

NETWORK 1275 Danner Dr Tel:330-562-7070 TECHNOLOGIES Aurora, OH 44202 Fax:330-562-1999 INC www.networktechinc.com

**ENVIROMUX<sup>®</sup> Series** 

# E-MNG-SH

# Enterprise Environment Monitoring System Self-Hosted Management Software

| Status & Alerts 🗷 Edit 🙁 |                          |              |         |                     |                       |            |                |               |                                      |         |
|--------------------------|--------------------------|--------------|---------|---------------------|-----------------------|------------|----------------|---------------|--------------------------------------|---------|
| Server Room              | Alerts                   | Alerts       |         |                     |                       |            |                |               |                                      |         |
|                          | Sensor                   | Sensor       | Sensor  | Sensor              | Device                | Last       |                | IP Address-   | Device Name\$                        | Status≎ |
|                          | Name+                    | Value\$      | Status≑ |                     | Name\$                | Updated\$  |                | 10.0.1.16     | Furnace Room E-2D                    | Normal  |
|                          | E-5D E04<br>Port 2 ACLM- | 0.0 Hz       | Alarm   | External<br>Sensors | E-5D E04<br>DDNS      | 4 sec. ago |                | 147.0.27.197  | E-16D Server Rack Monitor            | Normal  |
|                          | Frequency<br>E-5D E04    | 5.6 V        | Alarm   | External            | Test Unit<br>E-5D E04 | 4 sec. ago |                | 147.0.27.207  | E-2D Lab Room Environment<br>Monitor | Normal  |
|                          | Port 2 ACLM-<br>Voltage  |              |         | Sensors             | DDNS<br>Test Unit     |            |                | 147.0.27.208  | E-5D Server Rack Monitor             | Normal  |
|                          | E-5DEL E07               | Lights       | Alarm   | Digital             | E-5DEL-1              | 1 sec. ago |                | 147.0.27.212  | E-5D E04 DDNS Test Unit              | Alert   |
|                          | Light                    | On           | AldIII  | Inputs              | (E07)                 | T SEC. ayu |                | 147.0.27.218  | E-2D P05                             | Normal  |
|                          | Detector (2)             |              |         |                     |                       |            |                | 192.168.1.100 | E-16D 24V IPMI Rack                  | Normal  |
|                          | <u> </u>                 |              |         | Previous            | 1 Next                |            |                | 192.168.3.100 | E-16DEL-1 (Master)                   | Normal  |
| Server Room Temperature  | Server Rack & Lab        |              |         |                     |                       |            |                | 192.168.3.101 | E-16D S1                             | Normal  |
|                          | Server Rack & Lab        | 5            |         |                     | 1                     |            |                | 192.168.3.200 | E-16D P02                            | Normal  |
| et s                     | Sensor Name              | •            |         | Sensor Value\$      | Sensor Ty             | pe¢        | Updated \$     | 192.168.3.213 | Oper8 Test Unit                      | Normal  |
| 64.4 81.5 98.6           | Computer Lab             | Temperature  |         | 72.8 °F             | External S            | ensors     | 3 sec. ago     | 192.168.3.217 | E-5D-48V                             | Normal  |
| 47.3 115.7               | Computer Lab             | Humidity     |         | 27.4 %              | External S            | ensors     | 3 sec. ago     | 192.168.3.221 | E-2DB P02                            | Normal  |
|                          | Server Rack Te           | emperature   |         | 77.4 °F             | External S            | ensors     | 3 sec. ago     | 192.168.3.222 | E-2D E12                             | Normal  |
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| 13.1 149.9               | Equipment Lat            | 1 Temperatu  | re      | 77.7 °F             | External S            | ensors     | 3 sec. ago     | 192.168.3.225 | E-5D E02                             | Normal  |
| °F                       | Equipment Lab            | 0 1 Humidity |         | 21.2 %              | External S            | ensors     | 3 sec. ago     | 192.168.3.227 | E-2D P04                             | Normal  |
| -4.0 167.0               | Equipment Lat            | 2 Temperatu  | re      | 79.6 °F             | External S            | ensors     | 3 sec. ago     | 192.168.3.80  | E-16D E100                           | Normal  |
| ▼ 75.2                   | Equipment Lat            | 2 Humidity   |         | 22.1 %              | External S            | ensors     | 3 sec. ago     | 192.168.3.81  | E-5DEL-1 (E07)                       | Alert   |
| 1512                     | Computer Lab Ter         | nperature    |         |                     |                       |            |                | 192.168.3.82  | E-2DB E08                            | Normal  |
|                          |                          | y 1 Wk 1     | Mo 6 Mo | 2 Yr                |                       |            |                | 192.168.3.83  | E-5D E01                             | Normal  |
| Server Rack Main Voltage |                          |              |         | Te Min. Com         | puter Lab Te          | Avg. Com   | puter Lab Te   | 98.27.170.240 | Remote E-5D                          | Normal  |
|                          | 82.00 °F<br>80.00 °F     |              |         |                     |                       |            |                | -             |                                      |         |
| Server Rack Main Voltage | 78.00 °F                 |              |         |                     |                       |            |                |               |                                      |         |
| 110 71/                  | 76.00 °F<br>74.00 °F     |              | ~       |                     | _                     |            |                |               |                                      |         |
| 118.7 V                  | 72.00 °F                 |              |         |                     |                       |            | ~~~~           |               |                                      |         |
|                          | 70.00 °F<br>68.00 °F     |              |         |                     |                       |            |                |               |                                      |         |
| Normal                   | 66.00 °F                 |              |         |                     |                       |            |                |               |                                      |         |
| Last Updated: now        | Mar 11 11:26 AM          | Mar 11 F     | .00 PM  | Mar 11 10:33 PM     | Mar 12                | MA BO.     | Mar 12 9:40 AM |               |                                      |         |

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### CHANGES

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### VERSION

Release Version 1.6.7.0

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### **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.
  - o 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.
  - o Access is operating system independent through the HTML5 user interface on the computer/smartphone/tablet's web browser.
  - o No clients or special apps to install.
- Sends email and/or SMS alert messages.
  - o 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 64-bit, Windows Server 2008/2012/2016/2019/2022 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 and maximum version 3.32 in E-MICRO-TRH(P) Devices.
- Requires minimum firmware version 3.10 and maximum version 3.15 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-SH**NR**. The server still needs to have access to the internet for trial activation but offline activation for this version is explained on page 8.

### **Hardware Requirements**

Below table contains details on recommendation for Minimum Server Hardware requirements for running E-MNG-SH. Storage space required depends on your Log Level, number of ENVIROMUX devices added, IP Camera Recording rate, number of logs retained and Log Rolling Period. For software installation we recommend minimum of 3GB free space. We recommend to start with minimum 250GB total storage space and expand as needed.

| Number of ENVIROMUX Devices | Server CPU Core Count<br>Required | RAM size Recommended |
|-----------------------------|-----------------------------------|----------------------|
| 10                          | 4                                 | 6GB                  |
| 30                          | 6                                 | 8GB                  |
| 600                         | 8                                 | 12GB                 |
| 1100                        | 8                                 | 16GB                 |
| 1600                        | 12                                | 20GB                 |
| 2100                        | 12                                | 24GB                 |
| 2600                        | 14                                | 28GB                 |
| 3000                        | 14                                | 32GB                 |

### NOTE: We strongly recommend SSD for storage instead of HDD

### Network Port/Firewall Requirements:

To communicate with devices E-MNG-SH uses HTTP/HTTPS port as set on ENVIROMUX devices added.

To communicate with users E-MNG-SH uses HTTP/HTTPS port as set in Settings -> Network Settings of Server's IP

For License lock renewal and Gmail/Microsoft 365 authorization E-MNG-SH should be able to access <a href="https://www.networktechinc.com">https://www.networktechinc.com</a> on port 443

For Gmail and Microsoft 365 emails E-MNG-SH should be able to access respective email server domains

For SMS through Twilio/Sinch E-MNG-SH should be able to access respective SMS server domains

### 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 (vx.x.x.x = the version number) The current version number is 1.6.7.0.
- Adobe pdf file of this manual

### 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)

|   |                                   |   |              |  |                 |                       |                           |                   | <b>L</b>                              |              |                    |    |
|---|-----------------------------------|---|--------------|--|-----------------|-----------------------|---------------------------|-------------------|---------------------------------------|--------------|--------------------|----|
|   |                                   | View (                                  |              |  |                 | NTI                   |                           |                   | agement Software<br>tion Request Form |              | Home   Contact     | Us |
|   |                                   | (Does NOT re                            | quire i      | ENVIRO                                 | MOX UNIC)       | Products              | Applications              | Support           | Resources                             | Partners     | Where to Buy A     | bo |
| - | NTT ENVIRONUX Management Software |   |              |  |                 | Products » <u>Sel</u> | f-Hosted ENVIROMU         | K Management Sc   | oftware > ENVIROMUX                   | Management S | oftware Evaluation |    |
| - | Status & Alerts are ::            |   |              |  |                 | E-MNG-S               | H Self-Hoste              | d ENVIROM         | IUX Managerr                          | ent Softw    | are Evaluation     |    |
| * | Status & Alerts and to            | -                                       |              |  | Tanks II        | * Required Fie        | alda                      |                   |                                       |              |                    |    |
| 0 |                                   | Senar Senar Senar<br>Senar Vited Stated |              | Denice Last<br>Name# Updated           | P 400           | 100                   | Information               |                   |                                       |              |                    | 1  |
| 0 |                                   | Factoria Barra Agent                    |              | E-10 KDH + Hamile<br>DONG<br>Text Look | · wrea          | *First Name           |                           | *Last Name        |                                       |              |                    |    |
| » |                                   | LICER SET AND<br>PARTNERS               | Denore 1     | 110 HIN - 4 cml - 4                    |                 | Thereate              |                           | Laschame          |                                       |              |                    |    |
|   |                                   | CARLEY LAN ANT                          | Data         | EDE-1 1sc a                            | er heres        | *Company              |                           |                   |                                       |              |                    |    |
|   |                                   | Delette (D                              |              | And                                    | 100.000         |                       |                           |                   |                                       |              |                    |    |
|   | Server Base Temperature           | Several Active                          |              |  | 142.50          | *Street Add           | ress                      |                   |                                       |              |                    |    |
|   |                                   | Server Nature                           | Server Tabut | Salar Type#                            | Spend House     |                       |                           |                   |                                       |              |                    |    |
|   | 47.3 115.7                        |   | 174.F        | Education Services                     | The spin region | -                     |                           |                   | 1                                     |              |                    |    |
|   | -30.2 132.8-                      |   | 2124         | Editorial Services                     | Ton apt 102.10  | * City                |                           | *State/Provinc    | e                                     |              |                    |    |
|   | 13.1 149.9                        |   | 2125         | Edward Benary                          | Int.as NCM      |                       |                           |                   |                                       |              |                    |    |
|   | -4.0 167.0                        | Reament Las 3 Temperature               | PER 9        | Anterna Service -                      | Jan.mp reg.m    | *Zip/Postal           | Code                      | *Country          |                                       |              |                    |    |
|   | ▼ 75.2 ▼                          | Completing Services                     | 1115         | Contra Service                         | 110.00          |                       |                           | Please select a   | country 🗸                             |              |                    |    |
|   |                                   |   |              | wigeth, steps                          | 10256<br>00212  | *Phone                |                           | 1                 |                                       |              |                    |    |
|   | Server Rack Main Voltage          | 8010 W<br>1610 W<br>1610 W              |              |  |                 | *E-mail               |                           |                   |                                       |              |                    |    |
|   | 1187V                             | NOT THE T                               | _            | _                                      |                 |                       |                           | ]                 |                                       |              |                    |    |
|   | Normal                            | 10.00 W<br>10.00 W<br>10.00 W           |              |  |                 | *Confirm E-r          | mail                      | -                 |                                       |              |                    |    |
|   | Last Updated: now                 | 11.11.11<br>                            | 1            | -                                      |                 | * 11                  | ENVIROMUX units do        | ]                 |                                       |              |                    |    |
|   |                                   |   | -            | -                                      |                 | How many              | ENVIRUMUX UNITS DO        | o you pian on mar | aging?                                |              |                    |    |
|   | E-MNG-SH Self-Hoste               |   |              |  |                 |                       |                           | 1                 |                                       |              |                    |    |
|   | E-MNG-SH Self-Hoste               | a Enterprise E                          | Softw        |  | ionitoring      | End User L            | License Agreemer          | nt                |                                       |              |                    |    |
|   |                                   |   | 301 CW       | аге                                    |                 |                       |                           |                   |                                       |              |                    |    |
|   |                                   |   |              |  |                 | Network Tec           | hnologies Incorporated (. | NTI)              |                                       |              |                    |    |
|   |                                   |   |              |  |                 |                       |                           |                   |                                       |              |                    |    |
|   |                                   |   |              |  |                 |                       | X Management Software     | Soltware          |                                       |              |                    |    |
|   |                                   |   |              |  |                 | End User Lice         | ense Agreement            |                   |                                       |              |                    |    |
|   |                                   |   |              |  |                 |                       |                           |                   |                                       |              |                    |    |
|   |                                   |   |              |  |                 | You, as the C         | ustomer, agree as follows | e.                |                                       |              |                    |    |
|   |                                   |   |              |  |                 |                       |                           |                   |                                       |              | •                  |    |

\*  $\bigcirc$  I Agree to the End User License Agreement  $\bigcirc$  I Do Not Agree

### า เฐนเอ า- เงอูเอแลแบบ า บาบ

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.

Submit

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 ENVIROMUX-Management Software-Installer. (No need for Administrator privileges).



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

| Click to "Agree". | NTI ENVIRCHADX Management Software License Agreement.  |
|-------------------|--|
|                   | Methodsky Excharge-provided (NTL)         EVEX.XDBUK Monogenent Software Software         Ind List Listenik Agreement         Vou, as the Customer, epres as follows:         I. DEFINITIONE         I.1 "Application Software", shell mean the ENVIRONX Management Software to fishere         ************************************ |
|                   | Disagree   |

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.

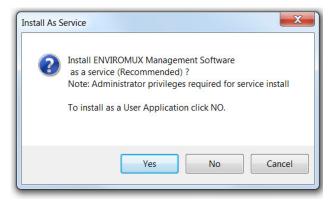


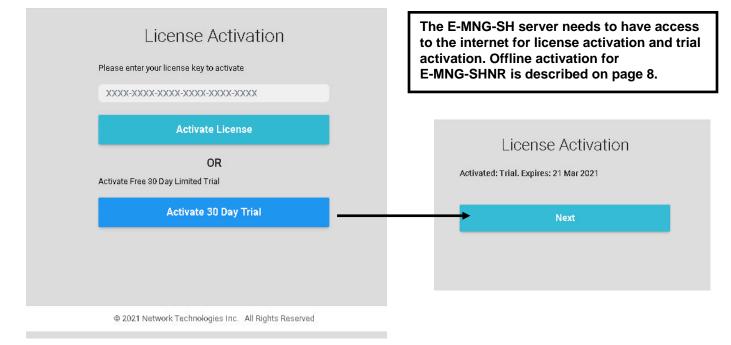
Figure 4- Install software as a service, or an application

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".

| inter email address of administrator account. This is the em<br>o register for license and to receive software alerts | iil |
|---|-----|
| mail Address  |     |
| Email   |     |
| assword   |     |
| Password  |     |
| confirm Password  |     |
| Confirm Password  |     |
| Set Admin   |     |

Figure 5- Create Admin login account

You will be prompted for a license key. To request a license key, <u>contact NTI</u>. 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".



### 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 8).

### NTI E-MNG-SH Self-Hosted Enterprise Environment Monitoring System Management Software

### ENVIROMUX Management Software

| Monitor            | . • | Application Settings             |   | License                |   |
|--------------------|-----|----------------------------------|---|------------------------|---|
| Events             |     | Application Settings             |   |                        | Current License: Activated: Trial   |
| Devices            |     | Language                         | English   | Upgrade to new License | 3000-30 |
| Settings           |     |                                  | Display language for server   |                        | Enter License Key   |
| plication Settings |     | Device Poll Rate                 | 5000  |                        | Error 1428: Could not connect to NTI servers for license activation<br>WinHttpSendRequest. The server name or address could not be resolved (0x2ce7) 12007  |
| twork Settings     |     |                                  | Delay between poling of sensor data for each device in millisecond. Minimum: 1000 |                        | Activate New License  |
| er Settings        |     | Date Format                      | MMIDDYYYY   | *                      |   |
|                    |     |                                  | Date Format to show values in   | Offline Activation     |   |
| About              | ٠   | Time Format                      | hh MM SS TT   | ~                      |   |
|                    | (** |                                  | Time formal to display values. HH: 24 hour format, hit: 12 hour formal, TT: AM/PM |                        | Download License Request File   |
|                    | -   | System Log Roll Period           | Hourty  | ~                      | If you don't have internet on this PC, download "Joanse Request File" to by Offine Astronom through another PC that has internet. Upon  |
|                    |     |                                  | System logs will be rolled every new period as set above                          |                        | Requesi File needs to be submitted to https://www.netwsdfdsaforkteching.com/licenasdfasdse-activation.php   |
|                    |     | Number of System Logs to Store   | 168   |                        |   |
|                    |     |                                  | Number of rolled system logs to keep on disk                                      | License File (*Jic)    | Choose File No file chosen  |
|                    |     | System Log Level                 | DEBUG   | ~                      |   |
|                    |     | - TWEEL CONTRACTOR OF THE STREET | System Log Level, Recommended: INFO   |                        | Upload License File   |

### 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 (right) 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 autorenew 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 the 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)

# License Activation

Your license has been used or we could not reach NTI servers to renew. Please check your network connection and try again.

### Try License Renewal

If you wish to try an alternate license key please enter the license key below to activate

### XXXX-XXXX-XXXX-XXXX-XXXX-XXXX

### Activate License

### Figure 8- Manually Renew License

Alternatively, you can purchase <u>E-MNG-SHNR</u> 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 8.) 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.

7

### **Offline Activation**

If the license key you received is for the E-MNG-SH**NR**, 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".

| XXXX-XXXX-XXXX-XXXX-XXXX   |   |
|--|---|
| Enter License Key Error 1428: Could not connect to NTI servers for license activation WinHttpSendRequest: The server name or address could not be resolved (0x2ee7) 12007 Activate New License | Note: If the "Offline Activation"<br>and "License File" prompts<br>disappear, simply enter the first<br>license key again to cause then   |
|  | to re-appear.   |
| Download License Request File  | her PC that has internet. License   |
| Choose File No file chosen   |   |
| Upload License File If you have received the License File from https://www.networktechinc.com/license-activation.phpfor a licen  |   |
|  | Enter License Key  Error 1428: Could not connect to NTI servers for license activation WinHttpSendRequest: The server name or address could not be resolved (0x2ee7) 12007  Activate New License  Download License Request File  If you don't have internet on this PC, download "License Request File" to try Offline Activation through anot Request File needs to be submitted to https://www.networktechine.com/license-activation.php  Choose File No file chosen  Upload License File |

**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

<u>https//www.networktechinc.com/license-activation.php</u> 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.



Activate your E-MNG-SHNR license even if your server (where E-MNG-SHNR Management Software is installed) does not have internet access. You should have downloaded a license request file from the management software, after entering the license key there. See page 7 in the <u>manual</u> for details. If you have not received your license key yet, please contact an NTI product consultant. Please note this method of offline activation cannot be used for evaluation licenses or floating virtual machine licenses. \* Required Fields License Request File





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.

## **Using Proxy**

If your server needs to use a proxy to reach NTI license server or any ENVIROMUX devices, you can setup WinHTTP proxy and software will use this proxy server to reach the NTI license server.

