



USER MANUAL

SVSI N6123 NETWORK VIDEO RECORDER HIGH-RESOLUTION, HD CONTENT RECORDINGS OVER AN ETHERNET LAN

NMX-NVR-N6123



IMPORTANT SAFETY INSTRUCTIONS

1. READ these instructions.
2. KEEP these instructions.
3. HEED all warnings.
4. FOLLOW all instructions.
5. DO NOT use this apparatus near water.
6. CLEAN ONLY with dry cloth.
7. DO NOT block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. DO NOT install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. DO NOT defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. PROTECT the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. ONLY USE attachments/accessories specified by the manufacturer.
12. UNPLUG this apparatus during lightning storms or when unused for long periods of time.
13. REFER all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. DO NOT expose this apparatus to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the apparatus.
15. To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from the AC receptacle.
16. Where the mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
17. DO NOT overload wall outlets or extension cords beyond their rated capacity as this can cause electric shock or fire.



The exclamation point, within an equilateral triangle, is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to persons.



ESD Warning: The icon to the left indicates text regarding potential danger associated with the discharge of static electricity from an outside source (such as human hands) into an integrated circuit, often resulting in damage to the circuit.

- WARNING:** To reduce the risk of fire or electrical shock, do not expose this apparatus to rain or moisture.
- WARNING:** No naked flame sources - such as candles - should be placed on the product.
- WARNING:** Equipment shall be connected to a MAINS socket outlet with a protective earthing connection.
- WARNING:** To reduce the risk of electric shock, grounding of the center pin of this plug must be maintained.

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ESD WARNING

	<p>To avoid ESD (Electrostatic Discharge) damage to sensitive components, make sure you are properly grounded before touching any internal materials.</p> <p>When working with any equipment manufactured with electronic devices, proper ESD grounding procedures must be followed to make sure people, products, and tools are as free of static charges as possible. Grounding straps, conductive smocks, and conductive work mats are specifically designed for this purpose.</p> <p>Anyone performing field maintenance on AMX equipment should use an appropriate ESD field service kit complete with at least a dissipative work mat with a ground cord and a UL listed adjustable wrist strap with another ground cord</p>
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  	<p>WARNING: Do Not Open! Risk of Electrical Shock. Voltages in this equipment are hazardous to life. No user-serviceable parts inside. Refer all servicing to qualified service personnel.</p> <p>Place the equipment near a main power supply outlet and make sure that you can easily access the power breaker switch.</p>
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WARNING: This product is intended to be operated **ONLY** from the voltages listed on the back panel or the recommended, or included, power supply of the product. Operation from other voltages other than those indicated may cause irreversible damage to the product and void the products warranty. The use of AC Plug Adapters is cautioned because it can allow the product to be plugged into voltages in which the product was not designed to operate. If the product is equipped with a detachable power cord, use only the type provided with your product or by your local distributor and/or retailer. If you are unsure of the correct operational voltage, please contact your local distributor and/or retailer.

FCC AND CANADA EMC COMPLIANCE INFORMATION:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Approved under the verification provision of FCC Part 15 as a Class A Digital Device.

Caution: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this device.

CAN ICES-3 (B)/NMB-3(B)

EU COMPLIANCE INFORMATION:

Eligible to bear the CE mark; Conforms to European Union Low Voltage Directive 2006/95/EC; European Union EMC Directive 2004/108/EC; European Union Restriction of Hazardous Substances Recast (RoHS2) Directive 2011/65/EU.

You may obtain a free copy of the Declaration of Conformity by visiting <http://www.amx.com/techcenter/certifications.asp>.

WEEE NOTICE:

	<p>This appliance is labeled in accordance with European Directive 2012/19/EU concerning waste of electrical and electronic equipment (WEEE). This label indicates that this product should not be disposed of with household waste. It should be deposited at an appropriate facility to enable recovery and recycling.</p>
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Chapter 1: Introducing Your New N6123 NVR

Product Overview

The NMX-NVR-N6123 is a network video recorder (NVR) designed to record hours of high-resolution, HD content over an Ethernet LAN. This rack-mount NVR is compatible with all SVSI video-over-IP products and attaches to the video network at any point. The unit records from any N-Series Encoder, and then uses any Decoder (of that same N-Series) for playback. Recordings can be converted to MP4 files for easy transfer to other systems. Each video stream is recorded and played back at its original resolution.

NOTE: With the exception of the N3000 Series, you can also convert recordings to MOV files.

NOTE: HDCP (High-Bandwidth Digital Content Protection) content cannot be converted. Encrypted N3000 streams cannot be converted. Unencrypted N3000 streams can be converted to MP4 files only.

The N6123 recording and playback durations reflect the compression capabilities of the Encoder/Decoder used. For example, the economical N1000 Series is an in-room solution and offers no compression, while the N3000 Series provides H.264 advanced video compression.

The N6123 is ideal for educational institutions, houses of worship, or corporate campuses that want to simultaneously distribute live video through a facility and record it for future network transmission or other delivery methods.

Configuration Considerations

- In N1000 mode, you can only record OR playback one stream at a time.
- In N2000 mode, you can record up to two streams (dual sync) or record one stream while playing back another.
- In N3000 mode, you can record up to ten streams and playback up to ten streams simultaneously. The streams can be asynchronous.
- You can choose an alternate audio stream to record with your video if necessary.

Basic Specifications

- Power Requirements: 120 Volt AC power input
- Dimensions (HWD): 3.5"(H) x 17.25"(W) x 15.5"(D)
(8.9 x 43.8 x 39.4 cm)
- Weight: 16 lbs (7.25 kg)
- Certifications: FCC, CB, and NRTL
- Temperature: 32° to 104°F (0° to 40°C)
- Humidity: 10% to 90% RH (non-condensing)
- Rack-mountable, 2U computer-based unit (mounting ears included in shipment)

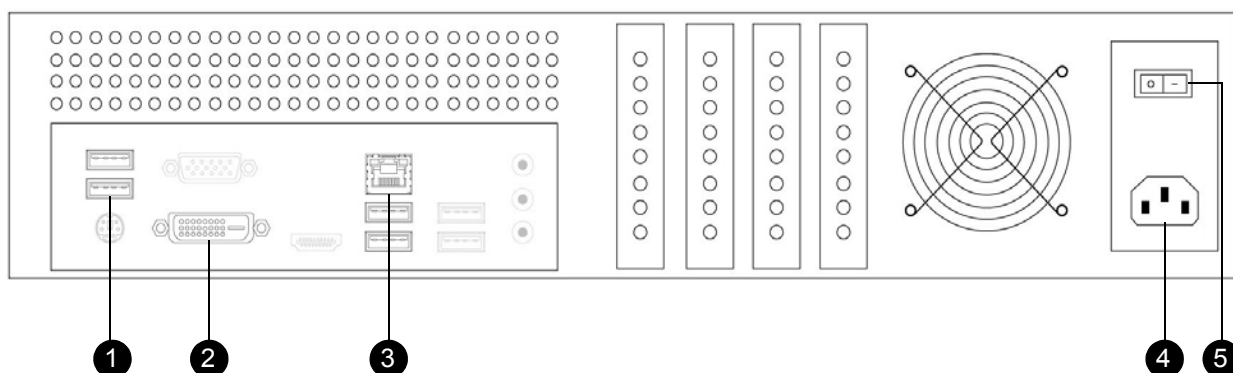
NVR Hardware Overview

The N6123 is built from a standard computer, but not all buttons, LEDs, and connectors are enabled. Refer to the following figures (front and rear panel drawings of the N6123) as well as the [Front and Rear Panel Descriptions table](#) on page 7 for more details.



NOTE: Reset button is disabled.

FIG. 1 Front Panel



- 1) USB Ports
- 2) Factory DVI Diagnostic Port
- 3) RJ45 Auto-Sensing Gigabit Ethernet Switch Port
- 4) Power Input
- 5) Power On/Off Switch

FIG. 2 Rear Panel

TABLE 1 Front and Rear Panel Descriptions

Front Panel	
ON/OFF button	Press to turn unit on or off.
POWER LED	On solid (blue) when operating power is supplied (via local power supply).
HDD LED	On flashing (red) when there is software activity.
USB ports	Insert USB drive for file transfer and storage. Also supports a USB keyboard (for diagnostic and factory restore purposes only).
Rear Panel	
USB ports	Insert USB drive for file transfer and storage. Also supports a USB keyboard (for diagnostic and factory restore purposes only).
Factory DVI Diagnostic Port	Plug directly into a monitor for diagnostic purposes while performing or creating a factory restore partition (which allows a backup of the system from a specified time). This would discard any changes made after the restore point (software updates, recordings, etc).
RJ-45	8-wire RJ45 female. 10/100/1000 Mbps 10/100/1000Base-T auto-sensing gigabit Ethernet switch port.
Power Input	120 Volt AC power input for external power supply.
Power On/Off Switch	Use to apply or remove power to the unit from the power supply. NOTE: This On/Off switch should only be used to disconnect the NVR from main power once it has been properly shut down. Use the Off button on the front of the unit for proper shut down. Be sure to save any changes prior to shutting down or powering off the NVR.

Application Example

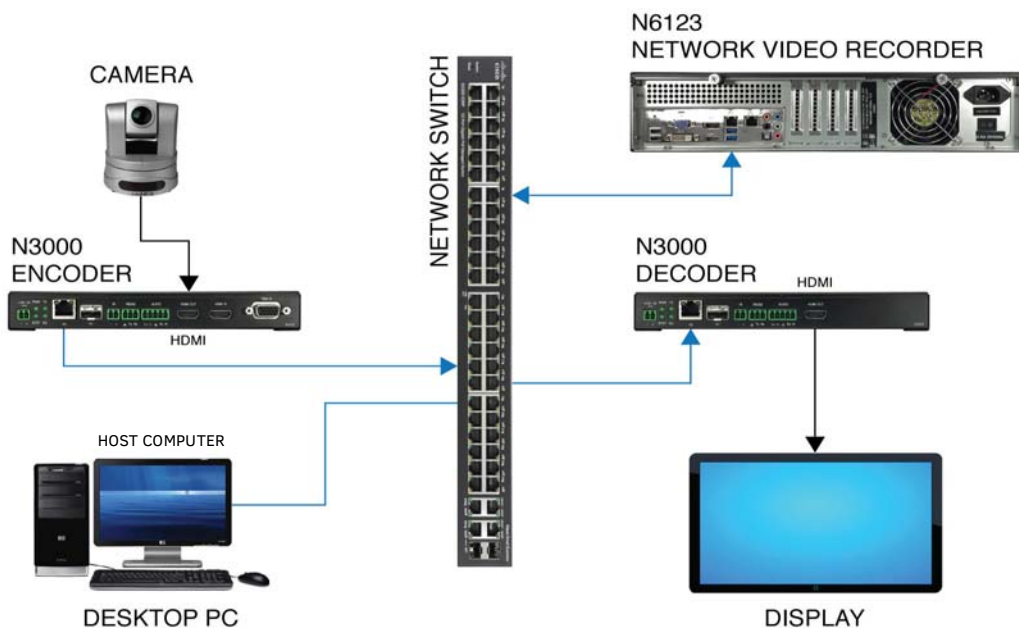


FIG. 3 NVR Simple Application Example

Chapter 2: Installing and Configuring the NVR

Preparing for Install

This chapter provides step-by-step guidance for installing and configuring equipment from the SVSI product family on your network. The steps provided here assume the following to be true:

1. *There are PoE switches operational on the network.*
SVSI equipment can operate on many different brands of networking equipment. The network itself needs to meet certain requirements to be able to support deployment. These instructions assume that you have purchased and installed a pre-configured switch from SVSI or that your existing equipment meets the following physical and protocol requirements:
 - Layer 3, also known as “multi-layer”
 - Gigabit Ethernet
 - IGMP Snooping
 - IGMP Snooping Querier with a Designated Querier (DQ)

NOTE: IGMP automatically negotiates between multiple switches and defines the switch with the lowest address as the DQ. If the DQ experiences faults or outages, IGMP automatically switches the DQ designation to the switch with the next lowest address.

