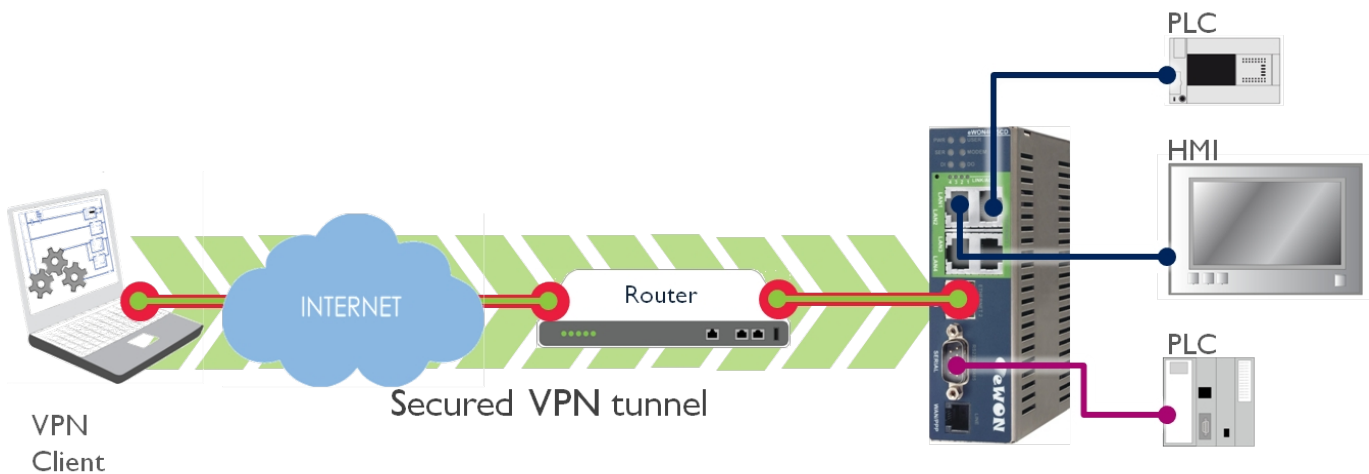


## Direct VPN Connection Using the 2nd Ethernet Port



1. Hardware and Software Requirements.....	3
Hardware Requirements.....	3
Software Requirements.....	3
eWON Firmware Version.....	3
2. Introduction.....	4
3. eWON Configuration for Internet Connection.....	5
LAN and WAN IP Interface Configuration.....	5
Internet Connection Configuration.....	6
4. eWON Configuration for VPN Connection.....	7
Specify the VPN Incoming Connection.....	7
Specify the VPN Routing.....	8
Specify the Security Level .....	9
5. Configure the Router.....	10
Port Forwarding.....	10
Public IP Address.....	10
6. eGigabit Configuration .....	11
7. Establish the VPN Connection.....	13
8. Troubleshooting.....	15
PC cannot connect to the eWON.....	15
If a VPN connection has been established, but the devices cannot be reached.....	15
Publish IP Address of the eWON does not Work.....	16
Revisions.....	17

# Hardware and Software Requirements

## Hardware Requirements

In order to follow this guide you will need:

- 1 eWON with a second Ethernet interface (for example : eWON 2005CD, 4005CD)

## Software Requirements

### eWON configuration software:

The eWON is configured through its embedded web server. So all you need is a standard Web Browser software like Internet Explorer<sup>i</sup> or Firefox<sup>ii</sup>.

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 backup/restore your configuration or upgrade the firmware of your eWON (if required).

### eGrabit:

To establish the VPN connection you need to install eGrabit on your PC. This software will act as VPN Client for the VPN connection to the VPN server (eWON).

eGrabit can be downloaded for free from our website: <http://support.ewon.biz>.