The *Netsh.exe* tool is used to configure a system-wide static proxy. You can use commands in the netsh winhttp context to configure proxy and tracing settings for Windows HTTP. The Netsh commands for winhttp can be run manually at the netsh prompt or in scripts and batch files.

### To configure a proxy server by using the Netsh.exe tool

To use the Netsh.exe tool to configure a proxy server, follow these steps:

- 1. Select **Start** > **Run**, type cmd, and then select **OK**.
- 2. At the command prompt, run the following command and then press <Enter>.

### netsh winhttp set proxy <proxyservername>:<portnumber>

In this command, replace <proxyservername> with the fully qualified domain name of the proxy server. Replace <portnumber> with the port number for which you want to configure the proxy server.

For example, replace <proxyservername>:<portnumber> with proxy.domain.example.com:80.

For more on setting up the winhttp proxy, please refer to the below link:

Microsoft Netsh winhttp proxy

Don't forget to restart E-MNG-SH service after setting the proxy

### **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 11). This is the protocol used for communication (along with HTTPS).

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 access the E-MNG-SH and view the monitored Devices, but they cannot change any settings. For more on privileges, see page 23.

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.

| C 88 © 127.0.0.1:8001/p./ndex Di Bostmarks Bir (Fire N NTI Network Techn V VFI Schware @ unit conventer @ DuckDuckGo ] |      | This is the address<br>server/Computer (c<br>another computer/s<br>name as set in app<br>server/computer w | lefault is 127<br>smartphone/t<br>lication settii | .0.0.1) it i<br>tablet the<br>ngs or or | is installe<br>URL to the of the | ed on. If<br>use will I | accessii<br>be either | ng from<br>the host |               |                |
|--|------|--|---|---|----------------------------------|-------------------------|-----------------------|---------------------|---------------|----------------|
| Home   |      |  | •   |   |                                  |                         |                       |                     |               |                |
| Home<br>Status +   |      | Devices Available  |   |   | Alerts                           |                         |                       |                     |               |                |
| Graphs   |      | IP Address-  | Device Name\$                                     | Status¢                                 | Sensor Name-                     | Sensor Value\$          | Sensor Status‡        | Sensor Type#        | Device Name\$ | Last Updated\$ |
| Multi-Sensors +  |      |  | No devices avail                                  | able                                    |                                  |                         | No                    | alerts              |               |                |
| Status & Alerts  |      |  |   |   |                                  |                         | Previou               | s Next              |               |                |
| IP Cameras   |      |  |   |   |                                  |                         |                       |                     |               |                |
| Camera Tests   |      |  |   |   |                                  |                         |                       |                     |               |                |
| Map 1  |      |  |   |   |                                  |                         |                       |                     |               |                |
| Map 2  |      |  |   |   |                                  |                         |                       |                     |               |                |
| A Events   | э    |  |   |   |                                  |                         |                       |                     |               |                |
| Devices  | - 34 |  |   |   |                                  |                         |                       |                     |               |                |
| Settings   | •    |  |   |   |                                  |                         |                       |                     |               |                |
| About  | - 5  |  |   |   |                                  |                         |                       |                     |               |                |
|  | «    |  |   | © 2021 Network Technologies Inc. All f  | lights Reserved                  |                         |                       |                     |               |                |

### 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**

| Language                           | English  | ~ |
|------------------------------------|--|---|
|                                    | Display language for server  |   |
| Device Poll Rate                   | 5000   |   |
|                                    | Delay between polling of sensor data for each device in millisecond. Minimum: 1000 |   |
| Date Format                        | MM/DD/YYYY   | ~ |
|                                    | Date Format to show values in  |   |
| Time Format                        | hh:MM:SS TT  | ~ |
|                                    | Time format to display values. HH: 24 hour format, hh: 12 hour format, TT: AM/PM   |   |
| System Log Roll Period             | Hourly   | ~ |
|                                    | System logs will be rolled every new period as set above                           |   |
| Number of System Logs to Store     | 168  |   |
|                                    | Number of rolled system logs to keep on disk                                       |   |
| System Log Level                   | DEBUG  | ~ |
|                                    | System Log Level. Recommended: INFO  |   |
| Send Anonymous Usage Stats         |  |   |
|                                    | Help NTI improve ENVIROMUX Management Software by sending anonymous usage reports  |   |
| Upload Crash Reports (Recommended) |  |   |
|                                    | Upload crash report to request NTI for fix (Restart Required)                      |   |
|                                    | Save   |   |

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 | Number of system logs to store on disk- There is no limit.  |
| Store                    |   |
| System Log Level         | Select the types of messages that will be logged in the system.log file on Software (see below)   |
| Send Anonymous Usage     | Place a checkmark if you approve of sending anonymous usage reports to NTI to help improve        |
| Stats                    | 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**

The Network Settings page provides settings for all of your connectivity options, including General Network Settings, Email/SMTP Settings, LDAP Authentication Settings, SMS Settings and Certificate Settings.

| Network Settings                                   |
|--|
| Network Settings                                   |
| + General Network Settings                         |
| + Email/SMTP Settings                              |
| + LDAP Authentication Settings                     |
| + SMS Settings                                     |
| + Certificate Settings                             |
| Save Send Test Email Send Test SMS Sync LDAP Users |

Figure 13- Network Settings Page

| Network Settings            |   |
|-----------------------------|---|
| Network Settings            |   |
| - General Network Settings  |   |
| Server Host Name            | locathost   |
|                             | Hostname to use on all unis. This hostname 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                   | 80  |
|                             | HTTP port on which the software should listen to (Restart Required)   |
| Disable HTTP Access         |   |
|                             | Disable HTTP Access and redbits to HTTPD enly (Restart Required)  |
| HTTPS Port                  | 443   |
|                             | HTTPS port on which the software should listen to   |
| - Email/SMTP Settingy       |   |

### Figure 14- General 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<br>The DB browser can be used to recover from an incorrect host name. (See page 22)   |
| 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.</ip></port#> |
| Disable HTTP Access         | Place a checkmark in this box (default is empty) if you want to restrict access to HTTPS only. If a checkmark is placed in this box, a restart will be required for it to take effect.   |
| HTTPS Port                  | HTTPS port on which the Server will be connected with.   |

Note: If HTTP Access is disabled, only then HSTS (HTTP Strict Transport Security) will be enabled. Some other web security headers like Frame Options, CORP and CSP will also be enabled by default.

| - Email/SMTP Settings               |  |
|-------------------------------------|--|
| SMTP Server Type                    | Custom   |
|                                     | GMTP Gener Type you want to use for sending emails   |
| SMTP Server                         |  |
|                                     | EMTP Server address or domain that you want to use to send emails  |
| Email From Address                  |  |
|                                     | SMTP email address that NTLENVIROMUX Management Software should use to send emails   |
| SMTP Encryption Type                | None   |
|                                     | Encyption type to be used with above SMTP Gener  |
| SMTP Server Port                    | 507  |
|                                     | SMTP Port to be used with above encryption setting for server. Usual port #- None: 25, TLS: 465, STARTTLS: 597   |
| SMTP Server Requires Authentication | L  |
| SMTP Username                       |  |
| Sm1P Username                       | GMTP authentication username   |
| SMTP Password                       |  |
| JHIT FOSSWOW                        | CMTP authentication password   |
| Confirm SMTP Password               | 0<br>  |
|                                     | Confirm above BMTP authentication password   |
| Use Custom Email Footer             |  |
|                                     | Check this box if you want to customize email footer   |
| Email Footer Message                |  |
|                                     | NTI ENVIROMUX Management Software<br>You have received this notification because you have enabled email alerts. Please login to change notification preferences or contact your server administrator |
|                                     | Enter enail botter to use in alerts and notifications  |

### Figure 15- Email/SMTP Settings

| Network Setting         | Description   |
|-------------------------|---|
| SMTP Server Type        | Select "Custom" or "Gmail" (Most of the settings that follow 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    | Place a checkmark in here if the SMTP Server requires authentication to send messages             |
| Authentication          |   |
| 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   |
| Use Custom Email Footer | Place a checkmark in the box if you want to customize the Email footer                            |
| Email Footer Message    | When a checkmark is in the "Use Custom Email Footer" option, a box appears where you can          |
|                         | enter a message that will appear in the footer of all alerts and notifications sent out by the    |
|                         | management software.  |

### **Gmail SMTP Server**

When "SMTP Server Type" is set to Gmail, a valid Gmail address must 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.

| SMTP Server Type   | Gmail   |  |
|--------------------|---|--|
|                    | SMTP Server Type you want to use for sending emails                                 |  |
| mail From Address  |   |  |
|                    | SMTP email address that NTI ENVIROMUX Management Software should use to send emails |  |
| urrent Auth Status | Not Authorized  |  |
|                    |   |  |
|                    |   |  |

### Figure 16- SMTP Server Type- Gmail

### NTI E-MNG-SH Self-Hosted Enterprise Environment Monitoring System Management Software

"Current Auth Status" will indicate 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 the below procedure (shown in screenshots). Any email failures and associated reasons will be logged in the *system.log* file

| 3 Sign in with Google                                  | G Sign in with Google  |
|--|--|
| Choose an account<br>to continue to networktechinc.com | networktechinc.com wants<br>access to your Google Account<br>🕅 emux.nti@gmail.com  |
| Network Technologies Sigr<br>emux.nti@gmail.com        | When you allow this access, networktechinc.com<br>will be able to  |
| ② Use another account                                  | Send email on your behalf. Learn more  |
| Befo<br>netw Settings page of ser                      | rvice.       Make sure you trust networktechinc.com         You may be sharing sensitive info with this site or app. You can always see or remove access in your Google Account.         Learn how Google helps you share data safely.         See networktechinc.com's Privacy Policy and Terms of Service. |
|  |  |
|  | Cancel Continue  |
| ENVIROMUX OAUTH Authorizat                             |  |
| ENVIROMUX OAUTH Authorizat                             |  |
|  |  |

Figure 17- Steps in getting Gmail Authorization

### LDAP Settings

| •                     | + Email/SMTP Settings                         |  |                                 |  |
|-----------------------|---|--|---------------------------------|--|
|                       | - LDAP Authentication Settings                |  |                                 |  |
|                       | Authentication Server Type                    | Local Users Only   |                                 |  |
|                       |   | Select the LDAP Server Type to auto load Users. Locally created Users are always   | Local Users Only                |  |
|                       | Primary Server                                |  | Local Users Only                |  |
|                       |   | Primary LDAP Server. Ex: example.com   | LDAP Microsoft Active Directory |  |
|                       | Secondary Server                              | Secondary LDAP Server will be used if Primary LDAP server does not respond   | Open LDAP Directory Service     |  |
|                       | 17-17-18-18-18-18-18-18-18-18-18-18-18-18-18- | Secondary LDAP Server will be used it Primary LDAP server does not respond   | Generic LDAP Server             |  |
|                       | User Base DN                                  | Base Disntinguish Name to search for users and groups(ex: cn=Users,dc=example,d  | (c=com)                         |  |
| Admin Hoomomo/Pind DN | Admin Username/Bind DN                        |  |                                 |  |
|                       | Aunin osemane/bitu bit                        | Users Distinguished Name with Admin Access(ex: First_Name Last_Name OR cn=Na   | ame,dc=example,dc=com)          |  |
| Bi                    | Bind DN User's Password                       |  |                                 |  |
|                       |   | Admin users password to login to server  |                                 |  |
|                       | Enable LDAPS                                  |  |                                 |  |
|                       |   | Enable LDAP Security using LDAPS protocol  |                                 |  |
|                       | LDAP Port                                     | 389  |                                 |  |
| •                     |   | Port to connect to server. Usual Port#: LDAP: 389, LDAPS:636   |                                 |  |
|                       | Username Attribute                            | sAMAccountName Attribute name to identify unique Username Usual Attributes: Active Directory: sAMAccountName, Open LDAP; uid |                                 |  |
|                       |   |  |                                 |  |
|                       | Attribute for a User's Memberships            | memberOf<br>Athribute name to identify all groups a user has membership in. Ex Active Directory; memberOf                    |                                 |  |
|                       | Attribute for a Group's Members               | member   |                                 |  |
|                       | Addinate for a Group's members                | Attribute name to identify all users that are members of a group. Ex: Active Directory: mi                                   | ember                           |  |
|                       | LDAP Status                                   |  |                                 |  |
|                       |   | Probe LDAP Server  | Click to test your settings are |  |
|                       |   |  | correct. (see below)            |  |
|                       | + SMS Settings                                |  |                                 |  |
|                       | + Certificate Settings                        |  |                                 |  |
|                       |   |  |                                 |  |
|                       |   | Save   |                                 |  |
|                       |   | Send Test Email Send Test SMS  |                                 |  |
|                       |   | Sync LDAP Users  |                                 |  |

**Figure 18- LDAP Authentication Settings** 

| LDAP Authentication<br>Settings       | Description   |
|---------------------------------------|---|
| Authentication Server Type            | Select Local Users Only, LDAP Microsoft Active Directory, Open LDAP Directory Service or<br>Generic LDAP Server   |
| Primary Server                        | Enter a valid primary LDAP server address (ex. Example.com)   |
| Secondary Server                      | Enter a valid secondary LDAP server address in case the primary LDAP server does not respond  |
| User Base DN                          | Enter the Base Distinguished Name to search for users and groups (ex. Cn=users, dc= example, dc=com   |
| Admin Username/Bind DN                | User's Distinguished Name with admin access (ex. First_Name Last_Name, OR cn=name, dc=example, dc=com   |
| Bind DN User's Password               | Admin user's password to log into LDAP server   |
| Enable LDAPS                          | Place a checkmark inside to enable the LDAP Security using LDAPS protocol   |
| LDAP Port                             | Enter the port number to connect to the server. Usual Port for LDAP: 389, LDAPS: 636  |
| Username Attribute                    | Attribute name to identify unique Username<br>Usual Attributes: Active Directory: sAMAccount Name, Open LDAP: uid   |
| Attribute for a User's<br>Memberships | Attribute name to identify all groups a user has membership in. (ex: Active Directory: memberOf)  |
| Attribute for a Group's<br>Members    | Attribute name to identify all users that are members of a group. (ex: Active Directory: member)  |
| LDAP Status                           | Click on "Probe LDAP Server" to test your settings are correct. Probe will do connection test and provides available Users and Groups. This will not store the available users. |

At the bottom of the page is a button for "Sync LDAP Users". Use this to load Users and Groups from LDAP server to E-MNG-SH software to allow authentication. Any LDAP User properties can be set in E-MNG-SH software (Ex mobile number) but it may get overridden by values received from LDAP Server (if set in LDAP server). When changing user properties, we recommend doing so in the LDAP server.

The E-MNG-SH has been tested to work with Microsoft LDAP and Open LDAP. The E-MNG-SH will automatically sync with the configured LDAP server twice each day, starting 10 hours after the last settings were saved.

Note: When LDAP Authentication has over 30 LDAP errors within 8 hours, the management server will block LDAP requests for 3 days.

The E-MNG-SH software does not support two users or groups with the same Name (CN), even if they differ in DN.

All users, Local or LDAP users, should have unique email addresses.

### Support for LDAP Groups

When an LDAP user belongs to multiple LDAP groups, the group with highest privilege will be assigned to this user.

When any properties (Ex: Enable Email) change for any LDAP Group, such properties saved on a Group member will be overwritten.

By default, all LDAP users get "Read Only Auth". Admins can edit Auth Level of any LDAP group in the E-MNG-SH software which gets applied to Group members.

| - 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 | xxxxxxxxx   |
|                 | Number to send SMS From. This is usually a phone number assigned to your account                                      |
| Account SID     | AC448ac629d1add1a16fac00892b8abf7c  |
|                 | 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 19- 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 to 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

| Monitor  |  |     |   |
|--|--|-----|---|
| e Numbers  | Ahoy Paul, welcome to Twilio!  |     |   |
| aging.   |  |     |   |
| nview  | Get a Twillo phone number  |     |   |
| it out   | Many of our products require a Twilio phone number. While your account is in bial, you can get one free USA or Canadian phone number.  |     |   |
| vices  | Get a Twilic phone number  |     |   |
| ders   |  |     |   |
|  |  |     |   |
|  | To get local phone numbers outside of the USA or Canada, you may need to upgrade your account and meet regulatory requirements. Read the regulatory requirement is                   |     |   |
| ider:  | To get local phone numbers outside of the USA or Canada, you may need to upgrade your account and meet regulatory requirements. Read the regulatory requirement (d                   |     |   |
| ider<br>tings  | To get local phone numbers outside of the USA or Canada, you may need to upgrade your account and meet regulatory requirements. Read the regulatory requirement (3                   |     |   |
| ider<br>tings<br>eneral  | To get local phone numbers outside of the USA or Canada, you may need to upgrade your account and meet regulatory requirements. Read the regulatory requirement (5                   |     |   |
| sterit Template<br>Ider<br>tings<br>eneral<br>g.archives<br>eo permissions         | To get local phone numbers outside of the USA or Canada, you may need to upgrade your account and meet regulatory requirements. Read the regulatory requirement (s<br>* Account Infe |     |   |
| ider<br>tings<br>eneral<br>g archives  |  |     | ~ |
| der<br>inga<br>næral<br>g æchives<br>io permissions                                | * Account info   | j/a | ) |
| der<br>ings<br>garchives<br>o permissions<br>kd-ons+o <sup>*</sup> Beta<br>udatory | * Account Info<br>Account SID  | ľo  | ] |

