



DM-NVX-350/351(C)

DM NVX™ 4K60 4:4:4 HDR Network AV
Encoder/Decoder

Web Interface Configuration Guide

Crestron Electronics, Inc.

Original Instructions

The U.S. English version of this document is the original instructions.
All other languages are a translation of the original instructions.

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Contents

Introduction	1
Web Interface Overview	1
Access the Web Interface	1
Access Web Interface with a Web Browser	1
Access Web Interface With Crestron Toolbox™ Software	2
Status	5
Device	6
Network	6
USB	7
DM NVX Director	7
DM NAX (AES67) Audio	8
Control System	9
Input/Output	9
Settings	11
System Setup	11
Stream	16
DM NAX (AES67) Audio	19
Subscriptions	21
Routing	22
Inputs	23
Outputs	23
On Screen Display	24
USB	25
IR Ports	26
Port Selection	27
Security	28
Current User	30
Users	31
Create New Local User	32
Add Active Directory User	32
Delete User	33
View User Details	33
Update User Details	34
Groups	35
Create Local Group	36
Add Active Directory Group	36
Delete a Group	37
View Group Details	37

802.1x Configuration	38
Configure DM-NVX-350/351(C) for 802.1X Authentication:	39

Introduction

The DM-NVX-350/351(C) is a compact video encoder/decoder designed to function as either a transmitter or receiver with the ability to switch between the two modes programmatically via commands from a Crestron control system or the web interface. Featuring simple web control and management, USB and KVM integration, and support for copper and fiber LAN connectivity, the DM-NVX-350/351(C) is a one-stop solution for any-sized network AV installation.

Web Interface Overview

The web interface of the DM-NVX-350/351(C) allows you to view status information for the DM-NVX-350/351(C) and configure its network and device settings.

Access the Web Interface

The web interface is accessed from a web browser. The following table lists various operating systems and the corresponding supported web browsers.

Operating System and Supported Web Browsers

OPERATING SYSTEM	SUPPORTED WEB BROWSERS
Windows® operating system	Chrome™ web browser, version 31 and later Firefox® web browser, version 31 and later Internet Explorer web browser, version 11 and later Microsoft Edge web browser
macOS® operating system	Safari® web browser, version 6 and later Chrome™ web browser, version 31 and later Firefox® web browser, version 31 and later

To access the user interface, do either of the following:

- Open it directly in a web browser.
- Open a web browser from within the Crestron Toolbox™ application.

Access Web Interface with a Web Browser

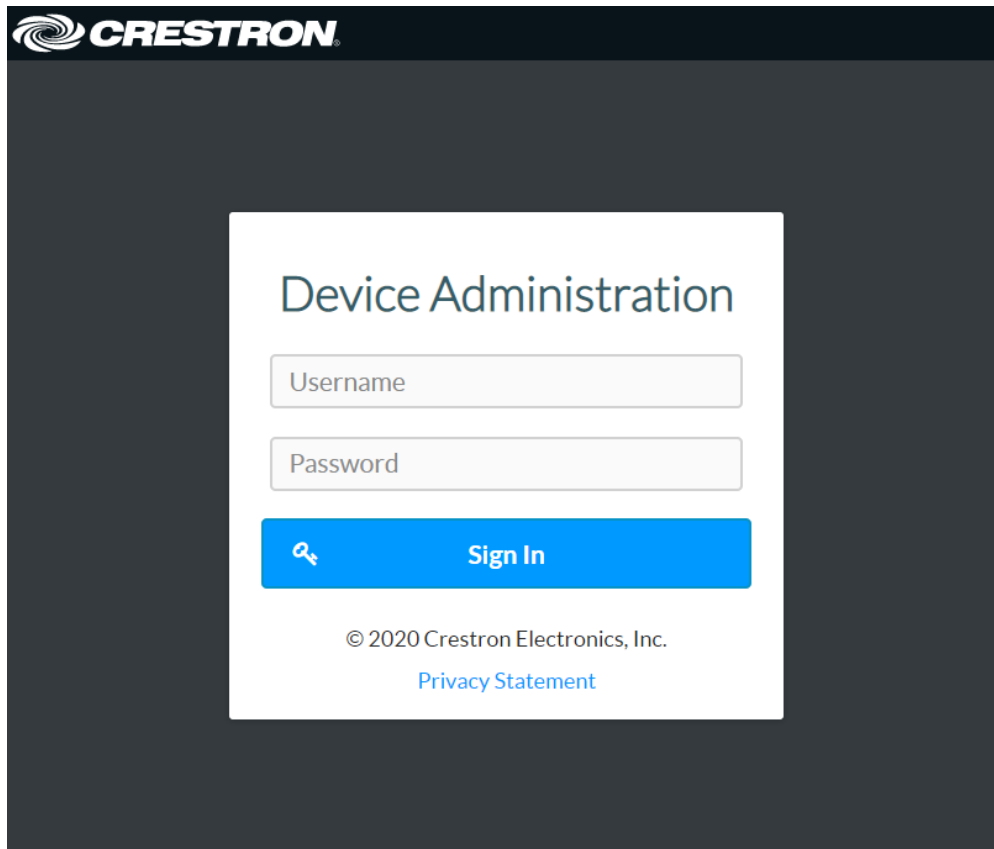
1. Enter the IP address of the DM-NVX-350/351(C) into a web browser.

NOTE: To obtain the IP address, press the **Setup** button on the front panel of the DMF-CI-8 chassis of the DM-NVX-350/351(C). The IP address will appear on a display connected to the HDMI® output.

2. Enter your credentials in the **Device Administration** dialog (note that the user name and password are case sensitive). The default user name is *admin*, and the default password is *admin*.

NOTE: For enhanced security, it is recommended that the default password be changed.

Device Administration Login Page




The screenshot shows the Crestron Device Administration login interface. At the top left is the Crestron logo. The main content is a white box on a dark background. The title 'Device Administration' is centered. Below it are two input fields: 'Username' and 'Password'. A blue 'Sign In' button with a magnifying glass icon is positioned below the password field. At the bottom of the white box, it displays '© 2020 Crestron Electronics, Inc.' and a link for 'Privacy Statement'.

3. Click **Sign In**.

Access Web Interface With Crestron Toolbox™ Software

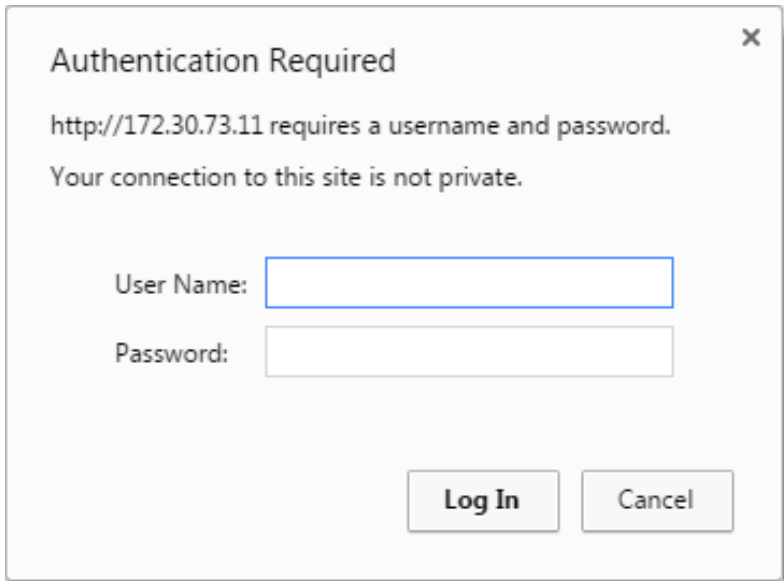
To access the user interface by opening a web browser within the Crestron Toolbox™ application, do the following:

1. Open the Crestron Toolbox™ application.
2. From the **Tools** menu, select **Device Discovery Tool**. You can also access the Device Discovery Tool by clicking the Device Discovery Tool button  in the Crestron Toolbox toolbar. The DM-NVX-350/351(C) is discovered and is listed in the device list on the left side of the screen. The associated host name, IP address, and firmware version are also displayed.

NOTE: If there is security software running on the computer, a security alert might be displayed when the Crestron Toolbox application attempts to connect to the network. Make sure to allow the connection, so that the Device Discovery Tool can be used.

3. In the Device Discovery Tool list, double-click your DM-NVX-350/351(C) device.
4. Enter your credentials in the **Authentication Required** dialog that opens, and then click **Log In**.

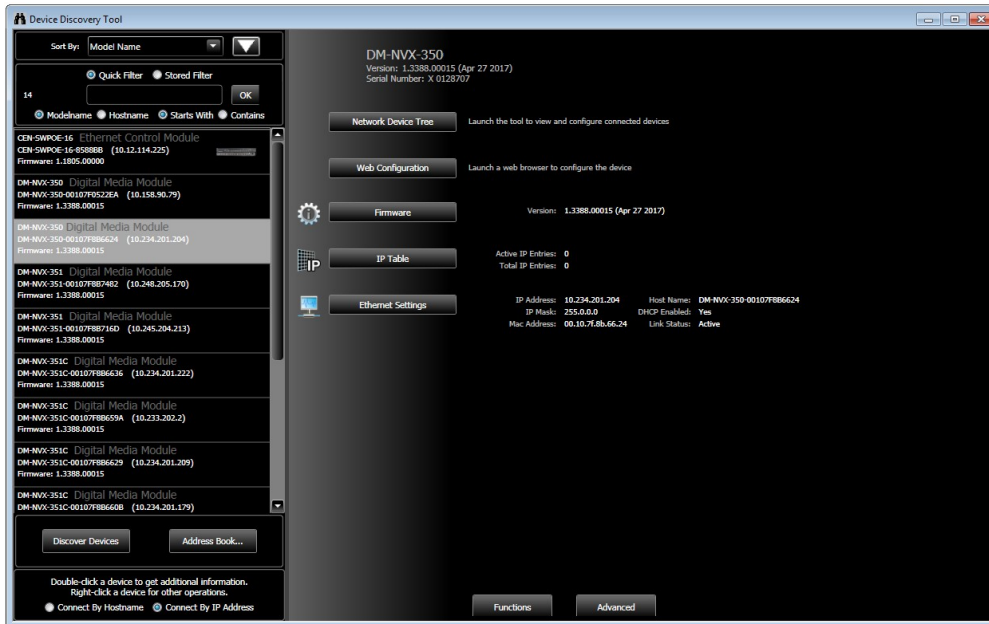
Authentication Dialog Box



The image shows a standard Windows-style dialog box titled "Authentication Required" with a close button (X) in the top right corner. The text inside the dialog reads: "http://172.30.73.11 requires a username and password." followed by "Your connection to this site is not private." Below this text are two input fields: "User Name:" followed by a text box, and "Password:" followed by a text box. At the bottom of the dialog are two buttons: "Log In" and "Cancel".

