

Streaming AV Products


NAVigator


System Manager



Safety Instructions


Safety Instructions • English


WARNING: This symbol, , when used on the product, is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

ATTENTION: This symbol, , when used on the product, is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

For information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the Extron Safety and Regulatory Compliance Guide, part number 68-290-01, on the Extron website, www.extron.com.


تعليمات السلامة • العربية


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Instrucciones de seguridad • Español


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ATENCIÓN: Este símbolo, , cuando se utiliza en el producto, avisa al usuario de la presencia de importantes instrucciones de uso y mantenimiento estas están incluidas en la documentación proporcionada con el equipo.

Para obtener información sobre directrices de seguridad, cumplimiento de normativas, compatibilidad electromagnética, accesibilidad y temas relacionados, consulte la Guía de cumplimiento de normativas y seguridad de Extron, referencia 68-290-01, en el sitio Web de Extron, www.extron.com.


Instructions de sécurité • Français


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ATTENTION : Ce pictogramme, , lorsqu'il est utilisé sur le produit, signale à l'utilisateur des instructions d'utilisation ou de maintenance importantes qui se trouvent dans la documentation fournie avec l'équipement.

Pour en savoir plus sur les règles de sécurité, la conformité à la réglementation, la compatibilité EMI/EMF, l'accessibilité, et autres sujets connexes, lisez les informations de sécurité et de conformité Extron, réf. 68-290-01, sur le site Extron, www.extron.com.


Istruzioni di sicurezza • Italiano


AVVERTENZA: Il simbolo, , se usato sul prodotto, serve ad avvertire l'utente della presenza di tensione non isolata pericolosa all'interno del contenitore del prodotto che può costituire un rischio di scosse elettriche.

ATTENZIONE: Il simbolo, , se usato sul prodotto, serve ad avvertire l'utente della presenza di importanti istruzioni di funzionamento e manutenzione nella documentazione fornita con l'apparecchio.

Per informazioni su parametri di sicurezza, conformità alle normative, compatibilità EMI/EMF, accessibilità e argomenti simili, fare riferimento alla Guida alla conformità normativa e di sicurezza di Extron, cod. articolo 68-290-01, sul sito web di Extron, www.extron.com.


Instrukcje bezpiecze stwa • Polska


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UWAGI: Ten symbol, , gdy używany na produkt, jest przeznaczony do ostrzeżenia użytkownika ważne operacyjne oraz instrukcje konserwacji (obsługi) w literaturze, wyposażone w sprzęt.

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Инструкция по технике безопасности • Русский

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Для получения информации о правилах техники безопасности, соблюдении нормативных требований, электромагнитной совместимости (ЭМП/ЭДС), возможности доступа и других вопросах см. руководство по безопасности и соблюдению нормативных требований Extron на сайте Extron: www.extron.com, номер по каталогу - 68-290-01.

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注意: ⚠️ 产品上的这个标志意在提示用户, 设备随附的用户手册中有重要的操作和维护(维修)说明。

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安全記事 • 繁體中文

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有關安全性指導方針、法規遵守、EMI/EMF 相容性、存取範圍和相關主題的詳細資訊, 請瀏覽 Extron 網站: www.extron.com, 然後參閱《Extron 安全性與法規遵守手冊》, 準則編號 68-290-01。

安全上のご注意 • 日本語

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안전 지침 • 한국어

경고: 이 기호 ⚠️ 가 제품에 사용될 경우, 제품의 인클로저 내에 있는 접지되지 않은 위험한 전류로 인해 사용자가 감전될 위험이 있음을 경고합니다.

주의: 이 기호 ⚠️ 가 제품에 사용될 경우, 장비와 함께 제공된 책자에 나와 있는 주요 운영 및 유지보수(정비) 지침을 경고합니다.

안전 가이드라인, 규제 준수, EMI/EMF 호환성, 접근성, 그리고 관련 항목에 대한 자세한 내용은 Extron 웹 사이트(www.extron.com)의 Extron 안전 및 규제 준수 안내서, 68-290-01 조항을 참조하십시오.

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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. The Class A limits provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference. This interference must be corrected at the expense of the user.

NOTE: For more information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the [Extron Safety and Regulatory Compliance Guide](#) on the Extron website.

Conventions Used in this Guide

Notifications

The following notifications are used in this guide:

CAUTION: Risk of minor personal injury.

ATTENTION : Risque de blessure mineure.

ATTENTION:

- Risk of property damage.
- Risque de dommages matériels.

NOTE: A note draws attention to important information.

TIP: A tip provides a suggestion to make working with the application easier.

Software Commands

Commands are written in the fonts shown here:

```
^AR Merge Scene,,0p1 scene 1,1 ^B 51 ^W ^C.0  
[01] R 0004 00300 00400 00800 00600 [02] 35 [17] [03]  
[Esc] X1 *X17* X20* X25* X23 CE ←
```

NOTE: For commands and examples of computer or device responses used in this guide, the character “0” is the number zero and “O” is the capital letter “o.”

Computer responses and directory paths that do not have variables are written in the font shown here:

```
Reply from 208.132.180.48: bytes=32 times=2ms TTL=32  
C:\Program Files\Extron
```

Variables are written in slanted form as shown here:

```
ping xxx.xxx.xxx.xxx -t  
SOH R Data STX Command ETB ETX
```

Selectable items, such as menu names, menu options, buttons, tabs, and field names are written in the font shown here:

```
From the File menu, select New.  
Click the OK button.
```

Specifications Availability

Product specifications are available on the Extron website, www.extron.com.

Extron Glossary of Terms

A glossary of terms is available at <http://www.extron.com/technology/glossary.aspx>.



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Introduction

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About this Guide

This guide contains installation, configuration, and operating information for the Extron NAVigator Pro AV over IP System Manager.

About the NAVigator

The NAVigator (see figure 1) manages, configures, and controls an AV streaming system consisting of Extron NAV encoders, and decoders (endpoints). The NAVigator also provides a centralized communication bridge between the control system and the endpoints. The NAVigator can support up to 16 endpoints as shipped and can be upgraded via LinkLicenses to support up to 48, 96, or 240 endpoints.

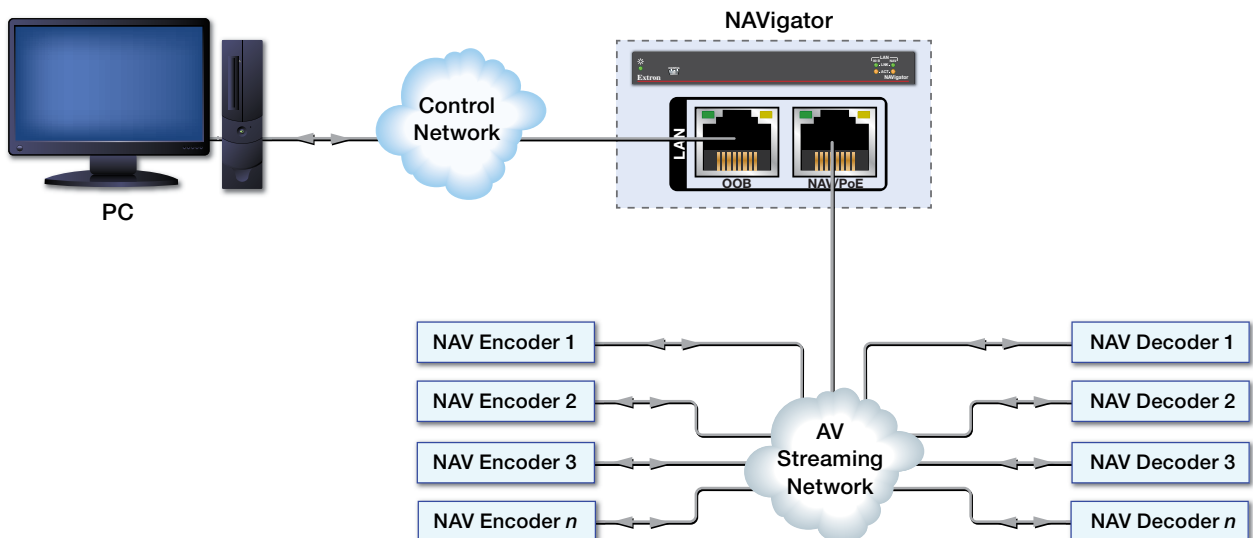


Figure 1. Typical NAVigator Application

The NAVigator provides one central web management interface. It expedites the system deployment process through bulk endpoint configuration, EDID Minder, and ties management features. In addition, it also makes system management easier through system tools such as firmware upgrade, backup, and restore.

The NAVigator is housed in a 1-inch high, half-rack width metal enclosure that can be mounted in any standard 19-inch rack or under furniture with optional mounting kits.

The NAVigator can be powered via Power over Ethernet (PoE) or by an included external 100 VAC to 240 VAC, 50-60 Hz power supply that provides worldwide power compatibility.

About the System

The NAVigator and NAV endpoints form an AV over IP switching matrix on an Internet Group Management Protocol (IGMP) Managed IP Network. The managed AV system can stream:

- HDCP 2.3-compliant HDMI video (which can include embedded digital audio) at resolutions up to 4k@60 Hz and 4:4:4 chroma sampling
- Optional analog audio
- RS-232 and IR control signals

NOTE: The RS-232 and IR communications are only controllable through an Extron Control Processor via a Secure Platform Device (SPD) (see the *Global Configurator Plus Help File*). The encoder and decoder do not generate or respond to the RS-232 and IR communication signals.

The encoders are configured for low latency multicast streaming.

The decoders tie to an encoder.

Features

- Securely manages, configures, and controls NAV Pro AV over IP systems.
- **Each unit supports up to 240 NAV endpoints** — Offers encrypted management and control up to 240 NAV endpoints for centralized, secure management of complete Pro AV over IP systems.
- **Intuitive, web-based user interface for ease of use** — Intuitive graphical web interface for configuration, monitoring, backup/restoration, and troubleshooting.
- **Manages simultaneous configuration of multiple NAV devices** — Enables bulk configuration of a large number of devices in a single operation, saving time and simplifying setup.
- **Secure encrypted communication between all endpoints** — Features secure communication ensuring any data sent to encoders or decoders from the NAVigator is encrypted.
- **Power over Ethernet, or PoE, eliminates the need for a local power supply** — PoE enables receipt of power directly from the PoE switch, eliminating the need for bulky local power supplies.
- **Scalable with LinkLicense** — The base NAVigator system supports 16 devices with the capability to expand to 48, 96, or 240 with the addition of LinkLicenses.
- Multiple NAVigator systems can work together to support thousands of endpoints, creating future-ready solutions that grow with your organization.
- **Secure network isolation with dual LAN interfaces** — Two isolated, independent LAN ports facilitate control from a secondary network, enabling flexible system design with enhanced security, and eliminating AV traffic on the corporate network.
- **Enables parallel firmware update of multiple NAV devices at once** — Upgrades firmware on all endpoints directly from the NAVigator web interface for quick and reliable firmware management that enables efficient system enhancements.
- **Integrates with Pro Series control systems for secure, user-friendly external control** — Designed to integrate directly with Extron Pro Series control systems for secure, encrypted RS-232 and IR control of external devices without the need for additional control processors.

- **External Extron Everlast power supply included** — Provides worldwide power compatibility with high-demonstrated reliability and low power consumption.
- **Extron Everlast Power Supply is covered by a 7-year parts and labor warranty.**
- **1-inch (2.5 cm) high, half rack width metal enclosure** — Compact, low profile enclosure for discreet placement and concealment.

Installation and Operation

This section describes the installation and the operation of the NAVigator, including:

- [Rear Panel Connections and Features](#)
- [Front Panel Connection and Indicators](#)
- [Basic Operation](#)

NOTE: For equipment mounting, see [Mounting the NAVigator](#) on page 122.

Rear Panel Connections and Features

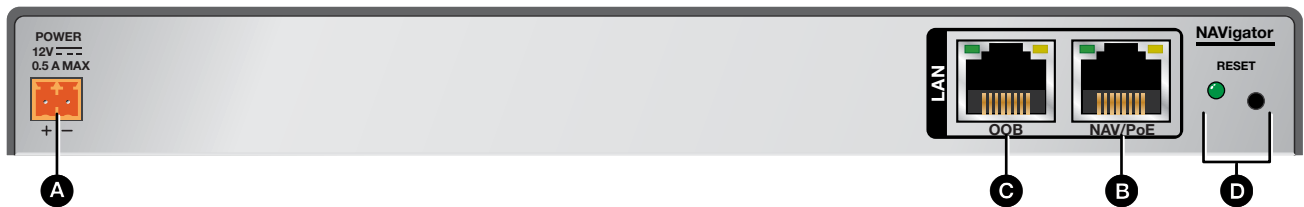


Figure 2. NAVigator Rear Panel Connectors and Features

- A** **Power connector** (optional) — See below.
- B** **NAV/PoE port** — See page 5.
- C** **OOB (Out of Band) port**
- D** **RESET button and LED**

- A** **Power connector** (optional) — Plug the included external 12 VDC power supply into this 2-pole connector for power by a local device.

ATTENTION:

- Do not connect power to the NAVigator until you have read the **CAUTION** and **ATTENTION** notices on pages 6 and 7.
- Ne connectez pas l'alimentation à l'NAVigator avant d'avoir lu les rubriques « **ATTENTION** » des pages 6 et 7.

NOTE: Alternatively, the NAVigator can be powered via PoE, supplied by either an optional PI 140 Power Injector or a PoE capable network switch.

- NAV/PoE port** (see [figure 2](#) on page 4)— Connect this port to your A/V LAN network for control of the NAVigator, control of the A/V streaming network (NAV encoders and decoders), or both. Optionally, you can also power the NAVigator by inserting PoE through this port. **Streaming endpoints must be on the same network as the NAV/PoE port.**

ATTENTION:

- Power over Ethernet (PoE) is intended for indoor use only. It is to be connected only to networks or circuits that are not routed to the outside plant or building.
- L'alimentation via Ethernet (PoE) est destinée à une utilisation en intérieur uniquement. Elle doit être connectée seulement à des réseaux ou des circuits qui ne sont pas routés au réseau ou au bâtiment extérieur.

- OOB (Out of Band) port** — Connect this port to a network for remote management of the NAV System. **The OOB port cannot receive PoE.**

NOTE: The OOB Port should not be connected to the same network as the NAV/PoE Port.

- RESET button and LED** — Press this button and observe the LED to initiate three levels of NAVigator reset (see [Reset Operations](#), on page 8).

Connector and Cable Details

Twisted pair cable termination and recommendations

Figure 3 details the **TIA/EIA T568-B** wiring standard. Use this standard to terminate twisted pair (TP) cables with RJ-45 connectors.

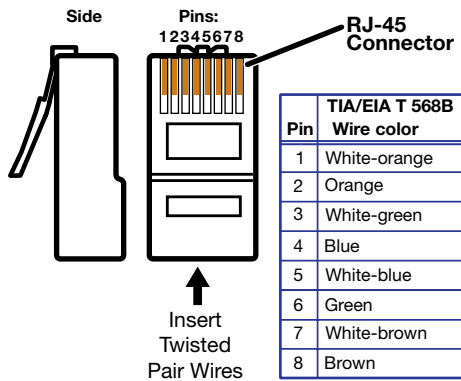


Figure 3. TP Cable Termination

Power supply wiring

Figure 4 shows how to wire the connector. Use the supplied tie-wrap to strap the power cord to the extended tail of the connector.

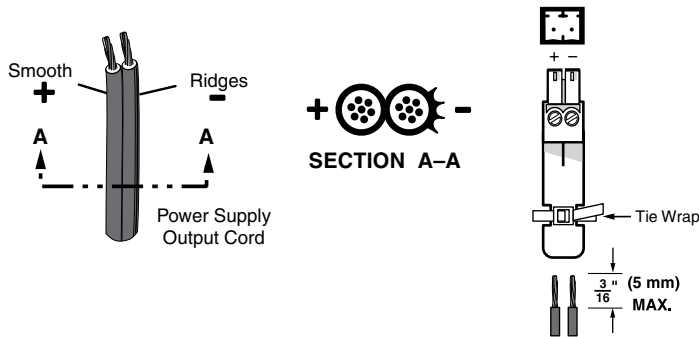


Figure 4. Power Connector Wiring

CAUTION:

ATTENTION :

- The DC output cables must be kept separate from each other while the power supply is plugged in. Remove power before wiring.
- Les câbles de sortie CC doivent être séparés les uns des autres tant que la source d'alimentation est branchée. Coupez l'alimentation avant d'effectuer les raccordements.
- The length of exposed wires is critical. The ideal length is 3/16 inch (5 mm).
 - Any longer and the exposed wires may touch, causing a short circuit.
 - Any shorter and the wires can be easily pulled out even if tightly fastened by the captive screws.
- La longueur des câbles exposés est primordiale. La longueur idéale est de 5 mm (3/16 inches).
 - S'ils sont un peu plus longs, les câbles exposés pourraient se toucher et provoquer un court circuit.
 - S'ils sont un peu plus courts, ils pourraient sortir, même s'ils sont attachés par les vis captives.
- Do not tin the power supply leads before installing them in the connector. Tinned wires are not as secure in the connector and could be pulled out.
- Ne pas étamer les conducteurs avant de les insérer dans le connecteur. Les câbles étamés ne sont pas aussi bien fixés dans le connecteur et pourraient être retirés.

ATTENTION:

- This product is intended to be supplied by a UL Listed power source marked "Class 2" or "LPS," rated 12 VDC, 1.5 A minimum. Always use a power supply supplied by or specified by Extron. Use of an unauthorized power supply voids all regulatory compliance certification and may cause damage to the supply and the end product.
- Ce produit est destiné à une utilisation avec une source d'alimentation listée UL avec l'appellation « Classe 2 » ou « LPS » et normée 12 Vcc, 1,5 A minimum. Utilisez toujours une source d'alimentation fournie ou recommandée par Extron. L'utilisation d'une source d'alimentation non autorisée annule toute conformité réglementaire et peut endommager la source d'alimentation ainsi que le produit final.

ATTENTION:

- Unless otherwise stated, the AC/DC adapters are not suitable for use in air handling spaces or in wall cavities.
- Sauf mention contraire, les adaptateurs AC/DC ne sont pas appropriés pour une utilisation dans les espaces d'aération ou dans les cavités murales.
- The installation must always be in accordance with the applicable provisions of National Electrical Code ANSI/NFPA 70, article 725 and the Canadian Electrical Code part 1, section 16. The power supply shall not be permanently fixed to a building structure or similar structure.
- Cette installation doit toujours être en accord avec les mesures qui s'applique au National Electrical Code ANSI/NFPA 70, article 725, et au Canadian Electrical Code, partie 1, section 16. La source d'alimentation ne devra pas être fixée de façon permanente à une structure de bâtiment ou à une structure similaire.
- Power supply voltage polarity is critical. Incorrect voltage polarity can damage the power supply and the unit. The ridges on the side of the cord (see [figure 4](#) on page 6) identify the power cord negative lead.
- La polarité de la source d'alimentation est primordiale. Une polarité incorrecte pourrait endommager la source d'alimentation et l'unité. Les stries sur le côté du cordon (voir [l'illustration 4](#) sur la page 6) permettent de repérer le pôle négatif du cordon d'alimentation.

To verify the polarity before connection, plug in the power supply with no load and check the output with a voltmeter.

Front Panel Connection and Indicators



Figure 5. NAVigator Front Panel Features

- Ⓐ **Power LED** — Indicates the unit power status.
 - Blinking** — The unit is receiving power, either locally or remotely (via PoE) and is booting up.
 - Lit** — The unit is receiving power, either locally or remotely (via PoE) and is operational.
- Ⓑ **Configuration port** — Connect to this USB mini-B port (USB 2.0) for product configuration, management and firmware updates.
- Ⓒ **LAN LEDs (OOB and NAV)** — Indicate the status of the ports.
 - Link** (green) — Indicates the status of the link.
 - **Blinking** — A network link has been established at 10/100 Mbps.
 - **Lit** — A network link has been established at 1 Gbps.
 - Act** (blinking amber) — Network activity is present. The blink rate corresponds to activity.

Basic Operation

Configuration and Other Operations

Configuration and more complex operation of the system is accomplished via embedded web pages (see **HTML Operation**, beginning on page 10); Extron Toolbelt, Global Configurator Plus, Global Configurator Professional, or Global Scriptor (see **Control System** on page 108), or SIS commands (see **SIS Operation**, starting on page 111).

Reset Operations

The rear panel **RESET** button initiates three modes of reset (numbered 1, 4, and 5, using standard Extron nomenclature; modes 2 and 3 are not applicable to NAV products). The **RESET** button is recessed, so use an Extron Tweaker, a pointed stylus, or ballpoint pen to access it.

See the **table** on page 9 for a summary of the modes.

ATTENTION:

- Review the reset modes carefully. Using the wrong reset mode may result in unintended loss of flash memory programming, port reassignment, or a controller reboot.
- Étudier de près les différents modes de réinitialisation. Appliquer le mauvais mode de réinitialisation peut causer une perte inattendue de la programmation de la mémoire flash, une reconfiguration des ports ou une réinitialisation du contrôleur.

NOTE:

- The reset modes listed in the **table** are separate functions, not a continuation from mode 1 to mode 5.
- The modes listed close all open IP connections and close all sockets.
- For reset modes 4 and 5, nothing happens if the momentary press does not occur within 1 second.

Reset Mode Comparison and Summary			
Mode	Activation	Result	Purpose and Notes
1 Hardware reset	Hold down the recessed RESET button while applying power to the unit. NOTE: After a mode 1 reset is performed, update the unit firmware to the latest version. Do not operate the unit firmware version that results from the mode 1 reset. If you want to use the factory default firmware, you must upload that version again (see Updating the NAVigator firmware on page 74 for details on uploading firmware).	The unit reverts to the factory default firmware. All user files and settings, such as IP settings, are maintained. NOTE: If you do not want to update firmware, or you performed a mode 1 reset by mistake, cycle power to the unit to return to the firmware version that was running before the mode 1 reset (see About Page on page 107 to find the firmware version).	Use mode 1 to return the unit to the factory default firmware version if incompatibility issues arise with user-loaded firmware.
4 Reset IP settings	Hold the RESET button for approximately 6 seconds, until the RESET LED blinks twice (once at 3 seconds and again at 6 seconds). Then momentarily press RESET within 1 second.	Resets all the IP settings without affecting the device configuration. Mode 4: <ul style="list-style-type: none"> Enables ARP capability. Sets the IP address, subnet address, gateway address, and port mapping to the factory default. Sets the Multicast IP, stream number and device name to the factory default. Turns DHCP on. The RESET LED blinks three times in succession during the reset.	Mode 4 enables you to set IP address information using ARP and the MAC address.
5 Factory reset	Hold the RESET button for approximately 9 seconds, until the RESET LED blinks three times (once at 3 seconds, again at 6 seconds, and then again at 9 seconds). Then momentarily press RESET within 1 second. NOTE: Reset mode 5 reverts the factory-configured username to <code>admin</code> and password to <code>extron</code> .	Mode 5 performs a complete reset to factory defaults (with the exception of the firmware): <ul style="list-style-type: none"> Does everything mode 4 does. Resets most settings. Resets all IP options. Removes all files from the unit. The RESET LED blinks four times in succession during the reset.	Mode 5 is for starting over with configuration and uploading or to replace events. Same as the <code>Esc|ZQQQ←</code> SIS command on page 115.

Performing Mode 4 and 5 Resets

Perform resets of the unit as follows (see figure 6):

- Use a small screwdriver to press and **hold** the rear panel **RESET** button until the rear panel **RESET** LED blinks either:
 - Twice, for an IP settings reset
 - Three times for an absolute (factory) reset

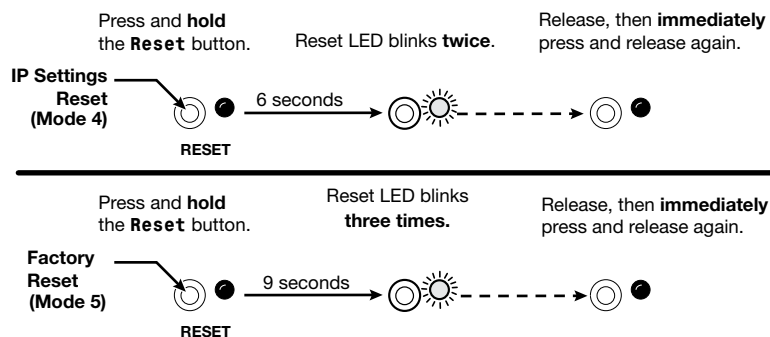


Figure 6. Resets

- Release the **RESET** button and then immediately press and release the **RESET** button again. Nothing happens if you do not momentarily press **RESET** within 1 second.

HTML Operation

This section introduces using the built-in HTML pages to configure and operate the NAVigator, including:

- [Opening the Embedded HTML Pages](#)
- [HTML Pages Overview](#)
- [Creating a NAV System](#)
- [Detailed Descriptions and Operations](#)

The NAVigator can be controlled and operated through either the front panel CONFIG (USB) port (see [figure 5](#), **A** on page 7) or the rear panel NAV/PoE port (see [figure 2](#), **B** on page 4) or OOB port (**C** on page 5). The Configuration port uses IP over USB technology. The factory-embedded pages are always available and cannot be erased or overwritten.

NOTE: If connection to the NAVigator using either the NAV/PoE port or OOB port is unstable, try turning off the proxy server in your web browser.

Opening the Embedded HTML Pages

Access the NAVigator using HTML pages as follows:

1. Start the web browser.

NOTES:

- Extron recommends the following browsers to fully support the NAV system:
 - Google Chrome™ — All screen images in this guide use Chrome.
 - Mozilla Firefox™
 - Microsoft® Edge™
- The network must be properly configured for multicasting (IGMP). Failure to do so may result in degraded performance.

2. Click in the **Address** field of the browser and enter the IP address.

NOTES:

- For the NAV/PoE+ port, if unit does not receive an IP address from the DHCP server, it self-assigns a Link Local IP address in the range 169.254.X.X.

• **Default settings:**

Port	DHCP	IP address	Subnet mask
Config (USB)*		203.0.113.22	
NAV/PoE (RJ-45)†	On		
OOB (RJ-45)	Off	192.168.253.254	255.255.255.0

* **For the Config port**, the address for IP over USB **CANNOT** be changed.

† **For the NAV/PoE port**, if unit does not receive an IP address from the DHCP Server, it self-assigns a Link Local IP address in the range 169.254.X.X.

- If you use IP over USB, Extron recommends waiting a minute after plugging in the cable from your PC to identify the USB connection as a valid Ethernet port.

3. Press the keyboard <Enter> key.

NOTES:

- If you do not have a trusted SSL Certificate, the browser displays a privacy notification (see figure 7). Continue to the login dialog box as follows:
 1. Click the browser button that advances past the privacy notification (such as **Advanced** [1] in Chrome). Explanatory text and a link appear.

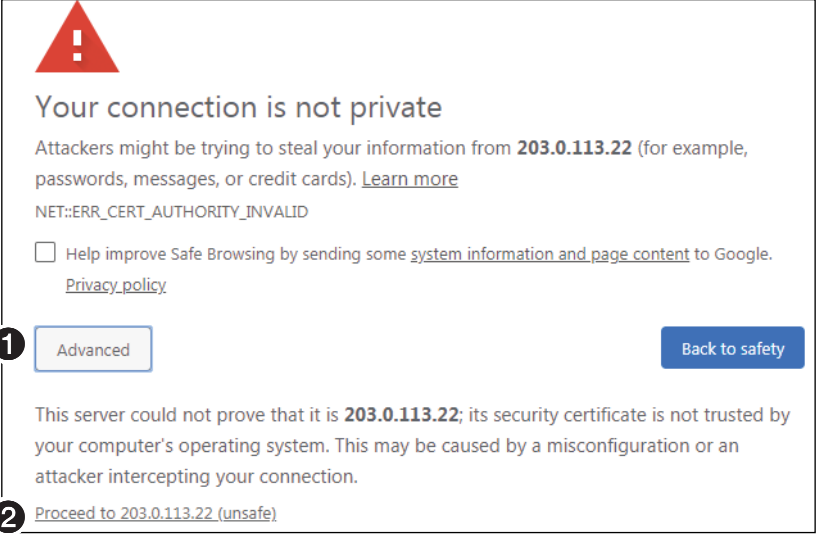


Figure 7. Privacy Notification (Shown in Chrome Browser)

2. Click **Proceed to <IP address> (unsafe)** (2) (or similar message).

- Your IT department can provide an uploadable SSL Certificate (see **Toolbelt** on page 108). Once the certificate is loaded, the notification does not occur.

The browser opens to the Login dialog box (see figure 8).



Figure 8. Login Dialog Box

4. Enter the **Username** (see figure 8, 1) and **Password** (2) and click **Sign In** (3). The browser opens the embedded HTML page (see **figure 9** on page 12).

NOTES:

- The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of a complete system reset, the passwords revert to the default.
- The default username is **admin** and the default password is **extron**.
- Passwords are case sensitive.

NOTES:

- The HTML page may open with any of the panes (items 2 through 7 below) selected.
- The login automatically times out after 30 minutes of inactivity.

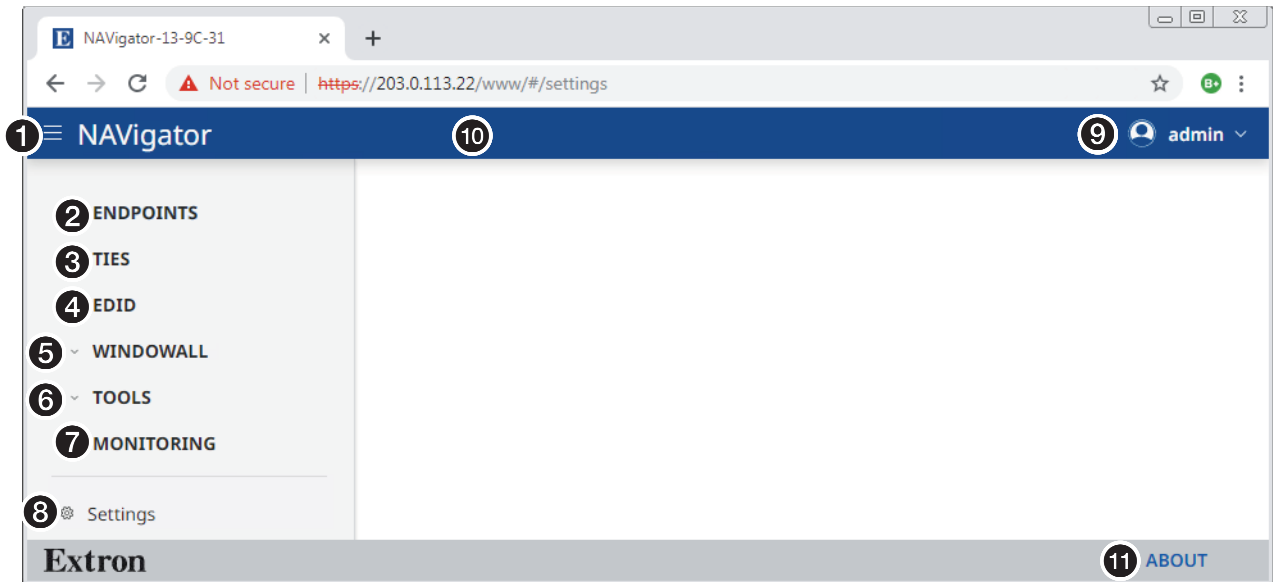
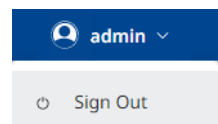


Figure 9. Home Page

HTML Pages Overview

See figure 9 and the following sections for an overview of the following panes or functions. See [Creating a NAV System](#) on page 22 for procedures to use items 7, 2, and 3 to create a NAV system. See [Detailed Descriptions and Operations](#) on page 30 for detailed descriptions of items 4 through 7, and 11.

- 1 **Menu icon** — Toggles to hide or show the links pane (items 2 through 7).
- 2 **Endpoints link** — Opens a page that allows you to discover and assign endpoints. You can then view these assigned endpoints and make configuration and communications settings changes to them (see [Endpoints Page](#) on page 13).
- 3 **Ties link** — Opens a page that allows you to make and break ties. See [Ties Page](#) on page 14.
- 4 **EDID link** — Opens a page that allows you to select an EDID and assign it to one or more inputs (encoders). See [EDID Page](#) on page 15.
- 5 **WindoWall link** — Opens pages that allow you to configure NAV WindoWall canvases and to save, apply, and clear NAV WindoWall presets (see [WindoWall Pages](#) on page 16).
- 6 **Tools link** — Opens pages that provide NAVigator tools and tools for entire system, including the endpoints (see [Tools Pages](#) on page 18).
- 7 **Monitoring link** — Opens a page that shows system status information (see [Monitoring Page](#) on page 21).
- 8 **Settings link** — Opens a page that provides access to many NAVigator device settings (see [Settings Page](#) on page 22).
- 9 **admin menu** — Click to display the Sign Out button. Click **Sign Out** to log out of the NAVigator HTML pages.



- ⑩ **Name banner** (see [figure 9](#) on page 12) — Normally displays the host name. Resting the cursor over this banner changes the display from host name to the device name.
- ⑪ **About link** — Opens a page that provides information about the NAVigator (see [About Page](#) on page 107).

Endpoints Page

The **Endpoints** page allows you to discover endpoints and assign one or more to the NAVigator. To access the **Endpoints** page, if necessary, click the **Menu** icon (see [figure 10](#), ① and [figure 11](#), ①). Click **Endpoints** (②). The **Endpoints** page opens. See [Creating a NAV System](#) on page 22 for a detailed description of discovering and assigning endpoints as part of creating a system.

Figure 10 shows the **Endpoints** page when no endpoints have been discovered or assigned.

Figure 11 shows the **Endpoints** page when endpoints have already been discovered and assigned and are online.

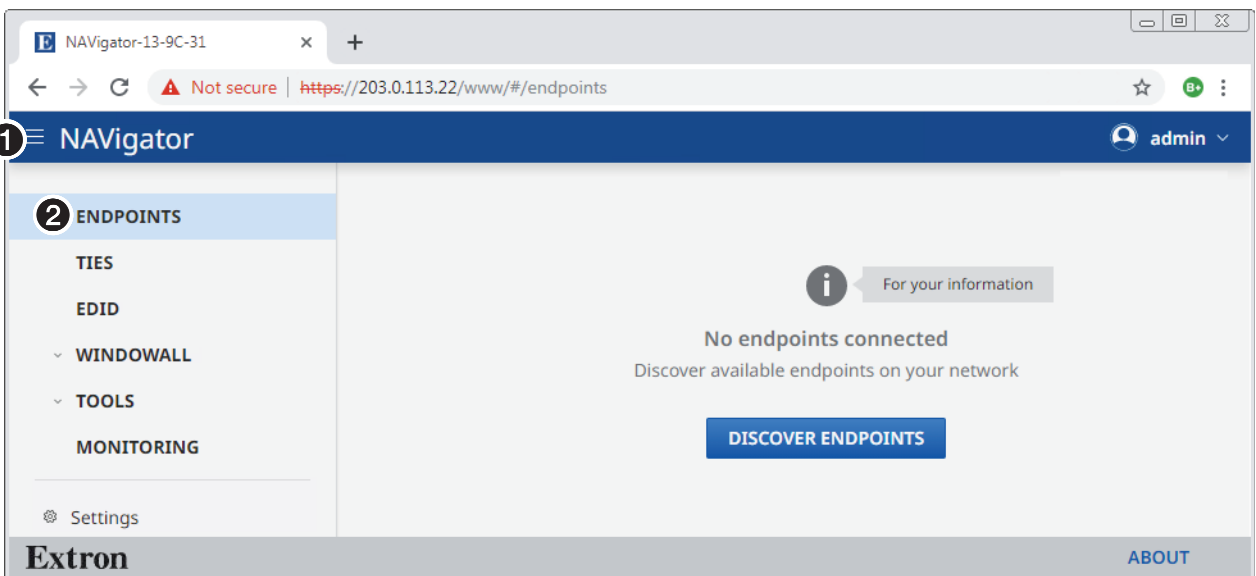


Figure 10. Endpoints Page with no Discovered Endpoints

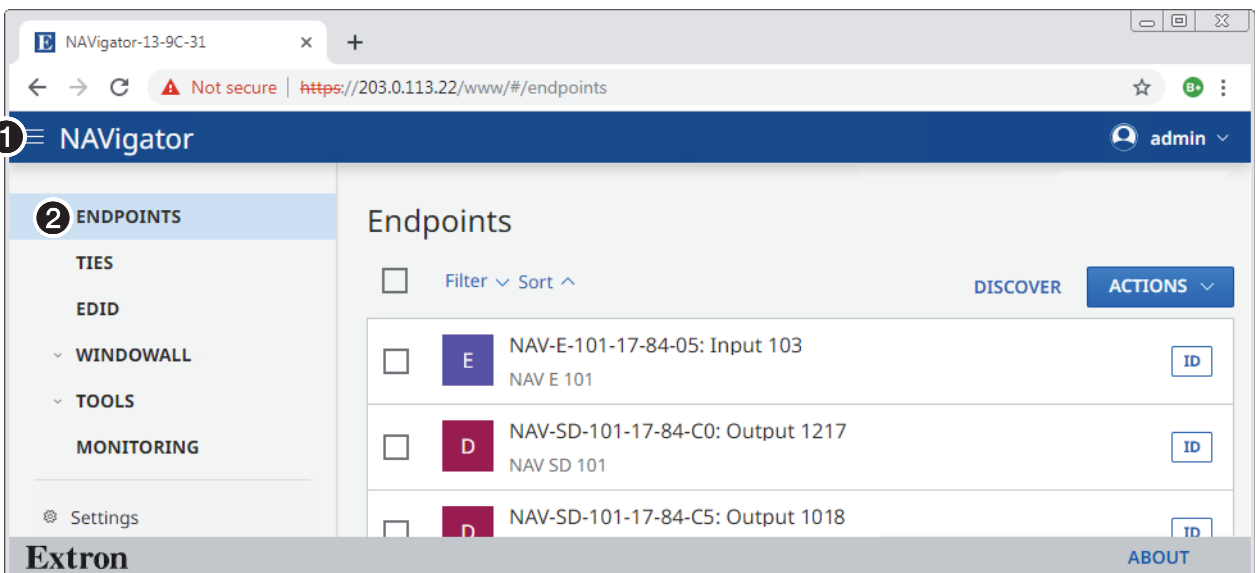


Figure 11. Endpoints Page with Discovered and Assigned Endpoints

Ties Page

The **Ties** page allows you to make or break ties to create or change the input/output matrix in a NAV system. To access the **Ties** page, if necessary, click the **Menu** icon (see figure 12, ❶). Click **Ties** (❷). The **Ties** page opens, displaying a grid of endpoints assigned to this NAVigator and indicates existing ties. See [Creating a NAV System](#) on page 22 for a detailed description of assigning and tying endpoints as part of creating a system.

The screenshot shows the NAVigator web interface. The browser address bar indicates the URL `https://203.0.113.22/www/#/ties`. The page title is "Ties". The left sidebar contains a menu with "TIES" selected. The main content area has tabs for "NAV", "AES67", and "USB". Below the tabs are search filters for "Search Inputs" and "Search Outputs". A "Set Tie Mode" section includes buttons for "AUDIO + VIDEO", "AUDIO ONLY", "VIDEO ONLY", "BREAK", and "BREAK ALL TIES". A table displays "Available Inputs" and "Available Outputs".

Available Inputs	Available Outputs	All Decoders	NAV-SD-101-27-84-C7: 2810	NAV-SD-101-18-74-D1: 1217	NAV-SD-101-17-88-C0: 1890
NAV-E-101-17-84-05: 579					
NAV-E-101-14-D2-52: 2716					
NAV-E-101-12-F2-41: 2018					
NAV-E-101-18-E2-42: 5718					

Figure 12. Ties Page

EDID Page

The EDID page allows you to select an EDID and assign it to one or more inputs (encoders). To access the EDID page, if necessary, click the **Menu** icon (see figure 13, ❶). Click **EDID** (❷). The EDID page opens, displaying a library of available EDIDs, favorite EDIDs, and connected output (display) EDIDs. See **EDID Page** on page 52 for a detailed description of using EDIDs.

The screenshot shows the NAVigator web interface. The browser address bar indicates the URL `https://203.0.113.22/www/#/edid`. The NAVigator header includes a menu icon (❶) and the user name 'admin'. The left sidebar lists navigation options: ENDPOINTS, TIES, EDID (❷), WINDOWALL, TOOLS, MONITORING, and Settings. The main content area is titled 'EDID Minder' and is divided into two sections: 'EDID' and 'Input Sources'. The 'EDID' section contains a search bar labeled 'Search EDIDs:' and a grid of EDID cards. The 'Input Sources' section contains a text box with the instruction 'Select an EDID first to see available inputs.' and an 'ASSIGN EDID' button. The EDID cards are organized into tabs: AVAILABLE EDIDS, FAVORITES, and CONNECTED OUTPUTS. The 'AVAILABLE EDIDS' tab is active, showing a grid of EDID cards. Each card displays the Extron logo, resolution, video type, audio type, and icons for information and selection. The footer of the page displays the Extron logo and an 'ABOUT' link.

Figure 13. EDID Page

WindoWall Pages

The NAVigator can support up to eight NAV WindoWalls with mixed sources. The NAVigator can support up to eight workspaces called *canvases*, each of which can support up to eight rows by eight columns.

The *windoWall* pages provide tools to configure *canvases* and to save, apply, and clear NAV WindoWall presets. To open the NAV *windoWall* pages, if necessary, click the **Menu** icon (see figure 14, ❶). Click **WINDO WALL** (see ❶ in the illustration at right) and either **Canvas Configuration** (❷) or **Presets** (❸).

- ❶ WINDO WALL
- ❷ Canvas Configuration
- ❸ Presets

Canvas Configuration page

The *Canvas Configuration* page (see figure 14) provides tools to assign decoders to NAV WindoWall canvases. See [WindoWall pages](#) on page 62 for a detailed description of using this page and [Creating presets](#) on page 67 to create NAV WindoWalls and presets.

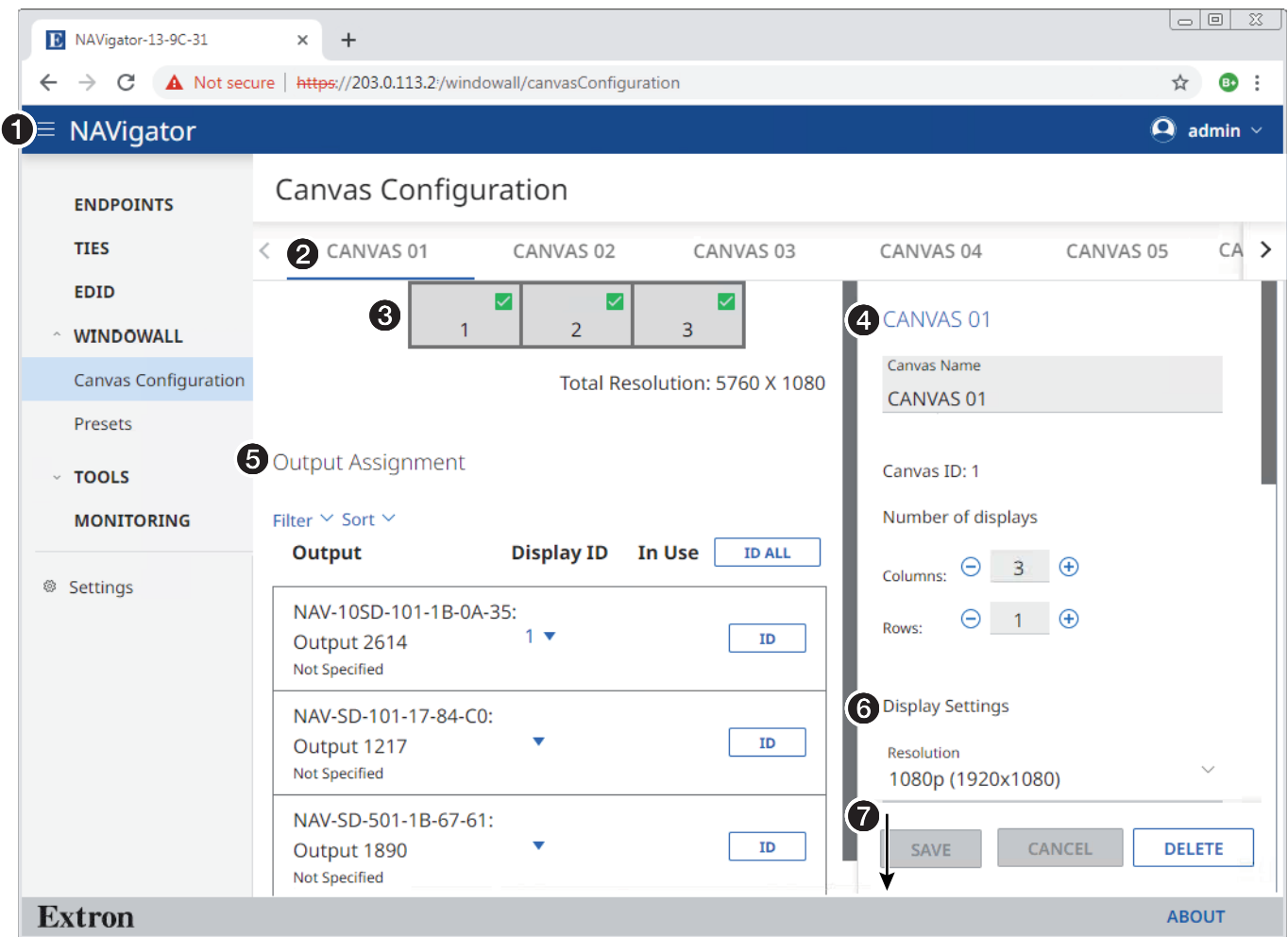


Figure 14. Canvas Configuration Page

The *Canvas Configuration* page consists of the following elements:

- ❷ **Canvas selection tabs** — Select a canvas to configure.
- ❸ **Canvas View** — A grid diagram in which each cell represents a display in the NAV WindoWall and which can include the display number (displays are numbered horizontally on the canvas view), the decoder, and the total output resolution.
- ❹ **Canvas Configuration** — Provide the Canvas ID (for identification to a control system), define the size of the canvas, and assign it a name.

