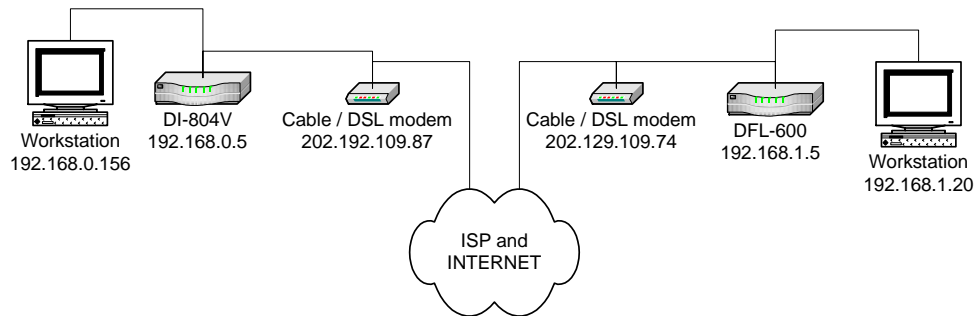


DI-804 VPN connection with another DI-804HV
(This example is using Static WAN IP addresses)
Date: 23 Oct 2003
Doc version: 1.1
Author: Neil Stent



DFL-600 (firmware 4.73)

LAN: 192.168.0.10 255.255.255.0
WAN: 202.129.129.87 255.255.255.224
WAN gateway: 202.129.109.65 255.255.255.224

Workstation A:

PC: 192.168.0.156 225.255.255.0
PC gateway: 192.168.0.10 225.255.255.0

DI-804HV (firmware 1.30)

LAN: 192.168.1.5 255.255.255.0
WAN: 202.129.129.74 255.255.255.224
WAN gateway: 202.129.109.65 255.255.255.224

Workstation B:

PC: 192.168.1.20 225.255.255.0
PC gateway: 192.168.1.5 225.255.255.0

Please note:

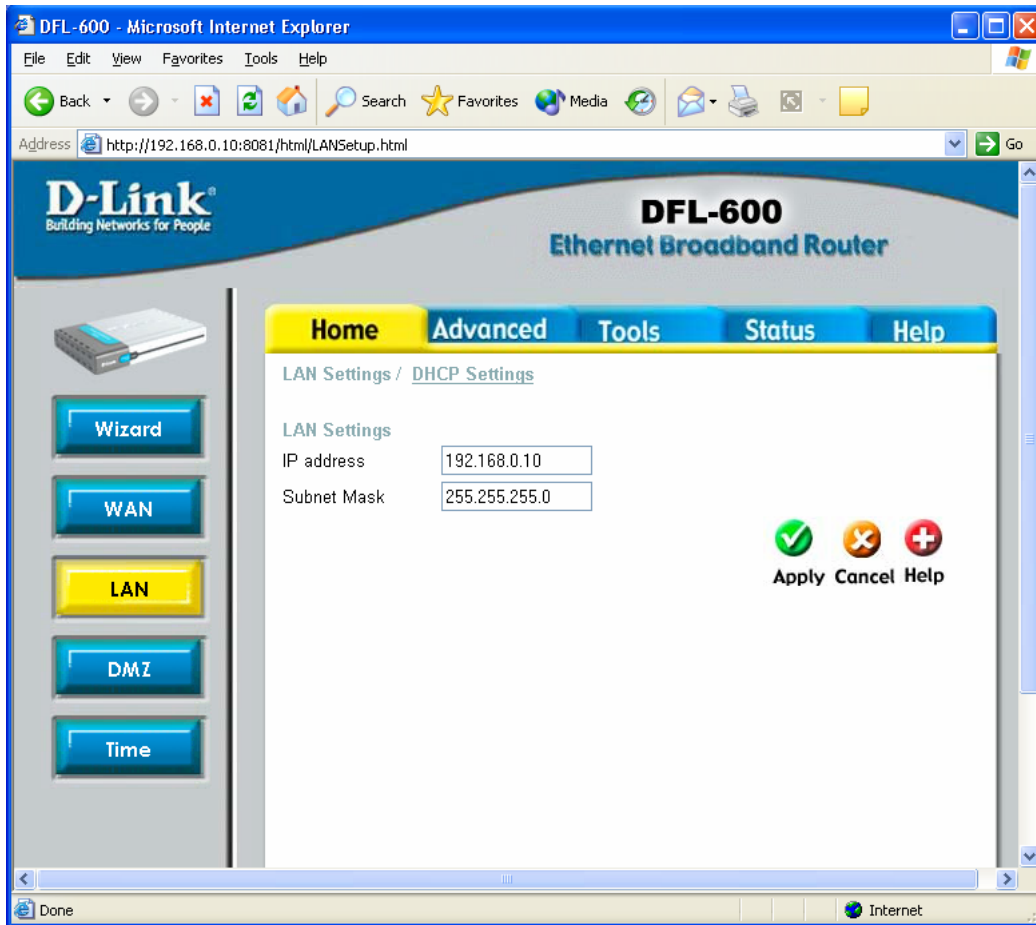
For any VPN you need to make sure that the LAN subnet on each location is different. As above you can see that the IP of the DFL-600 is 192.168.0.5 and the 804HV is 192.168.1.5. If you had a third location it should be 192.168.2.x etc... x being anything from 1 to 254.

