



# **VPN-Router EBW100-LAN**

## **Deltalogic24 configuration guide**

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**Note:**

We have checked the content of this manual for conformity with the hardware and software described. Nevertheless, because deviations cannot be ruled out, we cannot accept any liability for complete conformity. The data in this manual have been checked regularly and any necessary corrections will be included in subsequent editions. We always welcome suggestions for improvement.

Last update: 2013-07-18. All technical changes reserved.

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# Setup your Deltalogic24 Account

## First steps

Visit our website [www.deltalogic24.de](http://www.deltalogic24.de) and create your user account or log in to your existing user account. In order to create a VPN network click "add new router" and enter the serial number of your router.

After adding the EBW100-LAN to your user account, you will see a website with your network configuration (see *Screenshot 1*):

Netzkonfiguration Deltalogic GmbH							
Ihre IP: 79.245.81.214							
<a href="#">Änderungen speichern</a>				<a href="#">automatisch aktualisieren</a>			
Name/IP	Interner Name	Mail-Benachrichtigung	online	login	Traffic	Remote IP	
<a href="#">b2c0</a> 10.111.12.34	<a href="#">Router b2c0</a> Freigabe: <input checked="" type="checkbox"/>	<a href="#">Emailadresse eintragen</a> login: <input type="checkbox"/> disconnect: <input type="checkbox"/>	zuletzt online:		OUT: IN:		<a href="#">Log b2c0</a> <a href="#">ping b2c0</a>
<a href="#">b2c1</a> 10.111.12.38	<a href="#">Client b2c1</a> Freigabe: <input checked="" type="checkbox"/>	<a href="#">Emailadresse eintragen</a> login: <input type="checkbox"/> disconnect: <input type="checkbox"/>	zuletzt online:		OUT: IN:		<a href="#">Log b2c1</a> <a href="#">ping b2c1</a>
<a href="#">b2c2</a> 10.111.12.42	<a href="#">Client b2c2</a> Freigabe: <input checked="" type="checkbox"/>	<a href="#">Emailadresse eintragen</a> login: <input type="checkbox"/> disconnect: <input type="checkbox"/>	zuletzt online:		OUT: IN:		<a href="#">Log b2c2</a> <a href="#">ping b2c2</a>
<a href="#">b2c3</a> 10.111.12.46	<a href="#">Client b2c3</a> Freigabe: <input checked="" type="checkbox"/>	<a href="#">Emailadresse eintragen</a> login: <input type="checkbox"/> disconnect: <input type="checkbox"/>	zuletzt online:		OUT: IN:		<a href="#">Log b2c3</a> <a href="#">ping b2c3</a>
<a href="#">Änderungen speichern</a>							

*Screenshot 1 - Deltalogic24 network configuration sample*

## Introduction to Deltalogic24 web interface

The Deltalogic24 VPN network you have created has 4 user logins. The first user (b2c0) is the exclusive user for your router. The remaining users are clients (b2c1, b2c2, b2c3). They are used to connect your PC or laptop with this VPN network.

You can see the password if you click on the corresponding username. Below the usernames there are IP addresses. With these IP address the corresponding user will be connected to the VPN.

Especially the IP address of the router-user (b2c0) is important for the communication. In this example it is 10.111.12.34 (take a look at *Screenshot 1*).

### User-specific information:



Administrator rights are necessary for the OpenVPN-Client installation on your computer. Starting OpenVPN-Client needs at least "Network Configuration Operators Group" or Administrator rights. Otherwise the routing rules in the PC will be missing and no communication is possible.

### Network-specific information:



For VPN-clients via LAN (router or user account) it is important that outgoing connections on port 1194 UDP to the Deltalogic24 VPN server are possible. Maybe your firewall has to be configured to allow connections for the necessary IP addresses.

