

ENVIROMUX® Series


E-MNG-SH

Enterprise Environment Monitoring System Self-Hosted Management Software


NTI ENVIROMUX Management Software Admin

Status & Alerts Edit Refresh

Server Room



Server Room Temperature



Server Rack Main Voltage

Server Rack Main Voltage
118.7 V
 Normal
 Last Updated: now

Alerts

Sensor Name	Sensor Value	Sensor Status	Sensor Type	Device Name	Last Updated
E-5D E04 Port 2 ACLM-Frequency	0.0 Hz	Alarm	External Sensors	E-5D E04 DDNS Test Unit	4 sec. ago
E-5D E04 Port 2 ACLM-Voltage	5.6 V	Alarm	External Sensors	E-5D E04 DDNS Test Unit	4 sec. ago
E-SDEL E07 Light Detector (2)	Lights On	Alarm	Digital Inputs	E-SDEL-1 (E07)	1 sec. ago

Previous 1 Next


Server Rack & Labs

Sensor Name	Sensor Value	Sensor Type	Updated
Computer Lab Temperature	72.8 °F	External Sensors	3 sec. ago
Computer Lab Humidity	27.4 %	External Sensors	3 sec. ago
Server Rack Temperature	77.4 °F	External Sensors	3 sec. ago
Server Rack Humidity	21.2 %	External Sensors	3 sec. ago
Equipment Lab 1 Temperature	77.7 °F	External Sensors	3 sec. ago
Equipment Lab 1 Humidity	21.2 %	External Sensors	3 sec. ago
Equipment Lab 2 Temperature	79.6 °F	External Sensors	3 sec. ago
Equipment Lab 2 Humidity	22.1 %	External Sensors	3 sec. ago

Computer Lab Temperature

1 Hr 8 Hr 1 Day 1 Wk 1 Mo 6 Mo 2 Yr

● Max. Computer Lab Te... ● Min. Computer Lab Te... ● Avg. Computer Lab Te...



Device Status

IP Address	Device Name	Status
10.0.1.16	Furnace Room E-2D	Normal
147.0.27.197	E-16D Server Rack Monitor	Normal
147.0.27.207	E-2D Lab Room Environment Monitor	Normal
147.0.27.208	E-5D Server Rack Monitor	Normal
147.0.27.212	E-5D E04 DDNS Test Unit	Alert
147.0.27.218	E-2D P05	Normal
192.168.1.100	E-16D 24V IPMI Rack	Normal
192.168.3.100	E-16DEL-1 (Master)	Normal
192.168.3.101	E-16D S1	Normal
192.168.3.200	E-16D P02	Normal
192.168.3.213	Oper8 Test Unit	Normal
192.168.3.217	E-5D-48V	Normal
192.168.3.221	E-2DB P02	Normal
192.168.3.222	E-2D E12	Normal
192.168.3.223	E-2DB E11 (RevF)	Normal
192.168.3.225	E-5D E02	Normal
192.168.3.227	E-2D P04	Normal
192.168.3.80	E-16D E100	Normal
192.168.3.81	E-SDEL-1 (E07)	Alert
192.168.3.82	E-2DB E08	Normal
192.168.3.83	E-5D E01	Normal
98.27.170.240	Remote E-5D	Normal

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CHANGES

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VERSION

Release Version 1.5.2.0

Table of Contents

Introduction	1
Materials	2
Limitations	2
Download	3
Installation	4
Offline Activation.....	7
Installation Continued.....	8
Application Settings.....	9
System Log Level.....	9
Network Settings.....	10
Gmail SMTP Server.....	11
SMS Settings.....	13
Certificate Settings.....	15
Server Host Name.....	18
User Settings.....	19
Devices	20
Devices to Monitor.....	24
Device Discovery Tool.....	28
View Sensors Individually	29
Setup A Dashboard	32
Events Menu	39
Events Log.....	39
Reports.....	42
Generate Reports & Email.....	43
Operate Relay.....	44
Send Email.....	45
Send SMS.....	46
Record IP Camera.....	47
Digital Inputs Power Cycle.....	48
Triggers.....	49
Sounds.....	55
Recordings.....	56
The About Menu	57
Shut Down E-MNG-SH Server	58
Other Type Devices	59
Uninstall the Program	61
Software Update	61
HTTP REST API Support	62
Index	69

Table of Figures

Figure 1- Registration Form.....	3
Figure 2- Locate the installation file on your local hard drive.....	4
Figure 3- Agree to terms.....	4
Figure 4- Install software as a service, or an application.....	4
Figure 5- Create Admin login account.....	5
Figure 6- Activation screen.....	5
Figure 7- Activate later.....	6
Figure 8- Manually Renew License.....	6
Figure 9- Offline Activation prompts.....	7
Figure 10- Offline License Activation website.....	7
Figure 11- View of the Home screen.....	8
Figure 12- Application Settings.....	9
Figure 13- Network Settings.....	10
Figure 14- SMTP Server Type- Gmail.....	11
Figure 15- Steps in getting Gmail Authorization.....	12

Figure 16- SMS Settings for Twilio	13
Figure 17- Twilio Console Page.....	13
Figure 18- Twilio- Setting Geo Permissions.....	14
Figure 19- SMS Settings for Sinch.....	14
Figure 20- Self-signed Certificate Setting Options	15
Figure 21- Self-signed and User Signed Setting Options.....	15
Figure 22- CA Signed and Generate CSR Setting Options.....	16
Figure 23- CA Signed with Upload Keypair and Certificate Setting Options	16
Figure 24- CA Signed Certificate Setting Options.....	17
Figure 25- Security Configuration-X509 Certificate.....	17
Figure 26- User Settings for Adding Users	19
Figure 27- Edit user settings.....	19
Figure 28- My Devices List	20
Figure 29- My Sensors List.....	20
Figure 30- Add or Remove Devices	21
Figure 31- Map Types to choose from	21
Figure 32- World map provided	22
Figure 33- Loading maps and placing markers.....	22
Figure 34- Markers for Device or Sensor.....	23
Figure 35- Use a configured map to monitor select sensors.....	23
Figure 36- Sensor status at location "Basement".....	24
Figure 37- Add Devices to monitor	25
Figure 38- Primary group, and New Group added.....	25
Figure 39- Select Device to delete.....	26
Figure 40- Device moved/added to New Group.....	26
Figure 41- Additional features from Add Devices menu.....	27
Figure 42- System Info page for the Device.....	27
Figure 43- Device Discovery Tool page.....	28
Figure 44- Sensors being monitored.....	29
Figure 45- Details for Internal Temperature Sensor.....	30
Figure 46- Use Search Sensors box.....	30
Figure 47- Sensors, relays, IP Cameras etc attached to a specific Device.....	31
Figure 48- External Sensors connected to specific Device	31
Figure 49- Initial Monitoring Dashboard menu	32
Figure 50- Dashboard options	32
Figure 51- How to add Columns or delete Rows	33
Figure 52- Ready to add a sensor window.....	33
Figure 53- Select sensors to view.....	33
Figure 54- Multiple types of views available.....	34
Figure 55- More types of views.....	34
Figure 56- Select one or more sensors.....	35
Figure 57- Change the width of a column	35
Figure 58- Add a new row of sensors	36
Figure 59- Log out	36
Figure 60- Dashboard setup to display specific content	37
Figure 61- Download Graph Data to text file.....	37
Figure 62- Enable full screen view.....	38
Figure 63- Events Menu.....	39
Figure 64- Events Log.....	39
Figure 65- Connect directly to acknowledge or dismiss alert.....	40
Figure 66- View and connect directly with sensor through the Dashboard	40
Figure 67- Acknowledge or Dismiss alert pop-up	41
Figure 68- Clear or Download Event Log Entries.....	41
Figure 69- Save Event Log as text file	41
Figure 70- Action List.....	42
Figure 71- Action Options	42
Figure 72- More Action Options	43
Figure 73- Reports can show multiple devices, sensors or markers.....	43
Figure 74- Action Type "Output Relay"	44
Figure 75- Action Type "Send Email".....	46
Figure 76- Action Type "Record IP Camera"	47
Figure 77- Action Type "Digital Inputs power cycle".....	48
Figure 78- Trigger List.....	49
Figure 79- Trigger Options.....	49
Figure 80- Option detail for Trigger Frequency	50
Figure 81- Trigger set as Sensor Trigger Type	51
Figure 82- Sensor Type Selected with a Range of Values.....	52
Figure 83- Selected Sensor Type is Digital Input.....	52
Figure 84- Reports list.....	53
Figure 85- Report graph of an individual sensor	53

Figure 86- Report showing sensor alert trends 54
Figure 87- Report summary data for a sensor 55
Figure 88- User settings to enable Recording..... 56
Figure 89- Recording list..... 56
Figure 90- About menu 57
Figure 91- Click on Tray icon 58
Figure 92- Exit the program 58
Figure 93- Screenshot from an iPad 59
Figure 94- Screenshot from a smartphone 60
Figure 95-About page 61

INTRODUCTION

E-MNG-SH is a self-hosted Software program that provides an easy-to-use, unified interface for monitoring and configuring up to 3,000 E-16D, E-5D, E-2D, E-MICRO-TRH(P) and E-1W(P) monitoring systems (Devices) and all connected sensors (internal, external, digital input and IP sensors and output relays via Ethernet. Supported IP sensors (when connected to Devices) include E-MICRO-TRH(P) and E-1W(P). The Software is installed on a Windows-based server or computer (the Server) to actively poll all Devices for status information and alerts. Any computer, smartphone, or tablet with a web browser can be used to access the Software. All enabled users can be kept up to date on sensor statuses and be alerted instantly when a sensor goes out of range of a configurable threshold.

Features:

- Devices may be monitored individually or in a group
- Display values and status for individual sensors or list of sensors.
- Supports HTTP REST API to poll and download sensor data with response in JSON format.
- Unlimited number of users can access the Software program at the same time.
 - Users can configure their own Dashboards to display the data relevant to them and the window arrangement.
- Customize Dashboards to display Device status, sensor data, gauges, graphs, maps and IP camera snapshots.
- Any computer, smartphone, tablet with a web browser installed can be used to access the Software.
 - Access is operating system independent through the HTML5 user interface on the computer/smartphone/tablet's web browser.
 - No clients or special apps to install.
- Sends email and/or SMS alert messages.
 - Supports all email servers, including Gmail.
 - SMS providers supported: Twilio, Sinch
 - Customize messages for each sensor by creating message templates.
- Self-hosted Software – ideal for users in industries that require local Software management solutions for security or data privacy purposes.
- Plot the placement of E-LLDC-xx Liquid Location Detection Sensor Cables on floor plan maps to visually see the specific location of liquid presence when detected.

Software Requirements:

- Windows 7/8/10/11 32 or 64-bit, Windows Server 2008/2012/2016/2019/2022 32 or 64-bit.
- Requires minimum firmware version 4.15 or later in E-xD Devices. We recommend version 4.19.
- Requires minimum firmware version 3.28 or later in E-MICRO-TRH(P) Devices.
- Requires minimum firmware version 3.10 or later in E-1W(P) Devices.

Note: We recommend the server/computer is protected by a firewall and anti-virus software if the server /computer is going to be accessed from the internet..

Server Roles and User Access:

One user is assigned as Super Admin to register the license and complete Software setup, plus has access to all Admin privileges.

Users with Admin access have privileges to add/delete E-xD Devices, edit sensors, set up Dashboards, acknowledge/dismiss alerts, simulate alerts, view logs, view sensor data, and monitor Dashboards. Admins can also add/edit/delete users (Administrators and Operators). Any number of users can be assigned as Admin.

Users with Operator access can acknowledge/dismiss alerts, view logs and sensor data, and monitor Dashboards. An unlimited number of users can be assigned as Operator.

Users with Read Only access can view alerts, logs, sensor data and monitor Dashboards. An unlimited number of users can be assigned as Read Only.

Virtual Machines

The E-MNG-SH self-hosted Software program now supports a floating Virtual Machine-friendly license.

Version with Non-Renewing License

To use a version of the self-hosted Software program that does not require monthly license renewal, order E-MNG-SHNR. The server still needs to have access to the internet for trial activation but offline activation for this version is explained on page 7.

MATERIALS

Materials supplied with this package:

NTI E-MNG-SH ENVIROMUX Self-Hosted Management Software including:

- NTI ENVIROMUX-Management-Software-Installer_Vx.x.x.x_x64.exe or
NTI ENVIROMUX-Management-Software-Installer_Vx.x.x.x_x86.exe (vx.x.x.x = the version number)
The current version number is 1.4.11.0.
- Adobe pdf file of this manual

Note:

x86 is for 32 bit servers or computers which can only run 32 bit Windows OS and limits the maximum RAM size to 4GB.

x64 is for 64 bit servers or computers which run 64 bit Windows OS and has a much larger RAM size limit.

LIMITATIONS

- The Management Software:
 - Managing Device sensors on cascaded Devices are not supported currently.
 - Internet Explorer does not work with the E-MNG-SH Software

DOWNLOAD

To get the installer, go to our [website](#) .

- If you wish to evaluate the software, click on "**Request Server Software Evaluation**" and fill out the registration form. We will send the files and you can install it as described under "Installation".
- To purchase the software, you can go to our website or contact an authorized representative or NTI sales associate directly at 330-562-7070. NTI will email you links to the software and a link to request a license activation key.

Self-Hosted Enterprise Environment Monitoring System Management Software

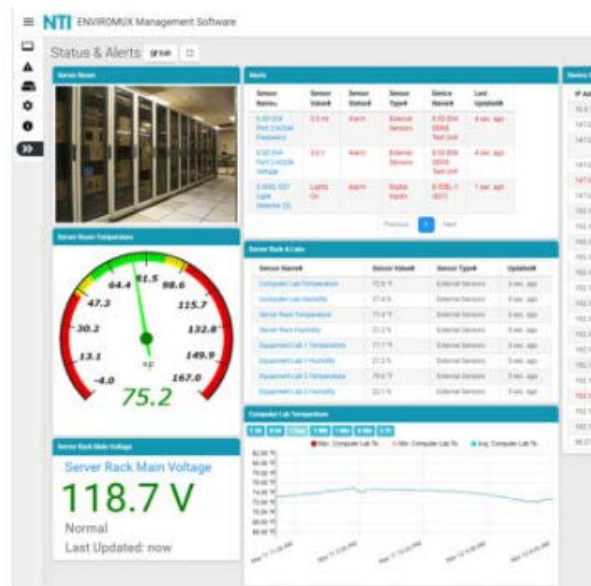
Monitor and configure up to 3,000 ENVIROMUX environment monitoring systems and all connected sensors. Access from anywhere using a web browser on a computer, smartphone, or tablet. No clients or special apps to install.

Request Server Software Evaluation

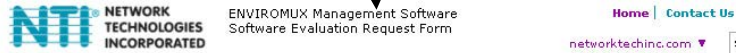
(Requires ENVIROMUX unit)

View Online Demo

(Does NOT require ENVIROMUX unit)



E-MNG-SH Self-Hosted Enterprise Environment Monitoring Software



Products > Self-Hosted ENVIROMUX Management Software > ENVIROMUX Management Software Evaluation

E-MNG-SH Self-Hosted ENVIROMUX Management Software Evaluation

*** Required Fields**

End User Information

*First Name *Last Name

*Company

*Street Address

*City *State/Province

*Zip/Postal Code *Country

*Phone

*E-mail

*Confirm E-mail

*How many ENVIROMUX units do you plan on managing?

End User License Agreement

Network Technologies Incorporated (NTI)
 ENVIROMUX Management Software Software
 End User License Agreement

You, as the Customer, agree as follows:

* I Agree to the End User License Agreement I Do Not Agree

Submit

Figure 1- Registration Form

Whether you are evaluating the software, or purchasing it, you will receive an email with links for a download of the software. **NOTE: The download exe files can only be accessed and downloaded once.** Please be sure that you will be able to save the files to a local computer prior to using the links.

The email will also include the serial number for your copy of the software. Be sure to make note of it as you will need to refer to it when you request the license key or if you call for assistance with the software.

INSTALLATION

To install the Software on a Windows-based server or computer, double-click the appropriate version of ENVIROMUX-Management Software-Installer. (No need for Administrator privileges).

- For a 32 bit computer/server install ENVIROMUX-Management-Software-Installer_ Vx.x.x.x _x86.exe.
- For a 64 bit computer/server install ENVIROMUX-Management-Software-Installer_ Vx.x.x.x _x64.exe

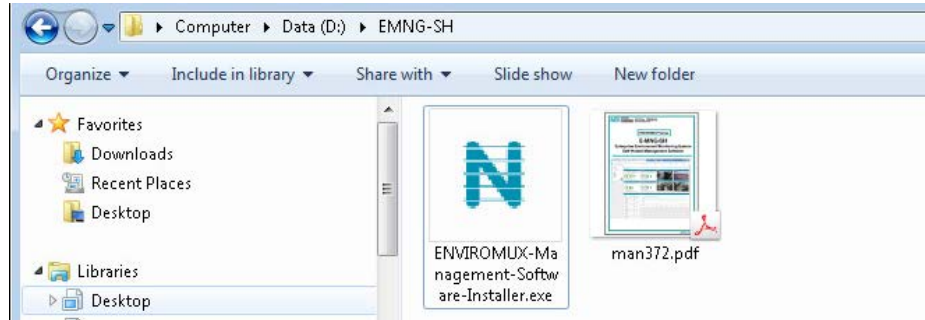


Figure 2- Locate the installation file on your local hard drive

Click to "Agree".

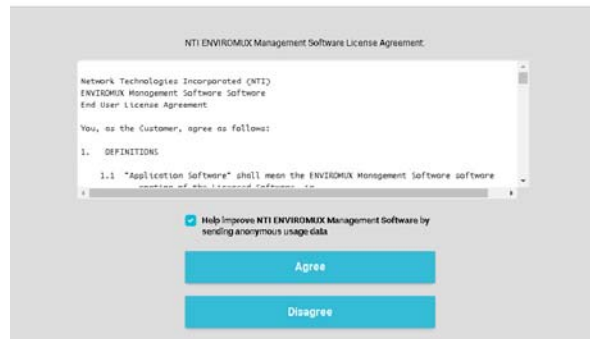


Figure 3- Agree to terms

Choose whether to install the software as an application or as a service. Installing as a service is **strongly recommended**. As an application, you will need to open the application each time the server it is installed on is powered ON, and only then will you be able to access it from other devices. As a service, the software will open and be ready to access any time your power the server ON. If you click "Cancel", the software will not be installed.

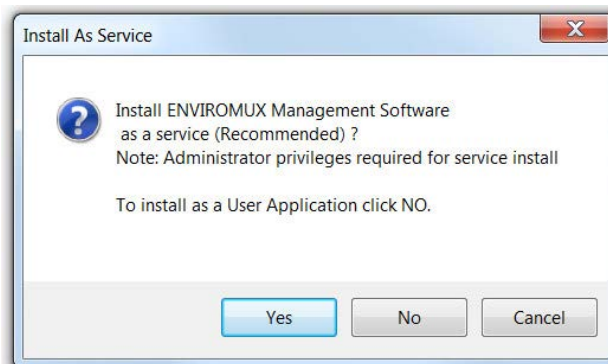


Figure 4- Install software as a service, or an application

The email address needs to be a valid email address. The password will be whatever you want to use to access the E-MNG-SH Software. After entering that information, click "Set Admin".

The screenshot shows a 'Create Admin Account' form. At the top, it says 'Create Admin Account'. Below that, a note reads: 'Enter email address of administrator account. This is the email to register for license and to receive software alerts'. There are three input fields: 'Email Address' (with a placeholder 'Email'), 'Password' (with a placeholder 'Password'), and 'Confirm Password' (with a placeholder 'Confirm Password'). At the bottom of the form is a blue button labeled 'Set Admin'.

Figure 5- Create Admin login account

You will be prompted for a license key. To request a license key, [contact NTI](#). This key will be unique to this Windows user and installation of the management program. You will need the serial number for the software provided on the email that provided the software download. If you already have a license key enter the license key here and click "Activate License".

The screenshot shows the 'License Activation' screen. It has a title 'License Activation' and a sub-header 'Please enter your license key to activate'. There is a text input field with a placeholder 'XXXX-XXXX-XXXX-XXXX-XXXX-XXXX'. Below this are two buttons: 'Activate License' and 'Activate 30 Day Trial'. The text 'OR' is centered between the two buttons. Below the 'Activate 30 Day Trial' button, it says 'Activate Free 30 Day Limited Trial'. An arrow points from the 'Activate 30 Day Trial' button to a 'Next' button on the next screen. A callout box on the right contains the text: 'The E-MNG-SH server needs to have access to the internet for license activation and trial activation. Offline activation for E-MNG-SHNR is described on page 7.' The next screen shows 'Activated: Trial. Expires: 21 Mar 2021' and the 'Next' button. At the bottom of the first screen, it says '© 2021 Network Technologies Inc. All Rights Reserved'.

Figure 6- Activation screen

If you choose to just demo the Software at this time, click "Activate 30 Day Trial". You can activate the license later by going to the Settings -> Application Settings page. With a trial activation, the software will be fully functional for 30 days, after which you will need to activate the license to resume operation. None of your settings will be lost.

Note: The 30 Day Trial activation will only work if the computer the ENVIROMUX Management Server is on is connected to the internet during the trial activation.

If the license key you received is for the E-MNG-SHNR and you have installed the ENVIROMUX Management Server to a computer that is offline, when you enter the key you will be prompted for "Offline Activation" and a "License File" (see page 7).

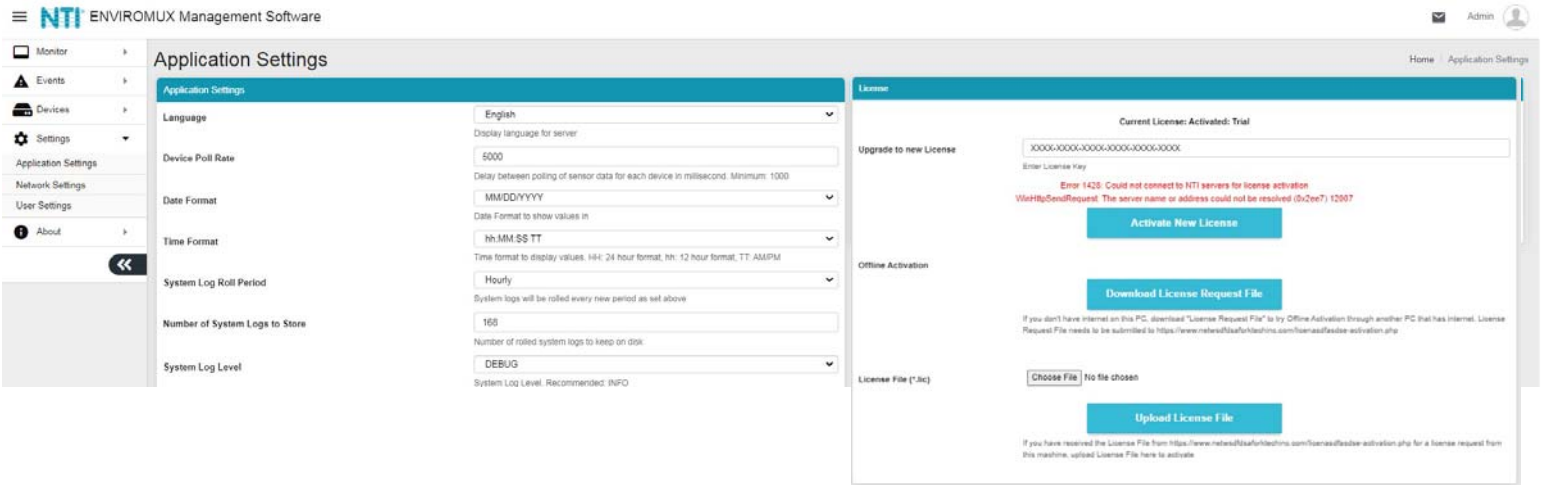


Figure 7- Activate later

If using an E-MNG-SH license, once the software license is activated, the software will renew the license lock every 30 days. If the Server is not connected to the internet, the software will continue to function for 30 days after the first attempt to renew the lock. After 5 days of unsuccessful attempts (once each hour), the following screen will replace the standard License Activation screen. Within the next 25 days you will need to connect the Server to the internet and have it auto-renew or manually click the "Try License Renewal" button.

Notifications will be sent to registered users via email when there is only 14 days, 7 days and 2 days left before expiration.

Failure to successfully renew the license will result in the software becoming unusable.

Note: To access the activation server an exception may be needed in your firewall by domain name with domain www.networktechinc.com port 443

If exception cannot be added by domain name and IP address is really necessary then allow 65.243.248.0/25 subnet port 443 (this format automatically includes 65.243.248.0 thru 65.243.248.127 in the exception)

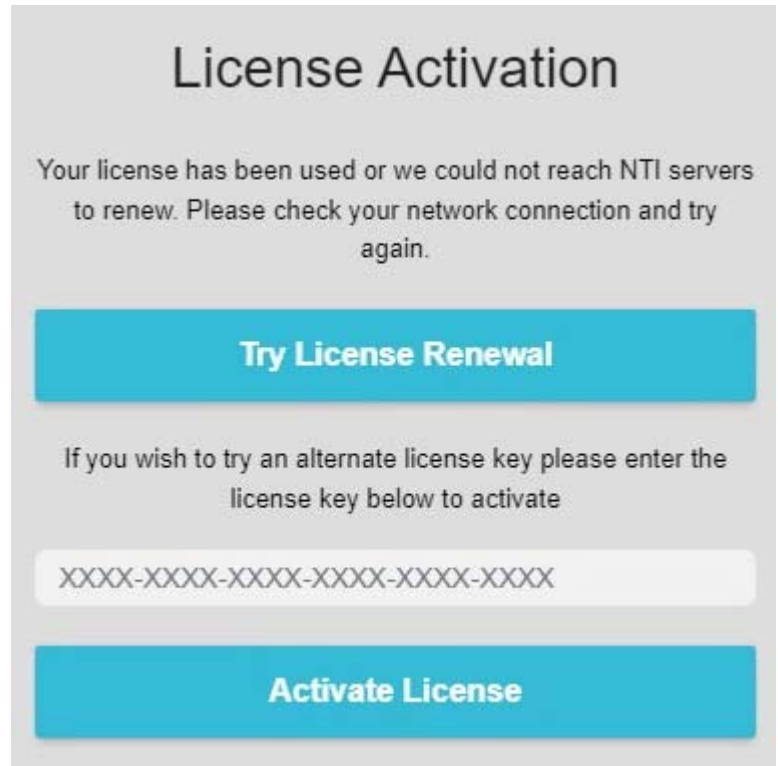


Figure 8-Manually Renew License

Alternatively, you can purchase [E-MNG-SHNR](#) which is a version of the software that can be activated using internet connection or offline and does not require a license lock renewal in order to continue functioning. (Offline activation for E-MNG-SHNR is described on page 7.) Call **NTI at 330-562-7070** or contact your NTI sales representative for more details.

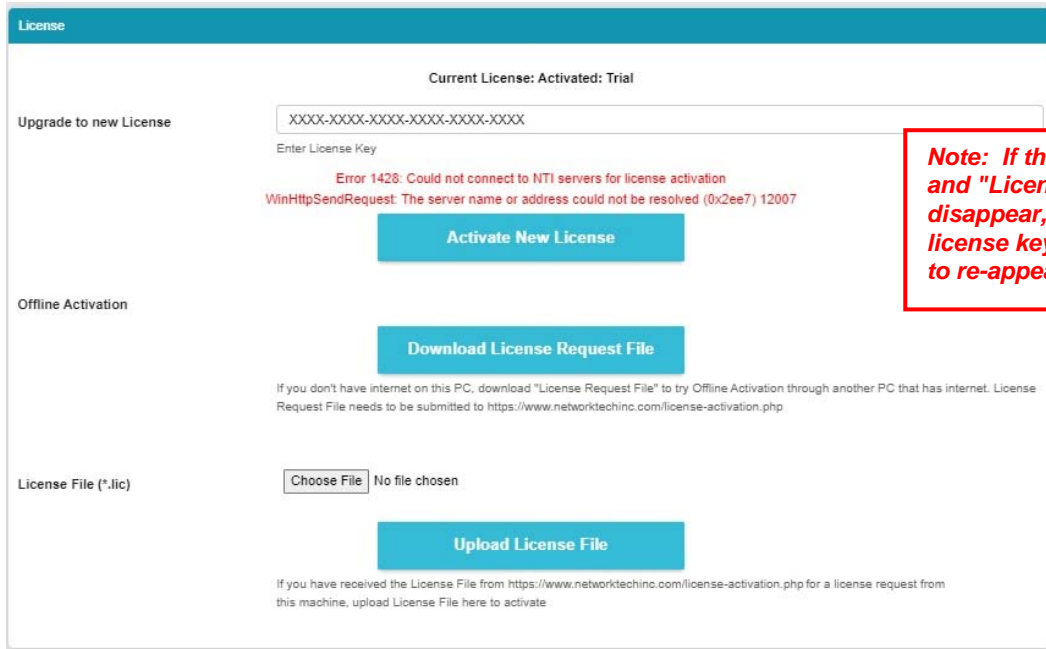
When installed as a service, if the software crashes for any unforeseen reason, it is set to auto restart up to 3 times within a three hour window. If it crashes more than three times, it will not auto restart. Contact NTI for assistance with any crash.