5. Click the **Web Configuration** button in the Configuration page displayed on the left side of the Device Discovery Tool.

Device Discovery Tool Window



Status

The Status page is the first page that is displayed when opening the web interface of the DM-NVX-350/351(C). It displays general information about the DM-NVX-350/351(C) (such as model name, serial number, and firmware version), current network settings (such as host name and IP address, etc.), as well as information about the connection to the control system.

The Status page can be accessed at any time by clicking the **Status** tab in the navigation bar of the web user interface of the DM-NVX-350/351(C).

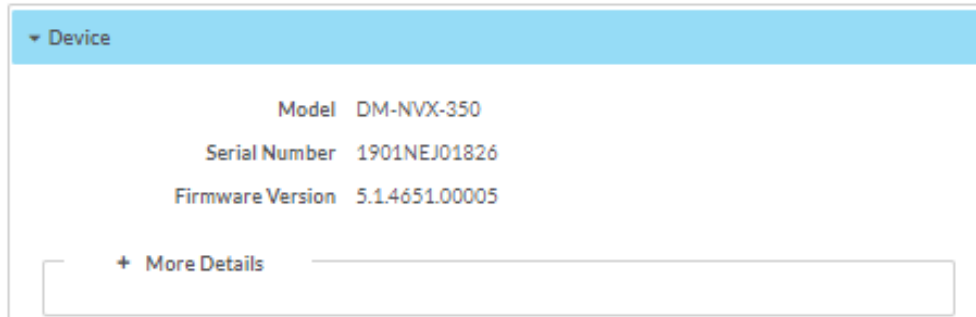
DM-NVX-350/351(C) Status Page

The screenshot shows the web interface for the DM-NVX-350/351(C) Status page. At the top, there is a black header with the CRESTRON logo on the left and a help icon (?) and a user profile icon on the right. Below the header, the device name "DM-NVX-350-AALAPDESK-CENTER" is displayed in a white box, followed by a blue "Action" button with a dropdown arrow. A navigation bar below contains four tabs: "Status" (selected), "Settings", "Security", and "802.1x Configuration". The main content area is a list of expandable sections: "Device", "Network", "USB", "DM NVX Director", "DM NAX (AES67) Audio", "Control System", and "Input/Output". At the bottom left, there is a copyright notice: "© 2020 Crestron Electronics, Inc. CCUI Version: 2.03.041949". At the bottom right, there is a link for "Privacy Statement".

Device

Displays the **Model**, **Serial Number**, and **Firmware Version** of the DM-NVX-350/351(C).

Status Page - Device



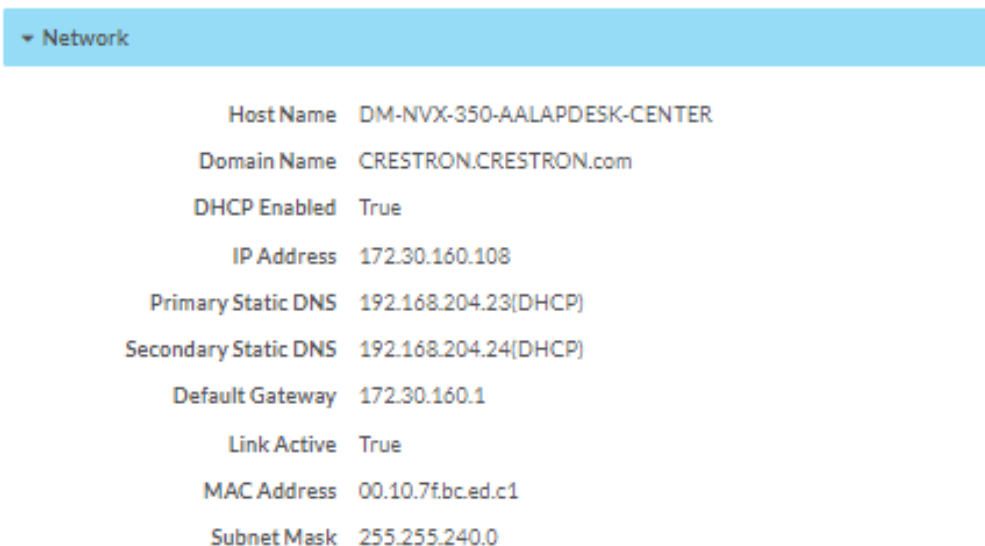
Click on **+ More Details** to see additional information about the DM-NVX-350/351(C).

Network

Displays the **Host Name**, **Domain Name**, **DHCP Enabled**, **IP Address**, **DNS Servers**, **Default Gateway**, **Link Active**, **Mac Address**, and **Subnet Mask** of the DM-NVX-350/351(C).

NOTE: By default, the host name of DM-NVX-350/351(C) consists of the model name followed by the MAC address of the device. For example, DM-NVX-350/351(C)- .

Status Page - Network



USB

Displays the **USB Mode**, **Transport Mode**, **Automatic USB Pairing**, **Multiple Device Support**, and **Local Device ID** of the DM-NVX-350/351(C).

Click **+ Remote Device ID** to display a table showing the **#**, **Remote Device ID**, and the **Pairing Status** of any devices connected to the DM-NVX-350/351(C) by USB.

Status Page - USB

The screenshot shows the USB status page with a blue header bar containing a dropdown menu set to "USB". Below the header, the following settings are displayed:

- USB Mode: Remote
- Transport Mode: Layer2
- Automatic USB Pairing: Enabled
- Multiple Device Support: Disabled
- Local Device ID: 00:10:7f:bced:c1

Below the settings, there is a section titled "Remote Device ID" with a minus sign icon. It contains a table with the following data:

#	Remote Device ID	Pairing Status
1	00:10:7f:9b:6f:e5	Not Paired

DM NVX Director

Displays the DM NVX Director settings. Note that the fields below will not be populated when using XiO-Director v 1.0.

Status Page - DM NVX Director

The screenshot shows the DM NVX Director status page with a blue header bar containing a dropdown menu set to "DM NVX Director". Below the header, the following settings are displayed:

- DM NVX Director Host Name
 - Domain Name
 - Domain Number
 - Domain Slot Number

- **DM NVX Director HostName:** Displays the host name of the DM-NVX-Director.
- **Domain Name:** Displays the domain name of the DM-NVX-Director.
- **Domain Number:** Displays the domain number of the DM-NVX-Director.
- **Domain Slot Number:** Displays the domain slot number of the DM-NVX-Director.

DM NAX (AES67) Audio

Displays the following audio information for both **DM NAX (AES67) Transmit** and **DM NAX (AES67) Receive**.

Status Page - DM NAX (AES67) Audio

DM NAX (AES67) Audio

DM NAX (AES67) Transmit

Status	Stream Stopped
DM NAX (AES67) Audio Mode	Automatic
Port	5004
Multicast Address	0.0.0.0

DM NAX (AES67) Receive

Status	Stream Stopped
Port	5004
Multicast Address	0.0.0.0

- **Status:** Displays the status of the stream.
- **DM NAX (AES67) Audio Mode:** Will display under either DM NAX (AES67) Transmit or DM NAX (AES67) Receive depending on the mode set. By default, the mode is set to **Automatic** which will add +1 to the outgoing video stream multicast address. For example, if the Video multicast address is 239.8.0.0, the DM NAX (AES67) Multicast address will be 239.8.0.1. The mode can also be set to **Manual** (which will allow setting the multicast address in the field below) or **Disabled**.
- **Multicast Address:** Sets the multicast address. This is only available when **Mode** is set to **Manual**.
- **Port:** Sets the port number. Available when **Mode** is set to **Manual**.

Control System

Displays the following connection information.

Status Page - Control System

IP ID	Room ID	IP Address/Hostname	Type	Server Port	Connection	Status
No records found						

- **Encrypt Connection:** Displays **ON** if the connection is encrypted or **OFF** if it is not.
- **IP ID:** Displays the IP ID of DM-NVX-350/351(C).
- **Room ID:** Displays the Room ID of the control system.
- **IP Address/Hostname:** Displays the IP address and Hostname of the control system.
- **Type:** Always set to **Peer**.
- **Server Port:** Displays the server port. The default port is set to **41794**.
- **Connection:** Always displays **Gway**.
- **Status:** The status will be either **OFFLINE** or **ONLINE**.

Input/Output

Displays the following input and output information.

Status Page - Input/Output

Name	Sync Detected	Resolution	Source HDCP	Source Content Stream Type	Interlaced	Aspect Ratio	Audio Format	Audio Channels
INPUT 1	Yes	3840x2160@60	Non-HDCP Source	Auto	No	16:9	LPCM	2
INPUT 2	No	0x0@0	Non-HDCP Source	Auto	No	No Signal	No Audio	0

Name	Sink Connected	Resolution	Source HDCP	Disabled by HDCP	Aspect Ratio
OUTPUT 1	Yes	Auto	HDCP Not Required	No	16:9

Click **+ Inputs** to display the following:

- **Name:** Displays the name of the input.
- **Sync Detected:** Displays whether sync is detected (**Yes**) or not (**No**).
- **Resolution:** Displays the resolution.

- **Source HDCP:** Displays the status of the source HDCP.
- **Source Content Stream Type:** Displays the stream type of the source content.
- **Interlaced:** Displays whether the stream is interlaced (**Yes**) or not (**No**).
- **Aspect Ratio:** Displays the aspect ratio.
- **Audio Format:** Displays the audio format.
- **Audio Channels:** Displays the number of audio channels.

