

D-Link And TheGreenBow Solution

DIR-130 Broadband VPN Router Application Note

Version 1.00
(2009-4-24)

Revision History

Date	Rev.	Description	Editor
2009-4-24	1.0	Interoperability Compliance Testing Negotiate mode for Phase1 and Phase2 using TheGreenBow VPN Client and D-Link product's DIR-130.	John Yoong

1. Introduction

The objective of this document is to provide a guide describing how to configure the devices to achieve the same environment as show at the network topology.

Users of this document are expected to already possess basic knowledge of D-Link devices and TheGreenBow VPN program, and are familiar with how to perform basic configurations. Only important configurations, such as those pertaining to interfacing and integrating, will be described in this document.

For purpose of reference, configuration files for each device are available for download.

2. Audience

This document is intended for project engineers or end users that need to implement Broadband VPN Router DIR series and TheGreenBow software at the sites.

3. Objective

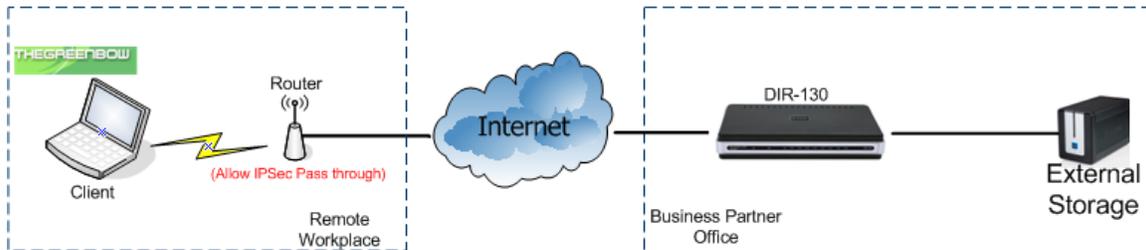
This topology consist the scenarios that integrates using TheGreenBow VPN program and D-Link Broadband VPN Router DIR-130 and demonstrate integrations and network solutions to OBUs, and in addition, to Partners and Customers from D-Link International.

4. List of Equipment and Software

The table below shows the devices information.

Device No.	Device Name	Device Model	Firmware
1	TheGreenBow VPN Client Software	-	4.6x
4	Broadband VPN Router	DIR-130	1.20

5. Network Diagram



Note: DIR-130 Router is set to allow IPSec pass through.

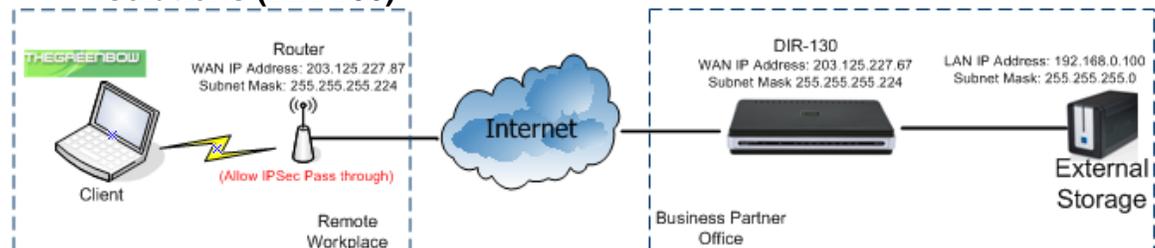
It is important to note that this application note is also applicable to the following VPN routers:

- **DIR-130**
- **DIR-330**
- **DIR-730**

6. Configurations

In this document, we will only describe the main configurations for this Scenario. The configurations setting for all the D-Link products will not be described here and for more detail about the product you can download their user guide.

6.1 TheGreenBow VPN client and D-Link Broadband VPN router solutions (DIR-130)



In this scenario the user can connect back to the Branch office database by using TheGreenBow VPN client tunneling to the Broadband VPN router DIR-130.

