

eWON Application User Guide

AUG 004 / Rev 1.3



You Select, We Connect

eWON Getting Started



Content

In this getting Started guide, we will explain how to power up your eWON and connect your eWON. This guide will also show you how to handle the general settings of your eWON and briefly explain its main features .

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Hardware and software requirements

Hardware requirements

In order to follow this guide you'll need:

- 1 eWON
Depending on the eWON type some features will be available or not.

Software requirements

eWON configuration software:

The eWON is configured through its web server. So all you need is a standard Web Browser software like Internet Explorerⁱ or Firefoxⁱⁱ.

Additionally we suggest you to download the eBuddy utility on our website :

<http://support.ewon.biz/>

This utility allows to list all the eWONs on your network and to change the default IP address of an eWON to match your LAN IP address range. With eBuddy you can also easily upgrade the firmware of your eWON (if required).

eWON Firmware Version

To be able to follow this guide your eWON needs a firmware version 5.0 or higher. A simple way to realize the eWON firmware upgrade is to use eBuddy, the eWON software companion.

Hardware installation

Power supply:

The eWON has to be supplied by an external voltage source ranging from 12 to 24 VDC. The power supply must be SELV-compliant (security voltage).

When switched on, the power indicator must go solid green.

Information about the installation for every eWON type are available on our website under <http://support.ewon.biz/doc.html>

Ethernet connection:

Every eWON is shipped with the pre-configured IP address 10.0.0.53 (Mask 255.255.255.0)

Before connecting the Ethernet port of the eWON to your local Ethernet network, ask first your network administrator if the above IP address can be used on your network or not.

Otherwise you can also use a crossed Ethernet cable to connect the eWON directly to your PC.

The eWON Ethernet interface is 10/100 BASE TX using an RJ45 connector



The Ethernet interface of the eWON is the topmost connector.

As soon as the Ethernet network is properly connected, the "Link" Led will go solid green, indicating that the eWON has sensed the network speed (10 or 100Mbits).

Get in touch with your eWON

Assigning an IP address to the eWON

Every eWON is shipped with the pre-configured IP address 10.0.0.53 and adm/adm as User Name/ Password.

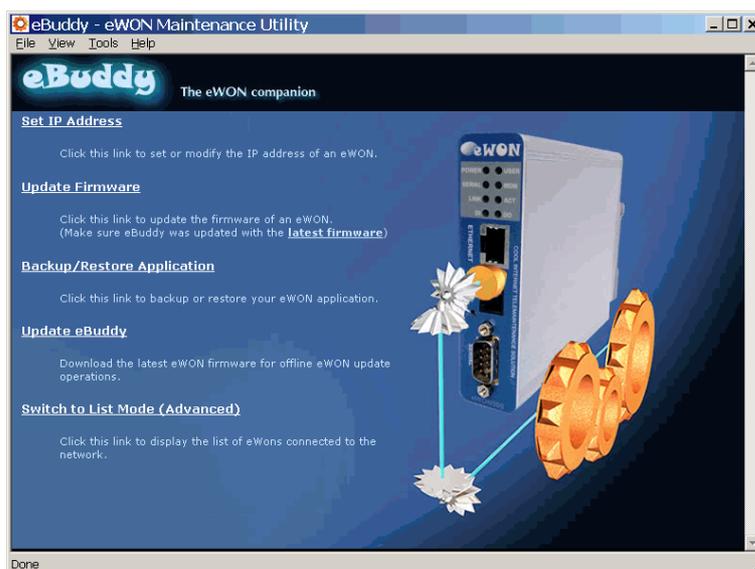
The network settings of your PC do probably not allow you to connect directly to this pre-configured IP address.

On our website, you will find an utility called «eBuddy» that will allow you to change the IP address of the eWON even if your PC is not on the same IP address range.

<http://support.ewon.biz>

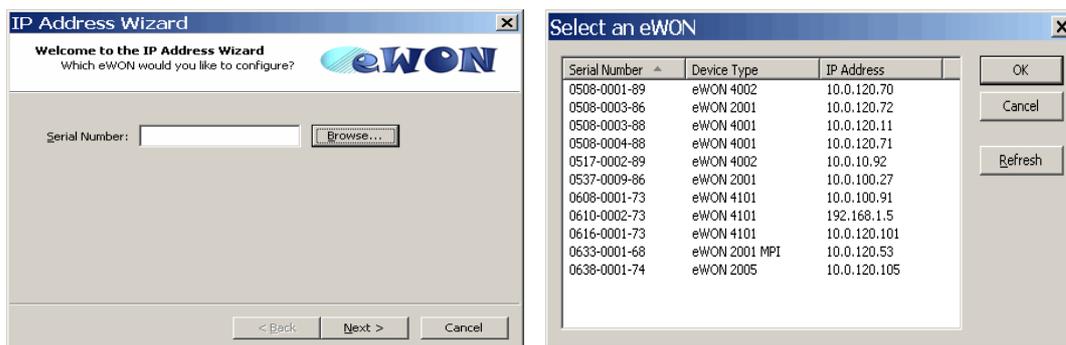
To change the IP address of your eWON follow the steps below:

- Launch the eBuddy application (eBuddy.exe)



- Click on the «Set IP address» link

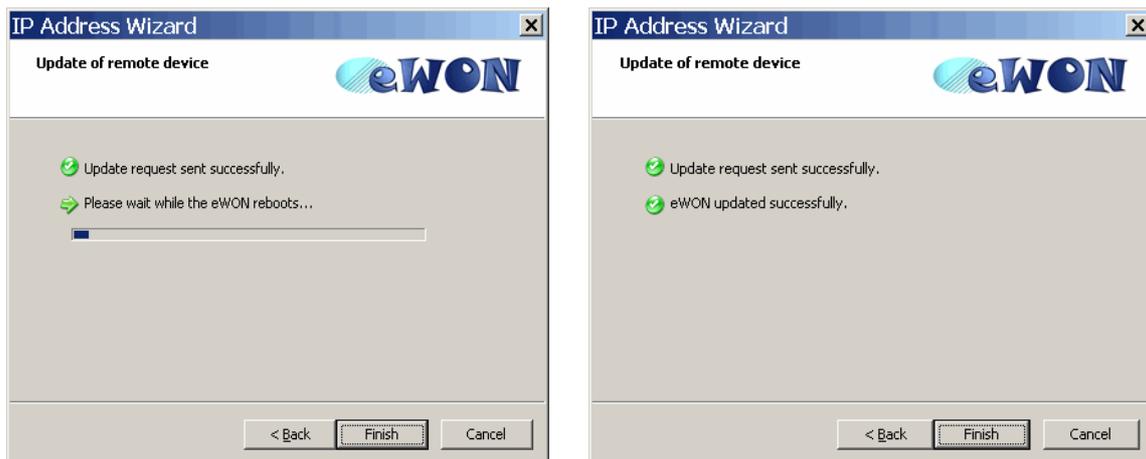
3. Get in touch with your eWON



- Enter the eWON serial number in the **Serial Number** field, or click on the Browse button. In this case, the dialog box «Select an eWON» will appear showing you all the eWON connected to your Network.



- Once the Serial Number has been entered, click **Next**.
- Set the new **IP Address** and the **Subnet Mask**.
- Click on **Next** to launch the update and wait for the eWON to reboot:



- When done, click on **Finish** to exit the IP Address Wizard.

Navigate through the eWON internal Web pages

Every configuration of the eWON can be done using the internal web pages of the eWON.

Accessing the internal web pages of your eWON is very simple:

- Enter the IP address of your eWON in the address bar of your Web Browser (Internet Explorer or Firefox): <http://10.0.0.53> or <http://192.168.0.2> in our example.
- On the «Connect to» pop-up page enter adm (User Name) /adm (Password) then click on **OK**.

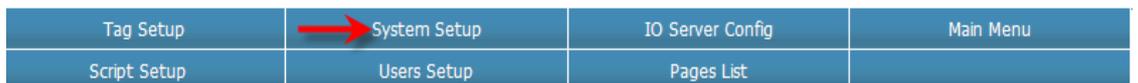


You are now navigating on your eWON.

The menu bar on the top of the main page allows you to navigate through the different displays and configuration pages of your eWON.



A click on the «**Configuration**» menu will replace this menu with the configuration menu bar.



A click on a menu in the **Configuration** menu bar will open a second menu bar (green color).

