

Edge Intelligence[®] Reference Manual

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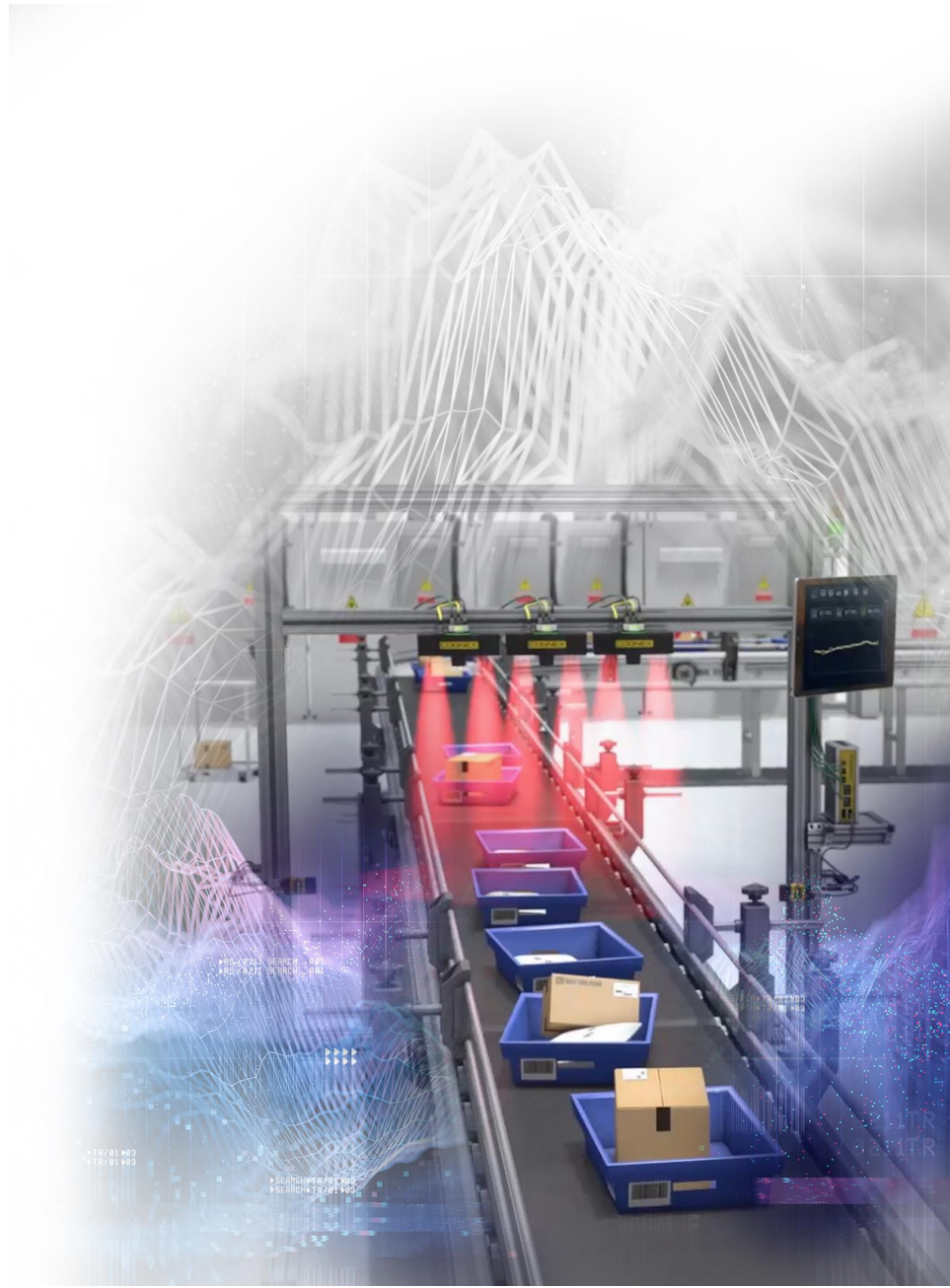


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Precautions


To reduce the risk of injury or equipment damage, observe the following precautions when you install the Cognex product:


- This product is intended for industrial use in automated manufacturing or similar applications.
- The safety of any system incorporating this product is the responsibility of the assembler of the system.
- Do not install Cognex products where they are exposed to environmental hazards such as excessive heat, dust, moisture, humidity, impact, vibration, corrosive substances, flammable substances, or static electricity.
- Route cables and wires away from high-current wiring or high-voltage power sources to reduce the risk of damage or malfunction from the following causes: over-voltage, line noise, electrostatic discharge (ESD), power surges, or other irregularities in the power supply.
- This product does not contain user-serviceable parts. Do not make electrical or mechanical modifications to product components. Unauthorized modifications can void your warranty.
- Changes or modifications not expressly approved by the party responsible for regulatory compliance could void the user's authority to operate the equipment.
- Include service loops with cable connections.
- Ensure that the cable bend radius begins at least six inches from the connector. Cable shielding can be degraded or cables can be damaged or wear out faster if a service loop or bend radius is tighter than 10X the cable diameter.
- This device should be used in accordance with the instructions in this manual.
- All specifications are for reference purposes only and can change without notice.


Symbols

The following symbols indicate safety precautions and supplemental information:

 **WARNING:** This symbol indicates a hazard that could cause death, serious personal injury or electrical shock.

 **CAUTION:** This symbol indicates a hazard that could result in property damage.

 **Note:** This symbol indicates additional information about a subject.

 **Tip:** This symbol indicates suggestions and shortcuts that might not otherwise be apparent.

Getting started

Edge Intelligence improves overall equipment effectiveness (OEE) and increases throughput across a range of industries including logistics, food and beverage, consumer products, packaging, automotive, medical devices, and electronics.

About Edge Intelligence



Edge Intelligence is a performance monitoring tool that collects and analyzes data generated by Cognex devices. Edge Intelligence provides reader statistics, no read images, trigger details, and configuration changes for all connected devices.

The Edge Intelligence solution consists of a physical Edge Intelligence box and a browser-based user interface that provides access to the Edge Intelligence functions.

Edge Intelligence provides the following features through the UI:

- **Real Time Monitoring (RTM)**
 - Live
 - Performance Overview
 - No Read Trigger Review
 - Configuration Change History
 - Settings
- **Performance Analytics**
 - Dashboard
 - Performance Review
 - Results Explorer
- **Validation Failure**
 - Trigger Review
 - Settings
- **Multi-Reader Configuration (MRC)**
 - DataMan
 - Feature Keys
- **Reporting**
 - Generate
- **User Management**
 - Users
 - Roles

- **Settings**

- Edge Device
- MQTT Forwarding
- DataMan WebHMI
- Firmware Upgrade

Supported DataMan readers compatible with Edge Intelligence:

- DM260 Series
- DM280 Series
- DM300 Series
- DM360 Series
- DM370 Series
- DM470 Series
- DM503 Series




Note: Readers must be on firmware 5.7.3 or higher to be compatible with Edge Intelligence.

Edge Intelligence Features

Edge Intelligence collects reader data and tracks reader configuration changes in real time, monitors performance, and provides data analysis to help identify root causes and facilitate quick action. The entire functionality of Edge Intelligence is accessible from a browser. Edge Intelligence has an intuitive user interface, no coding knowledge is required to use.

Main Features	Key elements
Device Management	Large storage for multi-day images/results
	Network, NAT
	Time Synchronization
Compatibility with DataMan Readers	Configurations, Firmware, Feature Keys
	Multi-Reader Sync group setup
	DataMan WebHMI to configure readers
Flexible and scalable solution: Integration with Industrial Analytics	Device results, and metadata
	Built-in MQTT/Sparkplug protocol (Ignition, Cloud providers) and analytics
Powerful Performance Monitoring tools	Real time performance with live dashboard
	Custom performance dashboards
	View and automatic categorization of Good Reads, No Reads, and Failed Validations
	Real time Device Configuration changes
	Daily and multi-day aggregated reports




Edge Intelligence Systems

Edge Intelligence Model	CPU	Processing Power	Number of Data Streams	Power	I/O	Memory	Image Capacity ¹	Image Storage ²
EI-200 	Intel Celeron N3350 1.1 GHz	Dual Core	Up to 5 data streams	12 VDC input jack	Not supported	4 GB LLDDR4 2133 MHz	Up to 1 million images	Up to 244 data days
EI-300 	Intel Atom E3950 1.6 GHz	Quad Core	Up to 10 data streams	9~36 VDC 3-pin terminal block	8-bit Isolated Digital I/O	8 GB LPDDR4	Up to 4 million images	Up to 487 data days
EI-700 	Intel Core i7-8700T 2.4 GHz	Hexa Core	Up to 20 data streams	9~48 VDC 5-pin terminal block	8-bit Isolated Digital I/O	8 GB SO-DIMM DDR4 2666 MHz - Wide Temp	Up to 8 million images	Up to 487 data days

¹ Assuming no-read images are saved at full resolution (3 megapixels) in JPEG format.

² With full resolution JPEG no-read images from all readers, on a system running 24/7 with 1 trigger per second at a performance of 99% read rate.

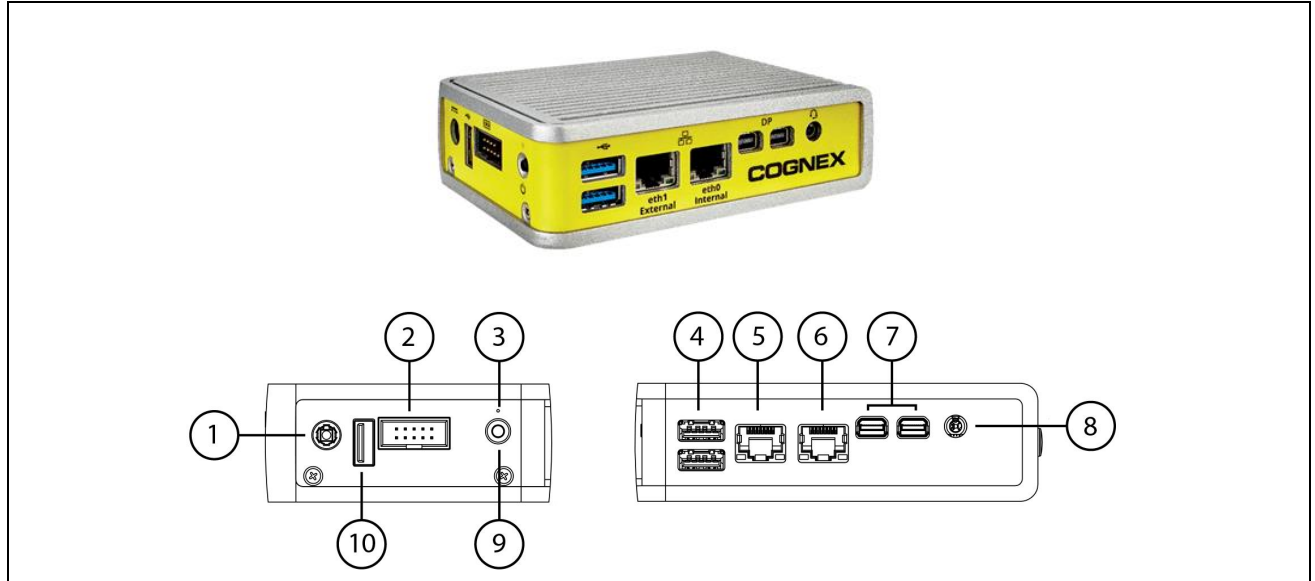
Edge Intelligence Kit

Specifications	EI-200	EI-300	EI-700
Edge Intelligence Model			
Number of Data Streams	Up to 5 data streams	Up to 10 data streams	Up to 20 data streams
EI Kit Component	<p>Mini Display Port-to-VGA male-to-female adapter</p> <p>DIN Rail Mounting Kit</p> <p>Power Adapter DC 12 V, 36 W - with Interchangeable Plug</p> <p>Thermal pads</p>	<p>Display Port-to-VGA male-to-female adapter</p> <p>DIN Rail Mounting Kit</p> <p>Power Adapter 60 W 12 V 5 A</p> <p>Computer Port & Dust Blocking Kit</p> <p>3-pin Power Terminal Block Connector</p> <p>3-pin CAN bus Terminal Block Connector</p> <p>10-pin DIO Terminal Block Connector M.2 and mPCIe expansion card screws</p>	<p>Display Port-to-VGA male-to-female adapter</p> <p>Wall Mounting Bracket with Vibration Isolation</p> <p>Power Adapter 160 W 20 V 8 A</p> <p>Computer Port & Dust Blocking Kit</p> <p>5-pin Power Terminal Block Connector</p> <p>3-pin CAN bus Terminal Block Connector</p> <p>10-pin DIO Terminal Block Connector</p> <p>2-pin Remote Switch Terminal Block</p> <p>5-pin Terminal Block to 6-pin Molex Adapter</p>

Product Overview

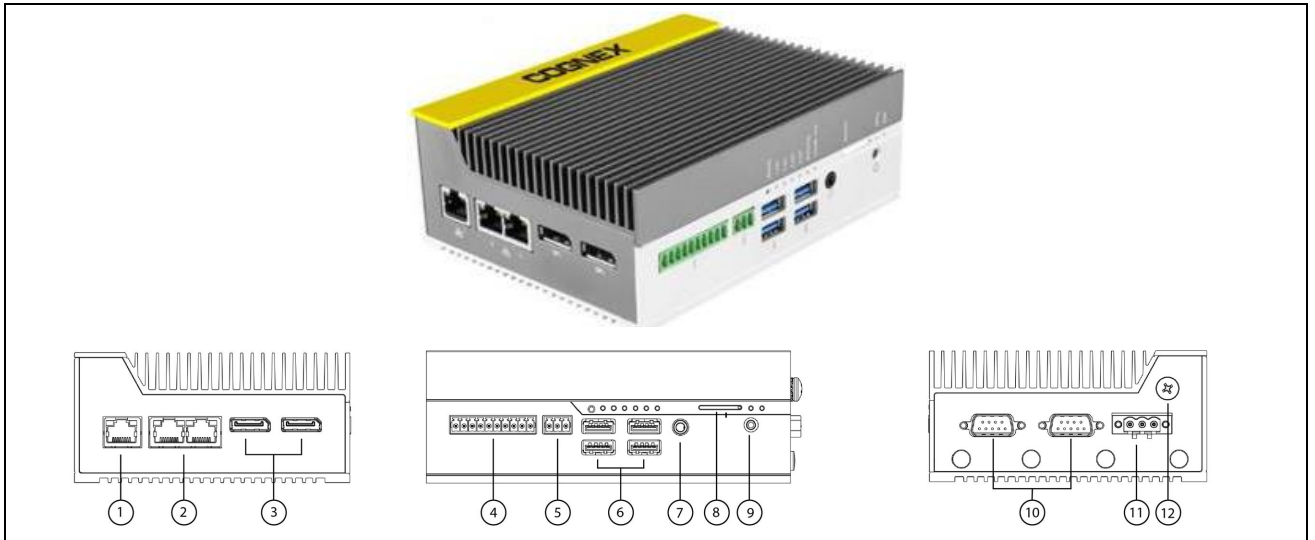
The following table shows the layout of Edge Intelligence Boxes.

EI-200 Layout



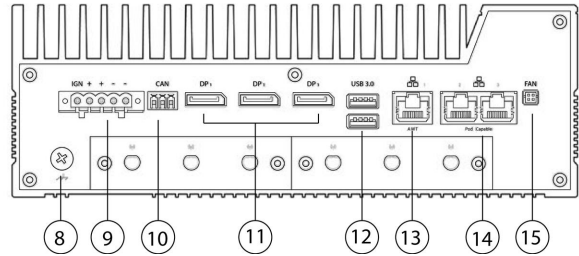
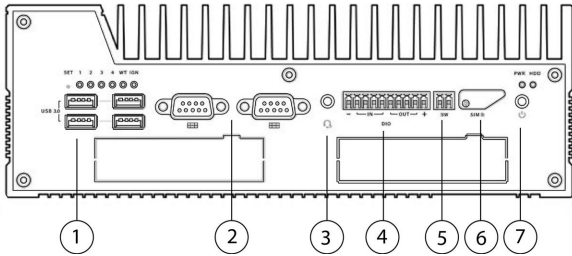
Connector/Button	Function
1	Power Connector (12V DC input jack)
2	COM Port (RS-232)
3	LED for Power
4	USB 3.0 Ports
5	External Port to Network (DHCP)
6	Internal Port to Devices (192.168.1.100)
7	MiniDisplay Ports
8	Audio Jack (Line out; Mic in)
9	Power Button
10	USB 2.0 Port

EI-300 Layout



Connector/Button	Function
1	Port to External Network (DHCP)
2	Ports to Internal Network (Static IP: 192.168.1.100 and DHCP)
3	Video Display Ports
4	8-bit Isolated Digital I/O (4-in, 4-out)
5	3-pin CAN Bus
6	USB 3.0 Ports
7	Audio Jack (Line out; Mic in)
8	Micro-SIM Slot
9	Power Button
10	COM Ports (RS-232)
11	3-Pin Terminal Block Power Input (9 ~ 36 V)
12	Grounding Nut

EI-700 Layout



Connector/Button	Function
1	USB 3.1 Gen 1 Ports ModBay Slots
2	COM Ports (RS-232)
3	Audio Jack (Line out; Mic in)
4	Digital I/O (4-in, 4-out)
5	2-pin Remote Power Switch
6	External Mini-SIM Slot
7	Power Button
8	Grounding Nut
9	5-Pin Terminal Block Power Connector (9 ~ 48 V)
10	3-pin CAN Bus
11	Video Display Ports
12	USB 3.1 Gen 1 Ports
13	Port to External Network (DHCP)
14	Ports to Internal Network (Static IP: 192.168.1.100 and DHCP)
15	External Fan Connection

Edge Intelligence Unit Dimensions

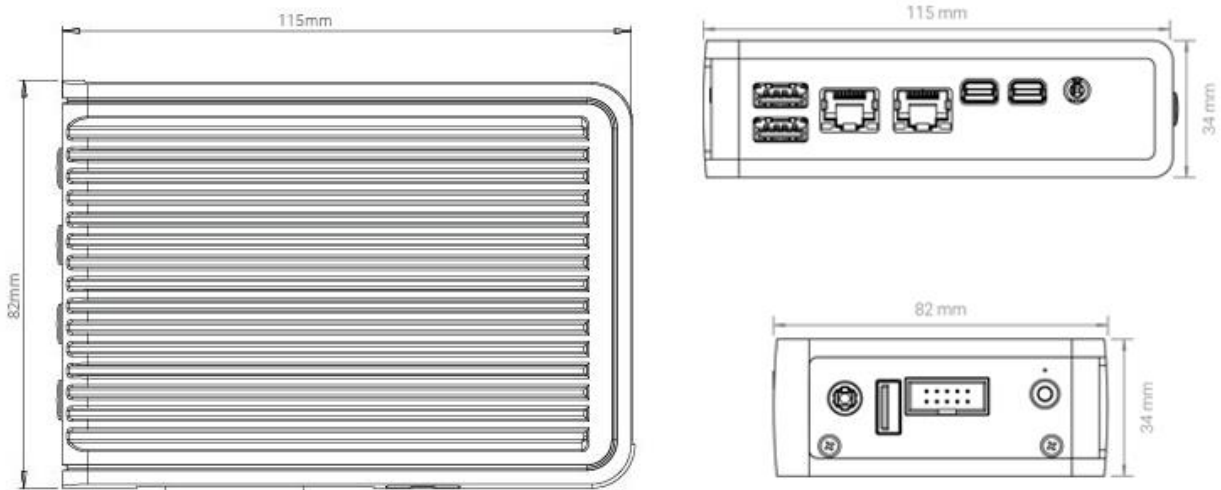
Observe the following dimensions when installing your Edge Intelligence.

Note:

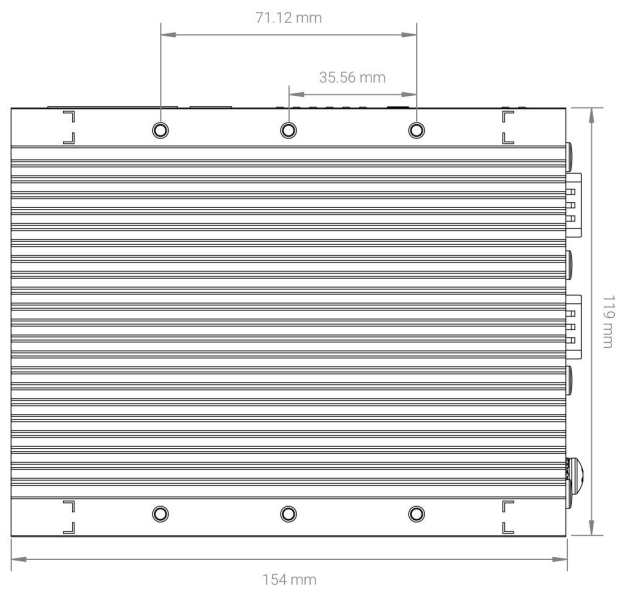
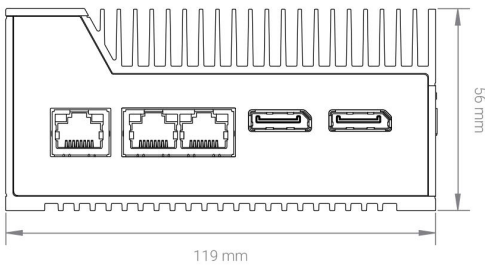
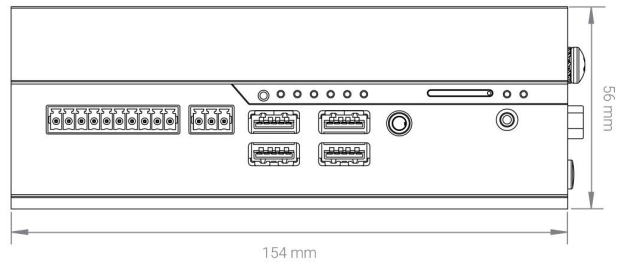
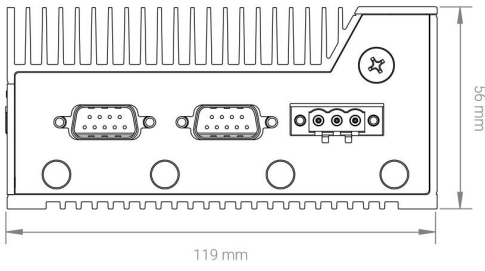
i Dimensions are in millimeters and are for reference purposes only.

All specifications are for reference purposes only and can change without notice.

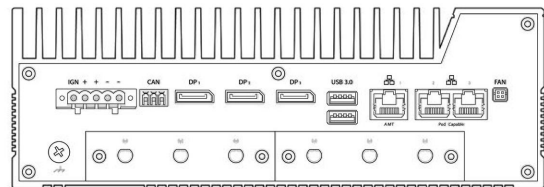
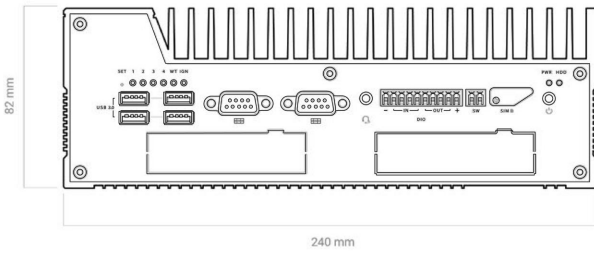
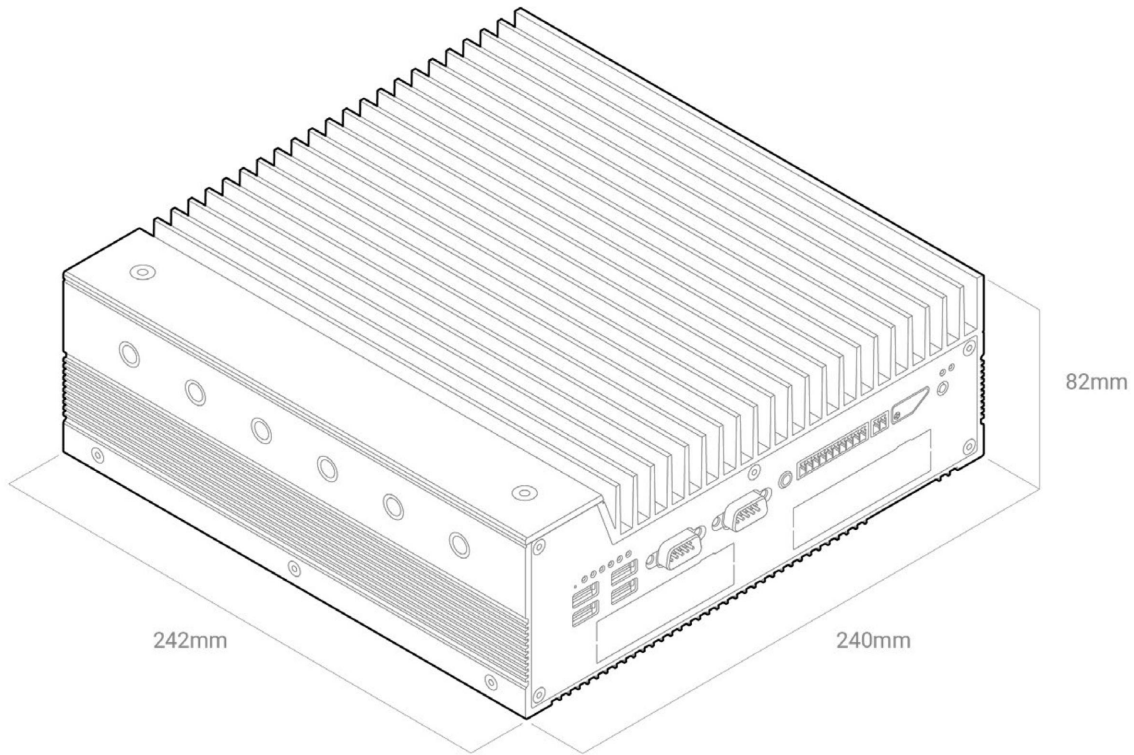
EI-200 Dimensions



EI-300 Dimensions



EI-700 Dimensions



Installation

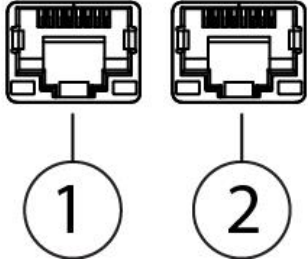
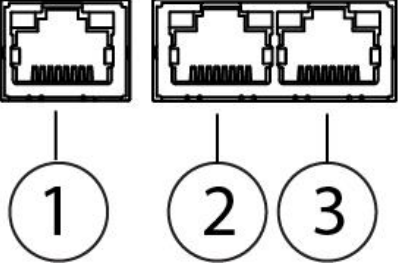
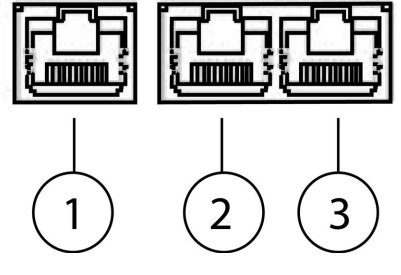
This section describes the installation process.

Connecting the Edge Intelligence

Unpack your Edge Intelligence unit and check that the following components have been included: power cable, display port to VGA adapter, and DIN rail mounting kit.

Perform the steps below before connecting to the web user interface:

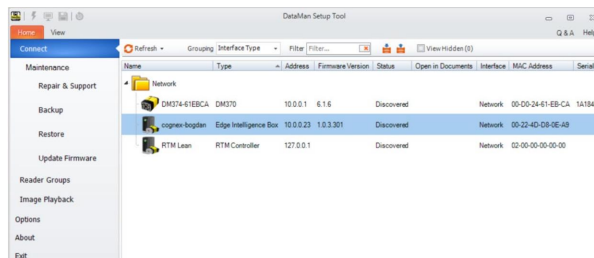
1. Connect Edge Intelligence unit to your Enterprise network using the External Ethernet port.

		
EI-200	EI-300	EI-700
1 External (DHCP)	External (DHCP)	External (DHCP)
2 Internal (192.168.1.100)	Internal (192.168.1.100)	Internal (192.168.1.100)
3 N/A	Internal (DHCP default)	Internal (DHCP default)

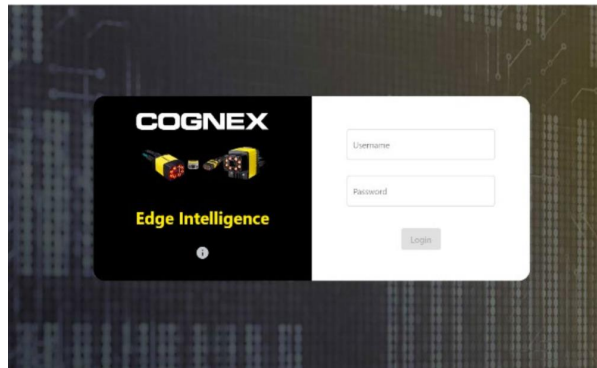
2. Connect Edge Intelligence unit to your reader network LAN using the Internal Ethernet port.
3. Connect any desired peripherals such as monitor, mouse, or keyboard to your Edge Intelligence unit using the USB ports before powering on the device.
4. Connect Edge Intelligence unit to power and start the device.

