 **TheGreenBow IPsec VPN Client**
Configuration Guide
BIPAC 7500G

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1 Introduction

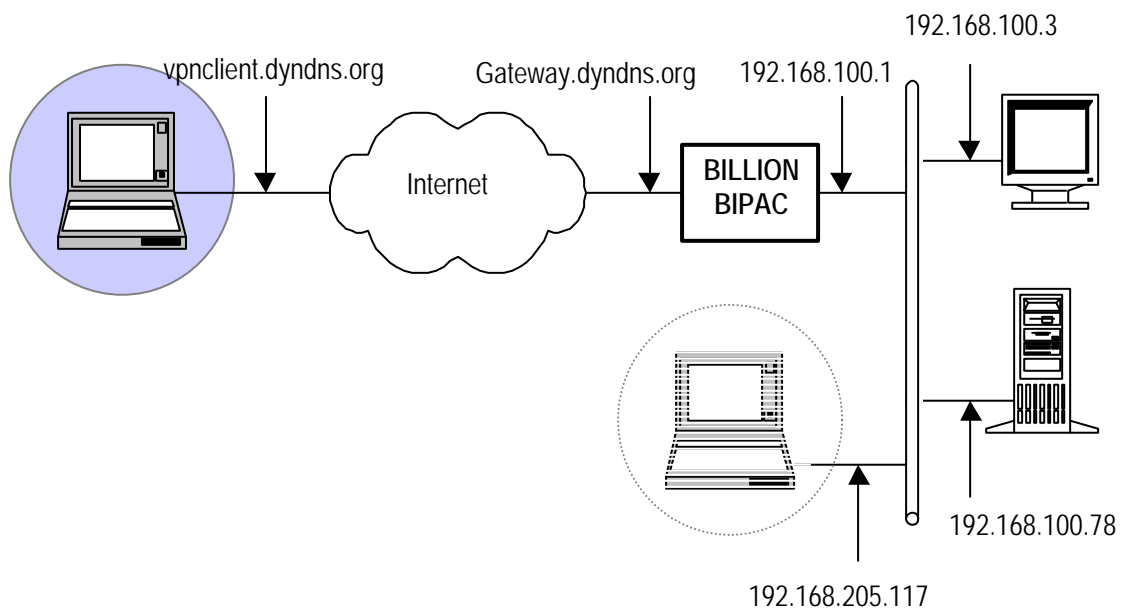
1.1 Goal of this document

This document describes how to configure TheGreenBow VPN Client with a Billion BIPAC 7500G VPN Router. For more information about Billion BIPAC 7500G, read its documentation on www.billion.com.

1.2 Network topology

In our example, we will connect TheGreenBow IPsec VPN Client to the LAN behind the Billion BIPAC 7500G router.

The VPN Client is connected to the Internet by a DSL/dialup connection from an ISP or through a LAN. The client will have a virtual IP address in the remote LAN. All the addresses in this document are given for example purpose.



2 Billion BIPAC 7500 VPN Configuration

This section describes how to build an IPSec VPN configuration with your Billion BIPAC 7500G VPN router.

2.1 BIPAC 7500 IPSec Settings

Once connected to your VPN gateway, you must select the menu "*Configuration*" → "*VPN*" → "*IPSec*".

Click on "*Create*" and add settings as below:

"*Secure Gateway Address*" must be filled in with VPN Client IP address or public IP address of the VPN gateway behind which the VPN Client is. You must also add a virtual IP address for the VPN Client (192.168.205.117 in our example) in "*Network Single Address*". These two settings are mandatory.

2.2 BIPAC 7500 IKE Settings

Once this done, click on "*Advanced Options*".

IKE Mode	Main
IKE Proposal	
Hash Function	SHA1
Encryption	3DES
Diffie-Hellman Group	MODP 1024 (Group 2)
Local ID	
Type	Default
Content	
Remote ID	
Type	E-mail (User FQDN)
Identifier	support@thegreenbow.cor
SA Lifetime	
Phase 1 (IKE)	240 minutes
Phase 2 (IPSec)	60 minutes
PING for keepalive	
PING to the IP	0.0.0.0 (0.0.0.0 means NEVER)
Interval	10 seconds (0-3600, 0 means NEVER)
Disconnection Time after no traffic	1200 seconds (180 at least)
Reconnection Time	15 minutes (3 at least)

In this page, you can define a Phase 1 Identity for the VPN Client. In "*Remote ID*", select "*E-mail*" as type and any value as identifier. You should add it if the VPN Client can connect to the Billion BIPAC routeur from a LAN. Click then on "*Apply*".

