This document explains how to connect 2 remote eWON devices securely over the Internet using a mobile connection (through a VPN connection).
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Chapter 1
Requirements

1. Requirements

**Hardware requirements**

In order to follow this guide you will need:

- 2 eWONs with a FLX 3202 extension card

**Software requirements**

**eWON configuration software:**

The eWON is configured through its web server. All you need is a standard Web Browser software like Internet Explorer, Chrome or Firefox.

Additionally we recommend to download the eBuddy utility from our website: [http://support.ewon.biz](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).

**Other programming software:**

N/A

**Network requirements** (see with your Mobile ISP)

VPN being a point-to-point communication, one of the two eWON needs to have a static IP to ease the communication between units.

Some Mobile ISP can provide a static public IP, but it is more often a static IP in a private network. In this case the VPN can only be joined by another unit with an IP from this private network.

If your Mobile ISP cannot provide this kind of service but the received IP is public, you can use a Dynamic DNS Solution (Dyndns, No-ip or similar DNS Service).

Be aware that a Dynamic DNS solution will generate some unexpected disconnection.

**eWON Firmware Version**

To be able to follow this guide your eWON needs a firmware version 5.0 or higher. A simple way to perform an eWON firmware upgrade is to use eBuddy, the eWON companion tool.
2. Introduction

In this document, we will see how to connect 2 remote sites together using VPN over the Internet. We will use 2 eWONs FLEXY and establish a VPN connection over the Internet using FLX3202 extension card and a Mobile Network.

Here are the steps to make 2 networks communicate (eWON A – eWON B) through a VPN connection:

- Configure the Internet connection on both eWONs
- Configure the eWON A for VPN incoming (as VPN Server)
- Configure the eWON B for VPN outgoing (as VPN Client)
- Set the eWON A LAN address as default gateway for your devices on site A
- Set the eWON B LAN address as default gateway for your devices on site B

- Note -

Make sure that the IP addresses on site A are in a different range than the addresses on site B, otherwise, the routing will be impossible.
3. Configure the eWON VPN Server

In our example, eWON A is the VPN Server.

LAN and Modem Interface Configuration

Set the eWON LAN IP Address:

Network configuration is automatically provided during the PPP negotiation with your ISP.

Set the eWON Modem interface:

Network configuration is automatically provided during the PPP negotiation with your ISP.
Chapter 3
Configure the eWON VPN Server

VPN Configuration

Global VPN configuration

By default Port In is set on 0
Which means that the eWON is listening to port 1194 for the incoming VPN connection.

- Note -
Adapt the UDP port used for the Incoming VPN connection if needed.
Chapter 3
Configure the eWON VPN Server

Incoming VPN configuration

- Check «listen for incoming VPN connection».
- Enter a Passphrase (and remember the Passphrase !!)
- Assign the VPN IP address: leave it on automatic.

- Note -

Set it manually only in case of address conflict.
### Internet Connection Configuration

**Select** «Modem connection» **for the Network connection.**

**Check** «Maintain connection».

**Disable** the Publish WAN IP address.

---

<table>
<thead>
<tr>
<th>Internet connection setup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Status</td>
</tr>
<tr>
<td>Internet connected</td>
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**Internet access**

<table>
<thead>
<tr>
<th>Network connection</th>
<th>Modem Connection</th>
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<tr>
<td>Maintain connection</td>
<td>✓</td>
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**Publish WAN IP address**

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<thead>
<tr>
<th>Publish IP address</th>
<th>Disabled</th>
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<tr>
<td>Re-publish interval</td>
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<tr>
<td>Configure publish IP address</td>
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</table>

**On demand**

![Internet connection diagram](image)

**IP Range**

<table>
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<tr>
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<th>To: 0.0.0.0</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chapter 3
Configure the eWON VPN Server

Routing Configuration

**eWON Routing Configuration**

- Enable «Route all gateway traffic through VPN».
- Select «NAT and TF disabled».

<table>
<thead>
<tr>
<th>Routing setup</th>
<th>Communication</th>
<th>Storage</th>
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</thead>
<tbody>
<tr>
<td>Special rules</td>
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<tr>
<td>Route all gateway traffic through VPN</td>
<td>When VPN interface is active</td>
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</tr>
<tr>
<td>NAT and TF (Transparent Forwarding)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apply NAT and TF to connection</td>
<td>NAT and TF disabled</td>
<td>NAT on LAN provides LAN device access without configuring eWON as gateway in the device</td>
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</tbody>
</table>

<table>
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<tr>
<th>Static routes table</th>
<th>Destination</th>
<th>Mask</th>
<th>Gateway</th>
<th>Hops</th>
<th>Clear</th>
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<td>Route 2</td>
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<td>0.0.0.0</td>
<td>0.0.0.0</td>
<td>0</td>
<td>Clear</td>
</tr>
<tr>
<td>Route 3</td>
<td>0.0.0.0</td>
<td>0.0.0.0</td>
<td>0.0.0.0</td>
<td>0</td>
<td>Clear</td>
</tr>
</tbody>
</table>

*These changes will be effective from next WAN connection*

Update
Chapter 3
Configure the eWON VPN Server

Security Configuration

In WAN Protection level: select «Allow all...»