- 5 **Output Assignments** (see [figure 14](#) on page 16) — Assign decoders to the displays in the NAV WindoWall.
- 6 **Display Settings** — Adjust the display settings of all outputs in the canvas.
- 7 **Mullion Compensation** (off-screen on [figure 14](#), see [figure 66](#) on page 66) — Adjust the space around displays to extend the image "behind" the bezels of flat panels.

Presets page

The Presets page (see [figure 15](#)) allows you to assign encoders (sources) to NAV WindoWall canvases and to save the canvas as a NAV WindoWall preset. See [WindoWall pages](#) on page 62 for a detailed description of using the Canvas Configuration page and this page and to create NAV WindoWalls and presets.

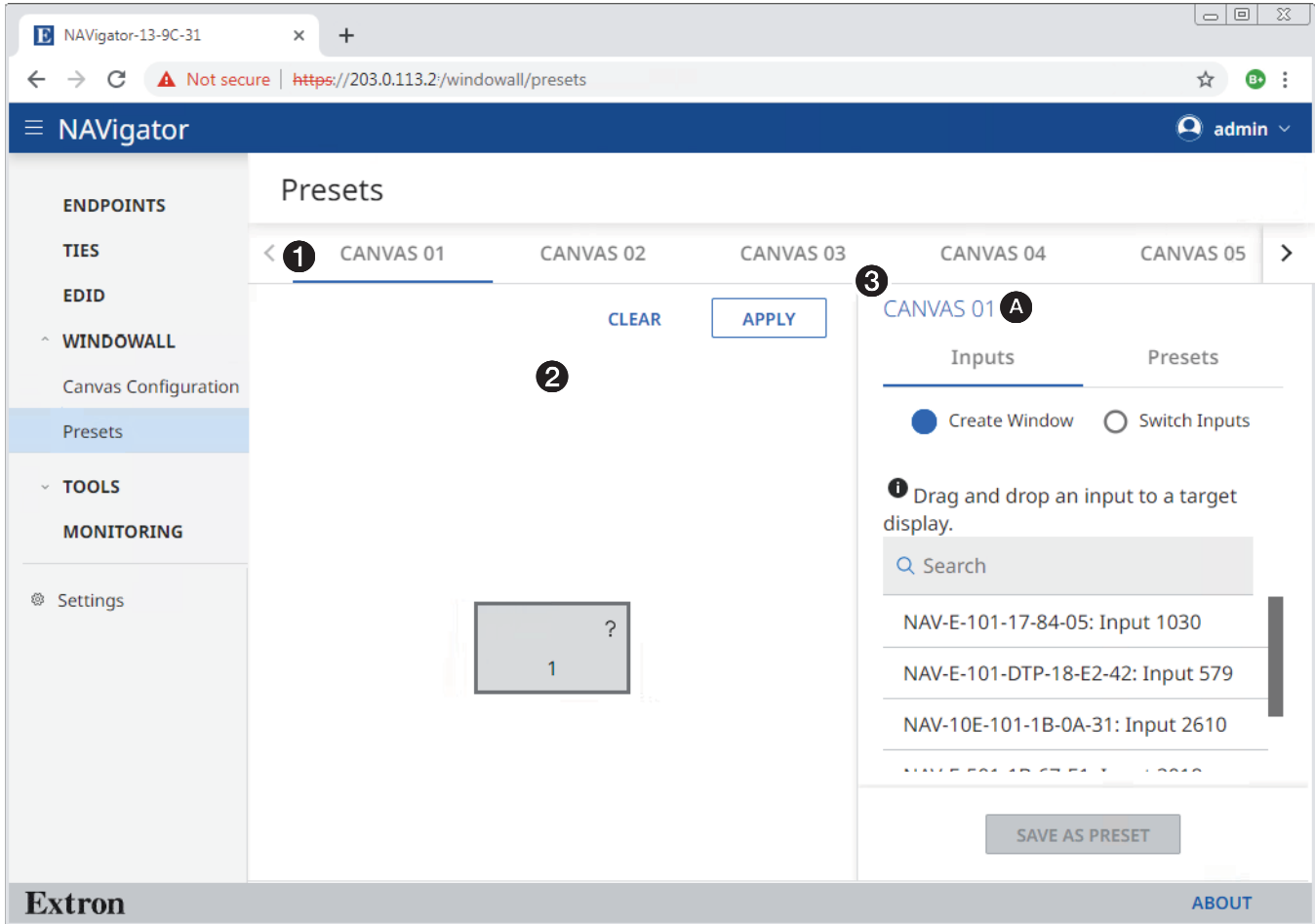


Figure 15. WindoWall Presets Page

See [figure 15](#). The Presets page consists of the following elements:

- 1 **Canvas selection tabs** — Select a canvas to configure.
- 2 **Canvas view** — A grid diagram in which each cell represents a display in the NAV WindoWall.
- 3 **Input and preset controls** — Assign encoders, manage presets, and switch inputs.

TIP: Each canvas has a **canvas ID** (A) that identifies that canvas. If you need to reference a canvas from a control system, the **canvas ID** does not change, even if you have renamed the canvas.

Tools Pages

The Tools pages provide tools for just the NAVigator (Device) and tools for the entire system, including endpoints (System). To access the Tools pages, if necessary, click the Menu icon (see figure 16, ❶). Click Tools (see ❶ in the illustration at right) and select among:

- **Device Tools** (❷, see "Device Tools page")
- **System Tools** (❸, see [System Tools page](#) on page 19)
- **Diagnostic Tools** (❹, see [Diagnostic Tools page](#) on page 20).



Device Tools page

The Device Tools page consists of four tabs (❷), Backup, Restore, Firmware, and Reset that provide NAVigator tools. See [Device Tools Page](#) on page 71 for detailed descriptions of these NAVigator tools.

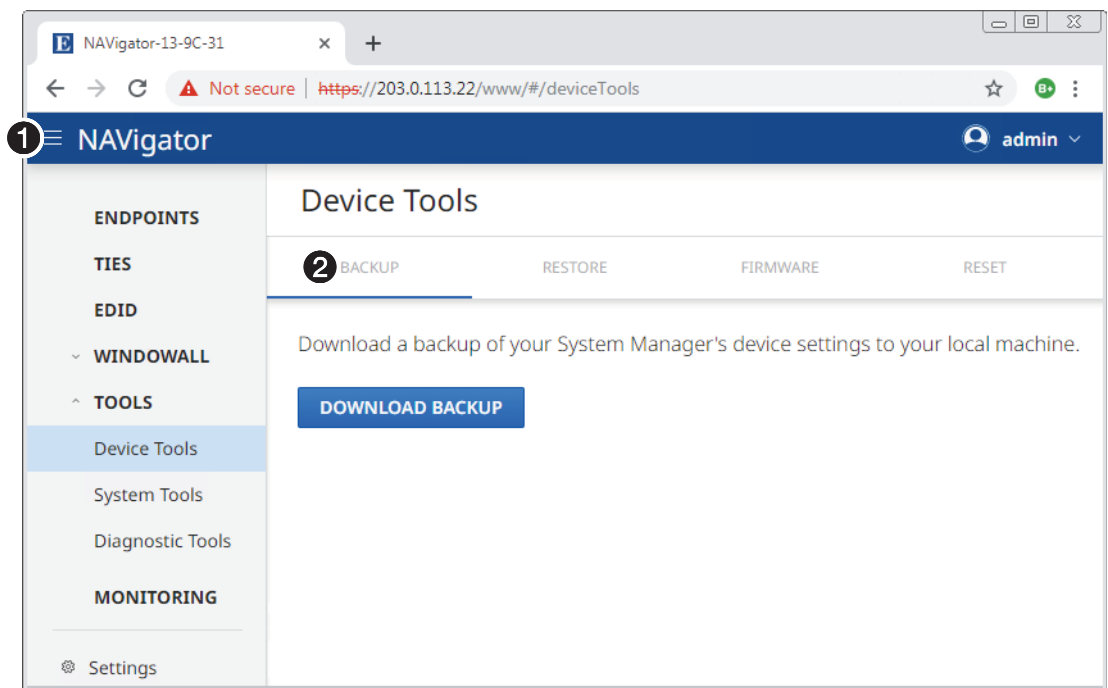
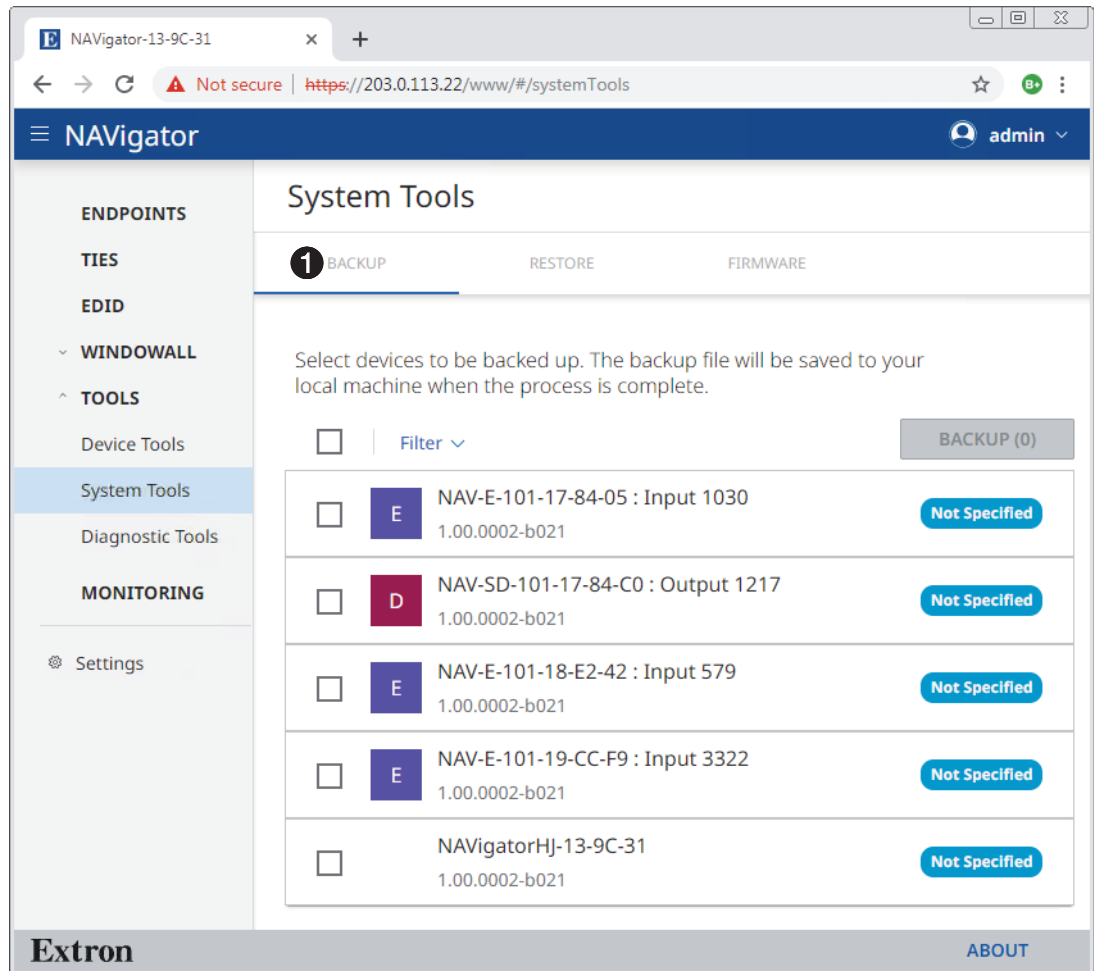


Figure 16. Device Tools Page

System Tools page

The System Tools page consists of three tabs (see figure 17, ❶), Backup, Restore, and Firmware that provide tools for the NAV system, including all assigned endpoints. See [System Tools Page](#) on page 77 for a detailed description of these system tools.



The screenshot shows a web browser window with the URL `https://203.0.113.22/www/#/systemTools`. The page title is "NAVigator" and the user is logged in as "admin". The left sidebar contains navigation options: ENDPOINTS, TIES, EDID, WINDOWALL, TOOLS (with sub-items: Device Tools, System Tools, Diagnostic Tools), MONITORING, and Settings. The main content area is titled "System Tools" and has three tabs: ❶ BACKUP, RESTORE, and FIRMWARE. The BACKUP tab is active and displays the following instructions: "Select devices to be backed up. The backup file will be saved to your local machine when the process is complete." Below the instructions is a "Filter" dropdown and a "BACKUP (0)" button. A table lists five endpoints, each with a checkbox, a colored icon (E or D), the device name and ID, and a "Not Specified" button.

Endpoint	ID	Action
<input type="checkbox"/> E NAV-E-101-17-84-05 : Input 1030	1.00.0002-b021	Not Specified
<input type="checkbox"/> D NAV-SD-101-17-84-C0 : Output 1217	1.00.0002-b021	Not Specified
<input type="checkbox"/> E NAV-E-101-18-E2-42 : Input 579	1.00.0002-b021	Not Specified
<input type="checkbox"/> E NAV-E-101-19-CC-F9 : Input 3322	1.00.0002-b021	Not Specified
<input type="checkbox"/> NAVigatorHJ-13-9C-31	1.00.0002-b021	Not Specified

Figure 17. System Tools Page

Diagnostic Tools page

The Diagnostic Tools page (see figure 18) provides tools that allow you to troubleshoot the connection to other units on the NAV network. Access the page as follows:

1. Click the **Tools > Diagnostic Tools** link on the left side of the browser (❶). The browser displays the Diagnostic Tools page.

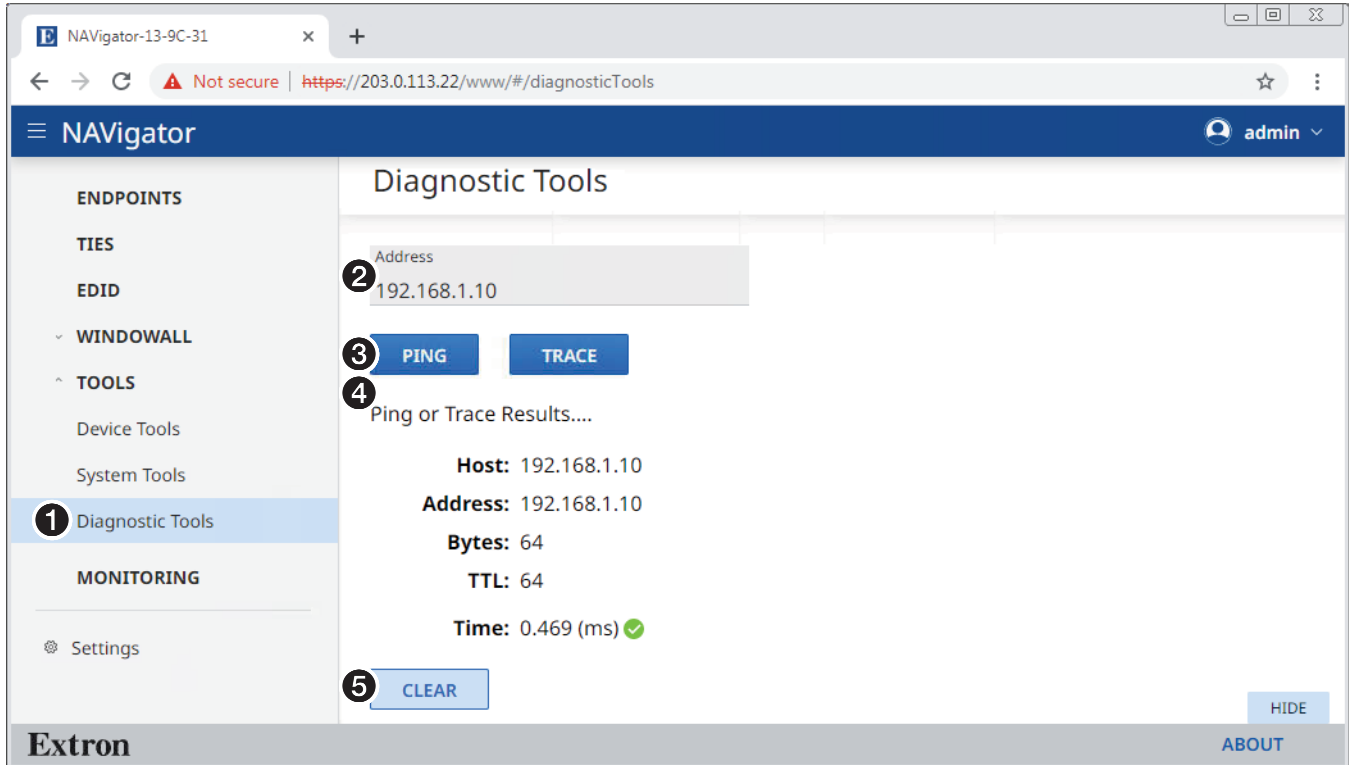


Figure 18. Diagnostic Tools Page, Ping Results Shown

2. Click in the **Address** field and type in the IP address of another unit on the network (❷).
3. Click either **Ping** or **Trace** (❸), depending on the diagnostic you want to run.

NOTES:

- **Ping** — Use this tool to test the connection to another unit on the network. Figure 18, ❹ shows the typical results of a Ping diagnostic.
- **Trace** — Use this tool to trace the network route taken by a packet from source to destination. Figure 19 shows the typical results of a Trace diagnostic.

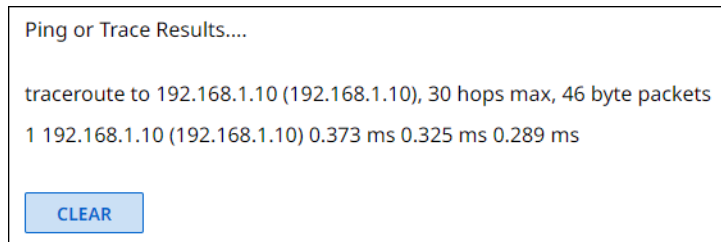


Figure 19. Trace Results Shown

5. Click **Clear** (❺) to reset the Address field if you want to run another diagnostic.

Monitoring Page

The Monitoring page shows system status information. To access the Monitoring page, click **Monitoring** (see figure 20, ❶). The Monitoring page opens. See **Monitoring Page** on page 87 for a detailed description of the monitored functions.

The screenshot shows a web browser window with the URL `https://203.0.113.22/www/#/monitoring`. The page title is "Monitoring" and the user is logged in as "admin". The left sidebar contains a menu with the following items: ENDPOINTS, TIES, EDID, WINDOWALL, TOOLS, ❶ MONITORING (highlighted), and Settings. The main content area displays the following monitoring cards:

- Offline Endpoints:** No offline devices (Status: Green checkmark)
- Conflicted Endpoints:** No device conflicts (Status: Green checkmark)
- IGMP Querier:** Discovered (192.168.1.111) (Status: Green checkmark)
- Control Systems:** 2/2 Connected (Status: Green checkmark, with a [LEARN MORE](#) link)

At the bottom of the main content area, there is a "No Alarms" section with an information icon and the text "There are no errors or warnings reported." and an [ALARM SETTINGS](#) link. A [DOWNLOAD LOGS](#) link is located at the bottom left of the main content area. The footer contains the "Extron" logo and an [ABOUT](#) link.

Figure 20. Monitoring Page

Settings Page

The Settings page provides the ability to view and change NAVigator settings. To access the Settings page, click **Settings** (see figure 21, ❶). The Device Settings page opens.

Using **Network Connection** (❷) is described as part of the procedure to create a NAV system (see "Creating a NAV System," below).

Using all other selections (❸) is described in **Settings Page** on page 93.

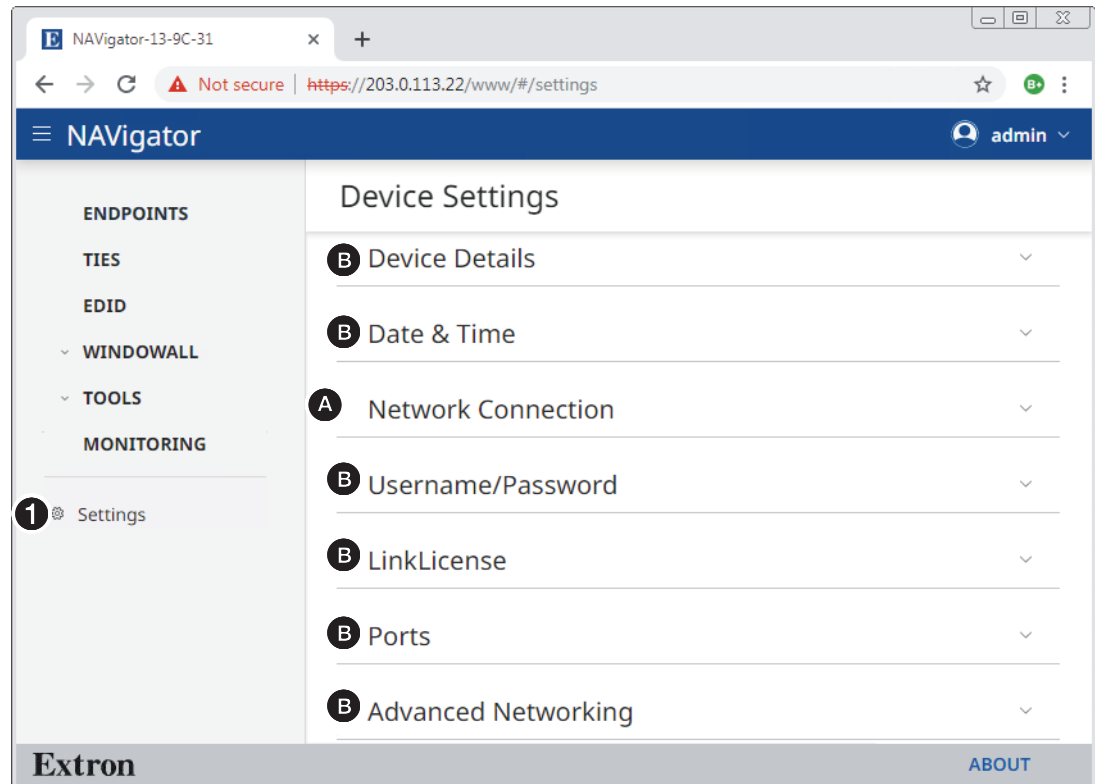


Figure 21. Device Settings Page

Creating a NAV System

Connection to the NAVigator can be done via the embedded HTML pages. Creating a NAV system using the NAVigator and its embedded HTML pages is a six-part process:

1. Connect to the NAVigator via the embedded HTML pages (see **Opening the Embedded HTML Pages** on page 10).
2. View and change NAVigator network settings as necessary (see **Network Connection Settings** on page 23).
3. Discover and assign endpoints to the NAV system (see **Discover and Assign Encoders and Decoders** on page 25).
4. View and change endpoint network settings as necessary (see **Configure Selected endpoint communication settings** on page 27).
5. Configure the AV sources, displays, and other equipment. Once endpoint communication are established, validate input/output signals via the **Device Details** pane of the endpoints.
6. Create and validate ties between the endpoints (see **Create Ties** on page 29).
7. Construct a control system using either Global Configurator or Global Scripter (see **Control System** on page 108).

Network Connection Settings

View and change connection settings as follows:

1. Obtain proper network connection values from the local system administrator.
2. If necessary, click the **Menu** icon (see figure 22, ❶) to toggle the links pane (❷) on.

The screenshot shows the NAVigator web interface in a browser window. The browser address bar shows the URL <https://203.0.113.22/www/#/settings>. The page title is "NAVigator" and the user is logged in as "admin".

The interface is divided into a left sidebar and a main content area. The sidebar contains a menu with the following items: ENDPOINTS, TIES, EDID, WINDOWALL, TOOLS, and MONITORING. The "Settings" option is highlighted with a circled 3 (❸).

The main content area is titled "Device Settings" and contains several sections: "Device Details", "Date & Time", and "Network Connection" (highlighted with a circled 4 (❹)).

The "Network Connection" section is divided into two columns: "OOB - Public LAN" and "NAV - AV LAN".

OOB - Public LAN	NAV - AV LAN
Port Enabled On	Link Speed 1 Gbps
Link Speed 1 Gbps	DHCP Off
DHCP On	IP Address 192.168.1.10
IP Address 198.168.113.148	Subnet 255.255.0.0
Subnet 255.255.240.0	Gateway 0.0.0.0
Gateway 198.168.112.100	DNS Server 0.0.0.0
DNS Server 198.168.1.96	DNS Suffix <i>Not Specified</i>
DNS Suffix extron.com	Link Local 169.254.7.129
MAC Address 00-05-A6-13-9C-31	MAC Address 00-05-A6-13-9C-32

Each column has an "EDIT" button at the bottom.

The footer of the page contains the "Extron" logo on the left and an "ABOUT" link on the right.

Figure 22. Network Connection Page

3. Click **Settings** (❸). The Device Settings page opens.
4. Click **Network Connections** (❹). The Network Connections drop-down menu opens, showing protected views of the network connection settings.

- Examine the network connection settings, comparing them against the values provided by the local system administrator. If all values are correct, proceed to **Discover and Assign Encoders and Decoders** on page 25.
- To change the settings**, click the appropriate (00B - Public LAN or NAV - AV LAN) **Edit** button (see figure 23, ❶). The **Edit** button changes to **Save** and the variable fields become available for editing.

NOTE: The IP Address, Subnet, Gateway, DNS Server, and DNS Suffix fields are unavailable for editing when DHCP is on.

The screenshot shows the 'Device Settings' pane with two columns: 'OOB - Public LAN' and 'NAV - AV LAN'. Each column has a 'RESET TO DEFAULT' button at the top. The OOB - Public LAN column includes a 'Port Enabled' switch (Off), 'Link Speed' (1 Gbps), 'DHCP' switch (On), and fields for IP Address (198.168.113.148), Subnet (255.255.240.0), Gateway (198.168.112.100), DNS Server (198.168.1.96), DNS Suffix (extron.com), and MAC Address (00-05-A6-13-9C-31). The NAV - AV LAN column includes 'Link Speed' (1 Gbps), 'DHCP' switch (Off), and fields for IP Address (192.168.1.10), Subnet (255.255.0.0), Gateway (0.0.0.0), DNS Server, DNS Suffix, Link Local (169.254.7.129), and MAC Address (00-05-A6-13-9C-32). At the bottom of each column are 'SAVE' and 'CANCEL' buttons. Numbered callouts 1-4 are placed over the interface: ❶ over the 'SAVE' button in the OOB column, ❷ over the 'DHCP' switch in the NAV column, ❸ over the 'Port Enabled' switch in the OOB column, and ❹ over the 'IP Address' field in the NAV column.

Figure 23. Device Settings Pane

- If desired**, click the **DHCP** switch (❷) to toggle Dynamic Host Configuration Protocol on and off.
- If desired**, click the **Port Enabled** switch (❸, 00B - Public LAN port only) to toggle the enable on and off.
- If desired**, click in the desired editable field (❹) and edit it as desired.
- Repeat step 9 as necessary for other values.
- Click **Save** (❶).

NOTE: If you change the settings of either port, you will lose communications momentarily while the NAVigator and endpoints self-reconfigure. This is normal.

Discover and Assign Encoders and Decoders

Discover and assign encoders and decoders (endpoints) to the NAV system as follows:

1. If necessary, click the **Menu** icon (see figure 24, ❶).

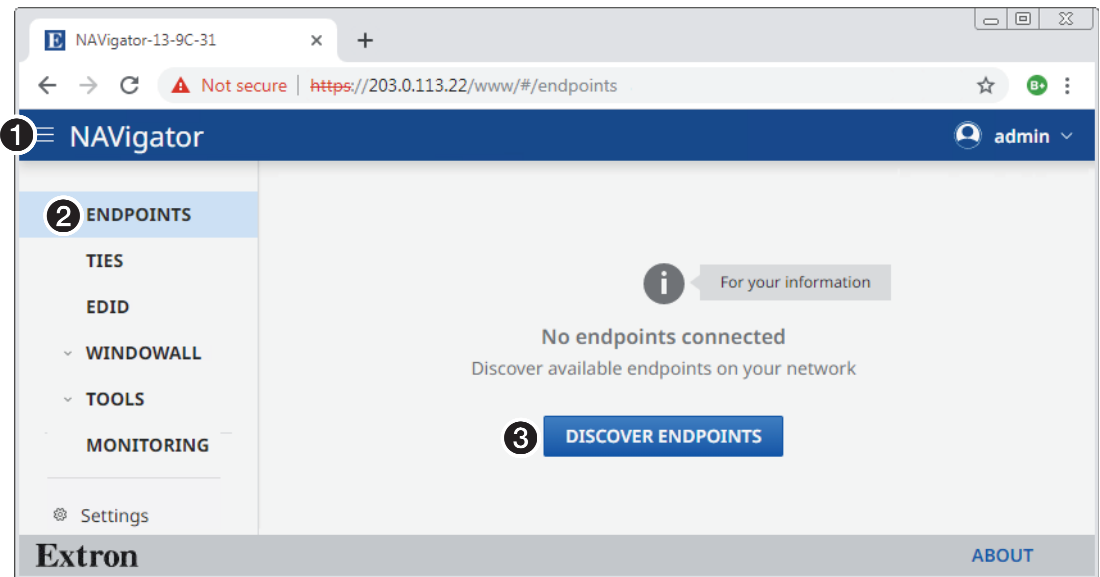


Figure 24. Discover Endpoints

2. Click **Endpoints** (❷).
3. Click **Discover Endpoints** (❸). The Assign Endpoints page opens (see [figure 26](#) on page 26).

NOTE: If you are adding to an existing set of assigned endpoints, at this point the endpoints page shows the existing endpoints and you click the **Discover** link instead (see figure 25, ❶).

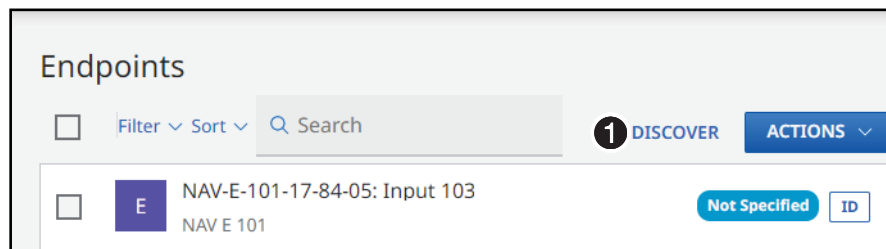


Figure 25. Appearance of Endpoints Page when Adding to Existing Endpoints

Continue the discovery and assignment process as described in steps 4 and 5 on [page 26](#).

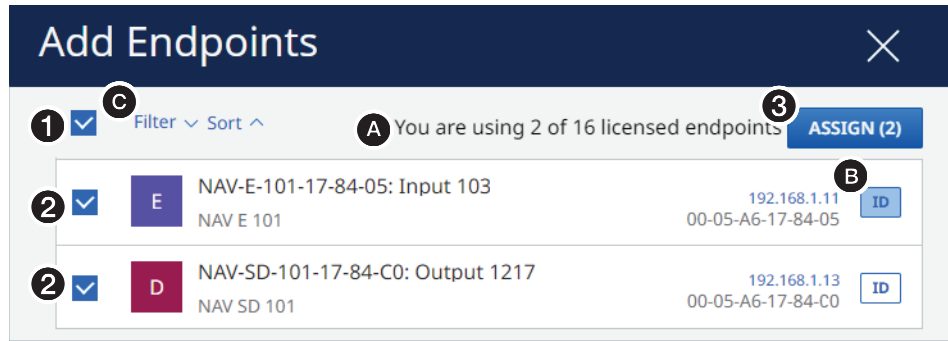


Figure 26. Assign Endpoints

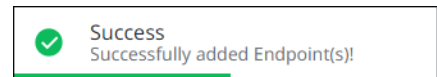
NOTES:

- A banner advises you of how many endpoints you are using and how many for which you are licensed (see figure 26, **A**).
- The NAVigator, by default, is licensed for 16 endpoints.
- Additional endpoints, up to 240, are available via LinkLicense; contact the Extron S3 Sales and Technical Support Hotline (see www.extron.com for the phone number in your region of the world). See [Loading a LinkLicense](#) on page 101 to install the license.
- When you assign an endpoint to the NAVigator, the endpoint automatically assumes the password of the NAVigator.

TIPS:

- Use the ID function to help identify an endpoint as follows:
 - Press and release the device **ID** button on the front panel of an endpoint to highlight the **ID** field on the HTML page for that endpoint (**B**). Press and release the button again to clear the highlight.
 - Click the **ID** field (**B**) on the HTML page to toggle the front panel ID LED on the endpoint on and off.
- Tailor the list to more easily find specific endpoints as follows:
 - Click the **Filter** drop-down menu (**C**) to show only endpoints by specific criteria (if created).
Click the **Sort** drop-down menu to arrange the order in which endpoints are displayed.

4. Click the **All** checkbox (**1**) or individual endpoint checkboxes (**2**).
5. Click **Assign** (**3**). The NAVigator assigns the endpoints and reports success on the endpoints page.



NOTE: Once an endpoint is assigned, it can no longer be discovered by other NAVigators.

Configure Selected Endpoint Communication Settings

NOTE: This section configures **selected** endpoint settings using bulk configuration (the most convenient approach). See [Endpoints page](#) on page 30 for detailed descriptions of configuring **all** endpoint settings.

Configure selected endpoint settings in bulk (all at once) as follows:

1. If necessary, click the **Menu** icon (see figure 27, **1**).

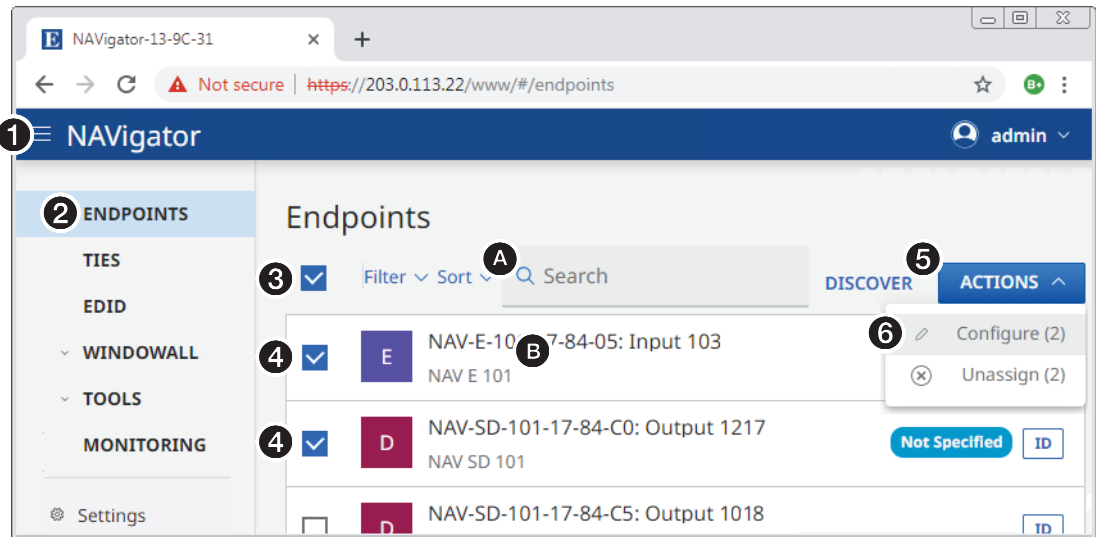


Figure 27. Selecting Configure

2. If necessary, click **Endpoints** (**2**). The Endpoints page opens.

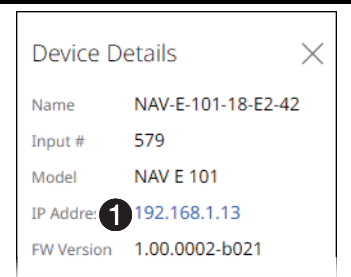
TIPS: Find specific endpoints more easily as follows:

- Use the **ID** button and **Filter** and **Sort** drop-down menus as described in the **TIPS** on page 26.
- Click in the **Search** field (**A**) and enter a few characters to show endpoints whose name or I/O number contain those characters.

3. Click the **All** checkbox (**3**) or individual endpoint checkboxes (**4**).
4. Click **Actions** (**5**) > **Configure** (**6**). The Configure Endpoints page opens (see [figure 28](#) and [figure 29](#), both on page 28).
5. Click the **General** link (see [figure 28](#), **1**) and the **Network** link (see [figure 29](#), **1**) as necessary to make the desired changes to the settings shown on the figures.
6. Click in one or more fields to be edited and make changes as necessary (see [figure 28](#), **2** on [figure 29](#), **2**, both on page 28).

TIP: Open the HTML page of a single endpoint for configuration (see [Device Details pane and proxy connections](#) on page 49), as follows:

1. Click in the field for the connected endpoint (see [figure 27](#), **B**). The HTML page opens a **Device Details** pane at the right of the page.
2. Click the **IP Address** (**1**, at right). The HTML page opens a new tab in the browser that is connected to the endpoint.



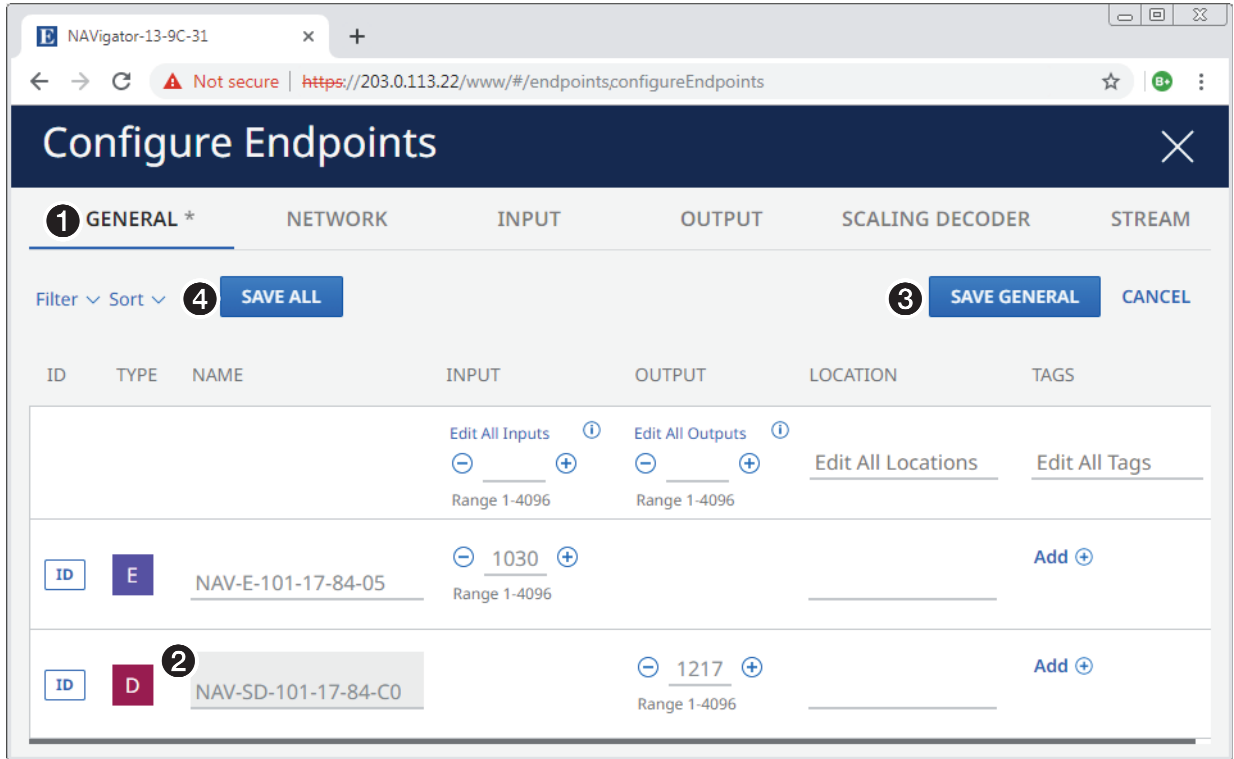


Figure 28. Configure Endpoints > General

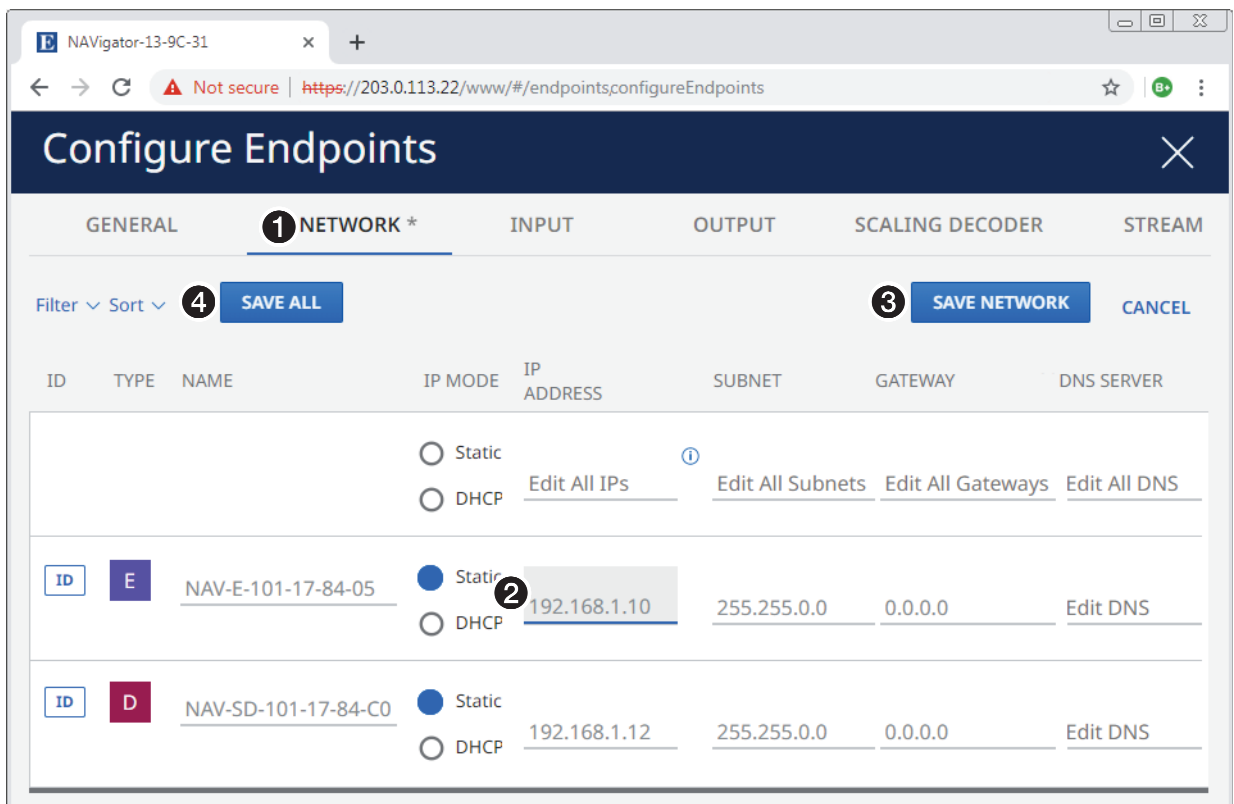


Figure 29. Configure Endpoints > Network

3. Click **Save** (3) or **Save All** (4) on either figure).

Create Ties

Create or change a tie in the NAV system as follows:

NOTE: You can also pair encoders and decoders to each other using the endpoint ID buttons (see the applicable endpoint guides available at www.extron.com).

1. If necessary, click the **Menu** icon (see figure 30, ❶).
2. If necessary, click **Ties** (❷). The page displays a grid of inputs and outputs.

The screenshot shows the NAVigator web interface. The browser address bar shows the URL <https://203.0.113.22/www/#/settings>. The page title is 'NAVigator' and the user is logged in as 'admin'. The sidebar on the left has 'ENDPOINTS' and 'TIES' selected. The main content area is titled 'Ties' and has three tabs: 'NAV', 'AES67', and 'USB'. Below the tabs are search filters for 'Search Inputs' and 'Search Outputs'. There are buttons for 'Set Tie Mod' with options: 'AUDIO + VIDEO', 'AUDIO ONLY', 'VIDEO ONLY', 'BREAK', and 'BREAK ALL TIES'. A grid of 'Available Inputs' and 'Available Outputs' is displayed. The 'Available Outputs' column includes 'All Decoders' and three specific decoder endpoints. The 'Available Inputs' column includes four encoder endpoints. A tie is established between the input 'NAV-E-101-12-F2-41: 579' and the 'All Decoders' output. Callouts ❶ through ❹ highlight the menu icon, the 'TIES' sidebar item, the 'AUDIO + VIDEO' tab, and a cell in the grid respectively.

Figure 30. Create Ties

NOTE: The tabs (❶) select the audio devices that are displayed in the grid. AES67 audio must be enabled to be available (see [Operation with AES67 Audio](#) on page 126).

TIP: Use the browser zoom feature to see more devices in the ties grid.

3. Click to select the Set Tie Mode (**Audio + Video**, **Audio Only**, or **Video Only**) (❸).
4. Click within the grid of inputs and outputs to tie the desired input to the desired decoder (or all decoders) (❹). Click in an existing tie to untie it.

TIP: Click in an **All Decoders** box (❺) to tie an input to all outputs.

NOTE: In the figure 30 example, **Audio + Video** from input NAV-E-101-12-F2-41 is tied to **All Decoders** (all outputs).

5. If the Create Ties page asks you to confirm the change, click **Continue**.

CONTINUE

Ties are displayed as follows:



Video and audio



Video only



Audio only

Detailed Descriptions and Operations

Endpoints Page

Besides the startup tasks of discovering and assigning endpoints to the NAVigator, the **Endpoints** pane has tools for “bulk” configuring one or multiple endpoints from the NAVigator. These tools are a more efficient way to manage your system than making changes to individual endpoints, either through their HTML pages directly (see the associated endpoint user guide) or proxied through the NAVigator (see [Device Details pane and proxy connections](#) on page 49).

