



Telkom VPN-Lite router setup
User Manual
Billion 810VNTX

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Introduction

Welcome to the Telkom VPN Lite router setup user manual. This manual will provide information on how to setup the Telkom VPN Lite service on your Billion 810VNTX using the setup utility, the router's graphical user interface (GUI) and CLI (Telnet or Console connection) commands (advanced user only).



- To ensure that the utility works correctly please temporarily disabled all software firewall applications. These applications may interfere with the processes needed to successfully complete the router setup. Examples of these applications/programs include: Norton Anti-virus, PC-Cillin, Bit Defender and McAfee.

Before you start



- This manual assumes that the Billion 810VNTX is in its factory default state. Thus:
LAN IP = 10.0.0.2
- It is recommended to use the utility to setup VPN-Lite on your Billion 810VNTX. The routers graphical user interface or manual setup method is to be used by experienced users only.
- Please ensure that your PC is set to obtain an IP address automatically from the router's DHCP server.

Register VPN-Lite service.

To enable you to configure the Telkom VPN-Lite service on your Billion Router you first need to register for the VPN-Lite service on the Telkom website (www.telkom.co.za).

On the VPN-Lite registration site you will be able to configure and manage your VPN-Lite sites as shown in the image below.

VPN Lite Main
The VPN Sites linked to your profile are listed below.

Summary

Customer:	Joe
Package Size:	VPNLite 10GB Plan
Monthly Usage:	34272 MB

What would you like to do?

Options

- :: Manage Sites
- :: View Usage
- :: eServices
- :: Help
- :: Downloads

VPN Sites

#	Site (Username)	Site Description	LAN Subnet	WAN IP
1	site10@evpn.neo.0008		10.0.10.0/24	172.29.1.10
2	site11@evpn.neo.0008		10.0.11.0/24	172.29.1.11
3	site12@evpn.neo.0008		10.0.12.0/24	172.29.1.12
4	site13@evpn.neo.0008		10.0.13.0/24	172.29.1.13
5	site14@evpn.neo.0008		10.0.14.0/24	172.29.1.14
6	site15@evpn.neo.0008		10.0.15.10/32	172.29.1.15
7	site16@evpn.neo.0008		10.0.16.0/24	172.29.1.16
8	site17@evpn.neo.0008		10.0.17.0/24	172.29.1.17
9	site18@evpn.neo.0008		10.0.18.0/24	172.29.1.18
10	site19@evpn.neo.0008		192.168.1.0/24	172.29.1.19
11	site1@evpn.neo.0008		10.0.1.0/24	172.29.1.1
12	site20@evpn.neo.0008		10.0.20.0/24	172.29.1.20

Here you will retrieve vital information like site Usernames and LAN Subnets and Site Password to configure the VPN-Lite sites. In the below setup sections you will be required to enter these values. Please ensure that you have all the correct information for each site before you start any of the setup sections mentioned in this document. Below is an image to show you what information on the VPN-Lite setup needs to be retrieved to enable you to setup your VPN-Lite. You can find this screen in the Manage Sites section.

Modify a Site

Site (Username)
site15@evpn.neo.0008

Site Description *
[Empty field]

LAN Subnet - Format: IP Address/Subnet Mask (8 - 32) *
10.0.16.0/24

WAN IP - Format: IP Address
172.29.1.16

Password
[Empty field]

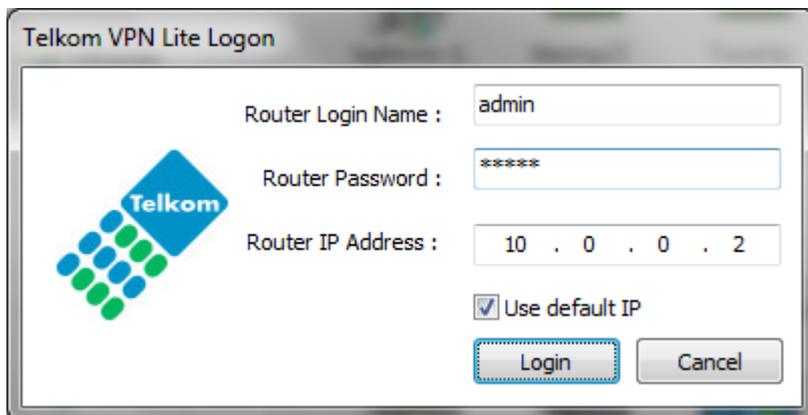
Confirm Password
[Empty field]