# Configuration of the EBW100-LAN for Deltalogic24

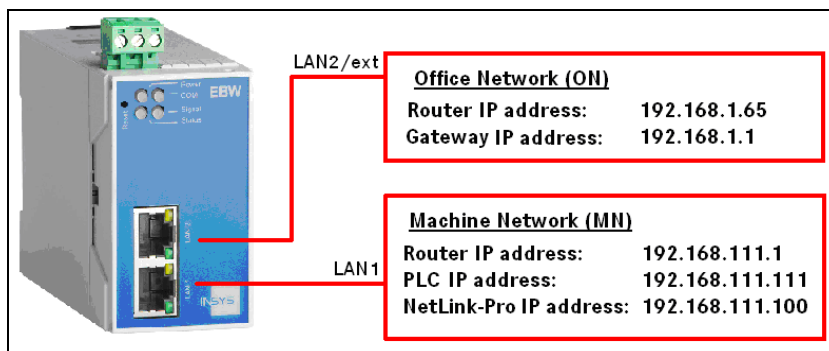
## Preface and requirements

We distinguish between machine network (MN) and office network (ON).



The machine network is the network, in which the network devices, that are supposed to be accessible via the VPN later on, are connected to LAN1. The office network is the network that provides the Internet access (Gateway). For this, the LAN2/ext interface is used.

For the planning of the network structure, contact your IT department. The following network planning serves as a configuration sample for this instruction:



Screenshot 2 - Configuration sample



With its IP address within the office network, the router must be able to establish a connection to the Deltalogic24 server via port 1194 UDP!

**Note: All settings in the web interface are to be saved by clicking "OK"!**

## First steps

- Feed the router with voltage (24 VDC)
- Configure the network interface of the configuration PC as "Obtain IP address automatically" (DHCP) or allocate a static IP address in the network 192.168.1.x (deviating from 192.168.1.1).
- Connect the configuration PC with the router via Ethernet cable on LAN 1 and use the network cable on LAN2/ext for the connection to the office network.
- Open the web browser on the configuration PC and enter "192.168.1.1" in the address bar. Login data: User "insys", password "icom".

## Configuration of the router's IP address within the machine network

Click on "Basic settings" > "IP address (LAN)" in the web interface. Here, the router's IP address within the machine network is entered, see *Screenshot 2 and 3*.

IP address (LAN)	
IP-Adresse	192.168.111.1
Netzmaske	255.255.255.0

Screenshot 3 - Configuration of the IP address within the machine network



If you confirm the changing with "OK" the router's web interface will be accessible via its new IP address. As soon as your configuration PC reobtained the router's IP address, enter the new IP address in your browser in order to be taken to the web interface.

The DHCP server, which is activated in the router on factory setting, automatically changes its IP address pool into the new machine network. If you are using a fixed network configuration on the configuration PC, change it according to the new machine network.

### Configuration of the router's IP address within the office network

Click on "LAN (ext)" in the web interface. If there is a DHCP server within the office network that assigns an IP address to the router within the office network, please select "DHCP client".

Otherwise, select "fixed IP address" and enter the IP address and subnet mask, see *Screenshot 2 and 4*.

**LAN (ext)**

☐ DHCP client

☒ static IP address 192.168.1.65

Netmask 255.255.255.0

MAC address 00:00:00:00:00:00

*Screenshot 4 – Configuration of the IP address within the office network*

### Configuration of the gateway within the office network

Click on "LAN (ext)" -> "Routing" in the web interface. Check the box "Set default route to gateway" and enter the IP address of the Internet gateway within the office network in the respective field. Furthermore, NAT for incoming and outgoing packets must be activated. Find the correct settings in *Screenshot 5*.



The Internet gateway can be a router, a firewall or a server within the office network. All packets addressed to networks that the router does not know will be sent via the gateway. NAT (Network Address Translation) allows the router to change or mask the IP addresses of the incoming and outgoing packets.

**Routing**

☒ Set default route to gateway 192.168.1.1

☒ Activate NAT for incoming packets

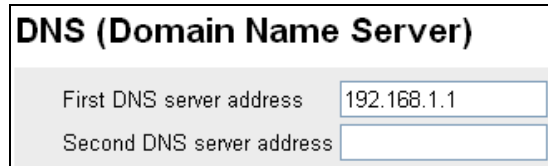
☒ Activate NAT for outgoing packets

*Screenshot 5 – Configuration of the gateway and NAT*

## DNS configuration

Click on "Server services" -> "DNS" in the web interface.

A DNS server must be stated in order that the resolution of domain name into IP address works. Normally, the standard gateway is configured here. Enter it in the "First DNS server address" field, see *Screenshot 6*.