All configurations are based on Broadband VPN router DIR-130 (F/W: **1.20**) and TheGreenBow VPN Client Software (F/W: **4.60.0.0**)

The steps in this configuration are:

- **Setup DIR-130 for VPN tunneling**
 1. **Setup VPN Setting**
- **Setup TheGreenBow VPN client**

1. Setup Phase 1
2. Setup Phase 2

6.1.1) Setup DIR-130 for VPN tunneling

6.1.1.1) Setup VPN Setting

- 1) Click on the “VPN Settings” and add the VPN profile “IPSec”.

Product Page: DIR-130 Firmware Version: 1.20

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DIR-130 //	SETUP	ADVANCED	MAINTENANCE	STATUS	HELP
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Internet

Network Settings

VPN Settings

VPN SETTINGS

Use this section to create and configure your VPN settings.

ADD VPN PROFILE :

Select a type

Select a type

IPSec - Internet Protocol Security

PPTP/L2TP

SSLVPN

Enable	Name	Type
<input type="checkbox"/>		

Helpful Hints..

The DIR-130 supports IPSec, PPTP/L2TP and SSL VPN as the Server Endpoint. For more details information about configuring VPN Endpoint Server in your DIR-130, please visit the help menu.

- 2) First “**Enable**” the VPN IPSec and follow by filling all the information as show below according to your network environment.

IPSEC SETTING :

Enable

Name :

Local Net /Mask :

Remote IP : Remote User Site to Site

Remote Local LAN Net /Mask :

Authentication : Pre-shared Key

X.509 Certificate

Local Identity

Certificates

XAUTH

Server mode

Authentication database

Client mode

User Name

Password

Local ID :

Remote ID :

- 3) Phase 1 and Phase 2 algorithms must be set the same as The GreenBow VPN Client software. Save the setting for the DIR-130 Broadband VPN Router.

PHASE 1 :

Main mode Aggressive mode

NAT-T Enable:

Keep Alive / DPD: none Keep Alive DPD (Dead Peer Detection)

DH Group : 2 - modp 1024-bit

IKE Proposal List :

	Cipher	Hash
#1:	3DES	SHA
#2:	3DES	SHA
#3:	3DES	SHA
#4:	3DES	SHA

IKE Lifetime : 28800 Seconds

PHASE 2 :

PFS Enable: Perfect Forward Secrecy PFS

PFS DH Group : 2 - modp 1024-bit

IPSec Proposal List :

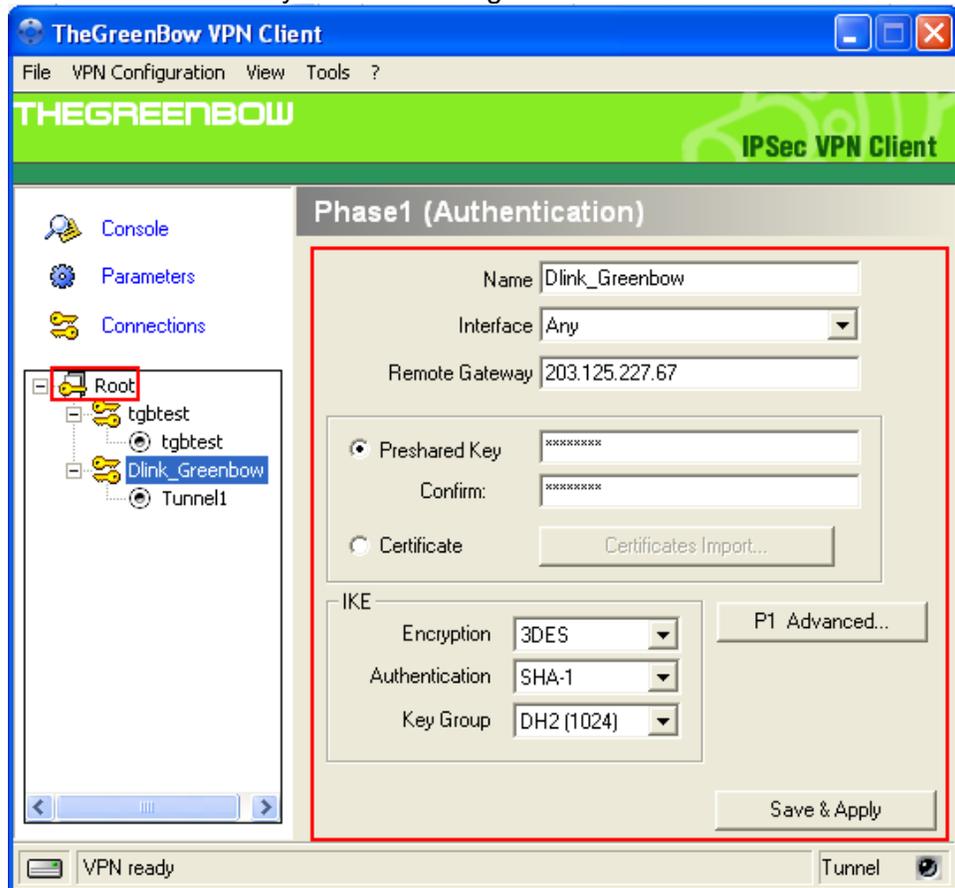
	Cipher	Hash
#1:	3DES	MD5
#2:	3DES	MD5
#3:	3DES	MD5
#4:	3DES	MD5