* Indicates mandatory fields

VPN-Lite Setup Using Windows Utility

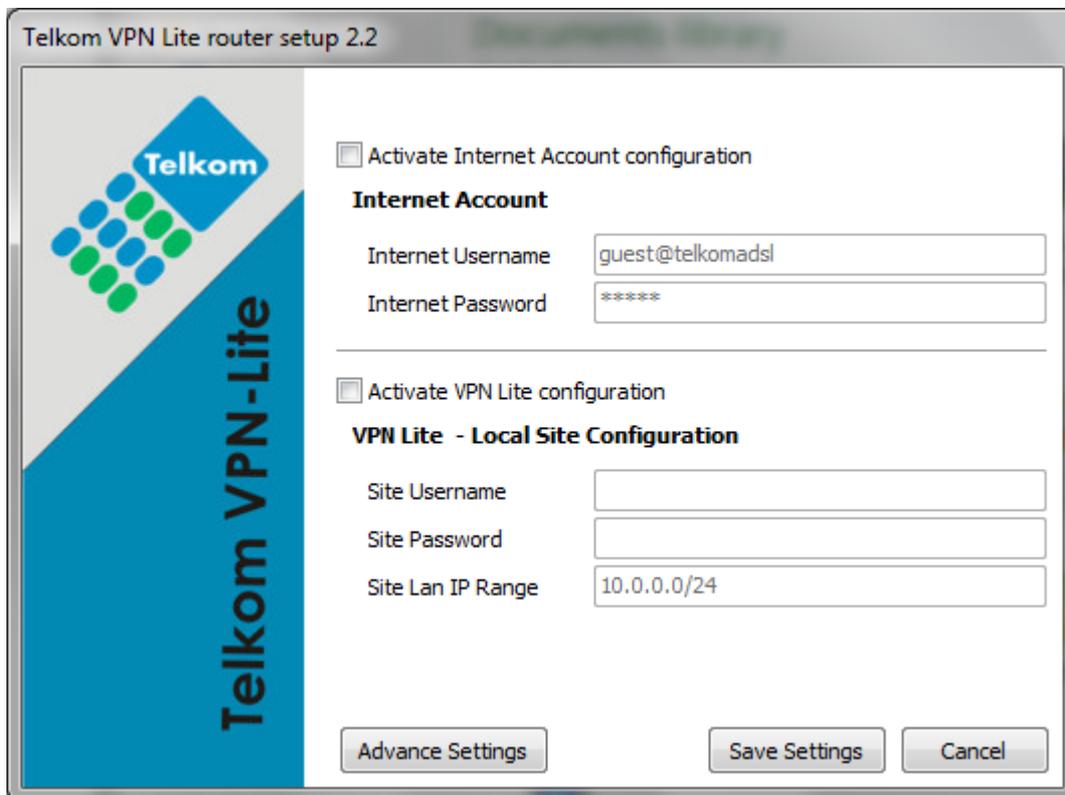
You can download the VPN-Lite utility program from the VPN-Lite website by selecting the Download section. After you successfully downloaded the utility just run the file to start the setup process.

On start up you will be requested to provide login information to connect to the router. By default the router login name will be admin and the login password will be admin. The default IP address for the router is 10.0.0.2 but if this has changed unselect the Use default IP check box and enter the current IP address of your router.



The screenshot shows a dialog box titled "Telkom VPN Lite Logon". On the left is the Telkom logo. The dialog contains three input fields: "Router Login Name" with the value "admin", "Router Password" with "*****", and "Router IP Address" with "10 . 0 . 0 . 2". Below these fields is a checked checkbox labeled "Use default IP". At the bottom are "Login" and "Cancel" buttons.

After a successful login the following screen will appear. Here you can setup your Internet Account information, VPN Lite and with the advance settings you can change your DHCP settings.



The screenshot shows a configuration window titled "Telkom VPN Lite router setup 2.2". On the left is a large blue graphic with the Telkom logo and the text "Telkom VPN-Lite". The main area has two sections, each with an unchecked checkbox: "Activate Internet Account configuration" and "Activate VPN Lite configuration". Under the first section is the "Internet Account" section with fields for "Internet Username" (filled with "guest@telkomadsl") and "Internet Password" (filled with "*****"). Under the second section is the "VPN Lite - Local Site Configuration" section with fields for "Site Username", "Site Password", and "Site Lan IP Range" (filled with "10.0.0.0/24"). At the bottom are "Advance Settings", "Save Settings", and "Cancel" buttons.