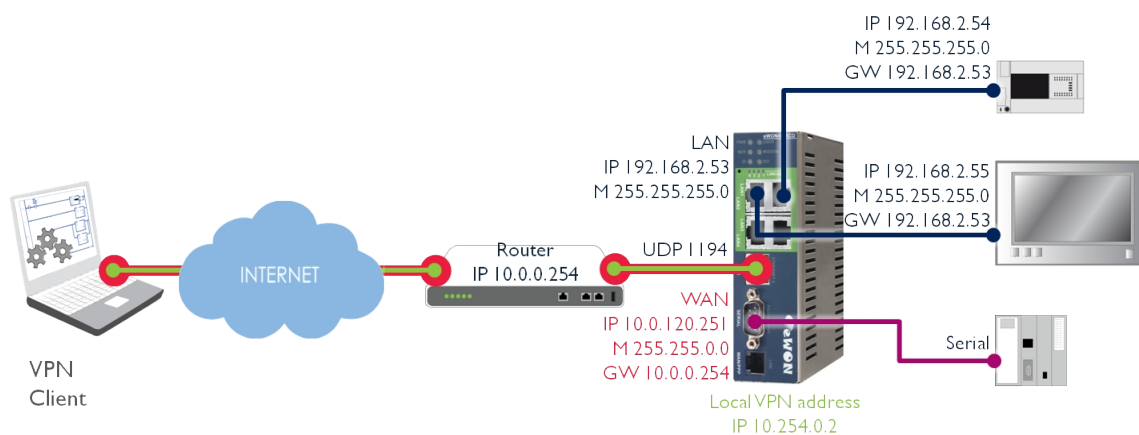
## eWON Firmware Version

To be able to follow this guide your eWON needs a firmware version 5.2s0 or higher. A simple way to realize the eWON firmware upgrade is to use eBuddy, the eWON software companion.

# Introduction

With its embedded PSTN, ISDN or GSM/GPRS modem, the eWON is your access point to field applications and your service gateway to perform remote maintenance on distant equipments.

Instead of using the modem, you can also use the 2<sup>nd</sup> Eth. Interface to reach your eWON through the local Internet access or an ADSL connection.



In this document, we will see how to reach your eWON and PLC(s) from your PC through a VPN connection over the Internet.


### ***Here are the steps to reach your eWON through a VPN connection:***

- Configure your eWON for **Internet** connection
- Configure your eWON for **VPN** connection
- Configure the **eGabit** VPN connection
- Configure the **Router** connected to the eWON

### ***If you want to reach the devices connected to your eWON:***

- Set the eWON LAN IP address as default gateway on the devices behind the eWON

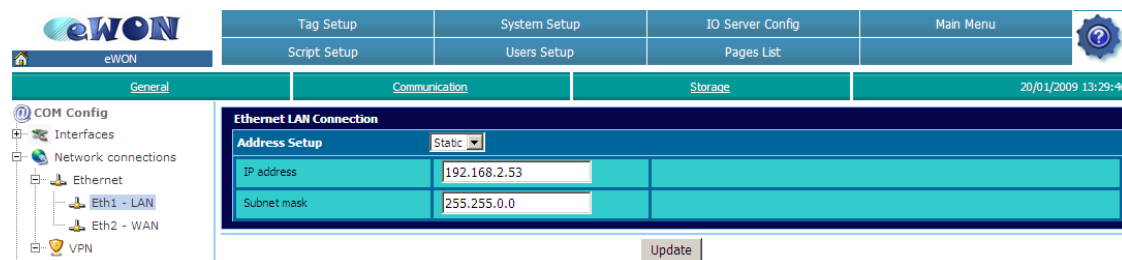
## eWON Configuration for Internet Connection

To establish an Internet connection using the eWON 2<sup>nd</sup> Ethernet interface, you can configure it manually or use the eWON Wizard which is efficient and easier. To open the eWON Wizard, click on **Configuration** in the toolbar and then on the  icon. Should you have any problem in configuring your eWON for the Internet connection using Wizard, refer to our document AUG-019-0-EN (<http://support.ewon.biz>)

In the current guide, we will focus on the manual configuration only.

### LAN and WAN IP Interface Configuration

**Configuration → System Setup → Communication → Network Connections → Ethernet → Eth1-LAN**

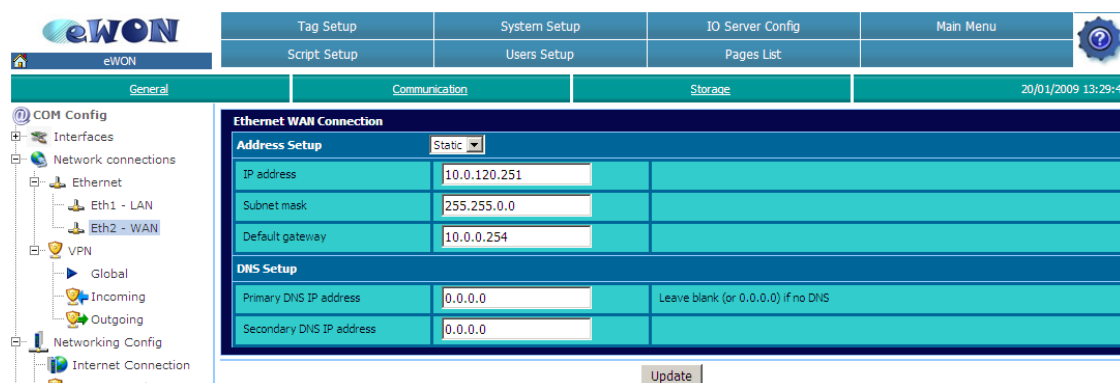


Ethernet LAN Connection	
Address Setup	Static
IP address	192.168.2.53
Subnet mask	255.255.0.0
Update	

Set the eWON **LAN IP Address**.

