Extron

VNM EC 201 • Setup Guide

The Extron VNM Enterprise Controller 201 is a dedicated control device for managing large VN-Matrix systems. The controller allows users to view, manage, and dynamically control multiple VN-Matrix systems and networked VN-Matrix domains from a single user interface.

This guide provides basic instructions for an experienced installer to configure and operate a single VNM Enterprise Controller 201 in a basic VN-Matrix system.

> **NOTE:** See the *VNM Enterprise Controller 201 User Guide*, *VN-Matrix 200 Series User Guide*, *VN-Matrix 225 Series User Guide*, *VN-Matrix 250 User Guide*, *VN-Matrix 300 User Guide*, and the *VN-Matrix 325 User Guide* for complete installation, network configuration, and mounting information.

Step 1 — Mount the VNM Enterprise Controller 201

Disconnect power to the VNM Enterprise Controller 201 and turn off all devices that will be connected to it. The controller is housed in a half rack wide, 11.5 inches deep, 1U high metal enclosure that can be rack mounted or placed on a table (with the provided rubber feet attached). Select a suitable mounting option and location, and follow the instructions provided with the mounting kit.
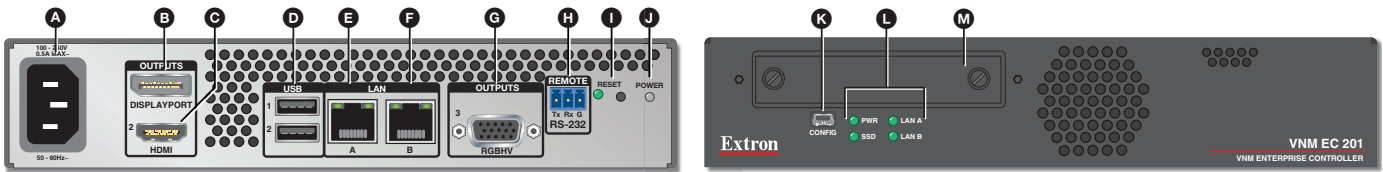
Step 2 — Cable the Controller

Figure 1. VN Matrix Enterprise Controller 201, Rear and Front Panels

A **AC power** — IEC connector. Standard AC power: 100 to 240 VAC, at 50 to 60 Hz.

B **DisplayPort video output** — Connect a compatible DisplayPort display for troubleshooting.

C **HDMI video output** — Connect a compatible HDMI display for troubleshooting.

D **USB ports** — Two USB port connections for one mouse and one keyboard.

E **Ethernet connector** — LAN A for connection to a standard LAN.

F **Ethernet connector** — LAN B is not required for normal operation.

G **VGA Connector** — One configurable analog output 15-pin HD (VGA) connector for use in troubleshooting.

H **Serial Connector** — Provides remote control using RS-232 and the High Level Interface (HLI) command control protocol that allows users to interface a third party control system with the devices on a VN-Matrix network.

I **Reset button and LED** — The VNM Enterprise Controller 201 has two reset modes to restore configuration settings or all settings back to factory defaults. The LED indicates the desired reset mode, and provides the reset status during the reset operation. For information on using the reset mode, see the VN Matrix Enterprise Controller 201 User Guide.

J **Recessed power button** — Press once to initiate a safe shutdown of the system.

K **USB mini-B config port** — Connect to a PC for Simple Instruction Set (SIS™) control.

L **Status LEDs** — Four LEDs provide the status of the VNM EC 201.

- **Network Activity LED (A)** — Lights steadily when a network link is established. Blinks to indicate activity.
- **Network Activity LED (B)** — Lights steadily when a network link is established. Blinks to indicate activity.
- **Drive Activity LED** — Blinks to indicate drive activity.
- **Power LED** — Lights when the controller is powered.

M **Solid State Drive (SSD)** — This removable drive holds the operating system (OS) and software required for operation.

VNM EC 201 • Setup Guide (Continued)

Initial EC 201 Installation and Configuration

Step 1 — Determine the Network Settings

Before any device is connected to a network, the default network settings of each device must be changed. On an existing network, check with the network administrator for a range of available IP addresses.

On a closed network used exclusively for VN-Matrix devices, it is recommended to use addresses within the range of 192.168.254.1 through 192.168.254.253 with a subnet mask of 255.255.255.0.

