



User Manual

Installation – Router setting

This manual describe the wiring and setting to operate the multi-protocol Oxtopus router EIA-709 and Modbus

This manual is organized in different chapter. Each can be read independently. The annexes are supplements to use routers in their environment.

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Terminology

Lon	Name usually given to the protocol or component working in EIA-709.1.
LonWorks [®]	Name given to the communication system developed by Echelon Corp under denomination EIA-709.1 or ISO-14908.1.
Modbus	Protocol used in building automation and industry for exchange data between two devices.
TP / FT10	Name given to the medium "Twisted Pair Free Topology" and operating at 78125 bits / s.
EIA-709.1	Generic identification for the protocol used between nodes on a network.
Node	Common name given to device exchanging data with protocol EIA-709.1.
EIA-852	Generic name for transport protocol EIA-709.1 over IP.
Config Server	Virtual administrator for "IP Channel" (EIA-852).
Channel IP	Virtual LAN that will be seen in the administrative tools as a communication medium just like a twisted pair.
Modbus	Modbus frames NAT routing function for address translation.
Echelon	Company that created the LonWorks® technology and has deposited the brand Echelon, LonWorks, LNS®, Neuron Chip®.
BACnet®	Protocol defined by ASHRAE SPC 135 and ISO-16484.5 normalised. This protocol includes power full objects for the Building Automation.
BACnet Object	An object is made by several properties representing the itself object values and exposed onto the network.
BACnet Property	BACnet properties are the values that make up a BACnet Object.
Network Number	lt's a unique number per channel. Each router has both network number and port : IP and MS/TP Port.



Contents

1	<u> I </u>	NTRODUCTION	<u>6</u>
1.2		RANGE OF OXTOPUS ROUTERS	7
1.3		ETHERNET CONNECTION	9
1.4		WIFI CONNECTION – ETHERNET	9
1.5		AUTOMATION PROTOCOLS SUPPORTED	0
1.5.	1	Router EIA-709.1	0
1.5.	2	BACNET IP/MSTP ROUTER1	1
1.5.	3	NAT MODBUS ROUTER1	1
1.5.	4	LON SCHEDULER	1
1.6		OTHER PROTOCOLS SUPPORTED	2
1.6.	1	EIA-852 Device	2
1.6.	2	EIA-852 Config Server1	2
1.6.	3	Wев1	3
1.6.	4	Disk space embedded in FTP1	3
2	С	ONNECTION AND MATERIAL1	4
2.1		ETHERNET	
2.2		WIFI	
2.3		Power	
2.4		Wiring	
2.5		WIRED NETWORK EIA-709.1 / EIA-485 MODBUS	
2.6		LED SIGNALIZATION	
2.6.		Power LED	
2.6.			
2.6.	-		
2.6.			
2.6.	-		
2.7		SCREEN 1	8
<u>3</u>	<u>E</u> /	ASY AND FAST SETTING	<u>0</u>
3.1		WIZARD FOR CONFIGURATION	1
3.2		STARTING WIZARD ON HOME PAGE	1
3.3		LOGIN PAGE	2
3.4		NAME OF ROUTER	2
3.5		IP ADDRESS	2
3.6		WIFI CONFIGURATION	3
3.7		EIA-852 CONFIGURATION	4
3.8		MODBUS CONFIGURATION	6
3.9		CONFIRM AND REBOOT	7
4	D	ETAILS SETTINGS	8



4.1	RESIZABLE PAGE TO THE SCREEN DEVICE	
4.2	Номе раде	
4.2.1	DEVICE INFO	
4.2.2		
4.2.3	Ports chapter	.33
	MENUS	34
4.4	LOGIN PAGE	
4.5	USER MODIFICATION ACCOUNT	
4.6	REBOOT PAGE	
4.7	SYSTEM CONFIGURATION	
4.8	CONFIGURATION	
4.9	Port EIA-709	
4.10	Port EIA-852 Client	
4.11	THE CONFIG SERVER	
4.12	CHANNEL LIST	
4.13	MODBUS SERVER STAT EIA-709 CONFIGURATION	
4.14	MODBUS SERIAL PORTS CONFIGURATION	
4.15	MODBUS NAT ROUTER CONFIGURATION	
4.16	BACNET CONFIGURATION	
4.16.		
4.16.	2 MSTP Ports	.44
<u>5 L</u>	ON SCHEDULER	<u>45</u>
5.1	OVERVIEW	46
5.2	ТНЕ НОМЕ РАGE	46
5.3	CONFIGURATION	47
5.3.1	Scheduler menu	.47
5.3.2	LONWORKS CONFIGURATION	.48
5.3.3	BACNET CONFIGURATION	.49
5.3.4	LON NODE INSTALLATION	.52
5.3.5	INSTALLING TEMPLATE FILES	.52
5.3.6	Adding the LON scheduler to an Oxtopus config server	.53
5.3.7	INSTALLATION IN AN LNS BASE WITH NL220	.53
5.3.8	Binding	.55
6 <u>L</u>	ON SWITCH MODE	57
6.1	OVERVIEW	
6.2	LON SWITCH AND IP CHANNEL	
6.3	ENABLE LON SWITCH MODE	
6.4	STATISTICS AND INFORMATION	60
<u>7</u> <u>C</u>	ONFIGURATION VIA USB	<u>62</u>
7.1	GENERAL INFORMATION	63
7.2	DEFAULT IP ADDRESS	



7.3	RESTARTING	64
<u>8</u>	SMART CHANNEL USAGE	66
8.1	PREAMBLE	
8.2	MAIN CHANNEL MODIFICATION	
<u>9</u> 9.1	APPENDIX Resources installation for NLSmartChannel	
9.1		73
9.1 9.2 9.2.	Resources installation for NLSmartChannel USB driver installation 1 On Windows 8	
9.1 9.2 9.2.	Resources installation for NLSmartChannel	



1 Introduction



1.2 Range of Oxtopus routers

Oxtopus routers are available in several product references.

	Part-Number	Sched	Port Ethernet	Wifi	Port TP/FT10 EIA-709	Port EIA-485 Modbus	Port BACnet MS/TP
	Ox-1Lo	No	2 en Switch	No	1		
	Ox-1Lo-Sc	Yes	2 en Switch	No	1		
	Ox-1Lo-Wi	No	2 en Switch	Yes	1		
	Ox-1Lo-Sc-Wi	Yes	2 en Switch	Yes	1		
	Ox-2Lo	No	2 en Switch	No	2		
<u>></u>	Ox-2Lo-Sc	Yes	2 en Switch	No	2		
LonWorks Only	Ox-2Lo-Wi	No	2 en Switch	Yes	2		
rks	Ox-2Lo-Sc-Wi	No	2 en Switch	Yes	2		
Νo	Ox-3Lo	No	2 en Switch	No	3		
on'	Ox-3Lo-Sc	Yes	2 en Switch	No	3		
	Ox-3Lo-Wi	No	2 en Switch	Yes	3		
	Ox-3Lo-Sc-Wi	Yes	2 en Switch	Yes	3		
	Ox-4Lo	No	2 en Switch	No	4		
	Ox-4Lo-Sc	Yes	2 en Switch	No	4		
	Ox-4Lo-Wi	No	2 en Switch	Yes	4		
	Ox-4Lo-Sc-Wi	Yes	2 en Switch	Yes	4		
	Ox-1Mo	n/a	2 en Switch	No		1	
≥	Ox-1Mo-Wi	n/a	2 en Switch	Yes		1	
Modbus Only	Ox-2Mo	n/a	2 en Switch	No		2	
sn	Ox-2Mo-Wi	n/a	2 en Switch	Yes		2	
db	Ox-3Mo	n/a	2 en Switch	No		3	
Mo	Ox-3Mo-Wi	n/a	2 en Switch	Yes		3	
	Ox-4Mo	n/a	2 en Switch	No		4	
	Ox-4Mo-Wi	n/a	2 en Switch	Yes	_	4	
	Ox-1Lo-1Mo	No	2 en Switch	No	1	1	
	Ox-1Lo-1Mo-Sc	Yes	2 en Switch	No	1	1	
	Ox-1Lo-1Mo-Wi	No	2 en Switch	Yes	1	1	
	Ox-1Lo-1Mo-Sc-Wi	Yes	2 en Switch	Yes	1	1	
	Ox-1Lo-2Mo	No	2 en Switch	No	1	2	
S	Ox-1Lo-2Mo-Sc	Yes	2 en Switch	No	1	2	
ndb	Ox-1Lo-2Mo-Wi	No	2 en Switch	Yes	1	2	
EIA-709 + Modbus	Ox-1Lo-2Mo-Sc-Wi	Yes	2 en Switch	Yes	1	2	
+	Ox-1Lo-3Mo	No	2 en Switch	No	1	3	
60,	Ox-1Lo-3Mo-Sc	Yes	2 en Switch	No	1	3	
A-7	Ox-1Lo-3Mo-Wi	No	2 en Switch	Yes	1	3	
	Ox-1Lo-3Mo-Sc-Wi	Yes	2 en Switch	Yes	1	3	
Mixed	Ox-2Lo-1Mo	No	2 en Switch	No	2	1	
Σ	Ox-2Lo-1Mo-Sc	Yes	2 en Switch	No	2	1	
	Ox-2Lo-1Mo-Wi	No	2 en Switch	Yes	2	1	
	Ox-2Lo-1Mo-Sc-Wi	Yes	2 en Switch	Yes	2	1	
	Ox-2Lo-2Mo	No	2 en Switch	No	2	2	
	Ox-2Lo-2Mo-Sc	Yes	2 en Switch	No	2	2	
	Ox-2Lo-2Mo-Wi	No	2 en Switch	Yes	2	2	
	Ox-2Lo-2Mo-Sc-Wi	Yes	2 en Switch	Yes	2	2	