Cloning Software

If the Software is installed on a virtual machine (VM) and this VM needs to be cloned to another computer, this can be done and the Software will continue to work with the same activation license, however only one instance of the activated software will function at a time. When you clone a VM like this, Please be sure to shutdown the old software or uninstall it, before the next license renewal. If you continue to run both old and cloned software, with the same license, they will interfere with each other and one of them will get locked out.

Offline Activation

If the license key you received is for the E-MNG-SHNR, and you are trying to activate the software offline, when you enter the key the activation will fail and you will be prompted for "Offline Activation" and a "License File".



Note: If the "Offline Activation" and "License File" prompts disappear, simply enter the first license key again to cause them to re-appear.

Figure 9- Offline Activation prompts

Click once on "Download License Request File". The ENVIROMUX Management Software will automatically save a **xxxx.req** (License Request File) to the browser's configured download directory. Transfer that **xxxx.req** file to a computer that has internet access that can connect to the NTI website.

From a browser on the internet-connected computer, go to the Offline Activation URL <https://www.networktechinc.com/license-activation.php> and upload the **xxxx.req** file (License Request File). Make sure the computer does not have any internet filters in place that would block a download. You will receive a **xxxx.lic** (License File) in return.

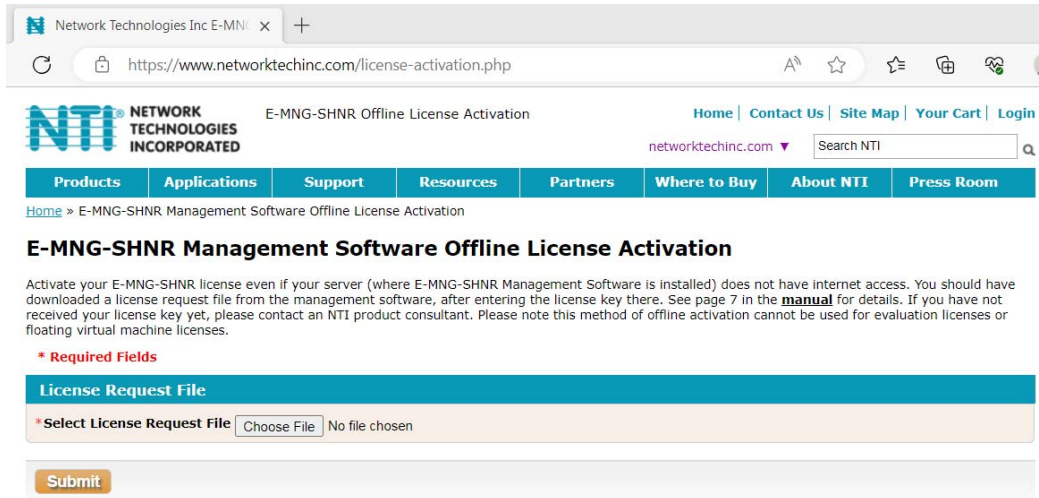


Figure 10- Offline License Activation website

Transfer this License File back to the ENVIROMUX Management Software server, click "Choose File" and select the License File downloaded. Now click once on "Upload License File" to upload and activate the ENVIROMUX Management Software license file.

Note: If the "Offline Activation" and "License File" prompts disappear, simply enter the first license key again to cause them to re-appear.

Installation Continued

Once the program is installed, a teal "N" will appear on your desktop and a shortcut on the taskbar. A shortcut will also be added to the "Start Menu"-> All Programs list.



Note: This is a web-based software. The icon is used only for starting the software on a server. Management and monitoring of the software is done through the browser.

Note: Ensure that the server firewall allows TCP port access as set in the application settings (see page 9).

Any computer, smartphone, or tablet with a web browser installed can be used to access the E-MNG-SH software. Access is operating system independent through the HTML5 user interface on the computer/smartphone/tablet's web browser.

To access the E-MNG-SH, simply enter in the IP address or Server host name of the ENVIROMUX Management System into the URL bar on your browsing computer/smartphone/tablet. If your computer/smartphone/tablet has network access to the E-MNG-SH, you will be presented with the login screen. The server can be configured by anyone with access to it that has administrative privileges (provided the server is ON and the E-MNG-SH is running).

Users with only "Operator" privileges can assess the E-MNG-SH and view the monitored Devices, but they cannot change any settings. For more on privileges, see page 19.

The Software will open to two empty lists under the Home page. The Home page will display the IP addresses of the Devices being monitored and a list of any alerts associated with sensors being monitored on those Devices.

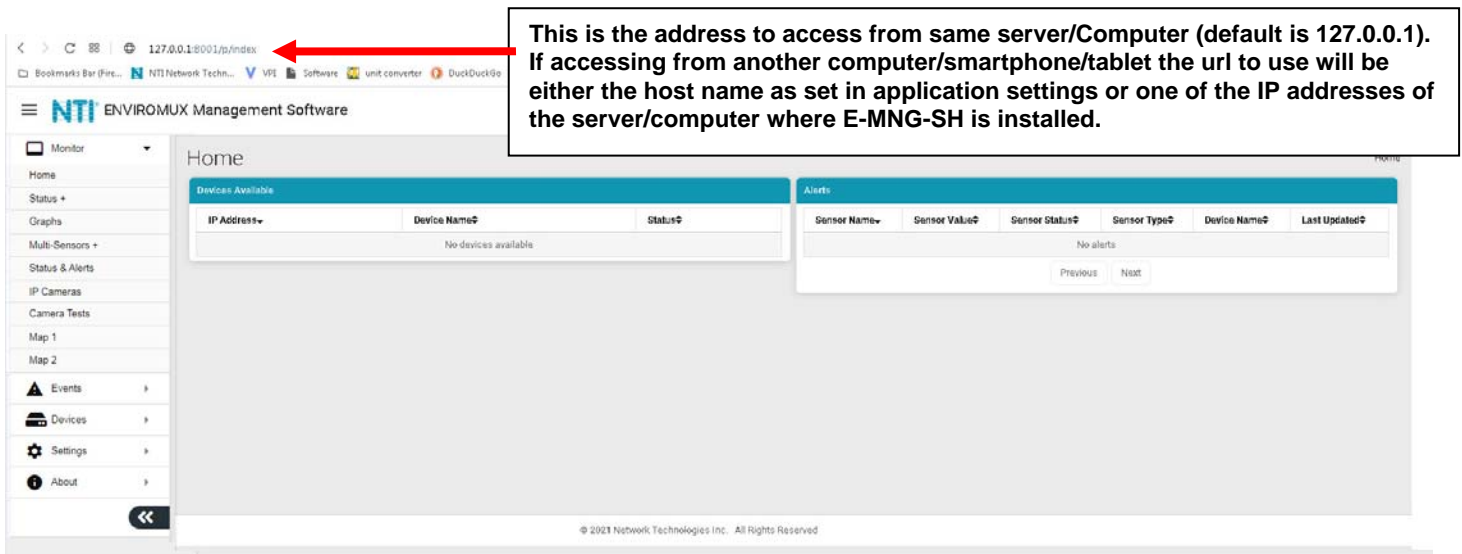


Figure 11- View of the Home screen

To configure the E-MNG-SH to manage your devices and sensors, go to the Settings pages. Under Settings you will find three submenus,

- Applications Settings
- Network Settings
- User Settings

Make sure all of the details for operating the E-MNG-SH are as desired.

Application Settings

The screenshot shows the 'Application Settings' window with the following configuration:

- Language:** English (dropdown)
- Device Poll Rate:** 5000 (text input)
- Date Format:** MM/DD/YYYY (dropdown)
- Time Format:** hh:MM:SS TT (dropdown)
- System Log Roll Period:** Hourly (dropdown)
- Number of System Logs to Store:** 168 (text input)
- System Log Level:** DEBUG (dropdown)
- Send Anonymous Usage Stats:** (checkbox)
- Upload Crash Reports (Recommended):** (checkbox)

A blue 'Save' button is located at the bottom center of the settings panel.

Figure 12- Application Settings

Application Setting	Description
Language	Only English is available at this time
Device Poll Rate	Delay time between polling data for each sensor attached to each Device, measured in milliseconds (Min. is 1000)
Date Format	Format of how the date will be displayed in the Software- six to choose from
Time Format	Format of how the time will be displayed in the Software- four to choose from
System Log Roll Period	System Logs will be rolled as often as set here- Hourly, Daily, Weekly, Monthly, Quarterly or Yearly
Number of System Logs to Store	Number of system logs to store on disk- There is no limit.
System Log Level	Select the types of messages that will be logged in the system.log file on Software (see below)
Send Anonymous Usage Stats	Place a checkmark if you approve of sending anonymous usage reports to NTI to help improve this Software
Upload Crash Reports	Place a checkmark in the box to have your Software upload crash reports to NTI and to request a fix. We strongly recommend enabling upload of crash reports. If disabled, NTI will not be able to help with any fixes because of a possible Software crash

System Log Level

- CRITICAL only logs messages that cause Software to exit
- ERROR logs messages with Device, server communication, sensor or user errors including CRITICAL messages
- WARNING will log messages including possible issues with setup or communication including ERROR & CRITICAL
- INFO logs informative messages including WARNING, ERROR & CRITICAL
- FINE logs extra informative messages that logs Device communication including INFO,WARNING, ERROR & CRITICAL
- DEBUG logs all messages which may be too verbose for normal usage but helps with debugging any software issues, including FINE, INFO, WARNING, ERROR & CRITICAL

Don't forget to click "Save" once this is complete.

Network Settings

Network Settings

Network Settings

-- General Network Settings

Server Host Name
Host name to use on all urls. This host name should be associated with atleast one of the IP Addresses of this server

Restrict to above Host Name
Restricts all access to use host name only. **If host name is incorrect, you will not be able to access the server**

HTTP Port
HTTP port on which the software should listen to (Restart Required)

HTTPS Port
HTTPS port on which the software should listen to

-- Email/SMTP Settings

SMTP Server Type
SMTP Server Type you want to use for sending emails

SMTP Server
SMTP Server address or domain that you want to use to send emails

Email From Address
SMTP email address that NTI ENVIROMUX Management Software should use to send emails

SMTP Encryption Type
Encryption type to be used with above SMTP Server

SMTP Server Port
SMTP Port to be used with above encryption setting for server. Usual port #- None: 25, TLS: 465, STARTTLS: 587

SMTP Server Requires Authentication
Check this box if SMTP server requires authentication to send email

SMTP Username
SMTP authentication username

SMTP Password
SMTP authentication password

Confirm SMTP Password
Confirm above SMTP authentication password

-- SMS Settings

SMS Provider
Select your SMS gateway provider to be able to send SMS alerts. Other SMS settings will be given by your SMS Provider

SMS From Number
Number to send SMS From. This is usually a phone number assigned to your account

Service Plan ID
Plan ID string is available from Home -> Communication APIs -> SMS -> Service APIs

Bearer API Token
API Token is available from Home -> Communication APIs -> SMS -> Service APIs

+ Certificate Settings

Figure 13- Network Settings

Network Setting	Description
Server Host Name	If you want to access the server with a specific domain name, please set that domain name here The DB browser can be used to recover from an incorrect host name. (See page 18)
Restrict to Above Host Name	Enable the Host Name assigned to the Server- restricting access to the Server by using the Host Name only.
HTTP Port	Port on which the Server will be connected with . This is the default HTTP port. If you change this, you will need to add ":<port#>" to the end of the IP address. i.e. If you change it to 85, you will need to enter <IP ADDRESS>:85 in the URL bar to access the Server.
HTTPS Port	HTTPS port on which the Server will be connected with.

Network Setting	Description
SMTP Server Type	Select "Custom" or "Gmail" (Most of the settings below are only for a "Custom" SMTP server)
SMTP Server	Enter a valid SMTP server address
Email From Address	Enter email "From" address to be used by E-MNG-SH to send messages from
SMTP Encryption Type	Choose encryption type from dropdown menu: STARTTLS, TLS or None
SMTP Server Port	Enter port used by SMTP Server (default is 587 with STARTLS encryption)
SMTP Server Requires Authentication	Place a checkmark in here if the SMTP Server requires authentication to send messages
SMTP Username	Enter the SMTP Username for the E-MNG-SH-if encryption is checked
SMTP Password	Enter the SMTP Password for the E-MNG-SH- if encryption is checked
Confirm SMTP Password	Re-enter the SMTP Password for the E-MNG-SH

Gmail SMTP Server

When "SMTP Server Type" is set to Gmail, a valid Gmail address needs to be entered into the "Email From Address" field. With that field filled, click the "Authorize with Google" button. Then follow the prompts to get Gmail authorized.

The screenshot shows the 'Email/SMTP Settings' section of the management software. It includes a dropdown menu for 'SMTP Server Type' set to 'Gmail', a text input field for 'Email From Address', and a 'Current Auth Status' indicator showing 'Not Authorized'. A prominent 'Authorize with Google' button is located at the bottom right of the settings area.

Figure 14- SMTP Server Type- Gmail

"Current Auth Status" will mention the Authorization status for Gmail. If Authorization is expired, it will automatically renew unless authorization has been revoked by the user. If not authorized or auto renew of authorization is failing, you have to Reauthorize again by using below procedure (shown in screenshots). Any email failures and associated reasons will be logged in the system.log file

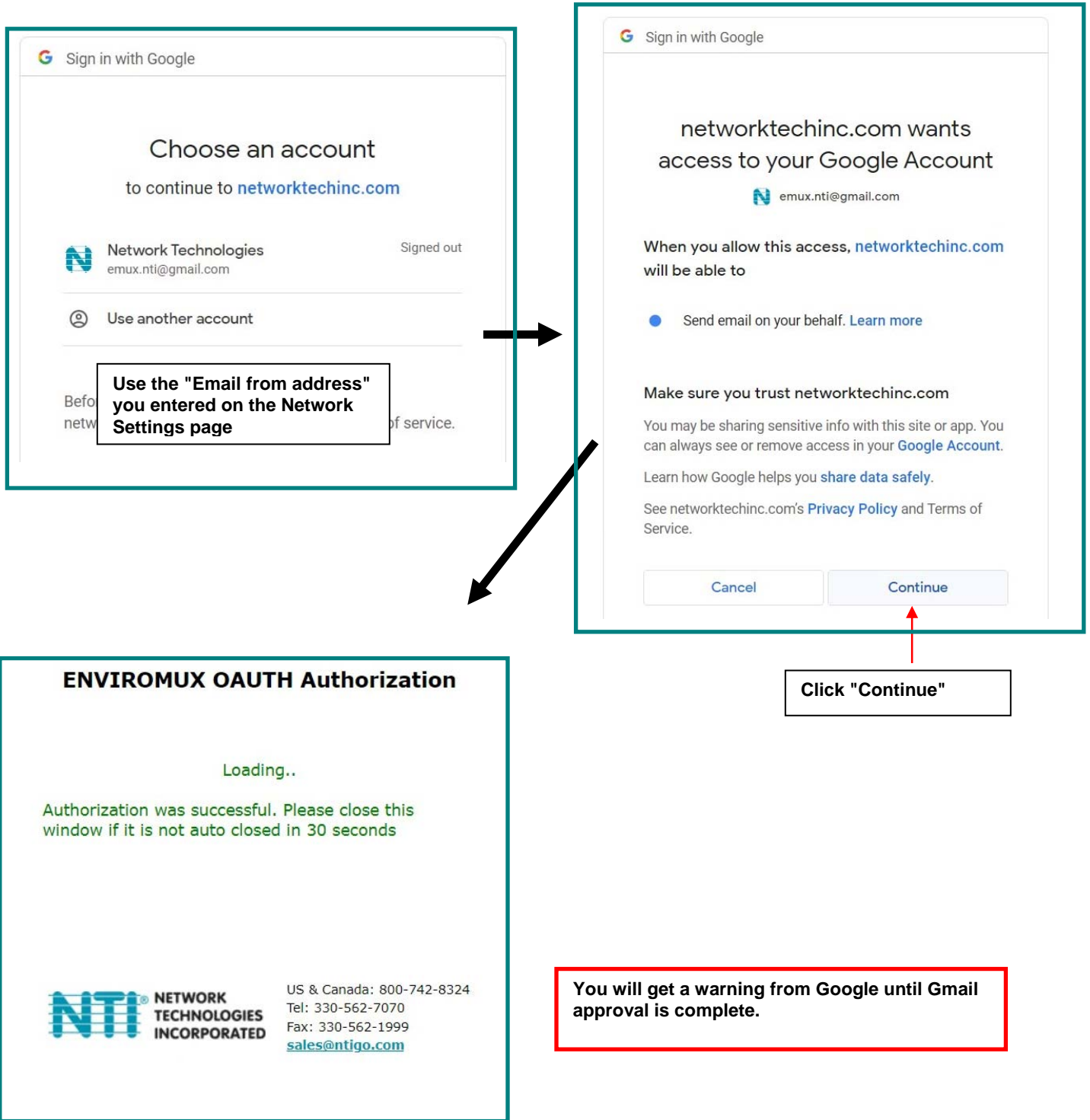


Figure 15- Steps in getting Gmail Authorization

SMS Settings

SMS Provider: Twilio
 Select your SMS gateway provider to be able to send SMS alerts. Other SMS settings will be given by your SMS Provider

SMS From Number: XXXXXXXXXXXX
 Number to send SMS From. This is usually a phone number assigned to your account

Account SID: AC448ac629d1add1a16fac00892b8ab7c
 SID string is found in Accounts -> Keys & Credentials -> API Keys & Tokens of your Twilio account

Auth Token:
 Auth token string is found in Accounts -> Keys & Credentials -> API Keys & Tokens of your Twilio account

Figure 16- SMS Settings for Twilio

SMS Settings

Network Setting	Description
SMS Provider	Click the down arrow to select your SMS Provider. Choose between Sinch, Twilio and None.
SMS From Number	Enter the phone number provided by your SMS Provider.
Account SID/Service Plan ID	Enter the ID number provided by your SMS Provider.
Auth Token/Bearer API Token	Enter the API Token provided by your SMS Provider.

Tips for Twilio SMS Signup:

If asked for Programming Language use “Other”, for integration use Own Code and No hosting options is required. You will be assigned a phone number for your account or you have to sign up for a phone number with relevant authorizations for your country of Choice. For example in USA you have to sign up for A2P 10DLS to send SMS to unverified numbers. If you want to use a short code you have sign up for relevant short code within Twilio

Get your Account SID and Auth Token and enter in E-MNG-SH software
 You can find these details in your Twilio Console page -> Account Info

By default Twilio allows sending SMS to numbers only in the home country you selected during signup
 To send internationally you have to select the desired countries in Geo Permissions by going to Console -> Develop -> Messaging -> Settings -> Geo Permissions

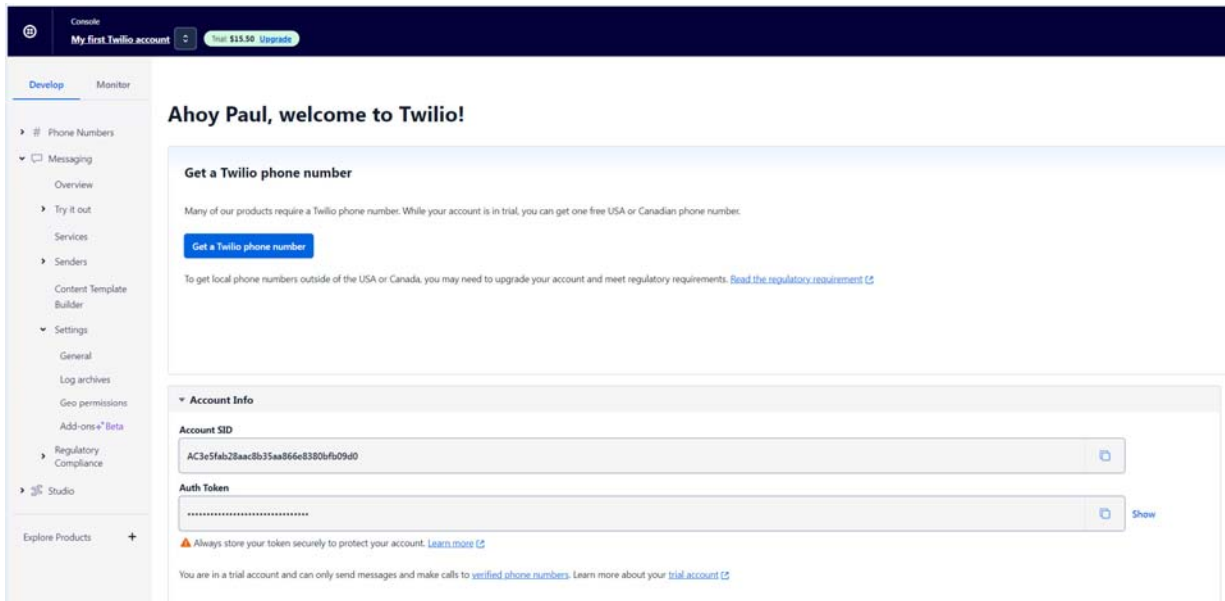


Figure 17- Twilio Console Page

Figure 18- Twilio- Setting Geo Permissions

Figure 19- SMS Settings for Sinch

Click "Send Test SMS" after saving your SMS Settings. If there is an SMS delivery failure, reasons for it will be logged in system.log. If the SMS delivery failed and it shows successful delivery in system.log, please check your SMS Provider account, as it may be held up due to a billing/authorization issue.

Certificate Settings

Menu changes based on the option selected. E-MNG-SH provides several ways to install an x509 certificate to work with HTTPS secure browsing.

a. Self-Signed with Signer Option as E-MNG-SH Signed:

This is the most simple option to setup and is the default. E-MNG-SH will generate the key, CA certificate and Server certificate as needed. Users only have to Download and install the CA certificate provided by E-MNG-SH

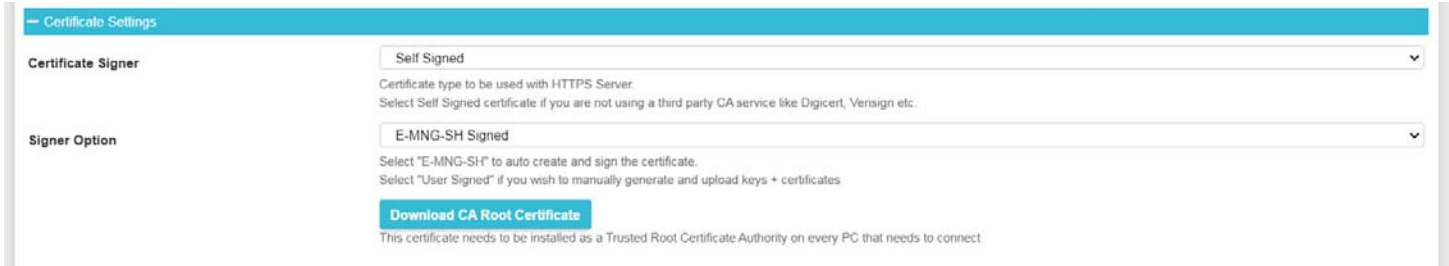


Figure 20- Self-signed Certificate Setting Options

b. Self Signed with User Signed Certificate:

E-MNG-SH understands you want to generate your own key, server certificate and CA certificate. You can use a procedure similar to [How to Create x509 Certificate](#) (Section I) to generate all 3 files and upload them to E-MNG-SH. Here we assume the CA certificate you upload is already set as Root Certificate for the users connecting to server.

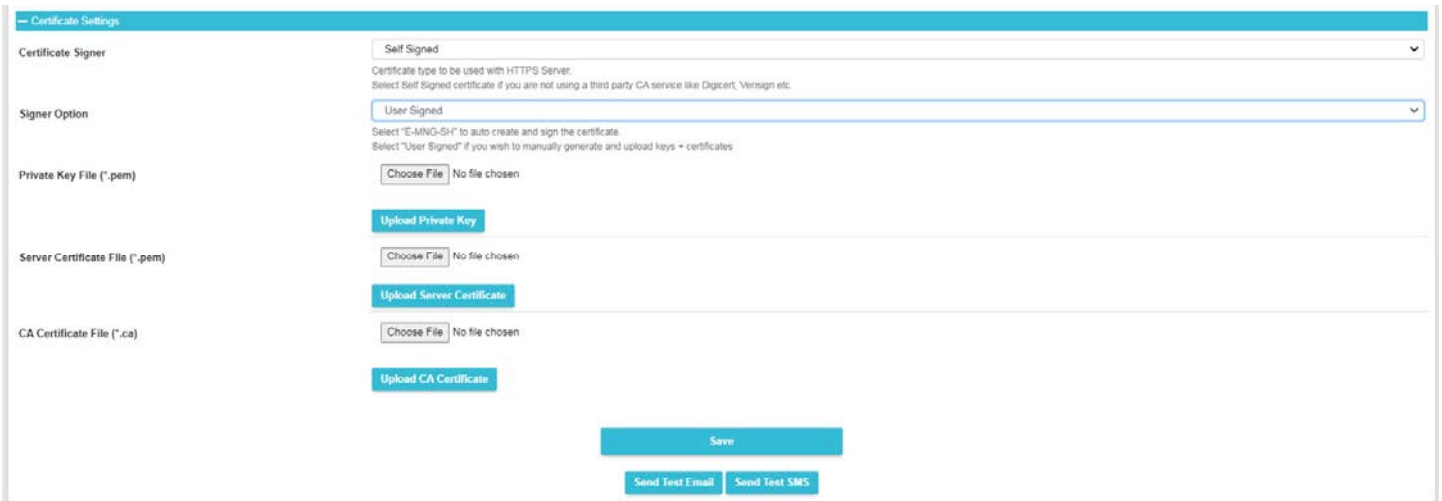


Figure 21- Self-signed and User Signed Setting Options

c. CA Signed with Generate CSR option:

Here you will be using a third party CA whose certificate will already be uploaded to your user's PC's/Devices like DigiCert, Verisign etc. In this case the key file will be generated by E-MNG-SH. These external CA expect only a CSR file, containing server details, to generate the server certificate for you. You can get this CSR file by filling out the required details. You have to upload this CSR file to your CA and get your server certificate as well as their CA certificate. Upload both certificates to E-MNG-SH and you are set.

Please note: You have to upload the server certificate for the same CSR you previously generated meaning you cannot regenerate a CSR after a server certificate has been created. Otherwise the key will mismatch the server certificate.

The screenshot shows the 'Certificate Settings' interface. The 'Certificate Signer' dropdown is set to 'CA Signed'. Below it, a note states: 'Certificate type to be used with HTTPS Server. Select Self Signed certificate if you are not using a third party CA service like Digicert, Verisign etc.' The 'Certificate Option' dropdown is set to 'Generate CSR and Upload Certificate', with a sub-note: 'Select a procedure to have the server certificate signed by CA'. The form includes input fields for Country Name, State/Province Name, Locality Name, Organization, Organization Unit, Common Name, and Email Address. At the bottom, there are buttons for 'Generate and Download CSR', 'Choose File' (No file chosen) for the Server Certificate File, 'Upload Server Certificate for CSR', 'Choose File' (No file chosen) for the CA Certificate File, and 'Upload CA Certificate'.

Figure 22- CA Signed and Generate CSR Setting Options

d. **CA Signed with Uploading keypair & Certificate:**

This case is same as step C, except you will have to generate the key yourself and also generate the CSR for it using a step similar to [How to Create x509 Certificate](#) (Section II) . You will have to upload Key, server certificate and CA certificate in this case.

The screenshot shows the 'Certificate Settings' interface. The 'Certificate Signer' dropdown is set to 'CA Signed'. Below it, a note states: 'Certificate type to be used with HTTPS Server. Select Self Signed certificate if you are not using a third party CA service like Digicert, Verisign etc.' The 'Certificate Option' dropdown is set to 'Upload Keypair and Certificate', with a sub-note: 'Select a procedure to have the server certificate signed by CA'. The form includes a 'Choose File' (No file chosen) button for the Private Key File (*.pem), a button for 'Upload Private Key', a 'Choose File' (No file chosen) button for the Server Certificate File (*.pem), a button for 'Upload Server Certificate', a 'Choose File' (No file chosen) button for the CA Certificate File (*.ca), and a button for 'Upload CA Certificate'.

Figure 23- CA Signed with Upload Keypair and Certificate Setting Options

Please note if any certificate options are changed, it requires the E-MNG-SH server to be restarted to load new certificate details. Please refer the Shutting Down/Restarting section in this manual

Figure 24- CA Signed Certificate Setting Options

Network Setting	Description
Certificate signer	Certificate type to be used with HTTPS Server. Select self-signed certificate (x509) if you are not using a third party CA service like Digicert, Verisign, etc. CA signed certificate will provide more options.
Signer Option	Select between E-MNG-SH Signed and User Signed (If "User Signed" is selected- the fields above will appear)
Private Key File	Choose and upload a private key file in *.pem format.
Server Certificate File	Choose a server certificate and upload in *.pem format
CA Certificate File	Choose and upload a CA Certificate file in *.ca / *.crt format.