Figure 2 shows an addressing scheme for a simple system containing a VNM Enterprise Controller, an encoder, and a decoder.
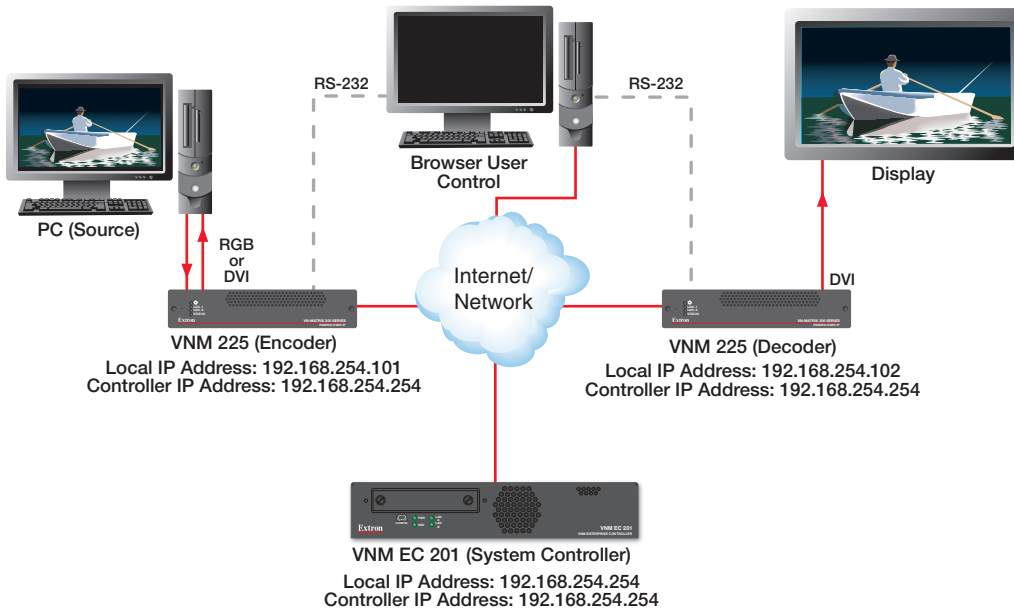

Figure 2. **VN Matrix System**

Map your system IP addresses for all connected devices and write them down.

Step 2 — Install and Configure the VN-Matrix Devices

See the setup guide included with each device. Connect each VN-Matrix device to the control PC, one at a time, and power the device on. Configure the network settings according to your IP address map. **DO NOT** use 192.168.254.254. The system above can be used as a guide for configuring network settings.

Once the new IP address for a device is entered, it can remain connected to the LAN and powered on.

Step 3 — Connect the VNM Enterprise Controller 201 to the VN-Matrix Network

On the rear panel of the EC 201, connect the network to LAN A (see **figure 1**, **E** on the previous page) using a Category (CAT) 6 twisted pair cable.

> **NOTE:** The LAN B Ethernet connector is not required for normal operation.

Step 4 — Power on the VNM Enterprise Controller 201

Connect a standard IEC power cord to the controller and to a 100 to 240 VAC, 50 Hz or 60 Hz power source. The controller powers up when an AC source is connected.

Step 5 — Configure the Network Settings of the VNM Enterprise Controller 201

The VNM Enterprise Controller 201 is preconfigured with the following network settings:

- IP address: 192.168.254.254
- Subnet mask: 255.255.255.0

> **NOTE:** With these settings, the VN-Matrix devices must use IP addresses within the range of 192.168.254.1 through 192.168.254.253 and the same subnet mask. The example in figure 2 uses the default settings of the VNM EC 201.

Use the following procedure to change the network settings of the VNM Enterprise Controller 201, if necessary.

1. Configure the network settings of a control PC to use an IP address within `192.168.254.1` to `192.168.254.253` and a subnet mask of `255.255.255.0`. Connect the control PC to the VN-Matrix network.

2. Open a web browser on the control PC and enter the IP address of the VNM Enterprise Controller 201 in the address bar (for example, `http://192.168.254.254`). The login screen opens (see figure 3).

