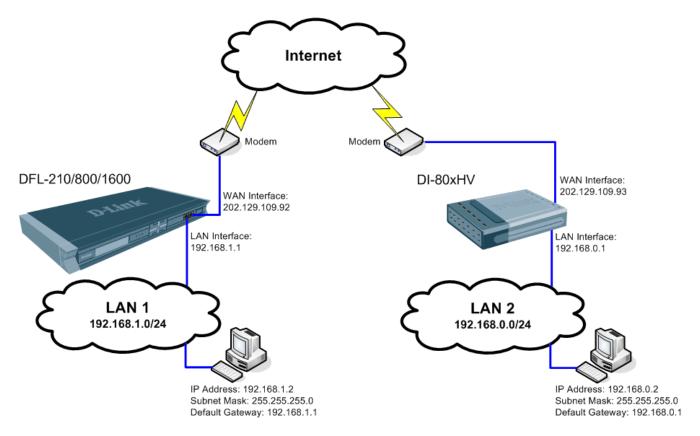
DFL-210, DFL-800, DFL-1600 How to setup IPSec VPN connection with DI-80xHV

This setup example uses the following network settings:

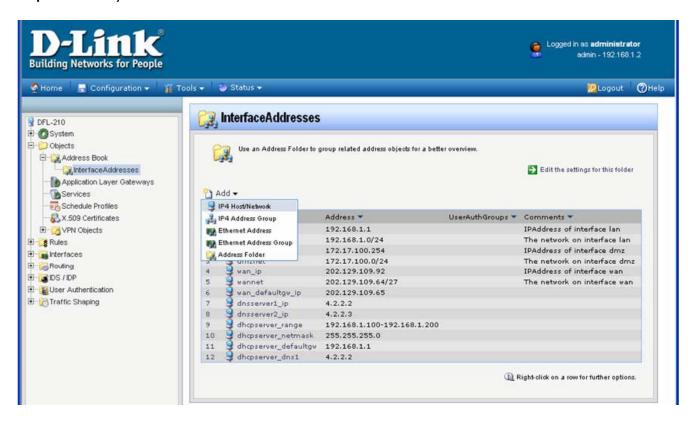


In our example the IPSec VPN tunnel is established between two LANs: 192.168.0.x and 192.168.1.x. **NOTE: It is essential to have private networks (LAN 1 and LAN 2) on different subnets.**

Configuration of the Firewall on LAN 1

Step 1. Log into the Firewall by opening Internet Explorer and typing the LAN address of the Firewall. In our example we are using the default 192.168.1.1. Enter Username and Password which you specified during the initial setup of the Firewall.

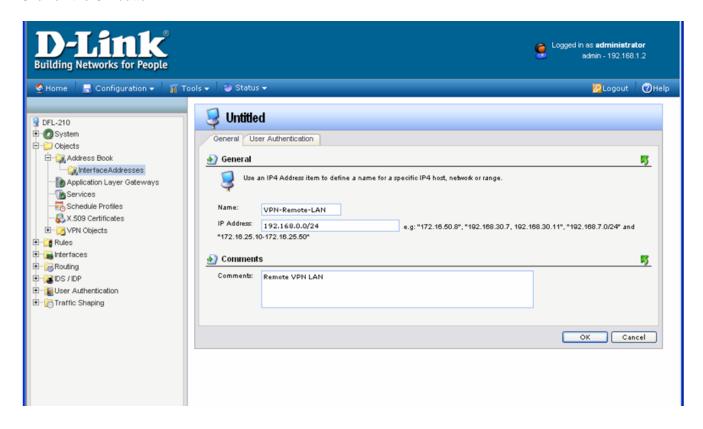
Step 2. Go to Objects > Address Book > Interface Addresses. Click on Add and select "IP4 Host/Network".



Specify the settings of the remote network on the other end of the VPN tunnel.