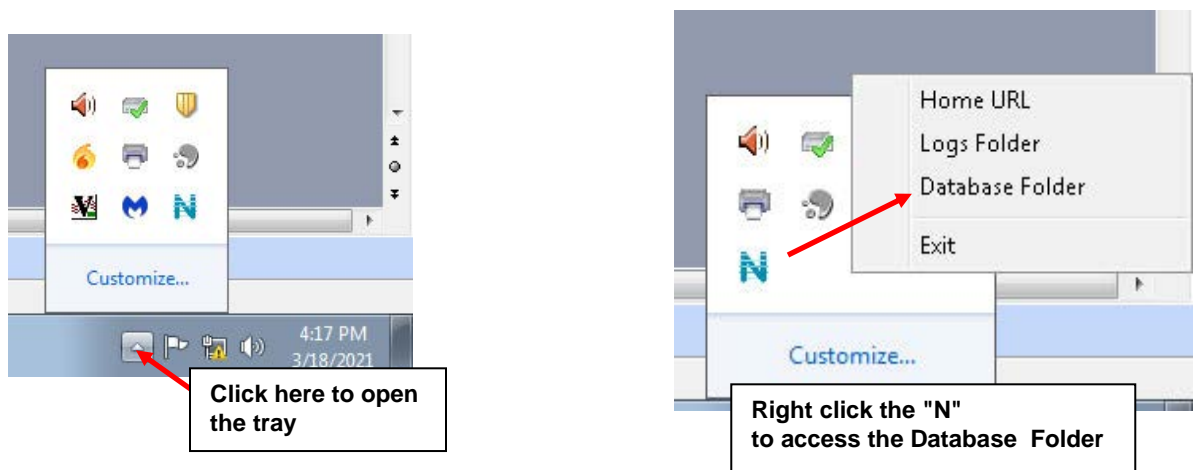
Don't forget to click "Save" once this is complete. You can test your settings by clicking "Send Test Email". An email will be sent to any configured users.

Figure 25- Security Configuration-X509 Certificate

Server Host Name

If you want to access E-MNG-SH with a specific domain name, please set that host + domain name (also referred to as FQDN (Fully Qualified Domain Name)) here (for example "monitor.enviromux.com"). This FQDN should be associated with at least one of the IP Addresses of this server or computer. In the event the FQDN set is incorrect and access is restricted to this FQDN (as set in "Enable Above Host Name"), you would not be able to login to E-MNG-SH. In this case you can correct the FQDN by following the below procedure.

1. Access the server or computer where E-MNG-SH is installed. Open the database folder and locate the "settings.db" file. (You can right click on the E-MNG-SH icon (teal colored "N") in the system tray to access the database folder.)



2. Exit E-MNG-SH software now
3. Open "settings.db" with any SQLite editor like DB Browser or DBeaver
4. Set the desired FQDN in "HOST_NAME" column of "EMANAGER_SETTINGS" table
5. Save these changes and close the file. Restart E-MNG-SH now and you should be able to login with a correct host name.

User Settings

There is a limit of 1000 users that can be configured to access the E-MNG-SH. To add users, go to Settings -> User Settings . Enter the first and last name, email address and password for that user to use to access the E-MNG-SH.

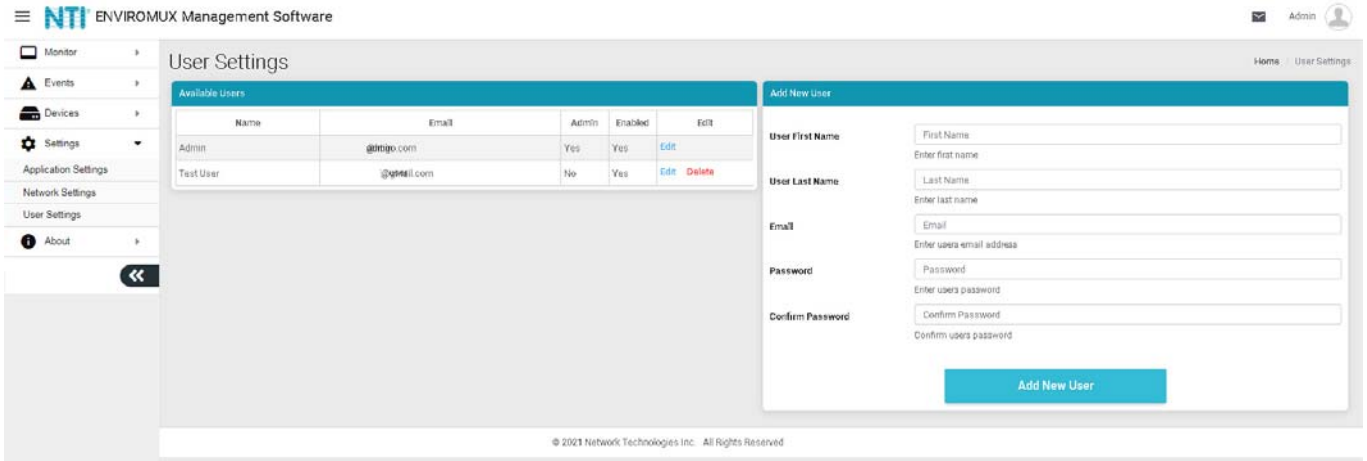


Figure 26- User Settings for Adding Users

Once a user has been established, click on "Edit" in the "Available Users" window to bring up the Edit User page and add additional information. You can also, instead, click on "Delete" to remove the user altogether.

First decide what access level this user will have:

Super Admin- This user cannot be deleted and is the same user used in license registration and managing the E-MNG-SH.

Admin - User has administrative privileges to make changes to the configuration of the E-MNG-SH

Operator- User only has access to the information provided on the E-MNG-SH. No changes can be made.

Read Only- User can see everything the E-MNG-SH has to offer, but cannot change any settings or add anything.

Note: Only Admin users can edit other user's passwords, the Operator users can edit their own password only

Enter a phone number (or two) if you want messages sent to this user's telephone via SMS (see page 13).

Be sure to check the "User Enable" block to give the listed user access to the E-MNG-SH.

Place a checkmark in "Sound Alerts" to enable the user to hear audible warnings about an alert being sensed while the user is monitoring a Dashboard.

Place a checkmark in "Enable Alerts" so the user can receive emails about sensor alerts or reports generated (page 39).

The Title, Department and Company are optional information that can be provided for reference.

On this page the user's password can also be changed. After entering, click "Set New Password".

When finished, be sure to click "Save User".

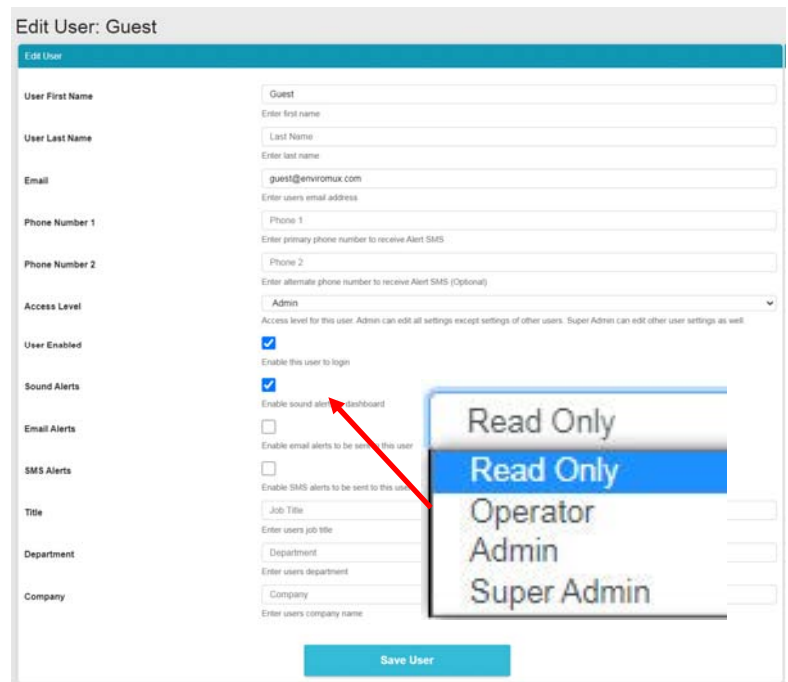


Figure 27- Edit user settings

DEVICES

Under Devices, in the menu, there are four options to select.

- Device Settings
- Sensor Settings
- Add or Remove Device
- Maps

The Device Settings page displays all the Devices you have configured to be monitored and the groups you have established for the management of those Devices. You can click on the IP Address of each to view status and adjust settings of each sensor in each device.

The screenshot shows the 'My Devices' interface. On the left is a 'Device Tree' with a 'Home' icon and three expandable categories: 'E-2D Units', 'E-5D Units', and 'E-16D Units'. On the right is a table titled 'Devices Available' with three columns: 'IP Address', 'Device Name', and 'Status'. The table contains seven rows of device information.

IP Address	Device Name	Status
10.0.1.16	Furnace Room E-2D	Normal
10.0.1.17	Compressor Rm. E-5D	Normal
147.0.27.197	E-16D Server Rack Monitor	Normal
147.0.27.207	E-2D Lab Room Environment Monitor	Normal
147.0.27.208	E-5D Server Rack Monitor	Normal
147.0.27.212	E-5D E04 DDNS Test Unit	Normal
147.0.27.218	E-2D P05	Normal

Figure 28- My Devices List

Next, under Sensor Settings, you have a "My Sensors" list of all sensors, IP addresses and cameras connected to the Devices being monitored.

The screenshot shows the 'My Sensors' interface. On the left is a 'Sensor Tree' with a 'Home' icon and several expandable categories including 'E-2D Units', 'E-5D Units', and 'E-16D Units'. On the right is a table titled 'Sensors Available' with a search bar at the top and three columns: 'Sensor Name', 'Sensor Type', and 'Device Name'. The table contains 20 rows of sensor information.

Sensor Name	Sensor Type	Device Name
1. E-2DB E08 Input Voltage	Internal Sensor	E-2DB E08
1.1. E-2DB E08 Temperature 1	External Sensor	E-2DB E08
1.2. E-2DB E08 Humidity 1	External Sensor	E-2DB E08
1.3. E-2DB E08 Dew Point 1	External Sensor	E-2DB E08
2.1. E-2DB E08 ACDCCLM Sensor 2-1	External Sensor	E-2DB E08
2.2. E-2DB E08 ACDCCLM Sensor 2-3	External Sensor	E-2DB E08
2.3. E-2DB E08 ACDCCLM Sensor 2-2	External Sensor	E-2DB E08
2.4. E-2DB E08 ACDCCLM Sensor 2-4	External Sensor	E-2DB E08
1. E-2DB E08 Digital Input 1	Digital Inputs	E-2DB E08
2. E-2DB E08 Digital Input 2	Digital Inputs	E-2DB E08
1. CPU250 Win Server 2016	IP Devices	E-2DB E08
1. E-16D-24V IPMI Rack Memory Free	SNMP Sensors	E-2DB E08
2. IPDU Output Relay 1	SNMP Sensors	E-2DB E08
3. NAS (NDATA) System Temperature	SNMP Sensors	E-2DB E08
4. NAS (NDATA) Fan 1 Speed (RPM)	SNMP Sensors	E-2DB E08
5. NAS (NDATA) Fan 2 Speed (RPM)	SNMP Sensors	E-2DB E08
1. E-2DB E08 Output Relay 1	Output Relays	E-2DB E08
1. Power Supply 1	Power Supplies	E-2DB E08
2. Power Supply 2	Power Supplies	E-2DB E08
1. Wanscam HW0041-1	IP Cameras	E-2DB E08
2. MXS 4K Camera MJPEG	IP Cameras	E-2DB E08

Figure 29- My Sensors List

Next is the "Add Or Remove Devices" page for adding more Devices to be monitored and adding groups to put the Devices into. Groups makes it easier to manage how the sensors and Devices will be monitored. From this page they can also quickly be removed from the list.

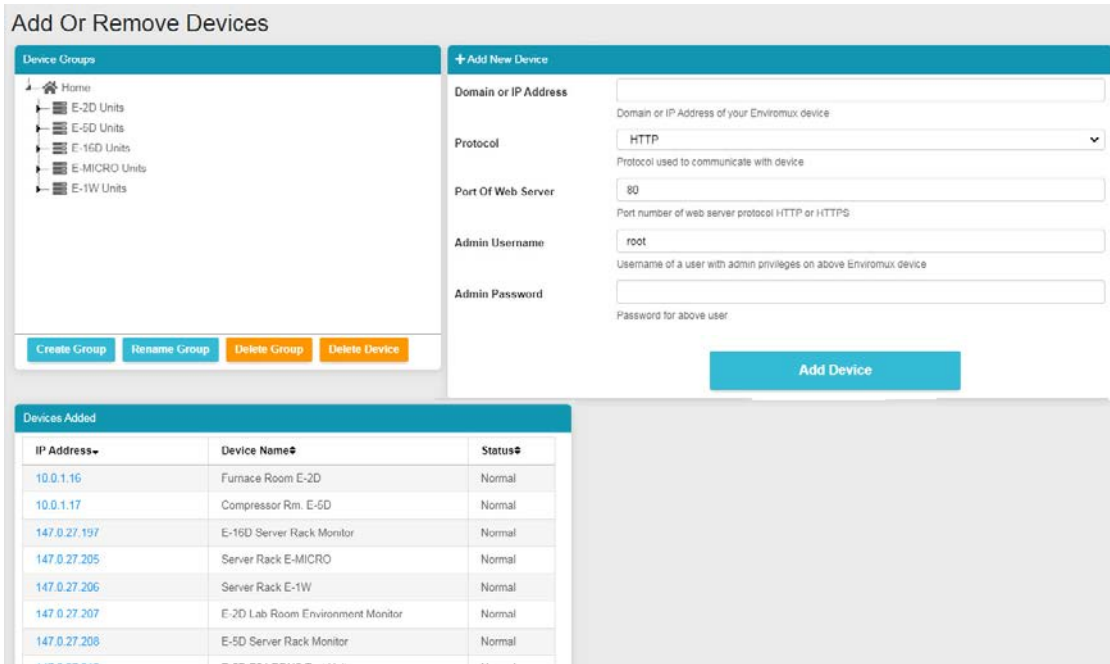


Figure 30- Add or Remove Devices

Lastly, use the "Maps" page to upload an unlimited number of images of a map, building, or server room (examples). Images must be .jpg or .png format, with a maximum size of 20MB (any resolution). On these images you can place markers for Places, Devices, or individual Sensors that you want to easily monitor the status of. Many map images are pre-loaded for you to choose from.

1. To setup a map, first select either "Floorplan" from the Map Type dropdown, or select a specific location from the pre-loaded maps. If you select "Floorplan", you will have the option to load a custom image. Locate the image file to be uploaded (must be .jpg or .png format). Then click "Upload".
2. Once uploaded, you can click on the map to have it enlarge in the viewing window.

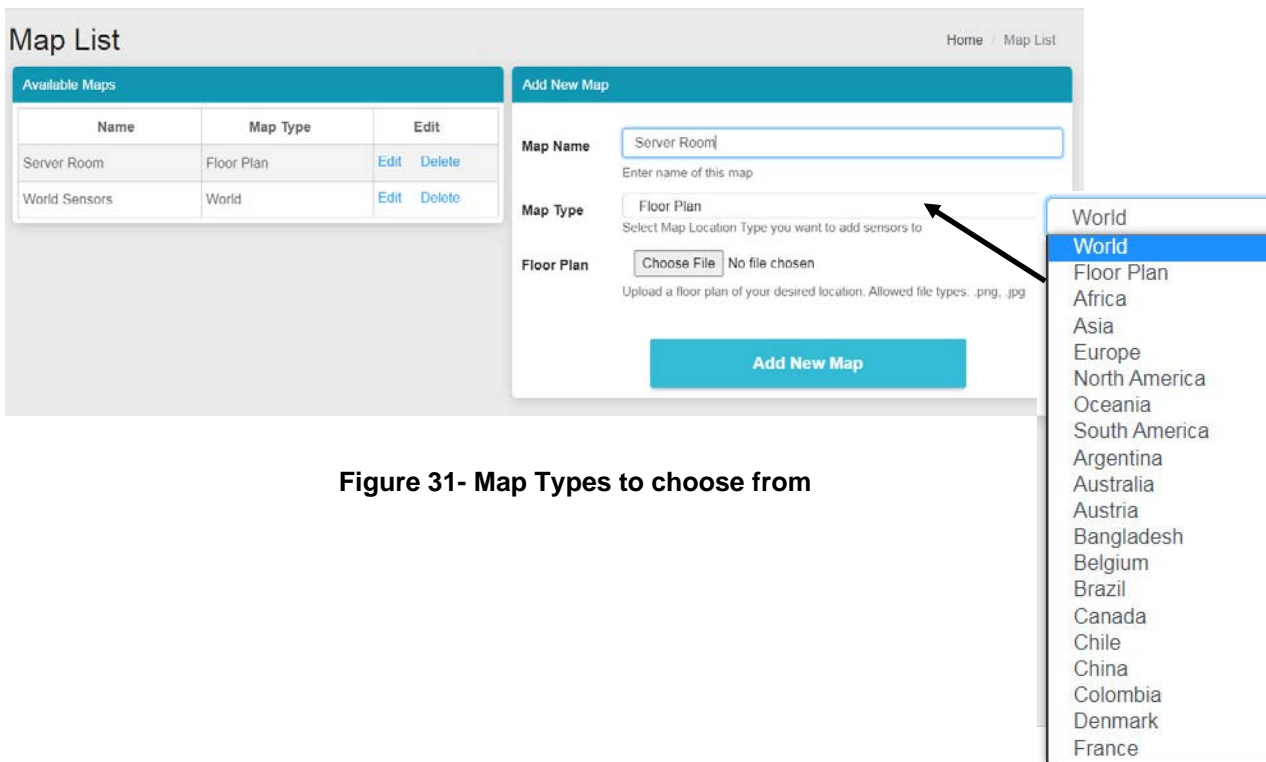


Figure 31- Map Types to choose from

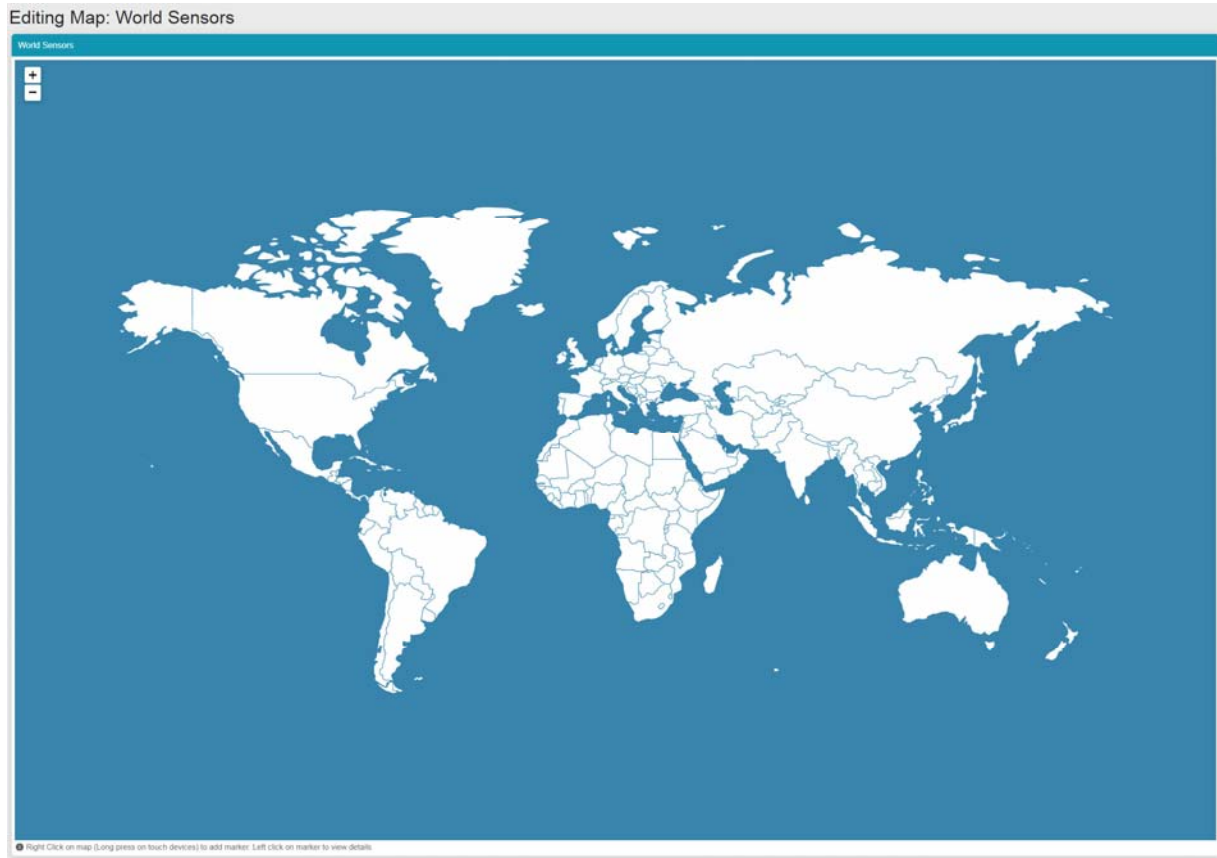


Figure 32- World map provided

3. Right click anywhere in the image to add a marker. A prompt for "Add Marker" will display. Click on that to bring up a list of sensors to be monitored in a Place, from a Device, or individual sensors.

Enter a name for this marker if it is a location, then select what sensors will be monitored at that location. Click "Save" when complete.

Markers will flash between light and dark green when not in alert, and between light and dark red when in alert.

Selected sensors

Add Marker

Select Marker Type: **Place**

Sensor Markers shows detailed view for one Sensor/IP Camera. Place and Device Marker shows summary view for multiple Devices/Sensors.

Name of the Place: Server Room

Search:

Item Name	Item Type	Parent Name
E-2DB E08	Device	E-2D Units
E-2DB E08 Input Voltage	Internal Sensors	E-2DB E08
E-2DB E08 Temperature 1	External Sensors	E-2DB E08
E-2DB E08 Humidity 1	External Sensors	E-2DB E08
E-2DB E08 Dew Point 1	External Sensors	E-2DB E08
E-2DB E08 ACDCM Sensor 2-1	External Sensors	E-2DB E08
E-2DB E08 ACDCM Sensor 2-3	External Sensors	E-2DB E08
E-2DB E08 ACDCM Sensor 2-2	External Sensors	E-2DB E08
E-2DB E08 ACDCM Sensor 2-4	External Sensors	E-2DB E08
E-2DB E08 Digital Input 1	Digital Inputs	E-2DB E08

Previous 1 2 3 4 5 ... 73 Next

Cancel Save

Figure 33- Loading maps and placing markers

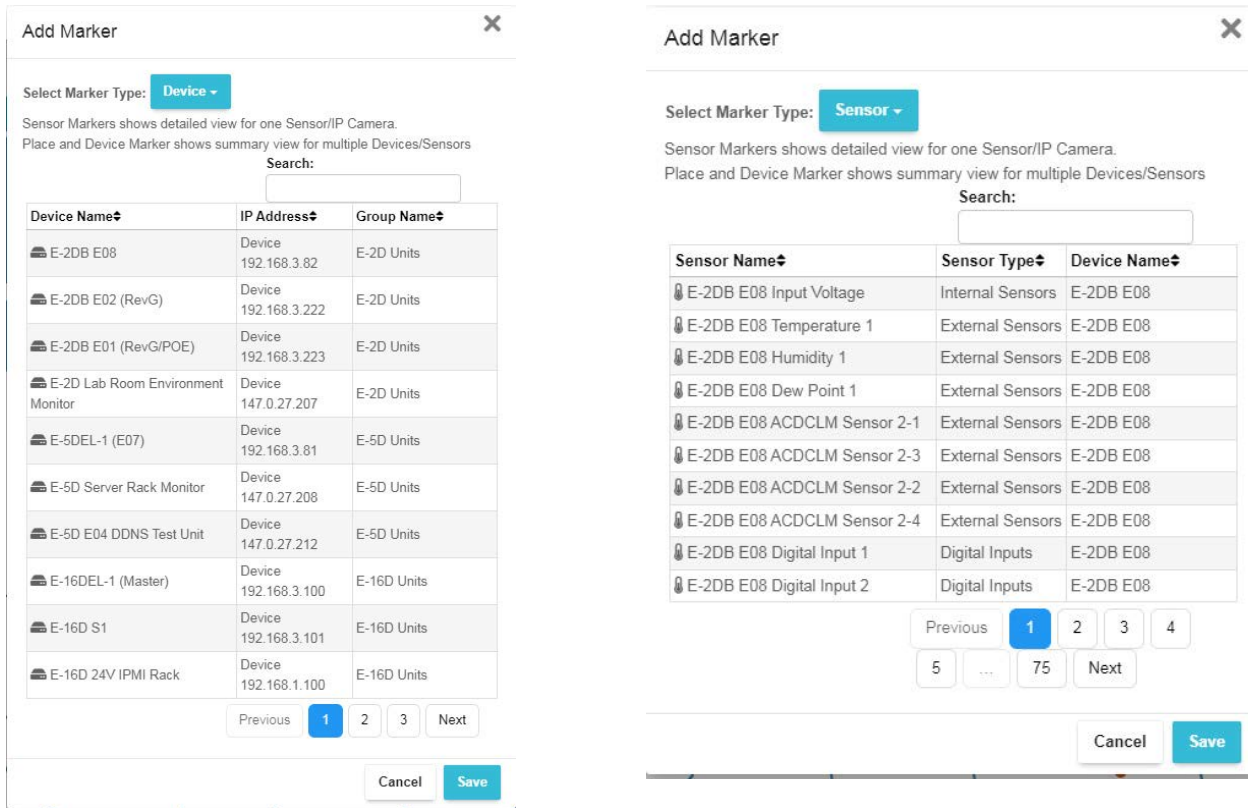


Figure 34- Markers for Device or Sensor

With your maps and markers defined, you can create a Dashboard and add your map to it (see page 32) .

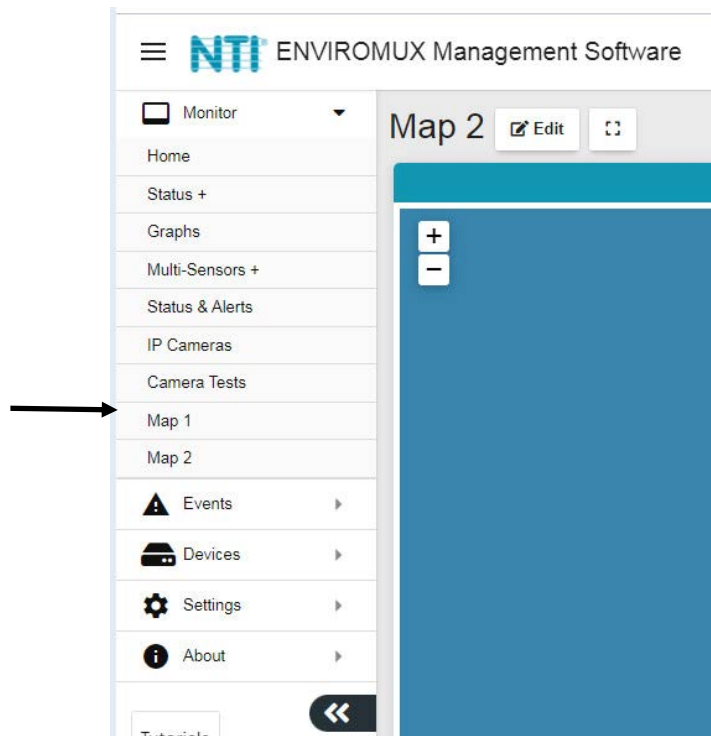


Figure 35- Use a configured map to monitor select sensors

With the map on the screen, click on any marker and the sensor or sensors associated with the Location/Device will be displayed and the status of those sensors will be indicated.

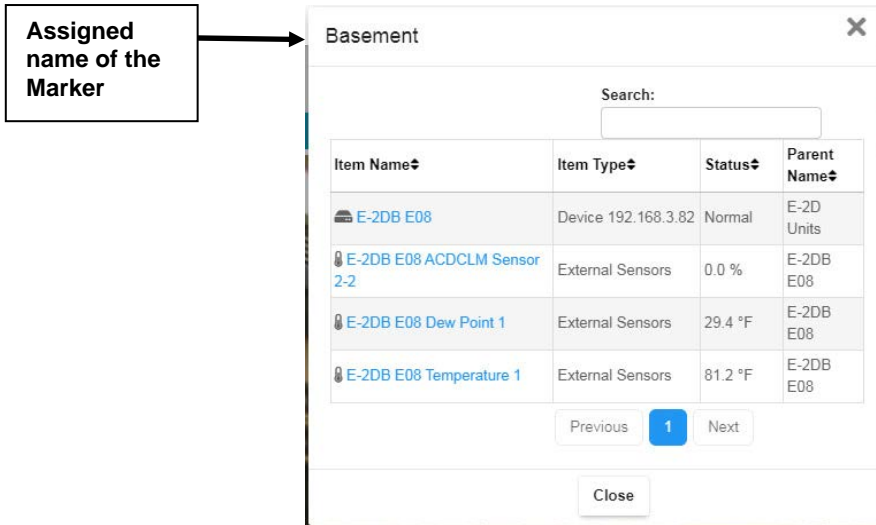


Figure 36- Sensor status at location "Basement"

Devices to Monitor

Before adding a Device, select the group under which the Device needs to be added. If no selection is made the Device will be added to the "Home" group.

To add a Device, click on "Devices"-> "Add or Remove Device" in the side menu. A window will open as shown on the next page.

Enter 1) the Domain or IP address for the Device,

2) the connection protocol (HTTP or HTTPS),

3) the server port number (usually 80 for HTTP and 443 for HTTPS)

4) any user with admin privileges on the E-xD can be used

5) the user with admin privileges password

6) press "Add Device".

