

NG-Gateway – Tutorial 3

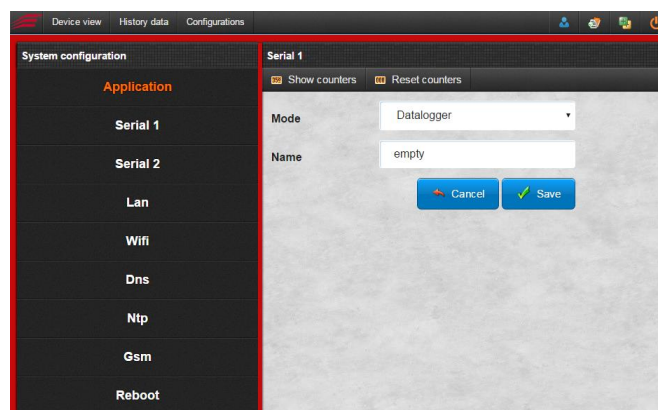
Configuration of data acquisition from devices

1. Introduction

In this tutorial, we will go through NG-Gateway configuration in data logger mode. Use this function to read and store data from external devices. Data logger mode is available exclusively for Data logger and Mini Web Server versions of the NG-Gateway.

2. Serial bus configuration in data logger mode

Select *system configuration* from the *Configurations* down drop menu. Select *serial 1* from the left hand side column menu and, from the down drop menu next to *Mode*, select *Datalogger*.



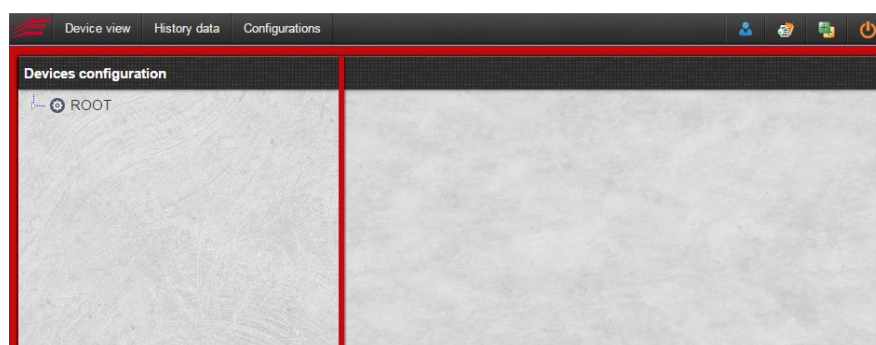
In this case, you only need to insert the *Name* parameter that is the custom name for the Serial port. Once finished, press *save button*. Repeat the same operation for the *Serial 2* if needed.

Select *Device configuration* page from the *Configurations* down drop menu.

3. Device configuration

This page is divided in two sections. The column on the left hand side shows the devices tree-like structure, which will be populated depending on buses configurations and connected devices.

The column on the right hand side of the page includes buses and devices description and configuration parameters.



At first, the devices tree will only show the root device, representing the main system: the NG-Gateway.

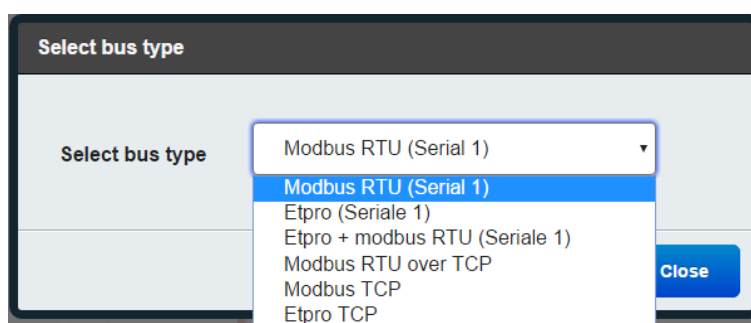
Click on root, to make the *Add bus* button and the devices service status appear in the right hand side column.

- In the *Device ID* area it will appear the ID assigned by the user to the device;
- In the *Device* column, the device name will appear;
- The *bus* area, will show the current bus assigned to the device;
- The *On error time* field will show the time the device spends on communication error state (if the error is present);
- *Last resume try* indicates date and time of the last attempt of communication resume if the device it's in communication error state;

In the screen, every fields is empty because we did not configure any device yet.

As example, we will configure a NG9 device powered by Energy Team.

Click on *Add bus*, a selection window will pop up. In our case, we only configured Serial 1, so in the bus list will not appear Serial 2, which is currently disabled.



- *Modbus RTU (serial 1)* can be used to create a Modbus RTU communication bus on *serial 1* RS485 port;
- *Etpro (serial 1)* can be used to create an Etpro communication bus in Serial 1 rs485 port;
- *Etpro + modbus RTU (serial 1)* can be used to create a bus supporting both ETpro and Modbus protocols on Serial 1 rs485 port;
- *Modbus RTU over TCP* can be used to create a bus that can read devices connected to the rs485 port of a RTU/TCP converter (such as NG-Gateway in Lan converter mode), which is in the same network of NG-Gateway;
- *Modbus TCP* can be used to interrogate devices that communicate through Modbus TCP protocol;
- *Etpro TCP* can be used to read a device through network that uses Etpro TCP protocol (such as Energy Team X-Meter with the XM5 Ethernet card).

In our case, the NG9 is connected to the Serial 1 RS485 port. NG9 is a device that communicates via Modbus RTU protocol.

Select *Modbus RTU (Serial 1)* from the bus list.