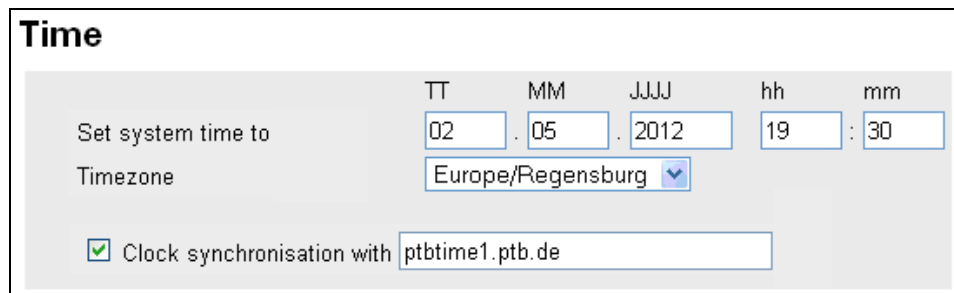
DNS (Domain Name Server)	
First DNS server address	192.168.1.1
Second DNS server address	

*Screenshot 6 – DNS configuration*

## Configuration of time and date

Click on "System" -> "Time" in the web interface.

If the time of day synchronization does not work via the NTP time server (Standard: "ptbtime1.ptb.de") indicated "Clock synchronisation with", please enter date and time manually, see *Screenshot 7*.



Time					
Set system time to	TT	MM	JJJJ	hh	mm
	02	05	2012	19	30
Timezone	Europe/Regensburg				
<input checked="" type="checkbox"/> Clock synchronisation with	ptbtime1.ptb.de				

*Screenshot 7 – Configuration of date and time*



If the time configuration is not correct, a VPN certificate's validity can possibly expire as it is not valid in the configured period!

## OpenVPN client configuration

Download the CA certificate on [www.deltalogic24.de](http://www.deltalogic24.de) and save it. Click on "LAN (ext)" -> "OpenVPN client" in the router's web interface. Scroll down to "Upload key or certificate". Click on "Browse..." and upload the CA certificate into the router. If the certificate has been uploaded correctly and confirmed by clicking on "OK" at the bottom of the page, the green check mark (✓) appears next to "CA certificate available".

Configure the other settings as shown in *Screenshot 8 and 9*. As soon as these settings are made, the check mark "Activate OpenVPN client" has to be ticked (✓).



User name/password: Access data for the router indicated in your Deltalogic24 account.

### OpenVPN client

☒ Activate OpenVPN client

OpenVPN client state  
 Display log of last connection  
 Display configurations file  
 Create sample configuration file for remote terminal

IP address or domain name of remote site:   
 Alternative remote site:   
 Tunneling over port (local / remote):    
 Protocol: ☒ UDP ☐ TCP  
 Set default route (redirect-gateway): ☐  
 Bind to local address and port: ☒  
 Remote terminal is allowed to change its IP address (float): ☒  
 Activate LZO compression: ☒  
 Masquerade packets before tunnelling: ☒  
 Cipher algorithm:   
 Log level:   
 Fragment packets (in bytes):   
 Interval for renegotiation of data channel key (in seconds):   
 Ping interval (in seconds):   
 Ping restart interval (in seconds):   
 Additional ICMP ping to:

Screenshot 8 – VPN configuration part 1

☒ Authentication based on certificate  
☒ CA certificate available   
☒ No certificate available  
☒ No private key available

User name:   
 Password:   
 Check remote certificate type: ☐

☐ No authentication or authentication with preshared key  
☒ No preshared key available  
 Generate a new static key

IP address of VPN tunnel local:   
 IP address of VPN tunnel remote:   
 Netaddress of network behind the VPN tunnel:   
 Netmask of network behind the VPN tunnel:

Screenshot 9 – VPN configuration part 2



The router's "Status VPN" LED flashes green as soon as the VPN connection has been established.

