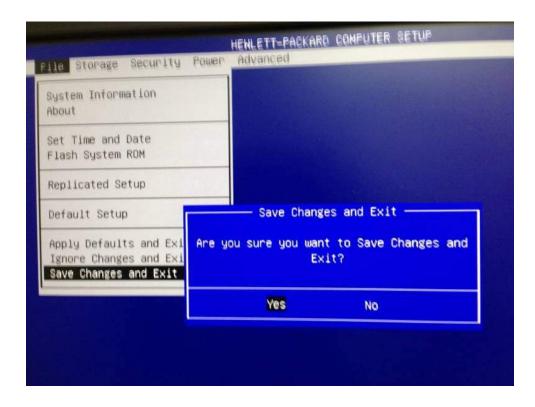


[Set Idle Power Savings to Normal]

When the above setting is done, select Save Changes and Exit from File menu.



[Save Changes and Exit]



When the confirm message pop up, select "Yes" and press Enter to finish the setting. The computer will be restarted.

Tip:

The HP Z series has a known issue where it can take several minutes to finish starting up. If this happens, just wait until start-up is complete. In rare cases, a message may be displayed indicating that it cannot start up. In these cases, remove any memory sticks, CD-Rs, or other media, and try starting up again.

6-5. Settings for Windows and Mac OS X Display settings

Windows

Although you have already connected the computers and computer monitors, you need to set up the operating system to reflect the physical layout of the screens. In Windows, select "Displays" from the control panel, and then select "Screen Resolution."

Next, click the "Identify" button and make note of the numbers that are displayed for each monitor. Then arrange the monitor icons in Windows in that order and click "Apply." To confirm that Windows now has the screens laid out to match the physical layout of the monitors, move the mouse so that the cursor runs across all the screens, and observe whether it moves across them sequentially.



[Display Arrangement (Windows)]

Next, to make it so that the monitor positioned at the Nuage Master is treated as the main display, click the checkbox labelled "Make this my main display" (if that is already the main display, do nothing).

| Resolution: | 1920 × 1200 - | | |
|----------------------|-------------------------------------|----|-------------------|
| Multiple displays: | Extend these displays | | |
| Make this my ma | ain display | | Advanced settings |
| Connect to a project | ctor (or press the 💐 key and tap P) | | |
| Make text and othe | r items larger or smaller | | |
| What display settin | gs should I choose? | | |
| | | ОК | Cancel Apply |
| | | UK | Cancel Apply |

Mac OS X

From the System Preferences window, click the Displays button, and then the "Arrangement" tab. Icons representing all the connected monitors will appear; drag them around so that their layout is the same as the physical layout. To confirm which display icon corresponds to which physical monitor, click and hold on the icon; a red frame will appear on that monitor. Use that feedback to arrange the displays.

Next, to make it so that the monitor positioned at the Nuage Master is treated as the main display, drag the white bar representing the menubar from whichever display currently has it to the one that you want to be the main display and drop it there.



[Display Arrangement (Mac OSX)]

Computer optimizations

Windows

The following procedure optimizes your Windows machine for use with Nuage. Most of the points here are recommendations for improving audio recordings and processing performance on Windows computers (note that performance improvements cannot be guaranteed due to differences between systems). Before changing your computer's basic settings, we recommend creating a recovery point for your system. The following recommendations assume that you are using Windows 7 (the way you access these functions on other versions of Windows may differ). Also please be aware that following these recommendations may have adverse effects on your computer.

- Use a hard disk drive other than the startup drive with your OS installed as your recording and playback drive. Run the defragmentation tool and disk scanner periodically on your hard drives. This will keep data access fast and reduce disk errors.
- 2. Disable screen savers, anti-virus software, Windows firewall, and Windows Defender. If these background tasks are activated unexpectedly, they can cause audio drop-outs. Also disable the system sound so that you do not accidentally record or play back system sounds (Note: we recommend not disabling anti-virus software and firewalls for computer that are connected to the Internet).
- 3. If you need to use pagefiles, increase virtual memory (swap space). Although this depends somewhat on other factors, you should generally aim for virtual memory to have double the capacity of RAM (However, that much RAM may not be needed if you already have enough memory). If you do not need to use pagefiles, disable this function on all your drives. Refer elsewhere for more information on optimizing swap space, virtual memory, and page files.
- 4. Confirm that your computer's power profile (Start > Control Panel > Power Options) is set to "High Performance" (or "Prioritize Performance"). This lets you avoid some CPU speed restrictions and unnecessary performance-robbing visual effects. However, "Aero" should be enabled.
- 5. Set the power-profile settings so that the computer does not sleep or hibernate even when idle, and so that power to the hard drive is not shut off. If the computer unexpectedly shuts down, audio recordings may be interrupted and lost.
- 6. Confirm that DMA (direct memory access) is enabled for each IDE channel. DMA is the recommended (fastest) method of disk access for audio-oriented computers. To enable DMA, open the disk manager (right-click Computer, then select Manage > Disk Manager). Next, expand the "IDE ATA/ATAPI Controller," and right-click on each channel to view its properties; under "Advanced Settings," confirm that DMA is enabled.
- 7. Delete all unneeded fonts. Reading fonts consumes system resources.

- 8. Confirm that all hard drives that will be used in audio processing have NTFS formatting.
- 9. Confirm that the OS, device drivers, BIOS, and chipset drivers are all up to date. For details, refer to the websites of the chipset manufacturer.
- Set the processor's schedule to "Background Services" (Control Panel > System > Advanced System Settings > Advanced Settings > Performance). This will increase the performance of audio drivers.
- 11. Turn off automatic indexing. Type "indexing options" under the Start menu, hit the Enter key, and click "Change". Indexing is a processor-intensive operation that can adversely affect audio.
- 12. Disable Wi-Fi and Bluetooth if possible. A computer attempting to maintain an unstable Wi-Fi connection is likely to encounter spikes in the CPU load, which can cause audio drop-outs. The following is for reference, and is recommended reading for anyone needing to brush up on these topics.
- 13. If you know of any unnecessary startup services, use services.msc to set those to "manual." If you are not sure what service's settings you should change, either skip this step or refer to this BlackViper services settings page:
- (http://www.blackviper.com/service-configurations/black-vipers-windows-7-service-pack-1-service-configurations/)
- 14. Use DPC Latency Checker (http://www.thesycon.de/eng/latency_check.shtml), which is free, to analyze your computer's processing performance. If this shows frequent DPC spikes exceeding 100 microseconds, you may get audio dropouts when running with low buffer settings. As a typical target, if DPC latency averages less than 100 microseconds, the computer's settings are OK. Spikes longer than that need to be minimized. Spikes such as these are typically caused by drivers for other hardware devices. Unfortunately, the only way to remove the problematic driver is to go through them one at a time. Before doing that, always update your hardware drivers.

Mac OS X

1. Disable all energy-saving settings. Select "Energy Saver" from System Preferences, and disable sleep as shown below.

| Computer sleep: | | | | | | | | | | |
|-----------------|----------|------|--------------|----------|-----------|-------------|--------|-------|----------|------------|
| | 1 min | ţ | 15 min | 1. J | ŗ. | 1 1 hr | ų, | 1 | l. I | 3 hrs Neve |
| Display sleep: | | 20 | | | | | | | X 73 | -0 |
| | 1 min | ÅN | ever letting | your dis | play go t | to sleep n | hay sh | orten | its life | 3 hrs Neve |
| Put hard disks | to clean | when | nossible | | | | | | | |

【Disable Display/HDD Sleep】

2. Disable software update to prevent automatic updates. Only use operating-system updates that have been tested by and are officially supported by Yamaha/Steinberg.

| Software Update keeps OS X and apps from the Mac App Store up to date Automatically check for updates Download newly available updates in the background | | | | | |
|---|--|--|--|--|--|
| You will be notified when the updates in the background You will be notified when the updates are ready to be installed. Install system data files and security updates Automatically download apps purchased on other Macs Sign into your account in the Mac App Store to enable automatic downloads | | | | | |
| Software updates are available Show Updates | | | | | |

[Disable Software Update]

- 3. Set up a dedicated hard drive for audio recording, separate from your system hard drive. This will ensure that audio data read/write operations are more efficient, by avoiding interference from operating-system read/write operations, and will permit you to record and play back more tracks simultaneously. Furthermore, if there are any disk problems, having separate system and audio drives will make it that much easier to replace the drive to recover the system. We recommend that you install NUENDO on the same drive as the operating system (the system drive) and use the other drive exclusively for reading and writing audio data, although this is not strictly necessary.
- 4. Disable screensavers, anti-virus software, and firewalls. Background tasks can cause audio dropouts if they activate unexpectedly (NB: we do not recommend disabling firewalls or anti-virus software for any computer connected to the Internet).

5. Disable the keyboard shortcut for Spotlight, and prevent Spotlight from searching the audio drive.

| | 9 | S T PDF Documents | | | |
|-----|-----------------------|--|---|----|-----|
| | 10 | Vebpages | | | |
| | 11 | 🗹 🙆 Music | | | |
| | 12 | 🗹 🛃 Movies | | | |
| | 13 | A Fonts | | | |
| | 14 | 🗹 😓 Presentations | | | |
| | 15 | 🗹 🞺 Spreadsheets | | | |
| | 16 | 🗹 🧊 Developer | | | |
| | | | | | |
| ſ | Sp | otlight menu keyboard shortcut: | # Space | * | |
| | 1222320 | | protection of the second se | | ~ |
| C | Sp | otlight window keyboard shortcut: | ∿t¥ Space | | (7) |
| | | [Disable Spotlight | shortcut keys】 | | |
| 000 | | Spotligh | t | | |
| | show A | II | | (Q | |
| | Brou | Search Results | Privacy | | |
| | | ent Spotlight from searching these lo | | | |
| | THE REAL PROPERTY AND | the Add button, or drag a folder or disk in | to the list below. | _ | |
| | 2 | NUAGE audio drive | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | + | _ | | | |
| | | - | \$ Space | | |
| | | ootlight menu keyboard shortcut: potlight window keyboard shortcut: | Process Tractant and | | (?) |

[Prevent Spotlight from searching the audio drive]

6. Disable the keyboard shortcut for Mission Control.

| M | lission Contro | bl | |
|-----------------|--|--|---|
| | | | Q |
| | | | |
| Dace | | | |
| spaces based | on most rece | ent use | |
| oplication, swi | tch to a space | with open wind | dows for the application |
| ication | | | |
| | | | |
| | | current app <mark>licat</mark> ior | i, or hide windows to locate |
| ^ † | \$ | - | \$ |
| ^ ↓ | \$ | - | \$ |
| F11 | \$ | - | \$ |
| | | | |
| F12 | \$ | - | \$] |
| | and Dashboa pace spaces based oplication, swi ication open windows, whith be covered up ^ 1 | and Dashboard, all arrange bace spaces based on most rece oplication, switch to a space ication open windows, windows of the the covered up. | spaces based on most recent use oplication, switch to a space with open wind ication open windows, windows of the current application the covered up. |

[Disable Mission Control shortcut keys]

7. Disable Wi-Fi and Bluetooth.

6-6. Settings for Nuage Workgroup Manager

If Tools for Nuage has been installed, Nuage Workgroup Manager will launch automatically when the computer is started, so it should not be necessary to launch the program (you may need to launch Nuage Workspace Manager if you quit the program manually).

| rkgroup | | | Workgro | Assign | Name | Identify |
|--------------|------|----------|-------------|----------|------------|----------|
| tive Assign | Name | Identify | | | | |
| | T | | _ | | <u>t</u> 4 | 3 |
| ice/DAW List | Name | Identify | Device/ | DAW List | Name | identify |
| | | | | | | |
| | | | | | | |

[Nuage Workgroup Manager (Windows)]

[Nuage Workgroup Manager (Mac OSX)]

If the Nuage Fader/Master and the Nuage I/O network switch are already hooked up, you should see the following in the Nuage Workgroup Manager window.

| evice/DAW List | <u> </u> | ţ | | |
|-------------------------|----------|---|---|--|
| Name | Identify | | | |
| NUAGE-IO8A8D (81:DE:14) | * | പ | i | |
| NUAGE-IO16D (81:DE:42) | * | പ | i | |
| NUAGE-IO16A (81:DE:48) | ÷. | പ | i | |
| NUAGE FADER (8B:4F:77) | * | പ | i | |
| NUAGE MASTER (8B:4F:46) | * | പ | i | |
| | <u></u> | | | |
| | | | | |

[Nuage devices recognized on the Workgroup Manager]

Select each device one at a time and click the up-arrow button to add it to the upper pane (Add this following the setup procedure for Nuage I/O in Section 3-3).

