



CEN-IO-COM-102/CEN-IO-DIGIN-104/  
CEN-IO-IR-104/CEN-IO-RY-104  
Wired Ethernet Modules

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.

The warranty for Crestron products can be found at [www.crestron.com/legal/sales-terms-conditions-warranties](http://www.crestron.com/legal/sales-terms-conditions-warranties).

The specific patents that cover Crestron products are listed at [www.crestron.com/legal/patents](http://www.crestron.com/legal/patents).

Certain Crestron products contain open source software. For specific information, visit [www.crestron.com/legal/open-source-software](http://www.crestron.com/legal/open-source-software).

Crestron, the Crestron logo, and Crestron Toolbox are either trademarks or registered trademarks of Crestron Electronics, Inc. in the United States and/or other countries. Other trademarks, registered trademarks, and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Crestron disclaims any proprietary interest in the marks and names of others. Crestron is not responsible for errors in typography or photography.

This document was written by the Technical Publications department at Crestron.  
©2019 Crestron Electronics, Inc.

# Contents

- Introduction ..... 1
- Configuration via Web Interface ..... 2
  - Access the Configuration Interface ..... 2
  - Create a New Account..... 3
  - Navigate the Configuration Interface ..... 5
    - Device Status ..... 5
    - Device Settings..... 7
    - IO Control ..... 12
    - TLS Settings..... 16
    - Update..... 17



# CEN-IO-COM-102/CEN-IO-DIGIN-104/ CEN-IO-IR-104/CEN-IO-RY-104: Wired Ethernet Modules

## Introduction

The Crestron® CEN-IO-COM-102, CEN-IO-DIGIN-104, CEN-IO-IR-104, and CEN-IO-RY-104 are wired Ethernet I/O modules that are designed to expand the available I/O ports within a commercial or residential system. The modules communicate to the local network using the available LAN connection, allowing the connected equipment to be remotely controlled and monitored.

---

**NOTE:** The CEN-IO-COM-102, CEN-IO-DIGIN-104, CEN-IO-IR-104, and CEN-IO-RY-104 are functionally similar. For simplicity within this guide, the term "CEN-IO device" is used except where noted.

---

For more information on the CEN-IO device, refer to the CEN-IO-COM-102/CEN-IO-DIGIN-104/CEN-IO-IR-104/CEN-IO-RY-104 Quick Start (Doc. 7870) at [www.crestron.com/manuals](http://www.crestron.com/manuals).

# Configuration via Web Interface

The CEN-IO device may be monitored and configured using the included web configuration interface. The configuration interface is accessible from a web browser if the CEN-IO device is connected to the network and its IP address is known.

Web browser access enables full control over the features of the CEN-IO device, including settings for the username and password, Ethernet and IP table settings, I/O control, TLS settings, and firmware updates.

---

**NOTE:** Most pages in the configuration interface are identical for all CEN-IO devices. Any differences are noted in the text.

---

## Access the Configuration Interface

To access the web configuration interface:

1. Use the Device Discovery tool in Crestron Toolbox™ software to discover the CEN-IO device and its IP address on the network.
2. Open a Text Console window for the device.
3. Issue the `SSL SELF` command to enable SSL.
4. Reboot the CEN-IO device.
5. Open a web browser.
6. Enter the CEN-IO device IP address into the browser URL field using an HTTPS URL scheme ("`https://xxx.xxx.xxx.xxx`"). By default, DHCP is enabled.

---

**NOTE:** For 48 hours after a firmware upgrade, the browser cache must be cleared after each login to the web-based configuration utility. If the cache is not cleared, the browser may not display the login page. Refer to the release notes for more details.

---

The configuration interface web server uses a self-signed certificate, which causes a browser warning to appear when the page loads.

7. Authorize the web server certificate using the certificate authorization process for the web browser.

## Create a New Account

When the configuration interface is accessed for the first time, a page is displayed for creating a new account.

### Create New Account Page

The screenshot shows the Crestron configuration interface. At the top, the Crestron logo is on the left, and fields for Hostname, Domain, Firmware, and SNMP Service are on the right. A sidebar on the left contains links for Device Status, Device Settings, IO Control, TLS Settings, and Update. The main content area has a heading 'Welcome. Please create a new account. (fields must be between 5 and 23 characters)'. Below this are three text input fields: Username, Password, and Verify password. A blue 'Create account' button is positioned below the fields. At the bottom, there is a table titled 'Browser/OS Support' with two columns: 'Browser/OS Support' and 'Minimum Version'.