NOTE: To proceed with this installation, the switches must already be successfully connected to your network. If needed, refer to your product's documentation for installation instructions.

2. *Deployment considerations have been made for the addition of high-speed video.*
Our Networked AV solutions provide unsurpassed video and audio quality at bandwidths appropriate to any network segment or link. Matrix switches as large as 1200x800 have been constructed on a house network using SVSI equipment. Alternatively, many customers choose to deploy on physically separate networks in order to use low-cost network appliances but keep video traffic separate from data and voice.

3. *N-Able software has been installed on the computer you are using to configure the equipment.*

From your host computer, download N-Able (our free setup utility software):

PC version - <http://www.amx.com/products/N-ABLE-PC.asp>

Mac version - <http://www.amx.com/products/N-ABLE-MAC.asp>

This software is designed to set up and control the equipment during initial deployment, however, it is not always the best solution for production-type or primary user control. Refer to *Control Options* on page 20 for details on the available control options.

Connecting the NVR to the Network

Physical installation of the NVR requires two simple connections. See [Figure 4](#) for details.

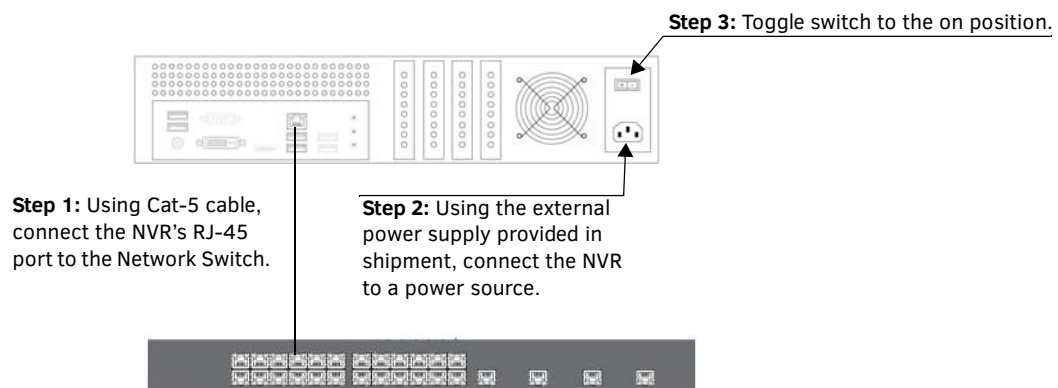


FIG. 4 CONNECTING NVR TO THE NETWORK

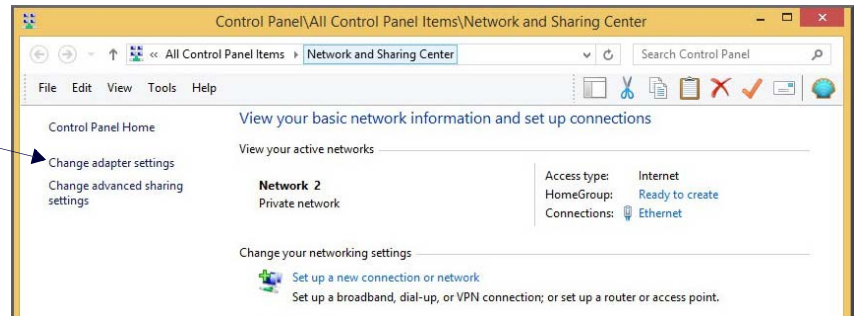
Setting Up Your Host Computer

In order to communicate with SVSI products, your devices must be on the same subnet as the host computer. N6123 devices are shipped in **DHCP** mode. The IP address will be assigned automatically based on the network DHCP server. If no DHCP server is found, the unit will switch to **Auto IP** mode with a default IP address of 169.254.xxx.xxx.

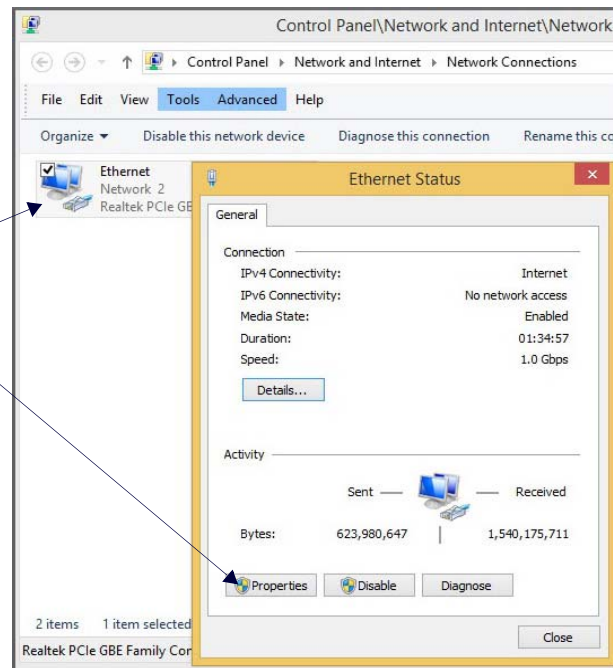
Before beginning installation, you will need to make some changes to the computer running N-able. These steps show how this can be accomplished in a Microsoft Windows environment.

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

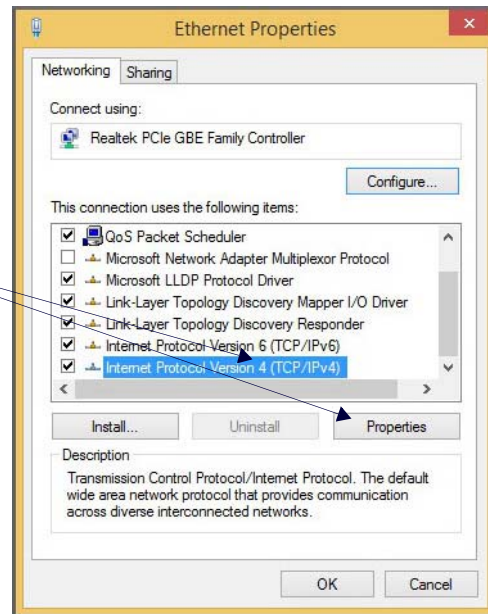
2. Select **Change adapter settings**.



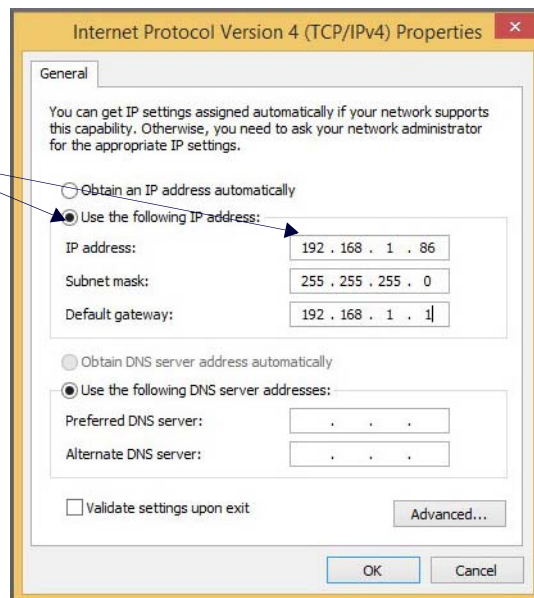
3. Double-click the wired interface to your AV network, and then click the **Properties** button.



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 in Auto IP mode 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 Mask of 255.255.0.0 and a Default Gateway of 169.254.1.1 (if required).

Communicating With the NVR

As you will see later in this chapter, most of the common functions (creating recordings, converting files, etc.) and settings can be controlled under the **NVR** tab in N-Able. However, there are some more advanced settings that you will need to access via the N6123's separate web interface configuration pages. This section shows how to access NVR controls in both N-Able and the NVR's web interface.

Logging in Using N-Able Software

Once the host IP address is configured properly on the host computer, launch N-Able to view all discovered units. The N6123 units appear on the following tabs:

- **Unit Management** tab - **Network Video Recorder** is listed in the **Type** field.
- **Video Matrix** tab - Depending on the **NVR Mode** setting (located on the **Settings** page) N6123 units are found on the **N1000**, **N2000**, and **N3000** sub-tabs of the **Video Matrix**.

NOTE: If the tables in N-Able do not automatically populate, select the **Unit Management** tab and click the **Auto Discover** button. See [Figure 5](#).

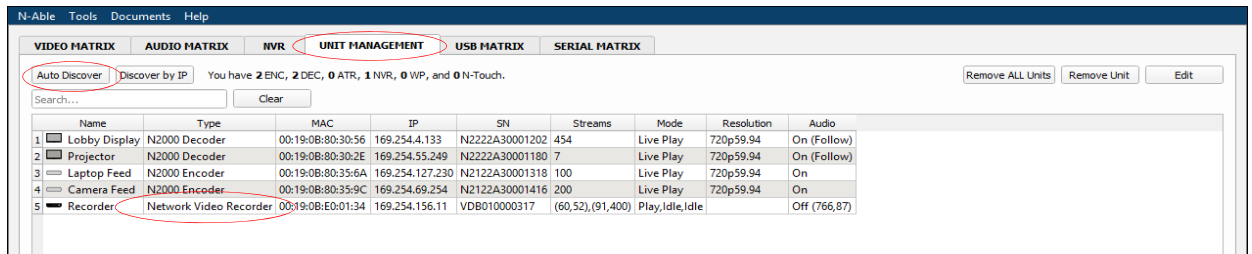


FIG. 5 UNIT MANAGEMENT PAGE

Logging in to the NVR's Web Interface

Now that you have discovered your units in N-Able, follow these directions to access an individual unit's web interface. This interface provides a complete set of configuration options for the unit (not just the more common settings found in N-Able).

1. Double-click the N6123's name (on either the **Video Matrix** or **Unit Management** tab) to view its configuration pages.