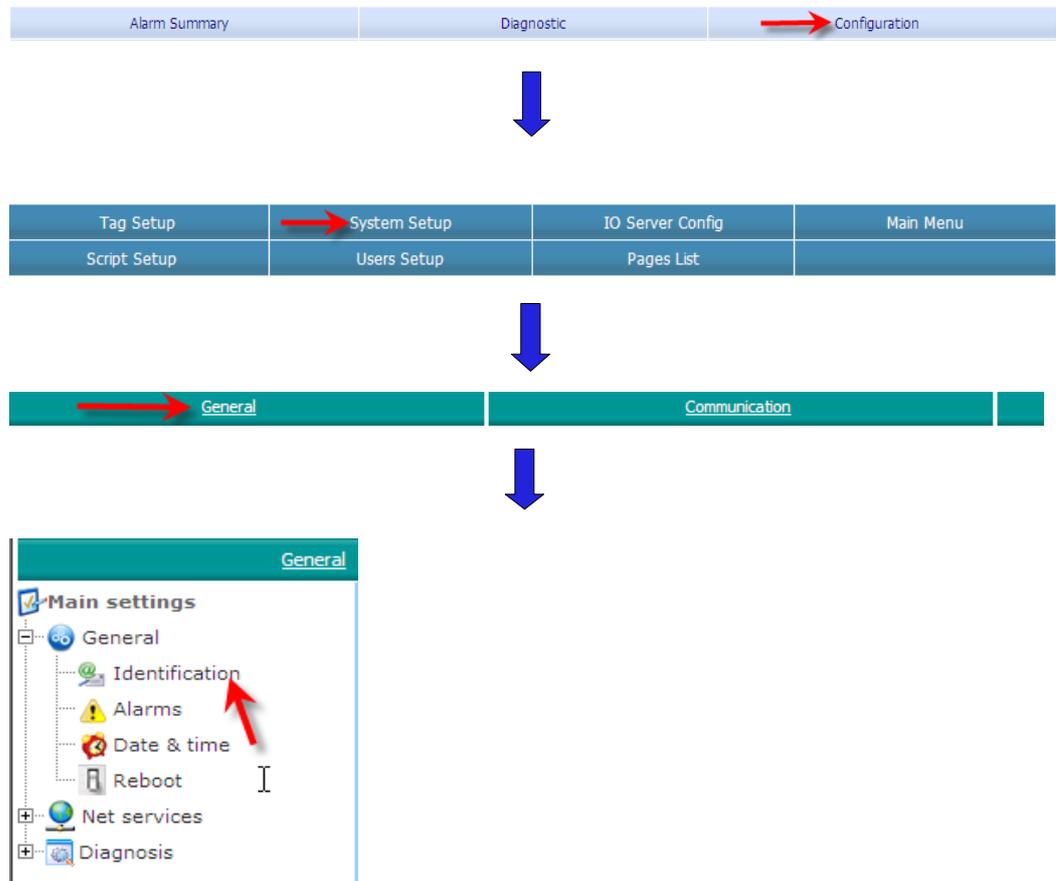


Most of the menus of this second bar will open a third level menu bar. This menu bar is presented in a tree format on the left side of the configuration page.

3. Get in touch with your eWON

In this document we will use the following syntax to represent the path to use to access the desired configuration page.

Configuration → System Setup → General → General → Identification



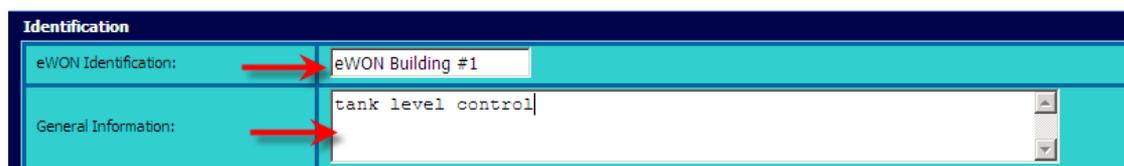
Generic eWON configuration

eWON identification

To identify your eWON, use the following menu

Configuration → System Setup → General → General → Identification

In the «**eWON Identification**» and the «**General Information**» fields, enter the information concerning your eWON or your project.



The new eWON identification will be displayed just under the eWON icon on the top left corner of the window.



If after modification the new «eWON Identification» is not displayed, use the **Refresh** button of your Browser.

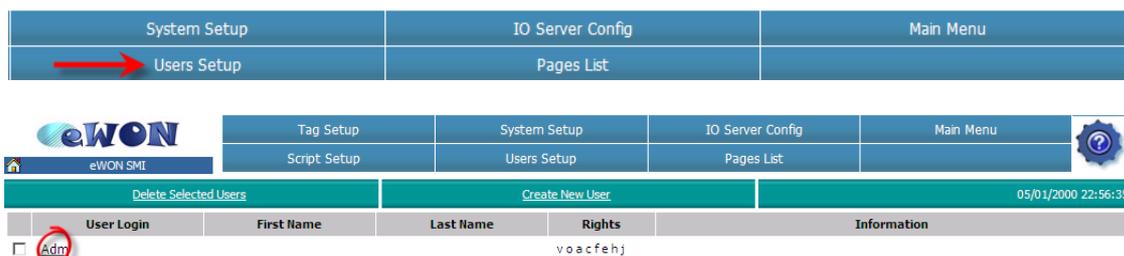
Setting the eWON Identification fields is useful because the information will also be included in the mail or SMS notification when an alarm is been raised.

User configuration

For obvious security reasons it would be better to change the default password of the Adm user account.

The different user accounts of the eWON can be managed using the following configuration page:

Configuration → Users Setup



Click on the «Adm» account to open the user account window.

The screenshot shows the user account configuration window for the 'Adm' user. It is divided into two main sections: 'Identification' and 'Rights'.
Identification section:
- First Name: [text input field]
- Last Name: [text input field]
- User Login: [text input field containing 'Adm']
- Password: [password input field with dots]
- Confirm Password: [password input field with dots]
- Information: [text area]
Rights section:
- All [dropdown menu]
- Tag Page allowed (Default is always allowed)
- All [dropdown menu]
- User Directory allowed (/usr/ is always allowed)
- [checkbox checked] View IO
- [checkbox checked] Force Outputs
- [checkbox checked] Acknowledge Alarms
- [checkbox checked] Change Configuration
- [checkbox checked] FTP server access
- [checkbox checked] eWON Files access [EBD]
- [checkbox checked] Java Forms access
- [checkbox checked] Control Java JVM

On this configuration page you can now change the user account settings of the selected user as for example change the password or define the access rights.

If you want to add a new user to the eWON, use the «**Create New User**» link in the green menu just under the configuration menu bar.

4. Generic eWON configuration

Hereunder a list of the most common used access rights:

Access right	Allows (to)
View IO	access the SCADA real time IO screen
Force outputs	change the eWON outputs
Acknowledge alarms	Acknowledge alarm
Change configuration	access the configuration part of the eWON
FTP server access	the user to access the eWON FTP Server

IP Address configuration

Use the following link to open the Ethernet LAN configuration window:

Configuration → System Setup → Communication → Network connections → Ethernet → Eth1 - LAN

Ethernet LAN Connection		
Address Setup Static		
IP address	<input type="text" value="10.0.120.153"/>	
Subnet mask	<input type="text" value="255.255.0.0"/>	
Default gateway	<input type="text" value="0.0.0.0"/>	
DNS Setup		
Primary DNS IP address	<input type="text" value="0.0.0.0"/>	Leave blank (or 0.0.0.0) if no DNS
Secondary DNS IP address	<input type="text" value="0.0.0.0"/>	
<input type="button" value="Update"/>		

Here you can change the eWON IP address and encode for example the default gateway or the DNS information for your eWON.

Instead of using a fixed IP address you can also decide to use Bootp or DHCP for the IP address specification.

IMPORTANT



If you change the eWON IP address settings, eWON must be restarted to take the modification into account. To restart the eWON, use the Reboot button under following menu

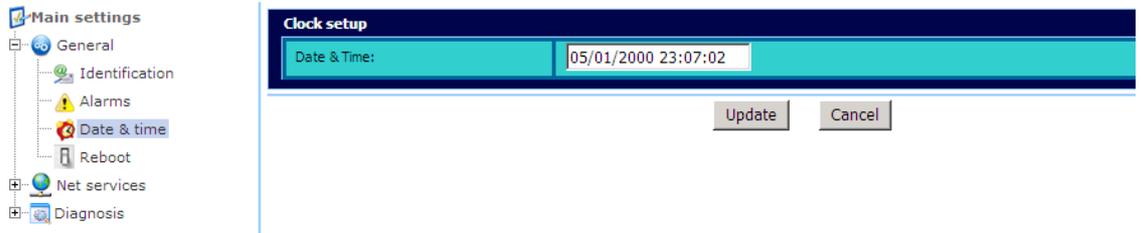
Configuration → System Setup → General → General → Reboot (or Reset for older firmware versions)

or just power off and on the eWON.