Internet Service Provider Account Setup

Select "Activate Internet Account configuration" tick box to set your Internet username and password. You can now enter your ISP username and password to connect to the internet. Your service provider will provide you with this information.

Activate Internet Account configuration

Internet Account

Internet Username	guest@telkomadsl
Internet Password	*****

VPN Lite – Local Site Configuration

Before you start with this section, please make sure you have registered on the VPN-Lite service website and that you have received your VPN-Lite account and IP information for the local site (*this will be one of your branches or offices where you will install the VPN-Lite service*). Please refer to the *Before you start* section in this document on page 4 for additional information.

To change these settings select "Activate VPN Lite configuration".

Activate VPN Lite configuration

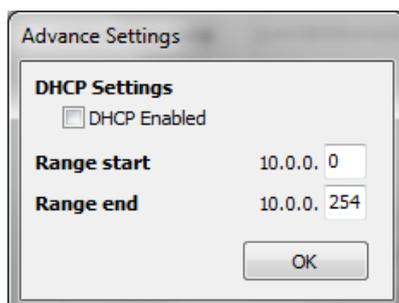
VPN Lite - Local Site Configuration

Site Username	site2@evpn.lite.0005
Site Password	*****
Site Lan IP Range	10.0.2.0/24

By using the information retrieved from the Telkom VPN-Lite setup website (see page 4) enter your site username, site password and site LAN IP range using the IP slash notation as it appears on the Telkom VPN-Lite website.

Advance Settings

In the advance settings you can enable or disable the router's DHCP settings. Please remember that if you disable the DHCP settings you will loose connection to your router after the settings have been updated, as the static IP address would have been changed to another IP range. You can also set your DHCP start and end range.



To save the settings press Save Settings and wait for the application to complete the setup process.

VPN-Lite Setup using your web browser

This section will guide you through the relative steps to setup you VPN-Lite service using the routers graphical user interface browser.

Connection to the router using your web browser

Open a web browser like Internet Explorer or Mozilla Firefox. In the internet address bar type in `http://10.0.0.2` and press enter. You will be prompted to supply a username and password. The user name is **admin** and the password is **admin**.



Setup your VPN-Lite

After the router's graphical user interface was successfully loaded in your web browser, firstly click on Advanced and then select Configuration – WAN – WAN Profile, in the menu on the left of the screen. The following screen will appear on the right.

▼ WAN Connection

▼ PPPoE Routed

Profile Port: ADSL

Protocol: Multiple Session

Description	Multiple Session with P	VPI/VCI	8 / 35	ATM Class	UBR
Username	guest@telkomadsl	Password	Service Name	
NAT	<input checked="" type="checkbox"/> Enable	IP (0.0.0.0: Auto)	0.0.0.0	Auth. Protocol	Chap(Auto)
Connection	Always On	Idle Timeout	0 min(s)	MTU	1492
RIP	<input type="checkbox"/> RIP v1 <input type="checkbox"/> RIP v2 <input type="checkbox"/> RIP v2 Multicast			TCP MSS Clamp	<input checked="" type="checkbox"/> Enable
Obtain DNS	<input checked="" type="checkbox"/> Automatic	Primary	0.0.0.0	Secondary	0.0.0.0

▶ Multiple Session-Second Session Enable

▶ Multiple Session-Third Session Enable

▶ Multiple Session-Fourth Session Enable

Apply

Edit	Name	Description	Creator	VPI	VCI	Delete
<input checked="" type="radio"/>	wanlink	Multiple Session with PPPoE pass-through	WebAdmin	8	35	

Ensure that the router's Protocol is set to Multiple Session. Click on Multiple Session-Second Session, the following screen will appear.

▼ Multiple Session-Second Session Enable

Description	Multiple Session-Second Se	ATM Class	UBR
Username	site2@evpn.lite.0005	Password
NAT	<input type="checkbox"/> Enable	IP (0.0.0.0: Auto)	0.0.0.0
Connection	Always On	Idle Timeout	0 min(s)
RIP	<input type="checkbox"/> RIP v1 <input type="checkbox"/> RIP v2 <input type="checkbox"/> RIP v2 Multicast		
Obtain DNS	<input checked="" type="checkbox"/> Automatic	Primary	0.0.0.0

▶ Multiple Session-Third Session Enable

▶ Multiple Session-Fourth Session Enable

Apply

You will require your VPN-Lite site username and password that you retrieved from the Telkom VPN-Lite setup site. You can change the Service Name field to VPNLite, Disable the Nat setting and enter your VPN-Lite site Username and Password. Ensure that the Enable tick-box is ticked and press Apply to save the settings.