Accessing the Web Interface and Logging In

After connecting the Edge Intelligence, connect directly to a VGA monitor and peripherals or by using Cognex DataMan Setup Tool (6.1.8 or later) to discover and configure Edge Intelligence to access the Edge Intelligence web interface, which makes it possible to connect remotely through a web browser from any device in the network. For more information on upgrading the firmware, see [Firmware Upgrade](#).



Click the discovered device and enter your credentials in the pop-up Login page.



The following predefined users are available by default:

Note: After creating the user profiles, changing the default password of each user profile is necessary to avoid security risks.

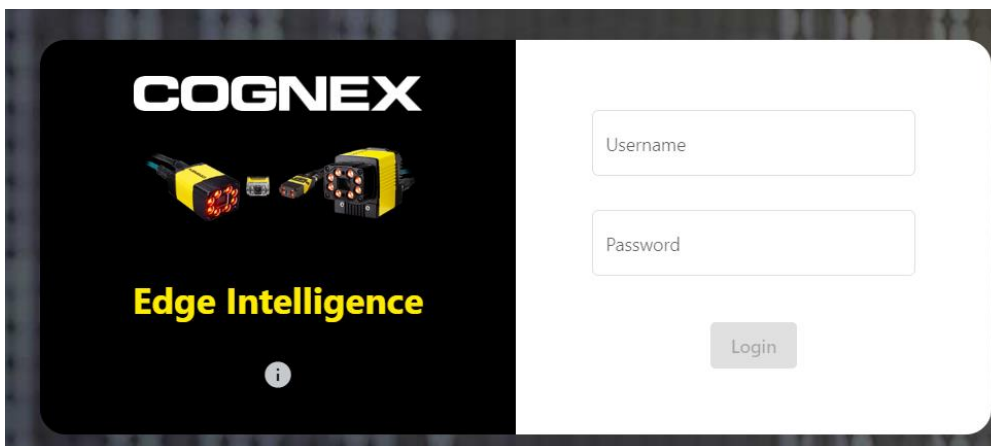
User	Password	Permission
admin	BnthWWSD	Has access to all apps and features.
engineer	TaRDpKVx	Has access to all apps and features.
operator	SxtXGmxs	User with read-only rights. The operator does not have access to the Multi-Reader Configuration app and the Settings.

You can click the information button which opens a pop-up to shows the following device details:

- Documentation – a link that opens the reference manual stored on the box
- Network Interfaces– shows available and connected network ports with their configurations
- Component Versions – highlights different features that run on the platform

Directly Connecting Using a Monitor

1. Connect your Edge Intelligence unit to a monitor using the provided Display Port to VGA adapter, or mini Display Port to VGA adapter when connecting EI-200.
2. The login page appears.



3. Click the information icon to get the external IP address. The internal IP address is **192.168.1.100** by default.



4. Take note of the external IP address, as you will need it to remotely connect to Edge Intelligence.

About EI-DemoUnit

Documentation

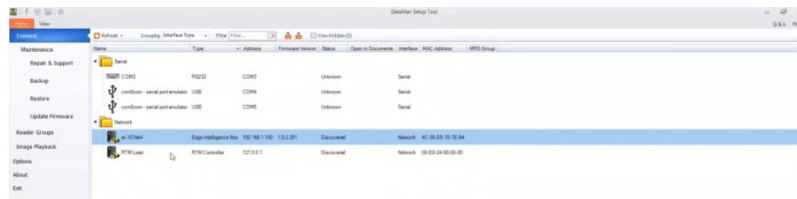
[Click here to open documentation.](#)

Network Interfaces

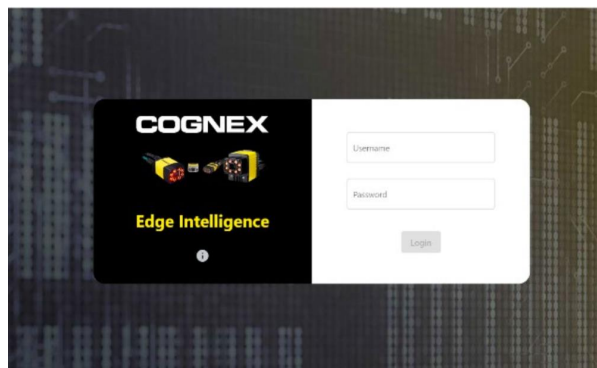
Name	Operational	MAC Address	Address Type	IP Address	Subnet Mask	Gateway	DNS Server	Domain
eth1	✓	4C38D5107E3A	DHCP	10.12.90.27	255.255.255.0	10.12.90.1	127.0.0.53	(none)
eth3	✓	4C38D5107E3B	DHCP	10.15.81.113	255.255.0.0	10.15.205.205	127.0.0.53	(none)
eth2	✓	4C38D5107E3C	Static	192.168.1.100	255.255.0.0			(none)

Remotely Connecting Using DataMan Setup Tool

1. Open Cognex DataMan Setup Tool (6.1.8 or later) to discover and connect to Edge Intelligence device. For more information on Setup Tool and troubleshooting, see **DataMan Setup Tool Reference Manual**.
2. Double click on the icon of the discovered Edge Intelligence



3. Login to the Edge Intelligence software. For login information, see [Accessing the Web Interface and Logging In on page 17](#).



Discovering Devices on the Network

The default IP address for the Internal Ethernet port of Edge Intelligence is set to 192.168.1.100. All devices on the network are discovered automatically, regardless of the network settings. However, discovered devices are labeled as misconfigured if they are not in the local subnet.

Discover Devices

Upon successfully logging in, the web UI launches, and Edge Intelligence auto-discovers the devices on your network, which appear listed on your home screen.

Click on the **Discover Devices** button in the header of the web interface to force a rediscovery if you have connected a new device after the initial auto-discovery.

Note:

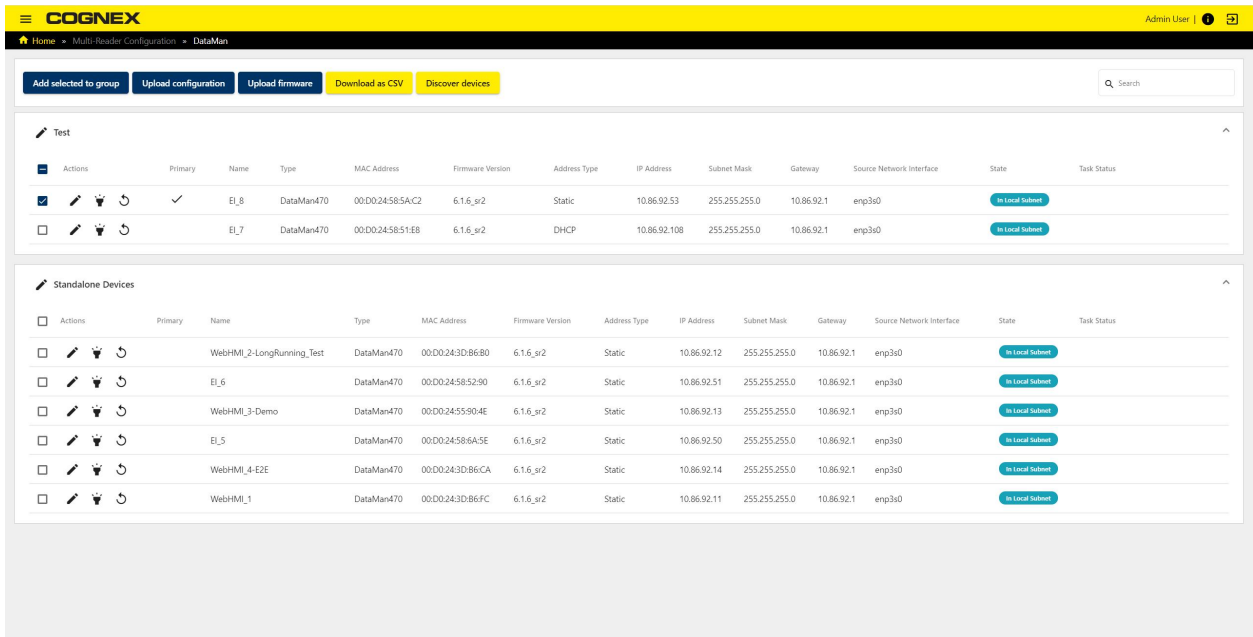
If you need to change your Edge Intelligence's network settings, open the menu and go to the Settings > Edge Device. From there, you can set the network settings.



Network Settings

It is recommended that all Cognex devices be on the same network as Edge Intelligence. In order to make this happen, change the IP address of all readers on the network to be in the same network as 192.168.1.xxx, or change the IP address of the Ethernet port to match those of the readers.

Note: The devices found on the network are listed on the first page of the Multi-reader Configuration Application.



Remote Connection Troubleshooting

This section lists the most common errors and their solutions.

Error	Illustration	Solution
Edge Intelligence is not visible in the Setup Tool or in the browser		Check wire connectons, secure them if necessary.
Failed login error message		Check the credentials and re-enter username and/or password.
Component load error message		Reboot device and wait for services to start.
No data/images available		Check reader availability and setup.

Note: An Ethernet connection to your network is recommended, as Wi-Fi may not allow the connection depending on your network settings.

Note:
The IP address of your device is listed on the login page.



About EI-DemoUnit

Documentation

[Click here to open documentation.](#)

Network Interfaces

Name	Operational	MAC Address	Address Type	IP Address	Subnet Mask	Gateway	DNS Server	Domain
eth1	✓	4C38D5107E3A	DHCP	10.12.90.27	255.255.255.0	10.12.90.1	127.0.0.53	(none)
eth3	✓	4C38D5107E3B	DHCP	10.15.61.113	255.255.0.0	10.15.205.205	127.0.0.53	(none)
eth2	✓	4C38D5107E3C	Static	192.168.1.100	255.255.0.0			(none)

Edge Intelligence User Interface

The Edge Intelligence user interface provides the following applications:

- Provisioning
- Real Time Monitoring (RTM)
- Performance Analytics
- Validation Failure
- Multi-Reader Configuration (MRC)
- Reporting
- User Management
- Settings
- Archiver

Provisioning

The Provisioning application of the Edge Intelligence user interface allows you to provision your connected devices and device groups, configure what data to collect from your devices, and manage your remote subnets.

DataMan

The DataMan page of the Provisioning application provides a list of standalone devices, as well as device groups, and allows you configure what data you want to collect from each of your devices. You can also provision one or more of your devices at the same time, or individually by IP address.

The DataMan page:

Actions	Primary	Name	MAC Address	IP Address	Model	Firmware Version	Password	Collect Good Read Triggers	Collect N Read Triggers
		ST_1_DM470	XXXXXXXXXX	192.168.1.1	DM475	6.1.10_sr1	<input type="password"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		ST_2_DM470	XXXXXXXXXX	192.168.1.2	DM474	6.1.10_sr1	<input type="password"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		ST_3_DM470	XXXXXXXXXX	192.168.1.3	DM475	6.1.10_sr1	<input type="password"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>





To refresh the list of connected devices, click **Refresh** in the header.

To provision devices, click **Provision devices** and use the pop-up dialog to select the devices. To provision a device by IP address, click **Provision device by IP** and enter the device IP address.

Click **Save** to apply any changes you make to device data collection settings.

Device Actions

You can perform actions on an individual device by clicking on the icons in the **Actions** column of the row for the selected device:

Actions	
 	
Icon	Action
	Flash LED
	Delete

- Click the **Flash LED** button to remotely trigger the LED of the device for easy identification.
- Click the **Delete** button to remove the device from the list.





Provisioning Devices

Click on **Provision devices** in the header to open the **Provision devices** pop-up dialog:

Provision devices

Discover Devices

Standalone Devices ^

<input type="checkbox"/>	Actions	Primary	Name	Type	MAC Address	Firmware Version	Address Type	IP Address	Subnet Mask	Gateway
<input checked="" type="checkbox"/>			Lab_Frame_Desk_1	DataMan470	00:D0:24:63:5B:4A	6.1.12	Static	172.16.25.5	255.255.254.0	172.16.24.1
<input type="checkbox"/>			ST_1_DM470	DataMan470	00:D0:24:63:4F:3C	6.1.10_sr1	Static	10.12.90.161	255.255.255.0	10.12.90.1
<input type="checkbox"/>			ST_2_DM470	DataMan470	00:D0:24:63:DE:D8	6.1.10_sr1	Static	10.12.90.164	255.255.255.0	10.12.90.1
<input type="checkbox"/>			ST_3_DM470	DataMan470	00:D0:24:3D:BE:72	6.1.10_sr1	Static	10.12.90.131	255.255.255.0	10.12.90.1

Cancel
Provision

The **Provision devices** dialog provides a list of connected devices. To provision one or more devices, check the checkbox for the selected devices, and click **Provision**.

To flash the LED on a device for easier identification, click the **Flash LED** icon in the **Action** column of the row for the selected device.

To refresh the list of connected devices, click **Discover Devices**.

To search for a specific device in the list, enter the name or IP address in the **Search** bar.

Provision Device by IP

Click on **Provision device by IP** in the header to open the **Provision device by IP** pop-up dialog:



Enter the IP address of the selected device, and click **Provision**.

Data Collection Settings

You can modify collection settings for different types of device data by switching the toggles on or off in each data collection column of the row for the selected device:

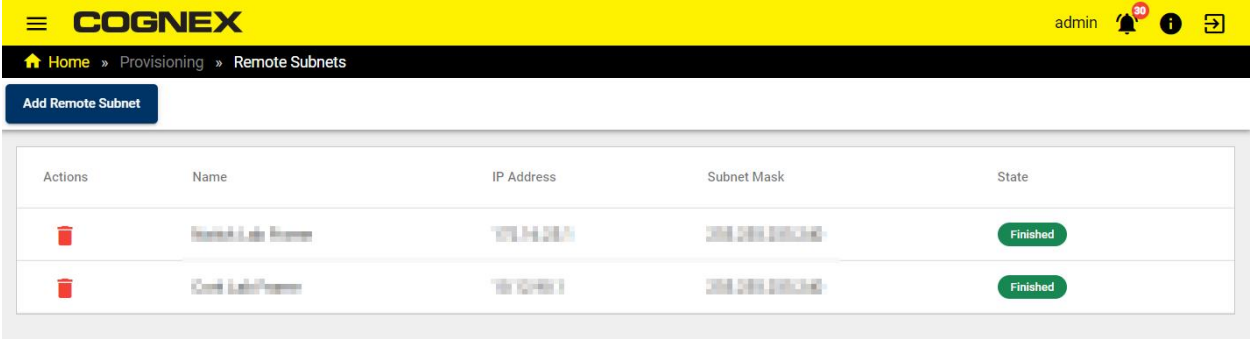
Column	Description																																								
<table border="1"> <thead> <tr> <th>Password</th> <th>Collect Good Read Triggers</th> <th>Collect No Read Triggers</th> <th>Collect Validation Failure Triggers</th> <th>Collect Good Read Images</th> <th>Collect No Read Images</th> <th>Collect Validation Failure Images</th> <th>Collect Device Configuration Changes</th> <th>Collect Statistics</th> <th>Collect Tunnel Trigger Result</th> </tr> </thead> <tbody> <tr> <td><input type="text"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="text"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="text"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>	Password	Collect Good Read Triggers	Collect No Read Triggers	Collect Validation Failure Triggers	Collect Good Read Images	Collect No Read Images	Collect Validation Failure Images	Collect Device Configuration Changes	Collect Statistics	Collect Tunnel Trigger Result	<input type="text"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>Provide the password for the device to make any changes.</p> <p>Enable this setting to collect good read trigger data from the device.</p> <p>Enable this setting to collect no read trigger data from the device.</p> <p>Enable this setting to collect validation failure trigger data from the device.</p> <p>Enable this setting to collect good read image data from the device.</p> <p>Note: When you enable good read image data collection, the device image format is set to 1/4 size JPEG.</p> <p>Enable this setting to collect no read image data from the device.</p> <p>Enable this setting to collect validation failure image data from the device.</p>
Password	Collect Good Read Triggers	Collect No Read Triggers	Collect Validation Failure Triggers	Collect Good Read Images	Collect No Read Images	Collect Validation Failure Images	Collect Device Configuration Changes	Collect Statistics	Collect Tunnel Trigger Result																																
<input type="text"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>																																
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<input type="text"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>																																

Column	Description
Collect Device Configuration Changes	Enable this setting to collect device configuration change data from the device.
Collect Statistics	Enable this setting to collect statistics from the device.
Collect Tunnel Trigger Result	Enable this setting to collect tunnel trigger results from the device.

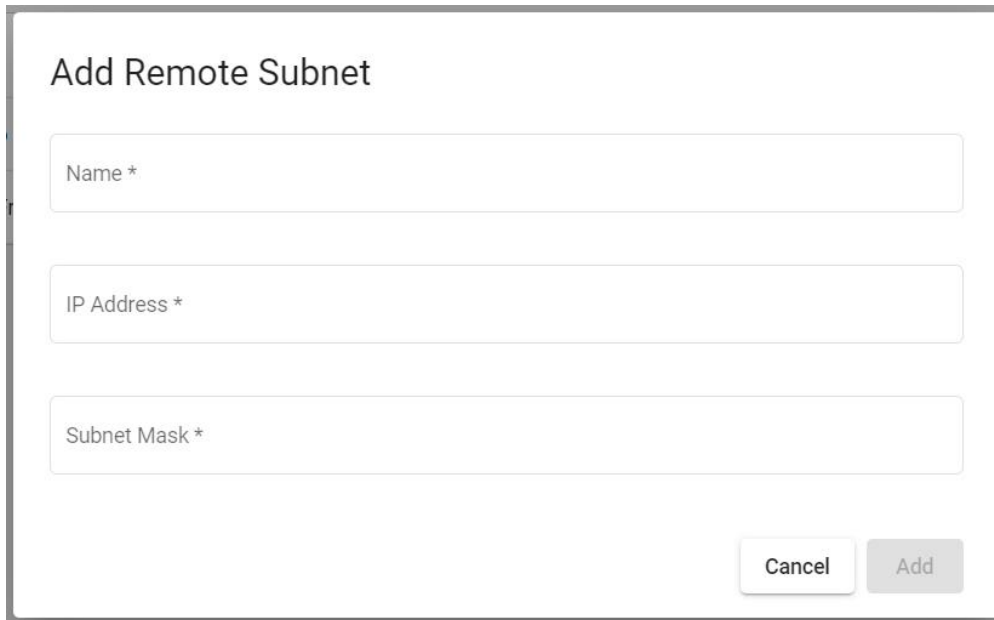
To order the list of devices by type of data collection enabled, click on a data collection column header.

Remote Subnets

The Remote Subnets page of the Provisioning application provides a list of remote subnets, and allows you to add additional subnets.



To remove a remote subnet from the list, click on the **Bin** icon in the **Actions** column of the row for the selected subnet. Click on **Add Remote Subnet** to open the **Add Remote Subnet** pop-up dialog:

A screenshot of a web form titled "Add Remote Subnet". The form contains three input fields: "Name *", "IP Address *", and "Subnet Mask *". At the bottom right of the form, there are two buttons: "Cancel" and "Add".

Add Remote Subnet

Name *

IP Address *

Subnet Mask *

Cancel Add

Enter the name, IP address, and subnet mask for the remote subnet you want to add, and then click **Add**.

Real Time Monitoring (RTM)

Real Time Monitoring (RTM) is a software application that collects statistical data including configuration history from readers on the network. RTM pages provide visualization of the collected data real-time, as well as over a longer period. The app provides the user with options of manual classification for no reads to troubleshoot the performance of the readers quickly.

RTM visualizes collected data in counters and trackers on 2 overview pages while users are able to view and change settings on 2 other pages:

- Live - home page of Edge intelligence, allows the user to assess the activity of the readers on the network in real time, group by group or per reader
- Performance Overview - allows the user to assess the performance of the readers on the network over a period of time
- No Read Trigger Review - provides a list of No reads, allows manual classification of no reads and provides the no read images in the image panel
- Configuration Change History - lists past configuration for a given group or reader, allows the user to compare configurations in a time frame
- Settings - the user can add and discover devices, view reader data like IP address, firmware version, model and change collection settings

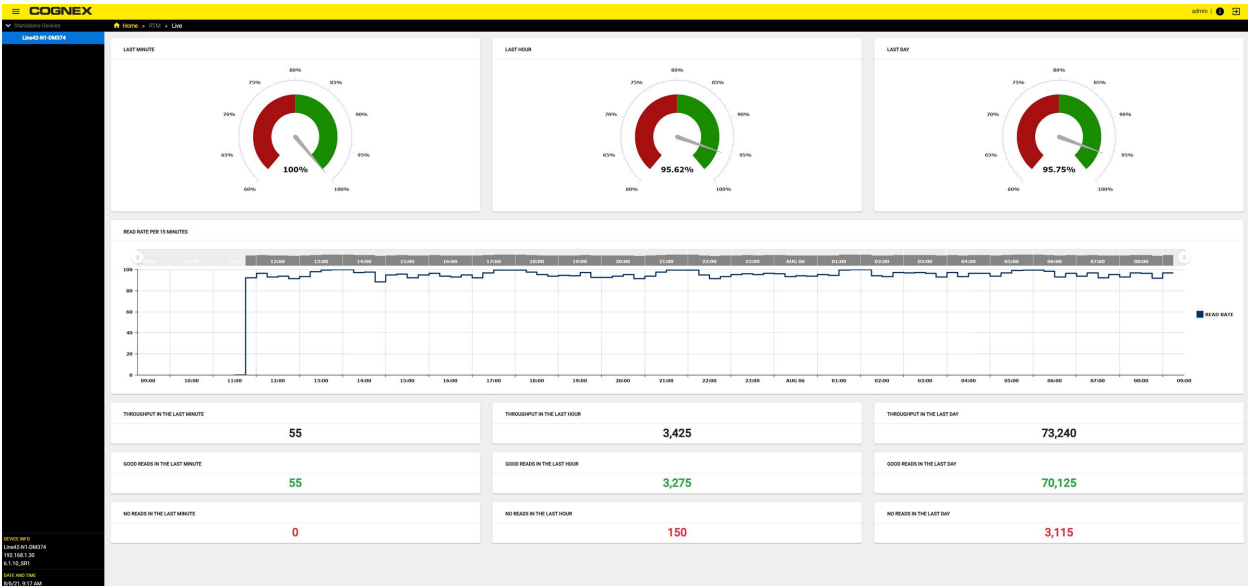
RTM provides the user rich data on system performance in different arrangement and detail on the pages. Standalone readers and groups provide RTM with collectable information about:

- Read rate
- Throughput
- Good read
- No read
- Passed validations

- Failed validations
- Trigger overrun
- Buffer overflow
- Missed triggers

Live

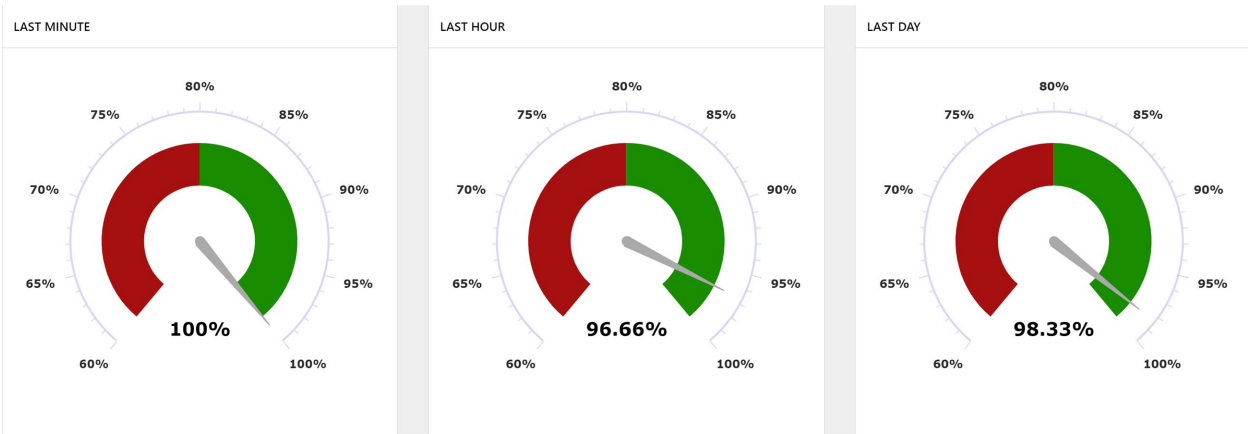
The Live page is the home page of Edge intelligence. It provides real-time information from grouped or standalone devices. The dashboard shows an overview of read rate of the selected group or reader per 15 minute intervals. Above the read rate table a percentage counters for read rates show the percent of good reads per 1 minute, 1 hour and 1 day. Below the read rate table this data is sectioned throughput, good reads, and no reads aligned to the passed minute, hour, and day.



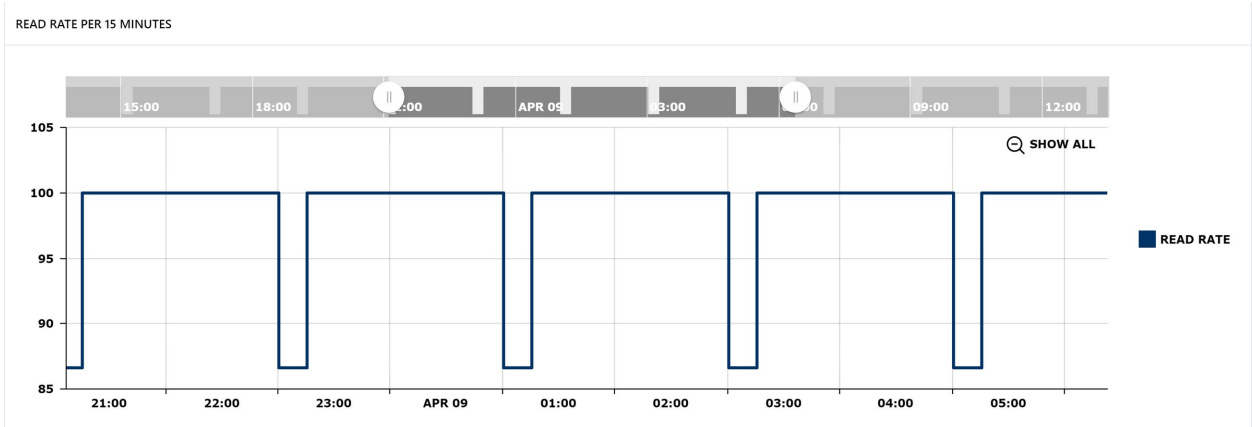
Dashboard

The window arranges the collected data in 3 time-frames:

- Last minute
- Last Hour
- Last Day



The top row indicates the percentage of Good Reads in the time frames. Percentage measurements start from 60% up to 100%. The Good read percentage overview allows you to assess performance of the MRS group or reader at a glance.



The middle section shows a fifteen minute interval read rate tracker. Select the time range of the tracker in the header by dragging the selector nob to view shorter ranges of time in more detail. To return to the maximum value, click on the **Show all** option. It shows detailed data about good and bad reads from the tracker. Hovering over the tracker highlights events and Good Reads or Bad reads bringing up the details of the event like percentage and time stamp.

THROUGHPUT IN THE LAST MINUTE 116	THROUGHPUT IN THE LAST HOUR 7,190	THROUGHPUT IN THE LAST DAY 172,694
GOOD READS IN THE LAST MINUTE 116	GOOD READS IN THE LAST HOUR 6,950	GOOD READS IN THE LAST DAY 169,813
NO READS IN THE LAST MINUTE 0	NO READS IN THE LAST HOUR 240	NO READS IN THE LAST DAY 2,881

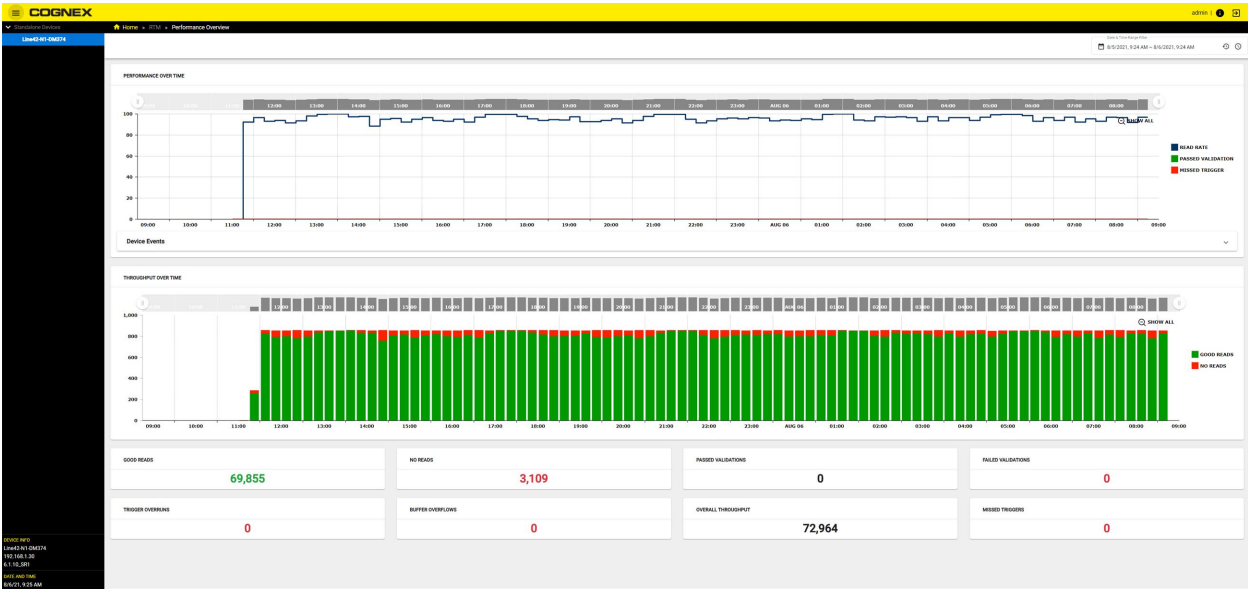
The bottom 3 rows of the dashboard separates the collected read rate date into:

- Throughput count per time frame
- Good Reads count per time frame
- No Reads count per time frame

Note: To navigate to a different RTM page or to a different app, use the Main menu opening from the top left side corner.

