Solid State Logic
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NETWORK I/O

Network I/O V4.2 Installation Notes

Required for this Upgrade	SSL Partcode
SSL Network I/O - Controller V1.11.6.44902	
SSL Network I/O - Firmware Updater V1.10.42678	
Audinate Dante Firmware Update manager	
Audinate Dante Controller V4.2.3.1	
SB 8.8	SSL_Stagebox_8In_8Out-4-1-25840.dnt
SB i16	SSL_Stagebox_16In-4-1-25840.dnt
SB 32.24 (network A card)	SSL_SB_32_24_ A-4-1-26041.dnt
SB 32.24 (network B card)	SSL_SB_32_24_ B-4-1-26041.dnt
SB 16:12 (network A card)	SSL_SB_16_12_ A-4-1-26041.dnt
SB 16:12 (network B card)	SSL_SB_16_12_ B-4-1-26041.dnt
A16.D16	SSL_A16_D16-4-1-25796.dnt
A32	SSL_A32-4-1-25796.dnt
D64	SSL_D64-4-1-25796.dnt
GPIO32	SSL_GPIO32-4-1-25796-release.dnt
PCIe-R	pcieSSL-4.0.10.5_fpga-4.2.0.9.dnt

This document contains essential information
Please read it carefully before making any attempt to upgrade the system
The order in which updates are performed is critical

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PLEASE READ ALL INSTRUCTIONS, PAY SPECIAL HEED TO SAFETY WARNINGS.

E&OE

Document Revision History

Draft	Name	Date
First release		September 2020

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Important Notes

All units to be updated must be powered on and visible on your Primary Dante network with IP addresses in the same subnet as the PC used to perform the update. Addresses can be verified in the ***Device Info*** tab of Dante Controller.

The following software must be installed on the PC used to perform the update:

- **Network I/O Updater V1.10.42678**
- Audinate **Dante Firmware Update Manager V3.10**
- Audinate **Dante Controller V4.1.0.5**

The V4.2 package includes a new NETIO Controller Application.
There are no other differences from the V4.1 package.

All SSL specific software will be provided in the update package. Third party software and user manuals are available to download free of charge from the following links:

Audinate Dante Controller
https://www.audinate.com/content/dante-controller-v4231-windows

Audinate Dante Firmware Update Manager
https://www.audinate.com/products/firmware-update-manager

Microsoft .NET

Network I/O Controller and Network I/O Updater require that .NET Framework V4.5.2 or later is installed. .NET is updated automatically as part of the Windows Update process. If your version of windows does not include .NET, please visit:
https://www.microsoft.com/net/download/dotnet-framework-runtime

A table of software and firmware version compatibility is included on page 7 of this document.

Note: *There is a new AES/SDI V2.2 package available. The AES/SDI V2.2 package may be downloaded from here.*

Note: The new NETIO installer does not make a desktop icon (create a shortcut if required) and is newly located under "N" for Network, instead of in the "Solid State Logic" folder, located in the Windows Start menu.

Firmware Update Procedure

If the V4.1 package has been installed no action is required if not please complete the following updates to: **SB 8.8, SB i16, SB 32.24, SB 16.12, A16.D16, A32, D64, GPIO32 and PCIe-R.**

IMPORTANT:

*It is critical that SSL control & ADC/DAC card firmware is updated prior to Dante firmware updates being applied. Please ensure all stageboxes are at the required version using the **SSL Network I/O Updater** application before updating Dante firmware.*

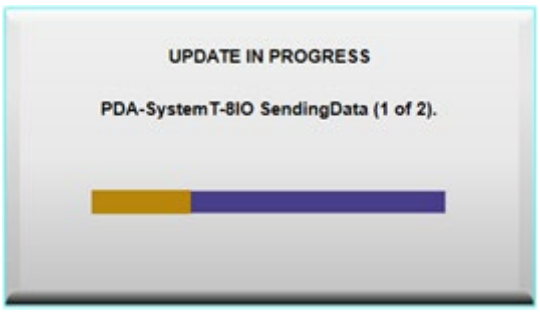
SSL control and ADC/DAC Card Firmware Update

1. Connect a network cable from a switch in the Dante Primary Network to the PC being used to perform the update.

2. Launch the **Network I/O Updater** application in administrator mode (right-click and select run as administrator).

3. The application will discover all net IO device on the network and display the currently installed firmware version. If an update is necessary, the required version will be displayed, and the **Update** button will become available. Press and hold the **Update** button to begin programming firmware. This update will take around 10-15 minutes depending on the unit being updated. You may monitor the update in the progress bar.