Time settings

You can set the eWON date and time settings by using the following menu

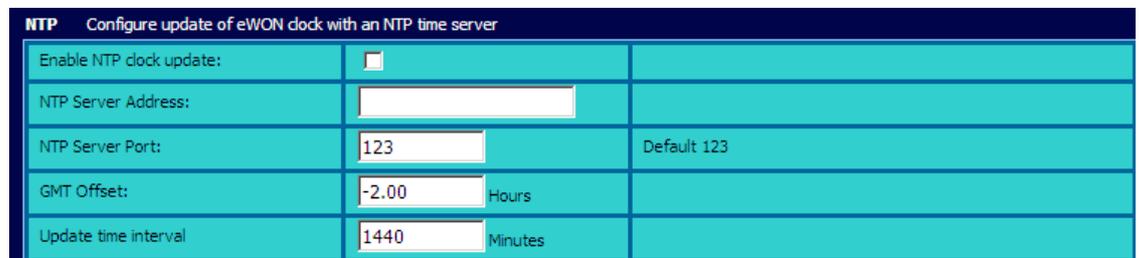
Configuration → System Setup → General → General → Date & Time



Correct date and time settings are very important for the alarm management and the data logging features of the eWON. When VPN connections are used, correct time settings are necessary for the certification check, etc.

You can ask the eWON to synchronize automatically its date and time according to a Network Time Server (NTP server). The NTP server settings can be configured using the following window

Configuration → System Setup → General → Net Services → NTP (time)



In the «GMT offset parameter» enter the time-lag (in hours) between your local time zone and the GMT time zone. Pay attention, the value to enter here is just the opposite value of the time zone you usually specify in the date and time properties settings of your PC. For example: If the time-lag is +2, you will have to insert -2 into your eWON.

NOTE



eWON does not handle daylight saving time changes. So you will need to adapt the GMT offset parameter for winter and summer time.

Create Tags and monitor values

In the eWON you can create Tags. A Tag will allow you to retrieve and modify the data on an external device like a PLC or a Modbus device.

The eWON integrates several IO Servers which allow to link a tag to a register of the external device.

Available IO servers

List of possible IO Servers:

IO Server	Used for
MEM	Internal memory tags
EWON	eWON integrated DI and DO
MODBUS	Modbus devices (TCP / RTU)
UNITE	Schneider PLC (Unitelway)
NETMPI	Siemens devices using eLink (obsolete)
DF1	Allen Bradley PLC of the SLC family
FINS	OMRON PLC
ABLOGIX	Allen Bradley PLC of the Controllogix family
S73&400	Siemens S7-300 and S7-400 (MPI / Profibus / ISOTCP)
S7200	Siemens S7-200 (PPI / ISOTCP)
HITACHI	HITACHI PLC

Most of the IO Servers need a communication configuration.

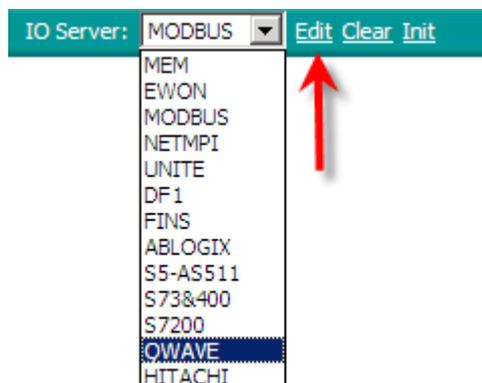
To access the IO Server configuration page use the following path:

Configuration → IO Server Config

Tag Setup	System Setup	 IO Server Config	Main Menu
Script Setup	Users Setup	Pages List	

5. Create Tags and monitor values

To configure the IO Server select the desired IO server in the list box and click on the Edit button just next the IO Server.



For detailed information about each IO Server, please refer to the eWON **General Reference Guide** (chapter 5: IO servers) that you can find at <http://support.ewon.biz>

IMPORTANT



The serial port can only be used by one IO Server at the same time. So, if the MODBUS IO Server uses already the serial port, then the UNITE IO Server cannot be used to poll data on the serial link as well.

On the Ethernet Link this limitation does not exist. So you can use the MODBUS IO Server to poll data on a device using the Ethernet link and on the same time use the DF1 IO Server to poll also data over Ethernet on a AB PLC device.

Tag Creation

Let us create some tags. Go back to the configuration menu and select Tag Setup.

We will create 2 tags:

- 1 tag connected to the digital output of the eWON
- 1 memory tag that we will use later to compute for an alarm management purpose.

The Tag list is currently empty. Select the **Create New Tag**, to show the tag configuration window:

Configuration → Tag Setup → Create new tag



In below window, enter the parameters of the tag connected to the eWON's digital output:

Tag Name: MyOutput

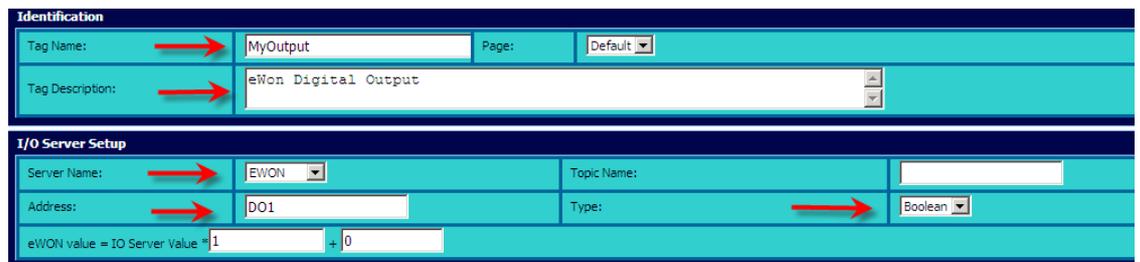
Tag Description: eWON Digital Output

Server Name: EWON

Address: DO1

Type: Boolean

Click "Add/Update Only" (at the bottom of the screen) to validate your changes.



Let us create another tag which will be used later for the alarm configuration:

Tag Name: Level

Tag Description: Check the tank's level

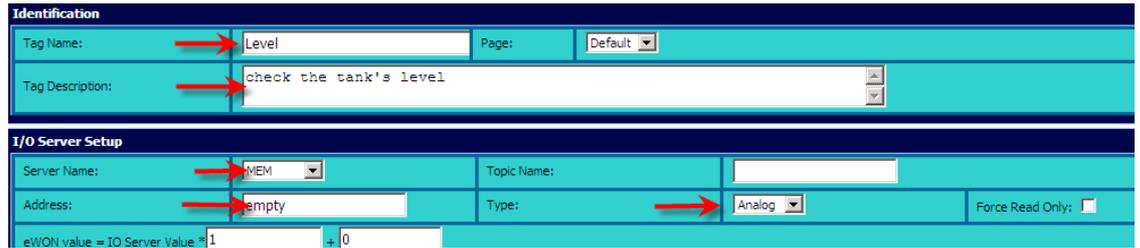
Server Name: MEM

Address: empty

Type: Analog

Click "Add/Update Only" (at the bottom of the screen) to validate

5. Create Tags and monitor values



Identification

Tag Name: Level Page: Default

Tag Description: check the tank's level

I/O Server Setup

Server Name: MEM Topic Name:

Address: empty Type: Analog Force Read Only:

eWON value = IO Server Value * 1 + 0

Monitor your tags

Tag display

Use the following link to display the View I/O page which allows you to monitor the Tags you have already created:

Main Menu → View I/O

On this screen you will see the current value of every configured Tag.

	Tag Name	Value	New Value	
<input type="checkbox"/>	Level	90	90	Update Tank Level

To refresh the value of the tags; use the «**Update**» button in the green sub menu. To classify tags or to give special access rights to Tag groups a Tag is linked to a Tag page. The list box next to the Update button allows you to select the Tag page to display.



Change the value of a tag

To change the value of a tag enter the value into the «**New value**» column of the View I/O page and click the «**Update**» button situated just after the «**New value**» field column.