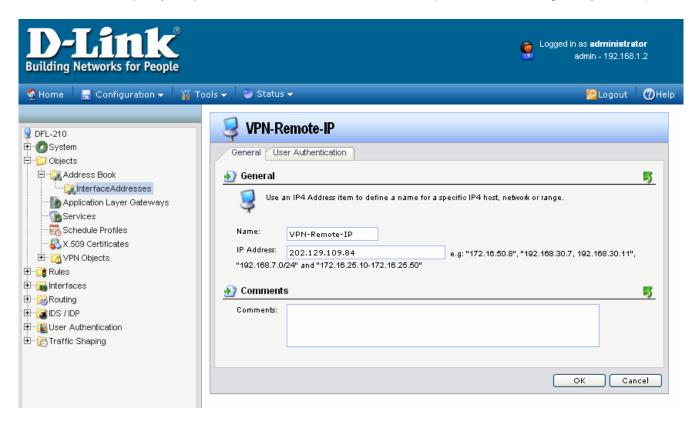
Under Name enter "VPN-Remote-LAN".

Under IP Address enter the Subnet ID and Mask Bits for the remote network: in our example it is 192.168.0.0/24. Click on the OK button.



Step 3. Add another "IP4 Host/Network". Enter the settings of the VPN endpoint, the public IP address of LAN 2. Under Name enter "VPN-Remote-IP".

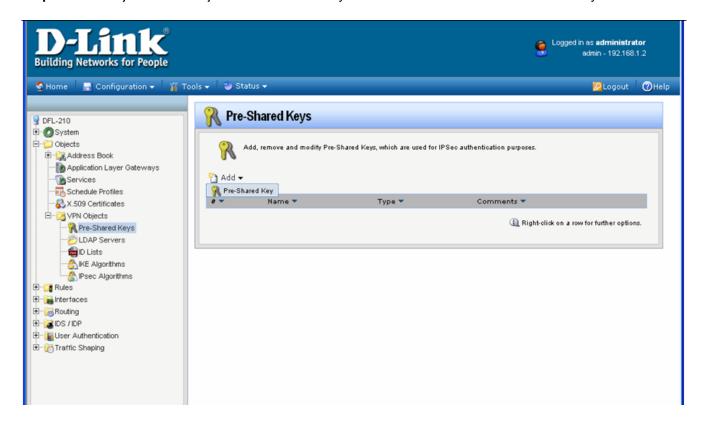
Under IP address specify the public IP address of the remote network (the IP address assigned by the ISP).



<u>Dynamic IP Address</u>: If remote network has dynamic public IP address, you can utilize one of the "Dynamic DNS" services available on the Internet. In this case the dynamic IP address of the remote site will be associated with a URL. To specify a URL as an address use this format: **dns:yoursite.dyndns.org**. Type the required URL under Interfaces > IPSec Tunnels > 'your tunnel settings' > Remote Endpoint (**Step 5**).

To configure the VPN firewall to update one of the Dynamic DNS services go to System > Misc. Clients > Add... When setting up IPSec VPN Tunnel (**Step 5**) which connects to a site with dynamic IP address or accepts connections from roaming IPSec clients with dynamic IP addresses, set Remote Network as "Any" and Remote Endpoint as "None".

Step 4. Go to Object > VPN Objects > Pre-Shared Keys. Click on Add and select Pre-Shared Key.



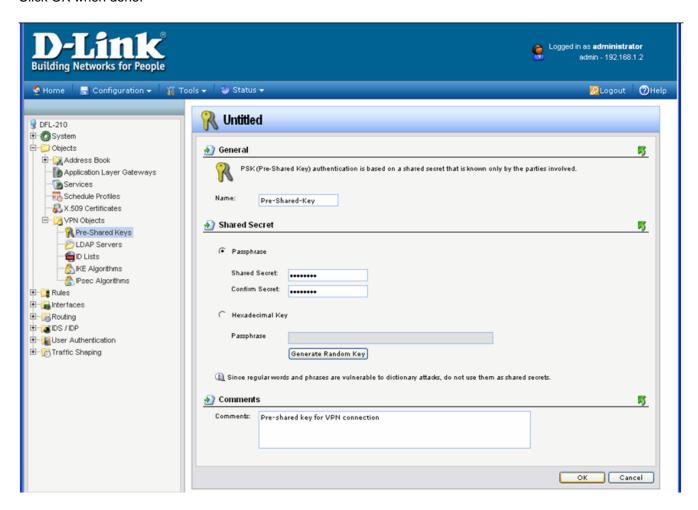
Enter the Pre-Shared Key settings for your VPN tunnel.

