Use TheGreenBow VPN Client to Connect with RV34x Series Router

Special Notice: Licensing Structure - Firmware versions 1.0.3.15 and later. Moving forward, AnyConnect will incur a charge for client licenses only.

For additional information on AnyConnect licensing on the RV340 series routers, check out the article AnyConnect Licensing for the RV340 Series Routers.

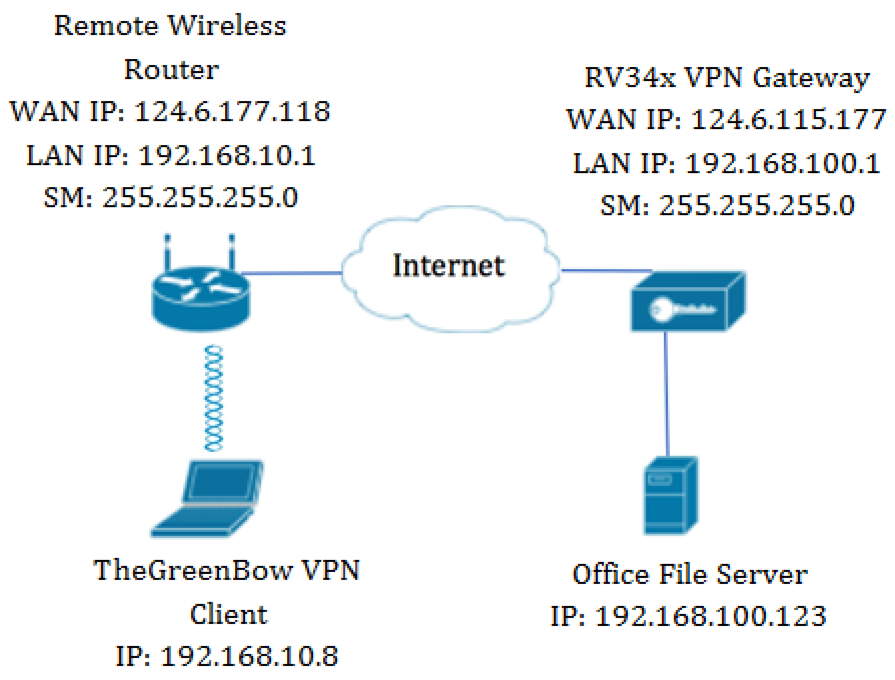
Introduction

A Virtual Private Network (VPN) connection allows users to access, send, and receive data to and from a private network by means of going through a public or shared network such as the Internet but still ensuring a secure connection to an underlying network infrastructure to protect the private network and its resources.

A VPN tunnel establishes a private network that can send data securely using encryption and authentication. Corporate offices mostly use VPN connection since it is both useful and necessary to allow their employees to have access to their private network even if they are outside the office.

The VPN allows a remote host to act as if they were located on the same local network. The router supports up to 50 tunnels. A VPN connection can be set up between the router and an endpoint after the router has been configured for Internet connection. The VPN client is entirely dependent on the settings of the VPN router to be able to establish a connection.

TheGreenBow VPN Client is a third-party VPN client application that makes it possible for a host device to configure a secure connection for site-to-site IPSec tunnel with the RV34x Series Router.



In the diagram, the computer will connect to the file server in the office outside its network to access its resources. To do this, TheGreenBow VPN Client in the computer will be configured in such a way that it would pull the settings from the RV34x VPN gateway.

Benefits of using a VPN connection

1. Using a VPN connection helps protect confidential network data and resources.
2. It provides convenience and accessibility for remote workers or corporate employees since they will be able to easily access the main office without having to be physically present and yet, still maintain the security of the private network and its resources.
3. Communication using a VPN connection provides a higher level of security compared to other methods of remote communication. Advanced level of technology nowadays makes this possible, thus, protecting the private network from unauthorized access.
4. Actual geographic location of the users are protected and not exposed to the public or shared networks like the Internet.
5. Adding new users or group of users to the network is easy since VPNs are easily scalable. It is possible to make the network grow without the need for additional components or complicated configuration.

Risks of using a VPN connection

1. Security risk due to misconfiguration. Since the design and implementation of a VPN can be complicated, it is necessary to entrust the task of configuring the connection to a highly knowledgeable and experienced professional in order to make sure that the security of the private network would not be compromised.
2. Reliability. Since a VPN connection requires an Internet connection, it is important to have a provider with a proven and tested reputation to provide excellent Internet service and guarantee minimal to no downtime.
3. Scalability. If it comes to a situation where there is a need to add new infrastructure or a new set of configurations, technical issues may arise due to incompatibility especially if involves different products or vendors other than the ones you are already using.

4. Security issues for mobile devices. When initiating the VPN connection on a mobile device, security issues may arise especially when the mobile device is connected to the local network wirelessly.
5. Slow connection speeds. If you are using a VPN client which provides free VPN service, it may be expected that your connection would also be slow since these providers do not prioritize connection speeds.

Prerequisites for Using TheGreenBow VPN Client

The following items must be configured on the VPN router first and will be applied to TheGreenBow VPN Client by clicking here to establish a connection.

1. Create a Client-to-Site Profile on the VPN Gateway
2. Create a User Group on the VPN Gateway
3. Create User Account on the VPN Gateway
4. Create an IPSec Profile on the VPN Gateway
5. Configure the Phase I and Phase II Settings on the VPN Gateway

Applicable Devices

- RV34x Series

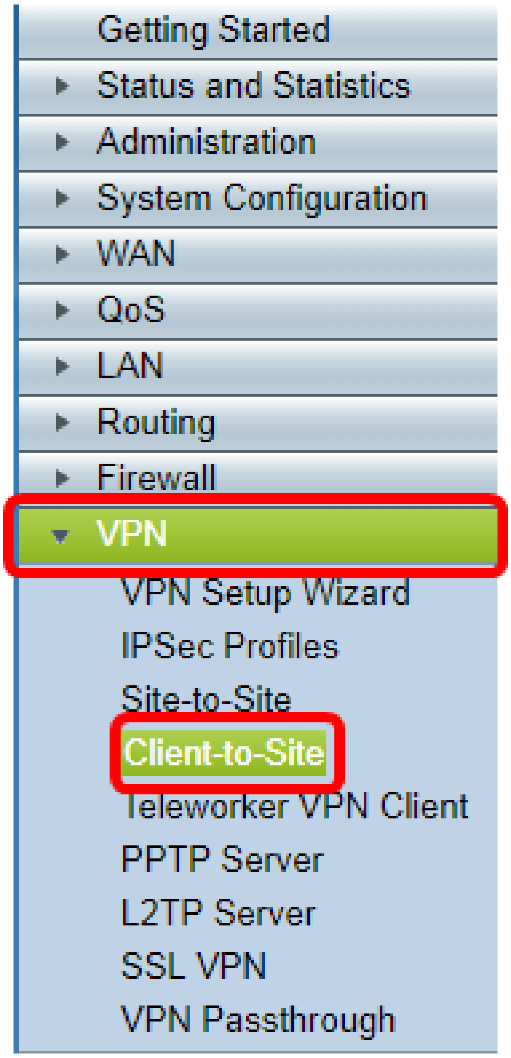
Software Version

- 1.0.01.17

Use TheGreenBow VPN Client

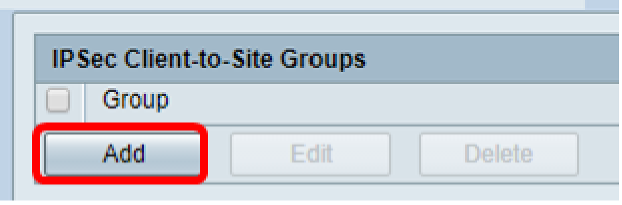
Create a Client-to-Site Profile on the Router

Step 1. Log in to the web-based utility of the RV34x Router and choose **VPN > Client-to-Site**.



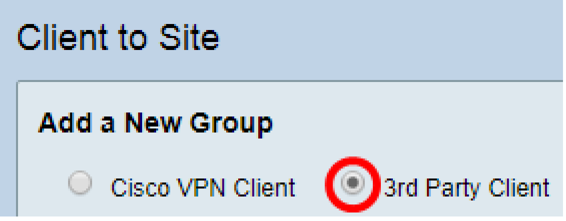
Note: The images in this article are taken from the RV340 Router. Options may vary, depending on the model of your device.

Step 2. Click **Add**.



Step 3. Click **3rd Party Client**.

Note: AnyConnect is an example of a Cisco VPN Client, while TheGreenBow VPN Client is an example of a third-party VPN Client.

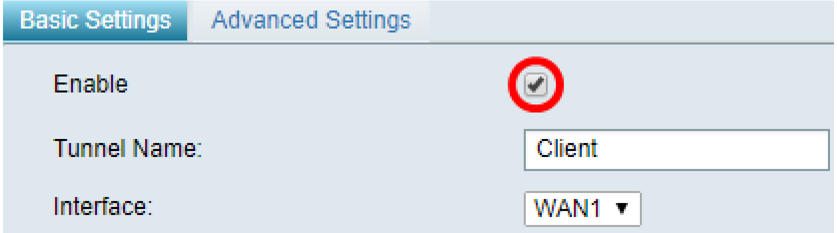

Client to Site

Add a New Group

○ Cisco VPN Client ● 3rd Party Client

Note: In this example, 3rd Party Client is chosen.

Step 4. Under the Basic Settings tab, check the **Enable** check box to ensure that the VPN profile is active.

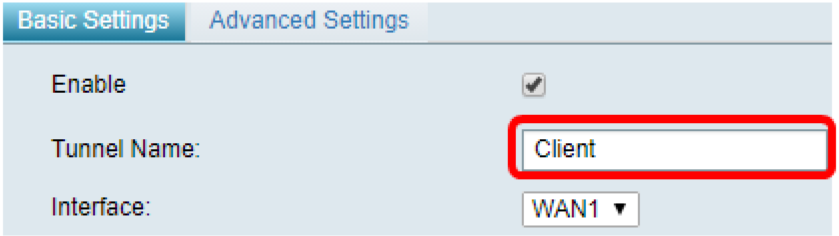


Enable ☑

Tunnel Name: Client

Interface: WAN1 ▼

Step 5. Enter a name for the VPN connection in the *Tunnel Name* field.



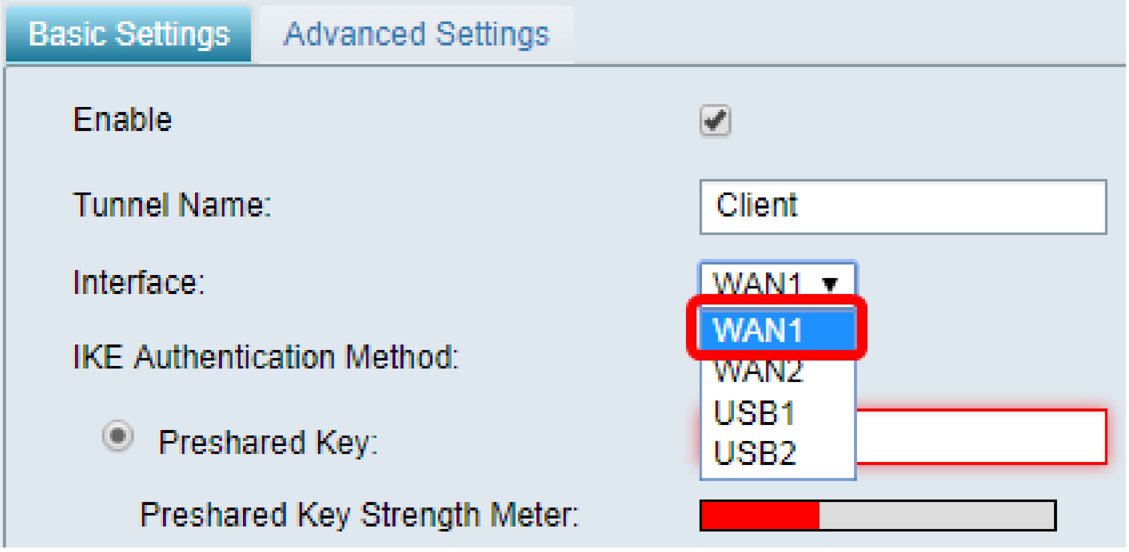
Enable ☑

Tunnel Name: Client

Interface: WAN1 ▼

Note: In this example, **Client** is entered.

Step 6. Choose the Interface to be used from the Interface drop-down list. The options are WAN1, WAN2, USB1, and USB2 which will use the corresponding interface on the router for the VPN connection.



Enable ☑

Tunnel Name: Client

Interface: WAN1 ▼

IKE Authentication Method:

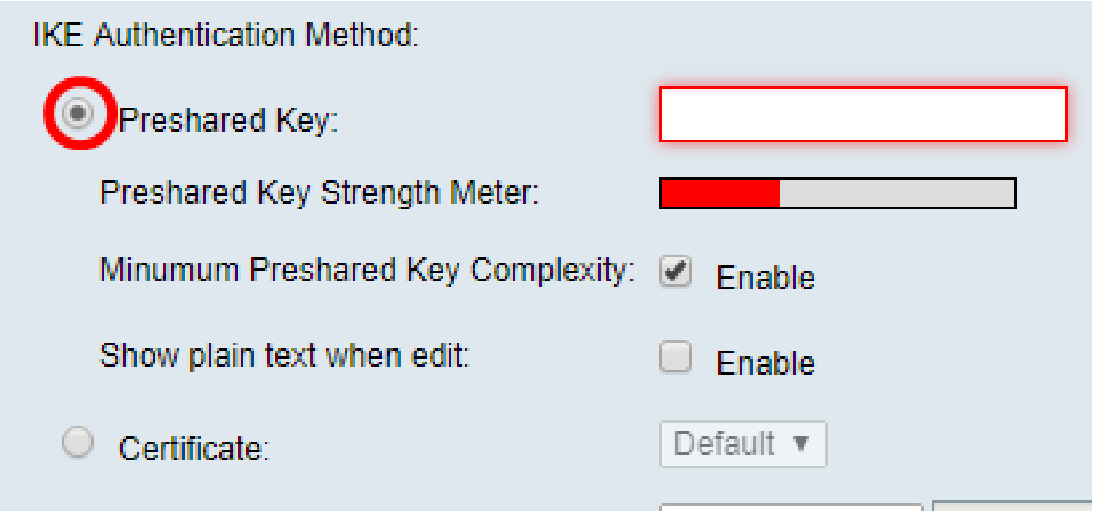
● Preshared Key:

Preshared Key Strength Meter:

Note: The options depend on the model of router you are using. In this example, WAN1 is chosen.

Step 7. Choose an IKE authentication method. The options are:

- Preshared Key — This option will let us use a shared password for the VPN connection.
- Certificate — This option uses a digital certificate that contains information such as the name, or IP address, serial number, expiration date of the certificate, and a copy of the public key of the bearer of the certificate.



IKE Authentication Method:

● Preshared Key:

Preshared Key Strength Meter:

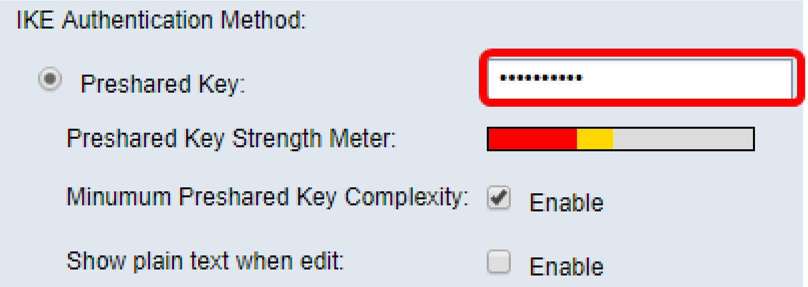
Minumum Preshared Key Complexity: ☑ Enable

Show plain text when edit: □ Enable

○ Certificate: Default ▼

Note: In this example, Preshared Key is chosen.

Step 8. Enter the connection password in the *Preshared Key* field.



IKE Authentication Method:

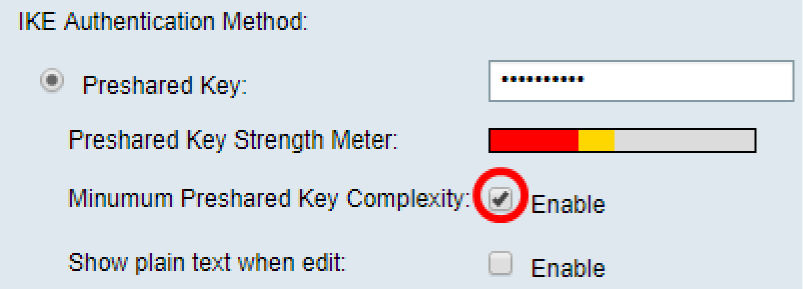
● Preshared Key: •••••••••••

Preshared Key Strength Meter:

Minumum Preshared Key Complexity: ☑ Enable

Show plain text when edit: □ Enable

Step 9. (Optional) Uncheck the Minimum Preshared Key Complexity **Enable** check box to be able to use a simple password.



IKE Authentication Method:

● Preshared Key: •••••••••••

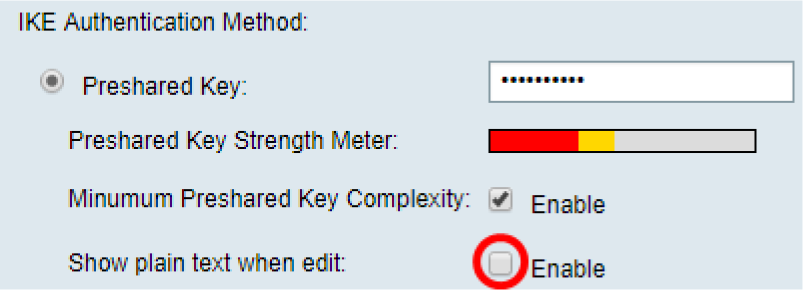
Preshared Key Strength Meter:

Minumum Preshared Key Complexity: ☑ Enable

Show plain text when edit: □ Enable

Note: In this example, Minimum Preshared Key Complexity is left enabled.

Step 10. (Optional) Check the Show plain text when edit **Enable** check box to show the password in plain text.