2.3 BIPAC 7500 enable new IPSec VPN tunnels

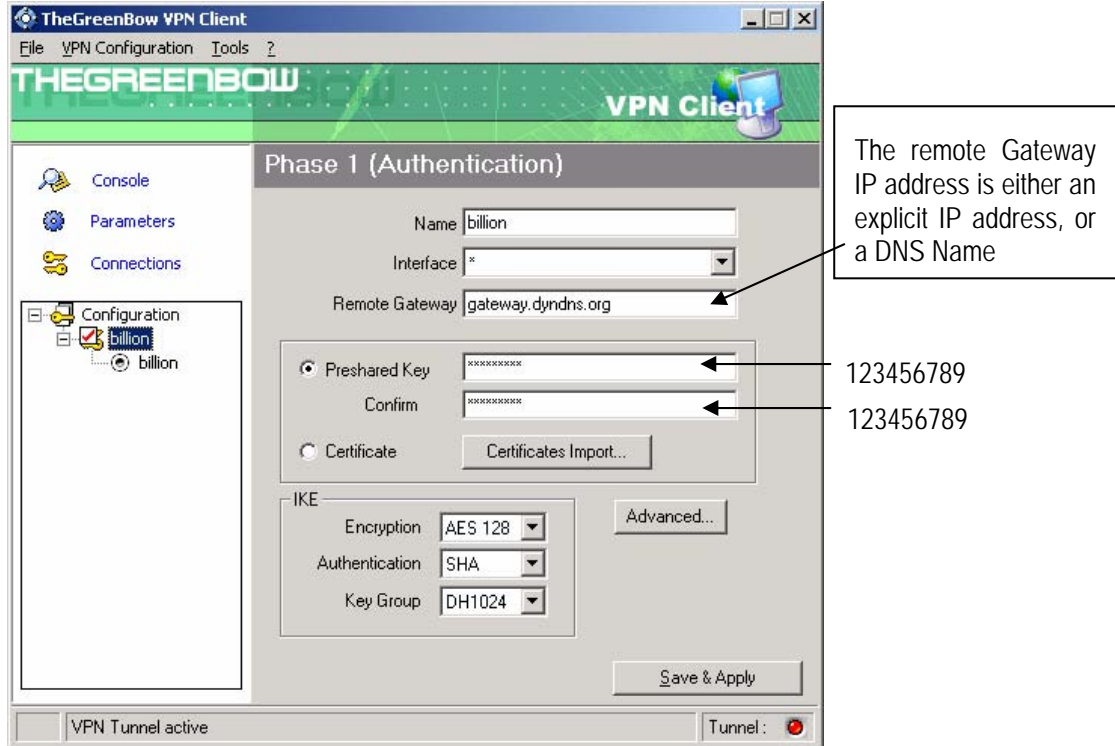
IPSec									
VPN Tunnels									
Enable	Disable	Name	Local Subnet	Remote Subnet	Remote Gateway	IPSec Proposal			
<input checked="" type="radio"/>	<input type="radio"/>	TheGreenBow	192.168.100.0 /255.255.255.0	192.168.205.117	212.198.144.205	AH:none ESP:sha1,aes_128_cbc	Edit	Delete	
Create									
Apply									

You have to select "*Enable*" and click on "*Apply*" if you want to use this tunnel.

3 TheGreenBow IPsec VPN Client configuration

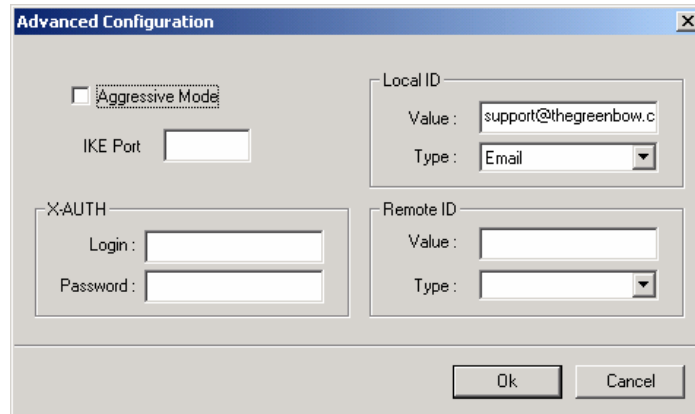
3.1 VPN Client Phase 1 (IKE) Configuration

You use for the VPN Client settings defined in Billion BIPAC 7500G VPN configuration.