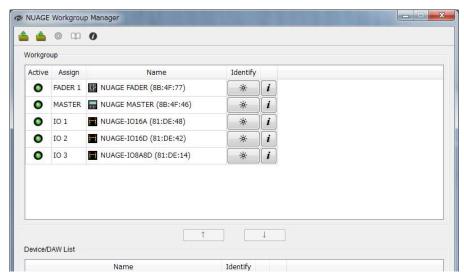
| | up | 4.0.5070 | | | | 10 | |
|--------|----------|----------------------|--------|---------------|-------------|----|--|
| | Assign | Name | /2252 | Identify | | 1 | |
| _ | | NUAGE FADER (88:4F | 5550 | * | i | - | |
| • | MASTER | NUAGE MASTER (88:4 | 4F:46) | * | i | | |
| | | | | | | | |
| | | | t | | 4 | | |
| vice/E | OAW List | Name | | Identify | 4 | | |
| | | Name D (81:DE:42) | | | -) 6 | | |
| NU | AGE-IO16 | | | Identify | പ | | |
| | AGE-IO16 | D (81:DE:42) | | Identify 🔅 | ନ ଜ ଜ | 1 | |

[Adding devices to the Workgroup]

Tip:

If you are using more than one Nuage Fader, add them in order, starting with the one you want to treat as the first Fader (eg, if you have two Faders next to each either, treat the left one as Fader 1 and the right one as Fader 2). To select the right unit from the Device/DAW List, click the Identify button; this will cause an LED on that unit to blink briefly. If for some reason the Faders have been added to the Workgroup in the wrong order, click the down-arrow button to remove all the Faders from the Workgroup and then start over.

Add all the devices to the Workgroup, and then confirm that the green Active indicator appears.



[All devices added to the workgroup active]

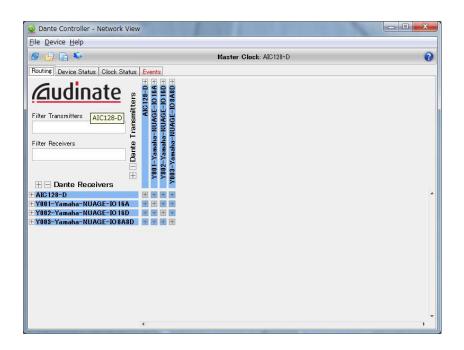
6-7. Settings for Dante Controller

There are two main types of patch settings related to Nuage audio input/output, and they both need to be set correctly. The first is patching in Dante, the second is patching in NUENDO. Set up patching in Dante first by launching Dante Controller. (Details for patching in NUENDO will be explained in 6-10.)



[Dante Controller]

When the Dante Accelerator card and Nuage I/O are connected, you should see the following.



Select the port that Dante Controller connects to (If you don't select the correct port, Nuage I/O and Dante Accelerator will not be displayed).

| F 🔒 🔒 📢 | | | Master Clock: | AIC128-D | | | 4 |
|-----------------------------|-----------------|--------------------|--------------------|----------------------------------|----------------------|-------------------------|---|
| louting Device Status Clock | Status Events | | | | | | |
| Device Name | Product Type | Product Version | Primary Address | Primary Link Speed | Secondary Address | Secondary Link Speed | |
| IC128-D | AIC128-D | 1.0.0 | 169.254.166.243 | 1Gbps | Not Supported | Not Supported | |
| 001-Yamaha-NUAGE-IO16A | Nio500-A16 | 1.0.0 | 169.254.216.57 | 1Gbps | | Link down | |
| 002-Yamaha-NUAGE-IO 16D | Nio500-D16 | 1.0.0 | 169.254.214.3 | 1Gbps | | Link down | |
| 003-Yamaha-NUAGE-IO8A8D | Nio500-A8D8 | 1.0.0 | 169.254.215.125 | 1Gbps | | Link down | |
| | Prima | | | | | | |
| | Prima | | 10 | .69.254.4.166 2C:41:38:4F:D0: | 54 | | |

The device names can be changed so it is easy to remember (not mandatory). Open the Device Config window.

| 🧕 Dante Controller - | Device View (AIC128-D) | X |
|----------------------|--|---|
| File Device Help | | |
| 8 🔆 💿 🞾 | AIC128-D | 0 |
| Receive Transmit Sta | tus Device Config Network Config | |
| -Rename Device- | | |
| | AIC128-D | |
| | | |
| Sample Rate | | |
| | | |
| Sample | e Rate: 48k 🔹 Pull-up/down: NONE 👻 | |
| | | |
| Encoding | | |
| | | |
| Enco | | |
| | rice does not support ding configuration. | |
| Device Latency— | | |
| Device Latericy | | |
| Current latency: | 1.0 msec | |
| Latency | Maximum Network Size | |
| 🔘 0.15 msec | Gigabit network with one switch | |
| 🔘 0.25 msec | Gigabit network with three switches | |
| 🔘 0.5 msec | Gigabit network with five switches | |
| I.0 msec | Gigabit network with ten switches or gigabit network with 100Mbps leaf nodes | |
| 🔘 2.0 msec | Gigabit network with 100Mbps leaf nodes | |
| 🔘 5.0 msec | Safe value | |
| Reset Device | | |
| | Reboot Factory Reset | |
| | | |

【Device Config window】

Change the device name shown in the Rename Device field and hit the Enter key. A confirmation dialog will appear; click Yes and the device's name will be changed (Spaces in names will not be shown; use hyphens or underscores instead).

| File Device Help | |
|--|---|
| 8 🗛 🖪 💀 | Master Clock: AIC128-D |
| Routing Device Status C | Nock Status Events |
| | |
| G udina | File Device Help |
| | |
| Filter Transmitters | S > • AIC128-D • 0 |
| | Receive Transmit Status Device Config Network Config |
| Filter Receivers | Rename Device |
| | Dante-Accelerator |
| | |
| 🗐 🗆 Dante Receive | rSample Rate |
| FAIC128-D | Sample Rate: 48k 👻 Pull-up/down: NONE 👻 |
| Y001-Yamaha-NUAGI | |
| + Y002-Yamaha-NUAGI + Y003-Yamaha-NUAGI | rEncodii 🥥 Dante Controller |
| ± 1003-Yamana-NUAGI | Encodir 20 Dante Controller |
| | Are you sure you want to rename AIC 128-D to Dante-Accelerator? |
| | Yes |
| | - Device Latency |
| | |
| | Current latency 1.0 msec |
| | Latency Maximum Network Size |
| | 0.15 msec Gigabit network with one switch 0.25 msec Gigabit network with three switches |
| | © 0.5 msec Gigabit network with five switches |
| COLUMN STATES IN THE OWNER | 1.0 msec Gigabit network with ten switches or gigabit network with 100Mbps leaf nodes |
| | 2.0 msec Gigabit network with 100Mbps leaf nodes 5.0 msec Safe value |
| 11111111111111 | rReset Device |
| | Reboot Factory Reset |
| | |

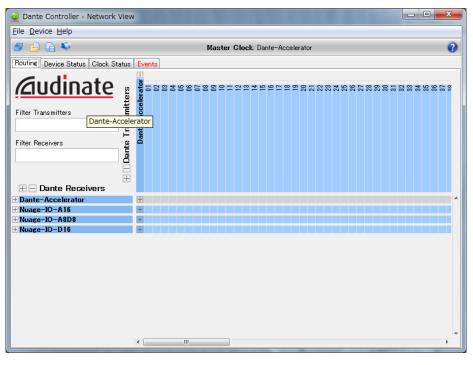
[Renaming the device name]

Change the name for Nuage I/O in the same way, as shown below.

TIPS :

Do not change "Y001-Yamaha-" written at the beginning of Dante Accelerator's name, or "Y00X-Yamaha-" witten at the beginning of Nuage I/O. If you change the name, they may not be able to be seen by the other Yamaha Dante equipment, such as CL digital mixing console. Therefore, we do not recommend you to do so.

The grid in Dante Controller shows output ports (transmitters) in columns, and input ports (receivers) in rows. Click the "+" button above Dante Accelerator to expand it horizontally; this lets you check Dante Accelerator's 128 channels of output.

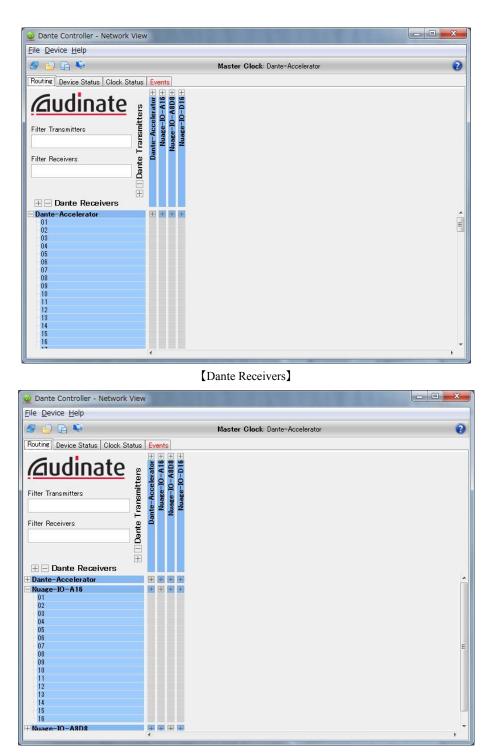


[Dante Transmitters]

Click the "+" button again to close up the Dante Accelerator grid. Next, disclose the 16 channels of output for each Nuage I/O.

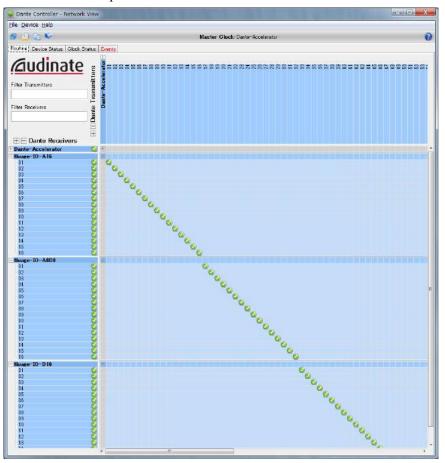
| 👱 Dante Controller - Network View | 1 | | - O X |
|---|---|---------------|--------------------------|
| <u>File</u> <u>D</u> evice <u>H</u> elp | | | |
| S 占 🕞 💐 | Master Clock: Dante-Ad | ccelerator | 0 |
| Routing Device Status Clock Status | Events | | |
| Filter Receivers | Dante-Accelerator ⊞ Nuace-10-A16 = 1 03 05 06 06 06 06 07 01 06 06 06 07 06 06 06 07 07 06 06 07 07 06 06 07 06 06 06 06 06 06 06 06 06 06 06 06 06 | Nuage-10-A508 | 15 16 Nuage-IO-D16 |
| 🗄 🖃 Dante Receivers | | | |
| + Dante-Accelerator | ± ± | ± | ± ^ |
| + Nuage-IO-A16 | ± ± | | + |
| ± Nuage-IO-A8D8 | | ± | + |
| ± Nuage-IO-D16 | + + | ± | + |
| | ۲ | | |

You can do the same thing with the "+" buttons at the left of the rows to expand them vertically. Check Dante Accelerator's 128 channels of input and each Nuage I/O's 16 channels of output.