Figure 20- Twilio Console Page

| ne Nambers | Filter by country             |                             |                                  |                                    |                                 |  |                             |
|------------|-------------------------------|-----------------------------|----------------------------------|------------------------------------|---------------------------------|--|-----------------------------|
| anging     | q                             |                             |                                  |                                    |                                 |  |                             |
| erview     | 1                             |                             |                                  |                                    |                                 |  |                             |
|            |                               |                             |                                  |                                    |                                 |  |                             |
| it out     | North America                 |                             |                                  |                                    |                                 |  |                             |
| rvices     |                               |                             |                                  |                                    |                                 |  |                             |
| es.        | Arguille (+1254)              | Artigue and Barbude (+1268) | Aruba (+297)                     | Ascension (+247)                   | Beharmas (+1242)                | Garbedos (+12%)  | Belize (+501)               |
| Template   | 💭 Bermuda (+1441)             | Canada (+1)                 | Cayman Islanda (+1345)           | Costa Rica (+50()                  | Cube (+SJ)                      | Curação and Caribbean Nethorlands (Bonaise, Sint<br>Eustatius, Sint Maarten, Salia) (+599) | Dominica (+1767)            |
| t sergune  | Dominican Republic (+1821)    | Dominican Republic (+1841)  | Dominican Republic (+1803001)    | Dominican Republic (+1809)         | El Salvador (+503)              | Greenland (~299)   | Grenada (+1473)             |
|            | Gundeloupe (+590)             | Guatemala (+502)            | - Helli (+508                    | Honduras (+504)                    | 🗍 Jamaiga (+1876)               | Martinique (+596)  | Mexico (+ 52)               |
|            | Montserret (+1664)            | Nicaragua (+505)            | Panama (+507)                    | Puerto Rico (+1787)                | St Kitts and Nevis (+ 1860)     | St Lucia (+1758)   | St Pierre and Miquelon (+50 |
|            | St Vincent Grenadines (+1784) | Trinidad and Tobago (+1858) | Turks and Calcos Islands (+1649) | United States (+1)                 | Virgin Islands, British (+1294) | Virgin Blands, U.S. (+1.140)   |                             |
| ives -     |                               |                             |                                  |                                    |                                 |  |                             |
| mission    |                               |                             |                                  |                                    |                                 |  |                             |
| ne feta    |                               |                             |                                  |                                    |                                 |  |                             |
|            | Asia                          |                             |                                  |                                    |                                 |  |                             |
| ony<br>moe | 22-252                        |                             |                                  |                                    |                                 |  |                             |
|            | Afghanistan (+93)             | [1] Armenia (+374)          | Azerbaijan (+194) 🔺 High Ank     | Bahrain (+973)                     | Bangladesh (+880) & High Stat   | () Bhutan (+975)   | Brunei (+673)               |
|            | Cambodia (+855)               | China (+86)                 | East Timor (+670)                | Georgia (#995)                     | Hong Kong (+852)                | 🗌 India (+93)  | Dindonesia (+62)            |
|            | 🗔 Dram (+198)                 | [ Iraq (+964)               | Israel (+972) A Hugh Role        | Japan (+ 51)                       | (\$90*) nebrol.                 | Korea Dem People's Rep (+850)  | Korea Republic of (+82)     |
| +          | Kinwait (+965)                | Kyrgyzsten (+ (98)          | Laos PDR (+050)                  | Lebanon (+964)                     | [] Macau (+853)                 | Maleysia (+60)   | Maldves (+960)              |
|            | Morgolia (+976)               | Myarimar (+95)              | Nepal [+977]                     | 🖸 Oman (+968) 🔺 High Ros           | Pakistan (+92) 🔺 High Risk      | Palestinian Territory (+970, +972) A High Trin   | Philippines (+63)           |
|            | (Qatar (=974)                 | Russia/Kazakhstan (+7)      | Saudi Arabia (+966)              | Singapore (+il5)                   | 🗌 Sei Lanka (+94) 🔺 Han Run     | 🗌 Syria (+963)   | Taiwan (+886)               |
|            | Tajikistan (< 9927 🔺 Ingh Ros | Theiland (+66)              | Turkiye (+90)                    | Turkmeniatan (+)930                | United Arab Emirates (+1/71)    | Uzbekistan (+ (99)   | Vietnam (+84)               |
|            | Verwan (+967)                 |                             |                                  |                                    |                                 |  |                             |
|            |                               |                             |                                  |                                    |                                 |  |                             |
|            | Europe                        |                             |                                  |                                    |                                 |  |                             |
|            | Alberta (+155)                | Andorra (+3/6)              | Austria (+4))                    | Belarus (+375)                     | Belgium (+ 32)                  | Bosnia and Herzegovina (+ 387)   | Bulgaria (+35%)             |
|            | Canary Islands (+ 3491)       | Croatia (+ 38%)             | Cyprus (+357)                    | Czech Resublic (+4/0)              | Denmark (+45)                   | Estoria (+372)   | Feroe Islands (+ 298)       |
|            | Finland/Aland Islands (+ 158) | France (+ 33)               | Germany (+49)                    | Gibrelter (+350)                   | Greece (+ 10)                   | Guernaeu/Jersey (+44)  | Hungery (+ 36)              |
|            | Ecelarul (+354)               | Feland (+ 353)              | lale of Man (+44)                | 2 2 aly (+ 3%)                     | Kostvo (+ 363)                  | C Latvia (~ 37)  | Uechtenatein (+423)         |
|            | Lithuania (+370)              | Luxembourg (+ 152)          | Ma/ta (+356)                     | Moldove (+ 37/0                    | Monaco (+ 377)                  | Montenegra (+ 382)   | Netherlands (+)()           |
|            | Norway (+47)                  | Poland (+48)                | Portugal (+252)                  | Republic of North Macedonia (+389) | Bomania (+40)                   | San Marino (+378)  | Serbia (+381)               |
|            | Slovakia (+421)               | Slovenie (+ 385)            | Spen (+34)                       | Sweden (+4t)                       | Switzerland (+41)               | Turkish Republic of Northern Cyprus (+ 10)   | Ukraine (+ 380)             |
|            | United Kingdom (+44)          | Vatican City (+379)         |                                  |                                    |                                 |  |                             |

Figure 21- Twilio- Setting Geo Permissions

| - SMS Settings   |   |   |
|------------------|---|---|
| SMS Provider     | Sinch   | ~ |
|                  | 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  | XXXXXXXXX   |   |
|                  | Number to send SMS From. This is usually a phone number assigned to your account                                      |   |
| Service Plan ID  | 9d2e810b2da24D62861facb5065546cd  |   |
|                  | 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   |   |

### Figure 22- 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

| - Certificate Settings |   | 8 |
|------------------------|---|---|
| Certificate Signer     | Self Signed   | ~ |
|                        | Certificate type to be used with HTTPS Server.<br>Setect Self Signed certificate if you are not using a third party CA service like Digicert, Verisign etc. |   |
| Signer Option          | E-MNG-SH Signed   | ~ |
|                        | Select "E-MNG-SH" to auto create and sign the certificate.<br>Select "User Signed" if you wish to manually generate and upload keys + certificates          |   |
|                        | Download CA Root Certificate<br>This certificate needs to be installed as a Trusted Root Certificate Authority on every PC that needs to connect            |   |



### 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 <u>How to Create x509 Certificate</u> (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.

| - Certificate Settings          |  |    |
|---------------------------------|--|----|
| Certificate Signer              | Self Signed  | ~  |
|                                 | Centricate type to be used with HTTPS Server.<br>Select Self Signed certificate if you are not using a third party CA service like Digicent, Verisign etc. |    |
| Signer Option                   | User Signed  | v. |
|                                 | Select "E-MNG-SH" to auto create and sign the certificate.<br>Select "User Signed" if you wish to manually generate and upload keys + certificates         |    |
| Private Key File (*.pem)        | Choose File No file chosen   |    |
|                                 | Upload Private Key   |    |
| Server Certificate File (*.pem) | Choose File No file chosen   |    |
|                                 | Upload Server Certificate  |    |
| CA Certificate File (*.ca)      | Choose File No file chosen   |    |
|                                 | Upload CA Certificate  |    |
|                                 | Save   |    |
|                                 | Send Test Email Send Test SMS  |    |

### Figure 24- 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.

| - Certificate Settings     |   |   |
|----------------------------|---|---|
| Certificate Signer         | CA Signed<br>Certificate type to be used with HTTPS Server.<br>Select Self Signed certificate if you are not using a third party CA service like Digicert. Versign etc. | • |
| Certificate Option         | Generate CSR and Upload Certificate<br>Select a procedure to have the server certificate signed by CA   | * |
| Country Name               |   |   |
| State/Province Name        |   |   |
| Locality Name              |   |   |
| Organization               |   |   |
| Organization Unit          |   |   |
| Common Name                |   |   |
| Email Address              |   |   |
|                            | Generate and Download CSR   |   |
| Server Certificate File    | Choose File No file chosen  |   |
|                            | Upload Server Certificate for CSR   |   |
| CA Certificate File (*.ca) | Choose File No file chosen  |   |
|                            | Uplicad CA Contilicatio   |   |



### 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 <u>How to Create x509 Certificate</u> (Section II). You will have to upload Keypair, server certificate and CA certificate in this case.

| - Certificate Settings          |  |        |
|---------------------------------|--|--------|
| Certificate Signer              | CA Signed  | *      |
|                                 | Centificate type to be used with HTTPS Server.<br>Belect Belf Signed certificate if you are not using a third party CA service like Digicent, Versign etc. |        |
| Certificate Option              | Upload Keypair and Certificate   | ~<br>~ |
|                                 | Belect a procedure to have the server certificate signed by CA   |        |
| Private Key File (*.pem)        | Choose File No file chosen   |        |
| Server Certificate File (*.pem) | Upload Private Koy<br>Choose File: No file chosen  |        |
|                                 | Upload Server Certificate  |        |
| CA Certificate File (*.ca)      | Choose File. No file chosen  |        |
|                                 | Upleved CA Certificate   |        |

### Figure 26- 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 to the Shutting Down/Restarting section in this manual

| - Certificate Settings          |  |   |
|---------------------------------|--|---|
| Certificate Signer              | CA Signed  | ۷ |
|                                 | Certificate type to be used with HTTPS Server.<br>Select Self Signed certificate if you are not using a third party CA service like Digicent. Versign etc. |   |
| Certificate Option              | Upload Keypair and Certificate   | * |
|                                 | Select a procedure to have the server certificate signed by CA.  |   |
| Private Key File (*.pem)        | Choose File No file chosen   |   |
|                                 | Upload Private Key   |   |
| Server Certificate File (*.pem) | Choose File No file chosen   |   |
|                                 | Uplood Server Certificate  |   |
| CA Certificate File (*.ca)      | Choose File No file chosen   |   |
|                                 | Ilpioad CA Certificate   |   |
|                                 | Save   |   |
|                                 | Seve   |   |
|                                 | Send Test Email Send Test SMS  |   |

### Figure 27- 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.

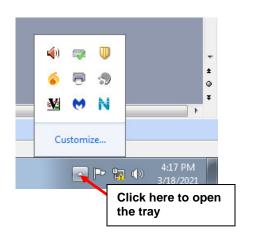
| Private Key File (*.pem)        | Choose File No file chosen |
|---------------------------------|----------------------------|
|                                 | Upload Private Key         |
| Server Certificate File (*.pem) | Choose File No file chosen |
|                                 | Upload Server Certificate  |
| CA Certificate File (*.ca)      | Choose File No file chosen |
|                                 | Upload CA Certificate      |

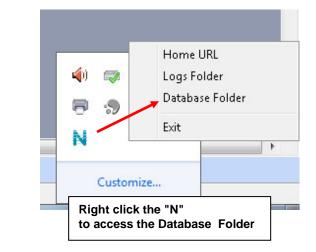
Figure 28- Security Configuration-X509 Certificate

### 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 "Server Host Name" on page 12), 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.

| Monitor              |          | User Settinas                 | User Settings |     |      |             |                  |                            |
|----------------------|----------|-------------------------------|---------------|-----|------|-------------|------------------|----------------------------|
| Events               |          | Available Users               |               |     |      |             | Add New User     |                            |
| Devices              |          | Name Email Admin Enabled Edit |               |     | Ecit |             |                  |                            |
| Settings             | •        | Admin                         | adittigo.com  | Yes | Yes  | Edit        | User First Name  | First Name.                |
| Application Settings |          | TestUser                      | gymeil.com    | No  | Yes  | Edit Delete | User Last Name   | Enter trat name            |
| Network Settings     |          |                               |               |     |      |             | Use Last Name    | Enter last name            |
| User Settings        |          |                               |               |     |      |             | Email            | Empl                       |
| About                | •        |                               |               |     |      |             |                  | Enter upera ernail addresa |
|                      | <b>«</b> |                               |               |     |      |             | Password         | Password                   |
|                      |          |                               |               |     |      |             |                  | Enter users password       |
|                      |          |                               |               |     |      |             | Confirm Password | Confirm Paseword           |
|                      |          |                               |               |     |      |             |                  | Confirm user password      |
|                      |          |                               |               |     |      |             |                  |                            |

### Figure 29- 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. The operator can also change relay settings on the E-xD units being monitored, and acknowledge alerts from the sensors connected to them. 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 16).

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 43).

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".

| it User                          |   |   |  |  |  |  |
|----------------------------------|---|---|--|--|--|--|
| ser First Name                   | Guest   |   |  |  |  |  |
|                                  | Enter first name  |   |  |  |  |  |
| iser Last Name                   | Last Name   |   |  |  |  |  |
|                                  | Enter last name   |   |  |  |  |  |
| mail                             | guest@enviromux.com   |   |  |  |  |  |
|                                  | Enter users email address   |   |  |  |  |  |
| hone Number 1                    | Phone 1   | Phone 1   |  |  |  |  |
|                                  | Enter primary phone number to receive Alert   | Enter primary shore number to receive Alert SMS |  |  |  |  |
| hone Number 2                    | Phone 2   | Phone 2   |  |  |  |  |
|                                  | Enter alternate phone number to receive Ale   | t SMS (Optional)                                |  |  |  |  |
| ccess Level                      | Admin   |   |  |  |  |  |
|                                  | Access level for this user Admin can edit all settings except settings of other users. Super Admin can edit other us  |   |  |  |  |  |
| iser Enabled                     |   |   |  |  |  |  |
|                                  |   |   |  |  |  |  |
| 010000000                        | Enable this user to login   |   |  |  |  |  |
| ound Alerts                      |   |   |  |  |  |  |
|                                  | Enable the user to logn   | Read Only                                       |  |  |  |  |
| iound Alerta                     | Enable sound all interestioned  | Read Only                                       |  |  |  |  |
| meil Alerta                      |   |   |  |  |  |  |
| imeli Alerta                     | Enable sound all interestioned  | Read Only                                       |  |  |  |  |
| mail Alerta<br>MS Alerts         | Entitle sound all the search outstand   | Read Only                                       |  |  |  |  |
|                                  | Evolution source and advertise resolutionants<br>Evolution ensuit adverts to be remove thin user<br>Evolution (SME) selects to be service that advert   | Read Only<br>Operator                           |  |  |  |  |
| mail Alerta<br>MS Alerts<br>Isle | Enable sound aller the non-thoses<br>Enable enable after to be called this cose<br>Enable (ME) alors to be called this cose<br>Enable (ME) alors to be called to be called<br>                                    | Read Only                                       |  |  |  |  |
| imail Alerta<br>MS Alerts        | Enable sound all the non-thoses<br>Enable enable all altris to be series the union<br>Enable (ME) alors to be series the union<br>Loobe (ME) alors to be series to the union<br>Loob Toto<br>Enter succes job the | Read Only<br>Operator<br>Admin                  |  |  |  |  |
| mail Alerta<br>MS Alerts<br>Itle | Enable sound all the newboard<br>Enable meal ateris to be send this user<br>Enable meal ateris to be send this user<br>Enable (SME) aters to be send to the cash<br>Job Toto<br>Enter users job the<br>Department | Read Only<br>Operator                           |  |  |  |  |

### Figure 30- 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.

| Device Tree | Devices Available |                                   |         |
|-------------|-------------------|-----------------------------------|---------|
| Home        | IP Address+       | Device Name≑                      | Status≑ |
| E-2D Units  | 10.0.1.16         | Furnace Room E-2D                 | Normal  |
| E-16D Units | 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 31- 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.

| or Tree   | Sensors Available                  |                 |              |  |  |
|---|------------------------------------|-----------------|--------------|--|--|
| Home  | Search Sensors:                    |                 |              |  |  |
| E-2D Units  | Sensor Name≑                       | Sensor Type≑    | Device Name≑ |  |  |
| 🛖 E-2DB E08<br>🛖 E-2DB E02 (RevG)                       | 1. E-2DB E08 Input Voltage         | Internal Sensor | E-2DB E08    |  |  |
|   | 1.1. E-2DB E08 Temperature 1       | External Sensor | E-2DB E08    |  |  |
| 📾 E-2D Lab Room Environment Monitor                     | 1.2. E-2DB E08 Humidity 1          | External Sensor | E-2DB E08    |  |  |
| - 🚍 E-2D P04  |                                    |                 |              |  |  |
| 🛖 Furnace Room E-2D                                     | 1.3. E-2DB E08 Dew Point 1         | External Sensor | E-2DB E08    |  |  |
| 💼 E-2D E04 (RevG)                                       | 2.1. E-2DB E08 ACDCLM Sensor 2-1   | External Sensor | E-2DB E08    |  |  |
| 🛖 E-2DB P02<br>🛖 E-2DB E15                              | 2.2. E-2DB E08 ACDCLM Sensor 2-3   | External Sensor | E-2DB E08    |  |  |
| - E-20 E15  | 2.3. E-2DB E08 ACDCLM Sensor 2-2   | External Sensor | E-2DB E08    |  |  |
| E-5D Units  | 2.4. E-2DB E08 ACDCLM Sensor 2-4   | External Sensor | E-2DB E08    |  |  |
| 🛖 E-5DEL-1 (E07)  | 1. E-2DB E08 Digital Input 1       | Digital Inputs  | E-2DB E08    |  |  |
| 🛖 E-5D Server Rack Monitor<br>🛖 E-5D E04 DDNS Test Unit | 2. E-2DB E08 Digital Input 2       | Digital Inputs  | E-2DB E08    |  |  |
| - Remote E-5D   |                                    | - π 178         |              |  |  |
| 🛖 E-5D E01  | 1. CPU250 Win Server 2016          | IP Devices      | E-2DB E08    |  |  |
|   | 1. E-16D-24V IPMI Rack Memory Free | SNMP Sensors    | E-2DB E08    |  |  |
| Compressor Rm. E-5D                                     | 2. IPDU Output Relay 1             | SNMP Sensors    | E-2DB E08    |  |  |
| 🛖 E-5D E02  | 3. NAS (NDATA) System Temperature  | SNMP Sensors    | E-2DB E08    |  |  |
| E-16D Units   | 4. NAS (NDATA) Fan 1 Speed (RPM)   | SNMP Sensors    | E-2DB E08    |  |  |
| E-16D S1  | 5. NAS (NDATA) Fan 2 Speed (RPM)   | SNMP Sensors    | E-2DB E08    |  |  |
| E-16D 24V IPMI Rack                                     |                                    |                 | 5 200 500    |  |  |
| E-16D Server Rack Monitor                               | 1. E-2DB E08 Output Relay 1        | Output Relays   | E-2DB E08    |  |  |
| 📾 Oper8 Test Unit                                       | 1. Power Supply 1                  | Power Supplies  | E-2DB E08    |  |  |
| - 📻 E-16D 48V   | 2. Power Supply 2                  | Power Supplies  | E-2DB E08    |  |  |
|   | 2. Power Supply 2                  | Power Supplies  | E-2DB E08    |  |  |
|   |                                    |                 |              |  |  |

### Figure 32- 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.

| Add Or Remo  | ve Devices                        |  |  |  |
|--|-----------------------------------|--|--|--|
| Device Groups  |                                   | + Add New Device   |  |  |
| Create Group Rename Group Delete Group Delete Device |                                   | Domain or IP Address<br>Protocol<br>Port Of Web Server<br>Admin Username<br>Admin Password | Domain or IP Address of your Environmux device HTTP Protocol used to communicate with device |  |
| 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   |  |  |
| 147.0.27.205   | Server Rack E-MICRO               | Normal   |  |  |
| 147.0.27.206   | Server Rack E-1W                  | Normal   |  |  |
| 147.0.27.207   | E-2D Lab Room Environment Monitor | Normal   |  |  |
| 147.0.27.208   | E-5D Server Rack Monitor          | Normal   |  |  |
|  |                                   |  |  |  |

### Figure 33- Add or Remove Devices

Lastly, use the "Maps" page to upload an unlimited number of images of a map, building, or server room (for example). 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.

| p List               |                     |       |                  |                        | Home / Map La   | st   |
|----------------------|---------------------|-------|------------------|------------------------|---|--|
| able Maps            |                     |       |                  | Add New Map            | p.  |  |
| Name                 | Мар Туре            |       | Edit             | Map Name               | Server Room   | World<br>World   |
| er Room<br>d Sensors | Floor Plan<br>World | Edit  | Delete<br>Delete | Map Type<br>Floor Plan | Enter name of this map Floor Plan Select Map Location Type you want to add sensors to Choose File No file chosen Upload a floor plan of your desired location. Allowed file types: .png, .jpg Add New Map | Floor Plan<br>Africa<br>Asia<br>Europe<br>North America<br>Oceania<br>South America<br>Argentina |
|                      |                     |       |                  |                        |   | Australia  |
|                      | r                   | Figur | o 34- M          | an Tynos               | s to choose from  | Austria<br>Austria<br>Bangla<br>Belgiu   |

L



Figure 35- 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.