Ox-3Lo-1Mo	No	2 en Switch	No	3	1	
Ox-3Lo-1Mo-Sc	Yes	2 en Switch	No	3	1	
Ox-3Lo-1Mo-Wi	No	2 en Switch	Yes	3	1	
Ox-3Lo-1Mo-Sc-Wi	Yes	2 en Switch	Yes	3	1	
Ox-1Ba	No	2 en Switch	No			1
Ox-1Ba-Wi	No	2 en Switch	Yes			1
Ox-2Ba	No	2 en Switch	No			2
Ox-2Ba-Wi	No	2 en Switch	Yes			2
Ox-3Ba	No	2 en Switch	No			3
Ox-3Ba-Wi	No	2 en Switch	Yes			3
Ox-4Ba	No	2 en Switch	No			4
Ox-4Ba-1Wi	No	2 en Switch	Yes			4
Ox-1Ba-1Mo	No	2 en Switch	No		1	1
Ox-1Ba-1Mo-Wi	No	2 en Switch	Yes		1	1
Ox-1Ba-2Mo	No	2 en Switch	No		2	1
Ox-1Ba-2Mo-Wi	No	2 en Switch	Yes		2	1
Ox-1Ba-3Mo	No	2 en Switch	No		3	1
Ox-1Ba-3Mo-Wi	No	2 en Switch	Yes		3	1
Ox-2Ba-1Mo	No	2 en Switch	No		1	2
Ox-2Ba-1Mo-Wi	No	2 en Switch	Yes		1	2
Ox-2Ba-2Mo	No	2 en Switch	No		2	2
Ox-2Ba-2Mo-Wi	No	2 en Switch	Yes		2	2
Ox-3Ba-1Mo	No	2 en Switch	No		1	3
Ox-3Ba-1Mo-Wi	No	2 en Switch	Yes		1	3
	Ox-3Lo-1Mo-Sc Ox-3Lo-1Mo-Sc Ox-3Lo-1Mo-Sc-Wi Ox-1Ba Ox-1Ba-Wi Ox-2Ba Ox-2Ba-Wi Ox-3Ba Ox-3Ba-Wi Ox-4Ba Ox-1Ba-1Wi Ox-1Ba-2Mo Ox-1Ba-2Mo Ox-1Ba-3Mo Ox-1Ba-3Mo Ox-2Ba-1Mo Ox-2Ba-2Mo Ox-3Ba-1Mo	Ox-3Lo-1Mo-Sc Yes Ox-3Lo-1Mo-Wi No Ox-3Lo-1Mo-Sc-Wi Yes Ox-1Ba No Ox-1Ba-Wi No Ox-2Ba No Ox-3Ba-Wi No Ox-3Ba-Wi No Ox-3Ba-Wi No Ox-4Ba No Ox-4Ba No Ox-1Ba-1Mo No Ox-1Ba-2Mo No Ox-1Ba-3Mo-Wi No Ox-1Ba-3Mo-Wi No Ox-1Ba-3Mo-Wi No Ox-2Ba-1Mo No Ox-2Ba-2Mo No Ox-2Ba-2Mo-Wi No Ox-2Ba-2Mo-Wi No Ox-3Ba-1Mo No	Ox-3Lo-1Mo-ScYes2 en SwitchOx-3Lo-1Mo-WiNo2 en SwitchOx-3Lo-1Mo-Sc-WiYes2 en SwitchOx-1BaNo2 en SwitchOx-1BaNo2 en SwitchOx-1Ba-WiNo2 en SwitchOx-2BaNo2 en SwitchOx-3BaNo2 en SwitchOx-3BaNo2 en SwitchOx-3Ba-WiNo2 en SwitchOx-4BaNo2 en SwitchOx-4Ba-1WiNo2 en SwitchOx-1Ba-1MoNo2 en SwitchOx-1Ba-1MoNo2 en SwitchOx-1Ba-3MoNo2 en SwitchOx-1Ba-3MoNo2 en SwitchOx-1Ba-3Mo-WiNo2 en SwitchOx-2Ba-1MoNo2 en SwitchOx-2Ba-1MoNo2 en SwitchOx-2Ba-1MoNo2 en SwitchOx-2Ba-1MoNo2 en SwitchOx-2Ba-1MoNo2 en SwitchOx-2Ba-1MoNo2 en SwitchOx-3Ba-1MoNo2 e	Ox-3Lo-1Mo-ScYes2 en SwitchNoOx-3Lo-1Mo-WiNo2 en SwitchYesOx-3Lo-1Mo-Sc-WiYes2 en SwitchYesOx-1BaNo2 en SwitchNoOx-1Ba-WiNo2 en SwitchYesOx-2Ba-WiNo2 en SwitchYesOx-3Ba-WiNo2 en SwitchYesOx-3Ba-WiNo2 en SwitchYesOx-4BaNo2 en SwitchYesOx-4BaNo2 en SwitchYesOx-1Ba-1MoNo2 en SwitchYesOx-1Ba-1MoNo2 en SwitchYesOx-1Ba-1MoNo2 en SwitchYesOx-1Ba-1MoNo2 en SwitchYesOx-1Ba-1MoNo2 en SwitchYesOx-1Ba-1Mo-WiNo2 en SwitchYesOx-1Ba-1Mo-WiNo2 en SwitchYesOx-1Ba-2MoNo2 en SwitchYesOx-1Ba-3MoNo2 en SwitchYesOx-2Ba-1MoNo2 en SwitchYesOx-2Ba-1Mo-WiNo2 en SwitchYesOx-2Ba-2Mo-WiNo2 en SwitchYesOx-2Ba-2Mo-WiNo2 en SwitchYesOx-2Ba-2Mo-WiNo2 en SwitchNoOx-2Ba-2Mo-WiNo2 en SwitchNoOx-3Ba-1MoNo2 en SwitchNoOx-3Ba-1MoNo2 en SwitchNo	Ox-3Lo-1Mo-ScYes2 en SwitchNo3Ox-3Lo-1Mo-WiNo2 en SwitchYes3Ox-3Lo-1Mo-Sc-WiYes2 en SwitchYes3Ox-1BaNo2 en SwitchNo2Ox-1Ba-WiNo2 en SwitchYesOx-2BaNo2 en SwitchYesOx-2Ba-WiNo2 en SwitchYesOx-3BaNo2 en SwitchYesOx-3BaNo2 en SwitchYesOx-4BaNo2 en SwitchYesOx-4BaNo2 en SwitchYesOx-4Ba-1WiNo2 en SwitchYesOx-1Ba-1MoNo2 en SwitchYesOx-1Ba-1MoNo2 en SwitchYesOx-1Ba-1MoNo2 en SwitchYesOx-1Ba-2MoNo2 en SwitchYesOx-1Ba-3MoNo2 en SwitchYesOx-1Ba-3MoNo2 en SwitchYesOx-2Ba-1MoNo2 en SwitchYesOx-2Ba-1MoNo2 en SwitchYesOx-2Ba-2MoNo2 en SwitchYesOx-2Ba-2MoNo2 en SwitchYesOx-2Ba-2MoNo2 en SwitchYesOx-2Ba-2MoNo2 en SwitchYesOx-2Ba-2MoNo2 en SwitchYesOx-2Ba-2MoNo2 en SwitchYesOx-3Ba-1MoNo2 en SwitchYesOx-3Ba-1MoNo2 en SwitchYesOx-3Ba-1Mo<	Ox-3Lo-1Mo-ScYes2 en SwitchNo31Ox-3Lo-1Mo-WiNo2 en SwitchYes31Ox-3Lo-1Mo-Sc-WiYes2 en SwitchYes31Ox-1BaNo2 en SwitchNo21Ox-1Ba-WiNo2 en SwitchYes1Ox-2BaNo2 en SwitchNo2Ox-2Ba-WiNo2 en SwitchYes1Ox-3BaNo2 en SwitchYes1Ox-3BaNo2 en SwitchYes1Ox-3Ba-WiNo2 en SwitchYes1Ox-4BaNo2 en SwitchYes1Ox-4BaNo2 en SwitchYes1Ox-4BaNo2 en SwitchYes1Ox-1Ba-1MoNo2 en SwitchYes1Ox-1Ba-1MoNo2 en SwitchYes1Ox-1Ba-2MoNo2 en SwitchYes2Ox-1Ba-3MoNo2 en SwitchYes2Ox-1Ba-3MoNo2 en SwitchYes3Ox-1Ba-3MoNo2 en SwitchYes3Ox-1Ba-3MoNo2 en SwitchYes3Ox-2Ba-1MoNo2 en SwitchYes3Ox-2Ba-1MoNo2 en SwitchYes1Ox-2Ba-1MoNo2 en SwitchYes1Ox-2Ba-2MoNo2 en SwitchYes1Ox-2Ba-2MoNo2 en SwitchYes1

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« -Sc » for **« LON Scheduler »**. Regardless of the product reference containing the LonWorks protocol you can add the LON Scheduler. The operation of the scheduler is described in 1.5.4, its configuration is described in chapter5.



Figure 1 Front view of Oxtopus router



1.3 Ethernet connection

All references are equipped with two RJ45 connectors. Communication can be done independently on both sides with network.



Figure 2 Ethernet Connectors Eth0 and Eth1

The two RJ45 Ethernet connectors are configured in factory as Ethernet switch. The main connector is the left ETH0. The Computer must be primarily connected to this port.

In this configuration, the router has only one IP address for all its functions.

1.4 Wifi Connection – Ethernet

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The Wifi option proposed in Oxtopus references allows access to Ethernet RJ45.

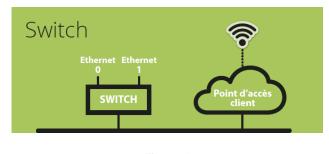


Figure 3 Architecture Ethernet IP

A computer can connect over WiFi Oxtopus to reach other Oxtopus or other equipment as the LNS server.

If a DHCP server provides an IP address on Ethernet, the computer do not need a fixed IP address, its Wi-Fi connection will assign a network address automatically.



1.5 Automation protocols supported

The EIA-709.1 and Modbus protocols are supported on Oxtopus router and run on IP separately.

1.5.1 Router EIA-709.1

In Oxtopus routers, the EIA-709.1 protocol is available either on twisted pair or over IP. In order to pass from one media to another, it is implemented in a router function. This is conforms to the EIA-709.1 protocol and ensures the traffic filtering.

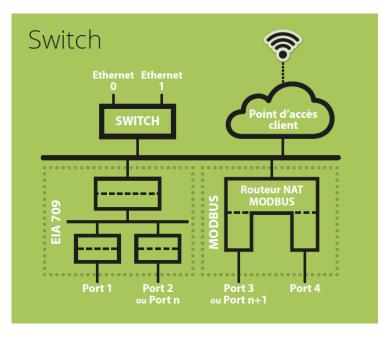


Figure 4 Architecture of Oxtopus router

To connect 2 media, a simple router is enough. To connect more than 2 medias a Virtual Media is introduced into the router to follow the installation and operate procedures of the EIA-709.1 networks.

1.5.1.1 "LON Switch" mode

From version x.x.1.41, the Oxtopus router supports the « LON Switch » mode. The router can be configured to act as an EIA-709 network learning switch. In this operating mode, the router learns the network topology and decides if a message must be forwarded or not, based on the subnet/node destination address.

Advantage of this operating mode is that only plug&play and no router configuration nor installation is needed. Disadvantage is that this operating mode uses a lot of bandwidth and <u>is not recommended for large network.</u>

See **6 LON Switch mode** for more explanation about this mode.



1.5.2 BACnet IP/MSTP router

Oxtopus Ox-xBa routers allow you to connect your BACnet / IP network to your BACnet MS / TP network. The routing function ensures the passage of a media to another while filtering the traffic.

Up to four opto-isolated MSTP ports are available on a router.

1.5.3 NAT Modbus router

The Modbus protocol cannot be a router function. It was implemented a frame redirection by changing the slave address. Hence the term NAT Router (Address Translation Router). Depending on the number of EIA-485 Modbus port available on the reference, Modbus master address requests on IP, the request will be redirected to the desired port with a new slave address.

Each EIA-485 port can only support 31 Modbus slaves. The Modbus address space is limited to 247 members. Within the maximum terms it is possible to send 31 * 4 = 124 Modbus slaves on EIA-485.

Slave source address	Port EIA-485	Slave destination address
10	Port 3	1
11	Port 3	2
20	Port 4	1
21	Port 4	2

Configuration example:

1.5.4 LON Scheduler

The LonWorks scheduler associates a BACnet schedulers to a LON / IP node, both integrated into the Oxtopus router. The configuration interface via the embedded website allows the user to define, for a given value of "Present_Value", the values of the set of associated variables. For each event defined in the BACnet Scheduler the LonWorks variables will be propagated.

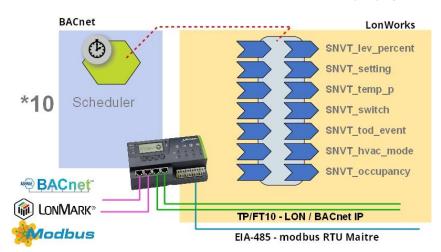


Figure 5 LON Scheduler architecture



On the LonWorks side, there are 10 functional blocks. Each function block has 14 network variables (7 nvi and 7 nvo). Each nviXX can force the value of the nvoXX. Then nvoXX value will be propagated according to your bindings.

💭 Scheduler_IZOT (Occitaline)	- 5 Sched_01
	⊂⊂ nviTemp01
i Node	<⊂ nvi0ccup01
⊕ ∰ Sched_01	⊂ nviSwitch01
i⊞ 🎏 Sched_02	⊂ nviLevPercent01 ⊂ nviSetting01
⊞∰Sched_03	- < nviHvacMode01
⊞	<⊂ nviTodEvent01
⊕ ∰ Sched_05	≩ nvoTemp01
⊕ ≝ Sched_06	- > nvo0ccup01
⊞	⊅ nvoSwitch01 ⊅ nvoLevPercent01
⊞ ∰ Sched_08	⇒ nvoSetting01
	→ D> nvoHvacMode01
	⇒ nvoTodEvent01

Figure 6 Scheduler Functional blocks

This LON node is internally linked to *schedule* BACnet objets. You can handle your times slots and exceptions using standard BACnet tools.