Once you understand how the Dante Controller grid works, you can set up the patches between the Dante Accelerator outputs and the Nuage I/O inputs, and between the Nuage I/O outputs and the

Dante Accelerator inputs. To set up a patch, just click on the box at the intersection of the patch-point. Continue until all patches are set.



[Patch Dante Transmitters and Receivers]

TIPS:

With only the first 16 channels, clicking the intersection point between device names while holding down the Control key will patch the inputs and outputs for those 16 channels one at a time, in order. Clicking while holding down the Control and Shift keys will remove all the patches for those 16 channels at once. The 17th channel and beyond need to be patched manually, one at a time. It can take a few seconds for each patch to be set, so wait for the setting process to finish before clicking again. The figure above shows the Dante Accelerator outputs patched to the I/O inputs; you will also need to match up the patches between each Nuage I/O output and Dante Accelerator input.

TIPS:

When patching Nuage I/O and Dante Accelerator, it is necessary to follow the ID order from the first unit, starting from 1-16, then 17-32 and 33-48. (If the patch is not in order, Direct Monitoring, Surround Processor and the linkage with SyncStation may not work properly.

Once you have finished setting up patches, save the settings file. If your settings ever get changed, you can recover your original patches by loading the settings file.

6-8. Setting up and launching NUENDO

Next, launch NUENDO. It will be displayed in the Device/DAW list; add NUENDO 6 to the Workgroup.

| orkgroup Active A |) m (| 0 | | |
|----------------------|--------|-------------------------|----------|----------|
| Active A | | | | |
| | | | | |
| • | Assign | Name | Identify | |
| O DA | AW A | > Nuendo (4F:D0:54) | ×. | <i>i</i> |
| S FA | ADER 1 | NUAGE FADER (8B:4F:77) | -× | i |
| M/ | ASTER | NUAGE MASTER (8B:4F:46) | * | i |
| IO | 01 | NUAGE-IO16A (81:DE:48) | * | i |
| IO | 0 2 | NUAGE-IO16D (81:DE:42) | × | i |
| IO | 3 | NUAGE-IO8A8D (81:DE:14) | -×- | i |
| evice/DAW | V LIST | | | |
| | | Name | Identify | |

[Add NUENDO6 to the Workgroup - completed]

Once you have added NUENDO 6 to the Workgroup, the mixer window will be displayed full-screen.

Mixer window settings

In Section 6-5, you set up the physical order of the computer monitors and how they are addressed by the operating system, but the first time NUENDO is launched, it will not recognize which monitor to use for Nuage Fader, so you need to force NUENDO to recognize it (The NUENDO Workspace window will be displayed on the monitor that the operating system recognizes as being the main monitor, so Nuage Master should be displayed correctly). As shown below, hold down the buttons SHIFT, CONTROL, ALT on the lower-left of the unit and press the "Section Control" buttons numbered 1 through 8 at the upper right in order until the monitor that you want to use for Nuage Fader has the right window.



[Adjusting Mixer window positions]

Tip:

To check whether the mixer window is displayed on the right monitor, open a project or create a new one, and then press any SEL button on the Nuage Fader. Check to see whether the channel strip corresponding to that channel has a white outline. If it is shown correctly above the SEL button that you pressed, then your settings are correct.

Next, adjust the display region of the mixer window. The first time it is launched the window will not have the correct left/right positioning. Use your mouse to drag the left and right edges of the window to the correct positions.





[Adjust left/right end of the screen]

Once you have adjusted the left/right positioning and the bottom edge, if necessary, each channel (track) on screen should be positioned in a vertical line with the Nuage Fader's 16 channels.



[Display monitor/Nuage Fader adjusted]

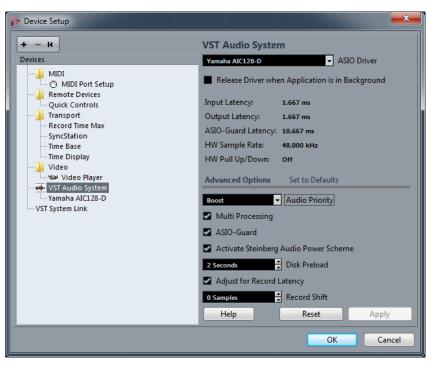
Other window settings

Once you have finished setting up the mixer window, position the transport, time-display, video, and other windows. If you would like to display the video-add window full-screen, open the video window (press the F8 key), drag it to the screen where you want it displayed, and then double-click the window.

6-9. Device Setup settings

You should make sure that the following have been set in advance in Device Setup: VST Audio System and Yamaha AIC128-D below it, and VST System Link.

Select the Dante Accelerator card (Yamaha AIC128-D) as the VST Audio System's ASIO driver. Set Audio Priority to Boost, and check on Multi Processing, ASIO-Guard, and Activate Steinberg Audio Power Scheme.



【VST Audio System】

Next, open Yamaha AIC128-D, and, and if you want to use the Direct Monitoring feature, check on Direct Monitoring. Click the Control Panel button, and set up the settings as shown below.

| + - H | Yama | aha AIC128-D | | | |
|---|------|--|---------------------|---------|----------|
| Devices | | Control Panel | Input Latency: 1.0 | 000 ms | |
| MIDI MIDI Port Setup Quick Controls Transport Record Time Max | | Clock Source ternally Clocked rect Monitoring Reset | Output Latency: 1.0 | 000 ms | |
| SyncStation Time Base | 1/0 | Port System Name | Show As | Visible | State |
| Time Display | In | AIC128-D Input 1 | AIC128-D Input 1 | × | Inactive |
| Video | In | AIC128-D Input 2 | AIC128-D Input 2 | × | Inactive |
| Video Player | In | AIC128-D Input 3 | AIC128-D Input 3 | × | Inactive |
| VST Audio System | In | AIC128-D Input 4 | AIC128-D Input 4 | × | Inactive |
| Yamaha AIC128-D | In | AIC128-D Input 5 | AIC128-D Input 5 | × | Inactive |
| VST System Link | In | AIC128-D Input 6 | AIC128-D Input 6 | × | Inactive |
| | In | AIC128-D Input 7 | AIC128-D Input 7 | × | Active |
| | In | AIC128-D Input 8 | AIC128-D Input 8 | × | Active |
| | In | AIC128-D Input 9 | AIC128-D Input 9 | × | Inactive |
| | In | AIC128-D Input 10 | AIC128-D Input 10 | × | Inactive |
| | In | AIC128-D Input 11 | AIC128-D Input 11 | × | Inactive |
| | In | AIC128-D Input 12 | AIC128-D Input 12 | × | Inactive |
| | In | AIC128-D Input 13 | AIC128-D Input 13 | × | Inactive |
| | In | AIC128-D Input 14 | AIC128-D Input 14 | × | Inactive |
| | In | AIC128-D Input 15 | AIC128-D Input 15 | × | Inactive |
| | In | AIC128-D Input 16 | AIC128-D Input 16 | × | Inactive |
| | In | AIC128-D Input 17 | AIC128-D Input 17 | × | Inactive |
| | In | AIC128-D Input 18 | AIC128-D Input 18 | × | Inactive |
| | In | AIC128-D Input 19 | AIC128-D Input 19 | × | Inactive |
| | | lelp | Reset | | Apply |

【Yamaha AIC128-D】

| ASIO Buffer S | ize 64 | • |
|-------------------|--------|---|
| DMA Transaction S | ize 16 | * |

[Yamaha AIC128-D Control Panel]

Finally, open VST System Link and make sure that nothing has been set.

| + - K VST System Link Devices Active Not Connected | 🎓 Device Setup | |
|--|---|---|
| Quick Controls 0 Offset Samples Transport 24 Bit Transfer Bits SyncStation 0 MIDI Inputs Time Display 0 MIDI Inputs Video 0 MIDI Outputs Yamaha AIC128-0 VST System Link N | + - I Devices MIDI MIDI Port Setup Remote Devices Quick Controls Transport Record Time Max SynCStation Time Base Time Display Video System Vist Audio System Vist Audio System Vist Audio System | VST System Link Active Not Connected ASIO Input Online Not Connected ASIO Output Use Selected ASIO Ports for Data only 1 Bit per Sample O O O Offset Samples 24 Bit Transfer Bits O MIDI Inputs O MIDI Outputs Self test N Device Onlin |
| Help Reset Apply | | |

【VST System Link】

Tip:

Make sure nothing is set on the VST System Link screen. There is no screen for setting an Extended System Link for synchronizing SyncStation and samples. System Link settings should be handled using the Project Synchronization Setup described below. If anything has been set in the System Link screen, an error message will be displayed after a certain period of time, after which the System Link will be removed.

TIPS:

Always startup NUENDO system with NUENDO as DAW A. If the DAW A is not started up, the system does not operate properly.

6-10. Project Synchronization Setup

Use the Project Synchronization Setup screen to set up synchronization for video devices that use SyncStation and NUENDO projects. Settings should be as follows. (Project Synchronization is under Treansport menu.)

Timecode-related

| Timecode Source > | Steinberg SyncStation (SyncStation receives timecodes from video device) |
|-------------------------|---|
| Steinberg SyncStation > | Timecode Source > RS422-out (SyncStation receives timecode from video device via RS422) |
| | Frame Reference > Video (SyncStation receives video sync) |
| | Clock Reference > User Frame Rate (SyncStation generates word clock based on video sync signal) |

Machine-control-related

Machine Control Output Destination > Steinberg SyncStation (Machine control sent from SyncStation)

Machine Control Output Settings

Machine Control Destination > RS422-out (Machine control sent via RS422)

Machine Control Input Source > Steinberg SyncStation (Machine control received from external device by SyncStation)

| Project Synchronization Setup | | | |
|--|---|---|--|
| Reinberg SyncStation | Timecode Source | | |
| RS422-Out | Internel Timecode MUDI Timecode | Timecode Preferences | Matter Machine Control Preferences |
| Videor Fraime Reference Use Prome Refer Clock Reference Sandstation Transcole Durbant | 9 Pin Sync 1 9 Pin Sync 2 ASIO Audio Device VST System Link | 10 Drop Out Frames 500 Inhibit Restart ms Jam-Sync | Machine follows mouse edits Machine follows jog Send 'Shuttle' instead of 'FF/Rewind' |
| 0:00:00:00 | Steinberg Time Base Steinberg SyncStation | Auto-Detect Frame-Rate Changes | Send 'Still' instead of 'Stop' |
| Disame Clinck Systick Ward | Nuendo | Machine Control Output Destination | Machine Control Output Settings |
| No USB MIDI port = | | Ne Machine Control MIDI Machine Control | R5422-Out + Machine Control Destination |
| Application: Status OK | Mechine Control Output | 9 Pin Control 1 | Audio Track Count |
| Computational constraints | | 9 Pin Control 2 | AI A2 TC VD |
| Open SyncStation Settings | | Strinberg 'Time Base' | Test |
| C. Standard B. | | O Steinberg SyncStation | 5. 2. Auto Edit PRE/POST |
| Project Setup - Time 0:00:00:00 Project Start Time 0:03:115:13 Project Length | Machine Control Input | Machine Control Input Source No Machine Control MIDI Machine Control Stanberg Time Ease Steinberg SyncStation | Machine Control Input Settings |
| 25 fpr Project Frame Rate 48.000 ktrr Sample Rate Ori- Pull-Dp / Pull-Down Ori- Video Pull | MIDI Timecode Out | MIDI Timecode Destinations | MUDI Timecode Follows Project Time Timecode Offset exposicoling |
| Project Setup - Display Timecoder Display Format 0:00:00:000 Display Time Offset 0 Bar Offset | MISI Cleck Out | MIDI Clock Destinations | MDI Clock Follows Project Protition Always Send Start Message Send MIDI Clock in Stop Mode |
| Help | | | OK |