Access the bulk configuration tools as follows:

1. If necessary, click the **Menu** icon (see figure 31, ①).

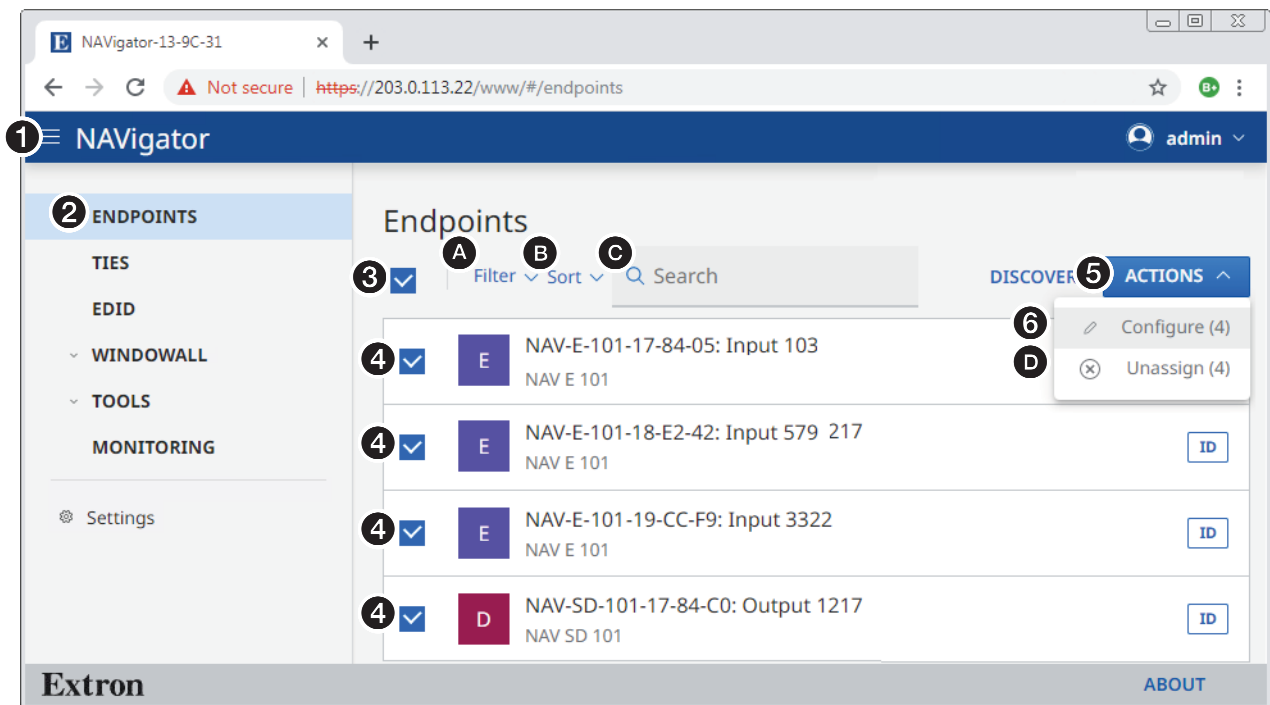


Figure 31. Accessing Bulk Configuration Tools

TIPS: Find specific endpoints more easily as follows:

- Use the ID button and Filter (A) and Sort (B) drop-down menus as described in the **TIPS** on page 26.
- Click in the **Search** field (C) and enter a few characters to show endpoints whose name or I/O number contain those characters.
- Click **Actions>Unassign** (5>D) to unassign an endpoint from the NAVigator.

2. If necessary, click **Endpoints** (2). The Endpoints page opens.
3. Click the **All** checkbox (3) or individual endpoint checkboxes (4).
4. Click **Actions** (5) > **Configure** (6). The Configure Endpoints tools open (see [figure 32](#) on page 32).

NOTE: The procedures that follow assume that you already have the General1 tab displayed on the Configure Endpoints tools (see the [procedure](#) on page 30).

The bulk configuration tools are located across several panes, accessible by the tabs identified in the following table. The table lists the panes, the functions available within them, and provides a link to detailed descriptions of changing those functions.

Tab	Configurable function	See:
General	Name	Add and edit names, tags, and locations on page 33
	Input and output number	Edit input and output numbers on page 35
	Location	Add and edit names, tags, and locations
	Tags	Add and edit names, tags, and locations
Network	Communication Settings	Configure endpoint communication settings on page 37
Input	HDCP authorized	Configure input settings on page 38
	Audio format	Configure input settings
Output	Video output	Configure output video and audio settings on page 40
	Allow audio only	Configure output video and audio settings
	HDCP mode	Configure output HDCP settings on page 41
	HDCP notification	Configure output HDCP settings
	Test pattern	Output a test pattern on page 42
Scaling Decoder	Output resolution	Configure the scaler on page 43
	Output rate	Configure the scaler
	Aspect ratio	Configure the scaler
	Auto memory	Configure the scaler
Stream	Bit rate (Mbps)	Configure the streaming settings on page 44
	Audio mode	Configure the streaming settings
	AES67 audio address	Configure the streaming settings
USB (applicable endpoints only)	USB port settings	Configure the USB settings on page 46
OSD	On-screen display	Configure the OSD on page 47
	Screen saver	Configure the screen saver on page 48

NOTES:

- When you make changes on a tab, two buttons become available:
 - The Save button for that page (such as [SAVE GENERAL](#) for the General1 tab).
 - The Save All button ([SAVE ALL](#)).
- You can make changes on multiple panes and then save them all by clicking [SAVE ALL](#).
- You can sort each column by clicking the header row, for example [NAME](#) ↑ or [INPUT](#) ↓.

General tab

When the Configure Endpoints tools are opened, they open to the General page (see figure 32).

NOTE: The General procedures that follow assume that you already have the General tab displayed on the Configure Endpoints tools (see the [procedure](#) on page 30).

The screenshot shows the 'Configure Endpoints' web interface in the 'GENERAL' tab. The interface includes a search bar, a 'SAVE GENERAL' button, and a 'CANCEL' button. Below these is a table with 4 endpoints. The table columns are ID, TYPE, NAME, INPUT, OUTPUT, LOCATION, and TAGS. The endpoints listed are NAV-E-501-17-84-05, NAV-E-101-18-E2-42, NAV-E-101-19-CC-F9, and NAV-SD-101-17-84-C0. The interface also includes a search bar and a 'Go to Page' field.

ID	TYPE	NAME ↑	INPUT	OUTPUT	LOCATION	TAGS
			Edit All Inputs <input type="button" value="Edit All Inputs"/>	Edit All Outputs <input type="button" value="Edit All Outputs"/>	<input type="button" value="Edit All Locations"/>	<input type="button" value="Edit All Tags"/>
			Range Start 1-4096	Range Start 1-4096		
<input type="button" value="ID"/>	<input type="button" value="E"/>	<input type="text" value="NAV-E-501-17-84-05"/>	<input type="button" value="-"/> <input type="text" value="1030"/> <input type="button" value="+"/> Range 1-4096		<input type="text"/>	<input type="button" value="Add +"/>
<input type="button" value="ID"/>	<input type="button" value="E"/>	<input type="text" value="NAV-E-101-18-E2-42"/>	<input type="button" value="-"/> <input type="text" value="579"/> <input type="button" value="+"/> Range 1-4096		<input type="text"/>	<input type="button" value="Add +"/>
<input type="button" value="ID"/>	<input type="button" value="E"/>	<input type="text" value="NAV-E-101-19-CC-F9"/>	<input type="button" value="-"/> <input type="text" value="3322"/> <input type="button" value="+"/> Range 1-4096		<input type="text"/>	<input type="button" value="Add +"/>
<input type="button" value="ID"/>	<input type="button" value="D"/>	<input type="text" value="NAV-SD-101-17-84-C0"/>		<input type="button" value="-"/> <input type="text" value="1217"/> <input type="button" value="+"/> Range 1-4096	<input type="text"/>	<input type="button" value="Add +"/>

1-4 of 4 Go to Page: Results per page: 10 << < 1 > >>

Figure 32. Endpoints Page, Configure Tools – General Tab

Add and edit names, tags, and locations

You can add a tag to discovered endpoints that are part of a particular usage set. Tags simplify finding specific endpoints and managing ties. You can add tags to assigned endpoints, and rename endpoints as desired. You can also associate each endpoint to the location where it is installed.

TIP: As an example using these features, you can tag all of the encoders associated with one presenter and one location so that you can limit encoders to that user and room when making ties.

NOTE: See the **NOTES** on page 34 for detailed valid character usage rules to ensure your entries are valid.

Add and edit tags, names, and locations as follows:

1. If necessary, click and drag the horizontal scroll bar (see figure 33, ①) to the right to reveal the Location and Tags fields.

NOTE: The Name field is locked in position and does not move.

The screenshot shows the 'Configure Endpoints' web interface. At the top, there's a navigation bar with tabs: GENERAL*, NETWORK, INPUT, OUTPUT, SCALING DECODER, and STREAM. Below the tabs are buttons for 'SAVE ALL' (6), 'SAVE GENERAL' (5), and 'CANCEL' (7). The main content area displays '2 Endpoints' in a table with columns: ID, TYPE, NAME ↑, LOCATION, and TAGS. The first row shows an endpoint with ID 'Encoder1' and type 'E'. The second row shows an endpoint with ID 'NAV-E-101-18-E2-42' and type 'E', with its location field set to 'Conference-room-1' (2). There are 'Edit All Locations' and 'Edit All Tags' (4) buttons above the table. The 'Tags' column for the second endpoint shows 'Payroll' and 'Add +' (3) buttons. A horizontal scroll bar (1) is located at the bottom of the table area. The bottom of the interface shows '1-2 of 2' items, a 'Go to Page: 1' input, and 'Results per page: 10' with navigation arrows.

Figure 33. Add and edit names, tags, and locations

2. To edit a Name or Location, click in the appropriate field and make changes as necessary (2).




NOTE: Name and Location can also be edited from the Settings > Device Settings page (see **Editing device details** on page 93).


3. Click anywhere outside the edited field.

- To create a tag for an individual assigned endpoint, click **Add**  (see [figure 33](#),  on page 33). An editable field opens (see [figure 34](#)).



Figure 34. Creating a Tag


- Click in the tag field and make changes as necessary (see [figure 34](#), ). When you click anywhere outside the tag field, the tag appears .
- To create a tag for all endpoints, click in the **Edit All Tags** field and make changes as necessary (see [figure 33](#),  on page 33).

When you click anywhere outside the **Edit All Tags** field, the **Add**  and **Remove**  buttons appear (shown at right).







- Click **Add** . The tag appears for each endpoint .

NOTES:

- Created tags cannot be edited.
- Delete a tag by clicking the .
- An endpoint can have a maximum of 10 tags.

- Click anywhere outside the edited field or fields. The **Save** buttons become available.

TIP: An asterisk  appears in the tab to indicate that there are unsaved changes.

- Click **Save General**  or **Save All**  to save the changes or **Cancel**  to abandon them.
- Click **X**  to close the Configuration Endpoints page or select a different tab or perform other operations to change other settings.

See the following **NOTES** for the text rules that apply to tags, names, and locations.

NOTES:

- Special characters, as used in the table below, are as follows:
! ~ ` @ # \$ % ^ & * () _ + = { } [] \ | : ; " ' < > , . ? and / .
A hyphen (-) is not a special character.
- Tags, names, and locations each have a 63-character limit.

Tag Rules	Name Rules	Location Rules
<ul style="list-style-type: none"> Cannot contain special characters. Cannot begin or end with a hyphen. Cannot begin with a space. <ul style="list-style-type: none"> Spaces are allowed after the first character. Multiple tags are allowed, making filtering and sorting searching easier. 	<ul style="list-style-type: none"> Must begin with a letter. Cannot contain special characters. Cannot end with a hyphen. Spaces are not allowed. 	<ul style="list-style-type: none"> Must begin with a letter. Cannot contain special characters. Cannot end with a hyphen. <ul style="list-style-type: none"> Hyphens are allowed in any other position. Cannot begin with a space. <ul style="list-style-type: none"> Spaces are allowed after the first character.

Edit input and output numbers

By default, input and output numbers are assigned by the endpoints. Being generated by an algorithm, the numbers appear random. If desired, change them as follows:

1. Click in the desired **Input** or **Output** field (see figure 35, **1**) and edit it as desired or click **+** or **-** to increment or decrement the field value. The valid range is from 1 to 4096.

NOTE: Each input requires a unique number and each output requires a unique number.

TIPS:

- Extron recommends sequential I/O numbering across the NAV system.
- If you sequentially number inputs and outputs, the NAV system function is similar to a traditional Extron matrix switcher.

The screenshot shows the 'Configure Endpoints' web interface. The browser address bar shows '203.0.113.22/www/#/endpoints/configureEndpoints'. The page title is 'Configure Endpoints'. The interface has tabs for 'GENERAL', 'NETWORK', 'INPUT', 'OUTPUT', and 'SCALING DECODER'. The 'GENERAL' tab is active. There are buttons for 'SAVE ALL', 'SAVE GENERAL', and 'CANCEL'. Below these buttons, it says '4 Endpoints'. A table lists four endpoints with columns for ID, TYPE, NAME, INPUT, OUTPUT, and LOCATION. The 'INPUT' and 'OUTPUT' columns have increment/decrement buttons and a range indicator 'Range 1-4096'. Callout 1 points to the output field of the last endpoint, which is '1040'. Callout 2 points to the 'SAVE GENERAL' button. Callout 3 points to the 'SAVE ALL' button. Callout 4 points to the 'CANCEL' button. Callout 5 points to the close button in the top right corner.

ID	TYPE	NAME ↑	INPUT	OUTPUT	LOCATION
			Edit All Inputs A - 128 + Range Start 1-4096	Edit All Outputs - + Range Start 1-4096	Edit All Locat
ID	E	NAV-E-101-17-84-05	A1 - 128 + Range 1-4096		
ID	E	NAV-E-101-18-E2-42	A2 - 129 + Range 1-4096		
ID	E	NAV-E-101-19-CC-F9	A3 - 130 + Range 1-4096		
ID	D	NAV-SD-101-17-84-C0		1 - 1040 + Range 1-4096	

Figure 35. Edit input and output numbers

TIP: If you enter a value in either the **Edit All Inputs** or **Edit All Outputs** field (**A**), the first endpoint listed below the edited field is changed to that number (**A1**). Subsequent input or output numbers (**A2** and **A3**) increment as the endpoints are listed from top to bottom.

- Click anywhere outside the edited field or fields. The Save buttons become available.

TIP: An asterisk (*) appears in the tab to indicate that there are unsaved changes.

- Click **Save General** (2) or **Save All** (3) to save the changes or **Cancel** (7) to abandon them.
- Click **x** (see [figure 35](#), 4 on page 35) to close the Configuration Endpoints page or select a different tab or perform other operations to change other settings.

Network tab

NOTE: The Network procedures that follow assume that you already have the General tab displayed on the Configure Endpoints tools (see the [procedure](#) on page 30).

ID	TYPE	NAME ↑	IP MODE	IP ADDRESS	SUBNET	GATEWAY	DNS SERVER	ETHERNET EXTENSION
			<input checked="" type="radio"/> Static <input type="radio"/> DHCP	192.168.1.10	55.255.0.0	Edit All Gateways	Edit All DNS	<input checked="" type="checkbox"/> Enabled
ID	E	NAV-E-501-17-84-C	<input checked="" type="radio"/> Static <input type="radio"/> DHCP	192.168.1.10	55.255.0.0	0.0.0.0	Edit DNS	<input checked="" type="checkbox"/> Enabled
ID	E	NAV-E-501-18-E2-42	<input checked="" type="radio"/> Static <input type="radio"/> DHCP	192.168.1.11	55.255.0.0	0.0.0.0	Edit DNS	<input checked="" type="checkbox"/> Enabled
ID	E	NAV-E-101-19-CC-F9	<input checked="" type="radio"/> Static <input type="radio"/> DHCP	192.168.1.25	55.255.255.0	0.0.0.0	Edit DNS	
ID	D	NAV-SD-101-17-84-C0	<input checked="" type="radio"/> Static <input type="radio"/> DHCP	192.168.1.13	55.255.0.0	0.0.0.0	Edit DNS	

Figure 36. Endpoints Page, Configure Tools – Network Tab

Configure endpoint communication settings

TIP: Adhere to IP addressing best practices and considerations for IP addressing schemes in a larger system.

1. Click the **Network** tab (see **figure 36**, **1** on page 36) to make changes to the network settings.
2. If desired, click either the **Static** or **DHCP** radio button to choose the desired IP addressing method.
 - You can select either for all inputs (**2**) or one or more individual endpoints (**3**).
 - You can select either radio button for all inputs (**2**) and then change the setting for individual endpoints (**3**).
 - All of the other settings for an endpoint under this tab are unavailable for selection when that endpoint is selected for DHCP.
3. Click in one or more fields to be edited and make changes as necessary (**4**).

TIPS:

- If you enter a value in the **Edit All IP Addresses** field (**A**), the first endpoint listed below the edited field is changed to that number (**A1**). The IP addresses for subsequent endpoints (**A2** and **A3**) increment as the endpoints are listed from top to bottom **unless** you have also made a change to an individual endpoint (**4**).
- If you enter a value in either the **Edit All Subnets**, **Edit All Gateways**, or **Edit All DNS** field (**B**), all listed endpoints have that value **unless** you have also made a change to an individual endpoint (**4**).

4. Click anywhere outside the edited field or fields. The **Save** buttons become available.

TIP: After you make any change in steps 2 and 3, an asterisk (**C**) appears in the tab to indicate that there are unsaved changes.

5. Click **Save Network** (**5**) or **Save All** (**6**) to save the changes or **Cancel** (**7**) to abandon them.
6. Click **x** (**8**) to close the **Configuration Endpoints** page or select a different tab to change other settings.

Input tab

NOTE: The Input procedures that follow assume that you already have the General tab displayed on the Configure Endpoints tools (see the [procedure](#) on page 30).

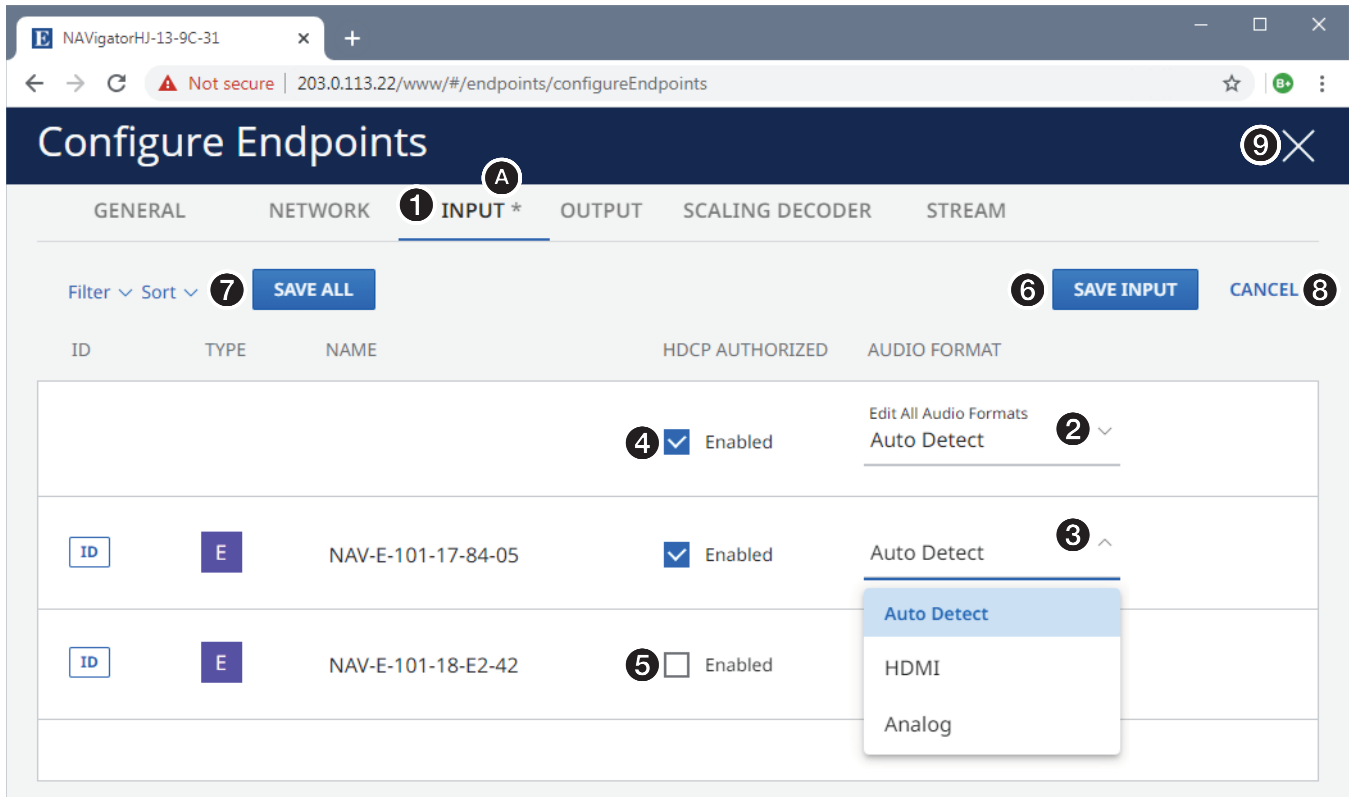


Figure 37. Endpoints Page, Configure Tools – Input Tab

Configure input settings

1. Click the **Input** tab (see figure 37, **1**) to make changes to the endpoint settings.
2. Click the **Audio Format** drop-down menu for all inputs (**2**) or for one or more individual endpoints (**3**) to select between **Auto Detect**, **HDMI**, or **Analog**.
3. If desired, select (click) or deselect the **HDCP Authorized** checkbox for all inputs (**4**) or for one or more individual endpoints (**5**).

NOTE: When **HDCP Authorized** is enabled (checked), the encoder informs the connected source that it can accept HDCP signals and is HDCP compliant. When disabled, the encoder informs the connected source that it is not HDCP compliant.

- For sources requiring encryption, enable **HDCP Authorized**. If **HDCP Authorized** is disabled for sources requiring encryption (for example, a Blu-ray player), the output is muted or a warning message is displayed.
- Some sources may encrypt their output even if the source material does not require HDCP encryption, preventing content from being displayed on a non-HDCP compliant display. Disable **HDCP Authorized** to allow the output of the scaler to remain unencrypted.

TIP: After you make any change in steps 2 and 3, an asterisk (**A**) appears in the tab to indicate that there are unsaved changes.

4. Click **Save Input** (**6**) or **Save All** (**7**) to save the changes or **Cancel** (**8**) to abandon them.
5. Click **X** (**9**) to close the Configuration Endpoints page or select a different tab to change other settings.

Output tab

NOTE: The Output procedures that follow assume that you already have the General tab displayed on the Configure Endpoints tools (see the [procedure](#) on page 30).

The screenshot shows the 'Configure Endpoints' web interface with the 'OUTPUT' tab selected. The interface includes a header with navigation tabs (GENERAL, NETWORK, INPUT, OUTPUT, SCALING DECODER, STREAM) and a table of endpoints. The table has columns for ID, TYPE, NAME, VIDEO OUTPUT, ALLOW AUDIO ONLY, HDCP MODE, HDCP NOTIFICATION, and TEST PATTERN. There are also 'Filter' and 'Sort' dropdowns, and 'SAVE OUTPUT' and 'CANCEL' buttons.

ID	TYPE	NAME	VIDEO OUTPUT	ALLOW AUDIO ONLY	HDCP MODE	HDCP NOTIFICATION	TEST PATTERN
			Edit All Outputs Auto	<input checked="" type="checkbox"/> Enabled	Edit All Modes Follow Input	<input checked="" type="checkbox"/> Enabled	Edit All Patterns Disabled
<input type="button" value="ID"/>	<input type="button" value="E"/>	NAV-E-101-17-84-05	Auto	<input checked="" type="checkbox"/> Enabled		<input checked="" type="checkbox"/> Enabled	Disabled
<input type="button" value="ID"/>	<input type="button" value="E"/>	NAV-E-101-18-E2-42	Auto	<input checked="" type="checkbox"/> Enabled		<input checked="" type="checkbox"/> Enabled	Disabled
<input type="button" value="ID"/>	<input type="button" value="E"/>	NAV-E-101-19-CC-F9	Auto	<input checked="" type="checkbox"/> Enabled		<input checked="" type="checkbox"/> Enabled	Disabled
<input type="button" value="ID"/>	<input type="button" value="D"/>	NAV-SD-101-17-84-C0	Auto	<input checked="" type="checkbox"/> Enabled	Follow Input	<input checked="" type="checkbox"/> Enabled	Disabled

Figure 38. Endpoints Page, Configure Tools – Output Tab

Configure output video and audio settings

Configure the video and audio output as follows:

1. Click the **Output** tab (see figure 39, ①).

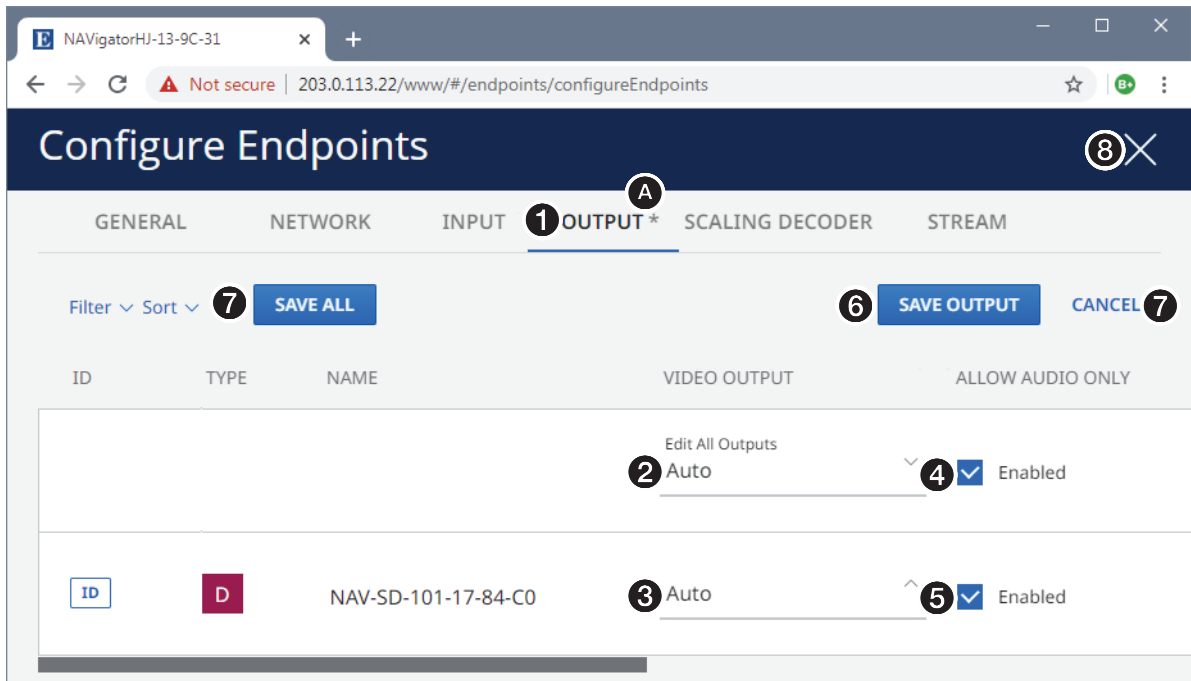


Figure 39. Configure Video and Audio Output Settings

2. Click the **Video Output** drop-down menu for all outputs (②) or for one or more individual endpoints (③) to select among the available video output formats (shown at right). **Auto** (if selected) follows the input format.

NOTE: The decoders change their color space, chroma sampling and quantization parameters for compatibility with HDMI and DVI sink devices.

3. If desired, select (click) or deselect the **Allow Audio Only** checkbox for all outputs (④) or for one or more individual endpoints (⑤).

NOTE: When **Allow Audio Only** is enabled (checked), and if an active video input signal is not present in the stream, the decoder sends a black burst signal to the attached display. The black burst prevents the display from going into standby state, allowing the display speakers to play audio. When **Allow Audio ONLY** is disabled, the display goes into standby state if an active video input signal is not present regardless of whether active audio is.

TIP: After you make any change in steps 2 and 3, an asterisk (A) appears in the tab to indicate that there are unsaved changes.

Auto
DVI RGB 444
HDMI RGB 444 FULL
HDMI RGB 444 LIMITED
HDMI YUV 444 FULL
HDMI YUV 444 LIMITED
HDMI YUV 422 FULL
HDMI YUV 422 LIMITED

4. Click **Save Output** (⑥) or **Save All** (⑦) to save the changes or **Cancel** (⑧) to abandon them.
5. Click **X** (⑨) to close the Configuration Endpoints page or select a different tab to change other settings.

Configure output HDCP settings

Configure the output HDCP settings as follows:

1. Click the **Output** tab (see figure 40, ①).

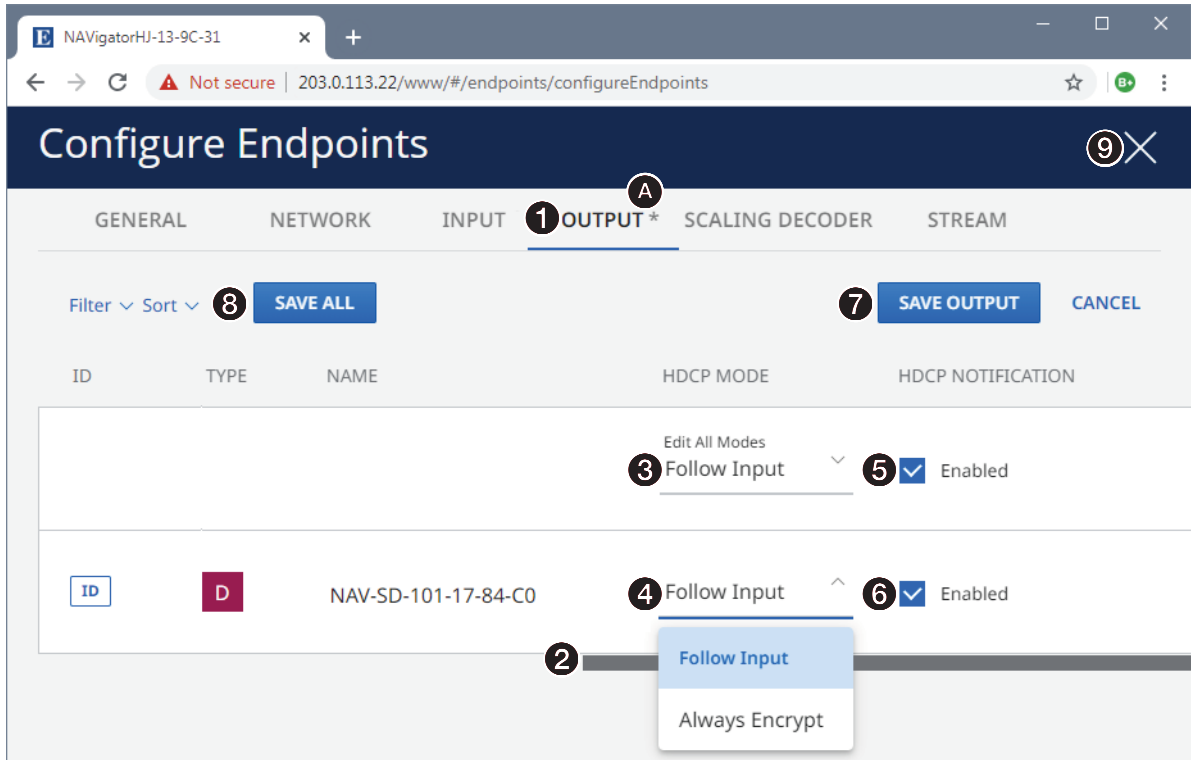


Figure 40. Configure Output HDCP Settings

2. If necessary, click and drag the horizontal scroll bar (②) to the right to reveal the HDCP fields.

NOTE: The Name field is locked in position and does not move.

3. Click the **HDCP Mode** drop-down menu for all outputs (③) or for one or more individual endpoints (④) to select between **Follow Input** and **Always Encrypt**.

NOTE: **Follow Input** mimics the HDCP encryption state of the connected source. **Always Encrypt** maintains the HDCP encrypted state with the output sink device to improve system switching performance.

4. If desired, select (click) or deselect the **HDCP Notification** checkbox for all outputs (⑤) or for one or more individual endpoints (⑥).

NOTE: When **HDCP Notification** is enabled (checked) and the source video is HDCP encrypted but the display attached to the decoder is not HDCP compliant, the decoder outputs a green screen. When **HDCP Notification** is disabled, a the decoder does not output a green screen, but outputs a black screen instead.

TIP: After you make any change in steps 3 and 4, an asterisk (A) appears in the tab to indicate that there are unsaved changes.

5. Click **Save Output** (⑦) or **Save All** (⑧) to save the changes or **Cancel** (⑨) to abandon them.
6. Click **X** (⑩) to close the Configuration Endpoints page or select a different tab to change other settings.

Output a test pattern

Configure the output test pattern as follows:

1. Click the **Output** tab (see figure 41, ①).

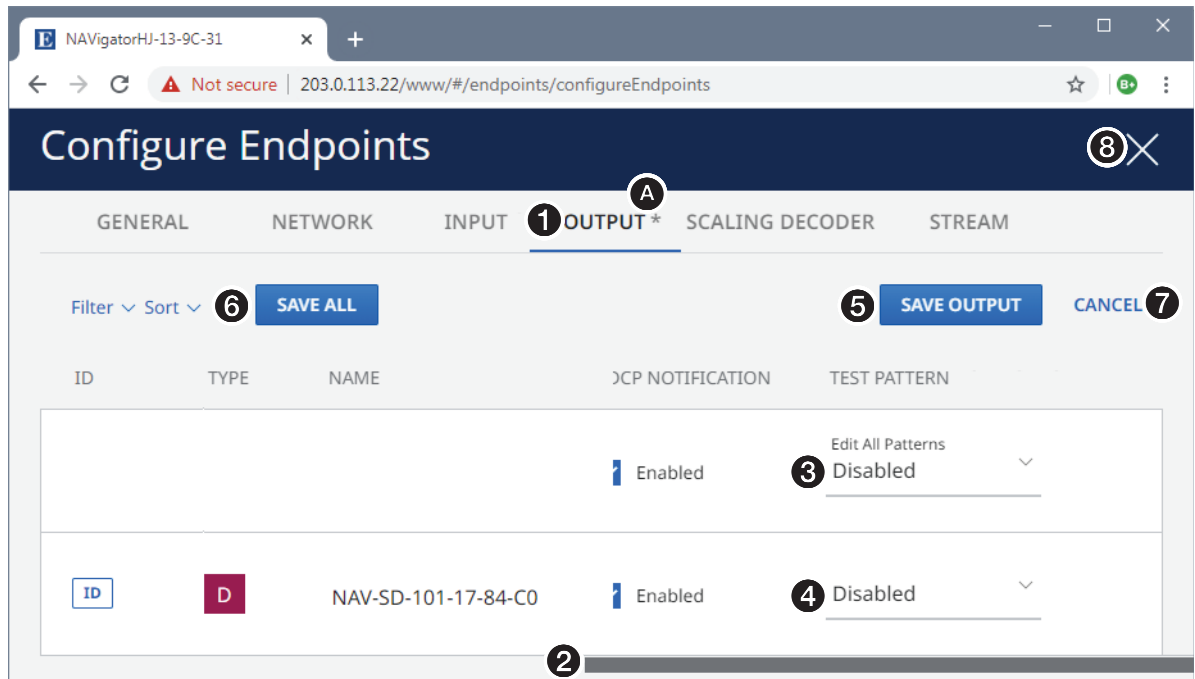


Figure 41. Configure Test Pattern

2. If necessary, click and drag the horizontal scroll bar (②) to the right to reveal the Test Pattern drop-down menu.

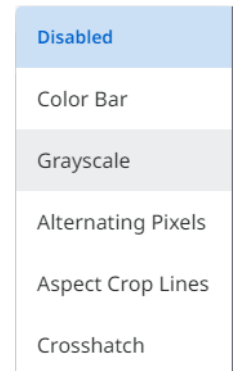
NOTE: The Name field is locked in position and does not move.

3. Click the **Test Pattern** drop-down menu for all outputs (③) or for one or more individual endpoints (④) to select among the available test patterns (shown at right) or no test pattern (**Disabled**).

NOTE: Test patterns are for debug and setup purposes. They let you validate a video signal path in the system and setup the displays connected to the outputs.

- Encoders can output color bar and grayscale test patterns.
- Decoders can output color bar, grayscale, alternating pixels, aspect crop lines, and crosshatch test patterns.

TIP: After you make a change in step 3, an asterisk (A) appears in the tab to indicate that there are unsaved changes.



4. Click **Save Output** (⑤) or **Save All** (⑥) to save the changes or **Cancel** (⑦) to abandon them.
5. Click X (⑧) to close the Configuration Endpoints page or select a different tab to change other settings.

Scaling Decoder tab

NOTE: The Scaling procedures that follow assume that you already have the General tab displayed on the Configure Endpoints tools (see the [procedure](#) on page 30).

Configure the scaler

Configure the output scaler settings as follows:

1. Click the **Scaling Decoder** tab (see figure 42, ①).

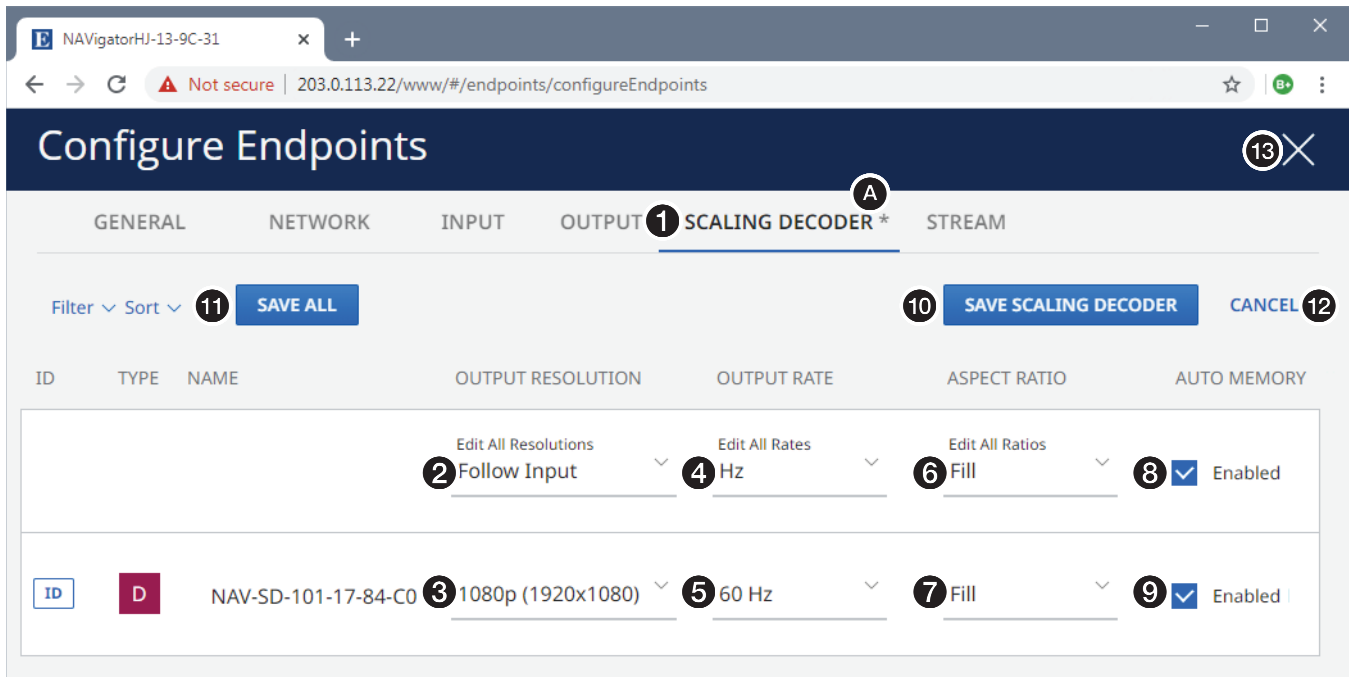


Figure 42. Endpoints Page, Configure Tools – Scaling Decoder Tab

2. Click the **Output Resolution** drop-down menu for all outputs (②) or for one or more individual endpoints (③) to select among **Follow Input** (no scaling) or scaled to a desired output resolution from the options presented.
3. Click the **Output Rate** drop-down menu for all outputs (④) or for one or more individual endpoints (⑤) to select among the available rates.

NOTE: See the applicable decoder user guide, available at www.extron.com, for a detailed list of available output resolutions and rates.

4. Click the **Aspect Ratio** drop-down menu for all outputs (⑥) or for one or more individual endpoints (⑦) to select between **Follow** (no scaling, maintain the aspect ratio of the input video) or **Fill** (scale the output to fill the connected display).
5. If desired, select (click) or deselect the **Auto Memory** checkbox for all outputs (⑧) or for one or more individual endpoints (⑨). Auto memory automatically saves picture adjustments to memory based on the incoming signal resolution and recalls them when the resolution is detected.

TIP: After you make any changes in step 2 through 5, an asterisk (A) appears in the tab to indicate that there are unsaved changes.

6. Click **Save Scaling Decoder** (⑩) or **Save All** (⑪) to save the changes or **Cancel** (⑫) to abandon them.

- Click **x** (12) to close the Configuration Endpoints page or select a different tab to change other settings.

Stream tab

Configure the streaming settings

NOTE: Lay out the complete scheme for all streaming IP addressing before adjusting the addresses to avoid creating a situation in which the system becomes inoperable.

Configure the streaming settings as follows:

- Click the **Stream** tab (see figure 43, 1).

The screenshot shows the 'Configure Endpoints' web interface in the 'STREAM' tab. The interface includes a search bar, a table of endpoints, and several control buttons. The table has the following data:

ID	TYPE	NAME ↑	BIT RATE (MBPS)	NAV AUDIO	AES67	AES67 AUDIO ADDRESS
			Range 150-900	Enabled	Enabled	239.69.4.6
NAV-E-101-17-84-05	E		850	Enabled	Enabled	239.69.4.6
NAV-E-101-18-E2-42	E		850	Enabled	Enabled	239.69.4.12
NAV-E-101-19-CC-F9	E		850	Enabled	Enabled	239.69.4.8
NAV-SD-101-17-84-C0	D			Enabled	Enabled	

At the bottom of the interface, there is a pagination control showing '1-8 of 8' and 'Go to Page: 1', and a 'Results per page: 10' dropdown menu.

Figure 43. Endpoints Page, Configure Tools – Stream Tab

- Click in the **Bitrate** field for all encoders (2) or for one or more individual encoders (3) and edit it as desired or click + or - to increment or decrement the field value. The valid range is from 150 to 9500.

NOTE: The upper limit for 1G encoders is 900 Mbps. The upper limit for 10G encoders is 9500 Mbps. If you enter a **Bitrate** value for all encoders (2), it affects both 1G and 10G products.

3. Click the **NAV Audio** checkbox or all encoders (figure 43, 4 on page 44) or for one or more individual endpoints (5) to toggle **NAV Audio** on and off.
4. Click the **AES67** checkbox for all encoders (6) or for one or more individual endpoints (7) to toggle **AES67** audio on and off.
5. Click one or more IP address fields to be edited and make changes as necessary (8).
 - **AES67 Audio Address fields**
 - **Video IP fields**
 - **Audio IP fields**
 - **USB IP fields** (the field is present only for endpoints with USB streaming capabilities)

NOTES:

- Drag the scroll bar (A) as necessary to reveal fields on the right side of the screen. The right side of the **Stream** tab is revealed (see figure 44).

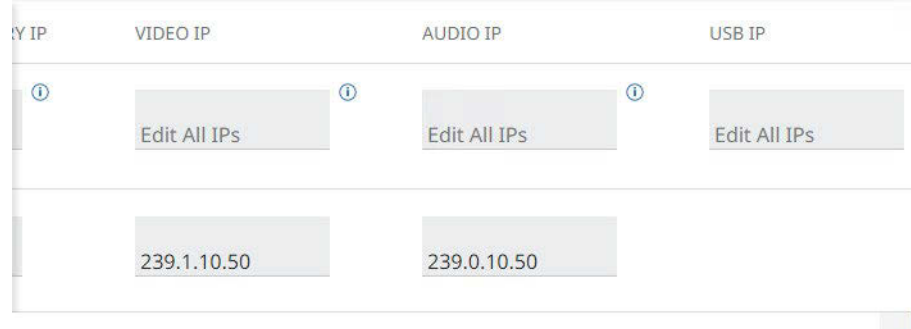


Figure 44. Revealed Fields

- The valid range for **AES67 Audio Address** fields is from **239.69.0.0** to **239.69.255.255**.
- The valid range for all other addresses on this pane is from **224.0.0.0** to **239.255.255.255**, exclusive of **239.69** addresses, which are reserved for AES67.
- Each field with an address must be unique.

TIPS:

- If you enter a value in the **Edit All IPs** field for a column of address (such as **AES67 Audio Address** (B), the first endpoint listed below the edited field is changed to that number (B1). Subsequent **AES67 Audio Address** numbers (B2 and B3) increment as the endpoints are listed from top to bottom **unless** you have also made a change to an individual endpoint (B).
- After you make any changes in step 2 through 5, an asterisk (C) appears in the tab to indicate that there are unsaved changes.

6. Click anywhere outside the edited field or fields. The **Save** buttons become available.
7. Click **Save Stream** (9) or **Save All** (10) to save the changes or **Cancel** (11) to abandon them.
8. Click **x** (12) to close the **Configuration Endpoints** page or select a different tab to change other settings.

USB tab

NOTE: The USB tab is present only if you select one or more endpoints with USB streaming capabilities in **Configure Selected Endpoint Communication Settings**, step 3 on page 27.

Configure the USB settings

Configure the USB streaming capabilities of applicable endpoints as follows:

1. Click the **USB** tab (see figure 45, ①).

ID	TYPE	NAME ↑	USB PORT	MODE	DEVICE CLASS FILTERING
			② <input type="checkbox"/> Enabled	④ Edit All Device Modes Host	⑥ Edit All Device Classes HID Only
<input type="button" value="ID"/>	D	NAV-SD-501-1B-67-61	③ <input type="checkbox"/> Enabled	⑤ Device	⑦ HID Only
<input type="button" value="ID"/>	E	NAV-E-501-1B-67-E1	③ <input type="checkbox"/> Enabled	⑤ Host	⑦ USB 2.0

Figure 45. Endpoints Page, Configure Tools – USB Tab

2. Click the **USB Port** checkbox for all endpoints (see figure 45, ②) or for one or more individual endpoints (③) to toggle the port enabled and disabled.
3. Click the **Mode** drop-down menu for all endpoints (④) or for one or more individual endpoints (⑤) to select between **Host** and **Device**.
4. Click the **Device Class Filtering** drop-down menu for all inputs (⑥) or for one or more individual endpoints (⑦) to select between **USB 2.0**, or **HID Only** (Human Interface Device), a class of devices for human interface such as keyboards and mice.

