



KB Name	eSync - VPN Server configuration		
Type	How To		
Since revision	eSync 1.5		
KB Number	KB-0060-0	Build	77
Mod date	14. Sep 2014		

eSync - VPN Server configuration

1 Introduction

eSync can also include an OpenVPN server.

By default the VPN server is not activated and not displayed inside eSync.

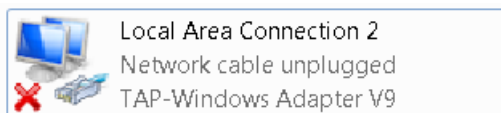
However, people wanting to combine the eSync Data management feature and the OpenVPN server on the same machine will be able to do this by going through this technical note.

2 Configuration

2.1 VPN Server configuration

To enable the VPN feature, follow the following procedure step by step :

1. Create an empty file named "esyncvpn.probe" in the <eSync directory>\WebSite.
2. Add or Update the TAP interface of the PC.



To add the Tap interface, we provide two BAT files located in <eSync directory>\OpenVPN\drivers\x64 :

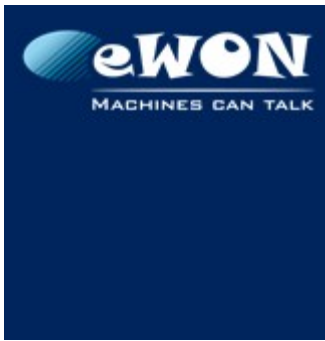
install.bat and **AddTap.bat**.

If your PC does not yet have a TAP interface, run the install.bat.

If you PC already has one Tap interface, then run Addtap.bat.

Both BAT files must be run with administration rights (right-Click → Run as Administrator)

3. Create the DH key for your server. For this, run the bat file **create_dhpem.bat** located in <eSync directory>\openvpn\config\
4. Start the service **eSyncOpenVPNLauncher** . You can do this using the command "net start eSyncOpenVPNLauncher".



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Warning



The service **eSyncOpenVPNLauncher** and the service **OpenVPNLauncher** provided by eCatcher and eGrabit cannot run at the same time.

5. Once this has been done, open the eSync configuration page by using the link "http://IP_of_eSync/initialsetup.php" inside your Web browser.

eSync Server Setup : Creation of the certificates	
Company Name:	eWON
eSync Server Friendly Name:	eSyncServer
City:	Nivelles
State/Province:	BW (Optional)
Country:	Belgium
	<input checked="" type="checkbox"/> Automatically create the CA certificate.
	<input checked="" type="checkbox"/> Automatically create the eSync Server certificate.

Next >

In this Window, you will find a form where you have to enter your personal information. These data will be used to generate the OpenVPN certificates for your VPN server. The options "Automatically create CA certificate" and "Automatically create the eSync Server certificate" must be checked. When it is correctly filled, click Next. eSync will generate the necessary certificates and go to the next configuration page.




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VPN Settings			
Public Hostname (or IP):	192.168.120.98		
OpenVPN UDP Port:	1194	(Default=1194)	
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: 255.255.128.0	
eWONs LANs Pool:	Base Address: 10.9.0.0	Subnet: 255.255.0.0	
Certificate Authority (CA):	✔ eWON Certificate Authority		
eSync Server Certificate:	✔ eSyncServer		

Server Synchro	
Default Password: (Default password used by the eWON to connect to the server)
Confirm password:

Start eSync

This one allows you to configure your VPN server. You should see the two symbols  that confirm the two certificates have been generated successfully.

Here is a description of all parameters to fill in this form :

Public Hostname (or IP)	Type the public hostname or Ip of your eSync server. This is the hostname/IP that eWON will use to connect the server in order to establish the VPN connection.
OpenVPN UDP Port	Type the UDP port that the server will use to listen for incoming connections.
eSync Server VPN IP	Type the IP address used by the server on the VPN network.
VPN DHCP Subnet Mask	Type the subnet mask of the VPN network. This mask combined with the VPN Server IP defines the network range of your VPN network.
VPN Static IP's Pool	Define a network range that is included in the global VPN network range. This network sub-range can be used for assigning static IP addresses to VPN clients. The other IP addresses outside this range but still included in the VPN network range will be used for assigning Dynamic IP addresses to VPN clients.
eWON LAN Pool	Define a network range for the LAN network of your eWONs. If you want to connect to the eWON LAN from the VPN network, you must use a different network range for every eWON LAN. Defining a network range here, will help you



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select unique network ranges for your eWONs. (Ex : If you define here the range 10.9.0.0 , 255.255.0.0 , eSync will suggest the range 10.9.0.0 , 255.255.255.0 for the first eWON, 10.9.1.0 , 255.255.255.0 for the second eWON,...