Performance Overview

The Performance Overview page of the RTM app provides the performance data from time intervals older than 24 hours. In Performance Overview Edge Intelligence can track a number of trigger statistics from the selected group of DataMan readers, and visualize the data in various ways. It displays the data collected in trackers arranged to performance over time, throughput over time and an adjustable tracker at the bottom of the page. Trackers provide detailed information about each event. To see details of an event, hover the mouse over the tracker. To zoom in, use the slides above the trackers. To returned to the selected time range, click Show all.



To select a standalone reader or group, click on the name in the device tree.

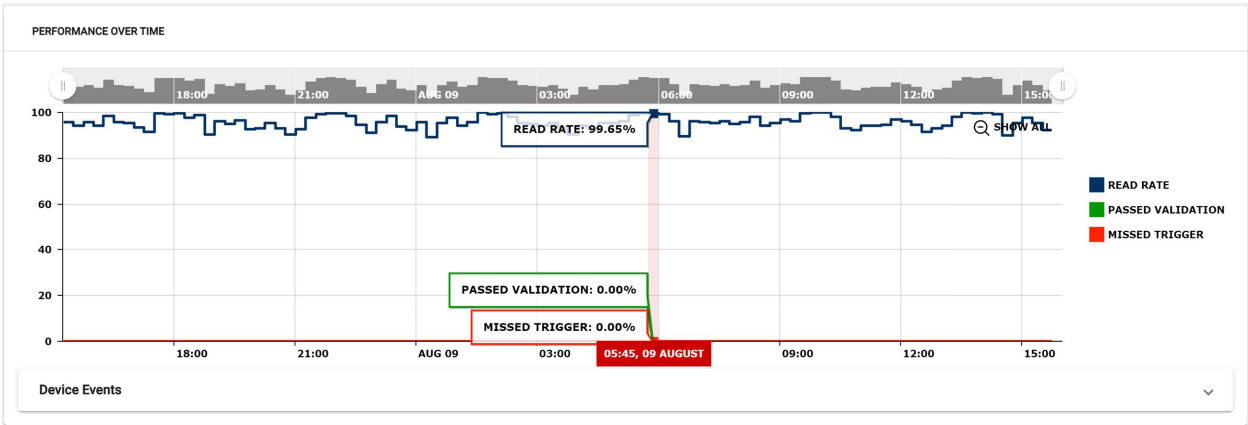
Performance Over Time

The Performance Over Time section shows color coded performance data in the selected range of time.



- Read Rate shows the rate of good reads compared to the number of total triggers.
- Passed Validation shows the rate of passed validations compared to the number of total triggers.
- Missed Trigger shows the rate of missed triggers compared to the number of total triggers.

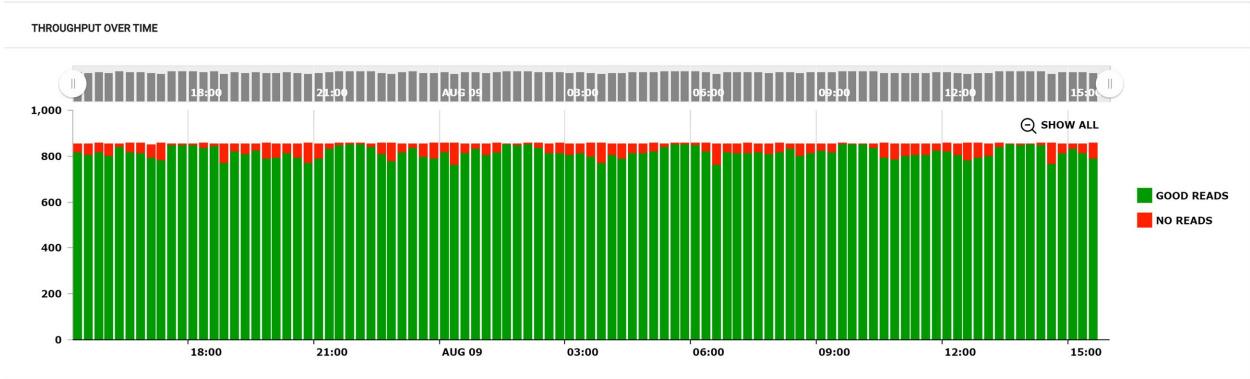
To see the percentage of Read rate, Passed Validation, and Missed Triggers hover the mouse over the tracker. To take a more detailed look over a certain part in the time range given, drag the slides above the tracker. To return to the overview, click on **Show all**.



Throughput Over Time

The tracker is dynamic chart that sums up throughput over the given time range. The data shown in the chart is color coded: GREEN stands for Good reads, and RED for No reads.

To see the number of Good Reads or No reads hover the mouse over the tracker. To take a more detailed look over a certain part in the time range given, drag the slides above the tracker. To return to the overview, click on **Show all**.



Overall reader statistics

Counters provide statistical data separated into categories of the overall read rate pertaining to the given time range. The Counters are color coded to give the user an at-a-glance overview of the performance of the group or standalone reader.

The dashboard also displays counters for:

- Good Reads – The number of triggers where a code was successfully decoded.
- No Reads – The number of triggers where a code was not decoded.
- Passed Validations – The number of good reads whose encoded data passes a specified content, format, or quality standard.
- Failed Validations – The number of good reads whose encoded data does not pass a specified content, format, or quality standard.
- Trigger Overruns – The number of times that the image could not be acquired because the reader was busy (for example, due to an ongoing burst or a long exposure).
- Buffer Overflows – The number of times it was possible to acquire an image, but there is no space left to save it on the reader. In other words, images are acquired faster than they can be processed. One possible situation is when decoding takes longer than what the image/trigger interval is.
- Overall Throughput – The sum of good reads and no reads.
- Missed Triggers – The sum of trigger overruns and buffer overflows.




THROUGHPUT IN THE LAST MINUTE	THROUGHPUT IN THE LAST HOUR	THROUGHPUT IN THE LAST DAY
116	7,190	172,694
GOOD READS IN THE LAST MINUTE	GOOD READS IN THE LAST HOUR	GOOD READS IN THE LAST DAY
116	6,950	169,813
NO READS IN THE LAST MINUTE	NO READS IN THE LAST HOUR	NO READS IN THE LAST DAY
0	240	2,881




Note: To navigate to a different RTM page or to a different app, use the Main menu opening from the top left side corner.

Date & Time Range Filter

Use the time range to define a period of time from which performance data is collected for the charts.

Date & Time Range Filter

 8/8/2021, 10:41 AM ~ 8/9/2021, 10:41 AM 

Icon	Action
	Date and Time Range Filter
	Reset to Last 24 Hours
	Set 'To' to Current Time

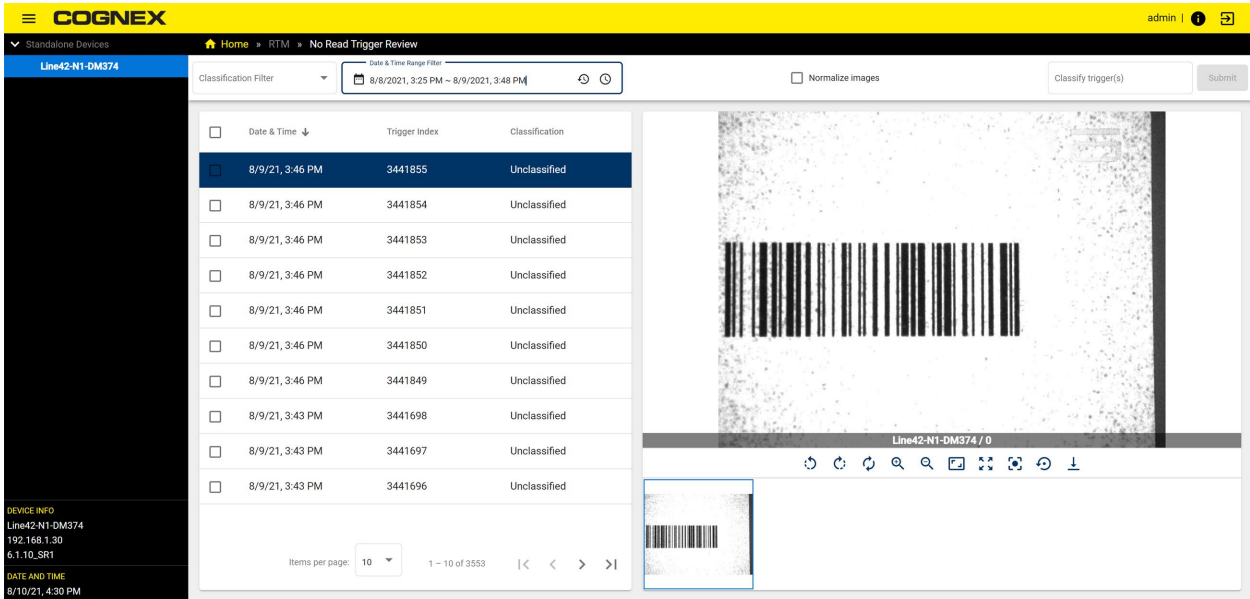
- Click the **Date & Time Range Filter** button or into the input field in the upper right corner to select and set a time range.
- Click the **Reset to Last 24 Hours** button to show the performance results from the last 24 hours.
- Click the **Set 'To' to Current Time** button to set the end of time range to current time.

Note: The date and time range selected on the Performance Monitoring page remains the same when navigating to other RTM app pages, except from the Live page.

No Read Trigger Review

The No Read Trigger Review page gives an overview of images and events when no reads occurred during collection. To set a time frame for overview use classification type to classify the No Read images manually. The maximum number of the No Read events is 100 on a single page.

To view images from a secondary reader (from MRS group), first enable trigger collection on the primary reader on the Settings page.



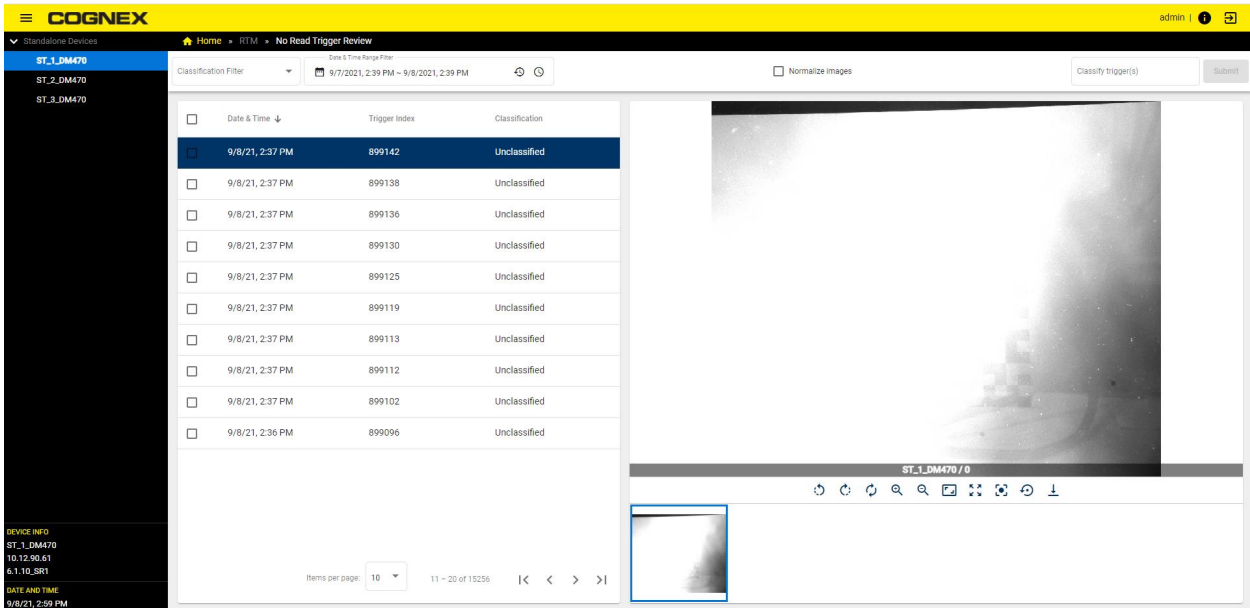
Dashboard Item	Description
Classification Filter	To chose the classification types select from a dropdown menu that the table below will filter for: <ul style="list-style-type: none"> • Damaged Code • Motion blur • No Label • Unclassified • Any other manually entered classification options
Date and Time Range Filter	To define a period of time from which performance data is collected for the charts use the time range app. For more information visit Date & Time Range Filter on page 32 <p>Note: The selected range filter stays the same between Performance Overview, Configuration Change History, and No Read Trigger Review pages.</p>
Normalize Image check box	To enhance the quality of images check the Normalize Image checkbox. Normalizing improves the contrast by stretching the intensity values of an image.
Classify trigger(s) field	To manually classify No read images enter their own classification or choose from a dropdown menu: <ul style="list-style-type: none"> • Damaged Code • Motion blur • No Label • Unclassified • Any other manually entered classification options.
Submit	The Submit button saves the new classifications you assign in the Classify trigger(s) text field.

<p>No Read Image table</p>	<p>The table shows No Read data in three columns:</p> <ul style="list-style-type: none"> • Date and Time • Trigger index • Classification <p>Each entry in the table represents 1 No read trigger event. To view the No Read image, click on the row of the trigger event and the image is displayed on the right side of the table. To arrange the data click on the headers of the three columns.</p>
<p>Image Display window</p>	<p>This window displays the No read image of the selected row of the No read trigger Image table. To control the image in the display window use the Device Display Controls. For more information see Device Display Controls on page 34.</p>

Note: To navigate to a different RTM page or to a different app, use the Main menu, which opens from the top left corner.











Device Display Controls

Select an item from the trigger list to display the corresponding filmstrip, and select an image from the filmstrip to display in the window. Use the icons directly below the selected image to rotate, reset rotation, zoom in or out or to original size, center, reset all settings, or download.



Device Display Control Icons:

Icon	Action
	Rotate Left 90°

	
Icon	Action
	Rotate Right 90°
	Reset Rotation
	Zoom In
	Zoom Out
	Zoom To Original Size
	Reset Zoom
	Move Center
	Reset All Settings
	Download

Configuration Change History

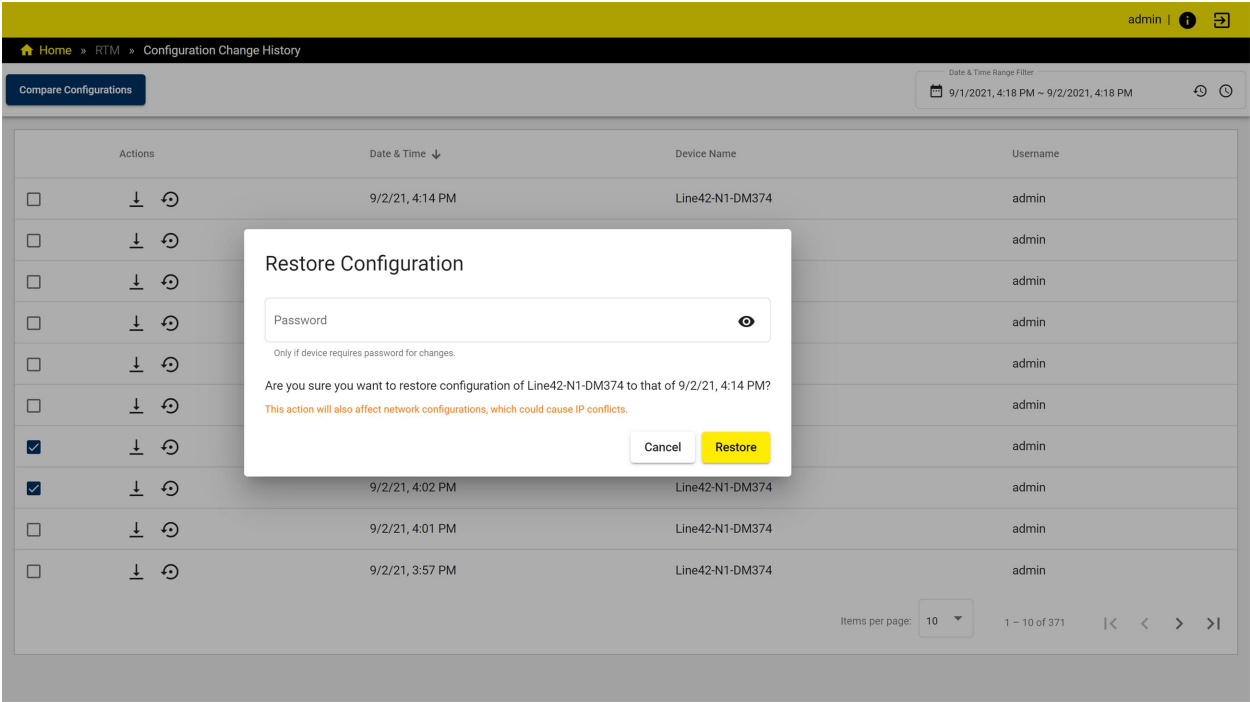
The Configuration Change History page tracks changes made to the configuration of all connected readers and shows changes in a customized fashion. The window displays the Device tree with available grouped and standalone readers. The page automatically links configurations with the respective usernames.

Configuration Change Actions

Icon	Action
	Selected checkbox
	Download Configuration File
	Restore Configuration

- Click the **checkbox** from the list in the left side of the rows to select a configuration.
- Click the **Download Configuration File** to download the selected Configuration files.

- Click **Restore Configuration** to revert to a previous configuration.
 - After clicking **Restore Configuration** enter your password and click **Restore** to revert configuration. Click **Cancel** to leave the popup window without restoring the selected configuration.



Dashboard overview:

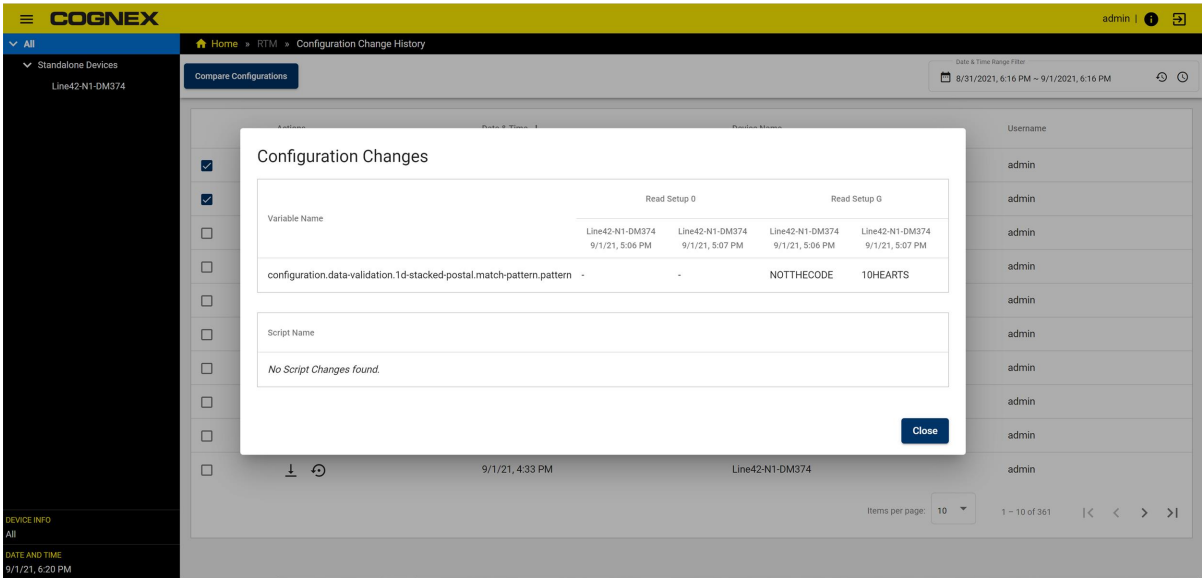
Item	Description
Compare Configurations button	Select 2 checkbox to enable the button. Click the button to see configuration changes in a pop-up window. For more information see
Date & Time Range Filter	Use the time range to define a period of time from which performance data is collected for the charts. For more information see Date & Time Range Filter on page 32
Configuration tables	List of readers and groups available for comparison.

Note: Changes made from Dataman Setup Tool are labeled as admin changes.

Column Name	Description	Display
Date and time	Date and time of the configuration change.	3/3/20, 9:10 AM
Device name	Name of the reader on the network.	
Username	Name and type of the user who made the configuration change.	

Configuration Changes

To compare two configurations, select the readers to compare. Click on the Compare Configurations button. A pop up window appears with a table containing the comparison results.



Item	Description
Configuration Changes	Lists variables which have different values in the compared versions
Variable Name	Name of the variable which has different values in the compared versions
Script Name	Name of the recently modified script
Read Setup	Name of the read setup

Variable changes:

Configuration Changes

Read Setup 0		
Variable Name		
	DM374-EI-Demo-Online 4/9/20, 7:03 AM	DM374-EI-Demo-Online 4/9/20, 7:05 AM
configuration.imager.gain-factor	15.00	5.00

Script Name
<i>No Script Changes found.</i>

Close

Column Name	Description
Variable Name	List of variables that have different values in the compared configuration versions
Read Setups	Display the name of the readers compared, and the difference in values pertaining to the row of the configuration scripts

Script changes:

Configuration Changes

Variable Name
No Variable Changes found.

Script Name	DM474-628156 4/15/20, 1:02 PM	DM474-628156 4/15/20, 2:08 PM
communication.script	<pre>// Comms script that triggers the reader twice/second var timerHandler = null; var trigger_delay = 0.5; // trigger twice/second function CommHandler() { return { onConnect: function (peerName) { // Disable the handler for this connection: if (peerName.indexOf("COM") >= 0) { timerHandler = this; timerHandler.setTimer(trigger_delay); return true; } return false; }, onDisconnect: function () {}, onError: function (errorMsg) {}, onExpectedData: function (inputString) { return true; }, onUnexpectedData: function (inputString) { return true; }, onTimer: function () { dmccCommand("TRIGGER", "ON"); if (timerHandler != null) timerHandler.setTimer(trigger_delay); }, onEncoder: function () {} }; }</pre>	<pre>// Comms script that triggers the reader twice/second function CommHandler() { return { onConnect: function (peerName) { // Disable the handler for this connection: return false; }, onDisconnect: function () {}, onError: function (errorMsg) {}, onExpectedData: function (inputString) { return true; }, onUnexpectedData: function (inputString) { return true; }, onTimer: function () {}, onEncoder: function () {} }; }</pre>
format.script	<pre>// Default script for data formatting function onResult (decodeResults, readerProperties, output) { if (decodeResults[0].decoded) { output.content = decodeResults[0].content; }</pre>	<pre>// Default script for data formatting function onResult (decodeResults, readerProperties, output) { if (decodeResults[0].decoded) { output.content = decodeResults[0].content; } else { output.content = "Not able to decode candidates"; }</pre>

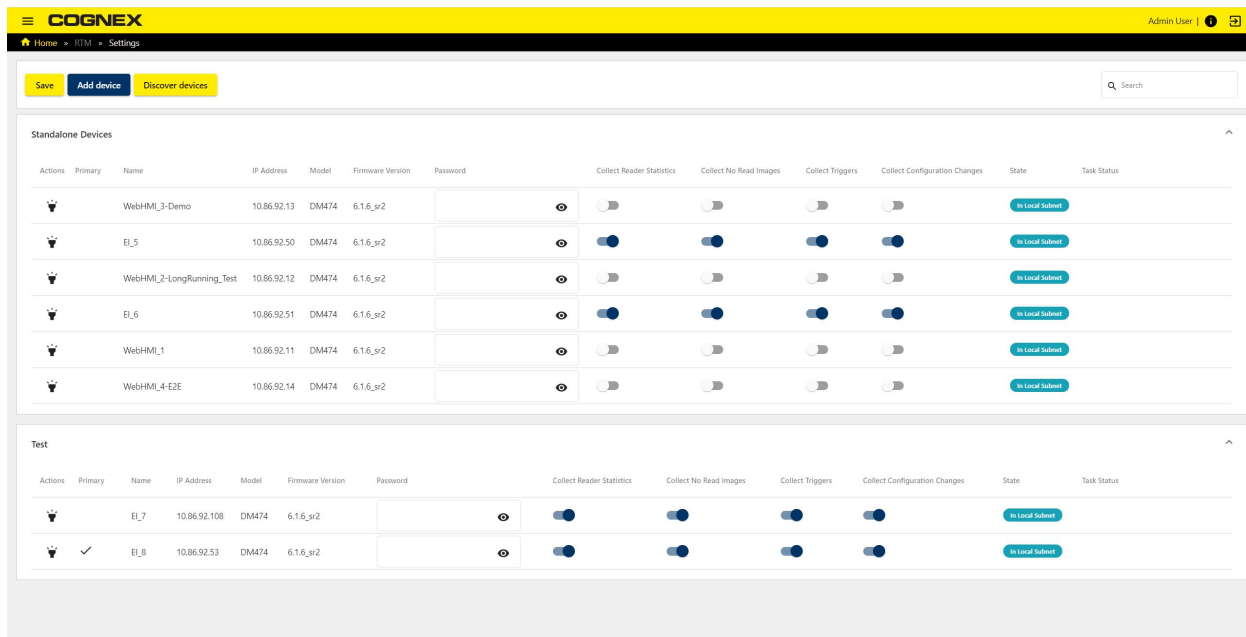
Close

Column Name	Description
Variable Name	List of variables that have different values in the compared configuration versions
Read Setups	Display the name of the readers compared, and the difference in values pertaining to the row of the configuration scripts

Settings

The Settings page of the RTM app lists all discovered devices on the network, provides options to subscribe for various statistical data from a reader or groups of readers. The window consists of a Top ribbon, where the Main Menu, the user info, the About section, and the Log out button resides. The window also consists of the Dashboard which contains information and settings options for all readers, standalone or in a group.

Note: To view images from a slave reader (from MRS group), first enable trigger collection on the master reader.



Item	Description
Action ribbon	Ribbon contains actions that can be performed on this page: Save - To save changes to the settings of a reader Add Device - To manually add a device not automatically recognized by the RTM app Discover devices - To trigger the RTM app to find more devices on the network
Standalone reader list	A table view of the settings of the standalone readers that are discovered on the network with options that can be enabled or disabled for the reader
Grouped reader list	Table views of the readers in a group sorted alphabetically by group name with options that can be enabled or disabled for the individual reader
Search Field	Allows searching for a reader by Name, Model or Firmware version

The table view of the standalone or group readers displays information and allows setting changes to the individual readers.

Column Title	Description
Actions	To flash led, click on the Flash icon
Primary	A check mark signifies the primary reader
Name	A customizable name of the reader
IP address	The IP address of the reader
Model	The type of the reader
Firmware version	The version of firmware installed on the reader
Password field	Password of the user allows making changes to the settings
Collect Reader Statistics	Enable or disable collecting statistics from the reader
Collect No Read images	Enable or disable collecting No Read images from the reader
Collect Triggers	Enable or disable collecting triggers from the reader
Collect Configuration Changes	Enable or disable collecting configuration changes from the reader

State	<p>Displays the state of the reader, which can be:</p> <ul style="list-style-type: none"> • In Local Subnet • In Remote Subnet • In Remote Subnet Behind NAT • Waiting For DHCP • Misconfigured • Unknown
Task status	Displays the status of the task

Note: To navigate to a different RTM page or to a different app, use the Main menu, which opens from the top left corner.

