

eSync VPN Server Configuration



User: Admin		<u>My e</u>	WONs	<u>Connections Histo</u> <u>Diagnos</u>	ny <u>Configuration</u> tic Log off
	> <u>eSync</u> > <u>Belgium</u>				Records per page: 100 OK
e Sync					22/08/2006 16:17:41
Belgium B C 14005 C IGprsPott C IGprsPott2 TGprsQWave	Name	S/N	Connected since	IP Address	Description
	Gprs4005		20/03/2006 16:12:17	VPN: <u>10.8.128.5</u>	eWON at Spectrum controls
	<u>T4005</u>	0606-0001-75	20/03/2006 16:17:04	VPN: <u>10.8.200.1</u>	BE ACTL HVAC system
	TGprsPct	0608-0001-73			R&D machine
	TGprsPort				Test Spec ctrl 1
	TGprsPort2				Portugal QWAVE 3
	TGprsQWave	0610-0002-73			

This application user guide explains step by step how to configure eSync and the eWON in order to link them by a VPN network using the eWON as VPN-client and eSync as VPN-Server.

Important: The VPN solution presented in this document is superseded by newer technologies and products including Talk2M and eFive.

1	Hardware and software requirements3
	1.1 Hardware requirements
2	What is a VPN for ?
3	eWONs as VPN routers
4	VPN : general topology5
	4.1 VPN server
	4.2 Local User Connection and Remote
	4.3 eWON dial-up on VPN11
	4.4 eWON GPRS as VPN Gateway14
	4.5 eWON2005CD as broadband VPN router
	4.6 Appendix - eWON with C configuration
<u>Re</u>	vision history



1 Hardware and software requirements

1.1 Hardware requirements

In order to follow this guide you will need:

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

1.2 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 Explorerⁱⁱ or Firefoxⁱⁱⁱ.

Additionally we suggest you to download the eBuddy utility on our website : <u>http://support.ewon.biz.</u> 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).

<u>eGrabit:</u>

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.

1.3 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.



2 What is a VPN for ?

A Virtual Private Network (VPN) is a private communication network usually used within a company, or between companies or organizations, in order to establish secured communication using the public network.

A good compromise is to use the *Internet* as carrier with a *tunneling* protocol (encapsulating the encrypted data). This network is called **virtual** because it links two physical networks (LAN) with a untrusted link (Internet). This network is called **private** because <u>only</u> the computers (or devices) connected on this particular VPN can understand the encrypted data.



In brief, a VPN provide you a global secured link at low cost. Advantages of VPN:

- low cost
 - as compared to a real Wide Area Network based on expensive leased lines.
- scalability

It is easy to add/remove a computer from the VPN.

Disadvantages of VPN:

- VPNs require an in-depth understanding of public network security issues and taking proper precautions in VPN deployment.
- The availability and performance of an organization's wide-area VPN (over the Internet in particular) depends on factors largely outside of their control.
- VPN technologies from different vendors may not work well together due to immature standards.
- VPN need to accommodate protocols other than IP and existing ("legacy") internal network technology.

The purpose of this document is to show you how to setup your VPN (Virtual Private Network) with eWONs.



3 eWONs as VPN routers

To build your VPN, all connected devices need to *speak* the same encrypted language. On recent computers, the VPN software handles the VPN layer. In the case of older computers or other Ethernet devices like PLCs, it is impossible to include these devices into the VPN network.

You need to build a Network in a way completely transparent for the participants. This job is done by using **VPN Routers**. Not all eWON models are able to act as VPN Routers.

On the computer side, you have two software companions :

••••	eGrabit: the VPN connection tool
Sync	eSync Connect : the VPN Server application

Today, they are many VPN technologies available, we choose to build VPN on the

OpenVPN standard see <u>http://openvpn.net</u>.

In eSync Connect, we need WebServer, DataBase and ServerSide technologies, we choose to use

Apache	
MySQL	
PHP	

see <u>http://www.apache.org</u> see <u>http://www.mysql.com</u> see <u>http://www.php.net</u>

4 VPN : general topology

With a VPN, you generally build a network like the one in Figure 2.





Figure 2: VPN general topology

Devices A, B, D, E, F and G are on the same Virtual Private Network. All devices on the VPN can connect to any other belonging to the same VPN network. The devices C and H have access to Internet but have no access to the VPN network.

4.1 VPN server

To build a VPN, you need a server acting as master of VPN communications.

Every device has to ask the Server to enter on the VPN.

eWON developed the **eSync** application to make the installation, configuration and daily use of the VPN easier. The installation of your eSync is very simple (follow the installer) and eSync will install on your computer :

- An Apache WebServer listening on port 80 Even if you have already a Webserver running on your computer, but in this case, eSync will listen on port 81.
- A MySQL Database listening on port 3306 Even if you have already another one running on your computer, but in this case, MySQL will use the port 3307.
- An OpenVPN layer composed of Services listening the port UDP 1194 Even if you have already another OpenVPN running on your computer, but in this case, eSync will use the port 1195.