- Note -
You can adjust it later to «Discard all traffic excepted VPN and initiated traffic», if required.

Reboot your eWON

To be sure that the eWON unit takes the VPN connection configuration into account, it is advised to reboot it.
Chapter 4
Configure the eWON VPN Client

4. Configure the eWON VPN Client
In our example, eWON B is the VPN Client.

LAN and Modem Interface Configuration

Set the eWON LAN IP Address:

Set the eWON Modem interface:

Network configuration is automatically provided during the PPP negotiation with your ISP.
Chapter 4
Configure the eWON VPN Client

VPN Configuration

Global VPN configuration

By default, 1194 port is used on the other eWON for the incoming VPN connection.

- Note -

Adapt the UDP port used for the Incoming VPN connection, if needed.
Outgoing VPN configuration

- Enable «Establish VPN connection».
- For the «Primary server» enter the public IP address of the eWON A.
- Select «Other eWON» for the «Connect to...»
- Enter the Passphrase you configured for eWON A.
- Assign the VPN IP address: leave it on automatic.

- Note -

Set the IP address manually only in case of address conflict.
Configure the eWON VPN Client

Internet Connection Configuration

- Select «Modem connection» for the Network connection.
- Check «Maintain connection».
- Disable the Publish WAN IP address.

Select «Ethernet Wan connection» for the Network connection.
Check «Maintain connection».
Disable the Publish WAN IP address.
Routing Configuration

Routing VPN Configuration

- Enable «Route all gateway traffic through VPN».
- Select «NAT and TF disabled».

eWON Routing Configuration
### Security Configuration

In **WAN Protection level**: select «Allow all...»

- **Note** -

You can adjust it later to «Discard all traffic excepted VPN and initiated traffic», if required.

**Reboot your eWON**

To be sure that the eWON unit takes the VPN connection configuration into account, It is advised to reboot it.
5. Public IP address

To make the VPN connection work, you need to specify in the eWON VPN Client (eWON B) the public IP address of the eWON VPN Server. You then need a static public IP address for the eWON A (ask your Mobile ISP).

The public IP address of the eWON VPN Client does not need to be static and does not have to be known.

Often the ISP does not provide a public address but a private IP address belonging to a private APN. This type of APN usually allows members of the same APN to connect with each other using the same configuration as explained above.

If you do not have a static IP address, you can configure your eWON A for dynamic DNS (Dyndns, No-Ip or similar DNS Service) and use the associated URL in the eWON VPN Client.

- Note -

Be aware that a Dynamic DNS solution can generate some unexpected disconnection. In such case, the eWON (VPN Client) will take several minutes before retrying to the DNS lookup and get the new server IP.

6. Configuration of the devices behind the eWONs

All the devices connected to the LAN of eWON A must have the LAN IP address of eWON A as Gateway.

All the devices connected to the LAN of eWON B must have the LAN IP address of eWON B as Gateway, as shown our introduction (page 4).
Chapter 7
Connection Establishment

7. Connection Establishment

Once the VPN connection has been configured, the connection will be automatically established when the eWON is powered on.

To verify that the VPN connection is established, follow this path:

Diagnostic → Status → Status

Click on «Status» to open the following page:

In our example the VPN allocated IP address is 10.254.0.2 for eWON A.

The eWON B received the VPN IP address 10.254.0.1
8. Troubleshooting

If a VPN connection has been established, but the devices behind the eWONs do not communicate:

- Check that devices on site A are not on the same LAN IP address range as the LAN IP address range of devices on site B.
- Make sure that each eWON is the default gateway of the devices linked to it.

If the VPN connection cannot be established:

- Verify that the eWON Server WAN IP address range is different from the eWON Client WAN IP address range.

If the VPN connection is interrupted:

- Check if the «Maintain Connection» is activated in each eWON (in the Internet Connection configuration page).
Revision

Revision History

<table>
<thead>
<tr>
<th>Revision Level</th>
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<tr>
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<td>13/07/2015</td>
<td>First Release</td>
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#ii Firefox is a trademark of the Mozilla Foundation

#iii Chrome is a trademark of Google Inc.

Document build number: 15

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