NOTES:

- The **Mode** and **Device Class Filtering** drop-down menus are unavailable for selection if the USB port is disabled in step 2.
- **Device Class Filtering** restricts the USB device types, typically for security purposes. Different functionality applies in the two modes.

TIP: After you make any changes in step 2 through 4, an asterisk appears in the tab to indicate that there are unsaved changes.

5. Click **Save USB** (see [figure 45](#), **8** on page 46) or **Save All** (**9**) to save the changes or **Cancel** (**10**) to abandon them.
6. Click **X** (**11**) to close the Configuration Endpoints page or select a different tab to change other settings.

OSD tab

Configure the On-screen display and screen saver capabilities of the endpoints as follows:

1. Click the **OSD** tab (see [figure 46](#), **1**).
2. **For OSD settings**, see "Configure the OSD," below.

For screen saver settings, see [Configure the screen saver](#) on page 48.

Configure the OSD

The screenshot shows the 'Configure Endpoints' page with the 'OSD' tab selected. The interface includes a navigation bar with tabs for INPUT, OUTPUT, SCALING DECODER, STREAM, USB, and OSD. The OSD tab is selected and marked with an asterisk. Below the navigation bar are buttons for 'SAVE ALL', 'SAVE OSD', and 'CANCEL'. A table lists two endpoints: 'NAV-SD-501-1B-67-61' and 'NAV-E-501-1B-67-E1'. The table columns are ID, TYPE, NAME, OSD TYPE, OSD DURATION, SCREEN SAVER MUTE, SCREEN SAVER DURATION, and SCREEN SAVER IMAGE. Callouts 1 through 11 highlight various UI elements: 1 (OSD tab), 2 (OSD Type dropdown), 3 (OSD Type dropdown for individual endpoints), 4 (OSD Duration field), 5 (OSD Duration field for individual endpoints), 6 (SAVE OSD button), 7 (SAVE ALL button), 8 (CANCEL button), 9 (SAVE ALL button), 10 (CANCEL button), and 11 (Close button).

Figure 46. Endpoints Page, Configure Tools – OSD Tab and Operations

3. Click the **OSD Type** drop-down menu for all endpoints (**2**) or for one or more individual endpoints (**3**) to select between **Input OSD** (input connection details), **status OSD** (general endpoint details), or **Disabled** (no OSD).
4. Click in the **OSD Duration** field for all endpoints (**4**) or for one or more individual endpoints (**5**) and edit it as desired or click **+** or **-** to increment or decrement the field value. The valid range is from **1 to 500** (in seconds) or **501** (always on).

TIP: After you make any changes in step 2 and 3, an asterisk (A) appears in the tab to indicate that there are unsaved changes.

5. Click **Save OSD** (see [figure 46](#), 6 on page 47) or **Save All** (7) to save the changes or **Cancel** (8) to abandon them.
6. Click X (9) to close the Configuration Endpoints page, select a different tab to change other settings, or continue to "Configure the screen saver".

Configure the screen saver

The screenshot shows the 'Configure Endpoints' page in a web browser. The browser address bar shows '203.0.113.22/www/#/endpoints/configureEndpoints'. The page title is 'Configure Endpoints'. The navigation bar includes tabs for INPUT, OUTPUT, SCALING DECODER, STREAM, USB *, and OSD *. The OSD * tab is active and has an asterisk (A) next to it. Below the navigation bar, there are buttons for 'SAVE ALL' (8), 'SAVE OSD' (7), and 'CANCEL' (9). Below these buttons, it says '2 Endpoints'. There is a table with the following columns: ID, TYPE, NAME, OSD TYPE, OSD DURATION, SCREEN SAVER MUTE, SCREEN SAVER DURATION, and SCREEN SAVER IMAGE. The table has two rows of endpoints. The first row is for endpoint 'NAV-SD-501-1B-67-61' with type 'D'. The second row is for endpoint 'NAV-E-501-1B-67-E1' with type 'E'. The table has several configuration fields for each endpoint, including 'OSD TYPE', 'OSD DURATION', 'SCREEN SAVER MUTE', 'SCREEN SAVER DURATION', and 'SCREEN SAVER IMAGE'. Numbered callouts (1-9) point to various UI elements: 1 points to the 'SCREEN SAVER MUTE' checkbox, 2 points to the 'SCREEN SAVER MUTE' label, 3 points to the 'SCREEN SAVER DURATION' field, 4 points to the 'SCREEN SAVER DURATION' field, 5 points to the 'SCREEN SAVER IMAGE' dropdown, 6 points to the 'SCREEN SAVER IMAGE' dropdown, 7 points to the 'SAVE OSD' button, 8 points to the 'SAVE ALL' button, and 9 points to the 'CANCEL' button. At the bottom of the page, there is a pagination control showing '1-2 of 2' and 'Go to Page: 1'. The 'Results per page' is set to 10.

Figure 47. Endpoints Page, Configure Tools – OSD Tab Screen Saver Operations

1. Click the **Screen Saver Mute** checkbox for all endpoints (figure 47, 1) or for one or more individual endpoints (2) to toggle the port enabled and disabled. This control sets whether a display immediately enters low power mode screen saver (is muted) upon loss of sync or displays selected screen (see **Screen Saver Image**, 5 or 6) for a period of time set by the **Screen Saver Duration** setting (3 or 4).
2. Click in the **Screen Saver Duration** field for all endpoints (3) or for one or more individual endpoints (4) and edit it as desired or click + or - to increment or decrement the field value. This control determines how long the screen saver stays active, before muting sync to a display. The valid range is from 1 to 500 (in seconds) or 501 (always on).

When **Screen Saver Mute** is unchecked, the duration automatically becomes 501.

After the duration expires, the encoder drops the active sync, allowing the display to turn off or enter low power mode.

3. Click the **Screen Saver Image** setting drop-down menu for all endpoints (see [figure 47](#), ⑥) or for one or more individual endpoints (⑥) to select among:
 - Black Screen
 - Blue Screen
 - Retain Last Frame
 - Default Image (Extron) (Extron logo)
 - Custom Image (an image of your choosing)

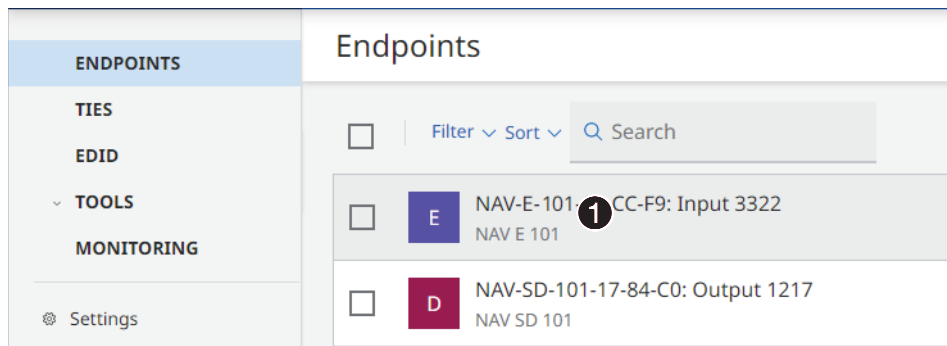
NOTE: To be available for selection, the custom image must be manually uploaded into the endpoint (see the applicable *User Guide* at www.extron.com).

4. Click **Save OSD** (⑦) or **Save All** (⑧) to save the changes or **Cancel** (⑨) to abandon them.
5. Click **X** (⑩) to close the Configuration Endpoints page or select a different tab to change other settings.

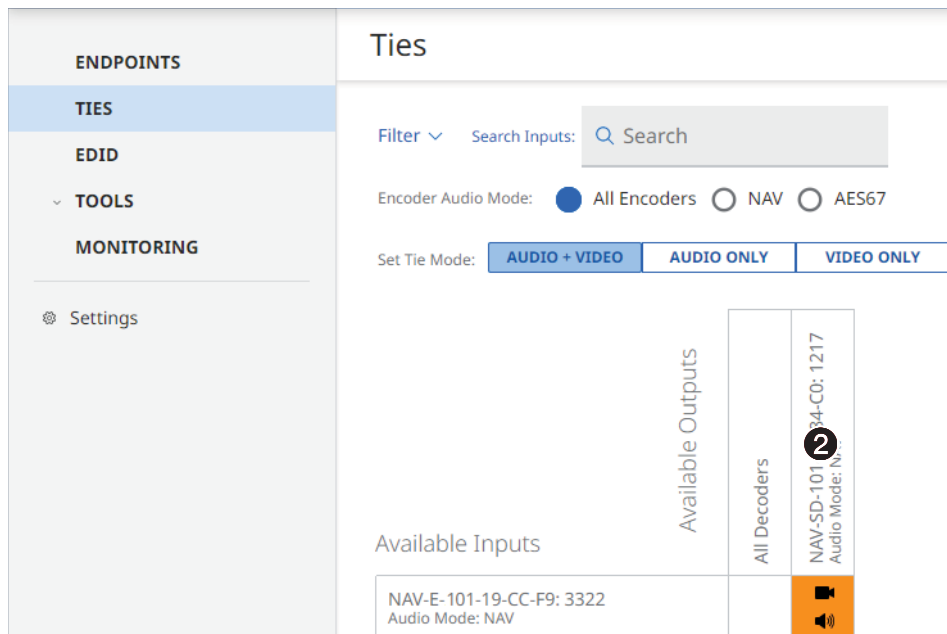
Device Details pane and proxy connections

A Device Details pane for an individual connected endpoint is available from the Ties page and from the Endpoints page that provides details about that endpoint.

To open the pane, click in the field for the connected endpoint on the Endpoints page (see [figure 48](#), ①) or Ties page (②). The HTML page opens a Device Details pane to the right of the page (see [figure 49](#) on page 50).



Endpoints page



Ties page

Figure 48. Open an HTML Page for a Connected Endpoint

Device Details
✕

Name	NAV-E-101-18-E2-42
Input #	579
Model	NAV E 101
IP Address	192.168.1.13
FW Version	1.00.0002-b021

Input

HDMI	Signal Detected
HDCP	<input type="checkbox"/>
EDID	1920x1080@60Hz
Audio Input	Auto
Audio Only	On

Output

HDMI	1920x1080@60Hz
HDCP	<input type="checkbox"/>

Stream

Video Stream	Active
Audio Stream	Active

Tags

A Personnel

Active Ties (1)

NAV-SD-101-17-84-C0

B BREAK

Device Details
✕

Name	NAV-SD-101-17-84-C0
Output #	1217
Model	NAV SD 101
IP Address	192.168.1.12
FW Version	1.00.0003-b089

Stream Input

Video Stream	Active
Audio Stream	Active

Output

HDMI	1920x1080@60Hz
HDCP	<input type="checkbox"/>
HDMI Audio	Unmuted
Analog Audio	Unmuted
Audio Only	Off
Volume	100%

Tags

A Annex

Active Ties (1)

NAV-E-201-D-19-CC-F9

B BREAK

Encoder Device Details

Decoder Device Details

Figure 49. Device Details Panes

TIPS:

- Tags, if created, are displayed on this pane (A).
- Click **Break** (B), if present (if this endpoint is part of a tie), to break the active tie.

Proxy connection

The HTML pages of an endpoint can be opened from the **Device Details** pane for additional configuration of that endpoint (known as “proxying an endpoint”).

Click the IP Address link in the **Device Details** pane (see figure 49, 1). The HTML page opens a new tab in the browser that is connected to the endpoint. The HTML page for the endpoint behaves as described in the user guides for the endpoint (see the applicable encoder and decoder guides available at www.extron.com).

Ties Page

Creating ties using the Ties page tools is fully described in [Create Ties](#) on page 29.

You can also create ties using an Extron product that can be controlled by the Extron Digital Signal Processor (DSP) program, such as a DMP 128 Digital Matrix Processor (see [Operation with AES67 Audio](#) on page 126).

The screenshot shows the 'Ties' interface with the following components:

- NAV and AES67 Tabs:** Located at the top, labeled 'A'.
- Filter Menu:** A drop-down menu labeled 'B'.
- Search Inputs Field:** A text input field labeled 'C'.
- Search Outputs Field:** A text input field labeled 'D'.
- Set Tie Mode Buttons:** A row of buttons labeled 'E' and 'G', including 'AUDIO + VIDEO', 'AUDIO ONLY', 'VIDEO ONLY', 'BREAK', and 'BREAK ALL TIES'.
- Available Outputs Table:** A table with columns for 'All Decoders', 'NAV-SD-101-17-84-C0: 1217', 'NAV-SD-101-18-74-D1: 1038', and 'NAV-SD-101-17-88-C0: 3372'.
- Available Inputs Table:** A table with rows for 'NAV-E-101-17-84-05: 1231', 'NAV-E-101-14-D2-52: 1030', 'NAV-E-101-12-F2-41: 579', and 'NAV 1-18-E2-42: 3322' (labeled 'H').
- Tie Matrix:** A grid where the intersection of 'NAV-E-101-12-F2-41: 579' and 'NAV-SD-101-17-84-C0: 1217' is highlighted with an orange square labeled 'F'. Other cells contain icons for video (green square) and audio (orange square with speaker icon).

Figure 50. Ties Pane Features

- A NAV and AES67 (audio) Tabs** — Select the desired tab to display only encoders streaming NAV audio, and only encoders streaming AES67 audio.

NOTE: AES67 audio must be enabled (see [Operation with AES67 Audio](#)).

- B Filter menu** (see figure 50) — Click the drop-down menu to show only endpoints by specific criteria (if created).
- C Search Inputs field** — Click in the field and enter a few characters to search for an input by name.
- D Search Outputs field** — Click in the field and enter a few characters to search for an output by name.

NOTE: See [Add and edit names, tags, and locations](#) on page 33 to assign and edit A, B, and C values.

- E Break button** — Unties any established ties when you click in a tie within the grid (F).
- G Break All Ties button** — Breaks all ties in the NAV system.

- TIP:** You can also open the HTML page of a single endpoint for configuration (see **Device Details pane and proxy connections** on page 49), as follows:
1. Click in the field for the connected endpoint (see **figure 50** on page 51). The HTML page opens a Device Details pane at the right of the Ties page.
 2. Click the **IP Address** (1, at right). The HTML page opens a new tab in the browser that is connected to the endpoint.

Device Details ✕

Name	NAV-E-101-18-E2-42
Input #	579
Model	NAV E 101
IP Address: 1	192.168.1.13
FW Version	1.00.0002-b021

EDID Page

The EDID page (see figure 51) has several tools to tailor the grid to more easily find specific EDIDs.

The screenshot shows the 'EDID Minder' interface. At the top, there are two main sections: 'EDID' and 'Input Sources'. The 'EDID' section contains a button that says 'Click + to select an EDID'. An arrow points from this button to the 'Input Sources' section, which contains a text box that says 'Select an EDID first to see available inputs.' Below these sections is a 'Select an EDID' section with a search bar labeled 'Search EDIDs:' and a search icon. Below the search bar are three tabs: 'AVAILABLE EDIDS' (marked with a circled 'B'), 'FAVORITES' (marked with a circled 'C'), and 'CONNECTED OUTPUTS' (marked with a circled 'D'). Below the tabs is a button labeled 'ADD CUSTOM EDID TO LIBRARY'. At the bottom, there are three EDID cards, each for 'Extron'. The first card (marked with a circled 'E') shows '800 x 600p @ 60Hz', 'Video: DVI', and 'Audio: None'. The second card (marked with a circled 'F') shows '1024 x 768p @ 60Hz', 'Video: DVI', and 'Audio: None'. The third card shows '1280 x 1024p @ 60Hz', 'Video: DVI', and 'Audio: None'. Each card has a star icon, an information icon, and a plus icon.

Figure 51. EDID Tools

- A Search EDIDs** — Enter a few characters in a resolution (such as "204" or "216" for 2048 x 2160) or refresh rate (such as "6" for 60Hz) to search for EDIDs of only that resolution or rate.
- B Available EDIDs** — Click to show all EDIDs.
- C Favorites** — Click show only the EDIDs that you have designated as a favorite (see **E** and **F** on page 53).
- D Connected Outputs** — Click to display only the EDIDs of connected output displays (loop-through for the encoder and output for the decoder).

NOTES:

- **Available EDIDs** — All EDIDs on the NAVigator including custom or uploaded EDIDs
- **Favorite EDIDs** — EDIDs that you have tagged as favorite (★).
- **Connected Outputs** — Sink devices connected on either the Encoder HDMI Loop through or the Decoder HDMI output.

- **Set Favorite ☆ icon** (see [figure 51](#) on page 52)— The EDID is **not** designated as a favorite. Click the icon in an EDID to toggle the favorite status of that EDID on.
- **Favorite ★ icon** — The EDID is designated as a favorite. Click the icon in an EDID to toggle the favorite status of that EDID off.

Assign an EDID to an input

Use the EDID page to select an EDID and assign it to one or more inputs (encoders) as follows:

1. If necessary, click the **Menu** icon (see figure 52, ❶).

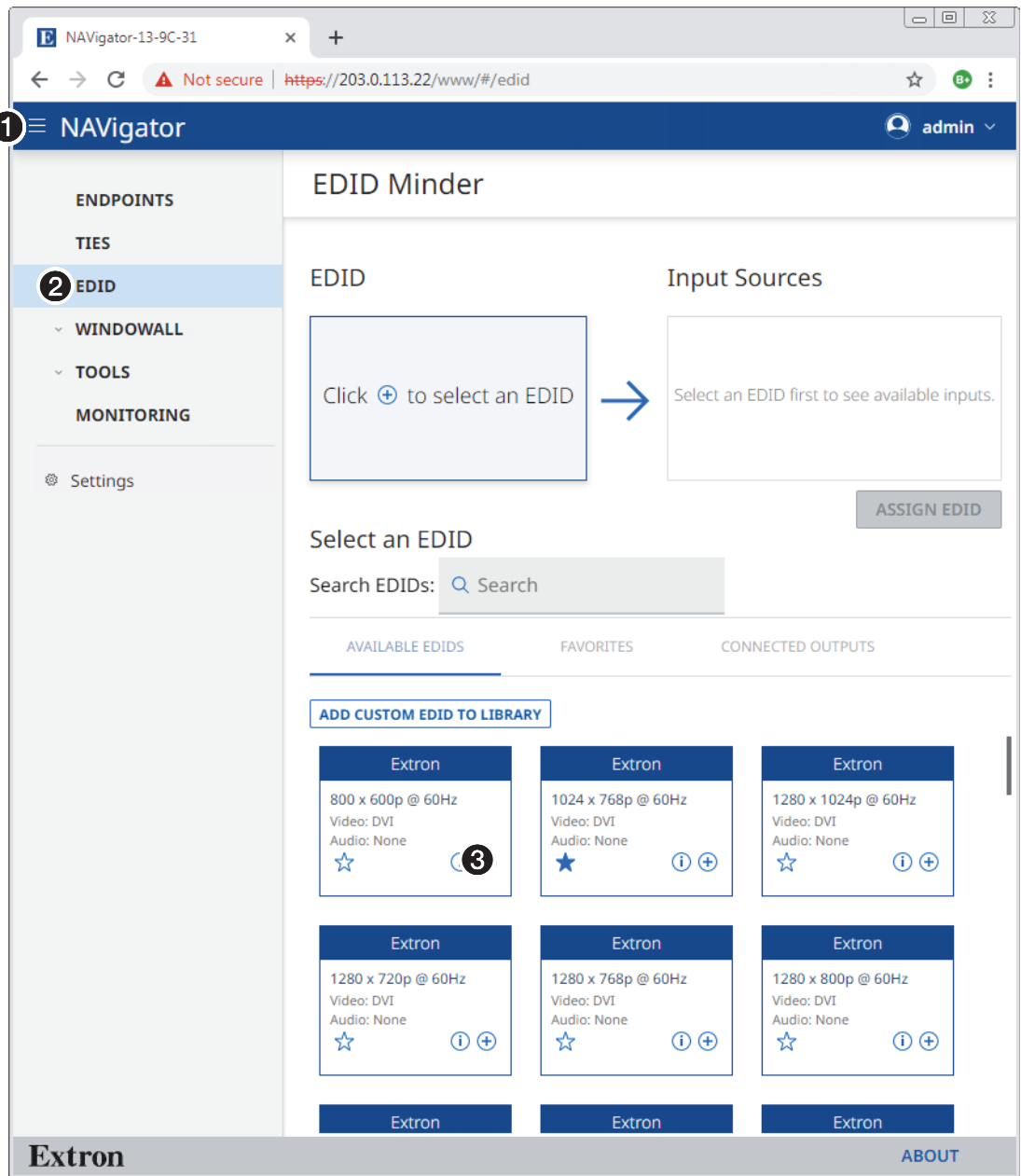


Figure 52. EDID Pane

2. If necessary, click **EDID** (❷). The EDID page displays a library of EDID files which you can select and then assign to one or more inputs (encoders).
3. Select the desired EDID (click the ⊕, ❸). The selected EDID displays in the EDID field (see figure 53, ❶ on page 55). Available input sources are also displayed (❷).

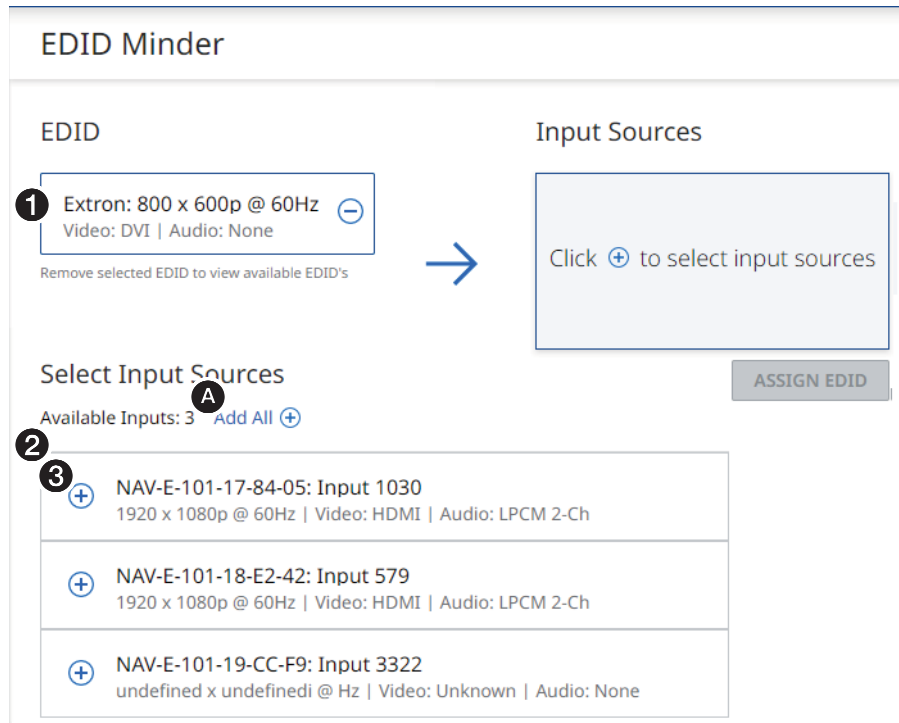


Figure 53. EDID Page With EDID Selected

4. Select one or more desired Input Sources (click the **+**, see figure 54, **3**). The selected sources display in the Input Sources field (see figure 53, **1**).

NOTE: Click **Select All** **+** (see figure 54, **A**) to select all inputs with one click.

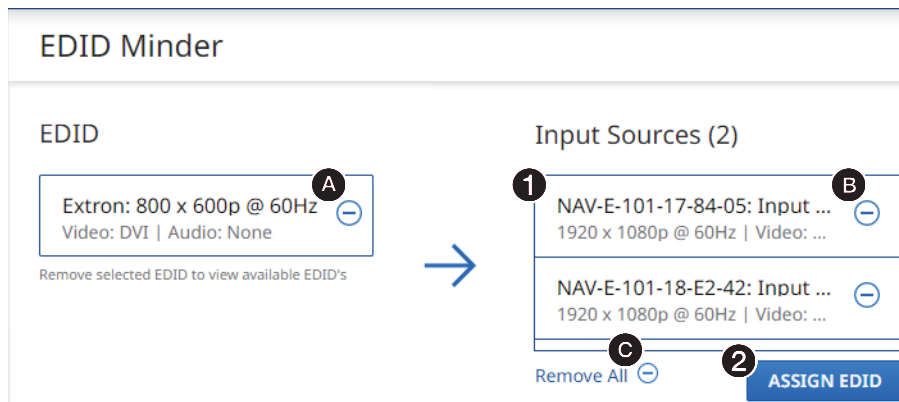
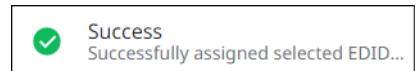


Figure 54. EDID Page with Input Sources Selected

TIPS:

- Click the EDID **-** (**A**) to clear all selections. The page appears as in **figure 52** on page 54.
- Click a selected Input Source **-** (**B**) to remove that input selection.
- Click Remove All **-** (**C**) to remove all input selections. The page appears as in figure 54.

5. Click **Assign EDID** (see figure 54, **2**). The NAVigator assigns the EDIDs and reports success on the EDID page.



Download an EDID

Use the EDID page to download EDID from the library to your PC as follows:

1. If necessary, click the **Menu** icon (see figure 55, ❶).

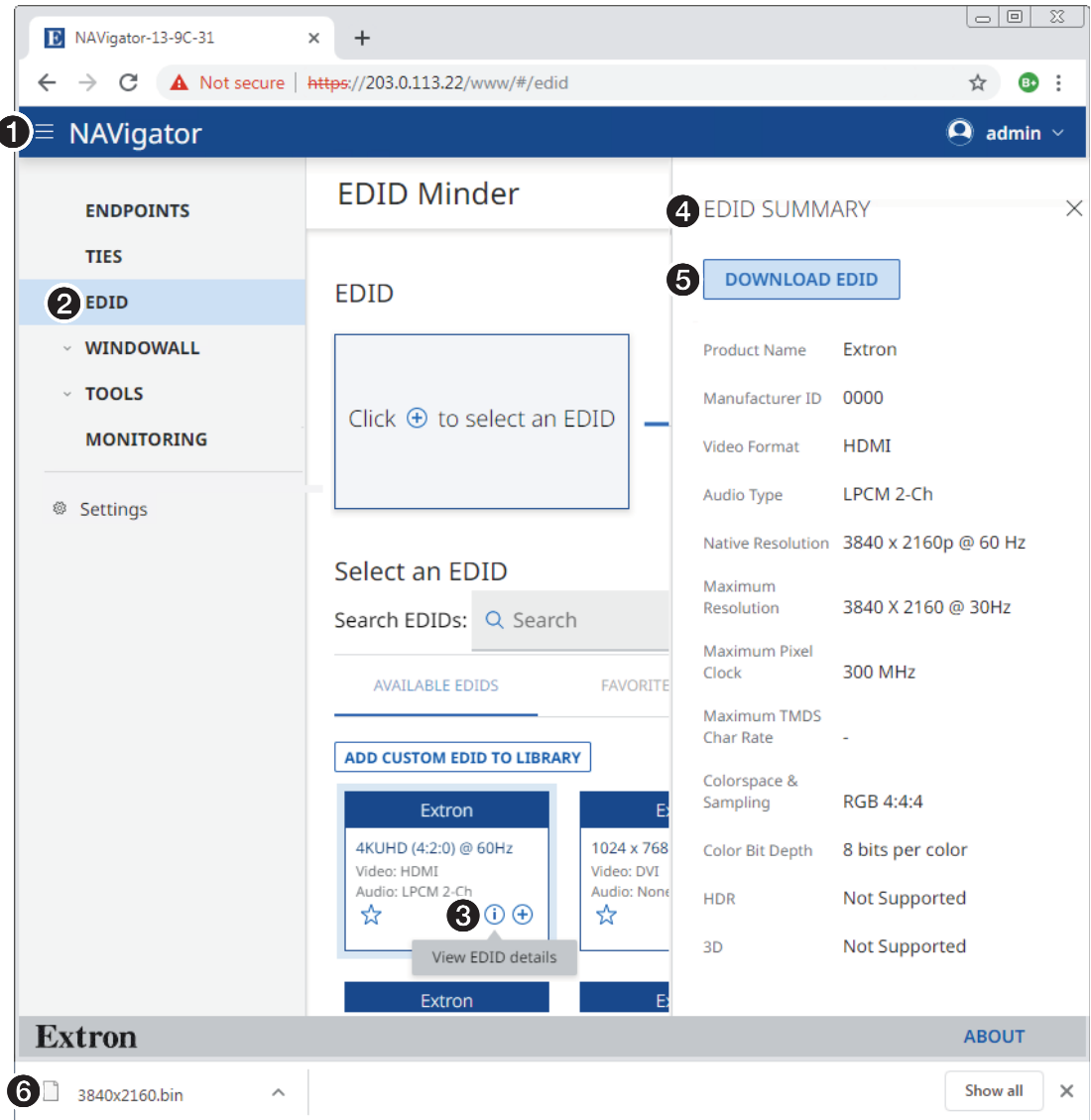


Figure 55. EDID Pane – Download an EDID

2. If necessary, click **EDID** (❷).

For the EDID to download, click the **Information** (❸) icon (❸).

The HTML page opens an EDID Summary pane to the right of the EDID page (❹). The panel lists:

- Product name
- Audio type
- Max. pixel clock
- Color bit depth
- Manufacturer ID
- Native resolution
- Maximum character rate
- High Dynamic Range (HDR)
- Video format
- Maximum resolution
- Colorspace and sampling
- 3D

3. Click **Download EDID** (❺). Figure 55 shows the results of downloaded EDID in the Chrome browser (❻).

Add a custom EDID

Use the EDID page to add a custom EDID from your PC to the library as follows:

1. If necessary, click the **Menu** icon (see figure 56, ❶).

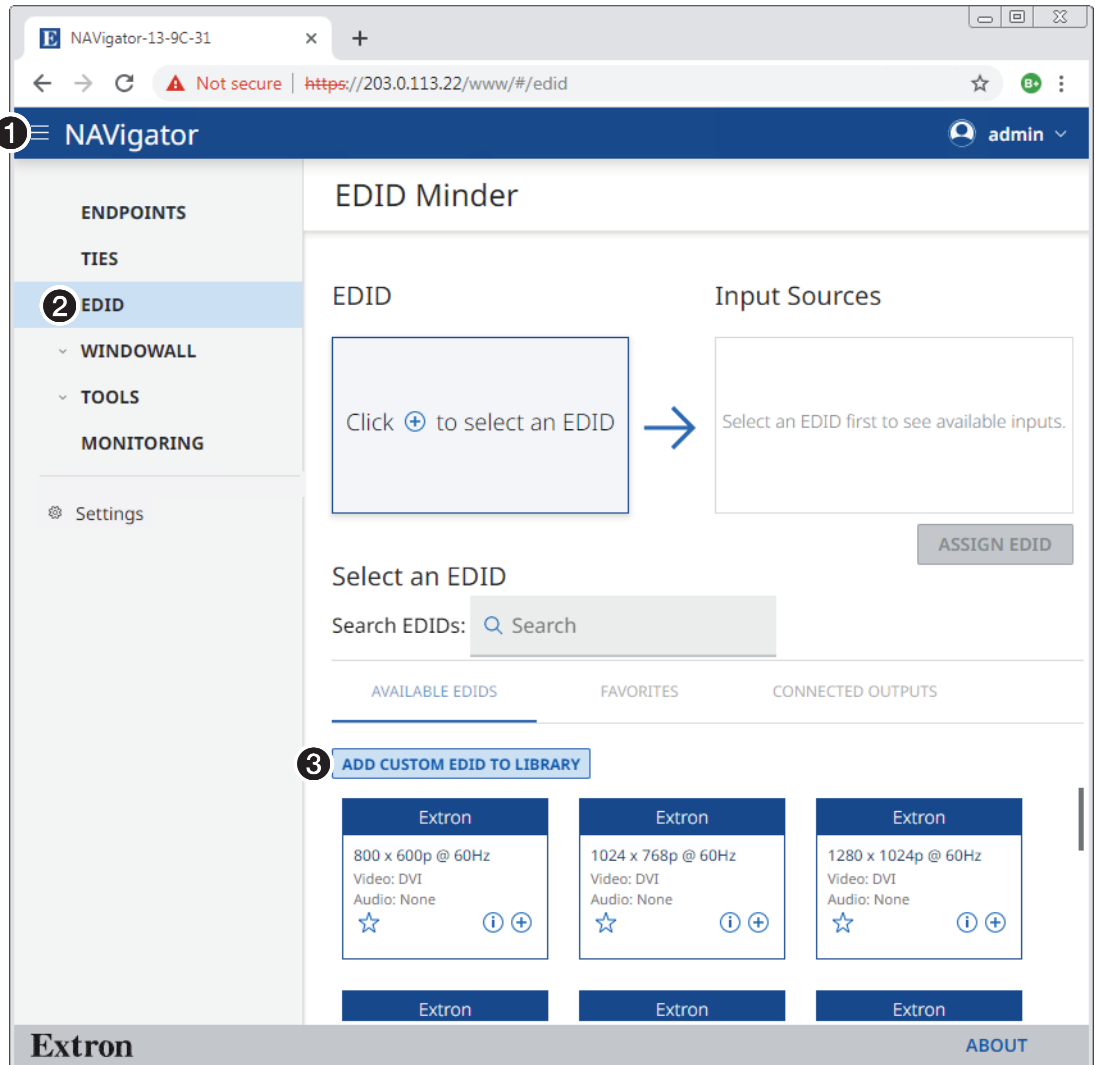


Figure 56. EDID Page — Add a Custom EDID

2. If necessary, click **EDID** (❷).
3. Click **Add Custom EDID to Library** (❸). An open dialog box opens (see [figure 57](#) on page 58).

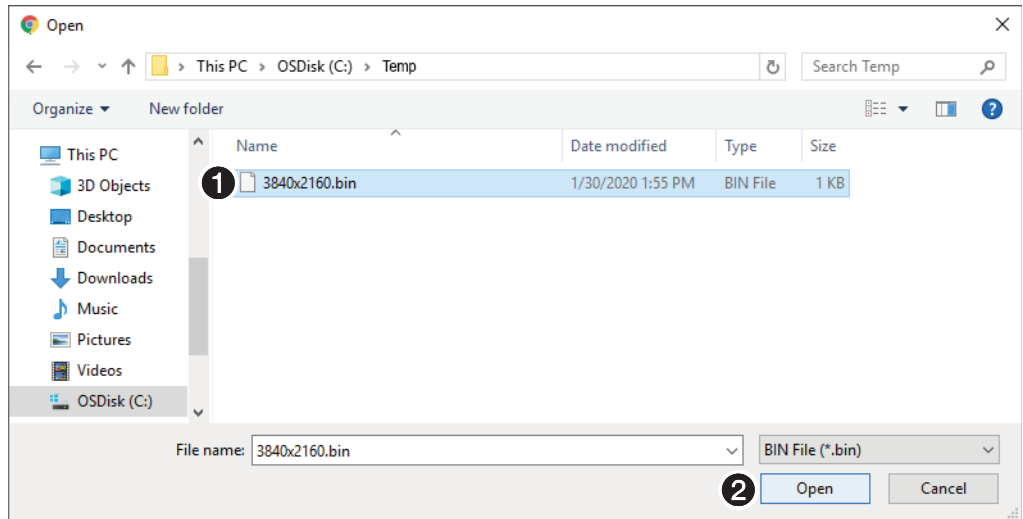
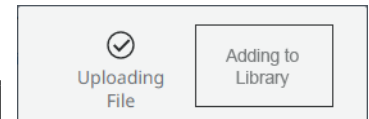


Figure 57. Open Dialog Box

4. Navigate to the folder where the EDID file is saved (see figure 57, ❶). Select the file.
5. Click **Open** (❷). The NAVigator reports that it is **Uploading** and then **Adding** the EDID to the library.

NOTE: This action happens quickly; you may not see it.



The EDID page returns to the top. The added EDID is displayed with a lighter border color (see figure 58, ❶).

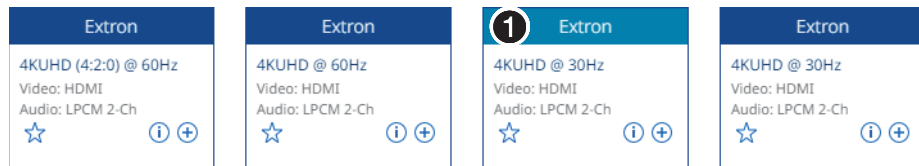


Figure 58. Custom EDID Displayed in EDID Page

Delete a custom EDID

Use the EDID page to remove a custom EDID as follows:

1. If necessary, click the **Menu** icon (see figure 59, ①).

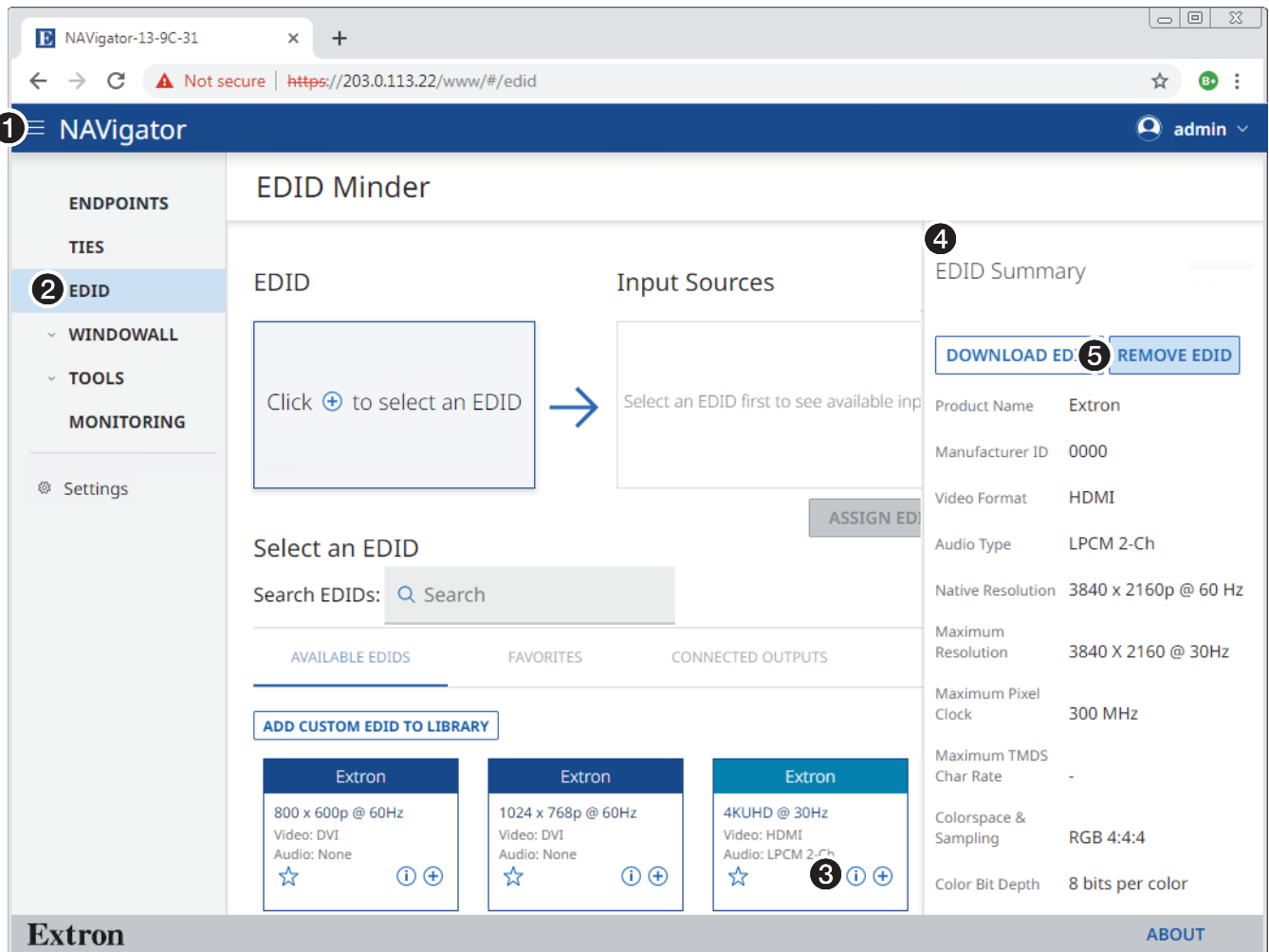


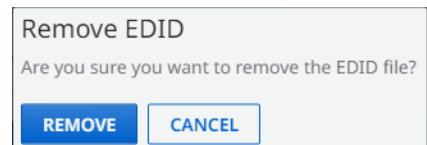
Figure 59. Deleting a Custom EDID

2. If necessary, click **EDID** (②). The EDID page displays a library of EDID files.
3. Click the **Information** (i) icon (③) on the custom EDID you want to remove. The HTML page opens an EDID Summary pane to the right (④).

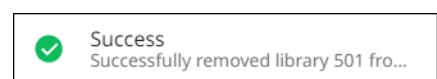
NOTE: Factory-installed EDIDs cannot be removed.

TIP: Custom EDIDs are displayed with a lighter border color.

4. Click **Remove EDID** (⑤). The HTML page asks you to confirm the deletion.



5. Click **Remove**. The NAVigator deletes the EDID and reports success on the endpoints page.



Find EDID common timings

The find EDID common timings function helps avoid a source device attached to a NAV encoder from sending a resolution and refresh rate that is beyond the capabilities of some displays in the system. Such an error would result in a black screen on displays whose performance capabilities have been exceeded.

Use the EDID page to find common timings as follows:

1. If necessary, click the **Menu** icon (see figure 60, ❶).

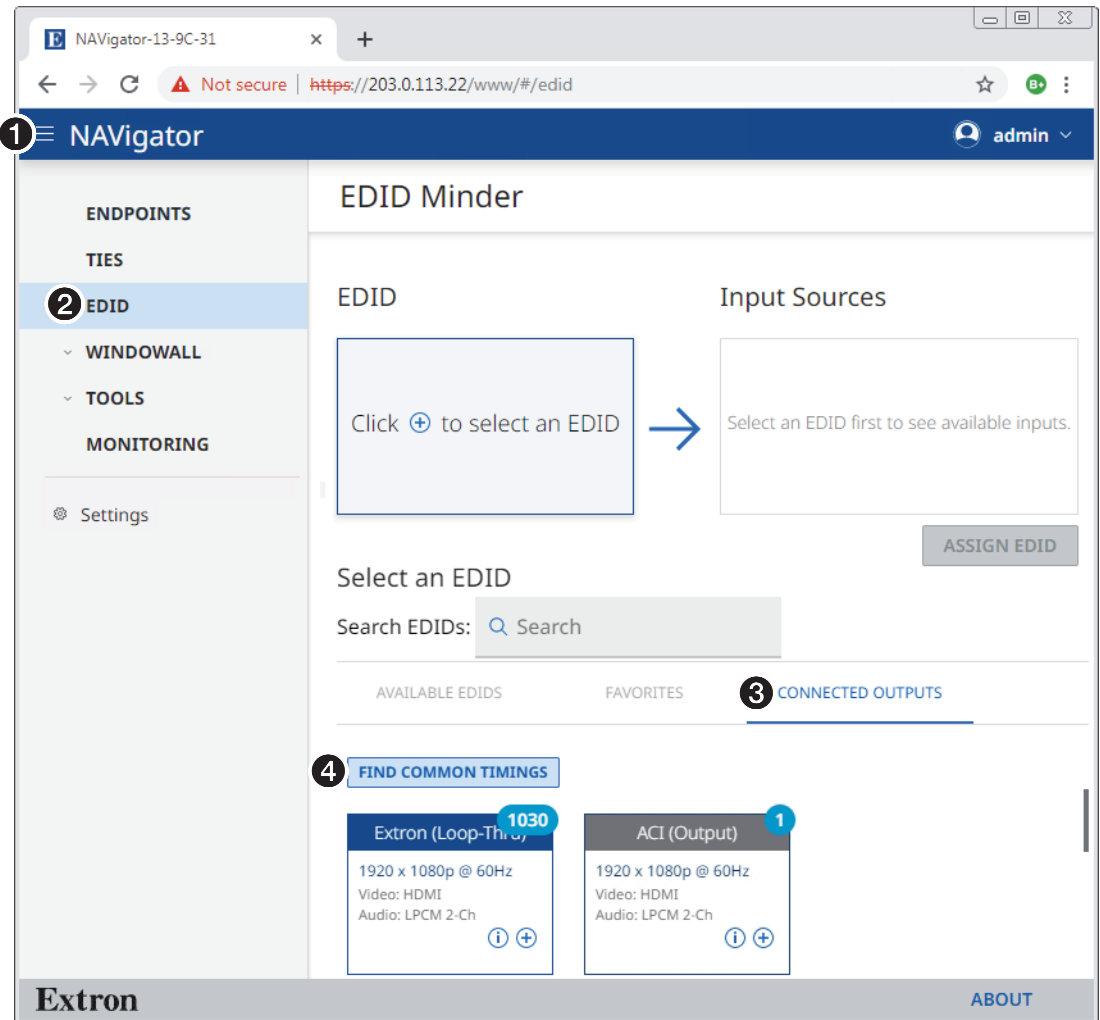


Figure 60. EDID Pane and Common Timings

2. If necessary, click **EDID** (❷). The EDID page displays a library of EDID files.
3. Click **Connected Outputs** (❸). If two or more connected outputs are detected, the Find Common Timings button appears (❹).
4. Click **Find Common Timings** (❹). The page shows a list of connected outputs and timings that are common to them (see figure 62 on page 61). The page also recommends the highest resolution and refresh rate compatible with all selected displays (❸).

NOTES:

- EDIDs from Extron products are indicated in blue (see figure 61, **A**).

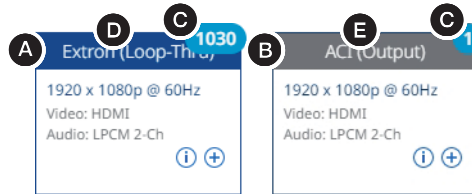


Figure 61. EDID Banners

- EDIDs from the products of other companies are indicated in gray (**B**).
- The pale blue numbers (**C**) indicate the endpoint from which the connected output EDID (Display EDID) came.
 - An encoder has (Loop-Thru) (**D**) in the EDID banner and the number in the pale blue background (**C**) is the input number.
 - A decoder has (Output) (**E**) in the EDID banner and the number in the pale blue background (**C**) is the output number.

