Setting up VPN connection: DI-804HV to DI-804HV
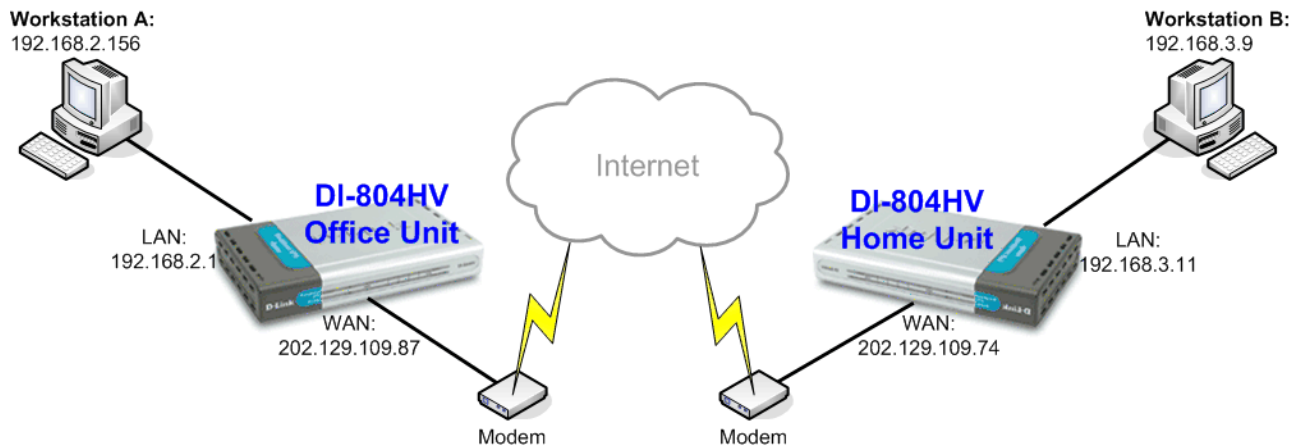
Office Unit: DI-804HV (firmware 1.34)
LAN IP: 192.168.2.1   Subnet Mask: 255.255.255.0
WAN IP: 202.129.109.87 Subnet Mask: 255.255.255.224
Default Gateway: 202.129.109.65

Workstation A:
IP: 192.168.2.156 Subnet Mask: 225.255.255.0
Default Gateway: 192.168.2.1

Home Unit: DI-804HV (firmware 1.34)
LAN IP: 192.168.3.11   Subnet Mask: 255.255.255.0
WAN IP: 202.129.109.74 Subnet Mask: 255.255.255.224
Default Gateway: 202.129.109.65

Workstation B:
IP: 192.168.3.9 Subnet Mask: 225.255.255.0
Default Gateway: 192.168.3.11

Please note:
For any IPSec VPN connection you need to make sure that the LAN IP subnets on each location are different. As you can see in the above example the LAN IP of the Office DI-804HV is 192.168.2.1 and the Home DI-804HV is 192.168.3.1. If you had a third location it should be 192.168.4.x, etc… (where x is any number from 1 to 254).

If you are using DSL-300, DSL-300+, DSL-302G modem or DSL-500, DSL-504, DSL-604+ router please see **Appendix 3** at the end of this document.

Office DI-804HV Settings:

Log into the router's WEB interface and go to Home > LAN. Change the IP address of the LAN port of the router to required IP.

Once you have changed the LAN IP address on the router, make sure your PC has an IP address from the same subnet (192.168.2.x in this example), you may just need to renew IP on your PC or reboot.

Next go to the Home > WAN page, choose the type of connection your ISP requires. In our example it is Static IP Address.

You need to have a static IP address the on WAN port of at least one unit out of two participating in VPN connection. Some PPPoE connections have a static IP as well (in most of such cases you do not have to specify the IP – your ISP will be providing you with the same IP every time you connect).