Internal link is based on enumeration values: for each *Present Value* of the *schedule* object you will associate values for the 7nvo.

The configuration of enumeration will be done using the router embedded website. You have a maximum of 5 values for each NVO.

When the Present Value change, all the 7 nvo associated will take your configured values and will be propagated according to your LON bindings.

1.6 Other protocols supported

1.6.1 EIA-852 Device

This protocol is transparent for the installer and operator of the router. It is used for exchanges between members of a Channel IP.

1.6.2 EIA-852 Config Server

It is the virtual administrator of a Channel IP. All nodes or routers members of this channel are declared in a list ("channel list") and may share data.

If a member is forgotten it cannot share with others.

The « Config Server » router must be declared in the channel list as member.

A router cannot belong on two channel lists member.



1.6.3 Web

An embedded Web server provides the router setup and provides a view of the general state of the router. It is accessible via its IP address with a browser like Firefox, Chrome or Internet Explorer. You can also access via WiFi with a tablet or smartphone. Web pages are automatically resized according to your device.

The configuration pages are protected by password.

Login : « admin », Password: « oxpass »

1.6.4 Disk space embedded in FTP

A user disk space is available to store your files or documentation. This space is limited access via FTP with login and password.

Login : « **ftp** », Password: « **ftp** ».



2 Connection and Material



2.1 Ethernet

The cables used should not exceed 90 meters. The left connector Eth0 must be privileged.

The default address is **192.168.1.254**.

2.2 Wifi

The connection can support multiple devices. It can be enabled or disabled on the router with buttons and the LCD display or on the Web page

2.3 Power

The material feed may be made in DC voltage or AC voltage.



Figure 7 The rear power connector

The power connector is a clips connector. Wire is inserted using a screwdriver 2.5mm or a suitable tool.

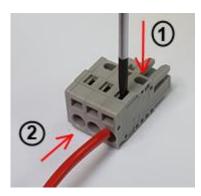


Figure 8 Insert wire in power connector

2.4 Wiring

According to the reference with 1, 2, 3 or 4 EIA-709 ports, ports are used, starting with the left.



According to reference product 1, 2, 3 or 4 EIA-485 ports, the ports are used starting from left or following EIA-709.

Reference	Port 1	Port 2	Port 3	Port 4
Ox-1Lo-1Mo	TP/FT10	EIA-485		
	EIA-709.1	Modbus		
Ox-11 o-2Mo	TP/FT10	EIA-485	EIA-485	
UX-1L0-21010	EIA-709.1	Modbus	Modbus	
	TP/FT10	TP/FT10	EIA-485	
Ox-2Lo-1Mo	EIA-709.1	EIA-709.1	Modbus	

2.5 Wired network EIA-709.1 / EIA-485 Modbus

The EIA-709 protocol is not polarized; the front connectors are identified in groups by three, left to right: Earth Net A and B.

Modbus over EIA-485 is polarized. Be careful, you must connect the + of all equipment on the right terminal and the - pole on the left terminal.

When the devices are powered by different sources, the third connector must be connected to the reference.



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(B)

Figure 9 Wired connection TP/FT10 CEA_709.1

Oxtopus 😵 Ox-3Lo-1Mo					
Lon	Lon	Lon	Mod		
÷A₿	÷ A B	÷ΑΒ	÷ - +		

Figure 10 Stick network connector TP/FT10 and EIA-485

A polarity inversion does not damage device, but the communication does not works.



2.6 LED signalization

2.6.1 Power LED

The **POWER** LED is ON in Green at the beginning of power on. A red color indicates a fault on the router.

2.6.2 Wifi LED

For Oxtopus routers with wifi option, **WIFI** LED will be green to indicate that wifi is active; the red color indicates that the wifi is inactive.

For routers that do not have wifi, this LED is off.

2.6.3 IP1/IP2 LED

IP LEDs indicates the status of each port and architecture

LED	Ethernet architecture
LED IP1 ON	IP Ports works in « switch » mode
LED IP2 ON	Ports are configured in « double IP »

Regardless of the architecture, the color of the LED indicates the operation of the connection.

A green LED indicates that the Ethernet connection is working properly.

A red LED indicates that the Ethernet connection is not working. This may be due to the inability to retrieve an IP address via DHCP for example.

Finally, an orange LED indicates that the Ethernet connection is working, but a fault has been detected during startup. Services such as CNIP (LON 852) Config Server and Modbus do not work. This may be due to, for example, significant time between the router startup and recovery of an IP address via DHCP. In this case the DHCP worked but the address was acquired too late, the services were launched without IP.

2.6.4 LED Activity (« Act. »)

2.6.4.1 LON FT/TP-10

EIA 709 Port of Oxtopus router has a bicolor LED:

Behavior	Description	Comment
GREEN blinking	Traffic	Receiving or sending frame
GREEN blinking at 1HZ	Port Not configured	
RED blinking	Errors on medium	Lost frame due to: - CRC Error

- Most important Traffic



2.6.4.2 Modbus RS485

A Modbus-RS485 port of Oxtopus router has a bicolor LED:

Behavior	Description	Comment
GREEN blinking	Traffic	Receiving or sending frame
RED blinking	Errors on medium	Lost frame due to: - CRC Error

2.6.5 LED Z

It is used to view the state of the line impedance: fault if line break or termination not connected et each ends.

LED in GREEN indicates that impedance is good.

LED in RED indicates that impedance is fault.

2.7 Screen

The Oxtopus Router has a LCD screen in front. When the router starts, the screen displays the logo "Occitaline" and the name of the router.



Figure 11 : Home screen

The buttons below the display are used to navigate in the menu.

Press one of the buttons to access the menu which indicates the router configuration and bandwidth usage in real time to the ports LON FT / TP10.





Figure 12 : First page menu

Buttons below the arrows are used to select the port. Once selected, press the button under the symbol "**SP**" (Service Pin) to send a service pin of the Neuron Chip of that port.

Whatever the selected port, the button under the symbol "**GSP**" allows you to send a service pin of each external Neuron Chip on router.

Finally, the page after Ports show you the IP address of the router.



Figure 13 : IP page



3 Easy and fast setting



3.1 Wizard for configuration

A wizard has been developed to simplify the configuration of Oxtopus router.

Questions are asked in specific order. At the end of the sequence, the reboot of the router places it in the desired configuration.

The steps are:

- 1. System
- 2. Configure Wifi
- 3. EIA-709 Configuration
- 4. Modbus configuration
- 5. Reboot

When the reference does not have Wifi, EIA-709 or Modbus, the corresponding step is simply skipped (not showed) from the wizard.

All changes in the configuration Wizard will be saved at the last step. You can redo the Wizard as many times as you like without saving. All temporary values are stored until the backup or closing your session with the browser.

3.2 Starting wizard on home page

The actions menu is on the left. The user identification is at the top right of the page.

The home page shows the status of the router. (For more details see chapter 0)

Occita line				
n Device-info				
Configuration	Device-info			
Luil Stats <				
∎ Log <	🕲 Oxtopus [Ox-4Lo-Wi]		🔇 Oxtopus	
c Easy installation	Name	Oxtopus_01		Occitaline
	Date	2015-06-05	Power (*) 8 10 (*) 11 (*)	e Coccitaline
	Time	10:10:26	#2 •	0 2 3 4
	Architecture ethernet	Switch		
	Wifi	V		
	SSID	OxTopus-Wifi		*******
			GENERAL SERVICE PIN	Z def. P1 P2 P3 P4
	ETH0			
	General	Port LON [Config server]	Port Lon [Client/Routeur]	Port Modbus Server

Figure 14 Home page and Easy installation menu



3.3 Login page

When access to a configuration page, if the user is not logged, the login page is proposed. (See Chapter 3.3)

The account is "**admin**", password is "**oxpass**".

3.4 Name of router

The name will be visible on the LCD screen and in the members list of the Channel IP.

<i>Cccita</i> line		× en
8 Device-info		
F Configuration	 Configuration system 	
🔟 Stats	< Name	
■ Log	Coxtopus_01	
📽 Easy Installation	← Back	➔ Next
		THEIR
	Eiguro 15	

Figure 15 Define router name

3.5 IP address

The router can obtain an IP address by DHCP server or you can define a fixed IP address.

Occita line		¥¥EN ≛▼
🚯 Device-info		
🖌 Configuration 🔨 <	Configuration ETH0	
🔟 Stats 🗸 🗸	⊕ Enable DHCP ○ Disable DHCP	
≡ Log <	Enable DHCP Hack Back	→ Next
# Conclusion		

Figure 16 Router with dynamic IP address

Occita line		¥K En ▲ •
Device-info		
🖋 Configuration 🔍 <	Configuration ETH0	
🔟 Stats <	○ Enable DHCP ◎ Disable DHCP	
≡ Log <		DNS 1
oc Easy installation	192.168.3.31	
	Netmask	DNS 2
	255.255.255.0	
	Gateway	
	← Back	→ Next

Figure 17 Router with fixed IP address



3.6 Wifi configuration

This page allows you to enable or disable the Wifi as well and set the access parameters.

<i>Cccita</i> line		
🚯 Device-info		
🖋 Configuration 🛛 🔍 <	Configuration WIFI	
Lul Stats <	○ Enable WIFI @ Disable WIFI	
≡ Log <		→ Next
og Easy installation		

Figure 18 Disabling Wifi option

If WiFi is activated from the LCD screen, the values stored in the configuration will be used. By enabling WiFi by the Web, you can change its setting.

Occita line		
2 Device-Info		
🖋 Configuration	 Configuration WIFI 	
Luu Stats	<	
■ Log	ssiD	
📽 Easy installation	OxTopus-Wifi	
	Pass Phrase	
	2336	
	WPA	
	WPA	
	WPA Pairwire	
	ТКІР	
	Channel	
	4	
	← Back	

Figure 19 Wifi setting

SSID	It defines the visible name usable by your PC, tablet or smart phone.
Pass Phrase	This is the passcode to enter to validate the connection.
WPA	This is the security mode Wifi access.
WPA Pairwire	This is the encryption connection.
Channel	This is the channel frequency for wireless connection.



3.7 EIA-852 configuration

The router side IP must be a member of an IP Channel. The router can handle this task with its "Server Config".

Default routers come with the "config server" disabled.

Occitaline		
Device-info		
F Configuration <	Parameter for LonWorks	router
🔟 Stats 🗸		
≡ Log <	Config server rule	
	Do you want to activate the config server ? 🔘 Yes 🔞 No	
	EIA-852 Client rule	
	EIA-852 Client IP and Port	
	192.168.3.31	1628
	My config server address	
	192.168.3.31	1629
	🗲 Back	
	E	iguro 20

Figure 20 EIA-852 setting without Config Server

In case of the "config server" is on another device, you must define the IP address of it and the port (default 1629).

Parameter for LonWorks I	router
Config server rule	
Do you want to activate the config server ? $ \odot $ Yes $ \odot $ No	
Address and port config server	
192.168.3.31	1629
Add the router to the channel list? $\ {\ensuremath{ \odot \ }}$ Yes $\ {\ensuremath{ \bigcirc \ }}$ No	
EIA-852 Client rule	
EIA-852 Client IP and Port	
192.168.3.31	1628
My config server address	
192.168.3.31	1629
+ Back	
	Config server rule Do you want to activate the config server? © Yes © No Address and port config server 192.168.3.31 Add the router to the channel list? © Yes © No EIA-852 Client rule EIA-852 Client IP and Port 192.168.3.31 My config server address 192.168.3.31

Figure 21 EIA-852 setting with Config Server and adding router to the Channel IP

In case of "Config Server" enabled, the router can automatically be added to its list of members and you can no longer enter the address of the "Config Server".