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.

DFL-600 Settings:

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

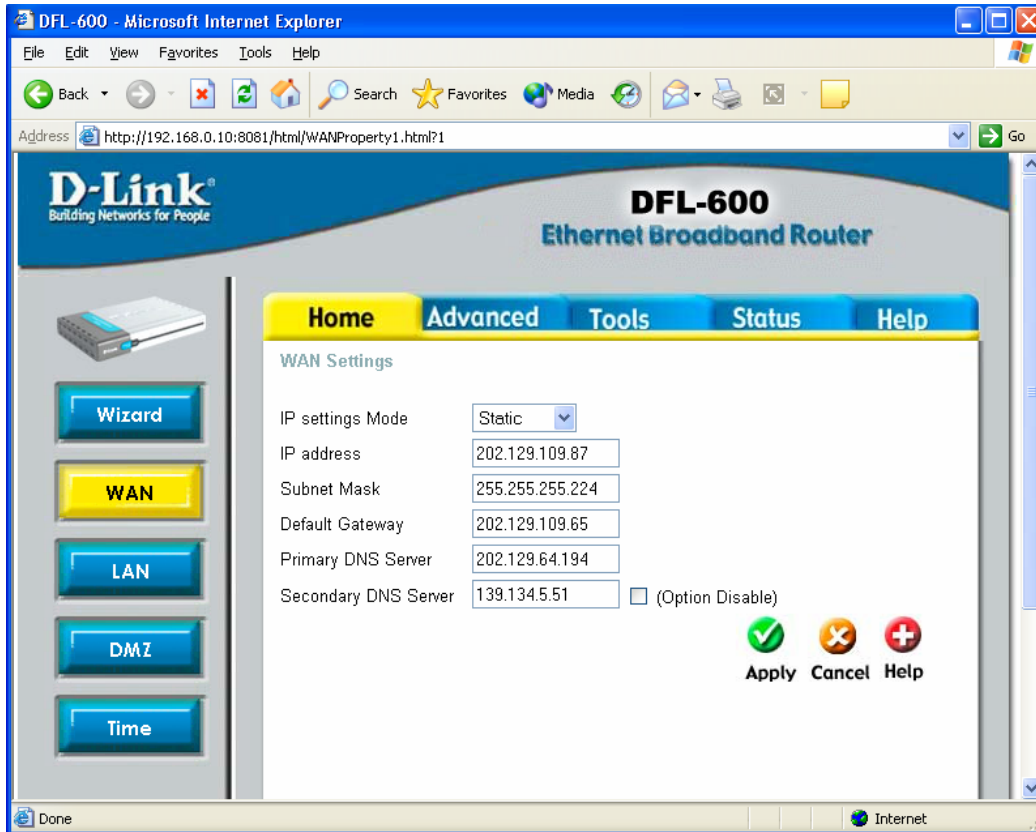
Once you have changed the LAN IP address on the router, make sure your PC has an IP address from the same subnet (192.168.2.x in this example), you may just need to renew IP on your PC or reboot.



