Introduction

N-Able is a free setup utility designed for use during initial configuration of your SVSI AV equipment. This tutorial provides information on the following:

N-Able Installation/Equipment Discovery

The steps provided in this section assume the AV equipment is already physically connected to the network and the wireless adapter on your computer is turned off.

Step 1: Load N-Able onto the host computer.

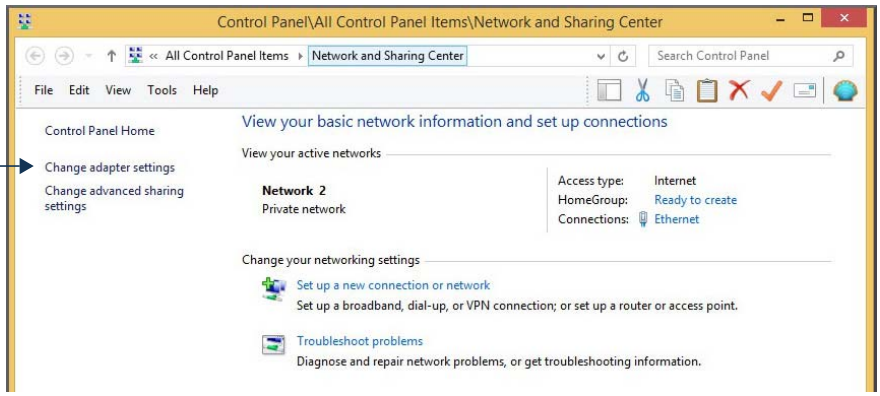
From your host computer, download and install N-Able using one of the following links:
PC version - http://www.amx.com/products/N-ABLE-PC.asp
Mac version - http://www.amx.com/products/N-ABLE-MAC.asp

Step 2: Set up host computer.

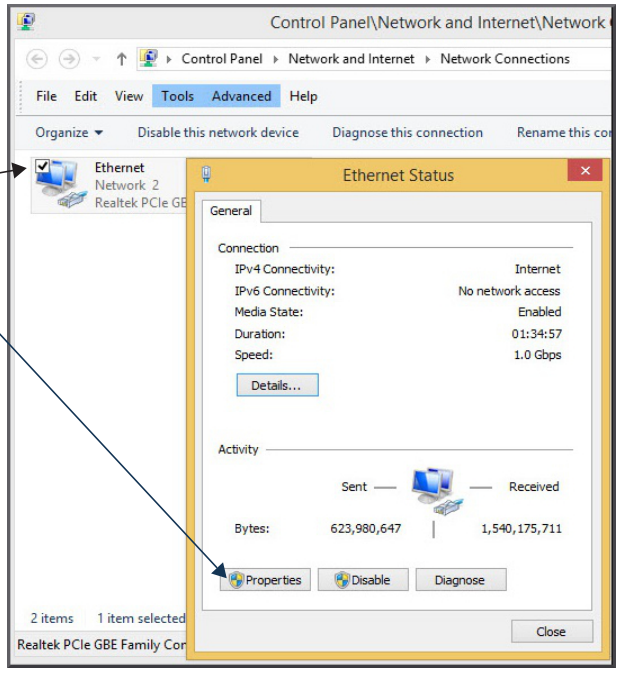
In order to communicate with SVSI equipment, your devices must be on the same subnet as the host computer. N-Series devices are shipped in **Auto IP** mode with a default IP address of 169.254.xxx.xxx. Before beginning installation, you will need to make some changes to the computer running N-Able. These steps show how this can be accomplished in a Microsoft Windows environment.

1. From the **Start** menu, select **Control Panel > Network and Sharing Center**.

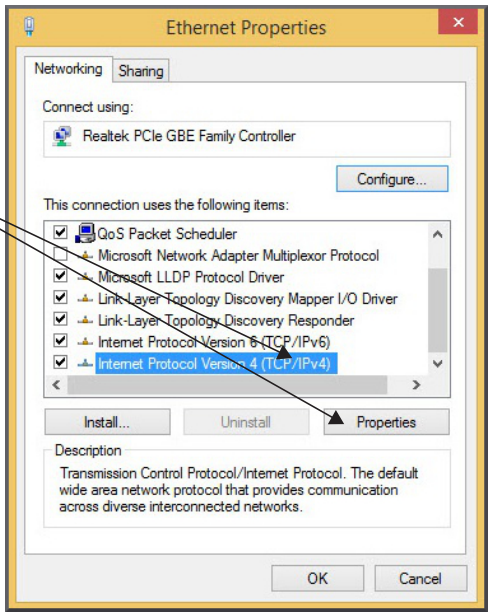
2. Select **Change adapter settings**.



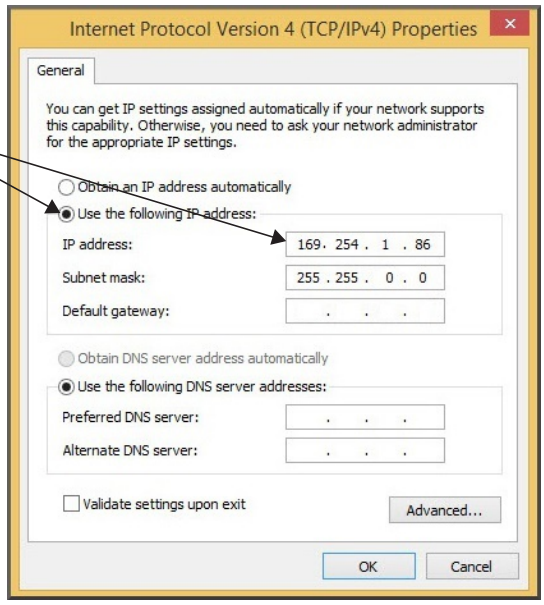
3. Double-click the wired interface to your AV network, and then click the **Properties** button.