IKE Authentication Method:

● Preshared Key: •••••••••••

Preshared Key Strength Meter:

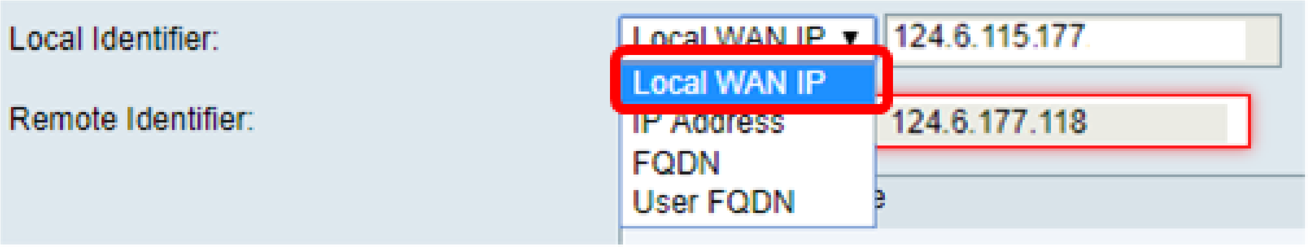
Minumum Preshared Key Complexity: ☑ Enable

Show plain text when edit: □ Enable

Note: In this example, Show plain text when the edit is left disabled.

Step 11. Choose a local identifier from the Local Identifier drop-down list. The options are:

- Local WAN IP — This option uses the IP address of the Wide Area Network (WAN) Interface of the VPN gateway.
- IP Address — This option allows you to manually enter an IP address for the VPN connection.
- FQDN — This option is also known as Fully Qualified Domain Name (FQDN). It lets you use a complete domain name for a specific computer on the Internet.
- User FQDN — This option lets you use a complete domain name for a specific user on the Internet.



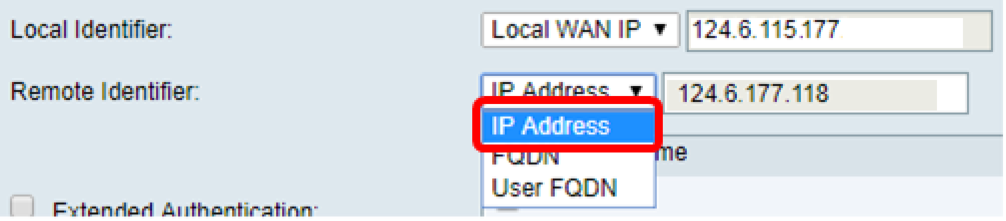
Local Identifier: Local WAN IP 124.6.115.177

Remote Identifier: 124.6.177.118

Note: In this example, Local WAN IP is chosen. With this option, the Local WAN IP is automatically detected.

Step 12. (Optional) Choose an identifier for the remote host. The options are:

- IP Address — This option uses the WAN IP address of the VPN client.
- FQDN — This option lets you use a complete domain name for a specific computer on the Internet.
- User FQDN — This option lets you use a complete domain name for a specific user on the Internet.



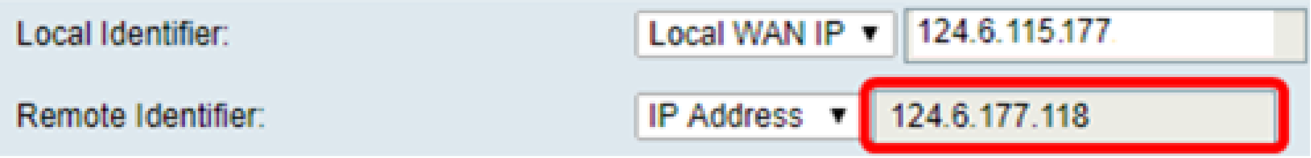
Local Identifier: Local WAN IP 124.6.115.177

Remote Identifier: IP Address 124.6.177.118

□ Extended Authentication:

Note: In this example, IP Address is chosen.

Step 13. Enter the remote identifier in the *Remote Identifier* field.

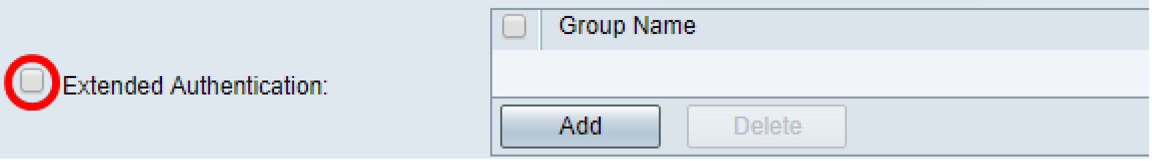


Local Identifier: Local WAN IP 124.6.115.177

Remote Identifier: IP Address 124.6.177.118

Note: In this example, 124.6.115.177 is entered.

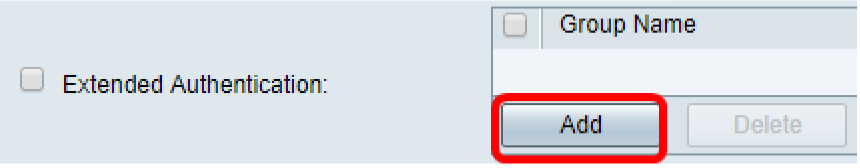
Step 14. (Optional) Check the **Extended Authentication** check box to activate the feature. When activated, this will provide an additional level of authentication that will require remote users to key in their credentials before being granted access to the VPN.



□ Extended Authentication:

Note: In this example, Extended Authentication is left unchecked.

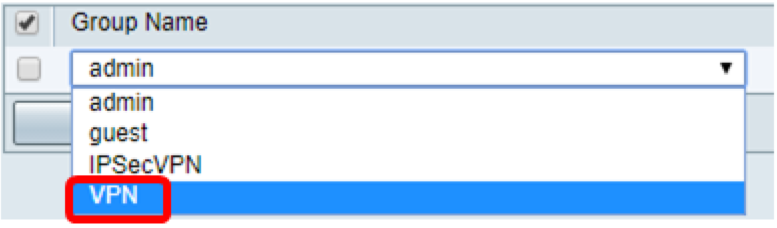
Step 15. Under Group Name, click **Add**.



☐ Extended Authentication:

☐ Group Name

Step 16. Choose the group that will be using extended authentication from the Group Name drop-down list.

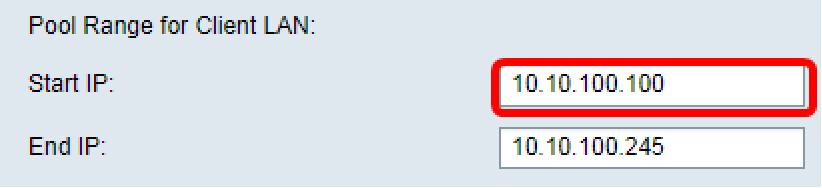


☑ Group Name

☐ admin ▾

Note: In this example, VPN is chosen.

Step 17. Under Pool Range for Client LAN, enter the first IP address that can be assigned to a VPN client in the *Start IP* field.



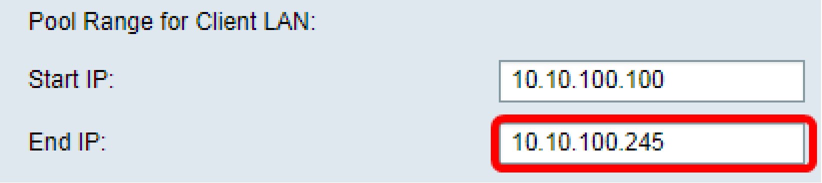
Pool Range for Client LAN:

Start IP: 10.10.100.100

End IP: 10.10.100.245

Note: In this example, 10.10.100.100 is entered.

Step 18. Enter the last IP address that can be assigned to a VPN client in the *End IP* field.



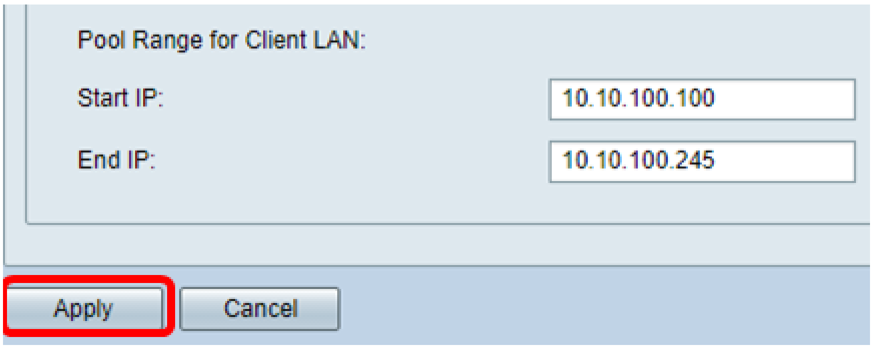
Pool Range for Client LAN:

Start IP: 10.10.100.100

End IP: 10.10.100.245

Note: In this example, 10.10.100.245 is entered.

Step 19. Click **Apply**.

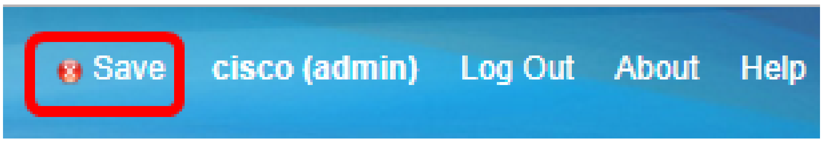


Pool Range for Client LAN:

Start IP: 10.10.100.100

End IP: 10.10.100.245

Step 20. Click **Save**.

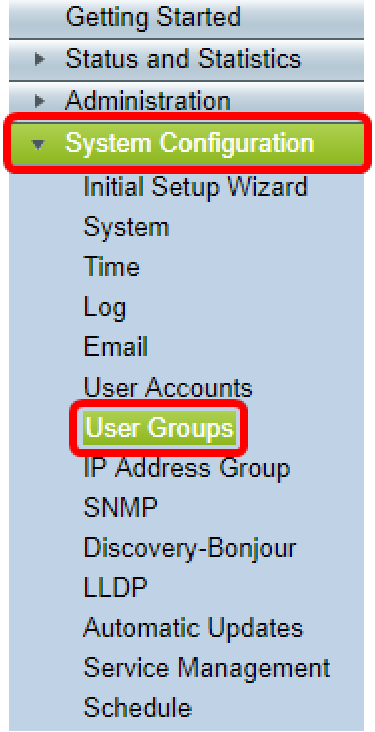


You should now have configured the Client-to-Site Profile on the router for TheGreenBow VPN Client.

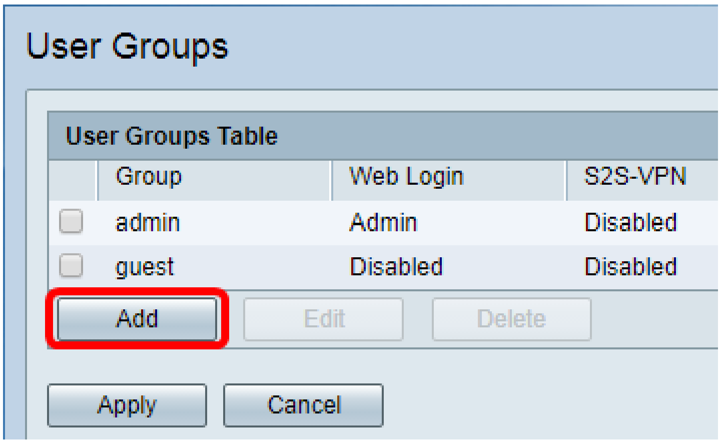
Create a User Group

Step 1. Log in to the web-based utility of the router and choose **System Configuration > User Groups**.

Note: The images in this article are from an RV340 Router. Options may vary depending on the model of your device.



Step 2. Click **Add** to add a User Group.

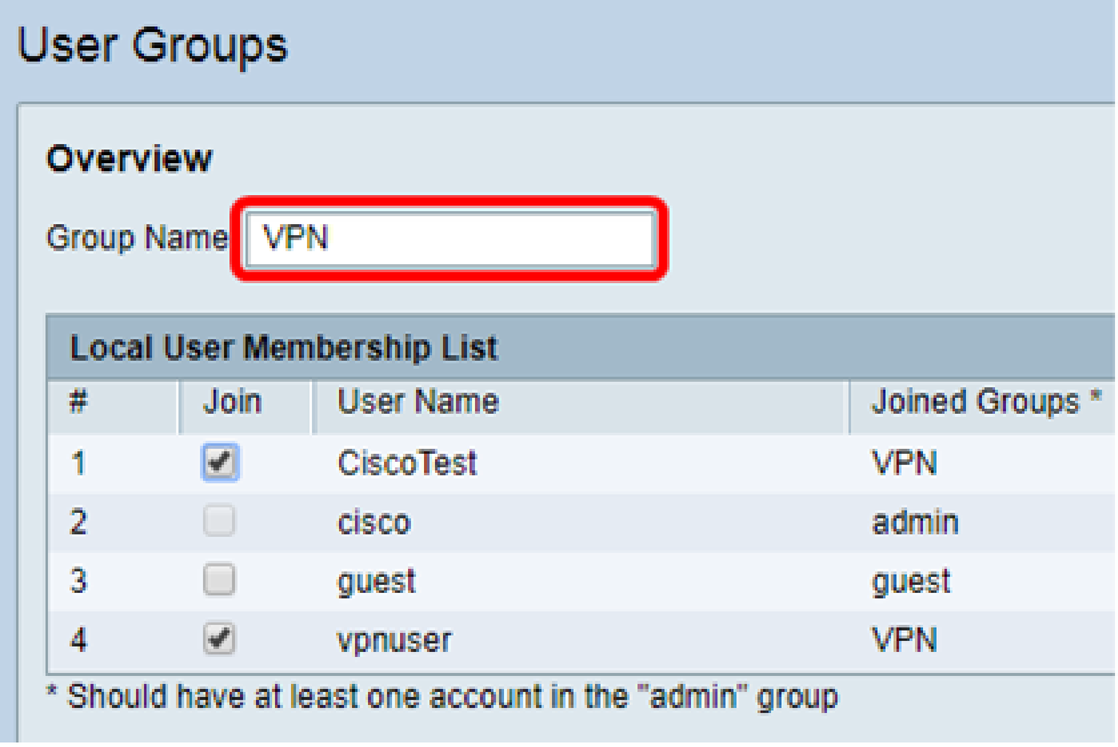


User Groups

User Groups Table

	Group	Web Login	S2S-VPN
☐	admin	Admin	Disabled
☐	guest	Disabled	Disabled

Step 3. In the Overview area, enter the name of the group in the *Group Name* field.



User Groups

Overview

Group Name: VPN

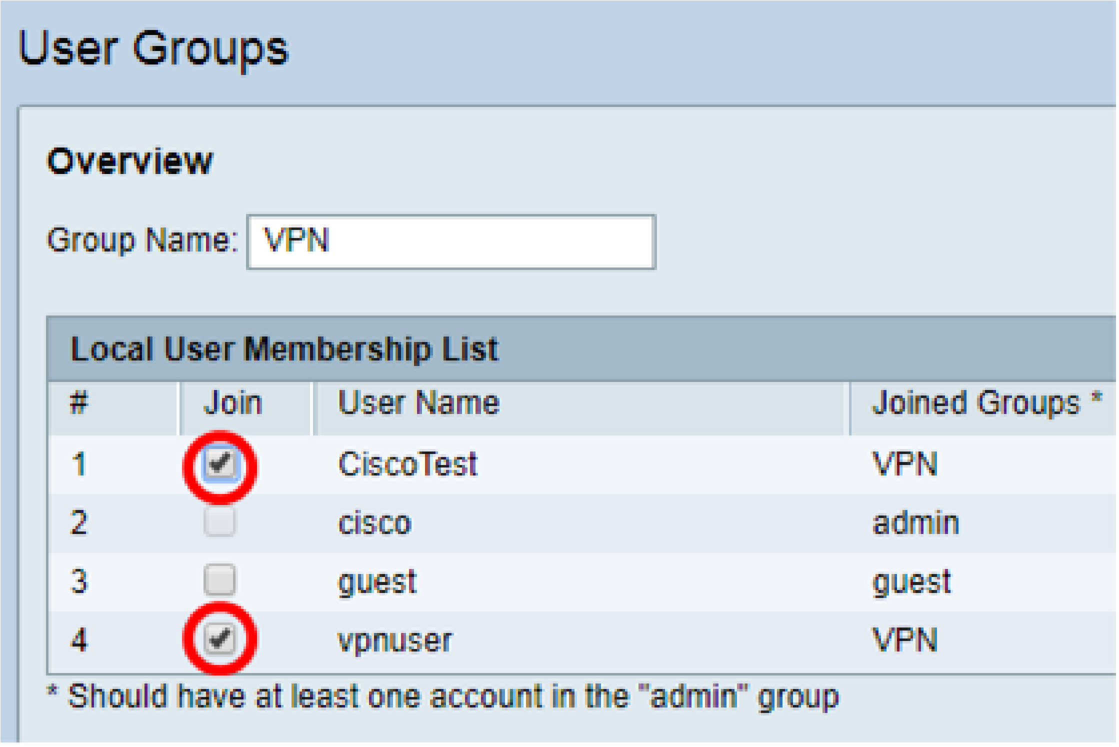
Local User Membership List

#	Join	User Name	Joined Groups *
1	☑	CiscoTest	VPN
2	□	cisco	admin
3	□	guest	guest
4	☑	vpnuser	VPN

* Should have at least one account in the "admin" group

Note: In this example, VPN is used.

Step 4. Under Local Membership List, check the check boxes of the user names that need to be in the same group.



User Groups

Overview

Group Name: VPN

Local User Membership List

#	Join	User Name	Joined Groups *
1	☑	CiscoTest	VPN
2	□	cisco	admin
3	□	guest	guest
4	☑	vpnuser	VPN

* Should have at least one account in the "admin" group

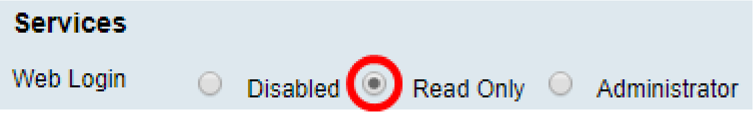
Note: In this example, CiscoTest and vpnuser are chosen.

Step 5. Under Services, choose a permission to be granted to the users in the group. The options are:

- Disabled — This option means that members of the group are not permitted to access the web-based utility through a browser.
- Read Only — This option means that the members of the group can only read the status of

the system after they log in. They cannot edit any of the settings.