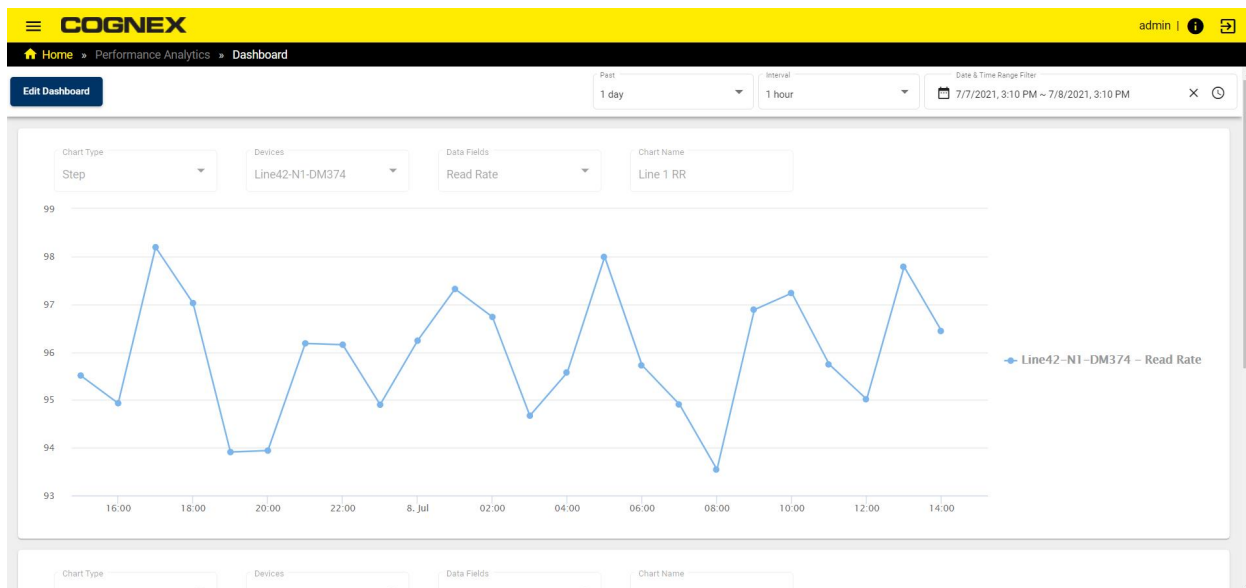
Performance Analytics

The Performance Analytics application of the Edge Intelligence user interface provides additional analytics options over the Performance Monitoring page in the RTM application.

Dashboard

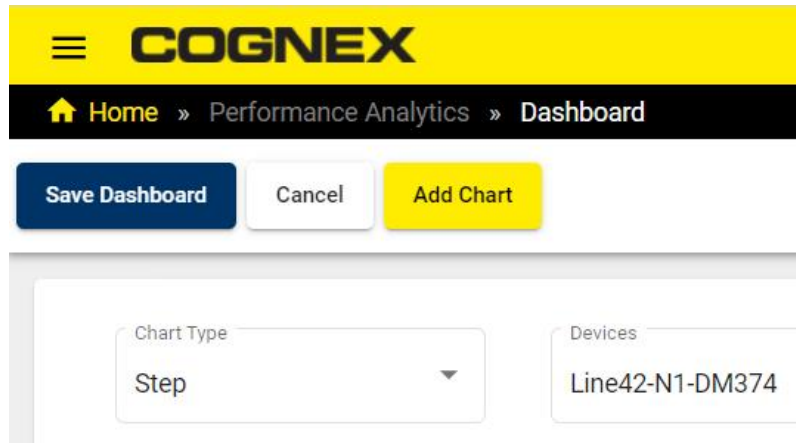
The **Dashboard** page of the Performance Analytics application provides a configurable set of saved charts that visualize the performance data of connected devices. The Dashboard allows you to create and save new charts, and edit existing ones, with multiple chart type display options and a wide array of data sets. You can also set the date and time range, and the charts on the Dashboard update accordingly.

The **Dashboard** page:



Edit Dashboard

Click **Edit Dashboard** in the top left corner of the page to enable creating, editing, moving, and deleting charts on the Dashboard.



To create a new chart at the top of the Dashboard:

1. Click **Add Chart** to create an empty chart.
2. Set the **Chart Type**, **Devices**, or **Data Fields** properties of the chart by clicking on the property box and selecting the desired settings from the dropdown. For a list of available Chart Types and Data Fields, see [Performance Review on page 43](#).
3. Fill in the **Chart Name** text box to give the chart a name.

To edit an existing chart, click on its properties and change the settings. The chart updates automatically to reflect the new settings.

To move a chart up or down on the Dashboard, click on the arrow icons in the top right corner of the chart.

To delete a chart, click on the trash icon in the top right corner of the chart.

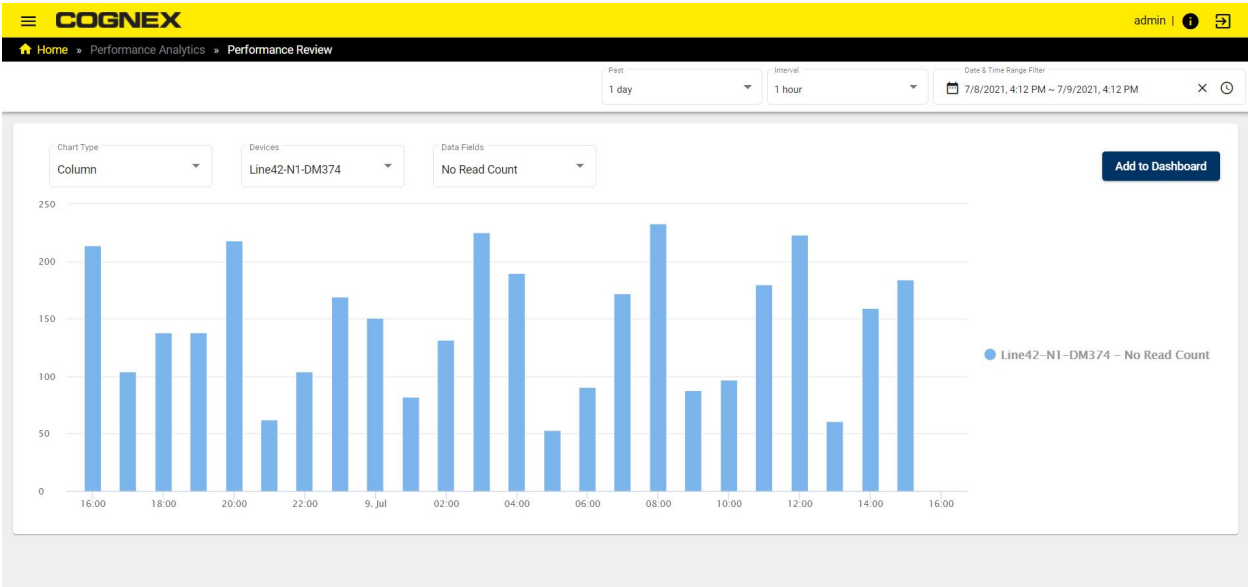
Once you are done editing the Dashboard, click **Save Dashboard** to save your changes, or **Cancel** to discard your changes.

You can zoom into areas of interest on the charts by clicking and dragging the cursor. Click **Reset Zoom** to return to the full time range.

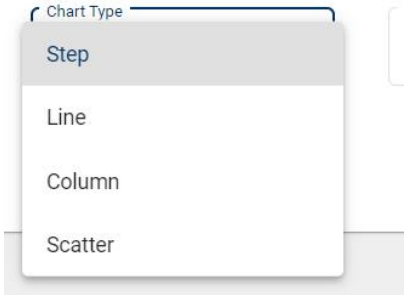
Performance Review

The **Performance Review** page of the Performance Analytics application allows you to configure a chart that visualizes the performance data of connected devices with multiple chart type display options and a wide array of data sets. You can also set the date and time range, and the chart updates accordingly.

The **Performance Review** page:

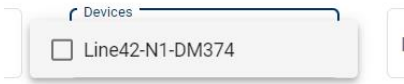


Click on a chart property to open a dropdown with the available configuration options.

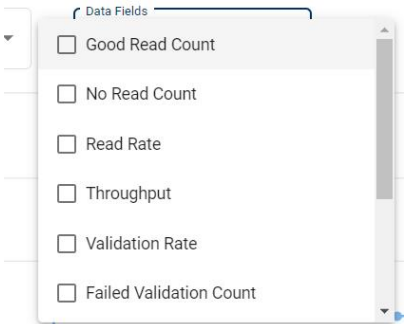


Select one of the available **Chart Types**:

- Step
- Line (default)
- Column
- Scatter



The **Devices** property provides a list of all connected devices. Check the checkbox of one or more devices to add their data to the chart.



Select one or more of the available **Data Fields**:

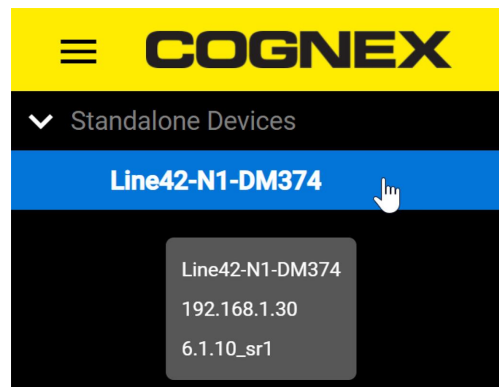
- Good Read Count
- No Read Count
- Read Rate
- Throughput
- Validation Rate
- Failed Validation Count
- Passed Validation Percent
- Missed Trigger Percent
- Buffer Overflow Count
- Trigger Overrun Count

You can zoom into areas of interest on the chart by clicking and dragging the cursor. Click **Reset Zoom** to return to the full time range.

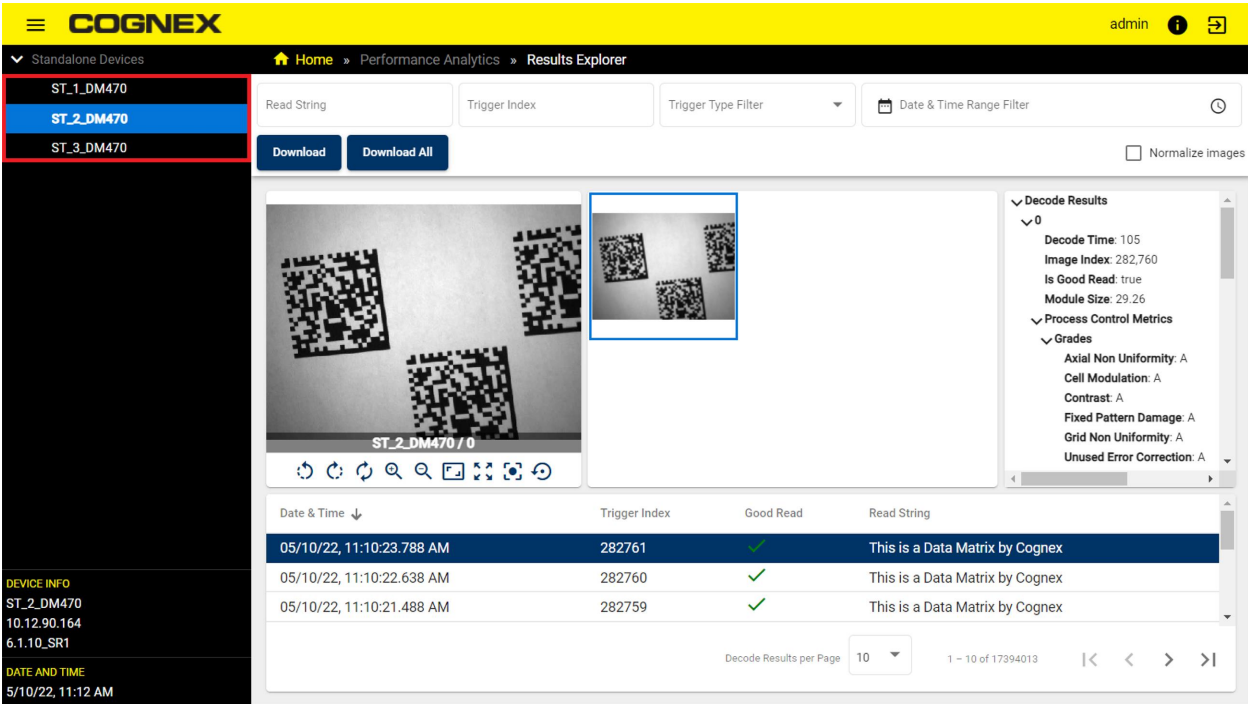
If you want to keep your chart configuration, you can also save it as a chart on the **Dashboard** page. Click **Add to Dashboard** in the top right corner of the chart.

Results Explorer

The **Results Explorer** page of the Performance Analytics application allows you to filter the results that Cognex devices collect and to find the data that is the most important to you. On the device tree, select the reader to use with Results Explorer.



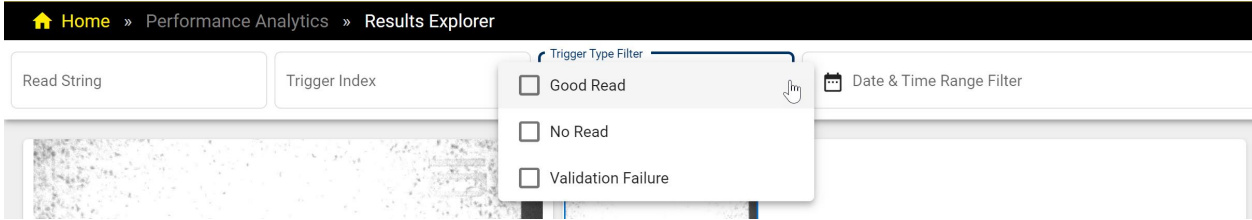
Double-clicking the selected device automatically brings you to the Results Explorer window, which provides a list of all trigger acquisitions on the reader and further information about each.



To filter acquisition details for the selected device, fill in the entry fields on the top of the Results Explorer window:

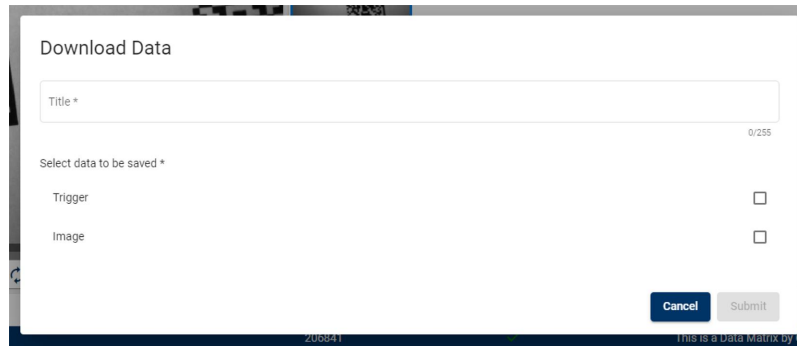


- In **Read string** entry field, look over the triggers that contain a specific character string.
- In **Trigger Index** entry field, filter trigger acquisitions by typing in or copy the number of the trigger Index.
- In the **Trigger Type Filter** dropdown menu, choose from the following options:
 - Good Read
 - No Read
 - Validation Failure



- In the **Date & Time Range Filter**, specify the time range of the results. For more information, see [Date & Time Range Filter on page 32](#)
- With the **Download** button, download the captured images to your computer.

- With the **Download All** button, start a bulk download of images, triggers, or both. The bulk download operation stores an archive of the selected images and triggers on the Edge Intelligence. When you click on the **Download All** button, the **Download Data** pop-up window appears.



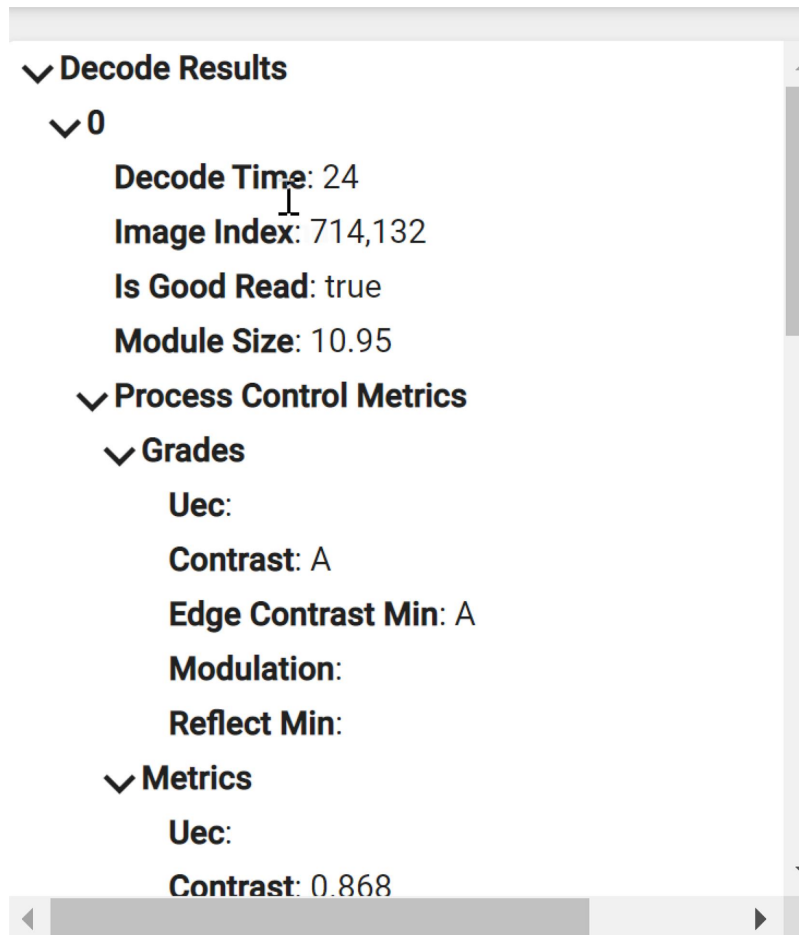
To provide the name of your archive, fill in the **Title** textbox. To select images, triggers, or both, check the **Trigger** and **Image** checkboxes. To download your archive, click on the **Submit** button. To exit from the window, click on the **Cancel** button.

- With the **Normalize images** checkbox, increase image contrast. To set the images back to default, uncheck the checkbox .



You can change the view of the selected image in the image pane with the Device Display Controls. For more information, see [Device Display Controls on page 34](#).

In the sidebar on the right, you can see more in-depth decode results for each of the trigger acquisitions on the list.

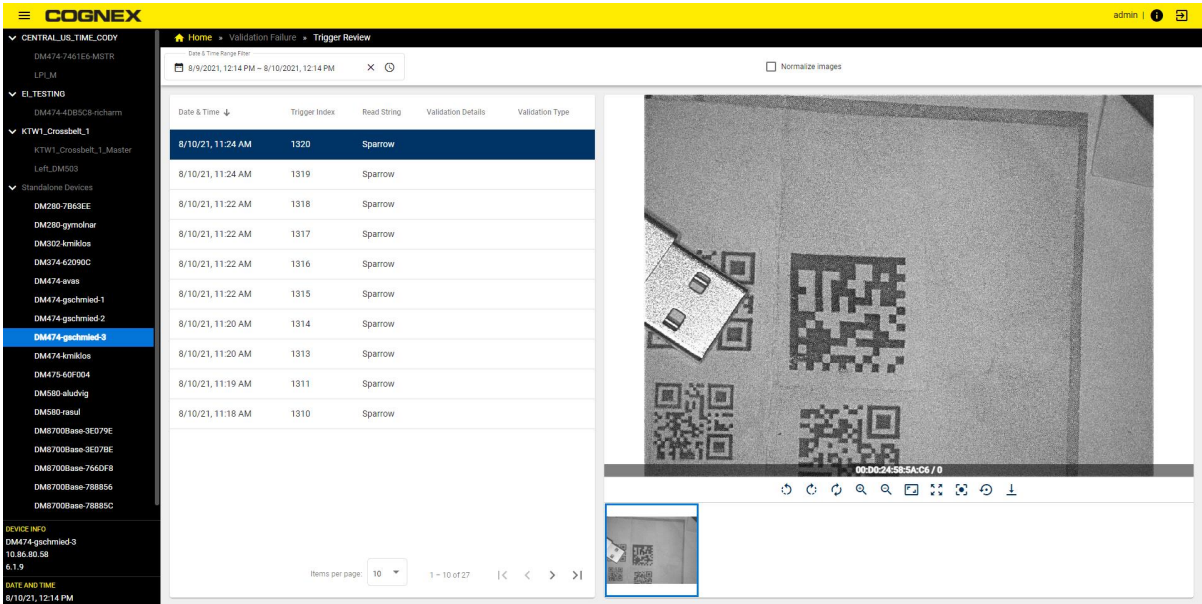


Validation Failure

The Validation Failure application of the Edge Intelligence user interface provides additional information about failed validation triggers.

Trigger Review

You can access **Trigger Review** under **Validation Failure>Trigger Review**.



Obtaining Data for Trigger Review

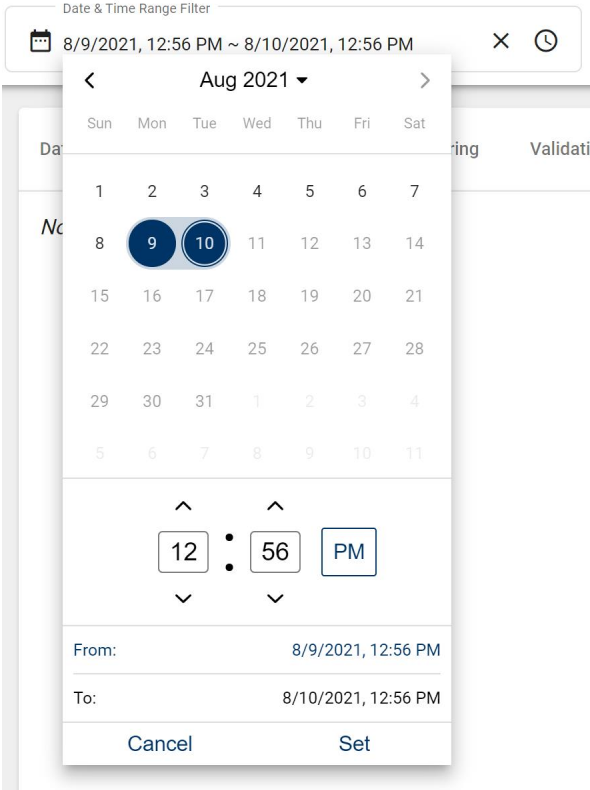
To obtain trigger review data:

- In RTM > Settings, check the Collect Validation Failure Images option.



- Set Data Validation for the DataMan device in DataMan Setup Tool > Settings > Data Validation and trigger the device to receive trigger results. See DataMan Setup Tool Reference Manual for details.

Elements of the Trigger Review window



Date and Time Range Filter lets you select the date and time range in which you want to review the obtained triggers. Click on the range filter cell for the date selector dropdown. Click **From** and **To** to specify the range. Click **Set** if ready.

Date & Time ↓	Trigger Index	Read String	Validation Details	Validation Type
8/10/21, 11:24 AM	1320	Sparrow		
8/10/21, 11:24 AM	1319	Sparrow		
8/10/21, 11:22 AM	1318	Sparrow		
8/10/21, 11:22 AM	1317	Sparrow		
8/10/21, 11:22 AM	1316	Sparrow		
8/10/21, 11:22 AM	1315	Sparrow		
8/10/21, 11:20 AM	1314	Sparrow		
8/10/21, 11:20 AM	1313	Sparrow		
8/10/21, 11:19 AM	1311	Sparrow		
8/10/21, 11:18 AM	1310	Sparrow		

Items per page: 10 1 - 10 of 27 |< < > >|

On the **list of available triggers**, you can examine the trigger index, the read string, the validation details and validation types, if there are any. On the bottom of the list, you can browse the triggers, if there are more which can be listed on a single page.



Trigger Image shows the triggered image or images of the corresponding trigger.

If there are more than one trigger images, you can select an image from the preview filmstrip on the bottom.

With the image viewer tools, you can rotate, zoom in and out and set the image to full screen. For more information see [Device Display Controls on page 34](#).

Settings

In **Settings**, you can configure the settings of string matching.

To configure a setting, you have to enable the corresponding match string configuration.

Match String Configurations

Data Matrix	<input checked="" type="checkbox"/>
QR Code / MaxiCode / Aztec Code	<input checked="" type="checkbox"/>
1D / Postal / Stacked	<input checked="" type="checkbox"/>
VeriCode	<input type="checkbox"/>
<small>Feature key is missing or this symbology is not supported by the selected device(s).</small>	
DotCode	<input checked="" type="checkbox"/>

Save

Available options are:

- Data Matrix
- QR Code / Maxi Code / Aztec Code
- 1D / Postal /Stacked
- VeriCode
- DotCode

To add a name for the enabled match string configuration, click into the description line of the corresponding code

Data Matrix	<input checked="" type="checkbox"/>
ECC 200	

Click **Save** to record the changes.

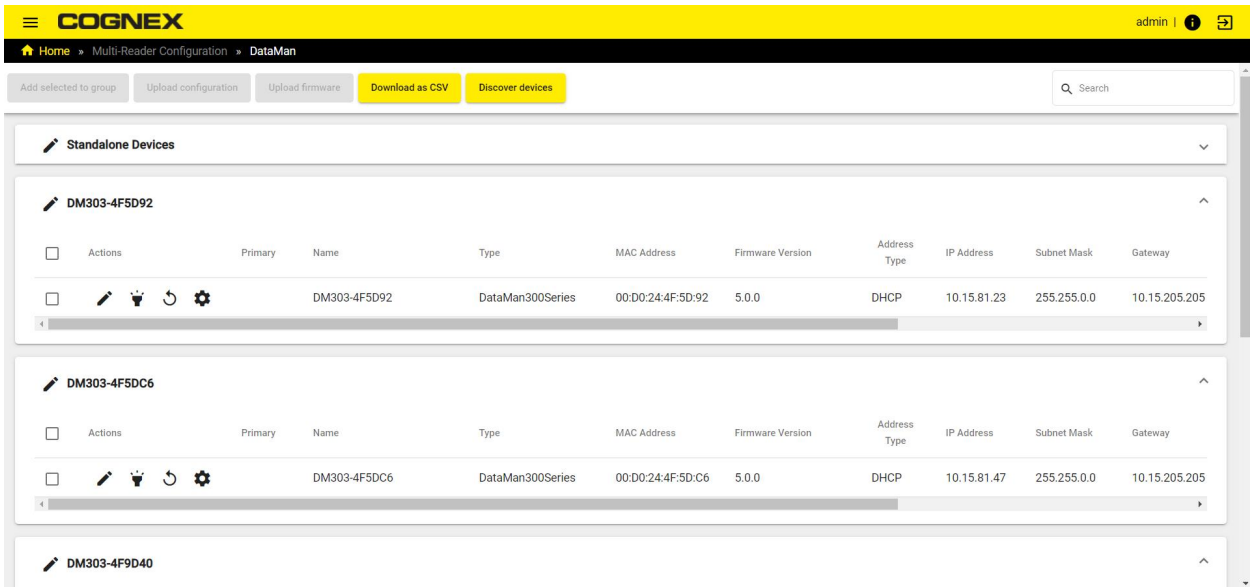
Multi-Reader Configuration (MRC)

The Multi-Reader Configuration application of the Edge Intelligence user interface provides a list of standalone devices and device groups, shows device information, and allows you to modify settings on individual devices as well as multiple devices simultaneously. You can also save entire tables of device configuration data to your local machine.

DataMan

The DataMan page of the Multi-Reader Configuration application provides a list of standalone devices, as well as device groups, including device data. You can edit the configuration, flash the LED, reboot, or access the DataMan WebHMI of individual devices from the DataMan page. You can perform mass configuration or firmware updates for device groups.

The DataMan page:











To refresh the list of connected devices, click **Discover devices** in the header.

To save the device information for the connected devices in CSV format, click **Download as CSV** in the header.