Name	Current Version	Required Version	Status	Command
PDA-SystemT-8IO	23927	25795	Press and hold button to start update	Update

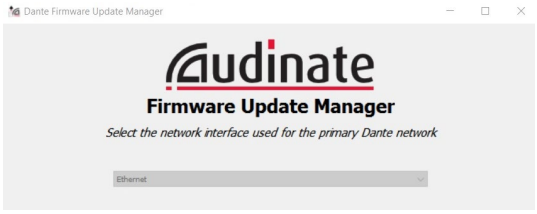


4. Once programming is complete, click **OK** and power cycle the unit to complete the update.

Dante Firmware Update

1. Connect a CAT5e/Cat6 network cable from a switch in the Dante Primary Network to the PC being used to perform the update.

2. Launch **Dante Firmware Update Manager**, select the network interface being used to connect to the Dante network and click **next**.

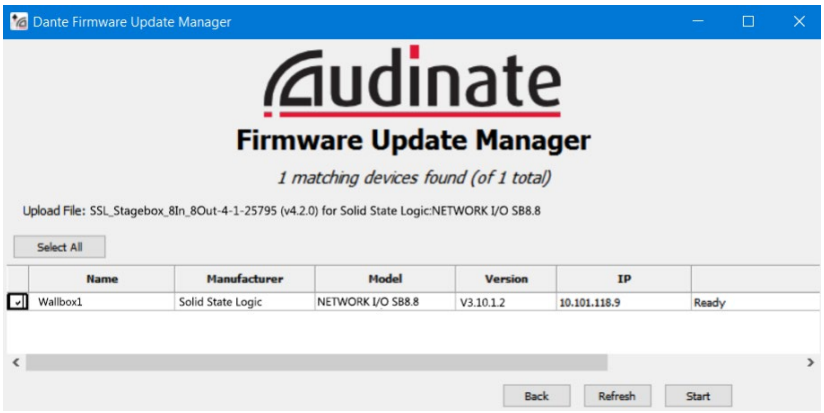


3. Select the correct.dnt firmware file for your unit using the **browse** button in the dialogue box. Leave the **Override Device Matching** option unchecked, then click **next**.



Model	.dnt firmware file
SB 8.8	SSL_Stagebox_8In_8Out-4-1-25840.dnt
SB i16	SSL_Stagebox_16In-4-1-25840.dnt
SB 32.24 (network A card)	SSL_SB_32_24_A-4-1-26041.dnt
SB 32.24 (network B card)	SSL_SB_32_24_B-4-1-26041.dnt
SB 16:12 (network A card)	SSL_SB_16_12_A-4-1-26041.dnt
SB16:12 (network B card)	SSL_SB_16_12_B-4-1-26041.dnt
A16.D16	SSL_A16_D16-4-1-25796.dnt
A32	SSL_A32-4-1-25796.dnt
D64	SSL_D64-4-1-25796.dnt
GPIO32	SSL_GPIO32-4-1-25796-release.dnt
PCIe-R	pcieSSL-4.0.10.5_fpga-4.2.0.9.dnt

4. **Dante Firmware Update Manager** will discover devices on the network which the selected firmware file is compatible with. Select the devices you wish to update using the checkboxes to the left of device names and click **Start**.



5. Once programming is complete, the unit must be rebooted.
   The current firmware version may be verified in the **Status** tab in Dante Controller Device View. Version numbers are listed at the end of this document.

Installing SSL Network I/O Controller

The latest version of **SSL Network I/O Controller** must be installed on any PCs which may be used to control Network I/O units on the network. Newer Network I/O firmware is not backwards compatible with older controller software.

Locate and run the Network I/O Controller installer in the update package, and follow the on-screen prompts to install or update to the latest version.