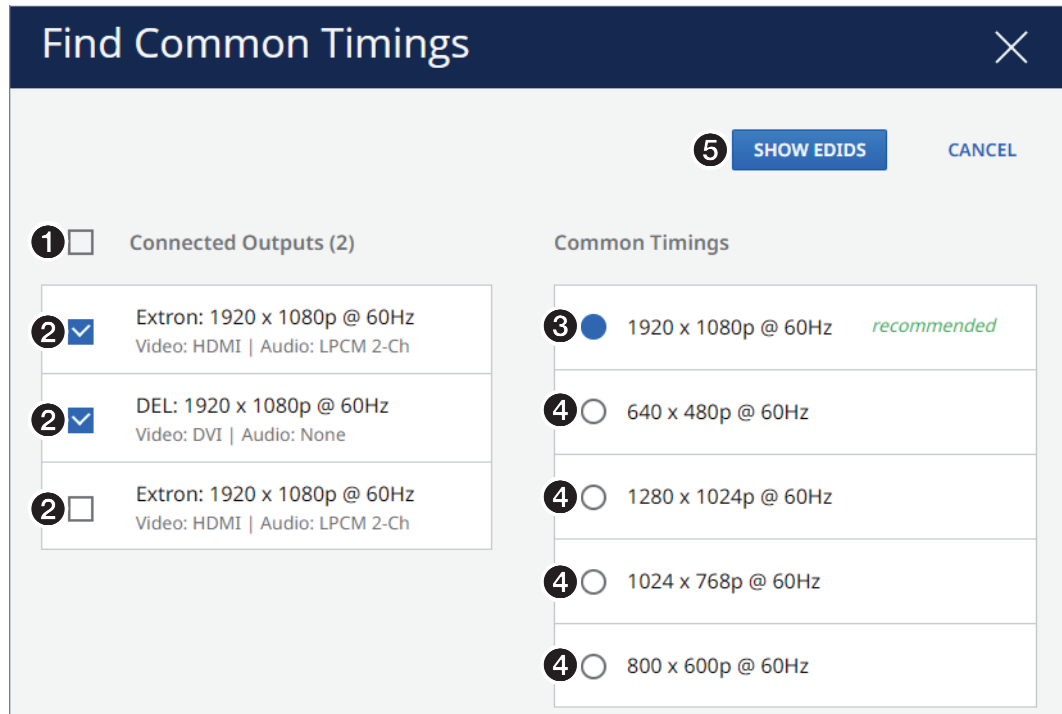


Figure 62. Selecting the Common Timing

5. Click the checkbox to select all **Connected Outputs** (see figure 62, **1**) or use the individual checkboxes (**2**) to select one or more connected outputs.
6. Select the recommended **Common Timing** (**3**) or another available common timing (**4**).
7. Click **Show EDIDs** (**5**). Only the available EDIDs that match the resolution and refresh rate of the **Common Timing** selection appear (see **figure 63** on page 62).

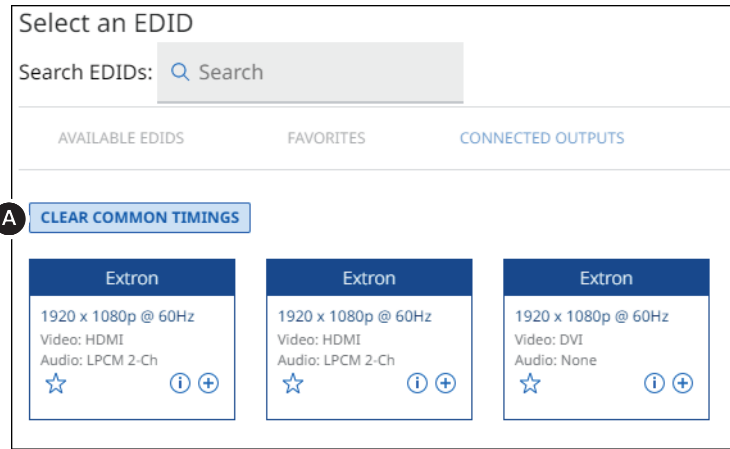


Figure 63. Display of Common Timings

8. Assign the desired EDID to one of more encoders (see [Assign an EDID to an input](#), beginning at step 3 on page 54).

TIP: Click **Clear Common Timings** (A) to clear the list.

WindoWall Pages

Creating a video wall is a multi-step process consisting of the following procedures:

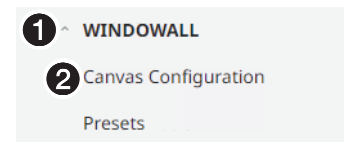
NOTE: The list below presents a logical flow of operations; many of these operations can be performed in any order.

- Create a canvas (see "Creating a canvas," below).
- Configure all decoders in the canvas (see [Configuring decoders](#) on page 64).
- Configure the mullion, the space around each display within the canvas (see [Configuring the mullion](#) on page 66).
- Create presets (see [Creating presets](#) on page 67). A preset can recall different canvas layouts. Once the layout is recalled, you can switch inputs to change input on certain windows in the layout. This function is so that you needn't use presets just to change inputs.
- Recall a preset (make the matrix of inputs and outputs take effect (see [Recalling presets](#) on page 69).

Creating a canvas

Create a matrix of displays and assign decoders as follows:

1. If necessary, click the **Menu** icon (☰, see [figure 14, 1](#) on page 16).
2. If necessary, click **WINDOWALL > Canvas Configuration** (see [1](#) > [2](#) in the illustration at right). The Canvas Configuration page opens (see [figure 64](#) on page 63).
3. Click the appropriate **Canvas** tab to select the canvas to configure (see [figure 64, 1](#)).



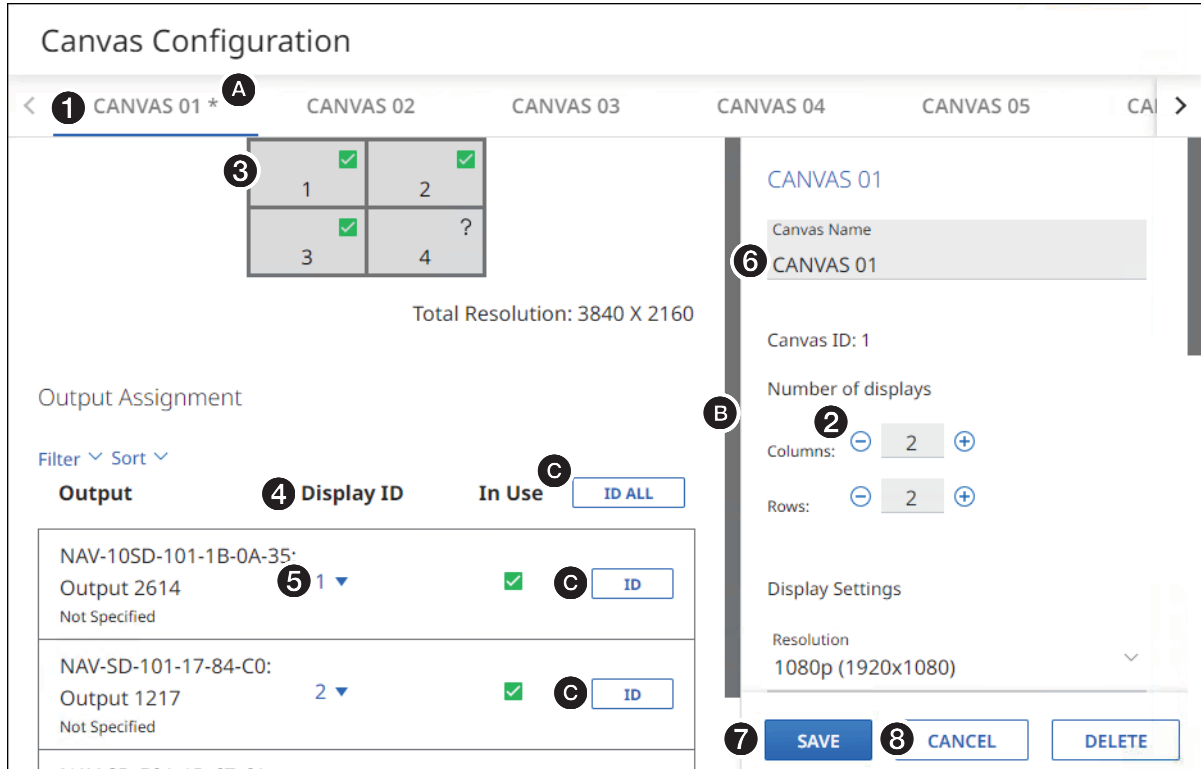


Figure 64. Canvas Configuration

- Configure the size of the canvas (the number and arrangement of the displays) by clicking in the **Columns** and **Rows** fields (see figure 64, 2) and editing them as desired (or click + or - to increment or decrement the field value). The valid range for both fields is from 1 to 8. The canvas view (3) shows the arrangement of the displays. The Save button (7) becomes available.

NOTE: In the canvas view:

- ✓ = indicates that a decoder has been assigned to a display.
- ? = indicates that no decoder is assigned to the display.

TIP: An asterisk (A) appears in the Canvas tab to indicate that there are unsaved changes.

- In the **Output Assignment** area (4), click the **Display ID** drop-down menu (5) for one or more desired decoders to assign that decoder to the desired display within the canvas view. ? changes to ✓ for that display in the canvas view.

TIPS:

- If necessary, click and drag the left scroll bar (B) to display additional decoders.
- Click the blank space in the **Display ID** menu to unassign the decoder.
- Use the ID function to help identify a decoder to easily identify the display and verify that the right decoder is selected, as follows:
 - Press and release the device **ID** button on the front panel of a decoder to highlight the **ID** field in the **Output Assignment** area (C). Press and release the button again to clear the highlight.
 - Click the **ID** button or **ID All** button (C) in the **Output Assignment** area to toggle the front panel ID LED and the on-screen display Status Screen for an individual decoder or all decoders on and off.

- If desired, highlight the **Canvas Name** field (see [figure 64](#), **6** on page 63) and enter a custom name for the canvas.

NOTE: The name shown on the Canvas tab (**1**) changes as you type in characters, but the change does not take affect until you save the changes in step 7.

- Click **Save** (**7**) to save all changes or **Cancel** (**8**) to abandon them.

Configuring decoders

Configure all decoders in a canvas at once, so that they have the same settings, as follows:

- If necessary, click the **Menu** icon (, see [figure 14](#), **1** on page 16).

- If necessary, click **WINDOWALL > Canvas Configuration** (see **1 > 2** in the illustration at right). The Canvas Configuration page opens (see [figure 65](#)).

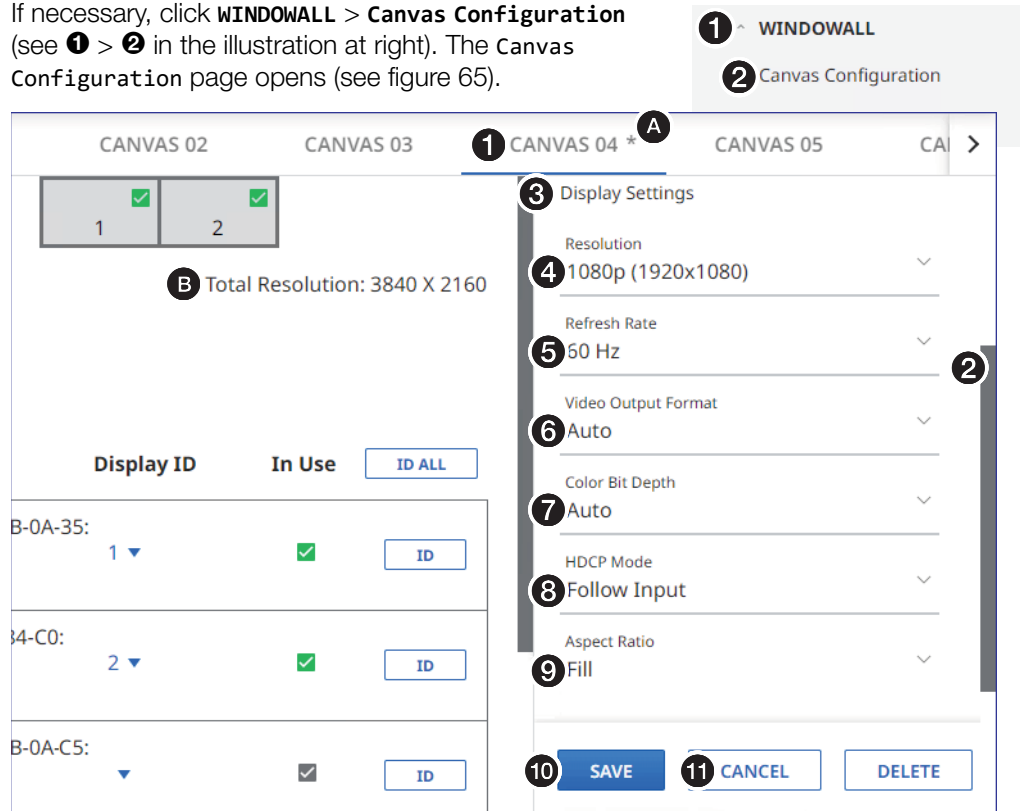


Figure 65. Configuring Decoders

- Click the appropriate **Canvas** tab to select the canvas to configure (see [figure 65](#), **1**).
- If necessary, click and drag the right scroll bar (**2**) to reveal the **Display Settings** adjustments (**3**).
- Make the following decoder adjustments, as necessary:

NOTE: After any change, an asterisk (see [figure 65](#), **A**) appears in the Canvas tab to indicate the unsaved changes.

- Click the **Resolution** drop-down menu (**4**) to select among the resolutions presented to scale all outputs in the canvas to the desired output resolution.
- Click the **Refresh Rate** drop-down menu (**5**) to select among the available rates for all outputs in the canvas.

NOTES:

- See the applicable decoder user guide, available at www.extron.com, for a detailed list of available output resolutions and rates.
- The **Total Resolution** (see [figure 65](#), [E](#) on page 64) displays the resolution of the entire canvas and changes as you make changes on the **Resolution** drop-down menu.

- c. Click the **Video Output Format** drop-down menu ([6](#)) to select among the available video output formats for all outputs in the canvas. **Auto** (if selected) follows the input format.

NOTE: The decoders change their color space, chroma sampling and quantization parameters for compatibility with HDMI and DVI sink devices.

- d. Click the **Color Bit Depth** drop-down menu ([7](#)) to force all outputs in the canvas to 8-bit depth or **Auto**. **Auto** (if selected) communicates with the sink display to see check its capabilities and sets the color bit depth accordingly.
- e. Click the **HDCP Mode** drop-down menu ([8](#)) to select between **Follow Input** and **Always Encrypt** for all outputs in the canvas.

NOTE: **Follow Input** mimics the HDCP encryption state of the connected source. **Always Encrypt** maintains the HDCP encrypted state with the output sink device to improve system switching performance.

- f. Click the **Aspect Ratio** drop-down menu ([9](#)) to select between **Follow** (no scaling, maintain the aspect ratio of the input video) or **Fill** (scale the output to fill the connected display) for all outputs in the canvas.
6. Click **Save** ([10](#)) to save all changes or **Cancel** ([11](#)) to abandon them.

Configuring the mullion

Configure all decoders in a canvas at once, so that they have the same settings, as follows:

1. If necessary, click the **Menu** icon (☰, see [figure 14](#), ① on page 12).
2. If necessary, click **WINDOWALL > Canvas Configuration** (see ① > ② in the illustration at right). The **Canvas Configuration** page opens (see [figure 66](#)).

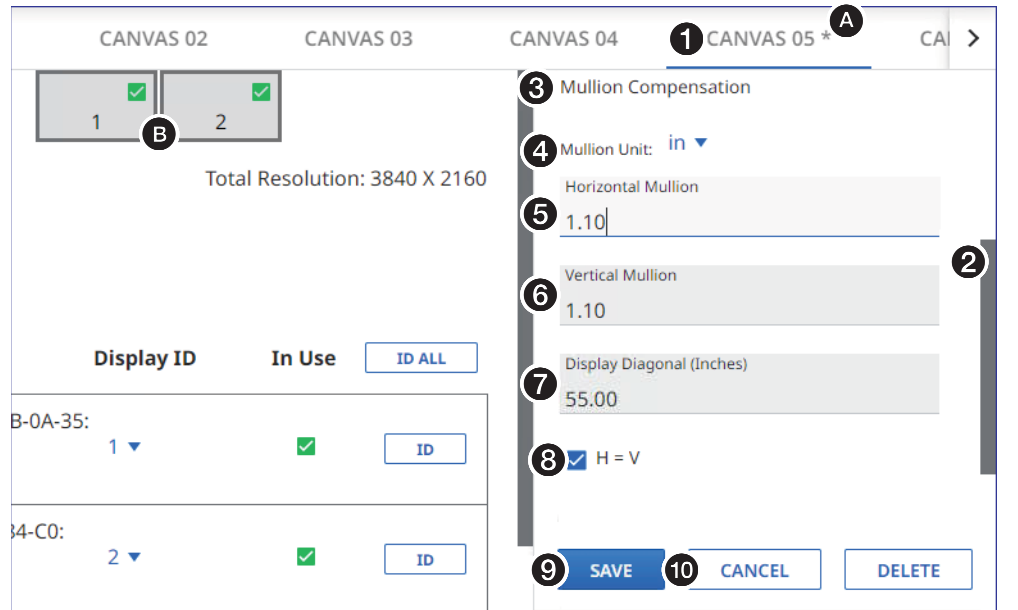


Figure 66. Configuring Mullions

3. Click the appropriate **Canvas** tab to select the canvas to configure (see [figure 66](#), ①).
4. If necessary, click and drag the right scroll bar (②) to reveal the **Mullion Compensation** adjustments (③).
5. Make the following mullion adjustments, as necessary:

NOTE: After any change, an asterisk (see [figure 66](#), ①A) appears in the **Canvas** tab to indicate the unsaved changes.

- a. Click the **Mullion Unit** drop-down menu (④) to select among **in** (inches), **mm**, or **pixels** as the measurement unit used for the horizontal and vertical mullions (⑤ and ⑥).
- b. Click in the **Horizontal Mullion** field (⑤) and enter a numeric value of the width of the side bezels of the displays used on your NAV WindoWall.
- c. Click in the **Vertical Mullion** field (⑥) and enter a numeric value of the width of the top and bottom bezels of the displays used on your NAV WindoWall.

NOTES:

- In these fields, mullions are detailed to the 2nd decimal point (*n.nn*) for inches and mm and whole numbers only for pixels.
- If **H = V** (⑧) is checked, **Horizontal Mullion** and **Vertical Mullion** are locked to each other; a change in one changes the other to the same value.
- Changes made in the **Horizontal Mullion** and **Vertical Mullion** fields are graphically represented in the canvas view (②B).

- d. Click in the **Display Diagonal** field (see [figure 66](#), [7](#) on page 66) and enter the diagonal dimension of the displays used in your NAV WindoWall.

NOTES:

- The **Display Diagonal** is always expressed in inches.
- The **Display Diagonal** is unavailable if **Pixels** is selected in the **Mullion Unit** field ([4](#)).


- e. Click the **H = V** checkbox ([8](#)) to toggle the **Horizontal Mullion** and **Vertical Mullion** fields lock on and off. When checked the two fields are to each other; a change in one changes the other to the same value.

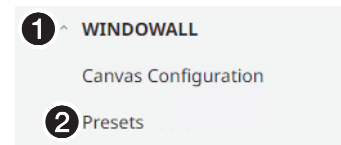
6. Click **Save** ([9](#)) to save all changes or **Cancel** ([10](#)) to abandon them.

Creating presets

Once you have created and configured a canvas, you may find it helpful to create presets to allow you to quickly recall a specific canvas and associated encoders. Create one or more NAV WindoWall presets (up to eight presets per canvas) as follows:

NOTE: This procedure assumes that you have created a canvas (see [Creating a canvas](#) on page 62).

1. If necessary, click the **Menu** icon (, see [figure 14](#), [1](#) on page 16).
2. If necessary, click **WINDOWALL > Presets**. The Presets page opens (see [figure 67](#) on page 68).
3. Click the appropriate **Canvas** tab to select the canvas for which to create a preset (see [figure 67](#), [1](#)).
4. If necessary, select (click) the **Inputs** tab ([2](#)).
5. If necessary, select (click) the **Create Window** radio button ([3](#)).
6. Drag and drop one or more encoders to the desired cells in the canvas view ([4](#)).



NOTES:

- Once you have dragged-and-dropped, you can resize the windows in the canvas view. Click the input you just placed in the canvas view. The canvas view window now has a thick black border. Use the cursor to move it over to the desired size. and click again to keep that size.
- If you click **Apply** ([4](#)), you switch all outputs in the canvas to the layout you have prepared **without** creating a preset. You cannot recall an **applied** WindoWall.



7. Click **Save as Preset** ([5](#)). The Save Preset pane opens (see [figure 68](#) on page 68).
8. Select a preset number (see [figure 68](#), [1](#)).

NOTE: If you select a preset that is already used, that preset will be overridden.

9. Enter a preset name ([2](#)).
10. Click **Save** ([6](#)) to save the preset or **Cancel** ([4](#)) to abandon the preset.
11. Click **x** ([5](#)) to close the Save Preset pane.

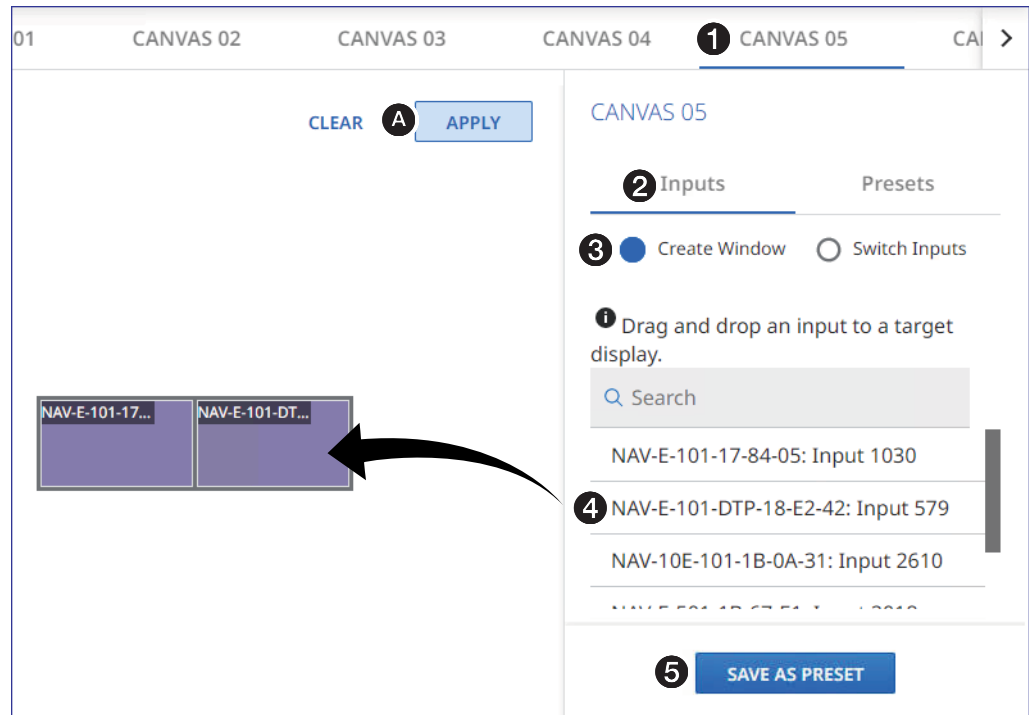


Figure 67. Creating a Preset

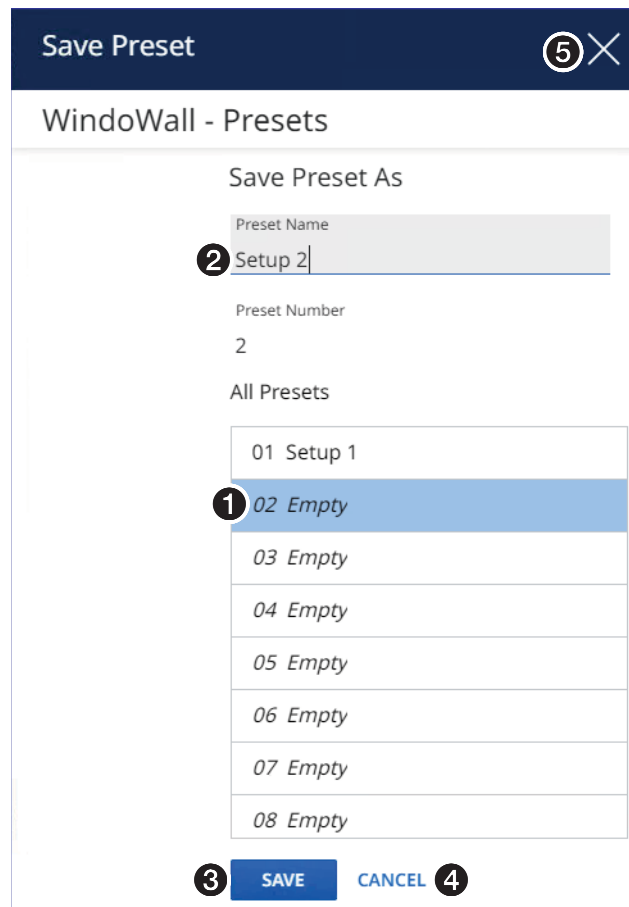


Figure 68. Saving a Preset

Recalling presets

Once you have created a preset, you need to recall it in order for it to take affect (making all of the preset ties). Recall a preset as follows:

1. On the window **all > Presets** page, click the Presets tab (see figure 69, ❶).

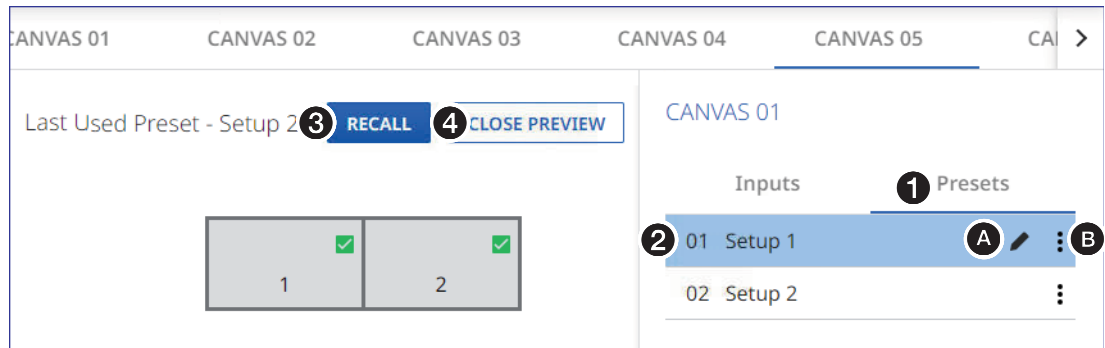


Figure 69. Recalling a Preset

2. Click the desired **Preset** (❷).

NOTE: The selected preset includes tools (A and B) for renaming, editing, and deleting presets (see below).

3. Click **Recall** (❸) to recall the preset or **Close Preview** (❹) to abandon the recall.

Renaming a preset

1. Click the pencil icon (see figure 69, A).
2. Type the new name in the Name field (see ❶ at right).
3. Click the **Check** icon (❷) to save the name or **X** (❸) to abandon it.



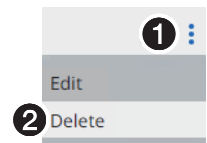
Editing a preset

1. Click the **Menu** icon (❶, at right) > **Edit** (❷). The window returns to a display similar to **figure 68** on page 68.
2. Perform **Creating presets** on page 67.



Deleting a preset

1. Click the **Menu** icon (❶, at right) > **Delete** (❷). The window prompts you to confirm that you want to delete the preset.
2. Click **DELETE** to confirm or **CANCEL** to abandon the deletion.



Switching preset inputs

You can also switch inputs to the NAV WindoWall from the Presets page, as follows:

1. If necessary, click the **Menu** icon (☰, see [figure 14](#), ❶ on page 16).
2. If necessary, click **WINDOWALL > Presets**. The Presets page opens (see figure 70).
3. Recall a preset (see [Recalling presets](#) on page 69).
4. Click **Switch Inputs** (see figure 70, ❶).
5. Drag and drop one or more encoders to the desired cells in the canvas display (❷).

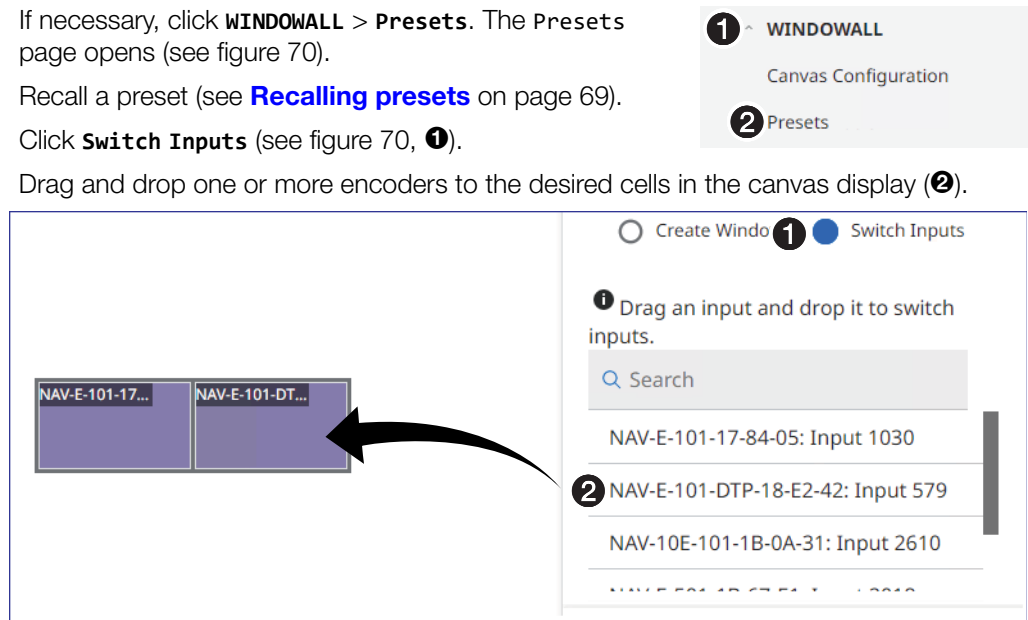


Figure 70. Switching Preset Inputs

TIPS:

- You can use a control system to recall a preset, and then you can switch inputs via the control system as well.
- The switch happens immediately as you drop the dragged input (release the mouse button).

Tools Pages

The two **Tools** pages, **Device Tools** (tools for just the NAVigator) and **System Tools** (tools for the NAVigator and all assigned endpoints) provide the following functions:

- **Backup** — You can make backup files for just the NAVigator itself (see "Backing up the NAVigator," below) or for the entire NAV system (including one or more or selected endpoints) (see [Backing up the system](#) on page 77). Backup files contain configuration settings and communications settings for all devices included in a backup.
- **Restore** — You can restore the configuration settings, communications settings or both, to their condition when the backup file was created for just the NAVigator (see [Restoring the NAVigator](#) on page 72) or to the NAV system (including one or more or selected endpoints) (see [Restoring the system configuration](#) on page 78).
- **Firmware** — From time to time, firmware updates will be made available on the Extron website. You can upgrade firmware for just the NAVigator (see [Upgrading the NAVigator firmware](#) on page 74) or firmware for NAV system (including one or more or selected endpoints) (see [Upgrading the system firmware](#) on page 83).
- **Reset** (Device Tools only) — You can reset or reboot the NAVigator (see [Resetting the NAVigator](#) on page 76).

Device tools page

Backing up the NAVigator

Backup the NAVigator settings as follows:

1. If necessary, click the **Menu** icon (see figure 71, ❶).

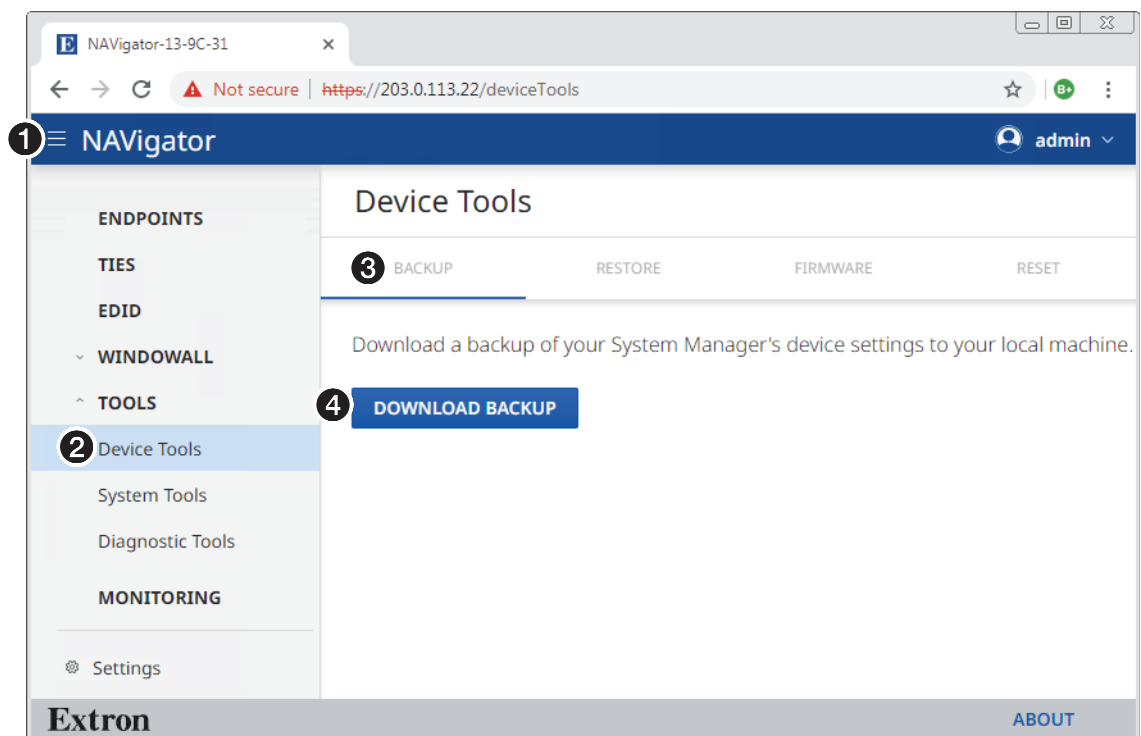
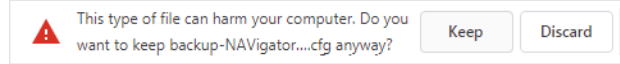


Figure 71. Opening the Device Backup Page

2. If necessary, click **Tools > Device Tools** (❷). The Device Tools page opens.
3. If necessary, click **Backup** (❸).

4. Click **Download Backup** (see [figure 71](#), **4** on page 71).

The NAVigator creates a file of current settings and, depending on your browser, may prompt you to confirm that you want to save it.



NOTE: Unless otherwise directed, the NAVigator backup file goes to the **Downloads** folder of the connected PC.

5. Click **Keep** to save the file to the **Downloads** folder or **Discard** as desired.

Restoring the NAVigator

Restore the NAVigator settings as follows:

1. If necessary, click the **Menu** icon (see [figure 72](#), **1**).

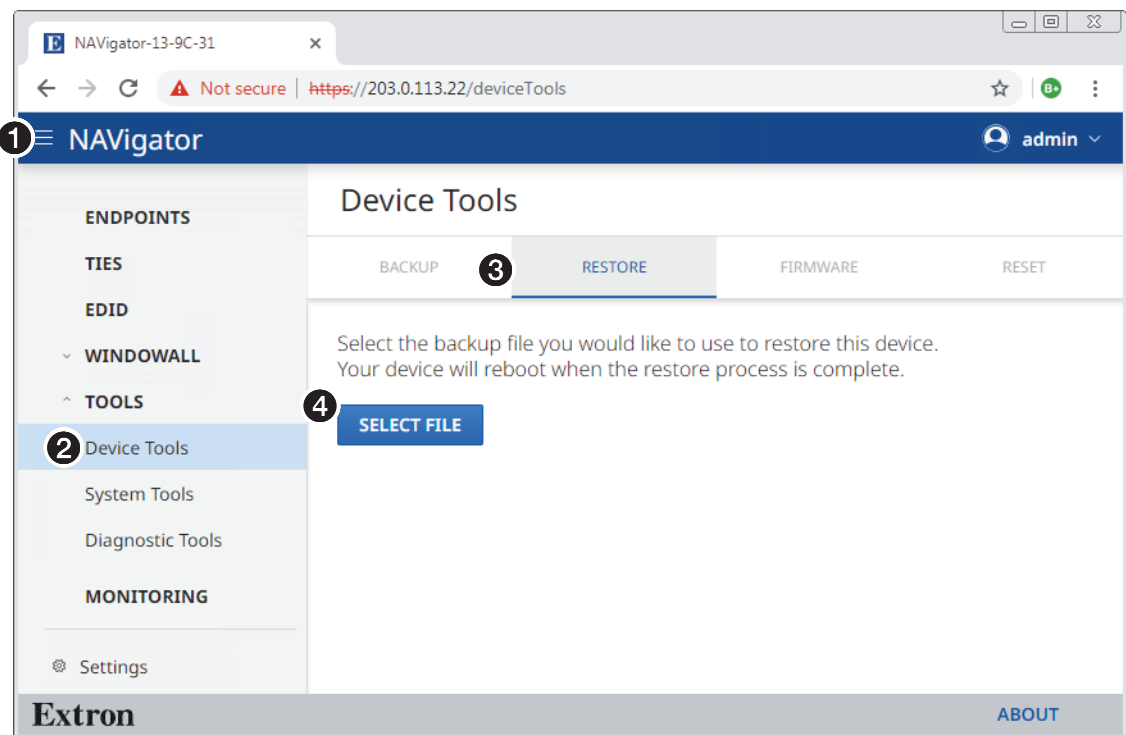


Figure 72. Opening the Restore Configuration Page

2. If necessary, click **Tools > Device Tools** (**2**). The Device Tools page opens.
3. If necessary, click **Restore** (**3**).
4. Click **Select File** (**4**). An open dialog box opens (see [figure 73](#) on page 73).
5. Navigate to the folder where the backup file is saved (typically the **Downloads** folder) (see [figure 73](#), **1**). Select the file.

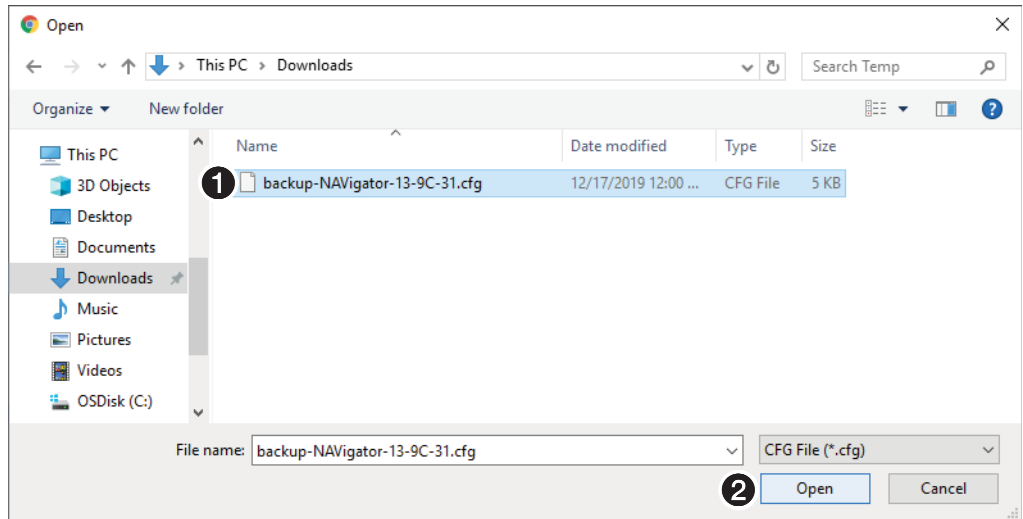


Figure 73. Open Dialog Box

- Click **open** (2). The Device Tools page returns to the top (see figure 74).

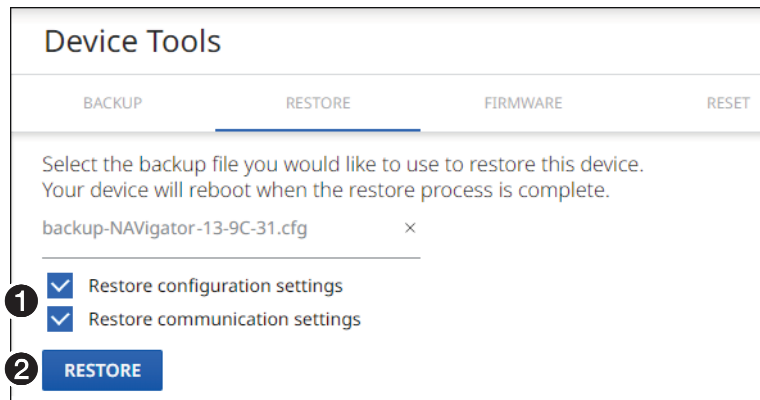


Figure 74. Device Tools – Restore Function

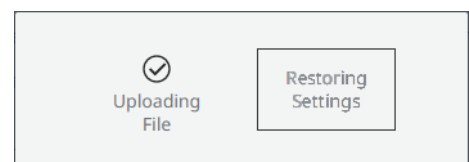
- Select (click) the settings to restore (see figure 74, 1).

Communication settings	Configuration settings
<ul style="list-style-type: none"> • Device Details — Device name • Network connection • Ports • Advanced networking —Route add/static route 	<ul style="list-style-type: none"> • Device Details — Location • Date and time • Advanced Networking — LLDP, Multicast Discovery IP • Custom and favorite EDIDs • WindoWall — Canvas and resets • Ties*

* **Restore Communication Settings** and **Restore Configuration Settings** must both be checked.

- Click **Restore** (2).

The NAVigator reports that it is uploading the backup file and then that is restoring the settings. When the operation completes, the NAVigator reboots.



NOTE: To continue to operate the NAVigator, you must reconnect (see [Opening the Embedded HTML Pages](#) on page 10).

Firmware page

Upgrading the NAVigator firmware

Upgrade the NAVigator firmware, the built-in software that controls NAVigator operation, as follows:

NOTES:

- See [Download a firmware or software package](#) on page 123 to obtain the firmware package.
- Upgrading the NAVigator firmware results in the unit rebooting.

1. Access the HTML embedded HTML pages (see [Opening the Embedded HTML Pages](#) on page 10). The HTML page opens (see figure 75).
2. If necessary, click the **Menu** icon (see figure 75, ①).

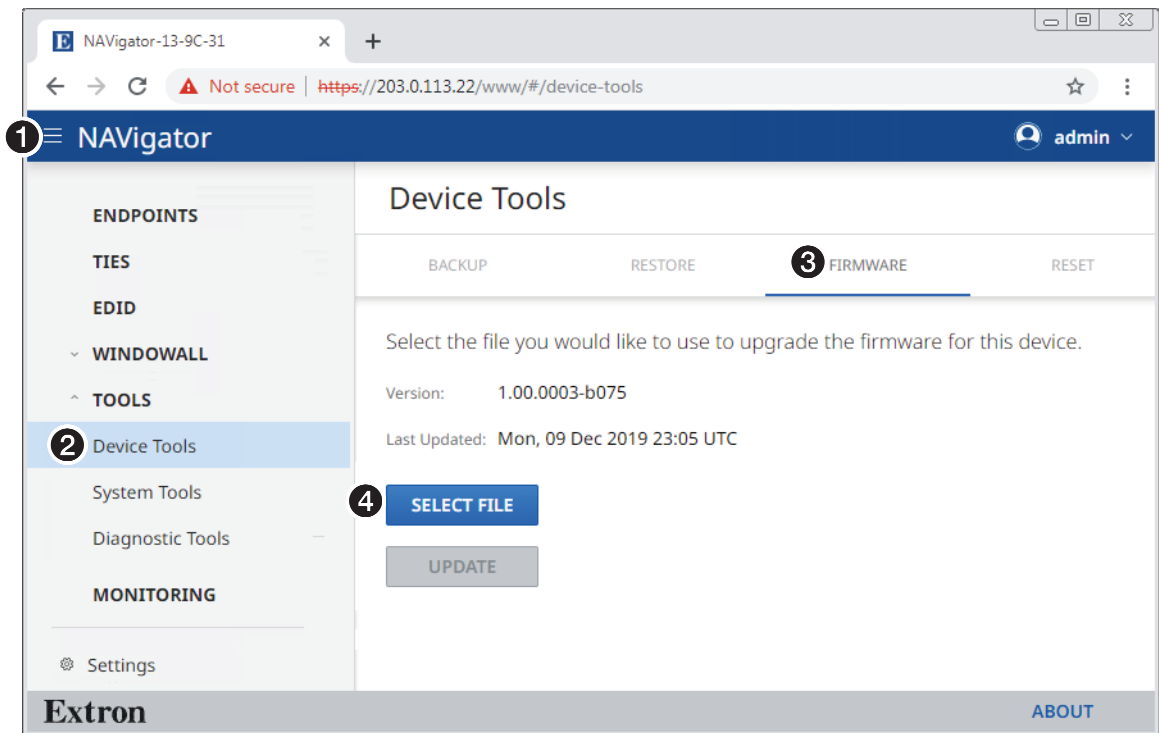


Figure 75. Device Firmware Upload Page

3. If necessary, click **Tools > Device Tools** (②).
4. Click **Firmware** (③).
5. Click **Select File** (④). An open dialog box opens (see [figure 76](#) on page 75).

