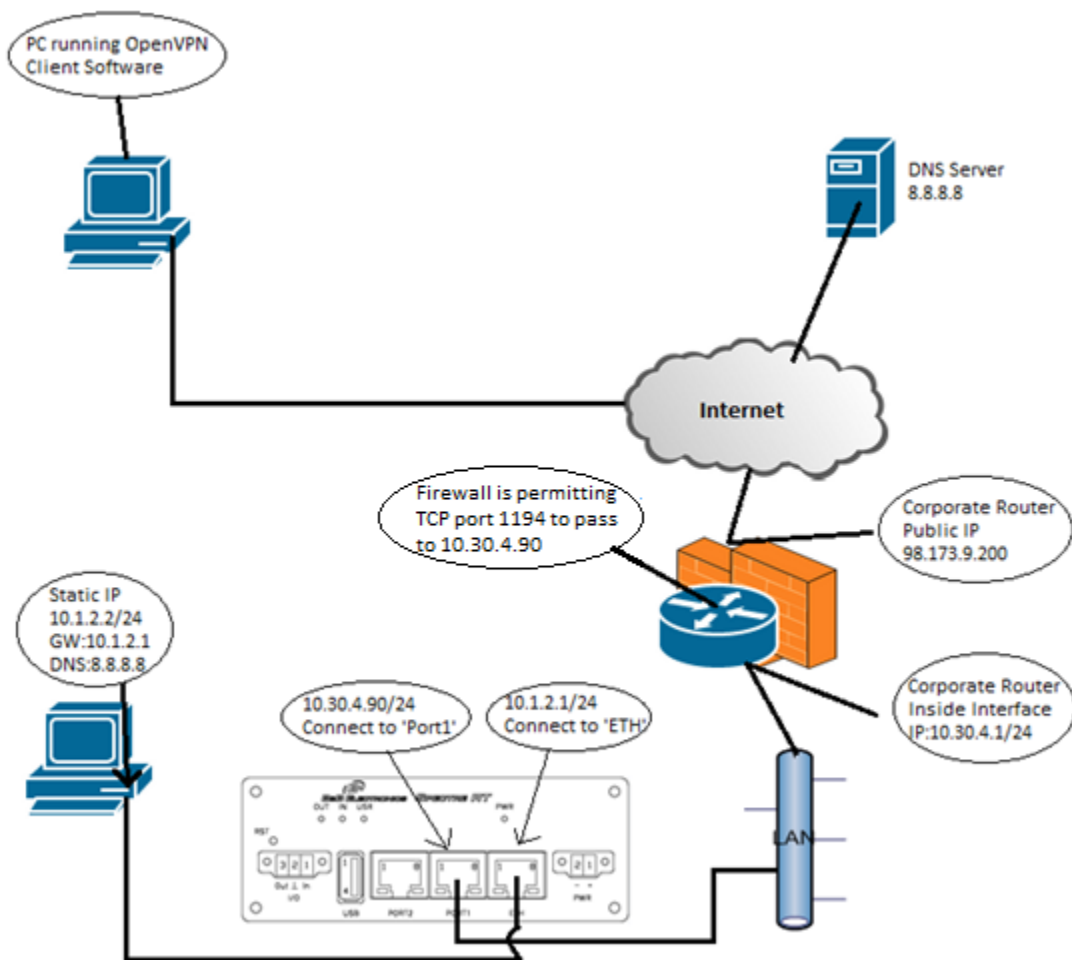


# PC OpenVPN Client remote to Spectre RT OpenVPN host

**Objective:** This procedure will walk through 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)

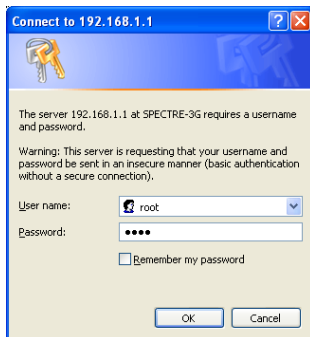
**Assumptions:** The router will start with default settings. If it does not, you may want to reset the unit to factory defaults before attempting to follow this procedure. The proper configuration has been added to the corporate firewall router to allow port 1194 (TCP) to pass. Products: Spectre RT = 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. <http://192.168.1.1/> The default password and username are as follows : "root" and "root".