After setting up the WAN port click on Apply to save settings.
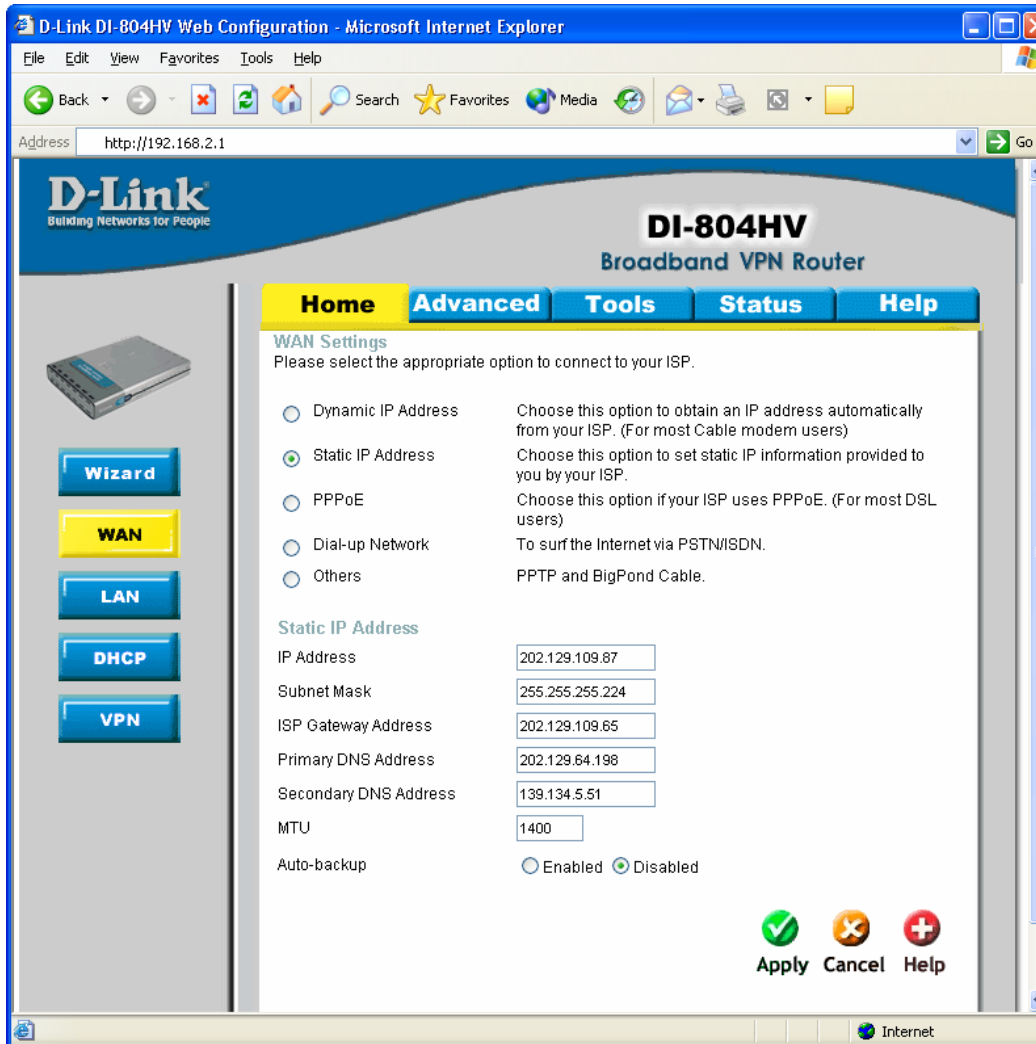
Next make sure you can access the Internet (that will confirm that you have set WAN settings correctly), then log back into the router and go into Home > VPN.

Make sure you have VPN Enable box ticked.
In the Max number of tunnels section, enter the number of tunnels needed (e.g. 2).
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"

Please note:
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 of the remote network (WAN address on remote router).

Preshare Key: this can be anything up to 31 characters long (write down this key as you will need it when configuring the Home Unit).
Then click Apply, then click on "Select IKE Proposal…"

Dynamic VPN Settings page will look a bit different:

Dynamic VPN – put a tick next to Enable.
Local Subnet/Netmask are characteristics of the network where the Unit you are currently configuring is installed.