4. Scroll down in the list to the **Internet Protocol Version 4 (TCP/IPv4)** option. Highlight it and click the **Properties** button.



5. Enable the **Use the following IP address** option, and enter the static IP address provided to you by your network administrator.



NOTE: *If the computer does not need Internet access, you can simply enter a unique 169.254.xxx.xxx IP address with a 255.255.0.0 subnet mask. Contact your network administrator if you are unsure of how to configure the existing network. SVSI units will not self-assign in the 169.254.0.xxx range.*

NOTE: *If the computer has a statically-assigned IP address, click the Advanced button. Then click Add to enter a unique 169.254.xxx.xxx address with a subnet of 255.255.0.0.*

Step 3: Discover units on the network.

Open N-Able and then follow the steps in FIG. 1.

1. Select the **Unit Management** tab.
2. Click the **Auto Discover** button (if the table has not already populated itself with the installed units).

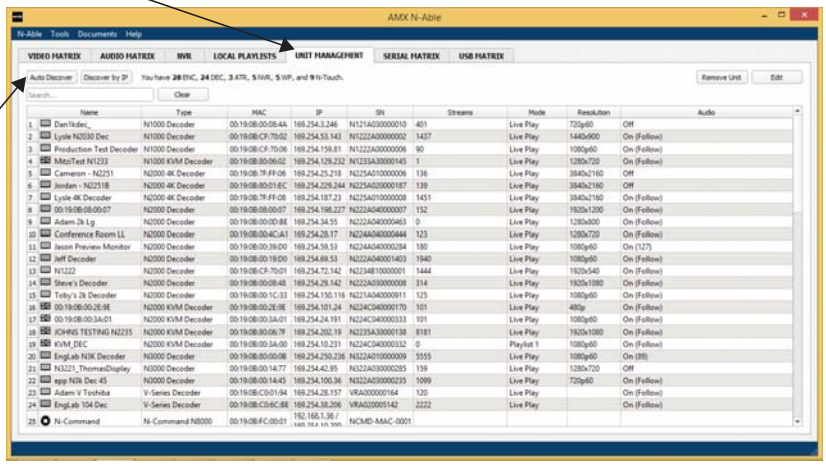


FIG. 1 Unit Management Page

NOTE: *When an NVR is first discovered, you are prompted to choose a product series to associate it with (N1000, N2000, N3000). This "locks" the NVR into a mode compatible with the chosen series. FIG. 2 shows how the mode can be changed if needed.*

1. Select the **NVR** tab and **Maintenance** sub-tab.
2. Choose a unit from the **NVR** drop-down menu.
3. Select the desired mode from the **NVR Mode** drop-down menu and click **Apply**.

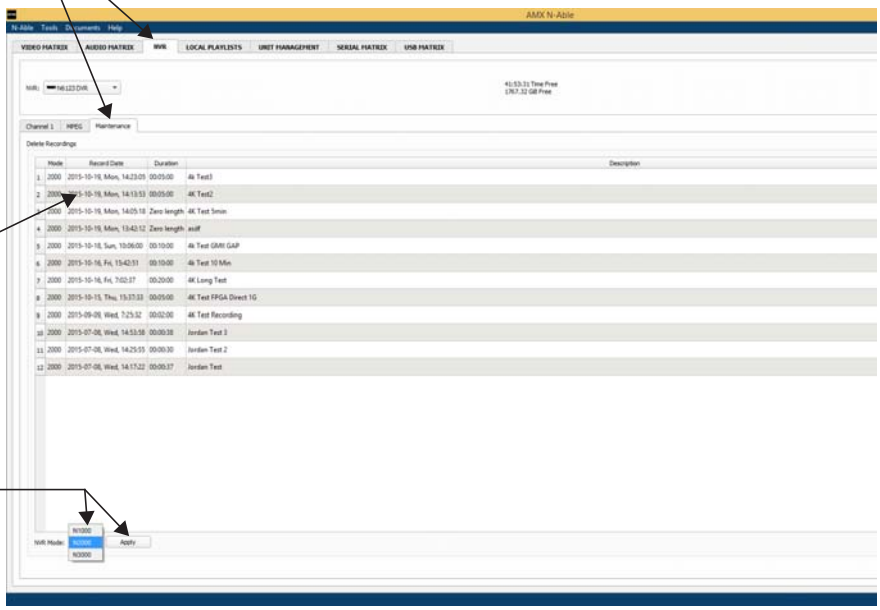


FIG. 2 Changing NVR Mode

Initial Encoder and Decoder Configuration

This section describes some configuration basics for SVSI Encoders and Decoders using N-Able. More detailed configuration options are provided in the documentation specific to each product series (N1000, N2000, N3000, etc.). Access product documentation within N-Able by selecting **Documents** on the main menu bar, or by visiting our website.

NOTE: *For information on how to quickly make basic configuration changes to multiple units using comma-separate value (CSV) files, refer to the section CSV File Use* on page 18.

