

PC OpenVPN Client remote to Spectre RT OpenVPN host

Objective: This procedure will walk throught the steps required to configure the Spectre RT so it can form an OpenVPN tunnel from the remote PC Client through the Internet, through a firewall and to an RT router. (see diagram for clarity)

Assumptions: The router will start with default settings. If it does not, you may want to reset the unit to factory defaults before attempting to follow this procedure. The proper configuration has been added to the corporate firewall router to allow port 1194 (TCP) to pass. Products: Spectre RT = ERT310, ERT312

Diagram of application:





Let's get started: First we will configure the Spectre RT router. Access must be gained to the configuration of the device. By default the "ETH" port is setup with a DHCP server so a PC configured as a DHCP client can be connected to this port and will be given a valid IP address. Connect the power cable and power the router up.

Now connect a PC to the "ETH" port on the router and allow the PC to obtain an IP address from the router. Open up a web browser on the PC and connect to the router. <u>http://192.168.1.1/</u> The default password and username are as follows : "root" and "root".

Connect to 192.1	68.1.1
	GE
The server 192.168.1 and password. Warning: This server password be sent in a without a secure conr	 1 at SPECTRE-3G requires a username is requesting that your username and an insecure manner (basic authentication nection).
User name:	😰 root 💌
Password:	****
	Remember my password
	OK Cancel

Goto the "LAN" menu item found under Configuration and the following screen should appear.

			LAN Conf
	Primary LAN	Second	ary LAN
DHCP Client	disabled	▼ disable	ed 🔻
IP Address	192.168.1.1		
Subnet Mask	255.255.255.0		
Bridged	no	▼ no	•
Media Type	auto-negotiation	▼ auto-ne	egotiation 🔹
Default Gateway	,		
DNS Server			
🖉 Enable dynami	ic DHCP leases		
IP Pool Start	192.168.1.2		
IP Pool End	192.168.1.254	_	
Lease Time	600	sec	
Enable static DHCP leases			
MAC Address	IP Address		
			-
			-
			-
			-
			-
L Annhal			_
Apply			

Configure the LAN settings as they are in the following screen shot. Then click the "Apply" button at the bottom of the page.

BSB ELECTRONICS Make The Right Connections

		LAN (Conf
	Primary LAN	Secondary LAN	
DHCP Client	disabled	▼ disabled	٠
IP Address	10.1.2.1	10.30.4.90	
Subnet Mask	255.255.255.0	255.255.255.0	
Bridged	no	▼ no	۲
Media Type	auto-negotiation	 auto-negotiation 	۲
Default Gateway	r	10.30.4.1	
DNS Server		8.8.8.8	
🗆 Enable dynam	ic DHCP leases		
IP Pool Start	10.1.1.2		
IP Pool End	10.1.1.10		
Lease Time	600	sec	
🗆 Enable static 🛛	OHCP leases		
MAC Address	IP Address		
Analy			
Арріу			

The router's IP address will change. Connect "Port 1" to the LAN (see diagram) and the PC (this could be any device you want to access over the VPN tunnel) to "ETH" port.

The PC connected to "ETH" port will need to have the IP address changed to static:

IP:10.1.2.2; Mask 255.255.255.0 Gateway:10.1.2.1 DNS 8.8.8.8

Using this PC on the "ETH" port side of the router you will be able to edit the routers configuration. Open up a web browser and connect to <u>http://10.1.2.1</u> The default password and username are as follows : "root" and "root".



Goto the "OpenVPN" menu item found under Configuration and the following screen should appear.

B&B ELECTRONICS Make The Right Connections 🕹 SPECTRE-RT - Mozilla Firefox Eile Edit View Higtory Bookmarks Iools Help SPECTRE-RT + ☆ マ C 🚷 ◄ Google **> SPECTRE RT Industrial Router** OpenVPN Tunnels Configuration Status Network DHCP IPsec DynDNS System Log Create Description 1st no 💌 Edit 2nd no 🔽 Edit Apply Configuration LAN VRRP PPPoE Firewall NAT OpenVPN IPsec GRE L2TP PPTP DynDNS NTP SNMP SMIP Expansion Port 1 Expansion Port 2 USB Port Startup Script Up/Down Script Automatic Update Customization User Modules

Click on the "Edit" button next to the row labeled "1st".