Parameter for LonWorks	router
Config server rule	
Do you want to activate the config server? Yes No 	
Address and port config server	
192.168.3.31	1629
Add the router to the channel list? \bigcirc Yes \oplus No	
EIA-852 Client rule	
EIA-852 Client IP and Port	
192.168.3.31	1628
My config server address	
192.168.3.31	1629
🗲 Back	
	Config server rule Do you want to activate the config server ? © Yes © No Address and port config server 192.168.3.31 Add the router to the channel list? © Yes @ No EIA-852 Client rule EIA-852 Client rule 192.168.3.31 My config server address 192.168.3.31

Figure 22 EIA-852 setting with Config Server WITOUT adding router to the Channel IP

If you do not want to add the router to the members of Channel IP managed by this router, you must enter the address of its "Server Config".

Occita line								¥€ EN ▲
2 Device-Info								
🗲 Configuration	<	Channel list						
Luii Stats	<	_						
■ Log	<	Add a new member Channel name						
		Oxtopus_CS						
		Show 10 💙 entries						
		Name	IP address	Port	Status	Enable	Edit	Edit
		Oxtopus_01	192.168.3.31	1628		V		
		Oxtopus02	192.168.3.26	1628			Z Edit	💼 Delete
		Showing 1 to 2 of 2 entries					Pre	evious 1 Next
		🗲 Back						→ Next

Figure 23 Member list of the Channel IP

On the first time on this page, if you have checked the checkbox "Adding the router to the members", only the router is added. In this case, the first line shows the router's name and IP address. The edit and delete buttons are not available.



3.8 Modbus configuration

This page defines the communication port used by the Modbus IP Server (default 502). The protocol is TCP / IP.

A field also sets a rerouted slave address to get Modbus ports and EIA-709.1 statistics of routers's Neuron Chip.

Occita line			XX E
n Device-info			
🗲 Configuration 🔍 <	Modbus IP configuration		
Luu Stats <			
≡ Log <	ETHO		
📽 Easy installation	Address IP and port for Modbus Server		
	192.168.3.31	502	
	Set Modbus slave address for reading Lon statistic over IF	•	
	2		
	🗲 Back		-

Server Modbus IP setting

If the router is equipped with EIA-485 port for Modbus, for each port you can configure speed, parity, stop bits and size.

Device-Info			
Configuration	Configuration Serials	ports EIA-485	
. Stats	<		
Log	<pre></pre>	port4	
	Baudrate	Baudrate	
	9600	9600	~
	Parity	Parity	
	None	✓ None	~
	Stop	Stop	
	1	✓ 1	~
	Size	Size	
	8	8	~
	RTU	V RTU	~

Figure 25 Serial ports EIA-485 setting

The source address is the address requested by Modbus Client on IP. The port is the line that will be sent. The request destination address is the real slave address of the device connected on line.



Occita line	ole Fortes Database (500			\$	₩ EN 4
b Device-info					
Configuration	 Modbus NAT 	router			
₫ Stats	<				
E Log	< Add a new gateway entry				
Casy installation	Show 10 💌 entries				
	Slave addr. source		Slave addr. destination	Edit E	dit
	2	Slave address reserved for LonWorks statistics			
	10	Port3	1	Edit	🗎 Delete
	11	Port3	2	Edit	🗎 Delete
	20	Port4	1	Edit	î Delete
	21	Port4	2	Edit	î Delete
	Showing 1 to 5 of 5 entries			Previous 1	Next
	← Back				→ Next

Figure 26 Translation address table for Modbus

3.9 Confirm and reboot

This page will record into the router all parameters entered by the user.

<i>Citaline</i>		XX EN	4 -
2 Device-info			
🖌 Configuration	Save all configuration and reboot		
Lad Stats <			
Log <	A ==		
oc Easy installation	Are your sure?		
	🖺 Yes 🗿 No		
	← Back	→ Ne	at 1
	5' 07		

Figure 27 Validation du Wizard

The values will be used after the reboot or by turning off / on the router.

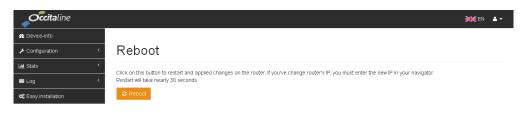


Figure 28 Router reboot

After validation, wait for 15 to 20 seconds for restart.

If you changed the IP address, the browser cannot find the router. You may need to change the address of your PC to be in the same subnet and enter the new router IP address to find its home page.



(B)

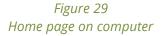
4 Details settings



4.1 Resizable page to the screen device

occitaline Device-info Configuration Configuration system Configuration ETH0 Configuration WIEI Oxtopus_01 Name Occitaline Configuration LON 2015-06-03 Date Channel list Time 20:13:17 Configuration Modbu Switch Architecture ethernet Server Lon stat Wifi Serials ports SSID OxTopus-Wifi NAT Router l Stats Z def. P1 P2 P3 P4

The Web site is automatically adapted to the device that consults.



When the device menu width no longer fits to the left, it is reduced and can be opened by the top right button.

🕽 Oxtopus [Ox-4Lo-Wi]	
Name	Oxtopus_0
Date	2015-06-0
Time	23:03:20
Architecture ethernet	Switch
Wifi	V
SSID	OxTopus-Wit

Figure 30 Home page on tablet in portrait



4.2 Home page

The home page displays the router's condition: configuration, impedance mismatches, sending services pin of each EIA-709.1 ports.

This page is not protected by password.

Occita line				FR 🍰 Connection
a Device-Info				
✗ Configuration <	Device-info			
Land. Stats <				
■ Log <	😵 Oxtopus [Ox-3Lo-1Mo]		🛇 Oxtopus	
C Easy installation	Nom	Oxtopus_01	Root O	Occitaline
	Date	2015-06-05	319 6	
	Heure	11:41:00	22 The second se	0234
	Architecture ethernet	Switch		AL
	Witi		0000	2 0 0 0 0
			FT-1	

			CENERAL SERVICE PIN	Z def. P1 P2 P3 P4
E	THO			
	Général	Port LON (Config server)	Port Lon [Client/Routeur]	Port Modbus Server
	IP 127.0.0.1	Channel name Oxtopus_CS	NID externe 38000000100	Port 502
		Nb de membre 2	NID interne 3800000101	Protocoles TCP
			Mode Configured	Statistique LON Archive
				Statistique Modbus Archive
P	Ports			
	Port1 [LON]		Port2 (LON)	
	NID externe	38000000102 - Configured	NID externe	3800000104 - Configured
	NID interne	38000000103 - Configured	NID interne	3800000105 - Configured
	Type routeur	Configured	Type routeur	Configured
	Port3 [LON]		Port4 [MODBUS]	
	NID externe	38000000106 - Configured	Baudrate	115200
	NID interne	38000000107 - Configured	Parity	None
	Type routeur	Configured	Stop	1
	- SERVICE PIN		Size	8
			Mode	RTU

Figure 31 Complete home page

Several panels are displayed according to the reference product.



4.2.1 Device info

Device-info

Nom	Oxtopus_01
Date	2015-06-05
Heure	11:41:00
Architecture ethernet	Switch
Wifi	

Figure 32 General Information

Reference of the product is shown in banner title.

Nom	This is the name of the router that is found among others on the LCD.
Date/Time	This is the current time of the router. It is used for log errors and statistics.
Architecture	It is the use of the two RJ45 connectors for Eth0 Eth1. The current mode is "Ethernet switch."
Wifi	indicates if WiFi is active or No.
SSID	When WiFi is active, this is the name of the visible WiFi access in devices used for connection.



Figure 33 Oxtopus router

Under the image, the button "GENERAL SERVICE PIN" sends the service pin of all ports simultaneously. Red or green circles at the bottom right indicates the ports fault impedance on each line.



4.2.2 Ethernet chapter

Chapter Eth0 indicates all services provided by the router via Ethernet

ETH0

Général		Port LON [Config server]	Port Lon [Client/Routeur]	Port Modbus Server
IP	127.0.0.1	Channel name Oxtopus_CS	NID externe 3800000100	Port 502
		Nb de membre 2	NID interne 3800000101	Protocoles TCP
			Mode Configured	Statistique LON Archive
				Statistique Modbus Archive

Figure 34 General services on IP

4.2.2.1 General panel

IP IP address of router.

4.2.2.2 Config Server panel

Channel name	This is the name of channel IP for rule « Config Server ». This name is only
	used by the user. He has no rule in the protocol.

Nb member Number of members declared in channel list.

4.2.2.3 Router EIA-852 Client panel

NID extern	Neuron ld on router EIA-709 IP side.
NID intern	Neuron Id on IP router internal side.
Mode	Routing mode EIA-709. (Configured, Repeater, Learning,)

4.2.2.4 Modbus server IP panel

Port	Communication port for Modbus IP server.
Protocol	TCP: IP Protocol used for Modbus IP server.
Stat Lon	Indicates logs router EIA-709 statistics to view them graphically.
Stat Modbus	Indicates Modbus Router logs Modbus statistics to view them.



4.2.2.5 BACnet IP panel

BACnet routers have an additional inset screen :

Port	4780
device ID	20
device name	OX-BAC-RT-IP/MST
BACnet/IP network	

Figure 35 BACnet IP general information

Port	BACnet IP communication port
Device ID	« Device Object » BACnet. identifier
Device name	Name of the BACnet object as entered by the user.
BACnet/IP network	BACNet IP « Network » number. All routers on the same BACnet / IP network must have the same network.

4.2.3 Ports chapter

In accordance with the reference product, the ports used are from 1 to 4. Each of them can be supplied for use in EIA-709 or Modbus.

Ports

rt1 [LON]		Port2 [LON]	
VID externe	38000000102 - Configured	NID externe	38000000104 - Configure
NID interne	3800000103 - Configured	NID interne	38000000105 - Configure
Fype routeur	Configured	Type routeur	Configure
		→ SERVICE PIN	
t3 [LON]		Port4 [MODBUS]	
t3 [LON]	38000000106 - Configured		11520
ID Interne	3800000106 - Configured 3800000107 - Configured	Port4 [MODBUS]	11520 Non
t3 [LON] ND externe		Port4 (MODBUS) Baudrate	
ts (LON) IID externe IID interne	3800000107 - Configured	Port4 [MODBUS] Baudrate Parity	Non

Figure 36 General on ports



4.2.3.1 EIA-709 port

NID external	External Neuron Id of router.
NID internal	Internal Neuron ld of router.
Type router	Routing mode choosen by your manager tool.

4.2.3.2 Modbus port

Baudrate	Speed of serial port.
Parity	Parity of serial port.
Stop	Number of stop bit for serial port.
Size	Size of each word for serial port (Modbus 8 bits).
Mode	Mode usage of serial port in Modbus « RTU »

4.2.3.3 BACnet MSTP port

Port3 [BACnet MSTP] -Port activé-	
Adresse MAC MSTP	0
Numéro de Network	2
Baudrate	38400

Figure 37 BACnet MSTP general information

MAC MSTP Address	BACnet MS/TP port MAC Address
Network	Network number MS / TP. Must be unique for each MS / TP port.
Parity	Configuring the parity of the words of the serial communication.

4.3 Menus

Menus are displayed on the left with a sufficient width terminal. If the width does not allow it, they fold out with the top right button. We find:

Device info	Home page
Configuration	Organized in system, Ethernet, Wifi, EIA-709.1 and Modbus
Stats	Graphical statistics
Log	Logs of communication and error
Easy Installation	The wizard





Figure 38 Menus example

4.4 Login page

When access to a configuration menu, if the user is not logged in, a login page is proposed. It is also possible to call this page from the top right menu: "Connection." The account is "**admin**" password is "**oxpass**".