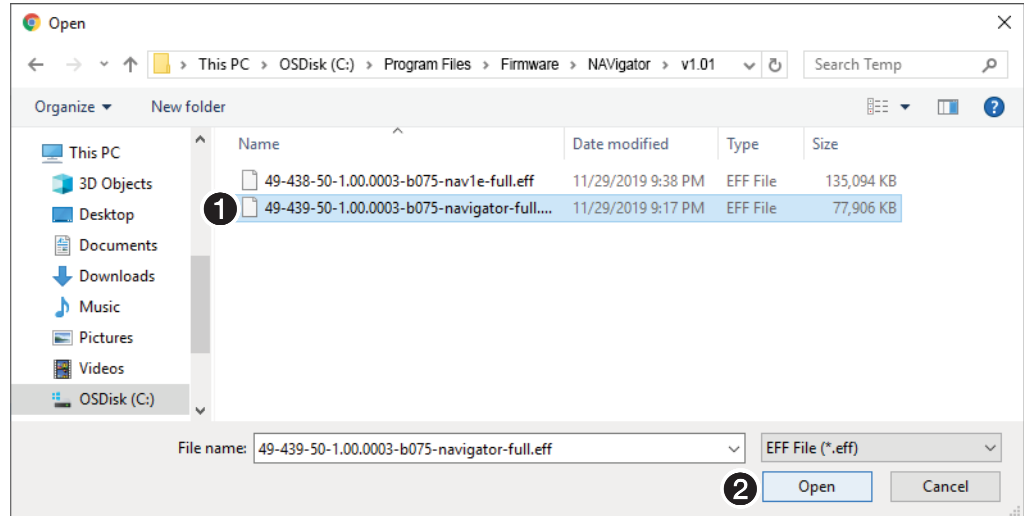


Figure 76. Open Dialog Box

6. Navigate to the folder where you saved the firmware upgrade file (see figure 76, ❶). Select the file.
7. Click **Open** (❷). The Open dialog box closes and the Device Tools page returns to the top, with the selected firmware file identified (see figure 77, ❶).

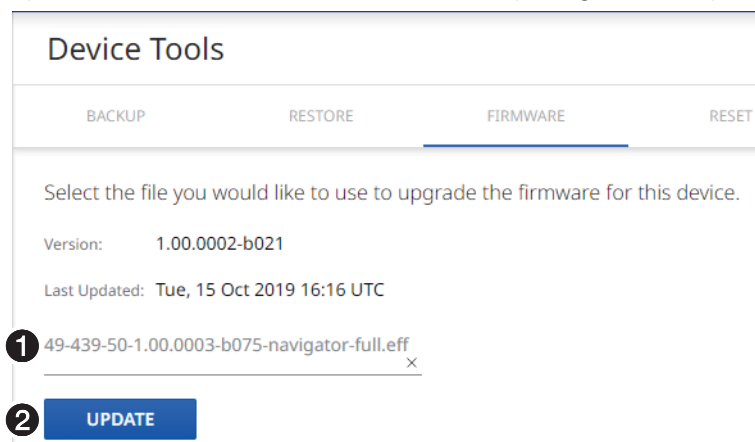


Figure 77. Device Page with Firmware File Identified

8. Click **Update** (❷).

The NAVigator page displays a sequence that reports the progress as it uploads the file (see figure 78, ❶), updates the firmware (❷), and then reboots (❸).

NOTE: Do not unplug the NAVigator while the firmware is been upgraded.

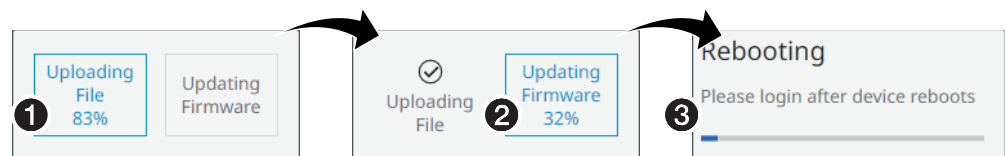


Figure 78. Firmware Upload Progress

When the NAVigator reboots, the connection to it is momentarily lost and after a few seconds, the browser displays the home page Login dialog box (see figure 8 on page 11). To continue to operate the NAVigator, you must reconnect (see [Opening the Embedded HTML Pages](#) on page 10).

Resetting the NAVigator

Reset or reboot the NAVigator settings as follows:

1. If necessary, click the **Menu** icon (see figure 79, ❶).

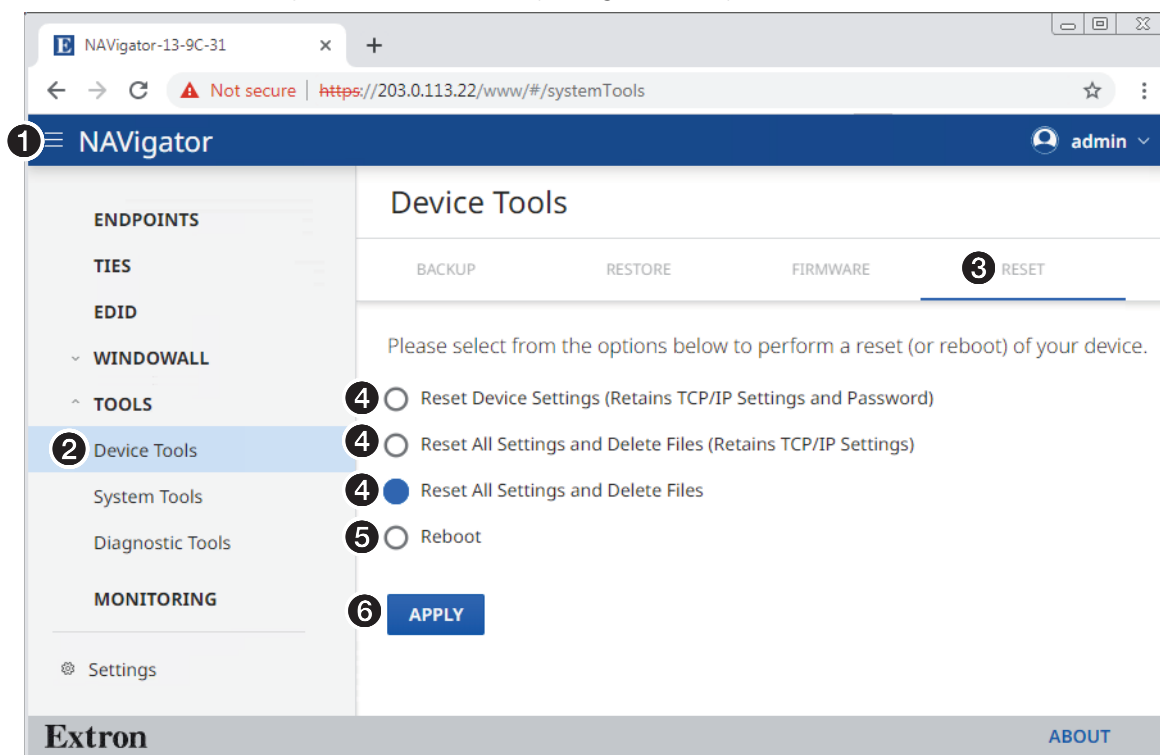


Figure 79. Opening the Restore Configuration Page

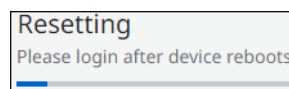
2. If necessary, click **Tools > Device Tools** (❷). The Device Tools page opens.
3. If necessary, click **Reset** (❸).
4. Select (click) the desired reset mode (❹) or **Reboot** (❺).

NOTES:

- **Reset Device Settings (Retains TCP/IP Settings and Password)** — Resets configuration settings. All communication settings and the password are retained. See the [table](#) of communication and configuration settings on page 73.
- **Reset All Settings and Delete Files (Retains TCP/IP Settings)** — Resets configuration settings **except** the communication settings, which are maintained. Resets the password to the default, which is **extron**. See the [table](#) of communication and configuration settings.
- **Reset All Settings and Delete Files** — This reset is identical to the Mode 5 reset (see the [table](#) of rear panel reset modes on page 9).

5. Click **Apply** (❻).

The NAVigator reports that it is **Resetting** and displays a status bar that shows the progress of the reset operation. When the operation completes, the NAVigator reboots.



NOTE: To continue to operate the NAVigator, you must reconnect (see [Opening the Embedded HTML Pages](#) on page 10).

System Tools page

Backing up the system

Backup the settings of multiple devices in the NAV system as follows:

NOTES:

- Endpoints that are conflicted or offline are omitted from the system backup file. Check the **Monitoring** page to ensure that no endpoints report **Offline** or **Conflicted** (see **Monitoring page** on page 87). See **Alarms** on page 119 to remedy a conflicted or offline endpoint.
- Click the **Filter** drop-down menu (A) to show only endpoints by specific criteria.

1. If necessary, click the **Menu** icon (see figure 80, 1).

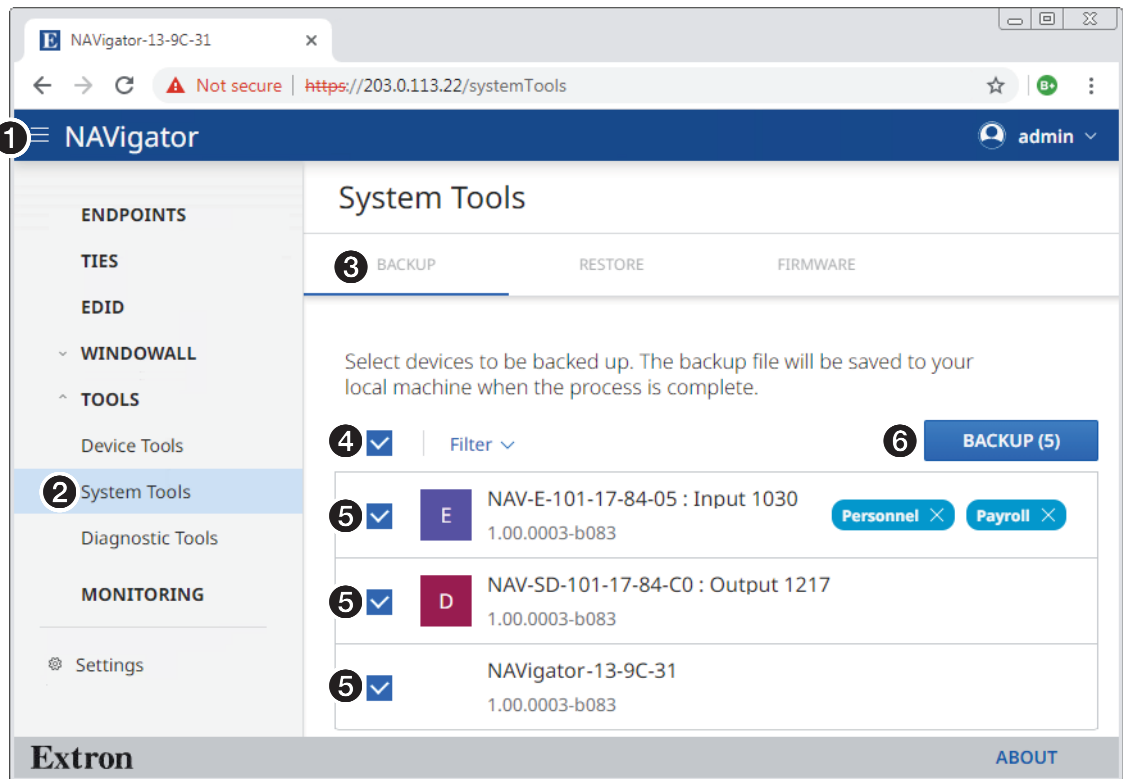


Figure 80. Opening the System Backup Pane

2. If necessary, click **Tools > System Tools** (2). The System Tools page opens.
3. If necessary, click **Backup** (3).
4. Click the **All** checkbox (4) or individual endpoint checkboxes (5) to select one or more endpoints to backup.
5. Click **Backup** (6).

The NAVigator creates a file of current system settings.

SYS_2019-12-17_1...esb ^

The NAVigator reports that the backup was file was successfully created.

Backup Successful

Your Bulk Device Backup was Successful.

OK

NOTE: Unless otherwise directed, the NAVigator backup file goes to the Downloads folder of the connected PC.

Restoring the system configuration

Restore the system settings, including the NAVigator and endpoints, as follows:

1. If necessary, click the **Menu** icon (see figure 81, ❶).

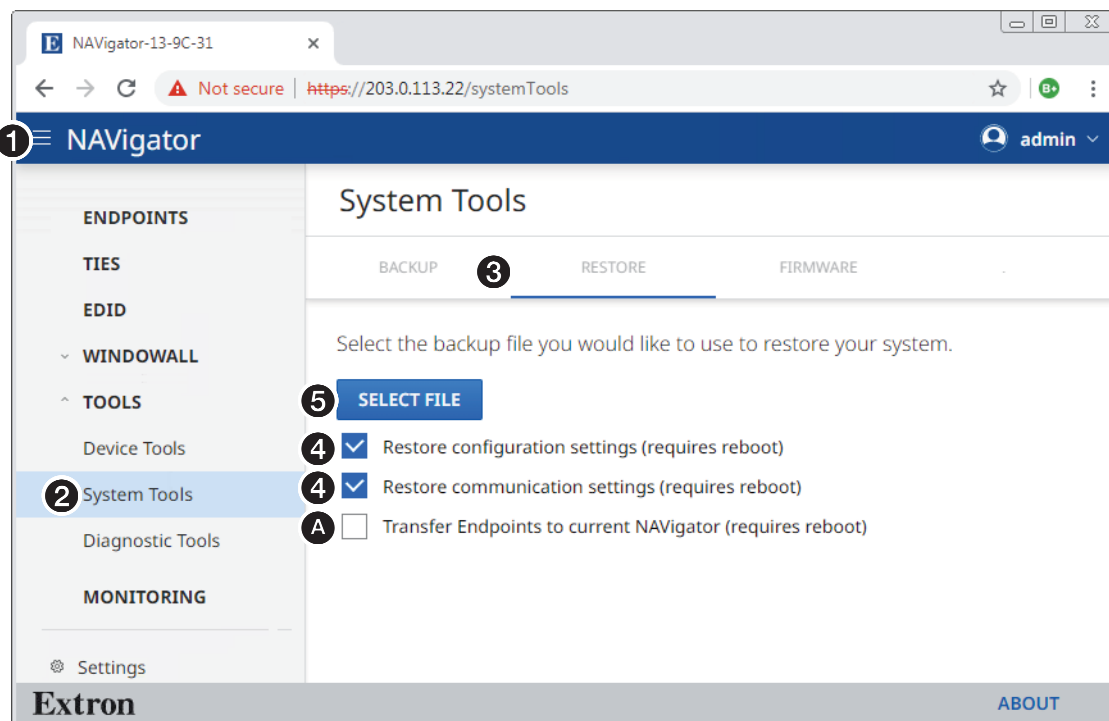


Figure 81. Opening the Restore Configuration Pane

2. If necessary, click **Tools > System Tools** (❷). The System Tools page opens.
3. If necessary, click **Restore** (❸).
4. Select (click) the settings to restore (❹).

NOTES:

- See the [table](#) of communication and configuration settings on page 73.
- The Transfer Endpoints to current NAVigator (requires reboot) selection (A) is a system transfer function to replace a NAVigator (see [Transferring system configuration to a backup NAVigator](#) on page 80).

Click **Select File** (5). An open dialog box opens (see [figure 82](#) on page 79).

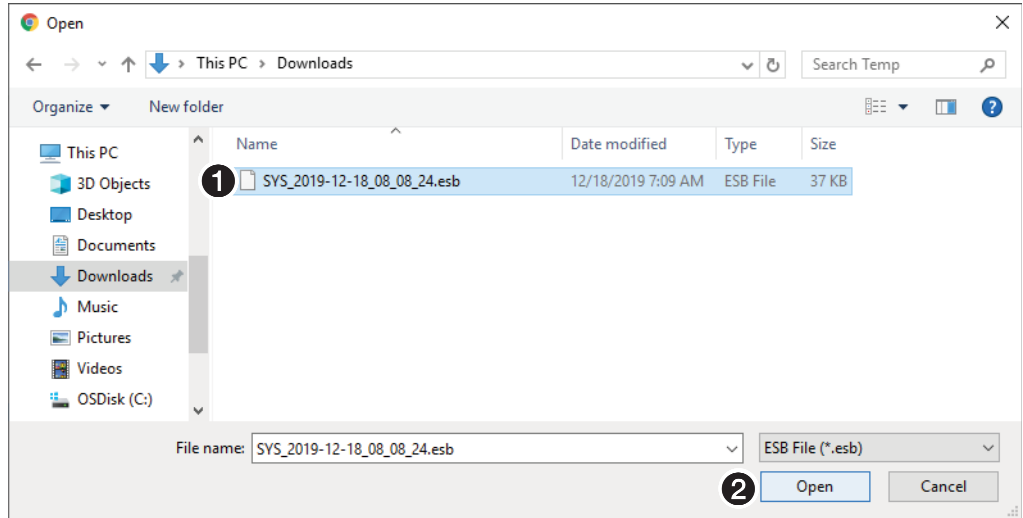


Figure 82. Open Dialog Box

5. Navigate to the folder where the backup file is saved (typically the Downloads folder) (see figure 82, ❶). Select the file.
6. Click **Open** (❷). The System Tools page returns to the top (see figure 83).

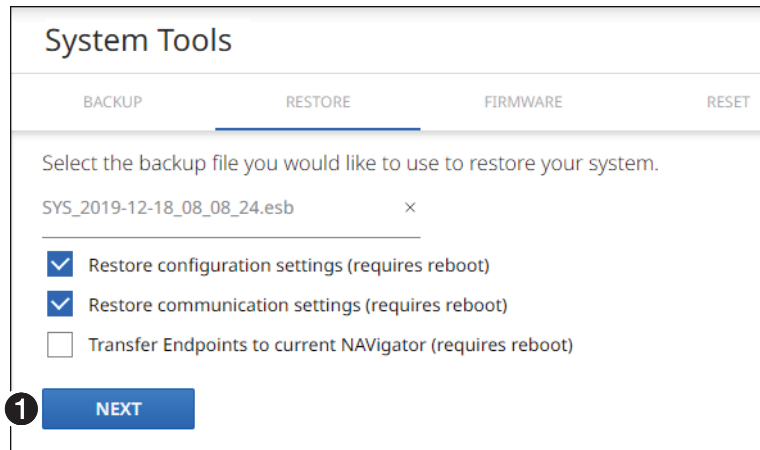
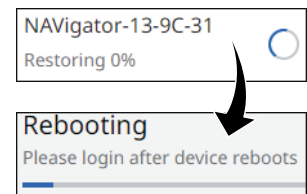


Figure 83. System Tools – Restore Function

7. Click **Next** (see figure 83, ❶).

The NAVigator reports that it is **Restoring** and then **Rebooting** and displays a status bar that shows the progress of the Restore operation. When the operation completes, the NAVigator reboots.



Transferring system settings to a replacement NAVigator

NOTES:

- This procedure is a restore option to recover your system if a NAVigator fails. It allows a replacement NAVigator to assume NAV system management if necessary.
- This procedure assumes that you have already created a system backup file (see [Backing up the system](#) on page 77).

Transfer the endpoints to backup NAVigator as follows:

1. Disconnect the original NAVigator and remove it from the system. Mount and connect the replacement NAVigator (see [Installation and Operation](#) on page 4).
2. Connect to the replacement NAVigator via the embedded HTML pages (see [Opening the Embedded HTML Pages](#) on page 10).
3. Configure the replacement NAVigator with the proper IP addressing for your setup, whether that is static or DHCP-assigned IP addressing (see [Network Connection Settings](#) on page 23).
4. **Open the system restore page** — Perform steps 1 through 3 of [Restoring the system configuration](#) on page 78.
5. Select (click) **Transfer Endpoints to current NAVigator (requires reboot)** (see figure 84, ❶).

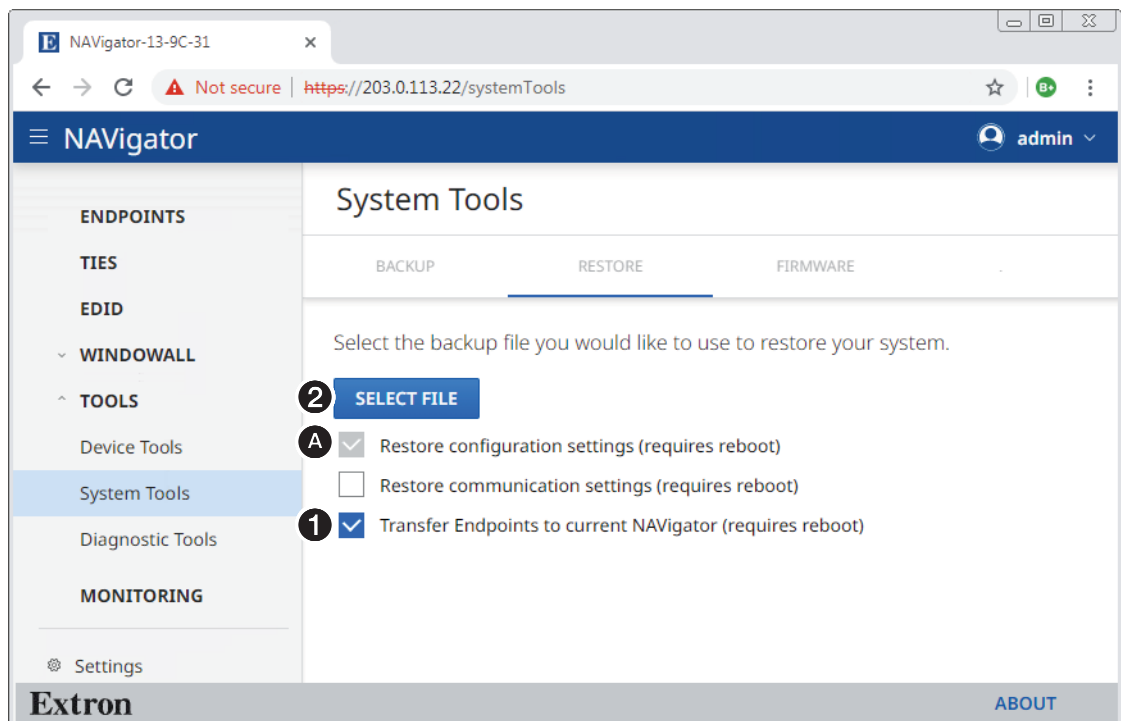


Figure 84. Transferring System Configuration

NOTE: This selection also automatically selects **Restore Configuration Settings (requires reboot)** (❶).

6. Click **Select File** (❷). An Open dialog box opens (see [figure 85](#) on page 81).

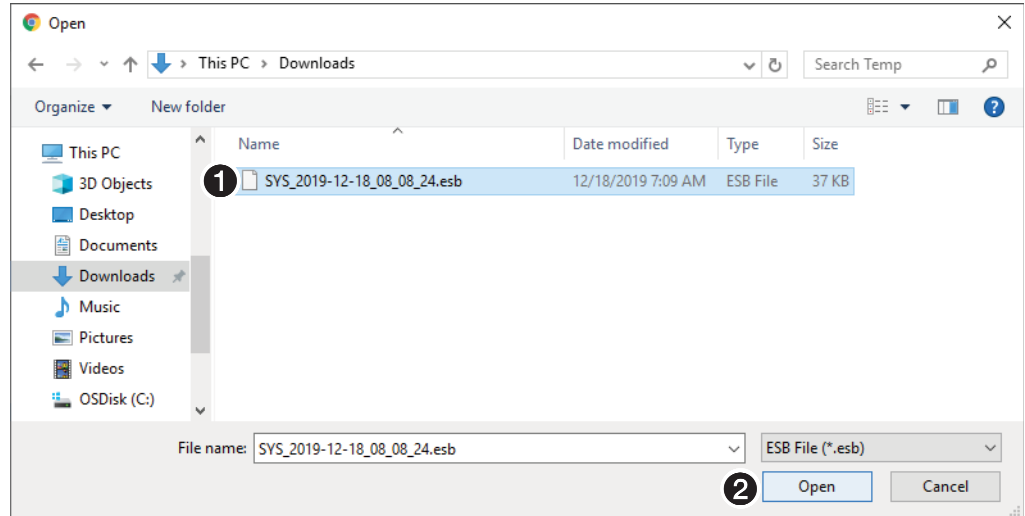


Figure 85. Open Dialog Box

7. Navigate to the folder where the backup file is saved (typically the Downloads folder) (see figure 85, ❶). Select the file.
8. Click **Open** (❷). The System Tools page returns to the top (see figure 86).

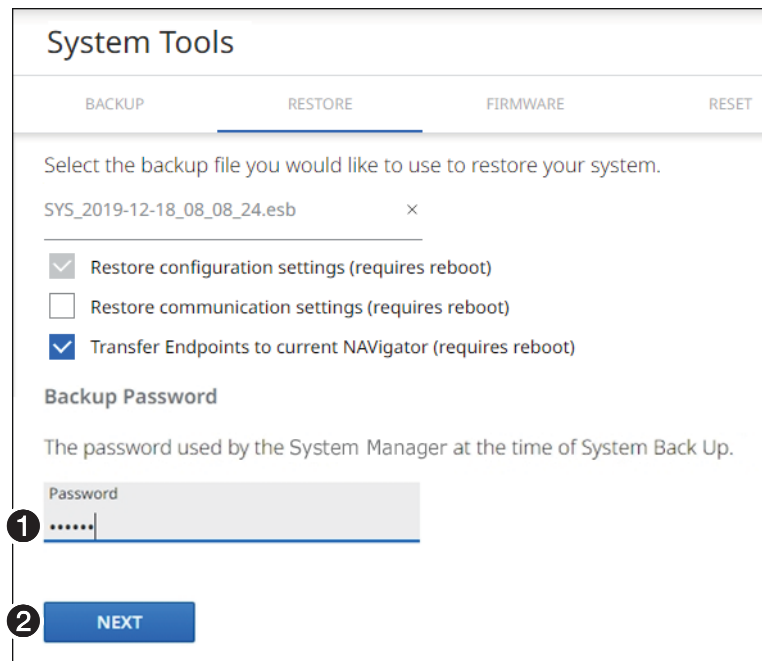
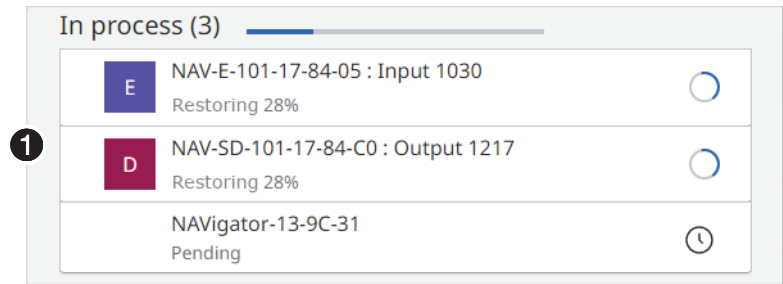


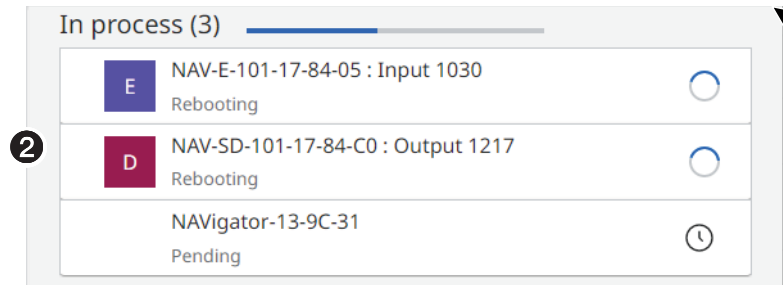
Figure 86. System Tools – Restore Function During Transfer

9. Enter the **Password** (see figure 86, ❶) used by the original NAVigator when the system backup file was created.
10. Click **Next** (❷).

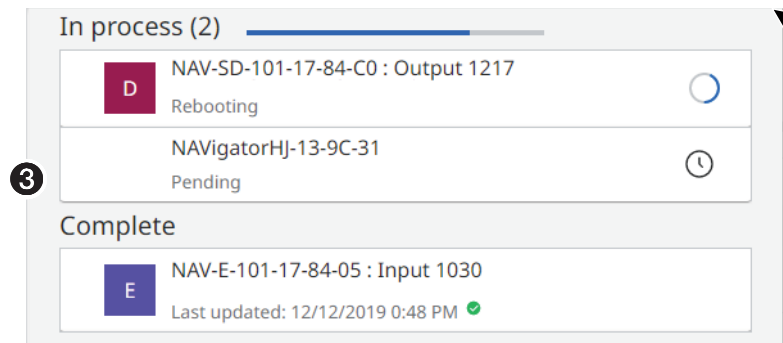
The restore process of the endpoints settings is reported in the In process field (see figure 87, ①).



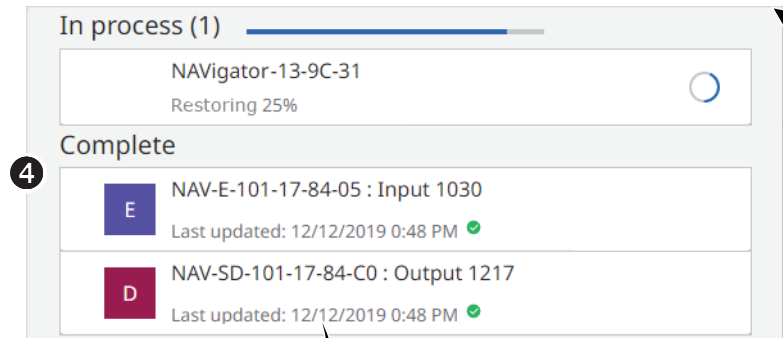
The restore process of the endpoints is complete and the endpoints are rebooting as indicated in the In process field (②).



As endpoints complete their reboot, they are indicated in the Complete field (③).



Once the endpoints are all complete, The NAVigator settings are restored (④).



Once its configuration settings are restored, the NAVigator reboots.

When the NAVigator reboots, the connection to it is momentarily lost and after a few seconds, the browser displays the home page Login dialog box (see figure 8 on page 11).

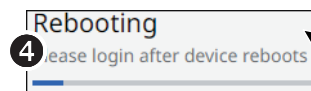


Figure 87. Transfer Endpoints Progress

11. After the reboot, reconnect to the replacement NAVigator via the embedded HTML pages (see **Opening the Embedded HTML Pages** on page 10).

The replacement NAVigator has now taken over management of the NAV system.

Upgrading the system firmware

Upgrade the firmware of multiple devices in the NAV system as follows:

NOTES:

- See [Download a firmware or software package](#) on page 123 to obtain the firmware package.
- Upgrading the system firmware results in the NAVigator rebooting.

1. Access the HTML embedded HTML pages (see [Opening the Embedded HTML Pages](#) on page 10). The HTML page opens (see figure 88).
2. If necessary, click the **Menu** icon (see figure 88, ❶).

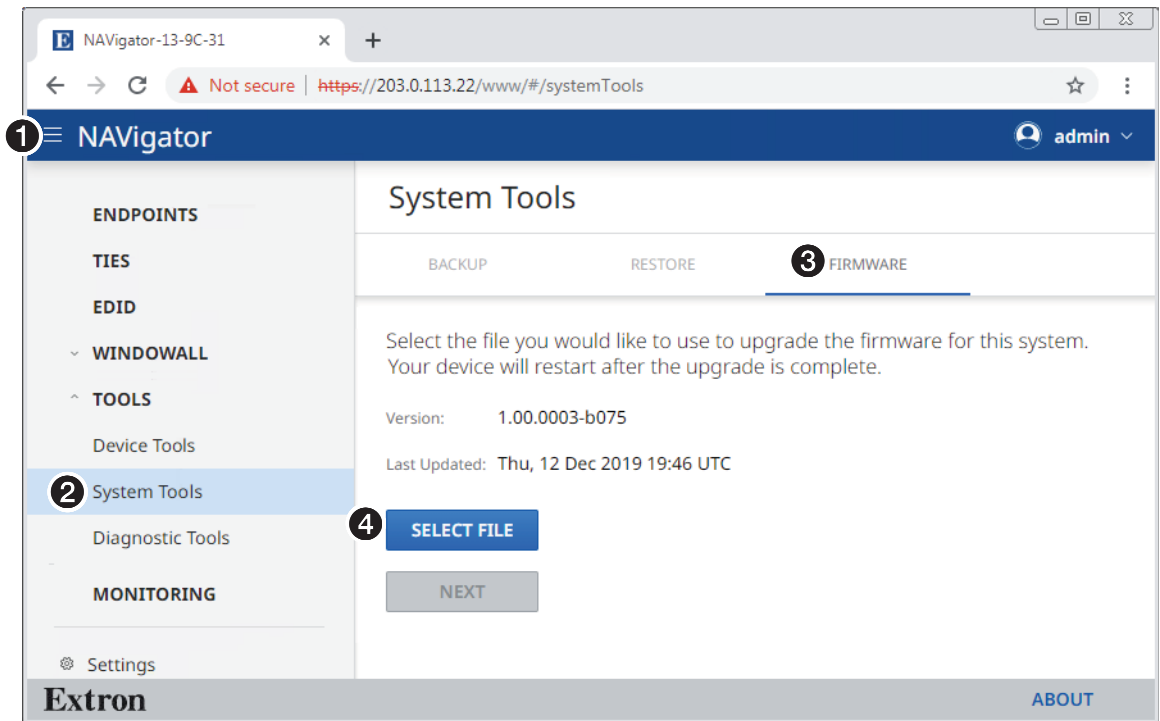


Figure 88. System Firmware Upload Page

3. If necessary, click **Tools > System Tools** (❷).
4. Click **Firmware** (❸).

- Click **Select File** (see [figure 88](#), ④ on page 83). An **Open** dialog box opens (see [figure 89](#)).

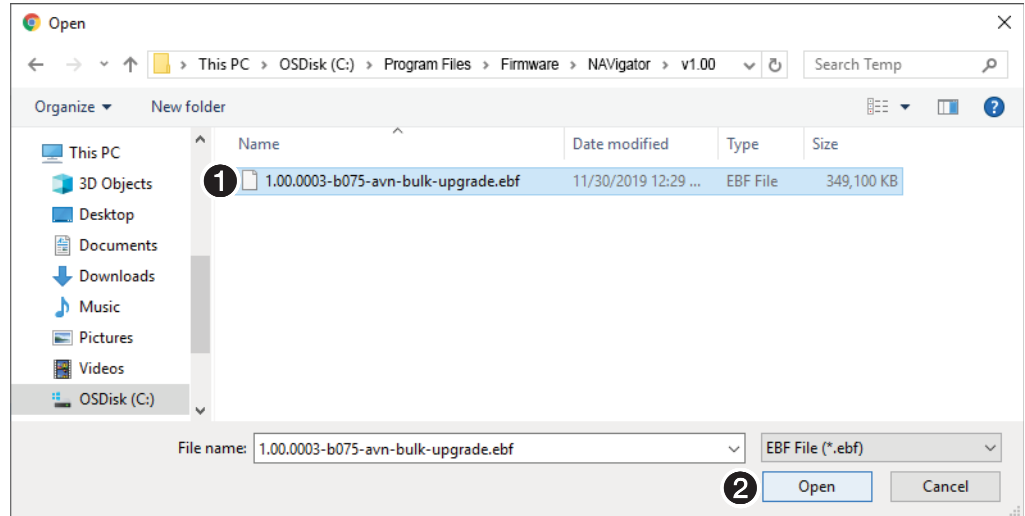


Figure 89. Open Dialog Box

- Navigate to the folder where you saved the firmware or software file (typically, the **Downloads** folder, see [figure 89](#), ①). Select the file.
- Click **Open** (②). The **Open** dialog box closes and the **Device Tools** page returns to the top, with the selected firmware file first shown as uploading and then identified (see [figure 90](#), ①).

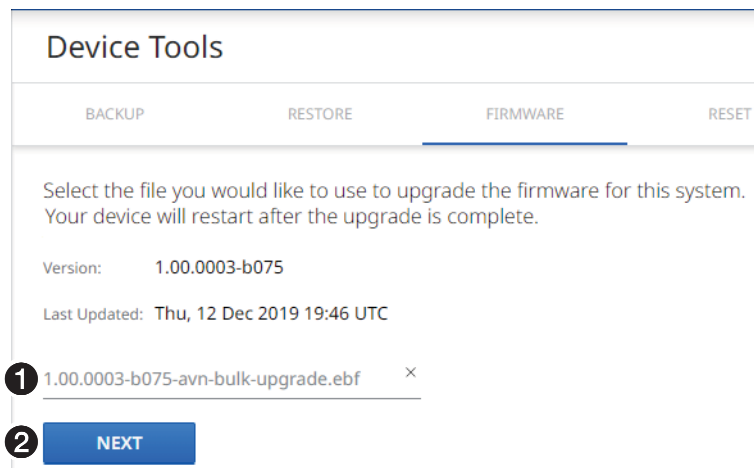


Figure 90. Device Pane with Firmware File Identified

- Click **Next** (②).

The **NAVigator** page displays a page where you can select endpoints to upgrade (see [figure 91](#) on page 85).

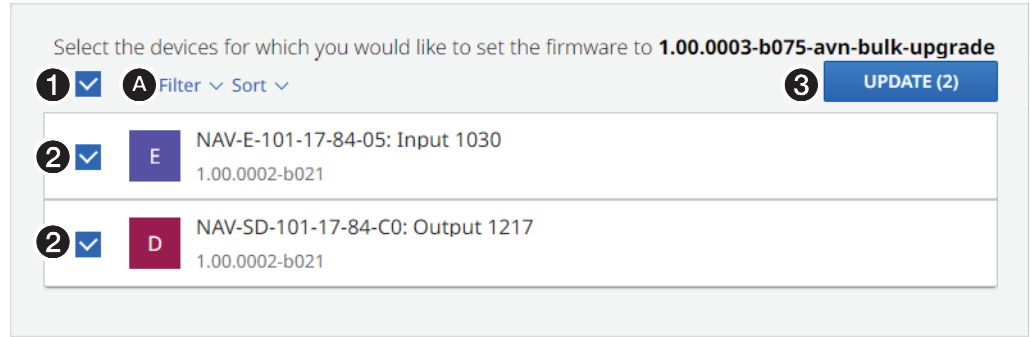


Figure 91. Firmware Endpoint Selection

9. Click the **All** checkbox (see figure 91, ❶) or individual endpoint checkboxes (❷) to select one or more endpoints to upgrade.

NOTES:

- The upgrade to the NAVigator itself, if selected, is always performed last so that the NAVigator can manage the upgrades of the endpoints.
- Some firmware updates may not apply to some endpoints, such as updates for 1G endpoints only and updates for 10G endpoints only. If desired, select **Filter > Model** to filter your endpoints.

Filter ^

Search

Clear All

MODEL

NAV E 101

NAV SD 101

10. Click **Update** (❸). The NAVigator page displays a series of messages that show the sequence of the firmware update (see figure 92, ❶ on page 86).

The system firmware upgrade has started (see figure 92, ①).

The firmware update to the endpoints is in progress in the In process field (②).

The firmware update to the endpoints is complete and the endpoints rebooting is indicated in the In process field (③).

As endpoints complete their reboot, they are indicated in the Complete field (④).

NOTE: Depending on the products in your system, the firmware Upgrade may require several cycles, one for each unique firmware package. For example, 1G endpoints require a separate upgrade cycle from 10G endpoints.

Once the endpoints are all complete, The NAVigator firmware updates (⑤). Once its firmware is updated, the NAVigator reboots.

On reboot, the connection to the NAVigator is lost and the browser displays the home page Login dialog box (see figure 8 on page 11). To continue to operate the NAVigator, you must reconnect (see [Opening the Embedded HTML Pages](#) on page 10).

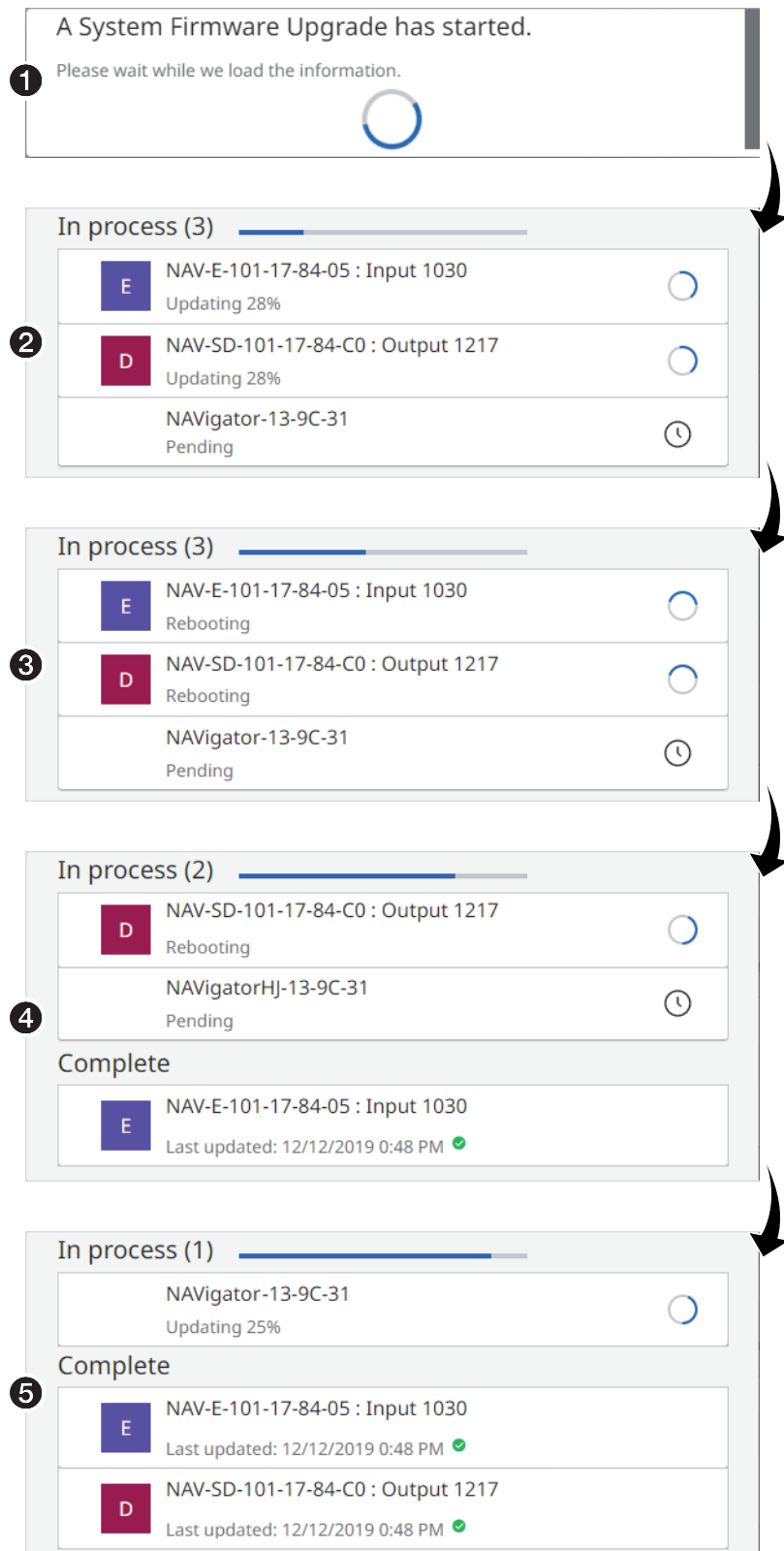


Figure 92. Firmware Upgrade in Progress

Monitoring Page

1. If necessary, click the **Menu** icon (see figure 93, ①).

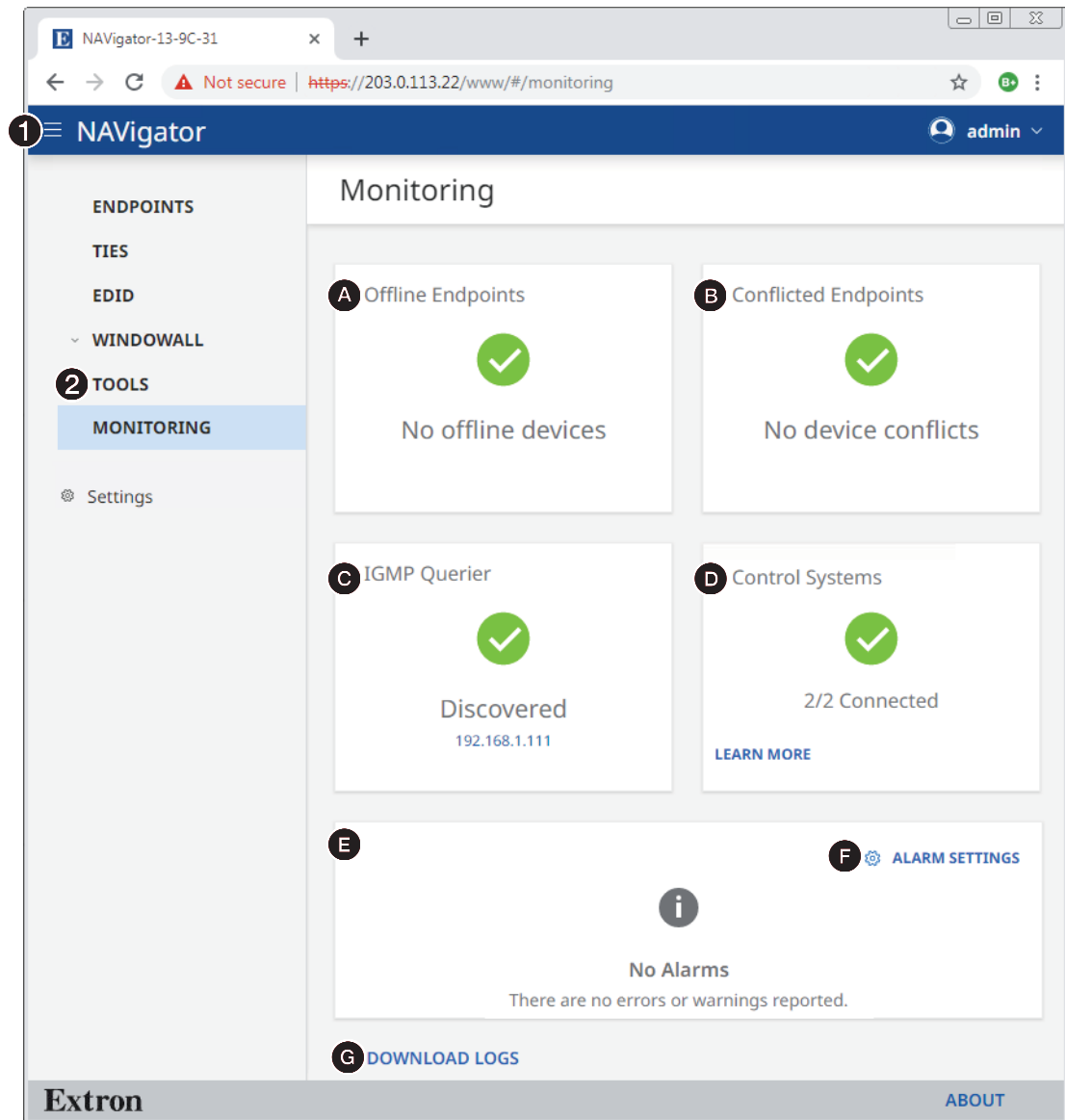


Figure 93. Monitoring Page

2. If necessary, click **Monitoring** (②).
 - Ⓐ **Offline Endpoints pane** — See [Offline Endpoints pane](#) on page 88.
 - Ⓑ **Conflicted Endpoints pane** — See [Conflicted Endpoints pane](#) on page 89.
 - Ⓒ **IGMP Querier pane** — See [IGMP Querier pane](#) on page 90.
 - Ⓓ **Control Systems pane** — See [Controls Systems](#) on page 90.
 - Ⓔ **Alarms pane** — See [Alarms pane](#) on page 91.
 - Ⓕ **Alarm Settings Link** — See [Alarms pane](#).
 - Ⓖ **Download Logs link** — See [Download Logs link](#) on page 92.