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

LAN Configuration			
	Primary LAN	Secondary LAN	
DHCP Client	disabled ▼	disabled ▼	
IP Address	192.168.1.1		
Subnet Mask	255.255.255.0		
Bridged	no ▼	no ▼	
Media Type	auto-negotiation ▼	auto-negotiation ▼	
Default Gateway			
DNS Server			
<input checked="" type="checkbox"/> Enable dynamic DHCP leases			
IP Pool Start	192.168.1.2		
IP Pool End	192.168.1.254		
Lease Time	600	sec	
<input type="checkbox"/> Enable static DHCP leases			
MAC Address	IP Address		
<input type="button" value="Apply"/>			

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

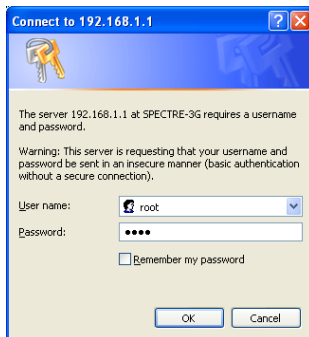
LAN Configuration			
	Primary LAN	Secondary LAN	
DHCP Client	disabled	disabled	
IP Address	10.1.2.1	10.30.4.90	
Subnet Mask	255.255.255.0	255.255.255.0	
Bridged	no	no	
Media Type	auto-negotiation	auto-negotiation	
Default Gateway		10.30.4.1	
DNS Server		8.8.8.8	
<input type="checkbox"/> Enable dynamic DHCP leases			
IP Pool Start	10.1.1.2		
IP Pool End	10.1.1.10		
Lease Time	600	sec	
<input type="checkbox"/> Enable static DHCP leases			
MAC Address	IP Address		
<input type="button" value="Apply"/>			

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.

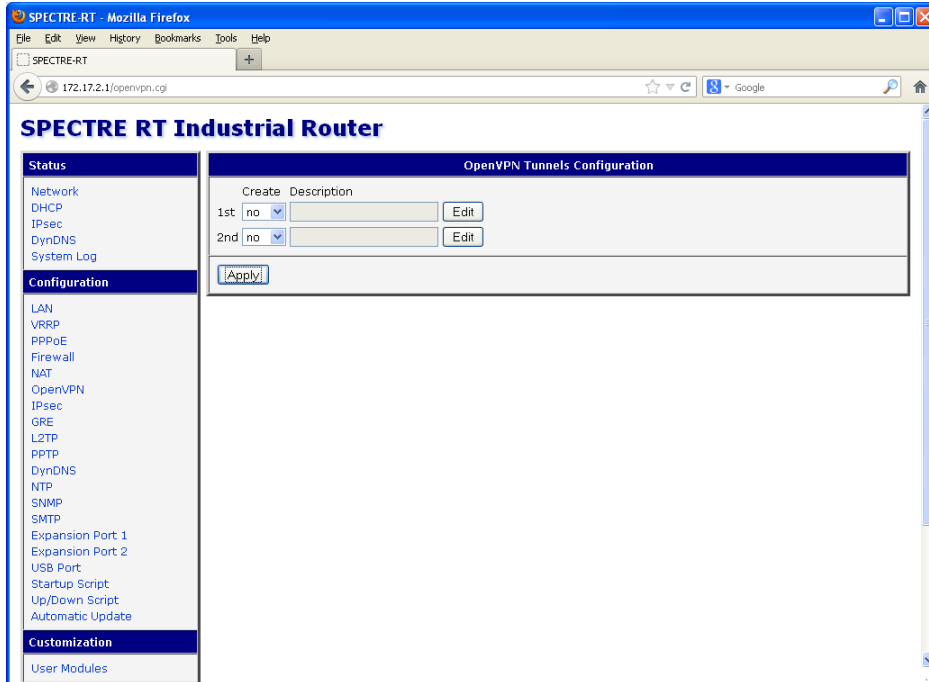
The PC connected to "ETH" port will need to have the IP address changed to static:

IP:10.1.2.2; Mask 255.255.255.0 Gateway:10.1.2.1 DNS 8.8.8.8

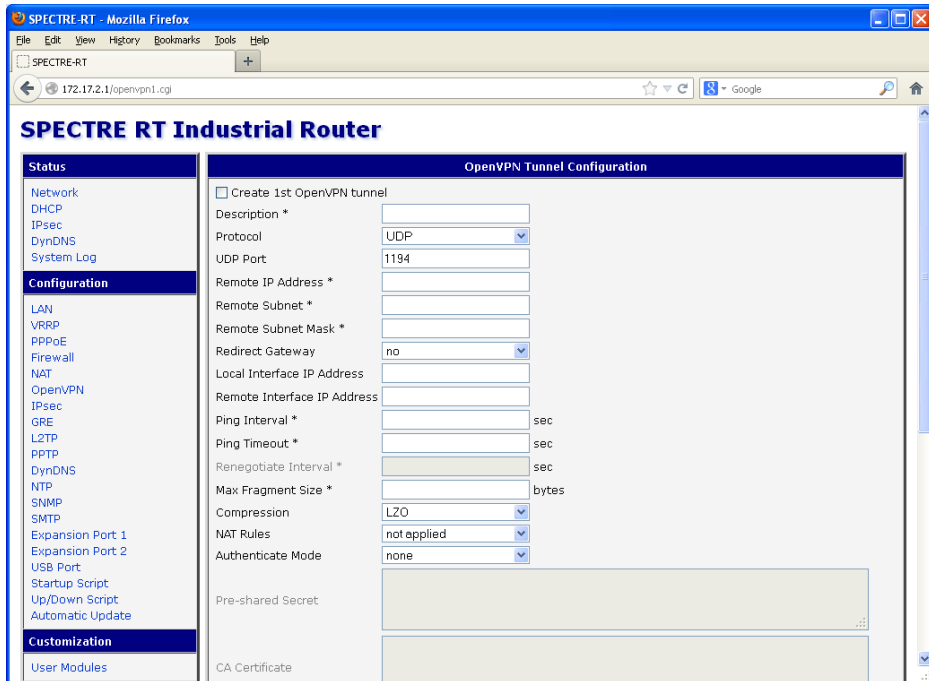
Using this PC on the "ETH" port side of the router you will be able to edit the routers configuration. Open up a web browser and connect to <http://10.1.2.1> The default password and username are as follows : "root" and "root".



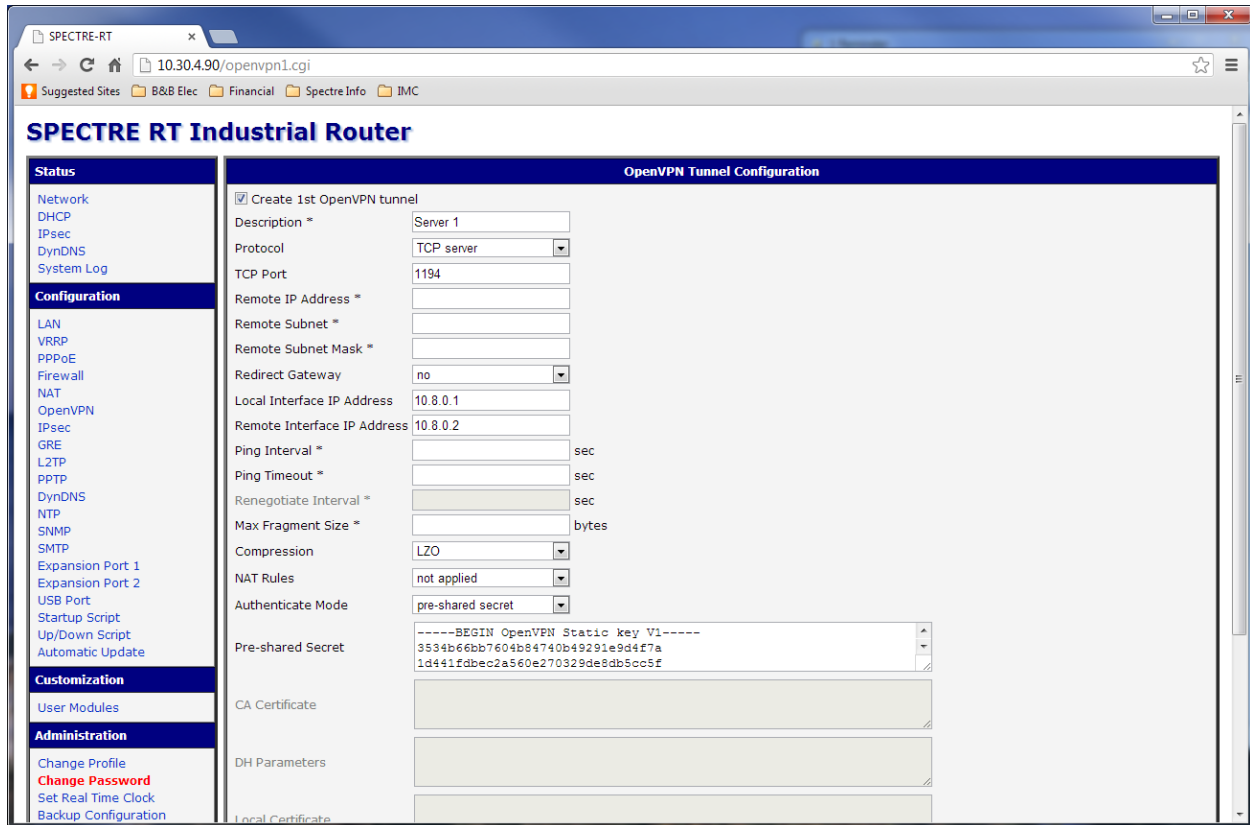
Goto the "OpenVPN" menu item found under Configuration and the following screen should appear.