Under Name type "Pre-Shared-Key".

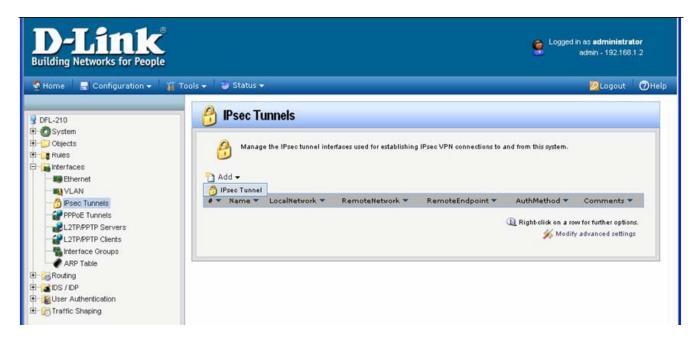
Under Shared Secret select the type of key you want to use and type in the key. In our example we are using ASCII key (passphrase).

Note that you will need to use exactly the same key when setting up the DI-80xHV on the other end of the tunnel.

Click OK when done.



Step 5. Go to Interfaces > IPSec Tunnels. Click on Add and select IPSec Tunnel.



Enter your IPSec tunnel settings.

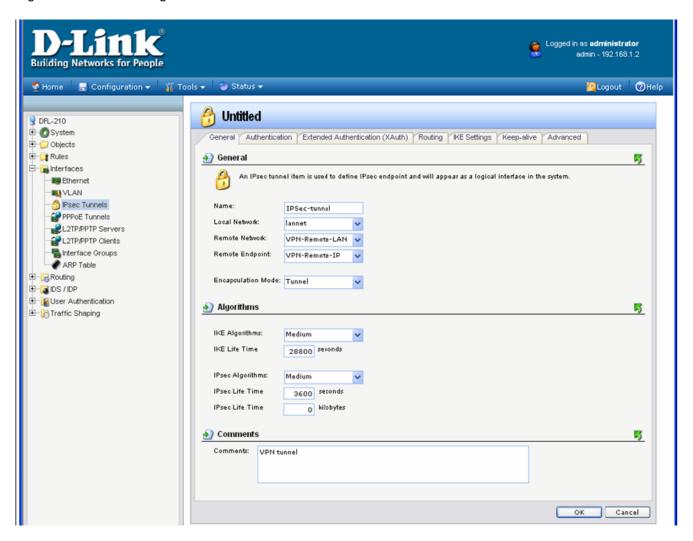
Under Name enter "IPSec-tunnel".

Under Local Network select "lannet" (this is the private network on this side of the VPN tunnel).

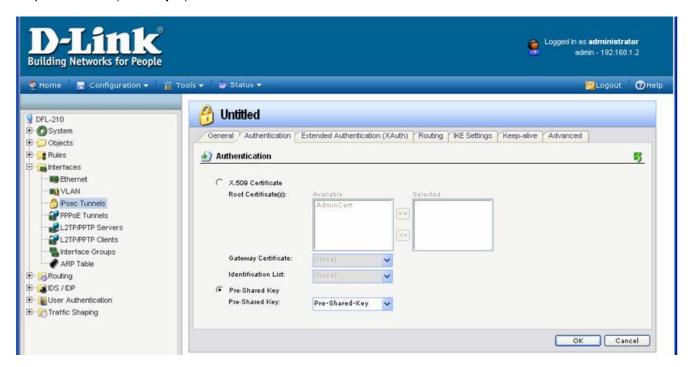
Under Remote Network select "VPN-Remote-LAN" (this is the private network on the other side of the VPN tunnel, see **Step 2**).

