

Technical Tip How To Create and Manage the Ethernet 32 I/O Device

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Table of Contents

 3 3
З
8
9
.10
. 13
. 14
.14
.14
•

1.0 Introduction

This document explains how to create and manage the Ethernet 32-channel I/O device in Intelli-M® Access. Before you begin, you must ensure that your Intelli-M® Access software version is version 2.2 or newer. If necessary, please visit our website at http://www.infinias.com to download the latest version of Intelli-M® Access.

2.0 Configuration

Configuration of the Ethernet 32 Channel I/O device is performed on the Peripherals Page in the Configuration section of the Intelli-M® Access UI.

2.1 Create a New Device and Peripheral

Login to Intelli-M Access and proceed to the Peripherals Page. Click the *Create Peripheral* command in the Actions Menu, and a Create Peripheral Dialog will appear.

ew Discover	Peripheral Configuration
w Web Page	Name:
nernet VO 10.1.3.198	Configuration Inputs Outputs

If your Ethernet 32 Channel I/O devices are in the same subnet as the Intelli-M® Access server, they will automatically be discovered, and you will see those device(s) listed on the left pane, as shown in the figure above. The figure above shows a single discovered Ethernet I/O device. If you do not see the device you are looking for, then click the *New* menu and select *32-Channel Ethernet I/O* from the menu.

Create Peripheral		
Discovered Devices:		
New - Discover	Peripheral Configuration	
32-Channel Ethernet VO	Name:	
Ethernet VO 10.1.3.198		
		_
	Creste)

If you do not see a 32-Channel Ethernet I/O entry in the popup menu, click the **Discover** button and wait up to a minute for Intelli-M® Access to re-discover the plugins, then click the **New** menu again. If you still do not see the device, please check the Troubleshooting section at the end of this document.

Click the **32-Channel Ethernet I/O** menu item to create a new device, and a device configuration popup dialog will appear.

	_		
C Address: 00-00-00-00-00-00			
Name	Function	Normal State	
Output 0	Output 💌	Normally Open 💌	
Output 1	Output 💌	Normally Open 💌	
Output 2	Output 💌	Normally Open 💌	
Output 3	Output 💌	Normally Open 💌	
Output 4	Output 💌	Normally Open 💌	
Output 5	Output 💌	Normally Open 💌	
Output 6	Output 💌	Normally Open 💌	
Output 7	Output 💌	Normally Open 💌	
Output 8	Output 💌	Normally Open 💌	
Output 9	Output 💌	Normally Open 💌	
	Output 0 Output 1 Output 2 Output 3 Output 4 Output 5 Output 6 Output 7 Output 8	Name Function Output 0 Output • Output 1 Output • Output 2 Output • Output 3 Output • Output 5 Output • Output 6 Output • Output 7 Output • Output 2 Output •	Address: 169.254.1.1 C Address: 00-00-00-00-00 Name Function Normal State Output 0 Output * Normally Open * Output 1 Output * Normally Open * Output 2 Output * Normally Open * Output 3 Output * Normally Open * Output 4 Output * Normally Open * Output 5 Output * Normally Open * Output 6 Output * Normally Open * Output 7 Output * Normally Open * Output 8 Output * Normally Open *

A non-functional default IP Address of 169.254.1.1 will be displayed, along with a default MAC Address of 00:00:00:00:00:00. Enter the correct IP Address and MAC Address of the device you wish to add.

Below the IP and MAC Address section is a list of 32 rows, each row defining one I/O channel. You can configure the name of each channel, whether it is an input or an output, and the default setting for the channel. A *Normally Closed* input will expect a standard relay-closure presence on that input when it is idle, and a *Normally Open* input will expect a standard relay circuit open when the input is idle.

A **Normally Closed** output will have a standard TTL ~5 volts present when idle, and a **Normally Open** output will have a standard TTL ~0 volts present when idle.

Please modify the I/O channels according to your needs. If you need a contact closure on an output, you will have to add a 5 volt relay with an amp rating that meets your needs onto that output to create the desired closure.