IPSec Lifetime : 3600 Seconds

6.1.2) Setup TheGreenBow VPN Client software

6.1.2.1) Setup Phase 1

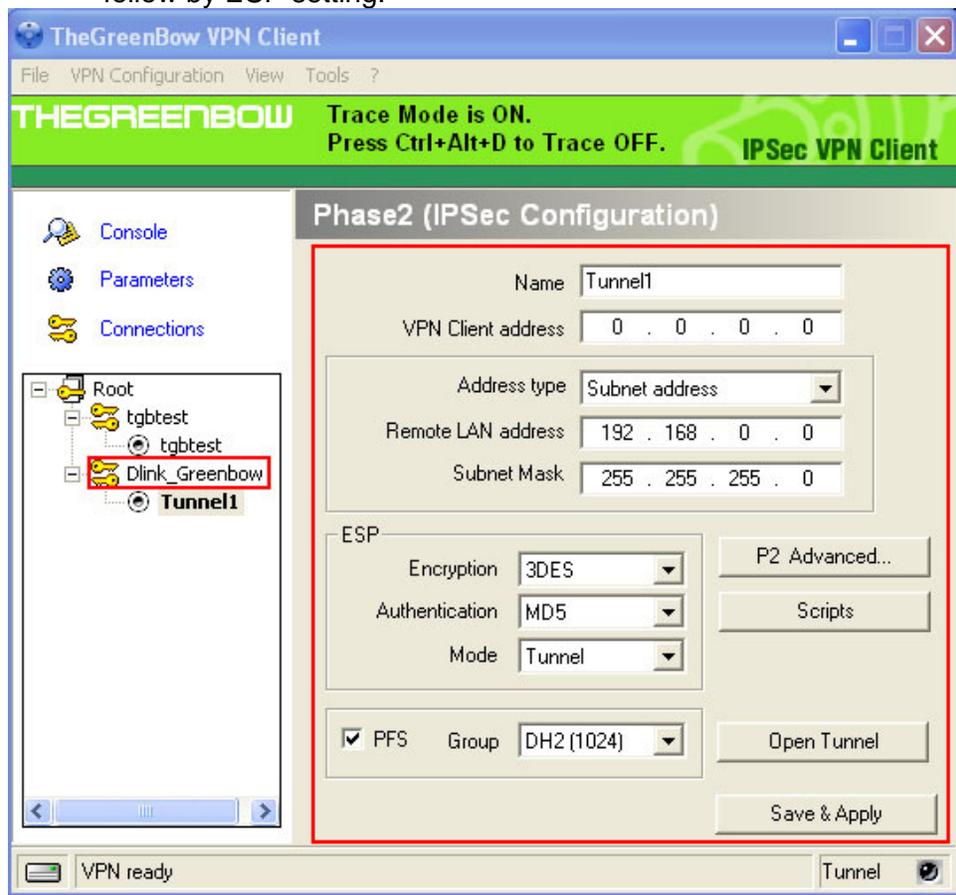
- 1) Right click on the “**Root**” to add a new “**Phase1**”, next fill in the IP address for this VPN client and Remote gateway IP follow by Preshared Key and IKE setting.