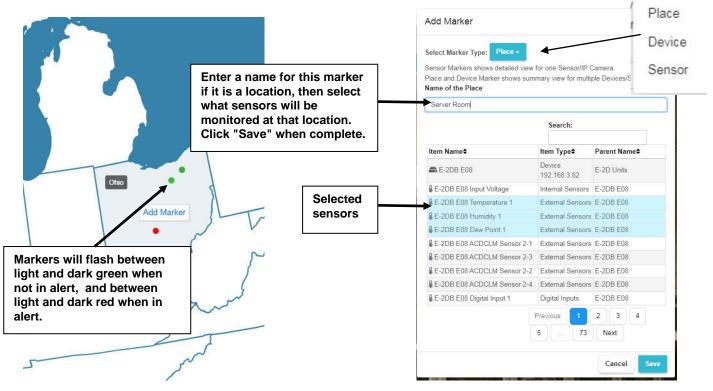


Figure 36- Loading maps and placing markers

| elect Marker Type: Device -    |                         |              | Select Marker Type: Sensor +       |                                 |                     |
|--------------------------------|-------------------------|--------------|------------------------------------|---------------------------------|---------------------|
| ace and Device Marker shows su | mmary view for mu       |              | Sensor Markers shows detailed view | for one Sensor/IP C             | Camera.             |
|                                | Search:                 |              | Place and Device Marker shows sum  | mary view for multip<br>Search: | ole Devices/Sensors |
| Device Name≑                   | IP Address\$            | Group Name\$ |                                    | Search.                         |                     |
| E-2DB E08                      | Device<br>192.168.3.82  | E-2D Units   | Sensor Name\$                      | Sensor Type\$                   | Device Name\$       |
| E-2DB E02 (RevG)               | Device<br>192,168,3,222 | E-2D Units   | E-2DB E08 Input Voltage            | Internal Sensors                | E-2DB E08           |
|                                | 192.168.3.222<br>Device |              | ₿ E-2DB E08 Temperature 1          | External Sensors                | E-2DB E08           |
| E-2DB E01 (RevG/POE)           | 192.168.3.223           | E-2D Units   | E-2DB E08 Humidity 1               | External Sensors                | E-2DB E08           |
| E-2D Lab Room Environment      | Device<br>147.0.27.207  | E-2D Units   | E-2DB E08 Dew Point 1              | External Sensors                | E-2DB E08           |
|                                | Device                  | E 69 11 3    | E-2DB E08 ACDCLM Sensor 2-1        | External Sensors                | E-2DB E08           |
| E-5DEL-1 (E07)                 | 192.168.3.81            | E-5D Units   | E-2DB E08 ACDCLM Sensor 2-3        | External Sensors                | E-2DB E08           |
| E-5D Server Rack Monitor       | Device<br>147.0.27.208  | E-5D Units   | E-2DB E08 ACDCLM Sensor 2-2        | External Sensors                | E-2DB E08           |
| E-5D E04 DDNS Test Unit        | Device                  | E-5D Units   | E-2DB E08 ACDCLM Sensor 2-4        | External Sensors                | E-2DB E08           |
| E-30 E04 DDN3 Test Offic       | 147.0.27.212            | E-3D Onits   | E-2DB E08 Digital Input 1          | Digital Inputs                  | E-2DB E08           |
| E-16DEL-1 (Master)             | Device<br>192.168.3.100 | E-16D Units  | E-2DB E08 Digital Input 2          | Digital Inputs                  | E-2DB E08           |
| E-16D S1                       | Device<br>192.168.3.101 | E-16D Units  | 1                                  | Previous 1                      | 2 3 4               |
| E-16D 24V IPMI Rack            | Device<br>192.168.1.100 | E-16D Units  |                                    | 5 75                            | Next                |
|                                | Previous 1              | 2 3 Next     |                                    |                                 | Cancel Save         |

### Figure 37- Markers for Device or Sensor

With your maps and markers defined, you can create a Dashboard and add your map to it (see page 36) .

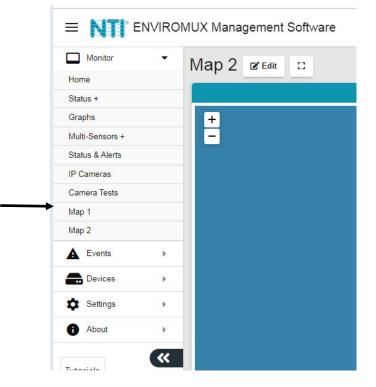


Figure 38- Use a configured map to monitor select sensors

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.

| <b>/larker</b> | Search:                        |                     |         |                 |  |
|----------------|--------------------------------|---------------------|---------|-----------------|--|
|                | ltem Name≑                     | ltem Type <b>≑</b>  | Status≎ | Parent<br>Name≑ |  |
|                | 📾 E-2DB E08                    | Device 192.168.3.82 | Normal  | E-2D<br>Units   |  |
|                | E-2DB E08 ACDCLM Sensor<br>2-2 | External Sensors    | 0.0 %   | E-2DB<br>E08    |  |
|                | E-2DB E08 Dew Point 1          | External Sensors    | 29.4 °F | E-2DB<br>E08    |  |
|                | E-2DB E08 Temperature 1        | External Sensors    | 81.2 °F | E-2DB<br>E08    |  |
|                |                                | Previous 1          | Next    |                 |  |

Figure 39- 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 32 ) to identify them (provided they are all connected to the same LAN).

| = NTI       | ENVIROMUX  | Management Softw | are                               |               |                            | 🖻 Admin 🔔   |
|-------------|------------|------------------|-----------------------------------|---------------|----------------------------|---|
| Monitor     |            | Add Or Remo      | ove Devices                       | Add Devices   |                            | Home Add Or Ramove Device   |
| A Events    |            | Device Groups    |                                   | rida Derrices | + Add New Device           |   |
| B Devices   |            | Home             |                                   |               | Domain or IP Address       |   |
| My Devices  |            | - E-2D Units     |                                   |               |                            | Domain or IP Address of your Environmux device                      |
| My Sensors  |            | - E-60 Units     |                                   |               | Protocol                   | HTTP  |
| Add Or Remo | we Device  | E 160 Units      |                                   |               |                            | Protocol used to communicate with device                            |
| Settings    | ÷.         |                  |                                   |               | Port Of Web Server         | 80  |
| About       | 2          |                  |                                   |               | 1742/2010/02/2010/Chi-6440 | Port number of web server protocol HTTP or HTTPS                    |
| U Abbit     | <i>k</i> , |                  |                                   |               | Admin Username             | root  |
|             | <*         |                  |                                   |               |                            | Username of a user with admin privileges on above Environmux device |
|             |            |                  |                                   |               | Admin Password             |   |
|             |            |                  |                                   |               |                            | Peasword for above uper   |
|             |            | Create Group Ren | Tame Broup Delete Broup Delete De | vice          |                            |   |
|             |            |                  |                                   |               |                            | Add Device  |
| _           |            | -                |                                   |               |                            |   |
| ices adde   | he         | Devices Added    |                                   |               |                            |   |
|             |            | IP Address+      | Device Name\$                     | Status        | •                          |   |
|             |            | 10.0.1.18        | Furnace Room E-2D                 | Norma         |                            |   |
|             |            | 147.0.27.197     | E-16D Server Rack Monitor         | Norma         | E                          |   |
|             |            | 147.0.27.207     | E-2D Lab Room Environment Monr    | lor Norma     | 6                          |   |
|             |            | 147.0.27.208     | E-6D Server Rack Monitor          | Norma         | 0                          |   |
|             |            | 147.0.27.212     | E-50 E04 DDNS Test Unit           | Norma         |                            |   |
|             |            | 1000000000       |                                   | 60710         |                            |   |

### Figure 40- 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.

# Cereice Groups Server Room Image: E-2D Units Image: E-3D Units Image: E-16D U

### Figure 41- 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".

|  |   | + Add    | New Device                        |  |
|--|---|----------|-----------------------------------|--|
| - * Homs<br>= 5:20 Units<br>- * 5:20 Units<br>- * 5:208 E<br>- * 5:208 E | 02<br>2                                       | Protoco  | or IP Address<br>xl<br>Web Server | Domain or IP Address of your Enhanced device<br>HTTP<br>Protector used to communicate with device<br>Bo<br>Port number of web serve costocci HTTP or HTTPs |
|  | Room E 20                                     | 0.000100 | Username<br>Password              | Voot<br>Usemame of a user with admin provieges on above Environmus device  |
| - 📾 E-160 P  | 1<br>DV IPMI Rack<br>02<br>enver Rack Monitor |          |                                   | Patanet for above user Add Device  |
| Create Group Ren   | Tame Group Dekke Group Dekke Defr.+           |          |                                   |  |
| IP Address+  | Device Hame\$                                 | Status‡  |                                   |  |
| 10.01.16   | Furnace Room E-2D                             | Normal   |                                   |  |
|  |   |          |                                   |  |

Figure 42- Select Device to delete

| Add Or Remove Devices   |  | Home /                                 | Add Or Remove Devices |
|---|--|--|-----------------------|
| Device Groups   | + Add New Device   |  |                       |
|   | Protocol HTTF<br>Protocol<br>Port Of Web Server 80<br>Port nun<br>Admin Username root<br>Usernam<br>Admin Password | or IP Address of your Enviromux device |                       |
| Create Broup Rename Group Dekete Group Dekete Group Dekete Device |  |  |                       |

### Figure 43- 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 32) 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.

| wice Gr | oups          |  |
|---------|---------------|--|
| - A H   |               |  |
|         | E-2D Units    |  |
| 1       | E-5D Units    |  |
|         | E-16D Units   |  |
| _       | E-MICRO Units |  |
|         | E-1W Units    |  |
|         | E-1W E02      |  |
|         | Reload Config |  |
|         | Rename Device |  |
|         | Delete Device |  |
|         |               |  |
|         |               |  |
|         | Delete Device |  |

Figure 44- 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.

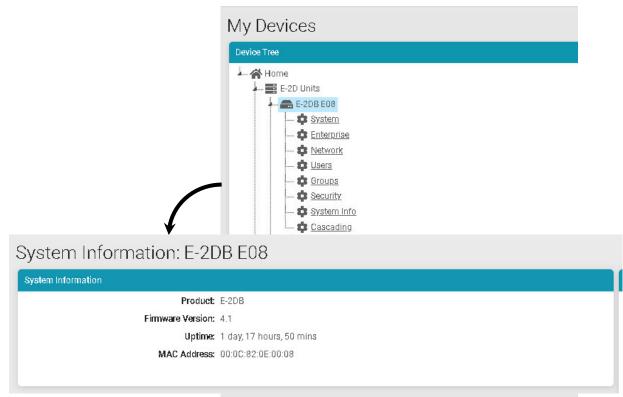


Figure 45- System Info page for the Device

## **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 <u>http://www.networktechinc.com/download/d-environment-monitor-16.html</u>. 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

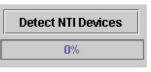
#### START

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

- <u>To Change A Device's Settings</u>, 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.
- <u>To Stop the LEDs of the unit blinking</u>, press the Blinking... button. The Blinking... button will change to a Blink LED button.



### Figure 46- 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.

| TI Device Discov | /ery              |               |                 |              |        | _ <b>_ _</b> × |
|------------------|-------------------|---------------|-----------------|--------------|--------|----------------|
| 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

| nsor Tree  | Sensors Available                  |                          |             |  |  |  |
|--|------------------------------------|--------------------------|-------------|--|--|--|
| A Home   | Search Sensors:                    |                          |             |  |  |  |
| E-2D Units   | Sensor Name≑                       | Sensor Type≑             | Device Name |  |  |  |
|  | 1. E-2DB E08 Input Voltage         | Internal Sensor          | E-2DB E08   |  |  |  |
| E-2DB E01 (RevG/POE)<br>E-2D Lab Room Environment Monitor<br>E-2D P04<br>Furnace Room E-2D | 1.1. E-2DB E08 Temperature 1       | click on this to see the | E-2DB E08   |  |  |  |
|  | 1.2. E-2DB E08 Humidity 1          | details for it           | E-2DB E08   |  |  |  |
|  | 1.3. E-2DB E08 Dew Point 1         | External Sensor          | E-2DB E08   |  |  |  |
|  | 1.3. E-2DB E08 Dew Point 1         | External Sensor          | E-2DB E08   |  |  |  |
| E-2D E04 (RevG)  | 2.1. E-2DB E08 ACDCLM Sensor 2-1   | External Sensor          | E-2DB E08   |  |  |  |
|  | 2.2. E-2DB E08 ACDCLM Sensor 2-3   | External Sensor          | E-2DB E08   |  |  |  |
| E-2D P05   | 2.3. E-2DB E08 ACDCLM Sensor 2-2   | External Sensor          | E-2DB E08   |  |  |  |
| - 📰 E-5D Units   | 2.4. E-2DB E08 ACDCLM Sensor 2-4   | External Sensor          | E-2DB E08   |  |  |  |
|  | 1. E-2DB E08 Digital Input 1       | Digital Inputs           | E-2DB E08   |  |  |  |
| E-5D Server Rack Monitor      E-5D E04 DDNS Test Unit                                      | 2. E-2DB E08 Digital Input 2       | Digital Inputs           | E-2DB E08   |  |  |  |
| Remote E-5D  |                                    |                          |             |  |  |  |
|  | 1. CPU250 Win Server 2016          | IP Devices               | E-2DB E08   |  |  |  |
|  | 1. E-MICRO E03                     | IP Sensors               | E-2DB E08   |  |  |  |
| Compressor Rm. E-5D  | I.1 E-MICRO E03 Temperature        | IP Sensors               | E-2DB E08   |  |  |  |
| =================================  | I.2 E-MICRO E03 Humidity           | IP Sensors               | E-2DB E08   |  |  |  |
| E-5DB P02 (PLSD Test Unit)   | I.3 E-MICRO E03 Humidity Dew Point | IP Sensors               | E-2DB E08   |  |  |  |
| - E-16DEL-1 (Master)   | 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   |  |  |  |
|  |                                    | IP Sensors               | E-2DB E08   |  |  |  |
|  | D.1 E-MICRO E03 Digital Input 1    |                          |             |  |  |  |
|  | 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   |  |  |  |
|  |                                    |                          |             |  |  |  |

#### Figure 47- 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.

| view                            |  | Sensor Settings                          |  |   |
|---------------------------------|--|--|--|---|
|                                 | status Normal  | — Sensor Settings                        |  |   |
| 77.5                            | Type: Temperature<br>Connector: 1  | Description                              | E-160-24V Internal Temperature                                       |   |
| 50.0 72.5 95.0<br>27.5 117.5    | Last Alert Value   | Units                                    | Descriptive name for the sensor                                      |   |
| 27.5 117.5                      | Lowest Reading: 78.9 °F<br>Lowest Reading was at: 02/21/2021 10:59:03 AM | Min. Level                               | Select the units for the sensor -40                                  |   |
| 5.0 140.0                       | Highest Reading 89.4 °F  | HILL CARE                                | Min. supported value for the sensor                                  |   |
| -17.5                           | Highest Reading was at: 02/18/2021 04:33:30 PM<br>Total Alert Time:      | Max. Level                               | 188<br>Max, supported value for the sensor                           |   |
| °F                              | Total Normal Time: 11 days 22 hours 5 minutes                            | Min. Non-Critical Threshold              | 60   |   |
| -40.0 185.0                     | Last Updated: 02/22/2021 01:27:02 PM                                     | Max. Non-Critical Threshold              | Min. threshold below which indicates a non-critical alert condition  |   |
| ▼ 872                           |  |  | 100  |   |
| 07.12                           |  |  | Max, threshold above which indicates an non-critical alert condition |   |
|                                 |  | Min. Critical Threshold                  | 50<br>Min. threshold below which indicates an alert condition        |   |
|                                 |  |  | 110  |   |
| Disable All Alerts for Device   | Clear Records Clear Braph  | Max. Critical Threshold                  | Max threshold above which indicates an alert condition               |   |
| 8 Hr I Day I Wik 1 Mo 6 Mo 2 Yr |  | Refresh Rate                             | 10   |   |
|                                 | 🔴 Max. 🌰 Min. 🔵 Avg.   |  | The refresh rate at which the sensor view is updated                 |   |
|                                 |  | Refresh Rate Unit                        | Sec<br>The refresh rate unit at which the sensor wew is updated      | 2 |
| F                               |  | Offset                                   | 0<br>Add/Subtract a value to offset ambient temperature heating      |   |
| · · ·                           |  | + Group Settings                         |  |   |
| D*F                             |  | + Non-Unitical Alert Settings            |  |   |
|                                 | Feb 22.240 NA  | + Critical Alort Sottings                |  |   |
| Per 21 340 PM PER 21 9 1 3 PM   | Feb 22 246 MA Feb 22 8 20 MA   | <ul> <li>Tennem with contridu</li> </ul> |  |   |

### Figure 48- 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.

| ensors Available   |                 |   |
|--------------------|-----------------|---|
|                    |                 | Search Sensors: 16del ×                               |
| Devîce 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 | 1.8. 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-16DEL-1 (Master) | External Sensor | 11.1. E-16DEL-1 STHSD Port 11 Temperature             |

Figure 49- Use Search Sensors box

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

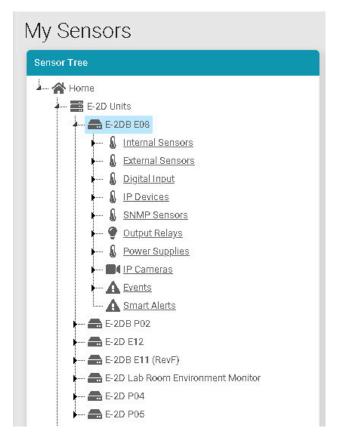


Figure 50- Sensors, relays, IP Cameras etc attached to a specific Device

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                 |                   |         |        |             | Sensor Tree                 |
|----------------------------------|-------------------|---------|--------|-------------|-----------------------------|
| Description                      | Туре              | Value   | Status | Action      | ноте                        |
| 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 | Internal Sensors            |
| 1.3. E-2DB E08 Dew Point 1       | Dew Point         | 32.8 °F | Normal | View Delete |                             |
| 2.1. E-2DB E08 ACDCLM Sensor 2-1 | AC Voltage        | 0.0 V   | Normal | View Delete | E-2DB E08 Humidity 1        |
| 2.2. E-2DB E08 ACDCLM Sensor 2-3 | DC Voltage        | -0.1 V  | Normal | View Delete |                             |
| 2.3. E-2DB E08 ACDCLM Sensor 2-2 | AC Current        | 0.0 %   | Normal | View Delete | E-2DB E06 ACDCLM Sensor 2-3 |
| 2.4. E-2DB E08 ACDCLM Sensor 2-4 | DC Current        | 0.4 %   | Normal | View Delete |                             |

Figure 51- 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".