[Project Synchronization Setup]

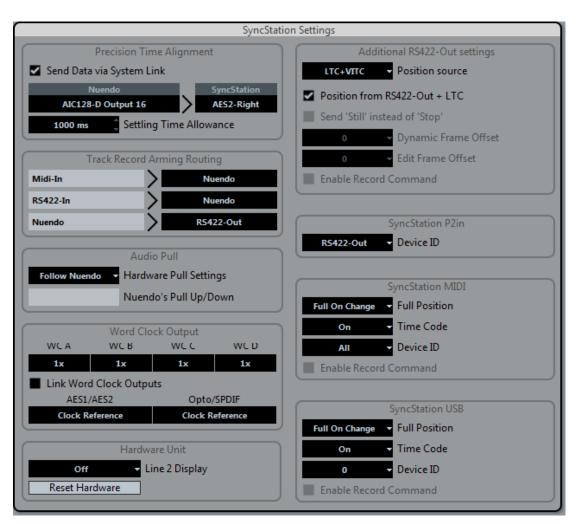
Click the Open SyncStation Setting button and set as follows.

Settings for Precision Time Alignment (System Link)

Check on Send Data via System Link

If the Nuage I/O's System Link Out jack connects to the SyncStation's AES jack (BNC) using a BNC cable, select "AIC128-D Output 16" in NUENDO, and select "AES2-Right" in SyncStation.

Select "LTC+VITC" for the Position Source in Aditional RS422-out Settings.



[SyncStation Settings]

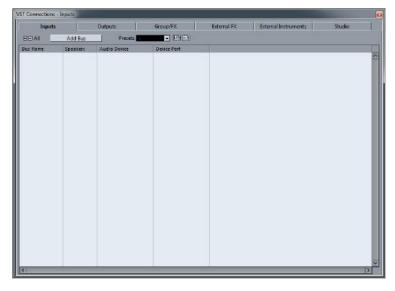
The project synchronization settings shown above are complete. Check to make sure that the three Frame, Clock, and SysLink indicators light up, and that NUENDO's transport is synchronized.

Tip:

The best settings for synchronizing with video devices will vary depending on the make and model of video equipment you are using. You will need specialized knowledge and some experimentation to find the best settings. We do not go into a detailed discussion of this topic, but do explain the basic settings.

6-11. Setting VST Connections

After launching NUENDO, set up audio patches (VST Connections) in NUENDO. Open the VST Connections (press the F4 key) window from the NUENDO 6 Devices menu.



【VST Connections】

Inputs Tab

The main settings for you to set up here are Inputs, Outputs, and Studio. Set the Inputs in order, based on the input channels you set up in Section 4-4. First, add five channels of mic/line input. Click the Add Bus button, type "Mic/Line" in the resulting dialog, set the number of channels to 5, and click the Add Bus button.



【Add Bus】

You should see the following once you have added the input channels.

| Inputs | | Outputs | Group/FX | External FX | External Instruments | Studio |
|------------------|----------|-----------------|------------------|-------------|----------------------|--------|
| ⊞⊟ All | Add Bus | Presets - | - E E | | | |
| Bus Name | Speakers | Audio Device | Device Port | | | |
| 🖃 🌓 Mic/Line 1 | Mono | Yamaha AIC128-D | | | | |
| -o Mono | | | AIC128-D Input 1 | | | |
| 🖻 ··· Mic/Line 2 | Mono | Yamaha AIC128-D | | | | |
| -o Mono | | | AIC128-D Input 2 | | | |
| 🖻 ··· Mic/Line 3 | Mono | Yamaha AIC128-D | | | | |
| -o Mono | | | AIC128-D Input 3 | | | |
| 🖻 ··· Mic/Line 4 | Mono | Yamaha AIC128-D | | | | |
| -o Mono | | | AIC128-D Input 4 | | | |
| 🖻 ··· Mic/Line 5 | Mono | Yamaha AIC128-D | | | | |
| -o Mono | | | AIC128-D Input 5 | | | |

The mic/line inputs have been patched to each of the Dante Accelerator's input channels (AIC128-D Input 1-5). Follow the same method to add 5.1 channels for a DVD player, and for a stereo video recorder.

| Inputs | Outpu | its | Group/ | FX | Externa | I FX | External Instruments | Studio | |
|----------------|----------|---------|------------|-----------|----------|------|----------------------|--------|---|
| ⊞⊟ AllAdd E | us | Presets | • | ₽ ₽ | | | | | |
| Bus Name | Speakers | Audio | Device | Device Po | ort | | | | |
| 🗏 🜓 Mic/Line 1 | Mono | Yamaha | a AIC128-D | | | | | | ŀ |
| -o Mono | | | | AIC128-D | Input 1 | | | | |
| Mic/Line 2 | Mono | Yamaha | a AIC128-D | | | | | | |
| —o Mono | | | | AIC128-D | Input 2 | | | | |
| = Mic/Line 3 | Mono | Yamaha | AIC128-D | | | | | | |
| o Mono | | | | AIC128-D | Input 3 | | | | |
| 🖃 Mic/Line 4 | Mono | Yamaha | AIC128-D | | | | | | |
| | | | | AIC128-D | Input 4 | | | | |
| Mic/Line 5 | Mono | Yamaha | a AIC128-D | | | | | | |
| | | | | AIC128-D | Input 5 | | | | |
| = DVD | 5.1 | Yamaha | a AIC128-D | | | | | | |
| ····—o Left | | | | AIC128-D | Input 7 | | | | |
| o Right | | | | AIC128-D | Input 8 | | | | |
| | | | | AIC128-D | Input 9 | | | | |
| | | | | AIC128-D | Input 10 | | | | |
| | | | | AIC128-D | Input 11 | | | | |
| | 1 | | | AIC128-D | Input 12 | | | | |
| 🖃 Video In | Stereo | Yamaha | a AIC128-D | | | | | | |
| | | | | AIC128-D | Input 13 | | | | |
| o Right | | | | AIC128-D | Input 14 | | | | |
| | | | | | | | | | |

[VST Connections Inputs]

External FX Tab

Here, the Outboard inputs are assigned to channels 15/16, but because this is being used as a send/return external effect, do not patch them from the Inputs tab, patch them from the External FX tab..

| • . | 1 . | . 1 | | í l | | i na l | | . 1 | | 5 |
|----------------|-----------------|------------|-------|--------------|---------|-------------|------------------|-------------|-------------|---|
| Inputs | Outp | uts | Grou | p/FX | Exte | ernal FX | External Instrum | ents | Studio | 4 |
| E All | Add External FX | | Fa | vorites | | | | | | |
| Bus Name | Speakers | Audio Devi | ce | Device Port | | Delay | Send Gain | Return Gain | MIDI Device | |
| - Outboard | Stereo/Stereo | | | | | 0.00 ms (0) | 0.00 dB | 0.00 dB | No Link | ŀ |
| 🗄 Send Bus 1 | Stereo | Yamaha AIO | 128-D | | | | | | | |
| ····-o Left | | | | AIC128-D Ou | tput 15 | | | | | |
| | | | | AIC128-D Ou | tput 16 | | | | | |
| 🖻 Return Bus 1 | Stereo | Yamaha AIO | 128-D | | | | | | | |
| | | | | AIC128-D Inp | ut 15 | | | | | |
| o Right | | | | AIC128-D Inp | ut 16 | | | | | |

Outputs Tab

Next set the output channels. Start by creating a bus under the Outputs tab.

Tip:

The speaker configuration (5.1, stereo, etc) used for monitoring in the control room must be defined under the Outputs tab as the main mix. Separately from the speakers (5.1, stereo, etc) added under the Studio tab, create a bus under the Outputs tab, and set that as the main mix. By setting the Audio Device and Device Port to "Not Connected," you can define a bus that has no physical output. The orange icon indicates the current main mix. If 5.1-channel sound is not selected, right-click on the bus name and choose "Set '5.1ch Speakers' as Main Mix."

Under the Outputs tab, do not set up the same device names and device ports that you did under the Studio tab. There is a danger of unexpectedly loud volume from double-patching.

| /ST Connections - Outputs | | | | | | | |
|---------------------------|----------|---------------|----------|-------------|-------|----------------------|--------|
| Inputs | Outputs | | Group/FX | External FX | | External Instruments | Studio |
| ⊞⊟ AllAdd Bu | is F | Presets - | - = | | | | |
| Bus Name | Speakers | Audio Device | Device | Port | Click | | |
| 🖃 啦 5.1 Speakers | 5.1 | Not Connected | d | | | | ^ |
| | | | Not Co | nnected | | | |
| | | | Not Co | nnected | | | |
| | | | Not Co | nnected | | | |
| | | | Not Co | nnected | | | |
| Left Surround | | | Not Co | nnected | | | |
| - Right Surround | | | Not Co | nnected | | | |
| Stereo Speakers | Stereo | Not Connected | d | | | | |
| o Left | | | Not Co | nnected | | | |
| -o Right | | | Not Co | nnected | | | |
| | | | | | | | |



[Define Main Mix]

Studio Tab

Setting the main mix, makes it so that the designated bus (5.1 speakers) will appear under the Studio tab (it cannot be changed here).

| Inputs | Outpu | uts (| Group/FX | External FX | External Instruments | Studio | |
|--------------|----------|---------------|--------------|-------------|----------------------|--------------|--|
| HI All Add C | hannel | Presets | | Control | Room: 🕘 🕐 Configu | uration: 5.1 | |
| Bus Name | Speakers | Audio Device | Device Port | | | | |
| 5.1 Speakers | 5.1 | Not Connected | Not Connecte | ed | | | |

The speakers that you actually use to listen to sounds in the control room are defined as "Monitor" under the Studio tab. Here, add the 5.1 speaker system, and patch the Dante Accelerator's output.

| /ST Connections - Studio | | | | | | | | |
|--------------------------|----------|-----------------|-------------------|-----------|---------------|----------------|--------|---|
| Inputs | Outputs | ; Group/F | X Externa | I FX | External Inst | ruments | Studio | |
| ⊞⊟ All Add Cha | nnel | Presets - | | Control R | oom:🕐 🕐 | Configuration: | 5.1 | |
| Bus Name | Speakers | Audio Device | Device Port | | | | | |
| - D 5.1 Speakers | 5.1 | Not Connected | Not Connected | | | | | ^ |
| 🖻 🗹 🚺 5.1 Speakers | 5.1 | Yamaha AIC128-D | | | | | | |
| -O Left | | | AIC128-D Output 1 | | | | | |
| Right | | | AIC128-D Output 2 | | | | | |
| | | | AIC128-D Output 3 | | | | | |
| | | | AIC128-D Output 4 | | | | | |
| Left Surround | | | AIC128-D Output 5 | | | | | |
| o Right Surround | | | AIC128-D Output 6 | | | | | |
| | | | | | | | | |

