Enado™ Installation Guide

ENA-001-010 | ENA-MINI-010

Document Revision:	v3.0
Document Date:	August 8th 2018
Supported Firmware:	v5.0.0

IMPORTANT! Safety Information

Safety Classifications

Note:	Provides special information for installing, configuring, and operating the equipment.
⚠ IMPORTANT!	Provides special information that is critical to installing, configuring, and operating the equipment.
⚠ CAUTION!	Provides special information on avoiding situations that may cause damage to equipment.
⚠ WARNING!	Provides special information on avoiding situations that may cause physical danger to the installer, end user, etc.
⚡ ELECTRIC SHOCK!	The source power poses an electric shock hazard that has the potential to cause serious injury to installers and end users.
⚡ ELECTRICAL DISCONNECT:	The source power outlet and power supply input power sockets should be easily accessible to disconnect power in the event of an electrical hazard or malfunction.
⚠ WEIGHT INJURY!	Installing some of the equipment requires two installers to ensure safe handling during installation. Failure to use two installers may result in injury.

Safety Statements

1. Read these instructions in their entirety and retain a copy for later reference.

2. Follow all instructions and heed all warnings.

3. Do not expose this apparatus to rain, moisture, sprays, drips or splashes and ensure that no objects containing liquids are placed on the apparatus, including cups, glasses and vases.

4. Do not place this unit in a confined space such as enclosed shelving, cabinets or bookshelves. Ensure the unit is adequately ventilated.

5. To prevent the risk of electric shock or fire hazard due to overheating, do not cover the unit or obstruct ventilation openings with material, newspaper, cardboard or anything that may restrict airflow into the unit.

6. Do not install near external heat sources such as radiators, heat registers, boilers or any device that produces heat such as amplifiers or computers and do not place near sources of naked flame.

7. Unplug apparatus from power supply during lightning storms or when unused for long periods of time.

8. Protect the power cable from being walked on, pinched or restricted in any way, especially at plug connections.

9. Only use attachments/accessories specified by the manufacturer.

10. Units contain non-serviceable parts - Refer all servicing to qualified service personnel.

⚠ IMPORTANT!
Do Not Hot swap connections - Please insert and extract cables carefully with the power SWITCHED OFF. Power is passed along transmissions so connecting and disconnecting cables while powered can result in damage to circuitry or possible injury.

Contents

1 Introduction

This Installation Guide outlines the process of installing and configuring a WyreStorm ENA-001-010 or ENA-MINI-010 controller.

We recommend printing this page to use as a checklist for items required to install this WyreStorm product.

💡 WyreStorm recommends reading through this document in its entirety to become familiar with the product's features prior to starting the installation process.

Before Beginning

WyreStorm recommends visiting the product page before installing this product for updates to this Installation Guide as well as other information about this product.

Read through this document in its entirety. ☐

ENA-001-010 or ENA-MINI-010 ☐

Required cables and connectors to connect sources and displays. ☐
See Installation for details on connector types and wiring guidelines.

A/V equipment to be controlled in the system. ☐

Ethernet network components and network usernames and passwords (if applicable). ☐

PC or Mac with a compatible web browser. ☐
Google Chrome, Mozilla Firefox and Apple Safari are recommended.

2 Product Overview

WyreStorm Enado redefines integrators' ability to control AV distribution systems by combining powerful hardware and intuitive, cross-platform software to create an end-to-end AV distribution and control system that is always on, updated and accessible.

The Enado Controller offers exceptional performance and capability within one compact unit, designed to offer high levels of functionality the Enado Controller utilizes a unique software platform that scales to the highest level.

The system can be programmed via a simple but advanced web browser application and is designed to offer maximum control flexibility eliminating the requirement for proprietary applications. The powerful software can run on any client device that offers a compatible web interface making the controller ideal for both professional and residential control.

For further information on this product and other WyreStorm ranges, visit our website or download our latest product guide at wyrestorm.com

In the Box

1x   ENA-001-010 or ENA-MINI-010 controller

1x   Printed Installation Guide (this document). Full manual also available for download at WyreStorm.com

8x   CAB-IR-LINK cables (ENA-001-010 only)

4x   RS-232 male to female DB9 cables (ENA-001-010 only)

1x   Ethernet patch cable

2x   Rack Ears (ENA-001-010 only)

1x   100-240v AC power cables (AUS, UK, US, EU form factors, ENA-001-010 only)

1x   5v 2A power supply (ENA-MINI-010 only)

ENA-001-010 Front and Rear Panel

Front Panel
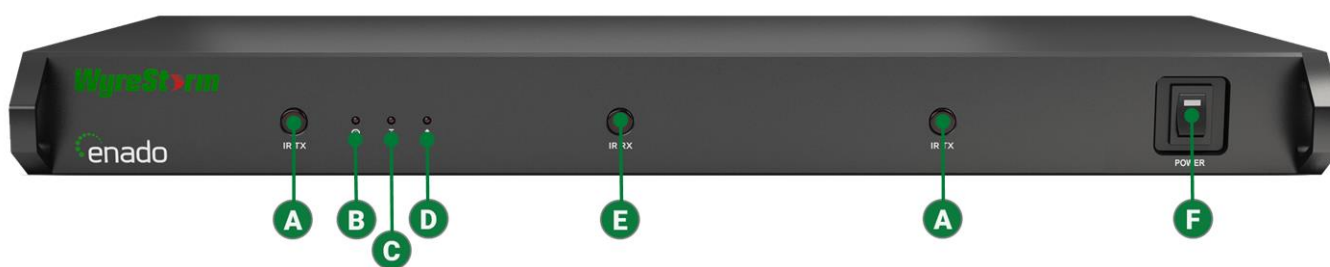
A	IR TX Blasters	Currently not used
B	Power LED	Solid: Enado is powered on
C	Transmission LED	Flashes: Data is sent from Enado
D	Warning LED	Solid: Enado is not functioning properly
E	IR RX Learning Port	Can be used to learn IR commands from an IR remote.
F	Power Switch	Turns the Enado on or off

Rear Panel

A	Ground Terminal	Can be used to ground the chassis
B	AC Power Plug	Connects to a 100-240V AC 50/60Hz AC mains outlet
C	8 Port Ethernet Switch	10/100Mbps unmanaged network switch. Connects to a LAN with a DHCP server for Enado to acquire an IP address
D	IR RX Learning Port	Can be used with an IR RX cable for IR learning. Performs same function as front panel IR RX
E	IR TX Ports	Are used with IR TX cables or CAB-IR-LINK integration cables to send IR commands to devices
F	RS-232 Ports	Are used to send serial commands to devices
G	Sensor I/O	Are used to triggered open or closed circuits. Requires 12volt input
H	USB 2.0 Port	Can be used for an EasySync USB to RS485 adapter.

ENA-MINI-010 Front and Rear Panel

Front Panel

A	Power LED	Solid: Enado is powered on.
B	Active LED	Flashing: Enado is functioning properly.
C	Blank Insert	Can be used with a card insert to identify information such as an IP address.

Rear Panel

|		
A	LAN Port	10/100 Mbps Ethernet port. Connects to a LAN with a DHCP server for Enado to acquire an IP address.
B	RS-232 Service Port	For WyreStorm use only.
C	Power Supply Adapter	Connects to a 5v 2A power supply.

Typical Application

A typical application for this product contains the following components. While other items can be added to the configuration, the items listed below are the devices typically found in the average installation of this product.

- ENA-001-010
- Cable/Satellite Box(es) & Bluray player(s)
- Network router/switch
- WyreStorm MX-0404-HDBT-H2-KIT with POH receivers