The devices are connected to the Ethernet side of the eWON .

**Configuration → System Setup → Communication → Network Connections → Ethernet → Eth2-WAN**



Ethernet WAN Connection	
Address Setup	Static
IP address	10.0.120.251
Subnet mask	255.255.0.0
Default gateway	10.0.0.254
DNS Setup	
Primary DNS IP address	0.0.0.0 <small>Leave blank (or 0.0.0.0) if no DNS</small>
Secondary DNS IP address	0.0.0.0
Update	

Set the eWON **WAN IP Address**.

The Ethernet side of the eWON will be used to establish the Internet connection.

The **default gateway** should be the IP address of the Router of your eWON.

**NOTE** The LAN IP address and the WAN IP address must be on different IP addresses ranges. Otherwise the routing will not be possible.



## Internet Connection Configuration

Configuration → System Setup → Communication → Networking Config → Internet Connection

The screenshot shows the eWON configuration interface. The breadcrumb path is Configuration → System Setup → Communication → Networking Config → Internet Connection. The main content area is titled "Internet connection setup" and includes the following sections:

- Internet access**
  - Network connection: Ethernet WAN connection
  - Maintain connection:
- Publish WAN IP address**
  - Publish IP address: Disabled
  - Re-publish interval: 0 minutes
- "On demand" Internet connection**
  - Accept dial on demand from **NO ONE EXCEPT** from:
  - Accept dial on demand from **ANYONE EXCEPT** from:
  - Four IP Range fields, each with From: 0.0.0.0 and To: 0.0.0.0

An "Update" button is located at the bottom of the configuration area.

Select **Ethernet WAN connection** for the Network connection.

Check **Maintain connection**.

Disable the **Publish WAN IP address**.

# eWON Configuration for VPN Connection

## Specify the VPN Incoming Connection

**Configuration → System Setup → Communication → Network connections → VPN → Global**

VPN Connection configuration		
Advanced options		
Diagnosis level	Low	Diagnosis goes to 'Real time log'
Port In	0	
Port Out	1194	
'keep alive' interval	120 seconds	0 = disable Keep alive.

Here you can change the Port number on which eWON will «listen for» incoming VPN traffic.

**NOTE** *Port in:* 0 = default behavior



If VPN is initiated by an external source (eGabit), then eWON listens on port 1194 (hard coded).

**Configuration → System Setup → Communication → Network connections → VPN → Incoming**

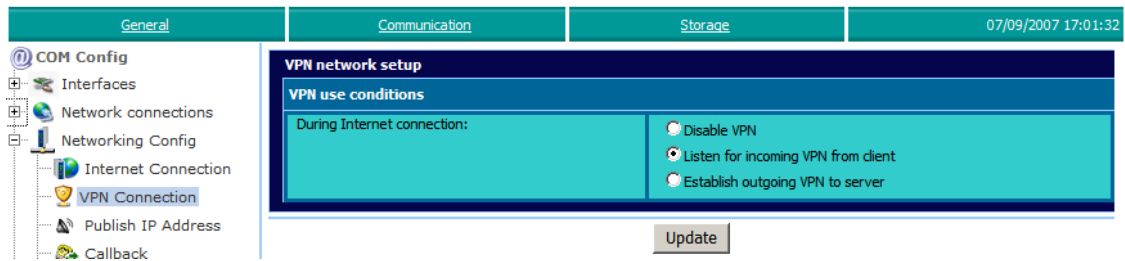
Accept incoming VPN connection configuration		
VPN activation rule		
The VPN activation rule is normally defined in <a href="#">Networking Config</a> (duplicated here for simplicity)		
Listen for incoming VPN connection	<input checked="" type="checkbox"/>	During Internet connections
Incoming VPN connection parameters		
Passphrase	••••••	
VPN Ip addresses config	Automatic	
Local VPN IP address	10.254.0.2	
Remote VPN IP address	10.254.0.1	

Check **Listen for incoming VPN connection**.

Enter a **Passphrase** and remember this **Passphrase** for the eGabit configuration.

Let the **VPN IP addresses config** on **Automatic**.