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

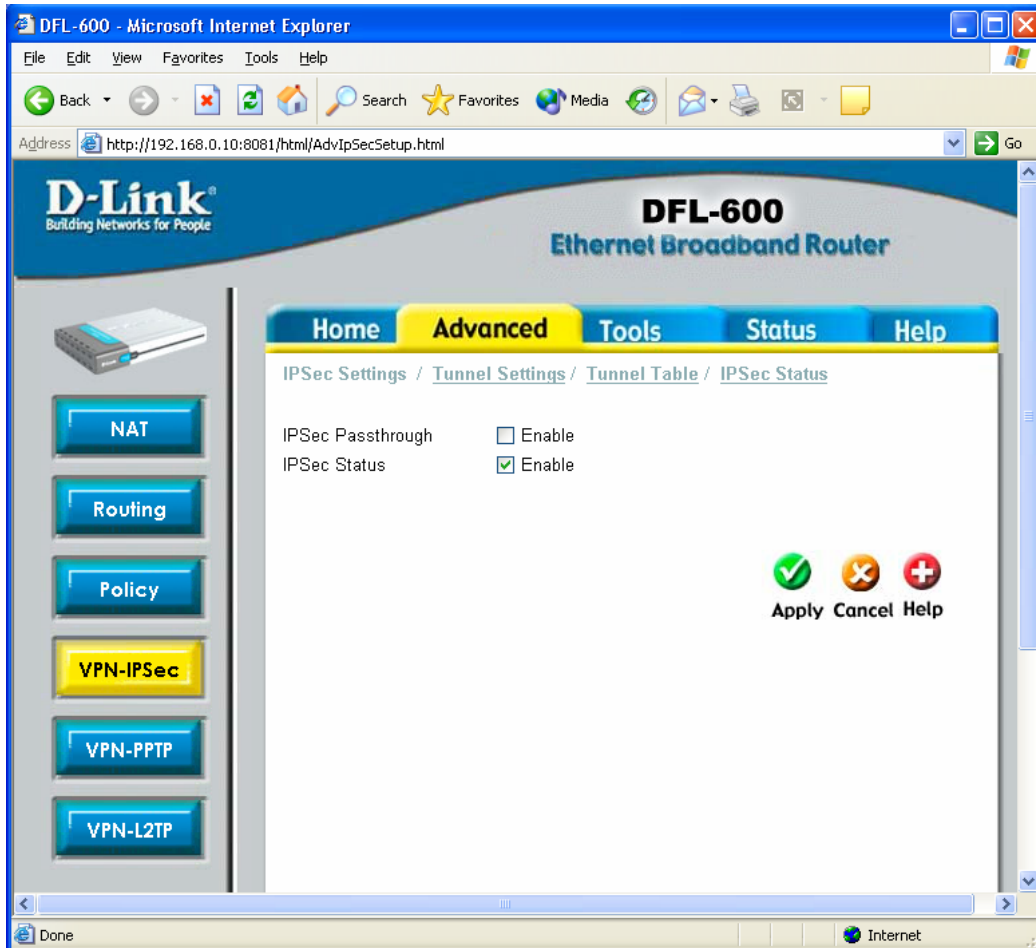
You need to have a static IP address the on WAN port of at least one unit out of two participating in VPN connection. Some PPPoE connections have a static IP as well (in most of such cases you do not have to specify the IP – your ISP will be providing you with the same IP every time you connect).

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 *Advanced > VPN-IPSec*.

Make sure you have *IPSec Status* box ticked.



Next click on Tunnel Setting on the top tab.
Then fill out the page as needed.

The Ter

The screenshot displays the configuration interface for a D-Link DFL-600 Ethernet VPN Firewall Router. The page is titled "D-Link Building Networks for People" and "DFL-600 Ethernet VPN Firewall Router". The navigation tabs include Home, Advanced (selected), Tools, Status, and Help. The current page is "IPSec Settings / Tunnel Settings / Tunnel Table / IPSec Status".

On the left sidebar, there are buttons for NAT, Routing, Policy, VPN-IPSec (highlighted in yellow), VPN-PPTP, VPN-L2TP, and DDNS. Above these buttons is an image of the router.

The main configuration area is titled "Add/New Tunnel" and contains the following fields:

- Tunnel ID: test
- Termination IP: 202.129.109.74
- Shared Key: dlinktest
- Tunnel Type: Public (dropdown)
- Phase 1 Proposal
 - Mode: Main Aggressive
 - DH Group: Group 1 (dropdown)
 - IKE Life Duration: 3600 seconds
 - IKE Hash: MD5 (dropdown)
 - IKE Encryption: DES (dropdown)
- Phase 2 Proposal
 - PFS Mode: Group 1 (dropdown)
 - IPSec Operation: ESP (dropdown)
 - IPSec Life Duration: 3600 seconds
 - ESP Transform: DES (dropdown)
 - ESP Auth: HMAC-MD5 (dropdown)
 - AH Transform: MD5 (dropdown)
- Target Host Range
 - Type: Subnet (dropdown)
 - Starting Target Host: 192.168.1.2
 - Subnet Mask: 255.255.255.0

At the bottom right, there are three icons: a green checkmark for "Apply", an orange 'x' for "Cancel", and a red plus sign for "Help".