Preshare Key: this can be anything up to 31 characters long (write down this key as you will need it when configuring the Home Unit).
Then click Apply, then click on "Select IKE Proposal…"
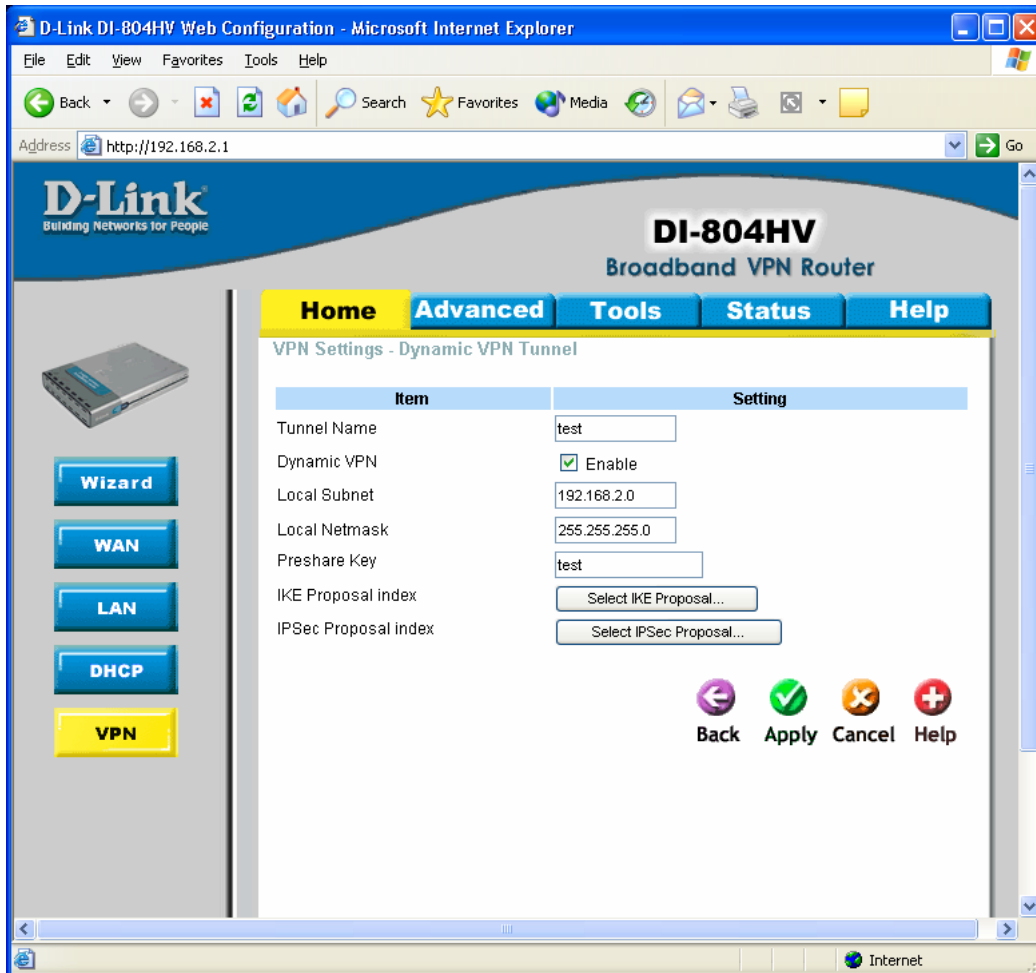
Below is the example how you can setup IKE Proposal.

We used the following settings:
ID 1, Name: test, Group 1, DES, SHA1, 3600, Sec

Click Apply, then click on Back.

Click on "IPSec Proposal" and you should see a page similar to the one below. Configure it the same way as on the IKE Proposal page, then click Apply.

This is all you need to do to configure the Office Unit. Now you need to setup the Home Unit. The setup will be almost the same as on the DI-804HV Office Unit.

Home DI-804HV VPN Connection settings:

Go to Home > LAN page. Change the IP address of the LAN port of the router to required IP. Once you have changed it, make sure your PC has an IP address from the same subnet (192.168.3.x in this example).