Click + **Outputs** to display the following:

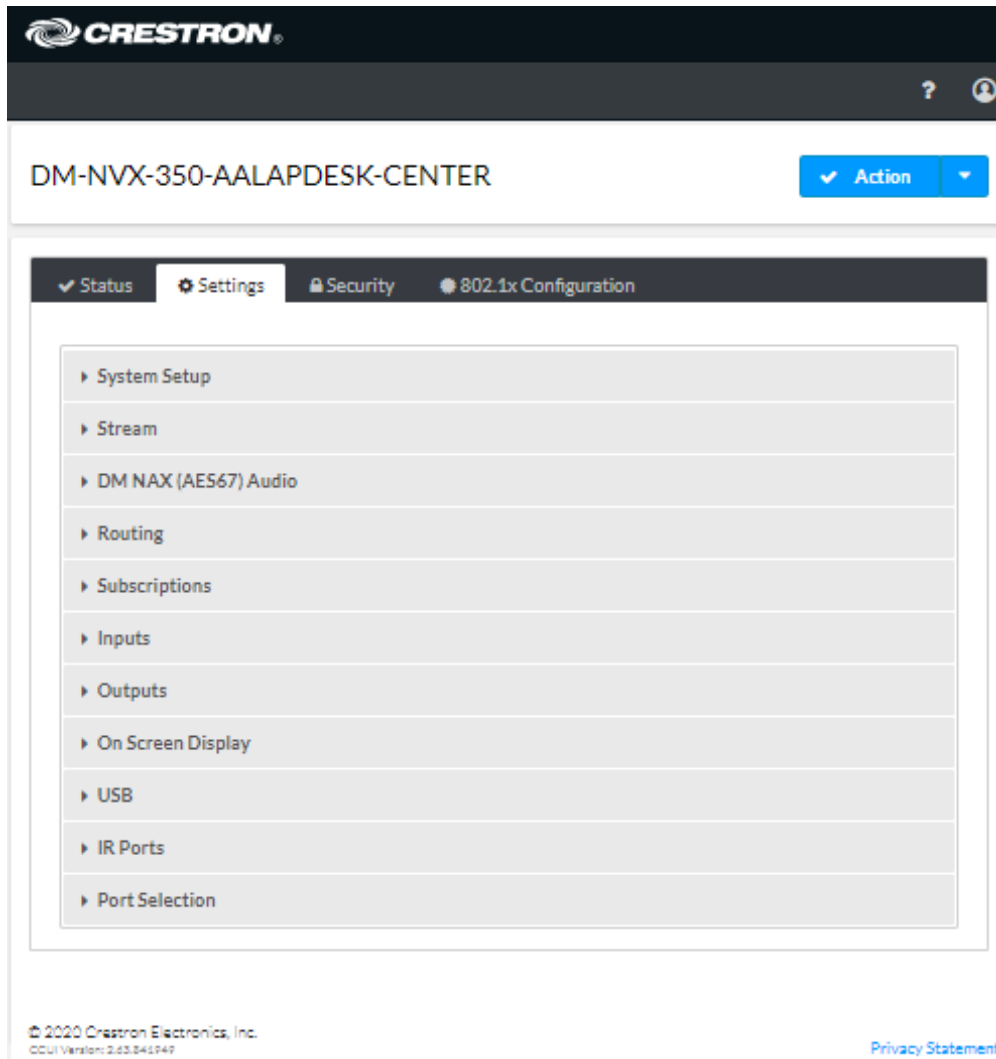
- **Name:** Displays the name of the output.
- **Sink Connected:** Displays whether a sink is connected (**Yes**) or not (**No**).
- **Resolution:** Displays the resolution.
- **Source HDCP:** Displays the status of the source HDCP.
- **Disabled by HDCP:** Displays whether the source is disabled by HDCP (**Yes**) or not (**No**).
- **Aspect Ratio:** Displays the aspect ratio.

Settings

The Settings page is used to configure the DM-NVX-350/351(C).

The Settings page can be accessed at any time by clicking the **Settings** tab in the navigation bar of the web user interface of the DM-NVX-350/351(C).

DM-NVX-350/351(C) Settings Page



System Setup

The System Setup settings allow you to configure the following system settings for the DM-NVX-350/351(C).

Settings Page - Network

- Network

Host Name	<input type="text" value="DM-NVX-350-AALAPDI"/>
Domain	<input type="text" value="CRESTRON.CRESTRON"/>
Primary Static DNS	<input type="text" value="192.168.204.23(DHCP)"/>
Secondary Static DNS	<input type="text" value="192.168.204.24(DHCP)"/>
Adapter 1	
DHCP	<input checked="" type="checkbox"/>
IP Address	<input type="text" value="172.30.160.108"/>
Subnet Mask	<input type="text" value="255.255.240.0"/>
Default Gateway	<input type="text" value="172.30.160.1"/>

The Network settings allow you to configure the **Host Name**, **Domain Name**, and **DNS Servers** of the DM-NVX-350/351(C).

NOTE: By default, the host name of DM-NVX-350/351(C) consists of the model name followed by the MAC address of the device. For example, DM-NVX-350/351(C)- 00107F7C6544.

Adapter 1: Enable or disable **DHCP**. The **IP Address**, **Subnet Mask**, **Default Gateway**, **Link Active**, and **Mac Address** of the DM-NVX-350/351(C) are also displayed.

Settings Page - Network Interface

- Network Interface

IGMP Support	<input type="radio"/> V2
	<input checked="" type="radio"/> V3

Network Interface: Select either **V2** or **V3** for **IGMP Support**.

Settings Page - Device Mode Lock

- Device Mode Lock

Control Lock	<input type="checkbox"/>
--------------	--------------------------

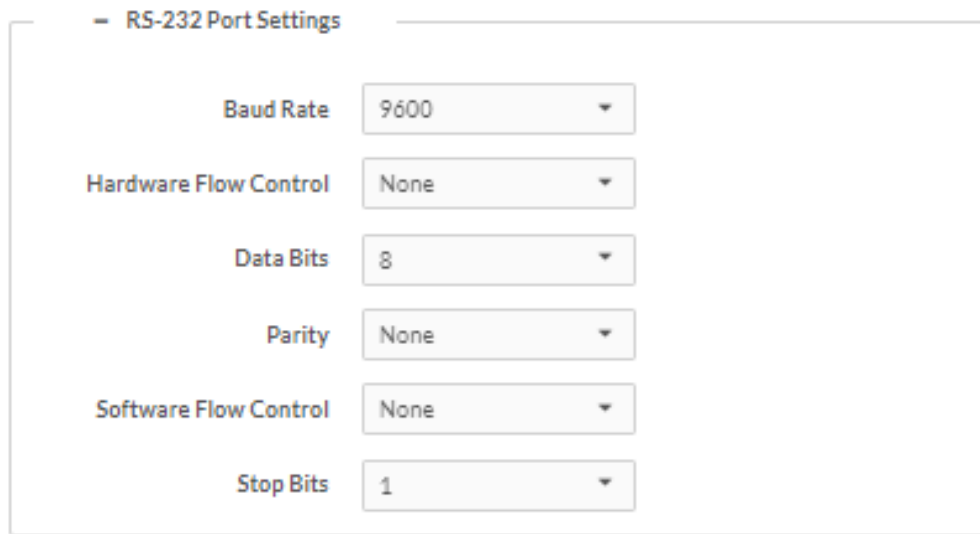
Device Mode Lock: Enable or disable **Control Lock** for the DM-NVX-350/351(C).

Settings Page - Cloud Settings



Cloud Configuration Service Connection: Toggle the switch to enable or disable **Cloud Configuration Service Connection**.

Settings Page - RS-232 Port Settings



Configure the RS-232 port settings of the DM-NVX-350/351(C) in the **RS-232 Port Settings** section of the screen.

- **Baud Rate:** Select the baud rate from the drop-down menu.
- **Hardware Flow Control:** Select the hardware flow control from the drop-down menu.
- **Data Bits:** Select the data bits from the drop-down menu.
- **Parity:** Select the parity from the drop-down menu.
- **Software Flow Control:** Select the software flow control from the drop-down menu.
- **Stop Bits:** Select the stop bits from the drop-down menu.

Settings Page - Auto Update

- Auto Update

Auto Update

Custom URL

Custom URL Path

Schedule

Day of Week

Time of Day

Poll Interval Minutes

[Update Now](#)

To automatically update the controls provided on the web interface of DM-NVX-350/351(C), do the following:

1. Move the **Auto Update** slider to the enabled position. By default, the auto update functionality is set to enabled.
2. Enter a path to the update cloud in the **Custom URL Path** field.

If you wish to schedule auto update to occur on certain days of the week, click the **Day of Week** drop-down and select the desired option (available options are as follows: Daily, Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday) and then enter time of the day when the auto update will start in the **Time of Day** field.

If you wish to specify polling interval, enter a value in the **Poll Interval** field. Click the **Update Now** button to force an update immediately.

Settings Page - Date/Time

- Date/Time

Synchronization

Time Synchronization

[Synchronize Now](#)

	Address	Port	Authentication Method	Authentication Key	Key ID
<input type="checkbox"/>	pool.ntp.org	123	None	*****	0

[+ Add](#) [- Remove](#)

Configuration

Time Zone

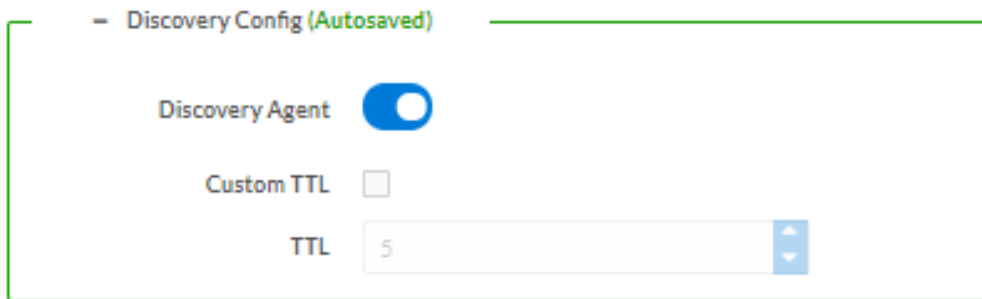
Date

Time

Configure the date and time settings of the DM-NVX-350/351(C) in the **Configure Date/Time** section of the screen.