DFL-600 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://192.168.0.10:8081/html/AdvTunnelTable.html?0,0,0,0>

D-Link
Building Networks for People

DFL-600
Ethernet Broadband Router

Home **Advanced** Tools Status Help

[IPSec Settings](#) / [Tunnel Settings](#) / [Tunnel Table](#) / [IPSec Status](#)

Total No. of Entries: 1 / 16

| Tunnel ID | Termination Address | View | Delete |
|-----------|---------------------|------|--------|
| test | 202.129.109.74 | | |

Done Internet

DFL-600 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://192.168.0.10:8081/html/AdvTunnelStatus.html>

D-Link
Building Networks for People

DFL-600
Ethernet Broadband Router

Home **Advanced** Tools Status Help

[IPSec Settings](#) / [Tunnel Settings](#) / [Tunnel Table](#) / [IPSec Status](#)

Total No. of Entries: 1 / 16

| Tunnel ID | Status | Receive Bytes | Transmit Bytes |
|-----------|----------------|---------------|----------------|
| test | P2_ESTABLISHED | 15120 | 31024 |

Done Internet

DFL-600 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print

Address http://192.168.0.10:8081/html/StatusIPSecLog.html?1 Go



D-Link
Building Networks for People

DFL-600
Ethernet Broadband Router

Home Advanced Tools **Status** Help

[Log Status](#) / [Intrusion Log](#) / [Blocking Log](#) / [Session Log](#) / [Black List](#)

IPSec Log / [Sys Log](#)

  **Refresh Help**

IPSec Log Table Total No. of Entries: 0 / 60

| index | Description |
|-------|---|
| 1 | Start P1 negotiation with peer 202.129.109.74 |
| 2 | MainMode Exchange Selected |
| 3 | MM init: sent [HDR][SA] |
| 4 | MM init: rcv [HDR][SA] |
| 5 | MM init: sent [HDR][KE][Ni] |
| 6 | MM init: rcv [HDR][KE][NR] |
| 7 | MM init: sent [HDR][IDi][HASH_I] |
| 8 | MM init: rcv [HDR][IDr][HASH_R] |
| 9 | Phase 1 negotiation succeeded with 202.129.109.74 |
| 10 | Sent Notification INITIAL_CONTACT to 202.129.109.74 |

Page 1 2

Done Internet

DFL-600 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://192.168.0.10:8081/html/StatusIPSecLog.html?2



D-Link
Building Networks for People

DFL-600
Ethernet Broadband Router

Home Advanced Tools **Status** Help

[Log Status](#) / [Intrusion Log](#) / [Blocking Log](#) / [Session Log](#) / [Black List](#)

[IPSec Log](#) / [Sys Log](#)

 
Refresh Help

IPSec Log Table Total No. of Entries: 15 / 60

| index | Description |
|-------|--|
| 11 | Start P2 negotiation with peer 202.129.109.74 |
| 12 | QM init.sent [HDR][HASH(1)][SA][Ni][KE][IDci,IDcr] |
| 13 | QM init.recv [HDR][HASH(2)][SA][Nr][KE][IDci,IDcr] |
| 14 | QM init.sent [HDR][HASH(3)] |
| 15 | Phase 2 negotiation succeeded with 202.129.109.74 |

Page 1 2

Done Internet

DI-804HV VPN Connection settings:

D-Link DI-804HV Web Configuration - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print

Address http://202.129.109.74/ Go


D-Link

Building Networks for People

DI-804HV

Broadband Hardware VPN Router

Home Advanced Tools Status Help



Wizard

WAN

LAN

DHCP

VPN

WAN Settings

Please select the appropriate option to connect to your ISP.