Basic Wiring Diagram
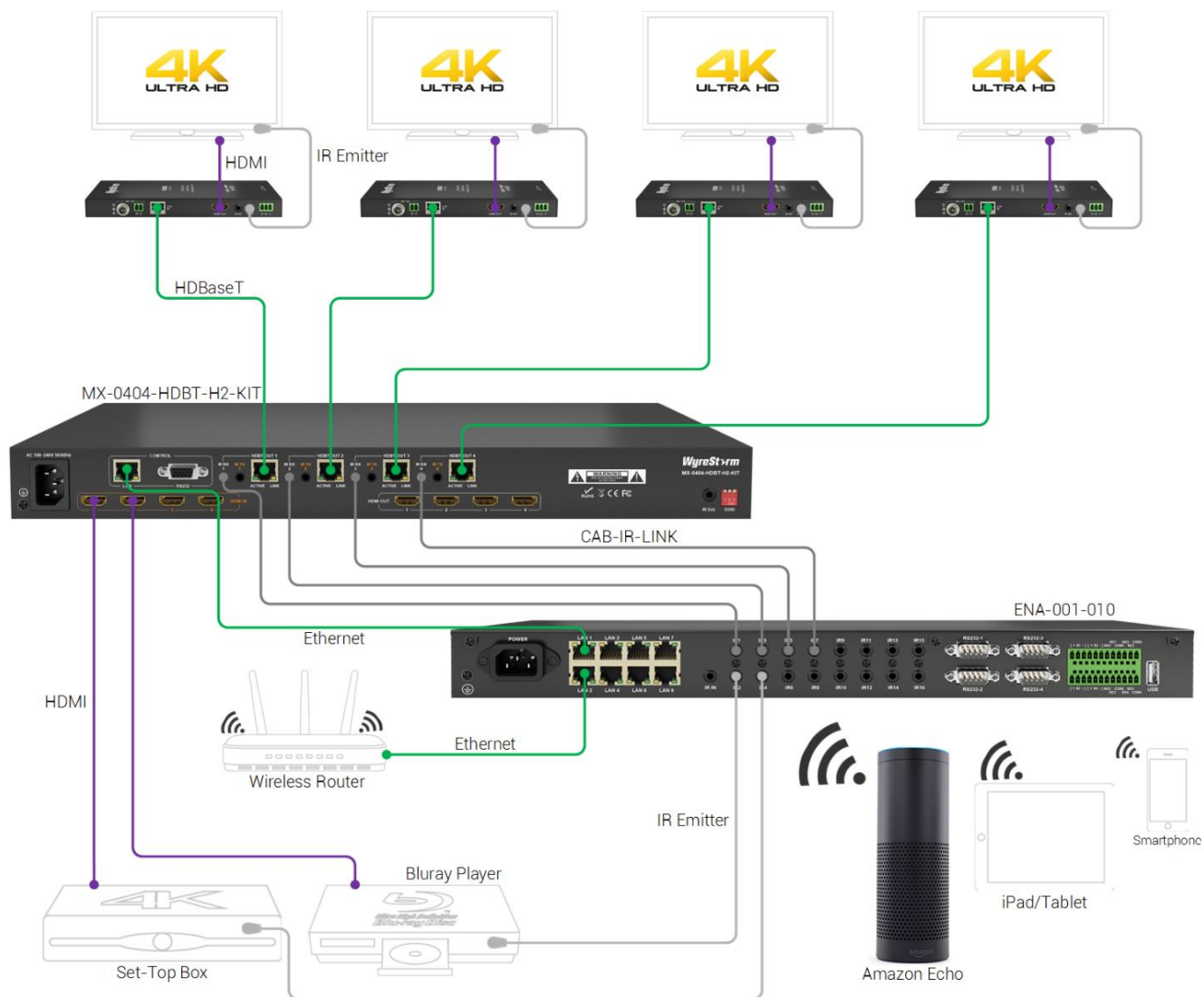
ENA-MINI-010 with Global Cache Adapter
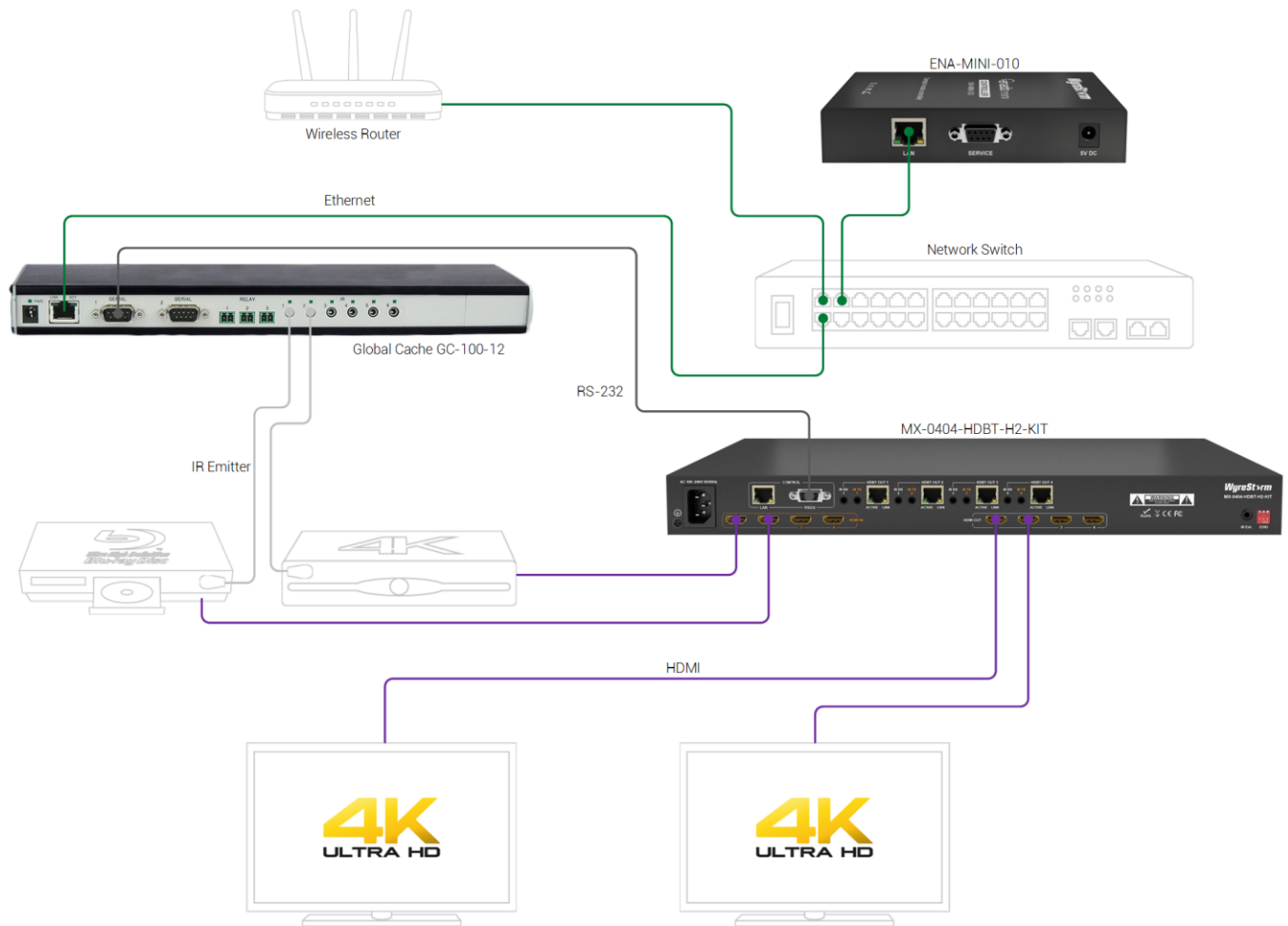
3 Installation

Shelf Placement

This product should be installed on a solid, flat, level surface such as a table, cabinet or shelf using the four included feet. The location should be dry, well ventilated, and out of direct sunlight.

It is acceptable to stack multiple products one atop of the other without a ventilation space between the units. However, WyreStorm recommends that if using more than two or more of this product, an empty space at least 1 rack unit (1.75 in) in height is used between every 2 chassis. This will assist in heat dissipation and prevent thermal protection from activating due to overheating.

Rack Placement

Rack ears (mounting brackets) are included with this product for installation in a standard 19-inch equipment rack. When installing in a rack, the attached feet located on the bottom of the chassis must be removed.

Wiring and Connections

WyreStorm recommends that all wiring for the installation is run and terminated prior to making connections to the switcher. Read through this section in it's entirety before running or terminating the wires to ensure proper operation and to avoid damaging equipment.
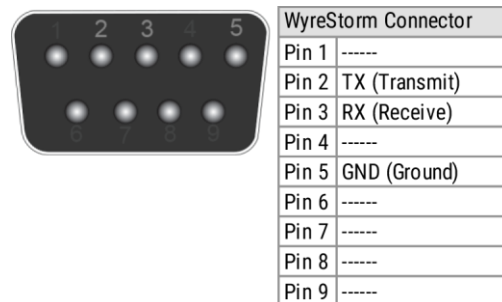
Network Wiring Guidelines

- The use of patch panels, wall plates, cable extenders, kinks in cables, and electrical or environmental interference will have an adverse effect on signal transmission which may limit performance. Steps should be taken to minimize or remove these factors completely during installation for best results.

Pin 1   Pin 8

Pin 1:	White/Orange	Pin 5:	White/Blue
Pin 2:	Orange	Pin 6:	Green
Pin 3:	White/Green	Pin 7:	White/Brown
Pin 4:	Blue	Pin 8:	Brown

Wire colors shown follow EIA/TIA-568B standard.

RS-232 Wiring

Different devices have different requirements for the RS-232 cables they use and the cables supplied with the Enado controller may not be appropriate for the selected device. Check the manufacturer's specification to ensure the cable meets the requirements for the device. The most common configuration of a cable is null-modem or cross over as is supplied with Enado.

WyreStorm Connector	
Pin 1	------
Pin 2	TX (Transmit)
Pin 3	RX (Receive)
Pin 4	------
Pin 5	GND (Ground)
Pin 6	------
Pin 7	------
Pin 8	------
Pin 9	------

IR TX/RX Guidelines

Using WyreStorm infrared emitters and receivers is the best way to ensure that most IR coding formats are transmitted and received Other 3rd party emitters and receivers can be used; however, these devices must operate in the same manner as the WyreStorm devices.

Due to differences in IR across 3rd party control systems their IR ports should never be connected directly to a WyreStorm system as an incompatibility may exist. WyreStorm offers a cable that compensates for voltage differences as well adjusts for differences in the pins used within the port. Refer to the CAB-IR-LINK product page for more information.

IR TX Port Pinout

Connection for IR TX (transmit) uses a 3.5mm (1/8in) mono plug.

Tip: Anode
Sleeve: Cathode (IR Signal)

IR RX Port Pinout

Connection for IR RX (receive) uses a 3.5mm (1/8in) stereo jack that outputs +5V DC to power the included IR receiver.

Tip: +5V DC
Ring: IR Signal
Sleeve: Ground (GND)

4 Configuration

This section provides the steps to configure this product for proper operation, please read through the entire section before powering on the product for the first time.

Connection Steps

- LAN connection to the Enado controller from a DHCP server
- LAN connection to applicable equipment
- IR Emitters or CAB-IR-LINK cables to applicable equipment
- RS-232 DB9 to applicable equipment
- Relay/Sensor connections to applicable equipment

Please note: IR, RS-232 and Relay connections are only natively possible on the ENA-001-010. These control methods can be added to the ENA-MINI-010 via supported Global Caché adapters. This process is explained Adding a Global Cache Adapter.

Locating Enado on the Network

Both the ENA-001-010 and the ENA-MINI-010 by default are set to DHCP. The quickest way to locate Enado's DHCP address is to use the Enado Discover Tool located within the WyreStorm Management Suite. Alternatively, a generic network scanning software can be used to locate Enado.

Download the Management Suite here.