And you are ready to establish secured connections. You can view your VPN interface on your Network Connections window (renamed here in VPN connection).



LAN or High-Speed Internet			
🕹 VPN Connection	LAN or High-Speed Inter	Connected	TAP-Win32 Adapter V8
🕹 Local Area Connection	LAN or High-Speed Inter	Connected	Intel(R) PRO/1000 MT N

Figure 3: Network connections

With the eSync application, you manage your VPN by opening a secure tunnel of communication between every VPN actors and the Server.

The standard setup of eSync will build a VPN where all actors receive an IP address on the range 10.8.x.x.

System Setup - Microsoft Int	ernet Explorer				_0
File Edit View Favorites	Tools Help 🛛 🔇 Back	• 🗇 - 🖹 🛢 🥴 😒	Favorites 🛛 🔪 🖉 🌀	SnagIt 🛃	
ddress 🙆 http://localhost:81/sy	stemsetup.php?initialsetup=1				💌 🔁 Go
esyng	<u>System Setup</u>	<u>eWONs Setup</u>	<u>Tree Setup</u>	<u>Users Setup</u>	<u>Main Menu</u>
User: Admin					
					03/07/2006 11:47:08
VPN Settings					
Public Hostname (or IP):	esync.hostname.com	1			
OpenVPN UDP Port:	1194 (Default=11)	34)			
eSync Server VPN IP:	10.8.0.1				
VPN DHCP Subnet Mask:	255.255.128.0				
VPN Static IP's Pool:	Base Address: 10.8.128.	0 Subnet: 255	5.255.128.0		
eWONs LANs Pool:	Base Address: 10.9.0.0	Subnet: 255	5.255.0.0		
Certificate Authority (CA):	🛷 ACT'L Certificate Au	hority			
eSync Server Certificate:	🛷 Test Tutorial				
Keen Alive:	ADSL, PSTN: 40	seconds (Default=40).			
ReepAlive.	GPRS: 120	seconds (Default=120).			
	The	C			
	Inc	e esync server is sta	arting up. Please wai	.	
Opening page http://localhost:81	/systemsetup.php		I		🛛 🛛 😼 Local intranet

Figure 4: eSync VPN settings

These addresses could be assigned statically or dynamically.

By default, the IP address ranges are divided in two, one half for the Static IP's and the other half for DHCP IP's.

You can define also the Base Address of all devices placed on the LAN side of eWON-VPN. Then, in our default configuration (see Figure 4), all devices placed behind an eWON-VPN must have an address beginning by 10.9.x.x. to be accessible on the VPN.

After the installation, you configure eSync with your Browser, just connect you to the LAN IP address of the server (and use the right port if necessary).

The Admin account of eSync is by default :

adm login:

password: adm

If your Server is accessible on your LAN, you can access to eSync from every computer.



Warning!

For security reasons, changing the default password *adm* is absolutely required. To change the *adm* password, from the menu bar, click on *Users Setup* and double click on the *adm* entry to edit its parameters. Enter the new password twice and click *Save*.

Server requirements:

- The Server must be accessible from Internet, generally through a fixed IP address.
- Port TCP 80 must be open for the HTTP traffic (or 81 if eSync was installed on 81)
- Port UDP 1194 must be open on the Server.



4.2 Local User Connection and Remote

If you want to go on the VPN from a computer, you need to use the VPN Client

ent 😭 eGrabit.

You can download it freely from the <u>www.ewon.biz</u> website. The installation requires no parameters. Now, you need a VPN account. Go on eSync Configuration, select Users Setup and click on Create New User link.

💣 Users Setup - Microso	ft Internet Explorer				
File Edit View Fav	orites Tools Help 🗍 Ġ Bad	k 🕶 🕤 👻 🖹 🛛 🥴 📌 Fa	vorites 🛛 😓 🔄 😏 S	inagIt 🛃	
Address 🕘 http://localho	st:81/userssetup.php		· · · · · · · · · · · · · · · · · · ·		
User: Admin	G <u>System Setup</u>	<u>eWONs Setup</u>	<u>Tree Setup</u>	Users Setup	<u>Main Menu</u>
Delete Selecte	d Users <u>Create New Us</u> Full Name Pighte	er <u>Export Selected Us</u>	<u>ser</u>		03/07/2006 14:54:4
adm	Admin Administrate	Default administrator. In p	roduction, this user sl	nould be deleted or its pass	word should be modified
	and the second second second	والمستعدية المعادية المساطي	and the second second		manual a second second
	Figur	re 5: Create new us	er		
Information					