Add the stereo speaker system, stereo cue for artists in the studio, and headphones for monitoring in the control room in the same way. Also, to hear sound from DVD players or video recorders playing in the control room, add their input channels as Monitor Sources. This completes setting up VST Connections.

| Inputs | Outpu | uts Gro | up/FX Exte | nal FX Ex | ternal Instruments | Studio |
|-----------------|----------|-----------------|--------------------|---------------|--------------------|---------|
| All Add Cha | nnel | Presets - | - # # | Control Room: | 🕐 🥝 Configuratio | on: 5.1 |
| Name | Speakers | Audio Device | Device Port | | | |
| 5.1 Speakers | 5.1 | Not Connected | Not Connected | | | |
| 2 DVD | 5.1 | Yamaha AIC128-D | AIC128-D Input 7 | | | |
| 3 Video In | Stereo | Yamaha AIC128-D | AIC128-D Input 13 | | | |
| Cue | Stereo | Yamaha AIC128-D | | | | |
| | | | AIC128-D Output 9 | | | |
| -o Right | | | AIC128-D Output 10 | | | |
| Phones | Stereo | Yamaha AIC128-D | | | | |
| | | | AIC128-D Output 11 | | | |
| -o Right | | | AIC128-D Output 12 | | | |
| 5.1 Speakers | 5.1 | Yamaha AIC128-D | | | | |
| | | | AIC128-D Output 1 | | | |
| o Right | | | AIC128-D Output 2 | | | |
| | | | AIC128-D Output 3 | | | |
| | | | AIC128-D Output 4 | | | |
| Left Surround | | | AIC128-D Output 5 | | | |
| | | | AIC128-D Output 6 | | | |
| Stereo Speakers | Stereo | Yamaha AIC128-D | | | | |
| | | | AIC128-D Output 7 | | | |
| -o Right | | | AIC128-D Output 8 | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

【VST Connections - Completed】

TIPS:

When using the Control Room function, it is necessary to turn on the Control Room. To turn on Control Room, click the power switch botton to turn on the green light on Control Room in VST Connections or Control Room Mixer screen

Tip:

In some cases, even if you play back a 5.1-channel project, you will only be able to hear it as left/right stereo. This is because, even with the control room's main mix set to 5.1ch, it is converted by MixConvert so that it can be monitored in stereo. To find out what channel format will be used for playback in the control room, check the Control Room section of the Control Room Mixer window. Here, if "5.1 > Stereo" is shown, 5.1-channel sound will be converted to stereo.

| Con | itrol | Roc | n | 5.1 | ->st | ereo |
|--------|-------|-----|----|-------|------|------|
| Mix | Cire |] | Ч | 17 RT | | dis |
| Signal | Lev | el | | - | | 36.5 |
| 50 40 | 30 | 24 | 18 | 12 | 6 | 0 |

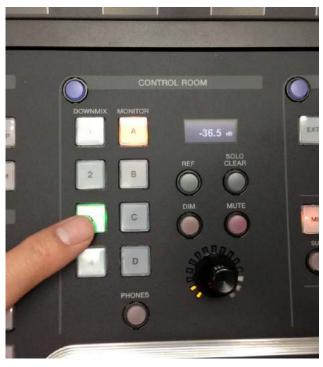
[Control Room Mixer (Control Room)]

Tip:

To change this, click the right-most button under "Speakers" in the Control Room Mixer window to open MixConvertV6, then click the downward-pointing triangle next to Stereo at the top to select 5.1 channels.



The above changes can be made in the Nuage Master's control room. Switch the downmix to set 5.1ch > 5.1ch.



【Control Room on Nuage Master】

TIPS:

To make the changes, click the first button from the right-hand side on speaker in the Control Room Mixer window to open MixConvertV6, and choose 5.1ch by clicking the triangle button on the right-hand side below the Stereo on top.

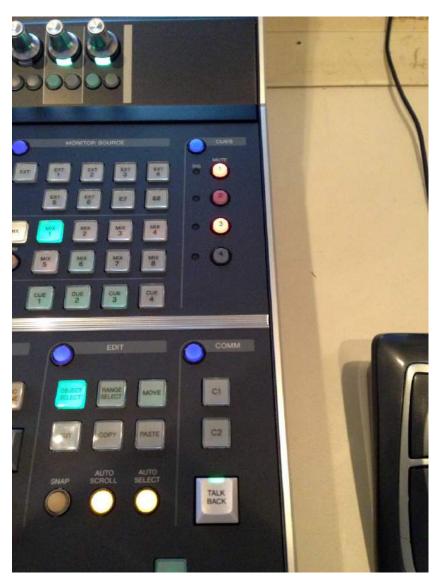
Talkback, CUE Setup

Setup the input for Talkback and output for CUE respectively.

| Inputs | Outputs | s Group | o/FX | Externa | I FX | External Inst | ruments | Studio |
|-------------------|------------|-------------------|-----------|-----------|-----------|---------------|----------------|--------|
| 🗆 All 📃 Add Ch | annel | Presets - | , # | | Control R | oom:🕛 🕐 | Configuration: | 5.1 |
| s Name | Sneakers | Audio Device | Device Po | rt | | | | |
| Talkback | Mono | Yamaha AIC128-D | | | | | | |
| o Mono | | | AIC128-D | Input 16 | | | | |
| 🗅 🗊 5.1 Master | 5.1 | Yamaha AIC128-D | AIC128-D | Output 9 | | | | |
| III Vox STEM | Mono | | | | | | | |
| I Music STEM | Quadro | | | | | | | |
| ାସ୍ୟ BG STEM | Quadro | | | | | | | |
| SFX STEM | Quadro+Lfe | | | | | | | |
| ELE 2.0 Mantes | Channe | Verselee AVC100-D | AVC120-0 | Output 15 | | | | |
| 🛨 Cue | Stereo | Yamaha AIC128-D | | | | | | |
| | | | AIC128-D | Output 31 | | | | |
| o Right | | | AIC128-D | Output 32 | | | | |
| Phones | Stereo | ramana Arcizo-D | | | | | | |
| ····-o Left | | | AIC128-D | Output 17 | | | | |
| -o Right | | | AIC128-D | Output 18 | | | | |
| 5.1 Speakers | 5.1 | Yamaha AIC128-D | AIC128-D | Output 1 | | | | |
| - Stereo Speakers | Stereo | Yamaha AIC128-D | ATC1 29 D | Output 7 | | | | |

[Talkback/CUE patching on VST Connections]

The Talkback button on Nuage Master and Mute button on CUE will be activated.



【CUES/COMM section on Nuage Master】

TIPS:

When add Talkback and Cue on VST Connection, the Talkback button, the Mute button on CUE and Signal indicator will be active as shown in above fig. (The above fig shows CUE 1-3 after setup, CUE 1 & 3 with Mute on while CUE2 is off.)

6-12. HA Remote settings with AD8HR

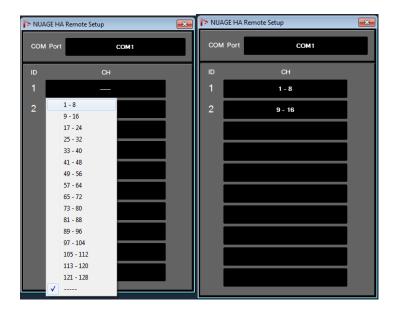
Here we will learn how to configure HA Remote settings and remotely control AD8HR units.

Nuage Remote Setup

First, open "Nuage HA Remote Setup" window from Devices menu of Nuendo (If cables are correctly connected, it will automatically start finding the COM port.



If the COM port is found, either 8 channel group of 8 can be selected for each ID, so select the channel numbers to which each Nuage I/O to which input channel group is connected.



Select a Nuage I/O input channel to which either AD8HR is connected, press "PRE" and "2" on the Section Control and "HA GAIN" and "HA TRIM" parameters are displayed on the Nuage Fader screen.

| VST Connections - I | nputs | | | |
|--|----------|-----------------|-------------------|--------|
| Inputs | | Outputs | Group/FX | Exterr |
| ⊞⊟ All | Add Bus | Presets | - E | |
| Bus Name | Speakers | Audio Device | Device Port | |
| 🚊 🗤 🌓 Mono In | Mono | Yamaha AIC128-D |) | |
| o Mono | | | AIC128-D Input 17 | |
| 🚊 🗠 Mono In 2 | Mono | Not Connected | | |
| Mono | | | Not Connected | |
| 🖻 🗠 Mono In 3 | Mono | Not Connected | | |
| —————————————————————————————————————— | | | Not Connected | |
| 🚊 🗠 Mono In 4 | Mono | Not Connected | | |
| - Mono | | | Not Connected | |



Configure all the remaining input channels on VST Connections and they are displayed and can be controlled from Nuage Fader.

HA GA

TIPS:

The only parameters that can be displayed/controlled are "HA GAIN" and "HA TRIM". If you want to change more parameters such as HPF (High Pass Filter) on/off and frequency, and +48V on/off, press "e" button for each channel to open Channel Settings window. Also, the parameter bar for HA Gain moves to the opposite side, however, this is due to the spec of AD8HR.

| 2.00kHz | 12.00kHz | | | |
|---------|------------|--------------------------|---------------|---------|
| 1.0 | 1.0 | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | LC | нс | GAIN | |
| | LC 20Hz | HC 20.00kHz | GAIN 0.0dB | |
| | | | | |
| | HA GAIN | 20.00kHz O HA TRIM | 0.0dB | HA +48V |
| | 20Hz | 20.00kHz | 0.0dB | HA +48V |

6-13. Connecting R Series units

R series, analog – Dante converter, can be connected to Nuage and it can control various head amp-related parameters (Version 1.5 or later). Although R series are not recognized and displayed in the Workgroup Manager, HA remote control can be done by adding the input channels on Nuendo that have been patched on Dante Controller. The R series models that can be controlled are:

- Rio3224-D
- Rio1608-D
- Ri8-D

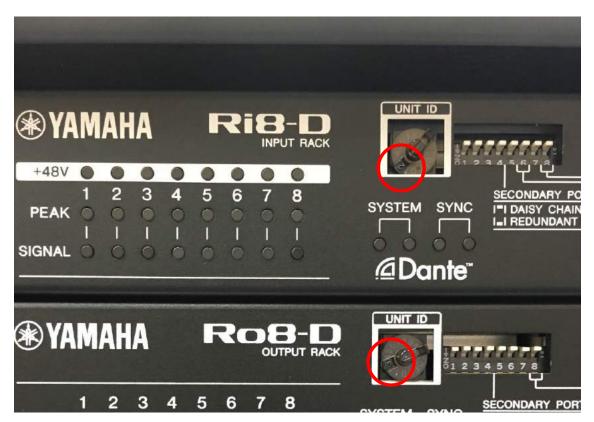
The parameters that can be controlled are:

- HA Gain (gain level)
- HA GC (gain compensation)
- HA On/Off (head-amp on/off)
- HA HPF (high pass filter)
- HA +48V (phantom power on/off)



[R series(Ri8-D/Ro8-D(n/a)/Rio1608-D/Rio3224-D from top down)]

Assign a Unit ID number to each unit using the front rotary switch so they are unique and not overlapped



[Assign a unique UNIT ID to each unit]

Connect the Dante connector of R series to the network switch.

TIPS:

R series units will not appear on the Workgroup Manager, even if they are correctly recognized by the system. That is no problem. As described below, if you have patched those Dante channels on Dante Controller to Nuendo input channels on VST Connections, they will appear on the Fader unit screen and become controllable.

Open Nuage Remote HA Setup window from Devices menu on Nuendo, move to R Series tab and select the Dante Accelerator card in use (or a DVS.)