Next go to the Home > WAN page, choose the type of connection your ISP requires. In our example it is Static IP Address. Click on Apply to save settings.

Next make sure you can access the Internet, then log back in to the router and go into Home > VPN.

Make sure you have VPN Enable box ticked.
In the Max number of tunnels section, enter the number of tunnels needed (e.g. 2).
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"

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 (the Office Unit network).

Remote Gateway is public IP of the remote network (WAN address on Office Unit DI-804HV).

Preshare Key: this should be the same key you have entered when configuring the Office Unit.
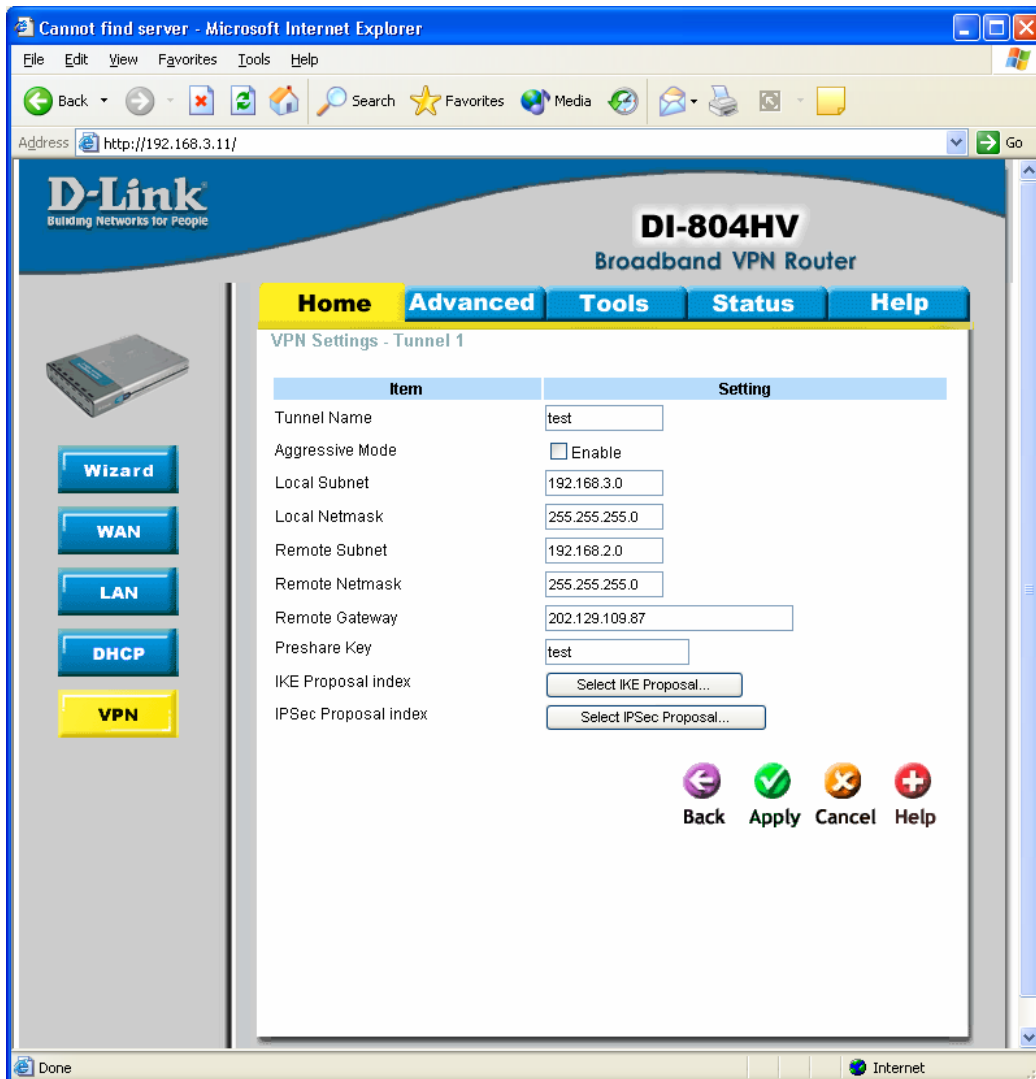
Then click Apply, then click on "Select IKE Proposal…"

You need to setup IKE Proposal with the same settings as the Office Unit.