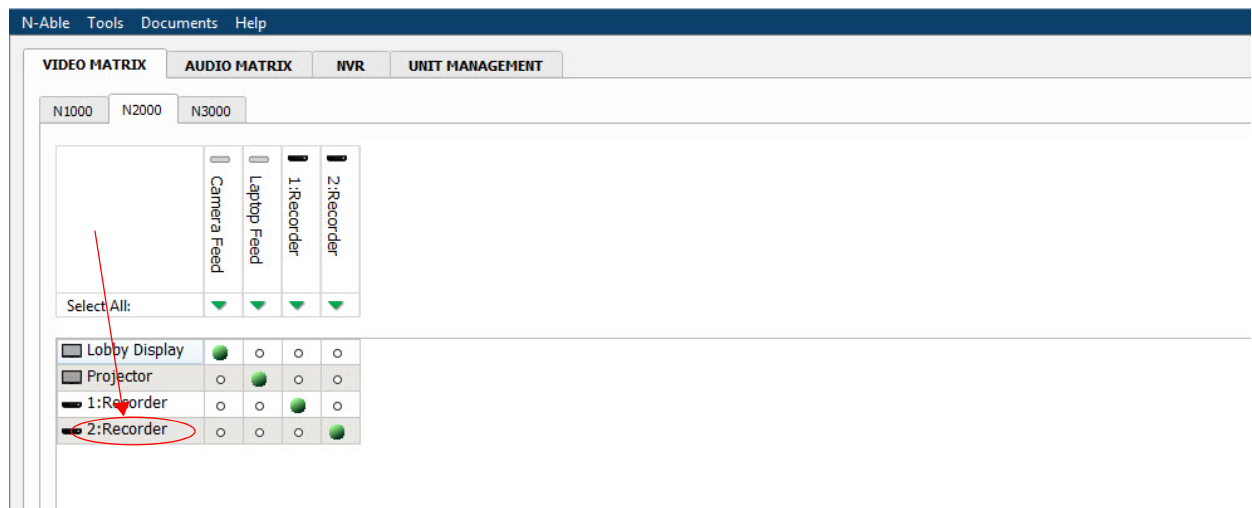


FIG. 6 SELECTING NVR IN N-ABLE

2. If prompted, enter **admin** and **password** for the default username and password. Once logged in, you can change the password (using the options on the unit's **Settings** page).

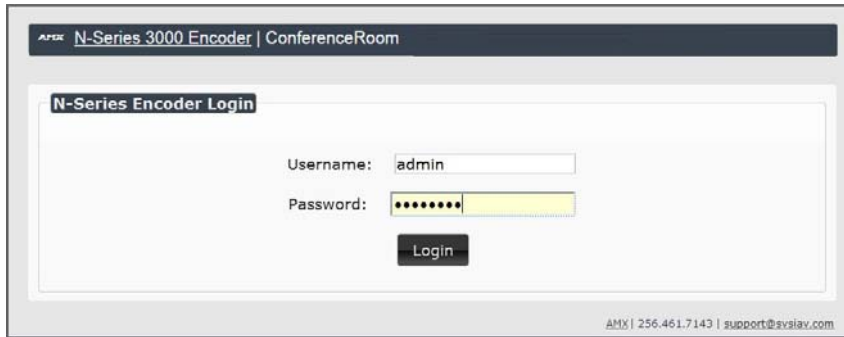


FIG. 7 LOGIN PAGE

NOTE: The Login page is only displayed if N-Able's stored username/password does not match the unit's username/password. A default system will match.

NOTE: If you would like for N-Able to support auto-login to your units, make sure N-Able's Device Auto-login settings match the unit's username and password (by selecting N-Able > Settings from the N-Able tool bar).

3. The **Settings** page is displayed (see [Figure 8](#)).

From any main page in the web interface, you can access all other main pages by clicking the links in the top navigation bar.

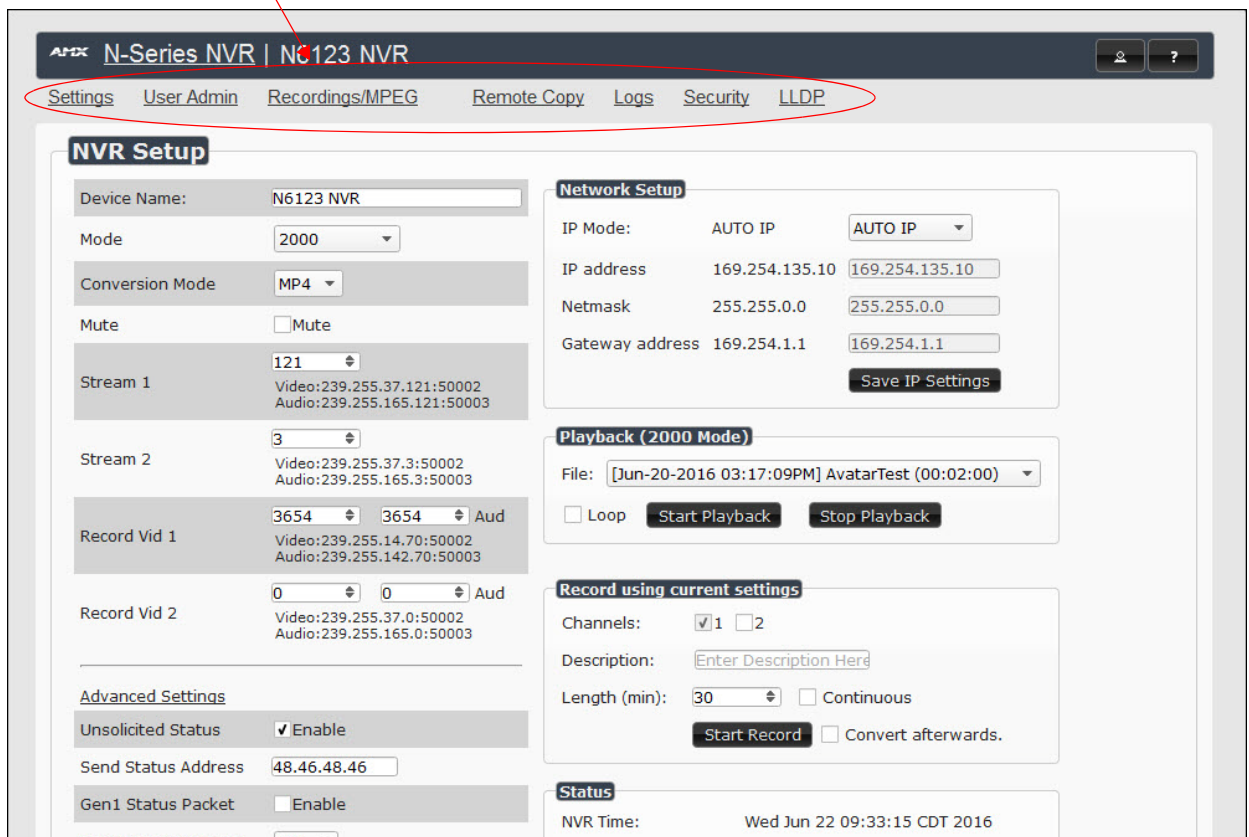


FIG. 8 SETTINGS PAGE

NOTE: Screen-by-screen descriptions of the web interface options are provided for your reference in [Chapter 3: NVR Web Interface Configuration Options on page 21](#).

Configuring IP addresses (if needed)

IP configuration changes must be done correctly to avoid any communication disruptions with the N6123 unit.

As mentioned previously, the default IP mode for N6123 devices is **DHCP** mode. When first connected to the network, an IP address is assigned automatically based on the network DHCP server. If no DHCP server is found, the unit will use **Auto IP** mode.

How IP Address Changes Affect Unit Control

N-Able control is dependent upon the host computer being in the same IP address range as the SVSI devices. Therefore, before making any N6123 IP address changes, we recommend having **two statically-assigned IP addresses on your computer**.

- Configure the first IP address to be in the range of the default N-Series IP settings (i.e., in the 169.254.xxx.xxx range), AND
- Configure a second IP address in the range of the IP address you are planning to assign to the units (or when using DHCP, an address within the defined range for your network).

Changing IP Addresses

There are two ways to assign new IP addresses to your N6123 units using N-Able:

- **Option 1:** Log in to each unit individually and make the changes on the **Settings** page.
- **Option 2:** Export a comma-separated value (CSV) file, make changes to all units in the resulting file, and import the CSV file into N-Able to apply the changes.

Option 1: Assigning IP Addresses Individually (using the Settings page)

1. Find the unit you wish to change in the control matrix (either on the **Unit Management** tab or the **Video Matrix** tab).
2. Double-click the unit and log in.
3. Go to the **Settings** page and make IP address changes for that unit either by setting a **STATIC** address or by enabling **DHCP** (see [Figure 9](#)).

Network Setup		
IP Mode:	AUTO IP	AUTO IP ▼
IP address	169.254.135.10	169.254.135.10
Netmask	255.255.0.0	255.255.0.0
Gateway address	169.254.1.1	169.254.1.1
Save IP Settings		

FIG. 9 NETWORK SETUP SECTION OF THE SETTINGS PAGE

4. Click the **Save IP Settings** button.
5. Return to the **Settings** page through the newly-configured IP address.
6. Once the **Settings** page appears (successfully using the new IP address) you can confirm the new address and lock in your changes.

NOTE: If you lose communication before you are able to confirm the new address, unplug the N6123, wait one minute, and plug it back in. This restores the unit to the original IP address.

Option 2: Assigning IP Addresses to Multiple Units (using CSV files)

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. Once configured, import the CSV file back into N-Able to assign those parameters to the appropriate devices. 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).

To configure units using a CSV file, follow these steps:

1. Make sure that 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**. See [Figure 10](#).

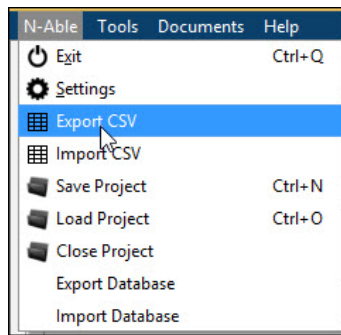


FIG. 10 EXPORT CSV FILE

3. From the **CSV Output Columns** window, select the fields you would like to be included in the CSV file. Hold the <Ctrl> key to select multiple fields.
4. 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.

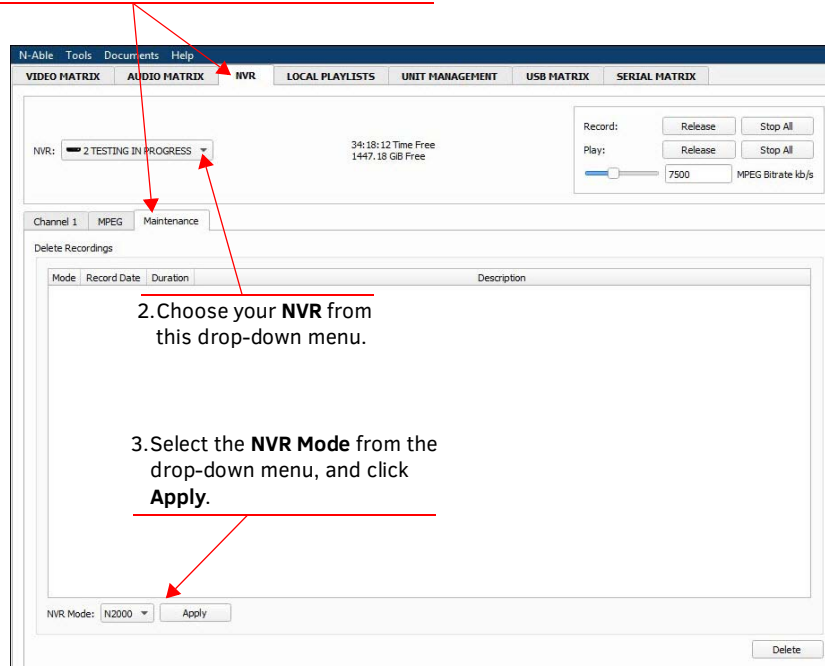
5. The folder containing your CSV file displays. Double-click the file to open it.
6. You can use this file to edit the IP mode, IP address, subnet mask, gateway IP address, stream number, etc. Once all changes have been made, save the file.
7. Go back into N-Able and select **N-Able > Import CSV**.
8. Browse to your saved CSV file and click **Import**.