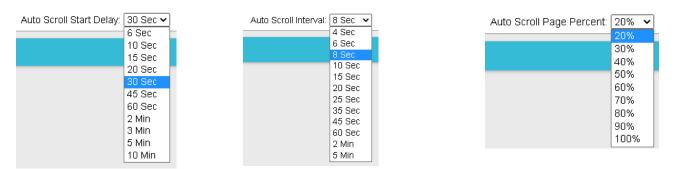
| Monitor     | • | Dashboard 1 🛛 🖬 💠   |
|-------------|---|---|
| Home        |   |   |
| Dashboard 1 |   | Each Dashboard will be listed and                           |
| Events      |   | selectable for independent viewing<br>from the Monitor menu |
| Devices     | • |   |
| Settings    | • |   |
|             | • |   |

Figure 52- 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, change Auto Scroll settings for the 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.

| Dashboard 1  | C' Finish Edit 🖸 Add New Dashboard 🖬                                   |
|--|--|
| Enable Auto Scroll: 🗹 🛛 Auto Scroll Start Delay. 🛛 | 10 Sec 🗸 Auto Scroll Interval: 8 Sec 💌 Auto Scroll Page Percent: 20% 🗸 |
|  | ≕+ Add New Row   |





### Figure 54- Auto Scroll settings

Auto Scroll is particularly helpful when you have many rows in the Dashboard and the monitor is not capable of displaying all content without scrolling. Auto scroll will start after the configured "Start Delay" period during which keyboard and mouse should be idle. You can set what percentage of page to scroll at a time from 20% to 100% of page. You can repeat to scroll this much of page every few seconds as set in Scroll Interval.

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

| New Dashboard     | 🕑 Finish Edit | 0 | Add New Dashboard | ₪ |                |                |
|-------------------|---------------|---|-------------------|---|----------------|----------------|
| Row Header        |               |   |                   |   |                | 8              |
| =+ Add New Column |               |   |                   |   |                | 1              |
|                   |               |   |                   |   |                | Delete the row |
|                   |               |   |                   |   |                |                |
|                   |               |   |                   |   | =+ Add New Row |                |
|                   |               |   |                   |   |                |                |

#### Figure 55- 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 39).

| New Dashboard       | atit 13 Add New Dashboard |
|---------------------|---------------------------|
| Row Header          |                           |
| Column Header 🛛 😁 😔 |                           |
| =+ Add New Window   | =+ Add New Column         |
|                     |                           |
|                     |                           |
|                     | =+ Add New Row            |

#### Figure 56- 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.

|                | Select window type and sensors to display       |                      |
|----------------|---|----------------------|
|                | Window Name                                     |                      |
|                | Outside Office                                  |                      |
| Sensor Value 👻 | Display Type: Bingle Sensor Value -<br>Search   |                      |
|                | Device Sensor Name® Value®                      | Sensor<br>Type‡      |
| Value          | E-228 E06 E-228 E06 Input Veltage 8.6 V         | Internal<br>Sensors  |
| or Graph       | 5-238 E08 5-206 E08 Temperature 1 79.8°F        | External<br>Sansora  |
|                | E-239 E08 E-226 E08 Humidity 1 18.4%            | External<br>Sensors  |
| or Card        | 6-238 E04 6-236 E04 Dew Point 1 82.8 °F         | External<br>Serroors |
| auge           | E-238 E06 E-208 E06 ACDCLM 0.0 V<br>Senser 2-1  | External<br>Sensors  |
|                | E-238 E09 E-228 E09 ACDCLM -0.1 V<br>Sensor 2-3 | External<br>Sensore  |
| List           | E-208 E08 E-208 E09 ACOCUM 0.0 %<br>Second 2-2  | External<br>Sensors  |
| or Graph       | 5-328 809 5-328 809 ACDLM 0.4.%<br>Sense 2-4    | External<br>Sensore  |
| F              | E-208 E08 E-208 E08 Digital Input 1 Open        | Digital<br>Inputs    |
|                | E-208 E06 E-206 E06 Digital Input 2 Open        | Digital<br>Inputa    |
|                | Previous 1 2                                    | 8 4                  |

Figure 57- Select sensors to view

whendow time and appears to display

x

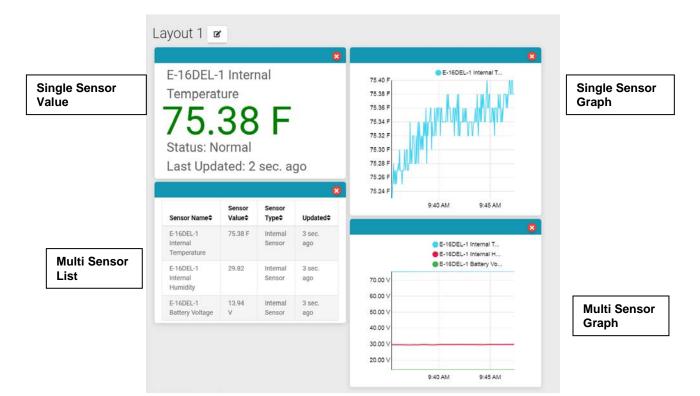


Figure 58- Multiple types of views available

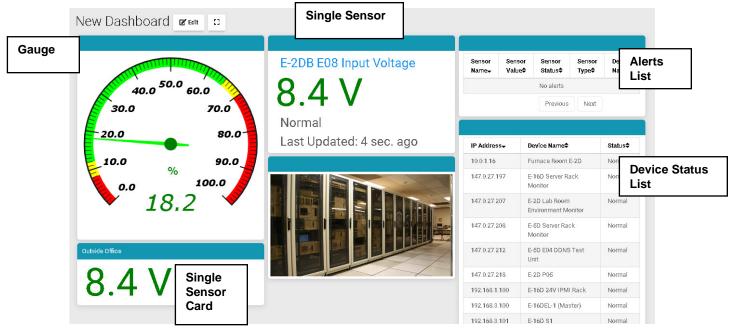


Figure 59- More types of views

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.

|                 |                                |                   | Sear                | ch |  |
|-----------------|--------------------------------|-------------------|---------------------|----|--|
| lay Type:       | Single Sensor Value 👻          |                   |                     | ,  |  |
|                 | Searc                          | h:                |                     |    |  |
| Devîce<br>Name≎ | Sensor Name\$                  | Sensor<br>Value\$ | Sensor<br>Type≎     |    |  |
| E-2DB E08       | E-2DB E08 Input Voltage        | 8.4 V             | Internal<br>Sensors |    |  |
| E-2DB E08       | E-2DB E08 Temperature 1        | 77.1 °F           | External<br>Sensors |    |  |
| E-2DB E08       | E-2DB E08 Humidity 1           | 19.8 %            | External<br>Sensors |    |  |
| E-2DB E08       | E-2DB E08 Dew Point 1          | 32.7 °F           | External<br>Sensors |    |  |
| E-2DB E08       | E-2DB E08 ACDCLM<br>Sensor 2-1 | 0.0 V             | External<br>Sensors |    |  |
| E-2DB E08       | E-2DB E08 ACDCLM<br>Sensor 2-3 | -0.1 V            | External<br>Sensors |    |  |
| E-2DB E08       | E-2DB E08 ACDCLM<br>Sensor 2-2 | 0.0 %             | External<br>Sensors |    |  |
| E-2DB E08       | E-2DB E08 ACDCLM<br>Sensor 2-4 | 0.4 %             | External<br>Sensors |    |  |
| E-2DB E08       | E-2DB E08 Digital Input 1      | Ореп              | Digital<br>Inputs   |    |  |
| E-2DB E08       | E-2DB E08 Digital Input 2      | Open              | Digital<br>Inputs   |    |  |
|                 | Previous                       | 1 2               | 3 4 5               |    |  |
|                 | 75                             | Next              |                     |    |  |

Select window type and sensors to display

×



To delete a window in a column, click the red "X" in the upper right corner of Increase width Delete a column **Decrease width** Delete a window 40.0 50.0 60.0 30.0 70.0 20.0 80.0 10.0 90.0 100.0 0.0 9.8 1 Outside Offic

Figure 61- Change the width of a column

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.

the window.

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

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

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#### NTI E-MNG-SH Self-Hosted Enterprise Environment Monitoring System Management Software

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

| New Dashboard   |  |                      |  |          |
|---|--|----------------------|--|----------|
| 2000 (March 1997)   | Crime Balan  | 000                  | These second   |          |
|   | E-16DEL-1 ACLM-3P480 Port 4 Current Phase A                |                      | Been Been Been Been Setts Las<br>Remo Valuet Oktot Typid Remot Up  | 1        |
|   | 1.7 A  |                      | Brokely<br>Pe  | dina Hef |
| 40.0 50.0 60.0  | Normal<br>Last Updated: 3 hours ago                        |                      | 6  |          |
| 30.0 70.0   | Contractorion and  |                      | P Address - Devise Named Okto<br>1001.14 Fumeric Name 503 Adm<br>142.047.147 Erick Sever Name Manne Barr | 41       |
|   | E 16DEL 1 ACLM 3P450 Port 4 Voltage Phase A                |                      | 147.937.007 Etab kao Atom Bellonewar Abelha Atom<br>147.937.308 E43 Sanar Balli shukku Atom              | at       |
| 20.0 80.0   | Normal   |                      | 147.027.019 0-19.004.05.002 0-00<br>147.027.019 0-00 0-00  | 47       |
|   | Last Updated: 3 hours ago                                  |                      |  | g Config |
| 10.0 % 90.0   | E-16DEL-1 ACLM-SP480 Port 4 Active Power Phase A           |                      | 112.150.2101 0142.01 1000<br>112.150.200 0143.00 6399<br>112.150.2207 0143.900 8499                      | 41       |
| 0.0 100.0   | 171.5 W  |                      | 182.183.5201 042.6780 800<br>182.183.5203 614.051 600  | 41       |
| 19.5  | Normal<br>Last Updated: 3 hours ago                        |                      | 192.153.5.035 643.9.01 (Bool) 644.9<br>142.163.5.235 014 014 014 014 014 014 014 014 014 014             | al       |
| 19.5  | 0  | Lana week            | 142,163,227 043 Kin kun<br>142,163,239 0149,050 kun  | 4        |
|   | 1000 million (1000 million)                                |                      | 142.148.8.81 D18521 (807) Rom<br>142.148.8.82 E4282108 Rom   | at       |
| Orlein Stree  |  | -                    | TELINESH FIERE BUT BUT   | 41       |
| 8.6 V   |  |                      | New Row  |          |
| C   |  |                      | Added  |          |
| The Add Test Street   |  |                      |  |          |
|   |  |                      |  |          |
| By Join<br>Owen Roder   | Colore Lines   | 200                  |  |          |
| Seve Rose   |  | The Automations      |  |          |
| E-2DB EDB Digital Input 2   | XAS (NDATA) System Temperature<br>37.0                     |                      |  |          |
| Open  | S7.0<br>Normal   |                      |  |          |
| Last Updated: 5 sec. age  | Last Updated: 8 sec. ago                                   |                      |  |          |
| Re anticipation and a second second   | Contraction of the second                                  |                      |  |          |
|   | Figure 62- Ac  | Click to Add New Row |  |          |
| To logout of the server without s<br>click on the Root icon in the upp<br>click on "Log Out".<br>Message number (image right)<br>the last alert was viewed or ack | per right corner of the scre<br>indicates the number of al |                      | Admin  |          |
|   |  |                      |  |          |
|   |  |                      | Edit Profile   |          |
|   |  | Indication of New    |  |          |
|   | Alert  |                      |  |          |
|   |  |                      | Log Out  |          |
|   |  |                      | Log out  |          |
|   |  |                      |  |          |
|   |  |                      |  |          |
|   |  |                      | Figure 63- Lo  | og 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 64- 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.

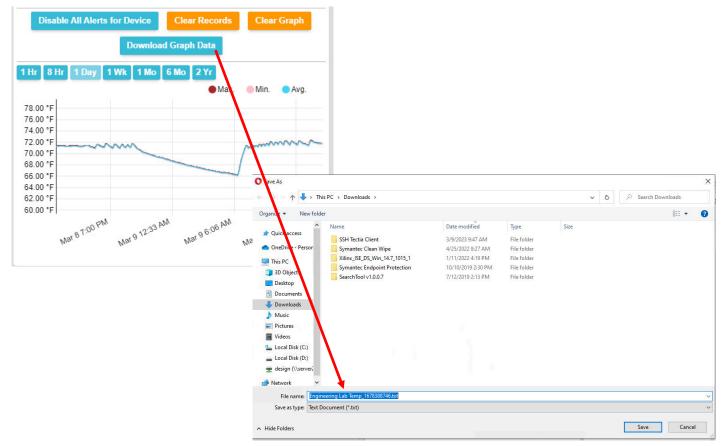


Figure 65- Download Graph Data to text file

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

| v Dashboard                |
|----------------------------|
| ≓ <sub>∓</sub> Add New Row |

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.

| $\equiv$ |             | MUX N | Management Software |     | Click for full screen mode |
|----------|-------------|-------|---------------------|-----|----------------------------|
|          | Monitor     | •     | Dashboard 1 🖻 🖬     | t D |                            |
|          | Home        |       |                     |     |                            |
|          | Dashboard 1 |       |                     |     |                            |
| A        | Events      |       |                     |     |                            |
|          | Devices     | •     |                     |     |                            |
| \$       | Settings    | •     |                     |     |                            |
| 0        | About       | •     |                     |     |                            |
|          | (           | «     |                     |     |                            |

Figure 66- 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.

| Monitor    | · · · | Home Add New Dashbo | ard |
|------------|-------|---------------------|-----|
| Events     | •     | Devices Available   |     |
| Events Log |       |                     |     |
| Triggers   |       | IP Address+         |     |
| Actions    |       | 10.0.1.16           |     |
| Reports    |       | 10.0.1.17           |     |
| Recordings |       | 147.0.27.197        |     |
| Devices    |       | 147.0.27.207        |     |
|            |       | 147.0.27.208        |     |
| Settings   | ×     | 147.0.27.212        |     |
| About      | ÷     | 147.0.27.218        |     |

Figure 67- 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.

| Events Log             |            |   | Home | Events Lo |
|------------------------|------------|---|------|-----------|
| Eventa Log             |            |   |      |           |
| Time                   | Event Type | Message   |      |           |
| 02/23/2021 10 34 36 AM | Info       | Sensor 4.1 E-SDEL Port 4 NLS returned to Normal on device E-SDEL-1 (E07)  |      |           |
| 02/23/2021 10:23:32 AM | Alert      | Sensor 4.1.E-SDEL Port 4 NLS went into Alert on device E-SDEL-1 (E07)   |      |           |
| 02/23/2021 10.14.57 AM | Info       | Sensor 4.1 E-SDEL Port 4 NLS returned to Normal on device E-SDEL-1 (E07)  |      |           |
| 02/23/2021 10:11:33 AM | Alert      | Sensor 4.1.E-SOEL Port 4 NLS went into Alert on device E-SDEL-1 (E07)   |      |           |
| 02/23/2021 10:00 15 AM | Info       | Sensor 4.1 E-SDEL Port 4 NLS returned to Normal on device E-SDEL-1 (E07)  |      |           |
| 02/23/2021 09:59:41 AM | Alert      | Sensor 4.1.E-SDEL Port-4 NLS went into Alert on device E-SDEL-1 (E07)   |      |           |
| 02/23/2021 09:52:04 AM | Info       | Sensor 1.1 E-16D-24V IPMI Rack Motion Detector 1 JE/h returned to Normal on device E-16D-24V IPMI Rack            |      |           |
| 2/23/2021 09:51:53 AM  | Alert      | Sensor 1.1 E-16D-24V IPMI Rack Motion Detector 1 JE/Is went into Alert on device E-16D 24V IPMI Rack              |      |           |
| 02/23/2021 09:24:43 AM | Info       | Smart Alert 2 Smart Alert #2 Beson & Siren Trigger returned to Normal on device E-20 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                  |      |           |
| 12/23/2021 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                     |      |           |
| 2/23/2021 09:23:35 AM  | Infa       | Smart Alert 2 Smart Alert 2 Beacon & Siren Alerta returned to Normal on device E-160 Server Rack Monitor          |      |           |
| 02/23/2021 09:23:35 AM | Info       | Smart Alert 1 Smart Alert 1 Emergenvor UPS Stutidown returned to Normal on device E-16D Server Back Monitor       |      |           |

Figure 68- Events Log

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

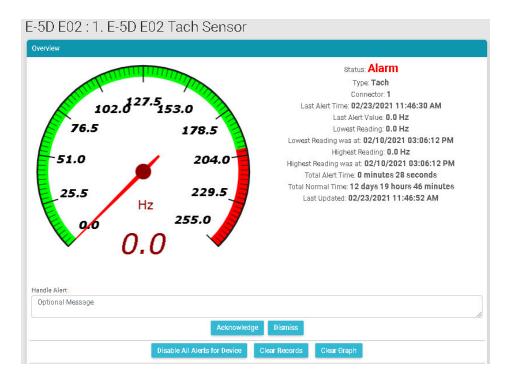
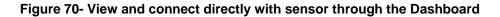


Figure 69- Connect directly to acknowledge or dismiss alert

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.

| Sensor Information 🖻 Edit 🙁                     |   |                      |                  |                   |                 |                 |                |
|---|---|----------------------|------------------|-------------------|-----------------|-----------------|----------------|
| E-16D-24V Outdoor Porch Temperature 15 (STHS-0) | Remote 5D STHS-LSH Port 1 Upper Level Temperature | Alen                 |                  |                   |                 |                 |                |
|   | Remote 5D STHS-LSH Port 1 Upper Level             | Sensur Name-         | Sensor<br>Value€ | Sensor<br>Status≑ | Sensor<br>Type¢ | Device<br>Name¢ | Last Updated\$ |
| 50.0 72.5 95.0                                  | Temperature                                       | E-5D E02 Tach Sensor | 0.0 Hz           | Alarm             | Tac Sensors     | E-5D E02        | 5 sec. ago     |
|   | 74.0 °F   |                      |                  | Previous          | 1 Next          |                 |                |
| 27.5 117.5                                      | /4.U F  |                      |                  |                   | _               |                 |                |
| 5.0 140.0                                       | Normal  | IP Address-          | Device Na        | ne‡               |                 |                 | Status≑        |
|   | Last Updated: 14 sec. ago                         | 10.0.1.16            | Furnace R        | bom E-2D          |                 |                 | Normal         |
| -17.5 162.5                                     |   | 147.0.27.197         | E-16D Sen        | rer Rack Monitor  |                 |                 | Normal         |
| •F  |   | 147.0.27.207         | E-2D Lab F       | toom Environment  | Monitor         |                 | Normal         |
| -40.0 185.0                                     | E-2DB E08 Input Voltage                           | 147.0.27.208         | E-5D Serve       | r Rack Monitor    |                 |                 | Normal         |
| 427   |   | 147.0.27.212         | E-5D E04 I       | DDNS Test Unit    |                 |                 | Normal         |
| 12:7  | 8.5 V   | 147.0.27.218         | E-2D P05         |                   |                 |                 | Normal         |
|   |   | 192.168.1.100        | E-16D 24V        | IPMI Rack         |                 |                 | Normal         |
|   | Normal  | 192.168.3.100        | E-16DEL-1        | (Master)          |                 |                 | Normal         |
| E-16D-24V Outdoor Porch Humidity 15 (STHSO)     | Last Updated: 1 sec. ago                          | 192.168.3.101        | E-16D S1         |                   |                 |                 | Normal         |
|   | Penguin Encounter                                 | 192.168.3.200        | E-16D P02        |                   |                 |                 | Normal         |
|   | rendun ercounter                                  | 192.168.3.217        | E-5D-48V         |                   |                 |                 | Normal         |