🔮 Users Setup - Microsoft Inter	rnet Explorer				_ 🗆
File Edit View Favorites	Tools Help 🛛 🕓 Back	< 🔹 🕤 👻 🖹 🖉	📌 Favorites 🛛 🍒 🗍 🍉 Sr	nagIt 📷	4
Address 🙆 http://localhost:81/ed	lituser.php				💌 🔁 Go
esung	System Setur	oMONe Sotup	Trop Sotup	lleare Satur	Main Monu
User: Admin	<u>aystem aetup</u>	errons setup	<u>1166 36(up</u>	<u>Users Setup</u>	<u>Mani Menu</u>
Full Name:	Guest		Password:	••••	
Username:	guest		Confirm Password:	••••	
Description:	Guest User				^
					v
Rights					
Administrator					
Certificate					
 The certificate is not set Create, Edit, Poveke 	et.				
Create Luit Revoke					
		Add/Update	Cancel		

Figure 6: User Setup

You must have the following display when Certificate is generated.

V UTHEST	
Create Edit Revoke	
Create Luit Revoke	

Figure 7: User Certificate generated



Now, you need to export this Certificate to your local computer.

🖉 Users Setup - Microso	ft Internet Explor	er				_ 🗆 🗙		
File Edit View Favo	orites Tools Helj	o 🛛 🔂 🕄 🗸 🗸	🕥 - 🖹 🛢 🖗 😒	r Favorites 🛛 🎍 🗍 🥌 Sr	nagIt 🖻			
Address 🙆 http://localhost:81/userssetup.php								
	G <u>Syste</u>	<u>m Setup</u>	<u>eWONs Setup</u>	<u>Tree Setup</u>	<u>Users Setup</u>	<u>Main Menu</u>		
Delete Selecte	d Users C	reate New User	Export Selecter	l User		03/07/2006 15:04:56		
Username	Full Name	Rights	Description 7					
🗖 adm	Admin	Administrator	Default administrator.	In production, this user sh	ould be deleted or its pass	word should be modified.		
🖉 guest	Guest		Guest User					



For that, select the User you want to export and click to the *Export Selected User* link. You will be prompted to give the location and name for this XML file.



In eGrabit, click on the *Add an eSync Server* link and use your User Certificate file to create your VPN link.

😒 eGrabit 3.0 Build 82	
& Connect 📓 Disconnect 📔 Show Log 📝 Properties 👹 🖄 Export 🖉 Import	
Site 🔺 Phone # or Host Address Status	New Connection to an esync server
eFive Servers	How would you like to create the eSync Server connection ?
☑ Add an eFive	I received a configuration file that I would like to import:
eWONs - YPN	Filename:
☑ Add an eWON	Guest.xml Browse
eWONs - Dial-up	
Add a Dial-up entry	$\ensuremath{\mathbb{C}}$ I would like to manually edit the connection properties
eSync Servers	OK Cancel
🖉 Aud ar 8 👷 eGrabit 3.0 Build 81	
Connect Disconnect Show Log Properties Export Import Site U Phone # or Host Address Status Click on the Connect button, or myeFive 192.166.12.13 eWDNs - VPN	
Mad a Dial-up entry	
eSync Servers	
Add an eSync Server	

If you double-click on the new eSync Server connection, you will enter in the VPN. Now, your computer has access to all the devices connected to the VPN.

For example, you can connect to eSync through the VPN connection if you go to <u>http://10.8.0.1:81</u> (my installation is on port 81).



4.3 eWON dial-up on VPN

To connect your eWON on the VPN, you need to create an account for it. Go on eSync *Configuration*, select *eWONs Setup* and click on the *Add an eWON* link.

🖉 eWONs Setup - Microsoft Internel	t Explorer				_			
File Edit View Favorites Tools » 🚱 Back + » 🧐 SnagIt 📷								
Address 🙋 http://10.8.0.1:81/ewonss	etup.php 🗾	∋ Go Google G-	En	voyer 🖗 🔍 💌 🔻 🌄				
						<u> </u>		
<i>esync</i>	System Setup	eWONs Setup	<u>Tree Setup</u>	<u>Users Setup</u>	<u>Main Menu</u>			
User: Ripak Pierre								
	> <u>eSync</u>			Reco	rds per page: 100 <u>Ok</u>	2		
eSync	<u>Add an eWON</u>	Delete selected eWONs	<u>Export Selec</u>	ted eWON	06/07/2006 15:37:51			
	Name Name	S/N	VPN IP Address	LAN	Description			
	\odot							
and the second s	والمحارك والمحاركين والمحارك	سروري والمسوري فسيرود فاستعرب	and see	A	and the second	السمى		