Individual Device Actions

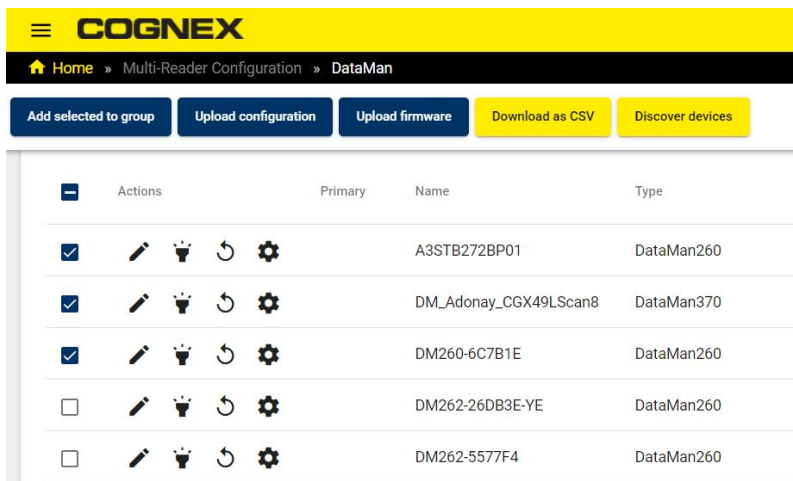
You can perform actions on an individual device by clicking on the icons in the **Actions** column of the row for the selected device:

Actions	
	
	
Icon	Action
	Single Device Edit
	Flash LED
	Reboot
	Open DataMan WebHMI

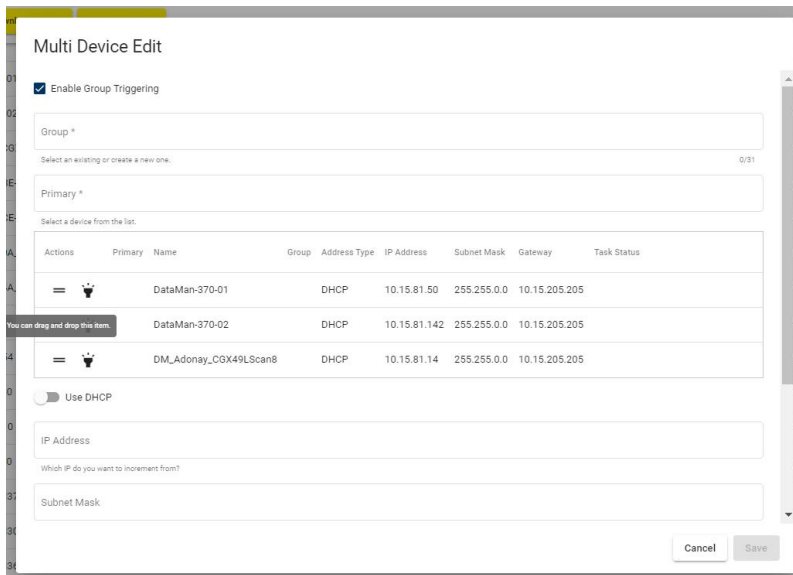
- Click the **Single Device Edit** button to modify the name, IP address, Subnet Mask, and Default Gateway of the device. Enter the device password if required.
- Click the **Flash LED** button to remotely trigger the LED of the device for easy identification.
- Click the **Reboot** button to initiate a reboot on the device.
- Click the **Open DataMan WebHMI** button to open the DataMan WebHMI in a new tab. For more information on the DataMan WebHMI, see [DataMan WebHMI on page 55](#).

Device Group Actions

To perform group actions, check the checkbox of the selected devices, enabling the group action buttons in the header:



Click the **Add to selected group** button to open the **Multi Device Edit** window:



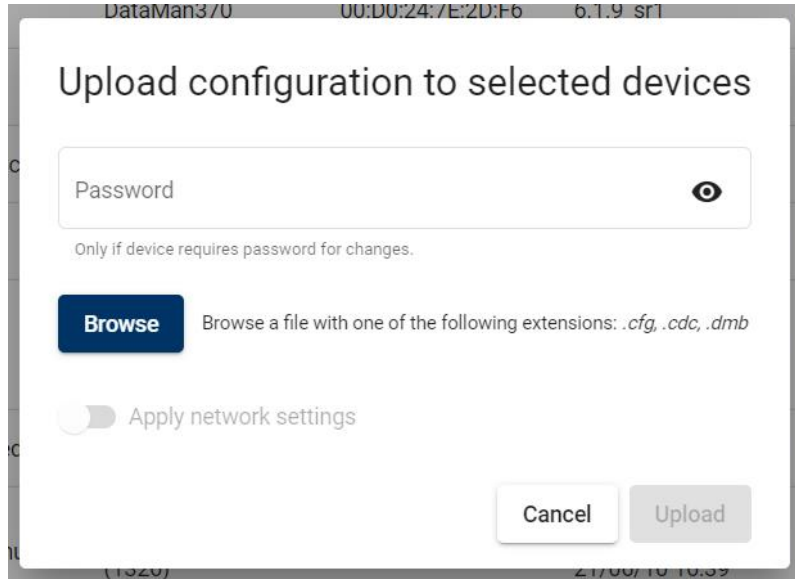
In the **Multi Device Edit** window, you can:

- add the selected devices to an existing group
- create a new group with the selected devices
- define a primary device in the group
- reorder the devices

- flash the LEDs of the individual devices for easy identification
- manually configure the IP Address, Subnet Mask, and Default Gateway

Enter the device password if the device is set up to require it. Click **Save** to apply any changes.

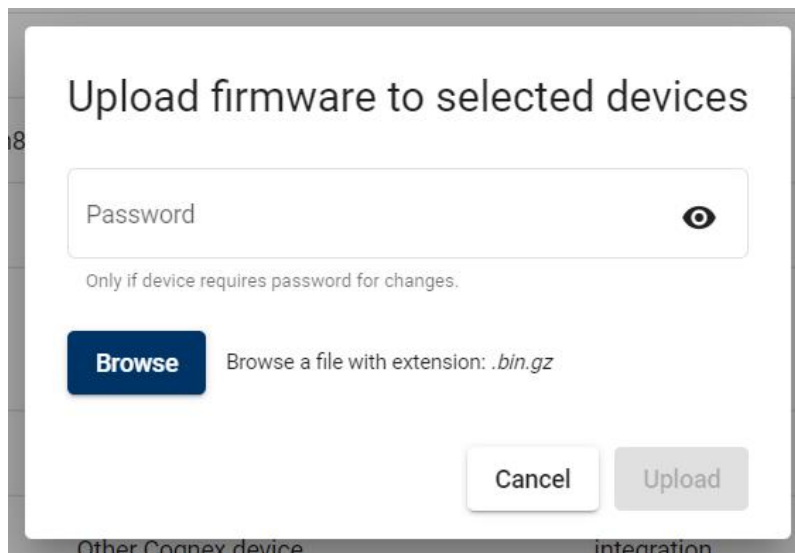
To upload a saved configuration file to selected devices, click the **Upload configuration** button, opening the **Upload configuration to selected devices** window:



The screenshot shows a dialog box titled "Upload configuration to selected devices". At the top, it displays device information: "DataMan370", "00:00:24:7E:2D:F6", and "6.1.9 sr1". Below the title is a "Password" input field with an eye icon on the right. Underneath the password field is the text "Only if device requires password for changes." Below that is a blue "Browse" button followed by the text "Browse a file with one of the following extensions: .cfg, .cdc, .dmb". At the bottom left, there is a toggle switch labeled "Apply network settings" which is currently turned off. At the bottom right, there are two buttons: "Cancel" and "Upload".

Click **Browse** to select the configuration file for upload. Enable **Apply network settings** to apply network settings. Enter the device password if the device is set up to require it, and click **Upload**.

To update the firmware on selected devices, click the **Upload firmware** button, opening the **Upload firmware to selected devices** window:



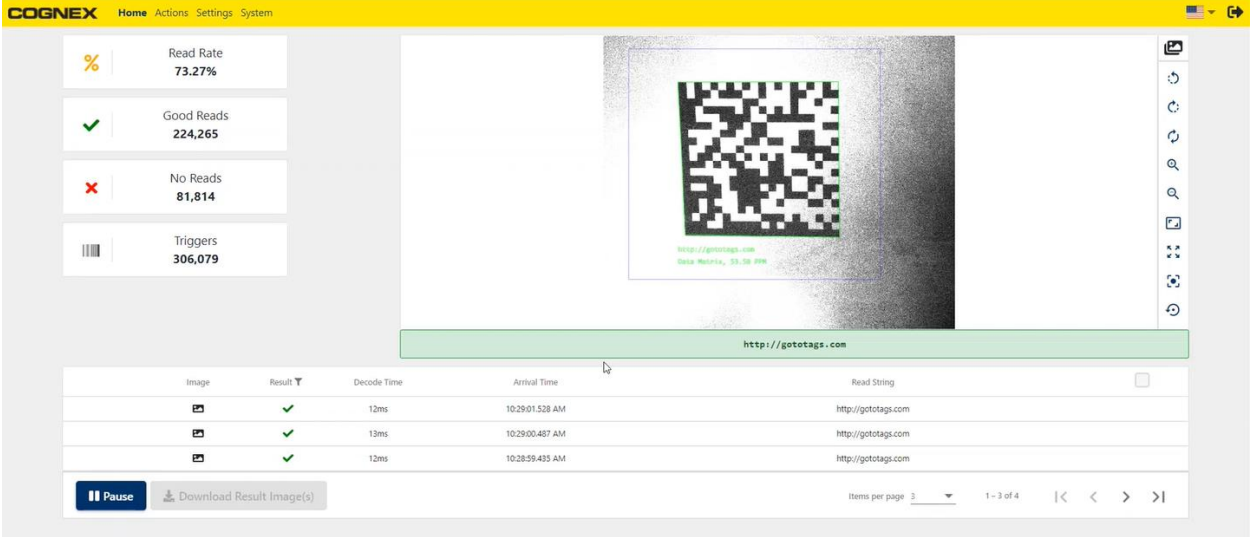
The screenshot shows a dialog box titled "Upload firmware to selected devices". At the top, it displays device information: "Other Coonex device" and "integration". Below the title is a "Password" input field with an eye icon on the right. Underneath the password field is the text "Only if device requires password for changes." Below that is a blue "Browse" button followed by the text "Browse a file with extension: .bin.gz". At the bottom right, there are two buttons: "Cancel" and "Upload".

Click **Browse** to select the firmware file for upload. Enable **Apply network settings** to apply network settings. Enter the device password if required, and click **Upload**.

DataMan WebHMI

The DataMan WebHMI application provides a live view of device reads, results and statistics, and allows you to pause the feed and scroll back to analyze or download individual result images. You can manually trigger or tune devices and

adjust device settings from the DataMan WebHMI.



You can access the DataMan WebHMI for a connected DataMan device from the DataMan page of the Edge Intelligence user interface by clicking on the gear icon labeled **Open DataMan WebHMI** in the **Actions** column of the selected device.

Home







The DataMan WebHMI **Home** page displays a live feed of the device with statistics and result logs.

On the left side, the DataMan WebHMI home page shows statistics for:

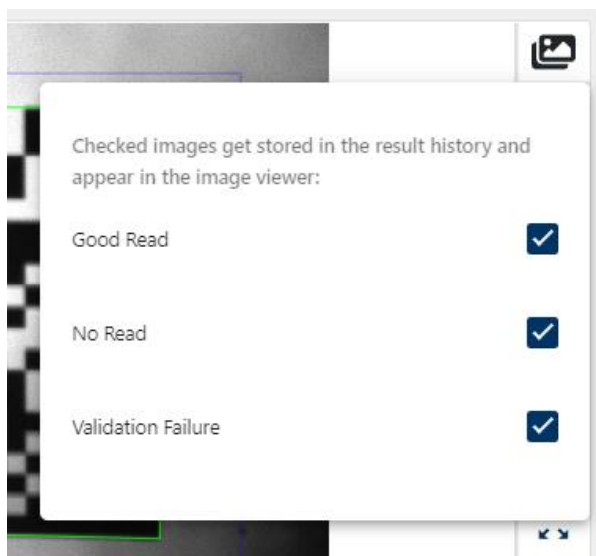
- **Read Rate** percentage
- Number of **Good Reads**
- Number of **No Reads**
- Number of **Triggers**

The display on the right side of the page provides a live feed of the device view with additional controls on the right side of the display for changing orientation and zoom:




Icon	Action
	Rotate Left 90°
	Rotate Right 90°
	Reset Rotation
	Zoom In

	
Icon	Action
	Zoom Out
	Zoom To Original Size
	Reset Zoom
	Move Center
	Reset All Settings

You can also filter the feed to display only **Good Read**, **No Read**, or **Validation Failure** results by clicking on the **Images** icon in the top right corner of the display.



The result logs of the last 50 captures are listed on the bottom of the page. You can browse the list using the navigation buttons in the bottom right corner of the pane.

Image	Result	Decode Time	Arrival Time	Read String
	✓	13ms	12:03:18.947 PM	12
	✓	12ms	12:03:17.783 PM	http://www.google.com
	✗	13ms	12:03:16.586 PM	

Items per page 3
 1 - 3 of 50

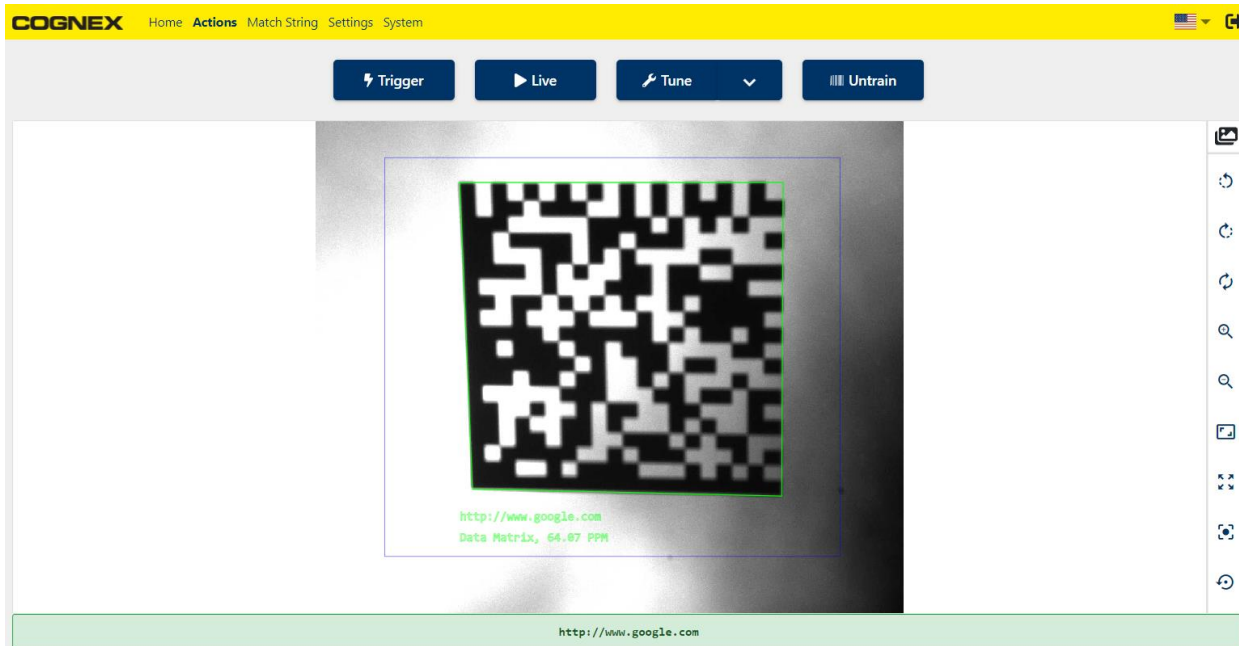
Click on the **Pause** button in the bottom left corner to pause the live feed. Pausing the feed allows you to select and download result images. Click on a log to put the result image on the display.

To download the image currently on the display, click on the **Download Result Image(s)** button without selecting any images from the result logs.

Check the checkboxes in the rightmost column of the result logs to select images for download, or check the checkbox in the table header to select all images. Click on **Download Result Image(s)** while multiple images are selected to download a ZIP file containing the selected result images.

Actions

The **Actions** page of the DataMan WebHMI allows you to manually trigger, start or stop, tune, or untrain the device.



Click **Trigger** to trigger the device manually.

Click **Live** to show the live feed of the device camera.

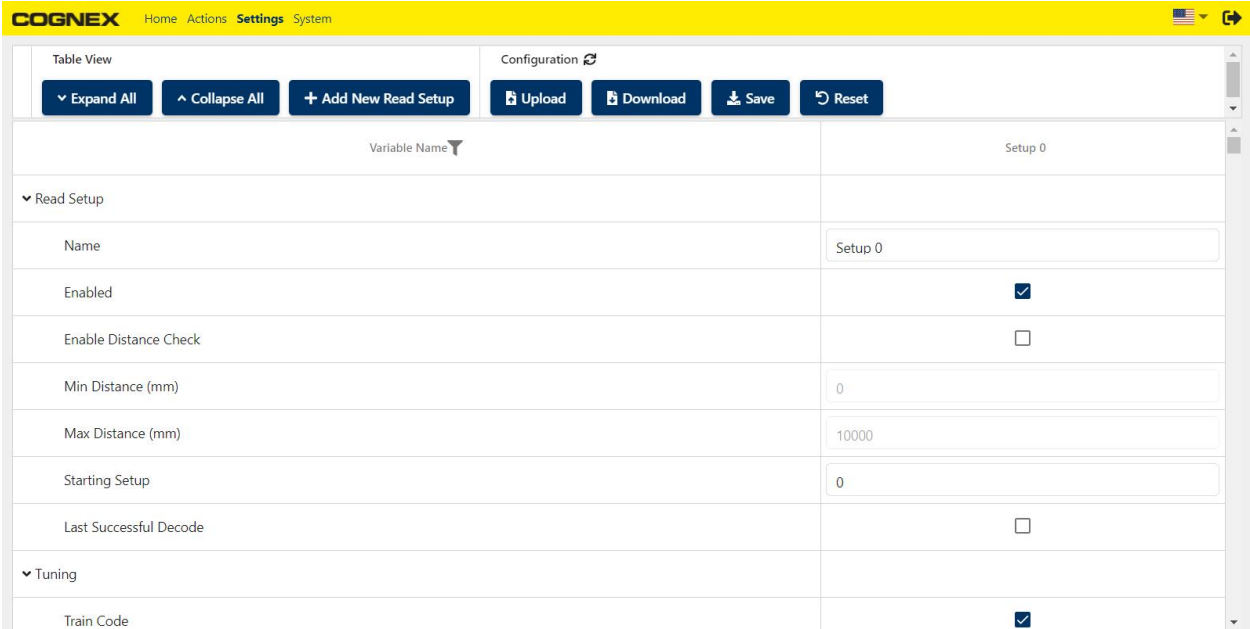
Click **Tune** to initiate an automatic recalibration. Open the Tune dropdown to optimize brightness or focus individually.

Note: When you tune a device, the device stops triggering.

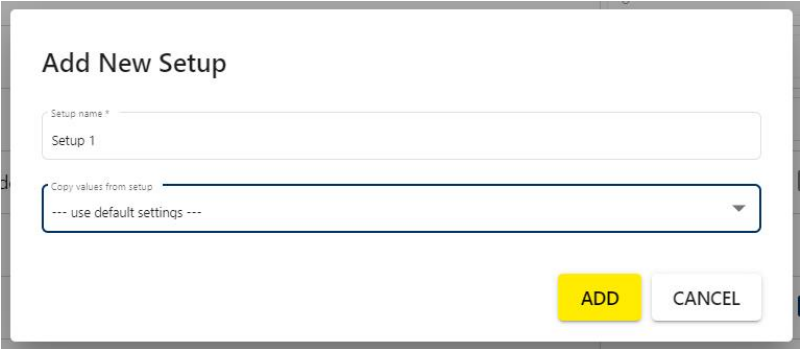
Click **Untrain** to untrain the device.

Settings

The **Settings** page of the DataMan WebHMI allows you to manually change the device configuration, upload, download, or save the current configuration, or reset the device to a previously saved configuration.



- Click **Expand All** or **Collapse All** at the top of the page to expand or collapse the setting categories in the settings table.
- Click **Add New Read Setup** to create a new setup using default settings or an existing setup as a template.



- Click **Upload** to upload a local configuration file to the device.
- Click **Download** to save the device configuration locally.
- Click **Save** to save the configuration on the device flash memory.
- Click **Reset** to reset the device configuration to default or a saved configuration.

The settings table provides you with detailed and in-depth configuration options for all device functionality. Each setting corresponds to a control command for the reader. For a detailed description of the available settings for the reader you are configuring, see the corresponding control commands for the reader in the *DataMan Control Commands Documentation*.

System

The **System** page of the DataMan WebHMI displays detailed device information, reader statistics, feature keys, and device time.

COGNEX Home Actions Settings System 🇺🇸 ↻

Device Information

Device Model: DM374	Firmware Version: 6.1.10_sr1
Serial Number: 1A1806XN002064	Installed Hardware: LiquidLens, Custom
Device Name: Line42-N1-DM374	Bootloader Version: 2017.11-45-g87f355f
MAC Address: 00-D0-24-3D-BB-38	OS Version: 6.1.10_sr1
IP Address: 192.168.1.30	

Feature Keys

1DCodeQuality, 1DDataStitching, 1DExtendedRes, 2DCode, 2DCodeQuality, BarCode, DotCode, IDMax, FullSpeed, IDQuick, ImageDownload, ImageFiltering, ImageFoV_Full, IntImageBuffer, LadderAndPicket, MST, Omidirectional, PostalCode, PowerGrid, Scripting, SignopticSig, Validation

Device Time

Local Time:
Jan 26, 2019, 2:36:11 AM

Uptime:
601h 36m 13s

Reader Statistics 🗑️ Clear

Total Triggers: 1,376,159	Missed Triggers: 0
Total Reads: 1,225,743	Passed Validations: 0
Read Rate: 89.07%	Failed Validations: 0
Total No-Reads: 150,416	Buffer Overflows: 0
No-Read Rate: 10.93%	Trigger Overruns: 0
	Item Count: 0

Feature Keys

The Feature Keys page shows the feature keys applied on each discovered reader.

COGNEX Admin User | 🇺🇸

Home → Multi-Reader Configuration → Feature Keys

Upload feature keys | Download as CSV | Discover devices 🔍 Search

Standalone Devices 🔓 Unlocked

Actions	Name	Type	Firmware Version	Serial Number	Feature Keys	Task Status
🗑️	WebHMI_1	DataMan470	6.1.6_sr2	1A1804XN001407	IDCodeQuality, 1DDataStitching, 1DExtendedRes, 2DCode, 2DCodeQuality, BarCode, DPM_IDMax, DotCode, FullSpeed, HDPlus, IDQuick, ImageDownload, ImageFiltering, IntImageBuffer, LadderAndPicket, Omidirectional, PostalCode, PowerGrid, Scripting, Validation	
🗑️	WebHMI_3-Demo	DataMan470	6.1.6_sr2	1A1802PP019862	IDCodeQuality, 1DDataStitching, 1DExtendedRes, 2DCode, 2DCodeQuality, BarCode, DPM_IDMax, DotCode, FullSpeed, HDPlus, IDQuick, ImageDownload, ImageFiltering, IntImageBuffer, LadderAndPicket, Omidirectional, PostalCode, PowerGrid, Scripting, Validation, MST, PFP, SymbolDiagnostics	
🗑️	WebHMI_4-E2E	DataMan470	6.1.6_sr2	1A1804XN001382	IDCodeQuality, 1DDataStitching, 1DExtendedRes, 2DCode, 2DCodeQuality, BarCode, DPM_IDMax, DotCode, FullSpeed, HDPlus, IDQuick, ImageDownload, ImageFiltering, IntImageBuffer, LadderAndPicket, Omidirectional, PostalCode, PowerGrid, Scripting, Validation, MST, PFP, SymbolDiagnostics	
🗑️	EL_5	DataMan470	6.1.6_sr2	1A1811PP147837	IDCodeQuality, 1DDataStitching, 1DExtendedRes, 2DCode, 2DCodeQuality, BarCode, DPM_IDMax, DotCode, FullSpeed, HDPlus, IDQuick, ImageDownload, ImageFiltering, IntImageBuffer, LadderAndPicket, Omidirectional, PostalCode, PowerGrid, Scripting, Validation, SymbolDiagnostics	
🗑️	WebHMI_2-LongRunning_Test	DataMan470	6.1.6_sr2	1A1804XN001369	IDCodeQuality, 1DDataStitching, 1DExtendedRes, 2DCode, 2DCodeQuality, BarCode, DPM_IDMax, DotCode, FullSpeed, HDPlus, IDQuick, ImageDownload, ImageFiltering, IntImageBuffer, LadderAndPicket, Omidirectional, PostalCode, PowerGrid, Scripting, Validation	
🗑️	EL_6	DataMan470	6.1.6_sr2	1A1811PP143762	IDCodeQuality, 1DDataStitching, 1DExtendedRes, 2DCode, 2DCodeQuality, BarCode, DPM_IDMax, DotCode, FullSpeed, HDPlus, IDQuick, ImageDownload, ImageFiltering, IntImageBuffer, LadderAndPicket, Omidirectional, PostalCode, PowerGrid, Scripting, Validation, SymbolDiagnostics	

Test 🔓 All

Actions	Name	Type	Firmware Version	Serial Number	Feature Keys	Task Status
🗑️	EL_8	DataMan470	6.1.6_sr2	1A1811PP145077	IDCodeQuality, 1DDataStitching, 1DExtendedRes, 2DCode, 2DCodeQuality, BarCode, DPM_IDMax, DotCode, FullSpeed, HDPlus, IDQuick, ImageDownload, ImageFiltering, IntImageBuffer, LadderAndPicket, MST, Omidirectional, PostalCode, PowerGrid, Scripting, SymbolDiagnostics, Validation, PFP	
🗑️	EL_7	DataMan470	6.1.6_sr2	1A1811PP143678	IDCodeQuality, 1DDataStitching, 1DExtendedRes, 2DCode, 2DCodeQuality, BarCode, DPM_IDMax, DotCode, FullSpeed, HDPlus, IDQuick, ImageDownload, ImageFiltering, IntImageBuffer, LadderAndPicket, MST, Omidirectional, PostalCode, PowerGrid, Scripting, SymbolDiagnostics, Validation, PFP	

The following actions are available:

- Uploading feature key files
- Downloading Feature Keys page information in CSV
- Discovering devices

Upload feature keys Download as CSV Discover devices	
Button	Description
Upload feature keys	Upload feature key files.
Download as CSV	Download device list with all data in CSV format.
Discover devices	Discover connected devices.

The Feature Keys page also allows comparing uploaded feature keys between readers in a group:

Feature Key Color	Description
BLUE	The feature is unlocked for the device.
RED	The feature is unlocked for some devices in the group, but not for the respective device.

Click the **Difference** dropdown menu to select the following menu items for comparison:

Unlocked

- Unlocked
- All
- Common
- Difference

Item	Description
Unlocked	Show unlocked feature keys for all devices.
All	Show unlocked and locked feature keys for all devices.
Common	Show feature keys which are unlocked for all devices.
Difference	Show feature keys which have a different status among the devices.

Click the **Upload feature keys** button to upload a feature key file from your computer:

Upload feature key files

Only if device requires password for changes.

Browse
Browse files with extension: .xml

Verification	File Name	Device Name	Serial Number	Feature Keys In File
✓	COGNEX000010_DMFK_1...	DM475-FocusStacking	1A1818PP255718	PTP MST

Cancel
Upload

Item	Description
Password	Password is only needed if the device requires a password.
Browse	Browse files with .xml extension on your computer.
Verification	Shows verified status.
File Name	Name of the feature key files.

Upload feature key files

Password

Only if device requires password for changes.

Browse Browse files with extension: .xml

Verification	File Name	Device Name	Serial Number	Feature Keys In File
✓	COGNEX000010_DMFK_1...	DM475-FocusStacking	1A1818PP255718	PTP MST

Cancel **Upload**

Item	Description
Device Name	Name of the device which gets the new feature key file.
Serial Number	Serial number of the device.
Feature Keys in File	Feature keys contained in the file.

Reporting

The Reporting application contains the Generate page which allows you to generate reports.

Generate

The Generate page of the Reporting application allows you to create new reports and manage existing ones.

Actions	Title	Scan Point Name	Site Name	Customer Name	Username	Request Date & Time	From Date & Time	To Date & Time	Template	File Name	Autogenerated
<input type="checkbox"/>	Test_repo			Ayshan Yariyeva	Unknown	8/5/21, 1:06 PM	8/4/21, 1:04 PM	8/5/21, 1:04 PM	Daily	test_report	
<input type="checkbox"/>	Test				Unknown	7/29/21, 10:23 PM	7/27/21, 10:23 PM	7/29/21, 10:23 PM	Daily		
<input type="checkbox"/>	L42N1	N1	L42	Cognex	Unknown	6/30/21, 8:14 PM	6/29/21, 6:00 PM	6/30/21, 6:00 PM	Daily	Report	

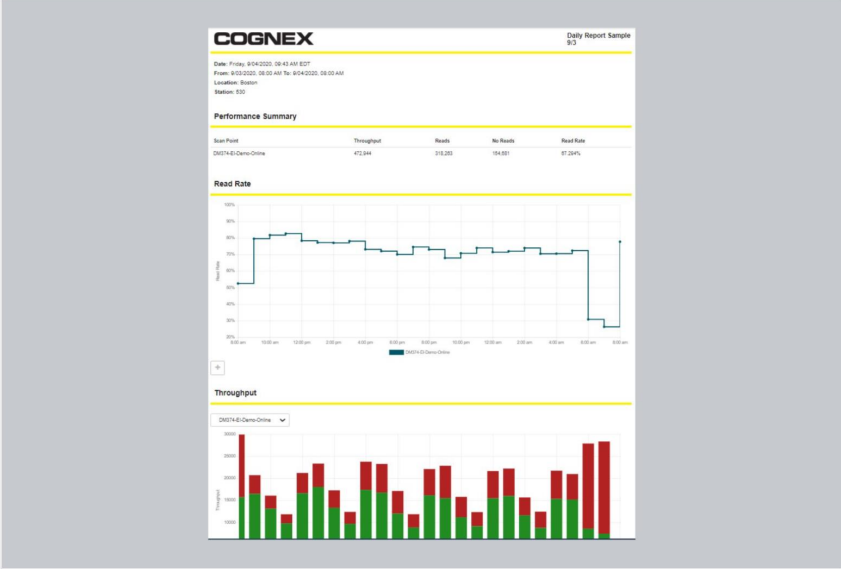
To generate a new report, fill in the fields under the **Generate new report**. Click on the **Generate** button on the bottom right of the section to generate the report. You can find your generated report in the list on the bottom of the Generate page.