Please Note: *In some cases (usually when multiple versions of the SSL software software and different versions of V3 and V4 Audinate Dante Controller have been installed) Windows doesn't correctly keep track of which program has installed the service in which order, and cannot correctly uninstall the Dante services. In these rare cases it may be necessary to manually uninstall all the SSL programs and Dante Controller before installing the new versions that utilise the V4.0 DAPI. In this case check in Windows program manager that the Dante services uninstall with the last program, it is advisable to reboot your machine between uninstalling everything and installing the new versions.*

Software and Firmware Version Compatibility Overview

Numbers in **bold** denote new versions.

Part		**V4.0 Package**	**V4.1 Package**	**V4.2 Package**
Audinate Dante Controller		V4.2.3.1	V4.2.3.1	V4.2.3.1
Audinate Dante Firmware Updater		V3.10	V3.10	V3.10
Network I/O - Controller		V1.10.9.41095	V1.10.9.41095	**V1.11.6.44902**
Network I/O - Updater		V1.9.12.41291	**V1.10.42678**	V1.10.42678
Net I/O Stageboxes	SB i16 and SB8.8 - Main PCB Firmware	23927	23927	23927
	SB i16 - .dnt firmware	V2.5.25840	V2.5.25840	V2.5.25840
	SB 8.8 - .dnt firmware	V2.5.25840	V2.5.25840	V2.5.25840
	SB 32.24 - Main PCB Firmware	24250	**26181**	26181
	SB 32.24 card A - .dnt firmware	V1.4.24196	**V4.1.26041**	V4.1.26041
	SB 32.24 card B - .dnt firmware	V1.4.24196	**V4.1.26041**	V4.1.26041
Net I/O 16.12	SB 16.12 - Main PCB firmware	25547	**26181**	26181
	SB16.12 card A - .dnt firmware	V1.5.25796	**V4.1.26041**	V4.1.26041
	SB16.12 card B - .dnt firmware	V1.5.25796	**V4.1.26041**	V4.1.26041
Net I/O A16.D16	A16.D16 - Main PCB firmware	25547	25547	25547
	A16.D16 - .dnt firmware	V1.5.25796	**V4.1.25796**	V4.1.25796
Net I/O A32	A32 - Main PCB firmware	25547	25547	25547
	A32 - .dnt firmware	V1.5.25796	**V4.1.25796**	V4.1.25796
Net I/O D64	D64 - Main PCB firmware	25547	25547	25547
	D64 - .dnt firmware	V1.5.25796	**V4.1.25796**	V4.1.25796

NET I/ O GPIO32	GPIO32 - Main PCB firmware	25547	25547	25547
	GPIO32 - .dnt firmware	V1.5.2796	**V4.1.25796**	V4.1.25796

Net I/O MADI-Bridge	Front Panel FW & SW indication	V3.4.24204.24799 or later	**V4.1.25700**	V4.1.25700
	Flash Firmware	24799	25700	25700
	.dnt firmware	24204	24204	24204
Net I/O PCIeR	PCIeR - .dnt firmware	V4.0.7.2	**V4.0.10.5 FPGA** **4.2.0.9.dnt**	V4.0.10.5 FPGA 4.2.0.9.dnt
	Audinate Dante PCIe driver		V1.8.0.3 Mac V1.8.0.1 Windows	V1.8.0.3 Mac V1.8.0.1 Windows
Net I/O SDI and AES units	Network I/O - Manager	**V2.0**	V2.0	V2.0
	SDI and AES Unit Main PCB Flash Version	**V2.1.0.3**	V2.1.0.3	V2.1.0.3
	SDI - .dnt firmware	**V1.0.0.1**	V1.0.0.1	**V1.0.3.1**
	AES - .dnt firmware	**V1.0.0.1**	V1.0.0.1	**V1.0.3.1**
SSL System T Console Software		**V2.3.17/19**	**V3.0.12**	**V3.0.14**
SSL Live Console Software		**V4.10.17**	V4.10.17	V4.10.17