3. Enter the appropriate username and password.

> **NOTE:** 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 convert to the default. The default user name is **admin**. The default password is **admin**. Entries are case sensitive.
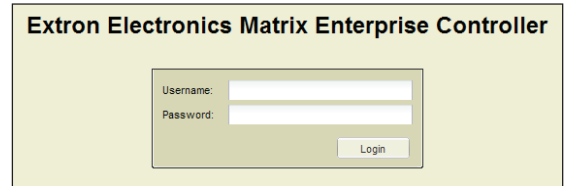
Figure 3. Enterprise Controller Login Page

4. Click **Login** or press the <**Enter**> key. The web-based user interface defaults to the `Devices` page (see figure 4, ❶).
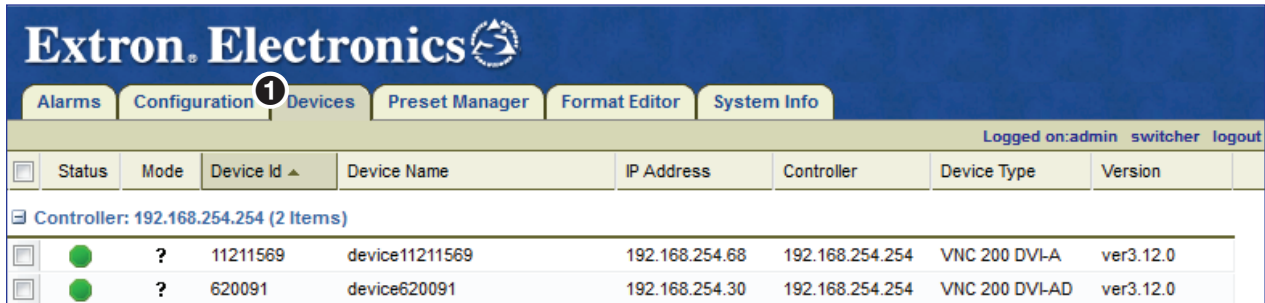
Figure 4. Devices Page

5. On the default `Devices` page, click the **Configuration** tab (see figure 5, ❶). The `Configuration` page opens.
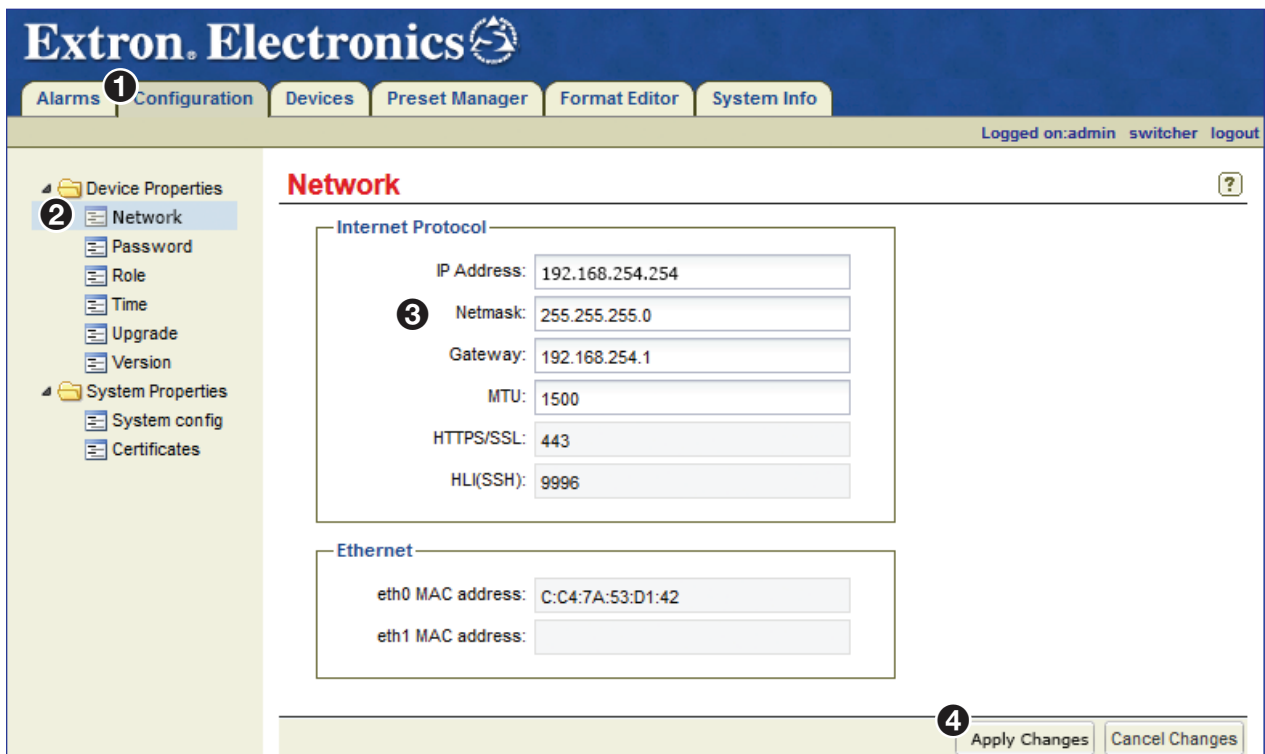
Figure 5. Network Configuration Page