	Tag Name	Value	New Value		Description
<input type="checkbox"/>	Level	88	88	Update	Tank Level

Do not forget to refresh the View I/O page using the «**Update**» button in the green sub menu in order to reflect the applied value changes.

Alarm Management

Configure the alarm settings on your Tag

Configuration → Tag Setup

If you want to edit the alarm configuration of your tag, click on the tag name (Level, in our example). Fill the fields with all the information needed.

For instance, if the **Alarm Level High** is 100, the alarm is raised if the level goes above 100.

Alarm Setup			
<input checked="" type="checkbox"/> Alarm Enabled			
Alarm Level Low:	<input type="text" value="0"/>	Alarm Level High:	<input type="text" value="100"/>
Alarm Level LowLow:	<input type="text"/>	Alarm Level HighHigh:	<input type="text"/>
Boolean Alarm Level:	<input type="text" value="1"/>	Value Deadband: <input type="text" value="0"/>	
Activation Delay:	<input type="text" value="0"/> sec	Auto acknowledge: <input type="checkbox"/> (Auto ACK on RTN)	
Alarm Hint:	<input type="text" value="please close the door"/>		

Once the Alarm has been enabled, click on **Add/Update Only**

To see if the alarm has actually been activated, click on **Tag Setup**.

Configuration → Tag Setup

	Tag Name	Description	Type	IO Server	Topic	IO Address
<input checked="" type="checkbox"/>	Level	Tank Level	Analog	MEM	Level	

The **X** sign under the bell icon proves that the alarm has been activated for this tag.

Alarm Display in the View I/O Page

Main Menu → View I/O

	Tag Name	Value	New Value		Description
<input checked="" type="checkbox"/>	Level	52	<input type="text" value="52"/>	<input type="button" value="Update"/>	Tank Level

On the View I/O page a yellow bell icon next a Tag indicates that an alarm has been raised for this Tag.

Alarm summary

View I/O	Alarm Summary	Diagnostic	Configuration
	Alarm History	Files Transfer	Log off

The Alarm summary will give you an overview of alarms that are currently present in the eWON and their situation. If an alarm is raised, it will be displayed on this page (ALM). The same occurs if the alarm returns to normal (RTN). Bear in mind that when the alarm is acknowledged, it is not displayed anymore.

Date	Name	Action/Date	User Ack	Description
<input type="checkbox"/> 05/01/2000 04:16:33	buton	ALM (LVL) 05/01/2000 04:16:33		

Alarm history

View I/O	Alarm Summary	Diagnostic	Configuration
	Alarm History	Files Transfer	Log off

This page will give you an overview of the various steps the alarm has gone through. So, you can easily see if and when an alarm has been raised or acknowledged, for instance.

Date	Name	Status	Type	User Ack	Description
05/01/2000 04:30:07	buton	ALM	LVL		
05/01/2000 04:30:03	buton	RTN			
05/01/2000 04:28:37	buton	ALM	LVL		
05/01/2000 04:28:25	buton	RTN			
05/01/2000 04:16:43	buton	ALM	LVL		
05/01/2000 04:08:12	Level	RTN			Tank Level
05/01/2000 04:07:58	Level	ALM	HI		Tank Level
05/01/2000 04:00:07	buton	ALM	LVL		

Alarm notification

When configuring the alarm, you can ask the eWON to send out a notification when the alarm is raised. The notification can be done by email, SMS (only for GSM and PSTN modems), FTP or SNMP traps.

Configuration → Tag Setup

Let us configure an alarm notification by email.

	L	Tag Name	Description
<input type="checkbox"/>		Level	Tank Level

Click on the bell link to open the **Alarm notification** window linked to the tag.

6. Alarm Management

Alarm Notification for tag: Level

E-Mail upon: ALM ACK RTN END

Short Message: Format as short message

E-Mail to: ex: usr1@dom.ci,usr2@dom.ci

E-Mail CC:

E-Mail Subject:

E-Mail Attachment(s): ex: &[sd]EV

Select for which alarm status the email will have to be sent out:

ALM: when an alarm is raised

ACK: when an alarm is acknowledged

RTN: when an alarm has returned to a normal state

END: When the alarm cycle is finished (ACK and RTN)

Fill the different email fields in: «email to», «email subject» and «email attachment».

To send out an email, the eWON needs information about the SMTP server which has to be used to send the mail.

These settings must be specified under the following path:

Configuration → System Setup → General → Net services → SMTP (mails)

SMTP Configure Mail Transfer		
SMTP Server Address:	<input type="text" value="relay.skynet.be"/>	Usually something like smtp.domain.com or mail.domain.com (can be an IP address)
SMTP Server Port:	<input type="text" value="25"/>	The default value is 25. It must only be changed in very special cases.
E-Mail "From" User name:	<input type="text" value="MyeWON@skynet.be"/>	This will be used to send E-mails, it must be compatible with your account name on the SMTP server.
User name:	<input type="text"/>	Fill this only if SMTP requires authentication, otherwise leave empty.
Password:	<input type="text"/>	Password for SMTP authentication (only if above field used).

IMPORTANT



If a domain name is used for the SMTP server, then you will probably have to specify the DNS servers in the eWON Ethernet section. To do so, follow the following path: Configuration – System Setup – Communication – Ethernet – Eth1-LAN.

DNS Setup		
Primary DNS IP address	<input type="text" value="0.0.0.0"/>	Leave blank (or 0.0.0.0) if no DNS
Secondary DNS IP address	<input type="text" value="0.0.0.0"/>	

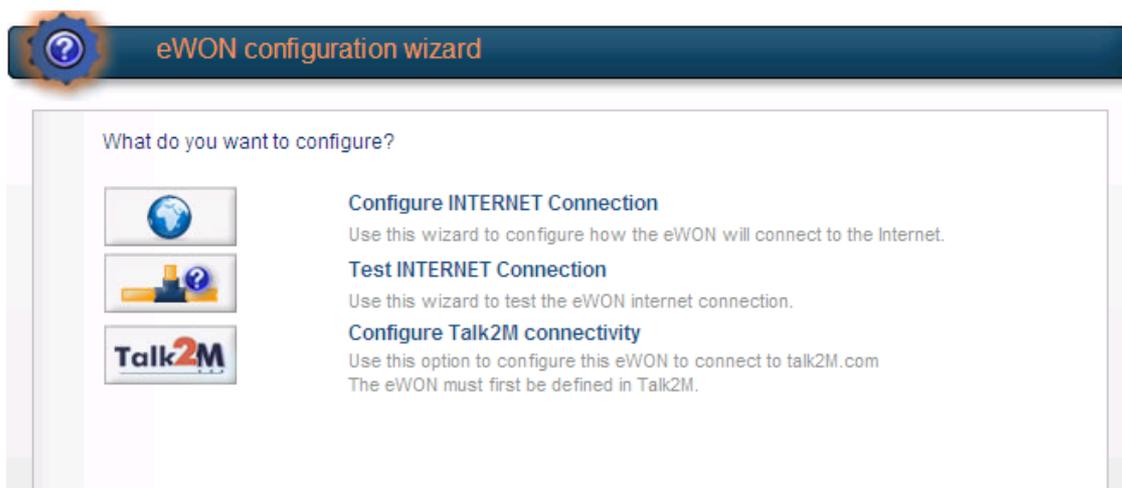
Configure eWON for Internet connection

When a new alarm is triggered, the eWON will check the SMTP server address. If the address is not compatible with its local network, then the eWON will establish the Internet connection (if configured) to be able to send out emails. Once an email has been sent, the eWON will disconnect from the Internet after configurable timeouts.

Let us assume that we want to use a SMTP server on the Internet. So, we will need to configure the eWON for the Internet connection. To do so, a wizard is at your disposal. This wizard will guide you through the different steps required for the Internet connection. You will find the wizard on the upper right corner, next to the Main Menu.



Once you have clicked on the  icon, the eWON configuration wizards page opens.



On this window, click on **Configure INTERNET Connection** and follow the steps to configure the Internet connection.

Email notification layout

When an alarm has been raised and you configured your eWON to send an email notification, it will contain the following information: the name of the Tag created, the level, the status and the alarm action (the text that you have written when configuring the alarm)

Hereunder an example:

```
Event on Tagname: Level
Status: ALM, Level: HI
*** Tagname Description:
Tank Level

*** Tagname Value:
Alarm Time: 20/08/2008 10:18:31, Current value: 110.000000
```

```
ALARM Action:
Open the faucet
```

```
*****
This Email has been generated automatically by:
*** Device Identification:
SMI
*** Device Description:

*** Device TCP/IP addresses
Ethernet: http://10.0.120.153
PPP: http://0.0.0.0
*****
```

Real Time Logging

Please be aware that there is an important difference between the **Real Time** and the **Historical Logging**.