When it is done, click the button **start eSync** and the VPN server should then start. To check if it started successfully, verify that there are some logs appearing in the page "Main Menu → VPN Diagnostic".

Reporting Level: Trace	Filter:	OK
Next Page >>		
Time	Level	Event
01/07/2014 17:14:06	Trace	Admin/192.168.120.97:1064 SENT CONTROL [Admin]: 'PUSH_REPLY,route 10.8.128.0 255.255.255.0' (pid=1000)
01/07/2014 17:14:06	Info	Admin/192.168.120.97:1064 send_push_reply(): safe_cap=940
01/07/2014 17:14:06	Trace	Admin/192.168.120.97:1064 PUSH: Received control message: 'PUSH_REQUEST'
01/07/2014 17:14:05	Trace	Admin/192.168.120.97:1064 MULTI: primary virtual IP for Admin/192.168.120.97:1064: 10.8.0.1

2.2 eWON Configuration

2.2.1 First declare the eWON inside eSync

VPN Settings	
<input checked="" type="radio"/>	Obtain an IP address automatically
<input type="radio"/>	Use the following IP Address: <input type="text"/>
LAN Settings (Must be filled in to allow remote access to the eWON LAN through the VPN)	
IP Address:	10.9.0.0 Check Suggest
Subnet Mask:	255.255.255.0 (Leave IP address and subnet mask empty if the eWON does not have a LAN.)
Certificate	
<input checked="" type="checkbox"/>	ang_demo
Create Edit Revoke	

When you edit an eWON in eSync, you get now additional parameters that help you to declare the eWON as a VPN client.



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VPN Settings	Select whether you want to assign a static or a dynamic IP to your eWON. The static IP address range depends on the "VPN Static IP's Pool" parameter in the VPN server configuration (See System Setup menu)
LAN Settings	Define the network range of the eWON LAN. Remember that every eWON must have a different network range if you need to access the eWONs LAN through the VPN network.
Certificate	This menu allows to generate the certificate and the key for your eWON. If you see The certificate is not set, then the certificate has not been generated yet and you must click "create" to generate it. At the opposite, if you see , then the certificate has already been generated. (See chapter 2.2.2)
Connection type	Check whether the eWON will connect through a GPRS connection or not. This will help to apply the right VPN KeepAlive parameter.

When everything is correctly filled, click "Add/Update".

2.2.2 eWON VPN configuration

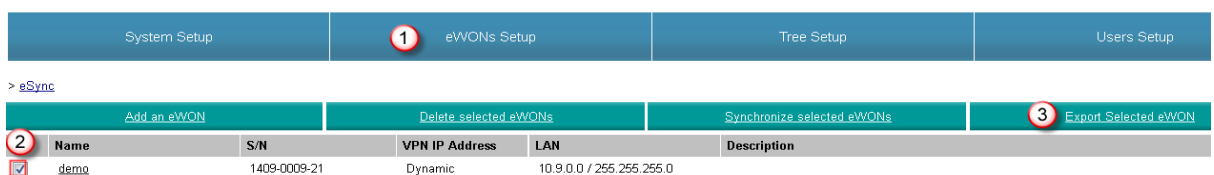
Now your eWON has been declared in eSync, you need to configure the VPN connection in your eWON.

To achieve this you can use the eWON config export feature of eSync.

2.2.2.1 Configuration using Export Feature

This feature generates a comcfg.txt file with all connection parameters (IP, Certificates,...) already configured. Then, this file simply needs to be uploaded to eWON through FTP.

To generate the file in eSync, click "Configuration → eWONs Setup". Then, select the eWON to export and click "Export Selected eWON".



Make sure the file name is comcfg.txt and then, using FTP, push the file to the eWON root.



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eWON should now contain the VPN keys and server information.

2.2.2.2 Manual Configuration

Instead of using the export feature explained here above, you can also configure the VPN server connection manually.

In eWON, go to System Setup → Communication → Network connections → VPN → Outgoing.

In this menu, you have to select “Defined manually” and type the IP/hostname of eSync. Depending on the topology, it could be the Public IP of the Internet router or the eSync Local IP.