If the IP address is valid, the message "Connecting to Device" will be followed by "Device added successfully" and the Device will appear in the Devices Added list. The sensors attached to that Device will be sensed and added to the "My Sensors" page.

If the IP address or Domain is not valid or accessible, the message "**Error 913: Connection Timeout**" will be displayed.

TIP: If you don't know the IP addresses of the Devices to be monitored, you can use the included NTI Discovery Tool (page 28) to identify them (provided they are all connected to the same LAN).

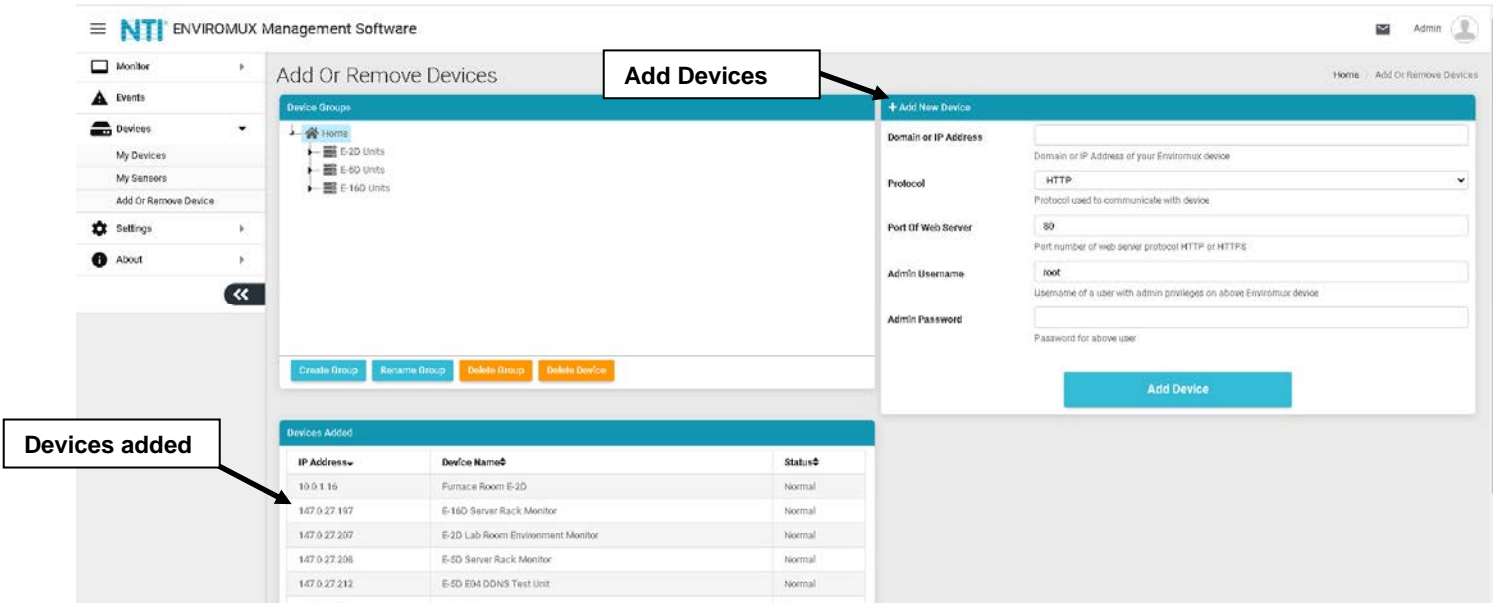


Figure 37- Add Devices to monitor

Continue adding until all Devices to be monitored are listed.

Groups

Groups can be used to organize your Devices as viewed on the Dashboard.

The name of the default group "Home" can be changed. Below it has been changed to "Server Room". Click the name, click on "Rename Group", and enter the new name. Press Enter key to save.

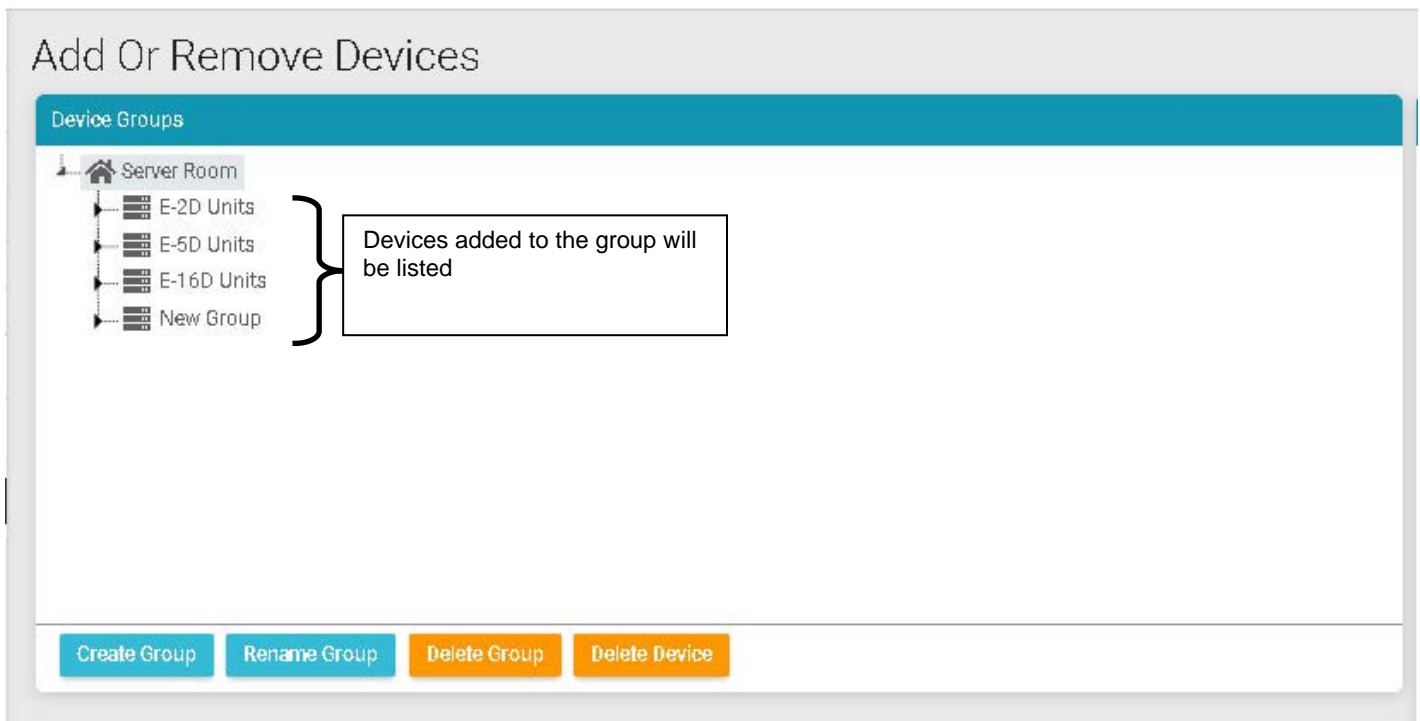


Figure 38- Primary group, and New Group added

Click "Create Group" to add an additional group. While the "New Group" name is selected (highlighted), any Device that is entered will fall under that group.

To remove a group, while the group to be removed is selected (highlighted), click "Delete Group".

To move a Device from one group to another group, first select the Device in the group to remove it from, then click "Delete Device".

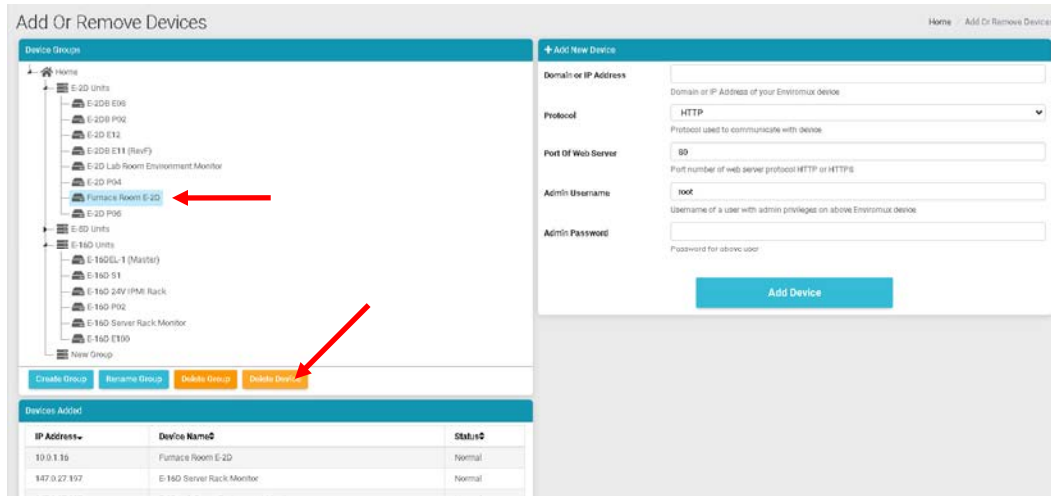


Figure 39- Select Device to delete

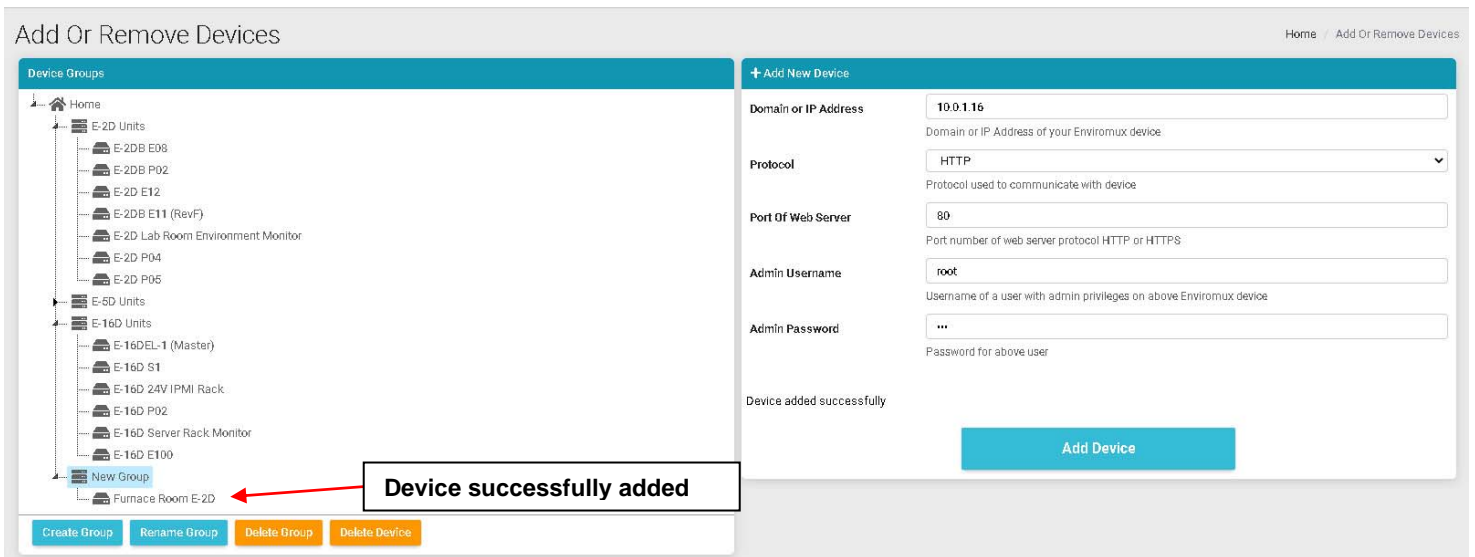


Figure 40- Device moved/added to New Group

Now select the new group name to add it to (above it is "New Group"), and re-enter the IP address and additional information. Click "Add Device". If successful, the message "Device added successfully" will appear and the Device will be listed under the new group name.

If you do not know the IP address of the Device you want to add, you can use the included NTI Discovery Tool (page 28) to identify them (provided they are all connected to the same LAN).

To reload the configuration for a Device, rename the Device or delete the Device, you can right-click the Device in the list from the Add Or Remove Devices menu.

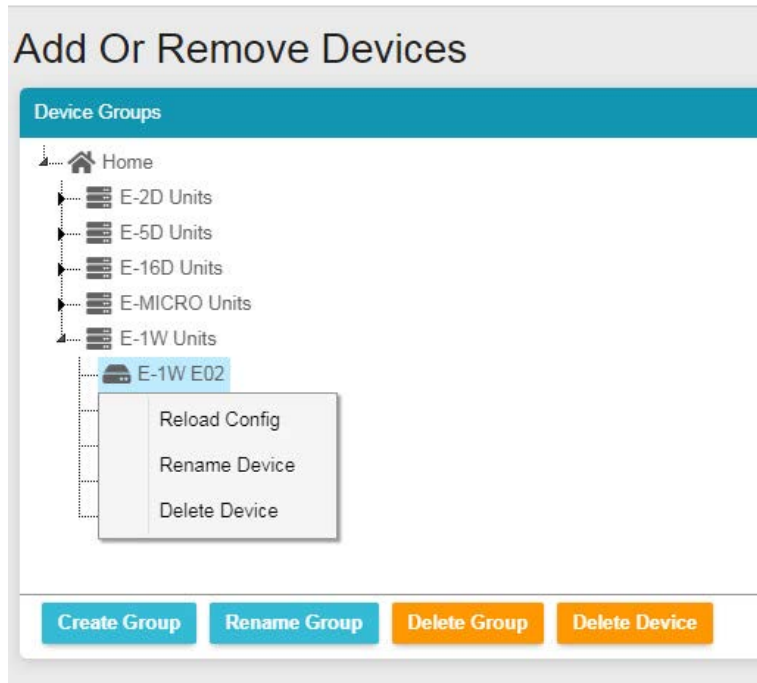


Figure 41- Additional features from Add Devices menu

The user can access and change configuration settings for a Device by going to the My Devices menu, double-clicking the Group, and then the Device. Accessing the Device this way will open up the list of configuration options for the Device.

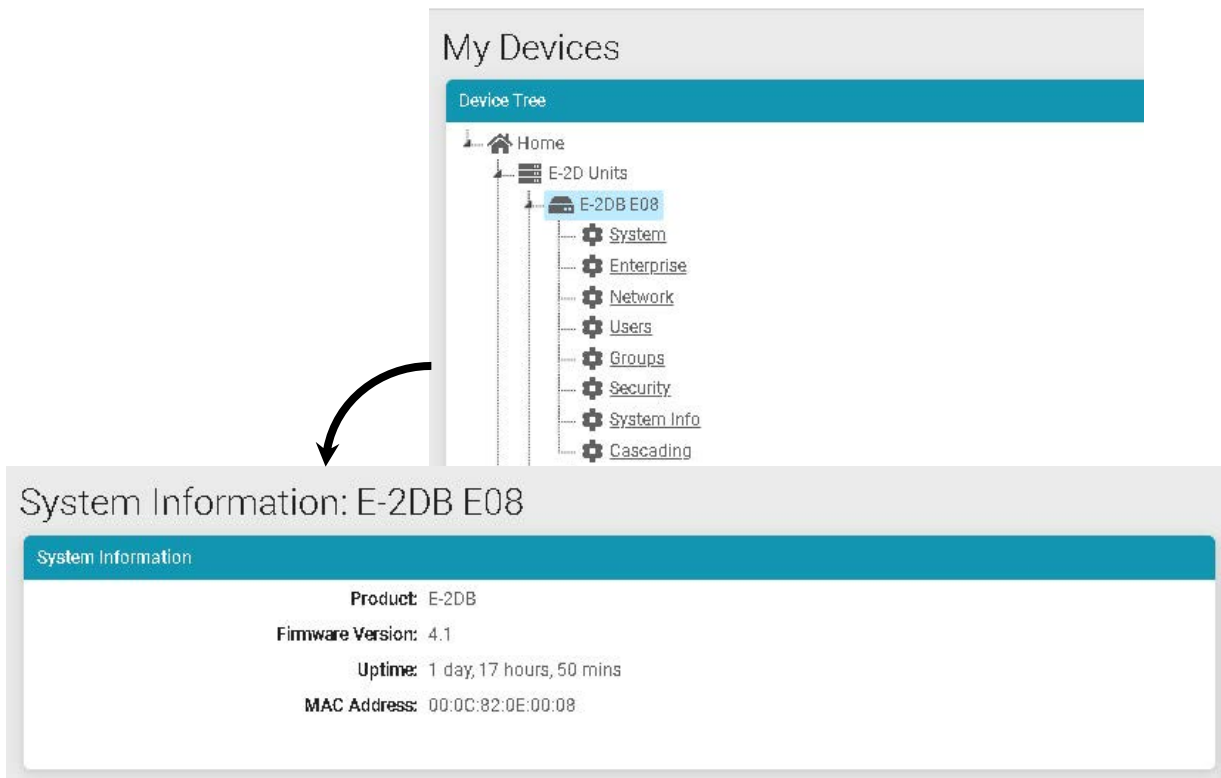


Figure 42- System Info page for the Device

Device Discovery Tool

In order to easily locate the Device on a network, the NTI Device Discovery Tool may be used. The Discovery Tool is available on many of our webpages, including <http://www.networktechinc.com/download/d-environment-monitor-16.html>. Download the discovery.zip, extract the contents to your PC and click on the file *NTIdiscover.jar*. This will open your browser and display the Device Discovery Tool page.

Note: The Device Discovery Tool requires the Java Runtime Environment to operate.

Note: The computer using the Device Discovery Tool and the ENVIROMUX must be connected to the same physical network in order for the Device Discovery Tool to work.

Network Technologies Inc Device Discovery Tool

- **START**
 - When you load this page, the NTI Device Discovery Applet should load. Accept the Certificate to allow this applet access to your network. Press the button entitled **Detect NTI Devices** to start the discovery process. After a short time, the tool will display all NTI devices on your network, along with their network settings.

Note: Do not close this page while the NTI Discovery Tool is running. Close the NTI Device Discovery Application first, then this webpage.
- **How To Use the Discovery Tool**
 - **To Change A Device's Settings**, within the row of the device whose setting you wish to change, type in a new setting and press the **Enter** key or the **Submit** button on that row. You can also press the **Submit All** button to submit all changes at once.
 - **To Refresh the list of devices**, press the **Refresh** button.
 - **To Blink the LEDs of the unit**, press the **Blink LED** button (This feature not supported on all products). The **Blink LED** button will change to a **Blinking...** button. The LEDs of the unit will blink until the **Blinking...** button is pressed, or the NTI Device Discovery Application is closed. The LEDs will automatically cease blinking after 2 hours.
 - **To Stop the LEDs of the unit blinking**, press the **Blinking...** button. The **Blinking...** button will change to a **Blink LED** button.

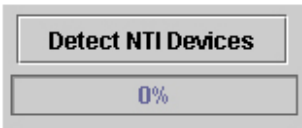


Figure 43- Device Discovery Tool page

Use the Device Discovery Tool to display all NTI ENVIROMUX Devices on the network, along with their network settings. Follow the instructions on the Device Discovery Tool page to use the tool and to change the Device settings if so desired.

Device	MAC Address	IP Address	Mask	Gateway		
ENVIROMUX	00:40:9D:24:07:70	65.243.248.18	255.255.255.128	65.243.248.1	Submit	Blink LED
		Submit All	Refresh	Close		

VIEW SENSORS INDIVIDUALLY

With Devices added, you can now view the sensors connected to those Devices. Select My Sensors from the side menu.

My Sensors

Sensor Tree

- Home
- E-2D Units
 - E-2DB E08
 - E-2DB E02 (RevG)
 - E-2DB E01 (RevG/POE)
 - E-2D Lab Room Environment Monitor
 - E-2D P04
 - Furnace Room E-2D
 - E-2D E04 (RevG)
 - E-2DB P02
 - E-2DB E15
 - E-2D P05
- E-5D Units
 - E-5DEL-1 (E07)
 - E-5D Server Rack Monitor
 - E-5D E04 DDNS Test Unit
 - Remote E-5D
 - E-5D E01
 - E-5D-48V
 - Compressor Rm. E-5D
 - E-5D E02
 - E-5DB P02 (PLSD Test Unit)
- E-16D Units
 - E-16DEL-1 (Master)
 - E-16D S1
 - E-16D 24V IPMI Rack
 - E-16D Server Rack Monitor
 - Oper8 Test Unit
 - E-16D 48V
 - E-16D E100
 - E-16D P02

Sensors Available

Search Sensors:

Sensor Name	Sensor Type	Device Name
1. E-2DB E08 Input Voltage	Internal Sensor	E-2DB E08
1.1. E-2DB E08 Temperature 1		E-2DB E08
1.2. E-2DB E08 Humidity 1		E-2DB E08
1.3. E-2DB E08 Dew Point 1	External Sensor	E-2DB E08
2.1. E-2DB E08 ACDCCLM Sensor 2-1	External Sensor	E-2DB E08
2.2. E-2DB E08 ACDCCLM Sensor 2-3	External Sensor	E-2DB E08
2.3. E-2DB E08 ACDCCLM Sensor 2-2	External Sensor	E-2DB E08
2.4. E-2DB E08 ACDCCLM Sensor 2-4	External Sensor	E-2DB E08
1. E-2DB E08 Digital Input 1	Digital Inputs	E-2DB E08
2. E-2DB E08 Digital Input 2	Digital Inputs	E-2DB E08
1. CPU250 Win Server 2016	IP Devices	E-2DB E08
1. E-MICRO E03	IP Sensors	E-2DB E08
1.1 E-MICRO E03 Temperature	IP Sensors	E-2DB E08
1.2 E-MICRO E03 Humidity	IP Sensors	E-2DB E08
1.3 E-MICRO E03 Humidity Dew Point	IP Sensors	E-2DB E08
E.1 E-MICRO E03 Temperature 1	IP Sensors	E-2DB E08
E.4 E-MICRO E03 Temperature 2	IP Sensors	E-2DB E08
E.5 E-MICRO E03 Humidity 2	IP Sensors	E-2DB E08
E.6 E-MICRO E03 Dew Point 2	IP Sensors	E-2DB E08
D.1 E-MICRO E03 Digital Input 1	IP Sensors	E-2DB E08
D.2 E-MICRO E03 Digital Input 2	IP Sensors	E-2DB E08
1. E-1W P01	IP Sensors	E-2DB E08
E.1 E-1W P01 Temperature 1	IP Sensors	E-2DB E08

click on this to see the details for it

Figure 44- Sensors being monitored

The initial list will be all of the sensors, cameras, remote IP Devices and IP Sensors (E-MICRO-TRH(P) and E-1W(P)) that are attached to the Devices and are now being monitored by the E-MNG-SH. To see the details for a specific sensor in that list, click on the blue text for the Sensor Name.

Sensor values, a historical graph, and all settings for that sensor can be viewed. Settings can also be changed if desired.

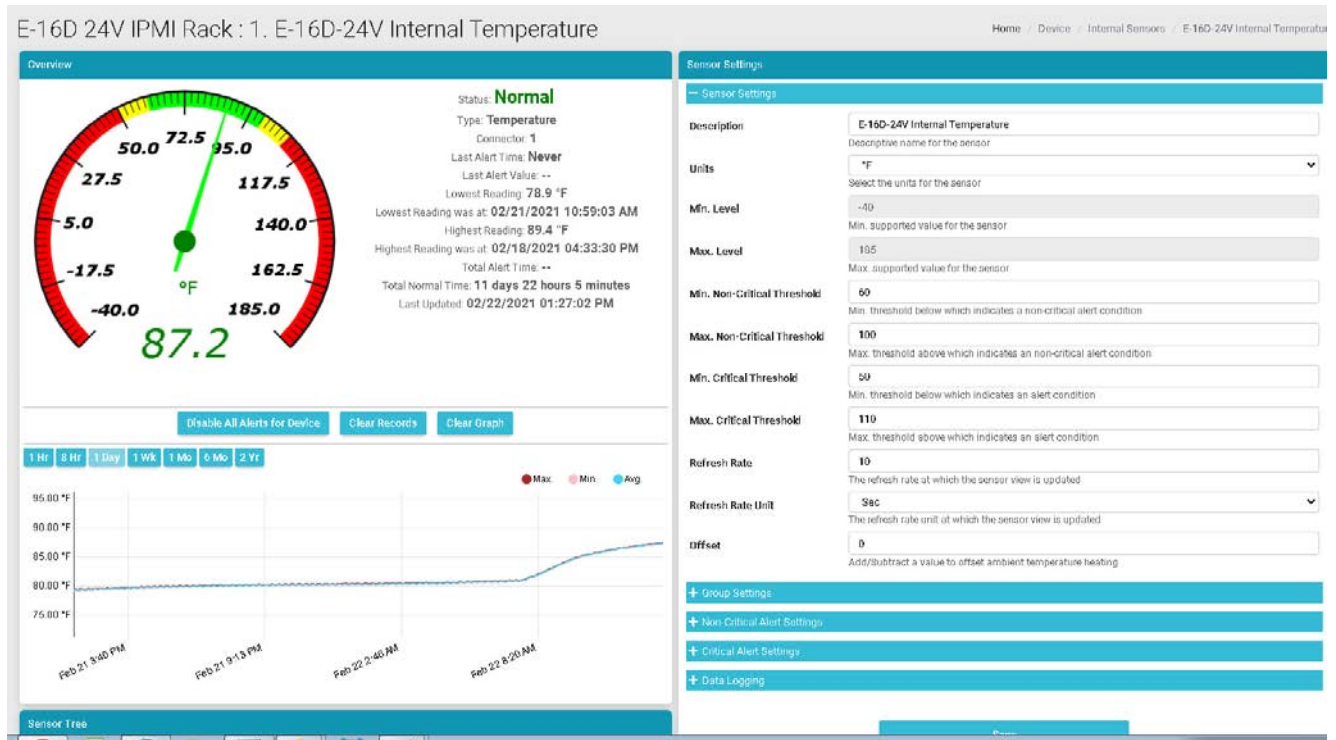


Figure 45- Details for Internal Temperature Sensor

To quickly find a sensor, type all or part of a sensor name or Device name in the "Search Sensors" box.

Sensors Available

Search Sensors: 16del

Device Name	Sensor Type	Sensor Name
E-16DEL-1 (Master)	Output Relays	1. 16DEL-1 Output Relay 1
E-16DEL-1 (Master)	IP Devices	1. E-16D Web Demo
E-16DEL-1 (Master)	Tac Sensor	1. E-16DEL-1 Digital Input 1 Tach Sensor (In Reserve)
E-16DEL-1 (Master)	Internal Sensor	1. E-16DEL-1 Internal Temperature
E-16DEL-1 (Master)	Power Supplies	1. E-16DEL-1 Power Supply
E-16DEL-1 (Master)	Events	1. Event #1 E-16D-M Internal Temperature
E-16DEL-1 (Master)	SNMP Sensors	1. NAS (NDATA) System Temperature
E-16DEL-1 (Master)	IP Cameras	1. Wanscam HW0041-1
E-16DEL-1 (Master)	External Sensor	1.1. E-16DEL-1 STHS-99 Port 1 Temperature
E-16DEL-1 (Master)	External Sensor	1.2. E-16DEL-1 STHS-99 Port 1 Humidity
E-16DEL-1 (Master)	External Sensor	1.3. E-16DEL-1 STHS-99 Port 1 Dew_Point
E-16DEL-1 (Master)	IP Devices	10. SPLITMUX-HD-4RT Web Demo
E-16DEL-1 (Master)	External Sensor	10.1. E-16DEL-1 RTD Port 10 Temperature 1
E-16DEL-1 (Master)	External Sensor	10.2. E-16DEL-1 RTD Port 10 Temperature 2 (Reserved)
E-16DEL-1 (Master)	IP Devices	11. E-MICRO Web Demo Unit
E-16DFI-1 (Master)	External Sensor	11.1 E-16DFI-1 STHSD Port 11 Temperature

Figure 46- Use Search Sensors box

To see sensors connected to a specific Device, double-click or expand the Device in the group.

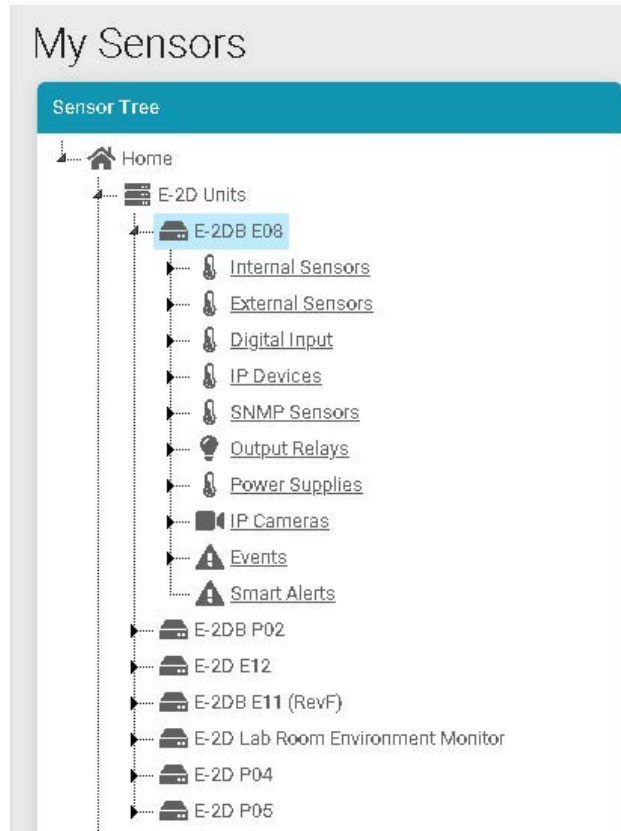


Figure 47- Sensors, relays, IP Cameras etc attached to a specific Device

If you click once on a specific sensor category, the screen format will change and show the status of all sensors in that category.