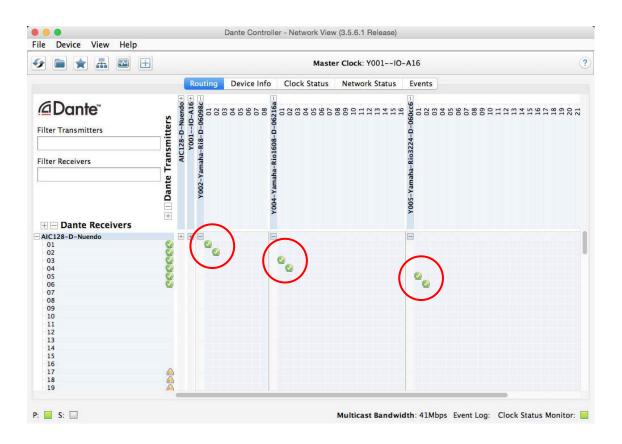
| 00 | NUAGE HA Remote Setup | | NUAGE HA Remote Setup |
|------------|-----------------------|------------|-----------------------|
| AD8HR | R Series | AD8HR | R Series |
| Dante Inte | rface | Darte Inte | erface |
| V | -D-Nuendo | | AIC128-D-Nuendo |
| AIOTZO | * C |] | × C |
| | | | |
| | | | |
| | | | |

[Nuage HA Remote Setup window]

TIPS:

The area below the Dante Interface box are empty, simply because the height needs to be consistent with the adjacent AD8HR page. Nothing will appear in this area in any condition.

Next, on the Dante Controller, patch each Dante output from R series unit to the Dante input channels of Dante Accelerator. In this example, two outputs from each R unit are patched to total six input channels of Dante Accelerator.



Then, on the Inputs tab of VST Connections window, assign those input channels of Dante Accelerator card to the input channels of Nuendo (as shown below) by adding input busses and assigning the input port of Dante Accelerator card to each bus.

| Inputs | 0 | utputs G | roup/FX | External FX | External Instruments | Studio |
|-----------|----------|-----------------|------------------|--|----------------------|--------|
| | Add Bus | Presets - | | | | |
| Bus Name | Speakers | Audio Device | Device Port | Į. | | |
| 🗸 🌓 Ri8-1 | Mono | Yamaha AIC128-D | a | | | |
| -o Mono | | | AIC128-D Input 1 | | | |
| | Mono | Yamaha AIC128-D | 5 | 2 | | |
| -o Mono | | | AIC128-D Input 2 | | | |
| | Mono | Yamaha AIC128-D | s; - | 12 | | |
| -o Mono | | | AIC128-D Input 3 | | | |
| | Mono | Yamaha AIC128-D | a | 12 | | |
| -o Mono | | | AIC128-D Input 4 | | | |
| | Mono | Yamaha AIC128-D | a | 12 | | |
| -o Mono | | | AIC128-D Input 5 | | | |
| | Mono | Yamaha AIC128-D | d - | 12 | | |
| -o Mono | | | AIC128-D Input 6 | j li | | |

Now the inputs from R series are connected to Nuendo and the HA remote can be controllable. In the SECTION CONTROL area of the Nuage Fader unit, press PRE button.



[Nuage Fader unit Section Control]

By default, the PRE section of Nuendo will appear, but by pressing 4 or 5 button in the Section Control are described the above, the HA remote of R series becomes controllable.



[PRE section – screen #4]

Here are the parameters that can be controlled.

HA GAIN - adjust the HA gain level

HA GC (Gain Compensation) on/off – to prevent from unexpected gain level changes, this allows the output level to keep consistent no matter how you change the gain level locally. If turned on, the output level from R series is fixed.



[PRE section – screen #5]

HA HPF – Turn on/off the high pass filer and set the cut-off frequency for each channel of R series units.

HA +48V – Turn on/off the phantom power for each channel of R series units. For security reasons, you have to press and hold this button for turning on the phantom power.

TIPS:

If you accidentally provide phantom power to microphones that do not require it such as passive type ribbon microphones, it may damage or break the microphone. Please make sure before you turn on the phantom power.

Also, if you press "e" button on each channel of Fader unit, the channel edit screen including the HA section will appear and you can control from that. Try to connect a microphone or an audio playback device, bring up the gain level and see if the input level will change.



[Mic signal check]

6-14. Connecting RMio64-D

RMio64-D, Dante-MADI converter, can be connected to Nuage and change various parameters on Nuage Workgroup Manager. RMio units will be recognized as "I/O" and up to total eight Nio and RMio units can be controlled (Version 1.6 or later.)



【RMio64-D Rear Panel】

When an RMio unit is connected to the network switch, it is recognized and displayed on the Device/DAW List of Workgroup Manager.

| | up | | | | |
|--------|----------|------------------------|----------|---|--|
| ctive | Assign | Name | Identify | | |
| • | DAW A | Nuendo (D1:3F:36) | × | i | |
| 0 | FADE | NUAGE FADER (88:4F:77) | × | i | |
| 0 | MAST | NUAGE MASTER | * | i | |
| 0 | 10 1 | Y001IO-A16 | | i | |
| | | | | | |
| rice/D | DAW List | | 1 | | |
| ice/D | AW List | | | | |

[Nuage Workgroup Manager]

Without adding the unit to the Workgroup, only "Identify" works and configuration window cannot be open until the RMio unit is added to the Workgroup, by pressing the uparrow button between the both lists.

| Active | Assign | Name | Identify | |
|--------|----------|------------------------|----------|---|
| 0 | DAW A | Nuendo (D1:3F:36) | * | i |
| 0 | FADE | NUAGE FADER (8B:4F:77) | × | i |
| 0 | MAST | NUAGE MASTER | × | i |
| 0 | 10 1 | Y001IO-A16 | × | i |
| 0 | 10 2 | RMio64-D (04:F1:E4) | × | i |
| | OAW List | Ť | 4 | |

6-15. Connecting GPIO units

GPI boxes by JL Cooper Electronics (hereinafter called JLC) can be connected to Nuage, by which Nuage Master can receive GPI trigger signal and, on the contrary, Nuage Master can send GPIO signal (Version 1.7 or later).

What is GPI (GPIO)?

GPI, or General Purpose Interface, (GPIO, or General Purpose Input / Output) is a general interface for controlling external devices by using the voltage change. In case of Nuage, this may be used for external devices such as a "RECORDING" sign and external talkback button and so on.

About JLC GPIO products

JLC's eBOX series are interfacing boxes for converting GPI (General Purpose Interface) input / output signal to Ethernet signal. Currently, up to tour units of the following two models can be connected and controlled.



- eBOX GPI8



[JL Cooper eBOX]



[JL Cooper eBOX GPI8]

First, connect the ETHERNET connector of eBOX and the network switch using CAT cables.



Next, open Nuage MASTER Setup window from Device menu of Nuendo, move to GPIO tab and set and IP address for Nuage Master. If possible, use the following unique IP address. IP address can be directly typed in the textboxes.

| Nuage Master | 192.168.254.103 |
|--------------|-----------------|
| eBOX | 192.168.254.102 |
| eBOX GPI8 | 192.168.254.104 |

| 00 | NUAGE MASTER Setup | | | | | | | | |
|--------------------|--------------------|------------|---------------|----------------|-----|--|--|--|--|
| User Assignable | Edit | Automation | Communication | GPIO | - ú | | | | |
| Device | Port Custo | m | | | | | | | |
| | | | | IP Address | | | | | |
| Master | Θ | | | 192.168.254.10 | 03 | | | | |
| | s - 35 | Model | | IP Address | | | | | |
| Device 1 | Ο | eBOX | | 192.168.254.10 |)2 | | | | |
| Device 2 | 0 | eBOX GP | 18 | 192.168.254.10 | 04 | | | | |
| Device 3 | 0 | · •••• | | | | | | | |
| Device 4 | 0 | : | | | | | | | |
| | | | | | | | | | |

[Nuage MASTER Setup – GPIO - Device]

The IP address can also be set by using the DIP switches on the rear panel as well as the bundled app.



[DIP switches – rear panel]

| IP address | SW1 | SW2 | SW3 | SW7 |
|-----------------|-----|-----|-----|-----|
| 192.168.254.102 | OFF | OFF | OFF | OFF |
| 192.168.254.103 | OFF | OFF | OFF | ON |
| 192.168.254.104 | ON | OFF | OFF | OFF |
| 192.168.254.105 | ON | OFF | OFF | ON |
| 192.168.254.106 | OFF | ON | OFF | OFF |
| 192.168.254.107 | OFF | ON | OFF | ON |

| Box to Con | figure | | | | | | | | | | | | _ |
|---------------------------|--------|-----|--------------|-----------------------------------|---------------------|------------|--------------------------|-------|-----|-----------------|----|-------|---|
| IP Address | - | 192 | 168.25 | 4.102 | Get from eBox | - | 71 | GODF | PER | ELE | CT | RONI | C |
| TCP Port | 1 444 | | Send to eBox | | | | 19 | | | | | | |
| Password | | | Reboot eBox | CARCOLUTION CONTRACTOR CONTRACTOR | | | assword Change asword | | | Update Password | | | |
| Box Setting | 15 | | | | | | | | | | | | |
| P Address | 192 | 168 | 254 | 102 | | Port | 1 | Port | 2 | Port | 3 | Port | 4 |
| Subnet Mask | 255 | 255 | 255 | 0 | Serial Port Rate | 38400 | • | 38400 | ٠ | 38400 | - | 38400 | |
| Gateway | 192 | 168 | 254 | 198 | Serial Port Parity | Odd | • | Odd | • | Odd | • | Odd | |
| TCP Port | 1 | 23 | | | Serial Port Timeout | (milliseco | nds) | 5 | 1 | | | | |
| Destination IP Address | 192 | 168 | 254 | 103 | Maximum Buffer S | ze (bytes |) | 128 | ī | | | | |
| Destination TCP Port | - | 23 | | | | | | | | | | | |

[eBOX Configuration Utility]

When the IP address is correctly set, the link status and packet send/receive status are indicated on the front panel of eBOX.



[Status indicators]

TIPS:

Like R series, eBOX is not displayed on Nuage Workgroup Manager even when connected and recognized, which is no problem.