- Administrator — This option gives the members of the group read and write privileges, and be able to configure the system status.

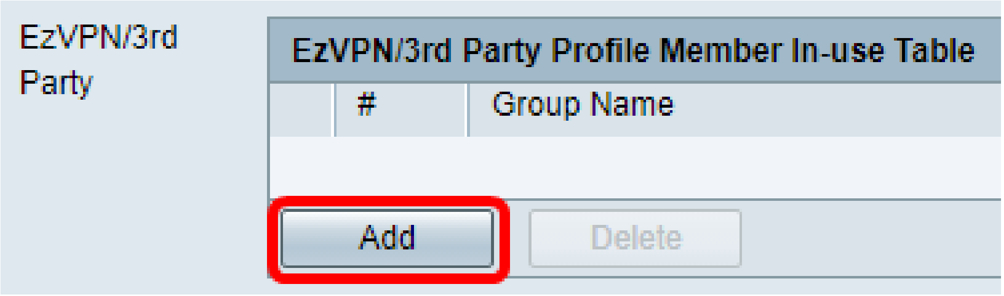


Services

Web Login ○ Disabled ● Read Only ○ Administrator

Note: In this example, Read Only is chosen.

Step 6. In the EzVPN/3rd Party Profile Member In-use Table, click **Add**.

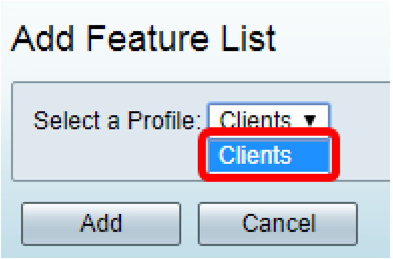


EzVPN/3rd Party

EzVPN/3rd Party Profile Member In-use Table

	#	Group Name

Step 7. Choose a profile from the Select a Profile drop-down list. The options may vary, depending on the profiles that have been configured on the VPN gateway.

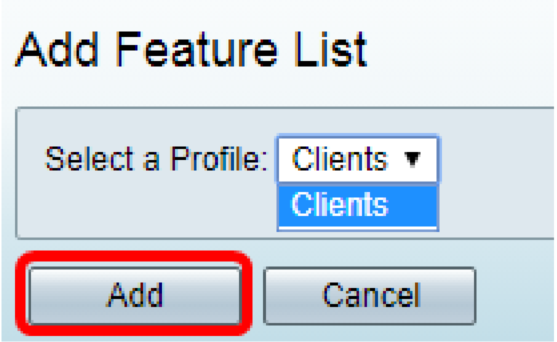


Add Feature List

Select a Profile: Clients

Note: In this example, Clients is chosen.

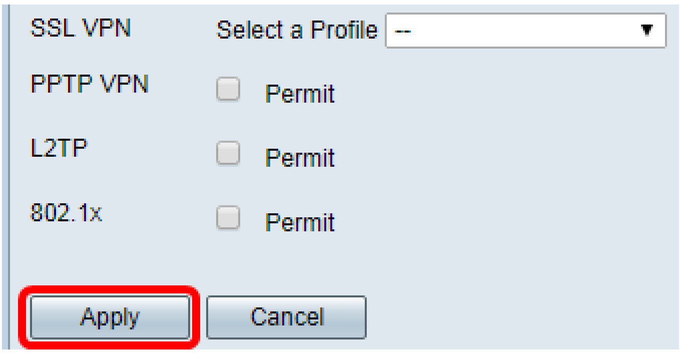
Step 8. Click **Add**.



Add Feature List

Select a Profile: Clients

Step 9. Click **Apply**.



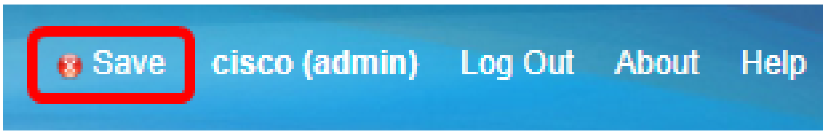
SSL VPN Select a Profile --

PPTP VPN □ Permit

L2TP □ Permit

802.1x □ Permit

Step 10. Click **Save**.

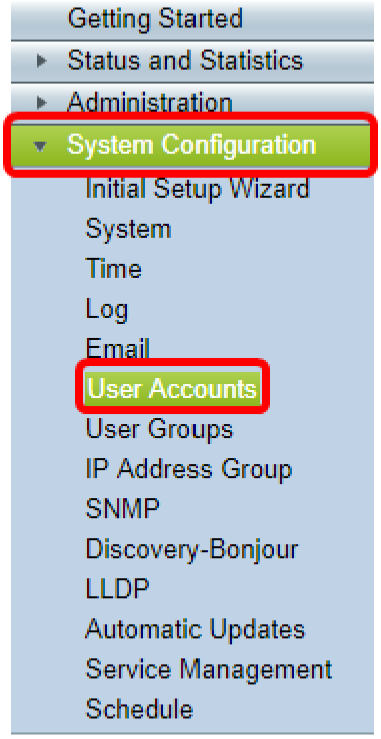


You should now have successfully created a user group on the RV34x Series Router.

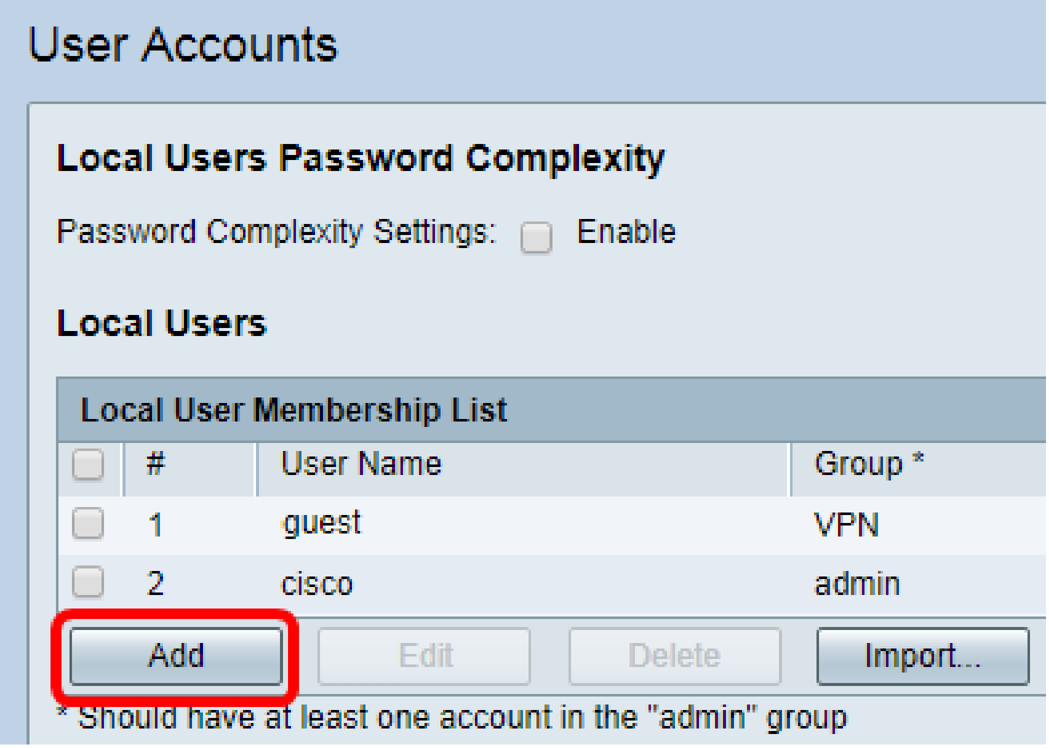
Create a User Account

Step 1. Log in to the web-based utility of the router and choose **System Configuration > User Accounts**.

Note: The images in this article are taken from an RV340 Router. Options may vary depending on the model of your device.



Step 2. In the Local User Membership List area, click **Add**.



User Accounts

Local Users Password Complexity

Password Complexity Settings: □ Enable

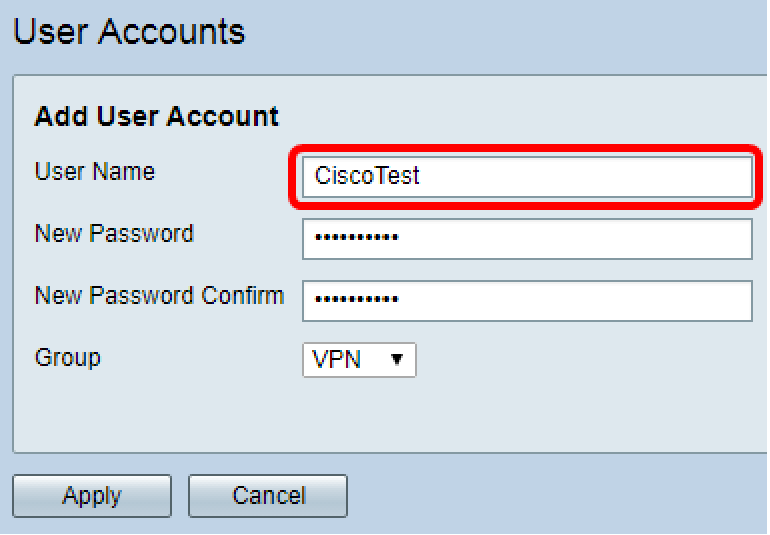
Local Users

Local User Membership List

□	#	User Name	Group *
□	1	guest	VPN
□	2	cisco	admin

* Should have at least one account in the "admin" group

Step 3. Enter a name for the user in the *User Name* field.



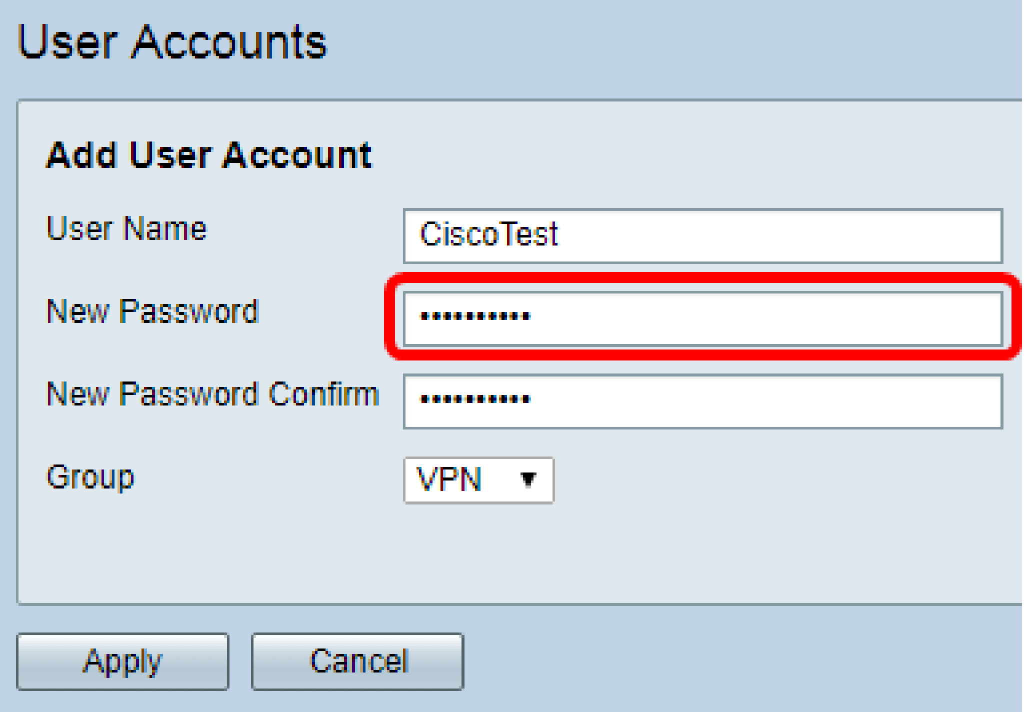
User Accounts

Add User Account

User Name	CiscoTest
New Password	••••••••••
New Password Confirm	••••••••••
Group	VPN ▾

Note: In this example, CiscoTest is entered.

Step 4. Enter the user password in the *New Password* field.



User Accounts

Add User Account

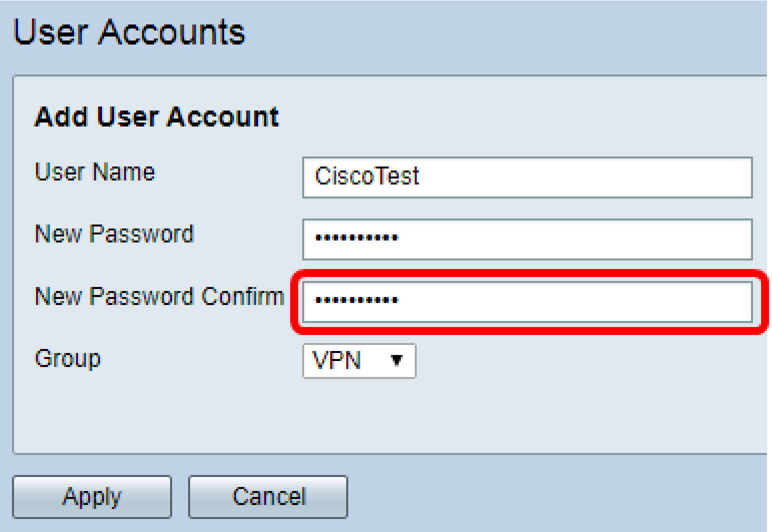
User Name: CiscoTest

New Password: ••••••••••

New Password Confirm: ••••••••••

Group: VPN

Step 5. Confirm the password in the *New Password Confirm* box.



User Accounts

Add User Account

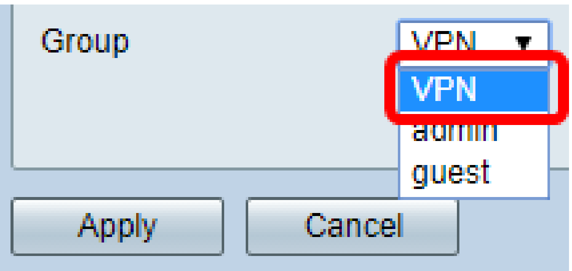
User Name: CiscoTest

New Password: ••••••••••

New Password Confirm: ••••••••••

Group: VPN

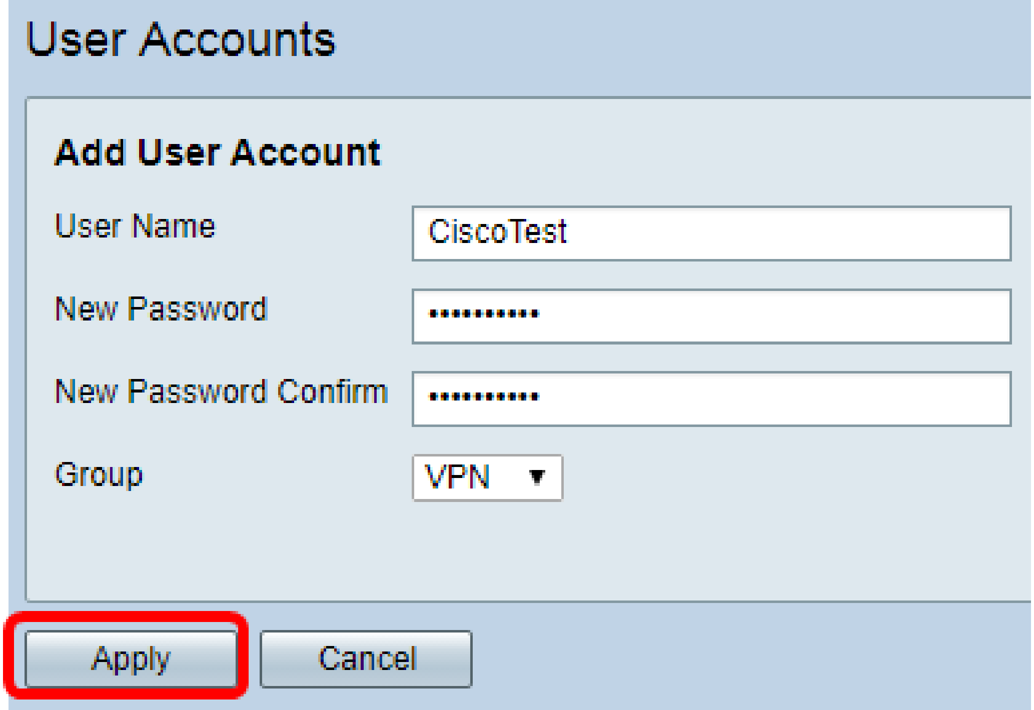
Step 6. Choose a group from the Group drop-down list. This is the group that the user will be associated to.



Group: VPN

Note: In this example, VPN is chosen.

Step 7. Click **Apply**.

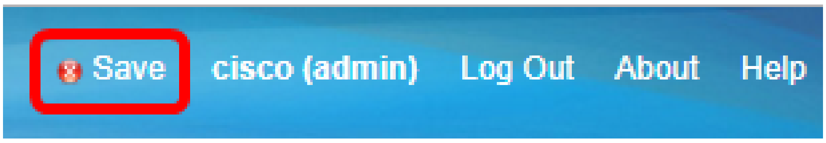


User Accounts

Add User Account

User Name	CiscoTest
New Password	•••••••••••
New Password Confirm	•••••••••••
Group	VPN ▼

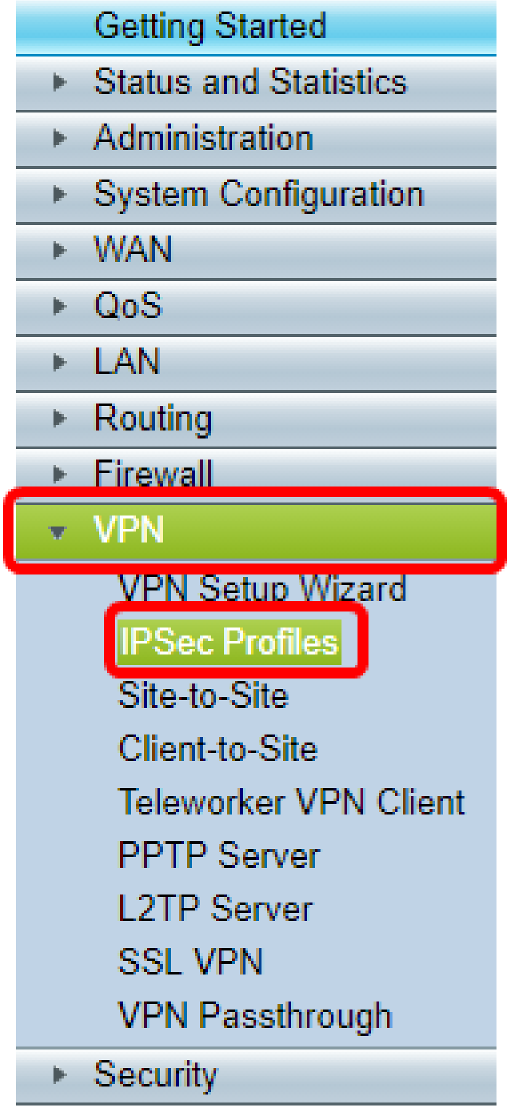
Step 8. Click **Save**.