Concerning the VPN Server settings, select “VPN Server “ and paste the eWON private key and certificate as well as the CA certificate in the right fields.

eWON private key and certificate can be extracted from eSync server by



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editing the eWON and click "edit". (See 2.2.1)

CA certificate can be accessed in the eSync server folder "<eSync Directory>\OpenVPN\Certificates\keys"



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2.3 User Configuration

You probably also want to connect PCs and not only eWONs to your VPN network. This is also possible with eSync.

2.3.1 First declare a User for the PC connection inside eSync

eSync users can also connect to eSync as a VPN client. To configure this, edit or create a user (Configuration → Users Setup).



You will see now that a new configuration menu appears :

Like for an eWON definition, this menu allows generating VPN certificate for your user. This is the only additional action to do.

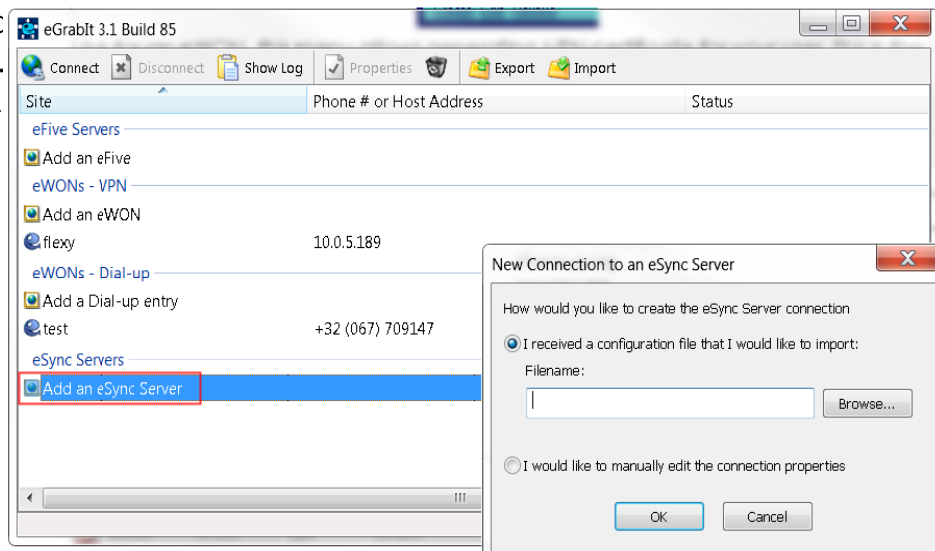
2.3.2 PC configuration

To configure the VPN client on the client machine, the software eGrabIt is used. This software is available on

http://wiki.ewon.biz/Support/07_Download/10_EWON_Softwares

In eGrabIt, either you can declare a new connection or use the export feature of eSync.

For this, you just need to select t





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Delete Selected Users		Create New User		Export Selected User	
1	Username	Full Name	Rights	Description	
<input checked="" type="checkbox"/>	adm	Admin	Administrator	Default administrator. In production, this user should be deleted or its password should be modified.	

You get an XML file that you can easily import in eGabit.

3 Router/firewall configuration

Your eSync server will probably not be directly visible on Internet, but will be installed behind a router or a firewall. To allow the eWONs to connect to the eSync VPN server, you'll need to declare a Port forwarding rule on the router.

You should forward one UDP port to the local eSync IP address on port UDP 1194 (=port used for the VPN connection).

Remark: There is no need to create a rule for the HTTP port which will be used for the historical data transfer. The data transfer will be performed through the VPN tunnel.

4 eWON Data Management configuration

As the eWON will now connect to the eSync server using a secured VPN tunnel, we will use this tunnel to send also the historical data through this tunnel.

For this, inside the Data management configuration of the eWON, instead of using the server URL we will use here the VPN IP address of the eSync Server (standard config = 10.8.0.1).



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Data Management		
eWON Data Management ID	<input type="text" value="Flexy"/>	This is the eWON ID specified on the acquisition server.
Password	<input type="password" value="•••••"/>	(if specified on the acquisition server)
Server URL	<input type="text" value="10.8.0.1"/>	ex: http://your_server.com:8080 or your_
Upload interval	<input type="text" value="1"/>	Minutes (leave 0 if you use the "Advanced data transfert schedule below).
Advanced data transfert schedule	<input type="text"/>	
Select tag group(s)	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D Select which data will be transferred.	
Upload on alarm	<input type="checkbox"/>	

5 Versions

The version of OpenVPN used by eSync is 2.3.4