The Historical Logging is used to save value changes of a variable in the eWON flash file system (non volatile flash memory). On the other hand, the Real Time saves any changes into a volatile memory (RAM memory). It only displays changes that occurred in a defined period of time (30 sec, 1 min, you can specify this period)

Configuration

[Configuration → Tag Setup](#)

To configure the Real time logging, click on the Tag Name and scroll down. Here you can choose the Time span and the Logging Interval (for example, you can ask the eWON to show you the variations of a tag every 10 seconds during 600 seconds). The data you will get from the graph are not saved in the eWON. The Real Time Logging is aimed at obtaining a kind of diagnostic, a look back in recent time.

Real Time Logging		<input checked="" type="checkbox"/> Real Time Logging Enabled
Time Span:	<input type="text" value="600"/>	Seconds
Logging Interval:	<input type="text" value="10"/>	Seconds

Real Time graph

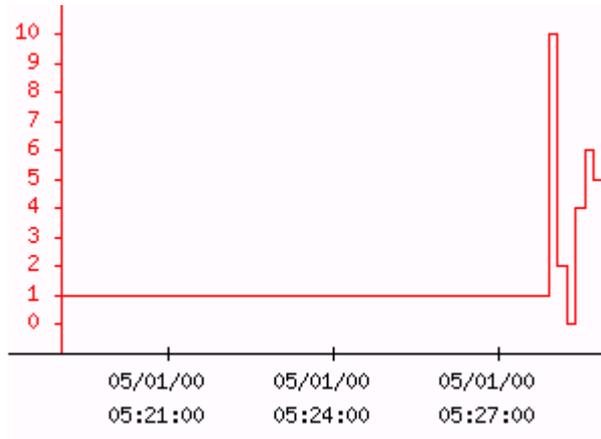
[Main menu → View I/O](#)

<input type="checkbox"/>	 Level 	<input type="text" value="110"/>	<input type="text" value="110"/>	Update	Tank Level
--------------------------	---	----------------------------------	----------------------------------	------------------------	------------

To see the Real Time Graph, all you have to do is click on the small icon representing a graph next to the Tag. See above.

7. Real Time Logging

Hereunder, an example of a Real Time Graph.



Historical logging

The Historical Logging is used to save value changes of a variable in the eWON flash file system (non volatile flash memory).

Configuration

Configuration → Tag Setup

To configure the Historical Logging, click on the Tag Name and scroll down and check the **Historical Logging Enabled** field.

For example, a *logging deadband* of 2 means that a point will be logged when the value changes by 2 or more. If you put a negative value in the deadband, the logging on value changes will be disabled.

A *logging interval* time of 0 means that the time based logging is disabled. On the other hand, a logging interval of 60 means that the value will be logged every 60 seconds.

Historical Logging	
	<input checked="" type="checkbox"/> Historical Logging Enabled
Logging Deadband:	<input type="text" value="2"/> (put a negative value to disable deadband logging)
Logging Interval:	<input type="text" value="0"/> Seconds (set to 0 will enable only Deadband logging)

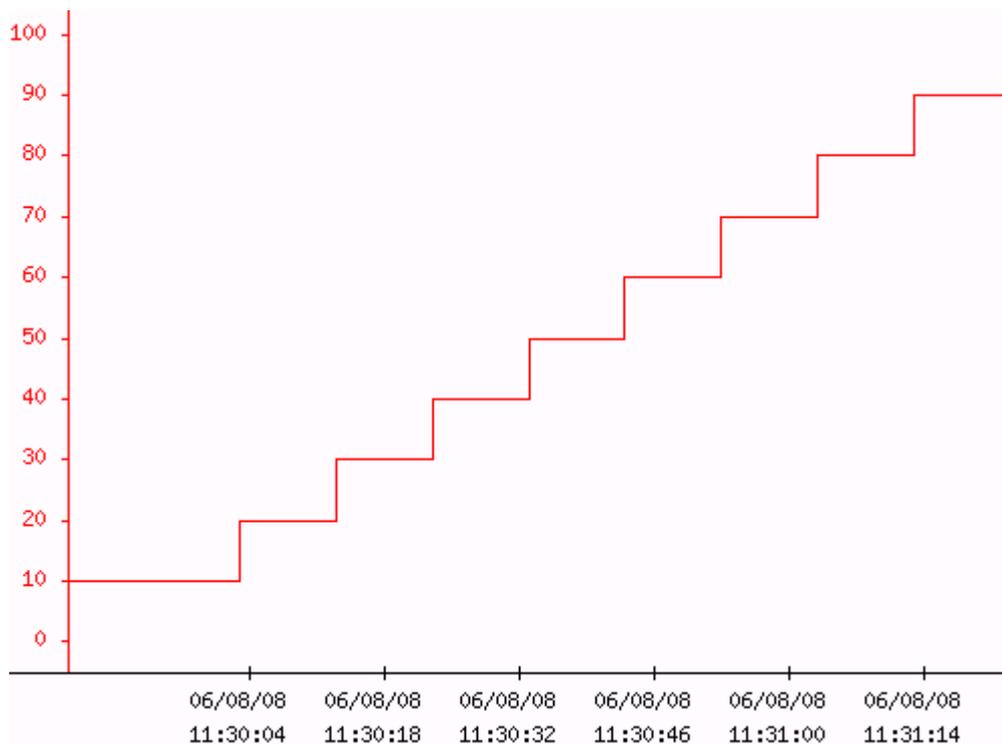
Historical Logging graph

Main menu → View I/O

To display the Historical Logging Graph, select the Tag with the left checkbox, click on **Show Graph For Selection**, select your time range for the selected variables and finally click on **Update Graph** link.

The screenshot shows the 'Historical Logging Table' interface. At the top, there is a green bar with a red arrow pointing to the 'Show Graph For Selection' button. Below this is a table with columns: Tag Name, Value, and New Value. A row is selected with 'Level' in the Tag Name column, '4' in the Value column, and '4' in the New Value column. To the right of the table, there is a 'Page: All' dropdown and an 'Update' button. Below the table, there is a blue arrow pointing down to another green bar. This bar contains a 'From:' field with the value '04/01/1999 05:35:36', a 'To:' field with the value '05/01/2008 05:35:36', a 'Common axis:' checkbox, and an 'Update graph' button with a red arrow pointing to it.

Hereunder a example of a Historical Logging Graph.



Historical Logging Table

Main menu → View I/O

If you want to see the Historical Logging of tags in a table format, you have select your Tag to click on the **Historical Logging Table**.



Then, choose a “from” date and a “to” date. Before clicking on **Update**, select “any” the **Group** field. Hereunder, an example of a Historical Logging Table where you can see the variations of the selected tag.



[Download as text file](#)

TimeStr	Température	Test
08/08/2008 15:00:16	Undef	Undef
08/08/2008 15:00:48	8.000000	Undef
08/08/2008 15:11:48	100.000000	Undef
08/08/2008 15:11:52	100.000000	2200.000000
08/08/2008 15:11:57	55.000000	2200.000000
08/08/2008 15:11:59	56.000000	2200.000000
08/08/2008 15:12:01	100.000000	2200.000000
08/08/2008 15:12:03	100.000000	55.000000

I

Transparent Gateway

The eWON can act as a transparent Gateway between its Ethernet interface and the serial interface.

This will allow the connection to a serial device through the eWON using the Ethernet protocol for the device. So your PC does not need to be connected directly to the device (like a PLC) over the serial link. But it can be connected anywhere as long as the PC has still access to the network on which the eWON is installed with the serial device.

Ethernet to serial protocol gateway

eWON can act as transparent Ethernet to serial gateway for the following protocols:



To use the Transparent Gateway in the eWON, all you have to do is configure the serial port settings of the IO Server for the desired protocol. For example, you will need to configure the serial settings of the DF1 IO Server if you want to use the transparent gateway between EIP and DF1 (AllenBradley protocols).

VCOM solution

If the serial device to which you want to connect does not use one of the protocols previously listed, then perhaps the VCOM feature of the eWON could be a solution to connect over Ethernet to your device. A Virtual COM (VCOM) solution will actually simulate a COM port on your PC. This virtual COM port is then connected to the serial port of the eWON using the Ethernet Link between your PC and the eWON. For the programming or communication software running on your PC, it is then as if the serial device was directly connected to your PC.