			FR FR	Connection
n Device-info			U	
Configuration	Connection	1		
Luil Stats <				
Log <		Nom		
C Easy installation				
		Mot de passe		
		& Connection		



4.5 User modification account

Occita line			XK EN ▲	
2 Device-info				
F Configuration	¢	User Profile		
Lad Stats	<	Name	New password	
■ Log	۲	admin		
Seasy installation		Level	Language	
		Admin	EN	~
		Guest user	Language	
		admin	FR	~
			🖺 Save 🛛 O Cance	

Figure 40 User modification page



With this page, the user can change his password and his language used after connection.

The language for « guest user» modifies the default language for not logged users.

4.6 Reboot page

(P

(B

This page will log into the router all the parameters entered by the user.

<i>Ciccita</i> line		🗮 EN	4.4
Device-info Configuration	Save all configuration and reboot		
Lad Stats <			
Log < C Easy installation	Are your sure?		
	Bi Ves ♥ No	→ Ne	×t

Figure 41 Wizard confirmation

The values will take effect after the reboot page or by turning off / on the router. After validating this page, you need to wait 15 to 20 seconds to reboot.

Occitaline		XK EN	≛ -
2 Device-info			
🖋 Configuration K	Reboot		
Luil Stats <	Click on this button to restart and applied channes on the router if you've channe router's ID you must enter the new ID in your navinator		
≡ Log <	Restart will take nearly 30 seconds.		
og Easy installation	2 Reboot		



If you changed the IP address, the browser cannot find the router. You may need to change the address of your computer in same subnet and enter the new router IP address to find its home page.



4.7 System configuration

occitaline			
B Device-info			
🖋 Configuration	~	Configuration system	
Configuration system		Name	
Configuration ETH0		Oxtopus_01	
Configuration LON	<		🖹 Save
Channel list			
Configuration Modbus	<	Date/Time	
Luil Stats	<		
≣ Log	<	Enable NTP	
📽 Easy installation		08/06/2015	
		Time	
		17:18	
			🖺 Save

This page allows you to change the router's name, date and time.

Figure 43 Configuration system

4.8 Configuration

This page allows to select the router's addressing mode. Either the IP address is dynamically assigned on the network by a DHCP server or it is manually assigned and called "static IP" address.

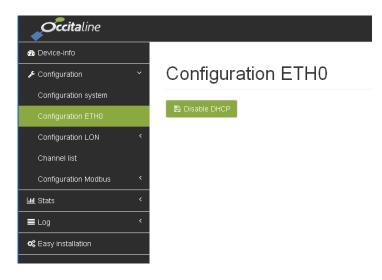


Figure 44 ETH0 configuration with DHCP

All modification of IP address takes effect after reboot.



(P

Occitaline			兴純 EN ▲ -
Device-info			
🗲 Configuration	Configuration ETH0		
Configuration system			
Configuration ETH0	Enable DHCP	DNS 1	
Configuration LON <	192.168.1.252		
Channel list	Netmask	DNS 2	
Configuration Modbus <	255.255.254.0		
🖬 Stats 🗸 🖌	Gateway		
■Log <			
C Easy installation			🖹 Save 🔷 Cancel

Figure 45 Configuration ETH0 with fixed IP

4.9 Port EIA-709

This page serves only to display the configuration of the EIA-709 router ports.

Occita line					
Device-info					
🗲 Configuration	~	Ports EIA-709			
Configuration system					
Configuration ETH0		Port1		Port2	
Configuration LON	~	Status		Status	
Ports EIA-709		Not configured		Not configured	
Port EIA-852 Client		Router mode		Router mode	
Config server		Configured	~	Configured	*
Channel list		D +O			
Configuration Modbus	<	Port3 status			
Luii Stats	<	Not configured			
■ Log	<	Router mode			
Seasy installation		Configured	~		

Figure 46 Configuration des ports EIA-709

4.10Port EIA-852 Client

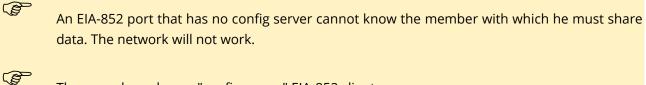
This page allows you to change the communication port for data exchange in EIA-852 Client (1628 by default) and the IP address and port (1629 by default) for the config server.



Device-info		
Configuration '	Port EIA-852 Cli	ent
Configuration system		
Configuration ETH0	ETHO	
Configuration LON		
Ports EIA-709	EIA-852 Client IP and Port	1628
Port EIA-852 Client	192.168.1.252 My config server address	1620
Config server	192.168.3.31	1629
Channel list	Agregation time	
Configuration Modbus	* no	~
Stats	< Reorder time	
Log	< Off	

Figure 47 EIA-852 client configuration

Its config server is not necessarily the router itself. That may be another router or a computer. It will specify the IP address and port used for this function.



There can be only one "config server" EIA-852 client

4.11 The config server

The router is delivered with the Config Server disabled. To enable and configure it, just click the button. "**Enable the config server**."



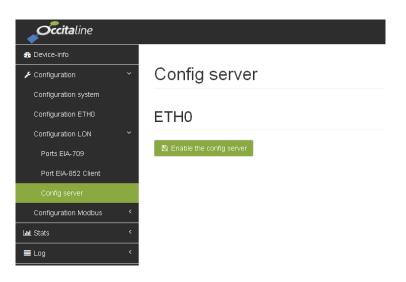


Figure 48 Config server disable

The IP address of the config server is IP address of the router itself. The port can be changed. The default value is 1629.

Occita line	
🚯 Device-info	
🖌 Configuration 🛛 👻	Config server
Configuration system	
Configuration ETH0	ETHO
Configuration LON Y	
Ports EIA-709	Disable the config server
Port EIA-852 Client	192.168.3.31 1629
Config server	Rooming Member
Channel list	Off
Configuration Modbus <	MD5
🔟 Stats 🗸 <	
≡ Log <	🖺 Save 🛛 😋 Cancel
C Easy installation	

Figure 49 Config server activated

4.12Channel list

This page allows adding, removing, enabling, exporting, importing and test members of IP channel. All members of the list are likely to share data. They will be installed in one or more LNS databases.



occita line								¥K en ≜ •
2 Device-info								
F Configuration	~	Channe	l list					
Configuration system		Channel name						
Configuration ETH0		Oxtopus_CS						
Configuration LON	۲.		Cancel					
Channel list			Cancer					
Configuration Modbus	۲.	Add Conta	act all 🖉 Export 🛃	🔹 Import				
Lad Stats	<							
■ Log	۲.	Show 🔄 entr	IP address	Port	Status	Enable		
og Easy installation					Status			
		Oxtopus_01	192.168.3.31	1628		V	Edit	窗 Delete
		Oxtopus02	192.168.3.26	1628	Registered	V	Edit	Delete
		Showing 1 to 4 of 4	entries					< 1 >

Figure 50 Liste des membres du Channel

The role of the Config Server is like a "virtual electrician" that will connect all devices on the same wired network.

4.13 Modbus server Stat EIA-709 configuration

This page provides the Modbus slave address to query the router on the statistics of external Neuron Chip of routers, status and Modbus Serial ports as impedance.

Cccitaline				₩en 🌢
n Device-Info				
F Configuration	 Modbus se 	erver for Lon stats		
		ess for reading Lon statistic over IP		
	2	ess for reading Lon statistic over IP		
Configuration LON	<	•		
	🗈 Save 🔹 Cancel			
Configuration Modbus	Show entries			
Server Lon stat	Router		Start Address	
Serials corts	PortiP1	External	1000	100
Serials ports	PortIP1 PortIP1	External	1000	100
NAT Router				
NAT Router	PortiP1	Internal	1500	100
NAT Router	PortiP1 Port1	Internal External	1500	100
NAT Router	PortIP1 Port1 Port1	internal External Internal	1500 2000 2500	100 100 100
	PortIP1 Port1 Port1 Port2	Internal External Internal External	1500 2000 2500 3000	100 100 100 100

Figure 51 Configuration of slave address for statistics.

Each Neuron Chip has a base address and each counter is set to a 16-bit word.

The reading is done by a read command on an "Input Register" Modbus.

4.14 Modbus serial Ports configuration

This page allows to change all the serial parameters for Modbus serial ports



(B)

🏤 Device-info			
🗲 Configuration	~	Serials ports	
Configuration system			
Configuration ETH0		Port4	
Configuration LON	<	Baudrate	
Channel list		115200	~
Configuration Modbus	~	Parity	
Server Lon stat		None	~
Serials ports		Stop	
NAT Router		1	*
∎ Stats	<	Size	
 I Log	<	8	*
		Router mode	

Figure 52 ModBus serial port configuration

4.15 Modbus NAT router configuration

This page allows to add, delete, edit, export and import translations Modbus Source slave address to a destination slave address on a serial port to join device.

occita line						
Device-Info Configuration	Ý	NAT Route	er			
Configuration system Configuration ETH0 Configuration LON	¢	Add 🕼 Export 🔩 Im	nport			
		Slave addr. source	Port	Slave addr. destination		
Configuration Modbus	~	10	з	1	Edit	🔒 Delete
		11	з	2	🛛 Edit	😫 Delete
Serials ports		20	4	1	🛛 Edit	🗃 Delete
NAT Router	¢	21	4	2	Z Edit	😫 Delete
Log	<	Showing 1 to 6 of 6 entries				< 1 >
Easy installation						



To each source slave address matches a serial port and a destination slave address on that port. This table allows to use the same destination slave addresses on all serial ports.



4.16 BACnet Configuration

4.16.1 Device and BACnet IP

<i>Ciccita</i> line		
Device-info: Ox-2Lo-2Ba	Device & BACnet/IP)
Configuration		
Configuration système	BACnet IP et Port	
Configuration ETH0	BACnet IP et Port	
Configuration LON <	192.168.3.21	47808
Configuration Modbus <	BACnet/IP network	
Configuration BACnet		
Device & BACnet/IP		
Ports MSTP	Objet Device	
Lul Stats <	Nom et ID du device	
E Log <	OX-BAC-RT-IP/MSTP	200
c Assistant installation	Description du Device	
	BACnet Router BACnet/IP and MSTP	
	🕒 Sa	uver 🛛 🛛 Annuler

Figure 54 Configuring the BACnet IP and BACnet Device Object

This page allows you to configure the parameters described below:

Parameter	Default value	Description
BACnet/IP UDP port	47808 (BAC0)	BACnet UDP Port. All BACnet modules on the same network must have the same port.
BACnet/IP network	1	Can take a value from 1 to 65534. Represents the "network" number associated with the IP channel. All routers in the same network must have the same Network IP number.
Name	Ox-BAC-RT-IP/MSTP	Router name. This name will be visible through the BACnet network.
Device ID	152000	Unique identification number of the module on the BACnet network. WARNING, all routers come with a default ID of 152000. It's up to you to modify them. Each device on the network must have a unique ID.
Description	BACnet Router BACNet/IP and MSTP	Description associated with the BACnet router. This description will be visible through the BACnet network.