- Follow the on-screen prompts to install the Management Suite onto your PC
- Open the WMS and launch the Enado Discover Tool
- Press the Scan Button and allow the software to search the network for the Enado
- Once the Enado has been found select it from the list and click the 'Launch In Browser' button

UK: +44 (0) 1793 230 343 | ROW: 844.280.WYRE (9973)
Email: support@wyrestorm.com
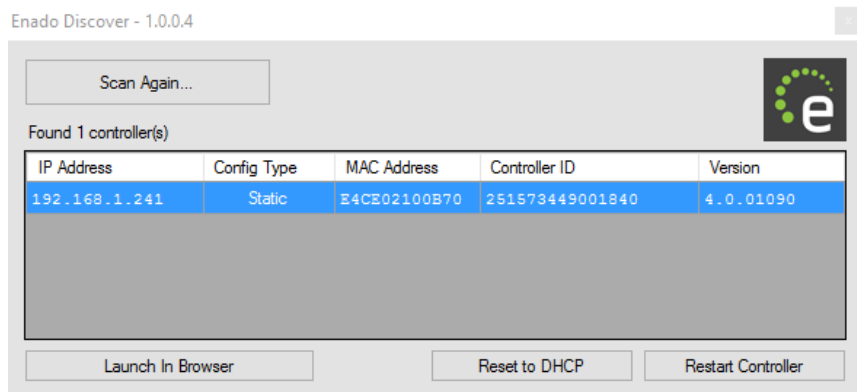
5 Product Operation

Accessing the User Interface

|	
Configuration User Interface	Interface in which a project is created and edited. Provides full access to all settings within Enado. **URL**: <Enado_IP_Address>/enado/edit
Control User Interface	Interface in which an end-user has access. No editing or settings are available. **URL**: <Enado_IP_Address>/enado

An Enado with no published project will prompt with the below message. Click the "Configuration Editor" link to start a project.
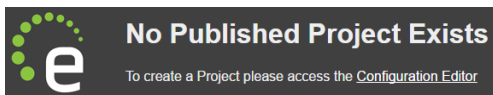
Updating Firmware

Before creating and editing a project check to ensure the Enado is running the latest firmware release. To do this perform the following steps.

1. Navigate to the **Application menu** and select **Update Manager**
2. If a firmware update appears, click the Install button
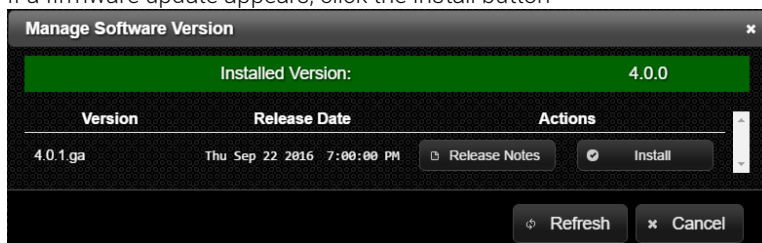
3. Allow the Enado to perform the update.

Please note: The Enado will need to have an Internet connection in order to search for a firmware update.

Setting a Static IP

Following the below steps to set a static IP address to Enado:

1. Navigate to the **Tools menu** and select **Network Settings**
2. Click Static as the Configuration Type
3. Enter in an IP address, subnet mask, gateway, and DNS
4. Click Apply Network Settings and allow the Enado to reboot
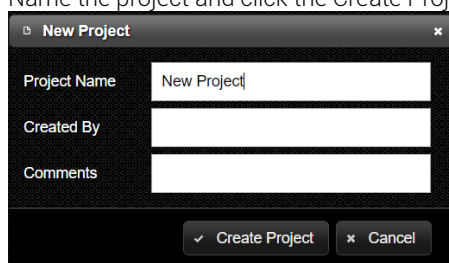5. When the reboot counter has finished, enter in the new IP address into your browser.
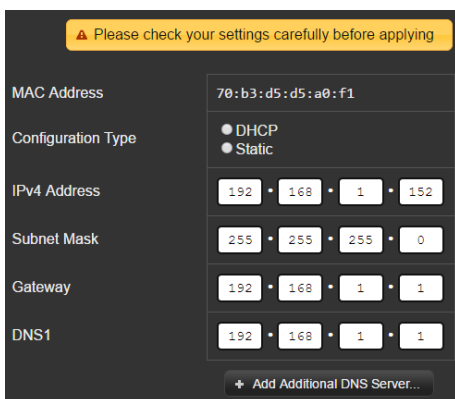
Creating Your First Project

Getting Started Guide

The Getting Started Guide is a great place to start an initial project. It provides step-by-step guidance and all the resources you need to understand how to navigate the user interface.
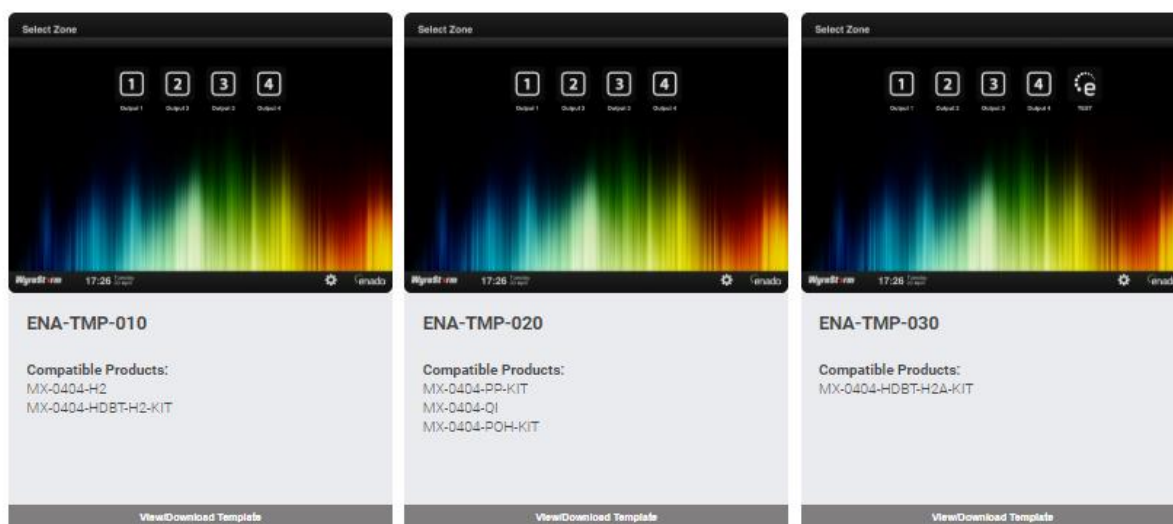
Custom Project

1. Navigate to the **Project menu** and select **New**.
2. Name the project and click the Create Project button.

Downloading Pre-Configured Projects

Pre-configured project can be downloaded and imported into Enado. Pre-configured project files are available for a number of WyreStorm devices, such as matrices, presentation switcher and NetworkHD.
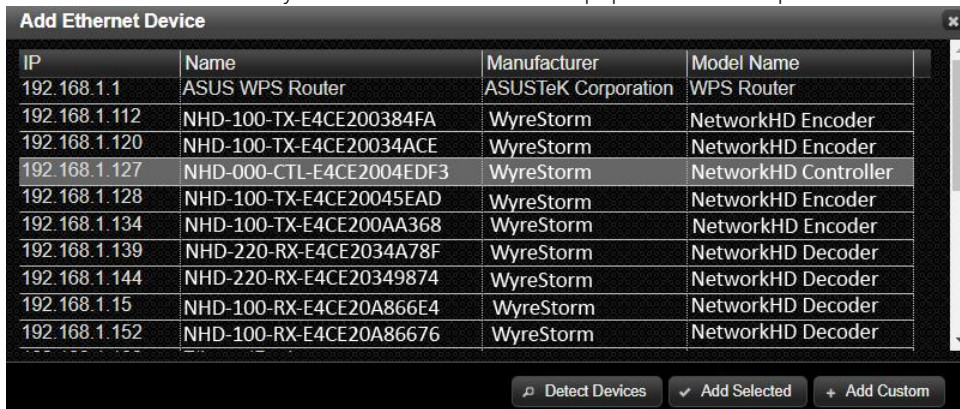
View available project files here.

ENA-TMP-010

Compatible Products:
MX-0404-H2
MX-0404-HDBT-H2-KIT

ENA-TMP-020

Compatible Products:
MX-0404-PP-KIT
MX-0404-QI
MX-0404-POH-KIT

ENA-TMP-030

Compatible Products:
MX-0404-HDBT-H2A-KIT

Configuring Control (IR, IP, RS232)

Controlling an Ethernet Device

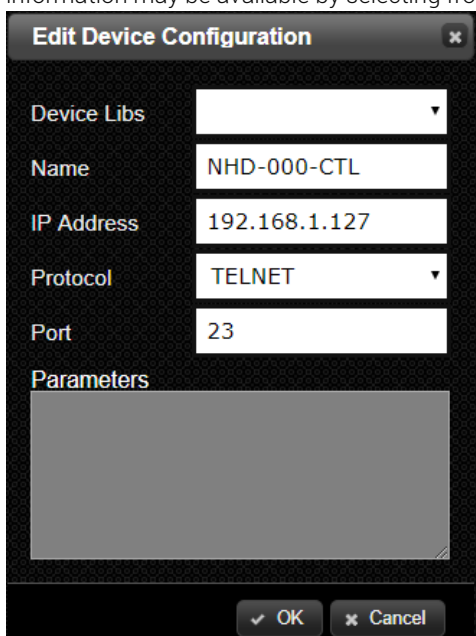There are two methods for adding and controlling Ethernet enabled devices, perform the following:

1. Navigate to the Tools Menu and select I/O Connectivity Settings
2. Select the "Add Ethernet Device" button located at the bottom right of the UI.
3. **Method #1 – Detect Devices**
   a. Press the Detect Devices button for Enado to scan the local area network.
   b. Select the Ethernet device you wish to control from the populated list and press Add Selected.

   c. When prompted provide the IP protocol and port number required from the Ethernet device. If you have previously downloaded control commands for the Ethernet Device through the Enado Command Library, protocol and port information may be available by selecting from the Device Libs drop down menu.