1. Move the **Time Synchronization** slider to the desired position to specify whether time synchronization will be enabled or disabled. By default, time synchronization is enabled.
2. In the **Time Server** field, enter the URL of the NTP or SNTP server.
3. Click **Synchronize Now** to perform time synchronization between the device's internal clock and the time server.
4. Click on the **Time Zone** drop-down to select the applicable time zone.
5. In the **Time (24hr Format)** field, enter current time in 24-hour format.
6. In the **Date** field, enter the current date.

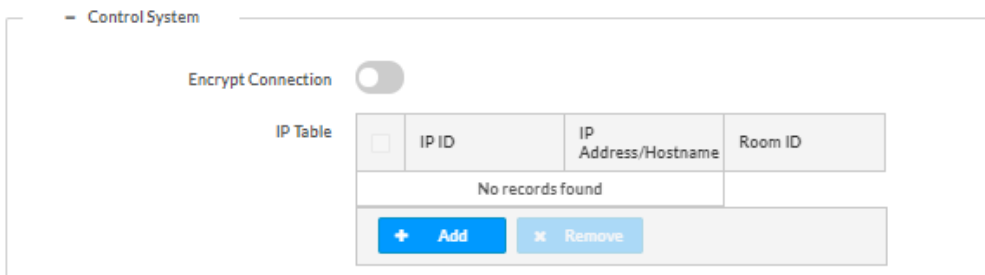
Settings Page - Discovery Config



Move the **Discovery Agent** slider to enabled or disabled to specify if the DM-NVX-350/351(C) is discoverable or not. When Discovery Agent is enabled, the DM-NVX-350/351(C) is displayed in the **Available Streams** list of other receivers.

If you would like to use a custom TTL value, select the **Custom TTL** option and then enter the value in the **TTL** field.

Settings Page - Control System



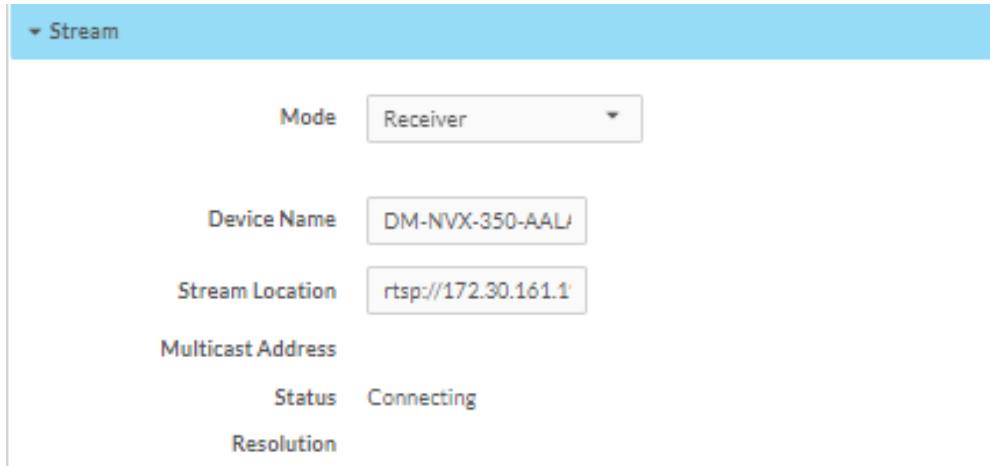
1. Toggle **Encrypt Connection** to specify whether to use encryption. By default, **Encrypt Connection** is disabled.
Note that when encryption is enabled, the **Control System Username** and **Control System Password** fields are displayed to provide login information.
2. Enter the Room ID in the **Room ID** field.
3. Select the IP ID of the DM-NVX-350/351(C) in the **IP ID** drop-down list. Valid values range

from 03 to FE in hexadecimal notation.

4. Enter the IP address or hostname of the control system in the **IP Address/Hostname** field.

Stream

Settings Page - Stream



Mode	Receiver
Device Name	DM-NVX-350-AAL
Stream Location	rtsp://172.30.161.1
Multicast Address	
Status	Connecting
Resolution	

- **Mode:** Select either **Receiver** or **Transmitter** from the drop-down menu.
- **Device Name:** Displays the name of the DM-NVX-350/351(C).
- **Stream Location:** Displays the location of the stream.
- **Multicast Address:** Displays the multicast address.
- **Status:** Displays the status of the device, for example, 'Stream stopped', 'Stream started', 'Connecting', etc.
- **Resolution:** Displays the resolution of an incoming stream.

Settings Page - Advanced

— Advanced (Autosaved)

Auto Initiation

Start Stop

Custom Ports

RTSP Port 554

TS Port 4570

Statistics

Statistics

Packets Received 0

Packets Dropped 0

Bitrate 750

Reset Statistics

Audio/Video

Audio Channels 0

Audio Format Unknown

Aspect Ratio No Signal

- **Auto Initiation:** Move the **Auto Initiation** slider to the desired position (enabled or disabled) to specify whether the stream will automatically start when the correct parameters are set. By default, **Automatic Initiation** is enabled.

Press the **Start** or **Stop** button to start or stop a stream if **Automatic Initiation** is disabled. Note that when **Automatic Initiation** is disabled, the device will not attempt to start a stream until the **Start** button is pressed.

- **Custom Ports:** Toggle the **Custom Ports** switch to enable the option to specify a custom RTSP or TS port. Crestron recommends using a custom port value greater than 10000.
- **RTSP Port:** Enter a custom TCP port number for the RTSP server of the primary audio/video stream (Transmitter mode only).

Valid values range from 1 to 65535. By default, the RTSP Port of the DM-NVX-350/351(C) is set to port 554.

- **TS Port:** Enter a custom UDP port at which both audio and video are transmitted. The value must be an even number. An odd value will be rejected by the device. By default, the TS Port is set to 4570. Valid values range from 1 to 65530.
- **Statistics:** Toggle **Statistics** to enabled in order to view **Packets Transmitted**, **Packets Dropped**, and **Bitrate**. Click **Reset Statistics** to reset this information.
- **Audio/Video:** Displays information for **Audio Channels**, **Audio Format**, and **Audio Ratio**.

DM NAX (AES67) Audio

Settings Page - DM NAX (AES67) Audio

DM NAX (AES67) Audio

DM NAX (AES67) Transmit (Autosaved)

Mode:

Multicast Address:

Port:

DM NAX (AES67) Transmit Advanced (Autosaved)

Auto Initiation:

Status: Stream Stopped

Encoding Format: LPCM

Encoding Sample Rate: 48000

Bitrate: 3072

Channels: 2

DM NAX (AES67) Receive (Autosaved)

Multicast Address:

Port:

DM NAX (AES67) Receive Advanced (Autosaved)

Auto Initiation:

Status: Stream Stopped

Encoding Format: LPCM

Encoding Sample Rate: 48000

Bitrate: 3072

Channels: 2

DM NAX (AES67) Transmit

- **Mode:** By default, the mode is set to **Automatic** which will add +1 to the outgoing video stream multicast address. For example, if the Video multicast address is 239.8.0.0, the DM NAX (AES67) Multicast address will be 239.8.0.1. The mode can also be set to **Manual** (which will allow setting the multicast address in the field below) or **Disabled**.
- **Multicast Address:** Sets the multicast address. This is only available when **Mode** is set to **Manual**.
- **Port:** Sets the port number. Available when **Mode** is set to **Manual**.

DM NAX (AES67) Receive

- **Multicast Address:** Sets the multicast address.
- **Port:** Sets the port number.

Under both **DM NAX (AES67) Transmit Advanced** and **DM NAX (AES67) Receive Advanced** are the following options:

- **Auto Initiation:** Toggle **Auto Initiation** to either enable or disable it. If disabled, the **Start** and **Stop** buttons become available for use.
- **Status:** Displays the status of the stream.
- **Encoding Format:** Displays the encoding format of the stream.
- **Encoding Sample Rate:** Displays the encoding sample rate of the stream.
- **Bitrate:** Displays the bitrate of the stream.
- **Channels:** Displays the number of channels.

Subscriptions

Settings Page - Subscriptions

Subscriptions

Subscribed Streams

+ Add Stream - Unsubscribe ⬇ Load Subscriptions 📄 Save Subscription

Global Filter 🔍

<input type="checkbox"/>	No	Device Name	Stream Details	Bitrate	Actions	Reorder
<input type="checkbox"/>	1	DM-NVX-3 63-00107F9 CB427	Stream not started	750	<input type="button" value="✕ Unsubscribe"/>	^ v
<input type="checkbox"/>	2	TX-01	Stream not started	750	<input type="button" value="✕ Unsubscribe"/>	^ v

Available Streams

+ Subscribe Checked

Global Filter 🔍

<input type="checkbox"/>	Device Name	Stream Details	Bitrate	Add Stream
<input type="checkbox"/>	DM-NVX-360-00107F9 CB7F0	rtsp://172.30.165.56:554/live.sdp(Encrypted) T S/RTP, 239.8.128.96	686	<input type="button" value="▶ Subscribe"/>
<input type="checkbox"/>	DM-NVX-352-00107F9 C09F7	rtsp://172.30.165.48:554/live.sdp(Encrypted) T S/RTP, 239.10.10.0	750	<input type="button" value="▶ Subscribe"/>
<input type="checkbox"/>	DM-NVX-E30-00107FB 58454	rtsp://172.30.165.54:554/live.sdp(Encrypted) T S/RTP, 239.101.45.2503 840x2160@60Hz,Lpcm 2Ch	686	<input type="button" value="▶ Subscribe"/>
<input type="checkbox"/>	DM-NVX-E760-00107F 9CB9DD	Stream not started	686	<input type="button" value="▶ Subscribe"/>

When a DM-NVX receiver subscribes to a DM-NVX transmitter, Real Time Streaming Protocol (RTSP) negotiation begins between the DM-NVX receiver and the DM-NVX transmitter. When a stream is routed, the DM-NVX receiver performs the Internet Group Management Protocol (IGMP) join, which causes the receiver to join the multicast group of the transmitter. A maximum of 1000 transmitters can be subscribed to a single receiver.