Create new 32-Channel Ethernet I/O		
19 Output 19	Output Normally Open	
20 Output 20	Output Normally Open	
21 Output 21	Output Vormally Open	
22 Output 22	Output Normally Open	The maximum source current
23 Output 23	Output Normally Open	for all outputs combined is 400ma. If you need to drive
24 Output 24	Output Normally Open	more than a total of 400ma
25 Output 25	Output Vormally Open	for all outputs, connect a
26 Output 26	Output Vormally Open	relay to each output and use the relay to activate your
27 Output 27	Output Normally Open	circuit.
28 Output 28	Output Normally Open	
29 Output 29	Output Normally Open	
30 Output 30	Output Normally Open	
31 Output 31	Output Normally Open	
Create Device		<u> </u>
		Close

When you are finished, press the *Create Device* button found at the bottom of the configuration pane.

When you press the *Create Device* button, the window will update to show a progress indicator while test events are sent to Intelli-M Access, as shown below.

Create new 32-Channel Ethernet I/O	
Sending Test Input Events from 169.254.1.1. Please wait	Only Intelli-M Access version 2.2.1 and newer show a progress dialog and send out test events for each configured input Intelli-M® Access version 2.2 and earlier will not show the progress dialog and will not send out test Active and Restored events. You will have to manually activate any inputs you configured to generate the events so they will be visible in Intelli- M® Access.
	Close

While the progress window is visible, the device will send an *Active* and a *Restored* event for each input you designate. Events are sent *only* for those channels designated as inputs. These events will then be added to the Intelli-M® Access event database, allowing you to act on one or more of these events on the Rules Page.

If you entered the correct server information, the progress will complete, the proper events will appear on the Events page, and a new entry in the Discovered Devices list will appear.

Create Peripheral		oriphorals because		
Discovered Devices:				
New Discover	Peripheral Confi	guration		
New Web Page	Name:			
Ethernet VO 10.1.3.198				
				Create Cancel
				Cancer

With the Device visible in the Devices list on the left pane, you can now prepare to add the device to Intelli-M® Access as a Peripheral. Click the Device, and the device's name and configuration will appear to the right, as shown below.

Create Peripheral								
Discovered Devices:								
New Discover Peripheral Configuration								
New Web Page	Name:	Ethernet I/O 10.1.3.	198					
Ethernet VO 10.1.3.198	Configuration							1
	IP Address: MAC Addre	10.1.3.198 ess: 00:50:C2:25:B1:11					<u>_</u>	
			. .		N. 10. (-1		
	Id	Name	Function	_	Normal State	_		
	0 Output	1 NO	Output	-	Normally Open	길		
	1 Output	2 NO	Output	•	Normally Open	•		
	2 Output	3 NO	Output	•	Normally Open	-		
	3 Output	4 NO	Output	•	Normally Open	-		
	4 Output	5 NO	Output	•	Normally Open	-		
	5 Output	6 NO	Output	•	Normally Open	-		
	6 Output	7 NO	Output	Ţ	Normally Open	7		
							Create Cancel	

If you selected a device that you created manually, then simply modify the Name field to match what you want Intelli-M® Access to know the device by, and click the *Create* button at the bottom of the dialog. This will finalize the process of creating a Peripheral for the Ethernet I/O device in Intelli-M® Access.

If you selected an automatically-discovered device that you didn't create yourself, you still need to configure the inputs and outputs to your liking. Click on the discovered device, and the configuration information in the right pane will be set to the default values of all channels set to a Normally Open outputs.

Make any changes at this time to the device configuration, and then press the **Save Device** button at the bottom of the configuration pane.

lew Discover	Peripheral Configuration	
ew Web Page	Name: Ethernet I/O 10.1.3.198	
hernet VO 10.1.3.198	Configuration	
		[
	23 Output 24 NO Output 💌 Normally Open 💌	
	24 Output 25 NO Output 🔽 Normally Open 💌	
	25 Output 26 NO Output 💌 Normally Open 💌	
	26 Output 27 NO Output 💌 Normally Open 💌	
	27 Output 28 NO Output 💌 Normally Open 💌	
	28 Output 29 NO Output 💌 Normally Open 💌	
	29 Output 30 NO Output Vormally Open V	
	30 Output 31 NO Output Vormally Open V	
	31 Output 32 NO Output 💌 Normally Open 💌	
	Save Device	
]

After you press the **Save Device** button, the right pane contents will change to a progress window.

Create Peripheral		
Discovered Devices:		
New Discover	Peripheral Configuration	
New Web Page	Name: Ethernet I/O 10.1.3.198 Configuration Sending Test Input Events from 10.1.3.198. Please wait	Only Intelli-M Access version 2.2.1 and newer show a progress dialog and send out test events for each configured input Intelli-M® Access version 2.2 and earlier will not show the progress dialog and will not send out test Active and Restored events. You will have to manually activate any inputs you configured to generate the events so they will be visible in Intelli- M® Access.
		Create

2.2 Creating the Device as a Peripheral

When you have finished configuring a device that was automatically discovered, you will have to select the device again in order to create it as a Peripheral.