External Sensors : E-2DB E08

Description	Type	Value	Status	Action
1.1. E-2DB E08 Temperature 1	Temperature Combo	79.1 °F	Normal	View Delete
1.2. E-2DB E08 Humidity 1	Temperature Combo	18.7 %	Normal	View Delete
1.3. E-2DB E08 Dew Point 1	Dew Point	32.8 °F	Normal	View Delete
2.1. E-2DB E08 ACDCM Sensor 2-1	AC Voltage	0.0 V	Normal	View Delete
2.2. E-2DB E08 ACDCM Sensor 2-3	DC Voltage	-0.1 V	Normal	View Delete
2.3. E-2DB E08 ACDCM Sensor 2-2	AC Current	0.0 %	Normal	View Delete
2.4. E-2DB E08 ACDCM Sensor 2-4	DC Current	0.4 %	Normal	View Delete

+ Add External Sensors

Figure 48- External Sensors connected to specific Device

From that screen you can view each sensor, or delete it from the list.

SETUP A DASHBOARD

Groups of sensors can be monitored in Dashboards containing rows and columns displaying the status of individual sensors. Each of the sensors monitored on each of the Devices can be added to various Dashboards and organized in rows and columns as necessary for easy viewing.

To get started, click the "Edit" button next to "Dashboard1".

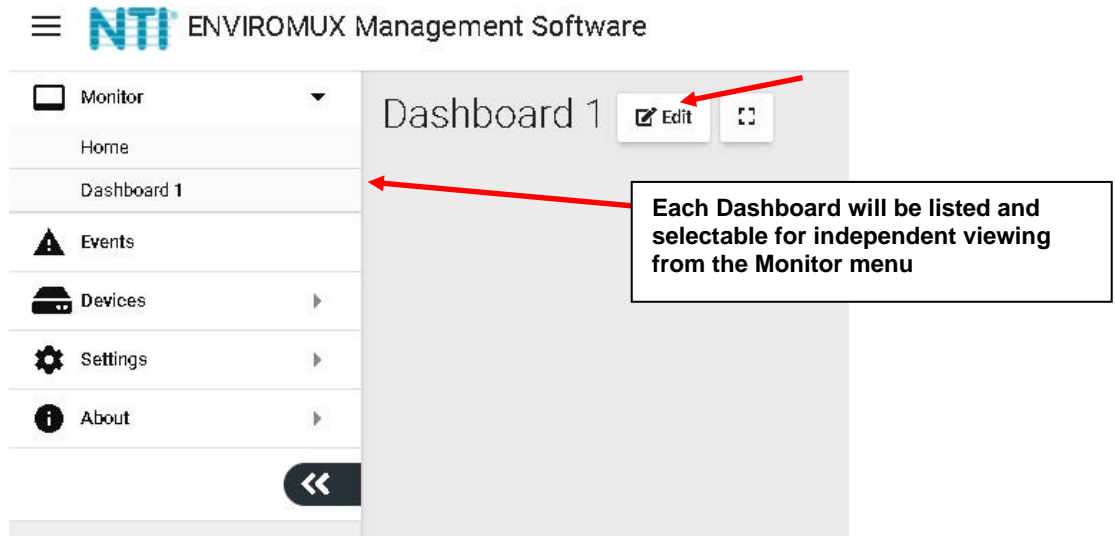


Figure 49- Initial Monitoring Dashboard menu

This will open the window into the options available for creating new Dashboards. With the editing window open, you can change the name of the Dashboard, add a new Dashboard, or add a new row of monitored sensors to the layout. If you click the Finish Edit button, the editing window will close and the configured Dashboard will remain.

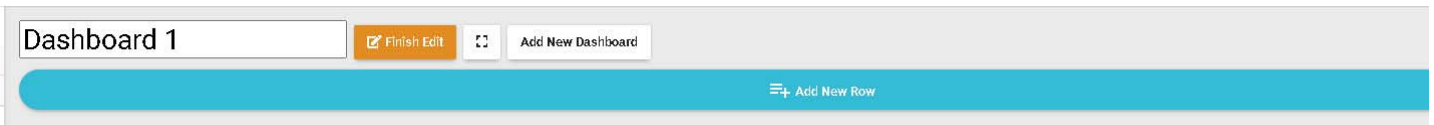


Figure 50- Dashboard options

Click "Add New Row" to establish your first row of sensors. Click the "X" to delete the row and all columns in it.

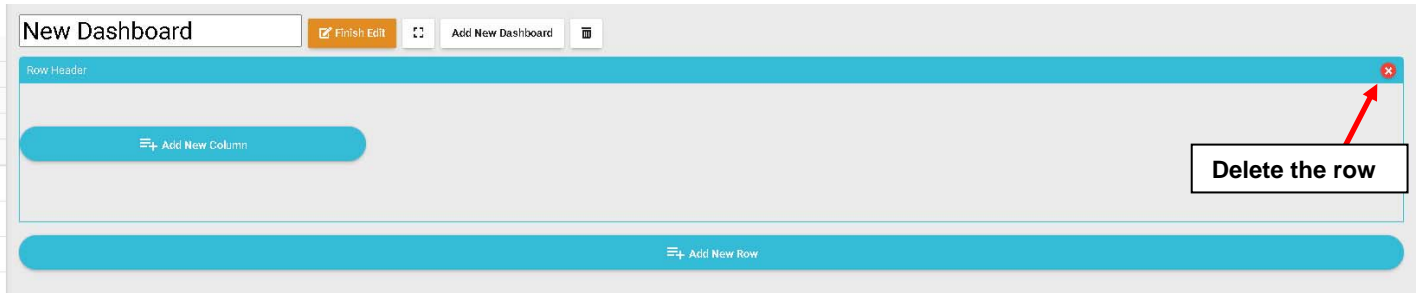


Figure 51- How to add Columns or delete Rows

Then click the "Add New Column" to create a column in that row. Click it multiple times for multiple columns. We recommend all columns fit in the same row side by side. To resize the columns click on the Decrease or Increase icon, as many times as needed, and that column will resize accordingly after a short delay (see also page 35) .

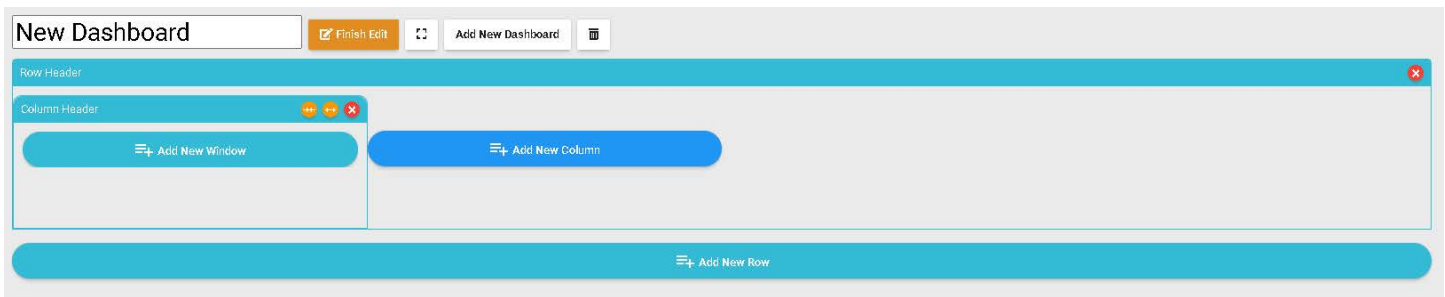


Figure 52- Ready to add a sensor window

To add a sensor, in the Column Header, click the "Add New Window". A list of all sensors connected to all of the Devices will appear, 10 at a time. Select which sensor is to be monitored in the column. You can also enter a name to associate with that sensor. Navigate through the many sensors available.

Sensors can be viewed as individual sensors, graphs for single sensors, gauges for single sensors and much more. IP Camera snapshots, an alerts list, or Device status can also be viewed.

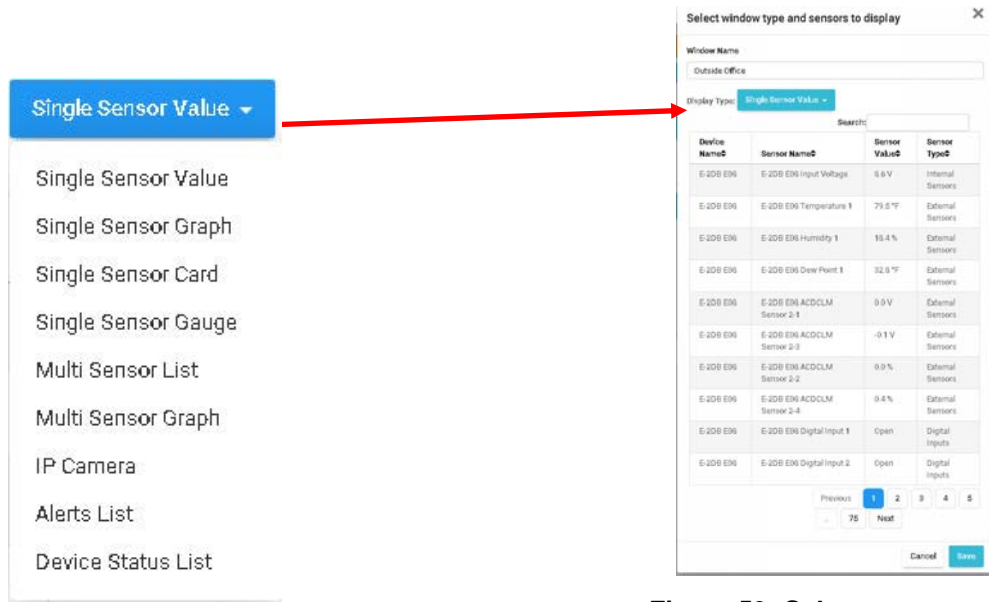


Figure 53- Select sensors to view

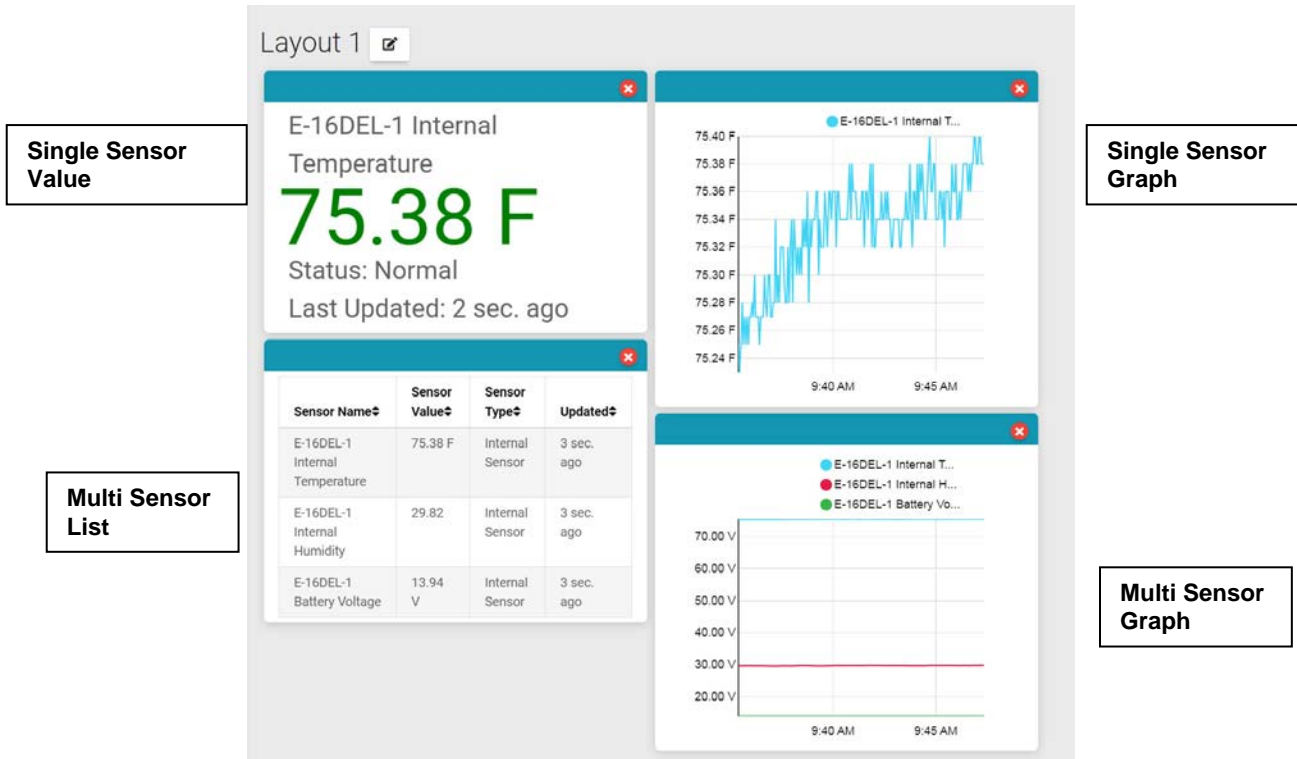


Figure 54- Multiple types of views available

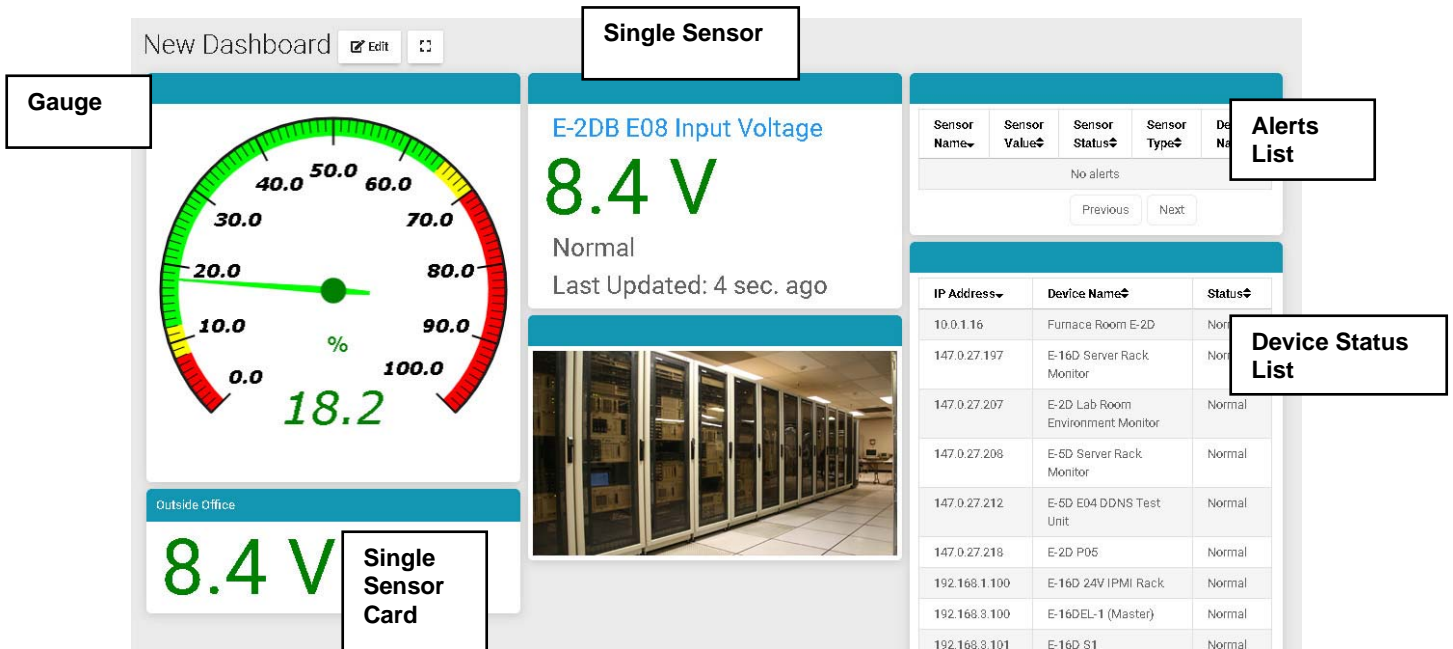


Figure 55- More types of views

To select one sensor, click one listed item and it will turn blue. Click "Save" to enter that in the column.

To select multiple sensors, there is no need to hold the shift key. Clicking one after the other keeps the sensor selected.

To deselect a sensor, click the sensor again.

Once done click "Save" to enter them in the same window.

To quickly locate the sensor you want to display, use the Search box to enter characters in the description to sort the available sensors and display only the ones that include your search parameters.

Select window type and sensors to display ✕

Window Name:

Display Type: Single Sensor Value ▾

Search:

Device Name↕	Sensor Name↕	Sensor Value↕	Sensor Type↕
E-2DB E08	E-2DB E08 Input Voltage	8.4 V	Internal Sensors
E-2DB E08	E-2DB E08 Temperature 1	77.1 °F	External Sensors
E-2DB E08	E-2DB E08 Humidity 1	19.8 %	External Sensors
E-2DB E08	E-2DB E08 Dew Point 1	32.7 °F	External Sensors
E-2DB E08	E-2DB E08 ACDCCLM Sensor 2-1	0.0 V	External Sensors
E-2DB E08	E-2DB E08 ACDCCLM Sensor 2-3	-0.1 V	External Sensors
E-2DB E08	E-2DB E08 ACDCCLM Sensor 2-2	0.0 %	External Sensors
E-2DB E08	E-2DB E08 ACDCCLM Sensor 2-4	0.4 %	External Sensors
E-2DB E08	E-2DB E08 Digital Input 1	Open	Digital Inputs
E-2DB E08	E-2DB E08 Digital Input 2	Open	Digital Inputs

Previous 1 2 3 4 5

... 75 Next

Cancel Save

To delete a window in a column, click the red "X" in the upper right corner of the window.

If you wish to change the order in which your sensors are viewed, you can move a window from one column to another. First add the column if it doesn't already exist, then simply drag the window by holding the window header bar to the target column. While dropping to the target column, that column will show a white placeholder indicating that the window can be dropped there.

Use the Increase button to increase the width of a selected column.

Use the Decrease button to decrease the width of a selected column.

The screenshot shows a dashboard with a gauge for humidity (19.8%) and a voltage display (8.6V). At the top, there are window headers: 'Row Header' and 'Column Header (3/12)'. Callouts point to various controls: 'Increase width' points to a right-pointing arrow, 'Decrease width' points to a left-pointing arrow, 'Delete a column' points to a red 'X' icon, and 'Delete a window' points to a red 'X' icon in the top right corner of the 'Outside Office' window. A 'Save' button is visible at the bottom right.

Figure 57- Change the width of a column

To add a new group of sensors to a separate row, Click "Add New Row" and configure the new row in the same fashion.

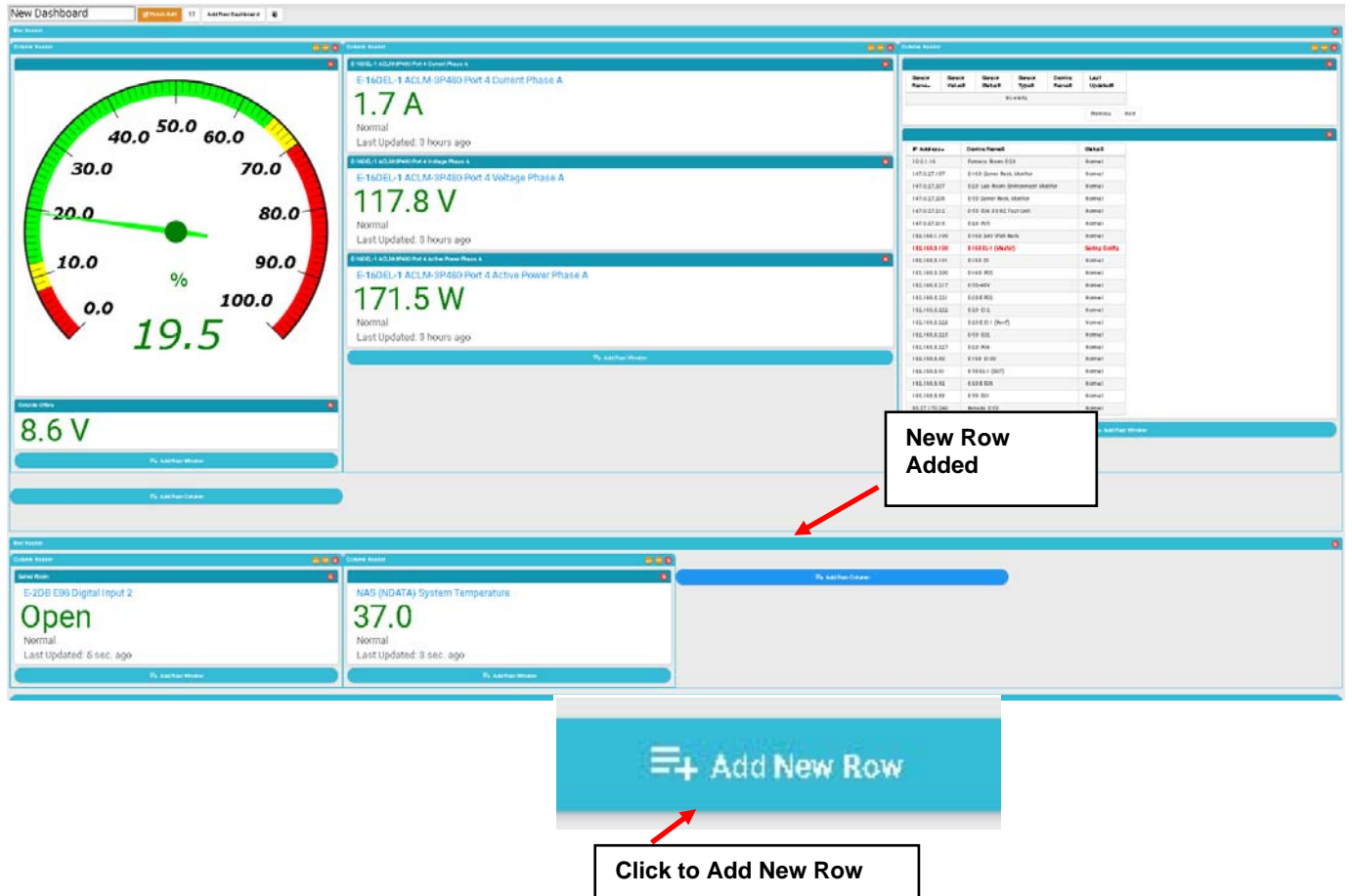


Figure 58- Add a new row of sensors

To logout of the server without shutting the Server down, click on the Root icon in the upper right corner of the screen, and click on "Log Out".

Message number (image right) indicates the number of alerts triggered since the last alert was viewed or acknowledged by this user

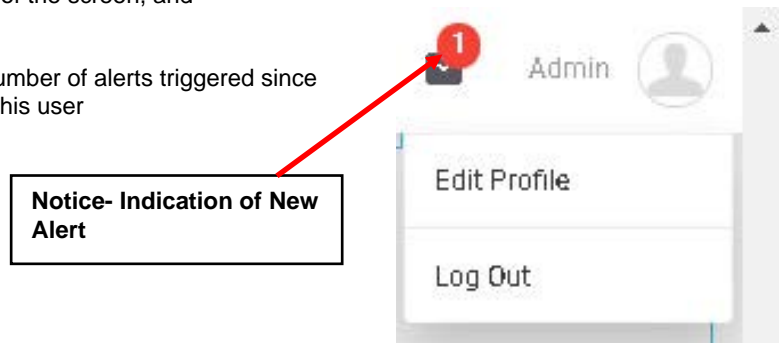


Figure 59- Log out

There is no limit to the number of Dashboards that can be setup to organize the type of sensor data you want to see. For example, a "Graphs" Dashboard was setup to view only the graphs from specific sensors.

When in full screen mode (see bottom of this page), scrolling the screen is not possible. Please make sure all windows fit inside the screen to be visible on the monitor.

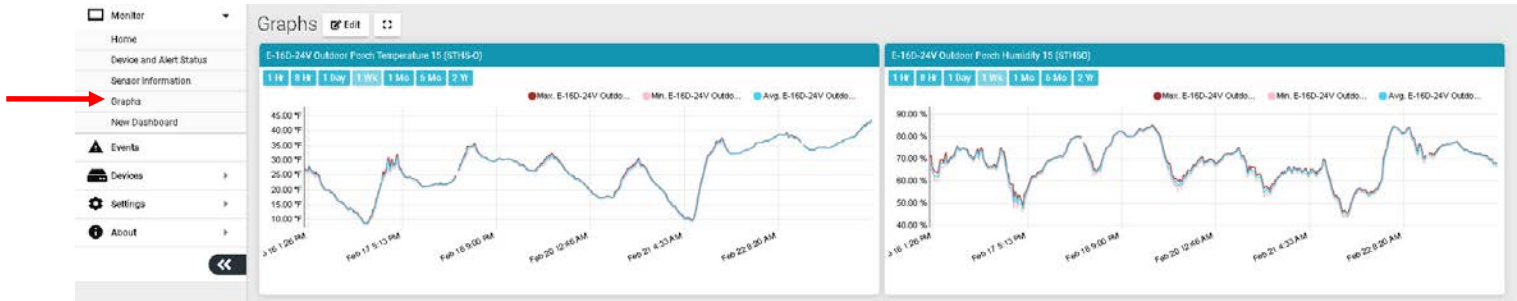


Figure 60- Dashboard setup to display specific content

The data from those graphs can also be downloaded for future reference. Click on "Download Graph Data" to download a text file with the information you need.

Note: Downloading before the graph is loaded using HTTP API will throw an HTTP response code 204.

- Graph data will contain data for all periods in different rows.
- A value of -999999 indicates a value is not available.

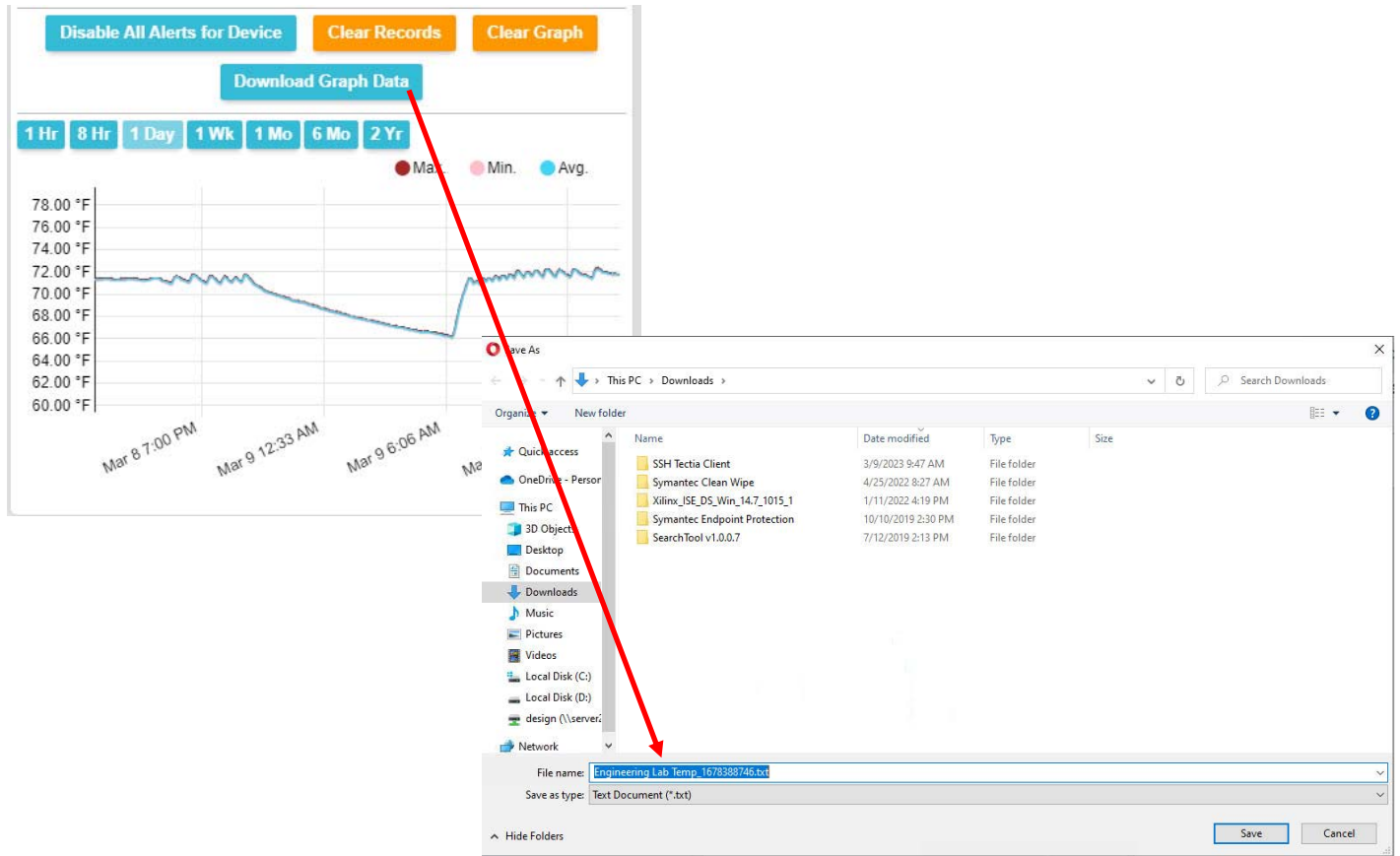
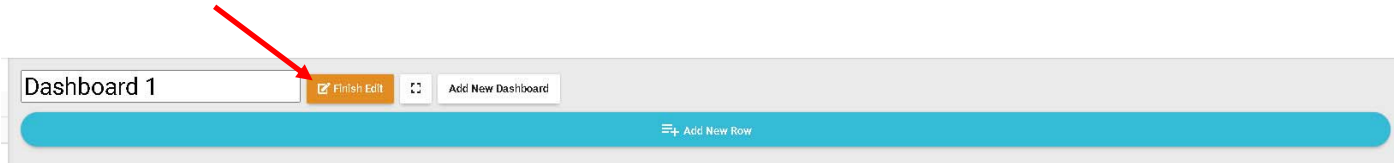


Figure 61- Download Graph Data to text file

Once you are finished editing a Dashboard, click "Finish Edit".