Browser/OS Support	Minimum Version
Firefox	15
Internet Explorer	9
Safari	5
Chrome	21
iOS	5
Android	4.0
Windows Phone	7

To create a new account:

1. Enter a username in the **Username** text field.
2. Enter a password in the **Password** text field. The password must be between 5 and 23 characters.
3. Reenter the password in the **Verify password** text field.
4. Click **Create account**.

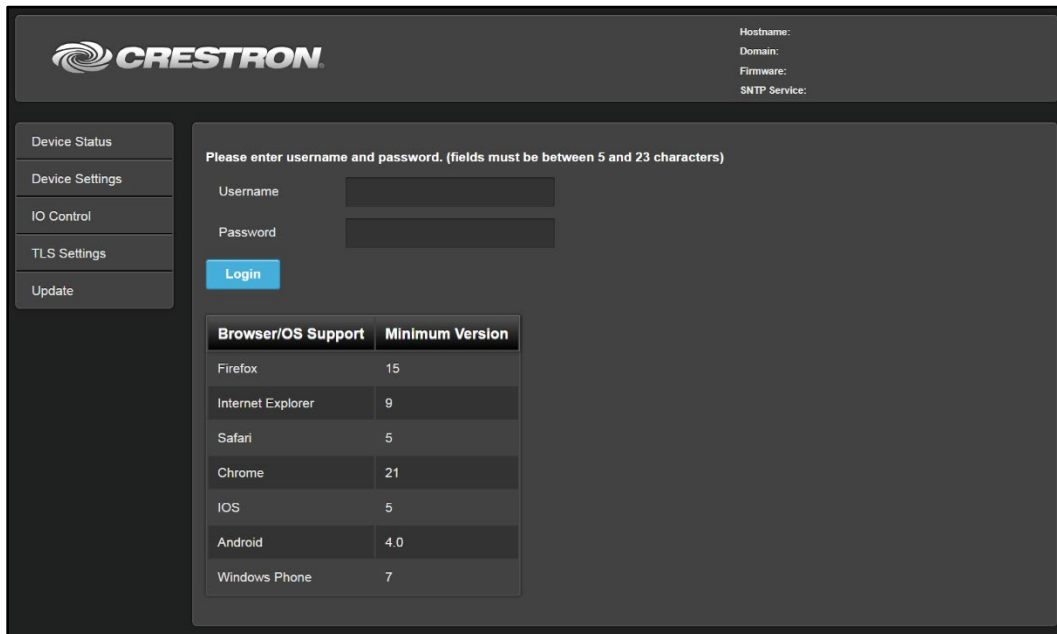
---

**NOTE:** The username and password are case sensitive.

---

After the account is created, a Login page is displayed each time the configuration interface is accessed. Enter the account username and password to log in to the utility.

## Login Page



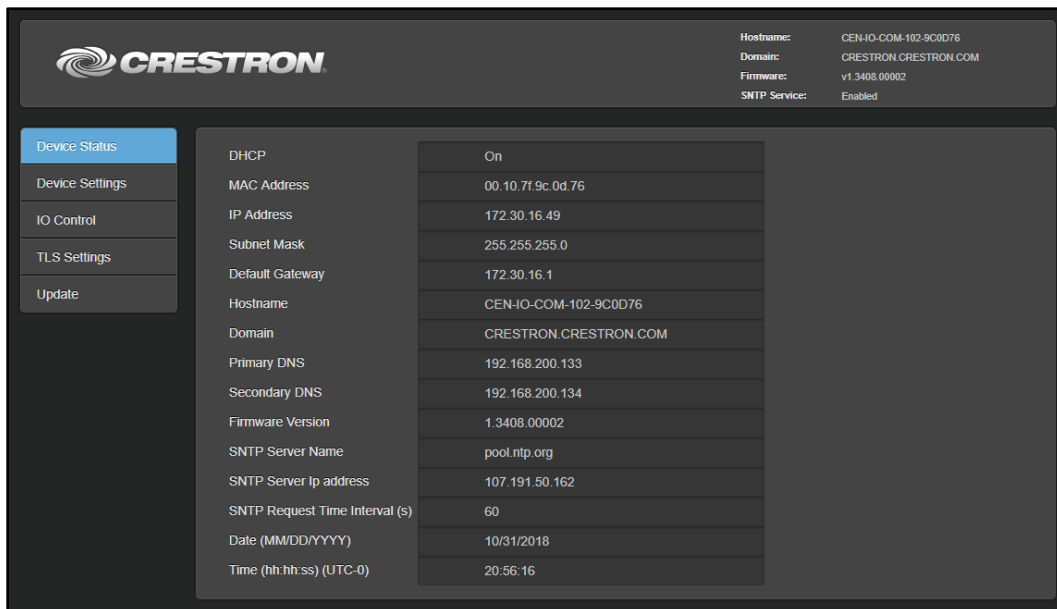
The screenshot shows the CRESTRON login interface. At the top left is the CRESTRON logo. On the top right, there are fields for Hostname, Domain, Firmware, and SNTP Service. A left sidebar contains navigation links: Device Status, Device Settings, IO Control, TLS Settings, and Update. The main area prompts the user to enter a username and password, with a note that fields must be between 5 and 23 characters. Below the input fields is a blue 'Login' button. At the bottom, a table lists supported browsers and their minimum versions.