The **Available Streams** table displays detailed stream information about all streams to which the DM-NVX receiver device can subscribe. There are several ways to subscribe to one or more streams.

- By adding a stream manually: Click the **+ Add Stream** button in the **Subscribed Streams** table, and then enter a stream name and URI in the corresponding fields.
- By selecting from the list of available streams:
 - Select a stream in the **Available Streams** table and click the corresponding **Subscribe** button.
 - Select one or more streams in the **Available Streams** table by checking the corresponding check box of the Device Name and then click the **+ Subscribe Checked** button.

The **Subscribed Streams** table displays detailed stream information about all current stream subscriptions.

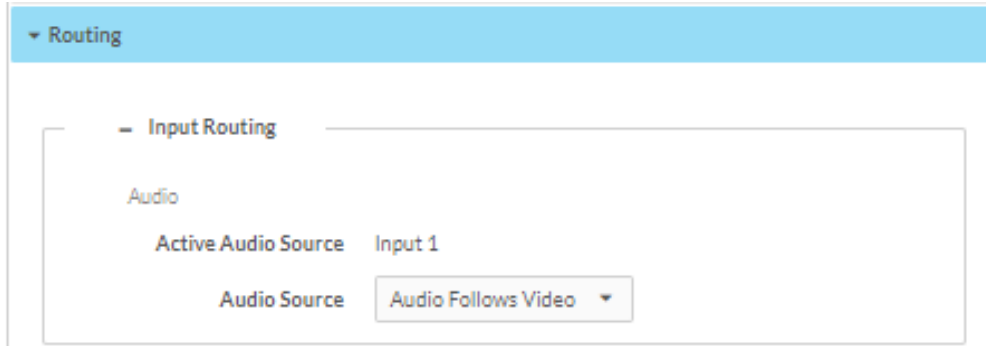
Click the **Unsubscribe** button to unsubscribe from a particular stream, or select several streams by checking the corresponding check box and then click the **Unsubscribe Checked** button.

Existing stream subscriptions can be saved (by clicking on the **Save Subscriptions** button) in a file named 'subscription.xml'. Note that when using firmware version 1.3388.00051 or earlier, the name of the file will be 'subscription.xiolist'.

Existing subscriptions can also be reloaded (by clicking on the **Load Subscriptions** button) if needed.

Routing

Settings Page - Routing



Select the desired audio source in the **Audio Source** drop-down list: **Audio Follows Video**, **Input 1**, or **DM NAX(AES67) Audio**.

Inputs

Settings Page - Inputs

Name	Sync Detected	EDID	HDCP Receiver Capability	Actions
INPUT 1	Yes	4K60 444 2CH Non-HDR	Auto	Edit

Inputs displays information about **Name**, **Sync Detected**, **EDID**, and **HDCP Receiver Capability**. Additionally, under **Actions**, click **Edit** to configure the applicable input.

Outputs

Settings Page - Outputs

Analog Audio Volume 0

Select the desired **Analog Audio Volume** by using the slider or inputting a value.

On Screen Display

Settings Page - On Screen Display

On Screen Display

Text Overlay

Text to Display

Background Transparency 100

Positioning

Text Location Custom

X Coordinate

Y Coordinate

The DM-NVX-350/351(C) provides the ability to display fixed text on the screen, which allows possibilities such as labeling the video source or displaying special instructions, schedules, announcements, alerts, and other messaging.

Toggle the **Text Overlay** slider to enable or disable the text overlay. By default, the text overlay feature is disabled.

Type the text to display over the video in the **Text to Display** entry field.

Move the **Background Transparency** slider or enter a value to adjust the background transparency. The exact transparency value (ranging from 0 to 100%) is displayed in the field beside the transparency slider.

Select where the overlay text will be positioned from the **Text Location** selector, or select **Custom** to enter an exact **X Coordinate** and **Y Coordinate**.

USB

Settings Page - USB

▼ USB

USB mode

Transport Mode

Automatic USB Pairing

Multiple Device Support

Local Device ID 00:10:7f:bced:c1

Remote Device ID

#	Remote Device ID	Pairing Status
1	<input type="text" value="00:10:7f"/>	Not Paired

DM-NVX-350/351(C) devices can be paired to support the extension of USB signals, which can be routed from one or more DM-NVX-350/351(C) device(s) to another DM-NVX-350/351(C) device via the web interface or the control system. Multiple receivers can feed USB signals to a single local device. For example, the local device would typically be a PC, where the remote devices would be a mouse, keyboard, or web camera.

Each DM-NVX-350/351(C) device provides a USB 2.0 HOST port and a USB 2.0 DEVICE port.

A DM-NVX device can be configured to use either a USB DEVICE port (Local) or USB HOST port (Remote) connection, but never both. A USB mouse, keyboard, or other peripheral can be connected to the HOST port on a DM-NVX-350/351(C) device, and a computer or other host device can be connected to the DEVICE port on another DM-NVX-350/351(C) device.

Configure the USB routing:

1. Determine the DM-NVX devices that are to be paired.
 - One DM-NVX device functions as the local extender. The DEVICE port connects to a computer or other host device.
 - The other DM-NVX devices function as remote extenders. Their HOST port connects to a USB mouse, keyboard, or other devices.
2. Set the **USB Mode** drop down to **Local** or **Remote** for each of the DM-NVX devices.
3. Select **Layer 2** or **Layer 3** from the **Transport Mode** drop-down list. When transport mode is set to **Layer 3**, DM-NVX-350/351(C) uses IP addresses for the USB pairing; otherwise MAC addresses are used.

4. Move the **Automatic USB Pairing** slider to enabled or disabled to specify whether the devices pair automatically or not. By default, enabled is selected. When automatic USB pairing is enabled, pairing is attempted as soon as a local device ID or at least one remote device ID is entered. If multiple device support is not enabled and a pair is already made, it will remove the existing pair, and pair to the new address.
5. Move the **Multiple Device Support** slider to enabled or disabled to specify whether the local device can be paired with more than one remote device. By default, **Disabled** is selected. Note that multiple device support is not available when transport mode is set to **Layer 3**.
6. The **Local Device ID** field reports the corresponding MAC address (when transport mode is set to **Layer 2**) or IP address (when transport mode is set to **Layer 3**) of the device
7. Copy the address (reported in the **Local Device ID** field) of the local device into the **Remote Device ID** field of the corresponding remote device.
8. Copy the address (reported in its **Local Device ID** field) of the corresponding remote device into the **Remote Device ID#** (where # ranges from 1 to 7) field of the local device.
9. If **Automatic USB Pairing** is disabled, pair the local and remote devices by clicking the **Pair** button on both DM-NVX devices (local and remote).

To unpair paired devices, click the **UnPair** button on each DM-NVX device. The **Pairing Status** field displays the paired status of each device.

IR Ports

Settings Page - IR Ports

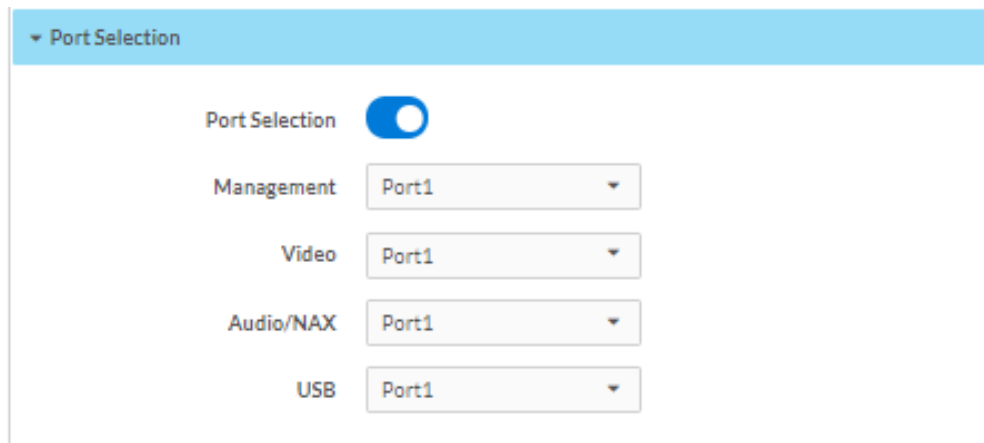
The screenshot shows a web interface for IR Ports settings. At the top, there is a blue header with a dropdown arrow and the text "IR Ports". Below this, there are two sections, one for "Port 1" and one for "Port 2". Each section contains a "File Name" label followed by the instruction "Please load an IR file (*.ir) for Port 1 of this device" (or Port 2). Below the instruction, there are two buttons: a blue "Load IR File" button with a download icon and a light blue "Delete IR File" button with a trash icon.

The following IR settings are available for both Port 1 and Port 2:

File Name: When an IR file is loaded using the **Load IR File** button, the name of the file will be displayed here. To delete this file, click **Delete IR File**.

Port Selection

Settings Page - Port Selection



▼ Port Selection	
Port Selection	<input checked="" type="checkbox"/>
Management	Port1 ▼
Video	Port1 ▼
Audio/NAX	Port1 ▼
USB	Port1 ▼

Use the **Port Selection** switch to toggle between enabled and disabled.

If **Port Selection** is enabled, you can select ports for **Management**, **Video**, **Audio/NAX**, **Dante**, and **USB**.