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

#### NTI E-MNG-SH Self-Hosted Enterprise Environment Monitoring System Management Software



#### Figure 71- 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.

| 09/2023 08:24:50 AM  | Alert   | Sensor  | r 16.1.E-16D  | EL-1 IMD-0 | M Port 16 M | lotion went in | to Alert on device E- | -16DEL-1 (Master |
|--|---|---|---|------------|-------------|----------------|-----------------------|------------------|
| wing 1 to 30 of 7463 entries   |   | Prev  | ious 1  | 2          | . 249       | Next           |                       |                  |
| ear All Entries Download All Entri   |   |   |   |            |             |                |                       |                  |
| Sure As  | Figure 72   | 2- Clear or   | Downle  | oad Ev     | ent Log     | J Entries      | Search Downloads      | ×                |
| Organize - New fold  | a   |   |   |            |             |                | Ja •                  | 0                |
| Cuick access     OneDrive - Person     This PC     Dobjects     Dostopp     Documents     Music     Pictures     Videos     Local Disk (C)     Local Disk (D)     design (Naeversi     Network     Network     Vetwork | Name<br>SH Tectia Client<br>Symante: Clean Wipe<br>Xilinu; (£5,5%, Win; 147, 2015; 1<br>Symante: Endpoint Protection<br>SearchTeol v1.0.0.7 | Date modified<br>3/9/2023 847 AM<br>4/25/2022 827 AM<br>1/11/2022 419 PM<br>10/10/2019 2:30 PM<br>7/12/2019 2:13 PM | Type<br>File folder<br>File folder<br>File folder<br>File folder<br>File folder | Size       |             |                |                       |                  |
|  | t_log_1678388368.txt  |   |   |            |             |                |                       | ~                |
| Save as type: Text C   | vocument (*.txt)  |   |   |            |             |                | Save Cance            | 4                |



# **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.

| UX Management S<br>Action Setting |                         |   |                |     | Click h<br>edit | nere t | 0      | Apply a        | name                     |
|-----------------------------------|-------------------------|---|----------------|-----|-----------------|--------|--------|----------------|--------------------------|
| Available Actions                 |                         |   |                |     |                 |        |        | Add New Action |                          |
| Name                              | Action Type             | Entity  | Triggers       |     | Enabled         |        | Edit   |                | Name                     |
| Sample Report                     | Generate Report & Email | E-16DEL-1 (Master)                              | Sample Trigger | Yes |                 | Edit   | Delete | Action Name    | Enter name for reference |
| Sensor Report                     | Generate Report & Email | E-16D-24V Outdoor Porch Temperature 14 (STO)/ A | Sensor Trigger | Yes |                 | Edit   | Delete |                |                          |
| Map Report                        | Generate Report & Email | Ohio  | Map Trigger    | Yes |                 | Edit   | Delete |                | Add New Action           |
| Map 2 Report                      | Generate Report & Email | Server Rack                                     | Map 2 Trigger  | Yes |                 | Edit   | Delete |                |                          |



| 1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.                                | t  |                                |                       | This Hour       |
|---|--|--------------------------------|-----------------------|-----------------|
| Action  |  |                                |                       | This Hour       |
| t Run Time:   | 01/25/2022 09:00:03 AM   |                                |                       | This Day        |
| on Name   | Sample Report  |                                |                       | This Week       |
|   | Enter name for reference (Optional)                                |                                |                       | This Month      |
| on Enable   |  |                                |                       | This Quarter    |
|   | Select to enable this action                                       |                                |                       | This Year       |
| n Type  | Generate Report & Email<br>Select what action to take              |                                |                       | Last Hour       |
| rt Period   | Last Day   |                                |                       |                 |
| nt Period   | The period for which to generate report. Report Week starts on Sun | day                            | Sensor Details        | Last Day        |
| rt Data Type  | Device   |                                |                       | Last Week       |
|   | Select the type of data this report should have                    |                                | Sensor List           | Last Month      |
| ct Device   |  |                                | Device                | Last Quarter    |
|   | ,<br>  | Search:                        | Map Markers           | Last Year       |
| evice Name≎   | IP Address   |                                | the neried terwile to | Last X Hours    |
|   | Device 192 168 3 100   |                                | E-16D Units           | Last X Days     |
|   | Device 192.168.3.82  |                                | E-2D Units            | Last X Weeks    |
|   | Device 192.168.3.222   |                                | E-2D Units            | Last X Months   |
| • • • • • • • • • • • • • • • • • • •                                 | Device 192.168.3.223   |                                | E-2D Units            | Last X Quarters |
| Devices   | Device 147.0.27.207  |                                | E-2D Units            | Last X Years    |
|   | Device 192, 168, 3, 81   |                                | E-5D Units            | Custom Times    |
| can be  | Device 147.0.27.208  |                                | E-5D Units            | oustoin nines   |
| selected.   | Device 147.0.27.212  |                                | E-5D Units            |                 |
|   | Device 192.168.3.101   |                                | E-16D Units           |                 |
| à   | Device 192 168 1 100   |                                | E-16D Units           |                 |
| t Triggers that activate this Action                                  | Previous   | 1 2 3 Next                     | E- Iou Units          |                 |
|   | Trigger Frequency®   | Next Trigger 1                 | lime•                 | Enabled         |
| gger Name‡  | Repeat Daily   | 01/26/2022 09                  | MA 00.00              | Yes             |
|   | Kepeat Dany  |                                |                       |                 |
| mple Trigger  | Repeat Dany<br>Repeat Weekly                                       | 01/27/2022 12                  | 00-00 AM              | Yes             |
| rigger Name <b>t</b><br>ample Trigger<br>enser Trigger<br>Jap Trigger |  | 01/27/2022 12<br>01/25/2022 12 |                       | Yes<br>Yes      |

### **Figure 75- 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.

Generate Report Generate Report Generate Report & Email Operate Relay Send Email Send SMS Record IP Camera Digital Inputs power cycle

### **Figure 76- More Action Options**

### Generate Reports & Email

If you select "Generate Report & Email" then all users with "Email Alerts" selected (Figure 30) will receive reports via email. Select "Generate Report" to have generated reports saved in the Report List (page 61). A Report can include sensor details, a sensor list, devices being monitored, or a list of configured map markers.

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 of a specific type.

| port Data Type                | Sensor Details              |                                    |               |                  |
|-------------------------------|-----------------------------|------------------------------------|---------------|------------------|
|                               | Select the type of data thi | s report should have               |               |                  |
| port Period                   | Last Hour                   |                                    |               |                  |
|                               | The period for which to g   | enerate report. Report Week starts | on Sunday     |                  |
| lect Sensor                   |                             |                                    |               |                  |
|                               |                             | Searc                              | h:            |                  |
| Sensor Name≎                  |                             | Device Name≎                       | Sensor Value≎ | Sensor Type≎     |
| E-2DB E15 Input Voltage       |                             | E-2DB E15                          | 8.5 V         | Internal Sensors |
| E-2DB E-15 Port 2 Temperature |                             | E-2DB E15                          | 79.6 °F       | External Sensors |
| E-2DB E-15 Port 2 Humidity    |                             | E-2DB E15                          | 53.5 %        | External Sensors |
| E-2DB E-15 Port 2 Dew Point   |                             | E-2DB E15                          | 61.2 °F       | External Sensors |
| E-2DB E15 Output Relay 1      |                             | E-2DB E15                          | Off           | Output Relays    |
| Power Supply 1                |                             | E-2DB E15                          | ок            | Power Supplies   |
| Power Supply 2                |                             | E-2DB E15                          | ок            | Power Supplies   |
| E-MICRO P02 Temperature       |                             | E-MICRO P02                        | 77.9 °F       | Internal Sensors |
| E-MICRO P02 Temperature 1     |                             | E-MICRO P02                        | 76.5 °F       | External Sensors |
| E-MICRO P02 Humidity 1        |                             | E-MICRO P02                        | 52.4 %        | External Sensors |

#### Figure 77- Report Data Type- Sensor Details

Sensor details will provide a graph of sensor values, alerts trend and sensor records of each selected sensor. A sensor list report will provide a list of the details shown in the image above, as shown on the next page.

# Sensor List Report

Report Date: 05/08/2025 04:01:56 PM

| No. Description                        | Value   | Type Device                   |  |
|--|---------|-------------------------------|--|
| E.2.E-2DB E-15 Port 2 Temperature<br>1 | 77.9 °F | Temperature CoE-2DBE15<br>mbo |  |
| E.2. E-2DB E-15 Port 2 Humidity<br>2   | 42.2 %  | Humidity Combo E-2DB E15      |  |
| E.2. E-2DB E-15 Port 2 Dew Point       | 53.1 °F | Dew Point E-2DB E15           |  |
| 3                                      |         |                               |  |
| 0.1 E-2DB E15 Output Relay 1           | off     | Output Relay E-2DB E15        |  |
| P.1 Power Supply 1                     | ОК      | Power Supply E-2DB E15        |  |
| P.2 Power Supply 2                     | ОК      | Power Supply E-2DB E15        |  |
| I.1 E-2DB E08 Input Voltage            | 8.4 V   | Voltage E-2DB E08             |  |
| E.1.E-2DB E08 Temperature 1<br>1       | 80.7 °F | Temperature CoE-2DBE08<br>mbo |  |
| E.1. E-2DB E08 Humidity 1<br>2         | 34.0 %  | Humidity Combo E-2DB E08      |  |

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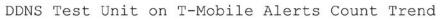
### Figure 78- Report for Sensor List

## **Device Report**

Report Period: Last 5 Days Report Date: 05/29/2025 01:53:47 PM



DDNS Test Unit on T-Mobile 1 Week



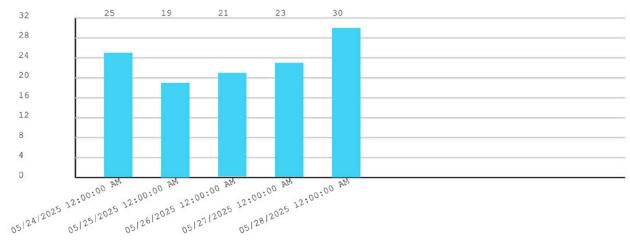
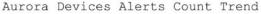
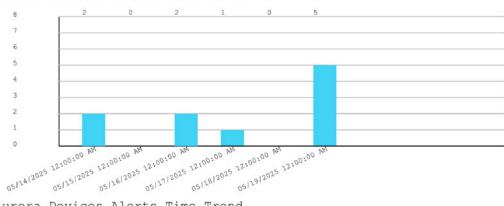


Figure 79- Report for Device

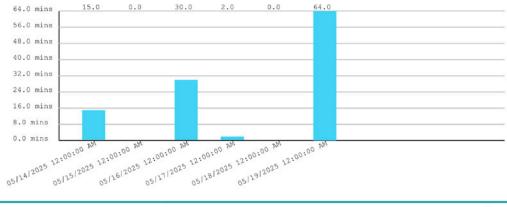
### Map Report

Report Period: Last 6 Days Report Date: 05/20/2025 12:00:02 PM





#### Aurora Devices Alerts Time Trend



NTI ENVIROMUX Management Software

3

Figure 80- Report for Map Markers

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.

|  |   |                         |               |                   | Available Actions               |  |   |         |             |
|--|---|-------------------------|---------------|-------------------|---------------------------------|--|---|---------|-------------|
| est Run Time:                                | 63/16/2023 05:00:05 AM  |                         |               |                   | Name                            | Triggers   | Entry   | Enabled | 1           |
| ction Name                                   | Cutdoor Porch Sensor Report   |                         |               |                   | Cubleer Porch Sensor Report     | Samaar Taggar  | E-16D-34V Outdoor Ponth Temperature 14 (STO)                    | Yes     | filst Dales |
|  | Sittle name by releases (Cotona)  |                         |               |                   |                                 |  | A C-16D-24V Outcoor Parch Temperature 1E<br>(STHS-O)            |         |             |
| ction Enable                                 |   |                         |               |                   | Mag Report                      | Mag Trigger  | Dia Chief   | Yop     | Ett Date    |
|  | Delect to enable it is actual   |                         |               |                   |                                 |  |   |         | List Delet  |
| ction lype                                   | Generate Report & Ernal   |                         |               | (*)               | Mag 2 Frequet                   | May 2 Trigger  | Server Rack   | Ves     |             |
|  | Kelect what action to take  |                         |               |                   | IPW Hara Mitten Detector Report |  |   | Van     | EII Delet   |
| port Period                                  | Left Quarter<br>The seried for which to generate report. Report Week starts a | kenter                  |               | •                 | Motion Seroor Report            | Exercise of the second se | E-16DEL 1 IND CM Part 14 Mation, E-6DEL 1<br>(MDM Port 5 Mation | Yes     | Edit Delet  |
| rpost Data Type                              | Senecr  |                         |               |                   | Fah                             | Sample Engger  | Server Rack   | Ves     | Cas Dave    |
| post cata type                               | Select the type of data this report around have                               |                         |               |                   |                                 | Sensor Trigger   | Contractory.  |         |             |
| lart Sansor                                  |   |                         |               |                   |                                 | Adap Trigget   |   |         |             |
|  | Sea   | de                      |               |                   |                                 |  |   |         |             |
| Sensor Name4                                 | Device Nam  |                         | Sensor Value# | Sensor Type4      |                                 |  |   |         |             |
| E-160-24V Qualator Parah Temperature         | 14 (STOY A E-160 24/ 8  | M Raix                  | 3487          | Esterne Servers   |                                 |  |   |         |             |
| E-160-24V Outbox Psych Temperature           | 15 (STHS-C) E-160-24/ #   | M Fack                  | 3647          | External Sensors  |                                 |  |   |         |             |
| E-16D-38V Coloner Prich Humidity 15.1        | (STHSO) E-160.24V.8   | M Rack                  | 035.5         | Esterne Senare    |                                 |  |   |         |             |
| 5-208-ECE Your Wilkige                       | E-708 EIB   |                         | 88V           | Internal Services |                                 |  |   |         |             |
| E-308 ECE Temperature 1                      | E-209 K00   |                         | 1221          | Estarus Sanaora   |                                 |  |   |         |             |
| E-308 EDE Humday 1                           | 8-209 EDI   |                         | 17.1.%        | External Sensors  |                                 |  |   |         |             |
| E 208 E05 Daw Point 1                        | E 209 E08   |                         | 343.ºF        | External Screens  |                                 |  |   |         |             |
| E 208 E08 ACOCLM Sensor 2-1                  | E 208 E00   |                         | C.0 V         | External Bansors  |                                 |  |   |         |             |
| E 208 E08 ACOCUM Bonser 2-3                  | E 200 EX  |                         | 0.1V          | Edunat Sessors    |                                 |  |   |         |             |
| E-208 E00 ACOCLM Denser 2-2                  | E-208.600   |                         | 15%           | External Sensors  |                                 |  |   |         |             |
| lact Triggers that activate this Action      | Prevena 🧃   | •                       | 28 Next       |                   |                                 |  |   |         |             |
|  | Trigger Krequency4  | Next Trigger Time®      |               | Enabled®          |                                 |  |   |         |             |
| Trigger Name#                                | Repeat Dely   | IIST1002310E0000AW      |               | Chen .            |                                 |  |   |         |             |
| Senser Ingpol                                |   | 11/12/2022 09:00:00 JAM |               | No                |                                 |  |   |         |             |
| Series Inggel<br>Sample Ingget               | Repeat Daily  |                         |               |                   |                                 |  |   |         |             |
| Server Inggel<br>Sample Inggel<br>Map Toggel | Repeat Daly   | 03/10/05/23 12 08:00 PM |               | Yes               |                                 |  |   |         |             |
| Senser Ingger<br>Sample Ingger               |   |                         |               | Vee<br>Ym<br>Ne   |                                 |  |   |         |             |

### Figure 81- 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.

Output Relays can be used to control beacons(E-BCN), sirens (E-SRN), automatic voice dialers(E-AVDS), electric strikes (E-EDR-SF), etc.

| dit Action                               |  |                           |                      |                 |                  |
|--|--|---------------------------|----------------------|-----------------|------------------|
| .ast Run Time:                           | 10/22/23 12:00:02 AM   |                           |                      |                 |                  |
| Action Name                              | Weekly Alerts Report<br>Enter name for reference             | (Dadamont)                |                      |                 |                  |
|  | PARTICIPATION PROVIDE  | (opuonar)                 |                      |                 |                  |
| ction Enable                             | Select to enable this action                                 | 0                         |                      |                 |                  |
| action Type                              | Operate Relay  |                           |                      |                 |                  |
| ction type                               | Select what action to take                                   |                           |                      |                 |                  |
| elect 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                     | tower Relay E-16D Server Rack Monitor                        |                           |                      | Power On        | External Sensors |
| Computer Lab Emergency UPS Shutdow       | Computer Lab Emergency UPS Shuldown E-16D Server Rack Monito |                           |                      | Inactive        | Output Relays    |
| Auto Dialer Call for Computer Lab Smok   |  | E-16D Server Rack Monitor |                      | Inactive        | Output Relays    |
| Auto Dialer Call for Equipment Lab 1 Sm  | oke  | E-16D Server Rack Monitor |                      | Inactive        | Output Relays    |
| Auto Dialer Call for Equipment Lab 2 Sm  | oke  | E-16D Server Rack Monitor |                      | Inactive        | Output Relays    |
|  |  | Previous 1                | Next                 |                 |                  |
|  | Active/On  |                           |                      |                 |                  |
| utput Relay Status                       | Select the status to chang                                   | e the Output Relay to     |                      |                 |                  |
| elect Triggers that activate this Action |  |                           |                      |                 |                  |
|  |  |                           | Search:              |                 |                  |
| Trigger Name\$                           | Trigger Frequency¢   |                           | Next Trigger Time¢   |                 | Enabled≑         |
| ingger Hamet                             | Repeat Weekly  |                           | 10/29/23 12:00:00 AM |                 | Yes              |
| Weekly Trigger                           |  |                           |                      |                 | Yes              |
|  | Repeat Hourly  |                           | 10/26/23 12:00:00 PM |                 |                  |

Figure 82- Action Type "Output Relay"

## Send Email

When "Send Email" is selected, a text box is presented to enter an 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>%</id>       | Sensor Name of a specific sensor identified by its EMNG Sensor ID.<br>Example %sensor_name_23%  |
| %sensor_val_ <id>%</id>        | Sensor Value of a specific sensor identified by its EMNG Sensor ID.<br>Example %sensor_val_23%.   |
| %triggered_root_sens_name%,    | These variables are available only if the Trigger is activated by an Event/Smart Alert with OR Logic and refers to Event/Smart Alert's root sensor. |
| %triggered_root_sens_val%,     |   |
| %triggered_root_sens_cat_name% |   |

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 %triggerred\_dev\_name% . Contact %triggered\_dev\_phone% to resolve .