6. On the `Configuration` page, click the **Network** link (see figure 5, ❷).
7. Change the **IP Address**, **Netmask**, and **Gateway** fields (❸) as necessary.

> **NOTE:** The **MTU** field **does not require changing**.

8. Click **Apply Changes** (see **figure 5**, ❹ on the previous page) to save the configuration.

    The controller restarts. After the restart, the network settings are properly configured.

9. On the control PC, configure the IP address so that it is within the address range of the VNM Enterprise Controller 201.

    > **NOTE:**   Perform this step only if the IP address of the controller uses a network prefix or subnet other than
    > **192.168.254**.*xxx*.

10. If necessary, restart the control PC to save the configuration.

Step 6 — Configure the VNM EC 201 as the System Controller

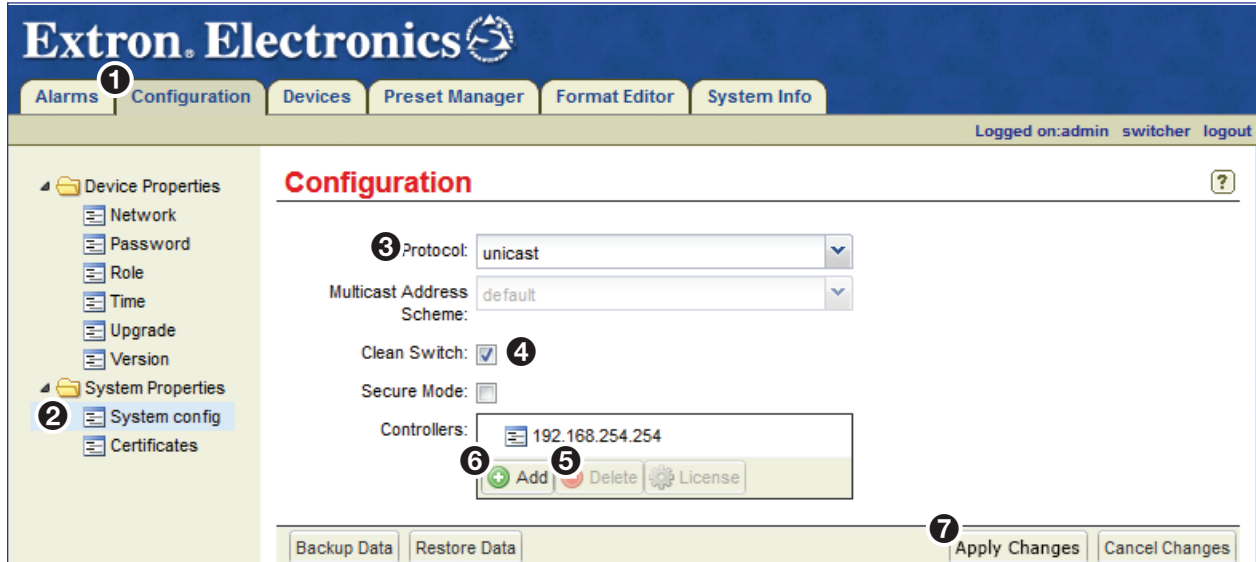1. Log in to the controller and click the **Configuration** tab (see figure 6, ❶). The Configuration page opens.