NOTES:

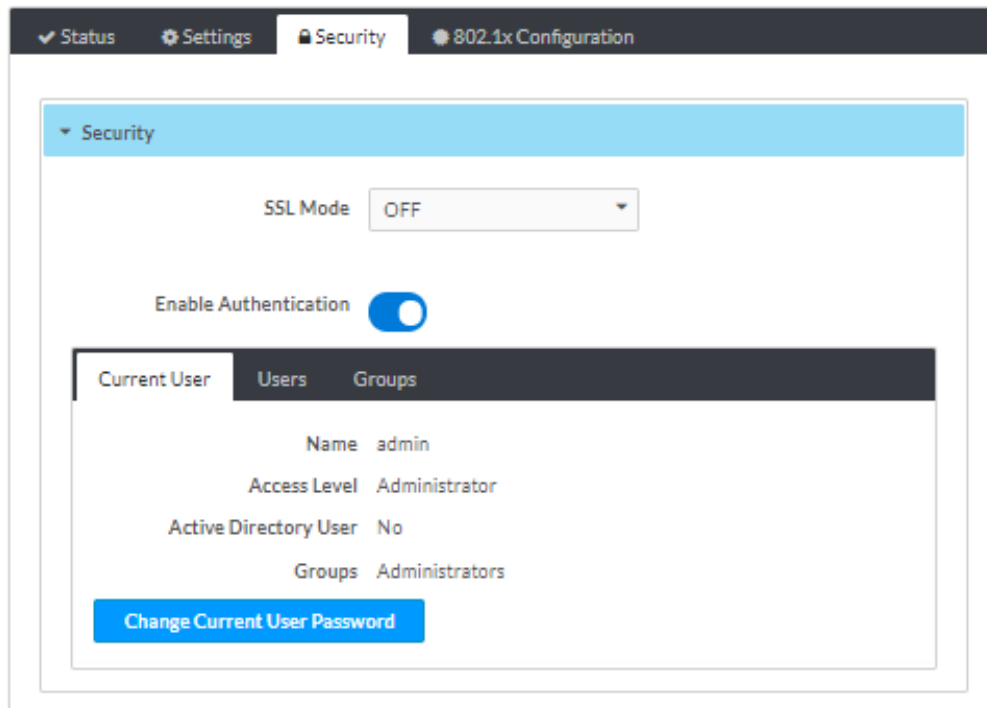
- If **Port Selection** is disabled, connecting multiple interfaces to the same switch may cause a network loop.
- The **Management** port is set to Port1 by default and controls your connection to the web interface. Changing the port value will result in losing your connection to the device via the web interface, so it is recommended that this setting remains unchanged.
- You can make selections for up to two ports.

Security

The Security page displays configuration settings related to security for the DM-NVX-350/351(C). The SSL mode and authentication options can be configured on this page.

The Security page can be accessed by clicking the **Security** tab in the navigation bar of the web user interface of the DM-NVX-350/351(C).

DM-NVX-350/351(C) Security Page



Select **Encrypt and Validate**, **Encrypt**, or **OFF** in the **SSL Mode** drop-down to specify whether to use encryption. By default, **SSL Mode** is set to **OFF**.

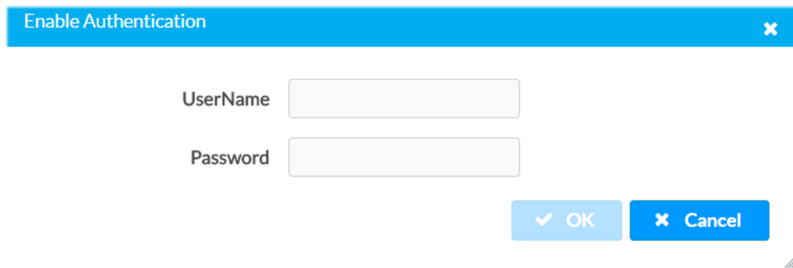
By default, the authentication mode is enabled.

Move the **Enable Authentication** slider to the desired position to specify whether authentication will be enabled or disabled.

NOTES:

- When authentication is enabled, you must create a local administrator account by creating a username and password. These credentials will be necessary to log in.
- When authentication is disabled, all existing users and groups will be deleted from the system.

Enable Authentication Dialog Box

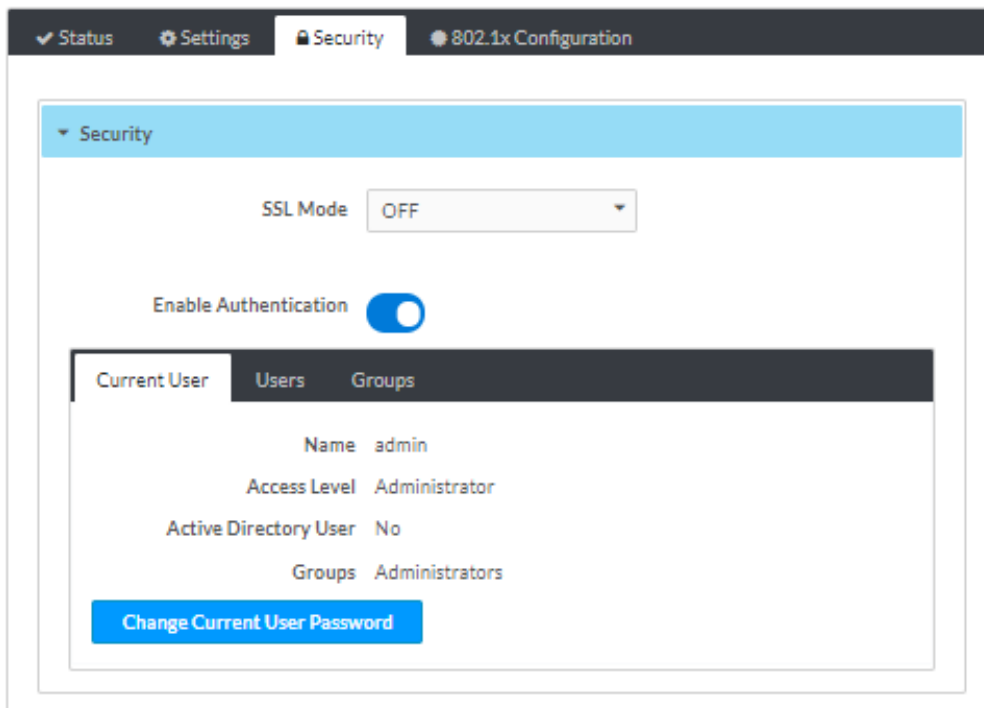


The dialog box has a title bar with the text "Enable Authentication" and a close button (X). Below the title bar are two input fields: "UserName" and "Password". At the bottom of the dialog are two buttons: "OK" (with a checkmark icon) and "Cancel" (with an X icon).

After enabling or disabling authentication, the current device session will end and you will be redirected to the login page. Enabling or disabling authentication does not affect existing user or group accounts on DM-NVX-350/351(C).

Once authentication is enabled, only users with administrator rights can disable it. When authentication is enabled, click the corresponding **Current User**, **Users** or **Groups** tabs to view, add, remove, and edit information local or Active Directory users and groups on DM-NVX-350/351(C) or to change password for the current user.

Security Page



The screenshot shows the "Security" page in a web interface. The top navigation bar includes "Status", "Settings", "Security", and "802.1x Configuration". The "Security" section is expanded, showing "SSL Mode" set to "OFF" and "Enable Authentication" turned on. Below this are three tabs: "Current User", "Users", and "Groups". The "Current User" tab is active, displaying the following information:

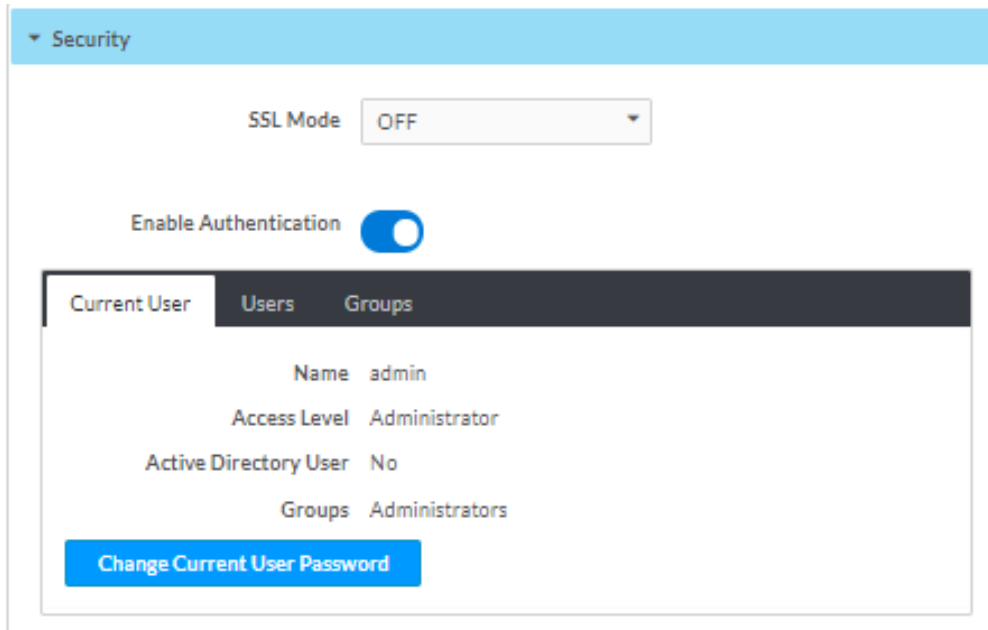
Name	admin
Access Level	Administrator
Active Directory User	No
Groups	Administrators

At the bottom of the "Current User" tab is a blue button labeled "Change Current User Password".

Current User

Click the **Current User** tab to view read-only information or to change the password for the current user.

Security Page - Current User



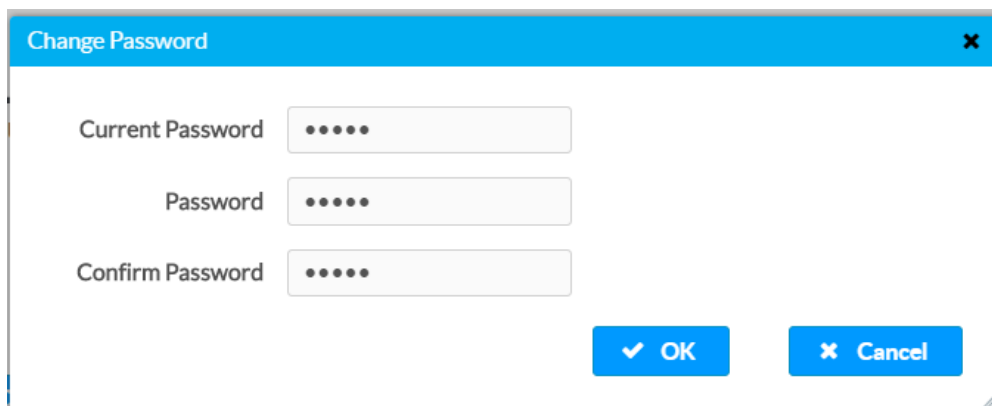
The screenshot shows the 'Security' page with a 'Current User' tab selected. The 'SSL Mode' is set to 'OFF'. 'Enable Authentication' is turned on. The 'Current User' tab displays the following information:

Name	admin
Access Level	Administrator
Active Directory User	No
Groups	Administrators

At the bottom of the tab is a blue button labeled 'Change Current User Password'.