Browser/OS Support	Minimum Version
Firefox	15
Internet Explorer	9
Safari	5
Chrome	21
iOS	5
Android	4.0
Windows Phone	7

**NOTE:** The Create New Account page and the Login page list the minimum versions of browsers and operating systems that are supported by the configuration interface. Ensure that the chosen web browser is supported prior to logging in.

Upon successful login, the Device Status page is displayed by default.

## Device Status Page



The screenshot shows the CRESTRON Device Status page. The top header includes the CRESTRON logo and system information: Hostname (CEN-IO-COM-102-9C0D76), Domain (CRESTRON.CRESTRON.COM), Firmware (v1.3408.00002), and SNTP Service (Enabled). The left sidebar has navigation links: Device Status (highlighted), Device Settings, IO Control, TLS Settings, and Update. The main area displays a list of system parameters and their current values.

DHCP	On
MAC Address	00.10.7f.9c.0d.76
IP Address	172.30.16.49
Subnet Mask	255.255.255.0
Default Gateway	172.30.16.1
Hostname	CEN-IO-COM-102-9C0D76
Domain	CRESTRON.CRESTRON.COM
Primary DNS	192.168.200.133
Secondary DNS	192.168.200.134
Firmware Version	1.3408.00002
SNTP Server Name	pool.ntp.org
SNTP Server Ip address	107.191.50.162
SNTP Request Time Interval (s)	60
Date (MM/DD/YYYY)	10/31/2018
Time (hh:mm:ss) (UTC-0)	20:56:16

**NOTE:** Do not lose the username or password for the configuration interface account. If the username or password is lost, the CEN-IO device must be restored to factory settings to restore access.

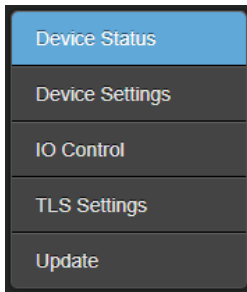


## Navigate the Configuration Interface

Use the navigation menu on the left side of the page to select the various configuration pages. The menu is always visible on the left side of the page, with the selected screen highlighted in blue.

The Device Status page is the default page that is displayed upon logging in.

### Navigation Menu

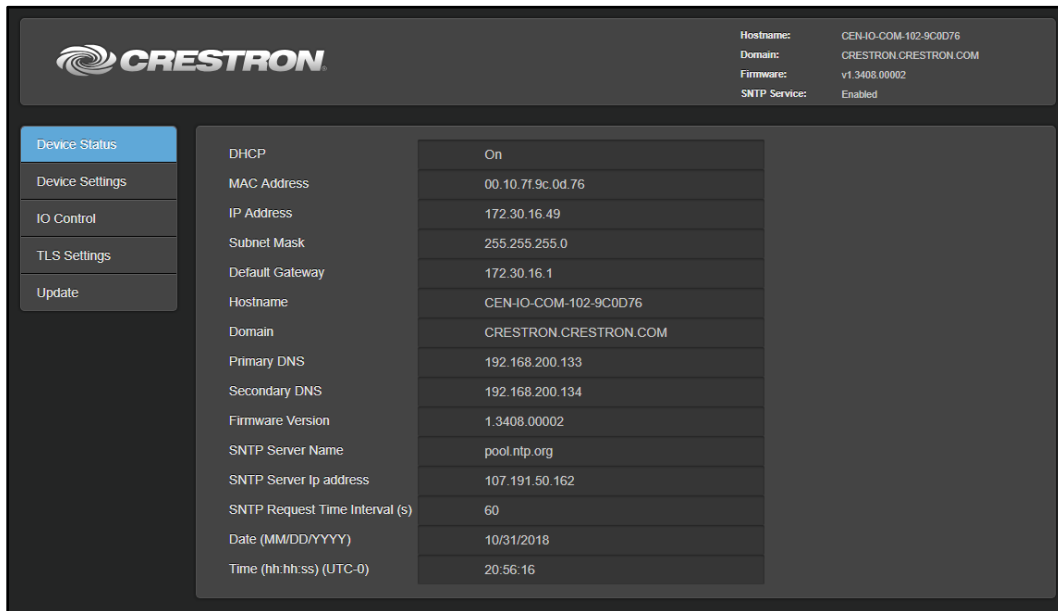


The device configuration pages are described in the sections that follow.