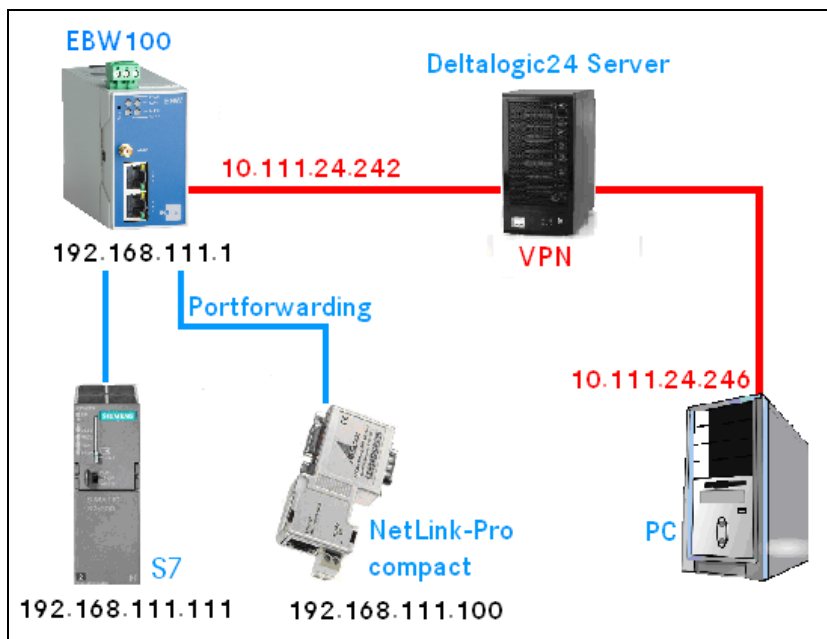
# Port forwarding



## Why is port forwarding necessary for a Deltalogic24 VPN connection?

Port forwarding/NAT is necessary when using a VPN connection via Deltalogic24 in order to reach the devices connected in the machine network. An example in *Screenshot 10*:

The communication of the Client-PC (10.111.24.246) within the VPN can only be established to the IP address of the router in the VPN (10.111.24.242). A direct connection to the end device in the machine network (e. g. 192.168.111.111) is not possible. The router forwards the incoming packets to the end devices following defined rules.



Screenshot 10 – Drafted installation



## Port forwarding configuration for the EBW100-LAN

Open the router's web interface and click on "LAN (ext)" -> "Portforwarding".

In *Screenshot 11* you can see how to enter a rule. This rule reveals the following: Incoming packets on port 102 TCP are forwarded to the IP address 192.168.111.111 (S7 PLC, see *Screenshot 10*) on port 102.

<input checked="" type="checkbox"/> Activate port forwarding for LAN (ext) interface				
Create new rule				
Protocol	Port	bis	to IP address	to port
TCP	102		192.168.111.111	102

Screenshot 11 – Port forwarding with the EBW100-LAN Router



# OpenVPN-Client configuration on the PC



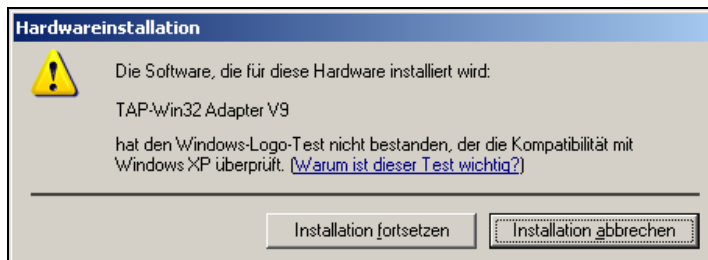
If this instruction is not on hand digitally, you will find links and samples on [www.deltalogic24.de](http://www.deltalogic24.de) -> "OpenVPN" at the bottom of the website.

## Download and installation of OpenVPN-Client

Download the OpenVPN-Client and install the software:

[www.openvpn.net/index.php/download/community-downloads.html](http://www.openvpn.net/index.php/download/community-downloads.html)

The notification during the installation of the "TAP-Win32 Adapter" is to be confirmed by clicking "Continue Anyway", see *Screenshot 12*.



*Screenshot 12 – Hardware installation TAP-Win32 Adapter v9*

## Saving the certificate file

Save the certificate file as "deltalogic24.de.crt" in the configuration directory (standard: "C:\Programme\OpenVPN\config"): [www.deltalogic24.de/deltalogic24.de.crt](http://www.deltalogic24.de/deltalogic24.de.crt)





Note: The Internet Explorer saves the file ending with ".cer". In order to ensure the correct functionality the file ending has to be renamed into ".crt".