You should now have created a User Account on your RV34x Series Router.

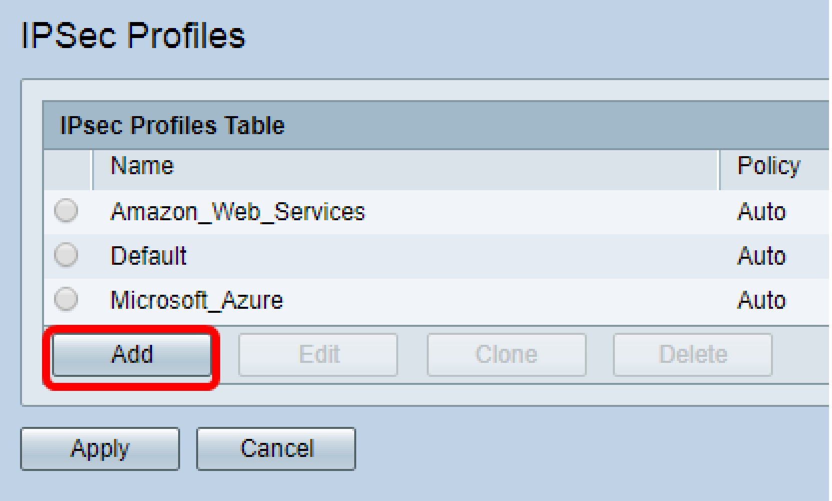
Configure IPSec Profile

Step 1. Log in to the web-based utility of the RV34x Router and choose **VPN > IPSec Profiles**.



Note: The images in this article are taken from the RV340 Router. Options may vary depending on the model of your device.

Step 2. The IPSec Profiles Table shows the existing profiles. Click **Add** to create a new profile.

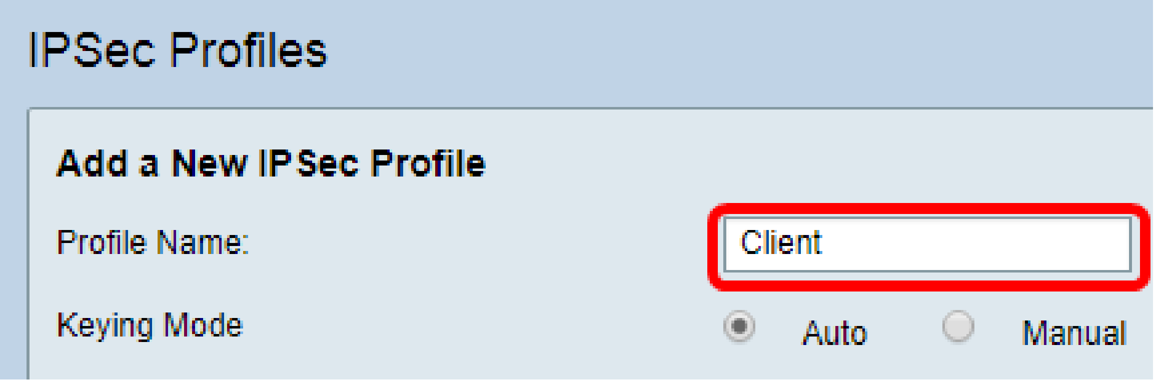

IPSec Profiles

IPsec Profiles Table

	Name	Policy
○	Amazon_Web_Services	Auto
○	Default	Auto
○	Microsoft_Azure	Auto

Note: Amazon_Web_Services, Default, and Microsoft_Azure are default profiles.

Step 3. Create a name for the profile in the *Profile Name* field. The profile name must contain only alphanumeric characters and an underscore (_) for special characters.



IPSec Profiles

Add a New IPSec Profile

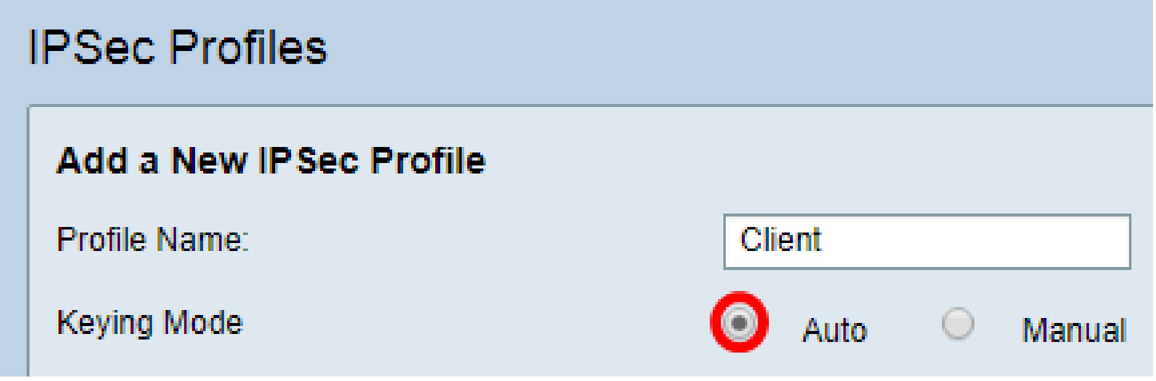
Profile Name: Client

Keying Mode ● Auto ○ Manual

Note: In this example, Client is entered.

Step 4. Click a radio button to determine the key exchange method the profile will use to authenticate. The options are:

- Auto — Policy parameters are set automatically. This option uses an Internet Key Exchange (IKE) policy for data integrity and encryption key exchanges. If this is chosen, the configuration settings under the Auto Policy Parameters area are enabled. If this option is chosen, skip to Configure Auto Settings.
- Manual — This option allows you to manually configure the keys for data encryption and integrity for the VPN tunnel. If this is chosen, the configuration settings under the Manual Policy Parameters area are enabled. If this option is chosen, skip to Configure Manual Settings.



IPSec Profiles

Add a New IPSec Profile

Profile Name: Client

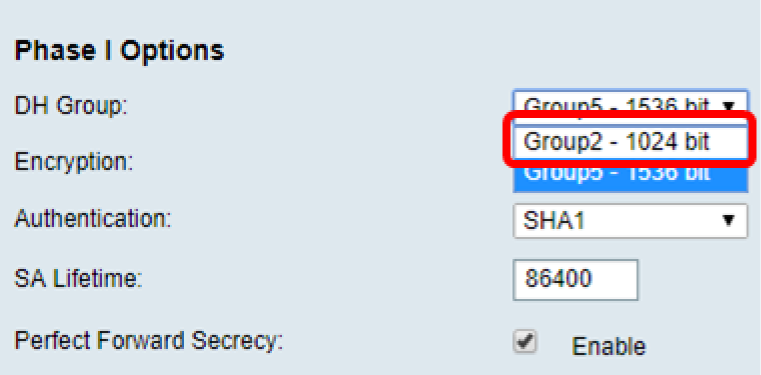
Keying Mode ● Auto ○ Manual

Note: For this example, Auto was chosen.

Configure the Phase I and Phase II Settings

Step 1. In the Phase 1 Options area, choose the appropriate Diffie-Hellman (DH) group to be used with the key in Phase 1 from the DH Group drop-down list. Diffie-Hellman is a cryptographic key exchange protocol which is used in the connection to exchange pre-shared key sets. The strength of the algorithm is determined by bits. The options are:

- Group2-1024 bit — This option computes the key slower, but is more secure than Group 1.
- Group5-1536 bit — This option computes the key the slowest, but is the most secure.



Phase I Options

DH Group: Group5 - 1536 bit

Encryption:

Authentication: SHA1

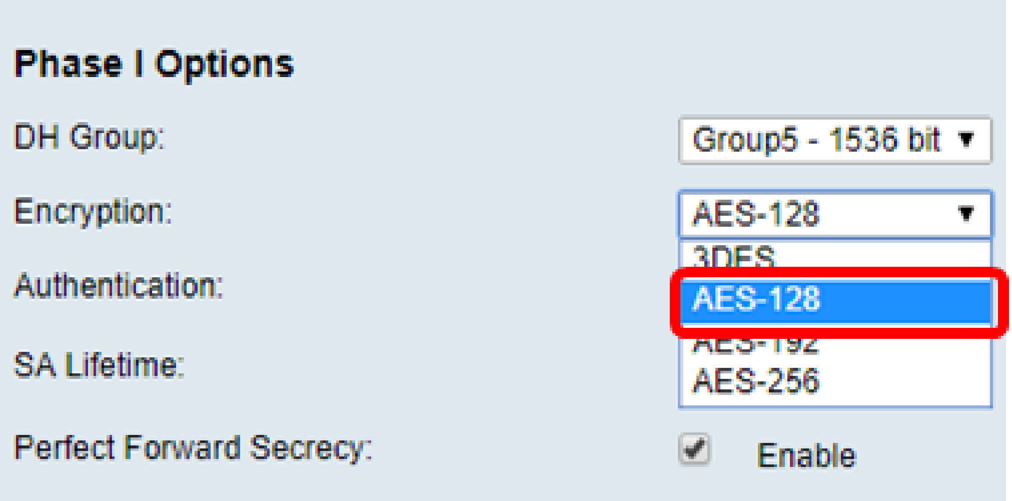
SA Lifetime: 86400

Perfect Forward Secrecy: ☑ Enable

Note: In this example, Group5-1536 bit is chosen.

Step 2. From the Encryption drop-down list, choose an encryption method to encrypt and decrypt Encapsulating Security Payload (ESP) and Internet Security Association and Key Management Protocol (ISAKMP). The options are:

- 3DES — Triple Data Encryption Standard.
- AES-128 — Advanced Encryption Standard uses a 128-bit key.
- AES-192 — Advanced Encryption Standard uses a 192-bit key.
- AES-256 — Advanced Encryption Standard uses a 256-bit key.



Phase I Options

DH Group: Group5 - 1536 bit

Encryption: AES-128

Authentication:

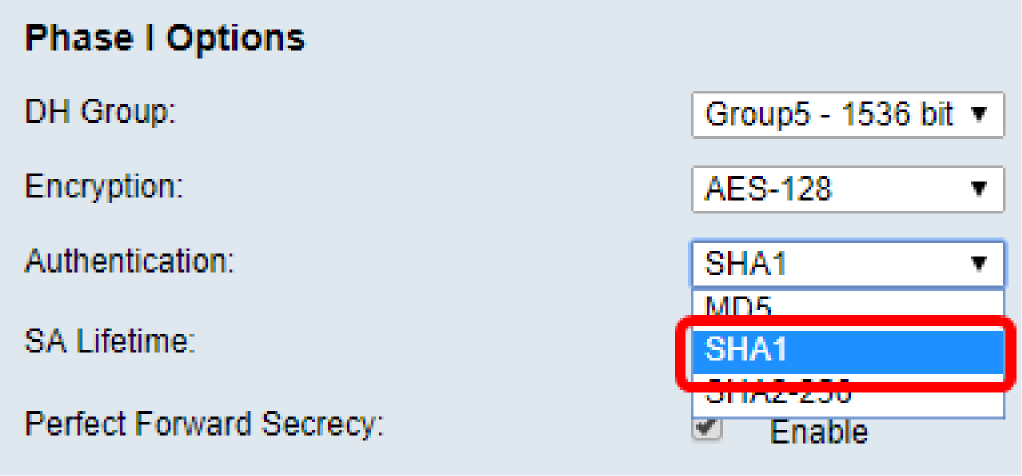
SA Lifetime:

Perfect Forward Secrecy: ☑ Enable

Note: AES is the standard method of encryption over DES and 3DES for its greater performance and security. Lengthening the AES key will increase security with a drop in performance. In this example, AES-128 is chosen.

Step 3. From the Authentication drop-down list, choose an authentication method that will determine how ESP and ISAKMP are authenticated. The options are:

- MD5 — Message-Digest Algorithm has a 128-bit hash value.
- SHA-1 — Secure Hash Algorithm has a 160-bit hash value.
- SHA2-256 — Secure Hash Algorithm with a 256-bit hash value.



Phase I Options

DH Group: Group5 - 1536 bit

Encryption: AES-128

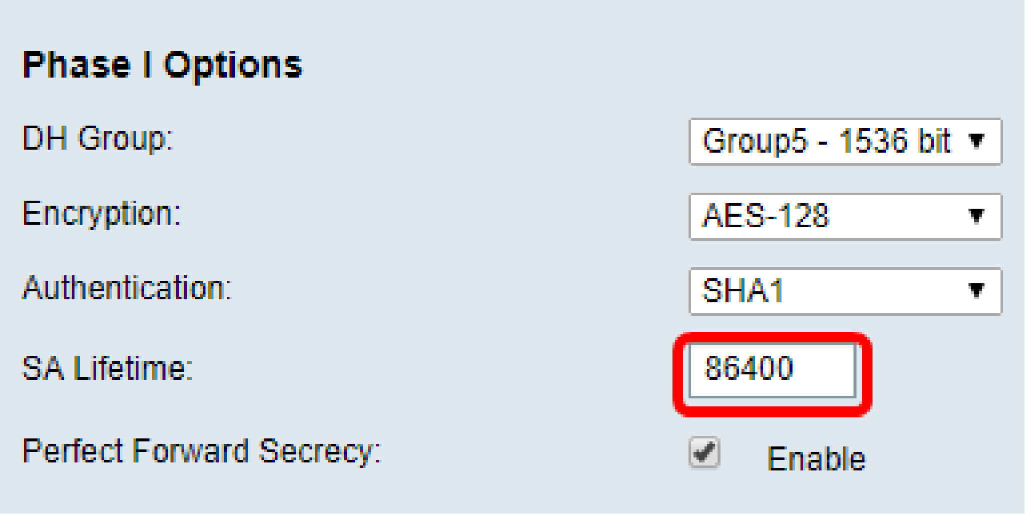
Authentication: SHA1

SA Lifetime:

Perfect Forward Secrecy: ☑ Enable

Note: MD5 and SHA are both cryptographic hash functions. They take a piece of data, compact it, and create a unique hexadecimal output that typically cannot be reproduced. In this example, SHA1 is chosen.

Step 4. In the *SA Lifetime* field, enter a value between 120 and 86400. This is the length of time the Internet Key Exchange (IKE) Security Association (SA) will remain active in the phase. The default value is 28800.



Phase I Options

DH Group: Group5 - 1536 bit

Encryption: AES-128

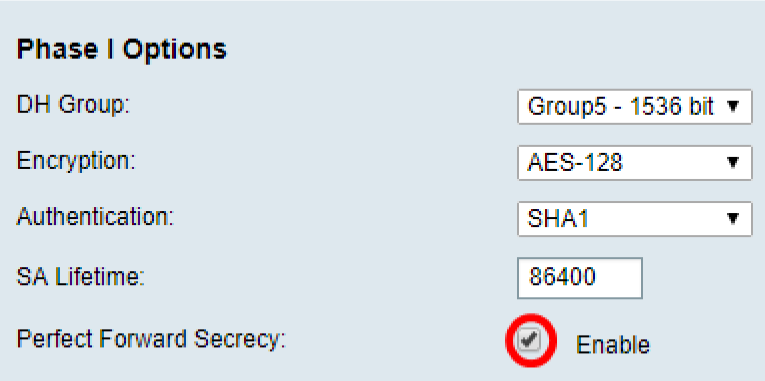
Authentication: SHA1

SA Lifetime: 86400

Perfect Forward Secrecy: ☑ Enable

Note: In this example, 86400 is entered.

Step 5. (Optional) Check the **Enable** Perfect Forward Secrecy check box to generate a new key for IPSec traffic encryption and authentication.



Phase I Options

DH Group: Group5 - 1536 bit

Encryption: AES-128

Authentication: SHA1

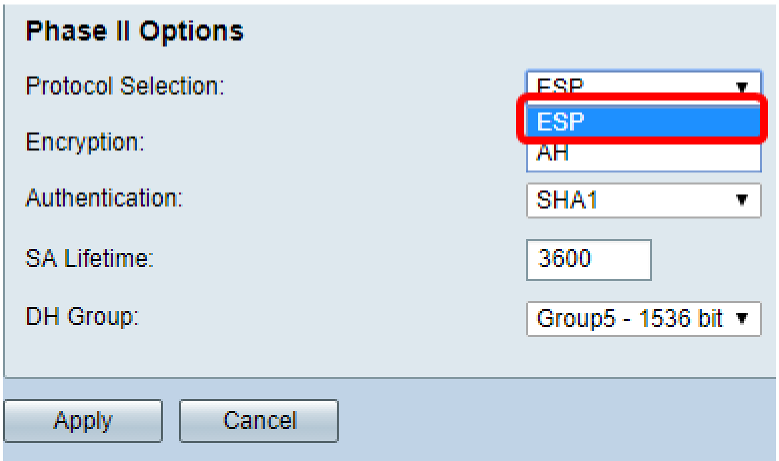
SA Lifetime: 86400

Perfect Forward Secrecy: ☑ Enable

Note: In this example, Perfect Forward Secrecy is enabled.

Step 6. From the Protocol Selection drop-down list in the Phase II Options area, choose a protocol type to apply to the second phase of the negotiation. The options are:

- ESP — This option encapsulates the data to be protected. If this option is chosen, proceed to Step 7 to choose an encryption method.
- AH — This option is also known as Authentication Header (AH). It is a security protocol which provides data authentication and optional anti-replay service. AH is embedded in the IP datagram to be protected. If this option is chosen, skip to Step 8.