Figure 9: Create eWON VPN

Fill all information						
🚰 eWON Properties - Microsoft Inte	rnet Explorer					
File Edit View Favorites Tools	s 🎽 🔇 Back 👻 🎽	筊 SnagIt 🛛 😁				-
Address 🕘 http://10.8.0.1:81/editewo	on.php?folderid=-1	🔽 🔁 Go 🛛 🖸 🕞	ogle G-	Envoyer 🖣 🔍 💌 🔻	🔓 🔻 🏠 🕶 🧟	
User: Ripak Pierre	<u>System Setup</u>	<u>eWONs Setup</u>	<u>Tree Setup</u>	<u>Users Setup</u>	<u>Main Menu</u>	
eSyncid: eV	WON_001					
Description:	STN connected to PLC	5				
Serial Number: 06	616-0001-73					
Additional Information:						
				<u>×</u>		
VPN Settings						
O Obtain an IP address aut	tomatically					
 Use the following IP Add 	ress: 10.8.128	.29 C	heck <u>Suggest</u>			
LAN Settings (Must be filled	in to allow remote a	ccess to the eWON	LAN through the VPN)			_
IP Address:	Check S	uggest				
Subnet Mask:	(Leave IF) address and subne	t mask empty if the eWO	N does not have a LAN.)		
0						- 1
Create Edit Revoke						
Connection Type						_ 1
GPRS						
		tebru//bbA	e Cancel			
		- iddropdu				•
🙆 Done					📄 📄 📝 Internet	11.

Figure 10: eWON setup



Use the *Suggest* link to select a free Fixed IP Address. Don't forget to create the Certificate! Now, you need to export this Certificate to your local computer.



Now, your eWON has the VPN configuration in place. At every connection of this eWON on Internet, it will setup the VPN tunnel with the server. For example, you can configure your eWON-pstn to use the Callback sequence to connect to Internet and VPN.

VPNCnxType:2	
VDNKovTvpo:1	
VPNSecretkey:BEGIN RSA	PRIVATE KEY
MIICXA	
END RSA PRIVA	ATE KEY
VPNSecretCert:BEGIN	CERTIFICATE
MIIDKi	
ÉND	CERTIFICATE
VPNCACert:BEGTN	CERTTETCATE
MITOGT	020012020002
	CEPTTETCATE
VPNPortout 1104	CERTIFICATE
VPNPOILOUL.1194	
VPNAIIVe:40	
VPNSrv1:support.ewon.be	
VPNSrv2:	
VPNP2PIpMode:0	

Once the eWON is on the VPN, the eSync main page shows you the eWON connected by displaying the IP address of it.

File Edit View Favorites Too	ols 🎽 🔂 Back 👻	» 🔵 🔄 SnagIt 🛛 😁				4
ddress 🗃 http://10.8.0.1:81/ewon:	ssetup.php					💌 🔁 Gi
esync			My eWONs	Connections Histor	y <u>Configuration</u>	
User: Ripak Pierre			my errons	<u>Diagnosti</u>	c Log off 🗳	
_	> <u>eSync</u>				Records per page: 100	<u>0K</u>
eSync					06/07/2006 16	6:43:30
	Name	S/N	Connected since	IP Address D	escription	
	<u>eWON_001</u>	0616-0001-73	06/07/2006 16:43:27	VPN: <u>10.8.128.29</u> P	TN connected to PLC5	
a second second second			-			

Figure 12: eSync shows eWON connected



If you open another Internet Browser and use this address (<u>http://10.8.128.29</u>), you will be connected on your eWON through the VPN.

🖉 eWON Session (Adm) - Microsoft I	Internet Explorer					
File Edit View Paranices Tools	Back 👻 🔰 🌀 SnagI	it 🛃				
Adress 🕘 http://10.8.128.29/Ast/Mai	inAst.shtm			🗾 🔁 Go		
ewon	Tag Setup	System Setup	IO Server Config	Main Menu		
eWON_001	Script Setup	Users Setup	Pages List			
		User session				
	User:		(Adm)			
	Connection Date	: 06/07	/2006 16:48:39			
		Close Curent Connexion				
	Close PPP Connexion					
	_					
		. A				
A CONTRACTOR OF A DESCRIPTION OF A DESCR				المراجب والمستع المتعلق المتقاد العربية المستعرب		

Figure 13: on eWON by VPN

If the WAN Protection (Security) is set to maximum (see Figure 14), the eWON website is accessible only through the VPN (the WAN address provided by the ISP will not answer).

	Networking security setup					
🗄 🛫 Interfaces	WAN Protection					
Network connections	WAN Protection level	Discard all traffic excepted VPN and initiated traffic (ex: EMail)				
Internet Connection		O Discard all traffic excepted VPN and initiated traffic (ex: EMail) and				
		ICMP (Ping)				
- 🔊 Publish IP Address		Allow all traffic on WAN connection (no protection)				
📚 Callback	Transparent Forwarding					
- 🔅 Routing	Require authentication for Transparent Forwarding					
Security	These changes will be effective from next WAN connection					

Figure 14: WAN Protection

If you have a PLC connected to this eWON and you want to access it with the corresponding software, simply use this VPN IP address.