4. Method #2 – Manually Add a Device
   a. Press the Add Custom button
   b. A blank "Ethernet Device" will be added. Press the Edit button to adjust the Name, IP address, protocol and port number.
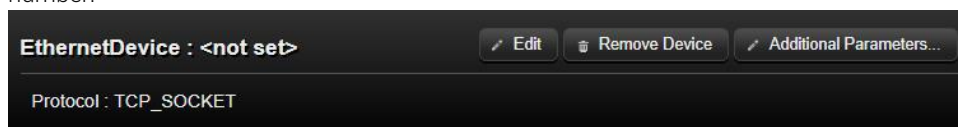
If an Ethernet device requires a login/authentication to issue commands, credentials can be added by clicking Additional Parameters on an added connection.

The available parameters to choose from are listed below:

| Login Prompt	Prompt which appears from a terminal window when attempting to login into the device. For example, a login prompt could show as < **login:** >
Username	Username required by the device. May require a line feed and carriage return to follow username. For example, < **yourusername\r\n** >
Password Prompt	Prompt which appears from a terminal window when attempting to login to the device. For example, a password prompt could show as < **password:** >
Password	Password required by the device. May require a line feed and carriage return to follow password. For example, < **yourpassword\r\n** >
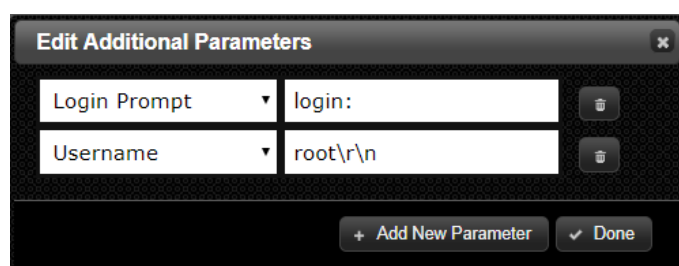
Controlling a Serial Device
1. Navigate to the Tools Menu and select I/O Connectivity Settings
2. Adjust one of the 4no. RS-232 port settings by selecting Edit (ENA-001-010 only)

From the Serial Configuration pop-up, configure the following:

- Port name (for easy identification)
- Baud Rate
- Data Bits
- Stop Bits
- Parity
- Raw Mode
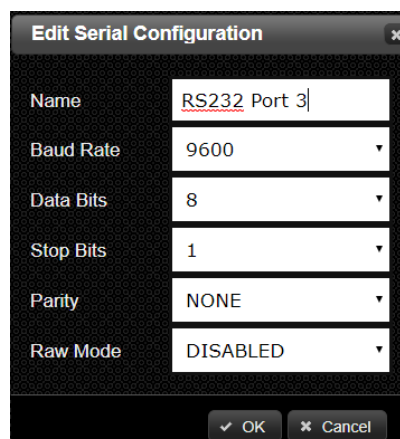
Controlling an IR Device
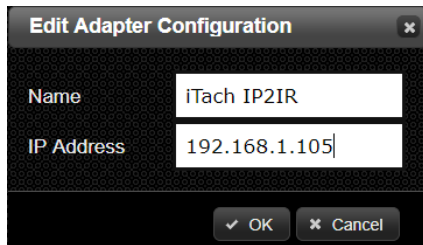IR Ports do not require any configurations, however, aliases can be assigned to the ports for easy identification.

1. Navigate to the Tools Menu and select I/O Connectivity Settings
2. Select Show Outputs button located next to IR Outputs
3. Click Edit next to the appropriate IR output (ENA-001-010 only)

Adding a Global Cache Adapter
1. Navigate to the Tools Menu and select I/O Connectivity Settings

1. Click the Add Port Adapter/Expander button
2. Select an adapter model number from the drop down menu
3. Once added, select Edit to input the adapter's IP Address.

Edit Adapter Configuration

Name	iTach IP2IR
IP Address	192.168.1.105

✔ OK   ✖ Cancel

Please note: As of Enado v5.0.0 firmware the following Global Cache devices are supported:

- GC100-6
- GC100-12
- iTach IP2IR
- iTach Flex/WiFi (3-way IR cable)

- iTach Flex/WiFi (single IR emitter)
- iTach Flex/WiFi (RS-232 cable)
- iTach IP2SL
- EasySync USB to RS485

Downloading Device Commands

Enado Command Library	Provides command sets for a large number of device including WyreStorm products. Command types vary from IR, IP or RS232
Global Cache Library	Provides access to Global Cache's database. Contains a vast database of IR only commands.

To download commands, perform the following:

1. Navigate to the **Libraries menu** and select **Active Device Commands**
2. Click the Add Device(s) button
3. From the drop down menu choose either the Enado Command Library or the Global Cache Database
4. From the second drop down menu choose a manufacturer and then device

Please note: In order for the Enado to populate the list of available command sets an Internet connection is required.

Importing Custom Commands

If a large amount of custom commands need to be imported into the Enado database, an XML file can be created and imported. The XML must be in plain text UTF-8 and can host an unlimited number of commands to expedite the process. An Excel spreadsheet can be created and used for the generation of commands.

1. Header 1 information: **<device name=" " manufacturer=" ">**.
2. Header 2 information: **<allcommands generated-by=" ">**.
3. Command string information: **<command id=" " type=" ">*DEVICE COMMAND DATA*</command>**
4. Closing brackets: **</allcommands> </device>.** These belong at the end after all device commands have been created.
5. In Enado navigate to the **Libraries menu** and select **Active Device Commands**
6. Select the Import Device button and select the XML file
7. To view the commands and to ensure they have imported correctly navigate to the **Tools menu** and select **Device Command Creator**
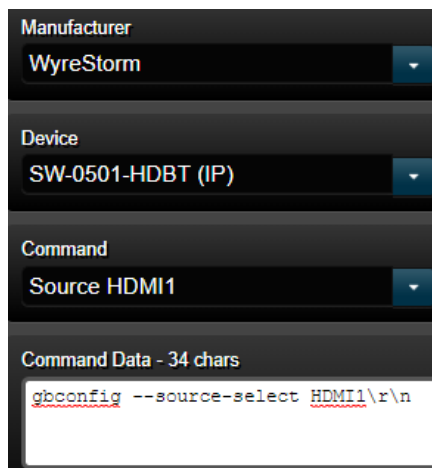
The below image shows an example XML file. Any XML created should follow the same formatting for proper import into Enado.

```xml
<device name="NetworkHD" manufacturer="WS">
<allcommands generated-by="AH">
<command id="Input1 > Outpu1" type="IP">matrix set Input1 Outpu1\r\n</command>
<command id="Input2 > Outpu2" type="IP">matrix set Input2 Outpu2\r\n</command>
<command id="Input3 > Outpu3" type="IP">matrix set Input3 Outpu3\r\n</command>
<command id="Input4 > Outpu4" type="IP">matrix set Input4 Outpu4\r\n</command>
<command id="Input5 > Outpu5" type="IP">matrix set Input5 Outpu5\r\n</command>
<command id="Input6 > Outpu6" type="IP">matrix set Input6 Outpu6\r\n</command>
<command id="Input7 > Outpu7" type="IP">matrix set Input7 Outpu7\r\n</command>
<command id="Input8 > Outpu8" type="IP">matrix set Input8 Outpu8\r\n</command>
<command id="Input9 > Outpu9" type="IP">matrix set Input9 Outpu9\r\n</command>
</allcommands>
</device>
```

Viewing and Testing Commands

The Device Command Creator is the home for accessing, editing and testing commands. This tool hosts many features including:

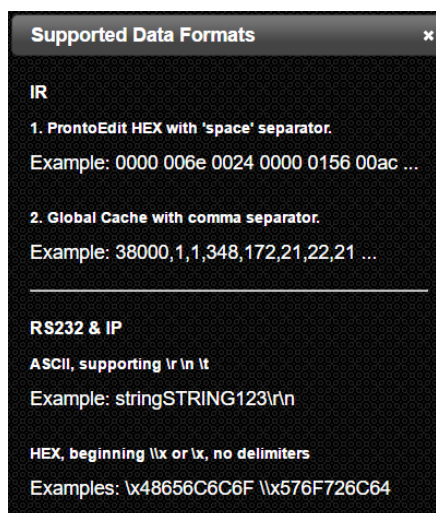**Command Data –** Choose a Manufacturer > Device > Command to view or edit a command's data.

Data Format Guide - lists the appropriate syntax for different formats of commands, including carriage return, line feed and delimiter information.
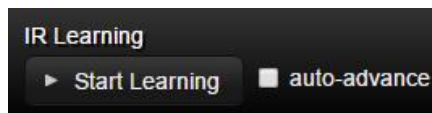
IR Learning - accomplished by clicking the Start Learning button and pointing an IR remote at either the IR RX on the front panel or by plugging an IR RX cable in to the IR IN port at the rear panel.

Please note: IR Learning is only possible on the ENA-001-010. WyreStorm cannot guarantee accuracy of learning IR commands due to varying environmental factors which can inhibit Enado's ability to receive correct data.

Testing Commands

1. Select the command to be tested by choosing Manufacturer > Device > Command
2. In the Testing section click the Set Test Outputs button and ensure that the appropriate I/O of Enado is selected
3. Click the Test Command button
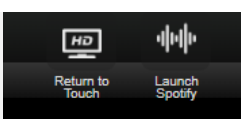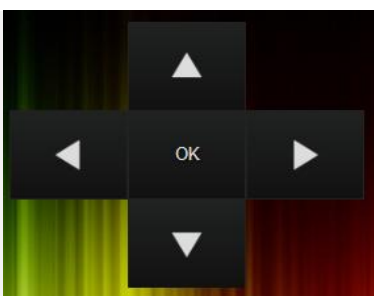
Adding Control Buttons

There are many types of buttons throughout the Enado interface. Each type of button serves a unique purpose.