Under Remote Endpoint select "VPN-Remote-IP" (this is the public up of the remote network, see **Step 3**). Encapsulation Mode should be set to Tunnel.

Under Algorithms select the desired algorithms and IKE/IPSec lifetime. In our example we are using "Medium" settings. You can modify or add your own set of security algorithms under Objects > VPN Objects > IKE Algorithms and IPSec Algorithms.



Click on Authentication tab. Make sure the Pre-Shared Key option is enabled. Select the "Pre-Shared-Key" in the dropdown menu (see **Step 4**).

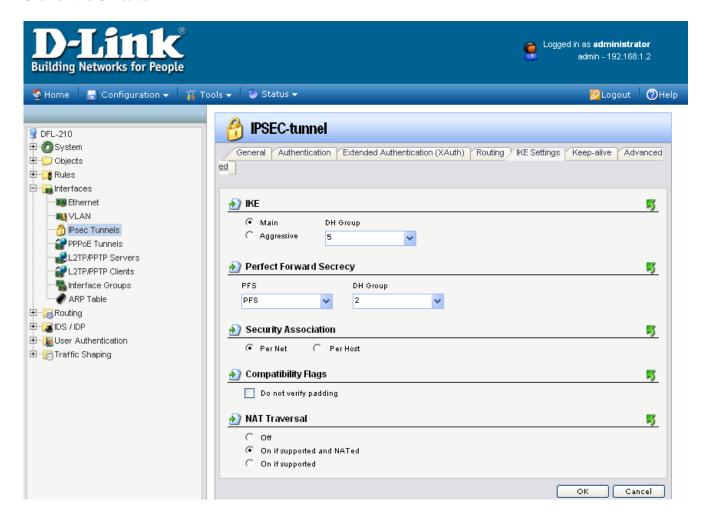


If the WAN port of the firewall is set with PPPoE authentication, select Advanced tab and change the Route Metric for the IPSec Tunnel to 80.

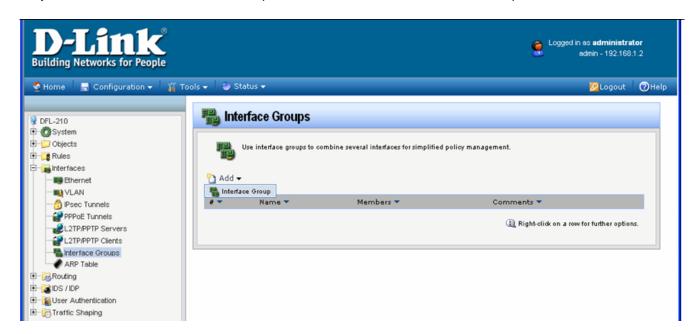


Click on IKE Settings tab. Under IKE change the DH Group to "5", Under Perfect Forward Secrecy select "PFS" from the drop down box and make sure the DH Group is "2".

Click on the OK button.



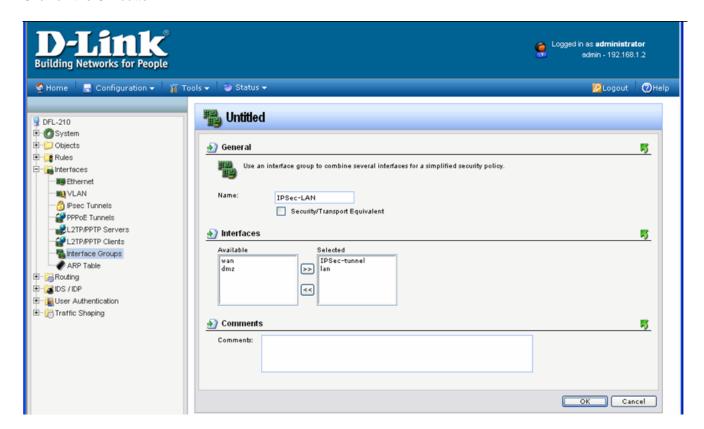
Step 6. Go to Interfaces > Interface Groups. Click on Add and select Interface Group.