When you fill in the necessary fields, you are provided with a Template preview of the report. Click **Generate** again to create the report.

The Template field on the Generate page has a drop down bar which has two options: Daily and Weekly.

Template Preview: Daily

The Daily Report summarizes the performance of all your DataMan assets. The report contains a table outlining the performance statistics, a multi-line chart comparing the read rate data of each asset over time, and a stacked bar chart to view the hourly throughput for each asset. This template was designed to ideally summarize a day of asset performance containing data points captured with a granularity of 1 hour. It is recommended you select a reporting range of around 24 hours.



Reset Generate

Template Preview: Weekly

The Weekly Report summarizes the performance of all your DataMan assets. The report contains a table for each asset with the performance statistics summarized for each day included in your reporting range. This template was designed to ideally summarize a week of asset performance containing data points captured with a granularity of 1 day. It is recommended you select a reporting range of around 7 days.

The screenshot displays the 'Weekly Report Sample 9/4' for station 530. It contains two tables of performance data for assets DM374-EI-Demo-Online and DM474-EI-Demo. Each table lists daily throughput, reads, no reads, and read rate percentages.

DM374-EI-Demo-Online				
Date	Throughput	Reads	No Reads	Read Rate
8/27/2020	44,507	0	44,507	0.000%
8/28/2020	124,570	0	124,570	0.000%
8/29/2020	135,788	0	135,788	0.000%
8/30/2020	719,122	579,574	139,548	80.595%
8/31/2020	1,498,149	1,240,128	228,021	84.459%
9/1/2020	1,241,151	1,078,366	162,785	86.884%
9/2/2020	478,074	386,033	92,041	80.748%
9/3/2020	244,080	150,422	93,658	61.628%

DM474-EI-Demo				
Date	Throughput	Reads	No Reads	Read Rate
8/27/2020	44,507	0	44,507	0.000%
8/28/2020	124,570	0	124,570	0.000%
8/29/2020	135,788	0	135,788	0.000%
8/30/2020	719,122	579,574	139,548	80.595%
8/31/2020	1,498,149	1,240,128	228,021	84.459%
9/1/2020	1,241,151	1,078,366	162,785	86.884%
9/2/2020	478,074	386,033	92,041	80.748%
9/3/2020	244,080	150,422	93,658	61.628%

To reset the fields in the **Generate new report** section, click on the **Reset** button.

The list at the bottom of the page lists the existing reports and their properties. To open, download, delete, or duplicate existing reports, use the icons in the **Actions** column of the list.

Individual Report Actions

You can perform actions on an individual report by clicking on the icons in the **Actions** column for the selected report:

<input type="checkbox"/> Actions	
Icon	Action
	Open
	Download
	Bin
	Duplicate

- To open a report, click on **Open** next to the checkbox in the **Actions** column.
- To download a report, click on **Download**.
- To delete a report, check the checkbox on the left of the report you want to delete, and click on red **Bin**.
- To copy data from a previously created report into the form, click on **Duplicate**.

User Management

The **Roles** page allows an admin level user to create roles and define which EI features those roles have access to. The **User** page allows an admin level user to create users and assign them roles.

Users

The Users page allows creating new users and assigning Roles to them.

☰ **COGNEX**
cognex | ⓘ ⌵

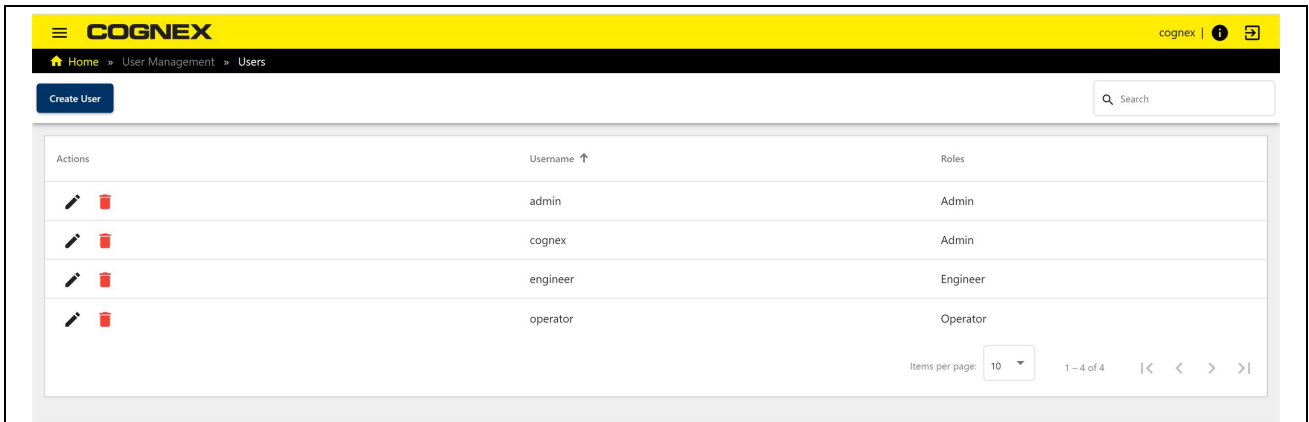
Home » User Management » Users

Create User

Actions	Username ↑	Roles
	admin	Admin
	cognex	Admin
	engineer	Engineer
	operator	Operator

Items per page: 10
1 - 4 of 4
|< < > >|

Item	Description
Create User	Brings up the pop-up window to add a new user.



Item	Description
User management table	Table listing the existing users, the assigned Username and roles.

The Create user action is available on the top ribbon. Set the following options for each user:

Create User

Username *

Role *

Password *

Confirm Password *

Item	Description
Username	The username of the user for logging in.
Role	The role of the user: <ul style="list-style-type: none"> • Admin • Engineer • Operator
Password	The password of the user for logging in.
Confirm Password	Reenter the password.

Note: A user with admin rights can also edit the same options for each user by clicking the **Edit** button.

The Users page lists the existing users. Edit or delete an existing user by clicking the appropriate icon.

Actions

Icon	Description
	Click Edit to edit the settings of a user.
	Click Delete to delete a user.

Roles

This page allows admin level users to create new roles and grant access to certain applications.

Home » User Management » Roles

- Admin
- Engineer
- Operator
- +

All application claims

- Access to ADWS app
The user has access to the ADWS application.
- Access to Customer Acceptance Test App
The user has access to the Customer Acceptance Test application.
- Access to Ignore Codes app
The user has access to the Ignore Codes application.
- Access to Multi-Reader Configuration App
The user has access to the Multi-Reader Configuration application.
- Access to Reporting app
The user has access to the Reporting application.
- Access to RTM App
The user has access to the Real-Time Monitoring application.

Item	Description
Roles	List of roles.
Accesses	List of accesses for the specified role.

The following predefined users are available by default:

66

i Note: After creating the user profiles, always change the default password to avoid security risks.

User	Password	Permission
admin	BnthWWSD	Has access to all apps and features.
engineer	TaRDpKVx	Has access to all apps and features.
operator	SxtXGmxs	User with read-only rights. The operator does not have access to the Multi-Reader Configuration app and the Settings.

Settings

The Settings application allows you to configure your Edge Device, set up MQTT and other IoT connections, enable or disable the DataMan WebHMI pages of your connected devices, and upgrade your device firmware.

Edge Device

The Edge Device page shows the network configuration and allows editing and saving the network settings of the Edge Intelligence device.

The screenshot displays the COGNEX Edge Intelligence User Interface. At the top, there is a yellow header with the COGNEX logo and a user profile 'admin'. Below the header is a breadcrumb trail: Home » Settings » Edge Device. The main content area is divided into several panels:

- Network Configuration:** Contains fields for Device Name (EI-DemoUnit), Network Interface (eth1), Enable DHCP (disabled), IP Address (10.12.90.27), Subnet Mask (255.255.255.224), Gateway (10.12.90.1), and DNS Server (10.10.160.1). A second section for Network Interface eth3 shows Enable DHCP (enabled) and IP Address (10.15.81.113).
- Clear Databases:** A panel with a 'Clear All' button.
- Reboot Edge Device:** A panel with a 'Reboot' button.
- Network Time Protocol:** Shows 'No NTP Servers found.' and a '+' button.
- Date & Time:** Shows 'Set Date & Time Manually' (enabled), Date & Time (8/10/2021, 11:21 AM), and Time Zone (America/New_York).

Section	Item	Description
Network configuration	Device Name	The name of the Edge Intelligence device.
	Enable DHCP	To enable using DHCP protocols instead of static protocols toggle the switch.
	IP Address	The IP Address of the Edge Intelligence device.
	Subnet Mask	The Subnet Mask of the Edge Intelligence device. Note: Do not set more than one network port to the same subnet mask.
	Gateway	The Gateway of the Edge Intelligence device.
Clear databases	You can clear the device lists, data, and images from the Edge Intelligence device, and create a new state. Note: Clear database option is only available with Admin level clearance.	
Reboot Edge device	You can reboot the Edge device with the Reboot Edge device option.	

Section	Item	Description
Network time protocol		<p>You can sync the time between the Edge Intelligence device and an NTP server. To Add New Address enter IP address of the NTP Server then click Save.</p> <div style="text-align: center;"> </div>
Date and time		<p>Toggle Set Date and Time manually to specify the date, time and the time zone. For more information see Date & Time Range Filter on page 32.</p>

Setting up the NAT

Network address translation (NAT) remaps IP address spaces into other IP address spaces by modifying network address information in the IP header of information packets. Scroll down for the NAT option.

To set up the NAT:

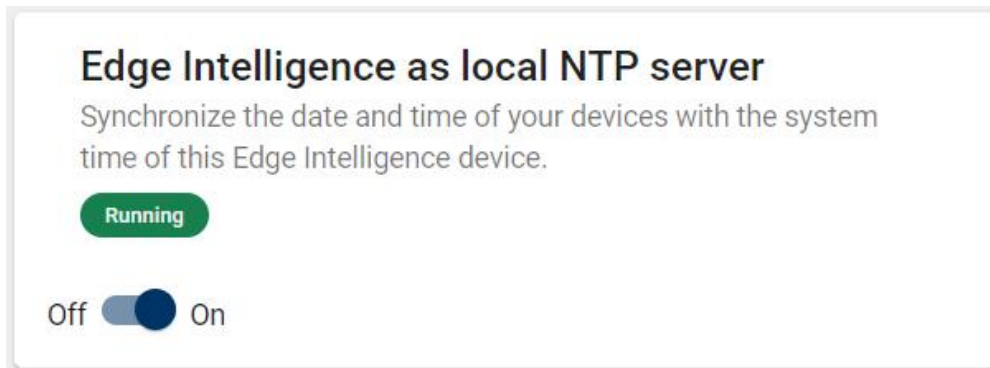
1. Make sure that the Default Gateway of the DataMan readers is the IP address of the EI network port they are connected to.
2. Set the switch to enable NAT Settings.

3. Click the + symbol to Add New Mapping.
4. Set the reader IP address as the Internal IP.
5. For the External IP, enter an available IP address you want to map to the reader.
6. Click Save.

NTP Server Function

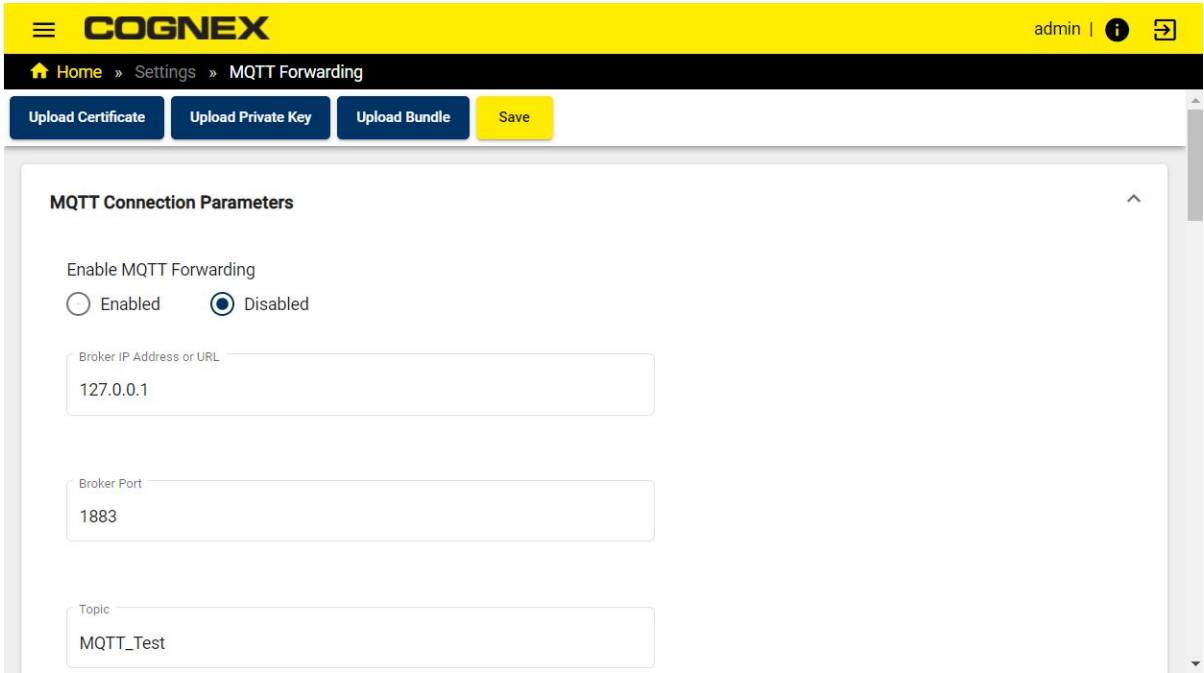
The Edge Intelligence device can act as a Network Time Protocol (NTP) server. NTP is an internet protocol for synchronizing clocks on a network to within a few milliseconds of universal coordinated time (UTC).

In the **Settings** menu, click on the **Edge Device** tab. Set the switch to **On** to enable NTP server and synchronize the date and time of your devices with the system time of Edge Intelligence.



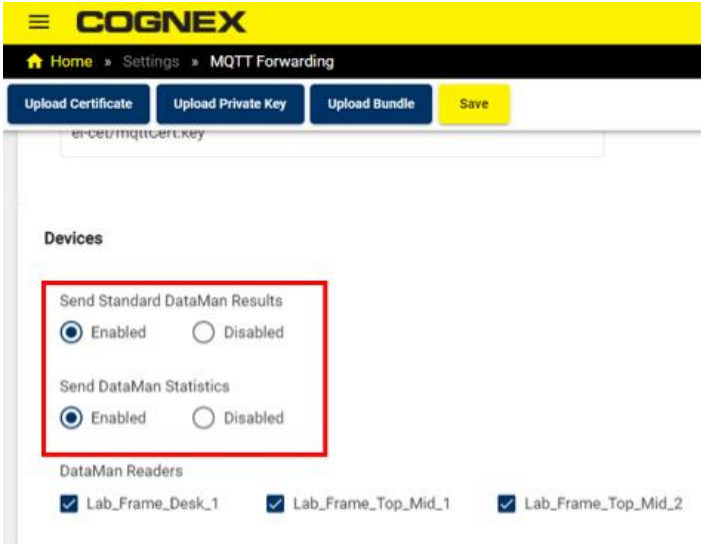
MQTT Forwarding

The **MQTT Forwarding** page of the **Settings** application allows you to set up network connections for forwarding to the IoT devices. You can configure MQTT, SSL/TLS, Sparkplug, and AWS settings on the **MQTT Forwarding** page.



You can also upload certificates, private keys, or bundles using the buttons at the top. It is possible to upload a *.crt*, *.csr*, *.pem*, or *.key* file.

By enabling **Send Standard DataMan Results** and **Send DataMan Statistics**, you send results and statistics from the DataMan devices.



You can select readers to forward data from under **DataMan Readers**.

To implement any changes you make, click **Save**.

See below about the forwarded data for **Standard DataMan Results** and **DataMan Statistics**:

Standard DataMan Results		DataMan Statistics
Decode Results <ul style="list-style-type: none"> • Decode Time • Image Index • Is Good Read • Module Size 	Read Setup Index Read String Result Index Source Device Mac Address Source Device Name Device Mac Address Encoder End Tick Encoder Start Tick	Good Read Count No read Count Passed Validation Count Failed Validation Count Buffer Overflow Count Missed Trigger Count Trigger Overrun Count Timestamp Device Mac Address
Symbology <ul style="list-style-type: none"> • Angle • Center • Id • Name • Size 	Group Timestamp Trigger End Time Trigger Index Trigger Start Time Trigger Time Unique Id	
Process Control Metrics <ul style="list-style-type: none"> • Standard 		
Validation <ul style="list-style-type: none"> • Error Code • Error Position • Error Text • Is Read String Valid 		

MQTT Connection Parameters

The **MQTT Connection Parameters** section of the page allows you to configure MQTT forwarding.

MQTT Connection Parameters

Enable MQTT Forwarding

 Enabled Disabled

Broker IP Address or URL

127.0.0.1

Broker Port

1883

Topic

MQTT_Test

Username

Cognex

Password (Optional)

Keepalive Interval (s)

10

QoS Level

 0 - at most once 1 - at least once 2 - exactly once

To enable MQTT forwarding, click **Enable**.

Provide the

- **Broker IP Address or URL**,
- **Broker Port**,
- **Topic** name,
- **Username**,
- the optional **Password**,
- **Keepalive Interval (s)**

Define the QoS Level you want, then click on **Save** at the top of the page to apply your changes.

SSL/TLS

The **SSL/TLS** section of the page allows you to configure SSL/TLS connections.

SSL/TLS

Enable SSL/TLS
 Enabled Disabled

Certificate Authority (CA) Endpoint
www.ssl.com

Certificate File Path
ei-cet/mqttCert.pem

Private Key File Path
ei-cet/mqttCert.key

To enable SSL/TLS forwarding, click **Enable**.

Provide the **Certificate Authority (CA) Endpoint**, **Certificate File Path**, and **Private Key File Path**, then click on **Save** at the top of the page to apply your changes.

Sparkplug Settings

The **Sparkplug Settings** section of the page allows you to configure Sparkplug formatting.

Sparkplug Settings

Enable Sparkplug Formatting
 Enabled Disabled

Group ID
Cognex

Custom Node ID (Optional)

To enable Sparkplug formatting, click **Enable**.

Provide the **Group ID** and **Custom Node ID**, then click on **Save** at the top of the page to apply your changes.

AWS IOT Settings

The **AWS IOT Settings** section of the page allows you to configure AWS forwarding.

AWS IOT Settings

Enable AWS Forwarding
 Enabled Disabled

AWS Client ID
EI-AWS-MQTT-Client

To enable AWS formatting, click **Enable**.

Provide the **AWS Client ID**, then click on **Save** at the top of the page to apply your changes.

The **Devices** section of the page allows you to select the **Result Input Source** and the readers you want to apply your changes to.

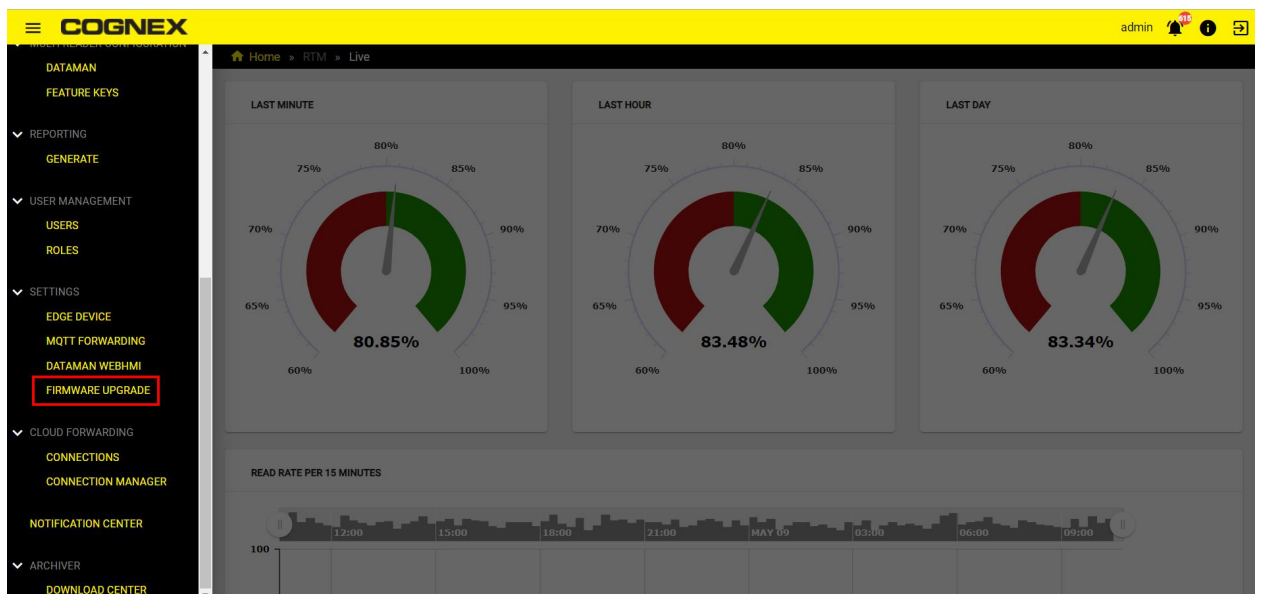
Click **Save** at the top of the page to apply your changes.

Firmware Upgrade

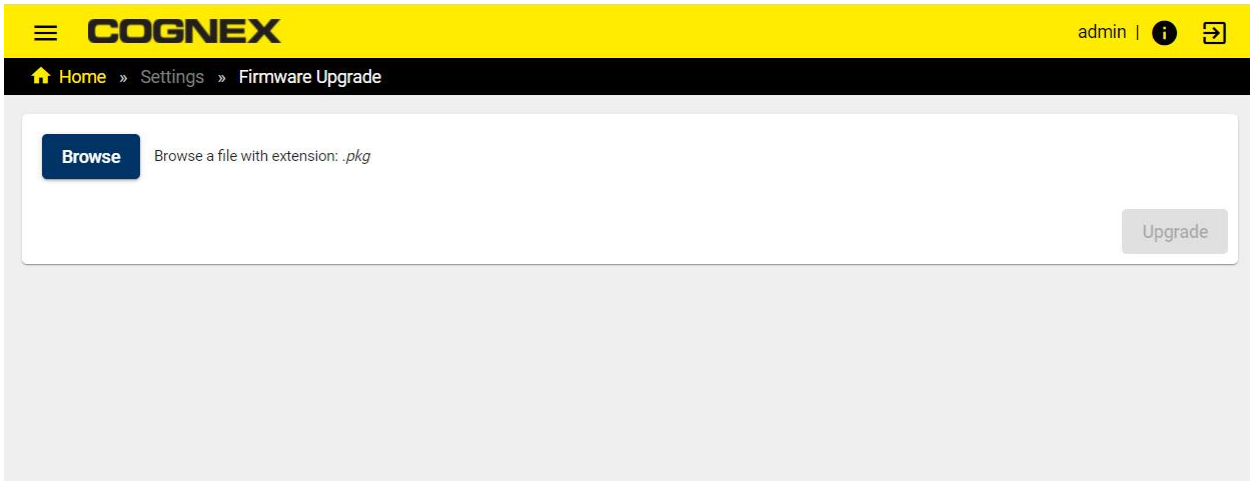
The **Firmware Upgrade** page of the **Settings** application step allows you to upload new firmware packages for upgrading device firmware.

If the Edge Intelligence unit is on version 1.2.1 or later, you can upgrade the Edge Intelligence firmware through the user interface by performing the following steps:

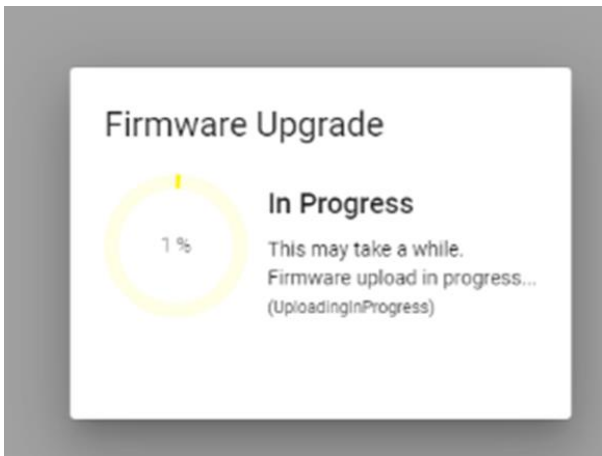
1. Make sure you are on the same network as Edge Intelligence Internal Ethernet port. The IP address of the Internal Ethernet port is in the form of 192.168.1.X.
2. Connect to the Edge Intelligence Internal Ethernet port. For more information, see [Connecting the Edge Intelligence](#).
3. Open a web browser and type the IP address of the Edge Intelligence unit into the address bar. The default static IP address is 191.168.1.100. The Edge Intelligence user interface opens up.
4. Navigate to **Settings > Firmware Upgrade** in the Edge Intelligence navigation pane.



- 5. Click on the **Browse** button and select the latest firmware version available for download on the Cognex website. The firmware is a *.pkg* format file.



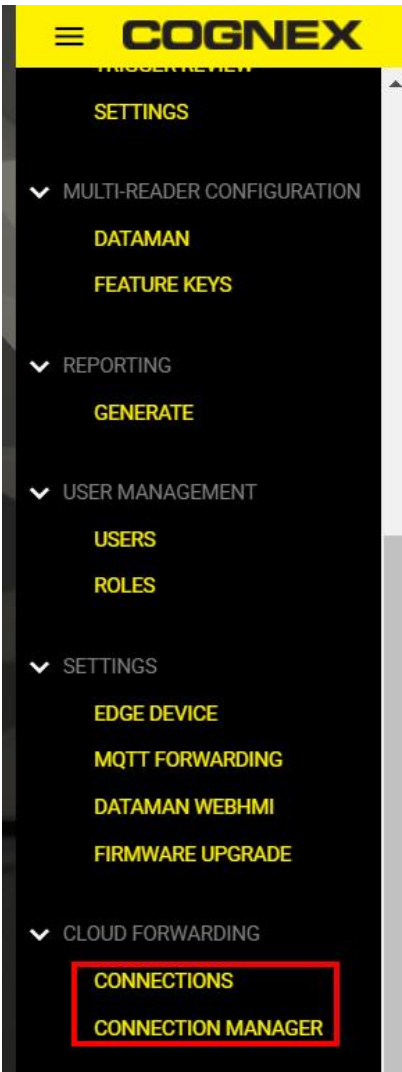
- 6. Click on the **Upgrade** button and wait for upgrade to complete.



If the Edge Intelligence unit is on version 1.1.1, you can upgrade Edge Intelligence firmware through DataMan Setup Tool. For more information, see [Software Update](#).

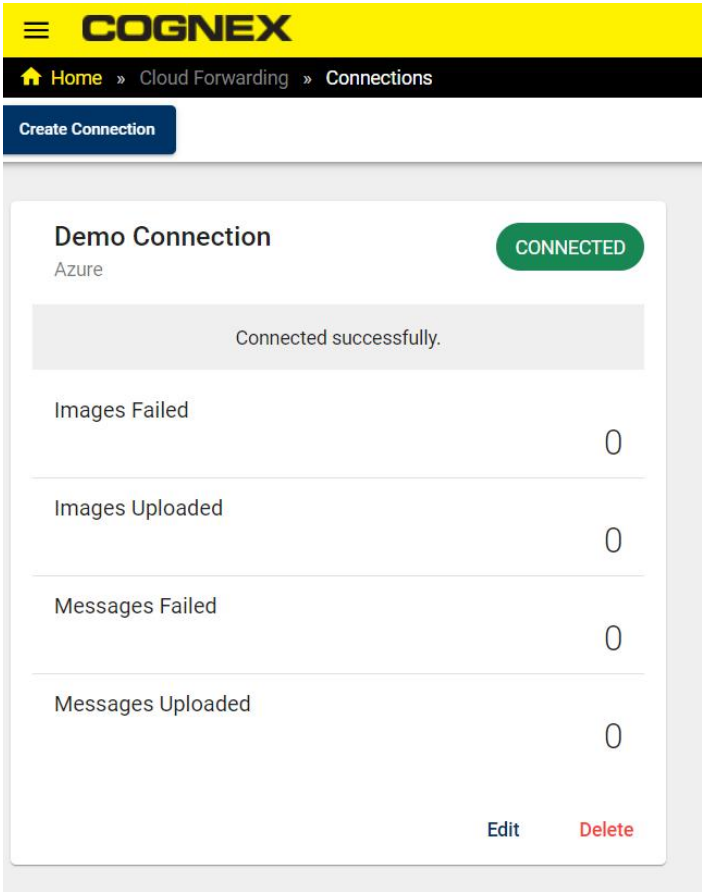
Cloud Forwarding

The Cloud Forwarding application allows you to configure your cloud connections and manage the forwarded data. The Cloud Forwarding application contains two pages: Connections and Connection Manager.