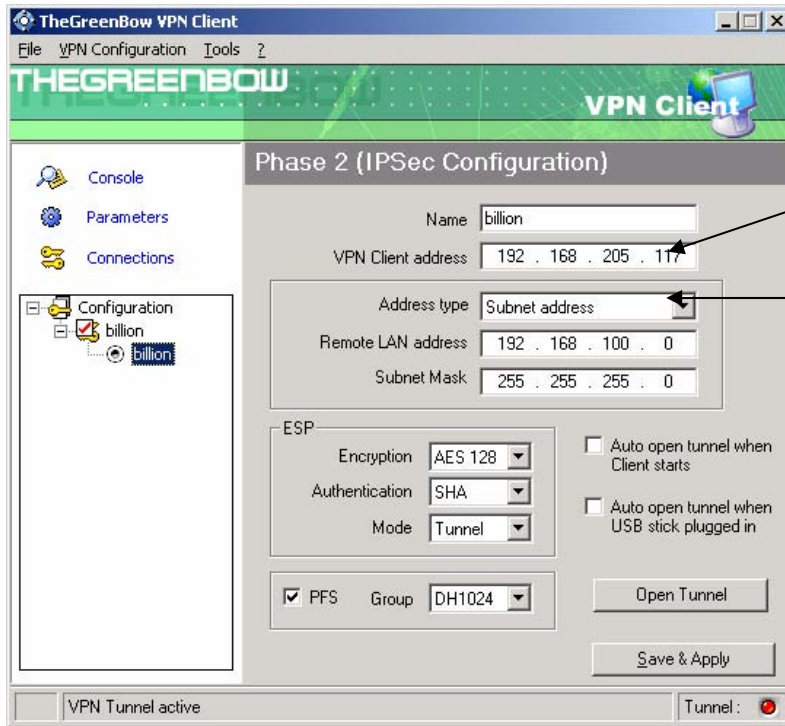
Phase 1 configuration

You must also add phase 1 IDs in "Advanced Configuration" window, if the VPN Client connects from a LAN.



3.2 VPN Client Phase 2 (IPSec) Configuration

Phase 2 Configuration window defines IPsec settings.



You define your static virtual IP address here.

Enter the IP address (and subnet mask) of the remote LAN.

Phase2 Configuration

3.3 Open IPSec VPN tunnels

Once both Billion BIPAC router and TheGreenBow IPSec VPN Client have been configured accordingly, you are ready to open VPN tunnels. First make sure you enable your firewall with IPSec traffic.

1. Click on "Save & Apply" to take into account all modifications we've made on your VPN Client configuration
2. Click on "Open Tunnel", or generate traffic that will automatically open a secure IPSec VPN Tunnel (e.g. ping, IE browser)
3. Select "Connections" to see opened VPN Tunnels
4. Select "Console" if you want to access to the IPSec VPN logs and adjust filters to display less IPSec messaging.

4 VPN IPSec Troubleshooting

4.1 « PAYLOAD MALFORMED » error

```
114920 Default (SA BILLION-P1) SEND phase 1 Main Mode [SA][VID]
114920 Default (SA BILLION-P1) RECV phase 1 Main Mode [NOTIFY]
114920 Default exchange_run: exchange_validate failed
114920 Default dropped message from 195.100.205.114 port 500 due to notification
type PAYLOAD_MALFORMED
114920 Default SEND Informational [NOTIFY] with PAYLOAD_MALFORMED error
```

If you have an « PAYLOAD MALFORMED » error you might have a wrong Phase 1 [SA], check if the encryption algorithms are the same on each side of the VPN tunnel.

4.2 « INVALID COOKIE » error

```
115933 Default message_rcv: invalid cookie(s) 5918ca0c2634288f 7364e3e486e49105
115933 Default dropped message from 195.100.205.114 port 500 due to notification
type INVALID_COOKIE
115933 Default SEND Informational [NOTIFY] with INVALID_COOKIE error
```

If you have an « INVALID COOKIE » error, it means that one of the endpoint is using a SA that is no more in use. Reset the VPN connection on each side.

4.3 « no keystate » error

```
115315 Default (SA BILLION-P1) SEND phase 1 Main Mode [SA][VID]
115317 Default (SA BILLION-P1) RECV phase 1 Main Mode [SA][VID]
115317 Default (SA BILLION-P1) SEND phase 1 Main Mode [KEY][NONCE]
115319 Default (SA BILLION-P1) RECV phase 1 Main Mode [KEY][NONCE]
115319 Default (SA BILLION-P1) SEND phase 1 Main Mode [ID][HASH][NOTIFY]
115319 Default ipsec_get_keystate: no keystate in ISAKMP SA 00B57C50
```

Check if the preshared key is correct or if the local ID is correct (see « Advanced » button). You should have more information in the remote endpoint logs.

4.4 « received remote ID other than expected » error

```
120348 Default (SA BILLION-P1) SEND phase 1 Main Mode [SA][VID]
120349 Default (SA BILLION-P1) RECV phase 1 Main Mode [SA][VID]
120349 Default (SA BILLION-P1) SEND phase 1 Main Mode [KEY][NONCE]
120351 Default (SA BILLION-P1) RECV phase 1 Main Mode [KEY][NONCE]
120351 Default (SA BILLION-P1) SEND phase 1 Main Mode [ID][HASH][NOTIFY]
120351 Default (SA BILLION-P1) RECV phase 1 Main Mode [ID][HASH][NOTIFY]
120351 Default ike_phase_1_rcv_ID: received remote ID other than expected
support@thegreenbow.fr
```

The « Remote ID » value (see « Advanced » Button) does not match what the remote endpoint is expected.