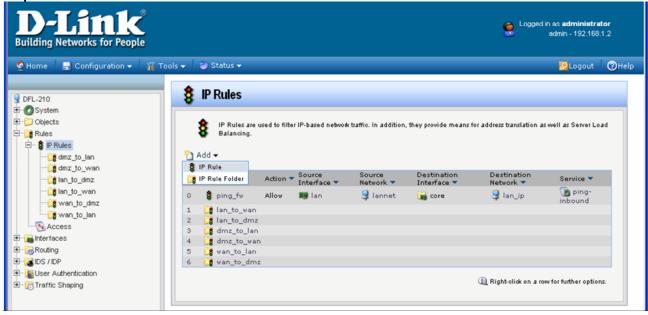
Create a group which has your IPSec tunnel and your LAN. Under Name type IPSec-LAN.

Under Interfaces add "IPSec-tunnel" and "lan" into Selected field.

Click on the OK button.



Step 7. Go to Rules > IP Rules. Click on Add and select IP Rule.



This rule will allow communication between the LAN and the IPSec tunnel.

Under Name type "IPSec-Allow".

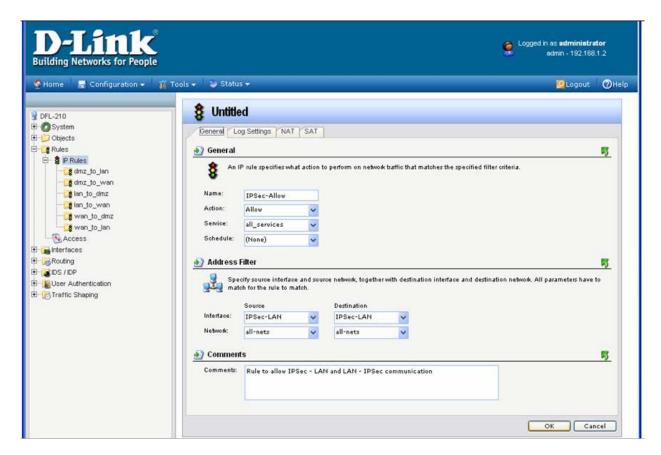
Under Action select "Allow".

Under Service select "all services".

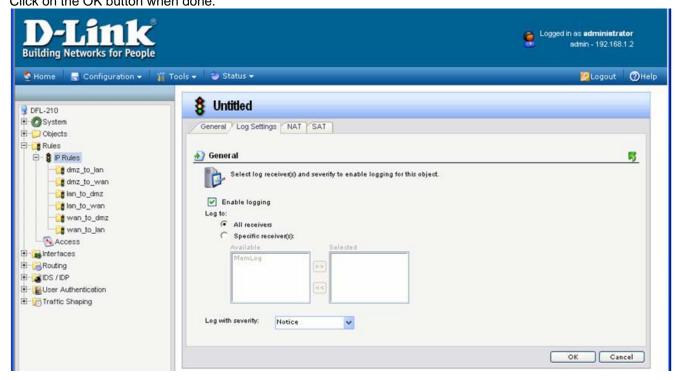
Under Address Filter specify the following:

Source and Destination Interfaces: "IPSec-LAN" (this is the group you created in Step 6).

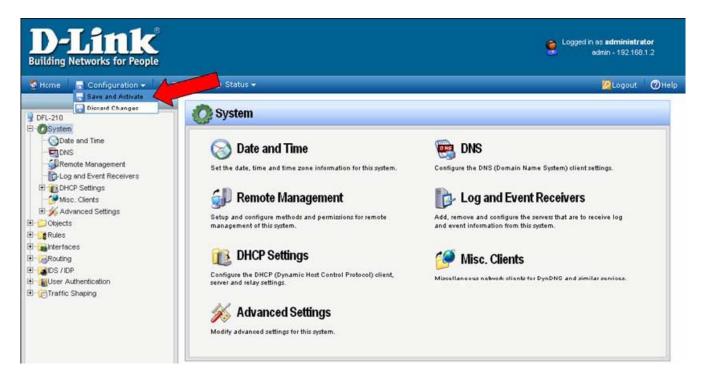
Source and Destination Network: select "all-nets".