However, the main difference between a real direct serial connection to the device and the VCOM solution is that the communication over Ethernet will need longer communication timeouts. If the software you are using has long enough timeouts or if these timeouts are configurable, then the VCOM solution could be applied to your device.

Tag publishing (Modbus TCP/ SNMP)

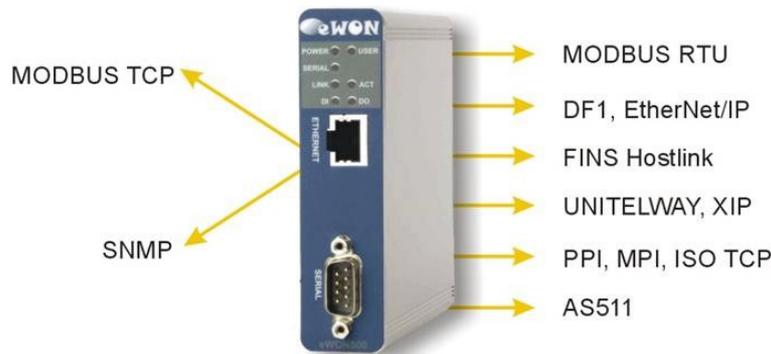
As already seen before, the eWON allows you to create Tags to poll for example data on serial or Ethernet devices using the different integrated IO Servers.

The eWON allows you also to publish the Tags you have created. Using this feature, an external software could then read the Tags value out of the eWON.

For example, a supervision software running on a PC which is connected to the eWON using the Ethernet Link (local network or over a remote connection) could then read the values which are polled on the PLC even if the supervision software does not support the PLC protocol.

The eWON can publish Tags using the following protocols:

- Modbus TCP
- SNMP
- Instant value files (This are csv formatted files containing the actual value of each Tag)



The Tag publishing has to be activated in the configuration page of each Tag which need to be published.

Tag Visibility		
Global settings		
Published value:	eWON value * 1 + 0	REMARK: Value published is unsigned 16bits for ModbusTCP and signed 32 bits for SNMP
Modbus TCP	<input checked="" type="checkbox"/> Enabled	
Register	1	<input type="checkbox"/> Consider as float register
SNMP	<input checked="" type="checkbox"/> Enabled	
OID	1	Value published: . 1.3.6.1.4.1.8284.2.1.3.1.11.1.4.OID (Integer32)
Instant Value		
<input type="checkbox"/> Group A <input type="checkbox"/> Group B <input type="checkbox"/> Group C <input type="checkbox"/> Group D		

The Tag configuration shown in the picture here above, will publish the Tag value as an Analog Output on register 1.

An external software can then read back this value using Modbus TCP, by specifying the eWON IP address, the Unit ID 100 (default setting of the eWON) and the Analog Output register 1.

IP Router

Most of the eWON series can be used as IP router. Only the eWON 500 and 4001 or 4002 devices without modem do not allow the routing, because they only integrate one Ethernet interface.

The different possible features that the eWON can fulfill as IP router are listed hereunder.

NAT and Transparent forwarding

This features are needed if you want that the Ethernet devices behind the eWON can connect to the Internet or can be reached from the Internet.

The NAT feature (Network Address Translation) must be used to allow the Ethernet devices behind the eWON to go out to the Internet.

The Transparent Forwarding feature, if activated, will forward all incoming traffic to the designed IP device which is connected to the eWON.

VPN

The VPN (Virtual Private Network) feature of the eWON will allow you to establish a secured connection to your eWON over the Internet.

The VPN connection can be:

- a point to point connection between your PC and the eWON (using eCatcher with or without the use of Talk2M)
- a point to point connection between two eWON's
- a real VPN network, connecting several eWON's and PC's together to a virtual network.

The VPN solutions of the eWON have been designed to simplify considerably the integration effort for the user.

Not every eWON has VPN capabilities. Refer to the feature matrix for the different eWON types to check if your device allows VPN or not.

Link to the feature matrix: <http://www.ewon.biz/FeatureMatrix.htm>

Proxy features

The eWON also integrates a Proxy feature.

The Proxy feature of the eWON can be used to connect from remote to a local Ethernet device which is connected to the eWON. For the local Ethernet device, it looks then as if the eWON was communicating directly to the device and not an external device of the network.

Remote maintenance

The eWON can be used to allow remote maintenance on your PLC devices using the Ethernet or the serial connection of the PLC.

In fact, to achieve the remote maintenance, a combination of the IP router feature and the serial gateway feature of the eWON is used.

To be able to do the remote maintenance, some configurations have to be done in the eWON and most of the time, in the programming software as well.

On our website, you will find documentations dedicated to the remote maintenance for every supported PLC device. (<http://support.ewon.biz> , in the **Connectivity** section)

User defined Web pages

Your eWON has an built-in Web server. Actually, you have already used it by browsing through the internal eWON web pages (View I/O, Configuration pages, etc).

You can also create your own Web pages on the eWON. This will allow you to customize the eWON more precisely in accordance to the project you realize.

A special syntax has to be used to include eWON data into your web pages. By using this syntax you will be able for example to include the value of an acquired Tag, acknowledge an alarm, etc.

The custom web pages have to be placed in the /usr directory of the eWON.

To display the web page following link has then to be used in your Internet Browser:

`http://eWON_IP_Address/usr/NAME_OF_THE_PAGE_WEB`
for example: `http://10.0.0.53/usr/MyPage.shtm`

The example hereunder shows how to create a custom web page.

- Create a file called MyPage.shtm with following content:

```
<html>
<Title>
My custom eWON web page
</title>
<body>
<P>
Currently looged user: <##SessionAst,UserLogin%>
</p>
<p>
Actual value of Tag 'Level' is: <##TagSSI,Level%>
</p>
</body>
</html>
```

- Put by FTP the MyPage.shtm file on the /usr directory of your eWON.
- Display the web page using following link in your Web Browser:
`http://eWON_IP-Address/usr/MyPage.shtm`

The following page will then be displayed:

13. User defined Web pages



IMPORTANT



When your eWON is configured with a user defined Web page as default page, then use following link to display back again the standard eWON configuration pages:
http://eWON_IP_Address/index.htm

NOTE



You can configure the eWON to display directly a user defined Web page instead of the standard eWON configuration pages.

This can be done under following menu:

Configuration → System Setup → General → General → Identification

Just enter the full name of the custom web page in the «user defined Home page» field.

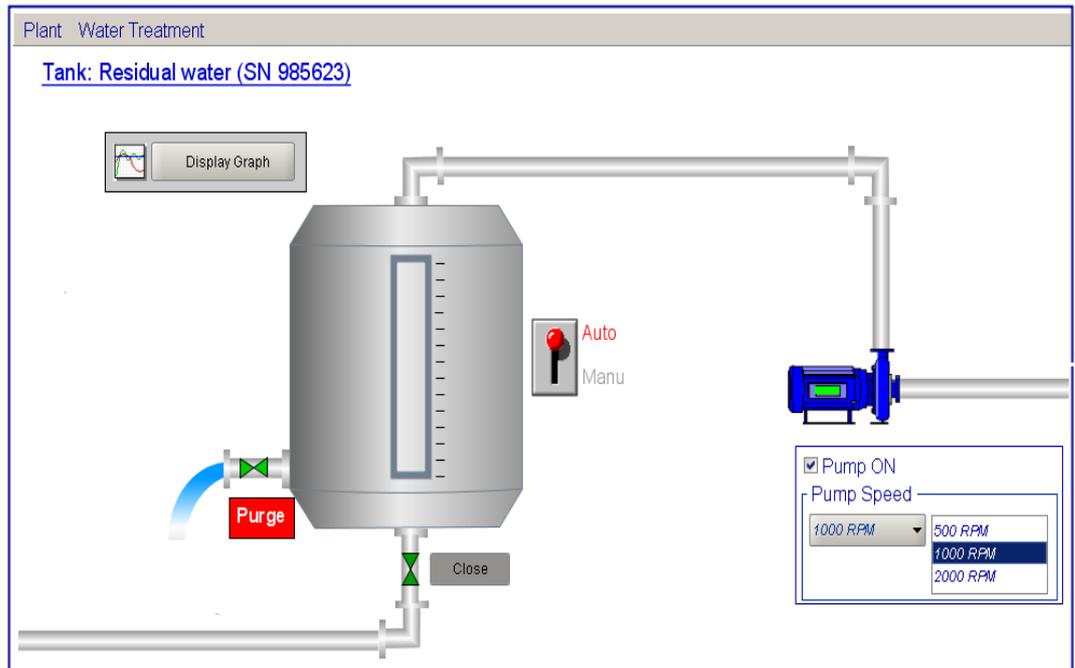
When you then enter the IP address of your eWON in your Web Browser, the user defined web page will be directly displayed.