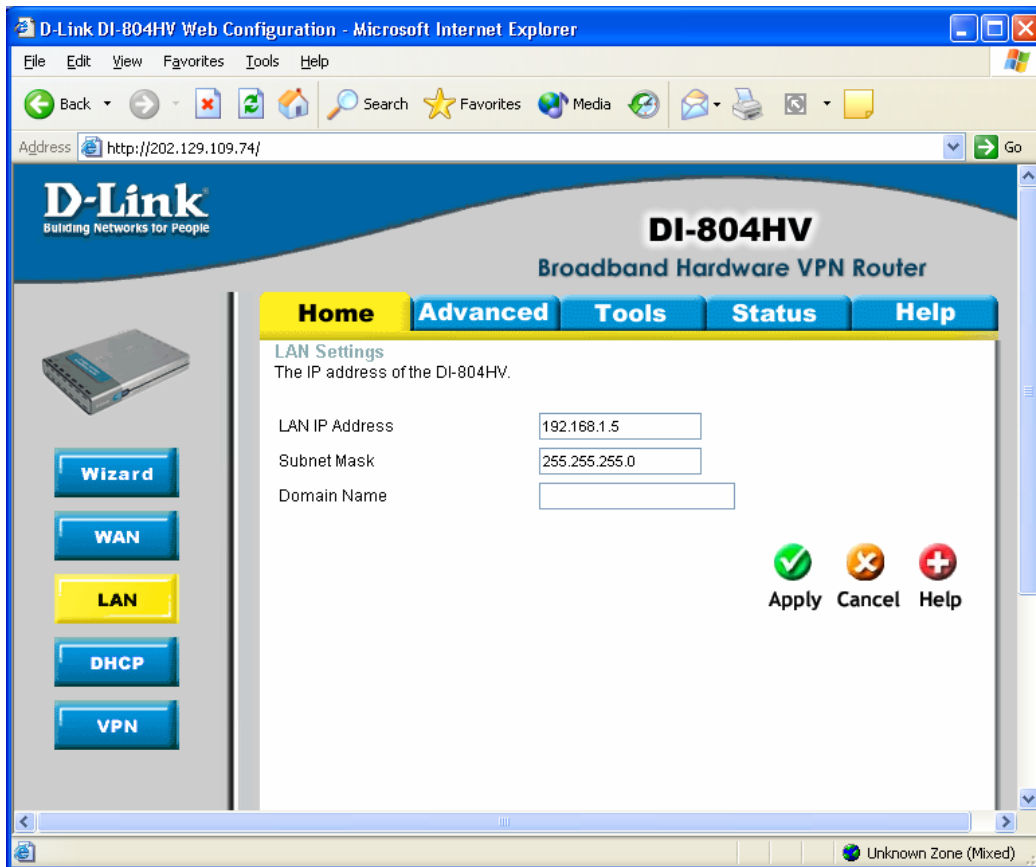
- Dynamic IP Address Choose this option to obtain an IP address automatically from your ISP. (For most Cable modem users)
- Static IP Address Choose this option to set static IP information provided to you by your ISP.
- PPP over Ethernet Choose this option if your ISP uses PPPoE. (For most DSL users)
- Dial-up Network To surf the Internet via PSTN/ISDN.
- Others PPTP and BigPond Cable.

Static IP Address

| | |
|-----------------|--|
| WAN IP Address | <input type="text" value="202.129.109.74"/> |
| WAN Subnet Mask | <input type="text" value="255.255.255.224"/> |
| WAN Gateway | <input type="text" value="202.129.109.65"/> |
| Primary DNS | <input type="text" value="202.129.64.194"/> |
| Secondary DNS | <input type="text" value="202.129.64.198"/> |
| Auto-backup | <input type="checkbox"/> Enable |

Apply Cancel Help

Unknown Zone (Mixed)



Make sure you have VPN enabled box ticked.
Type in any name for the Tunnel Name
Then click on the “more” button to the right of the ID “1”

D-Link DI-804HV Web Configuration - Microsoft Internet Explorer

Address: http://202.129.109.74/

D-Link
Building Networks for People

DI-804HV
Broadband Hardware VPN Router

Home Advanced Tools Status Help

VPN Settings

| Item | Setting |
|------------------------|--|
| VPN | <input checked="" type="checkbox"/> Enable |
| NetBIOS broadcast | <input type="checkbox"/> Enable |
| Max. number of tunnels | 6 |

| ID | Tunnel Name | Method |
|----|-------------|----------|
| 1 | test | IKE More |
| 2 | | IKE More |
| 3 | | IKE More |
| 4 | | IKE More |
| 5 | | IKE More |