Select the device one more time to view the configuration. Change the Name from its default to your liking, and press the *Create* button at the bottom of the dialog. The Peripheral will now be created, and shown as a Peripheral along with its camera names in the Peripherals Page.



2.3 Create a Rule for an Output

Click on the Rules Page to create a Rule for the newly-created *Main Elevator* Peripheral. Click the *Create Rule* Action in the Actions menu, and the Create Rule Dialog will appear. Click on the combo box to expose the Rule Types, and choose either *Energize IO32 Output (Timed)* or *De-energize IO32 Output (Timed)*.

Create Rule	
Туре:	
Access Privilege	×
Elevator	<u> </u>
Email Event	
Energize IO32 Output (Timed)	
Energize Open Collector 1 (OC1)	
Energize Open Collector 2 (OC2)	
Energize Relay	
Event Management	
Hide Event	
Lock Zone	
Lockdown Zone	
Record Pelco Video for 1 Minute	
Record Pelco Video Until Stop	
Revert Zone	
Stop-Record Pelco Video	
Unlock Zone	<u> </u>
	Create Cancel

These two Rule types will energize (or de-energize) a single output channel for 8 seconds. If you need a Rule Type whose duration is not 8 seconds, or if you need a "forever" Rule Type, please contact an **infinias**[™] Product Support Representative, and we will assist in getting you the Rule Type for your specific needs.

Select the usual Schedule and Event information as with other Rules, and choose the *Main Elevator* Peripheral from the Device tab.

Create Rule			
Туре:			
Energize IO32 Output (Timed)			~
Schedule	IntelliM Access	O Main Elevator	
Always			
Group			
Everyone			
Zone			
Door			
Door 200			
Reader			
Door 200 (IN) - Inside			
Event			
ValidCredential			
I/O Controller Main Elevator			
Outputs			
Selection required			
			Create Cancel

Note: It is extremely important to ensure that at least one test event from your device was sent to Intelli-M® Access. Intelli-M® Access builds its list of Events (shown in the Events tab) and Peripherals (shown in the I/O Controller tab) dynamically, based on the data that has been sent to it. Therefore, the Peripheral will be visible in the 'I/O Controller' tab only when at least one event has been sent from the device. If you are using Intelli-M® Access version 2.2.1 or newer, this step should occur automatically.

Schedule	V Output 1 NO	Output 2 NO	
Always	Output 3 NO	Output 4 NO	
	Output 5 NO	Output 6 NO	
Group Everyone	Output 7 NO	Output 8 NO	
Zone	Output 9 NO	Output 10 NO	
Zone	Output 11 NO	Output 12 NO	
	Output 13 NO	Output 14 NO	
Door Door 200	Output 15 NO	Output 16 NO	
	Output 17 NO	Output 18 NO	
Reader Door 200 (IN) - Inside	Output 19 NO	Output 20 NO	
<u></u>	Output 21 NO	Output 22 NO	
Event ValidCredential	Output 23 NO	Output 24 NO	
	Output 25 NO	Output 26 NO	
I/O Controller Main Elevator	Output 27 NO	Output 28 NO	
<u></u>	Output 29 NO	Output 30 NO	
utputs utput 1 NO	Output 31 NO	Output 32 NO	
μματ 1 NO			

Now choose the output(s) you wish to energize.

Press the *Create* button to complete the Rule. The example Rule shown will cause the output labeled *Output 1 NO* to energize for 8 seconds, and then return to its idle state.

Repeat these steps for all other Rules you wish to create that will communicate with the *Main Elevator* Peripheral.

2.4 Create a Rule for an Input

Click on the Rules Page to create a Rule that will act on an Input going active or inactive. Click the *Create Rule* Action in the Actions menu, and the Create Rule Dialog will appear. Choose an activity that you would like to occur when the input changes, such as unlocking a Door or Zone.