Click on 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 VPN connection between Office Unit and Home Unit.

Appendix 1.
How to test your VPN conection.

Make sure that computers on both locations can access the Internet.

To bring the VPN tunnel up you just need to try to access any IP address on the network at the remote location, pinging the other location is the easiest way.

To do this go to Start > Run, type *command* and click on OK.

Depending on what location you are at will depend on what you type in.
If you are located on the 192.168.2.x side (Office) type in the following and press Enter (this will ping the IP of the Home Unit):
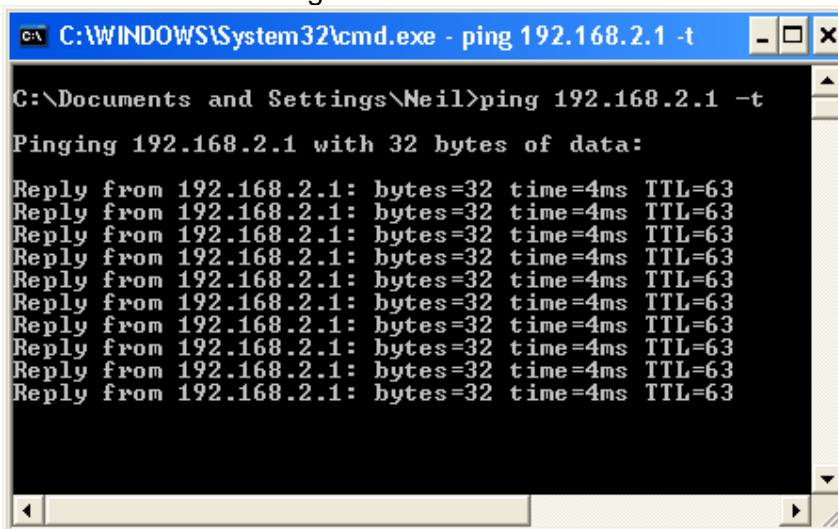
ping 192.168.3.11 -t

Or if your location is network with 192.168.3.x (Home) type:

ping 192.168.2.1 -t

You should see messages similar to the ones below:

If you see a message saying Reply from… that means that VPN tunnel has been established successfully and you can communicate with remote network via VPN.

If you now log into the DI-804HV and go into Status > Log you can see the VPN connection log.

Cannot find server - Microsoft Internet Explorer

File   Edit   View   Favorites   Tools   Help

Back   Search   Favorites   Media

Address   http://192.168.3.11/   Go

D-Link
Building Networks for People

DI-804HV
Broadband VPN Router

Home   Advanced   Tools   Status   Help

View Log
View Log displays the activities occurring on the DI-804HV. Click on Log Settings for advance features.