Connections

The **Connections** page of the **Cloud Forwarding** application displays the current status of the cloud connection and total number of images and messages uploaded or failed.



To edit the connection, click on **Edit**. The **Edit Connection** pane opens up:

Edit Connection

Connection Name *
Demo Connection

Destination Type *
Azure

Connection Type *
Connection String

Connection Settings

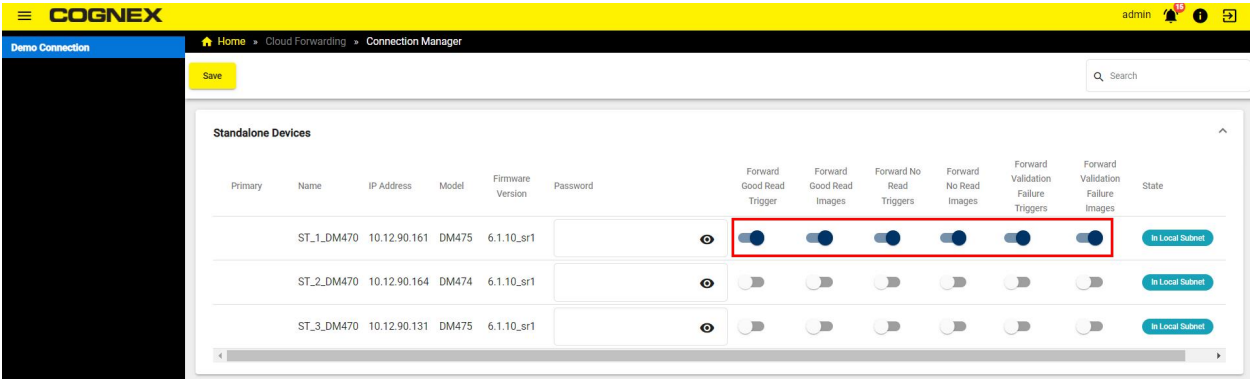
Azure Connection String *
HostName=El-Demo-IOTHub.azure-devices.net;DeviceId

Cancel Save

- The **Connection Name** field shows the name of the connection.
- The **Destination Type** dropdown shows where the data is forwarded to.
- The **Connection Type** dropdown shows the connection type, such as Connection String, SAS Token, x509 Certificate.
- In the **Azure Connection String** field you have to enter details for the specific connection type and destination.

Connection Manager

The **Connection Manager** page of the **Cloud Forwarding** application is for specifying the data to forward from each device.



To select the data to forward from each device, switch on the toggle. In this example, **Good Read Trigger, No Read Triggers, No Read Images, Validation Failure Triggers, Validation Failure Images** are chosen to forward for **ST_1_DM470**.

Archiver

The **Archiver** application of Edge Intelligence provides a method of storing and organizing data obtained from your readers, such as downloaded images and trigger sequences.

Download Center

The **Download Center** page of the Archiver application allows you to manage your current and historical archives.

When you download image or trigger data from the Results Explorer page of the Performance Analytics application, Edge Intelligence stores it in an archive file. Downloaded archives reside on the hard drive of the Edge Intelligence unit. The time it takes to create the archive depends on the size and the number of images that needs processing, and can take from around one minute to up to two hours. Depending on the amount of data, Edge Intelligence generates one or more archives. The size limit for a single archive is 1 GB. When the remaining disk space approaches approximately 50 GB, Edge Intelligence automatically starts to delete older images.

Note: Archives always have storage priority over the images stored in Results Explorer.

The Download Center page:

The screenshot shows the 'Download Center' page with a breadcrumb trail: Home » Archiver » Download Center. Below the breadcrumb is a table with the following columns: Actions, Title, State, Queued At, Updated At, and Files Count. There are three rows of archives, all with a 'Completed' state. The first row is 'No Read Images 1:50PM-2:58PM', the second is 'Image + Trigger 1/20 10AM-1PM', and the third is 'Image+trigger Jan4 1037-1237'. At the bottom of the table, there is a pagination control showing 'Items per page: 10' and '11 - 13 of 13'.

Actions	Title	State	Queued At	Updated At	Files Count
	No Read Images 1:50PM-2:58PM	Completed	2/3/22, 8:57 PM	2/3/22, 8:57 PM	1
	Image + Trigger 1/20 10AM-1PM	Completed	1/20/22, 7:21 PM	1/20/22, 7:21 PM	1
	Image+trigger Jan4 1037-1237	Completed	1/5/22, 4:37 PM	1/5/22, 4:37 PM	1

Column	Description
Actions	The possible actions for an archive. The following actions are available when clicking in the appropriate icon: <ul style="list-style-type: none"> deletes an archive cancels the request to create the archive resubmits the request to create the archive
Title	The user-specified name of the archive.

Home » Archiver » Download Center

Actions	Title	State	Queued At	Updated At	Files Count
	No Read Images 1:50PM-2:58PM	Completed	2/3/22, 8:57 PM	2/3/22, 8:57 PM	1
	Image + Trigger 1/20 10AM-1PM	Completed	1/20/22, 7:21 PM	1/20/22, 7:21 PM	1
	Image+trigger Jan4 1037-1237	Completed	1/5/22, 4:37 PM	1/5/22, 4:37 PM	1

Items per page: 10 11 - 13 of 13 << < > >>

Column	Description
State	The status of the archive. Displays one of the following states: <ul style="list-style-type: none">• Idle• Collecting Data• Running• Completed• Canceled
Queued At	The time when download starts.
Updated At	The time of the last status update or when the download finishes.
Files Count	The total number of ZIP files in the archive.

The archive file has the following contents:

- One or more folders that contain the images. Edge Intelligence organizes the folders by date, and each folder name has the format of YYYYMMDD.

The images in each folder follow a naming convention based on whether they originate from a standalone reader or from an MRS group:


- For standalone readers, the image name contains the device name, the trigger index, the image index, and the time stamp, in this order and separated by underscores. For example, *ST_1_DM470_566898_0_20211221T190905.jpg*.
- For readers in an MRS group, the image name contains the group name, the device name, the trigger index, the image index, the time stamp, and four random characters to prevent name collision, in this order and separated by underscores. For example, *Tunnel1_ST_3_DM470_1126_0_20220204T141531_6802.jpg*.

- One CSV file that contains trigger data. The name of the file contains the MRS group name when applicable, and the name of the primary device, for example, *Tunnel_1_ST1_DM470.csv*. The file organizes data into the following columns:
 - time: The time stamp of the image.
 - deviceMacAddress: The MAC address of the device.
 - group: The MRS group name.
 - type: The trigger type
 - triggerIndex: The index of the trigger.
 - goodRead: TRUE indicates a Good-read, FALSE indicates a No-read.
 - readString: The read string. For an MRS group, this column contains the overall result string.


Note: For an MRS group, the image folder(s) contain images from all readers, and the CSV file contains trigger data from the primary reader.

Extract a Single Archive File

1. In the **Download Center**, click on the row of the archive you want to download to see its contents.

Actions	Title	State	Queued At	Updated At	Files Count
	4/8 10:47-10:50	Completed	4/8/22, 4:52 PM	4/8/22, 4:52 PM	1
<p><i>Download only one file at a time. Simultaneous downloads severely impact device performance. Download all partial zip archives (if created) before opening the '.zip' file. You may need a third-party utility to automatically combine partial archives.</i></p> <p>↓ ei-data-export-20220408_1452-f61cd806-3697-4d56-a9c8-1686cc5feec2.zip</p>					

2. Click on the download icon to download the ZIP file.

Actions	Title	State	Queued At	Updated At	Files Count
	4/8 10:47-10:50	Completed	4/8/22, 4:52 PM	4/8/22, 4:52 PM	1
<p><i>Download only one file at a time. Simultaneous downloads severely impact device performance. Download all partial zip archives (if created) before opening the '.zip' file. You may need a third-party utility to automatically combine partial archives.</i></p> <p>↓ ei-data-export-20220408_1452-f61cd806-3697-4d56-a9c8-1686cc5feec2.zip</p>					

The default download location depends on the browser you are using.


- 3. Navigate to the folder on your computer that contains your downloaded file, and extract the contents of the file.

Extract a Multi-Archive File


When the size of the archive exceeds 1 GB, Edge Intelligence creates multiple partial ZIP files from that archive.

Note: As the built-in Windows file extractor cannot handle partial ZIP files, you need to install 7Zip or a similar program to manage them.

- 1. In the **Download Center**, click on the row of the archive that you want to download to see its contents.

Actions	Title	State	Queued At	Updated At	Files Count
	2/13-2/14 Images + Triggers	Completed	2/14/22, 6:16 PM	2/14/22, 6:21 PM	6
<p><i>Download only one file at a time. Simultaneous downloads severely impact device performance. Download all partial zip archives (if created) before opening the '.zip' file. You may need a third-party utility to automatically combine partial archives.</i></p>					
<p>↓ ei-data-export-20220214_1716-4e4d06cf-c77f-4054-baff-e2940a9c920f.z01</p>					
<p>↓ ei-data-export-20220214_1716-4e4d06cf-c77f-4054-baff-e2940a9c920f.z02</p>					
<p>↓ ei-data-export-20220214_1716-4e4d06cf-c77f-4054-baff-e2940a9c920f.z03</p>					
<p>↓ ei-data-export-20220214_1716-4e4d06cf-c77f-4054-baff-e2940a9c920f.z04</p>					
<p>↓ ei-data-export-20220214_1716-4e4d06cf-c77f-4054-baff-e2940a9c920f.z05</p>					
<p>↓ ei-data-export-20220214_1716-4e4d06cf-c77f-4054-baff-e2940a9c920f.zip</p>					

2. Download each ZIP one at the time file by clicking on the download icon, and store them in the same location.

Actions	Title	State	Queued At	Updated At	Files Count
	2/13-2/14 Images + Triggers	Completed	2/14/22, 6:16 PM	2/14/22, 6:21 PM	6

Download only one file at a time. Simultaneous downloads severely impact device performance. Download all partial zip archives (if created) before opening the '.zip' file. You may need a third-party utility to automatically combine partial archives.

[↓ ei-data-export-20220214_1716-4e4d06cf-c77f-4054-baff-e2940a9c920f.z01](#)

[↓ ei-data-export-20220214_1716-4e4d06cf-c77f-4054-baff-e2940a9c920f.z02](#)

[↓ ei-data-export-20220214_1716-4e4d06cf-c77f-4054-baff-e2940a9c920f.z03](#)

[↓ ei-data-export-20220214_1716-4e4d06cf-c77f-4054-baff-e2940a9c920f.z04](#)

[↓ ei-data-export-20220214_1716-4e4d06cf-c77f-4054-baff-e2940a9c920f.z05](#)

[↓ ei-data-export-20220214_1716-4e4d06cf-c77f-4054-baff-e2940a9c920f.zip](#)

The default download location depends on the browser you are using.

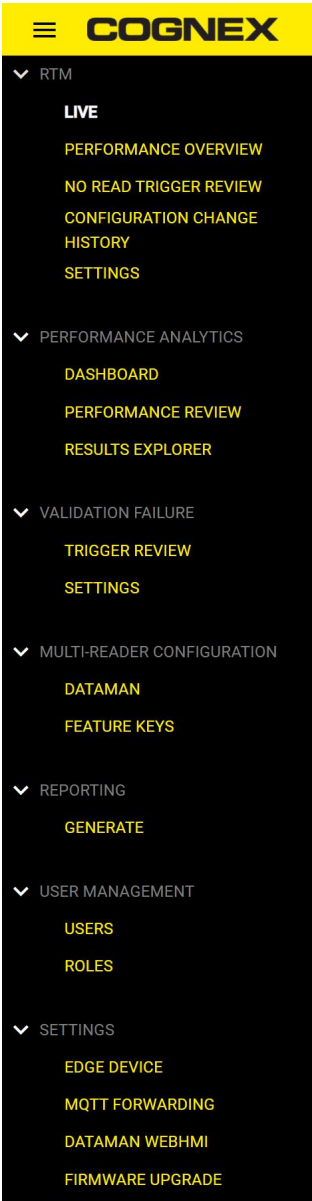
3. Navigate to the folder on your computer that contains all the downloaded partial ZIP files.
4. Right-click on the file with ZIP extension.
5. Click on the ZIP file extractor.
6. Click on **Extract to** to merge all partial files.

Main Elements of the User Interface

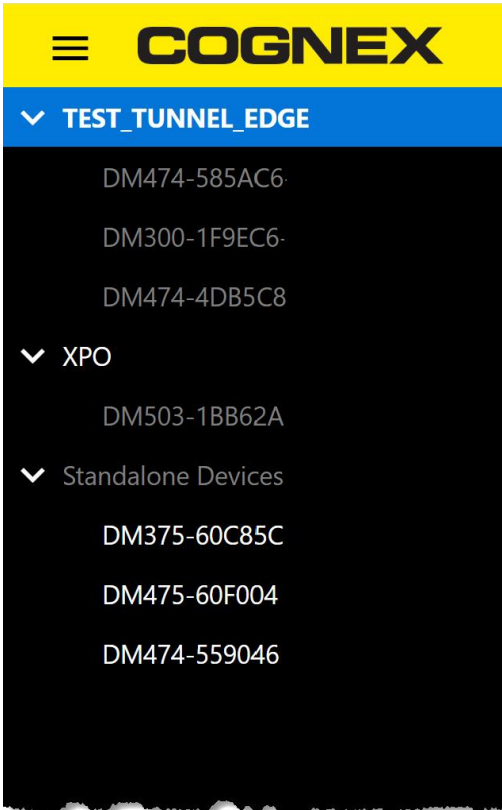
The yellow top ribbon appears on all pages, and provides the following features:

Main menu: Click on the **Menu icon** in the upper left corner to open the navigation pane. Use the tree to navigate between the available apps and their pages.





Device tree

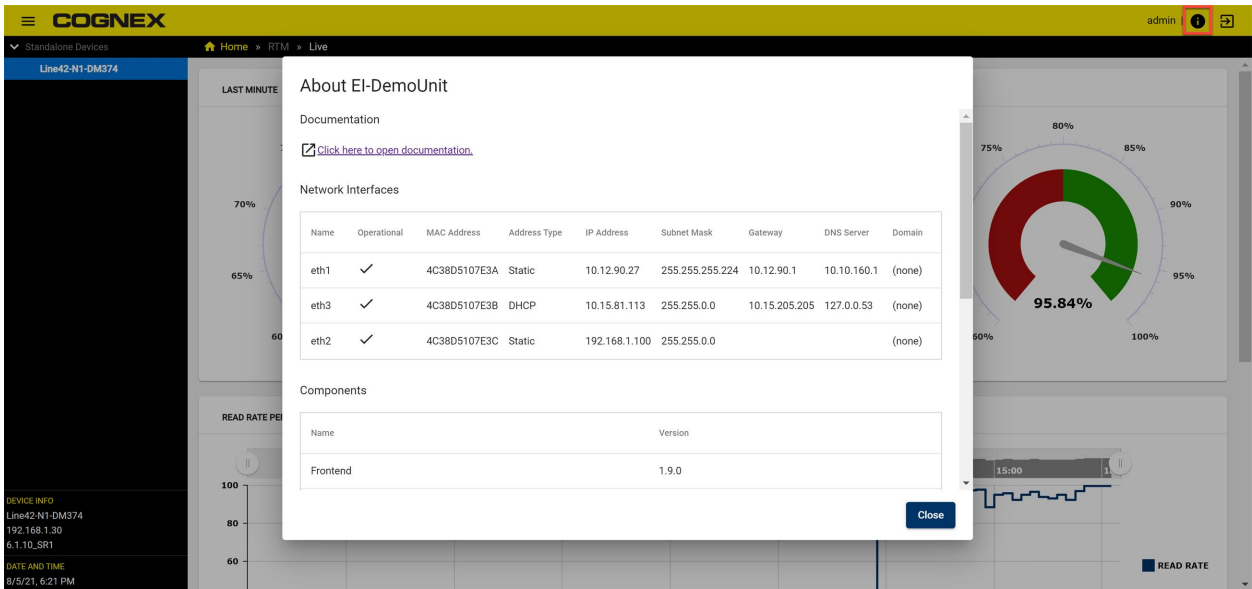


The device tree shows you what devices, readers, and reader groups are on the network. Click on the group or standalone reader to view the live data collected from it. IDs of the individual readers within a group appear grey, but the individual readers can not collect data separately within a group. The bottom of the pane displays information about the selected group and the date and time.

The ribbon displays the type of the user signed in.



To reach the Documentation of Edge Intelligence, Network Interfaces, and Components, click the **i (info) icon** to open the **About section pop-up window**.



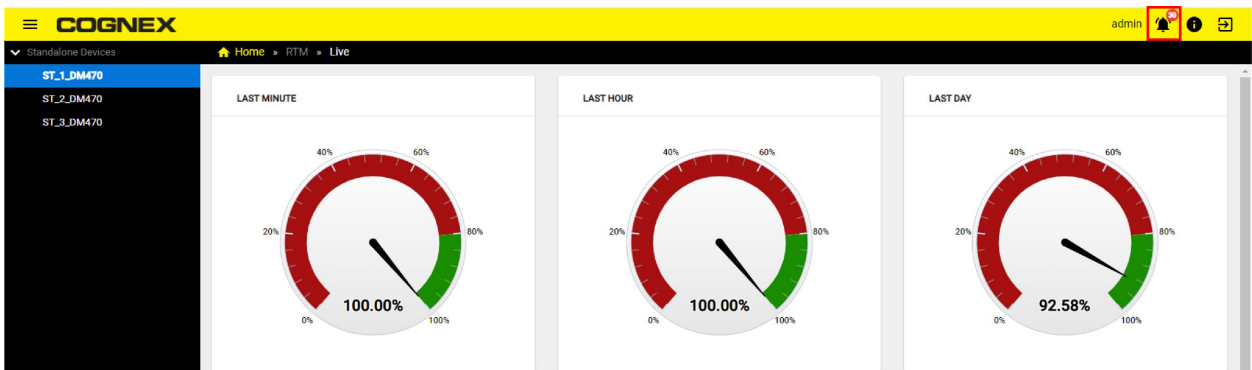
The Log out button is in the upper right corner:



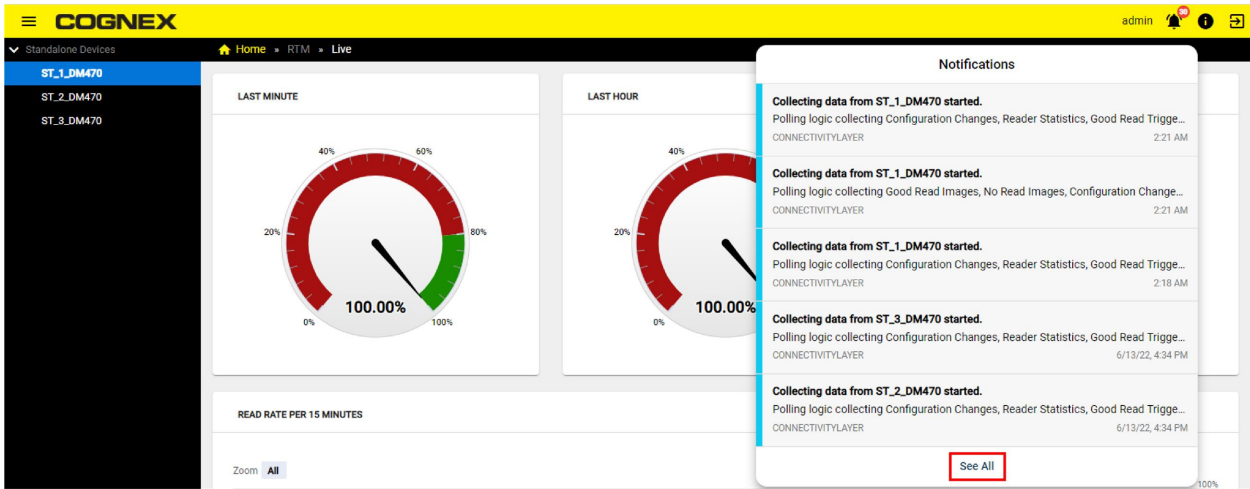
Notification Center

The Notification Center shows you the notifications that Edge Intelligence sends you.

There is a notification bell on the upper right corner of the home page:



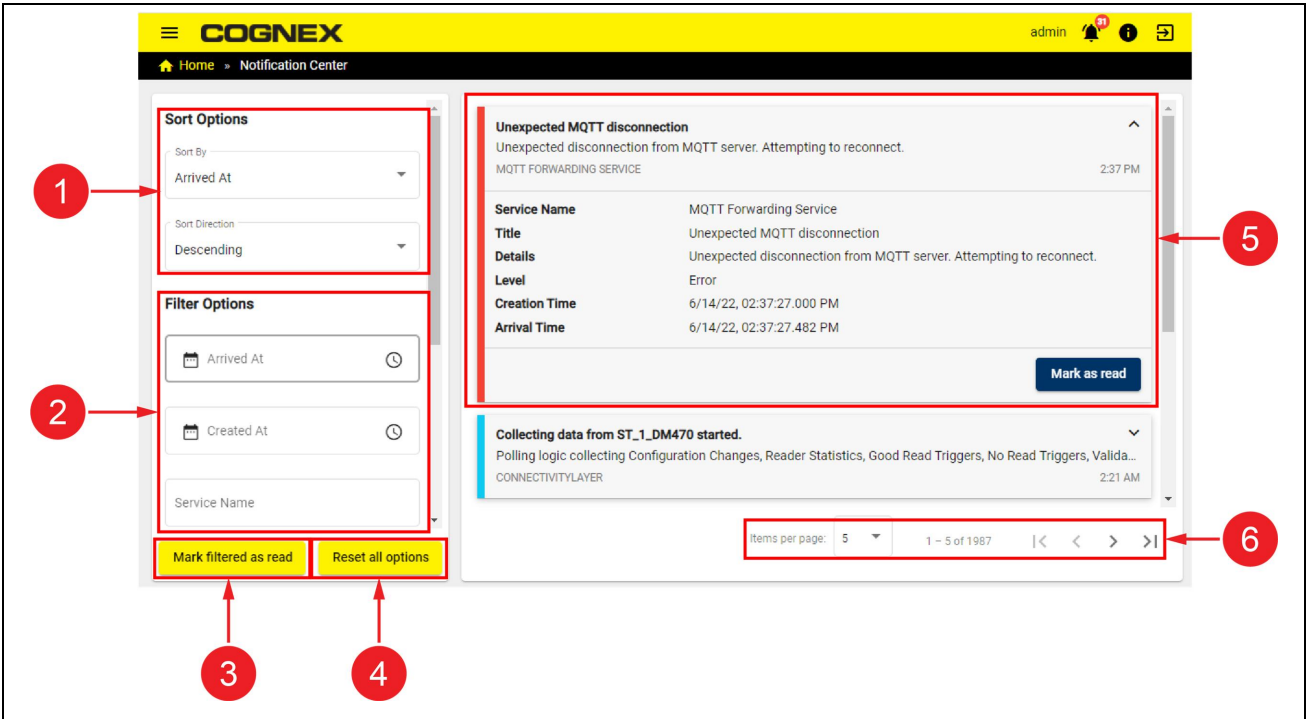
Click on the notification bell to see the latest notifications. Click on the **See All** button to land in the Notification Center where you can see all of the notifications.



The notification center provides you with the following features:

The screenshot shows the 'Notification Center' in the COGNEX interface. It features a sidebar on the left with 'Sort Options' and 'Filter Options'. The main area displays a notification for 'Unexpected MQTT disconnection' with details like Service Name, Title, Level, Creation Time, and Arrival Time. Below this is another notification about data collection starting. At the bottom, there are pagination controls showing 'Items per page: 5' and '1 - 5 of 1987'. Numbered callouts (1-6) point to specific elements: 1 points to the Sort By dropdown, 2 to the Filter Options section, 3 to the 'Mark filtered as read' button, 4 to the 'Reset all options' button, 5 to the notification details card, and 6 to the pagination controls.

Number	Element	Description
1	Sort By dropdown	Allows users to sort notifications by 'Arrived At'.
2	Filter Options section	Provides filters for 'Arrived At', 'Created At', and 'Service Name'.
3	Mark filtered as read button	Button to mark filtered notifications as read.
4	Reset all options button	Button to reset all filter and sort options.
5	Notification details card	Displays detailed information for a specific notification, including service name, title, level, creation time, and arrival time.
6	Pagination controls	Shows 'Items per page: 5' and '1 - 5 of 1987' with navigation arrows.



1

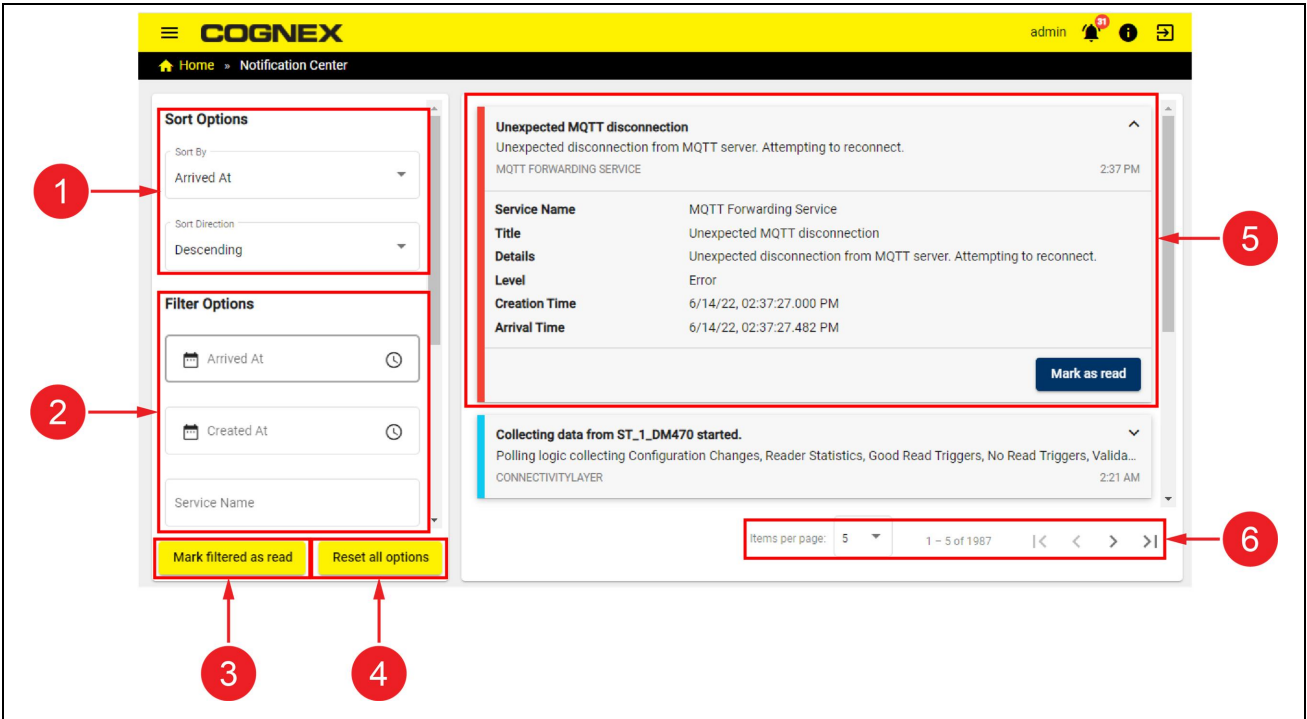
Sort Options

Click on the **Sort By** dropdown to sort your notifications according to the following options:

- **Service Name:** Sorts the notifications according to service name of the notifications.
- **Created At:** Sorts the notifications according to the date of creation.
- **Level:** Sorts the notifications according to the level of the notification (Info, Warning, Error).
- **Is Read:** Sorts the notifications according to whether the notification is read.
- **Arrived At:** Sorts the notifications according to the date of arrival.

Click on **Sort Direction** dropdown to determine the order of the notifications:

- **Ascending**
- **Descending**



2	Filter Options	<p>You can filter the notifications by using the following filter options:</p> <ul style="list-style-type: none"> • Arrived At: When the notification arrived in the Notification Center. • Created At: When the notification is created. • Service Name: Type in the Service Name of the notification. • Title: Type in the title of the notification. • Details: Type in the details of the notification. • Is Read: Filters your notifications according to the status of the notification (Read/Unread).
3	Mark filtered as read	Mark the filtered notifications as read.
4	Reset all options	Clears the selected Sort and Filter options.
5	Notification	Click on the notification to see the details. Click on the Mark as read button to mark the notification as read.