The above Net I/O items are not part of this package but version compatibility is included for completeness
Please Note: *The .dnt version numbers are displayed in Dante Controller* ***Device View*** *window, in the* ***Status*** *tab. The specific version number for the SSL .dnt file can be found in the* ***Software Version*** *field, in the Solid State Logic* ***Device Information*** *area.*

NETIO Controller V1.11.6.44902

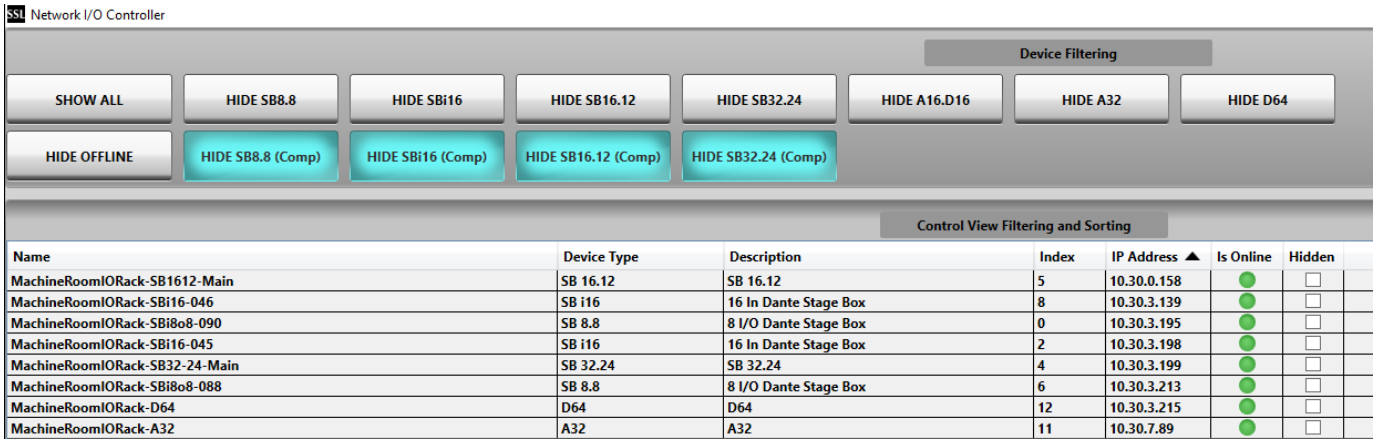
V1.11 brings improvements to the application including device ordering, filtering, and hiding. Application window resizing and scaling, improved visual navigation and user data storage have been added along with DDM integration.

Details

The main tab is now named **Control**, a new **Devices** management tab is provided for filtering, hiding, and sorting. The **Settings** tab is used for DDM configuration (added in a previous release but undocumented.)

Devices Tab

The Devices tab is split into two sections: **Device Filtering** and **Control View Filtering and Sorting**.



Name	Device Type	Description	Index	IP Address	Is Online	Hidden
MachineRoomIORack-SB1612-Main	SB 16.12	SB 16.12	5	10.30.0.158		
MachineRoomIORack-SBi16-046	SB i16	16 In Dante Stage Box	8	10.30.3.139		
MachineRoomIORack-SBi8o8-090	SB 8.8	8 I/O Dante Stage Box	0	10.30.3.195		
MachineRoomIORack-SBi16-045	SB i16	16 In Dante Stage Box	2	10.30.3.198		
MachineRoomIORack-SB32-24-Main	SB 32.24	SB 32.24	4	10.30.3.199		
MachineRoomIORack-SBi8o8-088	SB 8.8	8 I/O Dante Stage Box	6	10.30.3.213		
MachineRoomIORack-D64	D64	D64	12	10.30.3.215		
MachineRoomIORack-A32	A32	A32	11	10.30.7.89		

Device Filtering

The upper section provides **Device Filtering** for all Network I/O device types available in Network I/O Controller. These device types can be pre hidden, so they are not visible from this instance of the software when they are discovered. Device filtering hides the selected device types from the Control view and the filtering and sorting GUI lower down the same page.

An example use case may be for the user position managing the mic gains to hide all SB "compensated" devices so that the controller only shows the gain tracked signals, not the compensated split feeds. The opposite approach could be used at a location that received the compensated splits and wants metering of those signals only.