First Page   Last Page   Previous   Next   Clear   Log Settings

Help

Page 1/1

WAN Type: Static IP Address (V1.34)
Display time: Tue Oct 21 00:00:14 2003

*Send IKE M1(INIT) : 202.129.109.74 --> 202.129.109.87
Tuesday, 21 October 2003 12:00:01 AM Receive IKE M1(INIT) : 202.129.109.87 -->
202.129.109.74
Tuesday, 21 October 2003 12:00:01 AM Try to match with ENC:DES AUTH:PSK HASH:SHA1
Group:Group1
Tuesday, 21 October 2003 12:00:01 AM Send IKE M2(RESP) : 202.129.109.74 -->
202.129.109.87
Tuesday, 21 October 2003 12:00:01 AM Receive IKE M3(KEYINIT) : 202.129.109.87 -->
202.129.109.74
Tuesday, 21 October 2003 12:00:01 AM Send IKE M4(KEYRESP) : 202.129.109.74 -->
202.129.109.87
Tuesday, 21 October 2003 12:00:01 AM Receive IKE M5(IDINIT) : 202.129.109.87 -->
202.129.109.74
Tuesday, 21 October 2003 12:00:01 AM Send IKE M6(IDRESP) : 202.129.109.74 -->
202.129.109.87
Tuesday, 21 October 2003 12:00:01 AM IKE Phase1 (ISAKMP SA) established :
202.129.109.74 <-> 202.129.109.87
Tuesday, 21 October 2003 12:00:02 AM Receive IKE Q1(QINIT) : [202.129.109.87]-->
[202.129.109.74]
Tuesday, 21 October 2003 12:00:02 AM Requested routing is [192.168.2.0|202.129.109.87]<-
>[202.129.109.74|192.168.3.0]
Tuesday, 21 October 2003 12:00:02 AM Try to match with MODE:Tunnel PROTOCAL:ESP-DES
AUTH:SHA1 HASH:Others PFS(Group):Group1
Tuesday, 21 October 2003 12:00:02 AM Send IKE Q2(QRESP) : 192.168.3.0 --> 192.168.2.0
Tuesday, 21 October 2003 12:00:02 AM Receive IKE Q3(QHASH) :
[192.168.2.0|202.129.109.87]-->[202.129.109.74|192.168.3.0]
Tuesday, 21 October 2003 12:00:02 AM IKE Phase2 (IPSEC SA) established :
[192.168.2.0|202.129.109.87]<->[202.129.109.74|192.168.3.0]
Tuesday, 21 October 2003 12:00:02 AM inbound SPI = 0x2000010, outbound SPI =
0x2000010

Device Info

Log

Stats

Internet

Appendix 2
Connecting to remote computers/drives via VPN

You can map remote computers' drives 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):
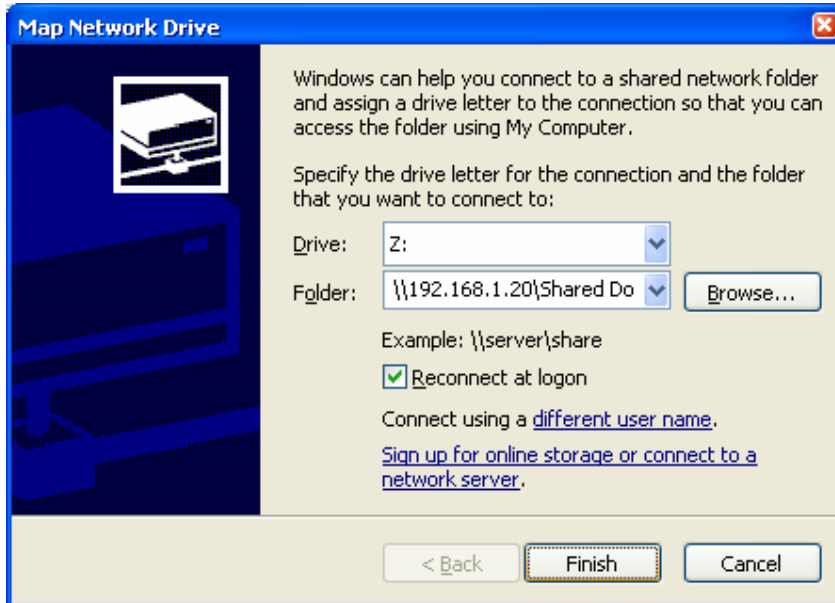
Alternatively you can do Search > Computers or People > Computer on Network > specify the IP address of the computer you are trying to connect to.

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. Or use the methods described above.
Note that firewall/antivirus software installed on your or remote computer may stop you from accessing shared folders.

Appendix 3
Note to DSL-300, DSL-300+, DSL-302G modems users
and DSL-500, DSL-504, DSL-604+ users.

If you are using **DSL-300** to connect your DI-804HV to the Internet please avoid using **192.168.1.x** addresses on your networks as it is the temporary subnet used by the modem.