## Creating the configuration file

Create a text file ending with ".ovpn" (e. g. "deltalogic24.ovpn") in the configuration directory, copy and paste the following lines and save the file:

```
remote deltalogic24.de
client
dev tun
proto udp
comp-lzo
auth-user-pass
ca deltalogic24.de.crt
```

## Connection establishment

Start the "OpenVPN GUI" by choosing it in the Start Menu or on the desktop with administrator or network operator rights (otherwise the routing won't work). Right-click on system tray icon of the OpenVPN-Client  and select "Connect". Enter your login data of a client access (this you find in your Deltalogic24 network summary). As soon as the symbol turns green  the connection has been established.

## Troubleshooting



If the user and password request does not appear, check whether the files are in the right directory as well as whether its content is correct. If there are errors when connecting, please send the content of the respective log file (right-click on the system tray icon -> "View Log") including a description of errors via e-mail to [support@deltalogic.de](mailto:support@deltalogic.de).

# Using the ACCON-S7-Net drivers



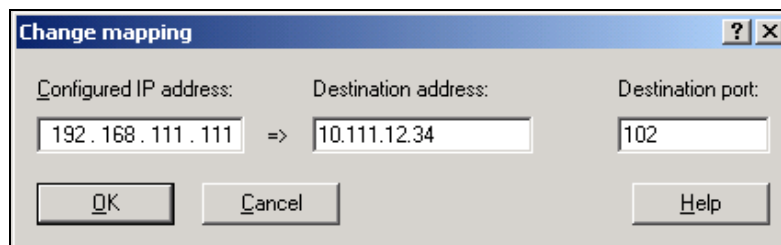
The ACCON-S7-Net drivers include ACCON-TeleService-IE and the communication drivers for ACCON-NetLink-PRO (compact) and other devices. ACCON-S7-Net can be downloaded on "[www.deltalogic.de](http://www.deltalogic.de)" under "Downloads" -> "S7 adapter" or you will find the setup on any DELTALOGIC CD.

## Establishing an online connection with ACCON-TeleService IE

As the PLC is not accessible via the IP address 192.168.111.111 but via 10.111.24.242, opening the Step7 project and switching to "Online" (cf. *Screenshot 10*) does not work. The PG/PC-interface ACCON-TeleService IE resolves this problem.

After opening the PG/PC-interface and selecting ACCON-TeleService-IE, open the properties. At first, by selecting "New", a station is created. In a station you can find the routing information for a project or a machine. Therefore, a reasonable name is to be chosen, e. g. "Project XYZ" so that a map can be generated.

Within the station, "direct map" has to be marked and by clicking on "New...", a new rule respectively map will be entered, see *Screenshot 13*.

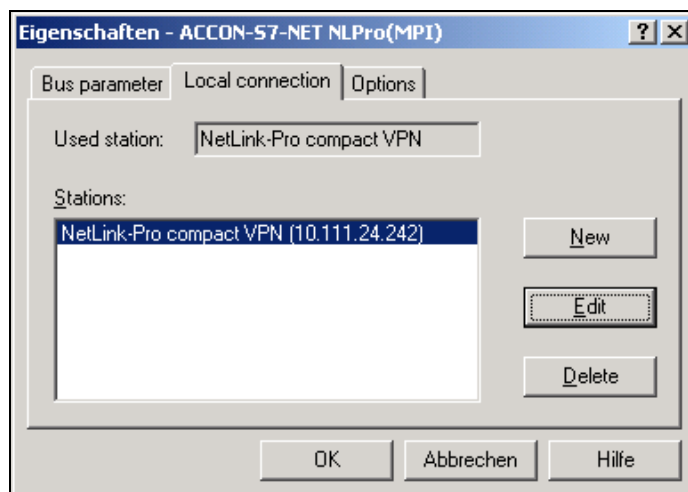


*Screenshot 13 – Mapping ACCON-TeleService IE*

The map above shows that the PLC with the IP address 192.168.111.111 is accessible via the router's IP address in the VPN 10.111.24.242 via port 102. With this property, an opened project with projected IP address 192.168.111.111 can switch to "Online".

## Establishing an online connection with the ACCON-NetLink-PRO compact

Configure the PG/PC interface "ACCON-S7-Net NLPro (MPI/PROFIBUS/PPI)" with the following settings: The VPN-IP address of the ACCON-NetLink-PRO compact has to be configured as IP address "10.111.24.242" and the corresponding station has to be selected, see *Screenshot 14*.



*Screenshot 14 – Interface properties of "ACCON-S7-Net NLPro"*