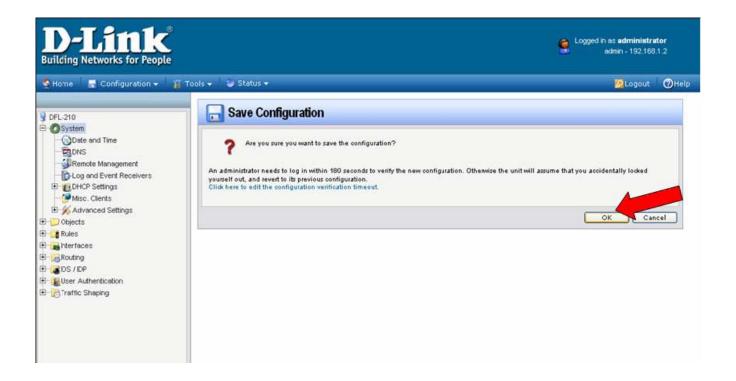
Click on Log Settings tab. Select the Enable Logging option. Click on the OK button when done.



Step 8. Save the new configuration. In the top menu bar click on Configuration and select "Save and Activate".



Click on OK to confirm the new settings activation:



Wait 15 seconds for the Firewall to apply the new settings.

Configuration of the DI-80xHV router on LAN 2

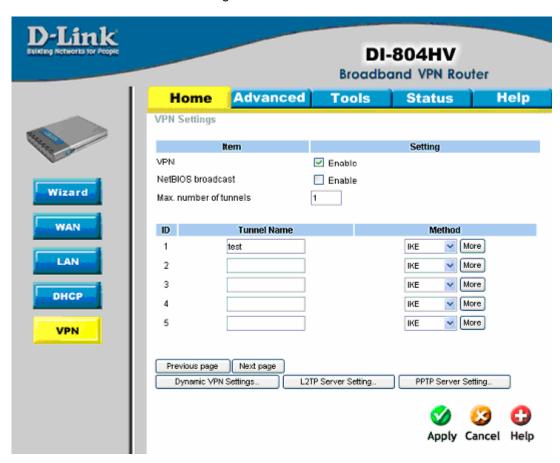
The steps to configure the second firewall will be almost identical to the steps for the firewall on the LAN 1. The only exception is the "Remote Network" and the "Remote Endpoint" settings. Note that the subnets on each LAN connecting through VPN should be different.

Login into the DI-80xHV configuration page, then go into Home > VPN.

Make sure you have VPN Enable box ticked.

Type in a name for the Tunnel Name, something related to the VPN connection would be a good idea, e.g. *Office, Home* etc...

Then click on "More" button to the right of the ID "1"



If the remote location does not have a static IPaddress please use **Dynamic VPN Settings** instead of the More button.

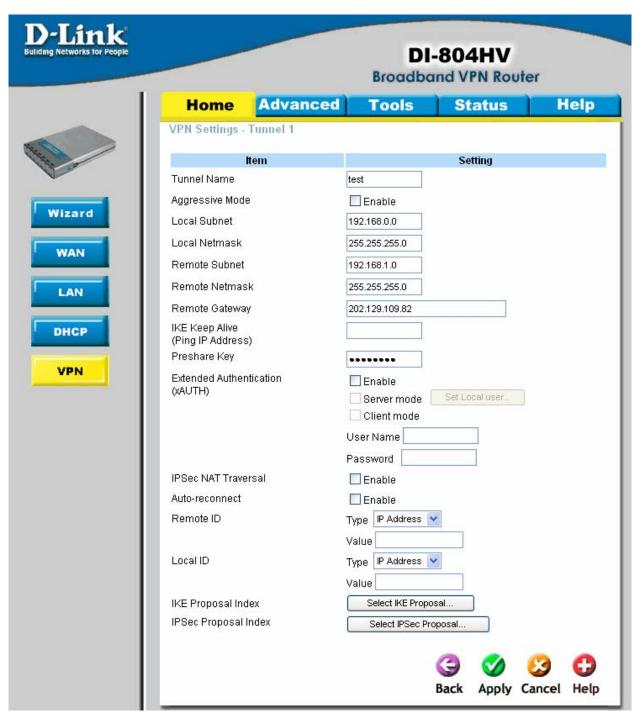
On the Tunnel 1 page enter the required information:

Local Subnet/Netmask are characteristics of the network where the Unit you are currently configuring is installed. Remote Subnet/Netmask are for the network located on the other end of the VPN connection.

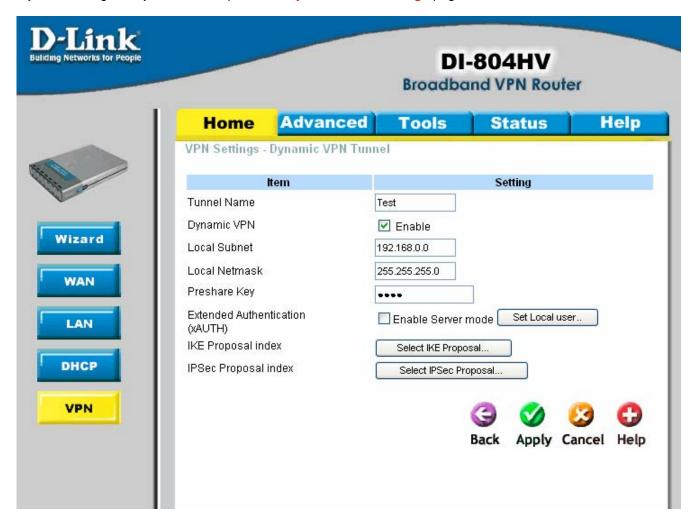
Make sure that you specify the Remote Gateway being public IP (the address Internet Provider assigns) of the remote network (WAN address on remote router).

Preshare Key: this can be anything up to 31 characters long (this is the same key that you used in the DFL-firewall configuration).

Then click Apply, then click on "Select IKE Proposal..."



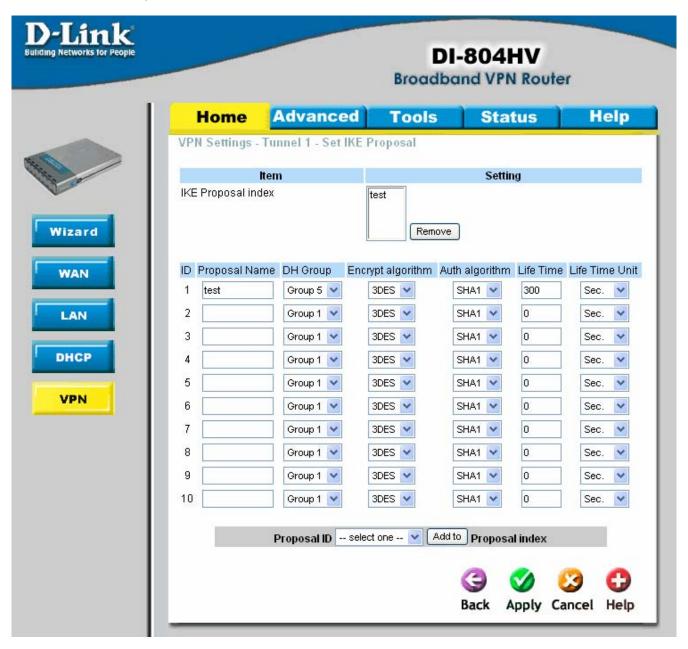
If you are using the Dynamic VPN option, the **Dynamic VPN Settings** page will look a bit different:



Below is the example how you can setup IKE Proposal.