4.4 eWON GPRS as VPN Gateway

The configuration of an eWON acting as VPN Gateway is the same as in the point "eWON dial-up on VPN"

The only things that change in this configuration are :

- eWON is used as Gateway to other ethernet devices
- eWON uses the built in GPRS modem to be connected (permanently) to Internet

Once you create the eWON in eSync, configure the LAN settings parameters (use the *Suggest* link).

🍘 eWON Properties - Microsoft	Internet Explore	r				
File Edit View Favorites	Tools Help	🛛 😋 Back 🝷 🕥 👻 📕	🛐 🤗 📌 Fa	vorites 🗞 🗍 🥯	SnagIt 🛃	At 1997
Address i http://10.8.0.1:81/ed	ditewon.php?id=19					💌 🄁 Go
User: Ripak Pierre	<u>System Se</u>	<u>tup eWONs Sc</u>	<u>etup</u>	<u>Tree Setup</u>	<u>Users Setup</u>	Main Menu
eSyncid:	eWON_002					
Description:	eWON-GPRS	as Gateway				
Serial Number:						
Additional Information:	0614-0005-	67		*		
				*	1	
VPN Settings						
O Ubtain an IP addres	s automatically	10.0.100.00				
 Use the following IP 	Address:	10.6.126.33	Check Su	iggest		
LAN Settings (Must be fi	lled in to allow	remote access to the e	WON LAN th	rough the VPN)		
IP Address: 10.9.9.0		Check Suggest				
Subnet Mask: 255.255.2	255.0	(Leave IP address and s	subnet mask e	empty if the eWON	does not have a LAN.)	
Cortificato						
eWON 002						
<u>Create</u> Edit Revoke						
Connection Type						
GPRS						
		Add/	'Update	Cancel		

Figure 15: create eWON with a LAN

Then, all devices (and eWON) must have an IP address in this 10.9.9.x range to be part of the VPN.

If eWON has the 10.9.9.1 address, don't forget to set this address as Gateway in other devices. If your eWON is an GPRS one, you can check the *GPRS connection Type*. This option will send the KeepAlive frame slowly (in GPRS, you pay for the traffic not for the time connected).

Once the Certificate is in the eWON, you may configure the eWON to play the Gateway behavior you want. The Gateway function is always activated in eWON - VPN, you no longer have to check the "Enable IP Gateway" checkbox (like with firmware 4.x).



Go on the eWON Routing page, and set the option you need.

@COM Config	Routing setup						
🗄 🗠 📚 Interfaces	Special rules						
	Route all gateway traffic through VPN		When VPN interface is active				
Internet Connection	NAT and TF (Transparent Forwarding)						
- 🥺 VPN Connection	Apply NATand TF to connection	NAT and TF on WAN 💌					
🔊 Publish IP Address	Enable transparent forwarding						
📚 Callback							
😥 Routing	These changes will be effective from next WAN connection						
- 🔒 Security	Update						

Figure 16: eWON Routing page

Usually, you need to set the NAT and TF (Transparent Forwarding) on WAN. This configuration allows your ethernet devices to use the both interfaces (WAN and VPN) to go outside. The WAN will be used if your device send an eMail to the ISP.

The VPN connection will be use when the device needs to access another VPN participant or when it replies to a request coming from the VPN.

As you are in GPRS, you can stay connected permanently to Internet, check the *Maintain Connection* checkbox.

General	Communication	<u>Storage</u>	07/07/2006 15:00:00
COM Config Therfaces	Internet connection setup		
	Network connection	Modem Connection 💌	
Internet Connection	Maintain connection		
VPN Connection	Publish WAN IP address		James and a start

Figure 17: Maintain Connection parameter

Be aware that eWON and eSync will send small packets (ping) to maintain the connection open (KeepAlive). Then this permanent connection will cost some money (even if there is no usefull traffic). Once connected on GPRS, the eWON will establish its VPN connection and be accessible by other VPN participants.

User: Ripak Pierre			<u>My eWONs</u>	<u>Connections</u> Diag	History gnostic	Configuration Log off
	> <u>eSync</u> > <u>Belgiur</u>	<u>n</u>			Record	s per page: 100 <u>OK</u>
e <u>Sync</u>						20/07/2006 16:06:05
	Name	S/N	Connected since	IP Address	Description	
@ eWON_002	eWON_001	0616-0001-73			PSTN connecte	d to PLC5
	<u>eWON_002</u>		20/07/2006 15:13:32	VPN: <u>10.8.128.33</u>	eWON-GPRS a	s Gateway

Figure 18: eWON-Gateway connected

The eWON is accessible at the address 10.8.128.33 (address on the VPN) or at the address 10.9.9.1 (address on the eWON LAN).

The devices placed on the LAN of the eWON are accessible by their address 10.9.9.x directly from your computer.



If you display the *IP Routes* of your computer (command ROUTE PRINT in a DOS box), you will see that VPN has automatically add a Route to the 10.9.0.0 (Base Address of eWONs LAN pools in the eSync Setup).