### Device Status

Click **Device Status** in the navigation menu to display the Device Status page.

### Device Status Page



Use the Device Status page to view status information about the CEN-IO device. These settings are configured using the Device Settings page. For more information, refer to page 7.

The following status information is provided:

- **DHCP:** Reports whether DHCP (dynamic host configuration protocol) is turned on or off
- **MAC Address:** The CEN-IO device MAC (media access control) address
- **IP Address:** The CEN-IO device IP address
- **Subnet Mask:** The CEN-IO device subnet mask address
- **Default Gateway:** The gateway router address
- **Hostname:** The CEN-IO device hostname
- **Domain:** The CEN-IO device domain name
- **Primary DNS:** The primary DNS (domain name server) address used to resolve the CEN-IO device domain to an IP address
- **Secondary DNS:** The secondary DNS address used to resolve the CEN-IO device domain to an IP address if the primary DNS fails
- **Firmware Version:** The firmware version running on the CEN-IO device
- **SNTP Server Name:** The SNTP (simple network time protocol) server used to set the date and time for the CEN-IO device (if SNTP is enabled)
- **SNTP Server Ip address:** The SNTP server IP address (if SNTP is enabled)
- **SNTP Request Time Interval (s):** The duration in seconds between time requests sent to the SNTP server (if SNTP is enabled)
- **Date (MM/DD/YYYY):** The date in MM/DD/YYYY format (if SNTP is enabled)
- **Time (hh:mm:ss) (UTC-0):** The time (UTC +0 coordinated universal time) in hh:mm:ss format (if SNTP is enabled)

## Device Settings

Click **Device Settings** in the navigation menu to display the Device Settings page.

### Device Settings Page

**CRESTRON**

Devicemodel: CEN-IO-RY-104  
Hostname: CEN-IO-RY-104-052062  
Domain: CRESTRON.CRESTRON.COM  
Firmware: v1.3408.00021

**Device Status**  
**Device Settings**  
IO Control  
TLS Settings  
Update

**DHCP**  
Enabled ☒  
Options ☐ Hostname ☒ FQDN

**IP Addresses**  
IP Address: 172 30 146 79  
Subnet Mask: 255 255 240 0  
Default Gateway: 172 30 144 1

**SNTP**  
Enabled ☒  
Server Name: pool.ntp.org  
Time Interval(s): 60

**DNS Options**  
Hostname: CEN-IO-RY-104-052062  
Domain: CRESTRON.CRESTRON.COM

**DNS Server List**

Static	Server Order	Server Address
<input checked="" type="checkbox"/>	Primary	192 168 200 133
<input checked="" type="checkbox"/>	Secondary	192 168 200 134

**IP Table**  
Control System List

Entry	Enabled	Online	CipID	Hostname or IP Address	RoomID
1	<input checked="" type="checkbox"/>	Yes	05	172.30.146.110	ROOM1
2	<input checked="" type="checkbox"/>	Yes	05	172.30.146.111	ROOM1

Control System Credentials  
User: Password:

**Login Information**  
Username and password must be between 5 and 23 characters  
Current password:  
New username (optional): Reenter new username:  
New password: Reenter new password:

**Save** **Reset** **Reboot**

Use the Device Settings page to make changes to the DHCP, IP address, SNTP, DNS, IP table, and login information settings. The CEN-IO device may also be rebooted from this page.

The following controls are provided at the bottom of the Device Settings page:

- Click **Save** to save any changes to the device settings.
- Click **Reset** to revert to the previously saved settings.
- Click **Reboot** to reboot the CEN-IO device.

---

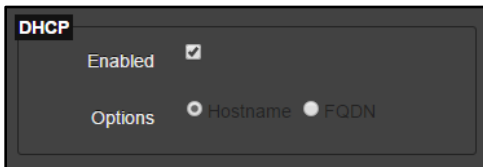
**NOTE:** Some device settings, including IP addresses, DNS options, SNTP, IP table, and login information, require the CEN-IO device to be rebooted before they take effect.

---

## DHCP

Use the settings provided in the **DHCP** section to enable or disable using DHCP for the CEN-IO device.

### Device Settings - DHCP



- **Enabled:** Click the check box to enable or disable DHCP. A filled check box indicates that DHCP is enabled.

---

**NOTE:** If DHCP is enabled, IP does not function until a reply has been received from the server. The CEN-IO device periodically broadcasts requests for an IP address.

---

- **Options:** If DHCP is enabled, select the appropriate radio button to determine whether DHCP resolves to a **Hostname** or a **FQDN** (fully qualified domain name).