Phase II Options

Protocol Selection: ESP

Encryption:

Authentication: SHA1

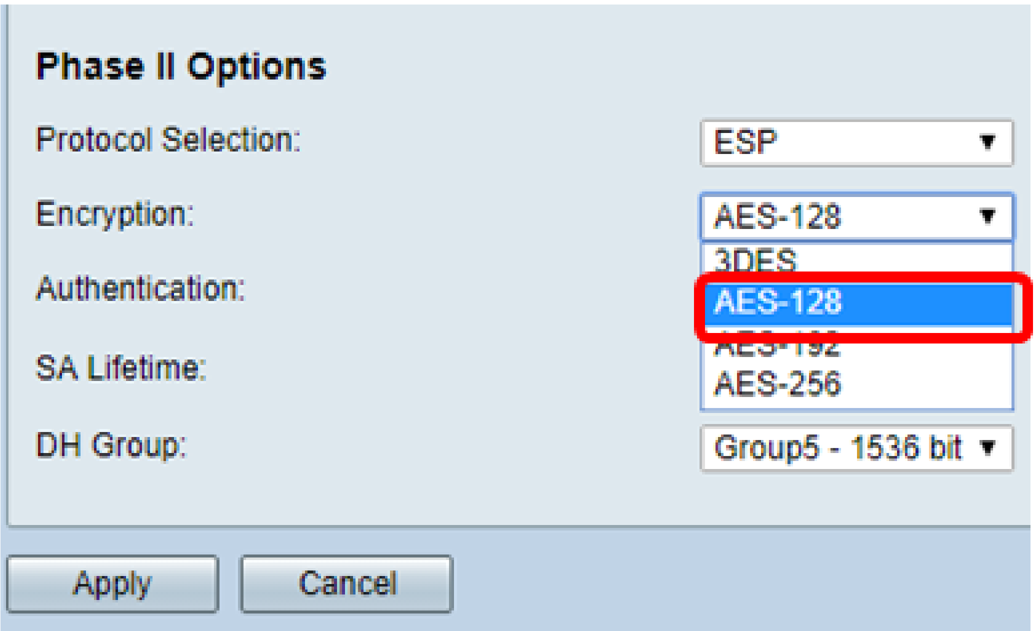
SA Lifetime: 3600

DH Group: Group5 - 1536 bit

Note: In this example, ESP is chosen.

Step 7. If ESP was chosen in Step 6, choose an authentication method that will determine how ESP and ISAKMP are authenticated. The options are:

- 3DES — Triple Data Encryption Standard
- AES-128 — Advanced Encryption Standard uses a 128-bit key.
- AES-192 — Advanced Encryption Standard uses a 192-bit key.
- AES-256 — Advanced Encryption Standard uses a 256-bit key.



Phase II Options

Protocol Selection: ESP

Encryption: AES-128

Authentication:

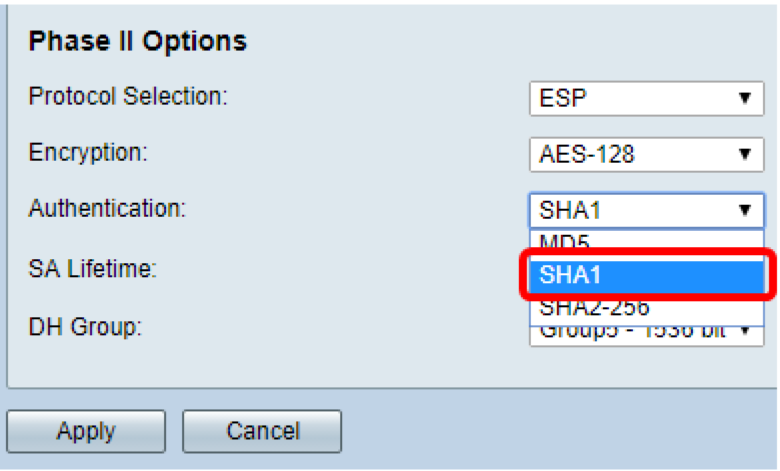
SA Lifetime:

DH Group: Group5 - 1536 bit

Note: In this example, AES-128 is chosen.

Step 8. From the Authentication drop-down list, choose an authentication method that will determine how ESP and ISAKMP are authenticated. The options are:

- MD5 — Message-Digest Algorithm has a 128-bit hash value.
- SHA-1 — Secure Hash Algorithm has a 160-bit hash value.
- SHA2-256 — Secure Hash Algorithm with a 256-bit hash value.



Phase II Options

Protocol Selection: ESP

Encryption: AES-128

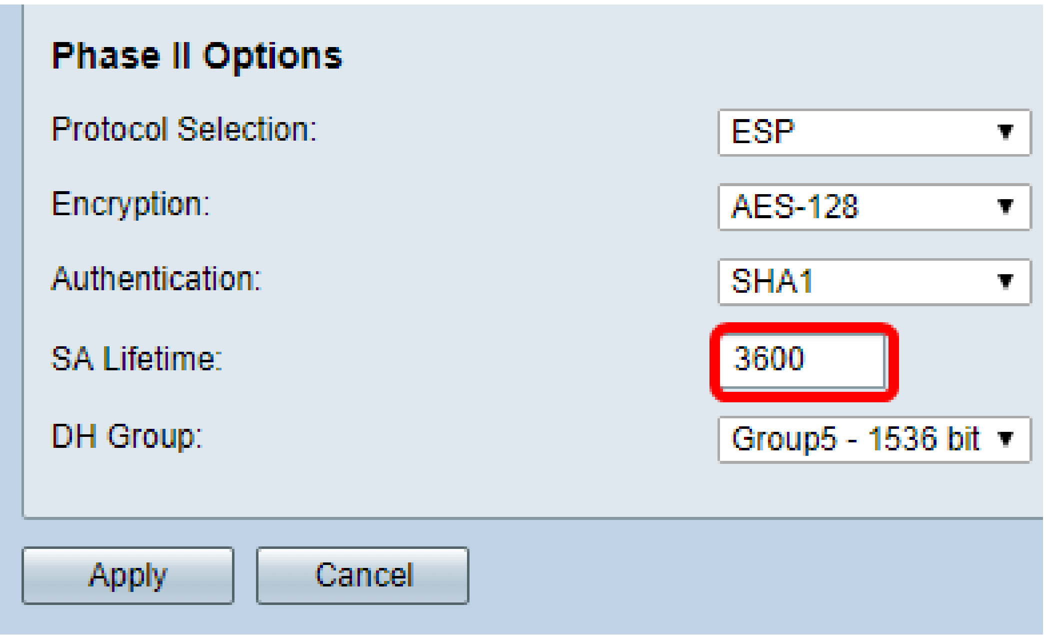
Authentication: SHA1

Note: In this example, SHA1 is chosen.

Step 9. In the *SA Lifetime* field, enter a value between 120 and 28800. This is the length of time the IKE SA will remain active in this phase. The default value is 3600.

Step 10. From the DH Group drop-down list, choose a DH group to be used with the key in Phase 2. The options are:

- Group2-1024 bit — This option computes the key slower, but is more secure than Group1.
- Group5-1536 bit — This option computes the key the slowest, but is the most secure.



Phase II Options

Protocol Selection: ESP

Encryption: AES-128

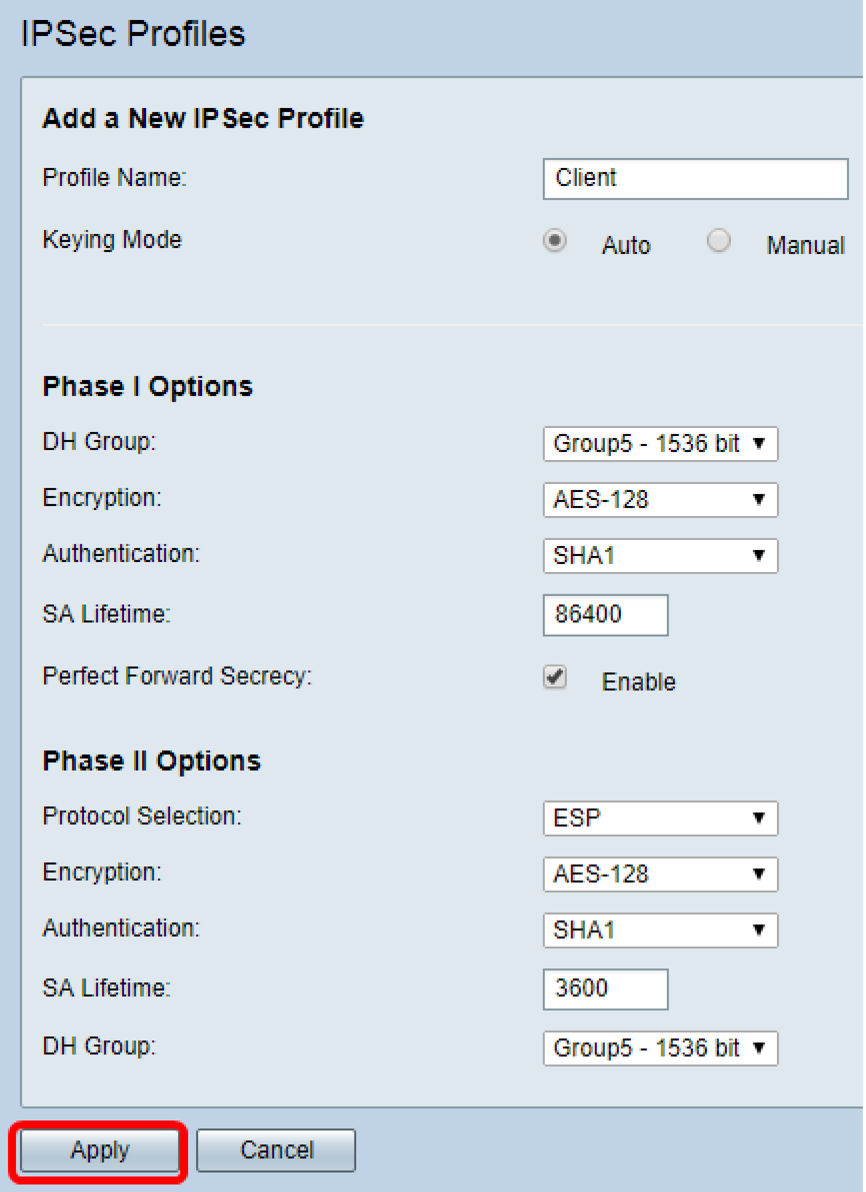
Authentication: SHA1

SA Lifetime: 3600

DH Group: Group5 - 1536 bit

Note: In this example, 3600 is entered.

Step 11. Click **Apply**.



IPSec Profiles

Add a New IPSec Profile

Profile Name:	Client
Keying Mode	● Auto ○ Manual

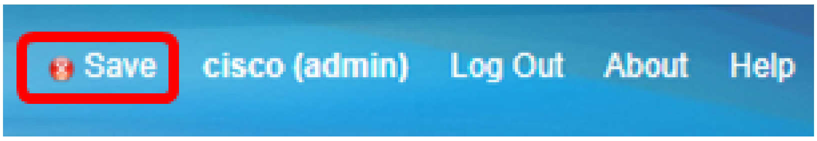
Phase I Options

DH Group:	Group5 - 1536 bit ▼
Encryption:	AES-128 ▼
Authentication:	SHA1 ▼
SA Lifetime:	86400
Perfect Forward Secrecy:	☑ Enable

Phase II Options

Protocol Selection:	ESP ▼
Encryption:	AES-128 ▼
Authentication:	SHA1 ▼
SA Lifetime:	3600
DH Group:	Group5 - 1536 bit ▼

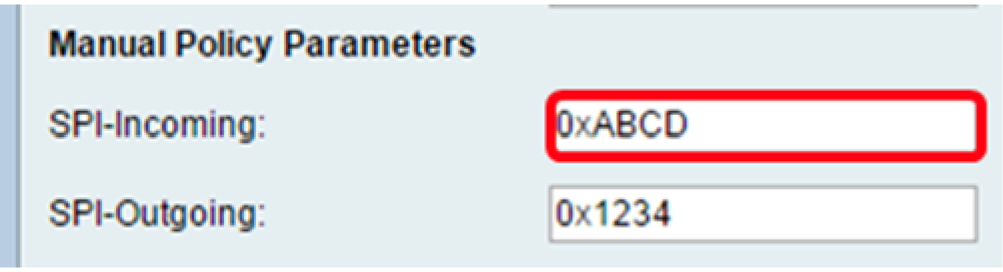
Step 12. Click **Save** to save the configuration permanently.



You should now have successfully configured an Automatic IPSec Profile on your RV34x Series Router.

Configure the Manual Settings

Step 1. In the *SPI-Incoming* field, enter a hexadecimal value from 100 to FFFFFFF for the Security Parameter Index (SPI) tag for incoming traffic on the VPN connection. The SPI tag is used to distinguish the traffic of one session from the traffic of other sessions.



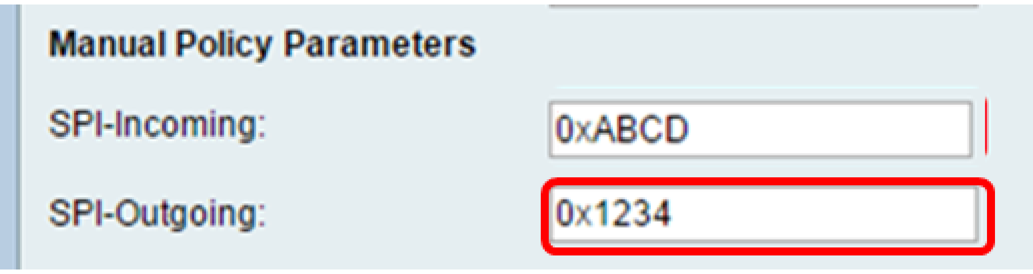
Manual Policy Parameters

SPI-Incoming: 0xABCD

SPI-Outgoing: 0x1234

Note: In this example, 0xABCD is entered.

Step 2. In the *SPI-Outgoing* field, enter a hexadecimal value from 100 to FFFFFFF for the SPI tag for outgoing traffic on the VPN connection.



Manual Policy Parameters

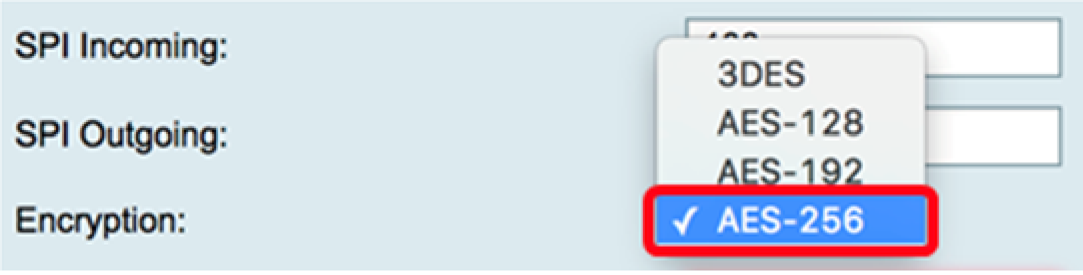
SPI-Incoming: 0xABCD

SPI-Outgoing: 0x1234

Note: In this example, 0x1234 is entered.

Step 3. Choose an encryption value from the drop-down list. The options are:

- 3DES — Triple Data Encryption Standard
- AES-128 — Advanced Encryption Standard uses a 128-bit key.
- AES-192 — Advanced Encryption Standard uses a 192-bit key.



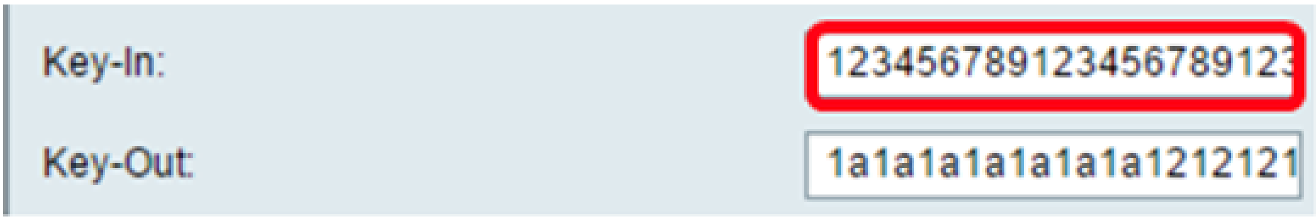
SPI Incoming:

SPI Outgoing:

Encryption: AES-256

Note: In this example, AES-256 is chosen.

Step 4. In the *Key-In* field, enter a key for the inbound policy. The length of the key will depend on the algorithm chosen in Step 3.

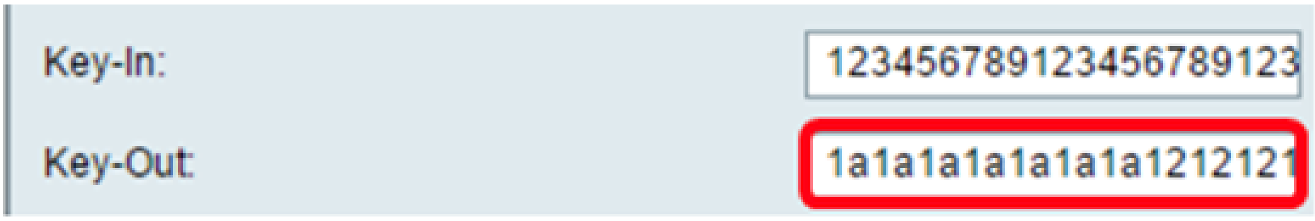


Key-In: 12345678912345678912

Key-Out: 1a1a1a1a1a1a1a1212121

Note: In this example, 123456789123456789123… is entered.

Step 5. In the *Key-Out* field, enter a key for the outgoing policy. The length of the key will depend on the algorithm chosen in Step 3.



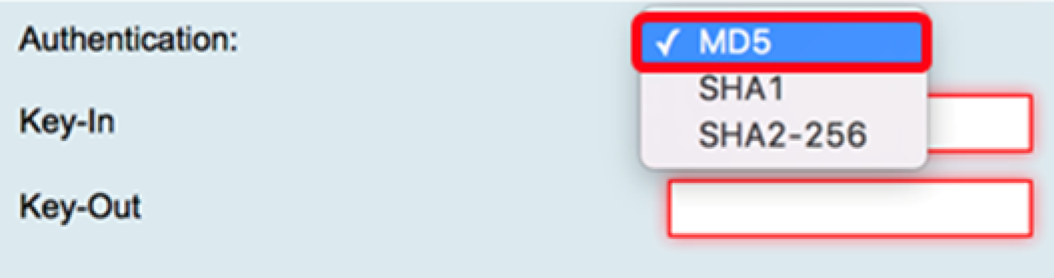
Key-In: 123456789123456789123

Key-Out: 1a1a1a1a1a1a1a1212121

Note: In this example, 1a1a1a1a1a1a1a12121212… is entered.