While viewing your Dashboard, to make it fill your screen, click on the small box to the right of the Edit button. Press the "Esc" key to return to normal viewing.

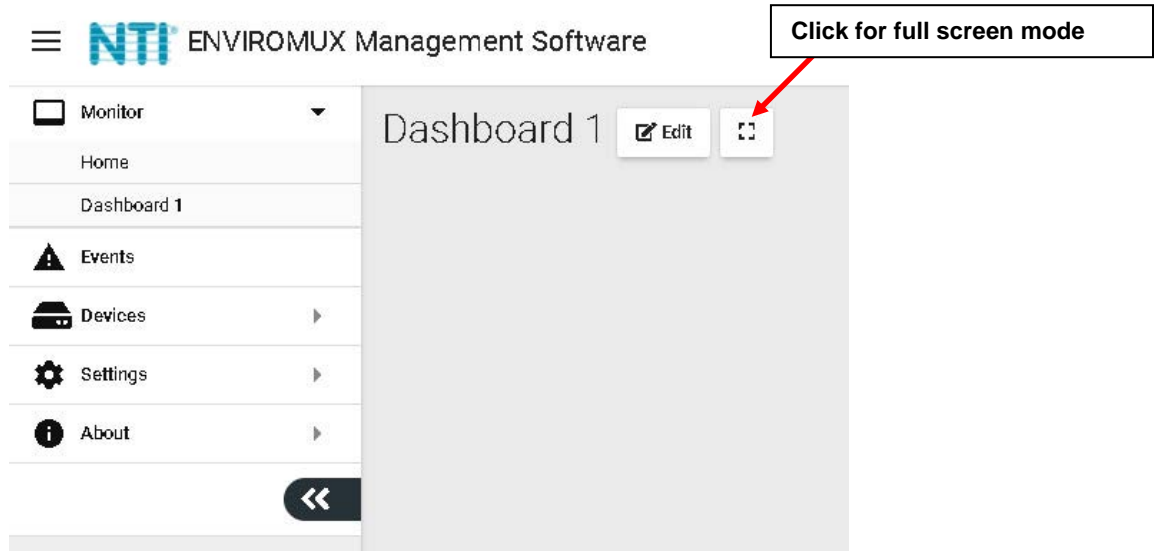


Figure 62- Enable full screen view

EVENTS MENU

The E-MNG-SH can provide information on alerts generated by the devices it is monitoring, and will provide that information in three different forms.

Events Log will provide a list of events that have occurred for each device/sensor the E-MNG-SH is monitoring.

Reports, once configured, will contain event information on selected sensors, devices (and all sensors connected to those devices), or markers assigned to configured maps. The information the reports (pdf format) will provide includes 1) sensor or device summary, 2) the combined number of alerts that have been generated by each selected sensors/device's sensors/markers in the maps and 3) the combined length of time each of those devices/sensors/markers were in alert. The frequency of reports and the data present in reports can be configured by "Triggers" and "Actions" respectively.

Recordings are a collection of IPCAM snapshot recordings that have been saved as configured in each sensor alert that is set to provide a snapshot recording from a connected IPCAM.

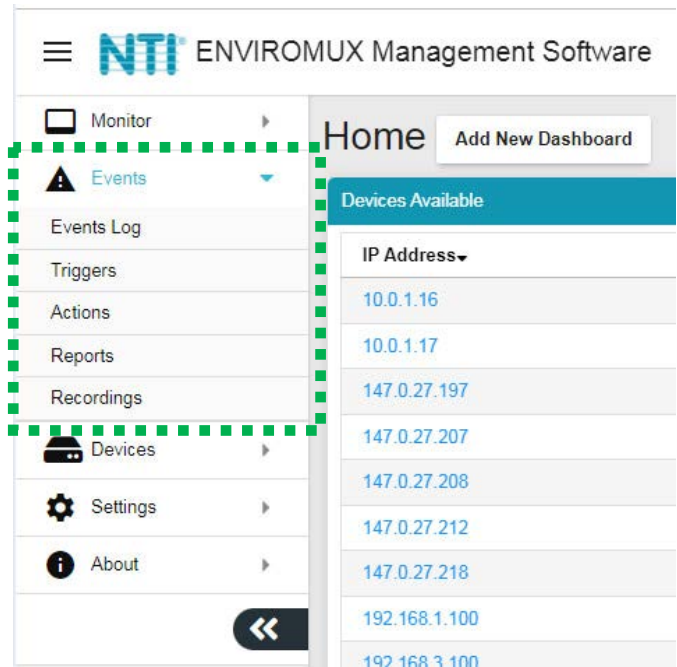


Figure 63- Events Menu

Events Log

The Events Logs is where Sensor Events, Smart Alerts and Alert messages are individually recorded. The time of each event, the type of event and the source of each event are recorded.

Alert logs are recorded in red font.

When the alert is Acknowledged or Dismissed, the alert will show up in the Events Log along with the name of the user.

From the link in the message, you can click and go directly to the sensor to see its current state.

Time	Event Type	Message
02/23/2021 10:34:36 AM	Info	Sensor 4.1 E-50EL Port 4 NLS returned to Normal on device E-5DEL-1 (E07)
02/23/2021 10:23:32 AM	Alert	Sensor 4.1 E-50EL Port 4 NLS went into Alert on device E-5DEL-1 (E07)
02/23/2021 10:14:57 AM	Info	Sensor 4.1 E-50EL Port 4 NLS returned to Normal on device E-5DEL-1 (E07)
02/23/2021 10:11:33 AM	Alert	Sensor 4.1 E-50EL Port 4 NLS went into Alert on device E-5DEL-1 (E07)
02/23/2021 10:00:15 AM	Info	Sensor 4.1 E-50EL Port 4 NLS returned to Normal on device E-5DEL-1 (E07)
02/23/2021 09:59:41 AM	Alert	Sensor 4.1 E-50EL Port 4 NLS went into Alert on device E-5DEL-1 (E07)
02/23/2021 09:52:04 AM	Info	Sensor 1.1 E-16D-24V IPMI Rack Motion Detector 1 AE/N returned to Normal on device E-16D 24V IPMI Rack
02/23/2021 09:51:53 AM	Alert	Sensor 1.1 E-16D-24V IPMI Rack Motion Detector 1 AE/N went into Alert on device E-16D 24V IPMI Rack
02/23/2021 09:24:43 AM	Info	Smart Alert 2 Smart Alert #2 Beacon & Siren Trigger returned to Normal on device E-2D Lab Room Environment Monitor
02/23/2021 09:24:43 AM	Info	Smart Alert 1 Smart Alert #1 Lab Intrusion returned to Normal on device E-2D Lab Room Environment Monitor
02/23/2021 09:24:43 AM	Info	Event 4 Event #4 Lab Smoke Detector returned to Normal on device E-2D Lab Room Environment Monitor
02/23/2021 09:24:43 AM	Info	Event 3 Event #3 Lab Water Sensor returned to Normal on device E-2D Lab Room Environment Monitor
02/23/2021 09:24:43 AM	Info	Event 2 Event #2 Lab Equipment Door returned to Normal on device E-2D Lab Room Environment Monitor
02/23/2021 09:24:43 AM	Info	Event 1 Event #1 Lab Main Door returned to Normal on device E-2D Lab Room Environment Monitor
02/23/2021 09:23:35 AM	Info	Smart Alert 2 Smart Alert 2 Beacon & Siren Alerts returned to Normal on device E-16D Server Rack Monitor
02/23/2021 09:23:35 AM	Info	Smart Alert 1 Smart Alert 1 Emergency IPIR Shutdown returned to Normal on device E-16D Server Rack Monitor

Figure 64- Events Log

If a sensor is in alert, you can directly connect to it and Acknowledge or Dismiss the alert.

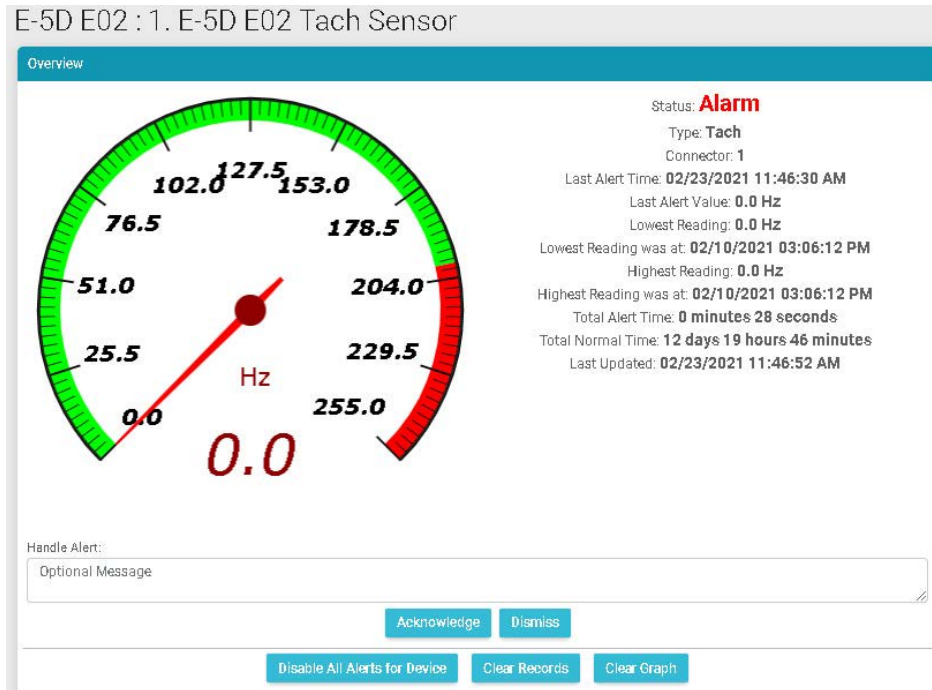


Figure 65- Connect directly to acknowledge or dismiss alert

Whether the Event is viewed on the Events Log page, or from a Dashboard displaying the event, you can click on the sensor in the image and address the event directly.

You can click on the alert to Acknowledge/Dismiss the alert directly from Dashboard.

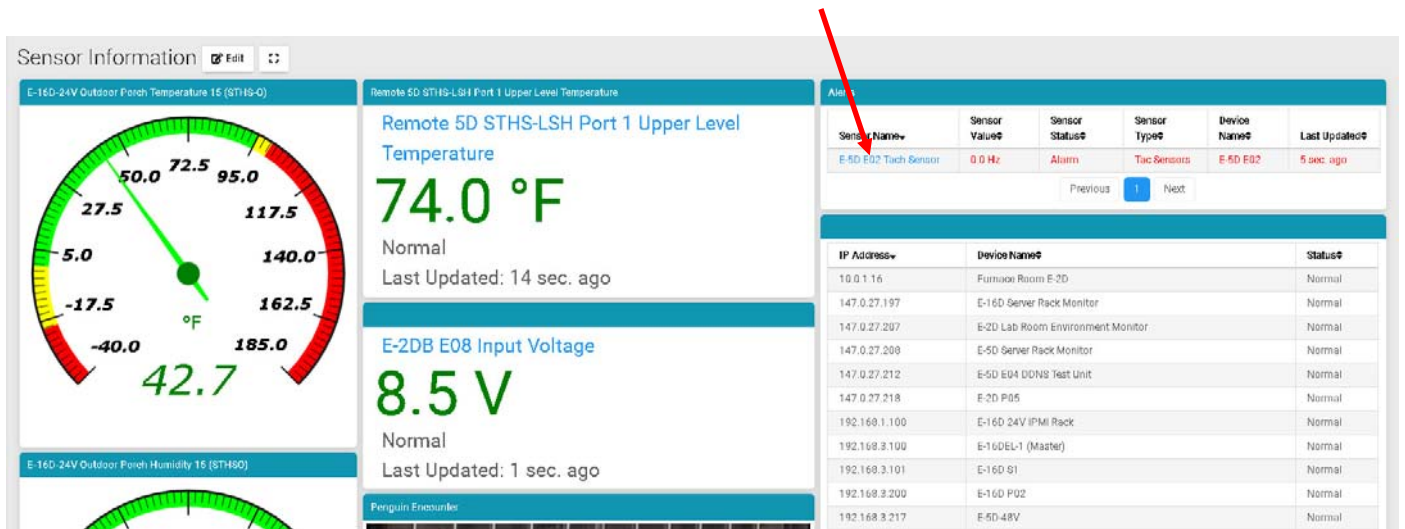


Figure 66- View and connect directly with sensor through the Dashboard

When you click on the alert from the Dashboard, a pop-up will display providing the option to acknowledge or dismiss it.

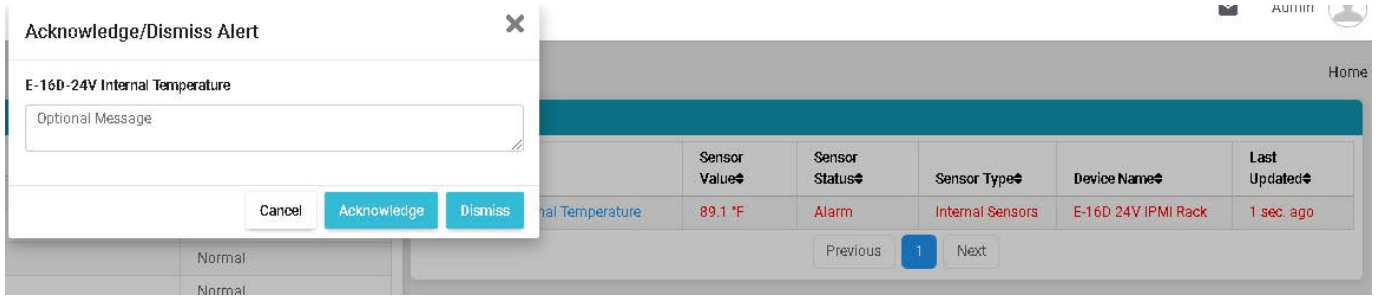


Figure 67- Acknowledge or Dismiss alert pop-up

If, at some point, you want to remove all the listed event log entries and start from scratch, you can click on "Clear All Entries" and let the list start over. If you want to save the logs for future reference, click "Download All Entries" first and save the file to a .txt file somewhere on your computer. This file is tab delimited with the first row having column names. Please note messages are in HTML format. You can use this file to filter by devices or sensors.



Figure 68- Clear or Download Event Log Entries

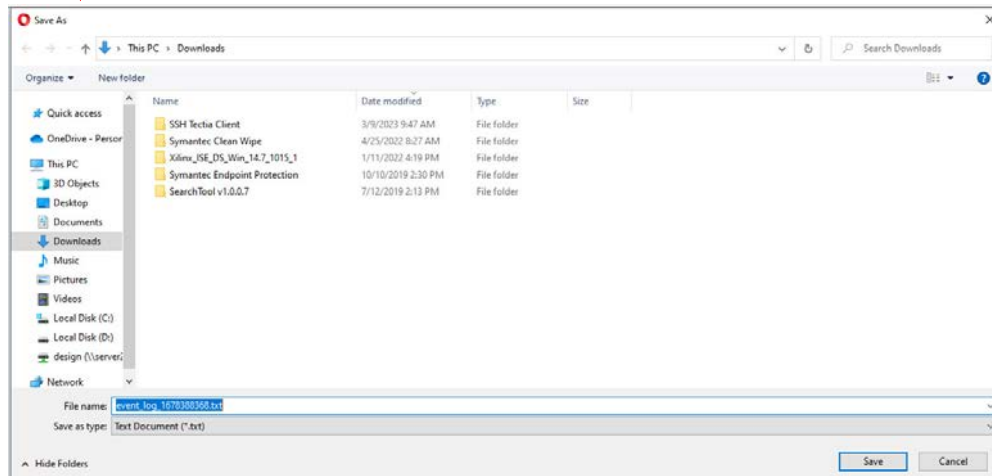


Figure 69- Save Event Log as text file

Reports

Reports will contain event information on selected sensors and devices individually or in groups as they are assigned to Devices, or markers assigned to configured maps. First you must configure the Actions to be reported on and Triggers for how often to have Reports generated.

First click on "Actions" in the Events menu. Apply a name to the Action you will create. Then click on "Add New Action" and your new Action will appear in the list to the left.

Once the Action is listed, click on "Edit" to configure it.

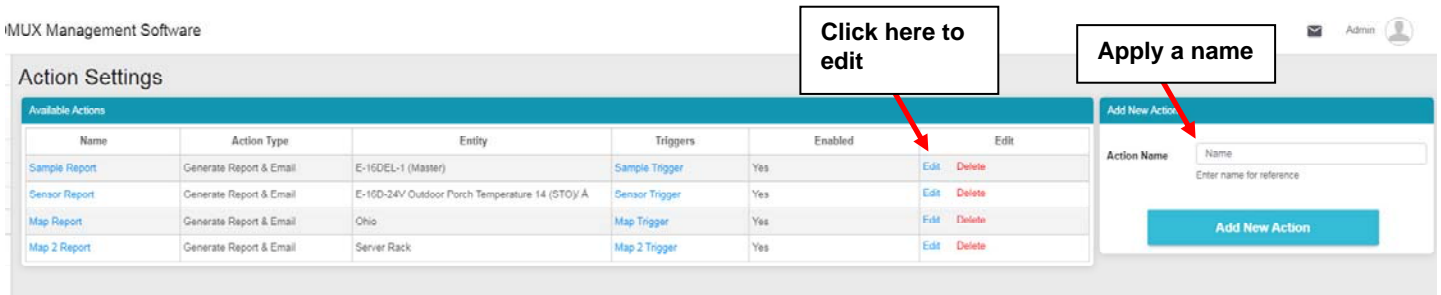


Figure 70- Action List

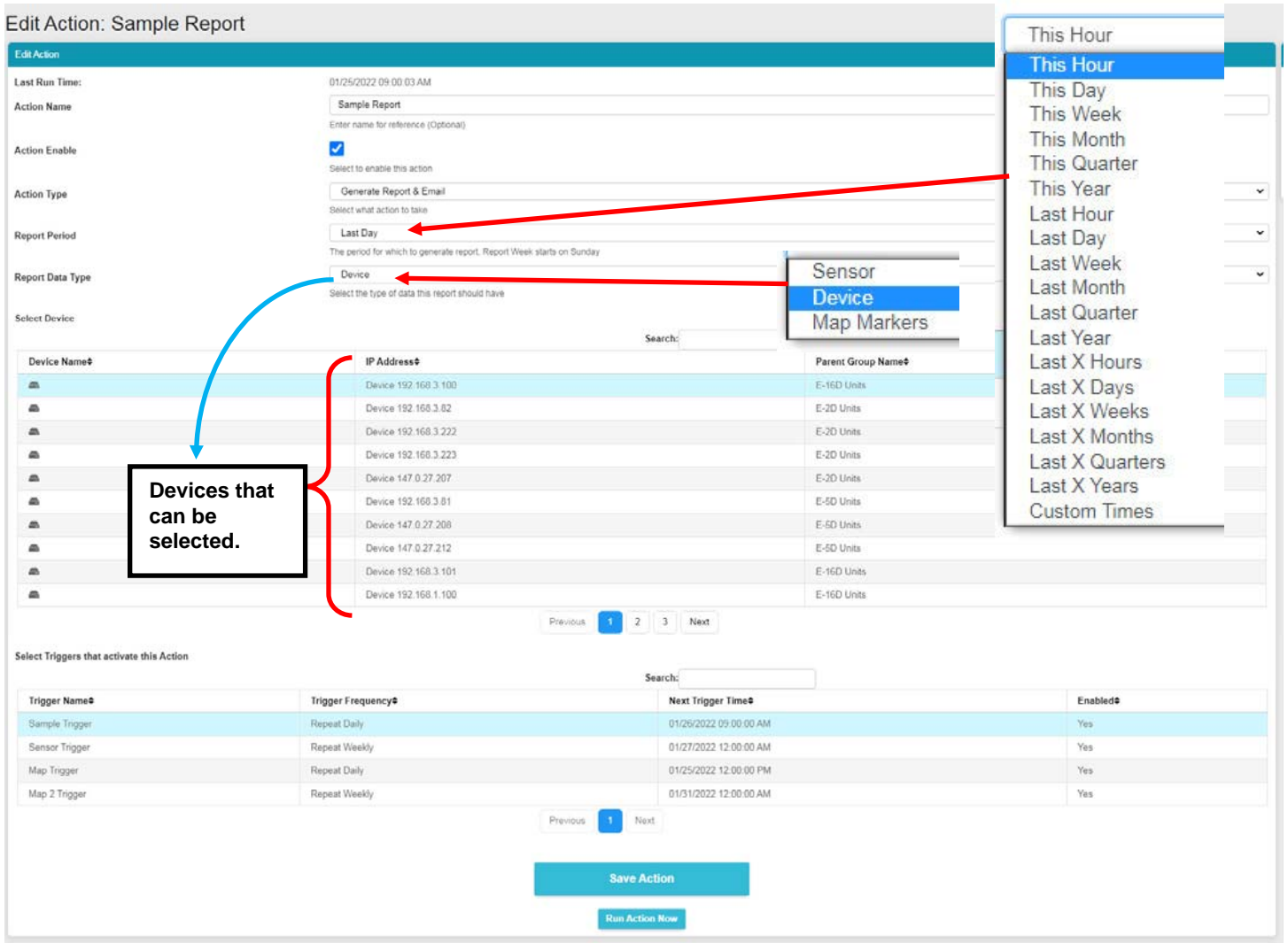


Figure 71- Action Options

Be sure to enable the "Action Enable" block. Otherwise reports will not be generated.

For Action Type, select from the drop down list..



Figure 72-More Action Options

Generate Reports & Email

If you select "Generate Report & Email" then all users with "Email Alerts" selected (Figure 27) will receive reports via email. Select "Generate Report" to have generated reports saved in the Report List (page 53).

The Report Period is the data in the time period that reports should include. A long list of time periods is available to select from.

The Report can include a summary of sensors or devices, alerts from multiple specific sensors, alerts from all sensors that are connected to specific devices (E-xD units) or alerts from sensors identified with markers placed in a single configured map. Available selections will adjust depending upon what **Report Data Type** you select. Multiple sensors, devices or markers can be selected and reported in a single report.

Edit Action: Outdoor Porch Sensor Report

Action Enable

Action Type Generate Report & Email

Report Period Last Quarter

Report Data Type Sensor

Select Sensor

Sensor Name#	Device Name#	Sensor Value#	Sensor Type#
E-18D-24V Outdoor Porch Temperature 14 (STOY-A)	E-18D-24V IPM Rack	34.0 °F	External Sensors
E-18D-24V Outdoor Porch Temperature 15 (STHS-G)	E-18D-24V IPM Rack	36.5 °F	External Sensors
E-18D-24V Outdoor Porch Humidity 16 (STHS-C)	E-18D-24V IPM Rack	63.6 %	External Sensors
E-20B-ESB Input Voltage	E-20B-ESB	8.6 V	Internal Sensors
E-20B-ESB Temperature 1	E-20B-ESB	82.2 °F	External Sensors
E-20B-ESB Humidity 1	E-20B-ESB	17.6 %	External Sensors
E-20B-ESB Dew Point 1	E-20B-ESB	34.2 °F	External Sensors
E-20B-ESB ACDCM Sensor 2-1	E-20B-ESB	0.0 V	External Sensors
E-20B-ESB ACDCM Sensor 2-3	E-20B-ESB	-0.1 V	External Sensors
E-20B-ESB ACDCM Sensor 2-2	E-20B-ESB	1.5 %	External Sensors

Select Triggers that activate this Action

Trigger Name#	Trigger Frequency#	Next Trigger Time#	Enabled#
Sensor Trigger	Repeat Daily	03/11/2023 08:00:00 AM	Yes
Sample Trigger	Repeat Daily	11/12/2022 09:00:00 AM	No
Map Trigger	Repeat Daily	03/18/2023 12:00:00 PM	Yes
Map 2 Trigger	Repeat Weekly	03/13/2023 01:00:00 AM	Yes
Server Rack Temperature	Once	10/01/2022 12:00:00 AM	No

Save Action

Available Actions

Name	Triggers	Entity	Enabled	Edit
Outdoor Porch Sensor Report	Sensor Trigger	E-18D-24V Outdoor Porch Temperature 14 (STOY-A), E-18D-24V Outdoor Porch Temperature 15 (STHS-G)	Yes	Edit Delete
Map Report	Map Trigger	Other	Yes	Edit Delete
Map 2 Report	Map 2 Trigger	Server Rack	Yes	Edit Delete
IPM Rack Motion Detection Report	Sensor Trigger	E-18D-24V IPM Rack Motion Detector 1 (E7H)	Yes	Edit Delete
Motion Sensor Report	Sensor Trigger	E-18DEL-1 IMD-IM Post 16 Motion, E-6DEL-1 855M Post 5 Motion	Yes	Edit Delete
Paul's	Sample Trigger, Sensor Trigger, Map Trigger	Server Rack	Yes	Edit Delete

Figure 73- Reports can show multiple devices, sensors or markers

Operate Relay

When "Operate Relay" is selected, all relays found on the ENVIROMUX's monitored by the Management Software will be listed. One or more relays can be selected. For Output Relay Status, select the status the relay should switch to once an Action is Triggered

Edit Action: Weekly Alerts Report

Edit Action

Last Run Time: 10/22/23 12:00:02 AM

Action Name: Weekly Alerts Report
Enter name for reference (Optional)

Action Enable:
Select to enable this action

Action Type: Operate Relay
Select what action to take

Select Output Relays

Search:

Sensor Name	Device Name	Current Value	Sensor Category
Siren & Beacon	E-2D Lab Room Environment Monitor	Inactive	Output Relays
Output Relay #1	E-2D P05	Inactive	Output Relays
Emergency UPS Shutdown	E-5D Server Rack Monitor	Inactive	Output Relays
Auto Dialer Call For Server Room Smoke	E-5D Server Rack Monitor	Inactive	Output Relays
Server 1 Power Relay	E-16D Server Rack Monitor	Power On	External Sensors
Computer Lab Emergency UPS Shutdown	E-16D Server Rack Monitor	Inactive	Output Relays
Auto Dialer Call for Computer Lab Smoke	E-16D Server Rack Monitor	Inactive	Output Relays
Auto Dialer Call for Equipment Lab 1 Smoke	E-16D Server Rack Monitor	Inactive	Output Relays
Auto Dialer Call for Equipment Lab 2 Smoke	E-16D Server Rack Monitor	Inactive	Output Relays

Previous 1 Next

Output Relay Status: Active/On
Select the status to change the Output Relay to

Select Triggers that activate this Action

Search:

Trigger Name	Trigger Frequency	Next Trigger Time	Enabled
Weekly Trigger	Repeat Weekly	10/29/23 12:00:00 AM	Yes
test	Repeat Hourly	10/26/23 12:00:00 PM	Yes
Sample Trigger	Unknown	-	Yes

Previous 1 Next

Save Action

Run Action Now

Figure 74- Action Type "Output Relay"

Send Email

When "Send Email" is selected, a text box is presented to enter email message to be sent to all registered users of the Management Software with email alerts enabled. The message can be either plain text or a template and can include a variety of template variables to make it easy to identify the Trigger source, device information etc. Available template variables are listed below.

Variable	Description
%triggered_sens_val%	Sensor Value
%triggered_sens_name%	Sensor Name
%triggered_sens_cat_name%	Sensor Category Name
%triggered_sens_pos%	Sensor Position within the Sensor Category
%triggered_dev_name%	Device Name corresponding to sensor triggered
%triggered_dev_loc%	Device Location corresponding to sensor triggered (Available for E-xD only)
%triggered_dev_branch%	Device Branch corresponding to sensor triggered (Available for E-xD only)
%triggered_dev_rack%	Device Rack corresponding to sensor triggered (Available for E-xD only)
%triggered_dev_phone%	Contact Phone Number of Device corresponding to sensor triggered (Available for E-xD only)
%triggered_dev_email%	Contact Email of device corresponding to sensor triggered (Available for E-xD only)
%triggered_dev_mac%	Device MAC address corresponding to sensor triggered
%triggered_dev_ip%	Device IP Address corresponding to sensor triggered
%triggered_dev_model%	Device Model corresponding to sensor triggered
%current_date_time%	Current Date and Time
%sensor_name_<ID>%	Sensor Name of a specific sensor identified by its EMNG Sensor ID. Example %sensor_name_23%
%sensor_val_<ID>%	Sensor Value of a specific sensor identified by its EMNG Sensor ID. Example %sensor_val_23%.