Create Rule	
Туре:	
Access Privilege	1
De-energize Open Collector 2 (OC2)	
De-energize Relay	
Display Web Page	In this example, the first
Elevator	I/O Channel is configured
Email Event	as an Input instead of an
Energize IO32 Output (Timed)	
Energize Open Collector 1 (OC1)	Output as in the previous
Energize Open Collector 2 (OC2)	example.
Energize Relay	
Event Management	
Hide Event	
Lock Zone	
Lockdown Zone	
Revert Zone	
Unlock Zone	
Create Cancel	

Choose your Schedule as you normally would, then choose which input event you want to unlock the Zone, such as *Input1Active*.

Ione			
Schedule	AntiPassbackViolation	ConditionNotMet	
Always		CredentialNotYetActive	
Group	DeviceTamper	DoorContactRestored	
Group	ForcedOpen	Heartbeat	
Zone	Initializing	✓ Input1Active	
Zone	Input 1Restored	Input2Active	
Door	Input2Restored	Input3Active	
DOOI	Input3Restored	Input4Active	
Reader	Input4Restored	InsufficientPrivileges	
	InsufficientReason	InvalidID	
	InvalidPIN	LeftOpen	
vent put1Active	Lockdown	Normal	
	Offline	Online	
Peripheral	Output 1Active	Output IInactive	
	Output2Active	Output2Inactive	
Target Zone Selection required	Output3Active	Output3Inactive	
Selection required	Output4Active	Output4Inactive	
	Output5Active	Output5Inactive	
	Output6Active	Output6Inactive	
	OverrideActive	OverrideInactive	

Click on the *Peripheral* Tab and select the *Ethernet I/O* device whose Input 1 you wish to use to activate the Unlock Zone Rule.

eate Rule Type:			
Unlock Zone			
Schedule Always	IntelliM Access	Main Elevator	
Group Everyone			
Zone			
Door Door 200			
Reader Door 200 (IN) - Inside			
Event ValidCredential			
(I/O Controller Main Elevator			
Outputs Selection required			
		Create	Cancel

Finally, choose the Zone you wish to be unlocked when Main Elevator's Input 1 activates.

Create Rule			
Type: Unlock Zone			v
Schedule	✓ Inside	Outside	
Group			
Zone			
Door			
Reader			
Event Input1Active			
Peripheral			
Target Zone Inside]		
			Create Cancel

3.0 How to wire an Input

Each port on the device that you have defined as an input will need a pull-up resistor connected in order to provide a voltage baseline for moving between the *activated* and *deactivate*d states. You will not receive *InputxActive* or *InputxInactive* events until you provide a voltage signal reference upon which the contact closure can apply.

The figure below shows an example wiring diagram for Port 0.0, which relates to Input 1 on the Ethernet device.



The above diagram will provide a low voltage signal while the contact closure is open, and a high voltage signal when the contact is closed. The reverse behavior can be achieved by moving the wire from the NC connection on the contact closure to the NO connection.

4.0 Troubleshooting

This section describes how to discover the Ethernet I/O device if it is not on the same subnet, or could not be discovered.

4.1 Different Subnet

If the device is not on the same subnet as the Intelli-M® Access server, find or place a computer that *is* on the same subnet, and download the following utility:

http://www.winford.com/download/eth32_install_2.01.exe

Run the utility installer, then run the *Eth32 Configuration* utility. It will scan the local subnet for the devices and report back its findings. You can also use this utility to change the unit from DHCP to a static IP address.

Once you have discovered your device, simply copy the IP and MAC Address information from the utility into Intelli-M® Access, as previously described in this document.

4.2 Same Subnet

If the device is on the same subnet, download the utility referenced above and see if that utility can find the device. If the utility finds the device, copy the IP and MAC Address information into Intelli-M® Access. If the utility cannot find the device, then the device may have a lower-level failure issue. Try the following checklist:

- **Power**: Ensure there is power supplied to the device. Inside the enclosure is a PoE splitter which separates the power from the Ethernet, and provides that power to the boards. Make sure the power LED on the splitter is lit. If not, the splitter might be at fault, or the PoE switch or cabling to the device maybe at fault. If the splitter LED is lit, make sure the power LED on the hardware is also lit. If not, there may be a bad power connection to the board, or the hardware itself is bad.
- **Networking**: If power appears to be working, then try to find the device on the network by pinging the broadcast address. For example, if your subnet is 10.1.1.xxx, then ping 10.1.255.255. One or more devices may respond to this IP address. After the ping is complete, issue an *arp -a* command at the DOS Command Prompt and look for the MAC Address of your device. This is the last resort technique that has a low likelihood of success, but it does work in some instances.

If none of these attempts work, please contact infinias support for additional help.