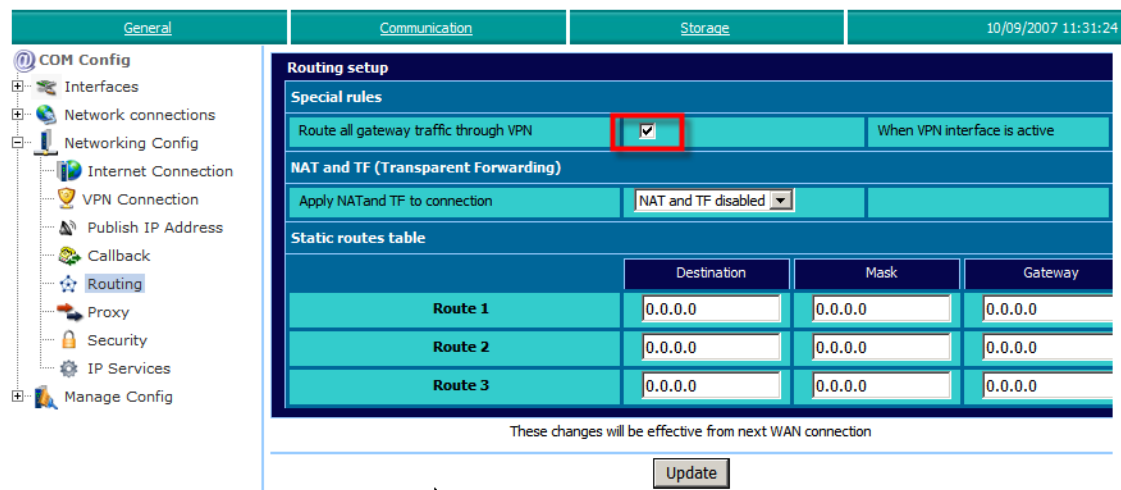
**Configuration → System Setup → Communication → Networking Config → VPN Connection**



Check the **Listen for incoming VPN from client**.

## Specify the VPN Routing

**Configuration → System Setup → Communication → Networking Config → Routing**



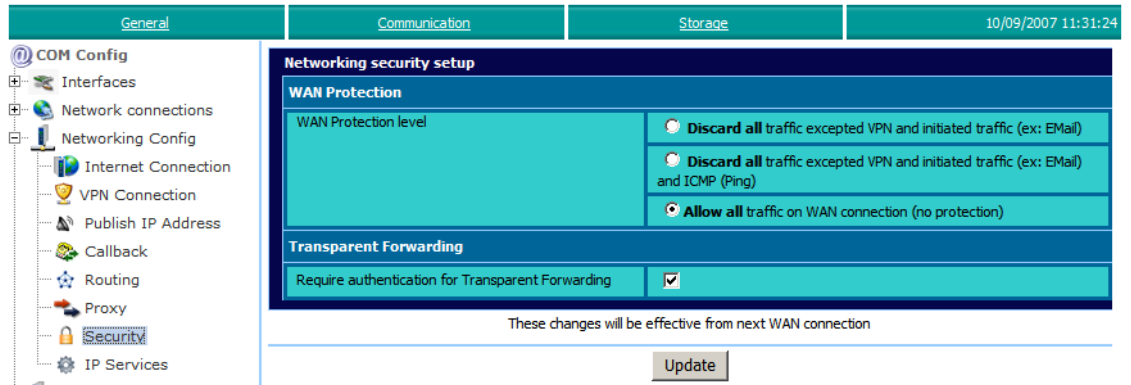
Check the **Route all Gateway Traffic through VPN** to route all the gateway traffic through the VPN tunnel.

Do not enable the **NAT and TF**.

**NOTE** The **NAT and Transparent Forwarding** are not needed because the packets will use the VPN tunnel. Only for special networking configurations the **NAT and TF** have to be activated.



## Specify the Security Level



Choose the **WAN Protection level** you want to apply.

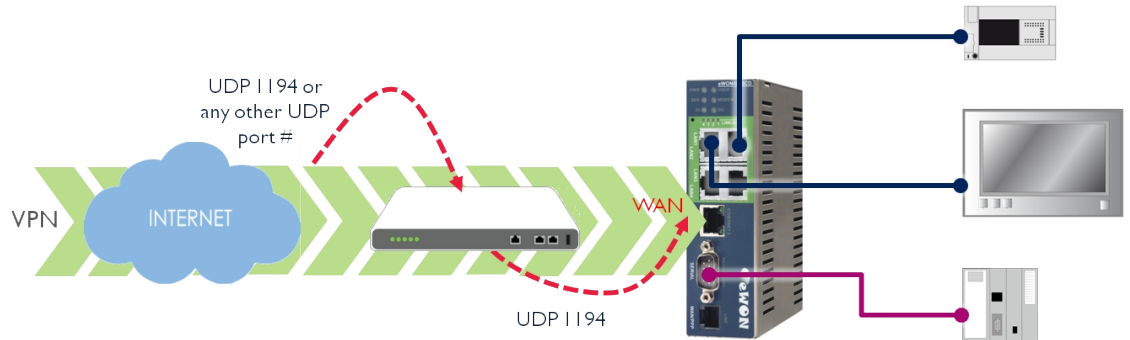
For testing purposes, it is better to start first with the **Allow all traffic** option.