Note: the Preshared Key and IKE must be the same setting set in the DIR-130.

6.1.2.2) Setup Phase 2

- 1) Right click on the “Phase1” to add a new “Phase2”, next fill in the VPN Client address for this VPN client and Remote gateway IP follow by ESP setting.



Note: the ESP Encryption and Authentication setting must be the same in the Broadband VPN Router DIR-130 phase 1 and phase 2 setting.

7. Interoperability Compliance Testing

7.1) General Test Approach

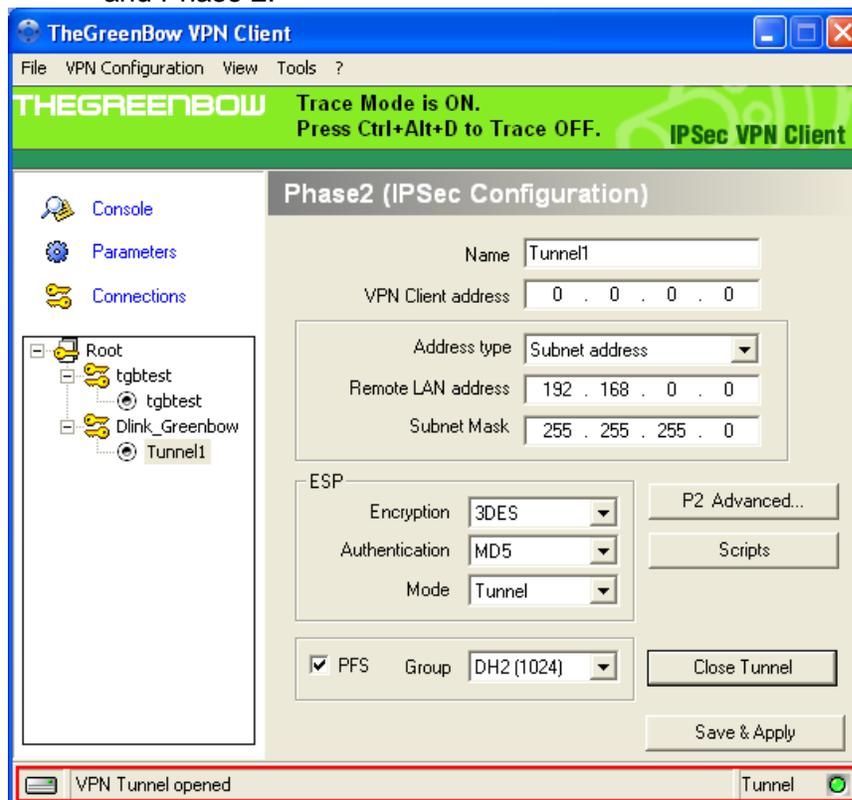
- a. Open the VPN tunnel using different Negotiate Mode in Phase 1 and Phase 2:

Series Negotiate Mode	
Phase 1	Phase 2
AES-SHA	AES-SHA
AES-MD5	AES-SHA
3DES-MD5	AES-SHA
3DES-SHA	AES-SHA
DES-MD5	AES-SHA
DES-SHA	AES-SHA
AES-SHA	AES-MD5
AES-MD5	AES-MD5
3DES-MD5	AES-MD5
3DES-SHA	AES-MD5
DES-MD5	AES-MD5
DES-SHA	AES-MD5
AES-SHA	3DES-SHA
AES-MD5	3DES-SHA
3DES-MD5	3DES-SHA
3DES-SHA	3DES-SHA
DES-MD5	3DES-SHA
DES-SHA	3DES-SHA
AES-SHA	3DES-MD5
AES-MD5	3DES-MD5
3DES-MD5	3DES-MD5
3DES-SHA	3DES-MD5
DES-MD5	3DES-MD5
DES-SHA	3DES-MD5
AES-SHA	DES-SHA
AES-MD5	DES-SHA
3DES-MD5	DES-SHA
3DES-SHA	DES-SHA
DES-MD5	DES-SHA
DES-SHA	DES-SHA

Series Negotiate Mode	
Phase 1	Phase 2
AES-SHA	DES-MD5
AES-MD5	DES-MD5
3DES-MD5	DES-MD5
3DES-SHA	DES-MD5
DES-MD5	DES-MD5
DES-SHA	DES-MD5

7.2) Test Result

- a. The VPN tunnel will be open at any negotiate mode set in Phase 1 and Phase 2.