Encoder Setup

1. In N-Able, select the **Video Matrix** tab.
2. Select the series sub-tab (**N1000**, **N2000**, **N3000**, **Uncompressed 4K,** or **Compressed 4K**) for the Encoder you wish to configure. For V-Series units, select the **N2000** tab.
3. Find your Encoder in the list. For new units, the name defaults to the MAC address (which is printed on the front panel of the unit). See FIG. 3 on page 13.

NOTE: *The Uncompressed 4K and Compressed 4K tabs apply to the N2151 Encoder and N2251 Decoder.*

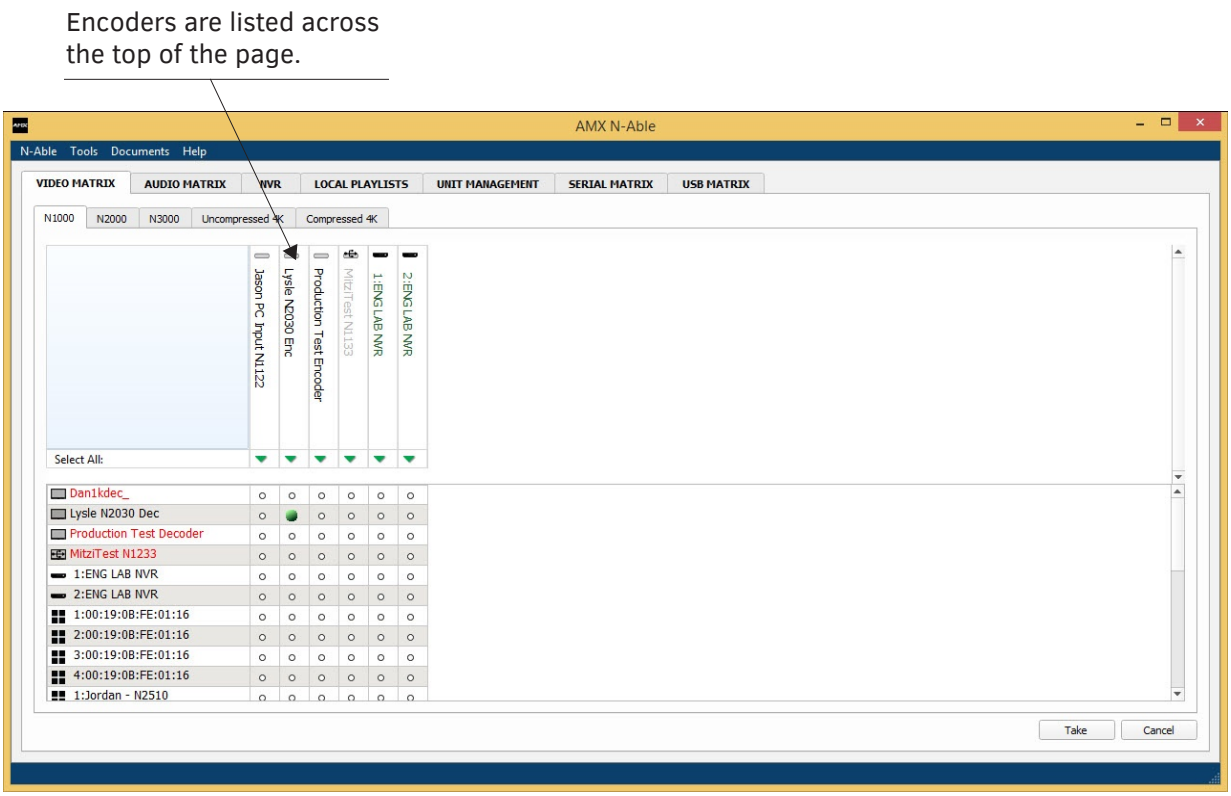


FIG. 3 Find Encoders on the Video Matrix Page

NOTE: *If using multiple Encoders in your set up, it is important to plug in and configure one Encoder at a time. All Encoders come pre-configured to use stream 1. As you add Encoders to the network, you will need to set them up to use different streams. If N-Able detects two Encoders with the same stream number assignment, a warning will display.*

4. Double-click the Encoder name to bring up its **Settings** page.
5. Make the changes suggested in FIG. 4 on page 14.

Change the **Device Name** to something user-friendly. More descriptive names help you organize and manage the SVSI system efficiently. Names based on the unit's location and function are very useful (e.g., **CR201-HDMI** for Conference Room 201, HDMI input). Keep in mind the matrices are organized alphanumerically.

Use the **Network Setup** section to choose the Encoder's **IP Mode** and (when in **STATIC** mode) to set up a new **IP address**, **Netmask**, and **Gateway address**. Click **Trial Save** to initially save IP address changes. Once you log in to the unit using the new address, you will be able to confirm and accept the changes permanently

Enter a **Stream** number that is unique to all other Encoders on the network.

Slide the **Image Quality** and **Motion Quality** sliders all the way to the right. This ensures the highest image quality. Adjust sliders if you need to lower Encoder bandwidth use.