Figure 6.   System Configuration Page

2. On the Configuration page, click the **System config** link (❷).

3. From the **Protocol** drop-down list (❸), select the transport protocol for the VN-Matrix system.

    > **NOTES:**
    > - The default transport protocol is unicast.
    > - **Unicast** supports up to four simultaneous streams from a single encoder.
    > - **Multicast** supports a single stream that can be used by multiple decoders. This protocol requires a network that supports Internet Group Management Protocol (IGMP) snooping for correct operation.
    > - **TCP** supports a single stream from a single encoder.

4. Ensure that the **Clean Switch** option (❹) is enabled (checked) to smooth transitions when switching between VN-Matrix 200/225/250 device streams.

    > **NOTE:**   VN-Matrix 300/325 devices do not support **Clean Switch** and ignore this setting.

5. If necessary, highlight all IP addresses and click **Delete** (❺) to clear the Controllers field.

6. Click **Add** (❻) and enter the correct IP address of the VNM EC 201 previously created in **Step 5 — Configure the Network Settings of the VNM Enterprise Controller 201** on page 2 into the window that opens and click **OK**.

7. Click **Apply Changes** (❼) to save the configuration. The VNM Enterprise Controller 201 restarts and is assigned as the system controller.

8. Refresh the browser to activate and view the changes.

Step 7 — Assign VN-Matrix 200 / 225 / 300 / 325 Devices as Encoders and Decoders

1. If necessary, log in, then click the **Devices** tab (see figure 7, ❶). The Devices page opens.
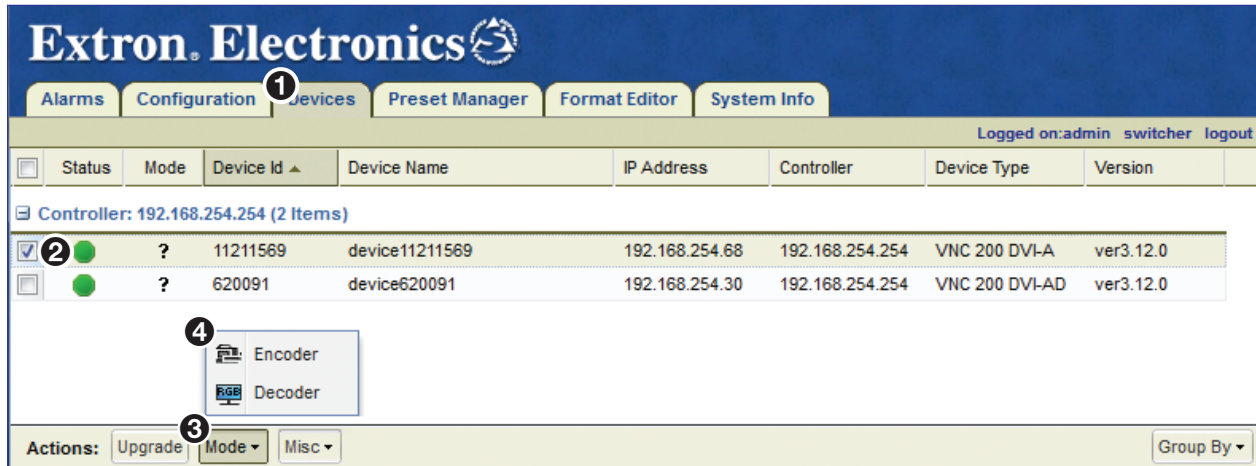

Figure 7. Devices Page — Mode Selection Menu

2. Click the check box in the same row as the desired device. The row highlights and the box is checked (❷).

3. Select **Mode** (❸) from the menu at the bottom of the page. The Device Mode dialog box opens (❹).

4. Determine the functionality of the device and choose **Encoder** or **Decoder** (❹) as appropriate.

> **NOTE:** Choosing a mode or toggling a device between an encoder and a decoder can take a few seconds after the selection is made.

5. Repeat this procedure for other devices as necessary.

Configure the Connected VN-Matrix Devices

Once the VN-Matrix devices are assigned as encoders and decoders in the VN-Matrix network, no further configuration is required. However, the individual devices on a VN-Matrix network can be further configured using the controller web-based user interface.

The following sections summarize how to configure devices using the VNM Enterprise Controller 201. For detailed information, click on the question mark icon (see figure 8, ❶) located on each of the menu pop-up pages, or see the *VNM Enterprise Controller 201 User Guide* and the *VN-Matrix 225/250/300/325 User Guides*.