Control View Filtering and Sorting

The lower section of the **Device** tab provides **Control View Filtering and Sorting.**

The GUI includes a table with the following headings:

- **Name –** Device name as set in Dante Controller
- **Device Type** – SSL Network I/O device type: SB8.8, SBi16, SB16.12, SB32.24, A16.D16, A32, D64, SB8.8 (Comp), SBi16 (Comp), SB16.12 (Comp), SB32.24 (Comp)
- **Description** – Currently set by SSL
- **Index** – Order that the devices are discovered
- **IP address** – The current Primary network interface IP address
- **Is Online** – Device reachability from this app - Online (green) / Offline (red)
- **Hidden** – Tick box to hide device in the control view

Sort ordering affects the table in this device tab but importantly sets the order devices display in the network view of the main **Control** tab. Selecting the heading for a column will set it as the ordering field, and toggle between ascending or descending. Sorting can be alpha-numerically by **Name** or **Device Type**, or numerically by **IP address** or **Index** (discovered order – as pre V1.11).

Discovery, reachability, online and offline

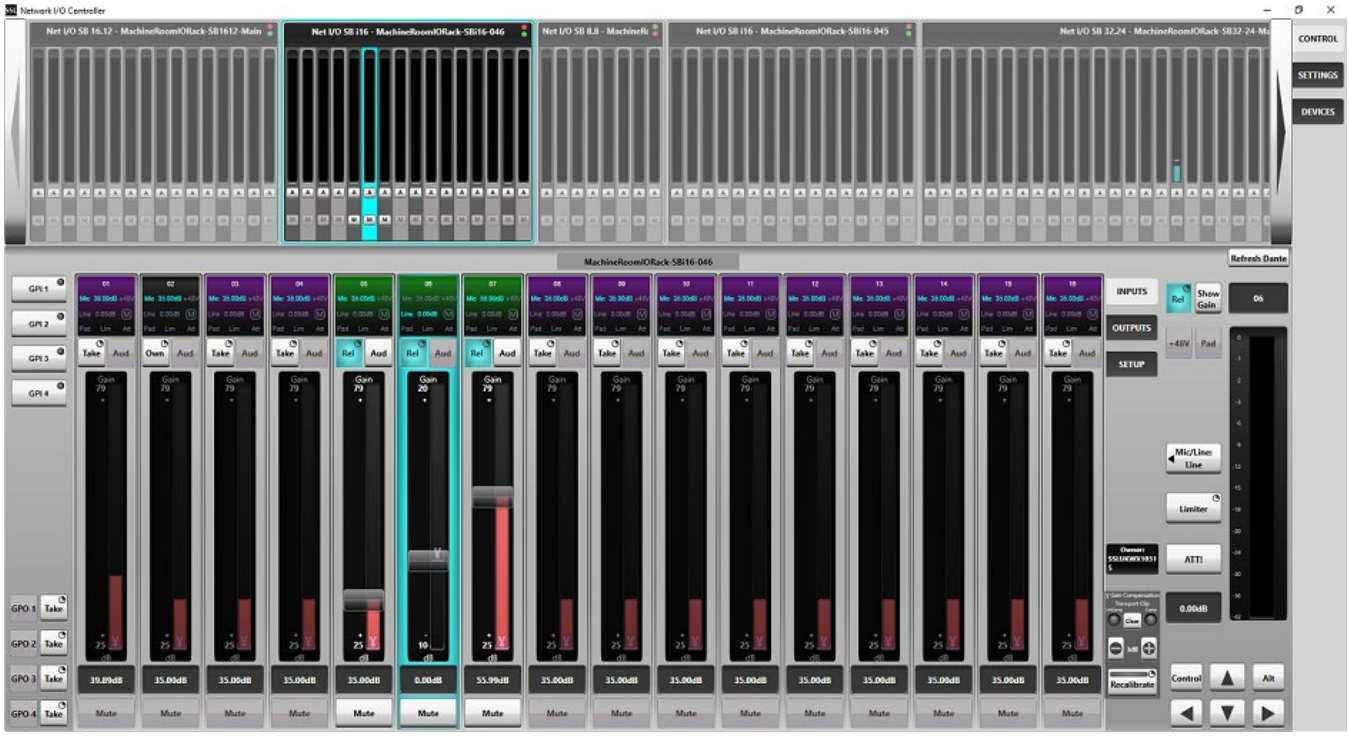
On each run of the app, devices on the network are discovered. The concept of an offline device for **Network I/O Controller** is one that was seen on this run but is now not reachable. A device can come back online within that run of the application, or it can come online as a new device within that run of the application.