## Edit Action: Weekly Alerts Report

| Action Name       Weekly Alerts Report         Enter name for reference (Optional)         Action Enable       Image: Comparison of Compari   | Last Run Time:                          | Never   |  |  |                       |
|---|---|---|--|--|-----------------------|
| Action Enable       Image: Select to enable this action         Action Type       Select themail         Message to send       Enter the message to send         Image: Themail Subject       Enter the message to send         Action Type       Enter the message to send         Action Type       Enter the message to send         Action Type       Enter the message to send         Available variables: %triggered_sens_name%, %triggered_sens_cal_name%, %triggered_dev_rank%, %triggered_fev_rank%, %triftevit     <   | Action Name                             | Weekly Alerts   | Report   |  |                       |
| Action Type     Select to enable this action       Message to send     Select what action to take       Image: The the message to send     Enter the message to send       Available variables: Wriggered_sens_val%, Miriggered_sens_name%, Miriggered_sens_oat       Message to send       Available variables: Wriggered_sens_val%, Miriggered_sens_oat       Available variables: Wriggered_sens_val%, Miriggered_ex_branch%, Miriggered_ex_mont%, Miriggered_ex_mont%       Email Subject     Enter the Email Subject to use       Repeat Weekly     10/29/23 12/00 00 AM     Yes       Sample Trigger     Unknown     Y   |   | Enter name for re   | eference (Optional)  |  |                       |
| Action Type       Select what action to take         Ressage to send       Enter the message to send         Available variables: %kriggered_sens_va%, %kriggered_sens_cat_name%, %kriggered_sens_cat_name%, %kriggered_sens_cat_name%, %kriggered_sens_cat_name%, %kriggered_dev_phor         Select what action to take         Enter the message to send         Available variables: %kriggered_sens_va%, %kriggered_sens_cat_name%, %kriggered_sens_p.ps         Wiriggered_dev_mame%, %kriggered_dev_phor         %kriggered_dev_mame%, %kriggered_dev_phor         %kriggered_dev_mame%, %kriggered_dev_phor         %kriggered_dev_mame%, %kriggered_dev_phor         %kriggered_dev_mame%, %kriggered_dev_phor         %kriggered_dev_mame%, %kriggered_dev_phor         %kriggered_dev_mame%, %kriggered_dev_phor         %kriggered_forcot_**         Note: %kriggered_root_email%, %kriggered_dev_phork         %kriggered_root_**         Note: %kriggered_root_**         %kriggered_root_**         Weikly         Tigger         Trigger Name4       Trigger Frequency4         Next Trigger Time4       Enabled5         Weikly Trigger       Unknown         Lest       Repeat Weekly         10/29/23 12/00 00 PM       Yes         Sample Trigger       Unknown         Prevrous <td< td=""><td>Action Enable</td><td></td><td></td><td></td><td></td></td<>  | Action Enable                           |   |  |  |                       |
| Select what action to take         Message to send         Enter the message to send         Available variables: %triggered_sens_val%, %triggered_sens_name%, %triggered_sens_pack         Available variables: %triggered_dev_loc%, %triggered_dev_loc%, %triggered_dev_mod%, %triggered_dev_phon%         %triggered_dev_name%, %triggered_dev_loc%, %triggered_dev_phon%, %triggered_dev_mod%, %triggered_dev_phon%, %triggered_dev_mod%, %triggered_dev_mod%, %triggered_dev_phon%, %triggered_dev_mod%, %triggered_dev_mod%, %triggered_dev_phon%         Select trigger       Note: %triggered_*% variables are available only if the Trigger is activated by a single sensor/Event/Smart Alert with OR Logic and refer         Email Subject       Enter the Email Subject to use         elect Triggers that activate this Action       Search:         Trigger Namet       Trigger Frequencyt       Next Trigger Timet       Enabled*         Weekky Trigger       Repeat Wookly       10/29/23 12:00:00 PM       Yes         test       Repeat Hourly       10/29/23 12:00:00 PM       Yes         Sample Trigger       Unknown        Yes         Previous       Next       Next       Next   |   | Select to enable  | this action  |  |                       |
| Ideasage to send       Enter the message to send         Available variables: %triggered_sens_val%, %triggered_sens_name%, %triggered_sens_cat_name%, %triggered_sens_pa         %triggered_root_sens_name%, %triggered_dev_prot_sens_val%, %triggered_dev_name%, %trigered_dev_name%, %triggered_dev_name%, %tr  | Action Type                             | Send Email  |  |  |                       |
| Enter the message to send         Available variables: Wriggered_sens_val%, %triggered_sens_name%, %triggered_sens_cat_name%, %triggered_sens_pame%, %triggered_dev_cot_sens_cat_name%, %triggered_dev_model%, %triggered_fev_model%, %triftered_fev_model%, %triggered_fev_model%, %trigered_f                           |   | Select what actio   | in to take   |  |                       |
| Available variables: %triggered_sens_val%, %triggered_sens_name%, %triggered_sens_cat_name%, %triggered_sens_pa%         %triggered_rot_sens_name%, %triggered_rot_sens_name%, %triggered_sens_pa%         %triggered_rot_sens_name%, %triggered_dev_ma%         %triggered_dev_name%, %triggered_dev_mac%, %triggered_dev_pack%, %triggered_dev_model%, %current_date_time%, %sensor_name_1CP>%         %triggered_rot_sens_name%, %triggered_dev_pack%, %triggered_dev_model%, %current_date_time%, %sensor_name_1CP>%         Note: %triggered_rot_sensor         Email Subject         Etert the Email Subject to use         Select Trigger sthat activate this Action         Select X       Trigger Frequency*       Next Trigger Time*       Enabled*         Weekly Trigger       Repeat Hourty       10/29/23 12 00:00 AM       Yes         Sample Trigger       Unknown        Yes         Previous       Next       Next  | Message to send                         |   |  |  |                       |
| Available variables: %triggered_sens_val%, %triggered_sens_name%, %triggered_sens_cat_name%, %triggered_sens_pa%         %triggered_root_sens_name%, %triggered_root_sens_name%, %triggered_sens_pa%         %triggered_root_sens_name%, %triggered_dev_mak%, %triggered_rok, %current_date_time%, %trigered_dev_rondet_k, %current_date_time%, %triggered_dev   |   |   |  |  |                       |
| Available variables: %triggered_sens_val%, %triggered_sens_name%, %triggered_sens_cat_name%, %triggered_sens_pa%         %triggered_root_sens_name%, %triggered_root_sens_name%, %triggered_sens_pa%         %triggered_root_sens_name%, %triggered_dev_mak%, %triggered_rok, %current_date_time%, %trigered_dev_rondet_k, %current_date_time%, %triggered_dev   |   |   |  |  |                       |
| Wiriggered_dev_name%, %triggered_dev_branch%, %triggered_dev_rack%, %triggered_dev_model%, %current_date_time%, %sensor_name_rdD>%, %sensor_val_clD>%, %s |   | 2012 - 2 |  | _name%, %triggered_sens_cat_name%, %t        | triggered_sens_pos%,  |
| %triggered_dev_email%, %triggered_dev_ip%, %triggered_dev_model%, %current_date_time%, %esnor_name_ <id>%, %sensor_val_<id>%, %sensor_val_<id>%sersor_is activated by a single sensor/Event/Smart Alert with OR Logic and refere Event/Smart Alert's root sensor         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         Sample Trigger       Unknown      </id></id></id></id></id></id></id></id></id></id></id></id></id></id>  |   |   |  |  |                       |
| Note: %triggered_*% variables are available only if the Trigger is activated by a single sensor/Event/Smart Alert with OR Logic and refer   "Wiriggered_root_*% variables are available only if the Trigger is activated by an Event/Smart Alert with OR Logic and refer   Email Subject   Email Subject  |   |   |  |  |                       |
| Trigger.       %ktriggered_root_*% variables are available only if the Trigger is activated by an Event/Smart Alert with OR Logic and refere Event/Smart Alert's root sensor         Email Subject       Enter the Email Subject to use         elect 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         Sample Trigger       Unknown        Yes         Sample Trigger       Unknown        Yes   |   |   |  |  |                       |
| Winggered_root_"% variables are available only if the Trigger is activated by an Event/Smart Alert with OR Logic and refer         Email Subject         Enter the Email Subject to use         elect Triggers that activate this Action         Search:         Trigger Frequency*       Next Trigger Time*         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       Next       Next       Yes  |   |   | _"% variables are available only if the Trigger  | r is activated by a single sensor/Event/Smar | t Alert with OR Logic |
| Email Subject Enter the Email Subject to use  elect Triggers that activate this Action  Trigger Name Trigger Frequency Next Trigger Time Enabled  Next Trigger Time Next Trigger Time Yes  test Repeat Weekly 10/26/23 12:00:00 PM Yes Sample Trigger Unknown Yes   |   | Iridger   |  |  |                       |
| Enter the Email Subject to use         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  |   | %triggered_root_  |  | is activated by an Event/Smart Alert with OF | R Logic and refers to |
| 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  |   | %triggered_root_  |  | is activated by an Event/Smart Alert with OF | R Logic and refers to |
| 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  | Email Subject                           | %triggered_root_<br>Event/Smart Aler  | t's root sensor  | is activated by an Event/Smart Alert with OF | R Logic and refers to |
| 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   |   | %triggered_root<br>Event/Smart Alert<br>Enter the Email S   | t's root sensor  | is activated by an Event/Smart Alert with OF | R Logic and refers to |
| test     Repeat Hourly     10/26/23 12:00:00 PM     Yes       Sample Trigger     Unknown      Yes   |   | %triggered_root<br>Event/Smart Alert<br>Enter the Email S   | t's root sensor  |  | R Logic and refers to |
| Sample Trigger Unknown Yes<br>Previous 1 Next   | elect Triggers that ac                  | %triggered_root<br>Event/Smart Alert<br>Enter the Email S<br>tivate this Action   | t's root sensor<br>Subject to use<br>Searc   | sh:  | R Logic and refers to |
| Previous 1 Next   | elect Triggers that ac<br>Trigger Name¢ | %triggered_root_<br>Event/Smart Alert<br>Enter the Email S<br>tivate this Action<br>Trigger Frequency¢  | t's root sensor<br>subject to use<br>Searc<br>Next Trigger Time≑   | sh:<br>Enabled≑                              | R Logic and refers to |
|   | Trigger Name\$                          | %triggered_root_<br>Event/Smart Alert<br>Enter the Email S<br>tivate this Action<br>Trigger Frequency≑<br>Repeat Weekly   | Searce<br>Next Trigger Time\$<br>10/29/23 12:00:00 AM  | ch:<br>Enabled <del>\$</del><br>Yes          | R Logic and refers to |
|   | Trigger Name¢<br>Weekly Trigger         | %triggered_root_<br>Event/Smart Alert       Enter the Email S       tivate this Action       Trigger Frequency\$       Repeat Weekly       Repeat Hourty  | Searce<br>Next Trigger Time\$<br>10/29/23 12:00:00 AM  | Enabled¢<br>Yes<br>Yes                       | R Logic and refers to |
| Save Action   | Trigger Name¢<br>Weekly Trigger         | %triggered_root_<br>Event/Smart Alert       Enter the Email S       tivate this Action       Trigger Frequency\$       Repeat Weekly       Repeat Hourty  | Next Trigger Time         Search           10/29/23 12:00:00 AM         10/26/23 12:00:00 PM           -         -           | ch:<br>Enabled‡<br>Yes<br>Yes<br>Yes         | R Logic and refers to |
| Save Action   | Trigger Name¢<br>Weekly Trigger         | %triggered_root_<br>Event/Smart Alert       Enter the Email S       tivate this Action       Trigger Frequency\$       Repeat Weekly       Repeat Hourty  | Next Trigger Time         Search           10/29/23 12:00:00 AM         10/26/23 12:00:00 PM           -         -           | ch:<br>Enabled‡<br>Yes<br>Yes<br>Yes         | R Logic and refers to |
|   | Trigger Name¢<br>Weekly Trigger         | %triggered_root_<br>Event/Smart Alert       Enter the Email S       tivate this Action       Trigger Frequency\$       Repeat Weekly       Repeat Hourty  | Next Trigger Time         Search           10/29/23 12:00:00 AM         10/26/23 12:00:00 PM           -         -           | ch:<br>Enabled‡<br>Yes<br>Yes<br>Yes         | R Logic and refers to |
| Run Action Now  | Trigger Name¢<br>Weekly Trigger         | %triggered_root_<br>Event/Smart Alert       Enter the Email S       tivate this Action       Trigger Frequency\$       Repeat Weekly       Repeat Hourty  | It's root sensor<br>Subject to use<br>Next Trigger Time¢<br>10/29/23 12:00:00 AM<br>10/26/23 12:00:00 PM<br><br>Previous 1 N | ch:<br>Enabled<br>Yes<br>Yes<br>Yes<br>lext  | R Logic and refers to |

Figure 83- 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.

| EditAction                                |   |   |               |            |   |
|---|---|---|---------------|------------|---|
| 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<br>Select what action to take            |   |               |            | ~ |
|   | Select what action to take                                |   |               |            |   |
| Select IP Cameras                         |   | ******                                    |               |            |   |
| IP Camera Name¢                           | Device Name¢  | Search:                                   | 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-10D 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       |   |
| nipat                                     |   |   | 07.204.140.20 | 0100       |   |
|   | Previous  | 1 Next                                    | -             |            |   |
| Length of time to record IP Camera        | 5 Sec   |   | 5 Sec         |            | ~ |
|   | Select how long to record this IP camera on alert. Applie | es only to IP cameras with JPEG URL types |               |            |   |
| Select Triggers that activate this Action |   | 8   | 5 Sec         |            |   |
|   |   | Search:                                   | - 10 Sec      |            |   |
| Trigger Name\$                            | Trigger Frequency¢  | Next Trigger Time\$                       | 15 Sec        |            |   |
| Weekly Trigger                            | Repeat Weekly   | 10/26/23 12:00:00 PM                      |               |            |   |
| test                                      | Repeat Hourly   | 10/26/23 12:00:00 PM                      | - 30 Sec      |            |   |
| Sample Trigger                            | Unknown   |   | 1 Min         |            |   |
|   | Previous  | 1 Next                                    |               |            |   |
|   |   |   | 2 Min         |            |   |
|   |   | Save Action                               | 5 Min         |            |   |
|   |   |   |               |            |   |
|   |   | Run Action Now                            | 10 Min        |            |   |

Figure 84-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.

Note: If the device connected to the Digital Input on the ENVIROMUX is not being powered by that ENVIROMUX, the power cycle action will have no effect on that device. See "Cycle Sensor Power" section in the <u>E-xD product manual</u>.

| 10/22/23 12:00.02 AM<br>Weekly Alerts Report<br>Enter amee for reference (Optional)<br>Select to enable this action |  |   |
|---|--|---|
| Enter name for reference (Optional)   |  |   |
| Select to enable this action  |  |   |
| Select to enable this action  |  |   |
|   |  |   |
| Digital Inquite nomer curcle  |  |   |
| Digital Inputs power cycle  |  |   |
| Select what action to take  |  |   |
|   |  |   |
|   | Search:  |   |
| Device Name\$   | Current Value®   | Sensor Category≎  |
| E-2D Lab Room Environment Monitor   | Open   | Digital Inputs  |
| E-2D Lab Room Environment Monitor   | Closed   | Digital Inputs  |
| E-2D Lab Room Environment Monitor   | Closed   | Digital Inputs  |
| E-2D Lab Room Environment Monitor   | Closed   | Digital Inputs  |
| E-20 P05  | No Alert   | Digital Inputs  |
| E-5D Server Rack Monitor  | Open   | Digital Inputs  |
| E-5D Server Rack Monitor  | Open   | Digital Inputs  |
| E-5D Server Rack Monitor  | Closed   | Digital Inputs  |
| E-5D Server Rack Monitor  | Closed   | Digital Inputs  |
| E-5D Server Rack Monitor  | Closed   | Digital Inputs  |
| Previous  | 1 2 Next<br>Search:  |   |
| Trigger Frequency≎  | Next Trigger Time≑   | Enabled¢  |
| Repeat Weekly   | 10/29/23 12:00:00 AM   | Yes   |
| Repeat Hourly   | 10/26/23 12:00:00 PM   | Yes   |
|   |  |   |
|   | E.2D Lab Room Environment Monitor           E.2D Server Rack Monitor           E.5D Server Rack Monitor           E.5D Server Rack Monitor           E.5D Server Rack Monitor           Previous | Device Name\$     Current Value\$       E.2D Lab Room Environment Monitor     Open       E.2D Lab Room Environment Monitor     Closed       E.2D P05     No Alert       E.5D Server Rack Monitor     Open       E.5D Server Rack Monitor     Closed       Previous     1     Next       Trigger Frequency\$       Mext Trigger Time\$       Repeat Weekly |

### Figure 85-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.

| Monitor              | • | Trigger Settings   | 3                      |                        |         |             |                 |                          | Home / Trigger Set |
|----------------------|---|--------------------|------------------------|------------------------|---------|-------------|-----------------|--------------------------|--------------------|
| Events               | • | Available Triggers |                        |                        |         |             | Add New Trigger |                          |                    |
| vents Log<br>riggers |   | Name               | Last Trigger Time      | Next Trigger Time      | Enabled | Edit        | Tringen Name    | Name                     |                    |
| ctions               |   | Sample Trigger     | 01/24/2022 09:00:01 AM | 01/25/2022 09:00:00 AM | Yes     | Edit Delete | Trigger Name    | Enter name for reference |                    |
| eports               |   | Sensor Trigger     | 01/20/2022 12:00:01 AM | 01/27/2022 12:00:00 AM | Yes     | Edit Delete |                 |                          |                    |
| ecordings            |   | Map Trigger        | 01/24/2022 12:00:04 PM | 01/25/2022 12:00:00 PM | Yes     | Edit Delete |                 | Add New Trigger          |                    |
| Devices              | • | Map 2 Trigger      | 01/24/2022 12:00:03 AM | 01/31/2022 12:00:00 AM | Yes     | Edit Delete |                 |                          |                    |
| Settings             | × |                    |                        |                        |         |             |                 |                          |                    |
| About                | Þ |                    |                        |                        |         |             |                 |                          |                    |

## Figure 86- Trigger List

| Edit Trigger                    |  |                                | Repeat Weekly    |  |
|---------------------------------|--|--------------------------------|------------------|--|
| Last Trigger Time:              | 10/26/23 09:38:14 AM                           |                                | Once             |  |
| Next Trigger Time:              | -  |                                | Repeat Hourly    |  |
| Trigger Name                    | Sample Trigger                                 |                                | Repeat Daily     |  |
|                                 | Enter name for reference (Optional)            |                                | Repeat Weekly    |  |
| Trigger Enable                  | ✓  |                                | Repeat Monthly   |  |
|                                 | Select to enable this trigger                  |                                | Repeat Quarterly |  |
| Trigger Type                    | Time Schedule                                  |                                |                  |  |
|                                 | The source of your Trigger which activates the | is Trigger based on conditions | Repeat Yearly    |  |
| Trigger Frequency               | Once   |                                | ~                |  |
|                                 | Specify how often this trigger should repeate  | dly activate                   |                  |  |
| Select date and time of trigger |  |                                |                  |  |
|                                 | Select trigger date and time                   | e Schedule                     |                  |  |
|                                 | Tin  | e Schedule                     |                  |  |
|                                 | Save Trigger Set                               | ISORS                          |                  |  |

#### Figure 87- 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 image below)

| Trigger Frequency<br>Select date and time of trigger              |   | Once<br>Specify how often this trigger shoul<br>01/31/2022 12:00:00 AM<br>Select trigger date and time | Trigger Frequency<br>Select Minute | Repeat Hourly<br>Specify how often this trigger should repeatedly activa<br>48 |   |  |
|---|---|--|------------------------------------|--|---|--|
|   |   |  |                                    | Select minut   | te of the hour at which this triggers                                       |  |
| Trigger Frequency   | Repeat Daily<br>Specify how often this trigger should repeatedly activate |  | Trigger Frequency                  | s  | Repeat Monthly<br>specify how often this trigger should repeatedly activate |  |
| elect Hour 12 AM<br>Select hour of the day at which this triggers |   | Select day of month  |                                    | 1<br>elect day of the month at which this triggers                             |   |  |

Figure 88- Option detail for Trigger Frequency

When the trigger type is set as "Sensors" (see Figure 89), 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.