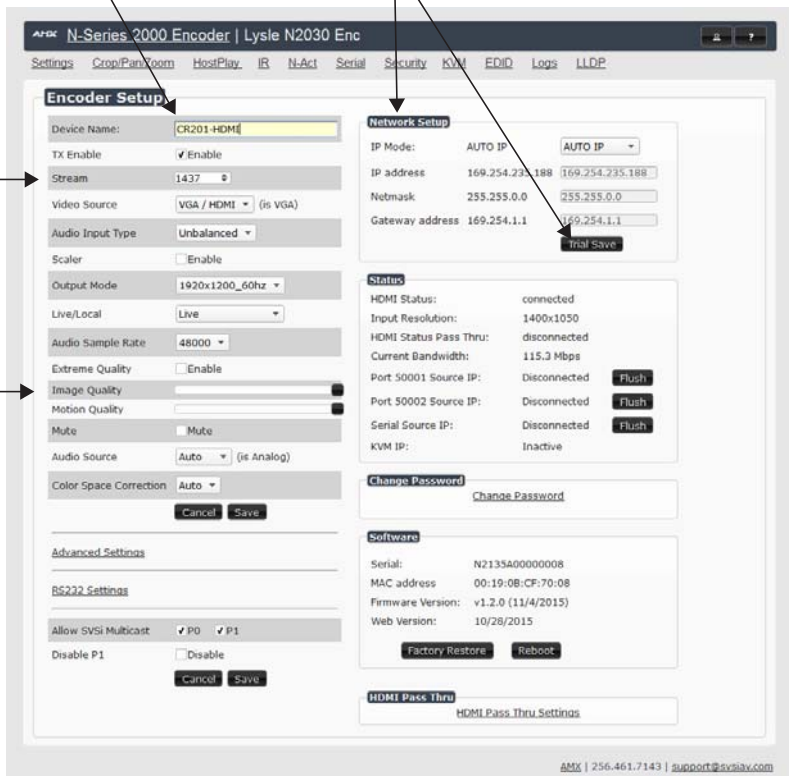


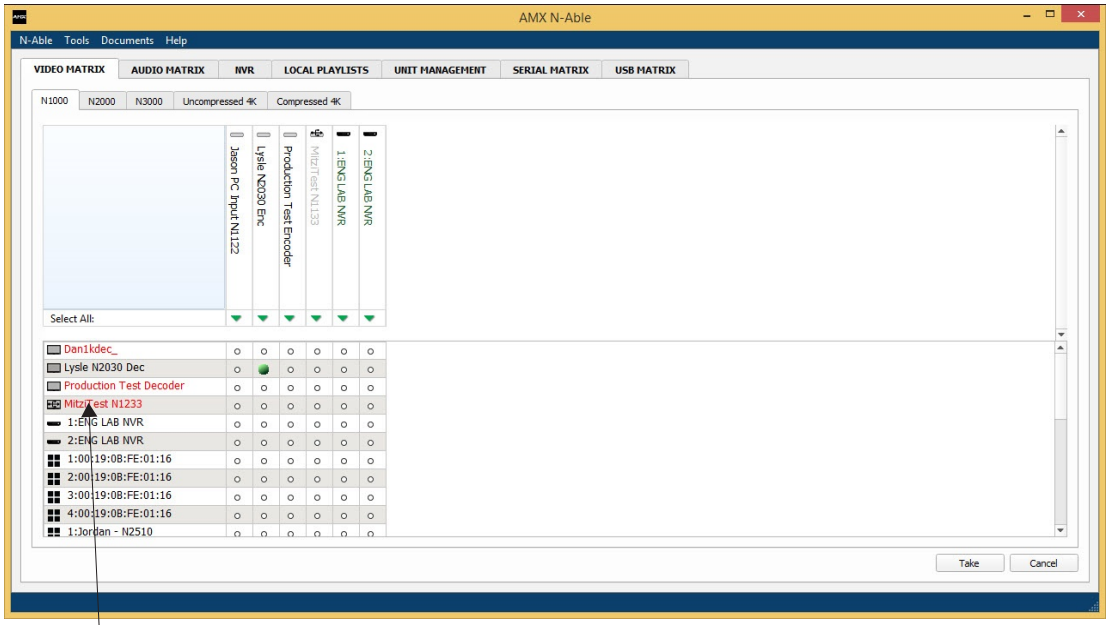
FIG. 4 Encoder Settings Page

NOTE: *To better understand the Stream setting, think of Encoders more like a channel on a cable box, rather than a traditional AV Matrix. Each Encoder must have a unique stream number, just like every channel must have a unique channel number (e.g., Food Network and HGTV cannot both be on channel 201). We recommend setting Stream to a number between 2 and 254 (it is required that the number be less than 32,512).*

6. Repeat these steps until all Encoders are configured correctly.

Decoder Setup

1. In N-Able, select the **Video Matrix** tab.
2. Select the **Video Matrix** series sub-tab (**N1000**, **N2000**, **N3000**, **Uncompressed 4K,** or **Compressed 4K**) for the Decoder you wish to configure. For V-Series units, select the **N2000** tab.
3. Find your Decoder in the list. For new units, the name defaults to the MAC address (which is printed on the front panel of the unit). See FIG. 5.



Decoders are listed down the left side of the page.