Below is an example in which you press Talkback button on Nuage Master and see if eBOX receives GPI signal from the Master. In the Output area, select "Nuendo" as target, "Control Room" as Function 1, "Talkback" as Function2, 1 and 2 as Device respectively, 1 as Port, and "High" as Terminal.

| - | | | ✓ Talkback | | _ | |
|------|---------|--------------|--------------------------|---------------------------------------|---------------------|------|
| | 0.0 | NU/ | Talkback 1 | | | |
| u | lser | Edit Automat | Talkback 2 | 1 | 2 | t, Î |
| Assi | gnable | Luit | Talkback 3 | | | |
| Devi | ice Por | t Custom | Talkback 4 | | | |
| Devi | ice Por | Custom | Multiple Monitor Sources | | | |
| | | | Monitor Source Select 1 | _ | _ | - |
| Inpu | it | 2000 PS 2000 | Monitor Source Select 2 | | | |
| | Target | Function 1 | Monitor Source Select 3 | ∋ Port | Termina | al |
| 1 | Nuendo | Control Room | Monitor Source Select 4 | 1 | High | |
| | | | Monitor Source Select 5 | i i i i i i i i i i i i i i i i i i i | _ | |
| 2 | | 7244 | Monitor Source Select 6 | | | 1 |
| | | | Monitor Source Select 7 | | | 1 |
| 3 | 10.00 | | Monitor Source Select 8 | 1000 | | |
| 0 | | | Monitor Select 1 | | | |
| | 1 | | Monitor Select 2 | | | 1 |
| 4 | | | Monitor Select 3 | | | |
| | | | Monitor Select 4 | | _ | |
| | | | Mix | | | |
| Outp | | Francisco | External | | T a ser la s | |
| | Target | Function 1 | Cue 1 | # Pon | Termina | |
| 1 | Nuendo | Control Room | Cue 2 | 1 | High | |
| | | | Cue 3 | | | 1 |
| 2 | Nuendo | Control Room | Cue 4 | | High | |
| - | Huchuo | Control Hoom | Mix (Phones) | | ingi | |
| 3 | | | External (Phones) | | | |
| 3 | | 0.777.0 | Cue 1 (Phones) | 100 | | |
| | | | Cue 2 (Phones) | | | 1 |
| 4 | | | Cue 3 (Phones) | | | |
| 9 | | - | Cue 4 (Phones) | | 92 - S | |
| | | | Control Room Mute | | | |
| | | | Phones Mute | | | |
| | | | Cue 1 Mute | | | |
| | | | Cue 2 Mute | | | |
| | | | Cue 3 Mute | | | |
| | | | Cue 4 Mute | | | |
| | | | Dim | | | |

[Nuage MASTER Setup – GPIO - Port]

| Target | Function 1 | Function 2 | Device | Port | Termina |
|--------|--------------|------------|--------|------|---------|
| Nuendo | Control Room | Talkback | 1 | 1 | High |
| Nuendo | Control Room | Talkback | 2 | 1 | High |
| - | | | | | |
| | | | | | |

Now as soon as you press Talkback button on the Master unit, GPI signal is sent out to the eBOX and GPI RECEIVE indicator will light.

| COPER ELECTRONICS | |
|----------------------|------|
| RX LINK SERVE | |
| DOWER ON GOV PORT OF | et s |
| | |

If GPI RECEIVE lights as soon as you press the TALKBACK button, it shows it works correctly.

6-16. Connecting and setting up Pro Tools system

The Pro Tools control function of Nuage is compatible to the following two types of Pro Tools platforms:

- Pro Tools HDX system
- Pro Tools Software

In order to synchronize Nuendo and Pro Tools, the following synchronizers are needed:

- Steinberg SyncStation
- Avid Sync HD

However, if your budget is limited and the synchronization using SMPTE timecode is not required, MTC (MIDI Timecode) can substitute. If that's the case, prepare MIDI interfaces and cables.

TIPS:

For Mac users, Core MIDI is not tested for this application and we do not recommend that you use the function for the MTC synchronization between Nuendo and Pro Tools.

Pro Tools HDX system configuration example



[Pro Tools System (front) w/ SyncStation]



[Pro Tools System (rear) w/ SyncStation]

Insert HDX card to the PCIe slot of Mac Pro. Before connecting the card to the motherboard, make sure to connect the black and yellow cable to the motherboard.



Using the DigiLink cable, connect PRIMARY PORT on HD I/O and PORT 1 connector on HDX card.



Next, connect Loop Sync (LS) on HD I/O and that on Sync HD, by connecting LS OUT on Sync HD and LS IN on HD I/O and connecting LS OUT on HD I/O and LS IN on Sync HD, using BNC cables.



By using XLR cables, connect TIMECODE OUT on SyncStation and LTC IN on Sync HD. Similarly, connect LTC OUT on Sync HD and TIMECODE IN on SyncStation.



Next, for wordclock synchronization, connect WORDCLOCK A on SyncStation and WC IN on Sync HD, also connect WORDCLOCK B to WC IN on HD I/O.



Connect USB port on SyncStation and an available USB port on the computer.



Connect the serial port on HDX card and HOST SERIAL connector on Sync HD using a 9-pin serial cable.



Lastly, connect audio outputs on HD I/O and audio inputs on Nuage I/O.



Synchronization Settings

TIPS:

In this scenario, Nuendo and Pro Tools are synchronized by using SMPTE Timecode (LTC) where Nuendo (SyncStation) is the clock Master while Pro Tools (Sync HD) is the Slave.

First, configure the Workclock source on Pro Tools. Open Hardware Setup window and, in the ClockSourse" area, chose "Wordclock (xx.xxkHz)".

| Periptanala HO LO #1 | Internal AEB/CBU (Envi) AEB/CBU 1-2 | Dural | | | |
|---|--|-------------|---|---|---------------------------|
| | AEN/ERU 3-4 AEN/ERU 5-6 AEN/ERU 7-8 ADAT 1-8 TOF 1-8 | | Overvit la Anamo 1-2 Anatog 3-4 Anatog 3-4 Anatog 3-4 Anatog 3-4 | | Olgital Format AES/EBU |
| HDK #1, Port 1 Cook Source (Wheel Dooks (HA, Serie)) | Optical (ADAT) (Enci) | | | - | Optical (S/PO/F) |
| Loop Master: HD 20 #1 | 1-10 (AESAEBU 5.2 | | (Digital 1-2 | | Tascen |
| Gampie Kate: 44.1 kHz | 11-12 (AEMERICA: | - | 092#34 | 1 | |
| | 13-14 (AEGAINUS-R 15-16 (AEGAENU7-A | | Dote 54 Dote 74 | | |
| | Est. Class Output Water | 2008 (H4.14 | (10) | | |
| - lowsty | | | | | |

Next, enable Sync HD. Open Peripherals window, move to Syncronization page and check "Enable SYNC HD"

| | | - | Peripherale | | | |
|-----------------|-------------------|------------------|----------------------|----------------------|-----------------|--|
| Bynchronization | Rephilise Combrat | MOX Complete | Electral Controlle | a Mic Presinge | Balaffier VENUE | |
| | MTG Reader And D | warmer. | | | | |
| | | MUCH Manhor Pr | + 3HC | * | | |
| | | MTC Generator Pr | rt (Auro) | | | |
| | Avid Byrahrsviadi | en Device | | | | |
| | E Enade State | | wit Firmware Version | 22.4 | | |
| | STIC Insertion | Energied | LTC Dubul Level | 3.00 | | |
| | Plan Merriry I | Enstowd | VITO Read Lines: | activity. | - | |
| | 😂 kile MTC Erse | ind in | WTC Generale Lines: | 34,98 | 1 | |
| | | | B-Phase/Tech Wrong | Si-phase FWD + A las | 0.87 | |
| | | | Scheef rune (2-254) | | | |

Make Pro Tools "online" (make chase-able as Slave). Click on the Sync button on the transport. Now Pro Tools is waiting for the LTC signal coming in.



Next, configure the Nuend system. Open Device Setup window and choose SyncStation. If the Revisioin numbers are shown, the SyncStation is correctly recognized.

| Device long | | | |
|---|---|---------------------|--|
| * ·* | | SyncStation | |
| ABOR MEX Part Long Result Deven Task Ques Contan V2 Ques Contan V2 Ques Contan Result Task Result Task Task Darks Task Darks Task Darks | 0 | Cont Configuration: | |

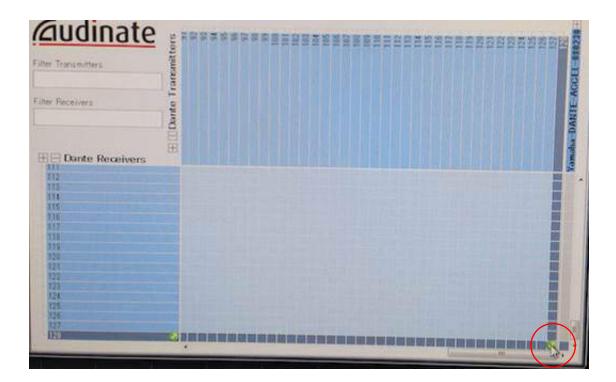
Now, play back a Nuendo project and see if another project on Pro Tools will work in sync by the same time code.

Reference: Synchronization between Nuendo and Cubase

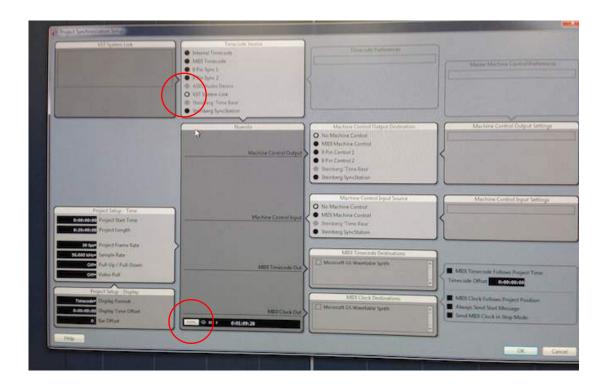
TIPS:

For Nuendo/Cubase synchronization, VST System Link will need to be used. When locked via VST System Link, the synchronization is bi-directional so the transport can be controlled from both platforms. Below is a description of how to set up Nuendo/Cubase with VST System Link

In order for Nuendo and Cubase to synchronize via VST System Link, one digital input and output channels are needed. In this scenario, we'll use Dante network and use one input and output channels of Dante Accelerator cards of both platforms. On Dante Controller, patch the ourput #128 of Nuendo to the input #128 of Cubase. Similarly, patch the output #128 of Cubase to the input #128 of Nuendo.



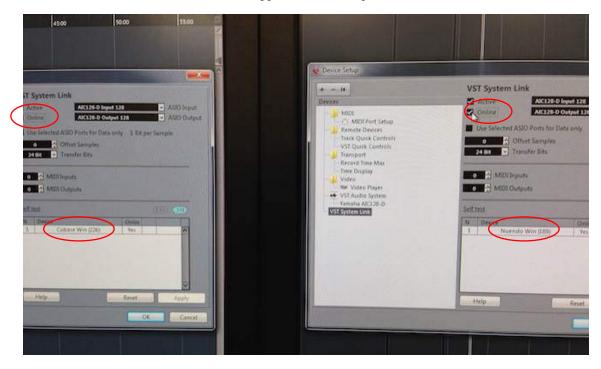
Open Project Synchnorization Setup on Nuendo, choose "VST System Link" in the Timecode Source area, and press "SYNC" button below that area. Do the same thing on the Cubase side as well.



Next, open Device Setup windows and move to VST System Link page. Choose the Dante input and output channels that you have patched on Dante Contriler earlier. Do the same thing on the Cubase side as well.

| ⊢ − ₩ | VST System Link |
|-------------------------|--|
| Devices | Active AIC128-D Input 128 |
| MIDI MIDI Port Setup | Online AIC128-D Output 128 ASIO Output |
| Remote Devices | Use Selected ASIO Ports for Data only 1 Bit per Sample |
| Track Quick Controls | 0 Offset Samples |
| VST Quick Controls | |
| Transport | 24 Bit Transfer Bits |
| Record Time Max | |
| SyncStation | 0 🕂 MIDI Inputs |
| Time Base | |
| Time Display | 0 🛫 MIDI Outputs |
| Video Video Player | |
| VILEO Flayer | Self test (TXX) (XXI) |
| Yamaha AIC128-D | N Device Onlin |

Check "Online" and the other DAW will appear on the both platforms.



Now Nuendo and Cubase are locked. Playback a project on one platform and see if it works on the other platform.

TIPS:

In this scenario, Nuendo is always the Master while Pro Tools is always Slave so, even if you playback a session on the Pro Tools side, it always will be brought back to the Nuendo time position. Switching DAW on the Nuage control surface does not change that. In order to control Pro Tools independently, press SYNC ONLINE button to make the Pro Tools offline.