If you are using **DSL-300+** to connect your DI-804HV to the Internet please avoid using **192.168.0.x** addresses on your networks as it is the temporary subnet used by the modem. Also note that DSL-300+ links to the MAC address of the device connected to it directly. So if you configured the modem while it was connected to your PC directly or to another router, you will need to reconfigure it while it is connected to your DI-804HV. Here are the steps:

1. Connect the DSL-300+ modem to the WAN port of your DI-804HV.
2. Set WAN port on DI-804HV to "Dynamic IP" and set LAN port to subnet different from 192.168.0.x (e.g. 192.168.3.1)
3. Renew IP address on your computer so it will be on 192.168.3.x subnet and log into the DSL-300+ using your Internet browser: http://192.168.0.1
4. In the DSL-300+ interface select Account Management. Put a tick next to your account and click on Delete.
5. Select Account Configuration and reconfigure the modem according to your ISP requirements. Click on OK to save settings.

If you are using **DSL-500, DSL-504, DSL-604+** router to connect your DI-804HV to the Internet please avoid using **192.168.0.x** addresses on your networks as it is the default LAN subnet used by the routers. You may change it to a different subnet (e.g. 192.168.33.1) if you wish, under Configuration > Ethernet IP.

Note that you need to enable VPN passthrough on the router. Or go to NAT Configuration and enable DMZ: specify the IP address of the WAN port of DI-804HV there.

DI-804HV WAN port should be set with static IP from the same subnet as DSL-xxx LAN port. Default Gateway should be set as DSL-xxx LAN port IP address.

Please keep in mind that with DSL-xxx routers with NAT enabled your public IP address will be located on the WAN port of DSL-xxx router. WAN port of DI-804HV will have private IP address. When setting up Remote Gateway in VPN you will need to use public IPs on DSL-xxx routers' WAN ports, e.g. 202.129.109.87 (see example with DSL-302G below).

With **DSL-302G** the setup is similar. This modem uses **10.1.1.1** address on LAN.
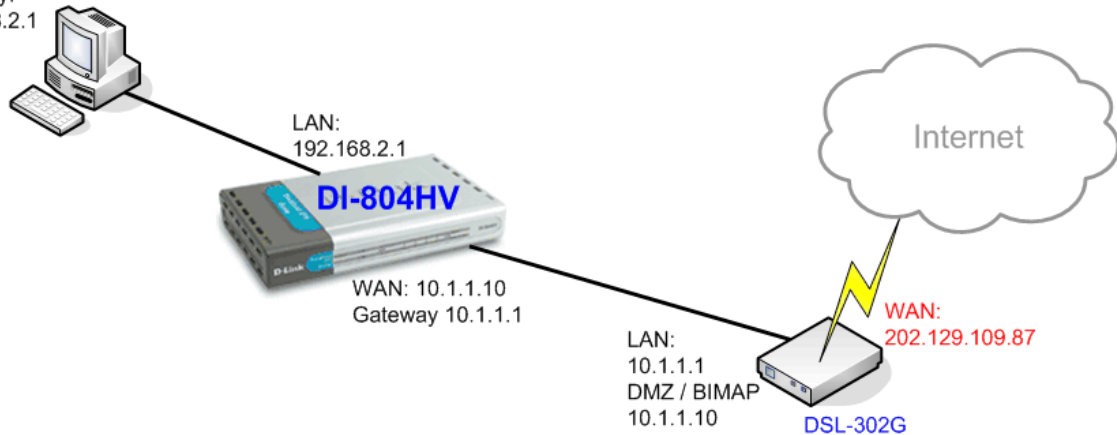
In order to enable VPN traffic passthrough in this modem you need to do the following:
Log into the modem's WEB interface and select WAN > NAT. Under NAT Options select NAT Rule Entry. Click on Add button.
Under Rule Flavor select BIMAP. Set Rule ID as next number in the rules table (in our case it is 2). IF Name = ALL. Local Address will be the IP on the WAN port of your DI-804HV which is connected to this modem. Global address leave as 0.0.0.0:

Then click on Submit to apply the settings.

When setting up Remote Gateway in VPN you will need to use public IP on DSL-302G's WAN port.

~ End of Document ~