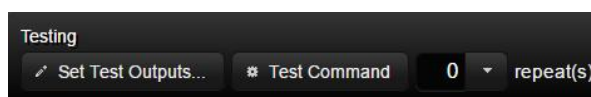|		
Zone/Room	Allow navigation into a Zone/Room for a project. Can also be used to designate an output of a matrix. Added to a page the Zone/Room page by pressing the Quick Insert plus button.	
Activity	Located within a Zone/Room. Typically, a link to an "Activity Layout". An Activity Layout links to control a source device or can double as a matrix input selection. Added to an Activity page by pressing the Quick Insert plus button.	
Shortcut	Unique per Zone/Room. Always appear at the top right of the interface. Can be programmed in the same way as an Activity button. Added to an Activity page by pressing the Quick Insert plus button.	
Global	Unique per Zone/Room. Always appear at the bottom right of the interface. Cannot be linked to an Activity Layout. Are typically used for volume or display power commands. Added to an Activity page by pressing the Quick Insert plus button.	
Control	Buttons that are located within an Activity Layout. Offer the broadest configuration options. These are typically buttons that control source devices. Added to an Activity Layout from the top menu by select **Insert>Button Group> Custom** OR **From Library**	

Editing Button Properties

To edit any type of button, simply left the button and choose Edit Properties. The properties pane offers a number of options.

Appearance Options
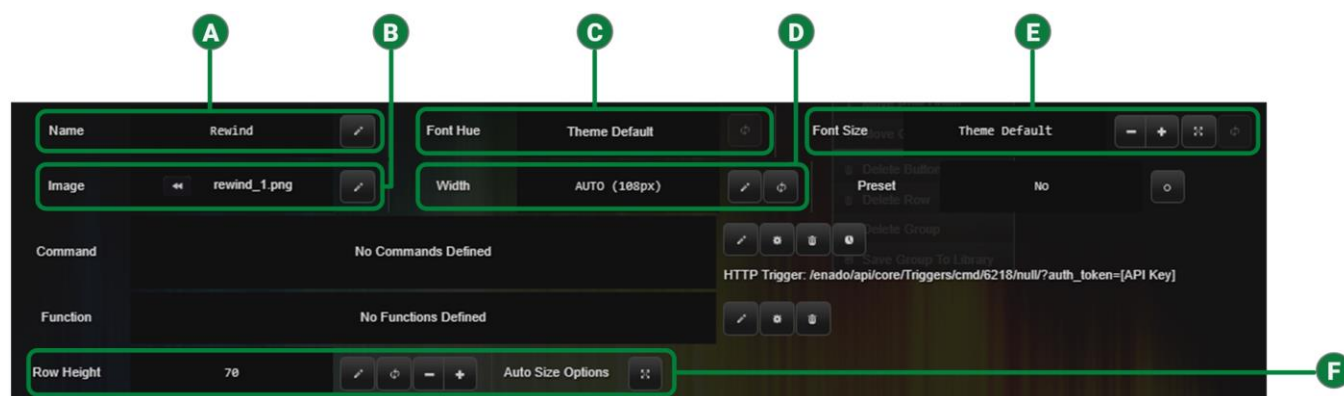
A	Changes the name of the button. Will be shown on button if no image is associated.
B	Associates an image with the button.
C	Changes the font color of the button name. Will only appear if no image is associated.
D	Changes the width of the button with the button group.
E	Changes the font size of the button name. Will only appear of no image is associated.
F	Changes the height of all buttons in a row.

Functionality Options

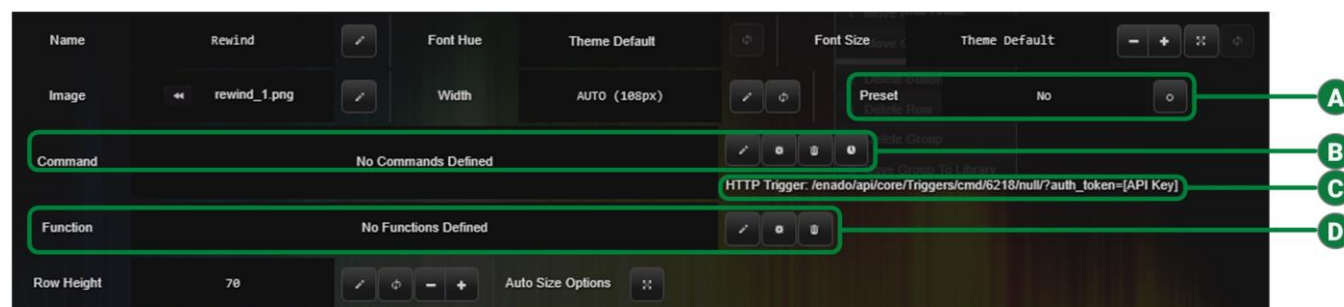|	
A	**Yes**: Allows end-user to re-program button with commands available in Activity Layout. (Typically used for cable TV channel favorites). **No**: No end-user adjustments can be made.
B	Allows a command to be assigned to the button from commands available in local Enado database.
C	Can be used to remote execute any commands that have been added to the button.
D	Allows a function to be assigned to the button. A typical function can be used to launch 3rd-party mobile apps, including NetworkHD Touch. (Launching apps is only supported on iOS and Android devices. The app must be installed on the mobile device prior in order to launch. Enado will need access to the internet in order to initially add a function).

Hide and Show Button Groups

The ability to Hide or Show specific button groups allows Activity Layouts to be designed with more creativity and functionality. This allows more control functionality without the clutter or hassle to find the right button. To create a function to Hide/Show a button group perform the following.

1. Navigate into an Activity Layout
2. Left click a button group to be hidden or shown and select Edit Group
3. Click the Reference ID field and type in a name. This is what is referenced when a button group is chosen to be hidden or shown. It cannot have any spaces.
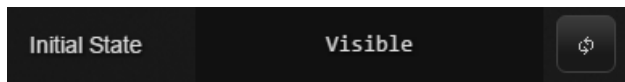
Reference ID	Nav1

4. Click the Finish Editing button
5. Select a button that will trigger the hide/show function and choose to edit its properties.
6. Select the Edit Properties pencil icon next to Function
7. Select the drop down menu from the Editing Functions pop-up and choose to hide or show an element.
8. Select the second drop down menu and choose the Reference ID that was created for a button group.

Show Element(s)

Nav1

9. Click the Add Function button and then click Done.
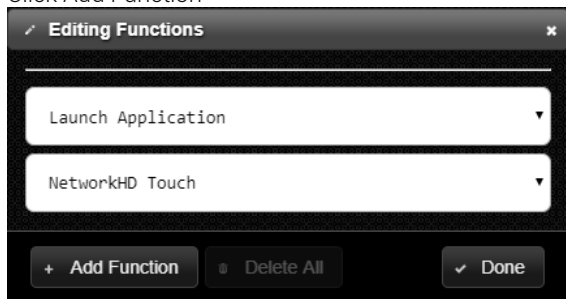
Please note: The initial state of a button group can be toggled between Visible and Hidden. By default, a button group's state will be visible.

Initial State	Visible	↻

Launching 3rd-Party Apps

3rd-Party applications installed on iOS or Android devices can be launched directly from the Enado interface. To program a button to launch an app, perform the following steps.

1. Navigate to the desired button
2. Left click and select Edit Properties
3. Click Edit (pencil icon) next to Function
4. Select Launch Application and then choose the desired app.
5. Click Add Function

Editing Functions

Launch Application

NetworkHD Touch

+ Add Function   🗑 Delete All   ✓ Done

Note: Enado must have an active internet connection in order to populate the list of apps.

Source Control (Activity Layouts)

Activity Layouts are "templates" that host Control buttons for a source device or specific actions. Activity Layouts are linked to Activity buttons in a project. There are two methods to using Activity Layouts, downloading pre-configured layouts or creating custom.

Downloading Pre-Configured Layouts

There are a number of Activity Layouts available for download at www.WyreStorm.com. To import a pre-configured Activity Layout, perform the following steps.

1. Navigate to the **Libraries menu**>**Online Libraries** or click here.
2. Select the Activity Templates link at the top of the page.
3. Download any appropriate template. Unzip the download to access the individual Activity Layout files.

Set-Top Boxes

Activity Templates for a broad list of set-top box manufacturers and models. These templates includes transport and navigation buttons alo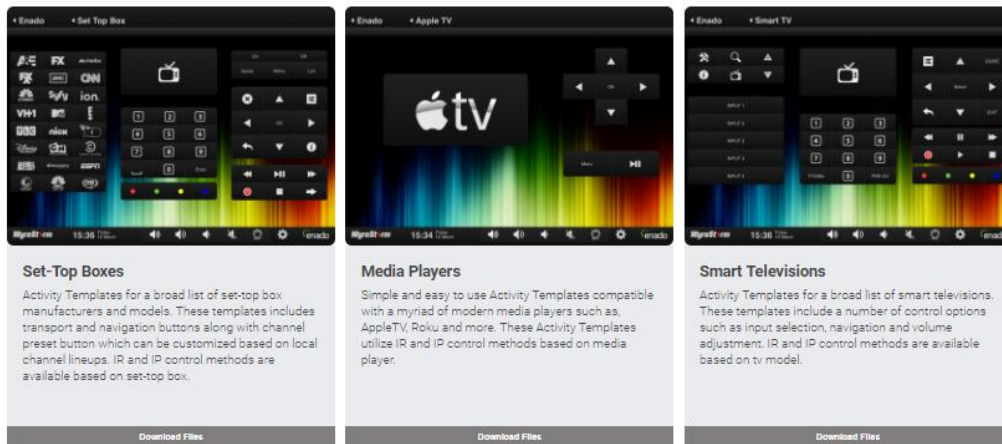ng with channel preset button which can be customized based on local channel lineups. IR and IP control methods are available based on set-top box.

Download Files

Media Players

Simple and easy to use Activity Templates compatible with a myriad of modern media players such as, AppleTV, Roku and more. These Activity Templates utilize IR and IP control methods based on media player.

Download Files

Smart Televisions

Activity Templates for a broad list of smart televisions. These templates include a number of control options such as input selection, navigation and volume adjustment. IR and IP control methods are available based on tv model.

Download Files

4. Navigate to the **Libraries menu** >**Activity Layouts**
5. Select the Import button and upload the template(s) downloaded from the Online Libraries
6. Navigate to the button you wish to link to the Activity Template.
7. Left click and choose Edit Properties
8. Select Edit (pencil icon) next to Activity Layout and select the template.