## IP Addresses

Use the settings provided in the **IP Addresses** section to set the CEN-IO device IP address, subnet mask address, and default gateway address.

---

**NOTE:** If DHCP is enabled, the **IP Addresses** settings may not be changed manually.

---

### Device Settings - IP Addresses

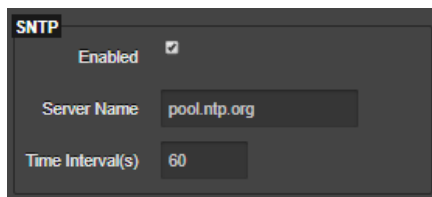


- **IP Address:** Enter an IP address for the CEN-IO device. Valid IP addresses consist of four octets, 0 to 255. The default address is "0.0.0.0".
- **Subnet Mask:** Enter a subnet mask address for the CEN-IO device. The default address is "255.255.255.0".
- **Default Gateway:** Enter a default gateway address for the gateway router. The default address is "0.0.0.0".

## SNTP

Use the settings provided in the SNTP section to enable or disable using an SNTP server to set the date and time for the CEN-IO device.

### Device Settings - SNTP



- **Enabled:** Click the check box to enable or disable SNTP. A filled check box indicates that SNTP is enabled.
- **Server Name:** Enter the IP address of the SNTP server.
- **Time Interval(s):** Enter the interval in seconds between the CEN-IO device sending time requests to the SNTP server.

## DNS Options

Use the settings provided in the **DNS Options** section to edit the CEN-IO device domain name and DNS addresses.

---

**NOTE:** The CEN-IO device domain name may be configured only by using the Text Console tool in Crestron Toolbox.

---

### Device Settings - DNS Options



Static	Server Order	Server Address			
<input checked="" type="checkbox"/>	Primary	192	168	200	133
<input checked="" type="checkbox"/>	Secondary	192	168	200	134

- **Hostname:** The CEN-IO device hostname
- **Domain:** The CEN-IO device domain name
- **DNS Server List:** Configure the CEN-IO device DNS addresses:

- **Static:** Click the check box to enable or disable using static DNS addresses. A filled check box indicates that static DNS addresses are enabled.

---

**NOTE:** If **Static** is enabled, DNS addresses must be entered manually. If **Static** is disabled, the CEN-IO device uses DNS addresses that are received via DHCP.

---

- **Server Order:** Indicates whether the DNS address is primary or secondary
- **Server Address:** Enter the DNS server address. The default address is "0.0.0.0".

## IP Table

Use the settings provided in the **IP Table** section to edit the CEN-IO device IP table for connecting to a control system.

### Device Settings - IP Table

Entry	Enabled	Online	CipID	Hostname or IP Address	RoomID
1	<input checked="" type="checkbox"/>	Yes	05	172.30.146.110	ROOM1
2	<input checked="" type="checkbox"/>	Yes	05	172.30.146.111	ROOM1

Control System Credentials

User:  Password:

- **Entry:** Indicates the IP table entry
- **Enabled:** Click the check box to enable or disable the IP table entry. A filled check box indicates that the IP table entry is enabled.


---

**NOTE:** If the IP table entry is enabled, the CEN-IO device will attempt to make a connection over IP to the control system specified by the **CipID** and **Hostname or IP Address** fields.

---

- **Online:** Reports whether the control system (connected via IP) is online
- **CipID:** Enter a CIP (Crestron Internet Protocol ID) for the control system in hexadecimal format. Valid values range from 0x03 to 0xFE.
- **Hostname or IP Address:** Enter a valid control system hostname or IP address.
- **RoomID:** The control system room ID that the CEN-IO device is associated with (for connections with the Crestron Virtual Control server-based control system)

---

**NOTE:** For more information on connecting the CEN-IO device to Crestron Virtual Control, refer to the help file in the Crestron Virtual Control web configuration interface. To access the help file, click the question mark button  on the top left of the page.

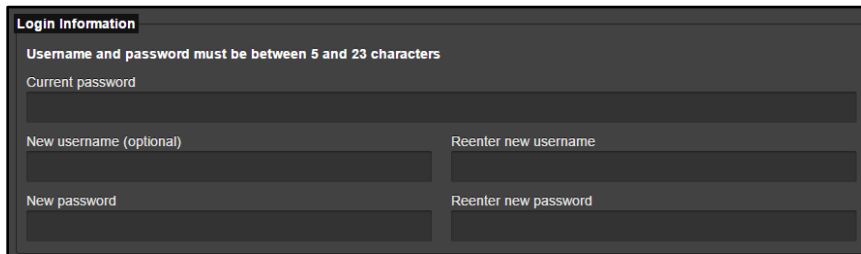
---

- **Control System Credentials:** Enter the credentials required to connect to the control system.
  - **User:** Enter the username for the secure control system connection.
  - **Password:** Enter the password for the secure control system connection.