4.5 « NO PROPOSAL CHOSEN » error

```

115911 Default (SA BILLION-P1) SEND phase 1 Main Mode [SA][VID]
115913 Default (SA BILLION-P1) RECV phase 1 Main Mode [SA][VID]
115913 Default (SA BILLION-P1) SEND phase 1 Main Mode [KEY][NONCE]
115915 Default (SA BILLION-P1) RECV phase 1 Main Mode [KEY][NONCE]
115915 Default (SA BILLION-P1) SEND phase 1 Main Mode [ID][HASH][NOTIFY]
115915 Default (SA BILLION-P1) RECV phase 1 Main Mode [ID][HASH][NOTIFY]
115915 Default phase 1 done: initiator id c364cd70: 195.100.205.112, responder id
c364cd72: 195.100.205.114, src: 195.100.205.112 dst: 195.100.205.114
115915 Default (SA BILLION-BILLION-P2) SEND phase 2 Quick Mode
[SA][KEY][ID][HASH][NONCE]
115915 Default RECV Informational [HASH][NOTIFY] with NO_PROPOSAL_CHOSEN error
115915 Default RECV Informational [HASH][DEL]
115915 Default BILLION-P1 deleted

```

If you have an « NO PROPOSAL CHOSEN » error, check that the « Phase 2 » encryption algorithms are the same on each side of the VPN Tunnel.

Check « Phase 1 » algorithms if you have this:

```

115911 Default (SA BILLION-P1) SEND phase 1 Main Mode [SA][VID]
115911 Default RECV Informational [NOTIFY] with NO_PROPOSAL_CHOSEN error

```

4.6 « INVALID ID INFORMATION » error

```

122623 Default (SA BILLION-P1) SEND phase 1 Main Mode [SA][VID]
122625 Default (SA BILLION-P1) RECV phase 1 Main Mode [SA][VID]
122625 Default (SA BILLION-P1) SEND phase 1 Main Mode [KEY][NONCE]
122626 Default (SA BILLION-P1) RECV phase 1 Main Mode [KEY][NONCE]
122626 Default (SA BILLION-P1) SEND phase 1 Main Mode [ID][HASH][NOTIFY]
122626 Default (SA BILLION-P1) RECV phase 1 Main Mode [ID][HASH][NOTIFY]
122626 Default phase 1 done: initiator id c364cd70: 195.100.205.112, responder id
c364cd72: 195.100.205.114, src: 195.100.205.112 dst: 195.100.205.114
122626 Default (SA BILLION-BILLION-P2) SEND phase 2 Quick Mode
[SA][KEY][ID][HASH][NONCE]
122626 Default RECV Informational [HASH][NOTIFY] with INVALID_ID_INFORMATION error
122626 Default RECV Informational [HASH][DEL]
122626 Default BILLION-P1 deleted

```

If you have an « INVALID ID INFORMATION » error, check if « Phase 2 » ID (local address and network address) is correct and match what is expected by the remote endpoint.

Check also ID type ("Subnet address" and "Single address"). If network mask is not check, you are using a IPV4_ADDR type (and not a IPV4_SUBNET type).

4.7 I clicked on "Open tunnel", but nothing happens

Read logs of each endpoint. IKE requests can be dropped by firewalls. An IPsec client uses UDP port 500 and protocol ESP (protocol 50).

4.8 The VPN tunnel is up but I can't ping !

If the VPN tunnel is up, but you still cannot ping the remote LAN, here are a few guidelines:

- Check Phase 2 settings: VPN Client address and Remote LAN address. Usually, VPN Client IP address should not belong to the remote LAN subnet
- Once VPN tunnel is up, packets are sent with ESP protocol. This protocol can be blocked by firewall. Check that every device between the client and the VPN server does accept ESP
- Check your VPN server logs. Packets can be dropped by one of its firewall rules.
- Check your ISP support ESP

- If you still cannot ping, follow ICMP traffic on VPN server LAN interface and on LAN computer interface (with Ethereal for example). You will have an indication that encryption works.
- Check the “default gateway” value in VPN Server LAN. A target on your remote LAN can receive pings but does not answer because there is a no “Default gateway” setting.
- You cannot access to the computers in the LAN by their name. You must specify their IP address inside the LAN.
- We recommend you to install ethereal (<http://www.ethereal.com>) on one of your target computer. You can check that your pings arrive inside the LAN.

	Doc.Ref	tgbvpn_Bipac7500G_en
	Doc.version	1.0 – Dec.2004
	VPN version	2.5x

5 Contacts

News and updates on TheGreenBow web site : <http://www.thegreenbow.com>

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