FIG. 5 Find Decoders on the Video Matrix Page

4. Double-click the Decoder name to bring up its **Settings** page.
5. Make the changes suggested in FIG. 6.

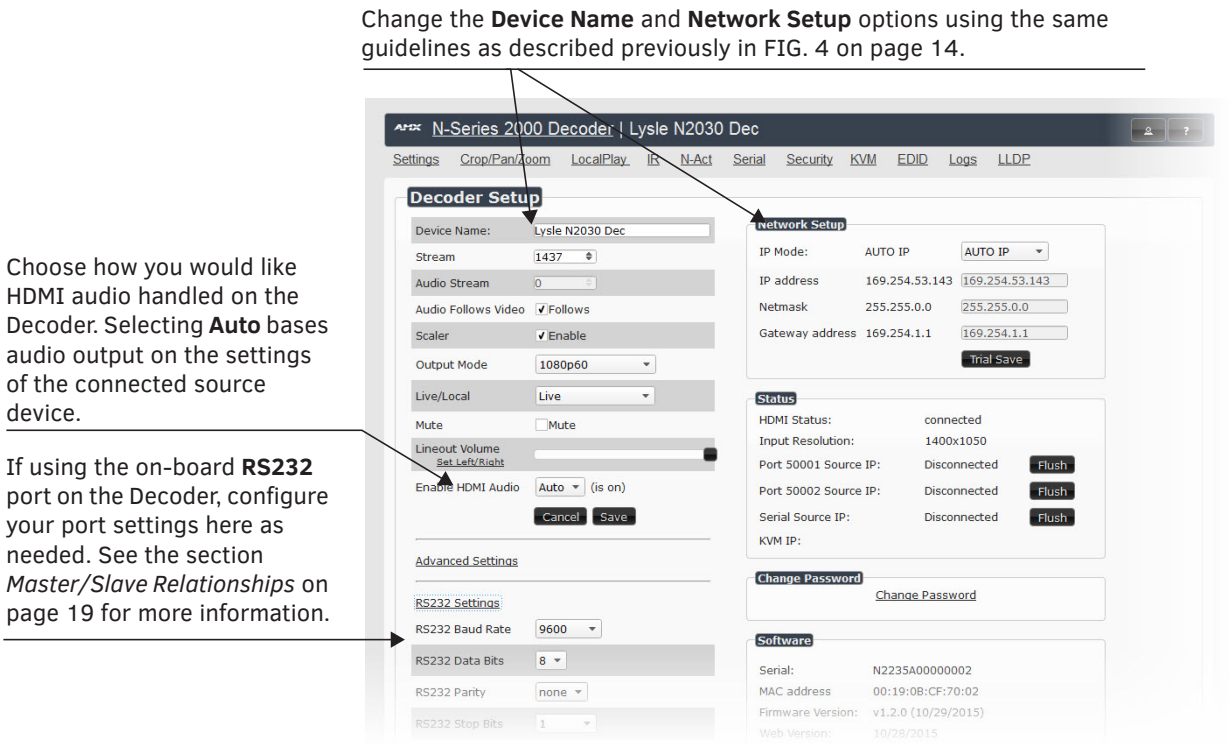


FIG. 6 Decoder Settings Page

6. Repeat these steps until all Decoders are configured correctly.

TIP: *If you changed the IP addresses of the Encoders and Decoder to something other than the default, you need to reconfigure your computer's IP Address accordingly.*

Decoder to Encoder Assignments

For the most part, once the initial setup is complete, you will primarily manage and configure the Decoders. To better understand, think of Encoders as radio stations and Decoders as car radios. The Encoders are supplying the streams and, using the Decoders, you can "tune in" to the stream you want. This section shows you how to easily route video from an Encoder to a Decoder.

1. Start by attaching a video source to an available Encoder.
2. On the Encoder's **Settings** page, verify that the **Live/Local** option is set to **Live** play mode. See FIG. 7. Play mode choices are described in more detail in TABLE 1 on page 17.