4.16.2 MSTP Pc	orts	
Occita line		Bonjour : admin 🗾 FR 👻 🔺
Device-info: Ox-2Lo-2Ba	Ports MSTP	
Configuration		
Configuration système	Port3	Port4
Configuration ETH0	Activer/désactiver port	✓ Activer/désactiver port
Configuration LON <	Baudrate	Baudrate
Configuration Modbus <	38400 👻	9600 👻
Configuration BACnet	Numéro de Network	Numéro de Network
Device & BACnet/IP	2	1004
Ports MSTP	Adresse MAC MSTP	Adresse MAC MSTP
	0	0
Lul Stats <	Max master	Max master
■ Log <	4	10
Section 45 Assistant installation	Max frame	Max frame
	5	5
		🖺 Sauver 🛛 😣 Annuler

Figure 55 Configuring the MSTP bus line on RS-485

Parameter	Default value	Description
Baudrate	38400	MS / TP communication speed. All modules on the same MS / TP bus must have the same communication speed.
Network number	« 100x » , avec x numéro du port BACnet.	Can take a value from 1 to 65534. Represents the "network" number associated with the MS / TP channel. The Network number must be unique for each MS / TP bus.
MAC MS/TP	0	Allowable values range from 0 to 127. MAC address of the MS / TP port of the router. Must be unique on the bus.
Max master	127	Allowable values range from 0 to 127. Must be equal to the largest MAC address number accessible on the MS / TP port. Setting this parameter will improve the performance of your network.
Max frame	10	Allowable values range from 0 to 100. Specifies the maximum number of frames that the router can send on the MS / TP before passing the Token. Too high value can reduce the performance of your network.



5 LON Scheduler



5.1 Overview

Since the LON Scheduler is made up of several blocks, one BACnet the other in LON, it is necessary to set each of these blocks. In addition, the LON node must be added to the Config Server in order to connect to the "Channel IP". The LON Node will also need to be installed in the database via NL220 or equivalent. The steps for configuring and installing the LON node are described in this chapter.

The "Scheduler LON" node is embedded in the Oxtopus but is unlinked from the LON router These are two separate applications, equivalent to two nodes present on the Oxtopus. The router AND the LON scheduler must therefore be installed via NL220 or equivalent.

5.2 The home page

When the Scheduler option is active in the Oxtopus router, an additional line appears on the cover page indicating elements related to the BACnet and LonWorks part.

ETH0

(B

General		Port LON [Config server]		Port LON [Client/Router]		Port Modbus Server	
IP address	192.168.0.253	Channel IP name	Oxtopus_CS	External NID	038000002254	Port	502
Netmask	255.255.255.0	Nb of member declared	2	Internal NID	038000002255	Protocol	TCP
MAC address	48:EE:0C:F2:C4:FF	Nb of member enabled	2	Router status	Unconfigured	Slave Address stat Lon	240
				A Service Pin		Nb Modbus NAT	3

ETH0 ... Schedules

Cnet device		Port EIA 852 for Scheduler	
BACnet port	47808	Neuron ID	FE771A769
Device ID	10123	Node status	app, unconfigu
Device Name Device Router	- Scheduler Occitaline	Node Port	1
Device Description BACnet Sche	eduler link to Lon node	Number of variables	
Network number	1	A Service Pin	

Figure 56 Scheduler home page

The Pin service button is available on the cover page, as for the router.



5.3 Configuration

5.3.1 Scheduler menu

When the Scheduler option is active in the Oxtopus router, three menu appears onto the left side

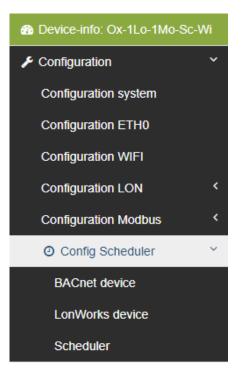


Figure 57 Scheduler menu

BACnet Device	BACnet scheduler configuration.
---------------	---------------------------------

LonWorks Device LonWorks scheduler configuration.

Scheduler Assign the values of the network variables according to the enumeration value.



5.3.2 LonWorks configuration

5.3.2.1 LonWorks device menu

The LonWorks configuration page allows you to view the state of the node, its physical and logical addresses.

Cicita line		
Device-info: Ox-1Lo-1Mo-Sc-Wi	Configuration LonWorks	for Scheduler
Configuration		
Configuration system	Neuron ID	Domain size / value
Configuration ETH0	FE771A7697EB	1 / 00
Configuration WIFI	Subnet/Node	Node status
Configuration LON <	0 / 0	app, unconfigured
Configuration Modbus <	Port EIA-852 Client	
O Config Scheduler Y	1631	
BACnet device	Ce port doit être différent de celui du routeur s'il est configuré sur le même Channel IP (config server)	
LonWorks device		
Lonworks device		
Scheduler		🖺 Save 🛛 Sancel

Figure 58 LonWorks configuration page

It is possible to modify the communication port of the LonWorks Scheduler node. This must be different from the communication port of the router. If the router and the node scheduler are in the same "Config Server", it is imperative to inform the two elements with the same IP address and their respective ports.



5.3.3 BACnet configuration

5.3.3.1 Device BACnet menu

Any BACnet device must have a "Device" object. The identifier of this device, or "device ID" must be unique in the BACnet project. Device ID settings are done by the website page.

Occita line	
Device-info: Ox-1Lo-1Mo-Sc-Wi	Configuration BACnet for Scheduler
Configuration	
Configuration system	Device Name
Configuration ETH0	Device Router - Scheduler Occitaline
Configuration WIFI	Device Description
Configuration LON <	BACnet Scheduler link to Lon node
Configuration Modbus <	Device ID
O Config Scheduler *	10123
BACnet device	BACnet port
LonWorks device	47808
Scheduler	🖺 Save 🔍 Cancel

Figure 59 BACnet properties configuration page

You can change the description of the Device BACnet object, its logical address in the project and the communication port. The default port in BACnet is 47808.

5.3.3.2 Network variable values, label and Enumeration

Each scheduler is associated with an object of type "multi-state-output". This object allows the association to a label a value to create an enumeration. Each multi-state-output can contain 5 enumerations by default.

The enumeration name allow you to give a name of each set of value.

Device-info: Ox-1lzot-2Mo-sc	Configuration	Enumération	ns valeurs	BACnet -> L	onWorks
Configuration 👻	Configuration	Enamoration		D/ (Office - Ex	
Configuration système	Programme horaire Sci	heduler 1			
Configuration ETH0			_		
Configuration Izot <	Info. générales Val 1	Val 2 Val 3 Val 4 Val 9	5		
Configuration Modbus	Choix des parametres du	ı programme horaire BAC	net		
O Config Prog. Horaire Y	Nom Programme Horaire	Description Programme	Horaire	Valeur par défaut	Début de pério
	Scheduler 1			Val 1	✓ Tout le temps
Device BACnet	Mode 1	Mode 2	Mode 3	Mode 4	
Programme horaire					

Figure 60 Enumeration name



The Shedule name allow you to give a specific name to your BACnet scheduler object, to find it in the list and in your BACnet browser.

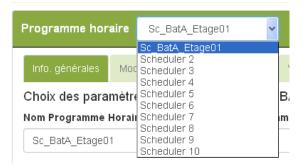


Figure 61 Schedule name

Each enumeration of each schedule object can individually be configured.

Configuration Enumérations valeurs BACnet -> LonWorks

rogramme horaire Sc_BatA	_Etage01 🗸 🗸				
Info. générales Mode occupé	Mode inoccupé	Val 3 Val 4	Val 5		
éfinition des valeurs des va	riables pour le n	node			
nvoTemp01					
32	7.67				
nvoOccup01					
OC_NUL	~				
nvoSwitch01.value	nvoSwitch0	1 - 4 - 4 -			
nvoswitchu1.value		l.state			
	0		-1		
nvoLevPercent01					
163	.835				
nvoSetting01.function	nvoSetting0	1.setting	nvos	Setting01.rotation	
SET_NUL	~		O		0
nvoHvacMode01					
HVAC_NUL	*				
		to 1 post state	nvo]	rodEvent01.time to	nevt state
nvoTodEvent01.current_state	nvoTodEver	nor.next_state	1140	logEventor.time_to_	next_state

Figure 62 LonWorks value settings for enumeration named: Mode Occupé

5.3.3.3 Configuration of the time program and the exceptions

Once correctly set, via a BACnet explorer you can view and configure your time programs.

All time program configurations can be done directly via BACnet.

An example is shown below for which we use the Inneasoft BACnetExplorer (<u>http://www.inneasoft.com/index.php/fr/produits/bacnet-protocole/bacnet-explorateur</u>).



4	Device Router - Scheduler Occitaline	155 Database Revision	1
	🔮 Alarmes	24 Daylight Savings Status	True
	Abonnements COV	28 Description	BACnet Scheduler link to Lon node
Þ	📜 Equipement	44 Firmware Revision	0.9.1
4	📜 Programme Horaire	56 Local Date	mardi 16 mai 2017
	🔂 Scheduler 1	57 Local Time	13:18:52
	🔂 Scheduler 10	58 Location	Europe/France
	🔀 Scheduler 2		
	👩 Scheduler 3	62 Max Apdu Length Accepted	1476
	Scheduler 4	70 Model Name	Ox-BAC
	Scheduler 5	75 Object Identifier	DEVICE:152000
	Scheduler 6	76 Object List	{DEVICE:152000 ; SCHEDULE:0 ; SCHEDULE:1 ; SCHEDULE:2 ; SCHEDULE:3 ;
	Scheduler 7	77 Object Name	Device Router - Scheduler Occitaline
	Scheduler 8	79 Object Type	Device (8)
		96 Protocol Object Types Supported	{0;0;0;0;0;0;0;0;0;1;0;0;0;0;1;0;0;1;0
	Scheduler 9	139 Protocol Revision	14
\triangleright	Sortie Multi Etats	139 Protocol Revisión	14

Figure 63 Occitaline Scheduler overview from the explorer

Create your schedule according to the enumerations previously configured in section 5.3.3.2

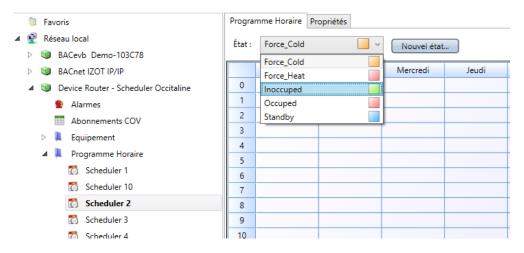


Figure 64 Enumerations previously configured





Figure 65 Time program example

In the same way, exceptions can be created / edited / deleted directly through the BACnet.

Writing to the multi-state output "present-value" will force the state and enumerated values will be immediately reflected on the LonWorks outputs.

5.3.4 LON node installation

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The LON node "Scheduler" is a LON / IP node. It is therefore mandatory to register it on the config server of the IP channel. The server configuration can be the router itself or any other device that supports the server configuration function. By default, the LON Scheduler node is on port 1630. It is with this port number that you must register the node on the server configuration.

5.3.5 Installing template files

The files "OX-SCHED01.XFB", "OX-SCHED01.xfo", "OX-SCHED01.xif" downloadable from our website and "spidData.xml" are downloadable from our lonmark.org.

The file "spidData.xml" must to be copied, according to OS, into the directory:

- C:\Program Files (x86)\LonWorks\Types for 64bits or
 C:\LonWorks\Types for 32 bits
- And in the case of the use of NL220, C:\Program Files (x86)\Newron System\NL220\Bin

The files "OX-SCHED01.XFB", "OX-SCHED01.xfo", "OX-SCHED01.xif" are to be copied, according to OS, into the directory:

- C:\Program Files (x86)\LonWorks\import\Occitaline or
- C:\LonWorks\Import\Occitaline



If the Occitaline directory folder does not exist, create it.

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5.3.6 Adding the LON scheduler to an Oxtopus config server

The LON scheduler node is added like any other node. Be careful though, port 1628 (LON default port) is already used for the router. **The LON Scheduler is declared on port 1630.**

Log on to the website. Via the menu, select "Configuration", "LON Configuration", "Channel list".

On the page that appears, click on the button ^{Ajouter un nouveau membre} which opens you a pop-up. Fill in the fields and validate.

Figure 66 Added a LON Scheduler to the channel list.

The server configuration then contacts the node and exchanges the channel information with it. When the exchanges are completed, the node must appear "Registered" in the list.



5.3.7 Installation in an LNS base with NL220

Create a node (here from the template) and name it.