Note that **Dante Domain Manager** adds an additional aspect to this discovery, only devices enrolled in the domain **Network I/O Controller** is a client of will be "Online." Moving a device between domains, with the app running affects the "reachability" of the device, therefore a device moved into a different domain will show as offline.

The app does not store a persistent record of devices discovered on previous runs of the application, like the console's software or DDM. The app does not remove devices that are no longer reachable, in the way Dante controller does.

Control Tab

The selected input is shown in both the network view and details view to aid associating the metering with the faders. Inputs can now be selected from the network view to quickly bring the controls of an input into the detail and focus views.



App resizing and scaling

The app window can now be resized horizontally and vertically. With the main control tab visible, increasing the window width allows more devices and input metering in the network view, plus displays more channels for control in the detail view. Increasing the window height provides larger metering in network view and a longer fader for each input in the detail view.

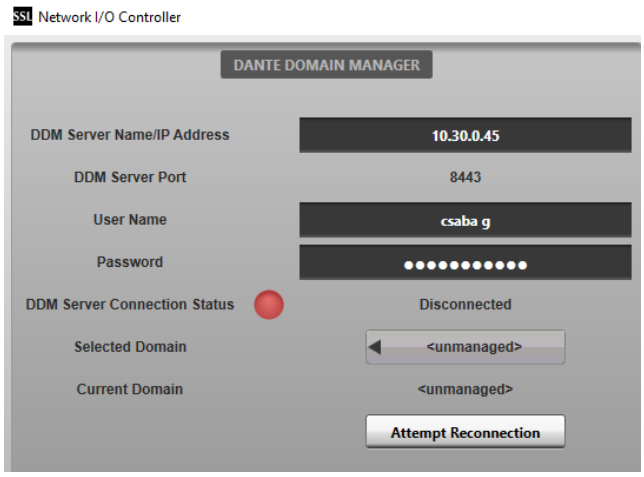
Full screen on a 1920 wide display shows 16 channels on the detail view. A 4k display will show more. Windows built in scaling can be used to set an optimum zoom on larger displays.

Windows User Accounts

The software now installs to Windows user accounts, data for the app is stored per Windows user. This includes the window size, filtered and hidden devices, plus sort order.

Settings (DDM)

DDM support was added in a previous release but is included here for completeness. Network I/O Controller can log into DDM as a control client in the same way as Dante Controller, SSL System T and Live consoles. More info on DDM can be found here.



Other Features and Improvements

- Removed left / right navigation arrows either side of detail view – these are duplicated functions for navigating between channels, which can also be performed using the navigation left / right arrows (bottom right of control tab) and computer keyboard

Bug Fixes

- Resolved – Windows installation issue without admin privileges

Troubleshooting

If devices are unable to be detected by either **Dante Firmware Update Manager** or **SSL Network I/O Updater** software, ensure the IP address of the devices in question are in the same subnet as the PC being used to perform the update.

If network connectivity problems are experienced, a full power cycle of the unit in question typically re-establishes full connectivity.

If the instructions to power cycle have not been followed and the unit has been soft rebooted from Dante Controller after the updates performed, it has been seen that the device cannot be seen in Dante Controller or the front panel “RUN” Led shows red, indicating a network fault.

The device will still show a green connected light on its rear **network interface** but will not be visible in **Dante Controller** and will not appear in the **SSL Network I/O Updater** software.

To resolve this connection issue, remove both power cables from the back of the device ensuring the device has completely powered down, then reconnect the power cables and allow the device to boot. The device should now be seen in both **Dante Controller** and **SSL Network I/O Updater**.

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