Starting Recordings

Follow the steps given in [Figure 11](#) to record using the N6123.

NOTE: HDCP content cannot be converted. Encrypted N3000 streams cannot be converted. Unencrypted N3000 streams can be converted to MP4 files only.

1. In N-Able, select the tabs **NVR > Maintenance**.



4. Select the **Channel** sub-tab.

5. Use the **Record Vid** drop-down list(s) to choose the source(s) for your recording. Enter a **Description** for your recording, **Time** length, etc.

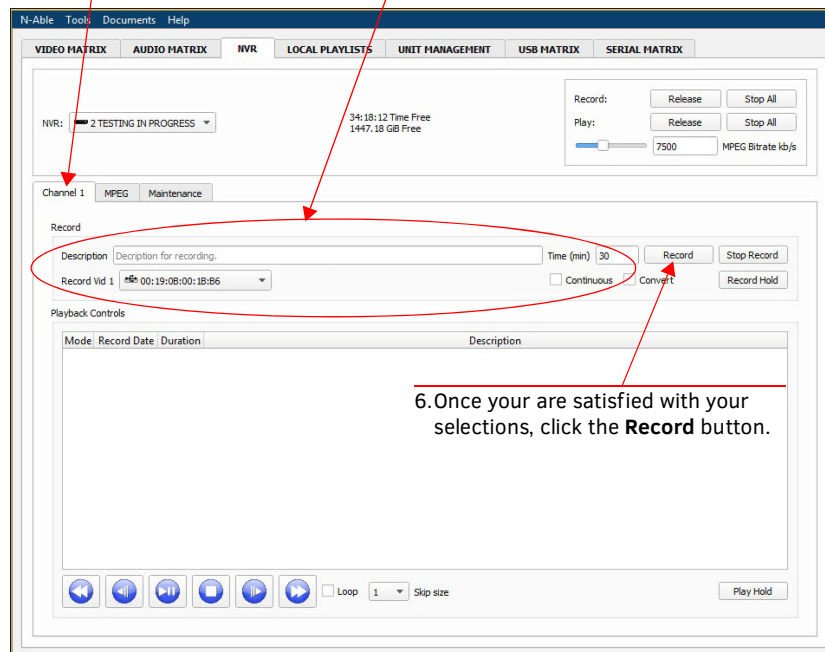


FIG. 11 RECORDING USING THE N6123

NOTE: You will be automatically prompted to select an NVR Mode if one has not been set yet.

Additional Things to Consider When Recording

- If you enable the **Convert** checkbox (shown previously in [Figure 11](#)) before you begin the recording, it will automatically convert to an MP4 or MOV file once complete. To change modes, use the **Conversion Mode** drop-down box on the N6123's **Settings** page (factory default is **MP4**). This is shown next in [Figure 12](#).
- N3000 streams will not convert to MOV files. If **MOV** is selected as the **Conversion Mode** when recording N3000 streams, the N6123 will automatically create MP4 files instead.
- To change the audio stream being recorded, use the **Aud** field on the N6123's **Settings** page (also shown in [Figure 12](#)).

NOTE: As discussed previously, the **Settings** page is part of the N6123's individual web interface. Refer back to the **Logging in to the NVR's Web Interface** section on page 12 for more information.

Choose what **Conversion Mode** you want to use (**MOV** or **MP4**).

Set **Aud** to **0** to record the audio from the video stream. You can enter a different stream number if your audio source differs from your video source.

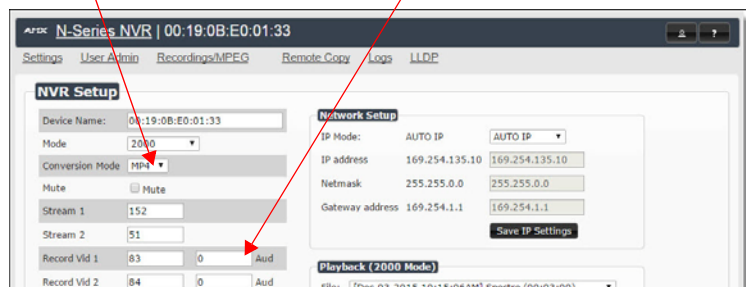


FIG. 12 CHOOSING CONVERSION MODE/SETTING AUDIO SOURCE

Depending on what mode you are using, recording times and record/playback options will vary. See Table 2 for more details.

TABLE 2 N6123 Mode Considerations

Mode	When in this mode you can...	Recording Time Estimates
N1000	...only record OR playback one stream at a time.	4.5 hours (880 Mbps/uncompressed)
N2000	...record up to two streams (dual sync) or record one stream while playing back another.	43 hours (100 Mbps/JPEG 2000 compressed)
N3000	...record up to ten streams and playback up to ten streams simultaneously. The streams can be asynchronous.	434 hours (10 Mbps/H.264 compressed)
NOTE: 4K Ultra HD products (N2151/N2251) are supported in compressed mode only.		

Playing Recordings

1. Use the **Video Matrix** in N-able to route your N6123 to a Decoder for output. This is done in the same manner as when you route Encoders to Decoders. See [Figure 13](#).

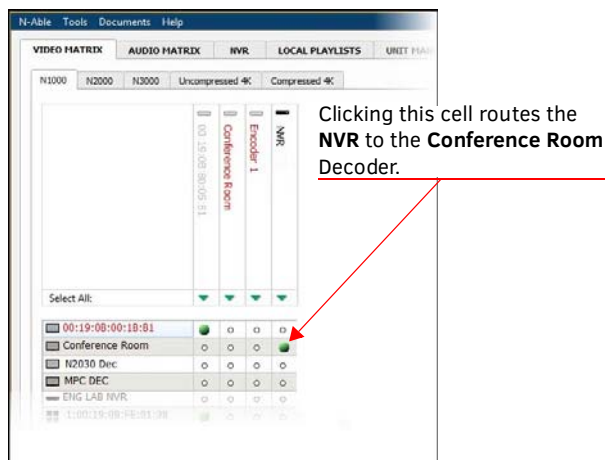
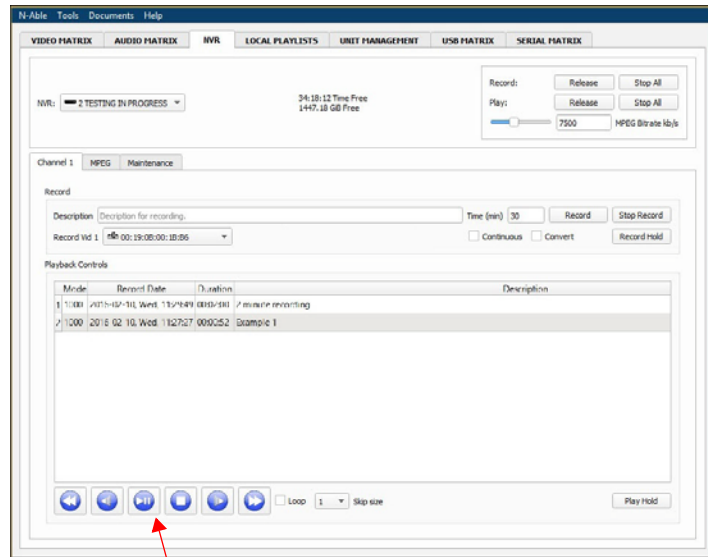


FIG. 13 ROUTING N6123 TO A DECODER

2. Select a completed recording from the **Channel** sub-tab(s) of the **NVR** tab (as shown in [Figure 14](#)).



Play back and navigate your recordings using these controls.

FIG. 14 RECORDINGS LIST

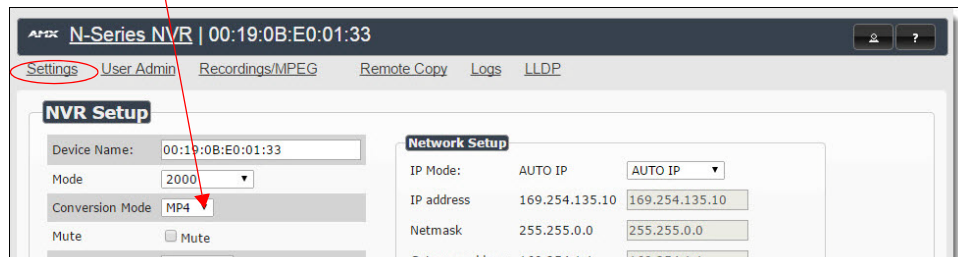
NOTE: If your recording does not display in the list, first make sure that your N6123 is in the same mode that was used to create the recording (NVR Mode drop-down on the Maintenance sub-tab). If that setting is correct and the recording still does not display, you may need to refresh the page.

Converting Recordings to MOV or MP4 Files

Once a recording is completed, you can convert it to an MOV or MP4 file by following the steps given in [Figure 15](#).

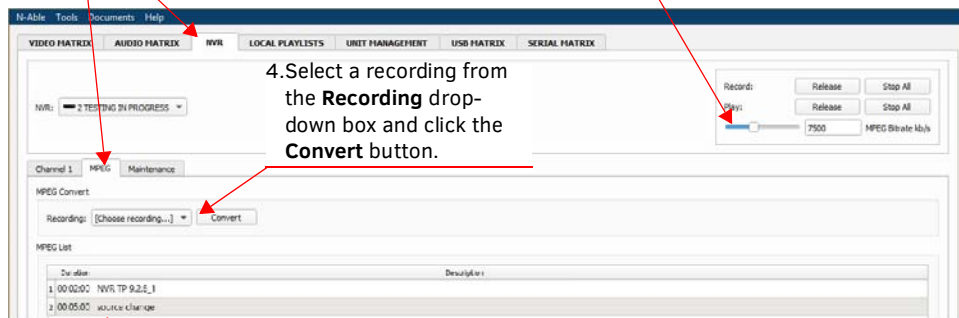
NOTE: *HDCP content cannot be converted. Encrypted N3000 streams cannot be converted. Unencrypted N3000 streams can be converted to MP4 files only.*

1. On the NVR's **Settings** page, choose what **Conversion Mode** you want to use (**MOV** or **MP4**).



2. On the **NVR** tab in N-Able, select the **MPEG** sub-tab.

3. Use the **MPEG Bitrate** slider to adjust the quality of the conversion. The higher the bitrate, the higher the quality (and the larger the file). The default bitrate is **7500 kb/s**.



4. Select a recording from the **Recording** drop-down box and click the **Convert** button.

5. Completed conversions are listed here. Select the conversion and then click the **Download MPEG** button (not pictured, but is located at the bottom-left of this screen) to watch or download the file.

FIG. 15 CONVERTING RECORDINGS

NOTE: *When you click Download MPEG with an MP4 file selected, the file begins playing in your default browser (at which point you can right-click to download).*

NOTE: *Conversions can take an estimated 1.5 times the length of the recording to complete. To check the progress of the conversion, click on N-Able's Unit Management tab and look in the Mode column. The number listed shows the current completion percentage of the conversion.*

Control Options

SVSI's N-Control solutions (N-Command, N-Act, and N-Touch) provide you with the most flexible management options available, insuring you are getting the most from your digital media system.

Primary Control Options

During initial configuration and setup, the free N-Able setup utility is sufficient. However, we do not recommend N-Able for production-level, primary-user control.