Once your VPN connection has been tested, you can then choose the **Discard all traffic excepted VPN** to restrict the Internet access on your eWON. Your eWON will then be accessible only through VPN.

# Configure the Router

## Port Forwarding

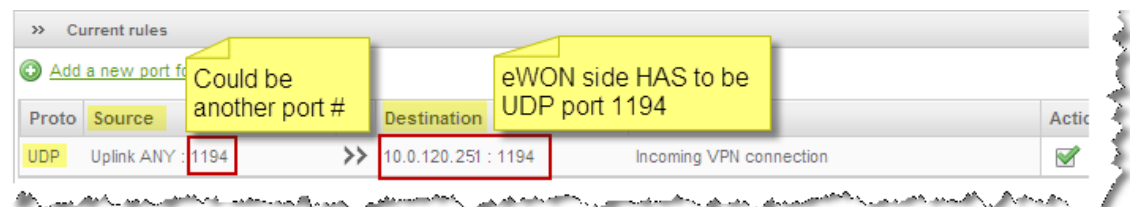
You will have to configure the Router to make a port forwarding.



For example, if you use the eWON standard VPN configuration you will have to define that the incoming packets from the **UDP port** (1194 or any other UDP port) will have to be redirected to the WAN IP address of your eWON on **UDP port 1194**.

**Note:** here we talk about the UDP port and not the TCP port.

*Example of a UDP port forwarding configuration (@ router level):*



## Public IP Address

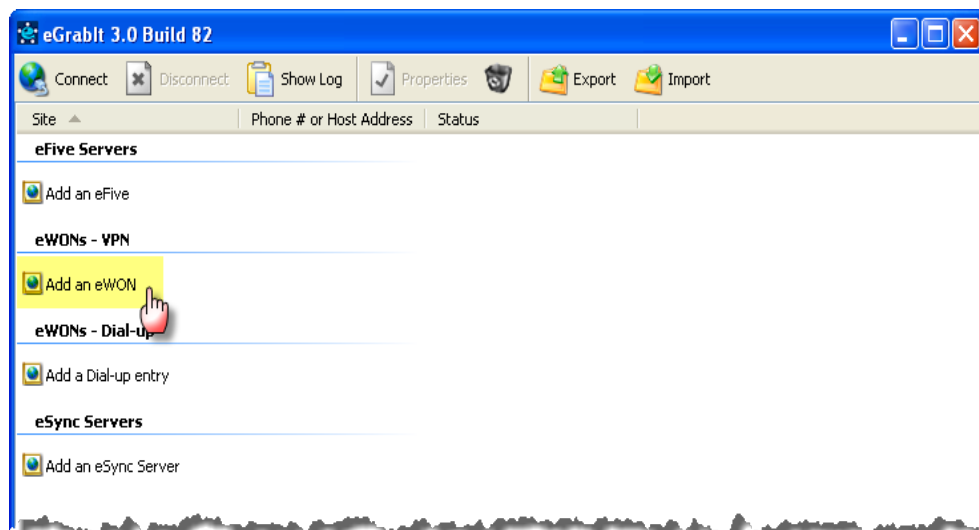
To make the VPN connection work from your PC, you need to specify the public IP address of the Router your eWON is connected to in the VPN client configuration on your PC. So, you need a static public IP address for the router. If you do not have a static IP address, then you can configure your router for dynamic DNS and use the dynamic domain name in the eGabit configuration.