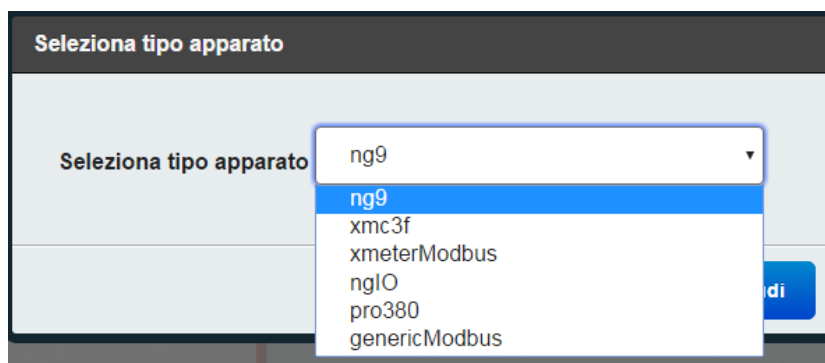
Click *Next* to confirm the selection. The Modbus Rtu configuration page will appear. Insert Bus customized name and the correct communication parameters depending on the connected device.

Click on *Save*.

If we expand the *Root* entry clicking on the small white arrow, the bus just created will appear in the device tree.

Clicking on the bus will open a page, which contains bus configuration summary and a specific toolbar. In the toolbar there are three buttons, *Add device*, *Modify Bus*, *Delete bus*. Modify and delete bus speak for themselves.

Click on the *Add device* button to open a device selection window.



In the list there are all main Energy Team devices and a Generic Modbus device, which, if configured correctly, allows reading any compatible Modbus RTU device (you can find further information about it in the user manual). Other devices can be developed upon request.

Select NG9 to fulfil our purposes and click on *Next* to confirm the selection.

In the *Base* tab, we can configure basic parameters of the new device:

- Insert device custom name in the *Name* area;
- From the *Enabled* drop down menu, select YES to enable the device acquisition in the system; select NO to disable the communication between the device and NG-Gateway; this can be useful in case of maintenance operations;
- Insert the address node used for the device;

- In the *Xml ID* field, you need to insert a unique code that NG-Gateway will use to name the Xml file containing the device data;
- The *Wait before command (ms)* field, can be used to insert the time in milliseconds that NG-Gateway will wait before sending any request to the device; unless you have special requirements, leave the default setting;
- In the *Note* area, you can insert any description or annotation that you desire to include.

Let's click on *Channels* tab. In this page we configure desired channels acquisition.

Abilitato Canale	Id xml	Nome	Archiviazione
<input type="checkbox"/> Tensione L1-L2	Tensione L1-L2	Tensione L1-L2	15
<input type="checkbox"/> Tensione L2-L3	Tensione L2-L3	Tensione L2-L3	15
<input type="checkbox"/> Tensione L3-L1	Tensione L3-L1	Tensione L3-L1	15
<input type="checkbox"/> Tensione L1-N	Tensione L1-N	Tensione L1-N	15
<input type="checkbox"/> Tensione L2-N	Tensione L2-N	Tensione L2-N	15
<input type="checkbox"/> Tensione L3-N	Tensione L3-N	Tensione L3-N	15
<input type="checkbox"/> Tensione concatenata equivalente	Tensione concatenata equivalente	Tensione concatenata equivalente	15
<input type="checkbox"/> Tensione stellata equivalente	Tensione stellata equivalente	Tensione stellata equivalente	15
<input type="checkbox"/> Frequenza L1-N	Frequenza L1-N	Frequenza L1-N	15
<input type="checkbox"/> Temperatura interna	Temperatura interna	Temperatura interna	15

In this page every measure available from the selected device will appear.

- Tick the *Enable* box to enable the channel to be stored on the NG-Gateway;
- In the *Xml ID* field, we can insert an ID that will be associated to the channel in the Xml file created by the system; this function is particularly useful in ftp server data transfer, since some servers can be set to filter Xml files while recognizing files content using this codes;
- Into the *Name* field, we can customize channel name or leave the channel description unaltered;
- From the *Integration period* drop down menu, chose the desired integration period for the selected channel. Let's choose 15 minutes for our example.

The selection is for three voltage channels, integrated every 15 minutes.

Back on the *Base* tab, click on *Save* to make the configuration effective.

The device will now appear on the device tree in the left column. To visualize the device, click on the small white arrow near the bus icon. Near the device name there is a number in parenthesis corresponding to the device node address assigned during the configuration procedure.

As you can see, there are three buttons on the toolbar:

(1) test - ng9

Modifica Clona Cancella valori Ordina canali Elimina

Nome test

Abilitato Si

Indirizzo di nodo 1

Id xml test-001

Attesa invio comando (ms) 0

Note

Salva

Base Canali

- By clicking on modify you will get back to the device configuration pages;
- Clicking on *clone*, the device configuration will be copied in a new device; change the new device ID address and press save; the new device will be configured exactly as the other one;
- Clicking on *Delete values* will open a new window in which to select a channel and delete the correspondent historical data stored inside the NG-Gateway;
- Clicking on *sort channel* will open a window in which you can change the channel order of appearance in the device tree view.
- Clicking on *Delete* will delete the device from the configuration.

Click on the small white arrow near the device icon, to view the channel list. Click on a channel to view the channel summary in the right column and the *Modify slot size* button, this allows editing the *Integration period* for the selected channel.

In order to verify the communication between NG-Gateway and the newly added device, go back to the *System configuration* menu and click on Serial 1 from the left hand side column menu. Click on the *Show counters* button. If the counters differ from zero, and are increasing it means the communication is ok.