Detailed information about the build-up of user define web pages can be found in the following PDF document: **RG-003-0-EN (Web Reference Guide).pdf** (support.ewon.biz)

When your eWON has viewON capabilities then you can also create your own web pages using the viewON application. The viewON application will allow you to create a Web Scada application and put this application on the eWON web server. Clients will then be able to connect to the eWON (locally or from remote locations) and run the Scada application.

13. User defined Web pages

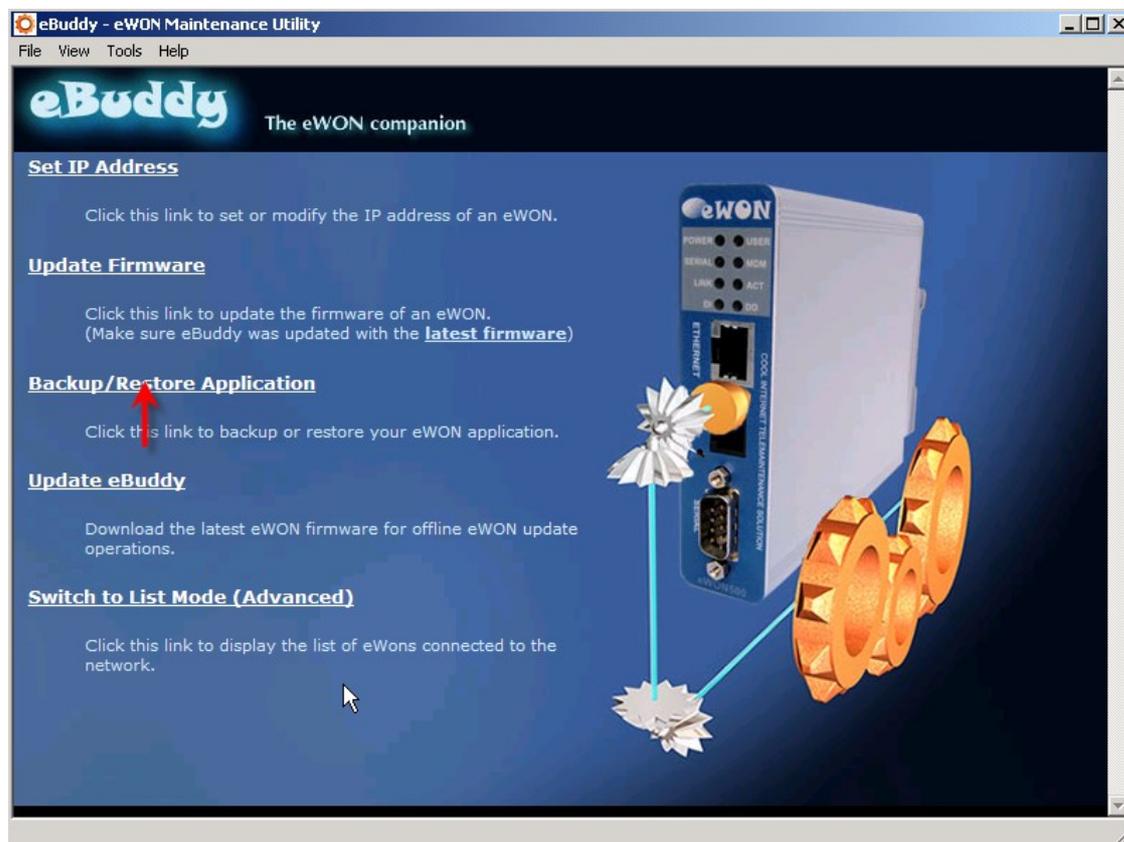
An example of a Web page designed with the viewON application is shown hereunder:



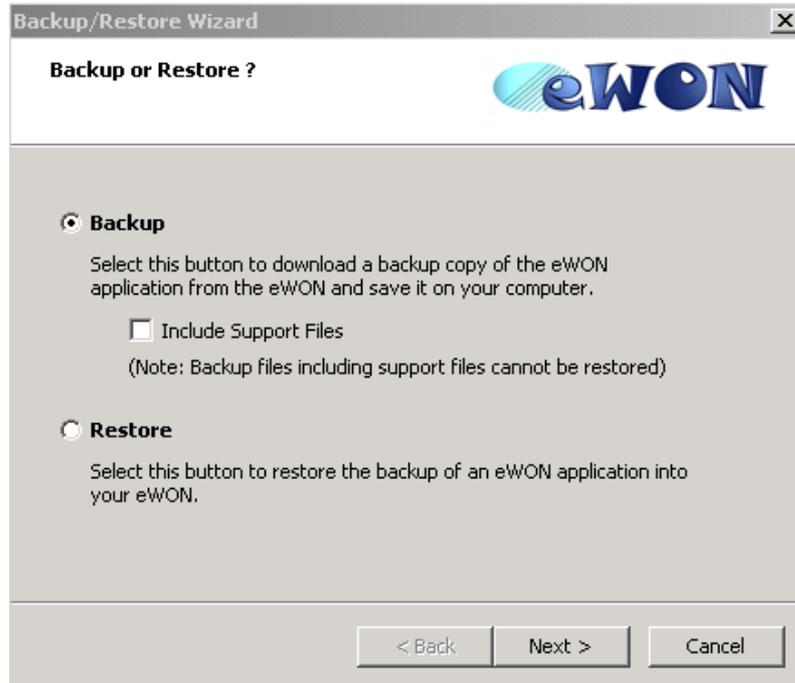
Backup and Restore

eBuddy allows you to backup and restore your eWON.

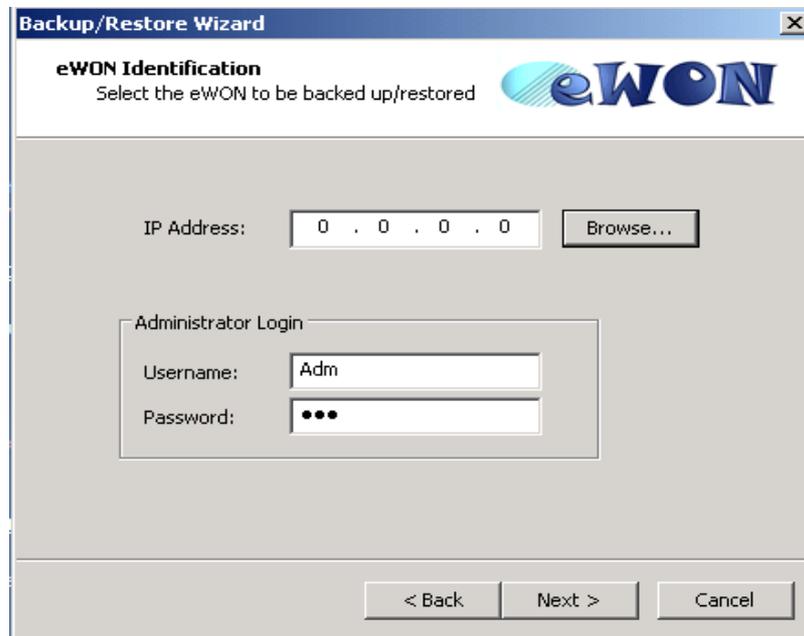
To do so, just open eBuddy and click on the **Backup and Restore** link.



Once this has been done, a window will open asking if you want to backup or restore your eWON.