You will now see your new WAN Connection on the default landing page.

WAN							
Port	Protocol	VPI/VCI	Connection	IP Address	Subnet Mask	Default Gateway	Primary DNS
ADSL	PPPoE	8 /35	Attempting to Connect <input type="button" value="Disconnect"/>	0.0.0.0	0.0.0.0		0.0.0.0
ADSL	PPPoE	8 /35	Attempting to Connect <input type="button" value="Disconnect"/>	0.0.0.0	0.0.0.0		0.0.0.0

In the menu in the left first click Advances and then select Configuration – Advanced – Static Route the following screen will appear in the right.

Static Routing										
Static Routing										
Destination	<input type="text"/>	Netmask	<input type="text"/>	Gateway	<input type="text"/>	Interface	<input type="text"/>	Cost	<input type="text" value="1"/>	
<input type="button" value="Add"/>		<input type="button" value="Edit / Delete"/>								
Edit	Valid	Destination	Netmask	Gateway/Interface			Delete			
<input type="radio"/>	<input checked="" type="checkbox"/>	0.0.0.0	0.0.0.0	0.0.0.0/ipwan			<input type="radio"/>			

Select the Delete radio button next to the 0.0.0.0 default router automatically created by the router and click on Edit/Delete. This will remove the default route.

Static Routing										
Static Routing										
Destination	<input type="text" value="10.0.0.0"/>	Netmask	<input type="text" value="255.0.0.0"/>	Gateway	<input type="text"/>	Interface	<input type="text" value="MPPP-0"/>	Cost	<input type="text" value="1"/>	
<input type="button" value="Add"/>		<input type="button" value="Edit / Delete"/>								
Edit	Valid	Destination	Netmask	Gateway/Interface			Delete			
<input type="radio"/>	<input checked="" type="checkbox"/>	10.0.0.0	255.0.0.0	0.0.0.0/ MPPP-0			<input type="radio"/>			

You need to setup 3 Static Routes for your VPN-Lite service. You should supply the Destination, Netmask and Interface. The first Destination is 10.0.0.0: the Netmask should be 255.0.0.0 and for interface select MPPP-0. Select apply to save the first Static Route.

Static Routing										
Static Routing										
Destination	<input type="text"/>	Netmask	<input type="text"/>	Gateway	<input type="text"/>	Interface	<input type="text"/>	Cost	<input type="text" value="1"/>	
<input type="button" value="Add"/>		<input type="button" value="Edit / Delete"/>								
Edit	Valid	Destination	Netmask	Gateway/Interface			Delete			
<input type="radio"/>	<input checked="" type="checkbox"/>	10.0.0.0	255.0.0.0	0.0.0.0/ MPPP-0			<input type="radio"/>			

Press create to add the following 2 Static Route's.

Destination	Netmask	Interface
172.16.0.0	255.240.0.0	ppp-0
192.168.0.0	255.255.0.0	ppp-0

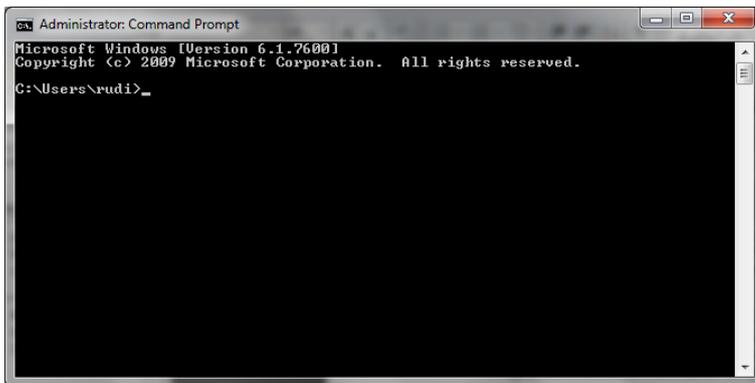
Configure your router IP address

In the menu on the left firstly click on Advance then select Configuration – LAN – Ethernet. The following screen will appear on the right.