## eGabit Configuration

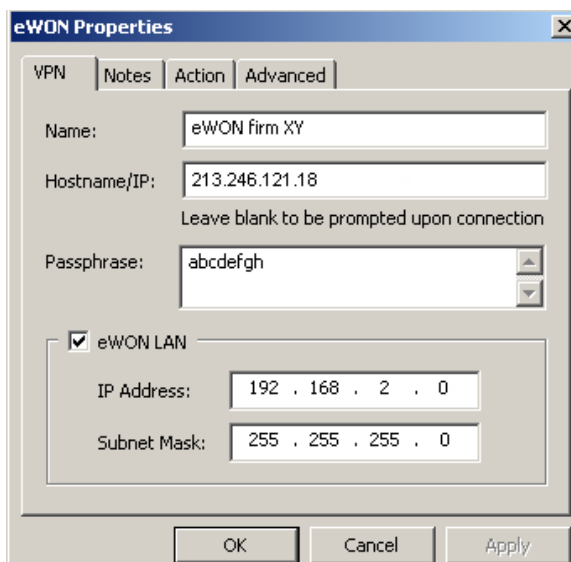
On the PC, we will use eGabit to manage the VPN connection.

In the VPN connection, eGabit will act as VPN Client and the eWON as VPN server. eGabit can be downloaded for free from our website: <http://support.ewon.biz>.

Launch eGabit.



Click on **Add an eWON** in the **eWONS -VPN** section.



Enter a **Name** for your VPN connection (ex.: eWON firm XY)

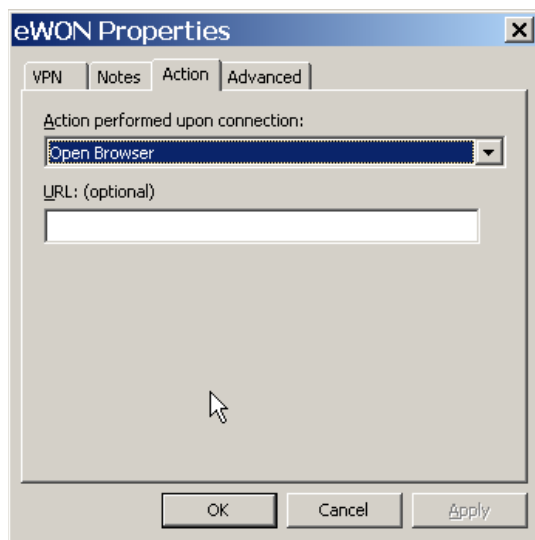
In the **Hostname/IP** field, enter the public IP address or the domain name of the Router on the eWON side.

If you have configured your eWON to publish address by DNS, the **Hostname/IP** should be this Dynamic DNS name.

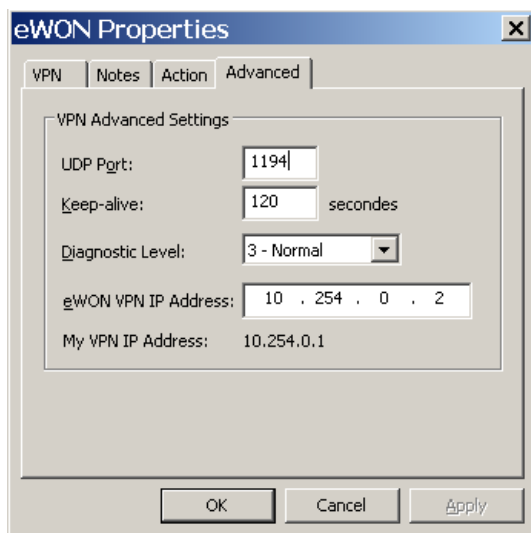
In the **Passphrase** field enter the passphrase you have configured in your eWON.

In the **eWON LAN** section enter the IP address range of the devices connected to the LAN side of the eWON. This information will be used to automatically add the route on your PC to route the packets through the VPN tunnel.

**NOTE** Make sure you insert the IP address range and *NOT* the IP address.  
So, if the eWON IP address is 192.168.2.53 and mask 255.255.255.0, enter **192.168.2.0** mask 255.255.255.0.