We used the following settings:

ID 1, Name: test, Group 5, 3DES, SHA1, 300, Sec



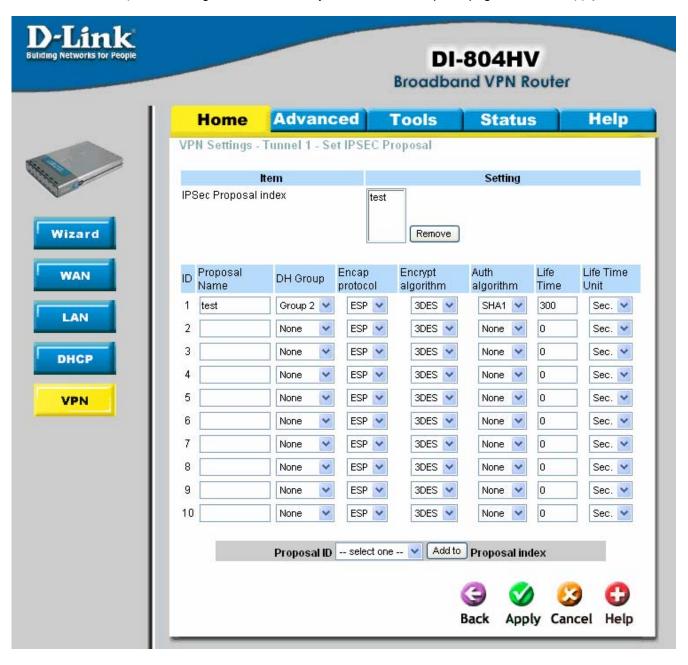
Once the settings have been changed click on the drop down box for "Proposal ID" and select "1". Then click on the Add to button.

This should move the Proposal name to the IKE Proposal Index at the top of the page.

NOTE: If you need to change the setting you do not need to click the Add to button the second time.

Click Apply, then click on Back.

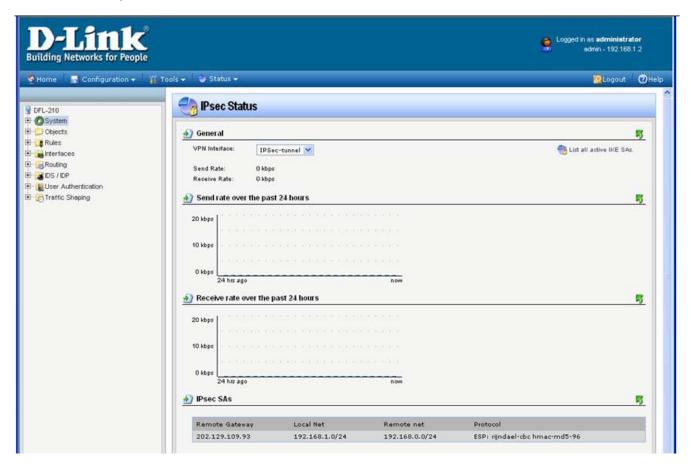
Click on "IPSec Proposal". Configure it the same way as on the IKE Proposal page, then click Apply.



This is all you need to do to configure the DI-80xHV VPN router.

Checking the VPN connection status on the DFL-210

To check the status of your VPN connection, click on Status and select IPSec. If the VPN tunnel is up, you will see an active entry under IPSec SAs.



In order to trigger the VPN firewall to establish VPN tunnel try accessing any IP address on the remote private network (e.g. ping an IP address on remote LAN).

If VPN Tunnel can not be established:

- Make sure that the modems in front of the firewalls support VPN passthrough.
- Check the Pre-shared keys, security algorithms and life times, make sure they match on both VPN firewalls.
- Restart both firewalls.

You can see the connection log under Status > Logging.



Connecting to shared resources via VPN

To connect to shared resources via VPN you can map remote computers' drives and folders by opening Windows Explorer and going to Tools > Map Network Drive (you need to specify the IP address of the computer on remote network and the name of the shared folder):



Alternatively you can do Search > Computers or People > Computer on Network > specify the IP address of the computer you are trying to connect to.

If you do not see computers in My Network Places or My Network Neighbourhood you may need to enable NetBIOS over TCP/IP in Windows.

Note that firewall/antivirus software installed on your or remote computer may stop you from accessing remote network.