The screenshot shows the COGNEX Notification Center interface. It features a yellow header with the COGNEX logo and a user profile 'admin'. The main content area is divided into a left sidebar and a main notification pane. The sidebar contains 'Sort Options' (Sort By: Arrived At, Sort Direction: Descending) and 'Filter Options' (Arrived At, Created At, Service Name). At the bottom of the sidebar are 'Mark filtered as read' and 'Reset all options' buttons. The main pane displays a notification titled 'Unexpected MQTT disconnection' with details like Service Name, Title, Level, Creation Time, and Arrival Time, and a 'Mark as read' button. Below this is another notification about data collection. At the bottom right, there are pagination controls including 'Items per page' (set to 5), '1 - 5 of 1987', and navigation arrows. Red callouts 1 through 6 point to these specific elements.

6	Paging buttons	Click on the Items per page dropdown to choose the number of notifications showed on the screen. Click on the arrows to turn pages between the notifications.
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Notification Types

The Notification Center displays three type of notifications:

- **Info:** Updates about general processes. No action is required.
- **Warning:** Caution, your process can be halted. You have to resolve the issues in the notifications before continuing the progress.
- **Error:** Blocks your progress. You have to resolve the issues first before continuing the progress.

Notification List

Service Name	Event	Notification Level	Title	Message
ARCHIVER	Archiving process started, collecting data.	Info	Collecting data for '{existingProcess.Title}'	Archiving process '{existingProcess.Title}' (ID: {processId}) has started collecting data.
	The zipping process started.	Info	Started '{existingProcess.Title}'	Archiving process '{existingProcess.Title}' (ID: {processId}) has been started.
	The zipping process finished.	Info	Finished '{existingProcess.Title}'	Archiving process '{existingProcess.Title}' (ID: {processId}) has been finished successfully.
	Archiving process cancelled.	Info	Cancelled '{existingProcess.Title}'	Archiving process '{existingProcess.Title}' (ID: {processId}) has been cancelled.
	Failed running the archiving process.	Error	Failed '{existingProcess.Title}'	Archiving process '{existingProcess.Title}' (ID: {processId}) has failed.
	Failed cancelling the archiving process.	Error	Failed to cancel '{existingProcess.Title}'	Archiving process '{existingProcess.Title}' (ID: {processId}) has been failed to cancel.
COGNAMER	CogNamer packet initiated reboot.	Warning	Packet initiated reboot	Reboot has been initiated on the Edge Intelligence box remotely via CogNamer. Wait until it boots up before applying any new modifications.
CONNECTIVITYLAYER	ConnectivityLayer started polling data from device.	Info	Collecting data from {_device.Name} started.	Polling logic collecting {requestedEvents} from the device.
	Could not log in to device to collect data.	Error	Could not login to device {_device.Name}	Polling logic failed to login to device.
	Could not connect to device to collect data.	Error	Collection stops for device {_device.Name}	Polling logic failed to connect to or get data from the device.

Service Name	Event	Notification Level	Title	Message
FILESTORAGE	FileStorage recovered from database errors.	Info	File save restored	Saving to the database has been recovered.
	Low free space is detected.	Error	Storage manager failure	Your SSD has reached critical storage limit. Please reboot the system to try and restore storage management. Call Cognex tech support if you see this error again.
FIRMWAREUPGRADE	Firmware upgrade started.	Info	Firmware upgrade	Firmware upgrade process has been started on the Edge Intelligence box.
	Firmware upgrade finished.	Info	Firmware upgrade	Firmware upgrade process has been finished. The Edge Intelligence box is going to be restarted soon. Wait until it boots up before applying any new modifications.
NETWORKMANAGER	The availability of one of network interfaces of the box changed.	Info	Network availability changed	Network <Network Name> is available.
	After network settings have been saved.	Warning	Reboot is initiated	Network setting changes were successfully saved. The system is going to be rebooted shortly.
	When someone reboots the box from the UI.	Warning	Manually initiated reboot	A reboot has been initiated on the Edge Intelligence box. Wait until it boots up before applying any new modifications.

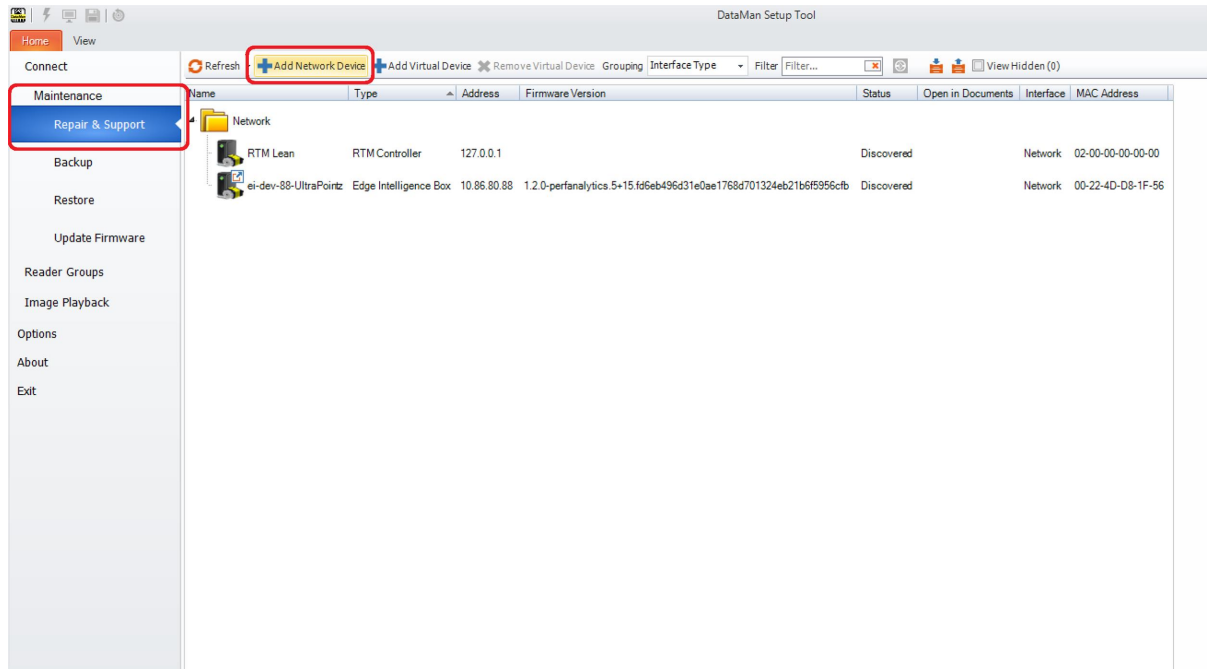
Service Name	Event	Notification Level	Title	Message
MQTTFORWARDING	On updating MQTT settings.	Info	MQTT settings updated	Applying new MQTT connection settings. Failed connections will result in an error notification.
	On successful connection to MQTT server.	Info	Connection successful	Successfully connected to MQTT server.
	On unsuccessful connection to MQTT server.	Error	Failed to connect	<ul style="list-style-type: none"> • Connection accepted. • Attempted to connect with MQTT v3.1.1 but server rejected that protocol version. • Attempted to connect with Client ID 'EI00D0COGNEX' but server rejected that ID. • Network Connection made but the MQTT server is unavailable at <IP address>:<port>. • Server rejected username and password. Check user credentials on the MQTT Forwarding page. • Client is not authorized to connect to the MQTT server at <IP address>:<port>. • Failed to connect with MQTT Return Code 6.
	On disconnection with MQTT server.	Error	Unexpected MQTT disconnection	Unexpected disconnection from MQTT server. Attempting to reconnect.
	On failure to reconnect with MQTT server.	Error	Failed to connect	The connection attempt to the MQTT server at <IP address>:<port> failed due to a connection timeout. Automatically retrying.

Software Update

Perform the Edge Intelligence software update through the DataMan Setup Tool. Make sure that you have installed the latest available version of the DataMan Setup Tool.

1. Make sure that the DataMan Setup Tool identifies the Edge Intelligence system as an accessible network device. If the DataMan Setup Tool has not yet identified the Edge Intelligence system, navigate to the **Maintenance: Repair and Support** menu and click **Add Network Device**.

Note: If the DataMan Setup Tool already recognizes and lists the Edge Intelligence system as an accessible device, skip **Step 1** and **Step 2**.



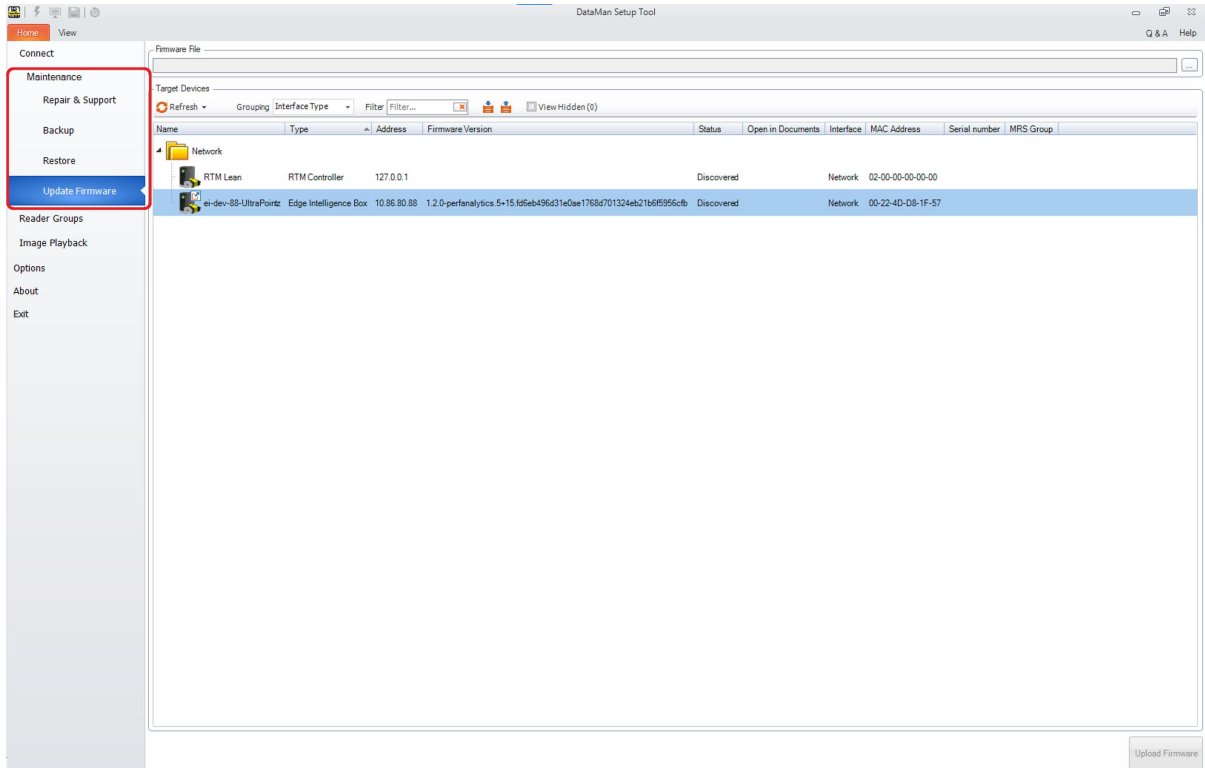
2. Specify the Edge Intelligence system by entering the IP address then click **OK**.

Add Network Device

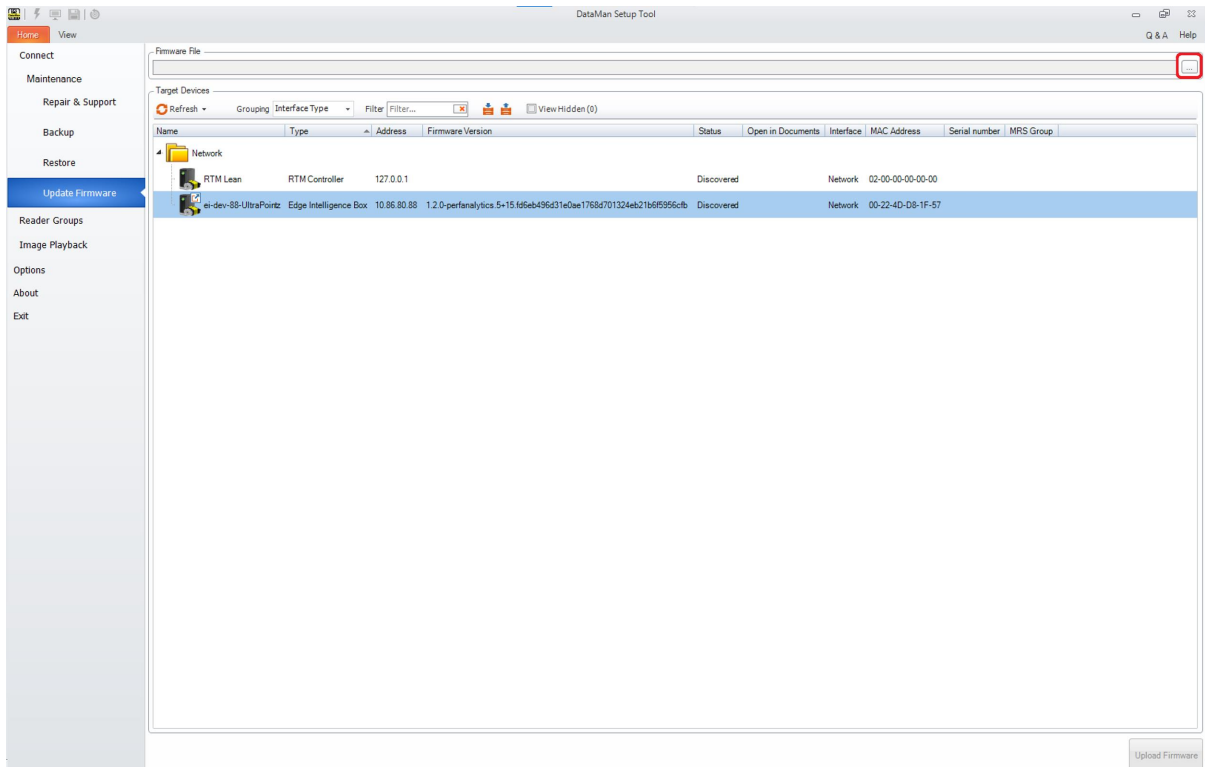
IP Address:

Note: Click the **Pen Symbol** to enable pasting a copied address. Clicking the **Pen Symbol** alternates between an automatically segmented and a manually segmented address format.

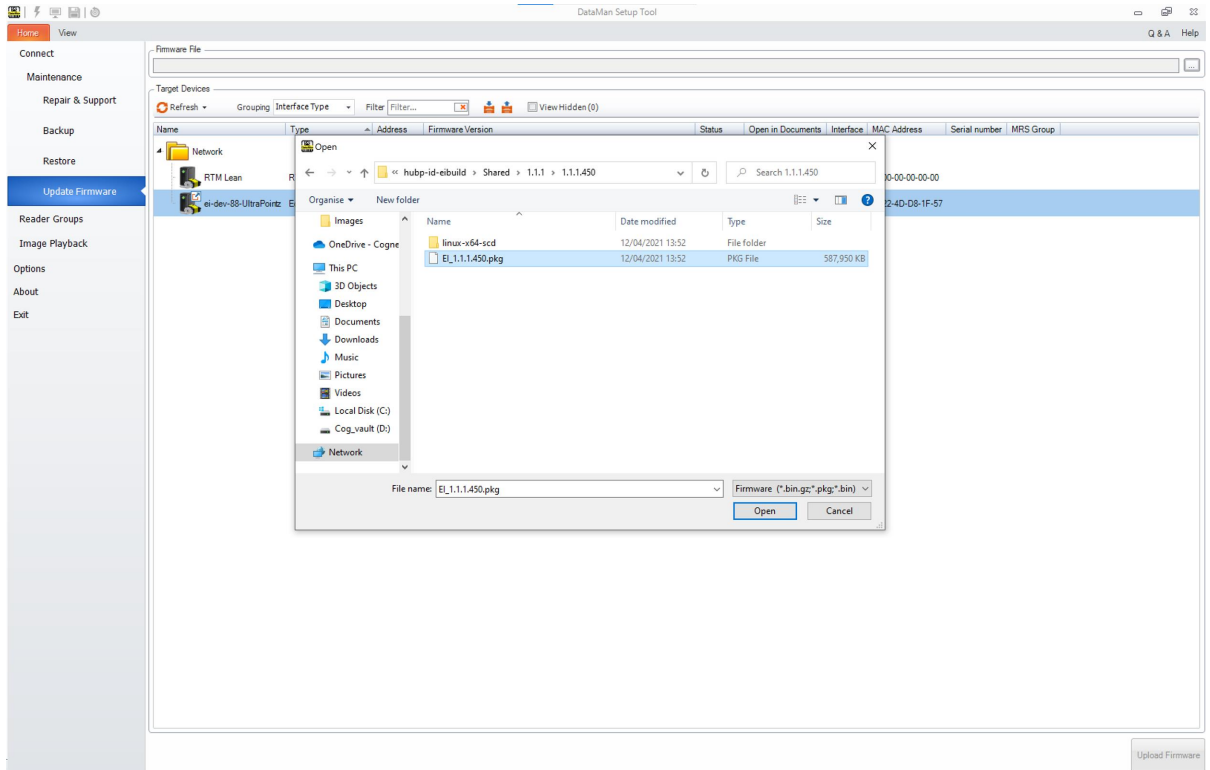
3. Navigate to the **Maintenance: Update Firmware** menu.



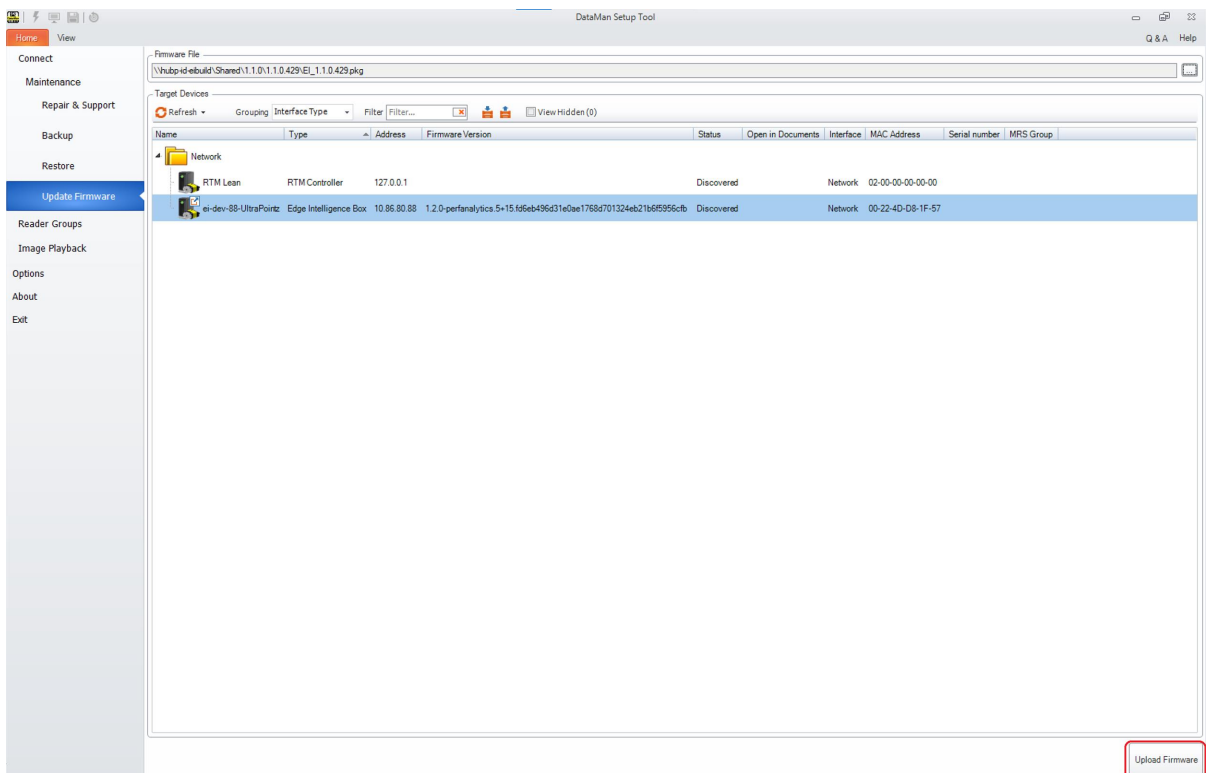
4. Select your Edge Intelligence device and browse the appropriate **.pkg** file from the Cognex network or local directories by clicking the ellipsis icon.



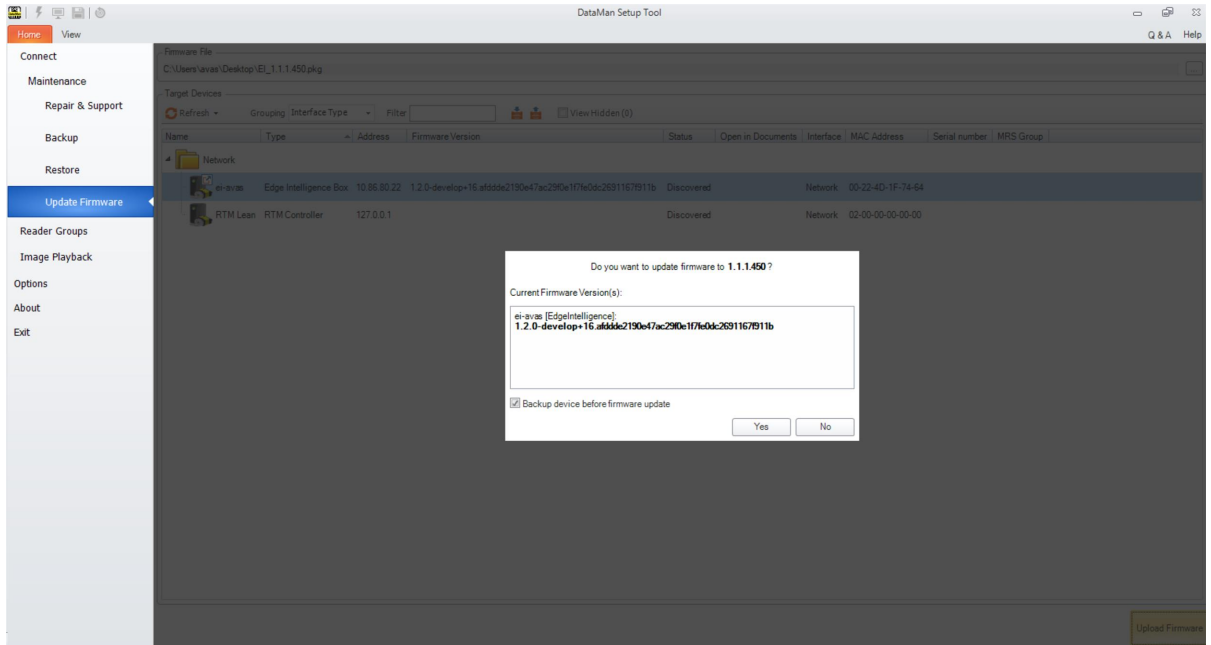
5. Select the **.pkg** file and click **Open**.



6. Click the **Upload Firmware** button.

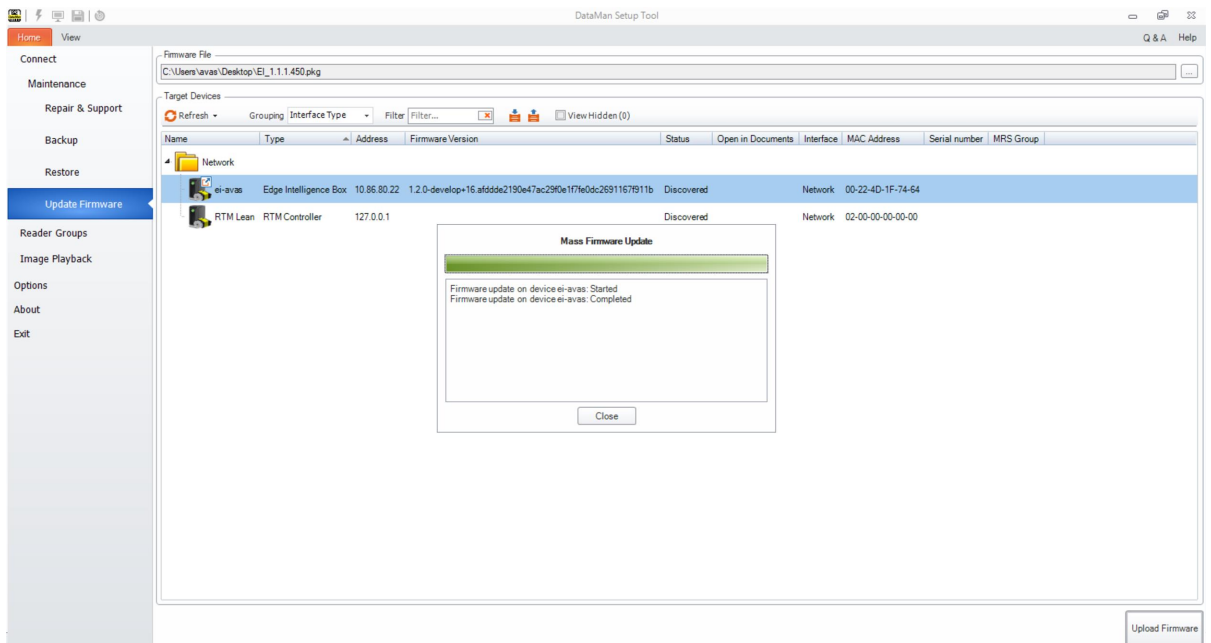


7. Confirm the firmware update by clicking **Yes**.



Note: Creating a backup by selecting the checkbox is optional.

8. Wait until the update procedure is complete then click **Close**.



Edge Intelligence Specifications


Specification category	EI-200	EI-300	EI-700
Weight	453 g (15.98 oz)	1360 g (47.97 oz)	5851 g (206.38 oz)
Housing	Fanless cast aluminum, steel	Fanless aluminum extrusion, steel	Fanless aluminum extrusion, steel
Power Input	12 VDC input jack	9~36 VDC 3-pin terminal block	9~48 VDC 5-pin terminal block
Power Consumption	9.2 W	19.04 W	80.64 W
Operating Temperature	0-40°C (32-104°F)	-25-70°C (-11-158°F)	-40-70°C (-40-158°F)
Storage Temperature	0-60°C (32-140°F)	-40-85°C (-40-185°F)	
Environmental Protection	IP50		
Image Storage ¹	Up to 1 million images	Up to 4 million images	Up to 8 million images
Image Storage ²	Up to 244 data days	Up to 487 data days	Up to 487 data days


¹ Assuming no-read images are saved at full resolution (3 megapixels) in JPEG format.

² With full resolution JPEG no-read images from all readers, on a system running 24/7 with 1 trigger per second at a performance of 99% read rate.

Cleaning and Maintenance

To clean the outside of the chassis, use a dry cleaning cloth.

 **CAUTION:** Do not clean Edge Intelligence products with liquids.

 **CAUTION:** Do not attempt to clean any Edge Intelligence product with harsh or corrosive solvents, including lye, methyl ethyl ketone (MEK) or gasoline.

Regulations/Conformity

Note: For the most current CE declaration and regulatory and conformity information see OnLogic support site: onlogic.com/support.

Safety and Regulatory			
Variants	EI-200	EI-300	EI-700
Certifications	2002/96/EC (WEEE Directive) 2011/65/EU (RoHS 2 Directive) Additional Safety and EMC certifications pending CB scheme CE EN 55024 EN 55032 EN 62368-1 FCC 47 CFR Part 15 IEC 62368-1 UL Listed	UL Listed configurations available CB Scheme FCC 47 CFR Part 15 Low-Voltage (2014/35/EU) Electromagnetic Compatibility (2014/30/EU) Radio Equipment (2014/53/EU) - Only applicable for configurations with wireless transmitters EN 55032 EN 55035 RoHS 3 (2015/863/EU) WEEE Directive (2012/19/EU) Power Immunity According to E-Mark 7637-2 & 16750-2 EN 50121 EN 62368-1 IEC 62368-1 UL 62368-1	FCC 47 CFR Part 15 Low-Voltage (2014/35/EU) Electromagnetic Compatibility (2014/30/EU) Radio Equipment (2014/53/EU) - Only applicable for configurations with wireless transmitters EN 55032 EN 55035 RoHS 3 (2015/863/EU) WEEE Directive (2012/19/EU) Power Immunity According to E-Mark 7637-2 & 16750-2 EN 50121 Additional Safety and EMC certifications pending. Some certifications configuration dependent.
Manufacturer	USA: OnLogic 35 Thompson Street South Burlington, VT 05403 USA Europe: OnLogic De Boedingen 39 4906 BA Oosterhout The Netherlands		

Open Source Licences

The table below shows the open source licences used by Edge Intelligence:

angular-resize-event	MIT
angular2-moment	MIT
core-js	MIT
dateformat	MIT
daterangepicker	MIT
fullscreen	MIT
moment	MIT
ngx-daterangepicker-material	MIT
ngx-spinner	MIT
primeicons	MIT
rxjs	Apache-2.0
rxjs-compat	Apache-2.0
screenfull	MIT
socket.io	MIT
socket.io-client	MIT
zone.js	MIT
@amcharts/amcharts3-angular	Paid