		Nouveau(x) noeud(s)	×
Nom	Sched_L	.ON_01	OK
			Annuler
Canal	Auto	Channel_1	Aide
Sous-réseau	🖌 Auto	Subnet_1_1	
Sous-système(s)	Location	2	Ajouter
			Supprimer
Créer un noeu	d à partir d	'un modèle	
Modèle de	noeud	0x-Sched01	Nouveau modèle
Nombre à c	réer	1 Id dans le nom 1	
		Nombre fixe de chiffres dans le no	m 1
Créer un noeu	d à partir d	u réseau	
Mettre toutes	les configu	rations aux valeurs par défaut constructeur	

Figure 68 Create a node (here from the template) and name it.

Install the node. Select the node, right click, "Network" then click on "Install ..."

1		— 🔫 пирац	етеп			
		E-SE Connexions	Ĩ	Editer		
		Set NyConr	aaa	Renommer		
1	医夏	InfraStru IZOT_Port1	X)	Supprimer de <locations></locations>		
	一夏	IZ0T_Port2	×	Supp <u>r</u> imer		
	一戸	IZOT_Port3		Imprimer	•	
	夏	LIPB_Port1 LIPB_Port2	Po.	Toutes les configurations aux défauts		
		LIPB_Port3		- ,		
			3	Toutes les configurations indéfinies aux défauts		
		0x-2Lo-B_Port2	23	Toutes les configurations mises en indéfinies		
		0x-2Lo-B_Port3 0x-2Lo-Node Port1		<u>R</u> éseau	Þ	🐣 Installer Ctrl+1
		0x-2Lo-Node Port2	굡	C <u>h</u> anger modèle		
	👮	0x-2Lo-Node_Port3		Auto connexion au host		
	1 1000	0x-3Lo-B-61_Port1	2	Supprimer connexions		
		0x-3Lo-B-61_Port2	5			
		0x-3Lo-B-61_Port3 0x-3Lo-B-61 Port4	20	Nouveau noeud		
		Ox-4Lo-B_Port1	₿ <mark>₽</mark>	<u>C</u> réer à partir de		
	💻	0x-4Lo-B_Port2	B)	Copier en <u>m</u> émoire	Ctrl+C	d code d LONI AIN
	1 1444	Ox-4Lo-B_Port3		Copier valeur configurations en mémoire		ad <sched_lon_01> t succés</sched_lon_01>
		0x-4Lo-B_Port4 0x-4Lo-B Port5	_	Copier extensions en mémoire		LON_01> supprimé.
		_	(B)	Coller valeurs c&onfiguration de la mémoire		ud <sched_lon_01> t succés.</sched_lon_01>
		Oxto_arrigo_Port2	13	Coller variable réseau de la mémoire		succes.
		Oxto_arrigo_Port3	12	Coller extensions de la mémoire		
96		Location 0X2 P2 Module (NL		-		
		0X2_P2_Module (NL 0X2_P3_Module (NL		Selectionner	•	
Ì	÷	0×2_P3b_Module (N		PlugIns	•	
		0×3_P2_Module (NL	2	Aide sur les noeuds		
		0x3_P3_Module (NL: 0X4_P2_Module (NL	ò	Rafraichir l'arbre		
		Sched_LON_01 (Occ	\sim			1
	T Ξ			a		

Figure 69 Node installation

The window that opens is waiting for a Neuron ID to continue. The Neuron ID is received directly from the network. To do this, connect to the Oxtopus website where the Scheduler is to be installed. On the LonWorks Node block, click on the ASERVICE PINE button.



You must have received the PIN service on NL220, which has automatically filled the following window.

Installation/Remplace	ment d'un noeud
Noeud Scheduler_Occitaline	Continuer
Sous-systèmes Locations	Abandon
Neuron ID FE 75 74 01 02 E0	Appui sur le bouton de service ou entrer ID le neuron ID
Mise à jour simple du NeuronId (pas d'installation)	Plus de détails

Figure 70 Node installation window

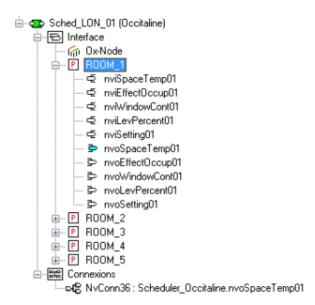
Click on "Continue".

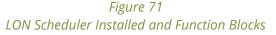
Wait until the node is properly installed.

5.3.8 Binding

Scheduler takes advantage of LON bindings. "Bind" Scheduler nvo on the nvl of the modules you want to control. At each time zone change, the values are updated and automatically sent to their recipient (s).

The image below shows the installed node, its 5 functional blocks (ROOM_X), each with 5nvi / 5nvo.





In the case of the image above, the nvoSpaceTemp01 is bound. As a reminder, the functional block is linked to scheduler 1 and 2 (for alternating summer / winter, see 1.5.4). On change of



time slot, the new value of nvoSpaceTemps01 will be automatically propagated to the nodes to which it is bound.



6 LON Switch mode



6.1 Overview

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From version x.x.1.41, the Oxtopus router supports the « LON Switch » mode. The router can be configured to act as an EIA-709 network learning switch. In this operating mode, the router learns the network topology and decides if a message must be forwarded or not, based on the subnet/node destination address.

Advantage of this operating mode is that only plug&play and no router configuration nor installation is needed. Disadvantage is that this operating mode uses a lot of bandwidth and <u>is not recommended for large network.</u>

In LON Switch mode, no installation by LNS is required and no configuration is needed except for IP.

Only Subnet/Node addressed messages are filtered, all other type of messages are forwarded to all ports!

- The router can learn up to two domains. The LON Switch algorithm supports nodes of same subnet on multiple channels and keeps on tracking a node even if it has been moved.
- All messages received on an unknown domain are forwarded.
- All messages with an unlearned destination subnet/address are forwarded to all ports.
- In IP-852 mode, messages are forwarded using the Channel routing information. If channel routing is not provided by a node, messages will be forwarded which will increase bandwidth usage.

We do not recommend the use of LON Switch mode on network with more than 10 IP-852 devices.

In case of frequently frame losses or network instability, we grandly recommend the use of the standard configured mode (Router EIA-709)

In Lon Switch mode, the router doesn't support any request. It will not answer to any LON request. Service Pin are also disabled.

6.2 Lon Switch and IP Channel

On an IP channel, a router in Lon Switch mode is used the same way than a configured router. You **MUST** declare a configuration server, and each of your IP device **MUST** be added in its channel list.

For more details about configuration server, please see chapter **4.11** The config server.



6.3 Enable Lon Switch mode

By default, the router is in configured mode. To enable Lon Switch mode, you must use the embedded website. Connect to your Oxtopus router and log in using "Connection" button.

Then select **"Update Software"** in the user menu.

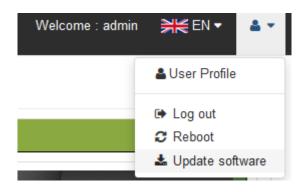


Figure 72 Access the change mode page

On the new displayed web page, you can select the router mode:

Occitaline				Welcome : admin	K EN -	≛ -
Device-info: Ox-3Lo	Configuration system	em				
Configuration <	Configuration by ot					
Lul Stats <	🔇 Oxtopus [Ox-3Lo]		BIN File for update software			
■ Log <	Router mode after reboot	O Router Switch	Parcourir Aucun fichier sélectionné.			
© Easy installation			MD5 File for update software			
	Oxtopus [Ox-3Lo]		Parcourir Aucun fichier sélectionné.			
	Name	Oxtopus			🖹 Sa	ve
	Version	0.9.1.41				
	Date	2018-09-17				
	Time	14:55:23				
	Ethernet architecture	Switch				
	Wifi					
	Lon mode router	Switch				

Figure 73 Oxtopus Router mode change

Restart the Oxtopus router using user menu **« Reboot ».** After restarting, the router will run in the selected mode.



In Lon Switch mode, the home page is slightly different. Specific information of configured mode are not displayed.



Occita line			Welcome : admin 🛛 🗮 EN ▾ 🔹 ▾
▲ Device-info: Ox-3Lo	Device-info		
F Configuration <			
Laal Stats <	😵 Oxtopus [Ox-3Lo]		🕲 Oxtopus
■ Log <	Name	Oxtopus	
of Easy installation	Version	0.9.1.41	Rower
	Date	2018-09-17	Switch
	Time	15:49:15	IP2 (1) (2) (3) (4)
	Ethernet architecture	Switch	
	Wifi		
	Lon mode router	Switch	
	ETH0		Update Date and Hour from browser
	General	Port LON [Config server] Disable	Port LON [Client/Router] Port Modbus Server
	IP address 192.168.3.82	Config Server remote 192.168.3.81	Lon mode router Switch Port 502
	Netmask 255.255.255.0		Protocol
	MAC address FA:4C:77:00:00:6E		Slave Address stat Lon 240
			Nb Modbus NAT 1
	Port1 [LON]	Port2 [LON]	Port3 [LON]
	Lon mode router	Switch Lon mode router	Switch Lon mode router Switch

Figure 74 Home page in Lon Switch mode

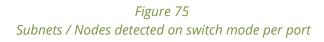
6.4 Statistics and information

Some statistics are available using the menu "**Stats**". In Lon Switch mode, standards router statistics can always be seen, like the last hour of bandwidth use, neuron ID list received on each port, and Neuron Chip error counters.

In addition, in LON Switch mode, you can visualize the Lon Switch table, containing for each two domains, the Subnet and Nodes detected on each ports. This list can be accessed by the menu "Lon Switch mode Lon"



<i>Citaline</i>		Welcome : admin	₩ EN •	≛ -
Device-info: Ox-2Lo	Node list per port			
Configuration				
🔟 Stats 🗸 🗸	🖺 Clear Switch tables			
Stats LON				
List NID per port	Domain Size : 1 Id : 00			
Statistics Switch mode Lon	Show 10 v entries			
≡ Log <	Subnet Nodes du port P1			
📽 Easy installation	04 02,			
	Showing 1 to 1 of 1 entries		< 1	>
	Show 10 v entries			
	Subnet Nodes du port P2			
	03 02,			
	Showing 1 to 1 of 1 entries		< 1	>



On this same page, you can clear the table. A clear could be needed when nodes are moved.



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7 Configuration via USB



7.1 General Information

For the USB driver installation and terminal, refer to the annexes 9.2 and 9.3.

When your device is running and configured, press the "Enter" key to display the menu. There are two choices:

- Restore the default IP address 192.168.1.254
- To restart

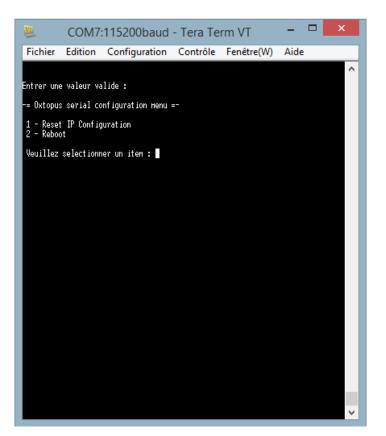


Figure 76 Screen on terminal connected to the router

7.2 Default IP address

To force the default IP address, select "1" on your keyboard, and confirm by pressing "enter"



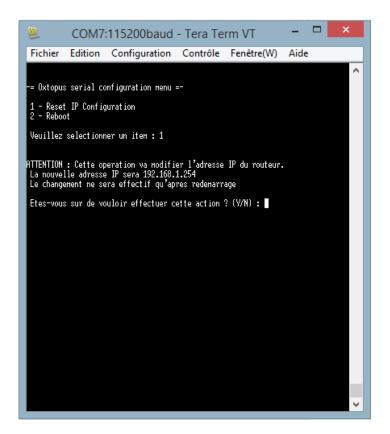
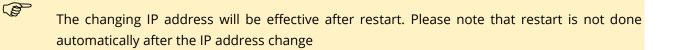


Figure 77 Confirmation load manufacturer values by "Y"

The interface asks you to confirm by pressing "Y" or "N" to return to main menu



7.3 Restarting

To reboot, select the "2" key on your keyboard, and confirm by pressing "enter".