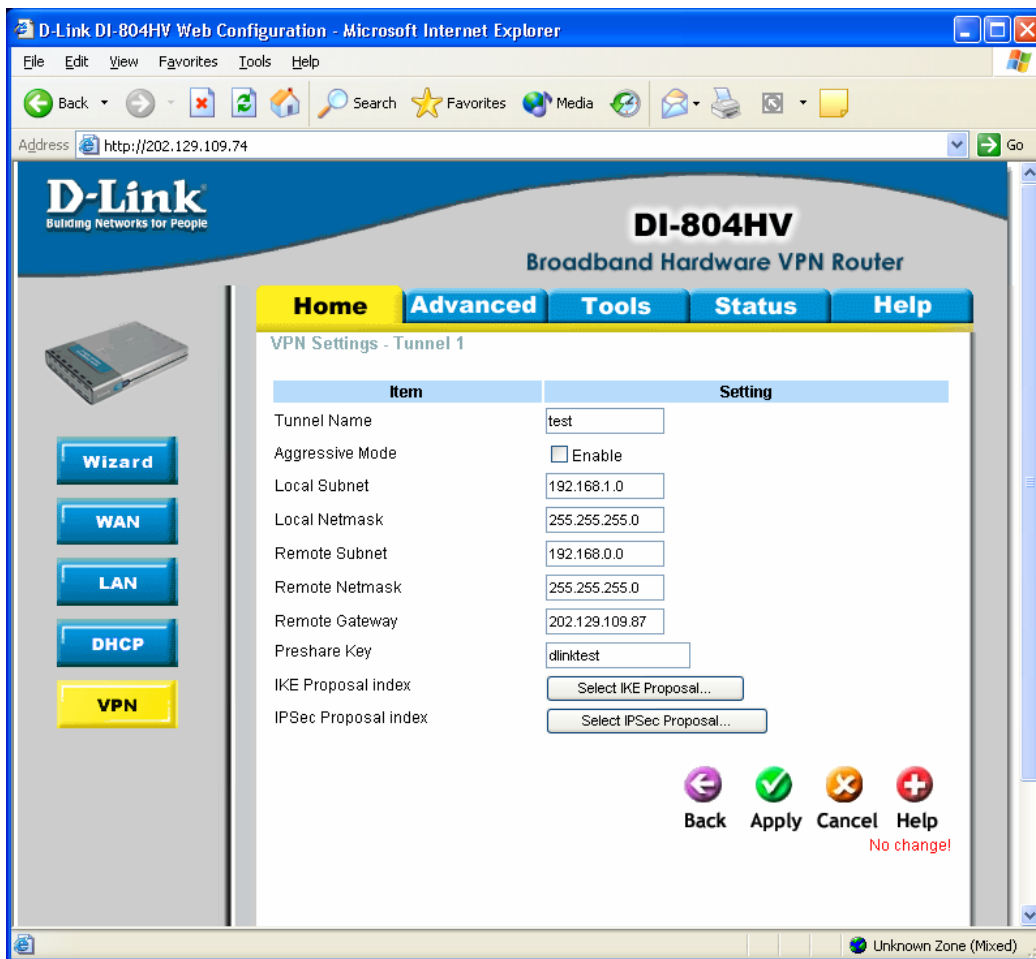
Previous page Next page Dynamic VPN Settings..

Apply Cancel Help

Next enter in your Local information then the remote.

Make sure that you tell the 804HV the remotes Public IP under “remote gateway”.

For the Preshare Key this can be anything up to 31 in length.
Then click Apply, then click on “Select IKE...”



For the test here we used DES, DES is a lower Encryption than 3DES.

If you have a slow internet connection you may want to use this as it can increase the data transfer through the VPN.

Down the bottom of the page click on the drop down for Proposal ID and click on 1, then click on “add to”. At the top of the page you should see the IKE proposal index now has ID 1 in there.

After the setup click on Apply, don't click on restart yet.

Next click on Back then click on “select IPSEC...”

D-Link
Building Networks for People

DI-804HV
Broadband Hardware VPN Router

Home Advanced Tools Status Help

VPN Settings - Tunnel 1 - Set IKE Proposal

Wizard
WAN
LAN
DHCP
VPN

| Item | Setting |
|--------------------|----------------|
| IKE Proposal index | test Remove |

| ID | Proposal Name | DH Group | Encrypt algorithm | Auth algorithm | Life Time | Life Time Unit |
|----|---------------|----------|-------------------|----------------|-----------|----------------|
| 1 | test | Group 1 | DES | MD5 | 3600 | Sec. |
| 2 | | Group 1 | 3DES | SHA1 | 0 | Sec. |
| 3 | | Group 1 | 3DES | SHA1 | 0 | Sec. |
| 4 | | Group 1 | 3DES | SHA1 | 0 | Sec. |
| 5 | | Group 1 | 3DES | SHA1 | 0 | Sec. |
| 6 | | Group 1 | 3DES | SHA1 | 0 | Sec. |
| 7 | | Group 1 | 3DES | SHA1 | 0 | Sec. |
| 8 | | Group 1 | 3DES | SHA1 | 0 | Sec. |
| 9 | | Group 1 | 3DES | SHA1 | 0 | Sec. |
| 10 | | Group 1 | 3DES | SHA1 | 0 | Sec. |