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SPECTRE RT In	dustrial Router			
Status		OnenVPN	Funnel Configuration	
Network	Create 1st OpenVPN tunne	2		
DHCP	Description *			
IPsec DypDNS	Protocol	UDP		
System Log	UDP Port	1194		
Configuration	Remote IP Address *			=
LAN	Remote Subnet *			
VRRP	Remote Subnet Mask *			
PPPoE Simonal	Redirect Gateway	no 👻		
NAT	Local Interface IP Address			
OpenVPN	Remote Interface IP Address			
IPsec	Ping Interval *		sec	
L2TP	Pina Timeout *		sec	
PPTP DypDNS	Renegotiate Interval *		sec	
NTP	Max Fragment Size *		bytes	
SNMP	Compression	LZO 💌		
Expansion Port 1	NAT Rules	not applied 🗸 🗸		
Expansion Port 2	Authenticate Mode	none 💌		
USB Port Startup Script				1
Up/Down Script	Pre-shared Secret			
Automatic Update				8
Customization				
User Modules	CA Certificate			



Edit the OpenVPN configuration as described in the screen shot below.

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← → C m [] 10.30.4.90	/openvpn1.cgi			=	
Suggested Sites 📋 B&B Elec 📋	📄 Financial 📋 Spectre Info 📋 IN	ИС			
SDECTDE DT In	ductrial Poute			·	-
SPECIKE KI III					
Status			OpenVPN Tunnel Configuration		
Network	Create 1st OpenVPN tunn	iel			
DHCP	Description *	Server 1			
IPsec DypDNS	Protocol	TCP server			
System Log	TCP Port	1194			
Configuration	Remote ID Address *				
	Remote IP Address				
VRRP	Remote Subnet				
PPPoE	Remote Subnet Mask *				
Firewall	Redirect Gateway	no		E	£
OpenVPN	Local Interface IP Address	10.8.0.1			
IPsec	Remote Interface IP Address	10.8.0.2			
GRE	Ping Interval *		sec		
PPTP	Ping Timeout *		sec		
DynDNS	Renegotiate Interval *		sec		
NTP	Max Fragment Size *		bytes		
SMTP	Compression	LZO 💌			
Expansion Port 1	NAT Rules	not applied			
USB Port	Authopticate Mede	nre shared secret			
Startup Script	Addrendcate Mode	pre-snared secret			
Up/Down Script	Pre-shared Secret	BEGIN OpenVPN S 3534b66bb7604b84740b	49291e9d4f7a *		1
Automatic opdate		1d441fdbec2a560e2703	29de8db5cc5f		
Customization					
User Modules	CA Certificate				
Administration			72		
Change Profile	DH Parameters				
Change Password			12		
Set Real Time Clock Backup Configuration					
Change Profile Change Password Set Real Time Clock Backup Configuration	DH Parameters				

You will have to generate your Pre-shared Secret using the utility that installs with the OpenVPN Client on the next step. Make sure that both the header "-----BEGIN OpenVPN Static key V1-----" and the footer "-----END OpenVPN Static key V1-----" are copied into the Pre-Shared Secret entry location in our router.

Click the "Apply" button at the bottom of the page to save this configuration.

In this example OpenVPN client version 2.3.0-1005 was used "openvpn-install-2.3.0-1005-i686.exe". You can download the client from OpenVPN's Website.

https://openvpn.net/index.php/open-source/downloads.html

Install the client with all the defaults. Find the OpenVPN config directory, this is normally "C:\Program Files\OpenVPN\ config". Now you will need to generate the static.key. This is done by using the tool that is installed with OpenVPN. It is called "Generate a static OpenVPN key" tool and it will create a "key.txt" file directly in the "C:\Program Files\OpenVPN\config" directory. This contains the Pre-shared Secret and this is to be used in the Router Server Configuration as seen above. Once the key is put into the router we are going to rename and change the extension of this file in the config folder to 'static.key' as seen below.

Static.key 3/25/2014 4:51 PM KEY File 1 K	В
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We will now need to create the client configuration file. We can do this by first creating a .txt file in the same directory and putting the information below as the content within the file.

##This will need to be altered as the application varies from this example. You can also use the sample configuration files under "C:\Program Files\OpenVPN\sample-config" as a guide for other configurations

dev tun	## identifies the device
proto tcp-client	## Assigns the protocol type, TCP Client OpenVPN
remote 98.173.9.200	## tells client the IP address of the remote interface
ifconfig 10.8.0.2 10.8.0.1	## Tells client the IP addresses of the VPN tunnel
secret static.key	## designates the file containing the key
comp-lzo	<pre>## compression type assigned must match other side</pre>
verb 3	
route 10.1.2.0 255.255.255.0 1	10.8.0.1 255.255.255.0 ##Sending traffic destined for 10.1.2.0/24
to Gateway 10.8.0.1 (VPN interi	face of our Router)

Once this is saved we can change the name and extension of the file to client.ovpn as seen below.



The configuration on the router and the client PC is complete. Run the OpenVPN client with administrative privileges. This is done by right clicking on the program link and selecting "Run as". You will notice that the program is running in the tray at the bottom of the PC's screen. Right click select "client" and then "connect".