🖎 Command Prompt				
=======================================				
Active Routes:				
Network Destinatio	n Netmask	Gateway	Interface	Metric 📃
0.0.0	0.0.0.0	10.0.0.254	10.0.120.1	20
10.0.0.0	255.255.0.0	10.0.120.1	10.0.120.1	20
10.0.120.1	255.255.255.255	127.0.0.1	127.0.0.1	20
10.8.0.0	255.255.128.0	10.8.0.57	10.8.0.58	1
10.8.0.56	255.255.255.252	10.8.0.58	10.8.0.58	30
10.8.0.58	255.255.255.255	127.0.0.1	127.0.0.1	30
10 0 120 0	9EE 9EE 490 A	10 0 0 57	10 0 0 0	1
(10.9.0.0	255.255.0.0	10.8.0.57	10.8.0.58	3
10.255.400.400	433.433.433.433	TA'A'TCA'T	TA'A'TCA'T	20
10.255.255.255	255.255.255.255	10.8.0.58	10.8.0.58	30
127.0.0.0	255.0.0.0	127.0.0.1	127.0.0.1	1
224.0.0.0	240.0.0.0	10.0.120.1	10.0.120.1	20
224.0.0.0	240.0.0.0	10.8.0.58	10.8.0.58	30
255.255.255.255	255.255.255.255	10.0.120.1	10.0.120.1	1
255.255.255.255	255.255.255.255	10.8.0.58	10.8.0.58	1
Default Gateway:	10.0.0.254			
Persistent Routes:				
None				

Figure 19: IP Routes



4.5 eWON2005CD as broadband VPN router

In this configuration, you may want to use an ADSL router because you need to transmit a lot of data.

The setup of this eWON is very similar than those from point 4.3 and 4.4.

The only thing that differs from point 4.4 is :

• the eWON use its WAN interface to connect on Internet.

Once you create the eWON in eSync, configure the LAN parameters like following.

🚰 eWON Properties - Microsoft	Internet Explorer					<u>- 🗆 ×</u>
File Edit View Favorites	Tools Help	< 🔹 🗇 👻 🖹 🛛 🔗 🦻	7 Favorites 🛛 😓 🗍 🈏 Sna	gIt 🛃		-
Address 🙆 http://10.8.0.1:81/e	ditewon.php?id=12		Go Google G-	Envoyer	🔍 🖂 🕶 🎦 🕶 »	
User: Ripak Pierre	<u>System Setup</u>	<u>eWONs Setup</u>	<u>Tree Setup</u>	<u>Users Setup</u>	<u>Main Menu</u>	
eSyncld:	JiPe2005					
Description:	Demo2005					
Serial Number:	0616-0002-74					
Additional Information:			X			
VPN Settings Obtain an IP address Use the following IP	s automatically Address: 10.8.12	8.17 Check	< <u>Suggest</u>			
LAN Settings (Must be fi	lled in to allow remote	access to the eWON LAN	l through the VPN)			
IP Address: 10.9.6.0	Check	<u>Suggest</u>				- 1
Subnet Mask: 255.255.2	255.0 (Leave	IP address and subnet ma	sk empty if the eWON doe	is not have a LAN.)		• •
Certificate JiPe2005 Create Edit Revoke						
Connection Type GPRS						
		Add/Update	Cancel			•

Figure 20: setup eWON2005CD in eSync

Then, all devices must have an IP address in the 10.9.6.x range to be part of the VPN.



ewon_2005	Tag Setup Script Setup	System Setup Users Setup	IO Server Config Pages List	Main Menu
General	Communication	5	torage	21/08/2006 17:42:17
@COM Config	Ethernet LAN Connection			
Him 🜊 Interfaces	Address Setup			
E L Ethernet	IP address	10.9.6.1		
🕹 Eth1 - LAN	Subnet mask	255.255.255.0		
Eth2 - WAN	Use BOOTP		Ethernet address provided by BOO	, mask and gateway will be TP
		Upo	date	

On the eWON2005CD, you have two Ethernet interfaces to configure, the LAN and the WAN.

Figure 21: eWON2005CD - LAN setup

Then, if your eWON2005CD has the 10.9.6.1 LAN IP address, don't forget to set this address as Gateway in the devices you want to access.

And the WAN Ethernet interface must be configured with parameters compatible with your ADSL device.