1. Click the **Change Current User Password** button to provide a new password for the current user.
2. In the **Change Password** dialog, enter the current password in the **Current Password** field, the new password in the **Password** field, then reenter the same new password in the **Confirm Password** field.

Change Password Dialog Box



The 'Change Password' dialog box contains three password input fields, each with five dots representing masked characters:

- Current Password
- Password
- Confirm Password

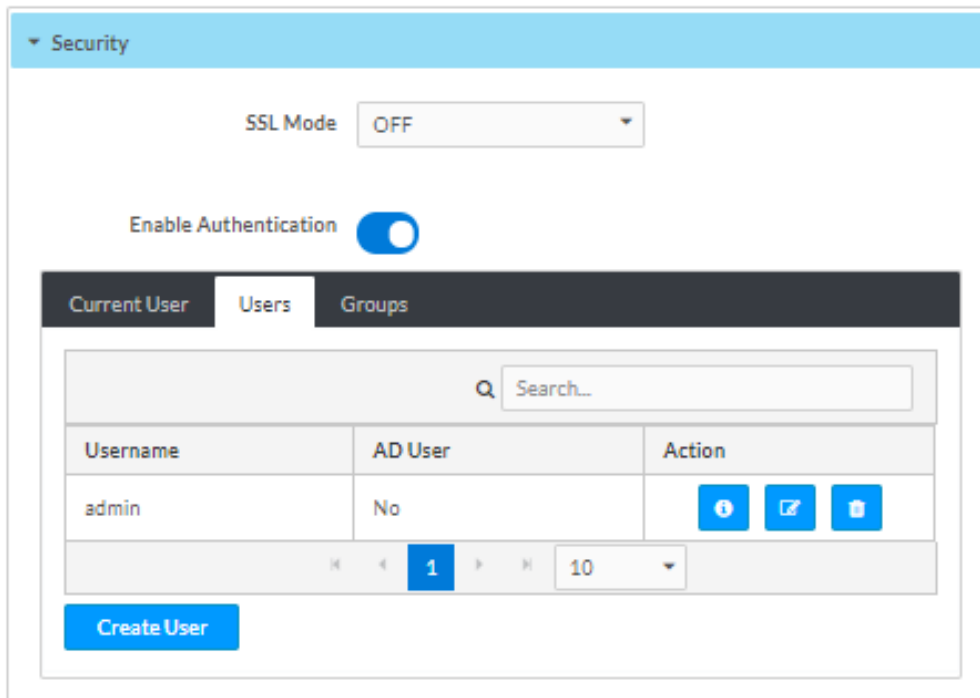
At the bottom right, there are two buttons: a blue 'OK' button with a checkmark and a blue 'Cancel' button with an 'X'.

3. Click **OK** to save or click **Cancel** to cancel the changes.

Users

Click the **Users** tab to view and edit user settings. The **Users** tab can be used to add or remove local and Active Directory users, and preview information about users.

Security Page - Users



Use the **Search Users** field to enter search term(s) and display groups that match the search criteria.

If users listed in the **Users** table span across multiple pages, navigate through the list of users by clicking a page number or by using the left or right arrows at the bottom of the **Users** pane to move forward or backward through the pages.

Each page can be set to display 5, 10, or 20 users by using the drop-down menu to the right of the navigation arrows.

Information about existing users is displayed in table format and the following details are provided for each user.

- **Username:** Displays the name of the user.
- **AD User:** Displays whether the user requires authentication using Active Directory.

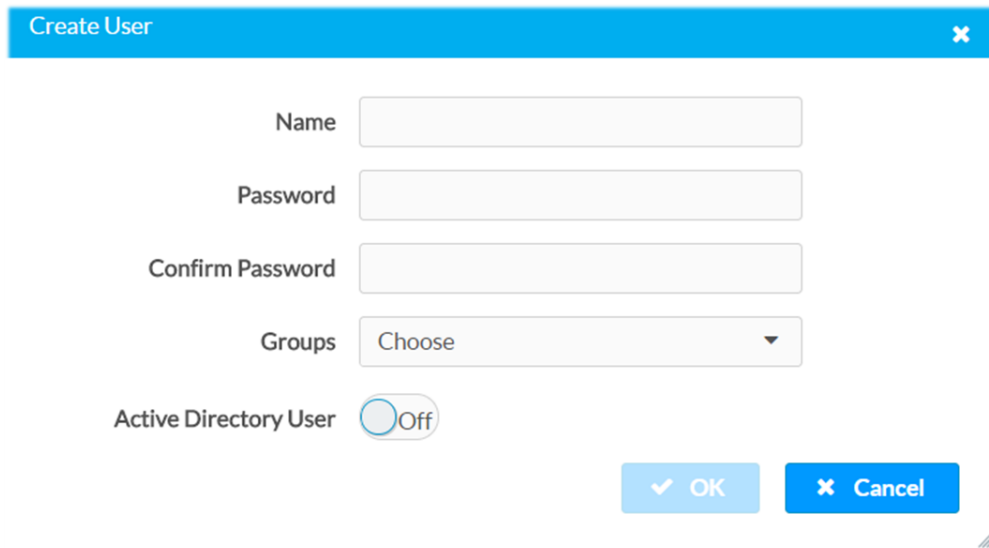
Click the corresponding button in the **Actions** column to view detailed user information or to delete the user .

To create a new user, click the **Create User** button.

Create New Local User

1. Click the **Create User** button in the User tab.
2. In the **Create User** dialog enter the following.

Create User Dialog Box



The screenshot shows a 'Create User' dialog box with the following fields and controls:

- Name**: Text input field.
- Password**: Text input field.
- Confirm Password**: Text input field.
- Groups**: Dropdown menu with 'Choose' selected.
- Active Directory User**: Toggle switch set to 'Off'.
- OK** and **Cancel** buttons at the bottom right.

- Enter a user name in the **Name** field. A valid user name can consist of alphanumeric characters (letters a-z, A-Z, numbers 0-9) and the underscore "_" character.
 - Enter a password in the **Password** field; reenter the same password in the **Confirm Password** field.
 - Assign the access level by selecting one or more groups from the **Groups** drop-down list.
 - Make sure that the **Active Directory User** slider is set to **Off**.
3. Click **OK** to save. Click **Cancel** to cancel the changes.

Add Active Directory User

Users cannot be created or removed from the Active Directory server, but access can be granted to an existing user in the Active Directory server.

To grant access to an Active Directory user, you can either add the user to a local group on the DM-NVX-350/351(C), or add the Active Directory group(s) that they are a member of to the DM-NVX-350/351(C) (see the [Add Active Directory Group \(on page 36\)](#) topic for more information).

To add an Active Directory user:

1. Click the **Create User** button.
2. In the **Create User** dialog, enter the following.


Create User Dialog Box

The screenshot shows a 'Create User' dialog box with the following elements:

- Name** text input field with a red error message: **Username is required**
- Groups** dropdown menu with 'Choose' selected and a red error message: **Group Must be selected**
- Active Directory User** toggle switch set to **On**
- OK** and **Cancel** buttons at the bottom right.


- Enter the user name in the **Name** field in the format "Domain\UserName", for example "crestronlabs.com\JohnSmith".
Valid user names can contain alphanumeric (letters a-z, A-Z, numbers 0-9) and underscore characters.
 - Select one or more groups from the **Groups** drop-down list.
 - Make sure that the **Active Directory User** slider is set to **On**.
3. Click **OK** to save. Click **Cancel** to cancel the changes.

Delete User

Click the trashcan button () in the **Actions** column to delete the user. Click **Yes** when prompted to delete the user or **No** to cancel the deletion.

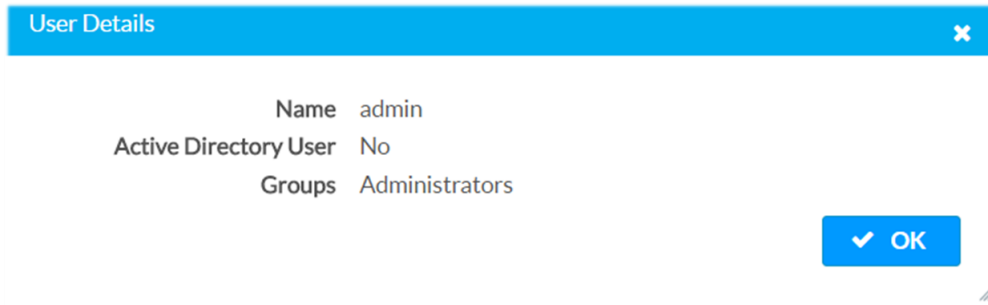
After a user is removed from a group, they lose any access rights associated with that group. Note that the user account is not deleted by the delete user operation.

View User Details

Click the information button () in the **Actions** column to view information for the selected user. The **User Details** dialog displays the following information for the selected user.


- **Name:** Displays the name of the selected user.
- **Active Directory User:** Displays whether the user is an Active Directory user.
- **Group:** Displays group(s) the selected user is part of.

User Details Dialog Box



Click **OK** to close the **User Details** dialog and to return to the **Authentication Management Users** tab.