Step 6. Choose an authentication method from the Authentication drop-down list. The options are:

- MD5 — Message-Digest Algorithm has a 128-bit hash value.
- SHA-1 — Secure Hash Algorithm has a 160-bit hash value.
- SHA2-256 — Secure Hash Algorithm with a 256-bit hash value.



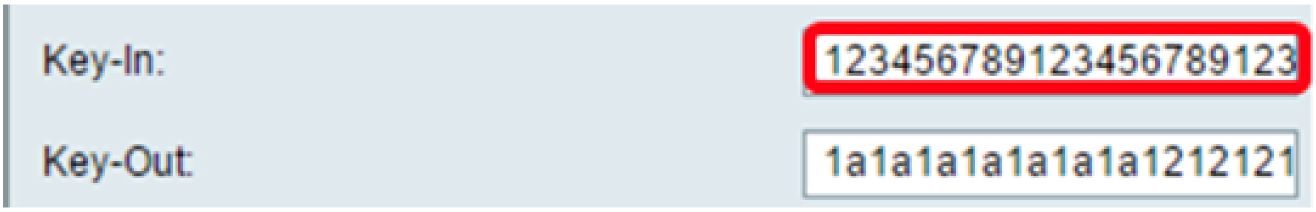
Authentication: ✓ MD5

Key-In

Key-Out

Note: In this example, MD5 is chosen.

Step 7. In the *Key-In* field, enter a key for the inbound policy. The length of the key will depend on the algorithm chosen in Step 6.

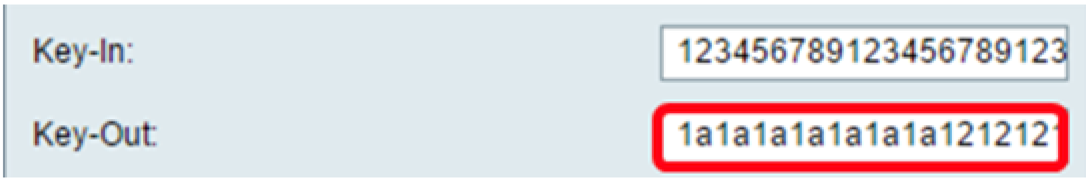


Key-In: 123456789123456789123

Key-Out: 1a1a1a1a1a1a1a1212121

Note: In this example, 123456789123456789123… is entered.

Step 8. In the *Key-Out* field, enter a key for the outgoing policy. The length of the key will depend on the algorithm chosen in Step 6.



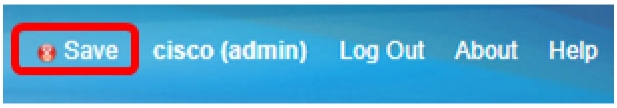
Key-In: 123456789123456789123

Key-Out: 1a1a1a1a1a1a1a121212

Note: In this example, 1a1a1a1a1a1a1a12121212… is entered.

Step 9. Click Apply .

Step 10. Click **Save** to save the configuration permanently.

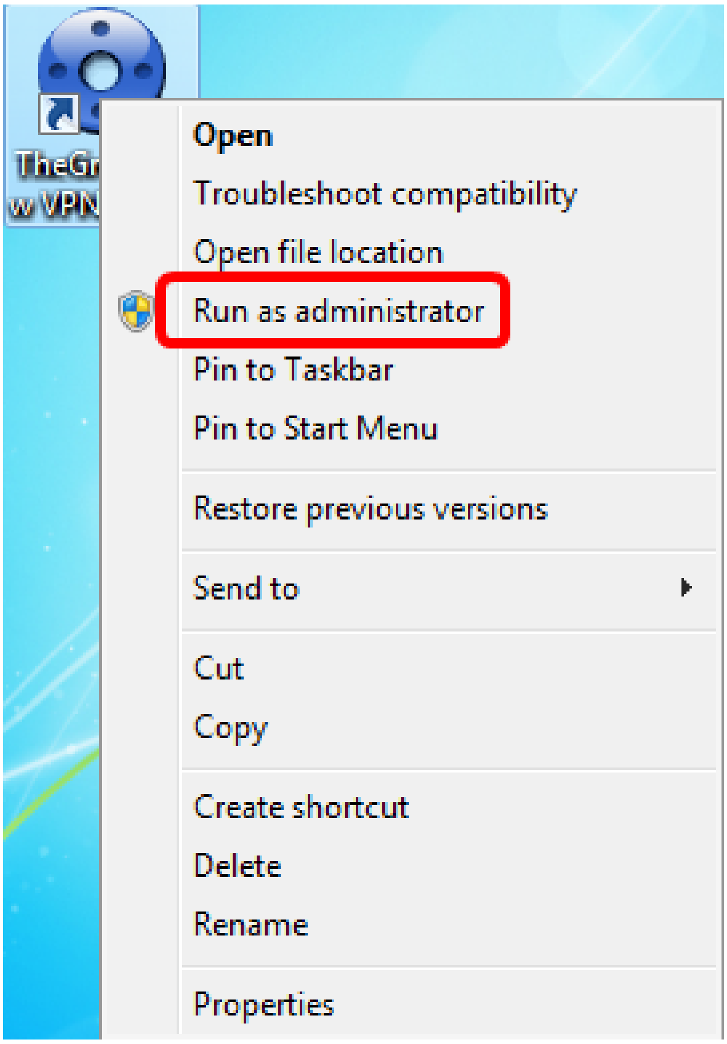


You should now have successfully configured a Manual IPSec Profile on an RV34x Series Router.

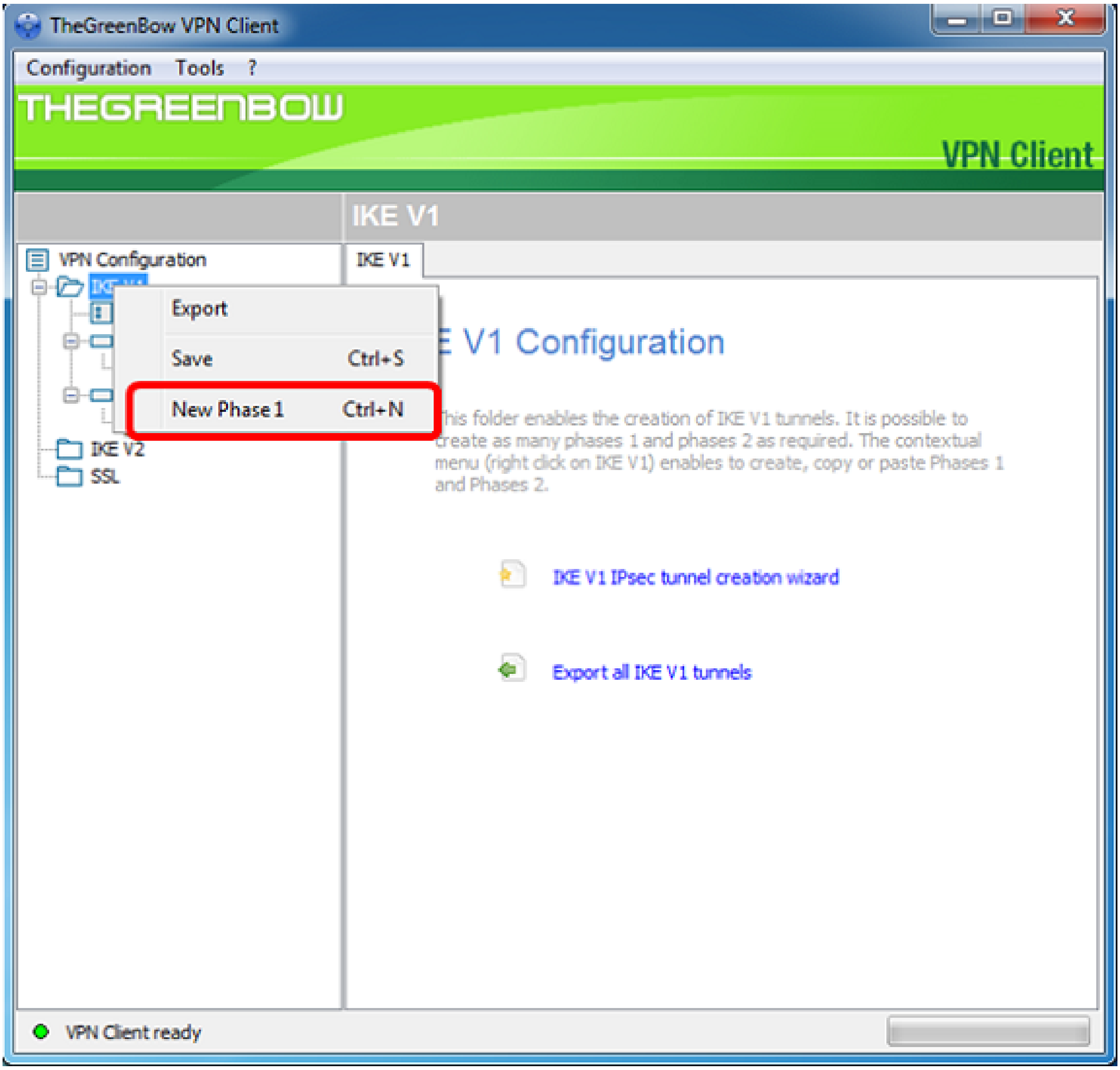
Configure TheGreenBow VPN Client Software

Configure Phase 1 Settings

Step 1. Right-click TheGreenBow VPN Client icon and choose **Run as administrator**.



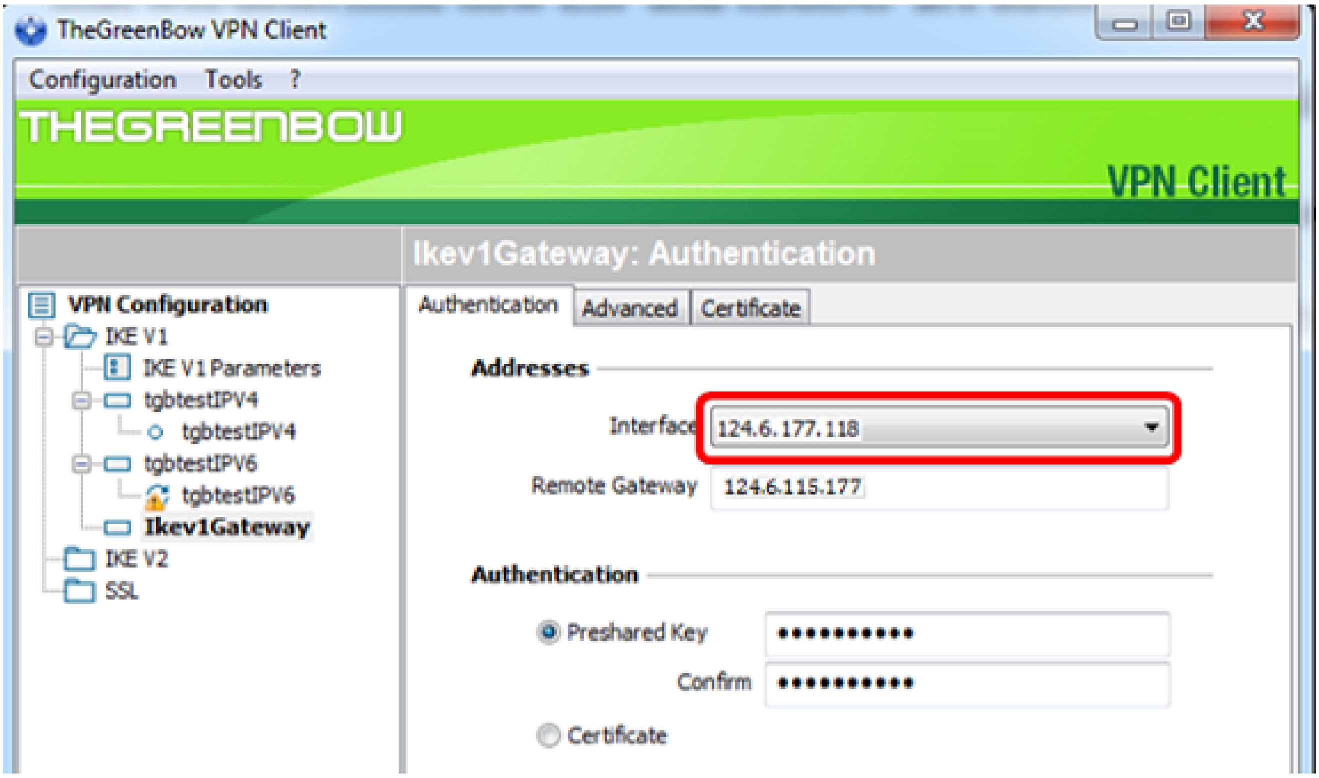
Step 2. On the left pane under VPN configuration, right-click **IKE V1** and choose **New Phase 1**.



This folder enables the creation of IKE V1 tunnels. It is possible to create as many phases 1 and phases 2 as required. The contextual menu (right click on IKE V1) enables to create, copy or paste Phases 1 and Phases 2.

Step 3. In the Authentication tab under Addresses, verify that the IP address in the Interface area is the same as the WAN IP address of the computer where TheGreenBow VPN Client is installed.

Note: In this example, the IP address is 124.6.177.118.



Ikev1Gateway: Authentication

Addresses

Interface 124.6.177.118

Remote Gateway 124.6.115.177

Authentication

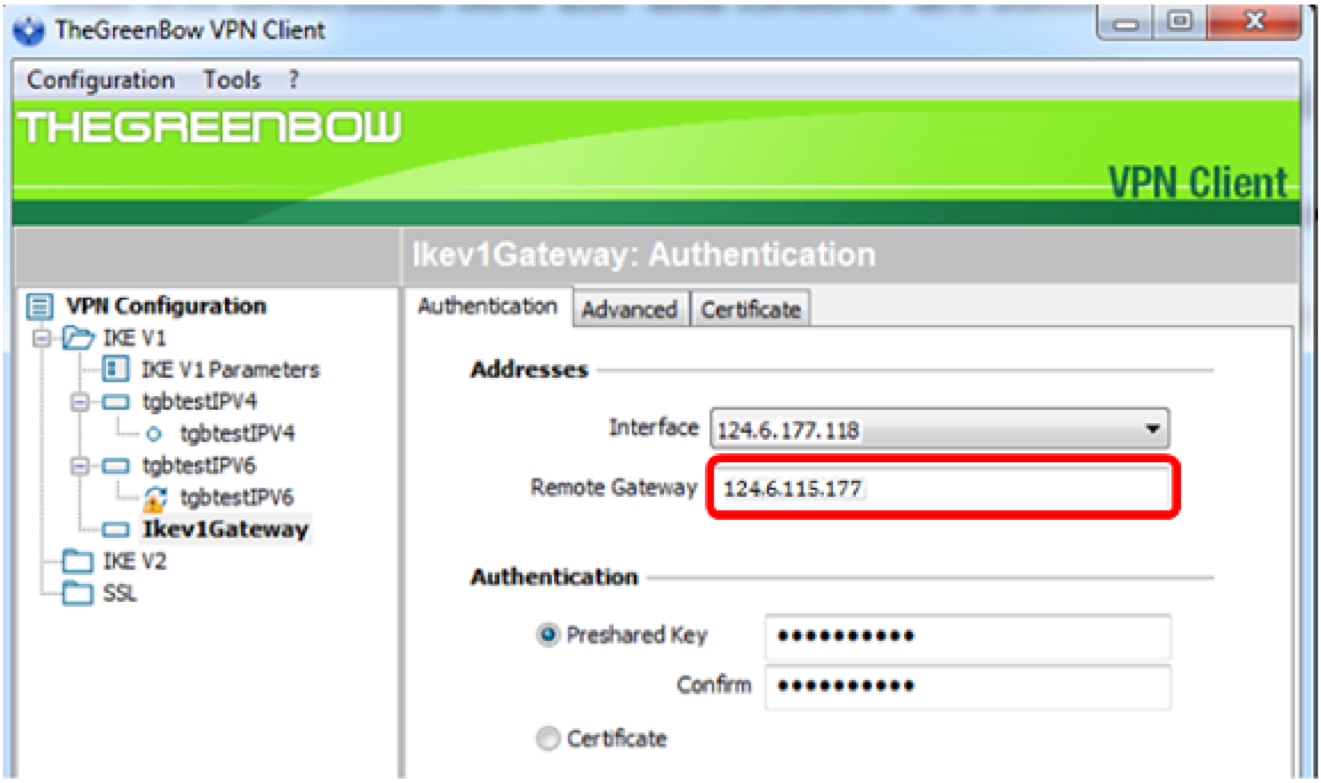
● Preshared Key ●●●●●●●●●●●

Confirm ●●●●●●●●●●●

○ Certificate

Step 4. Enter the address of the remote gateway in the *Remote Gateway* field.

Note: In this example, the IP address of the remote RV34x Router is 124.6.115.177.