Offline Endpoints pane

The **Offline Endpoints** pane (see [figure 93](#), **A** on page 87) shows the number, if any, of discovered endpoints that are not reporting their status.

Figure 94 shows the indication if an endpoint is offline. Click **Learn More** (**1**) to identify the offline endpoint (**2**).

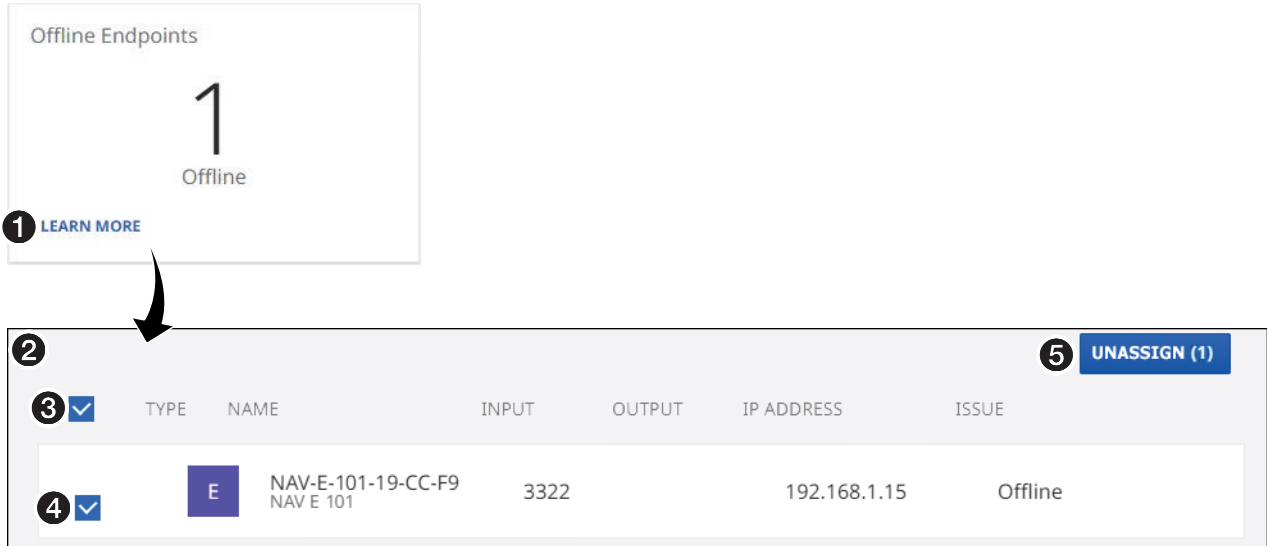


Figure 94. Identifying and Unassigning an Endpoint

See [Alarms](#) on page 119 to bring the endpoint back online. The indication is self-clearing.

To remove an undesired endpoint from the system, perform the following:

1. Click the **All** checkbox (**3**) or individual endpoint checkboxes (**4**) to select one or more endpoints to unassign.
2. Click **Unassign** (**5**).

Conflicted Endpoints pane

The Conflicted Endpoints pane (see [figure 93](#), [E](#) on page 87) shows the number, if any, of discovered endpoints that have an assignment conflict within the system.

Figure 95 shows the indication if an endpoint is conflicted. Click **Learn More** (1) to identify the conflicted endpoint (2).

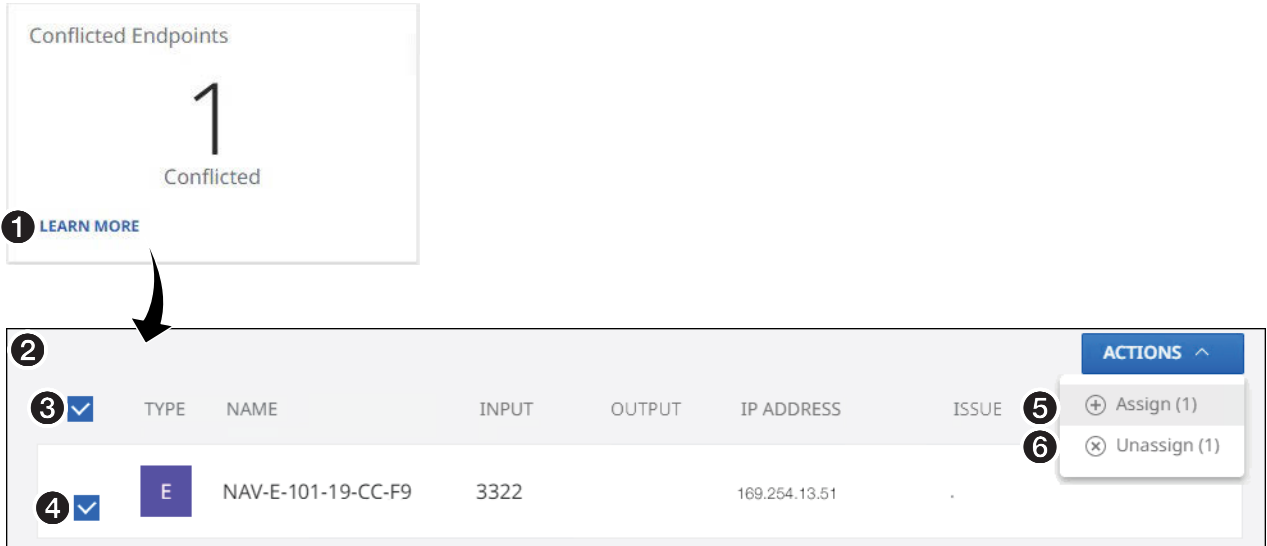


Figure 95. Identifying and Resolving an Endpoint Conflict

NOTE: A conflict exists when either of the following conditions is present:

- An endpoint indicates it is assigned to a NAVigator, but that NAVigator doesn't include this endpoint in its list of assigned endpoints.
- A NAVigator lists an endpoint in its list of assigned endpoints, but that endpoint indicates that it is unassigned.

To resolve system conflict, perform the following:

1. Click the **All** checkbox (3) or individual endpoint checkboxes (4) to select one or more endpoints to resolve.
2. Click **Assign** to reassign the endpoint to this NAVigator or **Unassign** (5) to release the endpoint from this NAVigator (6).

IGMP Querier pane

An IGMP querier is a network service that runs on a network switch and manages the IGMP network traffic. An IGMP querier should be configured on the NAV network. It manages the multicast traffic. If there is no IGMP querier on the network, there is no effective multicast traffic management and the multicast traffic saturates the network and stream errors can occur.

The IGMP Querier pane (see [figure 93](#), [C](#) on page 87) shows whether or not an IGMP querying device is present on the network, and the IP address of the IGMP querier. The address allows you to know that you are communicating to a querier and which querier. In the case of duplicate querier, the IP address may change. Figure 96 shows the indication if no IGMP querier is present on the network or if there are multiple IGMP queriers and there should only be one.

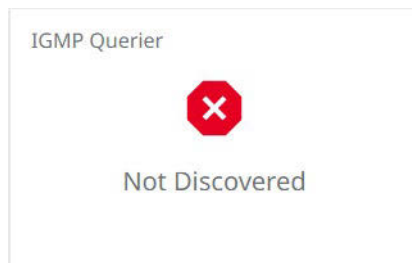


Figure 96. IGMP Querier Pane with no IGMP Querier Present on the Network

NOTE: If no IGMP querier is discovered, contact your network administrator. An IGMP querier is a required network resource for the NAV System to function correctly.

Control Systems pane

The Control Systems pane (see [figure 93](#), [C](#) on page 87) shows the status of control systems that are paired and connected to the NAVigator. The leftmost shown number at right indicates the number paired. The rightmost number indicates the number connected.

Figure 97 shows the indication if no control system is paired (on the left) and if none is connected (on the right). Click **Learn More** (1) to see detailed connection and pairing information (see [figure 98](#)).

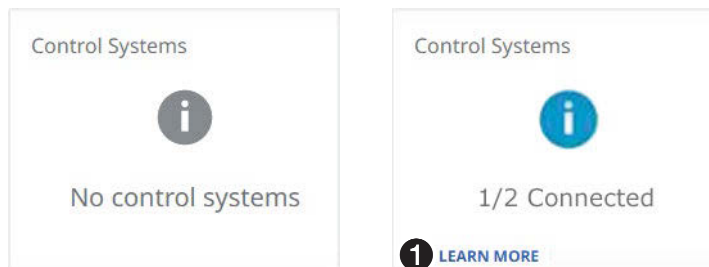


Figure 97. Control Systems Pane

2 Paired Control Systems		
IP ADDRESS	SYSTEM ID	STATE
10.113.120.98	6661	Connecting
192.168.1.180	0509	Connected

Figure 98. Detailed Control Systems Connection and Pairing Information

Alarms pane

The Alarms pane (see [figure 93](#), [D](#) on page 87) shows any alarms that have been triggered in the NAV system managed by this NAVigator. Figure 99 shows the pane when alarms are present. Some alarms self-clear when specific conditions are met, others remain as long as the conditions that cause them remain. As an example, a temperature alarm remains until the NAVigator cools down.

Alarms (Showing 2 of 2) 5 ALARM SETTINGS

1 Device Offline NAV-E-101-19-CC-F9 03/27/20 07:26...

1 Video Loss NAV-E-101-19-CC-F9 03/27/20 07:26...
[LEARN MORE](#)

Filter Sort 4 CLEAR ALARMS (1)

<input checked="" type="checkbox"/>	TYPE	NAME	INPUT	OUTPUT	TIMESTAMP	EVENT	ISSUE
<input checked="" type="checkbox"/>		NAV-E-101-17-84-05	3322		03/27/20 07:26 PM	Device Offline	The endpoint(NAV-E-101-17-84-05) is offline
<input checked="" type="checkbox"/>		NAV-E-101-17-84-05	3322		03/27/20 07:26 PM	Video Loss	No video for 2 seconds or more on input 1

Figure 99. Clearing Alarms

ATTENTION:

- Critical alarms should be resolved immediately.
- Warning alarms are less serious.

Manually clear one or more alarms from the system as follows:

1. Click **Learn More** (see figure 99, [1](#)).
2. Click the **All** checkbox ([2](#)) or individual endpoint checkboxes ([3](#)) to select one or more alarms to clear.
3. Click **Clear Alarms** to clear the alarm ([4](#)).

Configure which alarms are and are not reported in this pane as follows:

1. Click **Alarm Settings** (see [figure 99](#), ⑤). The Edit Alarms Settings dialog box opens (see [figure 100](#)).

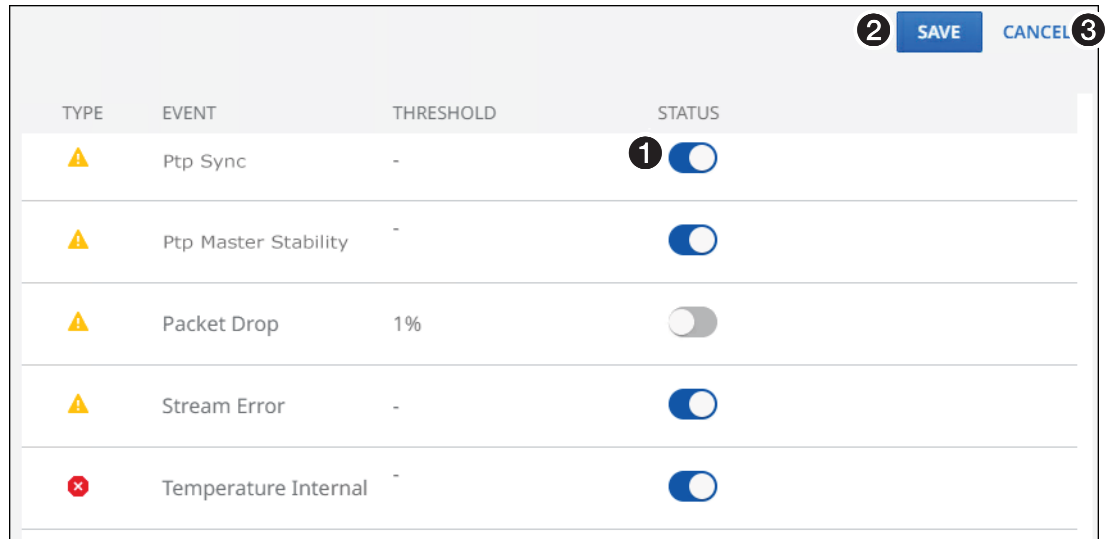
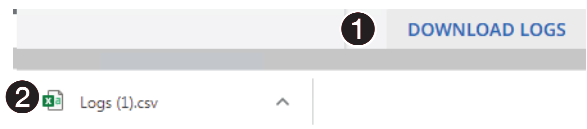


Figure 100. Alarm Settings Window

2. Click the **Status** switch (1) to enabled () and disable () alarm reporting.
3. Click **Save** (2) to make the changes or **Cancel** (3) to abandon them.

Download Logs

Click the **Download Logs** link (see 1 at right) to download a history of errors in a comma-delimited .csv file that can be opened in Microsoft Excel. The figure at right shows the results of downloading an alarms log using the Chrome browser (2).



NOTE: There is no upper limit to the number of alarms that can be logged, but a device can only have one alarm of the same type active at a time. The NAVigator monitors the active alarm states of all devices in the NAV system. All alarm state changes are logged even if status reporting is disabled from the NAVigator.

Settings Page

Editing device details

NOTE: Name and Location can also be edited from the Configure Endpoints > General tab (see [Add and edit names, tags, and locations](#) on page 33).

Edit the name and location as follows:

1. If necessary, click the **Menu** icon (see figure 101, ❶).

The screenshot shows a web browser window with the URL `https://203.0.113.22/settings`. The page title is "NAVigator" and the user is logged in as "admin". The left sidebar contains a navigation menu with the following items: ENDPOINTS, TIES, EDID, WINDOWALL, TOOLS, and MONITORING. The "Settings" link is highlighted with a circled 2. The main content area is titled "Device Settings" and contains a "Device Details" section with a circled 3. The details are as follows:

Device Name	NAVigator-13-9C-31	Part Number	60-1534-01
Location	<i>Not Specified</i>	Serial Number	A1PC690
Device Type	System Manager	Firmware Version	1.00.0003-b089
Model Name	NAVigator	Power Source	P/S
Model Description	NAV System Manager	Temperature	89.0F/31.6C

At the bottom of the details section, there is an "EDIT" button with a circled 4. The footer of the page displays "Extron" on the left and "ABOUT" on the right.

Figure 101. Device Details Pane

2. If necessary, click **Settings** (❷).
3. If necessary, click **Device Details** (❸). The HTML page displays read-only information about the NAVigator.
4. Click **Edit** (❹) to make the Device Name and Location available for editing (see [figure 102](#) on page 94). The Edit button changes to Save.

Device Settings

Device Details

Device Name NAVigator-13-9C-31	Part Number 60-1534-01
1 Location <input style="width: 100%; border: 1px solid #000080;" type="text" value="Conference Room 1"/>	Serial Number A1PC690
Device Type System Manager	Firmware Version 1.00.0003-b089
Model Name NAVigator	Power Source P/S
Model Description NAV System Manager	Temperature 32.0F/0.0C

2

Figure 102. Editing Device Details

5. Click in the appropriate field and make changes as necessary (see figure 102, ❶).

NOTE: See the **NOTES** on page 34 for the text rules that apply to names and locations.

6. Click anywhere outside the edited field.
7. Click **Save** (❷).

Setting date and time

Set the date and time as follows:

1. If necessary, click the **Menu** icon (see figure 103, ❶).

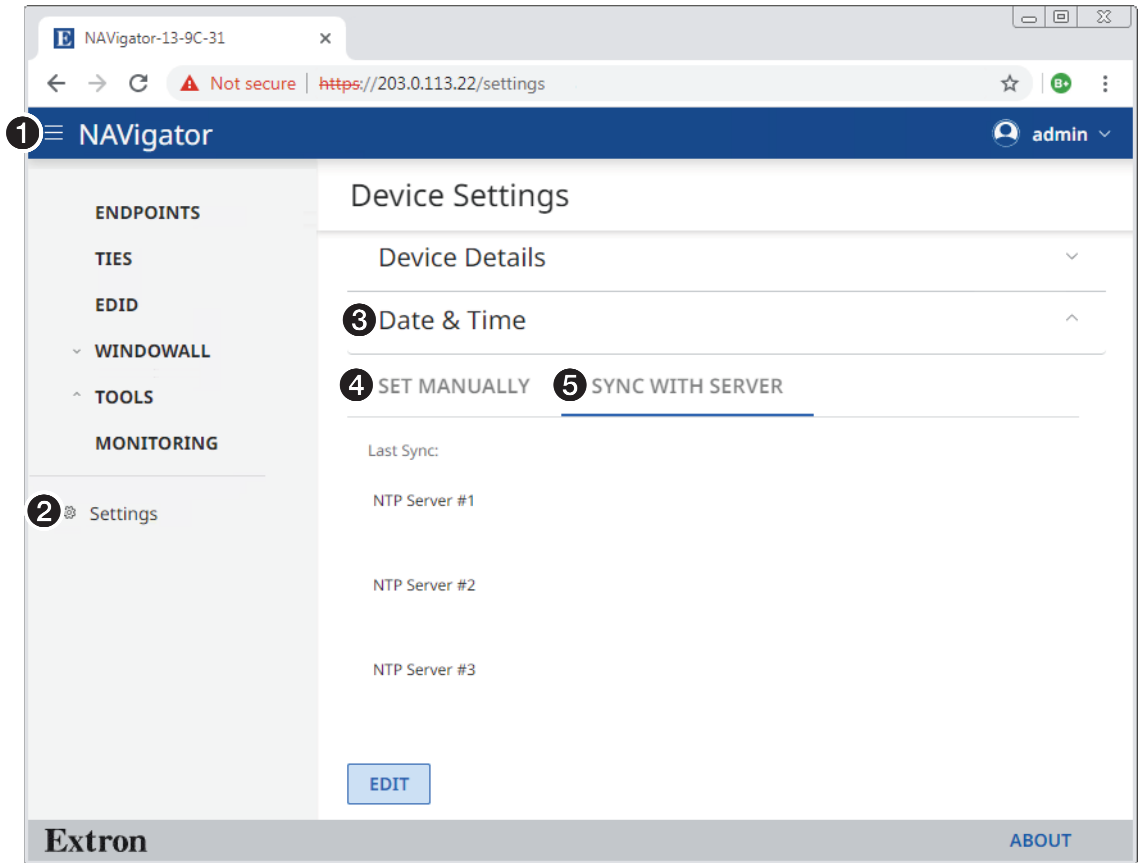


Figure 103. Date & Time Pane

2. If necessary, click **Settings** (❷).
3. If necessary, click **Date & Time** (❸).
4. **To set the time manually**, click **Set Manually** (❹) and see [Set manually](#) on page 96.
To sync the time with the server, click **Sync With Server** (❺) and see [Sync with server](#) on page 98.

Set manually

1. If necessary, click **Set Manually** (see figure 104, ❶).

❶ SET MANUALLY SYNC WITH SERVER

Date | Time
02/19/20 06:14 PM

Time Zone
(UTC+00:00)

❷ EDIT

Figure 104. Set Time and Date Manually

2. Click **Edit** (❷) to make the Date & Time available for editing (see figure 105).

SET MANUALLY SYNC WITH SERVER

❶ SET FROM PC

Date | Time
❷ 02/19/20 07:14 PM

Time Zone
❸ (UTC+00:00)

(UTC-08:00)
(UTC-08:00/UTC-07:00) Pacific Time
(UTC-07:00)
(UTC-07:00) Arizona
(UTC-07:00/UTC-06:00) Mountain Time

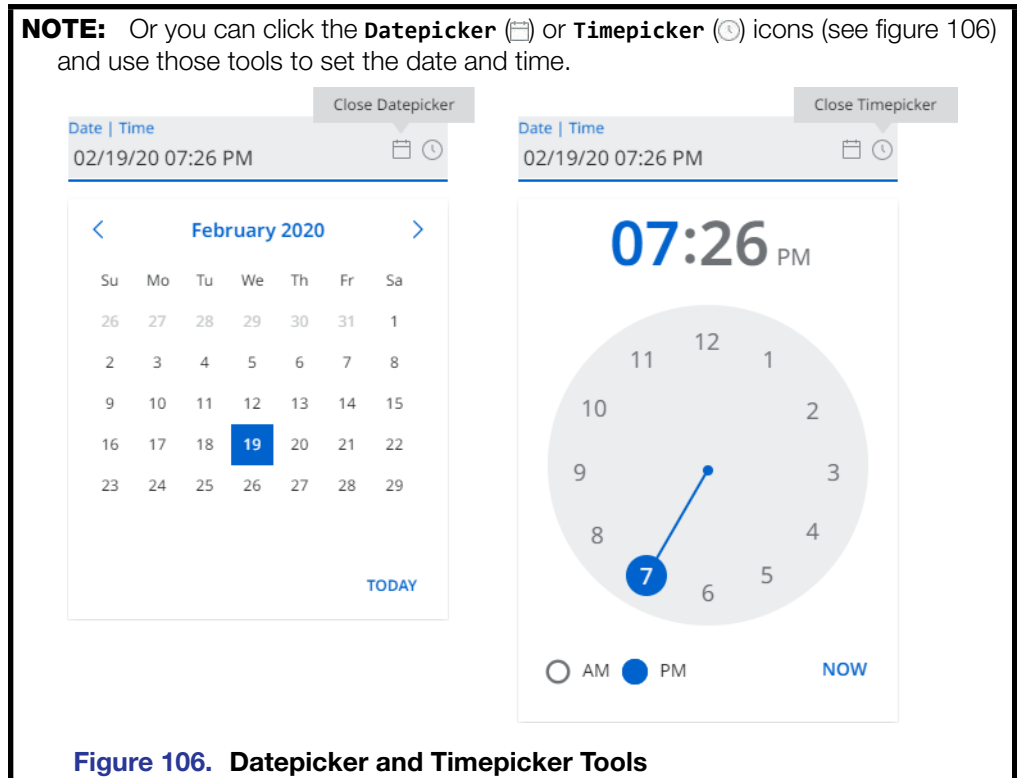
❹ SAVE CANCEL

Figure 105. Set Time and Date Manually

3. To sync the NAVigator to your computer, click **Set From PC** (see figure 105, ❶).

4. To manually set the time and date, click in the appropriate field and make changes as necessary (see [figure 105](#), ② on page 96).

NOTE: Or you can click the **Datepicker** (📅) or **Timepicker** (🕒) icons (see [figure 106](#)) and use those tools to set the date and time.



5. If desired, click the **Time Zone** drop-down menu (③) to select among the time zones.
6. Click **Save** (④).

Sync with server

1. If necessary, click **Sync With Server** (see figure 107, ❶).

Figure 107. Sync with Server

2. Click **Edit** (❷) to make the **Date & Time** available for editing. The **Edit** button changes to **Save**.
3. Click in the appropriate field and make changes as necessary (see figure 107, ❸).

NOTE: The entry must be in the valid IP address or domain name format.

4. Click anywhere outside the edited field.
5. Click **Sync Now** (❷) to synchronize the time with the configured time server.
6. Click **Save** (❸).

Network Connection

Using the Network Connection tools is fully described in [Network Connection Settings](#) on page 23.

Changing the Password

Change the password as follows:

NOTE: When you change the NAVigator Admin password, the new password is automatically pushed to **all** assigned endpoints.

1. If necessary, click the **Menu** icon (see figure 108, ❶).

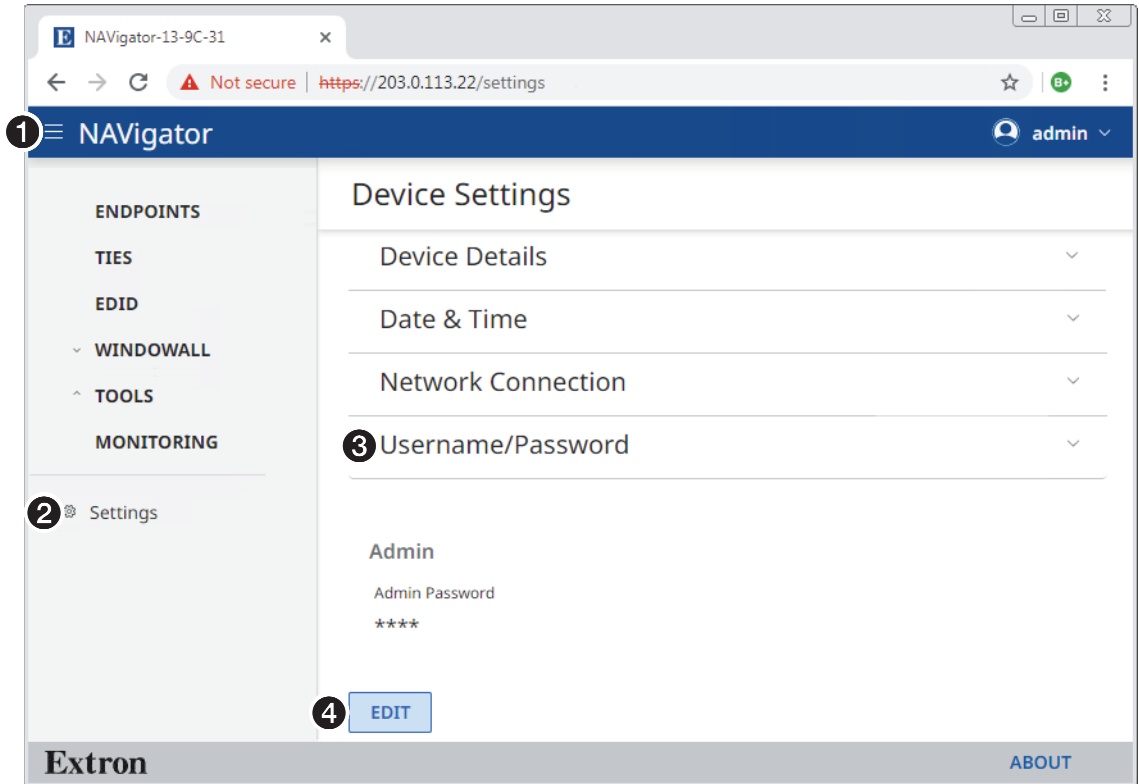


Figure 108. Username/Password Page

2. If necessary, click **Settings** (❷).
3. If necessary, click **Username/Password** (❸).
4. Click **Edit** (❹) to make the Password available for editing. The Edit button changes to Save.

5. Enter the new password in the **Admin Password** field (see figure 109, ①) and **Confirm Admin Password** field (②).

Username/Password

Admin

Admin Password

① extron

Confirm Admin Password

② extron

③ SAVE CANCEL

A Show Password

Figure 109. Changing the Password

NOTE: A valid password meets the following requirements:

- The length is up to 128 characters.
- All alpha-numeric characters and ASCII symbols are permitted except | (pipe).
- The password cannot be blank.
- The password cannot start with a space.

TIP: Select (click) the **Show Password** checkbox (A) to display the password as you type it.

6. Click **Save** (④).

Loading a LinkLicense

A LinkLicense is a key that unlocks additional or enhanced features of an Extron product, such as increasing the number of supported endpoints. Contact the Extron S3 Sales and Technical Support Hotline (see www.extron.com for the phone number in your region of the world) to obtain a LinkLicense.

Load a LinkLicense as follows:

1. If necessary, click the **Menu** icon (see figure 110, ❶).

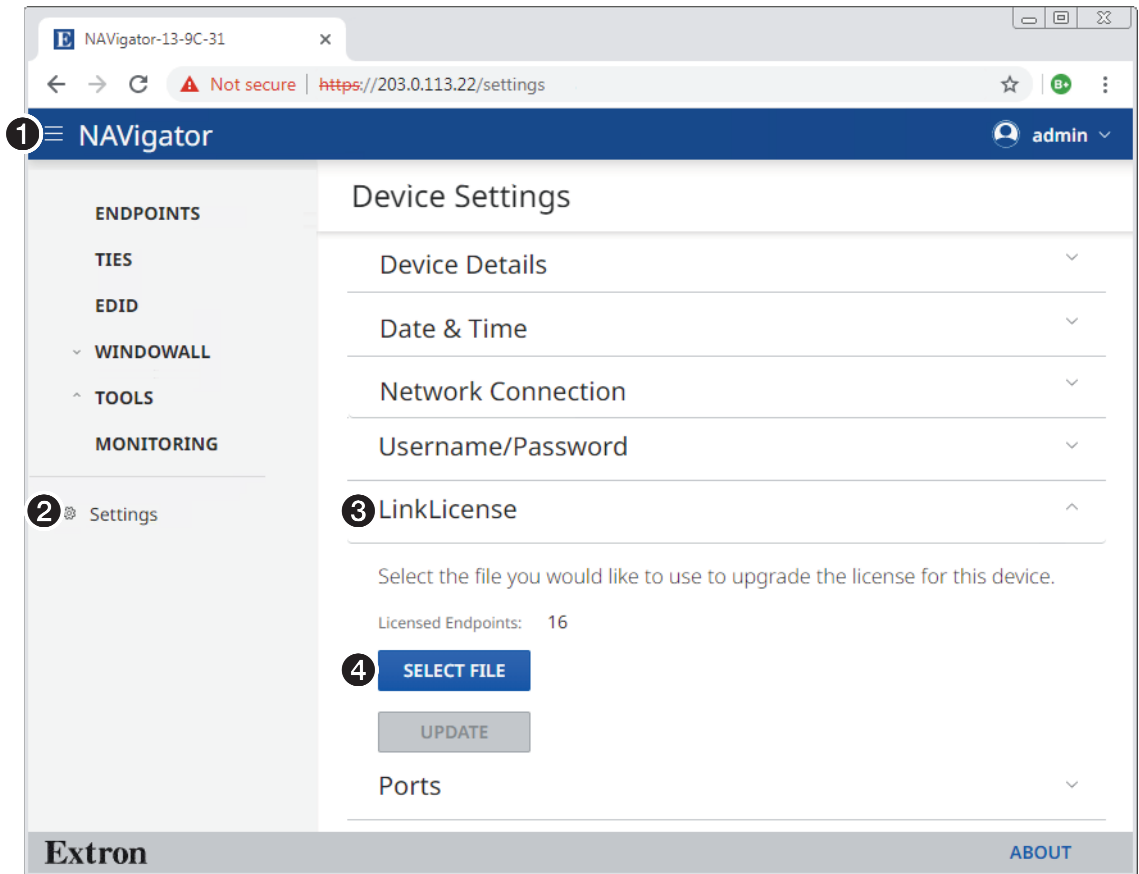


Figure 110. Opening the LinkLicense Page

2. If necessary, click **Settings** (❷).
3. If necessary, click **LinkLicense** (❸). The LinkLicense page opens.
4. Click **Select File** (❹). An open dialog box opens (see [figure 111](#) on page 101).

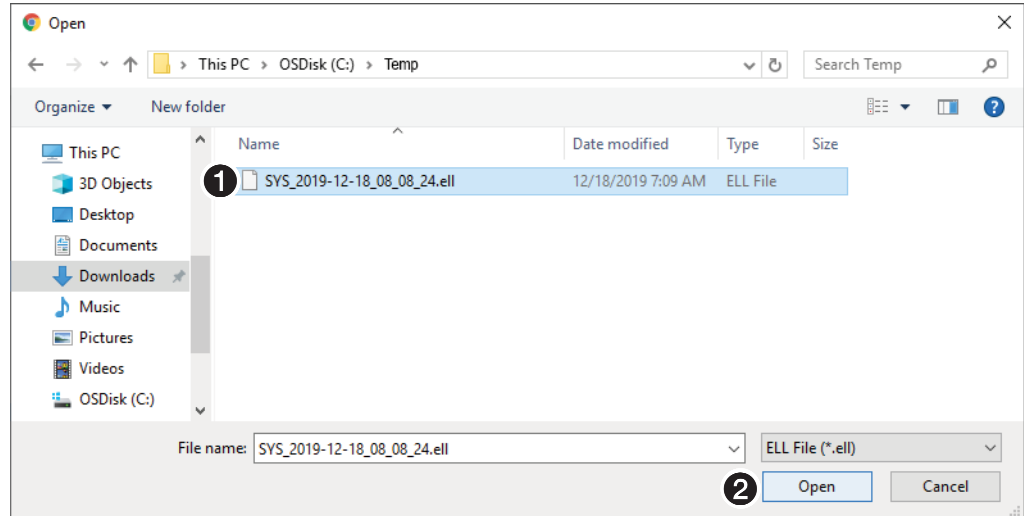


Figure 111. Open Dialog Box

5. Navigate to the folder where the LinkLicense is saved (see figure 111, ❶). Select the file.

NOTE: A valid LinkLicense has the extension e11. Any other file type is **NOT** a valid LinkLicense.

6. Click **Open** (❷). The LinkLicense page returns to the top (see figure 112).

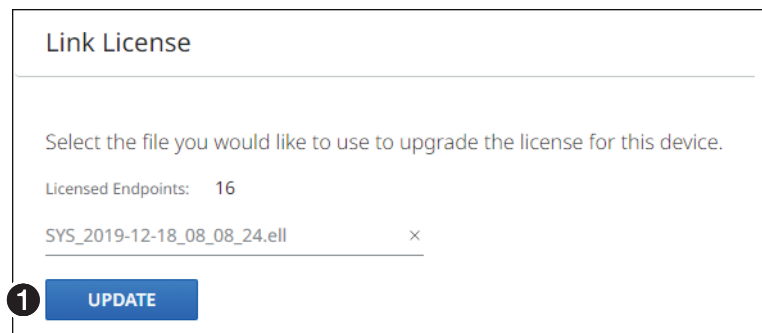
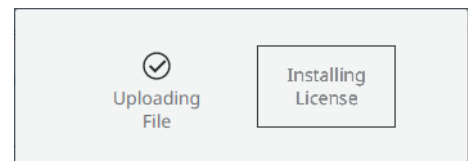


Figure 112. Device Tools – Restore Function

7. Click **Update** (see figure 112, ❶).

The NAVigator reports that it is **Uploading** and then **Installing** the license.

NOTE: To continue to operate the NAVigator, you must reconnect (see [Opening the Embedded HTML Pages](#) on page 10).



Changing the Port Settings

Set the port settings as follows:

1. If necessary, click the **Menu** icon (see figure 113, ❶).

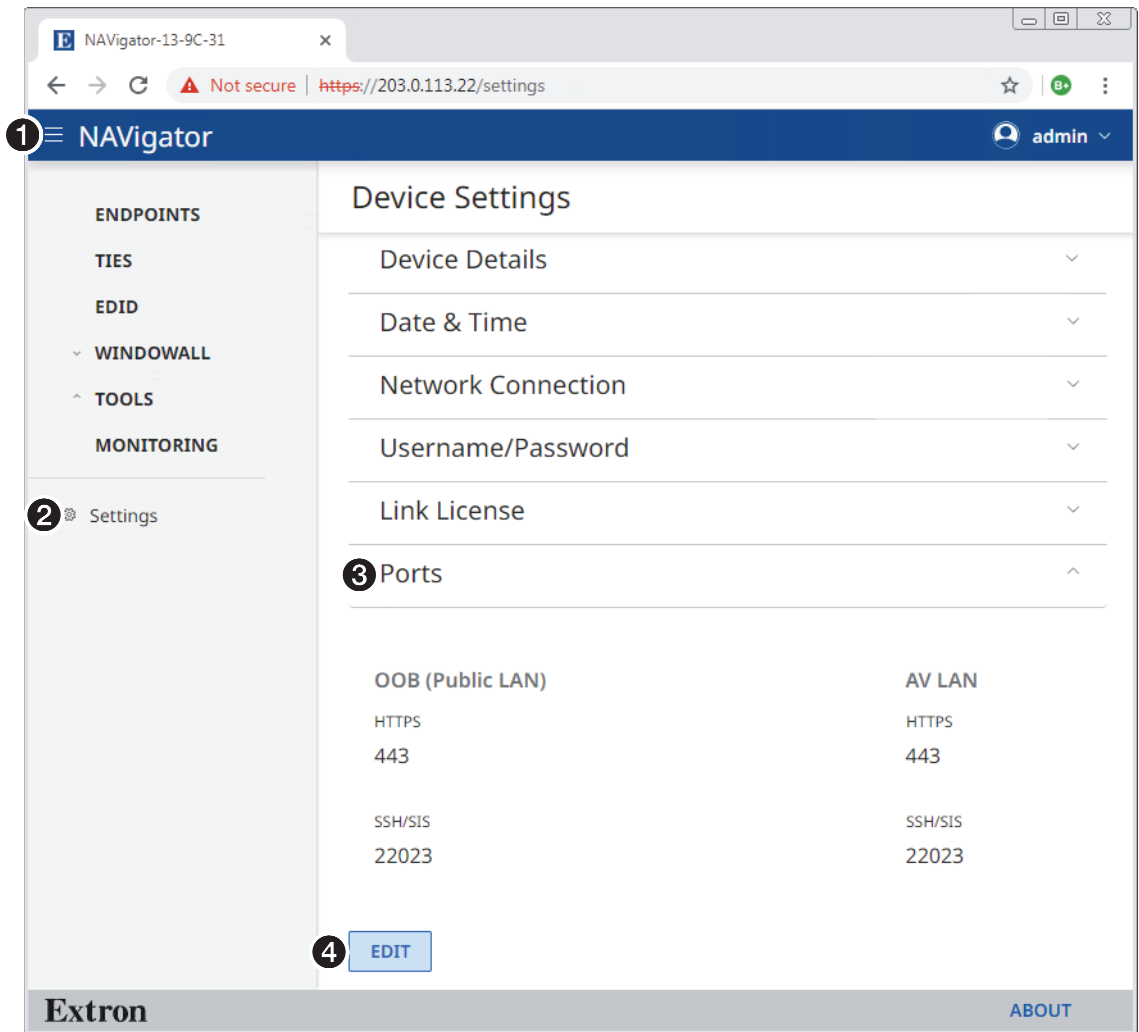


Figure 113. Ports Page

2. If necessary, click **Settings** (❷).
3. If necessary, click **Ports** (❸).
4. Click **Edit** (❹) to make the Ports available for editing. The **Edit** button changes to **Save**.
5. **If desired**, click in the **HTTPS** field (see figure 114, ❶ on page 104) and make changes as necessary.

Ports

OOB (Public LAN)	AV LAN
HTTPS 1024	HTTPS 443
SSH/SIS 22024	SSH/SIS 22023

SAVE CANCEL

Figure 114. Changing the Port Parameters

NOTES:

- The valid range for the HTTPS field is 0, 443, and 1024 through 65535.
- The valid range for the SSH/SIS field is 0 (disable the port) and 1024 through 65535.

6. **If desired**, click in the **SSH/SIS** field (see figure 114, ②) and make changes as necessary.
7. Click anywhere outside the edited field.
8. Click **Save** (③).

Changing the Advanced Networking Settings

Set the port settings as follows:

1. If necessary, click the **Menu** icon (see figure 115, ❶).

The screenshot shows a web browser window with the URL `https://203.0.113.22/settings`. The page title is "NAVigator" and the user is logged in as "admin". The left sidebar contains a menu with the following items: ENDPOINTS, TIES, EDID, WINDOWALL (expanded), TOOLS (expanded), and MONITORING. The main content area is titled "Device Settings" and contains several expandable sections: Device Details, Date & Time, Network Connection, Username/Password, Link License, Ports, and Advanced Networking. The "Advanced Networking" section is expanded, showing the following settings: Link Layer Discovery Protocol (LLDP) is set to "On", Multicast Discovery IP is "239.255.255.254", and the "Route Add/Static Route" section is visible with fields for Network Address, Subnet, and Next Hop IP Address. An "EDIT" button is located at the bottom right of the settings area.

Figure 115. Username/Password Page

2. If necessary, click **Settings** (❷).
3. If necessary, click **Advanced Networking** (❸). See the definitions of these values in the **NOTES** on page 106.
4. Click **Edit** (❹) to make the Device Settings available for editing. The **Edit** button changes to **Save**.

5. If desired, click the **Link Layer Discover Protocol (LLDP)** switch (see figure 116, ❶) to toggle LLDP on and off.

Advanced Networking

RESET TO DEFAULT

Link Layer Discovery Protocol (LLDP)

❶ Off On

Multicast Discovery IP

❷ 239.255.255.254

Route Add/Static Route

Network Address

Subnet

255.255.0.0

Next Hop IP Address

❸ SAVE CANCEL

Figure 116. Changing the Port Parameters

6. If desired, click in the appropriate IP address fields and make changes as necessary (❷).

NOTES:

- LLDP is a link layer protocol used by NAV devices to advertise their identity, capabilities, and neighbors on a local area network.
- Multicast Discover IP is an identical multicast discovery IP address (**Default: 239.255.255.254**) that is used for discovery and communication purposes across the NAV system.
- The Route Add/Static Route provides a single static route in the NAVigator for accessing endpoints located on remote subnets.
 - The Network Address and Subnet Mask fields define the remote subnets using the shortest prefix mask possible.
 - The Next Hop IP Address is the IP address of the gateway that has access those remote subnets.

7. Click anywhere outside the edited field.
8. Click **Save** (⊖).

About Page

Access the About page by clicking **About** (see figure 117, ❶).

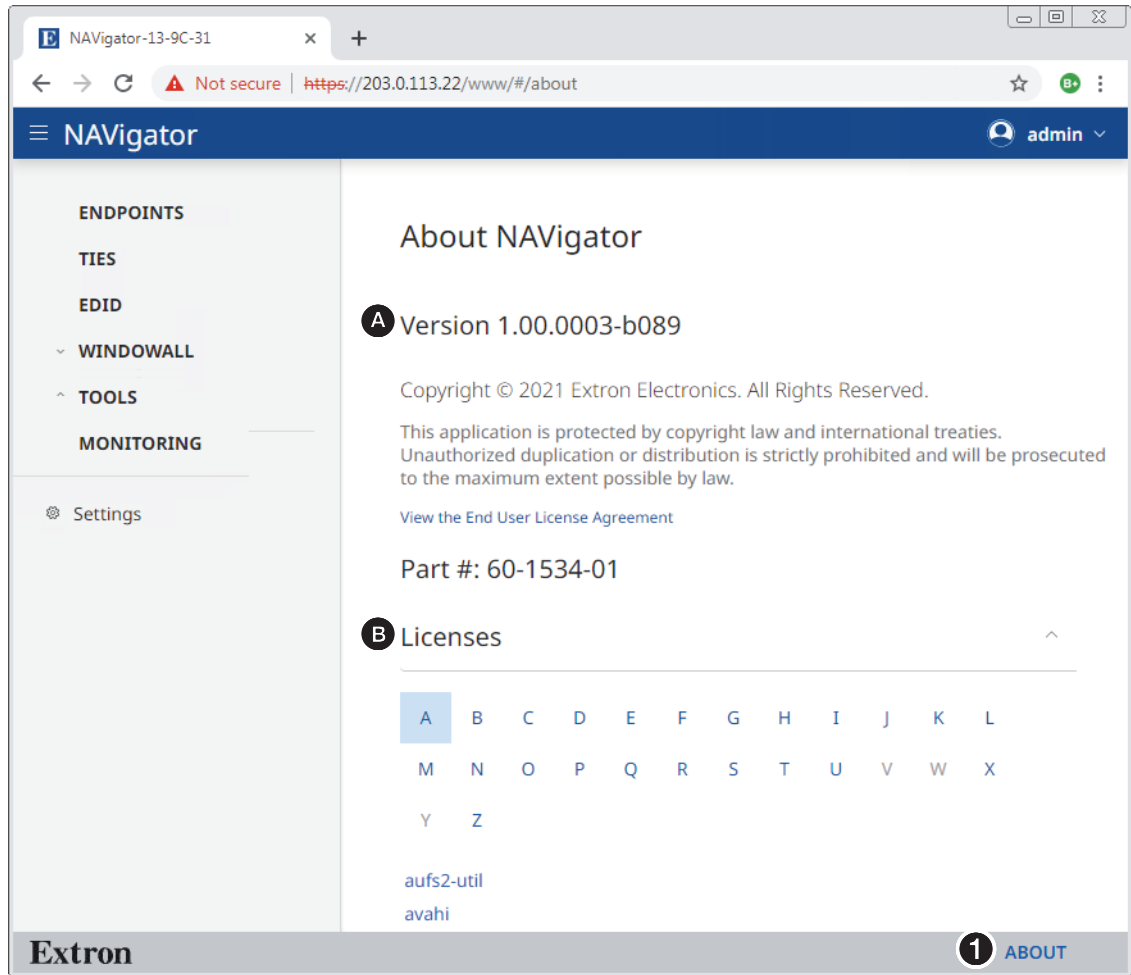


Figure 117. About Page

The About page provides the following useful information:

- A** **Firmware version number**
- B** **Installed licenses**, which can be sorted by click the desired filtering letter

Control System

This section includes:

- [Secure Platform Device](#)
- [Toolbelt](#)
- [Global Configurator Plus](#)
- [Global Scriptor](#)

The NAVigator can be remotely controlled from a host device such as a computer or Extron control system. The controlling device is connected via the NAVigator rear panel NAV/PoE port (see [figure 2, B](#) on page 5) or OOB port ([C](#)).