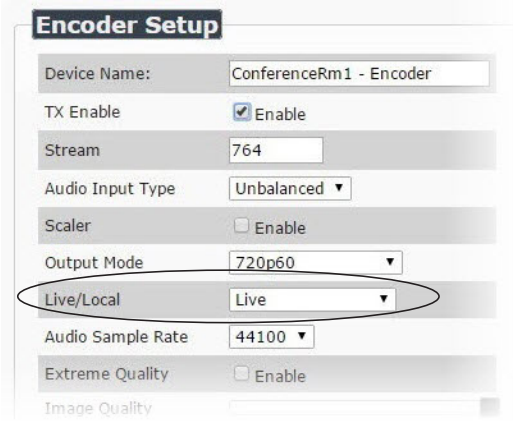
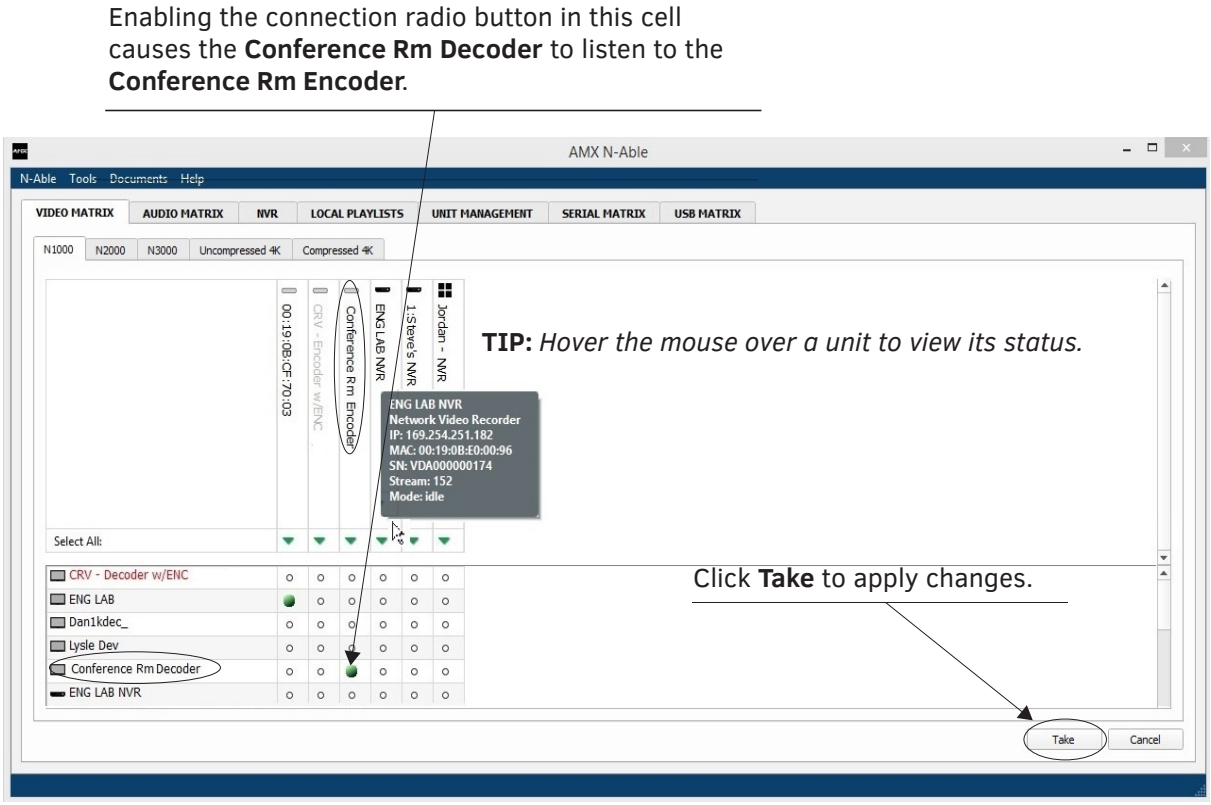


FIG. 7 Set Encoder to Live Play Mode

TABLE 1 Play Modes Available on Encoders and Decoders

Mode	Description
Encoder Live Play	Plays the video coming from the input source (e.g., video camera) connected to the Encoder.
Encoder Host Play	Plays image and audio files stored on the Encoder's on-board memory. These can be used to display a slide-show to multiple Decoders (in a similar fashion to Live Play). Selecting **Host Play** turns off the attached video source's video feed and begins playing the selected slide-show instead.
Decoder Live Play	Plays the live stream coming from an Encoder.
Decoder Local Play	Same thing as Host Play (for the files stored on the Decoder).

3. Verify the Decoders you are working with are in Live Play mode as well (using their **Settings** pages).
4. To get streams onto a Decoder, use the **Video Matrix** tab to route video from an Encoder to a Decoder by clicking radio button in the common cell on the matrix.
5. Click the **Take** button to accept the routing change. See FIG. 8 for an example.



Red Text - No video source (Encoder) or no display (Decoder).
Gray Text - Video output for this unit is disabled.
Black Text - Unit is in Live Play mode.
Blue Text - Unit is playing locally-stored content.

NOTE: *When a unit is offline (and polling is enabled), the unit's icon changes to a red exclamation mark, the unit name is displayed in red bold text, and the connection radio buttons for that unit turn red. If polling is disabled, press the F5 key to refresh status information.*

FIG. 8 Video Matrix Routing

6. Continue creating Decoder-Encoder routing associations until you have made all of your connections.

TIP: *It can be helpful to first attach all of your Decoders to one Encoder to verify that streaming is working properly.*

CSV File Use

N-Able has the ability to export and import CSV files. Once units are auto-discovered in N-Able, the CSV file can be exported into Excel where parameters such as IP address, subnet mask, gateway, stream number, audio settings, etc. can be configured. To use CSV files for configuration, follow these steps.

1. Make sure you have performed an **Auto Discover** (on the **Unit Management** tab of N-Able) since connecting all of the new units to the network.
2. From N-Able's main menu bar, select **N-Able > Export CSV** as shown in FIG. 9.

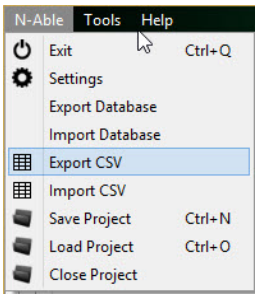


FIG. 9 Export a CSV File

3. Click **Yes** on the pop-up box informing you that a CSV file is about to be generated.

NOTE: *A CSV file editor (e.g., Microsoft Excel) is necessary to proceed.*

4. The folder containing your CSV file is displayed. Double-click the file to open it. FIG. 10 shows an example of a CSV file in Excel 2010.