Ethernet				
Primary IP Address				
IP Address	10	0	0	2
Subnet Mask	255	255	255	0
RIP	<input type="checkbox"/> RIP v1 <input type="checkbox"/> RIP v2 <input type="checkbox"/> RIP v2 Multicast			
<input type="button" value="Apply"/>				

On the Telkom VPN-Lite setup site you would have received a LAN Subnet address that could look like this 10.0.2.0/24. Your router's LAN IP would then be 10.0.2.2 and your Subnet Mask will be 255.255.255.0. Change the IP Address and the Subnet Mask on the screen and press the Apply button.

Your routers IP address is now changed to the new IP entered in the previous step. To ensure that your PC can still communicate with your Billion router on its new LAN IP address, you should release and renew your PC's IP address. In XP, Vista or Windows 7 press the Start button. Select All Programs\Accessories\Command Prompt. A Command prompt screen will appear



Type the following and press enter: ipconfig /release
 You should now wait for your IP to be released.
 Then type: ipconfig /renew.

Your PC's IP will now be renewed and within the new range to enable you to connect to your Billion router's new LAN IP address. You can now close the Command Prompt screen.

To reconnect to your router select the link with the new IP address displayed in your Internet Browser.

LAN Connection
Description
Device's IP has be changed temporarily. Do not forget to Save Configuration to FLASH to take effect. Currently, you can click http://10.0.2.2 to continue your configuration. Please check and re-apply the Virtual Server setting.

Your Internet Browser will now reconnect to your Billion router.

Now in the bottom right corner press the SAVE CONFIG button. The following screen will appear.

Save Config to FLASH
Please confirm that you wish to save the configuration.
There will be a delay while saving as configuration information is written to FLASH chips.
<input type="button" value="Apply"/>

Press the Apply button. Your settings will now be saved and you can start to use your VPN-Lite service.

VPN-Lite Manual Setup Using Telnet

The following section will guide you to setup your VPN-Lite service using the Telnet command line interface. Before you start please refer to the Before you start section in this document see page 4.

1. IP Management:

- a. Telnet to the Billion 810VNTX using the router's LAN IP address (default = 10.0.0.2) using this command: "telnet 10.0.0.2".

This will access the Billion 810VNTX's CLI interface allowing you to send setup commands. On successful connection, you will be prompted for a login and password (defaults: admin & admin). See screenshot below.



Enter your administration login & password. On successful authentication you will arrive at the admin prompt. (See screenshot below.)



- b. Setting the DHCP Server: This task is optional. If you want your Billion 810VNTX to act as a DHCP server – distributing IPs to your LAN PCs – please perform this step.

Set the router's DHCP range to the correct target range using this command:

Syntax: `dhcpserver subnet 1 add iprange <Target range network address> <Target range subnet>`

Example: `dhcpserver subnet 1 add iprange 1 10.0.17.0 255.255.255.0`

This router will now distribute IPs to connected PCs from the range 10.0.17.1 -> 10.0.17.254

Note: Alternatively, if you prefer to use static IPs on your network and you wish to disable the router's DHCP server feature, please run this command: `dhcpserver disable`

- c. **Set your router's LAN IP address:** Please run the following command to set your router's LAN IP address to within the correct target IP range. (Note that if using DHCP server, this LAN IP must be in that same IP range).

Note that your telnet session will become unresponsive after you execute the command and will eventually terminate. This is due to the router's altered LAN IP that was originally used to setup the Telnet connection, but has now been changed.

Syntax: `ip set interface iplan ipaddress <LAN IP> <Subnet>`
Example: `ip set interface iplan ipaddress 10.0.17.2 255.255.255.0`

Please see the correct LAN IP target range for your local site indicated on the VPN-Lite web page screen shot below.

Note that the router uses the subnet syntax instead of the slash notation (/24) used to display the LAN IP range on the website. Use the table below to translate the slash notation to the subnet mask syntax.