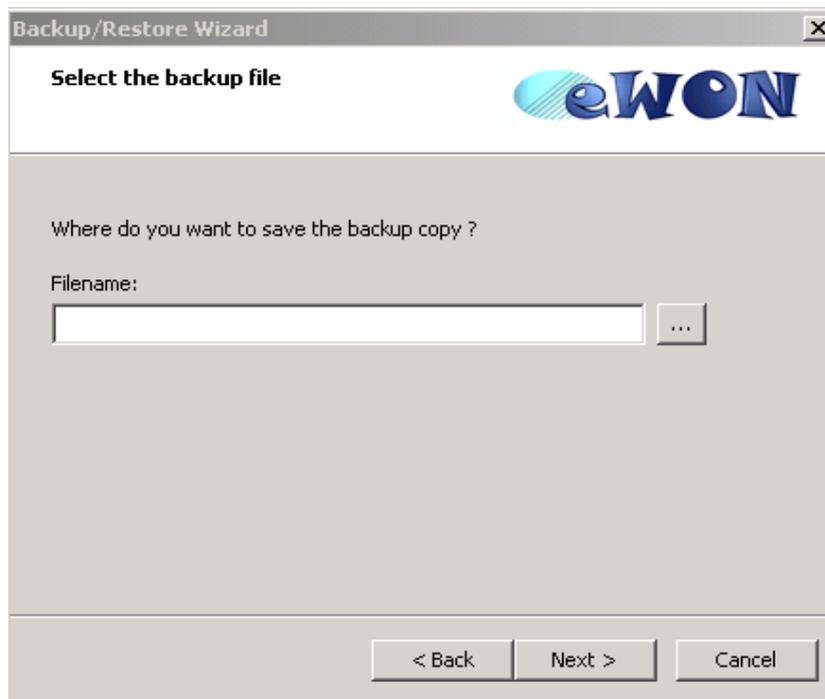


After having chosen, click on the «**Next** »button and specify the IP address of the eWON.



You can also click on the «**Browse**» button. In this case, the dialog box «**Select an eWON**» will appear showing you all the eWON connected to your Network.

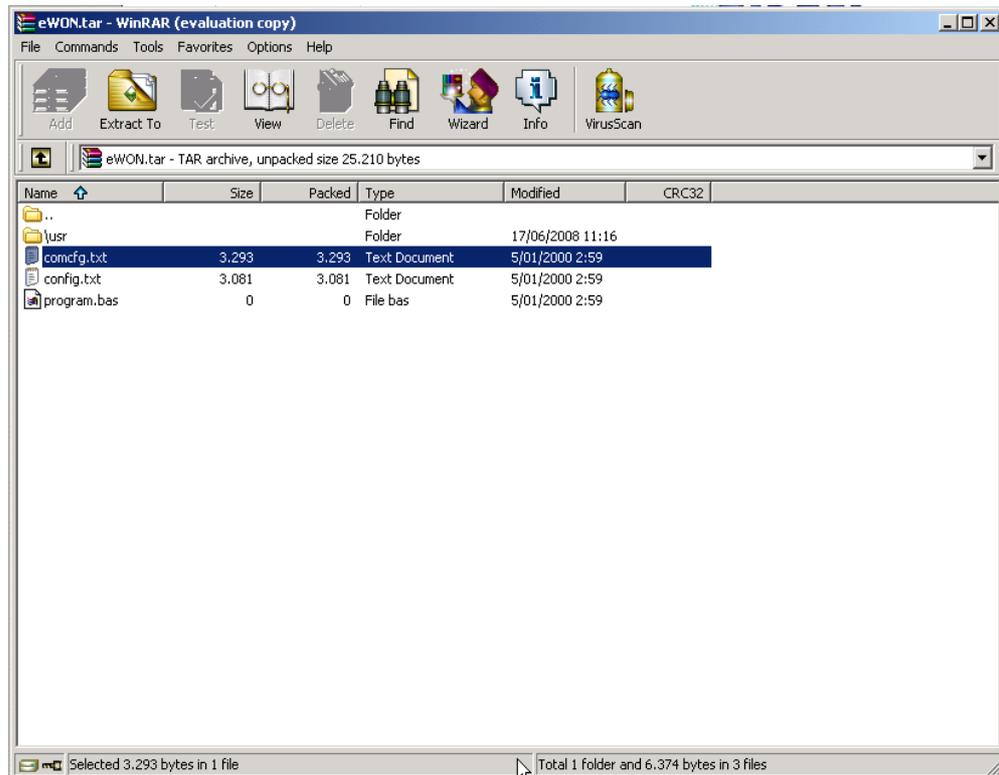
When you have selected your eWON in the list and clicked on the «**Next** » button, a **Select the Backup File** window appears. In the **Filename** field, specify where you want to save the backup copy, click on the «**Next** » button and save.



The backup copy will be saved as a **.tar** file. When you open it, you will find 3 different files: **comcfg.txt**, **config.txt**, **program.bas** and the **/usr** directory. These are the only files you need to backup your eWON.

14. Backup and Restore

When you open it, you will find 3 different files: comcfg.txt, config.txt, program.bas and the /usr directory. These are the only files you need to backup your eWON.



Configuration using FTP transfers

Every eWON can be used as FTP server or FTP client. This will allow you to get or put your own data files on the eWON.

The FTP Server feature of the eWON can also be used to change the eWON settings or to make a backup of your eWON.

All you have to do is put on the eWON a file that contains the different configuration parameters. When the eWON receives the file, it will analyze it and, if the syntax is correct, performs the changes.

In fact, we saw in the previous chapter that the following files are needed to make a full backup of your eWON:

- the comcfg.txt file
- the config.txt file
- the program.bas file
- the /usr directory.

The config.txt file contains the general information of your eWON, the configuration settings of the different IO Servers and also the Tag and user list of your eWON.

The comcfg.txt file contains the information about the communication settings of the eWON. This file contains for example the IP address of your eWON and the Internet connection settings.

The program.bas file contains the entire BASIC program you realized in your eWON.

The /usr directory will contain the custom web pages you created, the customized files you stored on the eWON and the viewON project.

If you adapt some settings in the config.txt file or in the comcfg.txt file, and you put this file (or a part of this file) back to the eWON using FTP, then eWON will perform the modification.

If, for example, you create the following config.txt file and you put it on the eWON root using a FTP transfer, then the eWON identification will be changed and 3 new Tags will be added (or modified, if the Tag was already existing).

```
:System
Identification:eWON connected to Tank1
:TagList
"Id";"Name";"Description";"ServerName";"TopicName"
1;"Level";"Level of Tank1";"MEM";""
2;"Temperature";"Temperature of Tank1";"MEM";""
7;"Pressure";"Pressure of Tank1";"MEM";""
```

Export Block Descriptors

The Export Block Descriptors have to be used to export data out of the eWON.

For example, we saw earlier in this document that you can send out emails for alarm notifications. With the use of Export Block Descriptors you can integrate additional information into the email as the alarm history or a historical graph covering the last 20 minutes.

An Export Block Descriptor is a string of characters describing what kind of eWON data to export using a predefined syntax.

Typically, the Export Block Descriptor will answer the following questions:

- Which eWON data to export (Event log, Historical logging, etc.)?
- How to format the exported data (Binary, Text, Html table, Graphic)?
- The start time ?
- The end time?
- Which Tag is concerned?

For example, the following Export Block Descriptor will extract the historical logging of the last 4 hours of Tag A1 and represent the result in text format:

```
$dtHL $ftT $st_h4 $et_m0 $tnA1.
```

If you add now this Export Block Descriptor to the email for the alarm notification, then the user will receive an alarm notification containing the Historical Graph of the last 4 hours. This will allow the user to make a more precise analyze of the alarm situation.

Other advanced use of the Export Block Descriptor are for example:

- Include data in an eWON HTML custom page.
- Access data in Basic Scripting using the OPEN “exp:.....” function

For a detailed explanation about the use of the Export Block Descriptor please refer to the **General Reference Guide** (<http://support.ewon.biz>).

eWON Scripting

You can create your own program on the eWON.

Classic use of the program features of the eWON are:

- Handling of an incoming SMS to change the value of a register in the PLC
- Changing dynamically some eWON configuration parameters, such as Internet connection settings, etc.
- Create and periodically send out a report (alarms, historical data, etc) by email or FTP

The program of the eWON is based on a syntax close to the BASIC, with many specific extensions.

The Basic program syntax and the extended functions are described in the “Programming Reference Guide”. (<http://support.ewon.biz>)

If you want to create your own program in the eWON, then we suggest you to read the «Programming eWON Learning by example» guide. The first part of this document explains how to create your own program in the eWON. (<http://support.ewon.biz/kb.html>)

eWON limitations

As any device, the eWON has its limits. For example the number of points that can be stored in the historical logging is not infinite, same thing for the number of Tags that can be created in the eWON, etc.

For a normal use of the eWON you will not be confronted to these limitations.

But for an advanced use of the eWON, it is probably better to know those limits before starting up the eWON programming.

Revisions

Revision Level	Date	Description
1.0	2008-05-05	First release.
1.1	2008-06-13	Symbol Tag editor added (chapter 3)
1.2	2008-08-26	Complete version
1.3	2009-12-14	MB_CD pictures

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