	A	B	C	D	E	F	G	H	I	J	K	L
1	NAME	TYPE	MAC	SN	STREAM	IPMODE	IP	SUBNET	GW	MODE	AUDIOSTR	AUDIOEN/
2	Dan1kdec_	N1-DEC	00:19:0B:00:	N121A03000	401	Static IP	169.254.3.	255.255.0.	169.254.1.	Live Play	0	0
3	Lysle N2030 Dec	N1-DEC	00:19:0B:CF:	N1222A0000	1437	Auto IP	169.254.5	255.255.0.	169.254.1.	Live Play	0	1
4	Production Test D	N1-DEC	00:19:0B:CF:	N1222A0000	90	Auto IP	169.254.1	255.255.0.	169.254.1.	Live Play	0	1
5	MitziTest N1233	N1-DEC-KVM	00:19:0B:80:	N1233A3000	1	Auto IP	169.254.1	255.255.0.	169.254.1.	Live Play	0	1
6	Cameron - N2251	N2-DEC-4K	00:19:0B:7F:	N225A01000	136	Auto IP	169.254.2	255.255.0.	169.254.1.	Live Play	0	0
7	Jordan - N2251B	N2-DEC-4K	00:19:0B:80:	N225A02000	139	Auto IP	169.254.2	255.255.0.	169.254.1.	Live Play	0	0
8	Lysle 4K Decoder	N2-DEC-4K	00:19:0B:7F:	N225A01000	1451	Auto IP	169.254.1	255.255.0.	169.254.1.	Live Play	0	1

FIG. 10 Sample CSV File

5. Make configuration changes and then save the file.
6. Select **N-Able > Import CSV** from the main menu bar.
7. Reboot the devices to activate the new settings.

This procedure can be used to configure multiple networked AV devices at the same time. It can also provide valuable diagnostics by allowing you to see the last known device configuration as well as scan the network for new devices (regardless of IP configuration).

Network Troubleshooting

N-Able's built-in **Network Troubleshooter** tests the network for stream connectivity and control port functionality. To access the troubleshooter, click on **Tools > Network Troubleshooter** as shown in FIG. 11.

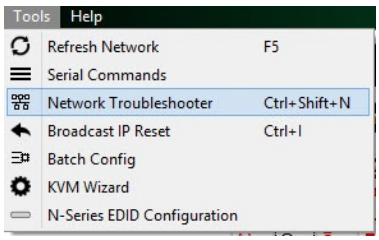


FIG. 11 Activating the Network Troubleshooter

Follow the directions given in FIG. 12.

1. Select the units you wish to test. Multiple units can be selected by holding down the **<CTRL>** key.

2. Choose one of the following test types:
   - **Test Control Ports** tests all available control ports on a given device.
   - **Test Stream Connectivity** tests a Decoder's ability to receive all available Encoder streams.

3. The results are displayed in the **Results Log**.

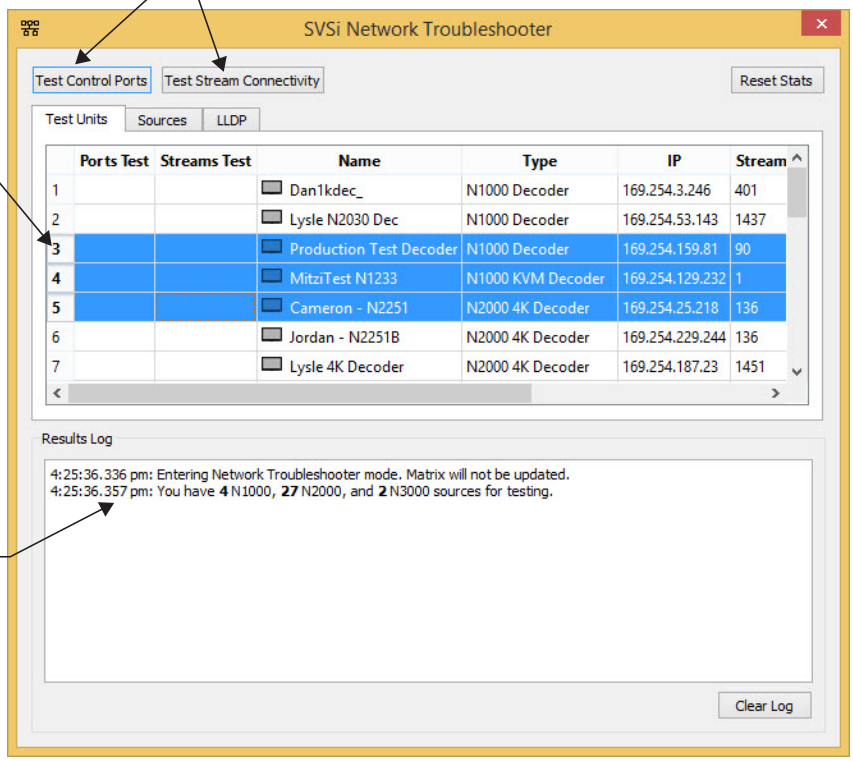


FIG. 12 Troubleshooting the Network

Master/Slave Relationships

The **Serial Matrix** is designed to designate a serial pass-through path for taking in/sending out RS232 commands from one device to another. A practical application of this would be taking in serial commands from a camera controller (connected to an Encoder) and sending those commands to the camera itself (connected to a Decoder). You are basically setting a path between two devices for which serial data will pass.

To do this, you must first assign a device to be a "Master", which will remove its ability to be used as a normal IP-to-RS232 device. Each Master can only be assigned to a single "Slave." As such, the **Serial Matrix** is a one-to-one relationship. Follow these steps to configure a device to be a Master:

1. Open the **Settings** page of the Encoder/Decoder you wish to be a Master.
2. Click **Advanced Settings**.
3. Scroll down and check the **Serial Master Enabled** box.