Proposal ID -- select one -- Add to Proposal index

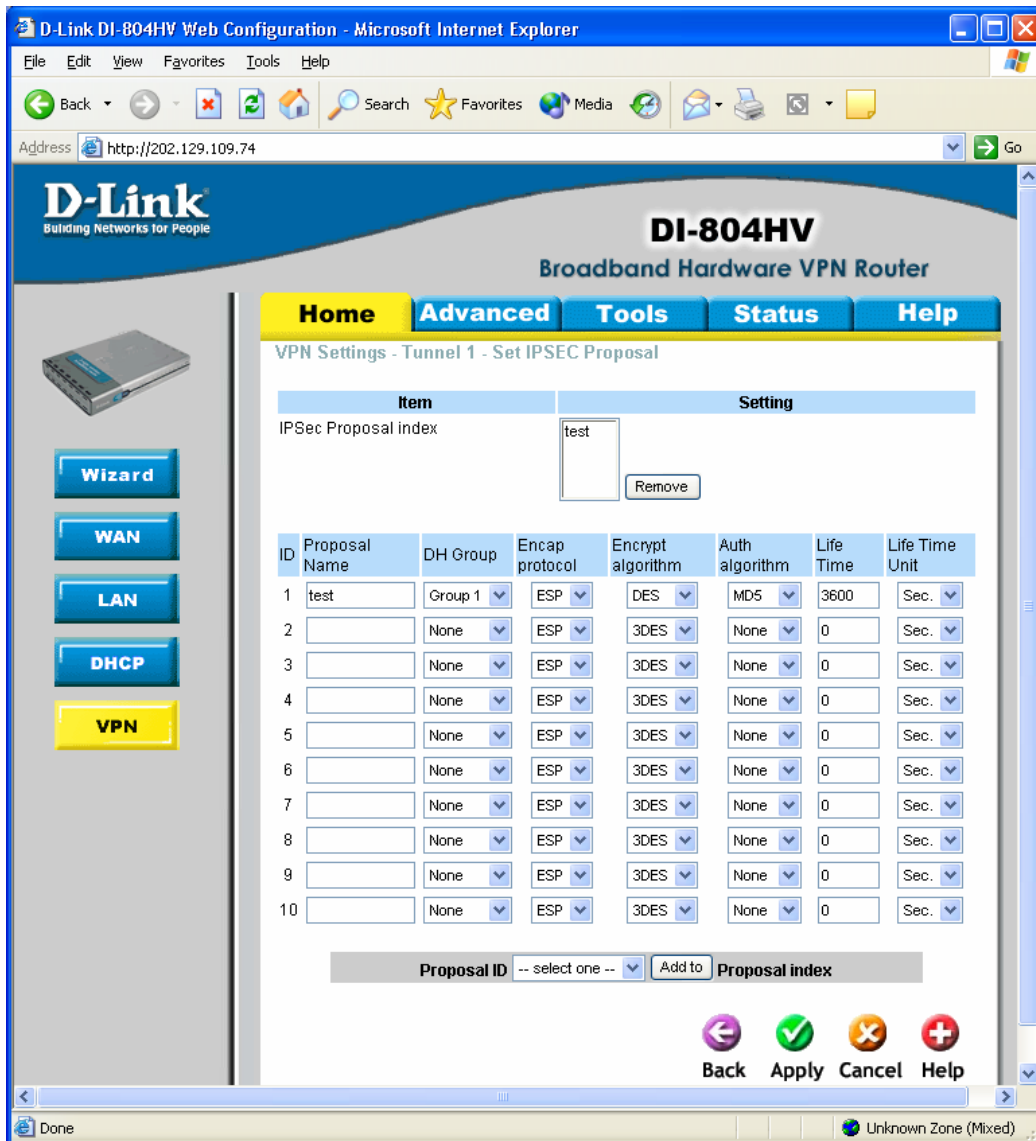
Back Apply Cancel Help

You should now see this page.

Do the same setup as on the last page.

After the setup click on Apply, then click on reboot and hit OK.

The unit will save the setting then restart the DI-804HV.



Once this is all done go into dos, Start > Run, type in command then hit enter.