Ikev1Gateway: Authentication

Addresses

Interface 124.6.177.118

Remote Gateway 124.6.115.177

Authentication

● Preshared Key ●●●●●●●●●●●

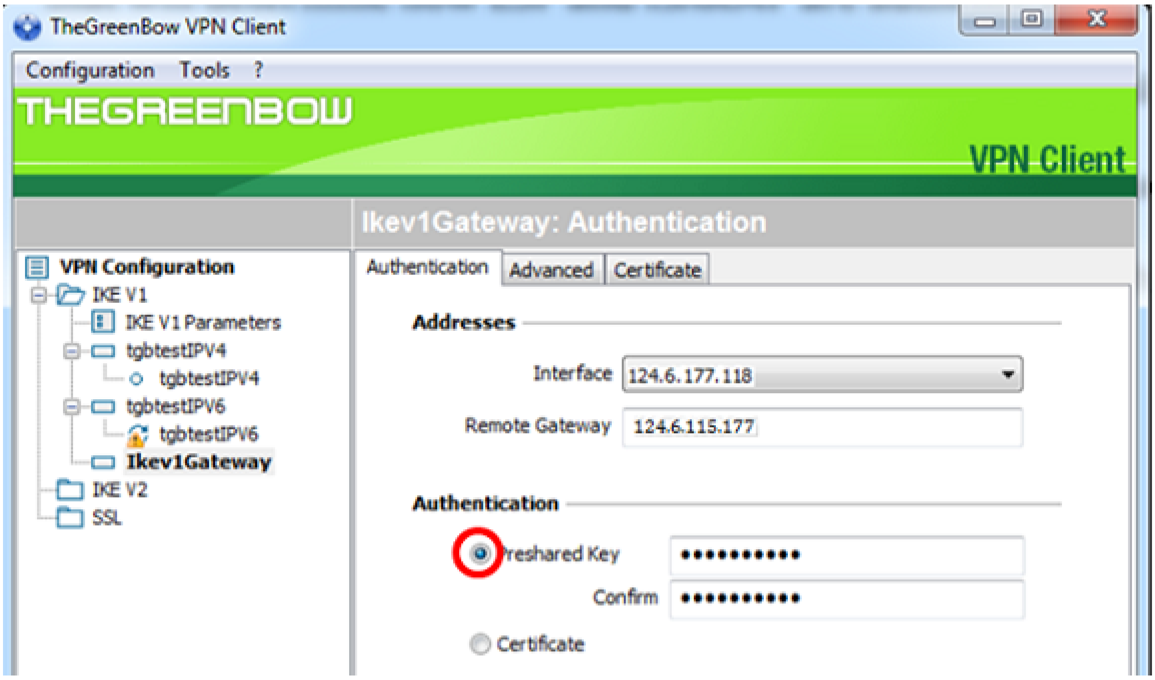
Confirm ●●●●●●●●●●●

○ Certificate

Step 5. Under Authentication, choose the authentication type. The options are:

- Preshared Key — This option will let the user use a password that has been configured on the VPN gateway. The password has to be matched by the user to be able to establish a VPN tunnel.
- Certificate — This option will utilize a certificate to complete the handshake between the VPN

Client and the VPN Gateway.



Ikev1Gateway: Authentication

Addresses

Interface 124.6.177.118

Remote Gateway 124.6.115.177

Authentication

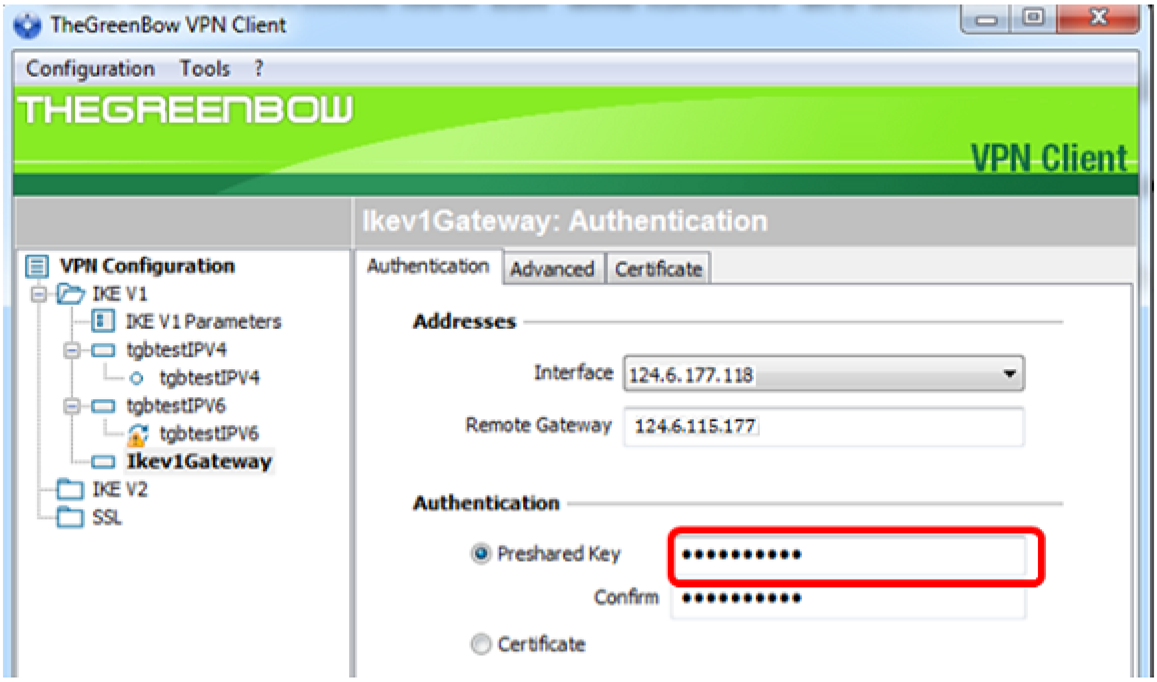
● Preshared Key ●●●●●●●●●●●

Confirm ●●●●●●●●●●●

○ Certificate

Note: In this example, Preshared Key is chosen to match the configuration of the RV34x VPN Gateway.

Step 6. Enter the Preshared Key configured in the router.



Ikev1Gateway: Authentication

Addresses

Interface 124.6.177.118

Remote Gateway 124.6.115.177

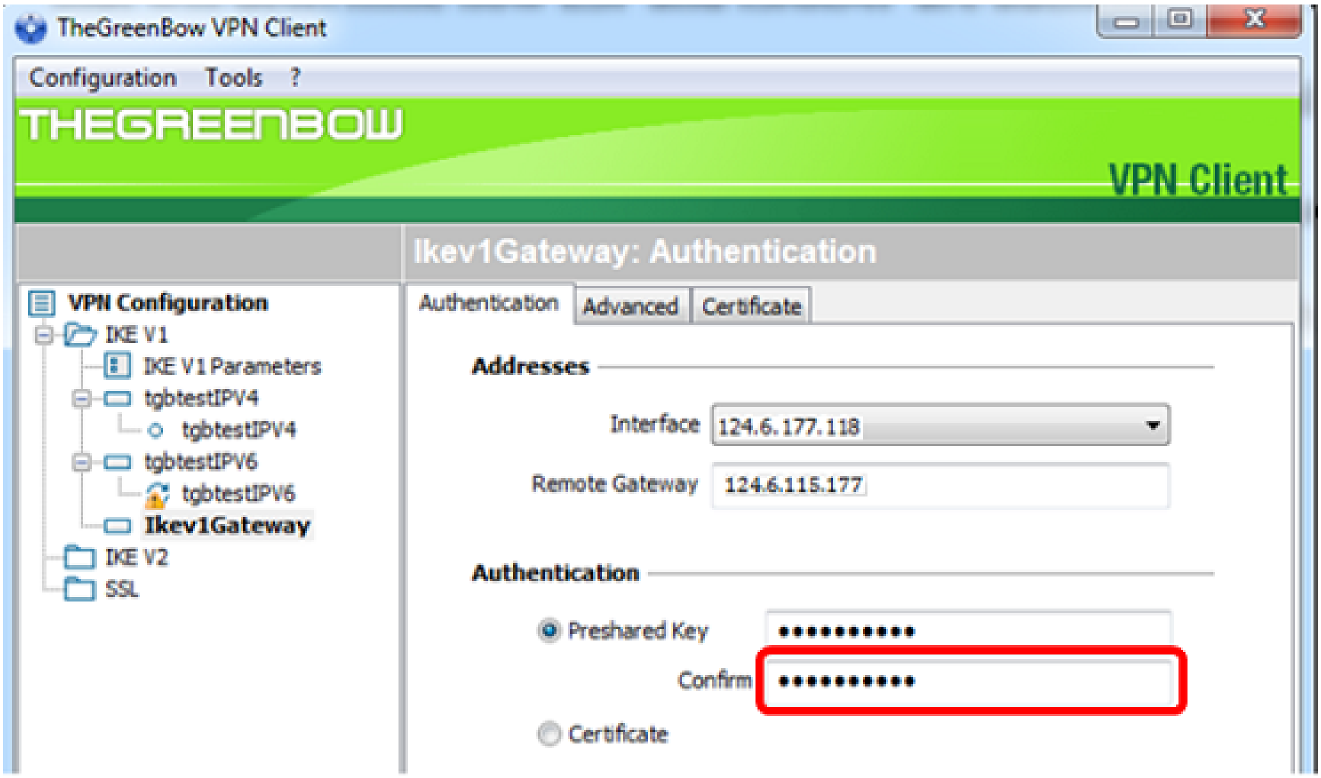
Authentication

● Preshared Key ●●●●●●●●●●●

Confirm ●●●●●●●●●●●

○ Certificate

Step 7. Enter the same Preshared Key in the *Confirm* field.



Ikev1Gateway: Authentication

Addresses

Interface 124.6.177.118

Remote Gateway 124.6.115.177

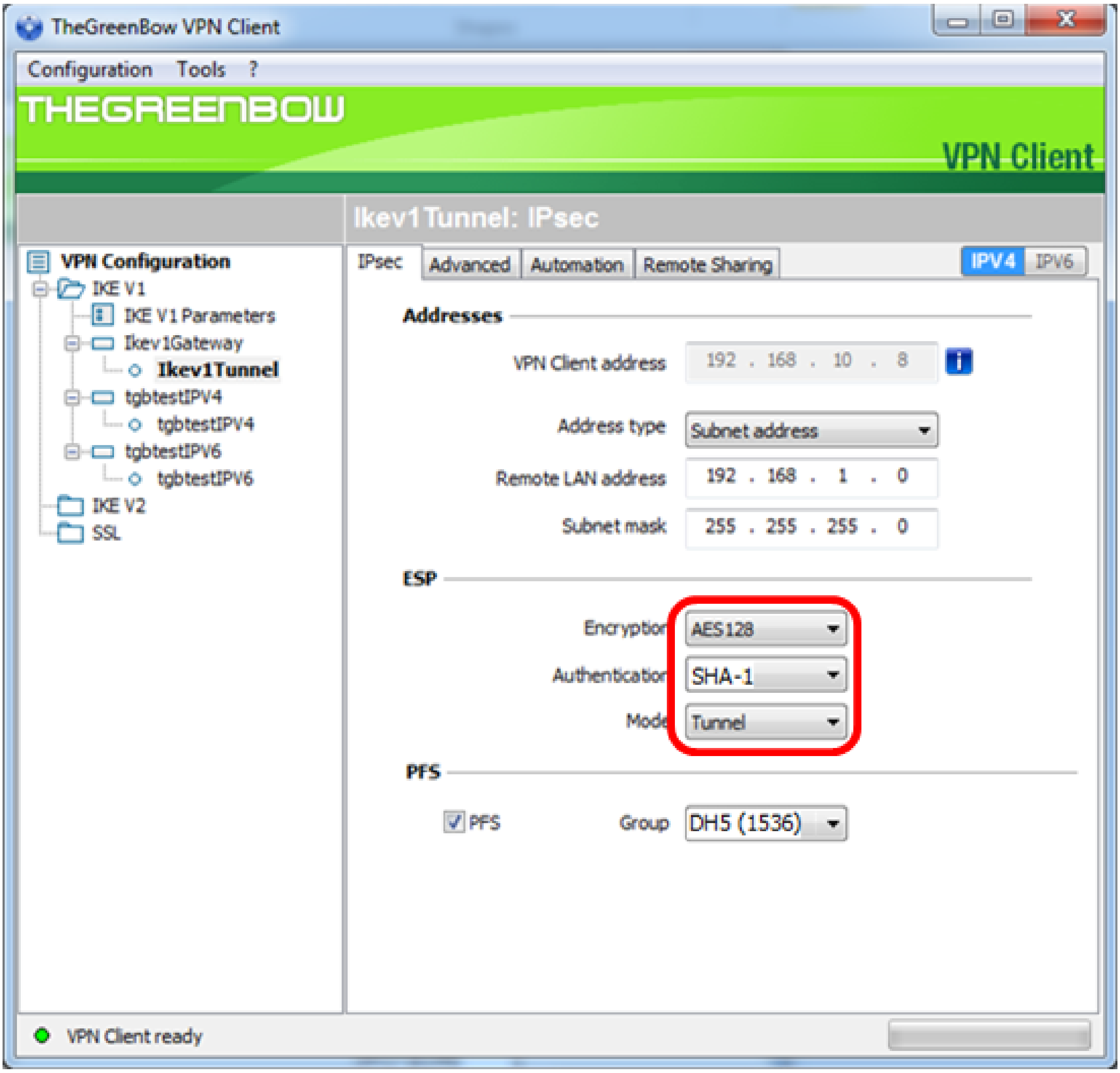
Authentication

● Preshared Key ●●●●●●●●●●●

Confirm ●●●●●●●●●●●

○ Certificate

Step 8. Under IKE, set the Encryption, Authentication, and Key Group settings to match the configuration of the router.



Ikev1Tunnel: IPsec

Addresses

VPN Client address: 192 . 168 . 10 . 8

Address type: Subnet address

Remote LAN address: 192 . 168 . 1 . 0

Subnet mask: 255 . 255 . 255 . 0

ESP

Encryption: AES128

Authentication: SHA-1

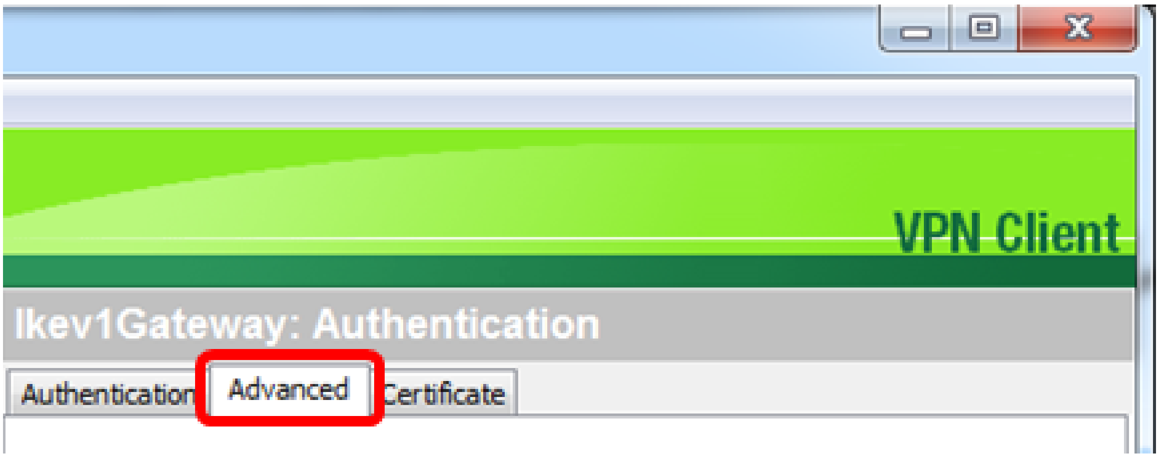
Mode: Tunnel

PFS

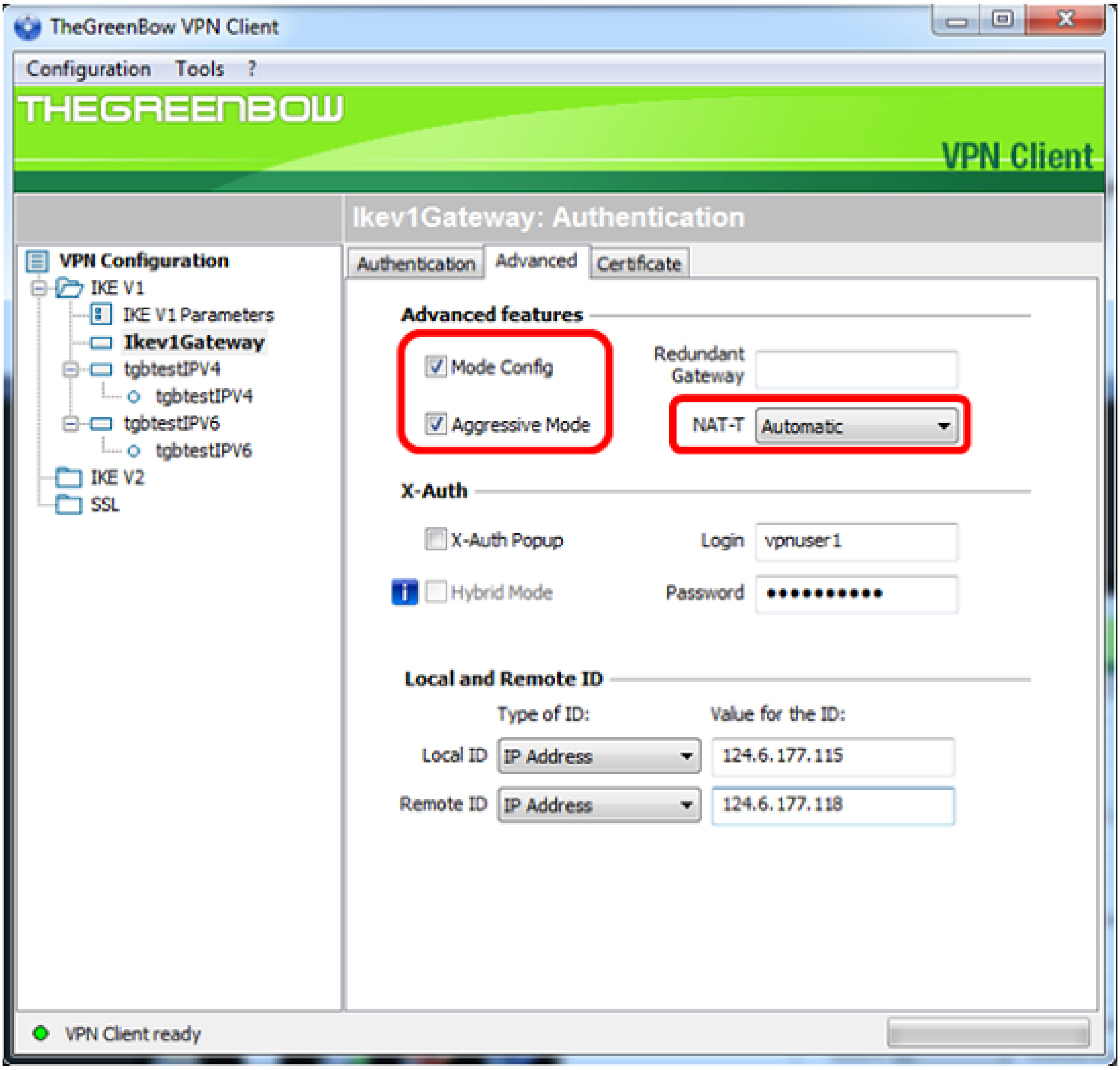
☑ PFS Group: DH5 (1536)

VPN Client ready

Step 9. Click the **Advanced** tab.