EMNG Sensor ID is available on each sensors page within the Management Software

Please note all triggered_* template variables work only if the Trigger Logic is OR. If the logic for Trigger is something else (like AND) then multiple sensors combine to activate a Trigger and no single sensor can be provided for the template. In such case triggered_* variables will be replaced by a "- ".

Example message: %triggered_sens_name% went into alert on device %triggered_dev_name% . Contact %triggered_dev_phone% to resolve .

An Email Subject can also be entered.

Edit Action: Weekly Alerts Report

Edit Action

Last Run Time: 10/22/23 12:00:02 AM

Action Name: Weekly Alerts Report
Enter name for reference (Optional)

Action Enable:
Select to enable this action

Action Type: Send Email
Select what action to take

Message to send:
Enter the message to send
Available variables: %triggered_sens_val%, %triggered_sens_name%, %triggered_sens_cat_name%, %triggered_sens_pos%, %triggered_dev_name%, %triggered_dev_loc%, %triggered_dev_branch%, %triggered_dev_rack%, %triggered_dev_phone%, %triggered_dev_email%, %triggered_dev_mac%, %triggered_dev_serial%, %triggered_dev_ip%, %triggered_dev_model%, %current_date_time%, %sensor_name_<ID>%, %sensor_val_<ID>%.
Note: triggered_* variables are available only if the Trigger is activated by a single sensor with OR Logic Trigger

Email Subject:
Enter the Email Subject to use

Select Triggers that activate this Action

Search:

Trigger Name	Trigger Frequency	Next Trigger Time	Enabled
Weekly Trigger	Repeat Weekly	10/29/23 12:00:00 AM	Yes
test	Repeat Hourly	10/26/23 12:00:00 PM	Yes
Sample Trigger	Unknown	--	Yes

Previous 1 Next

Save Action

Run Action Now

Figure 75- Action Type "Send Email"

Send SMS

Selecting "Send SMS" will have the same message format options as "Send Email" except for the "Email Subject" option. All users with configured phone numbers will receive a message when the action is initiated.

Note: Please restrict the SMS length to be under the limit provided by your SMS provider.

Record IP Camera

When "Record IP Camera" is selected, the user is provided with a list of IP cameras that are monitored by the connected ENVIROMUX's. Any of these can be selected to record video as the action taken. The length of time of the recording can be selected from 5 seconds to up to 10 minutes.

Edit Action: Weekly Alerts Report

Edit Action

Last Run Time: 10/22/23 12:00:02 AM

Action Name: Weekly Alerts Report
Enter name for reference (Optional)

Action Enable: Select to enable this action

Action Type: Record IP Camera
Select what action to take

Select IP Cameras

Search:

IP Camera Name	Device Name	Camera IP	URL Type
Airport	E-2D Lab Room Environment Monitor	87.54.59.228	JPEG
Airport	E-16D Server Rack Monitor	87.54.59.228	JPEG
Airport	E-5D Server Rack Monitor	87.54.59.228	JPEG
Airport	Server Rack E-1W	67.204.149.29	JPEG
Harbor	E-2D P05	70.88.192.254	JPEG
Airport	Server Rack E-MICRO	67.204.149.29	JPEG

Previous 1 Next

Length of time to record IP Camera: 5 Sec
Select how long to record this IP camera on alert. Applies only to IP cameras with JPEG URL types

Select Triggers that activate this Action

Search:

Trigger Name	Trigger Frequency	Next Trigger Time
Weekly Trigger	Repeat Weekly	10/29/23 12:00:00 AM
test	Repeat Hourly	10/26/23 12:00:00 PM
Sample Trigger	Unknown	--

Previous 1 Next

Save Action

Run Action Now

5 Sec

5 Sec

10 Sec

15 Sec

30 Sec

1 Min

2 Min

5 Min

10 Min

Figure 76-Action Type "Record IP Camera"

Digital Inputs Power Cycle

When "Digital Inputs power cycle" is selected, a list of all digital inputs being monitored by the ENVIROMUX's will be presented. Any of these can be selected to be power cycled by the ENVIROMUX when a trigger occurs.

Edit Action: Weekly Alerts Report

Edit Action

Last Run Time: 10/22/23 12:00:02 AM

Action Name:
Enter name for reference (Optional)

Action Enable:
Select to enable this action

Action Type:
Select what action to take

Select Digital Inputs to power cycle

Search:

Sensor Name	Device Name	Current Value	Sensor Category
Lab Smoke Detector	E-2D Lab Room Environment Monitor	Open	Digital Inputs
Lab Main Door	E-2D Lab Room Environment Monitor	Closed	Digital Inputs
Lab Equipment Door	E-2D Lab Room Environment Monitor	Closed	Digital Inputs
Lab Motion Detector	E-2D Lab Room Environment Monitor	Closed	Digital Inputs
E-2D P05 Digital Input 1	E-2D P05	No Alert	Digital Inputs
Server Room Smoke Detector	E-5D Server Rack Monitor	Open	Digital Inputs
Server Rack Wafer Sensor	E-5D Server Rack Monitor	Open	Digital Inputs
Server Room Motion Detector	E-5D Server Rack Monitor	Closed	Digital Inputs
Server Room Door	E-5D Server Rack Monitor	Closed	Digital Inputs
Server Rack Door	E-5D Server Rack Monitor	Closed	Digital Inputs

Previous 1 2 Next

Select Triggers that activate this Action

Search:

Trigger Name	Trigger Frequency	Next Trigger Time	Enabled
Weekly Trigger	Repeat Weekly	10/29/23 12:00:00 AM	Yes
test	Repeat Hourly	10/26/23 12:00:00 PM	Yes
Sample Trigger	Unknown	--	Yes

Previous 1 Next

Save Action

Run Action Now

Figure 77-Action Type "Digital Inputs power cycle"

Once Triggers have been set up, they will appear in the list. Triggers determine how often the Action will be initiated and when. Either select an existing Trigger to cause the Action to occur, or configure a new Trigger first (on the next page).

Be sure to click "Save Action" to retain your changes. To test the result of the action, click "Run Action Now". If the Action selected is a Report, then the Report generated by that action will appear under Reports, and if you have selected it, each user with Email Alerts enabled will also receive a pdf copy of the report. If the Action Type is any other (Operate Relay, Record IP Camera, Digital Inputs power cycle) then watch for the appropriate Action to be executed.

Triggers

Triggers determine when and how often a particular Action will be executed. For example, a Trigger for Report generation Action determines when and how often a Report gets generated. The same Trigger can be used repeatedly for as many Actions as needed.

Click "Triggers" in the Events menu. Apply a name to the Trigger you will create. Then click on "Add New Trigger" and your new Trigger will appear in the list to the left.

Once the Trigger is listed, click on "Edit" to configure it.

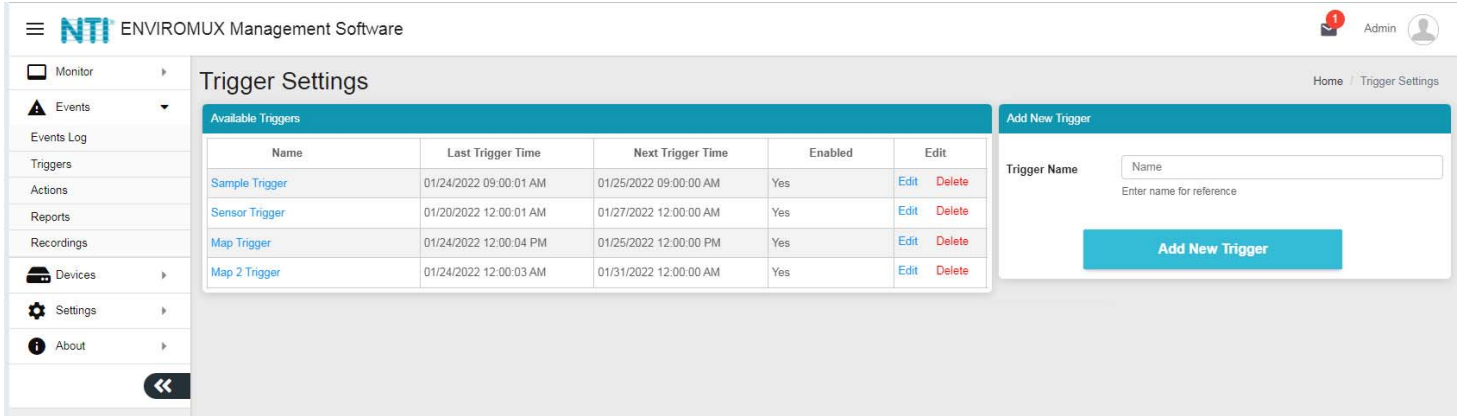


Figure 78- Trigger List

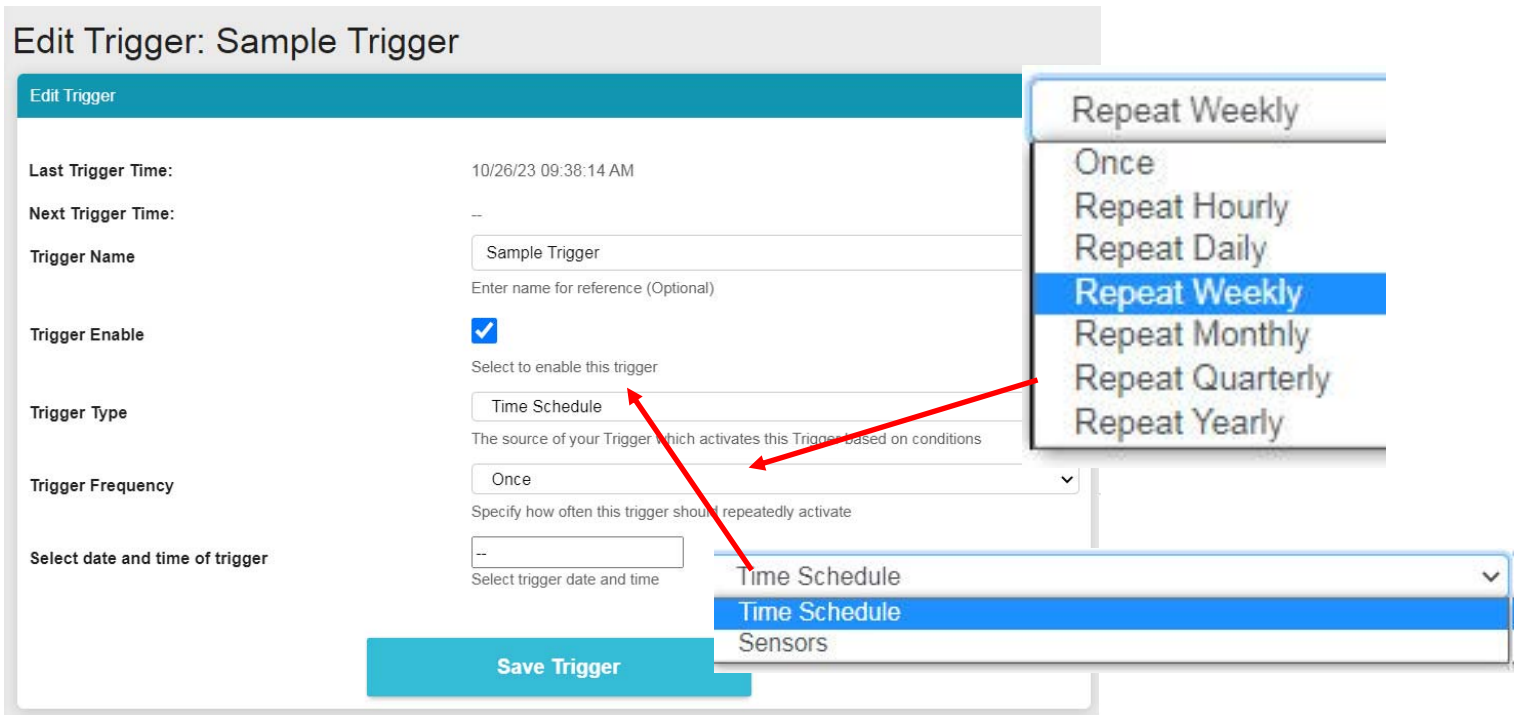


Figure 79- Trigger Options for Time Schedule Type Trigger

If the Trigger had been previously setup, the last trigger time and next trigger time will be indicated.

The name given to the Trigger will be displayed and can be changed.

A checkbox to enable the Trigger is provided so that it can be used.

Choose the type of trigger that will be used, one based on a Time Schedule, or one caused by the status of a sensor.

If Trigger Type is set as Time Schedule select the Trigger Frequency from a list of options. Depending upon what Trigger Frequency is selected, the option for fine tuning the frequency will change. (See next page)

The figure displays four screenshots of the configuration interface for different trigger frequencies:

- Once:** The 'Trigger Frequency' dropdown is set to 'Once'. The 'Select date and time of trigger' field is set to '01/31/2022 12:00:00 AM'. The instruction below the field is 'Select trigger date and time'.
- Repeat Hourly:** The 'Trigger Frequency' dropdown is set to 'Repeat Hourly'. The 'Select Minute' field is set to '48'. The instruction below the field is 'Select minute of the hour at which this triggers'.
- Repeat Daily:** The 'Trigger Frequency' dropdown is set to 'Repeat Daily'. The 'Select Hour' field is set to '12 AM'. The instruction below the field is 'Select hour of the day at which this triggers'.
- Repeat Monthly:** The 'Trigger Frequency' dropdown is set to 'Repeat Monthly'. The 'Select day of month' field is set to '1'. The instruction below the field is 'Select day of the month at which this triggers'.

Figure 80- Option detail for Trigger Frequency

When the trigger type is set as "Sensors" (see Figure 81, the options change to sensors that are being monitored by the E-MNG-SH).

In "Select Sensor Type", choose the type of sensor (from the drop down list) to filter the selections in the list below.

Edit Trigger: Sample Trigger

Edit Trigger

Last Trigger Time: 10/28/23 09:38:14 AM

Next Trigger Time: --

Trigger Name: Sample Trigger
Enter name for reference (Optional)

Trigger Enable: Select to enable this trigger

Trigger Type: Sensors
The source of your Trigger which activates this Trig

Select Sensor Type: Any Sensor/Event/Smart-Alert in Alert
Select the type of sensor to use in this Trigger

Select Sensors

Search:

ID	Sensor Name	Device Name	Sensor Value	Sensor Category
1_1	Lab Temperature	E-2D Lab Room Environment Monitor	22.4 °C	External Sensors
2_1	Lab Humidity	E-2D Lab Room Environment Monitor	25.8 %	External Sensors
3_1	Lab Dew Point	E-2D Lab Room Environment Monitor	35.3 °F	External Sensors
4_1	Lab Rack Main Voltage	E-2D Lab Room Environment Monitor	119.4 V	External Sensors
5_1	Lab Rack UPS Voltage	E-2D Lab Room Environment Monitor	118.8 V	External Sensors
6_1	Lab Rack Main Frequency	E-2D Lab Room Environment Monitor	60.2 Hz	External Sensors
7_1	Lab Rack UPS Frequency	E-2D Lab Room Environment Monitor	60.2 Hz	External Sensors
9_2	Lab Smoke Detector	E-2D Lab Room Environment Monitor	No Smoke	Digital Inputs
10_2	Lab Main Door	E-2D Lab Room Environment Monitor	Closed	Digital Inputs
11_2	Lab Equipment Door	E-2D Lab Room Environment Monitor	Closed	Digital Inputs

Previous 1 2 3 4 5 ... 20 Next

Select the sensors that can activate this Trigger

Logical Function: OR
If multiple Sensors are selected for this Trigger, select the Logical Function how they combine to activate this Trigger

Sensors Trigger Independently: No
No: To reactivate this Trigger, wait for all sensors to return to Normal.
Yes: Reactivate Trigger with any sensor switching to alert at any time.
Note: Applicable only to Triggers with multiple sensors

Save Trigger

Figure 81- Trigger set as Sensor Trigger Type

If Sensor Type selected is “Any Sensor/Event/Smart-Alert in Alert” then appropriate Sensor has to go into Alert (applicable for E-2D/5D/16D only) or appropriate Event/Smart Alert has to go into Alert on the device depending on threshold settings set on the device. If Sensor Type selected is any particular Sensor Type depending on availability on E-xD/E-MICRO-TRH(P)/E-1W then you can set the threshold for this directly in the Management Software. Please note there is no Trigger Delay setting available yet. So for sensors generating inaccurate values, we recommend setting the threshold in the Device.

With the sensor type selected, an option will be presented to either apply the minimum or maximum value from that sensor that will trigger the action when the sensor has a range of reported values, or an on/off value to trigger the action when the sensor type is a contact sensor type.

Search:

ID#	Sensor Name#	Device Name#	Sensor Value#	Sensor Category#
2_1	Lab Humidity	E-2D Lab Room Environment Monitor	40.7 %	External Sensors
25_1	E-2D P05 Port 1 Humidity	E-2D P05	33.6 %	External Sensors
34_0	Internal Humidity	E-5D Server Rack Monitor	16.9 %	Internal Sensors
36_1	Server Room Humidity	E-5D Server Rack Monitor	40.3 %	External Sensors
39_1	Server Rack Humidity	E-5D Server Rack Monitor	28.0 %	External Sensors
79_0	Internal Humidity	E-16D Server Rack Monitor	27.2 %	Internal Sensors
82_1	Office Humidity	E-16D Server Rack Monitor	34.7 %	External Sensors
84_1	Computer Lab Humidity	E-16D Server Rack Monitor	35.6 %	External Sensors
86_1	Server Rack Humidity	E-16D Server Rack Monitor	38.4 %	External Sensors
88_1	Equipment Lab 1 Humidity	E-16D Server Rack Monitor	27.9 %	External Sensors

Previous **1** 2 Next

Select the sensors that can activate this Trigger
Note: For Sensor Trigger Reactivation with multiple sensors, Trigger gets Reactivated only if all sensors returned to Normal, prior to Reactivation

Logical Function OR
If multiple Sensors are selected for this Trigger, select the Logical Function how they combine to activate this Trigger

Trigger Minimum Value
Value of sensor below which this Trigger gets activated

Trigger Maximum Value
Value of sensor above which this Trigger gets activated

Save Trigger

Figure 82- Sensor Type Selected with a Range of Values

Select Sensors

Search:

ID#	Sensor Name#	Device Name#	Sensor Value#	Sensor Category#
9_2	Lab Smoke Detector	E-2D Lab Room Environment Monitor	Open	Digital Inputs
10_2	Lab Main Door	E-2D Lab Room Environment Monitor	Closed	Digital Inputs
11_2	Lab Equipment Door	E-2D Lab Room Environment Monitor	Closed	Digital Inputs
12_2	Lab Motion Detector	E-2D Lab Room Environment Monitor	Closed	Digital Inputs
46_2	Server Rack Water Sensor	E-5D Server Rack Monitor	Open	Digital Inputs
47_2	Server Room Motion Detector	E-5D Server Rack Monitor	Closed	Digital Inputs
48_2	Server Room Door	E-5D Server Rack Monitor	Closed	Digital Inputs
91_1	Computer Lab Water Sensor	E-16D Server Rack Monitor	No Water Detected	External Sensors
95_1	Equipment Lab 2 Water Sensor	E-16D Server Rack Monitor	No Water Detected	External Sensors
128_2	Equipment Lab 1 Smoke Detector	E-16D Server Rack Monitor	No Smoke Detected	Digital Inputs

Previous **1** 2 3 Next

Select the sensors that can activate this Trigger
Note: For Sensor Trigger Reactivation with multiple sensors, Trigger gets Reactivated only if all sensors returned to Normal, prior to Reactivation

Logical Function OR
If multiple Sensors are selected for this Trigger, select the Logical Function how they combine to activate this Trigger

Trigger Value Closed/On
Value of sensor at which this Trigger gets activated

Save Trigger

Figure 83- Selected Sensor Type is Digital Input

With either type of sensor selected, more than one sensor in the list can be selected to trigger the action. With more than one is selected, a Logical Function should be selected to control how the sensor values will impact the trigger. Select between OR, AND, XOR, NOR and NAND logical functions.

- OR - a status change in any selected sensor will trigger the action
- AND- a trigger will occur only if all selected sensors have a status change
- XOR- a trigger will occur if one selected sensor has a status change, but not more than one sensor
- NOR- a trigger will occur only if more than one selected sensor has a status change
- NAND- a trigger will occur if only one sensor has a status change, or if no sensor has a status change, but it will not occur is more than one sensor has a status change.

Be sure to click "Save Trigger" to retain your changes.

If the Logical Function for the Trigger is OR (see Figure 81), there is another option of "Sensors Trigger Independently". Enable this setting if you like the sensors to Trigger when each and any sensor crosses threshold every time. In this case the Trigger does NOT wait for all sensors to return to normal. If this setting is disabled, the Trigger waits for all sensors to return to Normal to reactivate the trigger for any new sensor alert

With Triggers and Actions setup, Reports will be generated and added to the Report List.

Report List						
Pending Reports: 0 Available Reports:						
7. E-16DEL-1 (Master) Device Report	Last Day	Completed	Device	01/08/2022 09:00:02 AM	View	Download Delete
6. E-16DEL-1 (Master) Device Report	Last Day	Completed	Device	01/07/2022 09:00:02 AM	View	Download Delete
5. E-16DEL-1 (Master) Device Report	Last Day	Completed	Device	01/06/2022 09:00:03 AM	View	Download Delete
4. E-16D-24V Outdoor Porch Temperature 14 (STO) A Report	Last Week	Completed	Sensor	01/05/2022 11:54:51 AM	View	Download Delete
3. E-16DEL-1 (Master) Device Report	Last Day	Completed	Device	01/05/2022 09:00:04 AM	View	Download Delete
2. E-16DEL-1 (Master) Device Report	Last Day	Completed	Device	01/04/2022 09:00:06 AM	View	Download Delete
1. E-16DEL-1 (Master) Device Report	Last Day	Completed	Device	01/03/2022 03:37:16 PM	View	Download Delete

Figure 84- Reports list

With a report in the list, you can click "View" to see the content immediately, click "Download" to save it for viewing later, or click "Delete" if you don't want it in the list any longer.

The sensor report will provide (for one or more sensors) 1) a graph containing minimum, maximum and average sensor values, 2) a bar chart indicating the total number of alerts generated by a sensor and 3) the total length of time that sensor was in alert. The graph will contain data for the time period setup in the Report Period under Actions (page 42).

Maps and device reports provide an alert details summary and its trends (see image on next page). A maximum of 800 reports will be stored before the software automatically deletes the oldest reports.

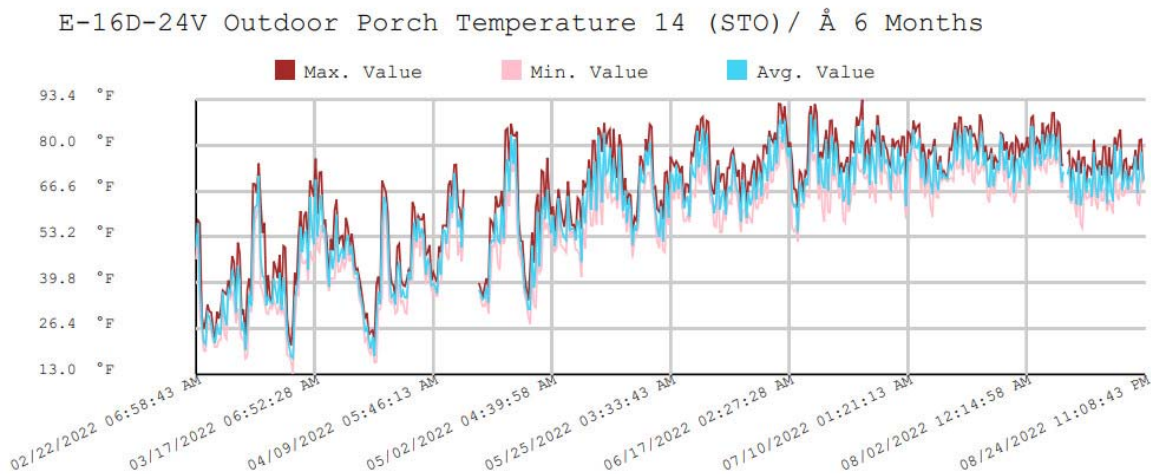
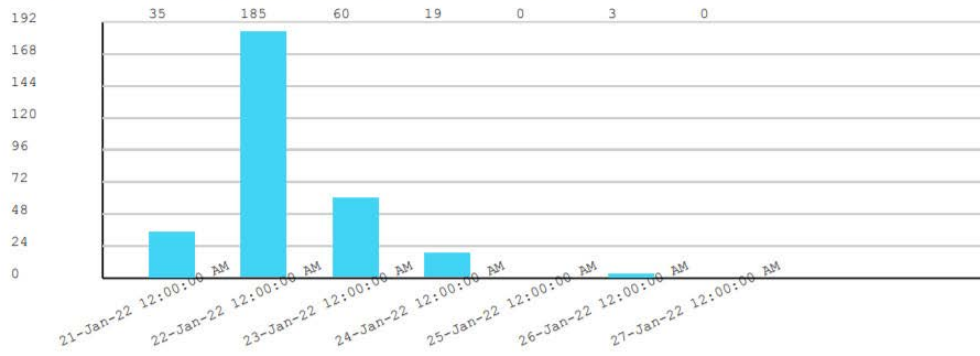


Figure 85- Report graph of an individual sensor

E-16D Server Rack Monitor Alerts Count Trend



E-16D Server Rack Monitor Alerts Time Trend

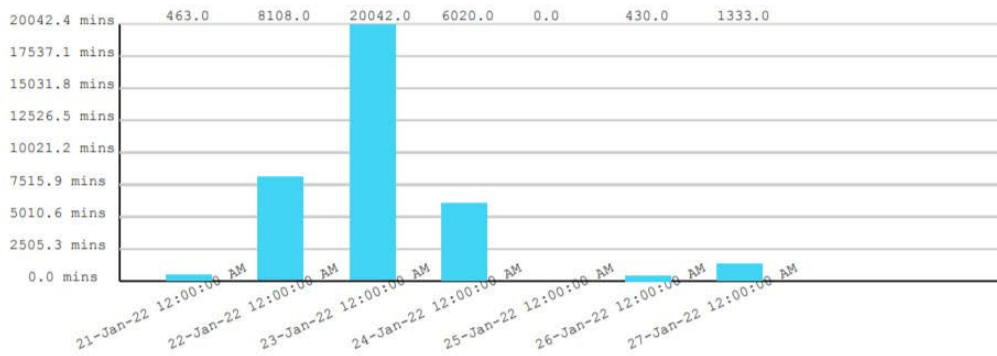


Figure 86- Report showing sensor alert trends

Current Value:	68.9 °F
Status:	Normal
Device Name:	E-16D 24V IPMI Rack
Last Alert Time:	Never
Last Alert:	--
Overall Lowest Reading:	-6.2 °F
Lowest Reading Time:	01/22/2022 05:03:23 AM
Overall Highest Reading:	93.9 °F
Highest Reading Time:	06/29/2021 02:34:22 PM
Total Alert Time:	--
Total Normal Time:	1 year 5 months 23 days
Last Update:	08/25/2022 12:00:03 AM

Figure 87- Report summary data for a sensor

Sounds

The E-MNG-SH will let you know when an sensor or device is in alert with a sound that can be heard over any speaker connected to the computer where the E-MNG-SH is being monitored. Alert warning sounds will be heard when the user is at any dashboard page that has alerts or device status windows and will sound every 120 seconds until the alert is cleared or acknowledged.

Warning sounds will not be heard if you are on the home page of the E-MNG-SH or if "Sound Alerts" is disabled in the User Setting page.

If the user has NOT used a dashboard page upon opening the tab, (for example NOT clicking or NOT scrolling on this page,) the browser may not play the alert sound. This is because of a browser restriction to prevent auto sound playback on auto-opened pages. Click on "**Enable Alert Sound**" that shows up on the dashboard page when this happens and sound alert will auto play going forward on this page.

Recordings

Recordings are snapshot recordings from selected IPCAMs when a sensor goes into alert. The IPCAM and the length of time it will record will be selected under critical alert settings for that sensor (below). Recordings are collections of snapshots from the camera, taken as frequently as the refresh rate for the camera is set for.

Figure 88- User settings to enable Recording

To see your recordings, click on "Recordings" in the Events menu. The camera the recording came from and time it was recorded will be in the bottom left corner of the recording. To delete a recording, click "Delete" in the bottom **right** corner of the recording image. Up to 1000 recordings will be stored before the software automatically deletes the oldest recording.

Label shows where the video was captured from and when

Figure 89- Recording list

THE ABOUT MENU

The About menu includes tools for viewing the firmware version you are using and any details about it, as well as providing a link to this manual and a link to a contacts page should you need to contact NTI. Lastly it provides a link to the firmware downloads page where you can get access to the most current version of the E-MNG-SH program.