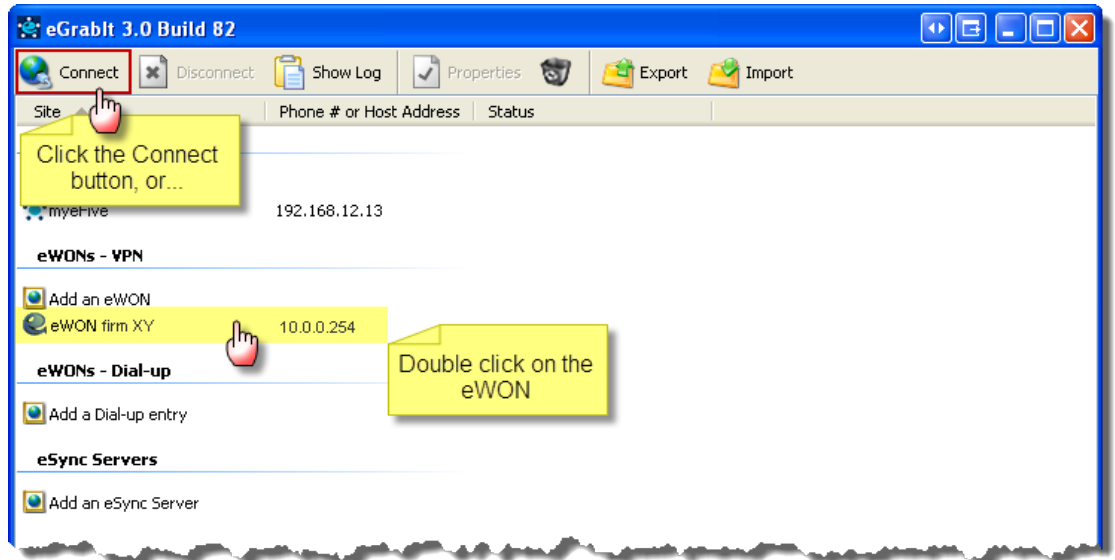
In the «Action», tab choose the action to perform once the VPN connection is established. By default the eWON internal Web pages will be displayed.



In the «Advanced» tab, you can specify the UDP port to use for the VPN connection. By default 1194 is used because eWON uses port 1194 in default config (see page 7).

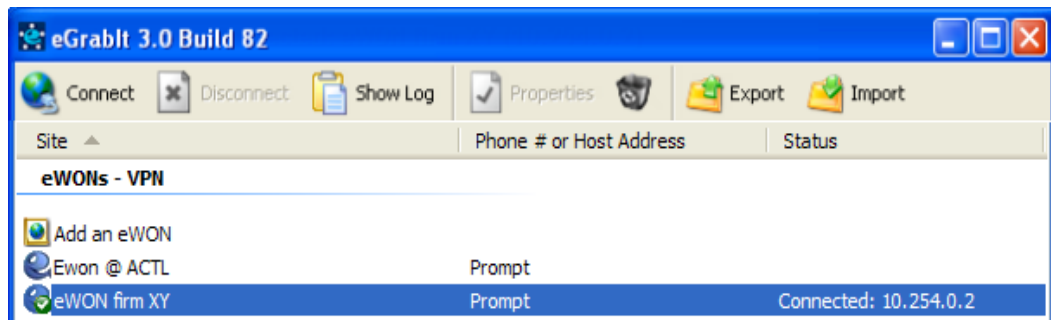
# Establish the VPN Connection

Launch eGabit and double click on the link of the eWON VPN you have just created.



eGabit tries to establish the VPN connection to the eWON.

Once the connection is established, you will see the following information in the eGabit window:



As you can see, eGabit is connected to the «eWON firm XY».. The address 10.254.0.2 is the default VPN address of the eWON (refer to page 7).

If you have introduced the eWON LAN IP address when configuring eGabit, you will now be able to access your eWON on its local LAN IP address and also the devices behind the eWON using the VPN tunneling.

With its default configuration, eGabit will automatically launch your Web browser to open the eWON Web Interface on IP address 10.254.0.2 (= eWON VPN IP address)

**IMPORTANT**



To be able to reach the Ethernet devices connected to the eWON using the VPN tunnel you will have to specify on every Ethernet device the **eWON as default Gateway**, (or create the adequate routing).

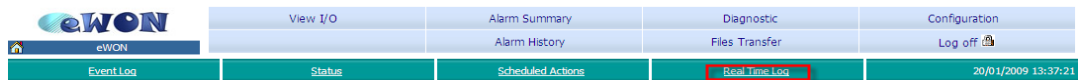
In our introduction example: the default gateway of the Ethernet devices is 192.168.2.53 which corresponds to the eWON LAN IP address.

---

# Troubleshooting

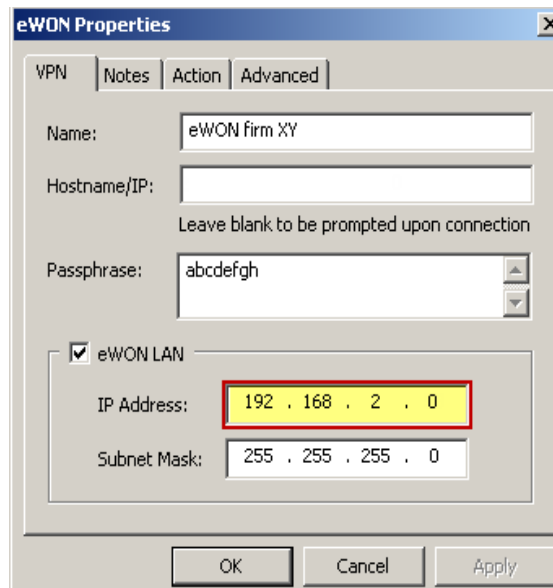
## PC cannot connect to the eWON

- Check the Passphrase that you chose when configuring eGrabit.
- Make sure that the Router's Internet connection does actually allow incoming connections on port UDP 1194. Ask your Internet provider to open this port or adapt the port used for the VPN connection to another opened port.
- To have more information on the VPN connection problem click on **Diagnostic** and then, on the **Real Time Log** link.