Click on the “Edit” button next to the row labeled “1<sup>st</sup>”.



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



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.

\*\*\*\*\*OpenVPN Client configuration\*\*\*\*\*

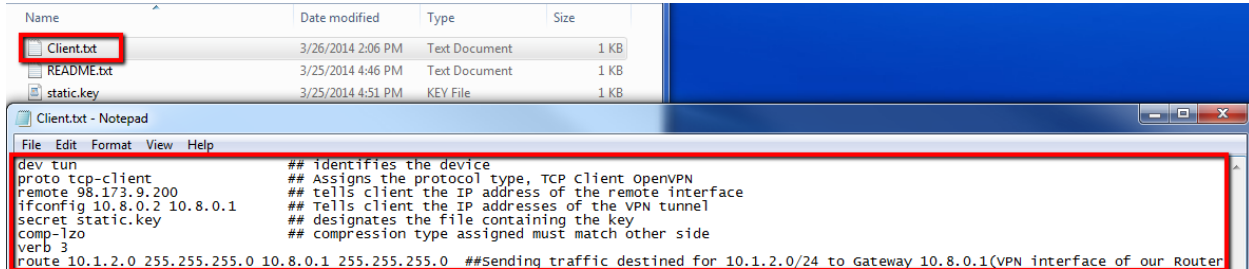
In this example OpenVPN client version 2.3.0-I005 was used “openvpn-install-2.3.0-I005-i686.exe”. You can download the client from OpenVPN’s Website.

<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.



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.



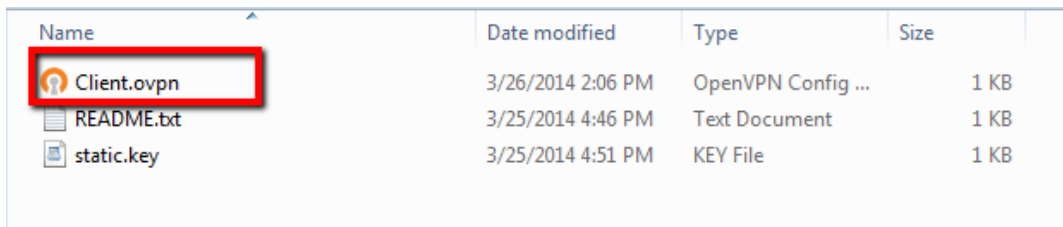
#####

##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              ## compression type assigned must match other side
verb 3
route 10.1.2.0 255.255.255.0 10.8.0.1 255.255.255.0 ##Sending traffic destined for 10.1.2.0/24
to Gateway 10.8.0.1(VPN interface 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”.