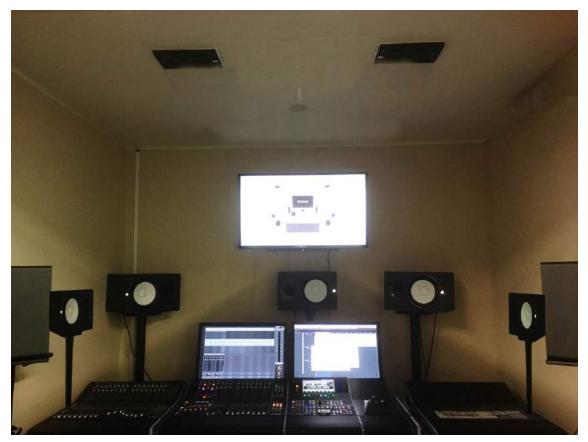


6-17. Setting up and configuring Dolby Atmos environment using VST MultiPanner

Nuendo is capable of handling busses compatible with Dolby Atmos 9.1ch format (Nuendo 7,1 and later), and those Atmos channels can be controlled from NUAGE Fader/Master (NUAGE V1.8).

Speaker placement

Dolby Atmos 9.1ch bus is available with Nuendo7.1, and below is an example of speaker placement for monitoring Dolby Atmos 9.1.



[Ex. Dolby Atmos 9.1 (7.1.2) Speaker Placement]



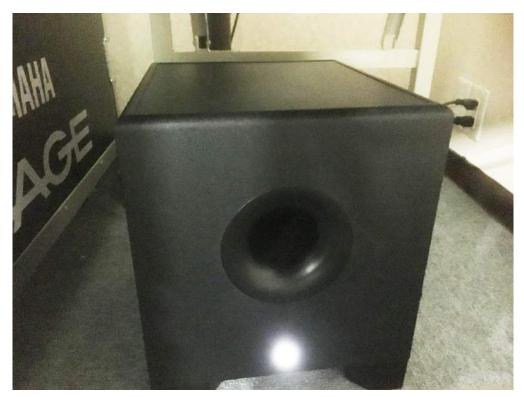
【Front Speakers [Left, Center, Right]】



[Side/Rear Speakers [Left Surround/Side Left]]

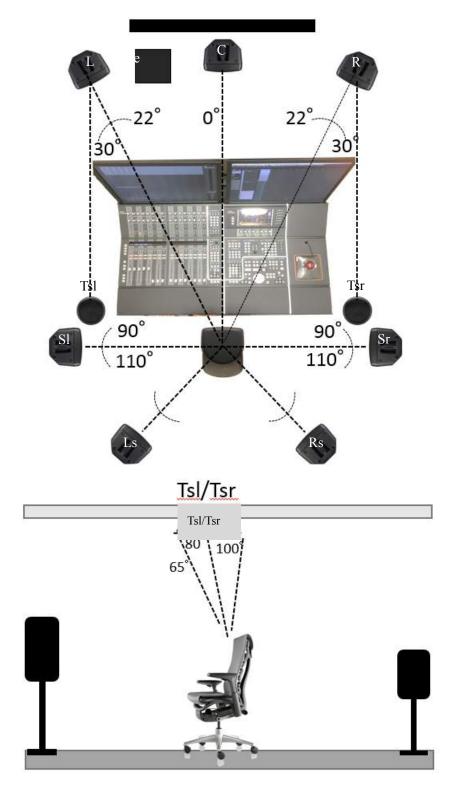


[Ceiling Speakers [Top Side Left/Top Side Right]]



【Subwoofer [Lfe]】

The diagram below shows an example of the angle of each speaker and its distance from the listening position.



[An example of speaker placement against the listening position]

Configuring VST Connections

Open the VST Connections window, select the Outputs tab, and create a 9.1 Dolby Atmos Out bus. Please note, Device Port settings should be left "Not Connected" because, if you directly set the Device ports here, you won't be able to control speaker volume or mute via Control Room, which may damage your speaker system.

| | VST Connections - Outputs | | | | |
|-------------------|---------------------------|-----------------|---------------|---------------|---|
| Inputs | 1-39 | Outputs | Group/FX | External FX | |
| E All | Add Bus | Prese | ets 🖃 📼 | | |
| Bus Name | | Speakers | Audio Device | Device Port | C |
| 💎 🏟 9.1 Dolby Atm | os Out | 9.1 Dolby Atmos | Not Connected | | |
| -o Left | | | | Not Connected | |
| -o Right | | | | Not Connected | |
| -o Center | | | 11 | Not Connected | |
| -O Lfe | | | | Not Connected | |
| -o Left Surro | und | | | Not Connected | |
| -o Right Surr | round | | | Not Connected | |
| -o Side Left | | | | Not Connected | |
| -o Side Right | t l | | | Not Connected | |
| -o Top Side I | eft | | | Not Connected | |
| -o Top Side I | Right | | | Not Connected | |

In the Studio tab, add a Dolby Atmos 9.1 monitor bus and assign the output channels to each speaker. Here, assign the output channels of Dante Accelerator card which are patched to each output channel of NUAGE I/O.

| In | puts | Outpu | ts | Group/FX | External |
|--|---------------|---|----------------------------------|---------------|----------|
| E AII | Add Chan | inel | Presets | • # = | Co |
| lus Name | | Speakers | Audio Device | Device Port | |
| 9.1 D Monit | | S Y S A D S A D S A D S A D S A D S A D S A D S A D S A D S A D S A D S A D S A D S A D S A D S A D S A D S A D | Not Connected Yamaha AIC128-E | Not Connected | 7 |
| -0 L | eft | 187 | | AIC128-D Out | put 1 |
| -0 R | ight | | | AIC128-D Out | put 2 |
| -0 0 | enter | | | AIC128-D Out | put 3 |
| -0 L | fe | | | AIC128-D OLT | put 4 |
| -0 L | eft Surround | | | AIC128-D Out | put 5 |
| -0 R | ight Surround | | | AIC128-D OLt | put 6 |
| -o S | ide Left | | | AIC128-D Out | put 7 |
| -0 S | ide Right | | | AIC128-D Out | put 8 |
| -0 Te | op Side Left | | | AIC128-D OLL | put 9 |
| -0 Te | op Side Right | | | AIC128-D Out | put 10 |
| > Meter | ng Channel | Stereo | Not Connected | Not Connected | d |

When the bus is correctly configured, it appears on the NUAGE Fader screen as below.



[9.1 Dolby Atmos bus on NUAGE Fader]

If you create a mono/stereo/5.1/9.1 Atmos track, you will see the pan position of each track on the NUAGE Fader screen as below.

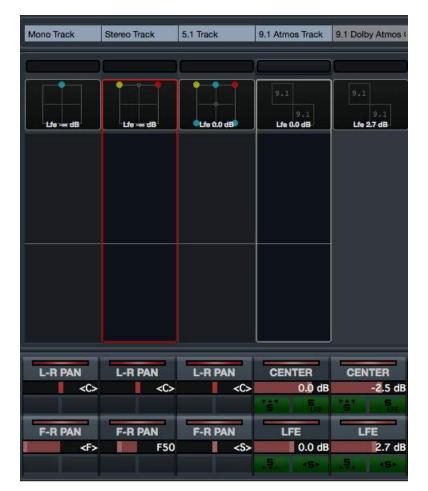


[Pan section on NUAGE Fader]

Up to two parameters can be displayed and controlled on the Fader screen at the same time, but you can access more parameters by switching the Section Control button 1-8



[NUAGE Fader Section Control]



[Section Control = 1]

| B-T PAN | B-T PAN | B-T PAN | SURROUND | SURROUND |
|------------|------------|------------|----------|----------|
| | | | 0.0 dB | 0.0 dB |
| ELV | ELV | ELV | 1 | |
| ROTATE SIG | ROTATE SIG | ROTATE SIG | SIDE | SIDE |
| 0.0 ° | 0.0 ° | 0.0 ° | 0.0 dB | 0.0 dB |
| | | | Se A | Se A |

[Section Control = 2]

| TILT Y | TILT Y | тор | TOP |
|--------|---------|--------|---------|
| 0.0 | • 0.0 • | 0.0 dB | 0.0 dB |
| | | LPF | LPR. |
| TILT X | TILT X | GLOBAL | GLOBAL |
| 0.0 | • 0.0 • | 0.0 dB | -6.8 dB |
| | | 741 5 | 767 5 |

[Section Control = 3]

| ORBIT CTR | ORBIT CTR | ORBIT CTR | | |
|-----------|-----------|-----------|----------|---------|
| 0.0 ° | 0.0 ° | ° 0.0 | | |
| INV | INV | INV | Sec. 199 | See 145 |
| RADIUS | RADIUS | RADIUS | 3 | |
| 100.0 % | 50.0 % | 0.0 % | | |
| | | | 1 | |

[Section Control = 4]

| CTR DIST | CTR DIST C | TR DIST | |
|----------|------------|---------|--|
| 0.0 % | 0.0 % | 0.0 % | |
| | | | |
| F FOCUS | F FOCUS | FOCUS | |
| 0.0 % | 0.0 % | 0.0 % | |

[Section Control = 5]

| SIDE FOCUS | SIDE FOCUS | SIDE FOCUS | |
|------------|------------|------------|--|
| 0.0 % | 0.0 % | 0.0 % | |
| | | | |
| R FOCUS | R FOCUS | R FOCUS | |
| 0.0 % | 0.0 % | 0.0 % | |

[Section Control = 6]

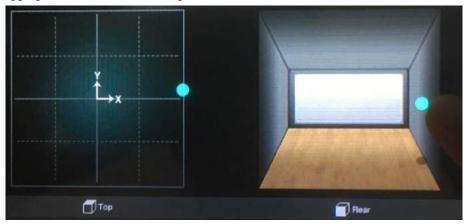
| H FOCUS | H FOCUS | H FOCUS | |
|---------|-----------|-----------|--|
| 0.0 % | 0.0 % | 0.0 % | |
| | SIG WIDTH | SIG WIDTH | |
| | 100.0 % | 100.0 % | |

[Section Control = 7]

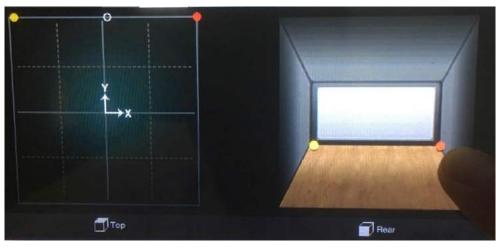
| | SI | G DEPTH 100.0 % | |
|-----|-----------|--------------------|--|
| LFE | LFE dB | LFE 0.0 dB | |
| | | | |

[Section Control = 8]

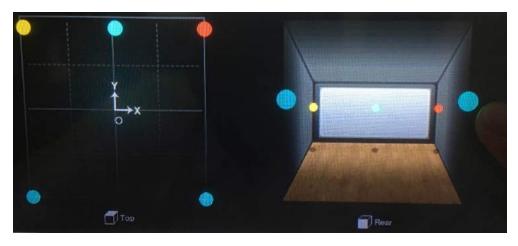
On the NUAGE Master Touchscreen, Dolby Atmos panning can be performed more intuitively by simply dragging the color balls or turning the knobs.



[Dolby Atmos on NUAGE Master (Mono)]



【Dolby Atmos on NUAGE Master (Stereo)】



【Dolby Atmos on NUAGE Master (5.1)】



[Dolby Atmos on NUAGE Master (9.1 Dolby Atmos)]

TIPS:

Thus far, we have outlined how to configure the panning of Bed channels. In order to pan the Object channels, you must obtain an RMU unit from Dolby, and install the RMU Connection Kit for Nuendo. For details, please refer to <u>Mixing with VST MultiPanner</u> document.



【VST Multipanner Object mode】