255.128.0.0 (/9)	255.255.240.0 (/20)
255.192.0.0 (/10)	255.255.248.0 (/21)
255.224.0.0 (/11)	255.255.252.0 (/22)
255.240.0.0 (/12)	255.255.254.0 (/23)
255.248.0.0 (/13)	255.255.255.0 (/24)
255.252.0.0 (/14)	255.255.255.128 (/25)
255.254.0.0 (/15)	255.255.255.192 (/26)
255.255.0.0 (/16)	255.255.255.224 (/27)
255.255.128.0 (/17)	255.255.255.240 (/28)
255.255.192.0 (/18)	255.255.255.248 (/29)
255.255.224.0 (/19)	255.255.255.252 (/30)

- d. **Setting your PCs IP address:** Your router's LAN IP has now been altered but your PC's IP is probably still in the old range – thus making a connection impossible. Please make sure that your PCs IP is updated to the new range, either by DHCP or setting it statically.

Once your PC's IP is again within the same range as your router's LAN IP, continue with the following steps.

2. Setting up the VPN-Lite solution:

- e. **Telnet to the Billion 810VNTX:** Please repeat step 1a but this time with the router's new updated LAN IP. Once you received the "admin>" prompt, please continue with the next steps.
- f. **Running the script:** The script below sets up the VPN-Lite service on your Billion 810VNTX. Please re-type or paste each of these commands into the telnet session that has been opened to the router in step 2a above (while substituting the <angle brackets>).



- Actual commands that need to be run on the telnet session are indicated in **blue**.
- Please note that non-bold words enclosed with <angle brackets> are user parameters and have to be provided by yourself. Make sure that you substitute all <angle brackets> with your own user specific parameters, before you start executing the script below.
- Please make sure that all commands are run successfully. It is not recommended to copy and paste the whole script at once as possible telnet buffer limitations might cause certain commands not to be pasted correctly.
- Words following "Comment:" are comments to the user, and not valid commands.

Comment: Remove current connection:

```
ip delete interface ipwan
```

Comment: The above command will generate some warnings/errors – this is normal.

```
transport delete wanlink
```

Comment: Setup bridge transport and interface:

```
rfc1483 add transport @wanlink a1 8 35 llc bridged
bridge add interface ipwan
bridge attach ipwan @wanlink
```

Comment: Setup Internet Connection:

```
pppoe add transport wanlink dialout eth 1 pppoe
pppoe set transport wanlink username <ISP account username>
pppoe set transport wanlink password <ISP account password>
pppoe set transport wanlink createroute enabled
pppoe set transport wanlink autoconnect disabled
pppoe set transport wanlink idletimeout 0
ip add interface ipwan
ip attach ipwan wanlink
```

Comment: Setup VPN-Lite Connection

```
pppoe add transport wanlink2 dialout eth 2 pppoe
pppoe set transport wanlink2 username <VPN-Lite Local site account username>
pppoe set transport wanlink2 password <VPN-Lite Local site account password>
pppoe set transport wanlink2 createroute disabled
pppoe set transport wanlink2 autoconnect disabled
pppoe set transport wanlink2 idletimeout 0
pppoe set transport wanlink2 discoverdns primary disabled
pppoe set transport wanlink2 discoverdns secondary disabled
ip add interface ipwan2
ip attach ipwan2 wanlink2
```

Comment: Add NATting for Internet Connection

```
security add interface ipwan external
nat enable ipwan ipwan internal
```

Comment: Add static routes to private IP ranges facilitating communication with remote VPN-Lite sites:

```
ip add route vpnlite1 10.0.0.0 255.0.0.0 interface ipwan2
ip add route vpnlite2 172.16.0.0 255.240.0.0 interface ipwan2
ip add route vpnlite3 192.168.0.0 255.255.0.0 interface ipwan2
```

Comment: Save configuration and restart device:

```
system config save
system restart
```

- g. After your Billion 810VNTX has rebooted, the VPN-Lite solution will be setup and ready for use.**

Firmware Upgrade

Connect to your router

Open a web browser like Internet Explorer or Firefox. In the address bar type in <http://10.0.0.2> and press enter. You will be prompted to supply a username and password to logon to the router. User name = admin Password = admin.



Firmware Upgrade

In the menu on the left click on Advanced then select Configuration – System – Firmware Upgrade. The following screen will appear on the right.



Press the Browse button to select the firmware file and then press Upgrade to start the firmware upgrade process. A progress bar will give indication on the progress of the upgrade. Do not switch off the router or disconnect any cables at this stage.

On completion of the upgrade you will be prompted to restart the router as shown below. If you select Current Settings your router will restart with your current settings on the new firmware. If you select Factory Default Settings your router will restart and all your current settings will be lost. Select one of the two options and press the Restart button to complete the new firmware update.