## Login Information

Use the settings provided in the **Login Information** section to change the username and password for the configuration utility account.

### Device Settings - Login Information



The screenshot shows a web interface titled "Login Information". Below the title is a message: "Username and password must be between 5 and 23 characters". There are four text input fields arranged in two rows. The first row contains "Current password" and "Reenter new username". The second row contains "New username (optional)" and "Reenter new password". Each field has a corresponding label to its left.

- **Current password:** Enter the current password for the account to make any username or password changes.
- **New username (optional):** Enter a new account username (if desired).
- **Reenter new username:** Reenter the username entered in the **New username (optional)** text field.
- **New password:** Enter a new account password. The password must be between 5 and 23 characters long.
- **Reenter new password:** Reenter the password entered in the **New password** text field.

---

**NOTE:** The username and password are case sensitive.

---

Click **Save** to save the new login credentials. The connection to the CEN-IO device is reset, and the CEN-IO device must be rebooted. Click **Reboot** to reboot the CEN-IO device, and then log in to the configuration utility using the new login credentials.

---

**NOTE:** Attempting to change any other device settings before rebooting the CEN-IO device with new login credentials results in an error message.

---

## IO Control

Click **IO Control** in the navigation menu to display the IO Control page. The IO Control page provides selections for configuring and controlling equipment connected to the CEN-IO device's respective I/O ports.

The IO Control page differs between the CEN-IO-COM-102, CEN-IO-DIGIN-104, CEN-IO-IR-104, and CEN-IO-RY-104. These differences are described in the following sections.

### IO Control (CEN-IO-COM-102)

The CEN-IO-COM-102 IO Control page allows for configuration and control of the two onboard RS-232 COM ports.

#### Device Settings - IO Control (CEN-IO-COM-102)

**CRESTRON**

Hostname: CEN-IO-COM-102-9C0D76  
Domain: CRESTRON.CRESTRON.COM  
Firmware: v1.3408.00002  
SMTP Service: Enabled

**Device Status**  
Device Settings  
**IO Control**  
TLS Settings  
Update

**Device Type**  
CEN-IO-COM-102

**Comport Connection Status**  
Comport1: Disconnected  
Comport2: Disconnected

**Comport Settings**

Port	BaudRate	Parity	DataBits	StopBits	HW	SW	RTS
1	9600	NO	8	1	None	None	On Off
2	9600	NO	8	1	None	None	On Off

**Save Settings** **Reset**

**Comport1**  
**SendBreak**  
**LongBreak** **ShortBreak**  
**TX**  
**SendTX1** **ClearTX1**  
**RX**  
**ClearRX1**

**Comport2**  
**SendBreak**  
**LongBreak** **ShortBreak**  
**TX**  
**SendTX2** **ClearTX2**  
**RX**  
**ClearRX2**



The following status information is provided:

- **Device Type:** The CEN-IO device model
- **Comport Connection Status:** The connection status of the two COM ports

The following **Comport Settings** may be configured for each COM port:

- **Port:** The COM port number
- **BaudRate:** Select the baud rate for the RS-232 connection.
- **Parity:** Select the parity bit setting for the RS-232 connection.
- **DataBits:** Select the number of data bits used for the RS-232 connection.
- **StopBits:** Select the number of stop bits set over the RS-232 connection.
- **HW:** Select a hardware handshaking setting for the RS-232 connection.
- **SW:** Select a software handshaking setting for the RS-232 connection.
- **RTS:** Toggle whether RTS (request to send) is turned on or off for the RS-232 connection.

Click **Save** to save any IO control settings for the CEN-IO-COM-102. Click **Reset** to revert to the previously-saved settings.

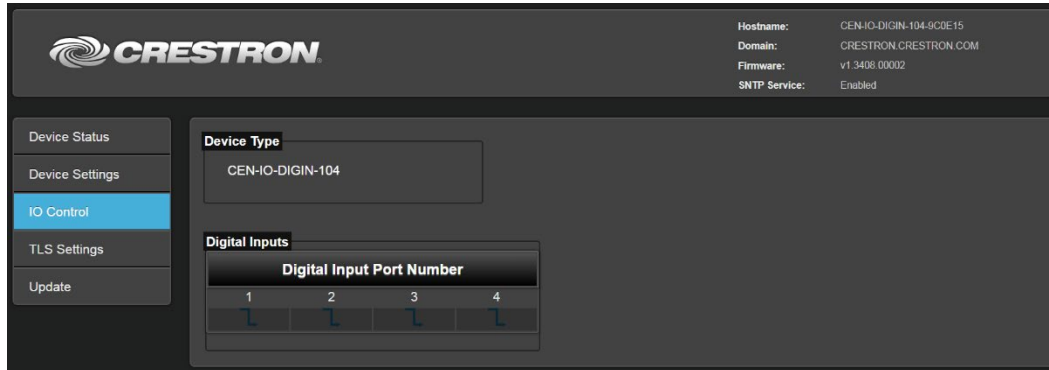
The following RS-232 commands may be sent to the device controlled through either COM port:

- **SendBreak:** Provides options for sending break signals to the device
  - **ShortBreak:** Sends a short break signal (lasting between one and two frame times) to the device.
  - **LongBreak:** Sends a long break signal (lasting more than two frame times) to the device.
- **TX:** Provides a list of all the available TX signals that can be sent to the device
  - **SendTX(1/2):** Sends the selected TX signal to the device.
  - **ClearTX(1/2):** Clears the selected TX signal sent to the device.
- **RX:** Provides a list of all the available RX signals that can be received from the device
  - **ClearRX(1/2):** Clears the RX signal received from the device.

## IO Control (CEN-IO-DIGIN-104)

The CEN-IO-DIGIN-104 IO Control page allows for monitoring of the four onboard digital inputs.

### Device Settings - IO Control (CEN-IO-DIGIN-104)



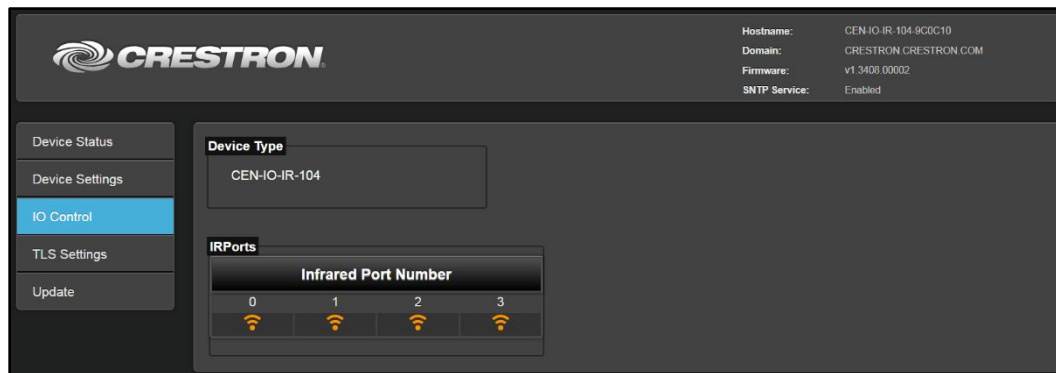
The following status information is provided:

- **Device Type:** The CEN-IO device model
- **Digital Inputs:** Displays whether the digital signal is being sent high (1) or low (0) to the respective port

## IO Control (CEN-IO-IR-104)

The CEN-IO-IR-104 IO Control page allows for monitoring of the four onboard IR/Serial ports.

### Device Settings - IO Control (CEN-IO-IR-104)



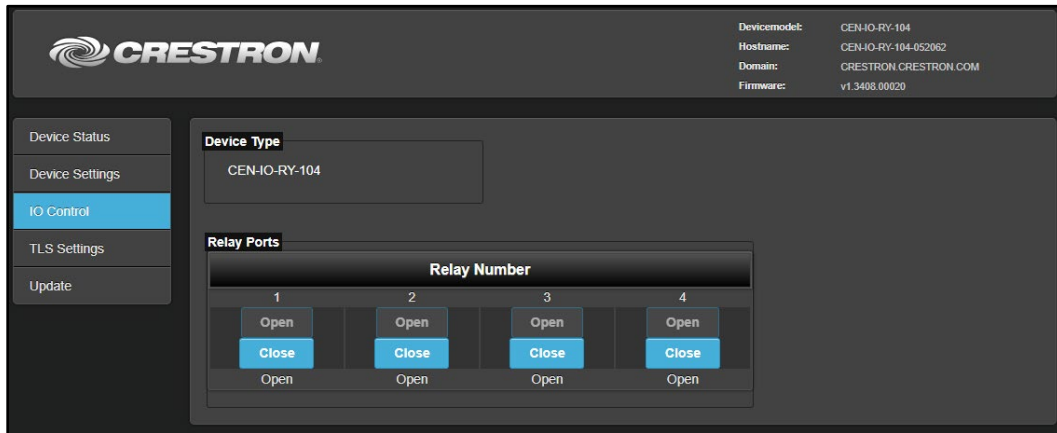
The following status information is provided:

- **Device Type:** The CEN-IO device model
- **IRPorts:** Displays whether an IR signal is present for the respective port

## IO Control (CEN-IO-RY-104)

The CEN-IO-RY-104 IO Control page allows for monitoring and control of the four onboard relay ports.