OWON	Tag Setup	Systen	n Setup		IO Server Config	Main Menu	
6WON_2005	Script Setup	Users	Users Setup		Pages List		
<u>General</u>	Communication		Storage			22/08/2006 09:53:38	
🔘 COM Config	Ethernet WAN Connection						
🗄 🜊 Interfaces	Address Setup						
드··· 💊 Network connections 드··· 🕹 Ethernet	IP address	10.1.0.110					
🕹 Eth1 - LAN	Subnet mask	255.255.0	0				
Eth2 - WAN	Default gateway	10.1.0.1					
	Use BOOTP				Ethernet address, mask and gateway will be provided by BOOTP		
⊞- 👤 Networking Config	DNS Setup						
🗄 🖬 🦍 Manage Config	Primary DNS IP address	195.238.2	21		Leave blank (or 0.0.0.0)	if no DNS	
	Secondary DNS IP address	0.0.0.0					
			Up	date			

Figure 22: eWON2005CD WAN setup

Here, you can see that we have an ADSL router on the 10.1.0.1 (eWON default gateway).

The IP addresses of your Remote Site will be as shown on the rigth.

There is no MODEM configuration to set. You can disable the Modem Outgoing Connection.



Figure 23: eWON2005CD remote site IP addresses



E 🍉 Modem	PPP outgoing Connection 📕 Enabled
⊡	Update
📒 Server1	

Figure 24: eWON2005CD Outgoing connection disable The VPN configuration is always the same. Put the certificate generate by eSync in the eWON.

WON	Tag Setup Sy Script Setup U		m Setup : Setup	IO Server Co Pages Lis	nfig t	Main Menu	
<u>General</u>	Communication		Storage			22/08/2006 09:53:38	
 €COM Config Sector Config Sector Configuration Enternet 	Establish outgoing VPN connection config VPN activation rule The VPN activation rule is normally defined in 1		n <u>king Config</u> (duplicat	ed here for simplicity)			
E 🌽 Modem ⊡ 🢇 VPN	Establish VPN connection Remote VPN WAN address or name				During Inter	net connections	
Global	Primary server Secondary server		support.ewon.be R		Remote IP a	Remote IP address or name Leave empty if no secondary server	
	Connect to: VPN Server You must copy/paste the 3 key/cert, files in the corresponding locations.						
	Private KEY:	#_ d+ ០០ ២ប	$\label{eq:host-constraint} \begin{array}{l} \#_1_STnTQmHUAgHZTCiuyHgkxmhmNifUz9vYkAx+L9MIvjBcoz4UJjPocH/C\\ d+fTNLVhz2Ru+6+hHidIEz2D4sUwCEy93kCVId3IAj789h/SCTUQA28f+dQW0Q5EG6XbWhMhJRvOIMAKc0j5jNKrwgxJew+/sgtMpk+kuOCdHRN2HoSXOg++pU+q2VcBmUqSOc4UUT/eYFuOOKdyD04hHYxgmODwX/TDeLyPiEfQeJkG2IP8UDDy6tx1BMrtdG9YEF/+k60TTUf4xqWPAcXD3tjdSqEg1SEhpSnyfSBLKWSf \\ \end{array}$				
	eWON CERTIFICATE: MIIDKJCCAL 2TEK MAgGALUECI EwRB		BEGIN CERTIFICATE MIIDKjCCApOgAwIBAgIBFzANBgkqhkiG9w0BAQQFADBnMQswCQYDVQQC ZTEK MAgGA1UECBMBLTEYMBYGA1UEBxMPQnJhaW51IGwnQWxsZXVkMQ0wCwYI SwRB			QFADBnMQswCQYDVQQGEwJi wnQWxsZXVkMQOwCwYDVQQK	
	CA (Certificate Authority) CERTIFI	ICATE: MI Bg: BA DT	FE: BEGIN CERTIFICATE MIIDGTCCAoKgAwIBAgIJAM124Z59gkorMAOGCSqGSIb3DQEBBAUAMGcxC: BgNV BAYTAmJIMQowCAYDVQQIEwEtMRgwFgYDVQQHEw9CcmFpbmUgbCdBbGx1dU DTAL			iqGSIb3DQEBBAUAMGcxCzAJ 9CcmFpbmUgbCdBbGxldWQx	
	Update						

Figure 25: eWON2005CD VPN certificate setup

In the Networking Config branch, the Internet Connection must be set on the WAN interface.

NON	Tag Setup	System Setup		IO Server Config	Main Menu	
🚰 eWON_2005	Script Setup	User:	Users Setup			
General	Communicatio	<u>n</u>	Storage		22/08/2006 09:53:3	
OM Config ■ ™ Interfaces	Internet connection setup Internet access					
Solution Solution Solution Solution Solution Solution	Network connection Maintain connection		Ethernet WA			
	IP Address Configure with the descent					

Figure 26: eWON2005CD Internet Connection

If you need a permanent access to Internet, use the Maintain Connection checkbox (as shown).

VPN Connection must be enable.



	[Tag Setup Script Setup	System Setup IO Server C Users Setup Pages Li		IO Server Config Pages List	Main Menu	
General		Communication	Storage			22/08/2006 09:53:36	
OCOM Config VPN network setup Image: Set of the set				C Disable VF C Listen for Establish	2N incoming VPN from client outgoing VPN to server		
🔊 Publish IP Addres	55			Upc	late		

Figure 27: eWON2005CD VPN connection

Set the *Routing* configuration if you need to allow devices on LAN to go outside.