N-Command Controllers

These web-based hardware Controllers offer intuitive, powerful management of equipment, content, NVR recording/playback, bandwidth utilization, and AV switching (using a web-based, point-and-click graphical matrix). The N-Command product line also offers:

- Simplified ASCII interface for third-party control via TCP/IP.
- N8002 and N8012 controllers have master/slave failover protection.
- N8012 controller has hot-swappable drives and redundant power supplies.
- Graphical presentation of video network connections.
- Full configuration control: assign fixed IP addresses for each SVSI component, adjust variable bit-rate for each video stream, etc.
- Additional software bundles (free with N-Command) allow you to easily create attractive touch panels for N-Series and third-party equipment control, as well as build software design walls of any size. Visit our website for more details on the available N-Command Controllers.

Third-Party Controllers

The N6123 is capable of interfacing with third-party control systems such as Crestron. For direct control of N6123 units from any Third Party Control system, please use the Direct Control API (available on our website).

N-Touch | IP Wall Controller

This 240 x 320 capacitive touch display has Wi-Fi and Bluetooth for expanding control to mobile devices. Programming is done individually through the built-in web server or collectively to multiple units using an N-Command N8000 Series Controller. Multi-page custom graphics can be created using the free Panel Builder software (stored internally).

Chapter 3: NVR Web Interface Configuration Options

This chapter defines N6123 NVR web interface configuration options. For ease of navigation, it is organized to reflect the graphical user interface (GUI).

NOTE: For instructions on accessing the NVR web interface, refer back to the *Logging in to the NVR's Web Interface* section on page 12.

From any main page in the GUI, you can access all other main pages by clicking the links in the top navigation bar. [Figure 16](#) shows the navigation bar and provides hot links to the sections of this chapter which describe each main page.

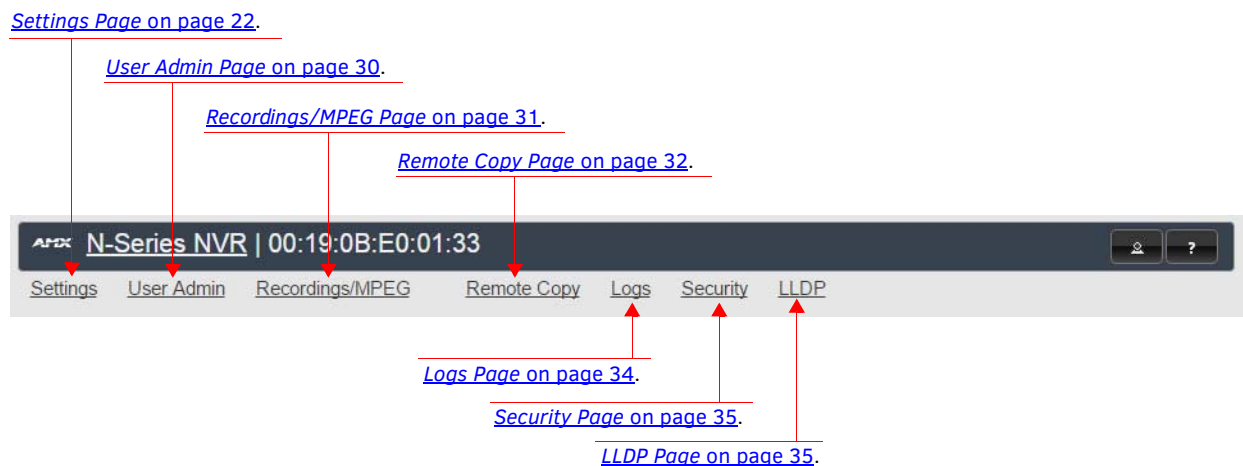


FIG. 16 Section Links

Settings Page

Click the **Settings** link at the top of any of the main web pages to access the page shown in [Figure 17](#). This page is divided into several sections and also has links to other dialog boxes for additional configuration options. Refer to the following sections for detailed descriptions:

- [NVR Setup Section on page 23](#)
- [Advanced Settings on page 24](#)
- [Time Settings on page 26](#)
- [Network Setup Section on page 26](#)
- [Playback Section on page 27](#)
- [Record \(using current settings\) Section on page 27](#)
- [Status Section on page 28](#)
- [Change Password Section on page 28](#)
- [Software Section on page 29](#)

N-Series NVR | 00:19:0B:E0:01:33

[Settings](#) [User Admin](#) [Recordings/MPEG](#) [Remote Copy](#) [Logs](#) [Security](#) [LLDP](#)

NVR Setup

Device Name: 00:19:0B:E0:01:33

Mode: Unassigned

Conversion Mode: MP4

Mute: ☐ Mute

Advanced Settings

Unsolicited Status: ☒ Enable

Send Status Address: 48.46.48.46

Gen1 Status Packet: ☐ Enable

Status Interval(secs): 10

Auto Delete MB Limit: Disabled

TTL: 64

VLAN Tagging: ☐ Enable

SNMP Enable: ☐ Enable

VLAN #: 1

MPEG Conversions add timestamp: ☒ Enable

MPEG Conversions add stream numbers: ☒ Enable

MPEG Conversions append description: ☐ Enable

Interleaved Multicast Streams: ☐ Enable

Time Settings

Only NTP can set time: ☐ Enable (recommended for NTP)

NTP #1:

NTP #2:

NTP #3:

Time Zone: America Chicago

[Cancel](#) [Save](#)

Network Setup

IP Mode: AUTO IP

IP address: 169.254.135.10

Netmask: 255.255.0.0

Gateway address: 169.254.1.1

[Save IP Settings](#)

Playback (0 Mode)

File:

☐ Loop [Start Playback](#) [Stop Playback](#)

Record using current settings

Channels:

Description: Enter Description Here

Length (min): 30 ☐ Continuous

[Start Record](#) ☐ Convert afterwards.

Status

NVR Time: Wed Jun 1 09:11:52 CDT 2016

Disk Free: 757.35 GB

MPEG Conversion: 0

Recording: No channels recording.

Playing: No channels playing.

Change Password

[Change Password](#)

Software

Serial: VDB010000316

MAC address: 00:19:0B:E0:01:33

Web Version: 5/17/2016

Firmware Version: 5/11/2016

Software Version: 1.1.42

[Factory Restore](#) [Reboot](#)

[Delete MPEGs](#) [Delete Recordings](#)

AMX | 256.461.7143 | svsisupport@harman.com

FIG. 17 Settings Page

NVR Setup Section

The **NVR Setup** section of the **Settings** page is shown in [Figure 18](#). Options are described in [Table 3](#).

The screenshot shows the 'NVR Setup' configuration window. It contains the following elements:

- Device Name:** A text input field containing 'N6123 DVR'.
- Mode:** A dropdown menu currently set to '2000'.
- Conversion Mode:** A dropdown menu currently set to 'MP4'.
- Mute:** A checkbox labeled 'Mute' which is currently unchecked.
- Stream 1:** A numeric input field with '139' and up/down arrows.
- Stream 2:** A numeric input field with '14' and up/down arrows.
- Record Vid 1:** A numeric input field with '129' and up/down arrows, followed by an 'Aud' label.
- Record Vid 2:** A numeric input field with '6224' and up/down arrows, followed by a '0' and up/down arrows, and an 'Aud' label.
- Advanced Settings:** A link below the main configuration fields.
- Time Settings:** A link below the 'Advanced Settings' link.
- Buttons:** 'Cancel' and 'Save' buttons at the bottom.

FIG. 18 NVR Setup Section

TABLE 3 Settings Page: NVR Setup Section

Option	Description	Notes
Device Name	Enter a user-friendly name for the unit.	More descriptive names in this field help you organize and manage the SVSI system efficiently. Keep in mind the matrices are organized alphanumerically.
Mode	Select the series you will be recording from (N1000, N2000, or N3000).	You can only record from <i>one series at a time</i> . Compressed N2151 streams are recorded in N2000 mode.
Conversion Mode	Select an MP4 or MOV format for your conversions	HDCP or encrypted N3000 streams cannot be converted. Unencrypted N3000 streams can be converted to MP4.
Mute	Enable to mute playback audio.	
Stream (from 1 up to 10, depending on the Mode selected)	View/edit the output stream number of the NVR. This is the stream number(s) that will be used for playback. The Decoder used for playback must match this stream number.	These fields will not populate until a Mode is chosen. The number of streams listed depends on which series is selected. N1000 Mode has one stream, while N2000 has two, and N3000 has ten.
Record Vid	The Record Vid number is the stream number of the Encoder you wish to record from.	These fields will not populate until a Mode is chosen. The number of record stream numbers listed depends on which series is selected. N1000 Mode has one record stream, while N2000 has two, and N3000 has ten.
Advanced Settings	Refer to <i>Advanced Settings</i> on page 24 for details on the options available from this link.	
Time Settings	Refer to <i>Time Settings</i> on page 26 for details on the options available from this link.	
Cancel	Click to return all controls to the last saved configuration.	
Save	Click to accept changes made to these controls.	

Advanced Settings

The section of the **Settings** page shown in [Figure 19](#) is displayed when you click the **Advanced Settings** link. Options are described in [Table 4](#).

Advanced Settings

Unsolicited Status	<input checked="" type="checkbox"/> Enable
Send Status Address	48.46.48.46
Gen1 Status Packet	<input type="checkbox"/> Enable
Status Interval(secs)	10
Auto Delete MB Limit	Disabled
TTL	64
VLAN Tagging	<input type="checkbox"/> Enable
SNMP Enable	<input type="checkbox"/> Enable
VLAN #	1
MPEG Conversions add timestamp	<input checked="" type="checkbox"/> Enable
MPEG Conversions add stream numbers	<input checked="" type="checkbox"/> Enable
MPEG Conversions append description	<input type="checkbox"/> Enable
Interleaved Multicast Streams	<input type="checkbox"/> Enable

FIG. 19 Advanced Settings

TABLE 4 Settings Page: Advanced Settings Section

Option	Description	Notes
Unsolicited Status	Enable the NVR to send a periodic status packet to the Send Status Address described below.	
Send Status Address	When Unsolicited Status is enabled, the NVR sends a periodic status packet to the IP address specified here.	
Gen1 Status Packet	Enable to cause the reporting status to be compatible with older SVSI equipment.	
Status Interval (secs)	Determine how often (in seconds) the unit transmits status packets.	
Auto Delete MB Limit	If you would like for recordings to be automatically deleted once a space limit is reached (in MB), select a limit from this drop-down box. Older recordings are deleted first.	
TTL	Select the Time To Live (TTL) for the transmit audio and video streams.	Limits the lifespan of data on the transmit audio and video streams (to improve performance).
VLAN Tagging	Enable to have the NVR insert a VLAN identification number into the packet headers (in order to identify which VLAN the packet belongs to). The VLAN # setting determines what number is inserted.	
SNMP Enable	Enable to allow the NVR to be monitored via SNMP (Simple Network Management Protocol).	
VLAN #	Enter the VLAN identification number. If VLAN Tagging is enabled, this number is added to the packet headers for packet identification purposes.	
MPEG Conversions add timestamp	When converting recordings to MPEG or MOV files, you can enable this option to allow a time stamp to be appended to the newly-converted file's name.	The MPEG Conversions append description option must be enabled for the time stamp to appear in the new filename.
MPEG Conversions add stream numbers	When converting recordings to MPEG or MOV files, you can enable this option to allow the recording's stream number to be appended to the newly-converted file's name.	MPEG Conversions append description option must be enabled for the stream number to appear in the new filename.

TABLE 4 Settings Page: Advanced Settings Section (Cont.)