Secure Platform Device

As a Secure Platform Device (SPD), the NAVigator communicates with compatible controllers such as Extron IPCP Pro and IPL Pro series control products over a secure, encrypted channel. The NAVigator hosts multiple Secure Platform Interfaces, exposing control of the entire NAV system to connected primary controllers.

Toolbelt

The Extron Toolbelt utility is available on the Extron website. Toolbelt is a stand-alone Windows® application for the management of control systems. Toolbelt can automatically discover Pro Series and NAV devices on a network (see the *Toolbelt Help* file). You can also manually add devices, using the known IP addresses. Once you log in to a NAV device, such as a NAVigator, you can perform tasks such as:

- Launch the embedded NAVigator HTML page after discovery
- View the device and system information
- View and edit network information
- View and set SSL certificates
- Use utilities such as **Ping**, **Reset**, and **Reboot**
- View 802.1x status logs
- Configure 802.1x security settings
- Update the firmware to a selected device or group of devices

Global Configurator Plus

NOTE: NAV Products can be used in control systems with the following Extron control products:

- **IPCP Pro Processors** such as the IPCP Pro 250
- **IPL Pro Control Processors** such as the IPL Pro S3

Global Configurator is an Extron control system configuration software for use in AV systems that include Extron Pro Series control products. Conditional logic, variables, and macros provide flexibility for elaborate control system designs. No direct programming knowledge is needed to use the program.

The functional logic is built in to Global Configurator; you merely select the functions that you want to use. You can quickly set up schedules, macros, monitors, and the like, using available actions and commands, without having to write control script.

Global Configurator has two modes:

- **Global Configurator Plus** — Ideal for smaller applications requiring one control processor and one control interface.
- **Global Configurator Professional** — Suited for applications requiring multiple control processors, enhanced functionality, and advanced configuration. Access to Global Configurator Professional requires ECP Certification.

In a NAV system with an Extron controller, such as an IPCP Pro 250, you can perform actions such as:

- Load device drivers for monitoring the status of and controlling devices with the NAV system.
- Upload GUI Designer interface layouts to touchpanels and third-party touch interfaces.
- Create the configuration containing all the settings for the control process and the products with which it interacts in the NAV system.
- Upload the configuration to the control processor.
- Send limited commands (such as some SIS commands) via the controller to a NAV device (but without receiving a response from the device).

To obtain Extron control product software, you must have an Extron Insider account and contact an Extron support representative on the Extron S3 Sales and Technical Support Hotline (see www.extron.com for the phone number in your region of the world). Extron provides training to our customers on how to use the software. Access to the features of Global Configurator Professional is available to users who successfully complete Extron Control Professional Certification.

For detailed descriptions and procedures to setup a control system with an IPCP Pro device and Global Configurator, see the applicable Global Configurator Help file.

Global Scriptor

NOTE: NAV Products can be used in control systems with the following Extron control products:

- **IPCP Pro Processors** such as the IPCP Pro 250
- **IPL Pro Control Processors** such as the IPL Pro S3

Global Scriptor is powerful and versatile control system programming software from Extron for AV systems that use an Extron Pro series control processor (such as an IPCP Pro 250). Global Scriptor, being programming (rather than just configuration) software, is much more flexible than Global Configurator. Global Scriptor allows an integrator to write customized programs for a his or her specific AV system. Using customized programming commands for configuration and control allows larger AV systems than Global Configurator.

Global Scriptor uses the easy-to-learn Python scripting language and includes the Extron-exclusive Python library: ControlScript. ControlScript increases the productivity of AV programmers by incorporating functions used in common AV control system projects, as well as helpful documentation, reference material, and sample code. Global Scriptor can insert specific AV devices (such as SPDs) and functions into the code.

In a NAV system with an Extron controller, such as an IPCP Pro 250, you can support many more devices (system controllers, NAVigators, and endpoints) than Global Configurator, send very specific SIS commands (as programmed code) and get feedback.

NOTE: Users and integrators must know how to program with Python and should know how to use Extron ControlScript.

For detailed descriptions and procedures to setup a control system with an IPCP Pro device and Global Scriptor, see the Global Scriptor Help file.

SIS Operation

The NAVigator can be remotely controlled, monitored, or configured using the following:

- A user-defined string consisting of SIS commands (see below)
- Extron Toolbelt or a control system constructed using either Global Configurator Plus, Global Configurator Pro, or Global Scriptor (see **Control System** on page 108)
- Built-in HTML pages (see **HTML Operation** on page 10)

This section provides guidance on operation of the NAVigator via a string of commands and lists the SIS commands, including:

- **Host-to-NAVigator Communications**
- **NAVigator-Initiated Power-Up Message**
- **NAVigator Error Responses**
- **Using the Command and Response Table**
- **SIS Command and Response Table**
- **NAVigator to Endpoints Communication (Encapsulation)**

As an SPD (see **Secure Platform Device** on page 108), communication is by using Global Configurator Plus, Global Configurator Professional, or Global Scriptor, via an SPD interface. See the applicable Help file to configure the program to issue command strings to the NAVigator.

NOTE: You can connect the NAVigator to a control system using either the OOB or NAV LAN port.

Host-to-NAVigator Communications

SIS commands consist of one or more characters per field. No special characters are required to begin or end a command character sequence. When a command is valid, the device executes the command and sends a response to the host device. All responses from the device to the host end with a carriage return and a line feed (CR/LF = **↵**), which signals the end of the response character string. A string is one or more characters.

NAVigator-Initiated Messages

© Copyright 20yy, Extron Electronics NAVigator, Vx.xx, 60-nnnn-nn↵

The NAVigator has completed its start-up. Vx.xx is the firmware version number and 60-nnnn-nn is the part number.

DevpA**<endpoint>***<0 = unassigned, 1 = assigned>*↵

The assigned status of an endpoint has changed.

DevpP**<endpoint>***<0 = offline, 1 = online>*↵

An assigned endpoint has changed its online status.

NAVigator Error Responses

When the NAVigator receives a valid SIS command, it executes the command and sends a response to the host device. If the NAVigator is unable to execute the command because the command is invalid or it contains invalid parameters, the NAVigator returns an error response to the host. The error response codes are:

- E10 — Invalid command
- E12 — Invalid port number
- E13 — Invalid parameter
- E14 — Invalid for this configuration
- E17 — Invalid command for signal type
- E22 — Busy
- E24 — Privilege violation
- E25 — Device not present
- E28 — Bad file name or file not found

Using the Command and Response Tables

The **command and response tables** begin on page 113. Symbols are used throughout the tables to represent variables in the command and response fields. Command and response examples are shown throughout the tables. The ASCII to HEX conversion table below is for use with the command and response table.

ASCII to Hex		Conversion Table															
Space	→	20	!	21	"	22	#	23	\$	24	%	25	&	26	'	27	
		(	28	)	29	*	2A	+	2B	,	2C	-	2D	.	2E	/	2F
		0	30	1	31	2	32	3	33	4	34	5	35	6	36	7	37
		8	38	9	39	:	3A	;	3B	<	3C	=	3D	>	3E	?	3F
		@	40	A	41	B	42	C	43	D	44	E	45	F	46	G	47
		H	48	I	49	J	4A	K	4B	L	4C	M	4D	N	4E	O	4F
		P	50	Q	51	R	52	S	53	T	54	U	55	V	56	W	57
		X	58	Y	59	Z	5A	[	5B	\	5C	]	5D	^	5E	_	5F
		`	60	a	61	b	62	c	63	d	64	e	65	f	66	g	67
		h	68	i	69	j	6A	k	6B	l	6C	m	6D	n	6E	o	6F
		p	70	q	71	r	72	s	73	t	74	u	75	v	76	w	77
		x	78	y	79	z	7A	{	7B	|	7C	}	7D	~	7E	DEL	7F

Common symbol definitions

- ↵ = Carriage return/line feed
- ← = Carriage return (no line feed)
- | = Pipe (can be used interchangeably with the ← character)
- = space
- [Esc] = Escape key
- W = Can be used interchangeably with the [Esc] character

SIS Command and Response Tables

Command and Response Table for NAVigator Commands

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional description
NOTES: <ul style="list-style-type: none"> The NAVigator supports 1- through 4-digit numeric entries (such as 1*1, 0002*0002). Leading zeroes are not required. Commands can be entered back-to-back in a string, with no spaces. For example: 1*1!02*02&03*03%4*8!. 			
Video, audio, and USB ties			
NOTES: <ul style="list-style-type: none"> The [x1] and [x2] variables can be in any of three formats: input or output number, device name (case-sensitive), or IP address. For AV ties, [x1] indicates the input and [x2] indicates the output. For USB ties, [x1] indicates the host and [x2] indicates the USB device. An input and an output can both have the same number, such as input 1 and output 1. For USB ties where [x1] and [x2] are I/O numbers, another variable, [x3], is necessary to clarify whether the device is an input or output. [x3] is not necessary for ties commanded by device name or IP address. For AV ties, do NOT include the [x3] variable; an alarm will occur. 			
Tie input [x1] video and audio to output [x2] <i>Example using I/O numbers:</i>	[Esc][x1]*[x2]! ← [Esc]1*3! ←	Out [x2] •In [x1] •A11 ← Out03•In01•A11 ←	Tie input [x1] video and audio to output [x2] . Tie input 1 video and audio to output 3.
Tie input [x1] video to output [x2] <i>Example using device names:</i>	[Esc][x1]*[x2]% ← [Esc]Encoder1*Classroom2% ←	Out [x2] •In [x1] •Vid ← OutClassroom2•InClassroom1•Vid ←	Tie input [x1] video to output [x2] . Tie video from encoder 1 to classroom 2.
Tie input [x1] audio to output [x2] <i>Example using IP addresses:</i>	[Esc][x1]*[x2]\$ ← [Esc]192.168.1.10*192.168.1.12\$ ←	Out [x2] •In [x1] •Aud ← Out192.168.1.12•In192.168.1.10•Aud ←	Tie input [x1] audio to output [x2] . Tie input 192.168.1.10 audio to output 192.168.1.12.
Tie host [x1][x3] USB to device [x2][x3] <i>Example encoder as host, using I/O numbers:</i>	[Esc][x1][x3]*[x2][x3]^ ← [Esc]2026i*436o^ ←	Out [x2][x3] •In [x1][x3] •Usb ← Out436o•In2026i•Usb ←	Tie host [x1][x3] USB to device [x2][x3] . Tie encoder 2026 to decoder 436 as a host.
<i>Example using device names:</i>	[Esc]labo*class1i^ ←	Outclass1•Inlab•Usb ←	Tie lab to class1 as a host.
<i>Example using IP addresses:</i>	[Esc]192.168.1.8*192.168.1.9^ ← Out192.168.1.9•In192.168.1.8•Usb ←		Tie input 192.168.1.8 to 192.168.1.9 as a host.
Tie input [x1] video and audio to all outputs	[Esc][x1]*! ←	[x1]•A11 ←	Tie input [x1] video and audio to all outputs.
TIP: When you create a tie where [x1] = 00 , you tie no input (AV ties) or no host (USB ties) to the specified output or device ([x2]) (untie [x2]). <ul style="list-style-type: none"> [Esc]0*! ← clears all AV ties. [Esc]0i*^ ← clears all USB ties. 			
Tie input [x1] video to all outputs	[Esc][x1]*% ←	[x2]•Vid ←	Tie input [x1] video to all outputs.
Tie input [x1] audio to all outputs	[Esc][x1]*\$ ←	[x2]•Aud ←	Tie input [x1] audio to all outputs.
Untie an AV output	[Esc]00*[x2]! ←	Out [x1] *In00*A11 ←	Untie output from input.
Untie an AV input	[Esc][x1]*00! ←	Out00*In [x1] *A11 ←	Untie input from all outputs.
KEY: [x1] = Input (AV) or host (USB) Number: 0000 or <input number> (0000 = untie outputs) Name: <name> IP address: <xxx.xxx.xxx.xxx> [x2] = Output (AV) or USB device (USB) Number: 0000 or <output number> (0000 = untie input) Name: <name> IP address: <xxx.xxx.xxx.xxx> [x3] = Encoder (input) or decoder (output) Only first letter (i or o) is valid. (Required for USB ties by I/O number only)			
NOTE: See Configure Selected Endpoint Communication Settings on page 27 to edit input and output numbers and IP addresses. See Add and edit names, tags, and locations on page 33 to edit input and output names.			

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional description
Video, audio, and USB ties (continued)			
NOTES:			
<ul style="list-style-type: none"> The quick multiple tie and tie input to all output commands make all ties simultaneously. If any commanded ties in a multiple tie command are invalid, all valid ties are made and the response is Qik14 to indicate the error. 			
Quick multiple tie	<code>[Esc]+Q[X1]*[X2]!...[X1]*[X2]&←</code>	<code>Qik←</code>	
Example:	<code>[Esc]+Q3*4!3*5%3*6\$←</code>	<code>Qik←</code>	Tie input 3 video and audio to output 4, tie input 3 video only to output 5, and tie input 3 audio only to output 6.
WindoWall presets			
Recall WindoWall preset (per canvas)	<code>[Esc]R1*[X4]*[X5]PRST←</code>	<code>PrstR1*[X4]*[X5]←</code>	
View last recalled preset (per canvas)	<code>[Esc]L1*[X4]PRST←</code>	<code>[X5]</code>	<code>[X5]</code> is the last recalled preset.
Select WindoWall input			
Select input	<code>[Esc][X4]*[X6]*[X1]←</code>	<code>Grp[X4]*[X6]*[X1]←</code>	Select input <code>[X1]</code> to Window <code>[X6]</code> on Canvas <code>[X4]</code> .
View current input	<code>[Esc][X4]*[X6]←</code>	<code>[X1]←</code>	
WindoWall video mute			
Mute Window	<code>[X4]*[X6]*1B</code>	<code>Vmt[X4]*[X6]*1←</code>	Mute window <code>[X6]</code> canvas <code>[X4]</code> .
Unmute Window	<code>[X4]*[X6]*0B</code>	<code>Vmt[X4]*[X6]*0←</code>	Unmute window <code>[X6]</code> canvas <code>[X4]</code> .
View Mute Status	<code>[X4]*[X6]B</code>	<code>[Y1]←</code>	Mute status of window <code>[X6]</code> canvas <code>[X4]</code> is <code>[Y1]</code> .
	Verbose mode 2 or 3:	<code>Vmt[X4]*[X6]*[Y1]←</code>	
Information requests			
View video and audio tie	<code>[Esc][X2]!←</code>	<code>[X1]←</code>	This command, when audio is broken away in the tie, returns an E13 error.
View video tie	<code>[Esc][X2]%←</code>	<code>[X1]←</code>	
View audio tie	<code>[Esc][X2]\$←</code>	<code>[X1]←</code>	
Show NAV system size	I	<code>V[X7][X8]*A[X7][X8]←</code>	Show the total number of encoders and decoders assigned to this NAVigator.
View model name	1I	<code>NAVigator←</code>	
View model description	2I	<code>NAV*System*Manager←</code>	
View number of connected users	10I	<code>[X9]←</code>	
View IGMP querier	50I	<code>[X10]←</code>	
View device serial number	98I	<code>[X11]←</code>	
View internal temperature	<code>[Esc]20STAT←</code>	<code>[X12]←</code>	
View LinkLicense status	<code>[Esc]LELIC←</code>	See below for an example:	
		<code>{“licensedFeature”:[{“name”:<variable>,”description”:<Link License nn Endpoints>,”status”:true,”serialNumber”:<variable>,”expirationDate”:<nnnnnnnn>,”data”:<n>,”part_number”:<79-<nnnn>-<nn>”}]}←</code>	
View part number	N	<code>60-nnnn-01←</code>	
KEY:			
<code>[X1]</code> = Input (AV) or host (USB)	Number: 0000 or <input number> (0000 = untie outputs)	Name: <name>	IP address: <xxx.xxx.xxx.xxx>
<code>[X2]</code> = Output (AV) or USB device (USB)	Number: 0000 or <output number> (0000 = untie input)	Name: <name>	IP address: <xxx.xxx.xxx.xxx>
<code>[X4]</code> = Canvas number	1 – 8		
<code>[X5]</code> = Preset number	1 – 8		
<code>[X6]</code> = Window number	1 – 64		
<code>[Y1]</code> = Mute Status	1 = muted, 0 = unmuted		
<code>[X7]</code> = Total number of inputs			
<code>[X8]</code> = Total number of outputs			
<code>[X9]</code> = Number of connected users	0 through 15		
<code>[X10]</code> = IP address	xxx.xxx.xxx.xxx		
<code>[X11]</code> = Serial number	<xxxxxxx>		
<code>[X12]</code> = Internal temperature	xxxF•xxC		
NOTE: If tagged responses are enabled, all read and view commands return the constant string and the value as the set command does (for example, the read matrix name command, <code>[Esc]CN←</code> returns <code>Ipno[X16]←</code>).			

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional description
Firmware version			
Read firmware version	Q	<u>X13</u> ←↵	
Read full firmware version	*Q	<u>X14</u> ←↵	
Read advanced firmware version	20Q	<u>X15</u> ←↵	
Device name			
Set NAVigator name	<u>Esc</u> <u>X16</u> CN←	Ipn• <u>X16</u> ←↵	
Read NAVigator name	<u>Esc</u> CN←	<u>X16</u> ←↵	
Reset NAVigator name to factory default	<u>Esc</u> •CN←	Ipn• <u>X16</u> ←↵	"NAVigator-" plus the last 3 pairs of the MAC address.
Verbose mode			
NOTE: Verbose mode affects all responses from the NAV system, not just those from the NAVigator.			
Set verbose mode	<u>Esc</u> <u>X17</u> CV←	Vrb <u>X17</u> ←↵	
Read verbose mode	<u>Esc</u> CV←	<u>X17</u> ←↵	
Miscellaneous device commands			
View device online status	<u>Esc</u> P* <u>X18</u> DEVP←	<u>X19</u> ←↵	The response will appear unsolicited if a unit changes its online state.
<i>Example:</i>	<u>Esc</u> P*23iDEVP←	1←↵	Encoder 23 is online.
View device assignment status	<u>Esc</u> A* <u>X18</u> DEVP←	<u>X19</u> ←↵	The response will appear unsolicited if a unit changes its assigned state.
<i>Example:</i>	<u>Esc</u> A*4001oDEVP←	0←↵	Decoder 4001 is not assigned.
Absolute system reset	<u>Esc</u> ZQQQ←	Zpq←↵	
KEY:			
<u>X13</u> = Firmware version	x.xx		
<u>X14</u> = Full firmware version	x.xx.xxxx		
<u>X15</u> = Advanced firmware version	x.xx.xxxx-bxxxx		
<u>X16</u> = Unit (host) name	Up to 63 alphanumeric characters		
<u>X17</u> = Verbose mode	0 = Clear or none (default)	2 = Tagged responses for queries	
	1 = Verbose mode	3 = Verbose mode and tagged for queries	
<u>X18</u> = Endpoint number	nnni (for input) or nnnno (for output)		
<u>X19</u> = Status	0 = Offline, unassigned	1 = Online, assigned	
NOTE: If tagged responses are enabled, all read and view commands return the constant string and the value as the set command does (for example, the read matrix name command, <u>Esc</u> CN← returns Ipn• <u>X16</u> ←↵).			

Command and Response Table for IP-Specific SIS Commands

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional description
DHCP client			
Set DHCP on	<code>[Esc][X21]*1DHCP ←</code>	<code>Dhcp•[X21]*1 ←</code>	
Set DHCP off	<code>[Esc][X21]*0DHCP ←</code>	<code>Dhcp•[X21]*0 ←</code>	
View DHCP status	<code>[Esc]DHCP ←</code>	<code>[X23] ←</code>	
IP address			
Set IP address	<code>[Esc][X21]*[X24]CISG ←</code>	<code>Cisg•[X21]*[X24] ←</code>	
IP and subnet mask			
Set IP address and subnet mask	<code>[Esc][X21]*[X24]^{IP}*[X24]^{Subnet}CISG ←</code>	<code>Cisg•[X21]*[X24]^{IP}/[X22]^{Subnet}*[X24]^{Gateway} ←</code>	
Set IP address and subnet mask	<code>[Esc][X21]*[X24]^{IP}/[X22]^{Subnet}CSIG ←</code>	<code>Cisg•[X21]*[X24]^{IP}/[X22]^{Subnet}*[X24]^{Gateway} ←</code>	
IP, Subnet, and gateway address all at once			
Set IP address, subnet address, and gateway	<code>[Esc][X21]*[X24]^{IP}*[X24]^{Subnet}*[X24]^{Gateway}CISG ←</code>	<code>Cisg•[X21]*[X24]^{IP}/[X22]^{Subnet}*[X24]^{Gateway} ←</code>	
Set IP address, subnet address, and gateway	<code>[Esc][X21]*[X24]^{IP}/[X22]^{Subnet}*[X24]^{Gateway}CISG ←</code>	<code>Cisg•[X21]*[X24]^{IP}/[X22]^{Subnet}*[X24]^{Gateway} ←</code>	
View IP address, subnet address, and gateway	<code>[Esc][X21]*CISG ←</code>	<code>[X24]^{IP}/[X22]^{Subnet}*[X24]^{Gateway} ←</code>	
DNS address			
Set DNS address	<code>[Esc][X21]*[X24]¹*[X24]²*[X24]³DNSS ←</code>	<code>Ipd[X24] ←</code>	Sets DNS servers for the NAVigator. You can list up to 3 DNS servers (<code>[X22]</code> s).
Clear all DNS addresses	<code>[Esc][X21]*0DNSS ←</code>		
View DNS address	<code>[Esc][X21]DNSS ←</code>	<code>[X24] ←</code>	
MAC address			
View MAC address	<code>[Esc]CH ←</code> <i>Verbose mode 2 or 3:</i>	<code>[X25] ←</code> <code>Iph•[X19] ←</code>	
Report inventories			
Report input inventory	<code>[Esc]Inventory*I*RPRT ←</code> <i>Verbose mode 2 or 3:</i>	<code>[X26][X26]²[X26]³ ... [X26]⁴⁰⁹⁶ ←</code> <code>Rprt*Inventory*I*[X26]¹ ... ←</code>	View the connection status of all inputs.
Report output inventory	<code>[Esc]Inventory*O*RPRT ←</code> <i>Verbose mode 2 or 3:</i>	<code>[X26][X26]²[X26]³ ... [X26]⁴⁰⁹⁶ ←</code> <code>Rprt*Inventory*O*[X26]¹ ... ←</code>	View the connection status of all outputs.
KEY:			
<code>[X21]</code> = Network interface	1 = OOB LAN interface	2 = NAV LAN interface	
<code>[X22]</code> = Subnet prefix	Number of bits used to create the subnet		
<code>[X23]</code> = Status	0 = Off, disabled, not detected	1 = On, enabled, detected	
<code>[X24]</code> = IP address, subnet, or gateway address	xxx.xxx.xxx.xxx		
<code>[X25]</code> = MAC address	00-05-A6-xx-xx-xx		
<code>[X26]</code> = Endpoint inventory	0 = No device or unassigned	1 = Device online	2 = Device offline

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional description
Report ties			
Report all AV ties	<code>[Esc]Ties*A*RPRT←</code>	<pre>Rprt•ties← Output InVid InAud← a [X1] [X1]← b [X1] [X1]← c [X1] [X1]← . . .← . . .← n --- ---← . . .← . . .← [X8] [X1] [X1]←←←</pre>	<p>View the input tied to all outputs assigned to the NAVigator.</p> <p>The columns in the reports are tab-delimited.</p> <p>Dashes indicate no tie.</p> <p>Only outputs assigned to this NAVigator (regardless of online or not) are listed in the report.</p>
Report all USB ties	<code>[Esc]Ties*U*RPRT←</code>	<pre>Rprt•ties*U← Device Host← [X27][X3] [X28][X3]← [X27][X3] [X28][X3]← [X27][X3] [X28][X3]← . .← . .← ----- ← . .← . .← [X27][X3] [X28][X3]←←←</pre>	<p>View the USB ties of the endpoints connected to the NAVigator.</p> <p>The columns in the reports are tab-delimited.</p>
NOTES:			
<ul style="list-style-type: none"> The quick multiple tie and tie input to all output commands make all ties simultaneously. If any commanded ties in a multiple tie command are invalid, all valid ties are made and the response is Qik14 to indicate the error. 			
KEY:			
<p>[X1] = Input (AV) or host (USB)</p> <p>[X8] = Total number of outputs</p> <p>[X2] = Output (AV) or USB device (USB)</p> <p>[X3] = Encoder (input) or decoder (output)</p> <p>[X21] = Network interface</p> <p>[X22] = Subnet prefix</p> <p>[X23] = Status</p> <p>[X24] = IP address, subnet, or gateway address</p> <p>[X25] = MAC address</p> <p>[X26] = Endpoint inventory</p> <p>[X27] = USB device</p> <p>[X28] = USB host</p>		<p>Number: 0000 or <input number> (0000 = untie outputs)</p> <p>Name: <name></p> <p>IP address: <xxx.xxx.xxx.xxx></p> <p>Number: 0000 or <output number> (0000 = untie input)</p> <p>Name: <name></p> <p>IP address: <xxx.xxx.xxx.xxx></p> <p>Only first letter (i or o) is valid. [X8] = Total number of outputs</p> <p>1 = OOB LAN interface 2 = NAV LAN interface</p> <p>Number of bits used to create the subnet</p> <p>0 = Off, disabled, not detected 1 = On, enabled, detected</p> <p>xxx.xxx.xxx.xxx</p> <p>00-05-A6-xx-xx-xx</p> <p>0 = No device or unassigned 1 = Device online 2 = Device offline</p>	

NAVigator to Endpoints Communication (Encapsulation)

SIS commands cannot be issued directly to endpoints, but are issued via a NAVigator on the system network using encapsulation.

Encapsulation consists of placing a "{" delimiter, an `{x#}` variable, and a ":" separator before an SIS command that is to be issued to an endpoint (see the examples below). The `{x#}` variable serves as an identifier of the targeted endpoint. All encapsulated commands end with a "}" delimiter and a carriage return (CR = `↵`).

The response from the endpoint also includes the identifier, enclosed in "{" and "}" delimiters.

NOTES:

- Encapsulated SIS commands must be valid for the endpoint (see the user guide for the applicable endpoint, available at www.extron.com, for a list of valid endpoint SIS commands). They do *not* need to be valid commands for the NAVigator.
- Just as in SIS commands to the NAVigator, | (pipe) and W can be used interchangeably with the `↵` and `Esc` characters in encapsulated commands.
- You must issue an end delimiter and CR ("`}↵`") before you can start a new command. If you make a mistake entering the command, issue the end delimiter to start over.

Command Function	Encapsulated Command (Host to Endpoint, via NAVigator)	Response (Endpoint to Host, via NAVigator)
Description <i>Encapsulation example:</i>	$\begin{array}{c} \{x\# : \langle \text{SIS command} \rangle \} \leftarrow \\ \text{Delimiter} \quad | \quad \text{Seperator} \quad | \\ \text{Identifier} \quad \quad \quad \text{Delimiter} \quad \quad \quad \text{CR} \end{array}$	$\begin{array}{c} \{x\# \} \langle \text{Response} \rangle \\ \text{Delimiter} \quad | \quad \text{Seperator} \\ \text{Identifier} \end{array}$
Encapsulated command to an encoder		
Send a command to an encoder	<code>{x31} : <command> ↵</code>	<code>{x31}x32</code>
<i>Example: Mute video only command, using the input number</i>	<code>{0306I:1B} ↵</code>	<code>{0306i}Vmt1↵</code>
<i>Example: Mute video only command, using the encoder name</i>	<code>{NAV-E-101-17-84-05:1B} ↵</code>	<code>{NAV-E-101-17-84-05}Vmt1↵</code>
<i>Example: Mute video only command, using the endpoint IP address</i>	<code>{192.168.1.10:1B} ↵</code>	<code>{192.168.001.010}Vmt1↵</code>
Encapsulated command to a decoder		
Send a command to a decoder	<code>{x33} : <command> ↵</code>	<code>{x33}x32</code>
<i>Example: Read device name command, using the output number</i>	<code>{12170:EscCN} ↵</code>	<code>{1217o}<decoder name>↵</code>
<i>Example: Read device name command, using the decoder name</i>	<code>{NAV-SD-101-17-84-C0:EscCN} ↵</code>	<code>{NAV-SD-101-17-84-C0}<decoder name>↵</code>
<i>Example: Read device name command, using the endpoint IP address</i>	<code>{192.168.1.3:EscCN} ↵</code>	<code>{192.168.001.003}<decoder name>↵</code>
KEY: <code>x31</code> = Input	Number: <input number> |	
	Name: <name>	
	IP address: <xxx.xxx.xxx.xxx>	
<code>x32</code> = Response	Valid response from the endpoint, including CRLF (<code>↵</code>) (see the endpoint user guide)	
<code>x33</code> = Output	Number: <output number> |	
	Name: <name>	
	IP address: <xxx.xxx.xxx.xxx>	
NOTE: Numeric <code>x31</code> s and <code>x33</code> s requires the of the I or O character because an input and output can have the same number. See Configure Selected Endpoint Communication Settings on page 27 to edit input and output numbers and IP addresses. See Add and edit names, tags, and locations on page 33 to edit input and output names.		

Troubleshooting

Alarms

The following table lists common NAV alarms shown on the **Monitoring** page (see **Alarms pane** on page 91) and suggested remedies:

Alarm	Cause	Remedy
Assignment Conflict	The NAVigator and endpoint report conflicting assignment statuses.	Perform a mode 5 reset on the endpoint that is causing the issue and then reassign it to the NAVigator.
Assignment Failure	The NAVigator failed to assign a discovered endpoint.	Confirm that the NAVigator has not reached its endpoint assignment limit. If a device has been decommissioned from the NAV system, unassign the endpoint from the "Offline endpoints" list. If endpoint still cannot be assigned, perform a mode 5 reset on the endpoint.
Audio Loss	The input audio signal level is below -60dB for a period of five minutes or more.	Increase the output level of audio source.
Auth Failures	A user has attempted to login unsuccessfully 10 or more times.	Check whether login attempts were from internal personnel. If not take action to strengthen security measures.
Backup Restore Failure	A problem occurred while trying to perform a backup or a restore.	Debug network connectivity between the NAVigator and endpoints.
Channel Conflict	Two or more NAV devices on the network have been given the same input or output number.	For devices affected, change the input number or output number so that each is unique in the system.
Communication Failure	An online assigned endpoint cannot establish a connection with the NAVigator.	Check the network settings to ensure unicast routing is possible between the NAVigator and endpoints.
Controller Disconnect	The NAV device is unable to connect to a paired control processor.	Verify the control processor is online. Review network settings to ensure unicast communication is possible from the NAV device to the control processor.
CPU Usage	The NAVigator CPU is overloaded.	Check for excessive controller-to-NAVigator communications.
Device Offline	An assigned endpoint has gone offline, either due to power or a network connectivity loss.	Check the offline endpoint for a power failure. Check the network connectivity of the endpoint.
Disk Space	Internal storage on the NAV device is low.	Reboot the NAV device. If the issue persists, perform a software reset that delete files (see Resetting the NAVigator on page 76).

Alarm	Cause	Remedy
Firmware Failure	A critical process has failed, crashing either the NAVigator or an endpoint.	Reboot the NAVigator. If the failure persists, perform a mode 1 reset.
Firmware Incompatible	A firmware version discrepancy exists between the NAVigator and assigned endpoints.	Upgrade the firmware on the deviating device.
Firmware Upgrade	The firmware upgrade process on NAVigator or endpoints failed to complete.	Retry the firmware upgrade. If it is again unsuccessful, use Toolbelt or a web browser to directly manage the device and perform a unit firmware upgrade.
HDCP Error	<p>Encoder: The video input signal is HDCP protected and HDCP negotiation has failed.</p> <p>Decoder: The incoming stream is HDCP protected and the display connected to the output does not support HDCP or the HDCP version.</p>	<p>Encoder:</p> <ul style="list-style-type: none"> • Disconnect and reconnect the video input cable into the encoder (see the applicable NAV encoder user guide at www.extron.com). • Bypass video adapter cables and make a direct HDMI male-to-male connection. <p>Decoder: Check the technical specifications of the display that is connected to the decoder for HDCP version support.</p>
IGMP Failure	The NAVigator failed to receive three consecutive IGMP queries from an IGMP querier.	Debug network connectivity between the NAVigator and the IGMP querier (which can be either a router or a managed switch).
Link Speed	The negotiated communication speed (Link Speed) between the NAVigator and a managed switch is lower than its capability of 1 Gbps.	Check switch configuration and ensure proper settings for the switch port to which the NAVigator is connected.
Name Conflict	Two or more NAV devices on the network have the same device name.	Change the device names affected so that each is unique.
Network Conflict	Two or more NAV devices on the network have the same IP address.	Change the IP addresses affected so that each is unique.
Network Utilization	The NAVigator is receiving excessive network traffic.	Check the network for flooding, also check for improper network configuration.
NTP Sync	The NAVigator cannot obtain time from the specified NTP Server	Debug the network connectivity between the NAVigator and the specified NTP server.
PTP Master Stability	The clock to which all devices are synchronized is changing too frequently, for example, due to network jitter.	Check network for flooding and correct PTPv2 packet priority.
PTP Sync	NAV device cannot synchronize its PTPv2 clock with any peers.	Ensure that network policies allow PTPv2 packets to reach the NAV Device from a clock master.
Stream Conflict	Multiple NAV endpoints are configured to use the same video, audio, AES67, or USB multicast IP address.	Reconfigure endpoint stream settings for a unique stream address.

Alarm	Cause	Remedy
Stream error	The decoder has lost reception of the stream for two or more seconds.	Check all network switches and routers that support your NAV system for proper multicast (IGMP) configuration.
Temperature Internal	The NAVigator is overheating.	Check the ambient temperature of NAVigator installation location. <ul style="list-style-type: none"> • If greater than 140 °F, (60 °C) use HVAC system to lower ambient temperature. • If ambient temperature is 140 °F, (60 °C) or less, check the mounting location for nearby equipment emitting excessive heat. Ensure there is an air gap around NAVigator to allow adequate airflow.
Tie Failure	The NAVigator failed to establish a tie between the specified endpoints.	Debug the network connectivity between the NAVigator and endpoints.
Video loss	The input is changed and video sync cannot be established for within a two-second window.	Debug the connectivity of the A/V source device to the NAV encoder.

Reference Information

This section provides additional reference information for the following NAVigator System Manager topics:

- [Mounting the NAVigator](#)
- [Download a Firmware or Software Package](#)
- [Operation with AES67 Audio](#)

Mounting the NAVigator

ATTENTION:

- Installation and service must be performed by authorized personnel only.
- L'installation et l'entretien doivent être effectués par le personnel autorisé uniquement.

The 1-inch high, quarter rack width NAVigator can be placed on a table, mounted in a rack, or mounted under a desk or table.

Tabletop Use

Affix the included rubber feet to the bottom of the unit and place it in any convenient location.

Mounting kits

Mount the unit using any optional compatible mounting kit listed on the Extron [website](#), in accordance with the directions included with the kit.

ATTENTION:

- When mounting the NAVigator under furniture, mount the device upside-down to ensure proper ventilation.
- Si vous installez le NAVigator sous un mobilier, veuillez à installer l'unité à l'envers pour assurer une bonne ventilation.

For rack mounting, see "UL Rack-Mounting Guidelines," below.

UL Rack-Mounting Guidelines

The following Underwriters Laboratories (UL) requirements pertain to the installation of the unit into a rack.

- **Elevated operating ambient temperature** — If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consider installing the equipment in an environment compatible with the maximum ambient temperature (TMA = +122 °F, +50 °C) specified by Extron.

- **Reduced air flow** — Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- **Mechanical loading** — Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- **Circuit overloading** — Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- **Reliable earthing (grounding)** — Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (such as use of power strips).

Download a Firmware or Software Package

Download a firmware or software package as follows:

NOTE: This procedure is used to download:

- Software such as Toolbelt, Global Configurator Pro, and Global Scriptor
- NAVigator firmware updates

1. Go to www.extron.com and momentarily rest the cursor over the **Download** tab (see figure 118, ❶). The Find Software & Downloads links appear.

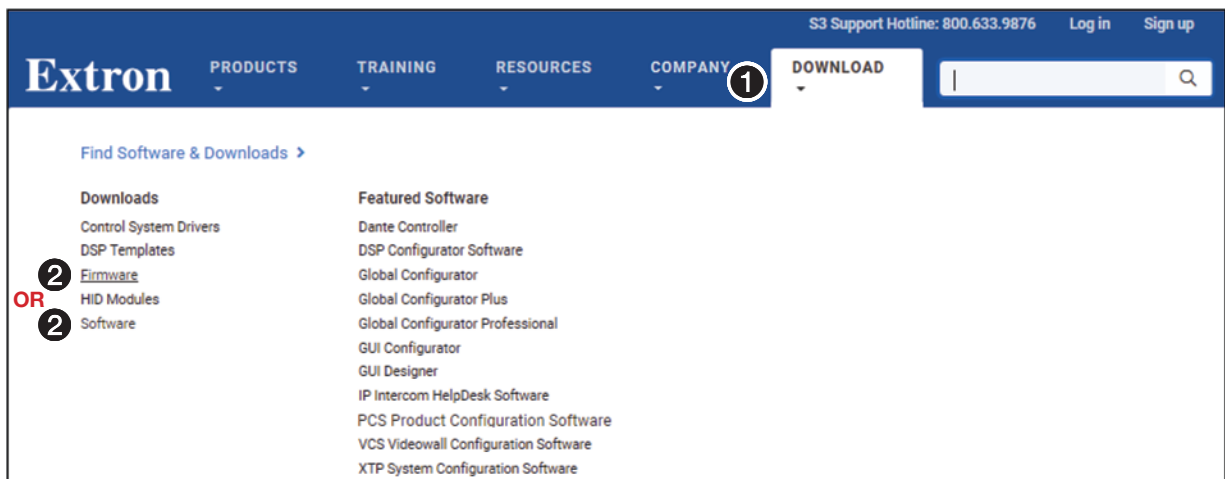


Figure 118. Selecting the Download Tab

2. Click the **Firmware** or **Software** link (❷). The main download page opens (see figure 119 on page 124).

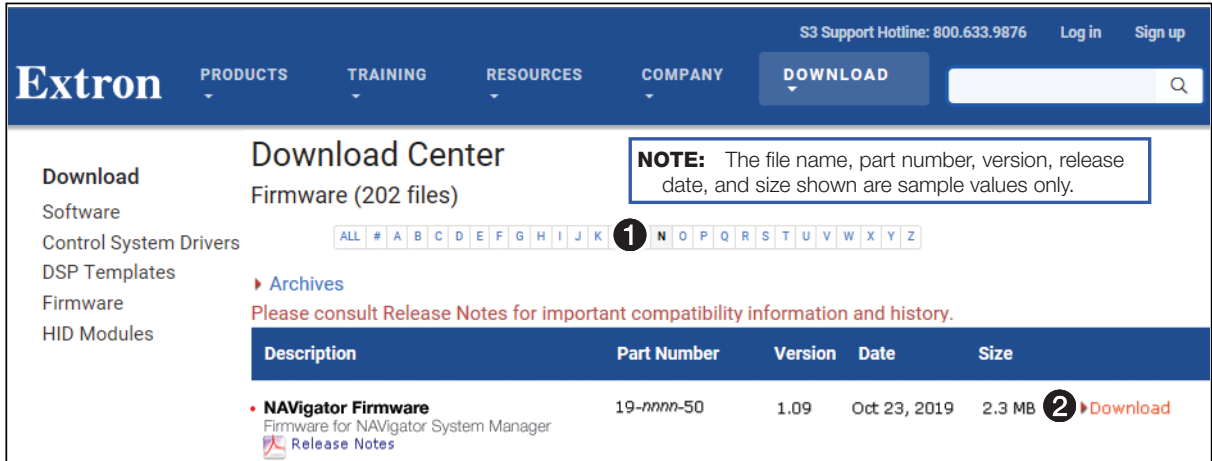


Figure 119. Downloading from the Main Download Page

3. Click the desired filtering letter (see figure 119, **1**) to jump to the nearest page of downloads.
4. Click **Download** for the desired software or firmware package to download (**2**). The Log in dialog box appears (see figure 120).

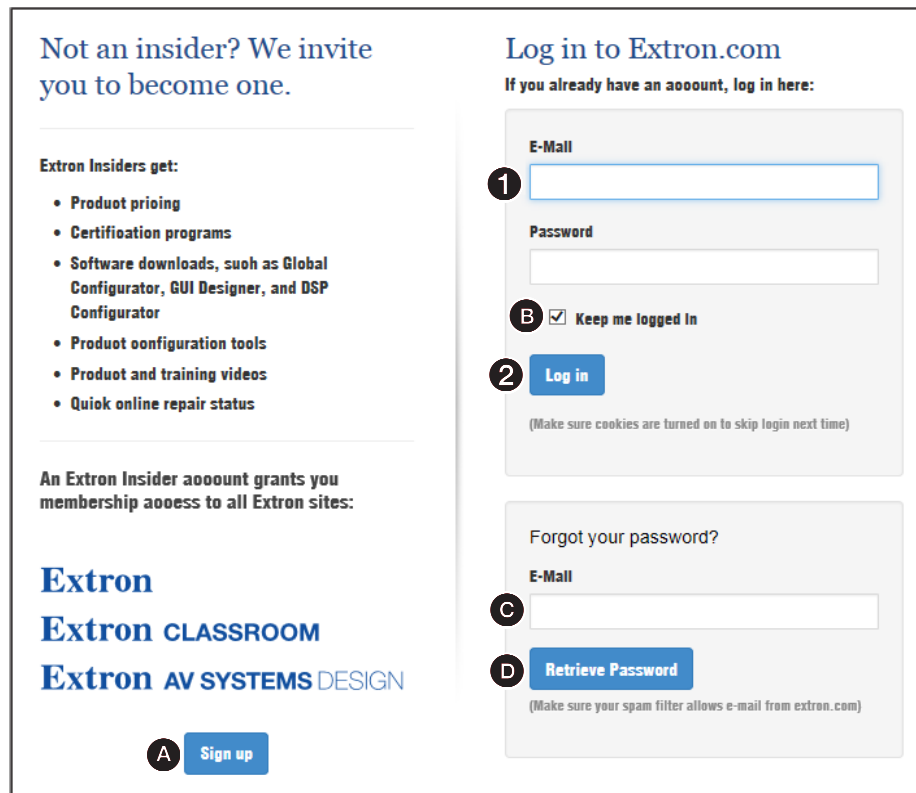


Figure 120. Log in Dialog Box

5. Enter the **E-Mail** address and **Password** associated with your Extron insider account (see figure 120, **1**).

TIPS:

- Click **Sign up** (see [figure 120](#), **A**) on page 119) to obtain website credentials.
- Click **Keep me logged in** (**B**) to eliminate steps 5 and 6 in future downloads.
- Enter your registered email address (**C**) and click **Retrieve Password** (**D**) if you have forgotten your credentials.

6. Click **Log in** to copy the package to the computer (**2**).
7. If your browser asks you to confirm that you want to continue, click **Run** or make a similar confirmation that you want to run the installation (see [figure 121](#), **1**).

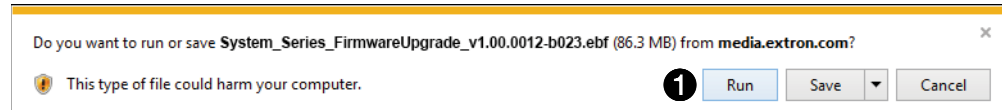


Figure 121. Download Warning and Confirmation

NOTES:

- Figure 121 may look different or may not appear at all, depending on your web browser choice and its security settings.
- File names and version numbers on this page are sample values only.

8. Return to either [Control System](#) on page 108, [Upgrading the NAVigator firmware](#) on page 74, or [Upgrading the system firmware](#) on page 83.

Operation with AES67 Audio

You can tie an Extron AES67-capable device, such as a DMP 128 ProDSP Digital Matrix Processor, into the NAV system. See the user guide for the applicable device to configure that device and also the Dante documentation. Once you have configured the AES67 device, the device is displayed on the NAVigator HTML Ties page. If you have AES67 selected as the audio plane and AES67 addresses applied (see [Configure the streaming settings](#), steps 3 and 4 on page 44) you can make ties as described in [Create Ties](#) on page 29.

Figure 123 shows three AES67-enabled DMP streams displayed on the Ties page. AES67 audio from the processors is tied to three separate NAV decoders (1).

The screenshot shows the 'Ties' page in the NAV system, with the 'AES67' tab selected. The interface includes search bars for inputs and outputs, and buttons for 'AUDIO ONLY', 'BREAK', and 'BREAK ALL TIES'. A table displays the connections between available inputs and outputs.

Available Inputs	Available Outputs	All Decoders	NAV-SD-101: 2611	NAV7-SD: 7	NAV8-SD: 8
NAVDMP128FP : 30		1			
NAVDMP128FP : 31			1		
NAVDMP128FP : 32				1	

Figure 122. Ties Page with AES67-Enabled DMP Processors

Extron Warranty

Extron warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

**USA, Canada, South America,
and Central America:**

Extron
1230 South Lewis Street
Anaheim, CA 92805
U.S.A.

Asia:

Extron Asia Pte Ltd
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363
Singapore

Japan:

Extron Japan
Kyodo Building, 16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

Europe:

Extron Europe
Hanzeboulevard 10
3825 PH Amersfoort
The Netherlands

China:

Extron China
686 Ronghua Road
Songjiang District
Shanghai 201611
China

Middle East:

Extron Middle East
Dubai Airport Free Zone
F13, PO Box 293666
United Arab Emirates, Dubai

Africa:

Extron South Africa
3rd Floor, South Tower
160 Jan Smuts Avenue
Rosebank 2196, South Africa

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions, or if modifications were made to the product that were not authorized by Extron.

NOTE: If a product is defective, please call Extron and ask for an Application Engineer to receive an RA (Return Authorization) number. This will begin the repair process.

USA: 714.491.1500 or 800.633.9876

Asia: 65.6383.4400

Europe: 31.33.453.4040 or 800.3987.6673

Japan: 81.3.3511.7655

Africa: 27.11.447.6162

Middle East: 971.4.299.1800

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.