### Device Settings - IO Control (CEN-IO-RY-104)



The following status information is provided:

- **Device Type:** The CEN-IO device model
- **Relay Ports:** Displays whether the relay is open or closed for the respective port

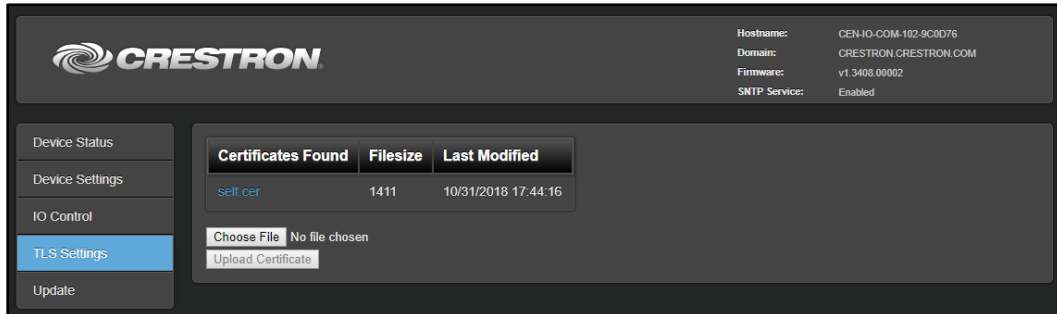
The relay signal for each port may also be controlled from the IO Control page:

- Click **Open** to open the relay.
- Click **Close** to close the relay.

## TLS Settings

Click **TLS Settings** in the navigation menu to display the TLS Settings page.

### TLS Settings Page



The TLS Settings page is used to view and load security certificates for the CEN-IO device.

To upload a new security certificate:

1. Click **Choose File**.
2. Select a security certificate file from a connected computer.

---

**NOTE:** The security certificate file must be in a valid TLS (Transport Layer Security) certificate file format (such as .cer).

---

3. Click **Upload Certificate**. The security certificate appears on the page after it is uploaded.

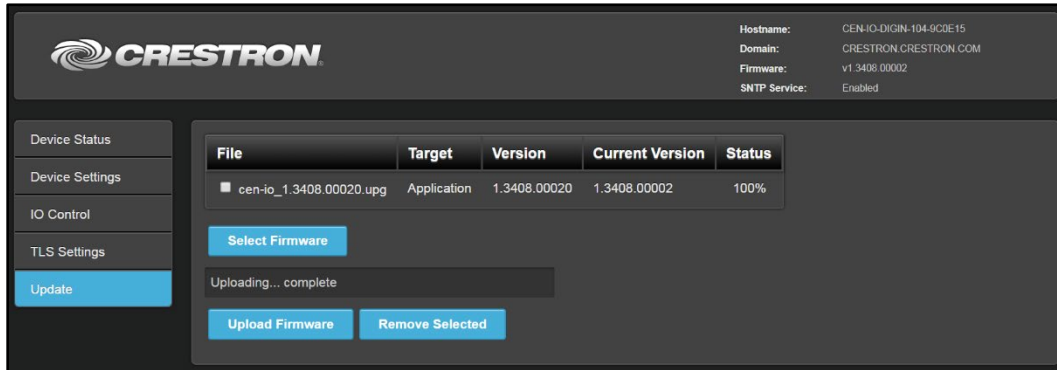
The following information is provided for each uploaded security certificate:

- **Certificates Found:** The security certificate filename  
Click the filename to download the certificate file to a connected computer.
- **Filesize:** The size of the security certificate file in bytes
- **Last Modified:** The date and time that the security certificate was last modified

## Update

Click **Update** in the navigation menu to display the Update page.

### Update Page



The Update page is used to update the device firmware.

To upload a new firmware file:

1. Click **Select Firmware**.
2. Select the CEN-IO device firmware file from a connected computer.

---

**NOTE:** The latest CEN-IO device firmware may be downloaded from the Crestron website at <https://www.crestron.com/Support>.

---

3. Click **Upload Firmware**. The CEN-IO device begins to perform a firmware update automatically.

The following information is provided for each loaded firmware file:

- **File:** The loaded firmware file (UPG or PUF)
- **Target:** The firmware target
- **Version:** The firmware version
- **Current Version:** The firmware version currently loaded to the CEN-IO device
- **Status:** The status of the firmware load (in percent)