WON	Tag Setup	System	Setup	IO Se	erver Config	Main Menu	
d eWON_2005	Script Setup	Users 9	Users Setup		ages List		
General	Communication	1	<u>Storage</u>			22/08/2006 09:53:38	
COM Config Routing setup							
🗄 🗮 Interfaces	Special rules						
⊞… 💊 Network connections ⊡… 📔 Networking Config	Route all gateway traffic through	VPN				When VPN interface is active	
Internet Connection	NAT and TF (Transparent Forw	arding)					
🧕 VPN Connection	Apply NATand TF to connection		NAT and TF on WAN 💌				
- 🔊 Publish IP Address	Enable transparent forwarding						
📚 Callback 🙀 Routing	These changes will be effective from next WAN connection						
- 🔒 Security		Update					

Figure 28: eWON2005CD Routing

Set the Security you need.

WON	Tag Setup	System 9	Setup	IO Server Config	Main Menu
G eWON_2005	Script Setup	Users S	etup	Pages List	
General	Communication	د =	itorage	22/08/2006 09:53:38	
COM Config C	Networking security setup WAN Protection WAN Protection level Transparent Forwarding	O Discard a O Discard a O Allow all t	II traffic excepted VPN and initi II traffic excepted VPN and initi raffic on WAN connection (no p	ated traffic (ex: EMail) ated traffic (ex: EMail) and ICMP (Ping) rotection)	
- 🔅 Routing	Require authentication for Transpa	arent Forwarding			
🔒 Security		These chang	nges will be effective from next WAN connection		
IP Services ⊕ ∎ Manage Config		Upda	ate		

Figure 29: eWON2005CD Security

With a *WAN Protection Level* set to "Allow All", your eWON accept also traffic coming from the "unsecured" world (not VPN).

With this configuration, you can access your eWON2005-VPN through the ADSL.



User: Ripak Pierre		ļ	My eWONs	<u>Connections</u> Dia	<u>History Cor</u> gnostic <u>L</u>	nfiguration og off 🕮
n aSvac	> <u>eSync</u> > <u>Belgium</u>	l			Records pe	r page: 100 <u>OK</u>
🖻 🛄 Belgium					22	2/08/2006 16:17:41
- C eVVON_001	Name	S/N	Connected since	IP Address	Description	
<u>eWON_002</u> <u>JiPe2005</u>	<u>Gprs4005</u>				eWON at Spectrum controls	deteile
	<u>T4005</u>	0606-0001-75			BE ACTL HVAC sys	t <u>uerans</u>
1	<u>TGprsPct</u>	0608-0001-73	22/08/2006 15:49:42	VPN: <u>10.8.128.17</u>	R&D machine	
	<u>TGprsPort</u>				Test Spec ctrl 1	
	TGprsPort2				Portugal QWAVE 3	
	TGprsQWave	0610-0002-73				

Figure 30: eWON2005CD connected in eSync

The eWON2005CD is accessible at this VPN address 10.8.128.17 and at this LAN address 10.9.6.1 (eSync knows that all address belonging to 10.9.6.x must be routed to this eWON2005CD). You can PING your eWON at 10.9.6.1 and your LAN device at 10.9.6.8.

📧 Command Prompt	_ 🗆 ×
C:\>ping 10.9.6.1	^
Pinging 10.9.6.1 with 32 bytes of data:	
Reply from 10.9.6.1: bytes=32 time=23ms TTL=255 Reply from 10.9.6.1: bytes=32 time=27ms TTL=255 Reply from 10.9.6.1: bytes=32 time=26ms TTL=255 Reply from 10.9.6.1: bytes=32 time=27ms TTL=255	
Ping statistics for 10.9.6.1: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 23ms, Maximum = 27ms, Average = 25ms	
C:\> C:\> C:\>ping 10.9.6.8	
Pinging 10.9.6.8 with 32 bytes of data:	
Reply from 10.9.6.8: bytes=32 time=27ms TTL=254 Reply from 10.9.6.8: bytes=32 time=25ms TTL=254 Reply from 10.9.6.8: bytes=32 time=26ms TTL=254 Reply from 10.9.6.8: bytes=32 time=23ms TTL=254	
Ping statistics for 10.9.6.8: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 23ms, Maximum = 27ms, Average = 25ms	
C:\>_	-

Figure 31: ping through VPN





4.6 Appendix - eWON with C configuration



Revision history		
Revision Level	Date	Description
1.0	2006	Initial version (formerly User Guide eWON - VPN).
1.1	19/12/13	Transfer into template and AUG structure + eGrabit + new network diagrams + Superseded notice

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

Document build number: 32

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

eWON sa, Member of ACT'L Group.