Option	Description	Notes
MPEG Conversions append description	When converting recordings to MPEG or MOV files, you can enable this option to allow time stamp and/or stream number information to be appended to the newly-converted file's name.	What is appended to the filename is directly related to the two options above. If they are both disabled, this setting is not applicable.
Interleaved Multicast Streams	Enables a multicast format which interleaves video and audio streams.	In order for SVSI devices to communicate with each other, their multicast settings must be compatible. For recording: This setting must match between Encoder and NVR. For playback: This setting must match between NVR and Decoder (but it does not necessarily have to match between NVR and the Encoder that the recording originated from).

Time Settings

The section of the **Settings** page shown in [Figure 20](#) is displayed when you click the **Time Settings** link. Use this section to specify Network Time Protocol (NTP) servers and the time zone. This information is used to provide accurate stream time stamping.

NOTE: The NVR can accept a time change command. However, if you want the device to ignore them, check the **Only NTP can set time (Enable)** box. This is recommended if using NTP.

FIG. 20 Time Settings Section

Network Setup Section

The **Network Setup** section of the **Settings** page is shown in [Figure 21](#). Options are described in [Table 5](#).

FIG. 21 Network Setup Section

TABLE 5 Settings Page: Network Setup Section

Option	Description	Notes
IP Mode	Configure the IP address mode. When set to AUTO IP , an IP Address in the range of 169.254.xxx.xxx with Netmask of 255.255.0.0 and Gateway address of 169.254.1.1 will be automatically assigned to the N6123 NVR by the control software. When set to DHCP , an IP Address in the range of the DHCP server on the network will be automatically assigned to the N6123 NVR. When set to STATIC , an IP address , Netmask , and Gateway address must be manually entered.	DHCP is the default setting. However, using DHCP beyond initial setup is generally not recommended. If the device is set to DHCP and fails to receive an address from the DHCP server in time, it will revert back to the AUTO IP Address (169.254.xxx.xxx) until the unit is rebooted.
IP address	View the current IP address of the N6123 NVR. When in STATIC mode, you may enter a new IP address into this field.	
Netmask	View the current Netmask of the N6123 NVR. When in STATIC mode, you may enter a new Netmask into this field.	
Gateway address	View the current Gateway address of the N6123 NVR. When in STATIC mode, you may enter a new Gateway address into this field.	
Save IP Settings	Click 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.	

Playback Section

The **Playback** section of the **Settings** page is shown in [Figure 22](#). Use this section to choose a recorded file stored on the NVR to playback. Options are described in [Table 6](#).

FIG. 22 Playback Section

TABLE 6 Settings Page: Playback Section

Option	Description	Notes
Channels	Select which stream to use for recording playback.	The Channels options will not populate until a Mode is chosen. The number of streams listed depends on which series is selected. N1000 Mode has one stream, while N2000 has two, and N3000 has ten. NOTE: Mode is selected under NVR Setup on the Settings page.
File	Choose a file from the drop-down selection of recordings made on this NVR.	The File drop-down list displays <i>only the recordings made in the currently selected Mode</i> . For example, if Mode is set to N1000 , then only N1000 recordings appear in this list.
Loop	Enable this option to place the recording you are playing back in a continuous loop (so it constantly repeats).	
Start Playback	Begin playback of the chosen File .	If Loop is not enabled, then playback ends when the recording does.
Stop Playback	End playback of the chosen File .	

Record (using current settings) Section

The **Record** section of the **Settings** page is shown in [Figure 23](#). Use this section to begin a recording using the currently assigned stream settings. Options are described in [Table 7](#).

NOTE: *HDCP content cannot be converted. Encrypted N3000 streams cannot be converted. Unencrypted N3000 streams can be converted to MP4 files [only](#).*

FIG. 23 Record Section

TABLE 7 Settings Page: Record Section

Option	Description	Notes
Channels	Select which channel to record from.	The Channels options will not populate until a Mode is chosen. The number of streams listed depends on which series is selected. N1000 Mode has one stream, while N2000 has two, and N3000 has ten. NOTE: Mode is selected under NVR Setup on the Settings page.
Description	Enter a description for this recording.	

TABLE 7 Settings Page: Record Section (Cont.)

Option	Description	Notes
Length	Limit recording time by entering a duration (in minutes). How this limit is enforced depends on whether or not Continuous is enabled.	
Continuous	Enable if you would like the recording to continue beyond the Length entered.	<ul style="list-style-type: none"> • If Continuous is not enabled, the recording will simply end after the Length entered has been reached (see above). • If Continuous is enabled, the NVR will continue recording after the Length entered. However, it will <u>only create a recording matching the designated Length of time</u>. In other words, if Length is set to 10 minutes and the recording continues for 40 minutes, you will only capture the last 10 minutes of that recording.
Start Record	Click to begin recording using the current settings.	
Convert afterwards	Enable if you want a conversion to take place automatically once the recording is complete.	

Status Section

The **Status** section of the **Settings** page is shown in [Figure 24](#). Options are described in [Table 8](#).

Status	
NVR Time:	Wed Jun 1 09:13:23 CDT 2016
Disk Free:	757.35 GB
MPEG Conversion:	0
Recording:	No channels recording.
Playing:	No channels playing.

FIG. 24 Status Section**TABLE 8** Settings Page: Status Section

Option	Description
NVR Time	Displays the NVR's time. If an NTP server is selected, that time is reflected here. See the <i>Time Settings</i> section on page 26 for more information.
Disk Free	View the amount of available disk space left on the NVR.
MPEG Conversion	During an MPEG conversion, this field displays a percentage marker (0 to 100) representing how far along the conversion is to completion.
Recording	During a recording, this field displays the status of a current recording.
Playing	During a playback, this field displays the status of the current playback.

Change Password Section

The **Change Password** section of the **Settings** page is shown in [Figure 25](#). To change the N6123 NVR interface password (for admin-level access) enter the current password in the field labeled **Old Password**, and enter a new password in the **New Password** and **Confirm Password** fields. Click **Change PW** to accept the new password.

Change Password	
Change Password	
Old Password:	<input type="password"/>
New Password:	<input type="password"/>
Confirm Password:	<input type="password"/>
<input type="button" value="Change PW"/>	

FIG. 25 Change Password

NOTE: If using auto-login (through N-Able or N-Command) the admin password needs to match the password stored in N-Able/ N-Command.

Software Section

The **Software** section of the **Settings** page is shown in [Figure 26](#). Options are described in [Table 9](#).

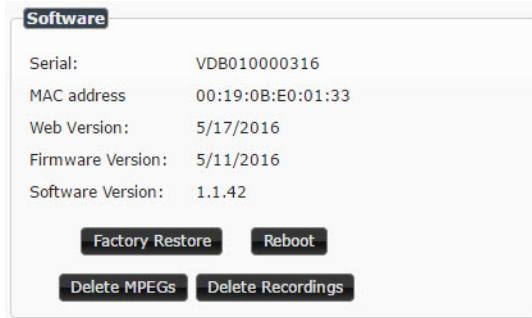


FIG. 26 Software Section

TABLE 9 Settings Page: Software Section

Option	Description
Serial	Displays the serial number of the N6123 NVR.
MAC Address	Displays the MAC address of the network interface of the N6123 NVR.
Web Version	Displays the date code for the currently running version of the web interface.
Firmware Version	Displays the date code for the currently running version of the N6123 NVR internal firmware.
Software Version	Displays the currently running software version.
Factory Restore	Click to restore the device to the original factory settings. This resets everything except the IP address (including name, stream number, etc.). Recordings and conversions are <u>not</u> deleted during a factory restore.
Reboot	Click to reboot the device (does not affect current configuration).
Delete MPEGs	Deletes all MPEG files currently stored on the N6123.
Delete Recordings	Deletes all recordings (MOV and MP4 files) currently stored on the N6123.

User Admin Page

Click the **User Admin** link at the top of any of the main web pages to access the page shown in [Figure 27](#). This page allows you to assign specific privileges to different users. See [Table 10](#) for option descriptions.

FIG. 27 User Admin Page

TABLE 10 User Admin Page Options

Option	Description
Username	To create a new user, enter a new user name in this field.
PW	When creating a new user, enter a password here that will be used upon initial login when that user enters the system.
Add User	Click to add the user and the associated password to the database.
Username	All users that have been added to this device will display in this column.
Full Admin	Enable this box to grant the associated user Full Admin privileges. A user with this privilege level can see all configuration pages and perform all administrator functions.
Delete MPEG	A user with this privilege level will only be able to view the MPEG/Recording page and delete any conversions (MP4 or MOV) on the MPEG sub-tab.
Delete Recordings	A user with this privilege level will only be able to view the MPEG/Recording page and delete any files on the Recordings sub-tab.
Save button	Click to save changes made to this user profile.
Delete User button	Click to delete the associated user from the system.

NOTE: Users with both privileges enabled (*Delete MPEG and Delete Recordings*) can see and delete both file types. Users with no privileges enabled can only view the *MPEG/Recordings* tab).

Recordings/MPEG Page

Click the **Recordings/MPEG** link at the top of any of the main web pages to access the page shown in [Figure 28](#). This page allows you to view all recordings and converted files on the unit, regardless of what **Mode** you are in. See [Table 11](#) for option descriptions.