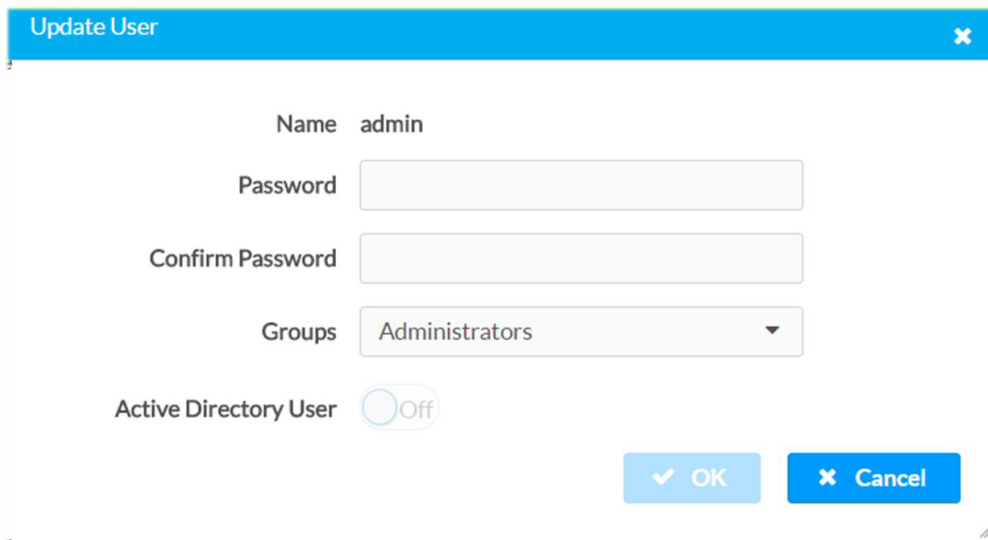
Update User Details

1. Click the information button () in the **Actions** column to update information for the selected user.
2. Enter a password in the **Password** field; reenter the same password in the **Confirm Password** field.
3. Select one or more groups to assign the user to from the **Groups** drop-down list.
4. Click **OK** to save or click **Cancel** to cancel the changes.

The **Update User** dialog also displays the following read-only information for the selected user.

- **Name:** Displays the name of the user.
- **Active Directory User:** Displays whether the user is an Active Directory user.

Update User Dialog Box



Groups

Click the **Groups** tab to view and edit group settings. The **Groups** tab can be used to add or remove local and Active Directory groups, and preview information about a group.

Use the **Search Groups** field to enter search term(s) and display groups that match the search criteria.

Security Page - Groups

SSL Mode: OFF

Enable Authentication:

Current User | Users | **Groups**

Search...

Group Name	AD Group	Access Level	Action
Administrators	No	Administrator	
Connects	No	Connect	
Operators	No	Operator	
Programmers	No	Programmer	
Users	No	User	

« < 1 > » 10 ▾



Create Group

If groups listed in the **Groups** table span across multiple pages, navigate through the groups by clicking a page number or by using the left or right arrows at the bottom of the Groups pane to move forward or backward through the pages.

Additionally, each page can be set to display 5, 10, or 20 groups by using the drop-down menu to the right of the navigation arrows.

Existing groups are displayed in a table and the following information is provided for each group:

- **Group Name:** Displays the name of the group.
- **AD Group:** Displays whether the group requires authentication using Active Directory.
- **Access Level:** Displays the predefined access level assigned to the group (Administrator, Programmer, Operator, User, or Connect).

Click the corresponding button in the **Actions** column to view detailed group information  or to delete the selected group .

Click on the **Create Group** button in the **Groups** tab to create a new group.

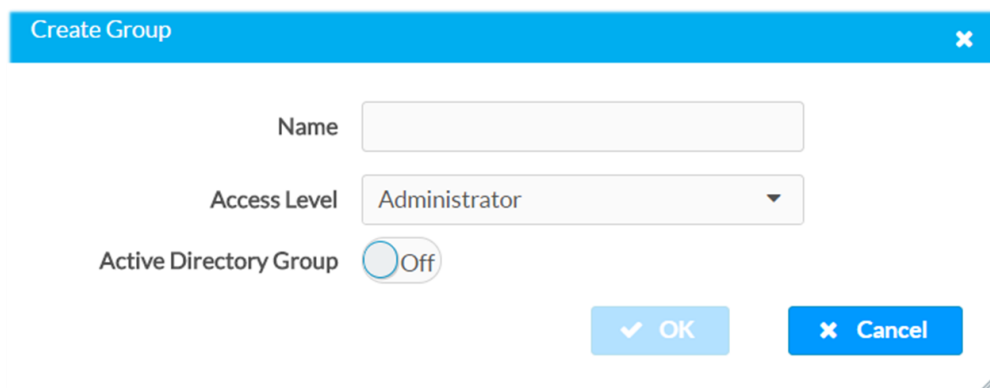
Create Local Group

1. Click the **Create Group** button.
2. In the **Create Group** dialog enter the following:
 - Enter the group name in the **Name** field.
 - Assign the group access level by selecting a predefined access level (Administrator, Connect, Operator, Programmer, User) from the **Access Level** drop-down list.
 - Make sure that the **Active Directory Group** slider is set to **Off**.
3. Click **OK** to save. Click **Cancel** to cancel the changes.

Add Active Directory Group

A group cannot be created or removed from the Active Directory server, but access can be granted to an existing group in Active Directory.

Create Group Dialog Box




The screenshot shows a dialog box titled "Create Group". It has a blue header bar with the title and a close button (X). Below the header, there are three main sections: 1. "Name" with a text input field. 2. "Access Level" with a dropdown menu currently showing "Administrator". 3. "Active Directory Group" with a toggle switch that is currently set to "Off". At the bottom of the dialog, there are two buttons: "OK" (with a checkmark icon) and "Cancel" (with an X icon).

Once the group is added, all members of that group will have access to the DM-NVX-350/351(C).

1. Click the **Create Group** button.
2. In the **Create Group** dialog enter the following:
 - Enter the group name in the **Name** field, for example "Engineering Group."
Note that group names are case sensitive; space is a valid character than can be used in group names.
3. Assign the group access level by selecting a predefined access level (Administrator, Connect, Operator, Programmer, User) from the **Access Level** drop-down list.
Make sure that the **Active Directory Group** slider is set to **On**.
4. Click **OK** to save. Click **Cancel** to cancel the changes.

Delete a Group

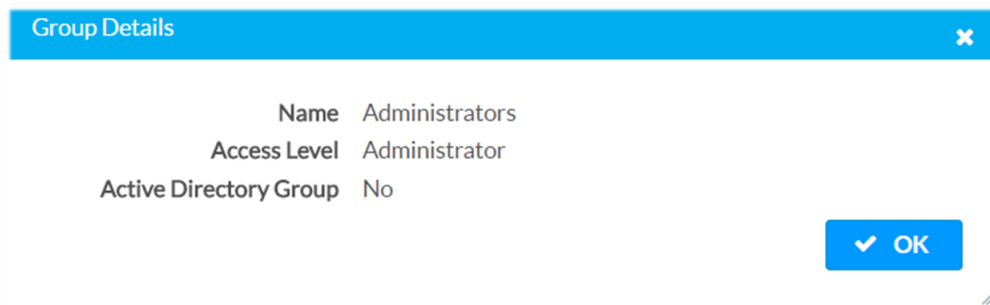
Click the trashcan button () in the **Actions** column to delete a group. Click **Yes** when prompted to delete the group or **No** to cancel the deletion.

When a group is deleted, users in the group are not removed from the device or Active Directory server. However, because a user's access level is inherited from a group(s), users within the deleted group will lose the access rights associated with this group. When an Active Directory group is removed from DM-NVX-350/351(C), all members of that group will lose access to the DM-NVX device.

View Group Details

Click the information button () in the **Actions** column to view information for the selected group. The **Group Details** dialog listing the following information for the selected group.

Group Details Dialog Box



- **Name:** Displays the name of the group.
- **Access Level:** Displays the access level of the group and its users.
- **Active Directory Group:** Displays whether the group is an Active Directory group.

Click **OK** to close the **Group Details** dialog and to return to the Authentication Management Groups settings.

802.1x Configuration

The DM-NVX-350/351(C) has built-in support for the 802.1x standard (an IEEE network standard designed to enhance the security of wireless and Ethernet LANs. The standard relies on the exchange of messages between the device and the network's host, or authentication server), allowing communication with the authentication server and access to protected corporate networks.

The 802.1x Configuration page can be accessed at any time by simply clicking the **802.1x Configuration** tab in the navigation bar of the web user interface of the DM-NVX-350/351(C).

802.1x Configuration Page

802.1x Configuration

IEEE 802.1x Authentication

Authentication Method

Domain

Username

Username cannot be empty

Password

Password cannot be empty

Enable Authentication Server Validation

Select Trusted Certificate Authorities

- AAA Certificate Services
- AC RAIZ FNMT-RCM
- ACCVRAIZ1
- Actalis Authentication Root CA
- AffirmTrust Commercial
- AffirmTrust Networking
- AffirmTrust Premium ECC
- AffirmTrust Premium
- Amazon Root CA 1
- Amazon Root CA 2

Configure DM-NVX-350/351(C) for 802.1X Authentication:

1. Move the **IEEE 802.1X authentication** slider to **Enabled**. This will enable all options on the 802.1X dialog.

2. Select the **Authentication method: EAP-TLS Certificate** or **EAP-MSCHAP V2 Password** according to the network administrator's requirement.
3. If you select **EAP-TLS Certificate**, click **Manage Certificates** to upload the required machine certificate.

The machine certificate is an encrypted file that will be supplied by the network administrator, along with the certificate password.

-or-

If you select **EAP-MSCHAP V2 Password**, enter the Username and Password supplied by the network administrator into the **Username** and **Password** fields. This method does not require the use of a machine certificate, only the user name and password credentials.

4. If you enabled the **Enable Authentication Server Validation** option, this will enable the list box **Select Trusted Certificate Authority(ies)** which contains signed Trusted Certificate Authorities (CAs) preloaded into the DM-NVX-350/351(C).

Select the check box next to each CA whose certificate can be used for server validation, as specified by the network administrator.

If the network does not use any of the listed certificates, the network administrator must provide their own certificate, which must be uploaded manually, via the **Manage Certificates** functionality.

5. If required, type the domain name of the network in the **Domain** field.

This page is intentionally left blank.