TheGreenBow VPN Software

- b. The broadband VPN router DIR series will show the tunnel is up at their VPN status.

Product Page: DIR-130 Firmware Version: 1.20

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DIR-130 // **SETUP** **ADVANCED** **MAINTENANCE** **STATUS** **HELP**

<ul style="list-style-type: none"> Device Info Log Statistics Active Session LAN Clients Routing VPN 	<p>CONNECTED VPN TUNNEL LIST</p> <p>The VPN List below displays current VPN information.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Type</th> <th>Local Information</th> <th>Remote Information</th> <th>Other</th> </tr> </thead> <tbody> <tr> <td>IPSec</td> <td>192.168.0.0/24:0</td> <td>192.168.2.54/32:0</td> <td>tunnel/0</td> </tr> </tbody> </table>	Type	Local Information	Remote Information	Other	IPSec	192.168.0.0/24:0	192.168.2.54/32:0	tunnel/0	<p>Helpful Hints..</p> <p>This page displays current established VPN tunnels.</p>
Type	Local Information	Remote Information	Other							
IPSec	192.168.0.0/24:0	192.168.2.54/32:0	tunnel/0							

DIR-130 VPN Status

- c. Client is able to Ping to the remote network.

```

C:\> Command Prompt - ping 192.168.0.100 -t
Reply from 192.168.0.100: bytes=32 time=3ms TTL=128
Reply from 192.168.0.100: bytes=32 time=7ms TTL=128
Reply from 192.168.0.100: bytes=32 time=4ms TTL=128
Reply from 192.168.0.100: bytes=32 time=6ms TTL=128
Reply from 192.168.0.100: bytes=32 time=5ms TTL=128
Reply from 192.168.0.100: bytes=32 time=4ms TTL=128
Reply from 192.168.0.100: bytes=32 time=6ms TTL=128
Reply from 192.168.0.100: bytes=32 time=4ms TTL=128
Reply from 192.168.0.100: bytes=32 time=6ms TTL=128
Reply from 192.168.0.100: bytes=32 time=5ms TTL=128
Reply from 192.168.0.100: bytes=32 time=9ms TTL=128
Reply from 192.168.0.100: bytes=32 time=7ms TTL=128
Reply from 192.168.0.100: bytes=32 time=8ms TTL=128
Reply from 192.168.0.100: bytes=32 time=5ms TTL=128
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Reply from 192.168.0.100: bytes=32 time=9ms TTL=128
Reply from 192.168.0.100: bytes=32 time=8ms TTL=128
Reply from 192.168.0.100: bytes=32 time=4ms TTL=128
Reply from 192.168.0.100: bytes=32 time=5ms TTL=128
Reply from 192.168.0.100: bytes=32 time=4ms TTL=128
Reply from 192.168.0.100: bytes=32 time=5ms TTL=128
Reply from 192.168.0.100: bytes=32 time=6ms TTL=128
Reply from 192.168.0.100: bytes=32 time=5ms TTL=128
Reply from 192.168.0.100: bytes=32 time=6ms TTL=128
Reply from 192.168.0.100: bytes=32 time=5ms TTL=128

```

8. Conclusion

The Application Notes demonstrate how D-Link VPN products and TheGreenBow software combined perfectly address the requirements of the small and medium businesses worldwide. The joint VPN solution offer advantages around multiple access control and authorization mechanisms for users and tunneling capabilities to access the entire corporate network; it can also provide different access rights to different users.

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D-Link is the worldwide leader and an award-winning designer, developer, and manufacturer of Wi-Fi and Ethernet networking, broadband, multimedia, voice and data communications and digital electronics solutions.