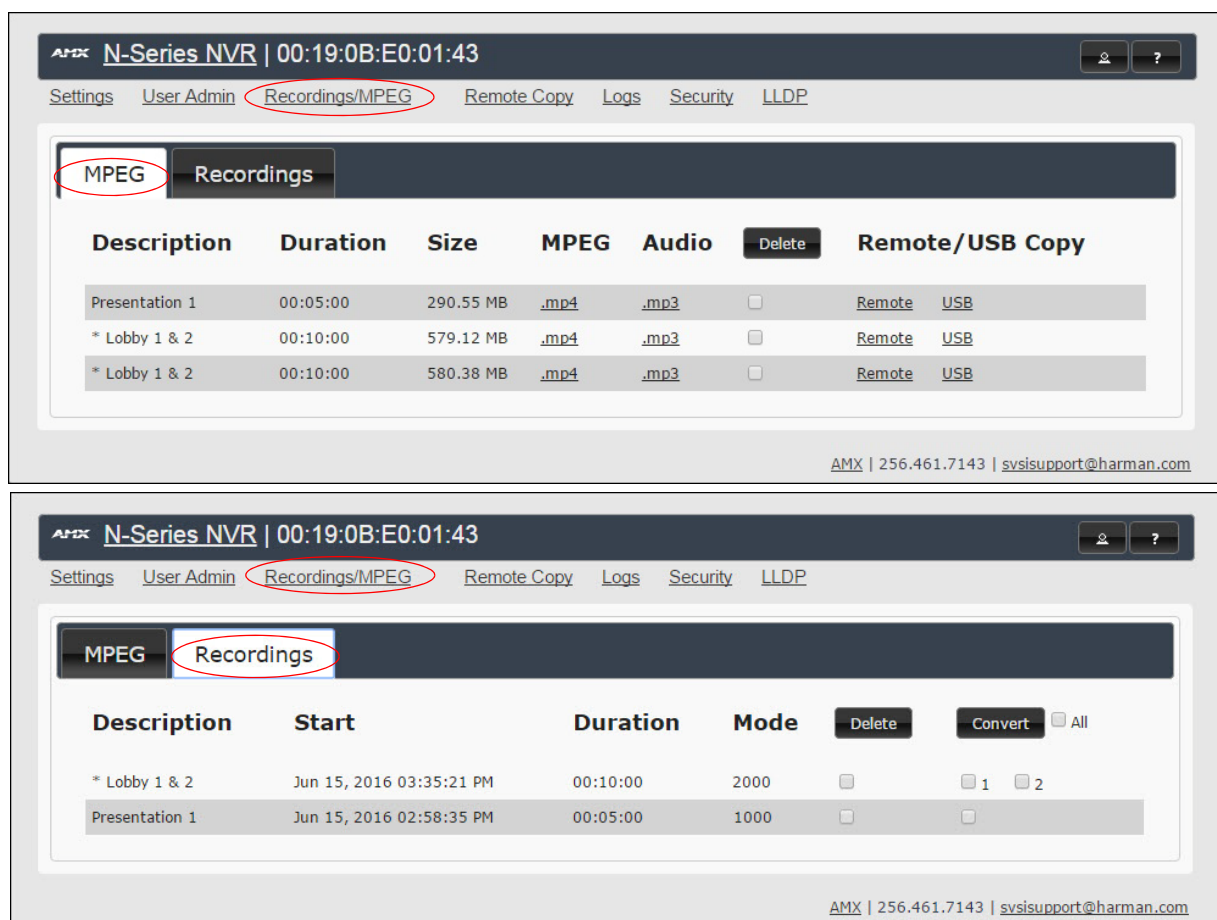


FIG. 28 Recordings/MPEG Page - MPEG and Recordings Tabs

TABLE 11 Recordings/MPEG Page Options

Option	Description
MPEG tab	
Click this tab to view/manage converted video and audio files on the unit. Allows you to view/download/delete/copy them. Options are described below:	
Description	Name of the recording (which is entered in the Description field on the Settings page) at time of conversion.
Duration	Displays the associated file's length (in HH:MM:SS format).
Size	Displays the associated file's size (in MBs).
MPEG	Right-click to download or left-click to play and/or download (depending on the browser).
Audio	Right-click to download or left-click to play and/or download (depending on the browser).
Delete	Enable this checkbox and then click the Delete button to remove the associated file(s) from the NVR.
Remote/USB Copy	Choose to copy the converted file to a remote device. Remote link: Click to copy the associated file to a shared directory, FTP server, etc. The functions configured on the Remote Copy page determine how/where the file will be copied when this link is selected. See the section <i>Remote Copy</i> on page 32 for more information. USB link: Click to copy the associated file onto the USB drive. This link only appears if you have a compatible USB drive plugged into the NVR (front or rear ports).
Recordings tab	
Lists the recording files on the unit and allows you to view/download them. Options are described below:	
Description	Name of the recording (which is entered in the Description field on the Settings page) at time of conversion.
Start	Displays the start time for the recording.
Duration	Displays the associated file's length (in HH:MM:SS format).

TABLE 11 Recordings/MPEG Page Options (Cont.)

Option	Description
Mode	Displays the associated file's recording mode. This tells you which N-Series the recording came from (N1000, N2000, or N3000).
Delete	Enable this checkbox and then click the Delete button to remove the associated file(s) from the NVR.
Convert	Enable this checkbox and then click the Convert button to convert recordings to MP4/MOV. Conversion functions configured on the Settings page determine how conversions take place. See the section <i>Settings Page</i> on page 22 for more information.

Remote Copy Page

Click the **Remote Copy** link at the top of any of the main web pages to access the page shown in [Figure 29](#). This page allows you to copy converted files to an external device. See [Table 12](#) for option descriptions.

N-Series NVR | ConferenceRm1-NVR

Settings User Admin Recordings/MPEG **Remote Copy** Logs Security LLDP

Transferred file name will use: ☒ Description ☐ Internal MP4/MOV name

Enable Network Share Copy ☐

Net share username:

Net share password:

Net share IP:

Net share save path: (Directory Must exist.)

Net Filename Prefix:

Enable FTP Copy ☐

FTP username:

FTP password:

FTP IP/Host:

FTP save path: (Directory Must exist.)

FTP Filename Prefix:

Enable Secure Copy ☒

SCP username:

SCP IP:

SCP Port:

SCP Save Path: (Directory Must exist.)

SCP Filename Prefix:

Save Remote Copy Settings

NVR Public RSA Key :

```
ssh-rsa
AAAAB3NzaC1yc2EAAAADAQABAAQACyqTLzAdNbM00Z8aaDmZ
h4wDGRzbWgtqLwMk6xEo+wDm1VgTlmsKbB00KQf9ELccqt89W
SLiK1pAAeiB0QIIdD5YEpLYcBxgvsH1REe112kSPWY0niTaQwH
kR8XkdVmVwxNewMofQy5XhVC4tntK4xTdgOVtCaJV1N5XAnRI7
1o1JaxISTv4aWmUMiFXXQXwy44HgqP92Kf5xq43g31iV5d5Yv
U7YqLhv9f3FHNfwYE0iHZ3FTt/gvece1mb14zgfVKEIGpzcNP
9mD248Ed88hW3Z3D508jOHGH9EVdmSAlMjMBQVArpJrSpLyU81
8K1S8jotP2iwyTJR86cF0f root@DVR
```

Generate New Keys

AMX | 256.461.7143 | svsisupport@harman.com

FIG. 29 Remote Copy Page

TABLE 12 Remote Copy Page Options

Option	Description
Transferred file name will use:	Choose Description or Internal MP4/MOV name .
Enable Network Share Copy	Enable to allow sending files to a shared directory common with Windows.
Net share username	Enter the login name required by the shared drive.
Net share password	Enter the password for the shared drive.
Net share IP	Enter the IP address for the shared drive.
Net share save path	Enter the path to save the file.
Net Filename Prefix	Enter a filename prefix to differentiate which device shared this file. This is optional and used mostly if there are multiple devices sharing to the same drive.
Enable FTP Copy	Enable to send files to an FTP server.
FTP username	Enter the login name required by the FTP server.
FTP password	Enter the password for the FTP server.
FTP IP/Host	Enter the IP address for the FTP server.
FTP save path	Enter the path to save the file.
FTP Filename Prefix	Enter a filename prefix to differentiate which device shared this file. This is optional and used mostly if there are multiple devices sharing to the same FTP server.
Enable Secure Copy	Enable to allow secure copy (which is a file transfer mechanism built on top of SSH). This is very common in Linux-based file transfers. It is also encrypted, unlike the other transfer options. This is covered in more detail in <i>Appendix A: Secure Remote Copy</i> on page 39.
SCP username	Enter the login name required by the OpenSSH server. The creation of this username is covered in <i>Appendix A: Secure Remote Copy</i> on page 39.
SCP IP	Enter the IP address for the OpenSSH server.
SCP Port	Enter the SSH port. The default port is 22.
SCP Save Path	Enter the path to which the NVR should save the movie files. This path must be a directory that already exists, and the path must include the forward slash. The default is <code>/home/dvruser/mov/</code> .
SCP Filename Prefix	Enter a filename prefix to differentiate which device shared this file. This is optional and used mostly if there are multiple devices sharing to the same server.
Save Remote Copy Settings button	Save changes made to these settings.
NVR Public RSA Key field	RSA keys are required for SCP to work properly. This process requires the expertise of a Linux administrator. See <i>Appendix A: Secure Remote Copy</i> on page 39 for more details.
Generate New Keys button	Generate a new public/private key.

Logs Page

Click the **Logs** link at the top of any of the main web pages to access the page shown in [Figure 30](#). The **Logs** page displays a command log that lists all TCP and UDP messages the unit receives. It also displays the web browser's IP address and gives you options to **Refresh** and **Reset Logs**.

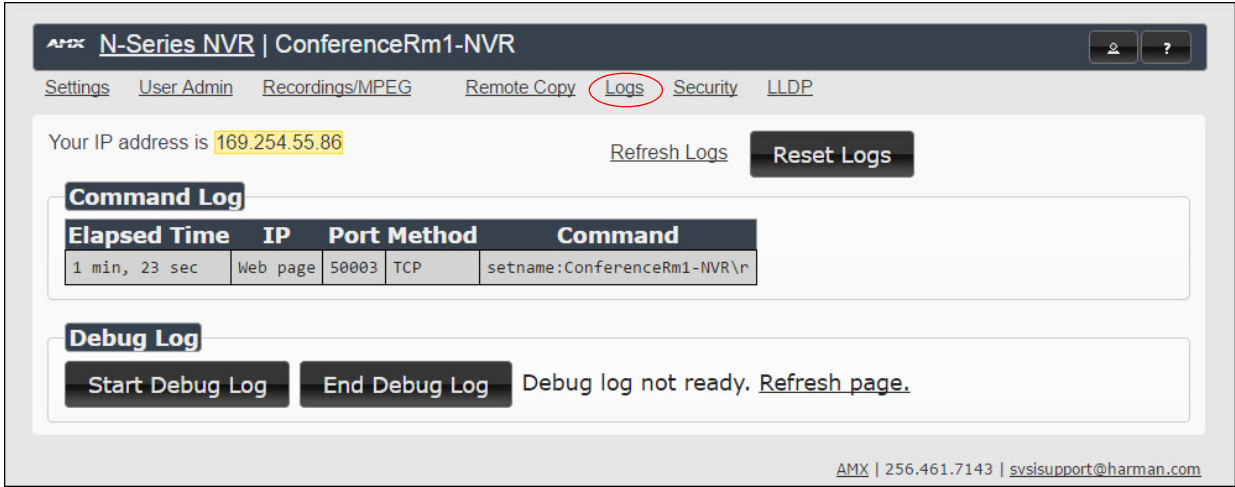


FIG. 30 Logs Page

Security Page

Click the **Security** link at the top of any of the main web pages to access the page shown in [Figure 31](#). This page allows you to force HTTPS connections and set up a password for stream encryption.

Password Considerations:

- For playback, this password must match the **Security** password of the Decoder.
- For conversion, this password must match the **Security** password of the Encoder (at the time of the recording).
- For recording, the NVR will record regardless of password settings matching.

NOTE: This page requires and will redirect to an HTTPS connection.

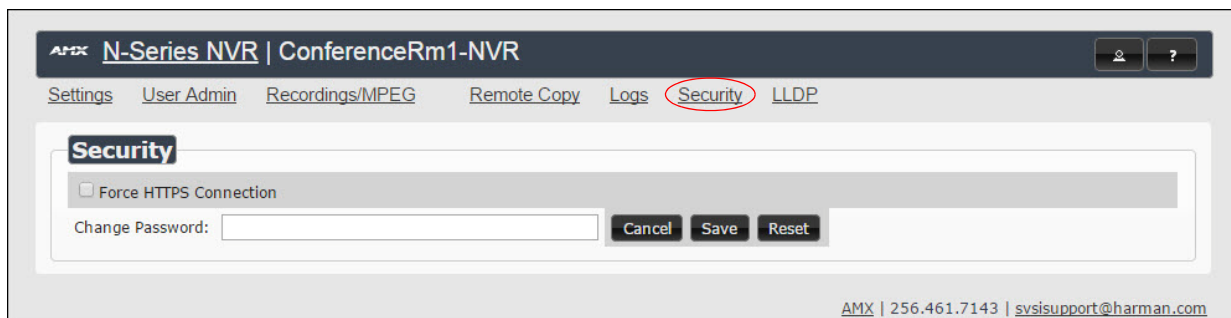


FIG. 31 Security Page

LLDP Page

Click the **LLDP** link at the top of any of the main web pages to access the page shown in [Figure 32](#). The **LLDP** page displays information from the Link Layer Discovery Protocol (LLDP) packet which identifies the port number and the switch the device is connected to. The **Sys Name ID**, **Sys Description**, **Port ID**, and **Port Description** fields all reflect the information that was entered on the connected switch's web interface.