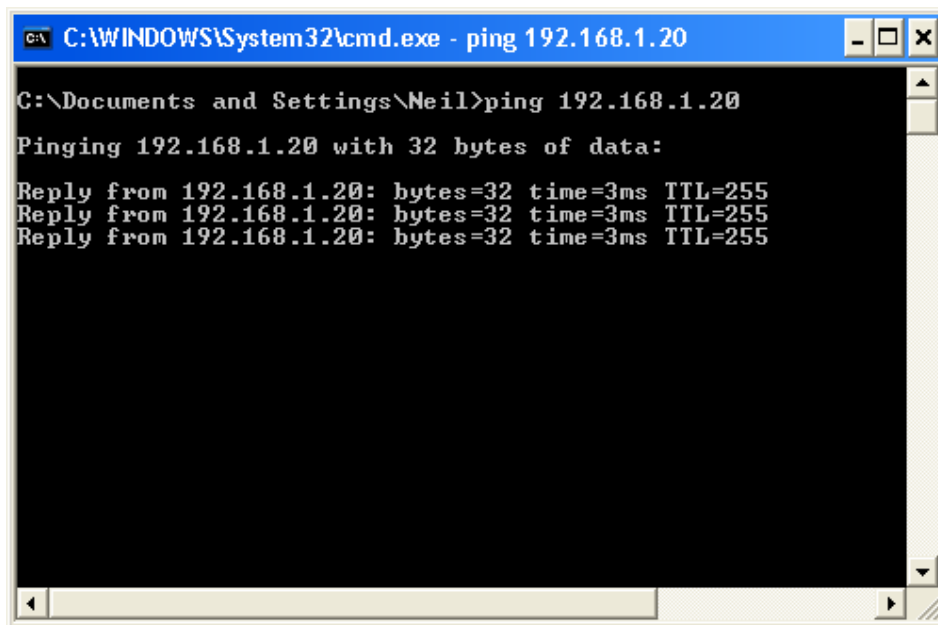
Depending on what location you are on will depend on what you type in.
If you are located on the 192.168.0.x side type in the red part:

Ping 192.168.1.5 (this is the IP of the remote unit)

Or if your location is 192.168.1.x type in the red part:

Ping 192.168.0.10 (this is the IP of the remote unit)

You should see something like the below.



A screenshot of a Windows command prompt window. The title bar reads "C:\WINDOWS\System32\cmd.exe - ping 192.168.1.20". The window content shows the following text:

```
C:\Documents and Settings\Neil>ping 192.168.1.20
Pinging 192.168.1.20 with 32 bytes of data:
Reply from 192.168.1.20: bytes=32 time=3ms TTL=255
Reply from 192.168.1.20: bytes=32 time=3ms TTL=255
Reply from 192.168.1.20: bytes=32 time=3ms TTL=255
```

The window has a standard Windows XP-style interface with a blue title bar, a scroll bar on the right, and a scroll bar at the bottom.

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).

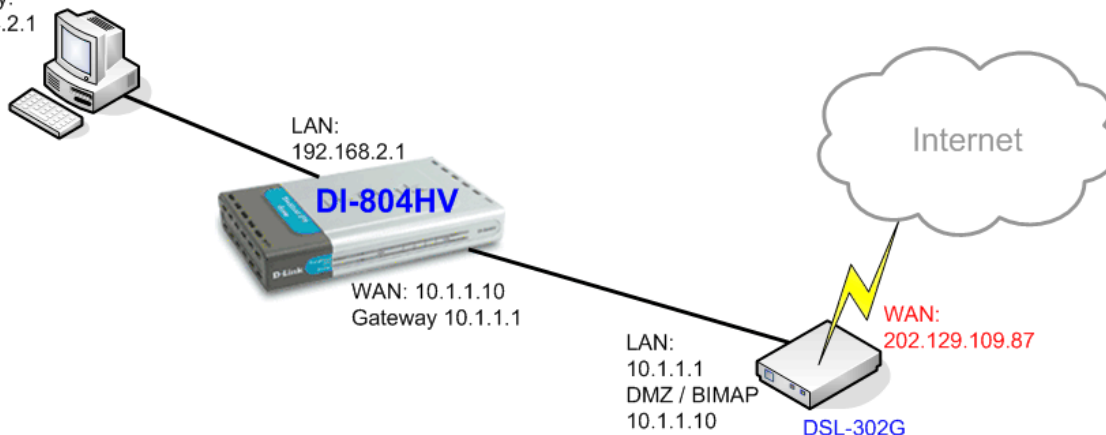
With **DSL-302G** the setup is similar. This modem uses **10.1.1.1** address on LAN.

Workstation A:

192.168.2.156

Gateway:

192.168.2.1



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:

NAT Rule - Add

| NAT Rule Information | | | | |
|------------------------|--|---|---|----|
| Rule Flavor: | BIMAP <input type="button" value="v"/> | | | |
| Rule ID: | 2 <input type="text"/> | | | |
| IF Name: | ALL <input type="button" value="v"/> | | | |
| Local Address: | 10 | 1 | 1 | 10 |
| Global Address: | 0 | 0 | 0 | 0 |

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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.

D-Link Australia & NZ Technical Support Team can be contacted on +61 2 88991800 or support@dlink.com.au

~ End of Document ~