|   |                         |   |  | Any Sensor/Event/Smart-Alert in Alert                                     |                          | ~                               |                  |   |
|---|-------------------------|---|--|---|--------------------------|---------------------------------|------------------|---|
| Edit Trig   | gger: Sample Trig       | ger   |  | Any Sensor/Event/Smart-Alert in Alert<br>Temperature<br>Humidity<br>Power |                          | <u>^</u>                        |                  |   |
| Edit Trigger  |                         |   |  | Voltage   |                          | - 11                            |                  |   |
| Last Trigger Time: 10/26/23 09:38:14 AM Next Trigger Time: - Trigger Name Sample Trigger Enter name for reference (C Trigger Enable Select to enable this trigger Trigger Type Sensors The source of your Trigger Select Sensor Type Any Sensor/Event/Smu |                         | Sample Trigger<br>Enter name for reference (Optional) | Dust<br>Frequency<br>Phase Angle<br>Power Factor<br>Apparent Power<br>Reactive Power<br>Length<br>Continuity |   |                          |                                 |                  | × |
| ID\$  | Sensor Name\$           |   | Device   | Search:   | Sensor Value‡            |                                 | Sensor Category≑ |   |
| 1_1   | Lab Temperature         |   |  | ab Room Environment Monitor   | 22.4 °C                  |                                 | External Sensors |   |
| 2_1   | Lab Humidity            |   | E-20 L   | Lab Room Environment Monitor 25.8   |                          |                                 | External Sensors |   |
| 3_1   | Lab Dew Point           |   | E-2D L   | 2D Lab Room Environment Monitor 35.3                                      |                          |                                 | 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 L   | Lab Room Environment Monitor 60.2 Hz                                      |                          |                                 | External Sensors |   |
| 7_1   | Lab Rack UPS Frequency  |   | E-2D L   | ab Room Environment Monitor   | ironment Monitor 60.2 Hz |                                 | External Sensors |   |
| 9_2   | Lab Smoke Detector      |   | E-2D 1.  | ab Room Environment Monitor   | No Smoke                 |                                 | Digital Inputs   |   |
| 10_2  | Lab Main Door           |   | E-2D L   | ab Room Environment Monitor   | Closed                   |                                 | Digital Inputs   |   |
| 11_2  | Lab Equipment Door      |   | E-2D L   | ab Room Environment Monitor   | Closed                   |                                 | Digital Inputs   |   |
| Sensors Trigger Independently No<br>No: To reactivate this<br>Yes. Reactivate Trigg   |                         | If multiple Sensors are selected for this 1           | Frigger, se<br>sensors t<br>switching  | to alert at any time.   | Next                     | OR<br>AND<br>XOR<br>NOR<br>NAND |                  |   |
|   |                         |   |  | Save Trigger  |                          |                                 |                  |   |

### Figure 89- 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.

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. A delay can be added so that Trigger gets activated only when sensor value crosses the threshold and stays there for the time of Delay. This can be used to avoid spurious alerts when value hovers near the threshold value. A similar Delay is available when Trigger returns to normal with "Trigger Return Delay".

|                | Sensor Name¢                  |  | Device Name‡                          | Sensor Value≎     | Sensor Category¢ |
|----------------|-------------------------------|--|---------------------------------------|-------------------|------------------|
| 2_1            | E-2DB E-15 Port 2 Temperature |  | E-208 E15                             | 80.7 %            | External Sensors |
| 4_1            | E-208 E-15 Port 2 Dew Point   |  | E-208 E15                             | 58.4 °F           | External Sensors |
| 8_200          | E-MICRO P02 Temperature       |  | E-MICRO P02                           | 80.0 %            | Internal Sensors |
| 9_201          | E-MICRO P02 Temperature 1     |  | E-MICRO P02                           | 76.9 F            | External Sensors |
| 11_201         | E-MICRO P02 Dew Point 1       |  | E-MICRO P02                           | 54.0 T            | External Sensors |
| 12_201         | E-MICRO P02 Temperature 2     |  | E-MICRO P02                           | 76.8 <del>T</del> | External Sensors |
| 18_201         | E-1W P01 Temperature 1        |  | E-1W P01                              | 79.6 °F           | External Sensors |
| 20_201         | E-1W P01 Dew Point 1          |  | E-1W P01                              | 52.5 °F           | External Sensors |
| 22_201         | E-1W P01 Temperature 3        |  | E-1W P01                              | 79.9 °F           | External Sensors |
| 23_201         | E-1W P01 Temperature 4        |  | E-1W P01                              | 75.6 T            | External Sensors |
| ensors Trigger | r Independently               | Yes  |                                       |                   |                  |
| rigger Minimu  | m Value                       | No. To reactivate this Trigger, wait for all ensors<br>Yes: Reactivate Trigger with any sensor switchin<br>Note. Applicable only to Triggers with multiple se<br>99999<br>Value of sensor below which this Trigger gets so | g to alert al any time.<br>Insors     |                   |                  |
| rigger Maximı  | ım Value                      | 99999<br>Value of sensor above which this Trigger gets ac  | tivated                               |                   |                  |
|                |                               | 0  |                                       |                   |                  |
| rigger Delay   |                               | Delay in seconds for which any sensor value sho  | ould hold for Trigger to be activated |                   |                  |

#### Figure 90- Sensor Type Selected with a Range of Values

|       |                                |                          | Search:   |                   |                  |  |  |
|-------|--------------------------------|--------------------------|---|-------------------|------------------|--|--|
| D\$   | 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 Detected | or                       | E-16D Server Rack Monitor   | No Smoke Detected | Digital Inputs   |  |  |
|       |                                | Trigger gets Reactivated | Previous 1 2 3 Next   |                   |                  |  |  |
|       |                                | If multiple Sensors an   | multiple Sensors are selected for this Trigger, select the Logical Function how they combine to activate this Trigger |                   |                  |  |  |
|       |                                | Closed/On                | d/On  |                   |                  |  |  |
|       |                                | Value of concor of uit   | ich this Trigger gets activated   |                   |                  |  |  |

### Figure 91- 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. When 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 senor 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 89), 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.

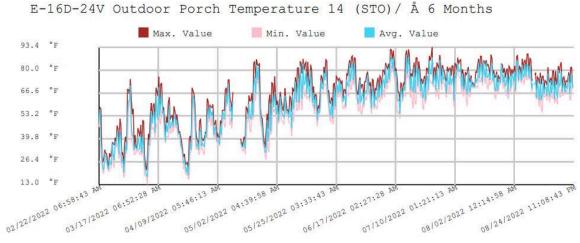
| Pending Reports: 0. Available Reports:                    |           |           |        |                        |                      |
|---|-----------|-----------|--------|------------------------|----------------------|
| 7. E-16DEL-1 (Master) Device Report                       | Last Day  | 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 | Mew Download Delete  |
| 1 E-16DEL-1 (Master) Device Report                        | Last Day  | Completed | Device | 01/03/2022 03:37:16 PM | View Download Delete |

#### Figure 92- Reports list

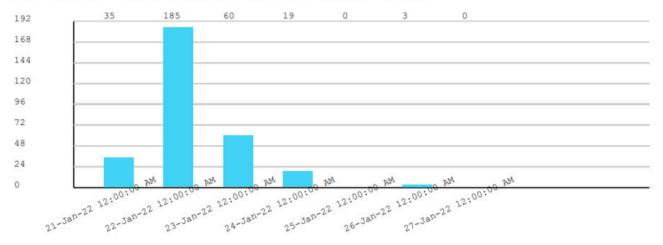
With a report in the list, you can click "View" to see the content immediately, click "Download" to save it for viewing later, or click "Delete" if you don't want it in the list any longer. To remove all reports at once, click "Clear All Reports"

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 47).

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.

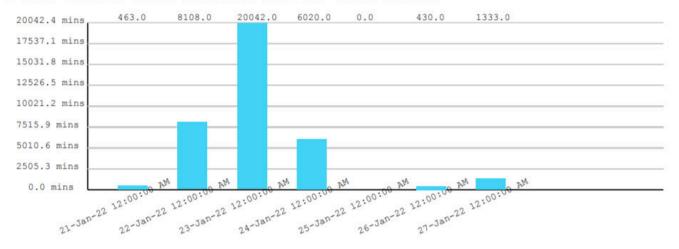


#### Figure 93- Report graph of an individual sensor



### E-16D Server Rack Monitor Alerts Count Trend

E-16D Server Rack Monitor Alerts Time Trend





| 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 95- 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 due to 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.

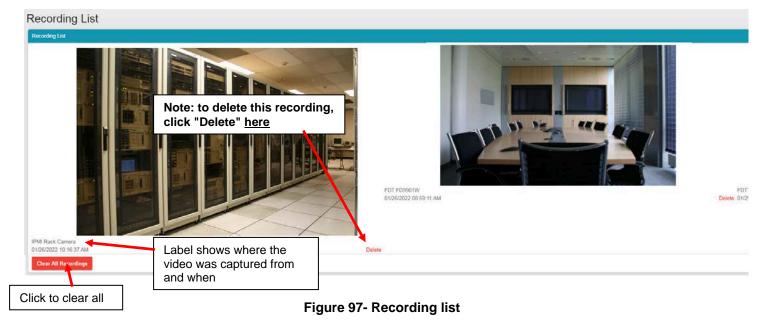
# Recordings

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.

| - Critical Alert Settings                |   |     |   |
|--|---|-----|---|
| Disable Alerts                           | Disable arent notifications for this sensor                                     |     |   |
| Alert Delay                              | 20<br>Duration the sensor must be out of thresholds before alert is generated   | Sec | • |
| Notify Again Time                        | 6<br>Time after which alert notifications will be sent again                    | Hr  | ~ |
| Notify on return to normal               | Send a notification when this sensor returns to normal status                   |     |   |
| Auto acknowledge                         | Automatically acknowledge alert when sensor returns to normal status            |     |   |
| Enable Syslog Alerts                     | Send alerts for this sensor via syslog  |     |   |
| Enable SNMP Traps                        | Send alerts for this sensor via SNMP trape                                      |     |   |
| Enable E-mail Alerts                     | Send alerts for this sensor via e-mail  |     |   |
| E-mail Subject                           | E-16D-24V Screen Room Temperature 3 Alert<br>Subject of e-mails sent for alerts |     |   |
| Select IP Camera                         | IPMI Rack Camera<br>Select IP camera for image capture/recording on alert       |     | * |
| Attach IP camera capture to e-mail       | Attach captured image from selected IP camera to alert e-mail                   |     |   |
| Save image to USB                        | Save captured image from selected IP camera to USB Flash                        |     |   |
| Length of time to record this IP camera  | Disable Record Disable Record Disable Record 5 Sec                              |     | × |
| Enable SMS Alerts                        | - 5 386<br>10 Sec<br>15 Sec<br>30 Sec   |     |   |
| Send custom SMS                          | 1 Min<br>2 Min<br>5 Min   |     |   |
| Customized SMS                           | 10 Min<br>Customized SMB message sent for alerts                                |     |   |
| Enable Siren                             | Turn on the siten when this sensor goes to alert                                |     |   |
| Enable Beacon                            | Turn on the beacon when this sensor goes to alert                               |     |   |
| Associated Output Relay                  | None<br>Name of the output relay that can be controlled by this sensor          |     | v |
| Output Relay status on alert             | Inactive<br>Status of the output relay when going to alert                      |     | * |
| Output Relay status on return from alert | Inactive<br>Status of the output relay when returning from alert.               |     | • |

Figure 96- User settings to enable Recording

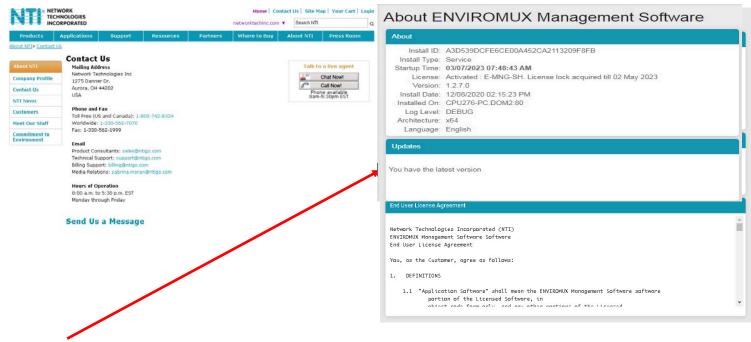
To see your recordings, click on "Recordings" in the Events menu. The camera the recording came from and time it was recorded will be in the bottom left corner of the recording. To delete a recording, click "Delete" in the bottom **right** corner of the recording image. Up to 1000 recordings will be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



## 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 the 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.

| 6 | About                                  |  |
|---|--|--|
|   | About ENVIROMUX<br>Management Software |  |
|   | User Manual                            |  |
|   | Downloads                              |  |
|   | Contact NTI                            |  |
|   | Figure 98- 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 99- Click on Tray icon

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



Figure 100- 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).

| $\geq$ | AA                          |                  | 192.168.3.1                       | 12              | C               | Û         | +         |    |
|--------|-----------------------------|------------------|-----------------------------------|-----------------|-----------------|-----------|-----------|----|
| NI     | ENVIRO                      | MUX Manag        | ement Softwar                     | e               |                 | $\geq$    | Admin     |    |
| D      | evices Available            |                  |                                   |                 |                 |           |           |    |
|        | IP Address+                 | Device           | Name <del>\$</del>                |                 |                 | Status\$  |           |    |
|        | 10.0.1.16                   | Furnace          | Room E-2D                         |                 |                 | Normal    |           |    |
|        | 147.0.27.197                | E-16D S          | erver Rack Monitor                |                 |                 | Normal    |           |    |
|        | 147.0.27.207                | E-2D La          | E-2D Lab Room Environment Monitor |                 | Normal          |           |           |    |
|        | 147.0.27.208                | E-5D Se          | E-5D Server Rack Monitor          |                 | Normal          |           |           |    |
|        | 147.0.27.212                | E-5D E0          | E-5D E04 DDNS Test Unit           |                 | Normal          |           |           |    |
|        | 147.0.27.218                | E-2D PC          | E-2D P05                          |                 | Normal          |           |           |    |
|        | 192.168.1.100               | E-16D 2          | E-16D 24V IPMI Rack               |                 | Normal          |           |           |    |
|        | 192.168.3.100               | E-16DE           | E-16DEL-1 (Master)                |                 | Normal          |           |           |    |
|        | 192.168.3.101               | E-16D S          | E-16D S1                          |                 | Normal          |           |           |    |
|        | 192.168.3.200               | E-16D F          | 202                               |                 |                 | Normal    |           |    |
|        | 192.168.3.217               | E-5D-48          | V                                 |                 |                 | Normal    |           |    |
|        | 192.168.3.221               | E-2DB F          | 202                               |                 |                 | Normal    |           |    |
|        | 192.168.3.222               | E-2D E1          | 2                                 |                 |                 | Normal    |           |    |
|        | 192.168.3.223               | E-2DB E          | E11 (RevF)                        |                 |                 | Normal    |           |    |
|        | 192.168.3.225               |                  | 12                                |                 |                 | Normal    |           |    |
|        | 192.168.3.227               | E-2D PC          | E-2D P04                          |                 | Normal          |           |           |    |
|        | 192.168.3.80                | E-16D E          | E-16D E100                        |                 | Normal          |           |           |    |
|        | 192.168.3.81                | E-5DEL-          | E-5DEL-1 (E07)                    |                 | Normal          |           |           |    |
|        | 192.168.3.82                | E-2DB E          | E-2DB E08                         |                 |                 | Normal    |           |    |
|        | 192.168.3.83                | E-5D E0          | E-5D E01                          |                 |                 | Normal    |           |    |
|        | 98.27.170.240               | Remote           | E-5D                              |                 |                 | Polling F | ailed     |    |
| A      | lerts                       |                  |                                   |                 |                 |           |           |    |
|        | Sensor<br>Name <del>↓</del> | Sensor<br>Value≑ | Sensor Status≑                    | Sensor<br>Type≑ | Device<br>Name≎ | La        | st Update | ed |
|        |                             |                  | No a                              | lerts           |                 |           |           |    |
|        |                             |                  | Previou                           | s Next          |                 |           |           |    |

Figure 101- Screenshot from an iPad

| 🗻 37°                    | * 🖸 🏹 🆛                                    | 96% 🔲 1:28 рм |
|--------------------------|--|---------------|
| ③ 192.168.3.12/          | /p/index                                   | 0<br>0<br>0   |
|                          | $\sim$                                     |               |
| Home<br>Home             |  |               |
| Devices Available        |  |               |
| IP Address <del>、</del>  | Device<br>Name≎                            | Status≑       |
| 10.0.1.16                | Furnace<br>Room E-2D                       | Normal        |
| 147.0.27.197             | E-16D Server<br>Rack Monitor               | Normal        |
| 147.0.27.207             | E-2D Lab<br>Room<br>Environment<br>Monitor | Normal        |
| 147.0.27.208             | E-5D Server<br>Rack Monitor                | Normal        |
| 147.0.27.212             | E-5D E04<br>DDNS Test                      | Normal        |
| $\leftarrow \rightarrow$ | <b>†</b> (33                               | ) 0           |

Figure 102- Screenshot from a smartphone

## **USER PASSWORD RESET**

Any user password can be reset following the below procedure. If you are able to login as a Super Admin and want to change the password of any other users, this can be done by the Super Admin user in the User Settings page.

- 1. Navigate to DB folder by clicking on the tray icon for ENVIROMUX Management Software. If you have the Management Software installed in Service mode and do not see a tray icon, then you will have to start the application for the tray icon to show up.
- 2. Right click on the icon and Open the "Database" folder.
- 3. Open the settings.db file in a sqlite editor like "DB Browser"
- 4. Navigate to the "Browse Data" Tab and select Table "EMANAGER\_USERS".
- 5. Locate the user you want to update the password for. Set your desired password in the "PASSWORD" column in plain text.
- 6. Set the "PASSWORD\_TYPE" column to 0.
- 7. Click on "Write Changes" in the menu bar above. If you are running in Service mode, you may see an error "Unable to write to file". This error is because service writes to a protected folder. Please refer to Step 9 to solve this.
- 8. If you are running in Application mode, please restart the application for the new password to take effect and skip step 9.
- 9. If you are running in Service mode and want to write to the **settings.db** file as above, copy the **settings.db** file to the Documents folder first. Edit this **settings.db** file using steps 3-7 and "Write Changes". Open a command prompt in Administrator mode and use the copy command to copy **settings.db** file from the Documents to the Database folder.
- 10. Now restart the service.
- 11. When the service or software is restarted, it auto encrypts the password in the Database folder and you can login with the new password.

# 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.

|                                       | • | About ENVIROMUX Management Software  |
|---------------------------------------|---|--|
| Events                                | • | About  |
| Devices                               | Þ | Install ID: A3D539DCFE6CE00A452CA2113209F8FB   |
| Settings                              | • | Install Type: Service<br>Startup Time: 03/07/2023 07:48:43 AM  |
| About                                 | - | License: Activated : E-MNG-SH. License lock acquired till 02 May 2023<br>Version: 1.2.7.0                        |
| bout ENVIROMUX<br>lanagement Software | 9 | Install Date: 12/08/2020 02:15:23 PM<br>Installed On: CPU276-PC.DOM2:80<br>Log Level: DEBUG<br>Architecture: x64 |
| ownloads                              |   | Language: English  |
| ontact NTI                            |   | Updates  |

Figure 103-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 the 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\_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": [

["<a href=\"/p/device/list-sensor?id\_device=4&cat\_type=0\">192.168.1.100</a>", "E-2DB- E08",

"Normal"],

#### NTI E-MNG-SH Self-Hosted Enterprise Environment Monitoring System Management Software

#### **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

07/05/2022 04:39:55 PM <\t> Alert <\t> Sensor 2. <a href="/p/device/sensor?id\_device=59&cat\_type=3&id\_sensor=1">E-16D E100 on 4G</a> went into Alert on device Remote E-5D <\t> 3 <\t>Remote E-5D<\t>E-16D E100 on 4G <\t> 1688928394894<\r\n>

Unix Timestamp

#### **Download Sensor Graph API**

Type: HTTP GET or HTTP HEAD

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

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": -899998.200000001,

"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"

}

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