Creating Custom Activity Layouts

1. Navigate to the **Libraries menu** and select **Activity Layouts**.
2. Click the Add New Layout button
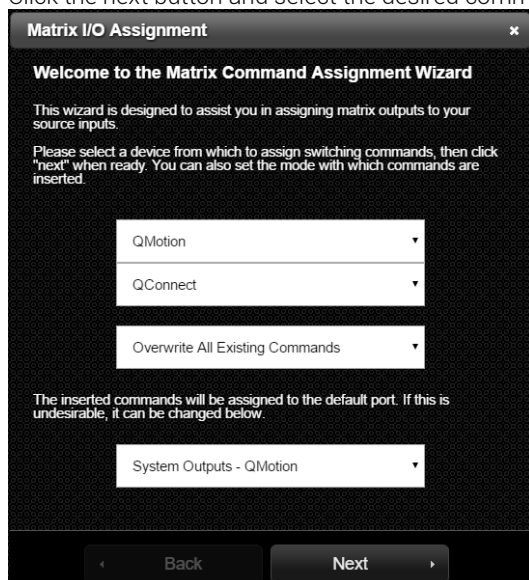3. Name the layout and then click Create & Edit

Wizards

There are a number of tools available in Enado which can simplify and decrease programming time. Each tools serves a specific purpose.

Matrix I/O Assignment

The Matrix I/O Assignment Tool allow commands to quickly be assigned to Activity buttons, whether commands are for matrix input/output switching or just creating a generic macro.

1. Navigate to the **Tools menu** >**Matrix I/O Assignment**
2. From the first drop down menu select a device manufacturer
3. From the second drop down menu select a device
4. Choose to overwrite, prepend or append any existing commands on existing Activity buttons
5. Select the desired port for the commands to utilize (configured in I/O Connectivity settings)
6. Click the next button and select the desired commands for any existing Activity buttons

Activity Port Assignment

The Activity/Port Assignment Tool allows easy programming of Activity button names, icons, linked Activity Layouts and I/O port. Access this tool by navigating to the Tools Menu>Activity/Port Assignment.

Please note: Any changes made from this tool will require a browser refresh to reflect changes.

Command Assignment Tool

The Command Assignment Tool (CAT) is used to perform bulk command assignments to buttons located in an Activity Layout. To access the CAT, navigate to the Tools Menu>Command Assignment.

The CAT will automatically list all assigned Activity Layouts for a project. Activity Layouts must be assigned to Activity Buttons in order to appear in the CAT.

1. From the drop down menus choose the appropriate Manufacturer and Device command set. If no values appear in the drop down menu, the Enado command database does not contain any commands and must be downloaded. Refer to the section: Downloading Device Control Commands.
2. Choose the appropriate Assignment Mode.
   a. **Overwrite**: will erase any existing commands associated with Activity Layout buttons and write new commands.
   b. **Append**: will keep any existing commands associated with Activity Layout buttons and will append any newly written commands.
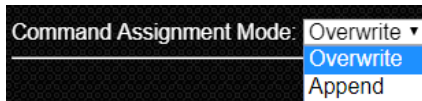
3. Press Next, to begin assigning commands. By default, Enado will attempt to automatically associate the names of buttons to the command names in the chosen library.
4. Manually select commands from the drop down menus for any remaining buttons.
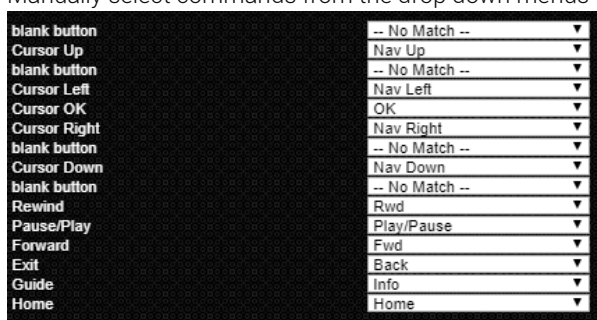
Uploading Custom Icons

Enado comes pre-loaded with a library of Room, Activity and Button icons. All of these images can be viewed by navigating to the **Libraries menu** and selecting **Images/Icons**. Initially a drop down menu will appear which lists the different icon categories. Once a category is selected the corresponding icons will appear.
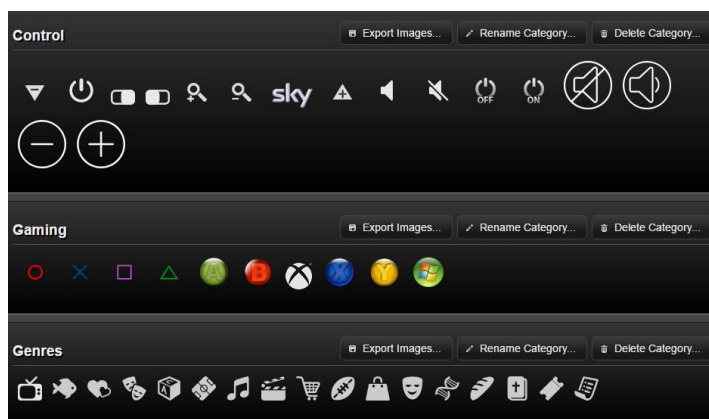
Custom icons can be uploaded in the Icon/Image library by selecting either the Upload Multiple or Single Image button. The format of any icon that is uploaded into the Icon/Image library needs to be a **PNG.**

Visual Theme

The visual theme for a project can be adjusted by navigating to the **Project menu** and selecting **Visual Theme**. To create a custom theme, perform the following steps.

1. Click the New Theme button and give it a name
2. Select Custom Hue to adjust the colors of the top and bottom menu bars
3. Select Background to upload a custom background image. This must be in a **PNG or JPEG** format
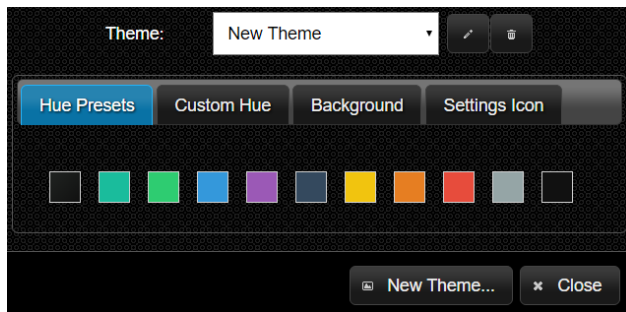
Please note: The size of this image will affect how quickly the Enado UI loads on the control device. Keep image size to a minimum.

QR Codes

QR codes can be generated directly from the Enado configuration UI for access into any Project or Room or Activity in a Project. The project QR code is available when publishing or to generate QR codes for specific rooms or activities in rooms, perform the following steps.

1. Navigate to the **Project menu** and hover over **Links/QR Codes**
2. Choose to generate either Room or Activity QR codes
3. Allow the Enado to automatically generate the QR codes
4. Download or print the codes and scan them with a mobile device

Project Summary - WyreStorm HQ

| WyreStorm US Office - Roku | WyreStorm US Office - Set Top Box | WyreStorm US Office - Bluray | WyreStorm US Office - FireTV | WyreStorm US Office - Shades |

Please note: A third party app may need to be downloaded to a mobile device in order to scan the QR code.

Remote Access

Enado can have remote access configured to allow a connection from outside its LAN. Each Enado controller generates a unique Permalink address. A Permalink address acts in the same way as DynamicDNS, if Enado's LAN IP address were to change the Permalink URL will still allow access into the controller. To setup remote access perform the following steps.

1. Navigate to the **Tools menu** and select **Remote Access Options**
2. Adjust the port number (optional)
3. Adjust the System Name (optional)
4. Generate an API Key
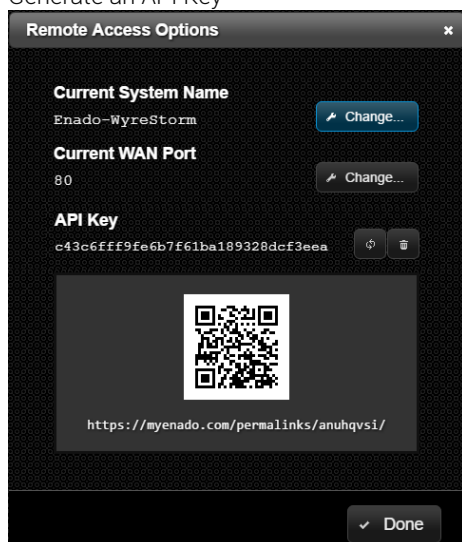
5. Navigate to the **Application menu** and select **Preferences**
6. Ensure that the Control UI settings are enabled
7. Open the live user interface and select the "Gear" icon at the bottom right
8. Click Manage System Passwords then choose Create New Password
9. Enter in the desired password and click confirm
10. Click the Enable button. A green "ON" indicator should appear

Once Enado's remote access options have been configured the network router will need port forwarding adjusted. To do this perform the following steps.

1. Login to the network router and locate the port forwarding options
2. Set the external port to the same port number configured in Enado
3. Set the internal port to port 80
4. Set the IP address to match the IP address for Enado

Controllers can also be accessed remote via the Remote Access Portal, at https://www.myenado.com/mycontroller/. Type in the controller's System Name and follow the on-screen instructions to access the controller.

For additional information or help on configuring a specific model router please visit portforward.com

Timed Commands

Timed commands can be programmed onto either existing project buttons or through the Triggered Commands tool. To make a button/macro into a timed event perform the following:

Note: Enado must be connected and maintain a connection to the internet in order to acquire local time. Configure the local time zone by navigating to the Preferences Menu and setting the time zone.