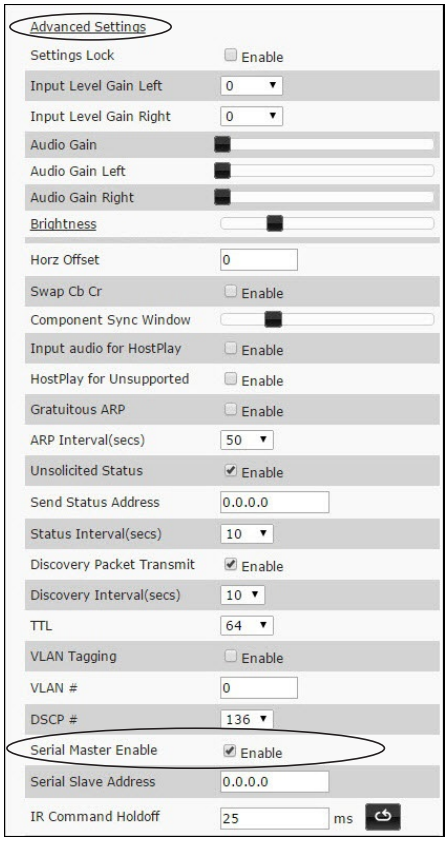


FIG. 13 Enable Master on Settings Page

4. Once you have enabled a device to be a Serial Master, it will be displayed on N-Able's **Serial Matrix** tab.
5. Enable the common cell to assign a master to a slave (in the same way that you assigned video streams earlier). See FIG. 14 on page 21.

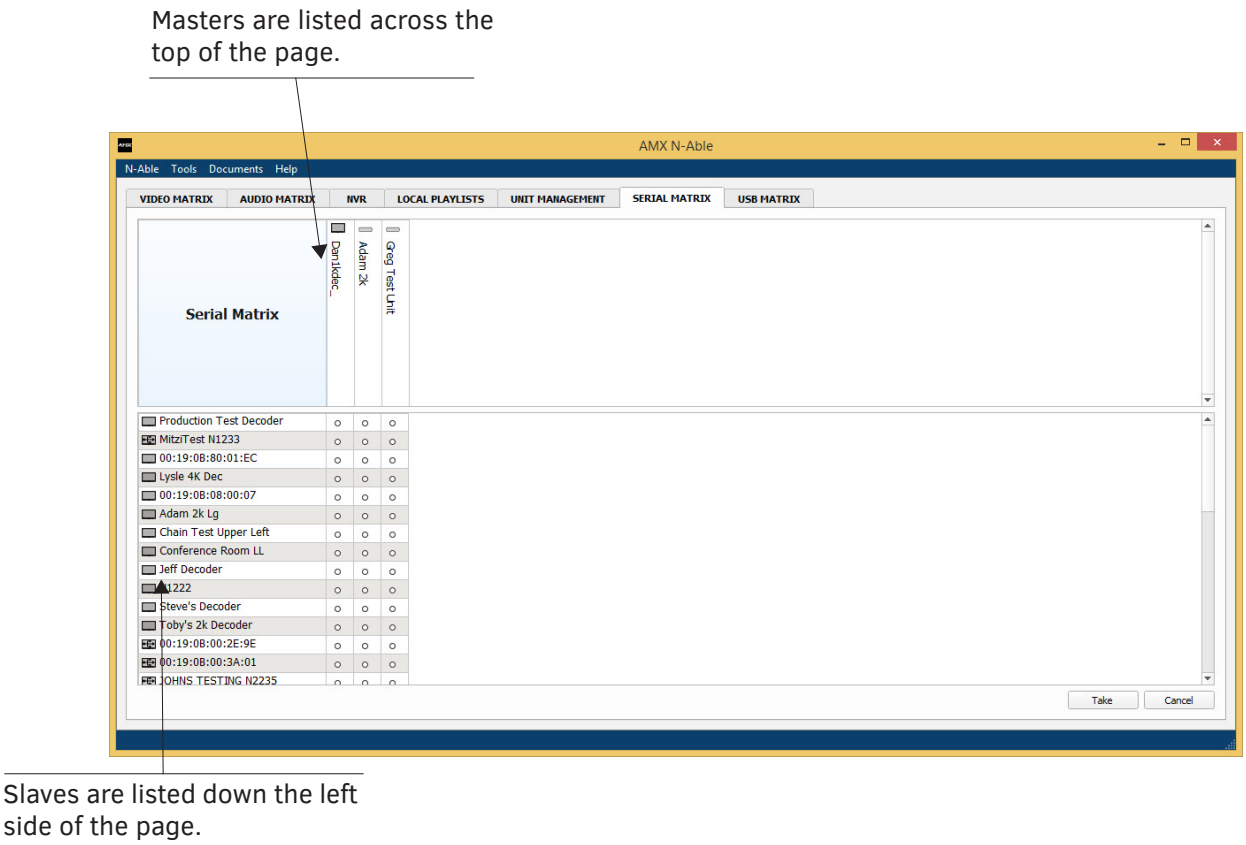


FIG. 14 Serial Matrix Tab

6. Click the **Take** button to activate changes.
7. The two devices can now pass serial data between them.

NOTE: *Copy protected content cannot be transmitted by SVSI's Networked AV products as shipped from the factory. Please contact SVSI if your video distribution requirements include fair-use, owner-licensed, or owner-created content.*

Please contact SVSI technical support at support@svsiav.com or 256.461.7143 x9900 for any installation issues. Visit our support webpage at support.svsiav.com.