Figure 8. Question Mark Icon for Information

Encoder Configuration

1. Log in to the controller, then click the **Devices** tab (see figure 7, ❶). The Devices page opens.

2. Select an encoder (❷). At the bottom of the page, several menus are now available (see figure 9).

Figure 9. Encoder Devices Configuration Menu

> **NOTE:** The menu options change depending on the device selected for configuration.

3. Select the following menus and configure the settings as necessary to allow for optimal encoder streaming.

    *   **Configure** — Sets global parameters specific to selected VN-Matrix units. Use this window to change the device name and configure the operating mode of the device.

    *   **Format** — Use this window to view information about the incoming source, make adjustments to the signal, and set EDID options.

    *   **Compression** — Use this window to adjust the amount of compression that is applied to the stream.

4. Repeat this procedure for other encoders as necessary.

Decoder Configuration

1. Click the **Devices** tab (see **figure 7**, **❶** on page 5). The Devices page opens.

2. Select a decoder (see **figure 7**, **❷**). At the bottom of the page, several menus are now available (see figure 10).

Actions:	Info	Connections	Configure	Format	Peripherals	License	Upgrade	Mode ▾	Misc ▾		Group ▾

Figure 10. Decoder Devices Configuration Menu

> **NOTE:**   The menu options change depending on the device selected for configuration.

3. Select the following menus and configure the settings as necessary to allow for optimal decoder streaming.

    *   **Configure** — Sets global parameters specific to selected VN-Matrix units. Use this window to change the device name and configure the operating mode of the device.

    *   **Format** — Use this window to adjust the format of the signal being output to a display.

4. Repeat this procedure for other decoders as necessary.

Web-based User Interface Control Options

This section details control options that are available using the web-based user interface. For more information on all available control options, see the *VNM Enterprise Controller 201 User Guide*.

Using the Switcher Page

The Switcher page assigns encoders (sources) to decoders (displays). This allows the user to control streaming throughout the entire system using a single page. Use the following procedure to configure the Switcher page.

1. Click on the **Switcher** link located at the top right of the web page. The Switcher page opens (see figure 11).
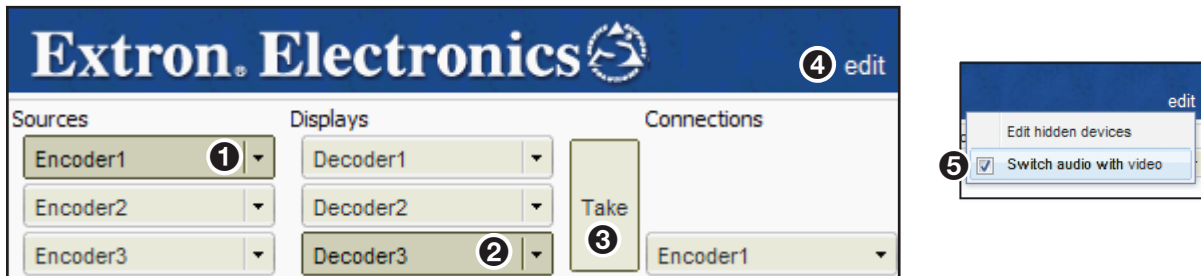

Figure 11. Switcher Page

2. From the **Sources** column, click on an encoder (see figure 11, **❶**).

3. From the **Displays** column, click on a decoder (**❷**).

4. Click **Take** (**❸**). A connection is created between the selected encoder and decoder. Figure 11 shows that Encoder1 is streaming media to Decoder3.

5. Repeat this procedure to create other connections as necessary.

> **NOTE:**   To remove a connection, select a connection (from the Connections column) and click **Break Connection**. To remove all connections, select a connection and click **Break All Connections**.

6. If audio data is present within the stream, click on the **edit** link located at the top right of the Switcher page (**❹**) and select the **Switch audio with video** option (**❺**). This keeps the audio and video data together when you are creating connections.

Updating the VNM Enterprise Controller 201 License

Updating the license of the VNM Enterprise Controller 201 is sometimes necessary to enable certain features of the system. Use the following procedure to update the license.