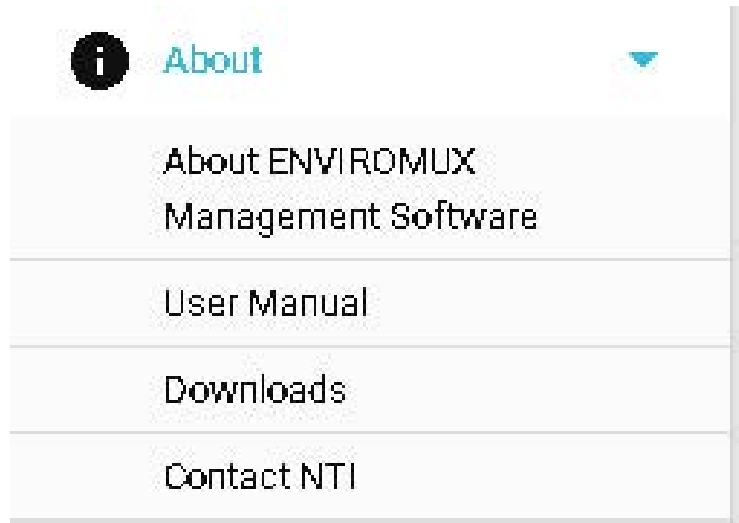
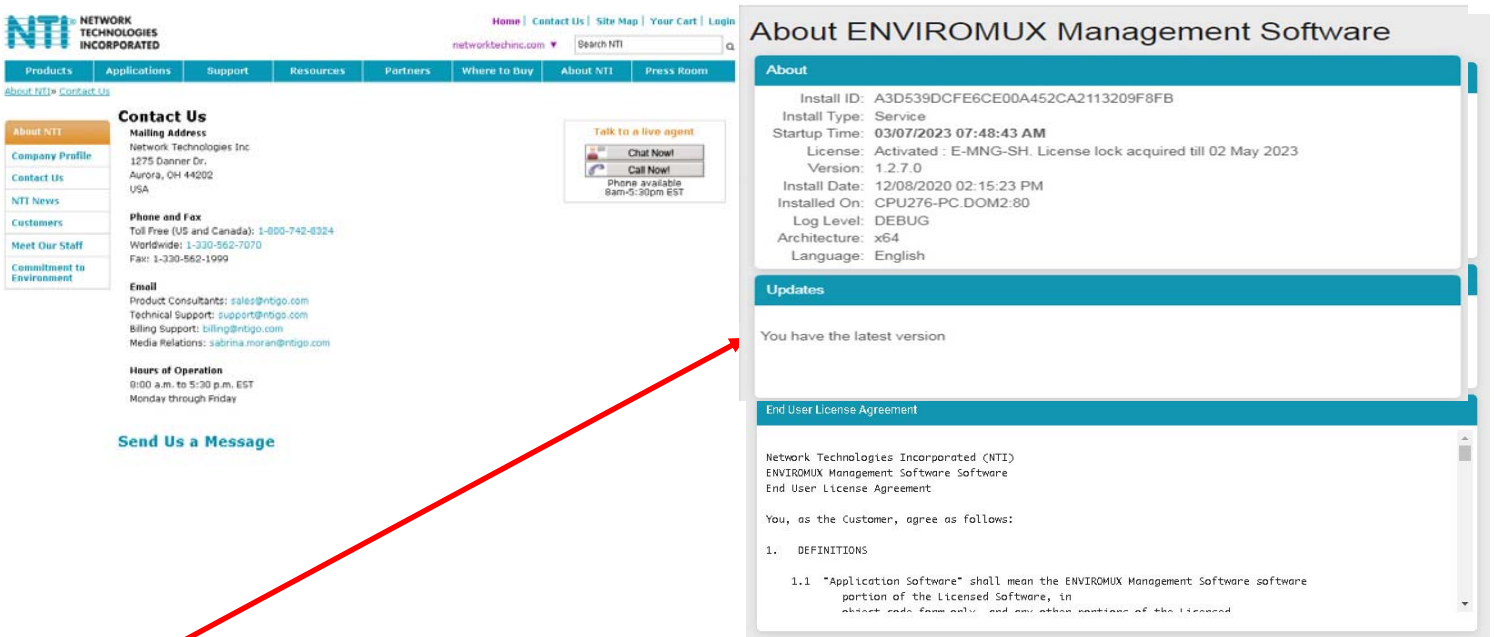


Figure 90- About menu



From the "About ENVIROMUX Management Software" page you can also, at a glance, see if another more current version of the software is available, without having to actually leave the program and go to the Downloads page.

SHUT DOWN E-MNG-SH SERVER

The following applies only if the software is installed as a User Application.

To shut down the E-MNG-SH completely, left click the tray icon in the bottom right corner of your desktop.

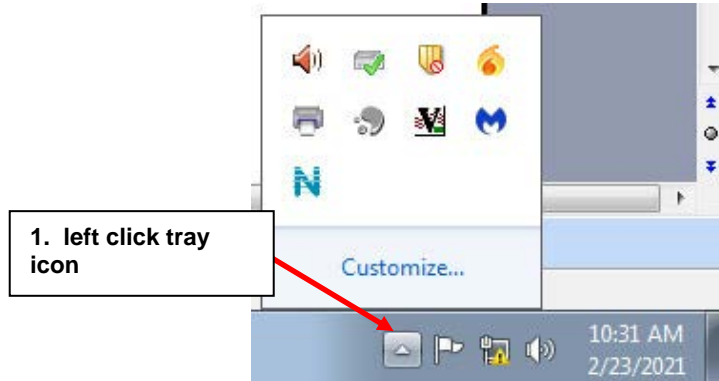


Figure 91- Click on Tray icon

Then right click the E-MNG-SH icon, and select Exit.

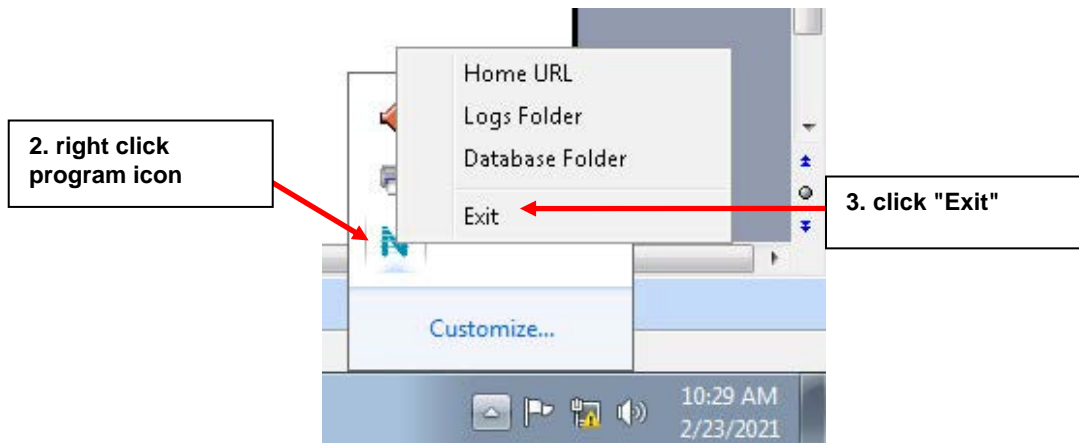


Figure 92- Exit the program

If the software is installed as a Service, the following applies.

Please open the Services application on your PC and navigate to "NTI ENVIROMUX Management Software" entry.

Right click on **Shutdown** or **Restart** as desired.

The opening and closing Tray Icon Application does not have any effect on the status of the Service in case of a "Service" Install.

OTHER TYPE DEVICES

The E-MNG-SH can be accessed from any network-connected computers/smartphone/tablet (provided the computer/smartphone/tablet has access to the Server the E-MNG-SH is on).

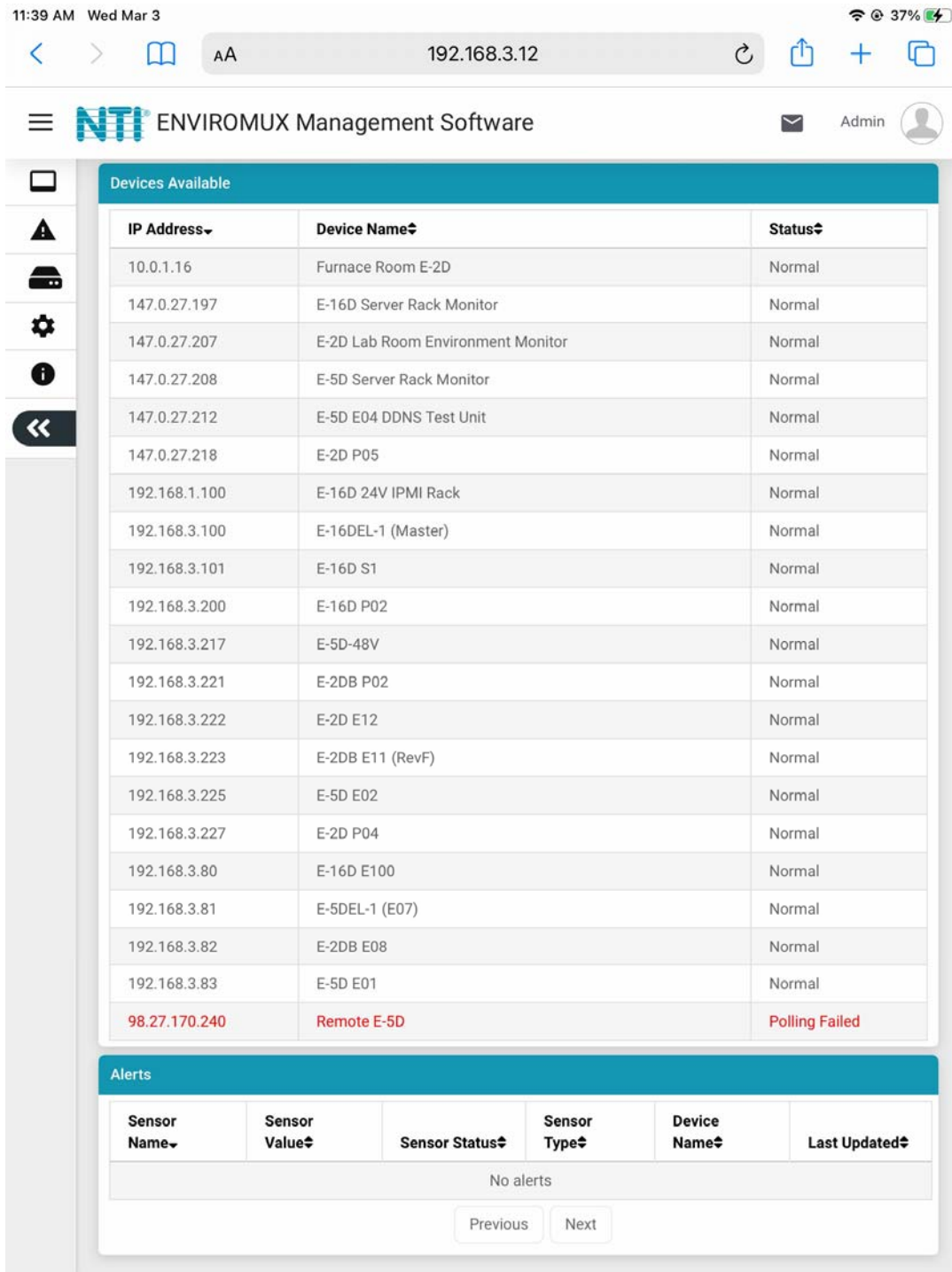


Figure 93- Screenshot from an iPad

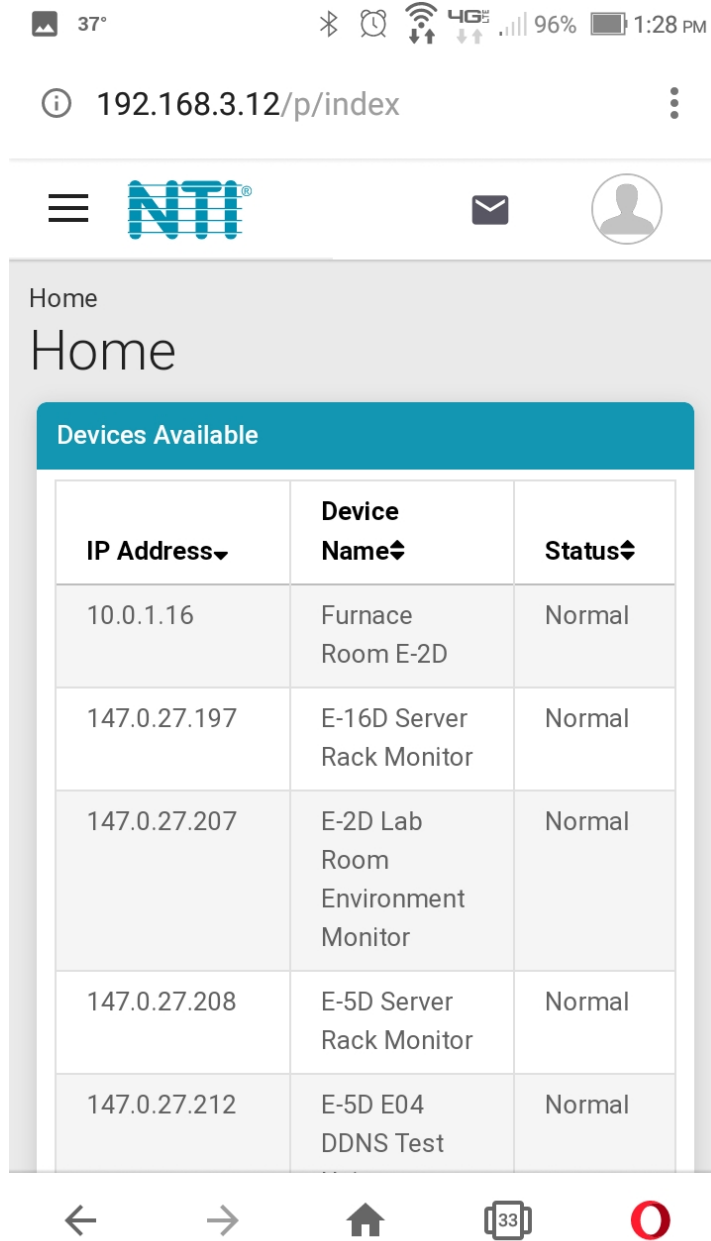


Figure 94- Screenshot from a smartphone

UNINSTALL THE PROGRAM

To uninstall the program: Go to the appropriate programs settings page (i.e. Control Panel -> Programs and Features) and select the "ENVIROMUX Management Software" to uninstall.

Note: Uninstalling the program will also remove any settings and saved sensor values. The license will remain (the license is not transferable)

SOFTWARE UPDATE

From time to time a new version of this program will be available. If you decide to update, follow these steps.

1. Download the new software version to the computer/server the E-MNG-SH is installed on.
2. Shut down the E-MNG software if running on this computer/server.
3. Double-click on the new installation file to install. Once the update has completed, it will prompt for login from the default browser.

Login to the E-MNG-SH and verify that the update has worked. Click on "About" in the side menu, then click "About ENVIROMUX Management Software". The version number shown there will indicate what version you are running. The Updates section will get refreshed after the next update check.

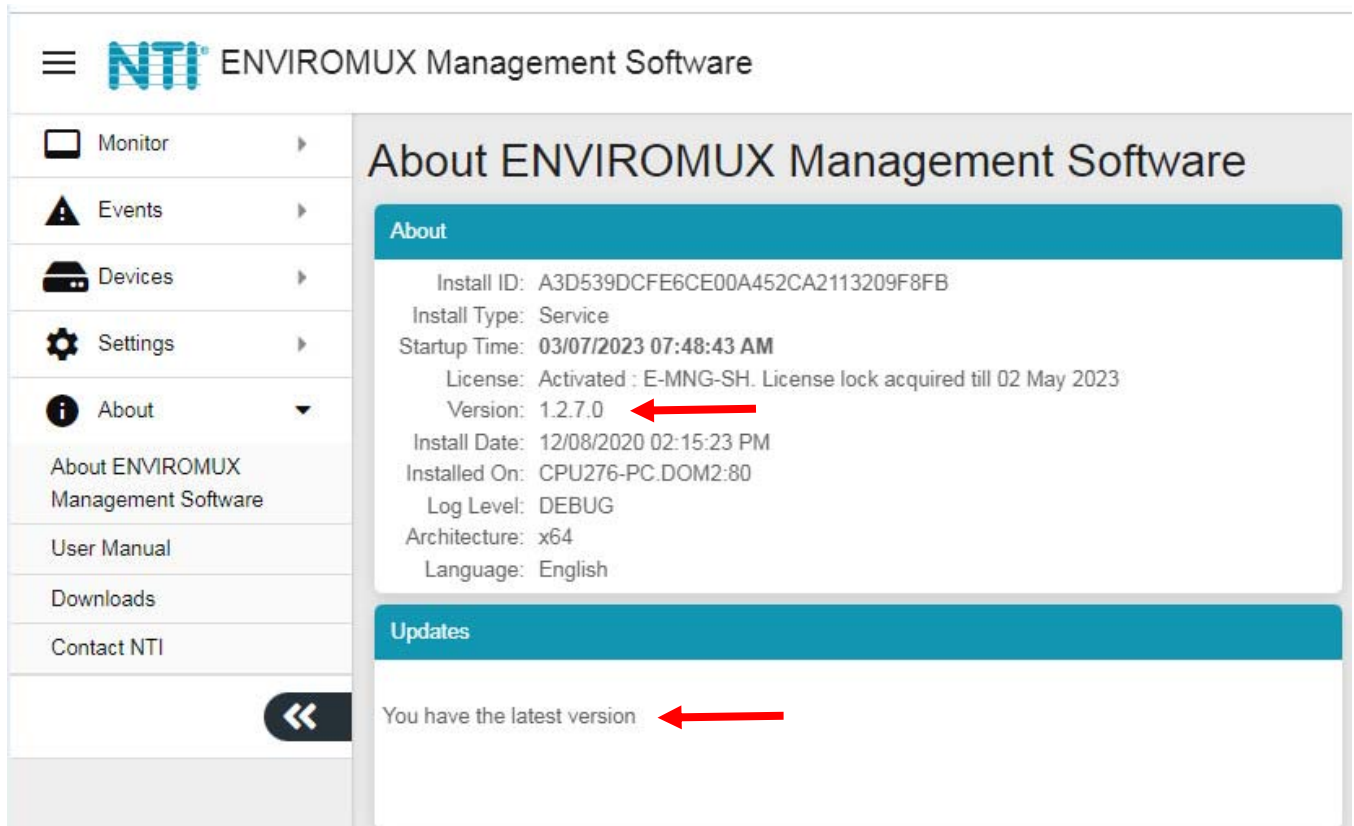


Figure 95-About page

HTTP REST API SUPPORT

Support has been built into the ENVIROMUX firmware to use JSON API to poll sensors using HTTP protocol like cURL command. To automate the interface between servers and the ENVIROMUX and provide data, the following instruction is provided.

E-MNG-SH supports following API's that can be used to get all relevant data from the E-MNG-SH server instead of each individual device. You have to use the Login API to get the session ID first

1. **Login API**
2. **Get Sensor List API**
3. **Get Device List API**
4. **Download Events Log API**
5. **Download Sensor Graph API**

Login API

Type: HTTP POST

Endpoint: "/api/u/login"

POST Body: email=<email>&password=<password>

Response on success: NTI session id in "Set-Cookie" HTTP Header and JSON response with code 200 and relevant success message

Response on error: JSON response with non 200 response code and error message in "msg"

Example:

```
Curl -vk -X POST "https://192.168.1.100/api/u/login" -d "email=guest@enviromux.com&password=guest"
```

Response:

HTTP/1.1 200 OK

Transfer-Encoding: chunked

Set-Cookie: **ntisid=fkal9sjks0kU02js9edjd0Jhals9qj09LSDFG24S98LsAs**; Expires=Sat, 02 Dec 2022 14:15:39 GMT; path=/; HttpOnly

Content-Type: application/json

```
{"code": 200, "msg": "Logged In..", "data": {}}
```

Get Sensor List API:

Type: HTTP GET

Endpoint: "/api/u/sensor/brieflist"

Requires HTTP "Cookie" header with value "ntisid=<sid>"

Content-Type: application/json

JSON Response code if successful: 200

Response data will have array list as follows

```
[<Sensor_id>, <sensor_category_ID>, <Device_name>, <Sensor_name>, <current_sensor_value>, <sensor_category_name>]
```

Example:

```
curl -vk -X GET "https://192.168.1.100/api/u/sensor/brieflist" -H "Cookie:
ntisid=fkal9sjks0kU02js9edjd0Jhals9qj09LSDFG24S98LsAs"
```

Response:

```
{
  "code": 200,
  "data": [
    [ 14, 0, "E-2DB E08", "E-2DB E08 Input Voltage", "8.6 V", "Internal Sensors"],
    [ 20, 1, "E-2DB E08", "E-2DB E08 Temperature 1", "81.7 °F", "External Sensors"],
    ...
  ],
  "msg": "request successful"
}
```

Sensor ID will be unique ID across all sensors of all devices except when sensor category ID is Event or Smart Alert.

Sensor ID will be unique among all Events of all devices

Sensor ID will be unique among all Smart Alerts of all devices

Sensor Category ID List:

```
NTI_SENSOR_CATEGORY_INVALID = -10,
NTI_SENSOR_CATEGORY_EXD_INTERNAL = 0,
NTI_SENSOR_CATEGORY_EXD_EXTERNAL = 1,
NTI_SENSOR_CATEGORY_EXD_DIGITAL_INPUT = 2,
NTI_SENSOR_CATEGORY_EXD_IP_DEVICE = 3,
NTI_SENSOR_CATEGORY_EXD_SNMP = 4,
NTI_SENSOR_CATEGORY_EXD_IP_SENSOR = 7,
NTI_SENSOR_CATEGORY_EXD_IP_INT_SENSOR = 8,
NTI_SENSOR_CATEGORY_EXD_IP_SENSOR = 8,
```

NTI_SENSOR_CATEGORY_EXD_IP_EXT_SENSOR = 9,
NTI_SENSOR_CATEGORY_EXD_IP_DIGINP_SENSOR = 10,
NTI_SENSOR_CATEGORY_EXD_TAC = 12,
NTI_SENSOR_CATEGORY_EXD_OUTPUT_RELAY = 100,
NTI_SENSOR_CATEGORY_EXD_POWER = 101,
NTI_SENSOR_CATEGORY_IP_CAMERA = 103,
NTI_SENSOR_CATEGORY_EXD_EVENTS = 104,
NTI_SENSOR_CATEGORY_EXD_SMART_ALERTS = 105,
NTI_SENSOR_CATEGORY_EXD_SENSOR_HUB = 106,
NTI_SENSOR_CATEGORY_EMICRO_1W_INTERNAL = 200,
NTI_SENSOR_CATEGORY_EMICRO_1W_EXTERNAL = 201,
NTI_SENSOR_CATEGORY_EMICRO_1W_DIGITAL_INPUT = 202,
NTI_SENSOR_CATEGORY_EMICRO_1W_IP_DEVICE = 203,
NTI_SENSOR_CATEGORY_EMICRO_1W_EVENTS = 204,
NTI_SENSOR_CATEGORY_EMICRO_1W_SMART_ALERTS = 205,
NTI_SENSOR_CATEGORY_MAP = 300,

Get Device List API

Type: HTTP GET

Endpoint: "/api/u/monitor/getwindeviceslist"

Requires HTTP "Cookie" header with value "ntisid=<sid>"

Content-Type: application/json

JSON Response code if successful: 200

Response "data" will have an "sdata" array list as follows

[<Device_IP_Address_in_anchor_tag>, <Device Name>, <Device_Status>]

Example:

```
curl -vk -X GET "https://192.168.1.100/api/u/monitor/getwindeviceslist" -H "Cookie:
ntisid=fkal9sjks0kU02js9edjd0Jhals9qj09LSDFG24S98LsAs"
```

Response:

```
{
  "code": 200,
  "data": {
    "id_window": 0,
    "sdata": [
```

```
["Normal"],
    ["<a href=\"/p/device/list-sensor?id_device=4&cat_type=0\">192.168.1.100</a>", "E-2DB- E08",
"Alert"],
    ["<a href=\"/p/device/list-sensor?id_device=8&cat_type=0\">192.168.1.101</a>", "E-16DB- D05",
...
]
},
"msg": "request successful"
}
```

Download Events Log API

Type: HTTP GET or HTTP HEAD

Endpoint: "/api/u/events/log/download"

Requires HTTP "Cookie" header with value "ntisid=<sid>"

Content-Type: application/octet-stream

Content-Disposition: attachment;filename="event_log_<timestamp>.txt"

If successful HTTP Response code: 200 followed by tab delimited event log data:

<Time>\t<Record Type>\t<Message>\t<Log Level>\t<Device>\t<Sensor>\t<Unix Timestamp>

HTTP Response code if error: 401

Example:

```
curl -vk -X GET "https://192.168.1.100/api/u/events/log/download" -H "Cookie:
ntisid=fkal9sjks0kU02js9edjd0Jhals9qj09LSDFG24S98LsAs"
```

Response:

HTTP/1.1 200 OK

Transfer-Encoding: chunked

Content-Type: application/octet-stream; name="event_log_1688938293.txt"

Content-Disposition: attachment;filename="event_log_1688938293.txt"

Time	Record Type	Message	Log Level	Device	Sensor	Unix Timestamp
07/05/2022 04:39:55 PM	<t> Alert <t>	Sensor 2. E-16D E100 on 4G went into Alert on device Remote E-5D <t> 3 <t>Remote E-5D<t>E-16D E100 on 4G <t>				1688928394894<\r\n>

Download Sensor Graph API

Type: HTTP GET or HTTP HEAD

Endpoint: "/api/u/device/sensors/download"

Requires HTTP "Cookie" header with value "ntisid=<sid>"

Requires HTTP GET variables: "period_index =1&cat_type=<Sensor_category_ID>&emng_id_sensor=<Sensor_ID>"

Period Index is the period for which to download this sensor graph for. Period index can be selected from list below:

Graph Periods Available:

PERIOD_1HR = 0,

PERIOD_8HR = 1,

PERIOD_2D = 2,

PERIOD_1WK = 3,

PERIOD_1MO = 4,

PERIOD_6MO = 5,

PERIOD_2YR = 6

cat_type is the sensor category ID shown in Get All Sensor List API

emng_id_sensor is the sensor ID that is unique to all sensors

Example response with graph data loaded:

Response Content-Type: application/json

If successful JSON response code will be 200 otherwise it will have appropriate response code along with error message like 401 for invalid credentials

Even if JSON response code is 200, graph data may not have loaded in response.

To confirm if data was loaded please check the response variable ['data']['loaded'].

If this is true, data was available when API was called and ['data']['sdata'] now contains sensor graph data for selected period

If ['data']['loaded'] is false, this sensor's graph data was not loaded to memory at the time of request. However this auto triggers a load request. So please try again in 3-5 seconds by which time graph data would have been loaded.

Format of sensor data is as below. 'sdata' key will have 3 arrays each for Maximum, Minimum and Average values within that period of time slice. As in example below, ['data']['sdata'][0]['values'] will have an array of dictionary of x to timestamp and y to Maximum sensor values

```
{
  "code": 200,
  "data": {
    "high_label": "Triggered",
    "loaded": true,
    "low_label": "Normal",
    "sdata": [{
      "area": false,
      "color": "brown",
      "key": "Max.",
      "max_val": 114.2,
```



```

        "min_val": 119.4,
        "unit": " V",
        "values": [{"x":1690542680206, "y": 114.2}, {"x":1690542737806, "y": 114.1} ....]
    }, {
        "area": false,
        "color": "pink",
        "key": "Min.",
        "max_val": 117.2,

        "min_val": 0,
        "unit": " V",
        "values": [{"x":1690542680206, "y": 117.2}, {"x":1690542737806, "y": 117.0} ....]
    }, {
        "area": false,
        "color": "#42d4f4",
        "key": "Avg.",
        "max_val": 121.2,
        "min_val": 120.4,
        "unit": " V",
        "values": [{"x":1690542680206, "y": 121.0}, {"x":1690542737806, "y": 120.9} ....]
    }],
    "tick_format": 1,
    "valtype": 3
},
"msg": "request successful"
}

```

Example response with graph NOT loaded:

```
curl -vk -X GET "https://192.168.1.100/api/u/device/sensors/getgraph?period_index=1&cat_type=2&emng_id_sensor=14" -H
"Cookie: ntisid=fkal9sjks0kU02js9edjd0Jhals9qj09LSDFG24S98LsAs"
```

Response:

HTTP/1.1 200 OK

Content-Type: application/json

```
{
    "code": 200,
```

```
"data": {
  "high_label": "Triggered",
  "loaded": false,
  "low_label": "Normal",
  "sdata": [{
    "area": false,
    "color": "brown",
    "key": "Max.",
    "max_val": -899998.2000000001,
    "min_val": 899999.10,
    "unit": " V",
    "values": null
  }, {
    "area": false,
    "color": "pink",
    "key": "Min.",
    "max_val": -899998.2000000001,
    "min_val": 899999.10,
    "unit": " V",
    "values": null
  }, {
    "area": false,
    "color": "#42d4f4",
    "key": "Avg.",
    "max_val": -899998.2000000001,
    "min_val": 899999.10,
    "unit": " V",
    "values": null
  }],
  "tick_format": 1,
  "valtype": 3
},
"msg": "request successful"
}
```

INDEX

About menu, 56
activation, 5
add Devices, 24
API Support, 61
application settings, 9
dashboards, 32
Device Discovery Tool, 28
Device list, 20
Events_log, 39
firewall, 8
Gmail SMTP server, 11
groups, 25
installation, 4
Java Runtime Environment, 28
maps configuration, 21
my sensors list, 29
offline activation, 7
operate relay, 44
recordings, 55
reports, 42, 52
shutdown server, 57
software update, 60
sounds, 54
triggers, 48
uninstall, 60
Users-add, 19
x509 certificate, 15

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