1. If not done already, add control commands to a supported button in the Enado configuration interface as normal.
2. Next to the command field from the button's "Edit Properties" pane select the "Timer" icon
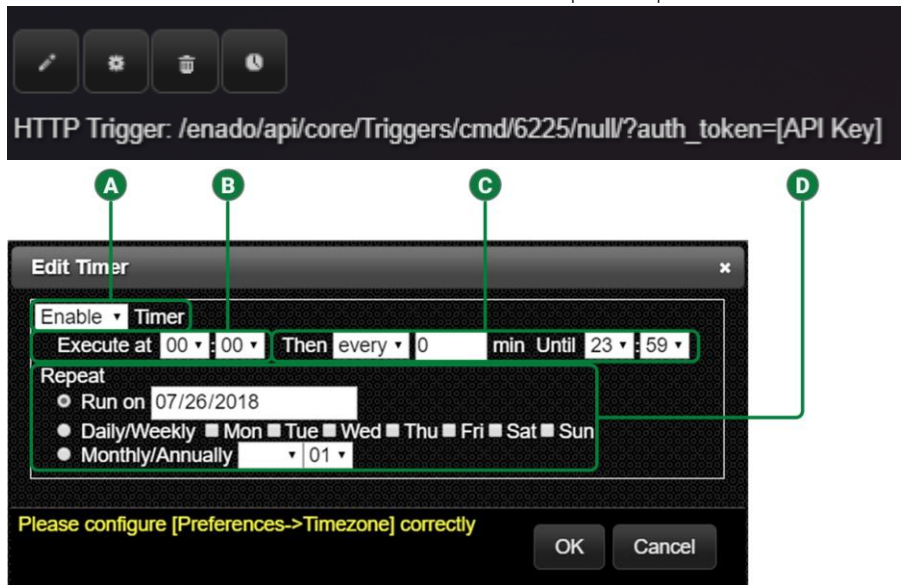
A	Timer	**Enable**: Enables the timer
		Disable: Disables the timer
B	Execute at	Specify the time of day in which to execute the command
C	Then	**End**: Timer will only execute at the specified time.
		Every: Timer will execute every X minutes until end time has been reached
D	Repeat Options	**Run on:** Timer will only execute on specified date.
		Daily/Weekly: Check respective day(s) to repeat
		Month/Annually: Set month and day to repeat

To create a separate timed command outside of existing project buttons, perform the following:

1. Navigate to the Tools Menu and select Triggered Commands
2. Select Add/Edit Commands button to add the commands you wish to have triggered.
3. Select Edit Condition button
4. To have Enado trigger the commands via the Timer options set the drop down menu to HTTP>GET>x (where x is a value 1 – 99)
5. Set the timer and repeat options respectively.

Triggered Commands

Triggered commands allow the Enado controller to execute a single or multiple commands through contact closures and by receiving an HTTP request. Triggering via HTTP requests allows the Enado to be integrated with such devices as the Amazon Echo and IFTTT.com. To configure a triggered command, perform the following steps.

1. Navigate to the **Tools menu** and select **Triggered Commands**
2. Select the Add Triggered Command button at the bottom of the page
3. Press Edit Condition and choose HTTP and GET
4. Choose a unique preset number between 1 and 99
5. Add a command(s) for the device you wish to control and adjust the port(s) accordingly

The URL to execute a triggered command uses the following format. The network WAN IP address, trigger number and API Key will need to be changed to match the settings that have been configured.

- https://<EnadoPermalink>/Enado/api/core/Triggers/<trigger **ID number>**/?auth_token=**<API Key>**

To trigger a command by using the contact closures simply choose **CONTACT-X** as the Condition. Then choose the state of the contact.

Please note: For integration with IFTTT.com remote access will need to be configured. Please see the **Integrating Enado & Amazon Echo Application Note,** or the online user manual on the Help menu, for a detailed procedure on how to accomplish the integration.

Adding a Video Preview

Enado has the ability to enable video feedback using a compatible encoded web stream. These web streams must support Motion JPEG snapshots (MJPEG or MJPG). Many CCTV DVR & IP cameras natively support this format. Please check with the manufacturer to ensure a system is compatible with this format.

Video sources with composite video outputs can be converted to IP streams using Axis video encoders. For information on how to add a web stream from an Axis encoder please review the **Enado Video Integration Guide Application Note** or visit the online user manual via the Help menu.

To add a web stream from a CCTV DVR or IP camera please refer to the manufacturer's documentation to acquire the appropriate URL required for feedback in Enado. Once the appropriate URL is acquired perform the following steps in Enado.

1. Navigate to the **Tools menu** and select **Video Source Settings**
2. Select Custom Path from the drop down menu
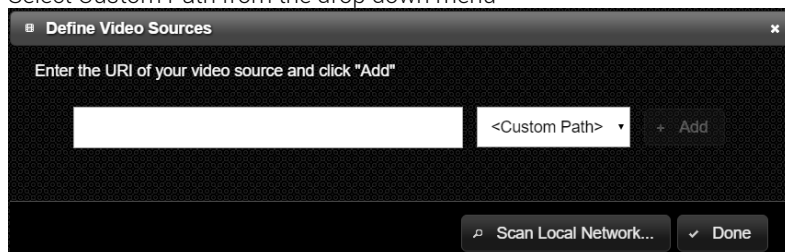
3. Enter in the URL for the CCTV or IP camera and click the Add button
4. Navigate into an Activity Layout
5. Navigate to the **Insert menu** and select **Video Element**
6. Left click on the imported video element and choose Edit Properties
7. Select the Pencil icon (Edit properties) next to Video Source
8. Select the custom path video URL and click OK
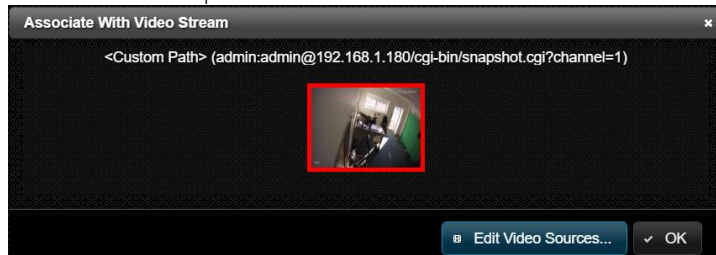
9. Publish the project for the video element to show in the Live UI
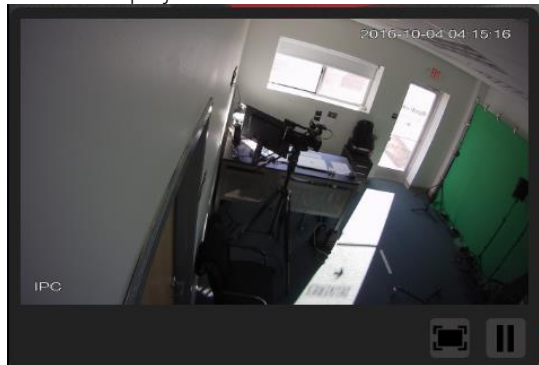
NetworkHD Encoder preview streams can be viewed in Enado by utilizing the same steps listed above. Create a Custom Path in the Video Source Settings with the appropriate encoder URL.

NHD-100 & 200 Encoders: TX_IP_ADDR/capture.jpg

NHD-400 Encoder: TX_IP_ADDR/capture.jpg

Example URL: 192.168.1.242/capture.jpg

Integrating Amazon Echo (Alexa)

Integrating Amazon Echo with Alexa voice service requires an active MyEnado subscription. A MyEnado subscription can be purchased from the Enado editor by navigating to **Tools>Remote Access Options.**

1. Select the desired button/macro you wish to turn into a voice enabled command and choose edit properties
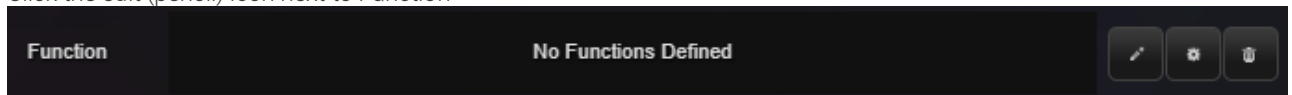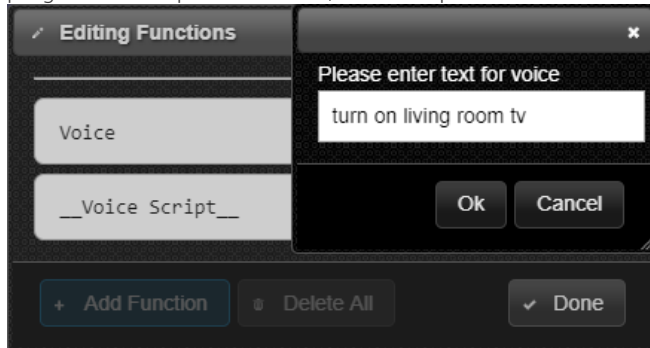2. Click the edit (pencil) icon next to Function

3. From the drop down menu choose Voice and then click Add Function
4. When prompted type in the phrase you wish to be recognized by Alexa. For example, if the corresponding button was programmed to power on a TV, the voice phrase could be called "Turn on Living Room TV".

5. Click Ok when finished
6. Repeat the above steps for any additional control buttons
7. Navigate to **Tools>Remote Access Options**
8. Generate a Voice Service Code and make note of the number

9. Navigate to **Project>Preview/Publish** and select Publish to push the configuration.

The Enado skill will need to be enabled for your Amazon Echo device(s). To enable the Enado skill, perform the following:

1. Open the Amazon Alexa app on your iOS or Android device
2. Select the menu button at the top left and choose Skills & Games
3. Type Enado Voice in the search field to locate the Skill
4. Tap the Enable button

UK: +44 (0) 1793 230 343 | ROW: 844.280.WYRE (9973)
Email: support@wyrestorm.com
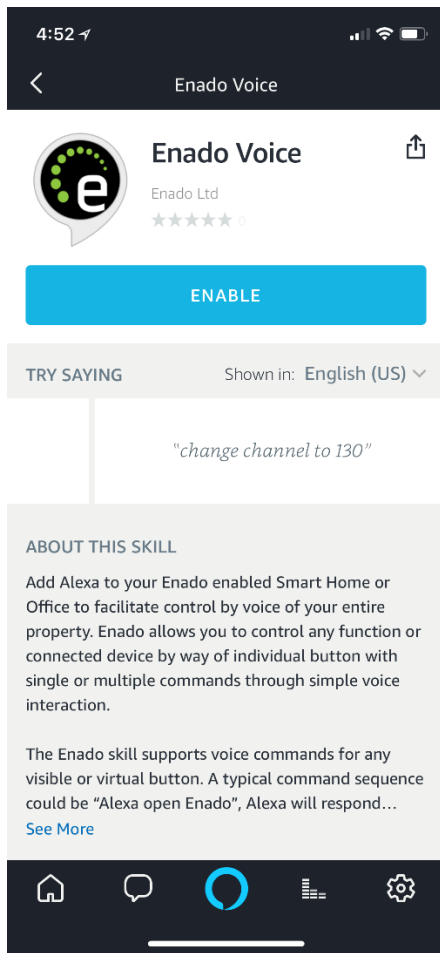
You will now need to link the Amazon Echo to the Enado controller. Follow the below dialog steps to successfully create the link.