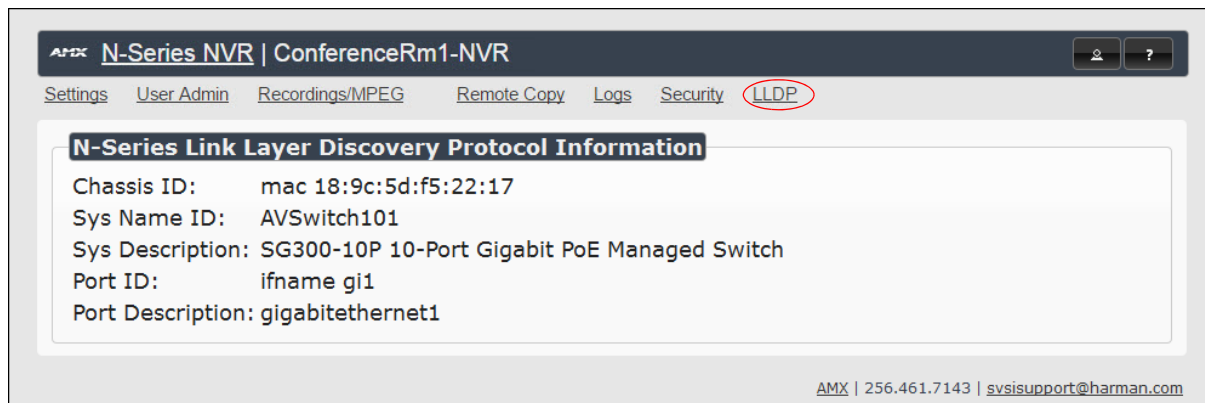


FIG. 32 LLDP Page

Chapter 4: Troubleshooting

This chapter contains possible solutions to some common NVR issues. Should you encounter any problems not covered by these guidelines, please contact SVSI technical support via email (sysisupport@harman.com) or call 256.461.7143 x9900. You can also visit our support webpage at support.svsia.com.

Issues	Suggestions
Recording on the NVR failed (recording length = 0).	<ul style="list-style-type: none"> Verify the NVR was configured to record the correct stream number. This is entered in the Record Vid field on the Settings page. See the <i>NVR Setup Section</i> section on page 23 for more information. Verify the Encoder you recorded from is on the same multicast scheme as the NVR. For example, if the NVR has Interleaved Multicast Streams enabled (on the Advanced portion of the Settings page), then even if the stream numbers match between Encoder and NVR, the multicast address for that stream number will not match. Both units will have to have matching settings (i.e., both have Interleaved enabled or disabled). Verify the NVR is configured to record on the correct series Mode (e.g., if recording from an N1000 Encoder, the Mode should be set to N1000). See the <i>NVR Setup Section</i> section on page 23 for more information.
Conversion of recording failed.	<ul style="list-style-type: none"> Recording cannot be converted because it contains HDCP-protected content. Recording cannot be converted because it is an encrypted N3000 stream. Recording cannot be converted because the encryption key from the stream source (Encoder) does not match the NVR's encryption key. The encryption key can be changed on the Security page (see <i>Security Page</i> on page 35 for more information).
Play back of a recording failed (LocalPlay screen displays instead of the recorded stream from the NVR).	<ul style="list-style-type: none"> Verify Decoder is assigned to view the correct output stream of the NVR. Verify Decoder is currently in Live play mode (its name will display in black text on the Video Matrix page). You can change to Live mode on the Decoder's Settings page. Verify network is properly configured and set up. If needed, connect the NVR's network port to the Decoder to bypass the network. If Multicast Address Override is enabled on the Decoder, verify that the upper two octets of the Multicast Address match between the NVR and the Decoder (Settings > Stream Settings). The Multicast Address Override only applies to the N3000 series. If the NVR has Interleaved Multicast Streams enabled and the Decoder does not, only the LocalPlay screen will be displayed. This is true even if the two devices are assigned the same stream number. Verify that the NVR and Decoder UDP port numbers match (only applies to N3000 series). If the Decoder Stream Source is set to URL, make sure the Stream URL is correct (only applies to N3000 series). <p>NOTE: When Decoder is set to URL mode, it is not switchable via N-Able.</p>
Black screen/no screen displays.	<ul style="list-style-type: none"> Set Decoder to Local Play. If the Local Play screen does not appear, check the display input settings and cabling. As mentioned previously in this table, you can change to the Local mode on the Decoder's Settings page.
Decoder displays decryption error.	<ul style="list-style-type: none"> Use HTTPS to view the web pages for the NVR and Decoder. On the Security page, enable Set to Default Password or Change Password so that the NVR and Decoder passwords match.
Decoder audio or video is stuttering.	<ul style="list-style-type: none"> Increase the latency on the Decoder's Settings page (Advanced Settings > Add Latency) in 20 ms increments until stutter is resolved (only applies to N3000 series).
No audio is detected.	<ul style="list-style-type: none"> If there is no audio on <u>all</u> Decoders, verify audio settings are correct on NVR. If there is no audio on a <u>single</u> Decoder, verify audio settings are correct on Decoder.
Device has been discovered in N-Able, but the configuration pages do not open when double-clicking device name on the Video Matrix page.	<ul style="list-style-type: none"> Make sure your computer is in the same IP address range as the unit. See <i>Setting Up Your Host Computer</i> on page 10 for more information.
Not recording audio.	<ul style="list-style-type: none"> Check that the Decoder has proper audio stream setting (set either to the Source Stream Number or 0).
Video output is stuttering.	<ul style="list-style-type: none"> This could be a network bandwidth issue where the full video stream is not reliably getting from NVR to Decoder. Contact your network administrator for assistance.

NVR Default Troubleshooting Screens

This section shows and defines common status screens related to the N6123 NVR.



FIG. 1 Local Play Screen

Displayed when Decoder...	Notes
<ul style="list-style-type: none"> • ...is set to Local Play mode. • ...is set to the NVR output stream but no recording is currently playing. 	If the Decoder is NOT set to Local Play mode, this screen could signify a network communication issue.



FIG. 2 Restricted Content Not Supported Screen

Displayed when Decoder...	Notes
<ul style="list-style-type: none"> • ...is connected to a monitor that does NOT support Restricted Content (i.e., the monitor is NOT HDCP compliant). 	Once the Decoder detects that the monitor is not HDCP compliant, this screen is displayed. If you suspect that this message was displayed in error, please call Technical Support.

NOTE: *The NVR must first be set up to pass HDCP-protected content.*



FIG. 3 Video Encrypted Screen

Displayed when Decoder....	Notes
<ul style="list-style-type: none"> ...is receiving a stream from an NVR it can not decrypt. 	<p>Keep the following in mind when dealing with encryption passwords:</p> <ul style="list-style-type: none"> When playing a recording, the Decoder's encrypted password must match the encrypted password that the Encoder used when the recording was created. Similarly, when converting an encrypted recording, the NVR's encrypted password must match the encrypted password that the Encoder used when the recording was created. <p>To reset the password, go to the Security page (on either the NVR or the Decoder). Refer to the <i>Security Page</i> section on page 35 if you are not sure where to find this setting.</p>



FIG. 4 Restricted Encryption Screen

Displayed when Decoder....	Notes
<ul style="list-style-type: none"> ...is receiving stream with HDCP encrypted data. 	<p>This screen will be displayed on playback if the recorded stream contained HDCP content. Call your AV installer or SVSI tech support for assistance.</p>

Appendix A: Secure Remote Copy

The N6123 NVR supports remote copy to an OpenSSH Server via its public key. It can copy individual movie files to a configured path via the web interface or it can copy all movie files at once through the N-Command (N8000 Series) scripting engine. When copied over, the files are renamed based on their description (with invalid filename characters removed) and an optional prefix. Any number of NVRs can remote copy their files to a single server and have their own paths and prefixes. The NVR can remote copy while converting, recording, and playing.

Needed Equipment

- N6123 NVR
- Separate computer with OpenSSH Server with space to hold MPEG movies

NOTE: Only Linux servers are officially supported for secure remote copy.

- Conductor N8000 series controller (if you wish to copy all movie files at once command)

Setup

The N6123 NVR needs direct socket access to the OpenSSH Server so it can establish a secure connection. The NVR will make its public key available and attempt to do a password-less SSH login. All the NVR configurations are made through the NVR's web interface. See *Chapter 3: NVR Web Interface Configuration Options* on page 21 for more information.

A Linux administrator will need to configure the receiving OpenSSH server to allow password-less entry with the NVR's public key. This admin-level process is as follows:

From Linux (such as CentOS)

1. Log into the command prompt as root (or a user with sudo access).
2. Create an NVR user:
`[root@localhost admin]# useradd dvruser`
3. Switch to the new user:
`[root@localhost admin]# su dvruser`
4. Switch to home directory:
`[dvruser@localhost admin]$ cd ~`
5. Create new SSH keys. Press enter to accept all defaults.
`[dvruser@localhost ~]$ ssh-keygen`
6. Create a "mov" directory to hold the movies:
`[dvruser@localhost ~]$ mkdir mov`
7. Navigate to the ~/.ssh directory:
`[dvruser@localhost ~]$ cd ~/.ssh`
8. Create an **authorized_keys** file. chmod it to 600:
`[dvruser@localhost ~]$ touch authorized_keys; chmod 600 authorized_keys`

The NVR's public key now needs to be pasted in to the new **authorized_keys** file.

From the NVR's web interface:

1. Log in with an admin account.
2. Navigate to the **Remote Copy** page.
3. Click the **Generate New Keys** button. This will remove all previous keys and create new ones.
4. Copy the new public key to the **authorized_keys** file made earlier on the OpenSSH server. For multiple NVRs, each public key from each NVR gets its own line in that same file.
5. On the NVR web page, Fill out the form accordingly:
Enable Secure Copy: Check to enable secure copy.
SCP username: The user account created earlier. If you followed the example, it is **dvruser**.
SCP IP: The IP address of the OpenSSH server.
SCP Port: The SSH port. The default port is 22.
SCP Save Path: The path to which the NVR should save the movie files. This path must be a directory that already exists, and the path must include the forward slash. The default is **/home/dvruser/mov/**.
SCP Filename Prefix: You may prepend a string to the front of the file (such as the name of the NVR). All files copied over will be prefixed with this string. File names for the MPEG files are **prefix + MPEG description** with invalid characters removed and spaces converted to underscores.
6. Click **Save Remote Copy Settings**.
7. Go to the **Recording/MPEG** page and click the **MPEG** tab.
8. Choose an already converted MPEG from the list and then click the **Remote** link to execute a remote copy on that file.

N8001/N8002/N8012 Support

N-Command N8000 supports remote copy in the script engine. The command to copy all MPEGs is:

```
remotecopy IP/"NAME"/MAC all
```

Currently, only **remotecopy all** is supported. The NVR will queue and remote copy all available MPEG files. If the NVR is in the middle of a remote copy and receives another remote copy command, it will reject the new remote copy command.

Should you encounter any problems not covered by these guidelines, please contact SVSI technical support via email (svsisupport@harman.com) or call 256.461.7143 x9900. You can also visit our support webpage at support.svsia.com.



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