## If a VPN connection has been established, but the devices cannot be reached

- Check the eGrabit settings. Make sure that you have introduced the eWON IP address **range** and not the whole IP address.



- You can also have a look at the route that has been created by eGrabit on your PC. Open a DOS command window (Run: cmd) and type «route print». You will have to find a route for the eWON LAN as you specified in eGrabit. As you can see the address for the LAN 192.168.2.0 will be routed through the VPN connection (10.254.0.2 = eWON VPN address).

```

C:\WINDOWS\system32\cmd.exe
=====
Active Routes:
Network Destination    Netmask          Gateway          Interface
0.0.0.0                0.0.0.0          62.4.206.112    62.4.206.112
10.254.0.0             255.255.255.252 10.254.0.1      10.254.0.1
10.254.0.1             255.255.255.255 127.0.0.1       127.0.0.1
10.255.255.255         255.255.255.255 10.254.0.1      10.254.0.1
62.4.206.112          255.255.255.255 127.0.0.1       127.0.0.1
62.255.255.255        255.255.255.255 62.4.206.112    62.4.206.112
127.0.0.0              255.0.0.0        127.0.0.1       127.0.0.1
192.168.2.0            255.255.255.0   10.254.0.2      10.254.0.1
194.78.16.11           255.255.255.255 62.4.206.112    62.4.206.112
224.0.0.0              240.0.0.0        10.254.0.1      10.254.0.1
244.0.0.0              240.0.0.0        62.4.206.112    62.4.206.112
255.255.255.255        255.255.255.255 10.254.0.1      10.254.0.1
255.255.255.255        255.255.255.255 62.4.206.112    62.4.206.112
255.255.255.255        255.255.255.255 62.4.206.112    3
Default Gateway:      62.4.206.112
=====
    
```

**Publish IP Address of the eWON does not Work**

- If the dyn DNS does not work, have a look to the **Event Log** of the eWON. If the message is «DNS-Unable to resolve host name», check the DNS address entered in your eWON which should be the IP address of the Router if it allows DNS or a compatible DNS server on the Internet.

Time	Event	Description	Originator	Help
26/11/2008 17:19:03	31912	esync-Internet communication failed	esyncitf	
26/11/2008 17:19:03	25000	noip-Connect to No-IP server failed	esyncitf	
26/11/2008 17:19:03	24916	dns-Unable to resolve host name (dynupdate.no-ip.com)	esyncitf	

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

**Ethernet LAN Connection**

**Address Setup**

IP address: 10.0.0.53  
 Subnet mask: 255.255.255.0  
 Default gateway: 0.0.0.0

**DNS Setup**

Primary DNS IP address: 195.238.2.21  
 Secondary DNS IP address: 0.0.0.0

Update

Here you can specify the **DNS IP address** if needed.



---

Revisions

<b>Revision Level</b>	<b>Date</b>	<b>Description</b>
1.0	2009-01-20	First release.
1.1	2013-10-11	Update diagrams and eGabit

---

- i Microsoft, Internet Explorer, Windows and Windows XP are either registered trademarks or trademarks of Microsoft Corporation
- ii Firefox is a trademark of the Mozilla Foundation

Document build number: 191

---

*Note concerning the warranty and the rights of ownership:*

*The information contained in this document is subject to modification without notice. The vendor and the authors of this manual are not liable for the errors it may contain, nor for their eventual consequences.*

*No liability or warranty, explicit or implicit, is made concerning quality, the accuracy and the correctness of the information contained in this document. In no case the manufacturer's responsibility could be called for direct, indirect, accidental or other damage occurring from any defect of the product or errors coming from this document.*

*The product names are mentioned in this manual for information purposes only. The trade marks and the product names or marks contained in this document are the property of their respective owners.*

*This document contains materials protected by the International Copyright Laws. All reproduction rights are reserved. No part of this handbook can be reproduced, transmitted or copied in any way without written consent from the manufacturer and/or the authors of this handbook*