1. Click the **Configuration** tab (see figure 12, ❶). The Configuration page opens (you may need to log in).
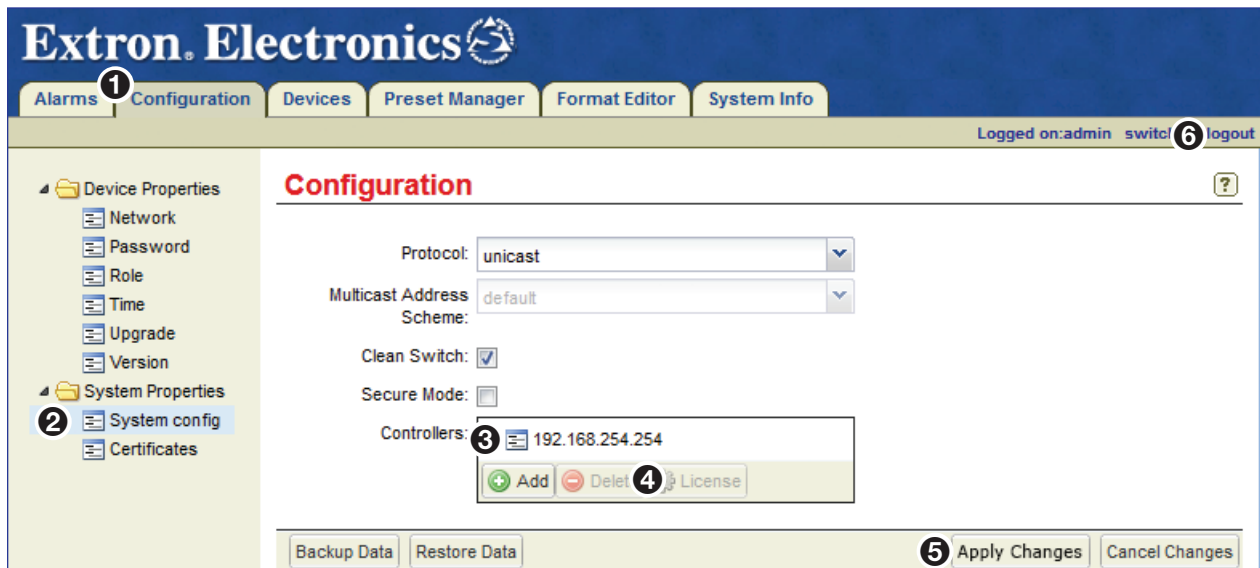

Figure 12. System Configuration Page

2. On the Configuration page, click the **System config** link (see figure 12, ❷).
3. In the **Controllers** field (❸), select the IP address of the controller that requires a new license.
4. Click **License** (❹).

   The Controller License Management dialog box opens (see figure 13). Keep this box open.
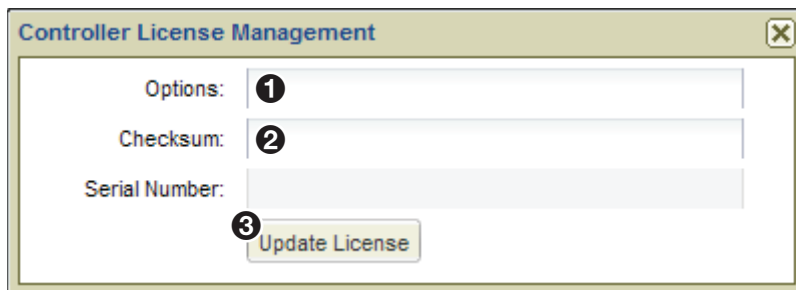

Figure 13. Controller License Management Window

5. Contact Extron Sales Support and provide the following information (contact information is available at **www.extron.com**):
   - The serial number of the VNM Enterprise Controller 201. This can be obtained from the Controller License Management window or from the side of the controller.
   - The order number of the VNM Enterprise Controller 201 from your purchase invoice.
6. Extron Sales Support provides a structure key and a license key.
   - Enter the structure key into the **Options** field (see figure 13, ❶).
   - Enter the license key into the **Checksum** field (❷).
7. Click **Update License** (❸) to assign the new license settings.
8. Close the Controller License Management dialog box.

Logging Out

To log out, click the **logout** link (see figure 12, ❻) located at the top right of the web page or close the browser.

For 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.

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