User Dialog	Alexa Response
"Alexa, open Enado"	*Hello, how can I help?*
"Register voice service"	*Please tell me your voice service code, starting with "Service code…"*
"Service code {123 456}" (replace with service code generated by your Enado controller)	*Please tell me device's location by starting with "Device in…"*
"Device in {room}" (name of room in Enado project a voice command exists within)	*Congratulations, device has connected to {room} voice service.*

Repeat the above dialog for additional rooms that have voice commands. When finished, you can execute any voice commands you have created.

Example Command #1	Alexa Response
"Alexa, open Enado"	*Hello, how can I help?*
"Turn on Living Room TV"	*Ok, anything else?*
"Start Netflix"	*Ok, anything else?*
"No"	*-*

Example Command #2	Alexa Response
"Alexa, tell Enado to turn on Living Room TV"	*Ok*

Example Syntax

"Change channel to {num}"

"Change {device} channel to {num}"

"Change {device} channel to {num} in {room}"

"Set temperature to {num}"

"Set {room} temperature to {num}"

"Enter {room}"

"Control {device}"

"Control {device} in {room}"

To view a compiled list of all voice commands created with respective Rooms, Activities and buttons navigate to **Project>View/Print Voice.**

Room/Zone: Office		Project Name: New_Project_2017-06-27_10:39:16		
	Voice	Activity	Group	Button
0001	100%	(Global)		100%
0002	20%	(Global)		20%
0003	60%	(Global)		60%
0004	Mute	(Global)		Mute
0005	Mute	(Global)		Mute
0006	power off video wall	power off tvs		
0007	power on video wall	power on tvs		

Publishing a Project

In order for a project to be accessed through the live user interface it needs to be published. To publish a project, perform the following steps.

1. Navigate to the **Project menu** and select **Preview/Publish**
2. Click Publish

The publish menu will also generate a QR code that can be scanned from a mobile device. The QR code will automatically direct a device to the live user interface. To copy the QR code for use elsewhere simply right click it and select Copy.

When accessing the Live UI of Enado the latest published project will load by default. Multiple published projects can be accessed simultaneously by adjusting the project number in the URL.

http://192.168.0.241/enado/live.php?project=**33**

The number 33 in the Live UI URL above can be changed to reflect another published project in Enado. Simply publish a second project in Enado and note the number associated with the project in the URL.

Preferences Menu

Controller preferences can be adjusted to enable or disable specific features of Enado. Navigate to the **Application menu** and select **Preferences** to make the following adjustments:

A	Timezone	Allows Enado to report accurate time based on location. Correct timezone is required when programming timed commands.
B	Editor Password	**Enabled**: Enado will prompt for a password when logging into the configuration UI. **Disabled**: The configuration UI will not be password protected
C	Remote Access Authentication	**Enabled**: Enado will prompt for a password if remotely accessing the interface. **Disabled**: Enado will not prompt for a password if remotely accessing the interface.
D	Control UI Settings Icon	**Enabled**: A settings icon will appear in the control UI and will be accessible to the end-user, allowing limited settings to be adjusted outside of the configuration UI. **Disabled**: No settings icon will appear in the control UI
E	Single Zone Link	**Enabled**: Will show a project's Zone/Room button when there is only a single Zone/Room **Disabled**: Will not show a project's Zone/Room button when there is only a single Zone/Room and will automatically log the end-user into the Activity selection page.
F	Single Activity Link	**Enabled**: Will show a project's Activity Button page even if there is only a single Activity Button. **Disabled**: Will not show a project's Activity Button page when there is only a single Activity Button and will automatically log the end-user into the Activity. *Requires the Single Zone Link to be disabled.
G	Zone Terminology	Enter in customer "Zone" naming. This name will appear at the top navigation bar in the control UI.

Project & Controller Backup

WyreStorm recommends always keeping a current backup of the Enado controller. To create a full controller backup, perform the following steps.

1. Navigate to the **Tools menu** and select **Export/Backup Controller**
2. Allow the Enado to compile the controller backup and then click the download link

To create project backups, perform the following steps.

1. Navigate to the **Project menu** and select **Export Project to File**
2. Allow the Enado compile the project and then click the download link

Please note: The Export Project to File option will only export the currently selected project. To select a different project for exporting navigate to the **Project menu**, hover over **Open/Import** and then **My Projects**.

GPIO (Relays & Sensors)

The ENA-001-010 features a set of relays and sensors. These relays can be used for numerous applications such as triggering a projector screen up or down. The below diagram demonstrates connections from Enado to a projector screen control box.

A closed circuit can be toggled from the Enado UI which will allow 12volts to be sent to the projector screen control box. When 12volts is received, depending on the manufacturer, the screen will go up or down.
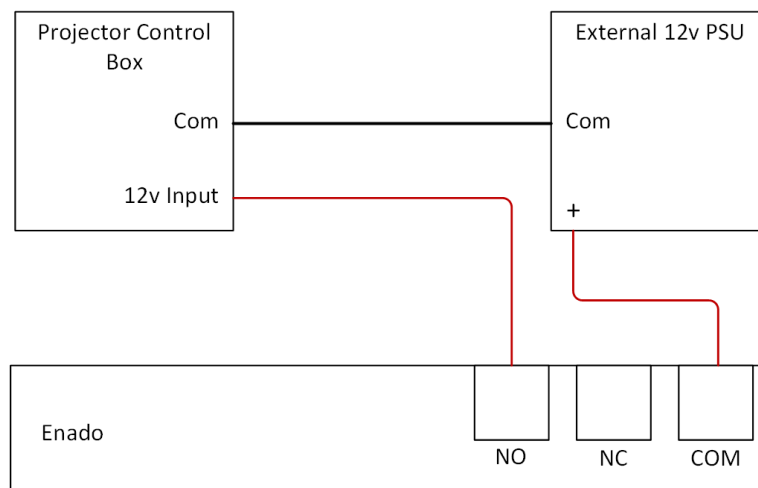
To create the relay trigger from the Enado UI perform the following steps.

1. If not done already, create a button in an Activity Layout.
2. Select the button and choose Edit Properties.
3. Next to the Command field, select the Edit (Pencil) icon.
4. Click the Add Relay Command button.
5. Choose the appropriate relay and its state, On or Off.
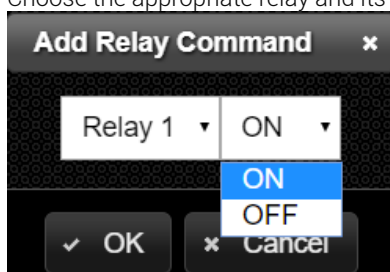
6 Troubleshooting

Unable to Locate Enado's IP Address

- Ensure that Enado is connected to a DHCP server to acquire an IP address.
- Ensure your PC is on the same network and IP range set the IP address range to the same range you believe the Enado is in and use a subnet mask of 255.0.0.0.
- Use the Enado Discover Tool to search for the unit and reset it to DHCP.

Devices Aren't Being Controlled

- Ensure commands have any required Carriage Return and Line Feeds and it does not have any extra spaces.
- Enado I/O ports have been configured correctly for a device – check with the manufacturers API.
- Activity Layouts/buttons have been assigned an I/O port.
- Wiring pinout is correct per device specifications.
- Consider attempting to control a device through additional third party software such a terminal emulator.
- Reboot the Enado controller.

Testing Commands

1. Navigate to the **Device Command Creator** located in the **Tools menu**
2. Select the command to be tested by choosing the Manufacturer, Device and then the Command
3. In the Testing section click the Set Test Outputs button and ensure that the appropriate I/O of Enado is selected
4. Click the Test Command button

Activity Layouts Aren't Publishing

1. Navigate to the **Project menu** and select **View/Print Details**
2. Verify that all Activity buttons that should have a layout linked do not show **<< NO LINKED ACTIVITY>>**

```
#
#      Project Name:    WyreStorm HQ
#      Created By:      Corey Fontanazza
#      Comments:
#      Created At:      Thu, 04 Aug 2016 15:21:40 +0000
#
----------------------------------------------------------

WyreStorm US Office
        ActivityLinks:
                Roku           --->    Roku
                Set Top Box    --->    USA STB - Cisco
                Bluray         --->    Samsung BluRay
                FireTV         --->    << NO LINKED ACTIVITY >>
                Shades         --->    Shades

        Shortcuts:
                Touch    --->    << NO LINKED ACTIVITY >>

        Global Buttons:
                New Global (volume_up-32.png)
                New Global (speaker-32.png)
                New Global (volume_down-32.png)
                New Global (mute-32.png)
```

Cannot Gain Remote Access

- Remote access password has been enabled – Enable the User Interface settings in Application>Preferences, then in the user interface press the setting icon and Manage Passwords. Create a new password and enable it.
- Ensure the Network router has port forwarding configured to match port number and IP address for Enado.
- Check that the Forwarded port number has not been blocked by the ISP.

Custom Image Will Not Upload

- Ensure that the image is in a **PNG** format for buttons or PNG or JPG for Theme backgrounds.

Contacting Technical Support

Phone: UK: +44 (0) 1793 230 343 | ROW: 844.280.WYRE (9973)
Email: Support@WyreStorm.com
On Line Chat (Accessible through website): http://WyreStorm.com/Contact-Tech-Support

7 Document Revision History

V3.0 - August 2018

Various Sections	Added content regarding Enado version 5

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