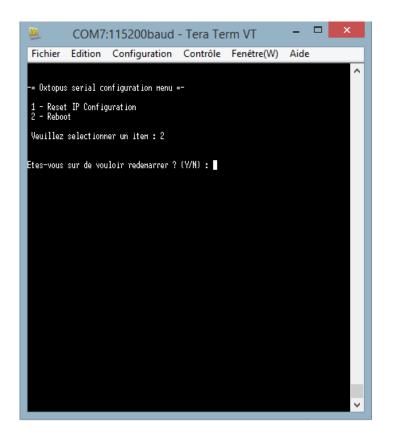


Figure 78 Confirm Reboot by "Y"

The interface asks you to confirm by pressing "Y" or "N" to return to main menu



8 Smart Channel usage



8.1 Preamble

(P

To simply use the Oxtopus routers in NL220 or NLFacilities you must have placed specific files in the directory NLSmartChannel. See Appendix 9.1

These routers are equipped with an Ethernet port with an Ethernet switch on two RJ45 connectors and 1, 2, 3 or 4 ports TP / FT10. Some models can be equipped with 1, 2 or 3 Modbus ports. These are considered invisible in NL220.

Model to be installed in Smart Channel

	Μ	odèle à installer d	lans Smart Channe	el
Référence	Ox-1Lo	Ox-2Lo	Ox-3Lo	Ox-4Lo
Ox-1Lo	\checkmark			
Ox-1Lo-Wi	\checkmark			
Ox-1Lo-1Mo	\checkmark			
Ox-1Lo-1Mo-Wi	\checkmark			
Ox-2Lo		\checkmark		
Ox-2Lo-Wi		\checkmark		
Ox-2Lo-1Mo		\checkmark		
Ox-2Lo-1Mo-Wi		\checkmark		
Ox-3Lo			\checkmark	
Ox-3Lo-Wi			\checkmark	
Ox-3Lo-1Mo			\checkmark	
Ox-3Lo-1Mo-Wi			\checkmark	
Ox-4Lo				\checkmark
Ox-4Lo-Wi				\checkmark

8.2 Main channel modification

If the channel type on which you want to install the router is not IP10L, you can modify it by editing it.





Figure 79 Editing Channel type

The name and type can be changed to fit to your project.

Backbone	Update
IP-10L	Cancel
Host_Oxtopus01	Help
	IP-10L

Figure 80 Name and type of channel

Once entered, you need to update by clicking the "Update" button.



Figure 81 Channel modified following your needs

NLSmartChannel assists you in adding your project infrastructure products. Media types are checked. By adding an Oxtopus router, the IP port will always be connected to a channel IP-10L

PORT T#T Ports name Refresh	g_] Attached	Test all	Options	O User guide	(1) About	Exit	
LNS database	5		LNS Hos	ting PC ackbo	2	Ctrl+Space	device [Ctrl+N]]

Figure 82 Adding an infrastructure device



Channel	Backbone (IP-10	DL)			
<u>N</u> ame	Ox-2Lo-B				
<u>T</u> ype	Occitaline : Oxto	opus 1 Ethernet port Sw	vitch, 2 ports TP/FT	10	
	LS-11C	LS-13300C	LS-13333C	LS-13338C	^
	LS-13C	LS-33300C	LS-33C	LS-38C	
	MPR50	Ox-1Lo	Ox-2Lo	Ox-3Lo	
	Ox-4Lo				~
N <u>u</u> mber	1 🕂	R <u>a</u> nk 1st dev	rice 1	* *	
<u>O</u> ptions	🖃 Near side p	port			1
	Port Mode		IP Port		
	Mode		Router mode		
	⊟ Class				
	IP Port		Configured		
	Port #1 Port #2		Configured		
	Documenta	tion	Configured		-1
	Web site	NUM	http://www.oci	citaline.com	
	Datasheet			eet.OVTOPUS.En	. N

Figure 83 Oxtopus routers

You only have to choose the router version you want to install.

After validation, you can resume operations to add another router of the same type or a different one.

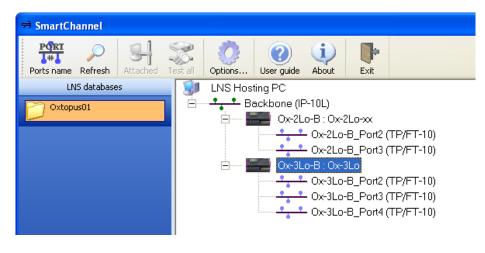


Figure 84 Plusieurs routeurs de type différents peuvent être ajoutés.

With "CTRL-"" shortcut or the installation menu, you can access the installation window below.



Commission InfraStr	ucture De	vice		×
<u>N</u> ame	Ox-3Lo-B			
<u>T</u> ype		Ox-3Lo		
	Port		Neuron ID	٦
	IP Port		00000000000	
	Port #1		00000000000	
	Port #2		00000000000	
	Port #3		00000000000	
			the router port to commission.	
	Set Neur	ronID witho	ut commissioning	
(Filter serv	vice pin on	programID	
[Commissio	n Deco	mmission Close Help]

Figure 85 Entering the NEURON Id

If the router is turned on and connected to the Ethernet network, you can get its IP address by navigation with the buttons under LCD screen of router.



Figure 86 IP address of Oxtopus router.

This address is used in your Web browser to view the embedded Web server in the router Oxtopus.



Occita line			FR .
)evice-info			
Configuration	 Device-info 		
itats	< .		
og	C Oxtopus [Ox-4Lo-Wi]	C	Oxtopus
asy installation	Nom	Oxtopus_01dz	
	Date	2015-06-03	Rumer ®
	Heure	12:56:41	P1 0 3
	Architecture ethernet	Switch	A4.0 0 0
	wiri	v	
	SSID	OxTopus-Witi	[-]-]
		[GENERAL SERVICE PIN
		C	
	ETH0		
	Général	Port LON [Config server]	ort Lon [Client/Routeur] Port Madbus Server
		Poir conclosing server	Por moubus derver
	IP 127.0.0.1	Channel name Oxtopus_CS	ND externe 3800000100 Port

Figure 87 Home page of Oxtopus router

On the home page you have a "General Service Pin" button.

Each port sends its Neuron Id outside of the router. You will therefore be able to install the IP router in first. Then, for the other ports, you can activate the buttons on the home page or choose the port on the LCD screen and press the "[SP]."

When you have entered all the Neuron Id and closed the window, you will find that the router is green in the tree. It is now operational.

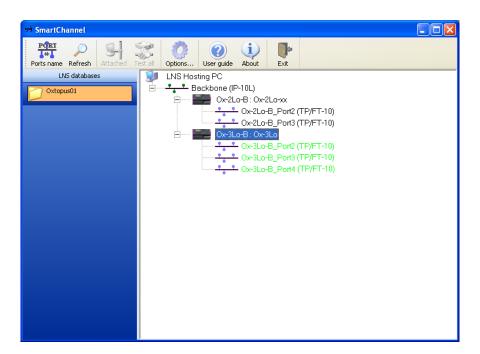


Figure 88 Router installed in LNS database



9 Appendix



9.1 Resources installation for NLSmartChannel

The compressed file "NL220_Resources.rar" allows software tools NL220 and NLFacilities to easily install the range of Oxtopus routers.

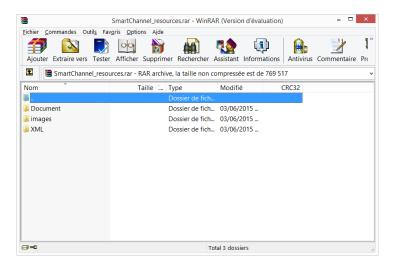


Figure 89 Contain compressed file for NLSmartChannel

Each directory in the compressed file contains files for defining Oxtopus routers.

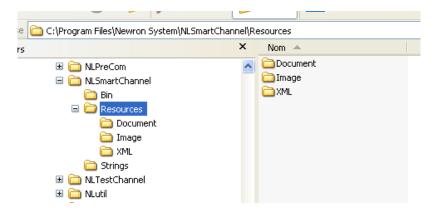
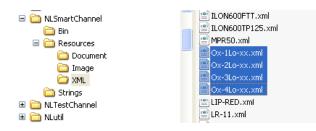


Figure 90 Directory where the files must be installed

When the files are installed you will find the following directories:









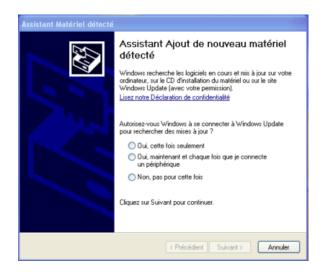
9.2 USB driver installation

9.2.1 On Windows 8

Under Windows 8 when you plug the USB cable, the device is recognized automatically.

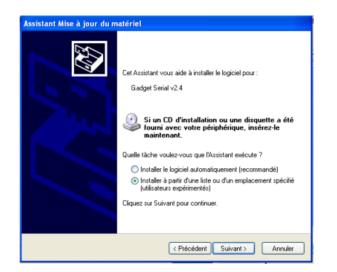
9.2.2 On Windows XP / 7

Under Windows XP, it is necessary to install the USB driver manually. To do this, connect the USB cable to the router and on the computer. When the "Wizard Add Hardware" appears, select "No, not this time" then click "Next".



On new windows, check "Install from a list or a specific location" then click on "Next".





To finish, check « search the best pilotes in location » and specify the location of the file « Linux_acm_inf ». This file is available with the documentation of router. Click on « Next ».

Assistant Mise à jour du matériel			
Choisissez vos options de recherche et d'installation			
Rechercher le meilleur pilote dans ces emplacements.			
Utilisez les cases à cocher ci-dessous pour limiter ou étendre la recherche par défaut qui inclut les chemins d'accès locaux et les médias amovibles. Le meilleur pilote trouvé sera installé.			
Rechercher dans les médias amovibles (disquette, CD-ROM)			
Inclure cet emplacement dans la recherche :			
C:\Documents and Settings\DanielZOTTI\Bureau 💙 Parcourin			
Ne pas rechercher. Je vais choisir le pilote à installer.			
Choisissez cette option pour sélectionner le pilote de périphérique à partir de la liste. Windows ne garantit pas que le pilote sélectionné sera le plus performant pour votre périphérique.			
< Précédent Suivant > Annuler			

9.3 Terminal installation (Tera Term)

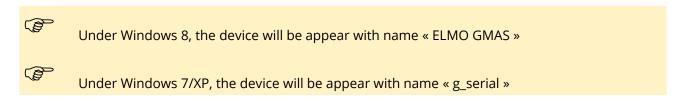
To view information from the USB communication, a terminal must be used. If you do not have a terminal, you can use TeraTerm available on www.occitaline.com web site. Start Tera Term. A window appears, click on "File" then "New Connection".



Tera Term: Nouvelle connexion			
○ Т СР/ІР	Hôte: myhost.example.com Historique Service Telnet SSH Autre Protocole: UNSPEC	>	
Série	Port: COM7: ELMO GMAS (COM7) OK Effacer Aide	~	

Figure 94 Start Tera Term configuration

Select « Serial » and in port the nom of device connected.



The terminal configuration is made by clicking on "Settings" then "Serial Port", below the values to be set. Confirm by clicking "OK"

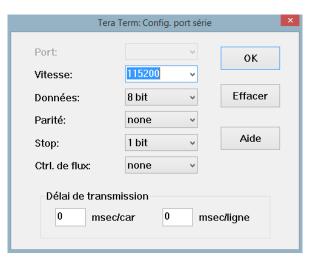


Figure 95 Configuration of serial port USB



END OF DOCUMENT



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