Step 10. (Optional) Under Advanced features, check the **Mode Config** and **Aggressive Mode** check boxes and set the NAT-T setting to Automatic.



Ikev1Gateway: Authentication

Advanced features

☑ Mode Config

☑ Aggressive Mode

Redundant Gateway

NAT-T: Automatic

X-Auth

☐ X-Auth Popup

☐ Hybrid Mode

Login: vpnuser1

Password: •••••••••••

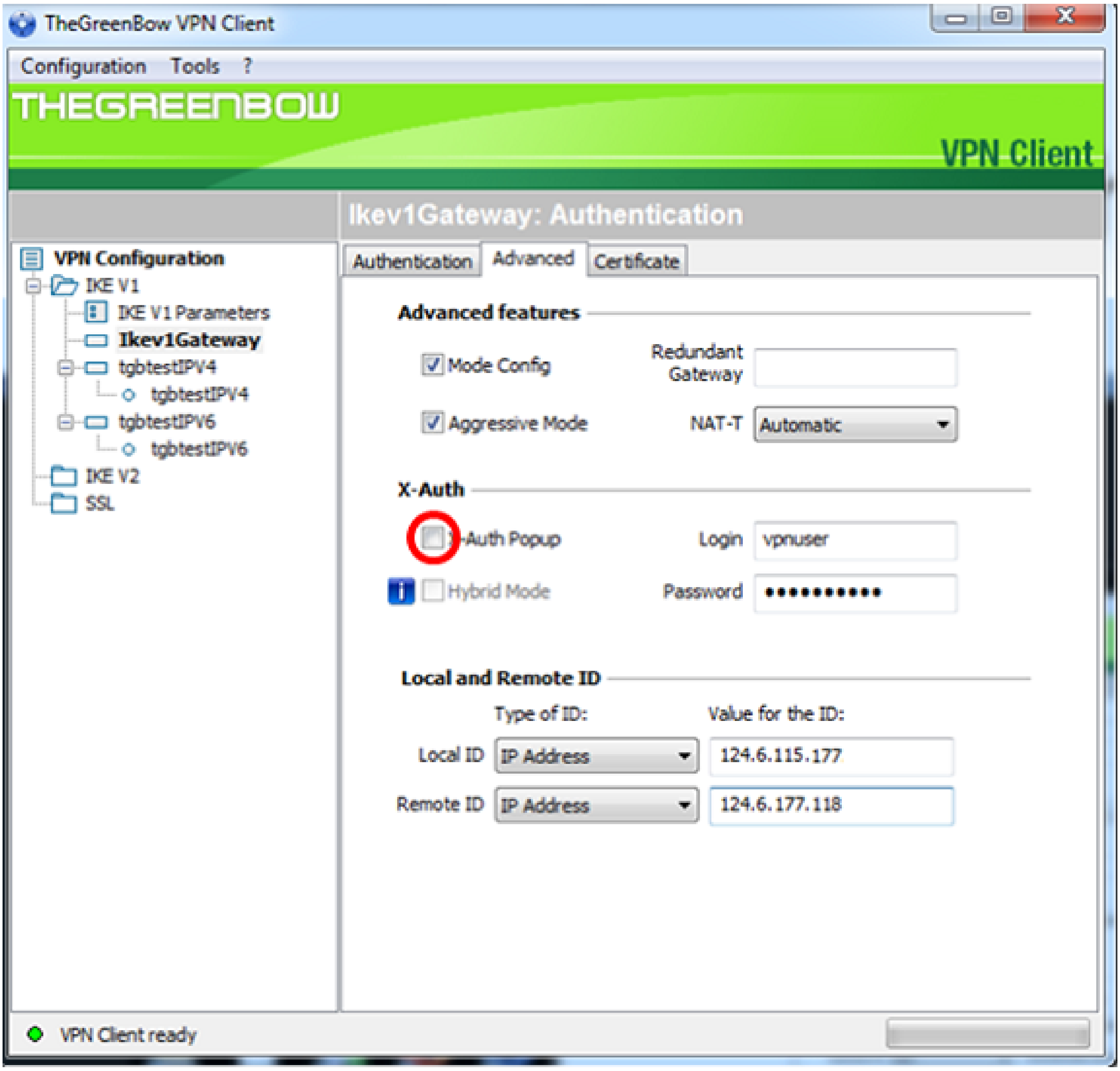
Local and Remote ID

	Type of ID:	Value for the ID:
Local ID	IP Address	124.6.177.115
Remote ID	IP Address	124.6.177.118

VPN Client ready

Note: With Mode Config enabled, TheGreenBow VPN Client will pull settings from the VPN gateway to attempt to establish a tunnel while enabling Aggressive Mode and NAT-T make establishing a connection faster.

Step 11. (Optional) Under X-Auth, check the **X-Auth Popup** check box to automatically pull up the login window when starting a connection. The login window is where the user enters his credentials to be able to complete the tunnel.



Ikev1Gateway: Authentication

Advanced features

☑ Mode Config — Redundant Gateway: (blank)

☑ Aggressive Mode — NAT-T: Automatic

X-Auth

☐ X-Auth Popup — Login: vpnuser

☐ Hybrid Mode — Password: ●●●●●●●●●●●

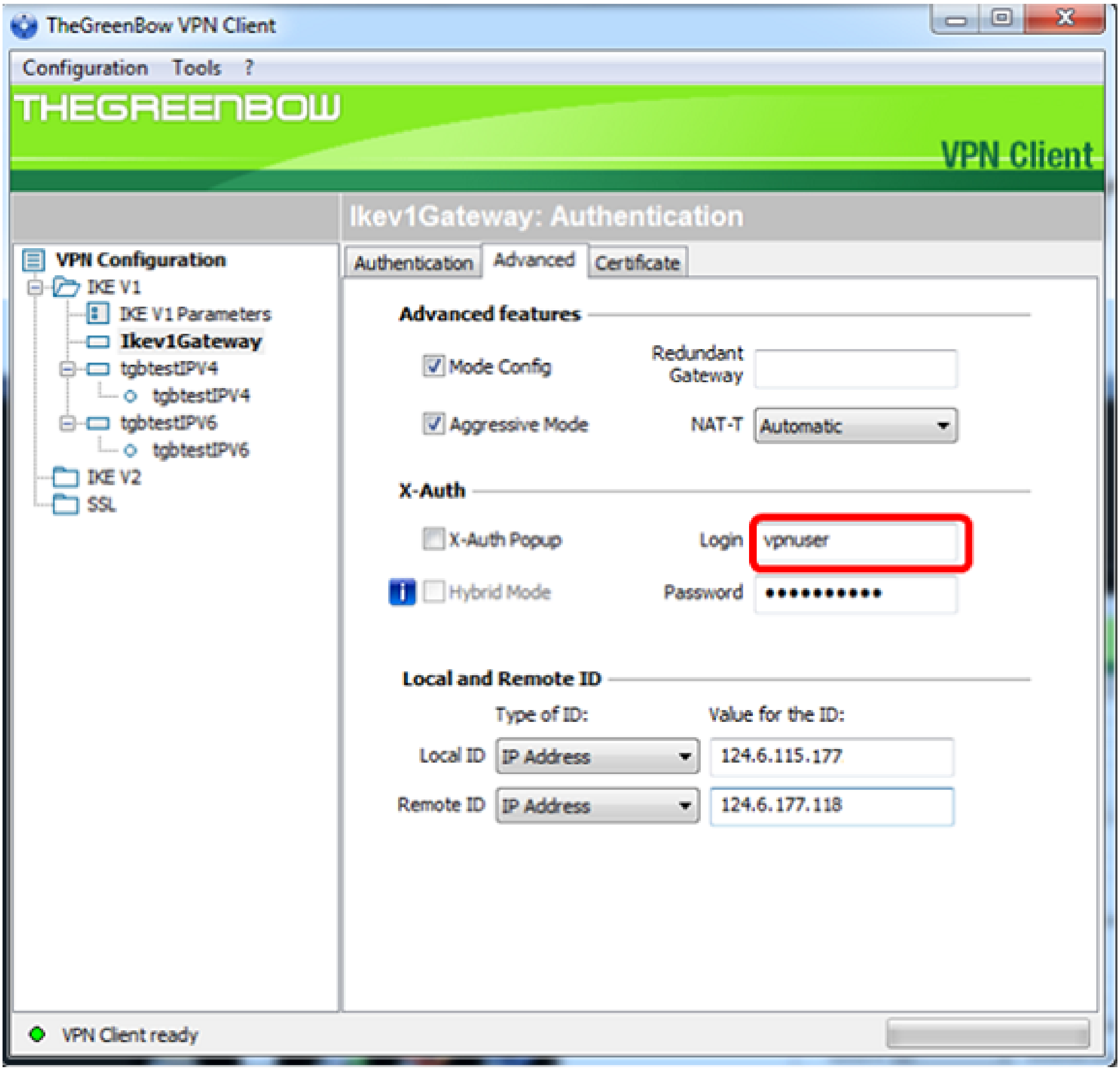
Local and Remote ID

	Type of ID:	Value for the ID:
Local ID	IP Address	124.6.115.177
Remote ID	IP Address	124.6.177.118

VPN Client ready

Note: In this example, X-Auth Popup is not checked.

Step 12. Enter your username in the *Login* field. This is the user name configured for creating a user group in the VPN gateway.



Ikev1Gateway: Authentication

Advanced features

☑ Mode Config — Redundant Gateway:

☑ Aggressive Mode — NAT-T: Automatic

X-Auth

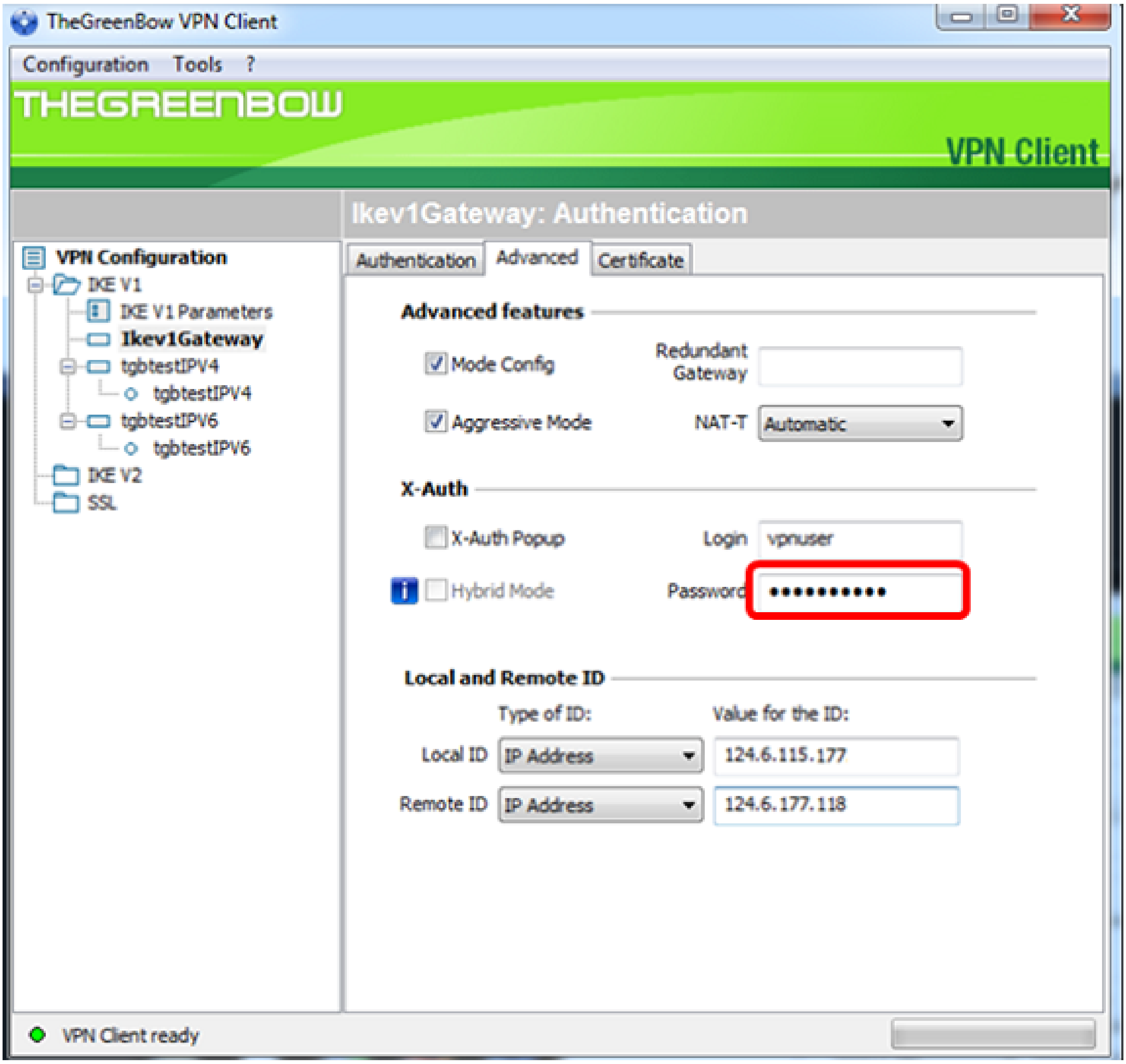
□ X-Auth Popup — Login: vpnuser

□ Hybrid Mode — Password: ●●●●●●●●●●●

Local and Remote ID

	Type of ID:	Value for the ID:
Local ID	IP Address	124.6.115.177
Remote ID	IP Address	124.6.177.118

Step 13. Enter your password in the *Password* field.



Ikev1Gateway: Authentication

Advanced features

☑ Mode Config

Redundant Gateway

☑ Aggressive Mode

NAT-T: Automatic

X-Auth

□ X-Auth Popup

Login: vpnuser

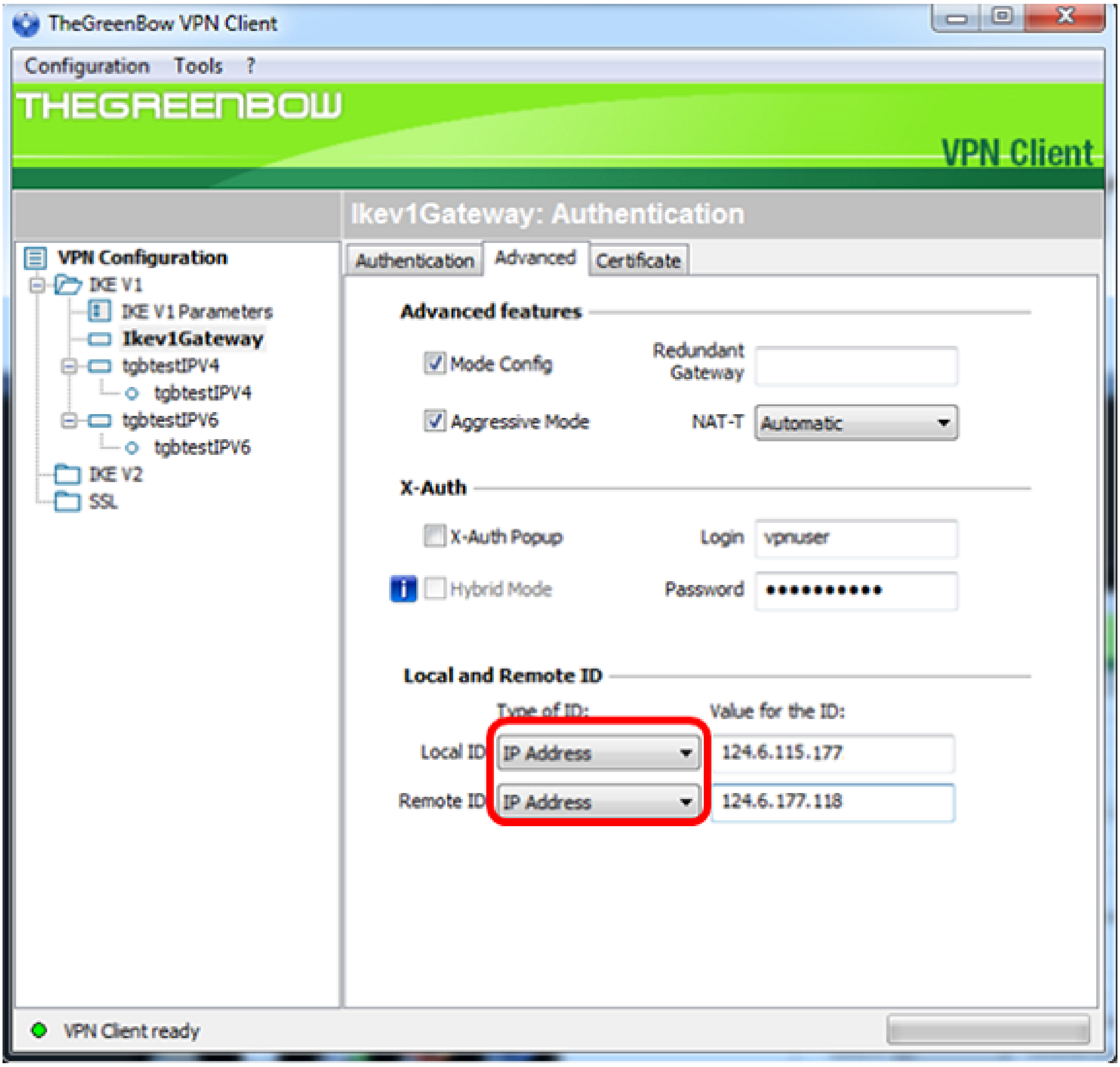
□ Hybrid Mode

Password: •••••••••••

Local and Remote ID

	Type of ID:	Value for the ID:
Local ID	IP Address	124.6.115.177
Remote ID	IP Address	124.6.177.118

Step 14. Under Local and Remote ID, set the Local ID and the Remote ID to match the settings of the VPN gateway.



Advanced features

☑ Mode Config

Redundant Gateway

☑ Aggressive Mode

NAT-T Automatic

X-Auth

□ X-Auth Popup

Login vpnuser

□ Hybrid Mode

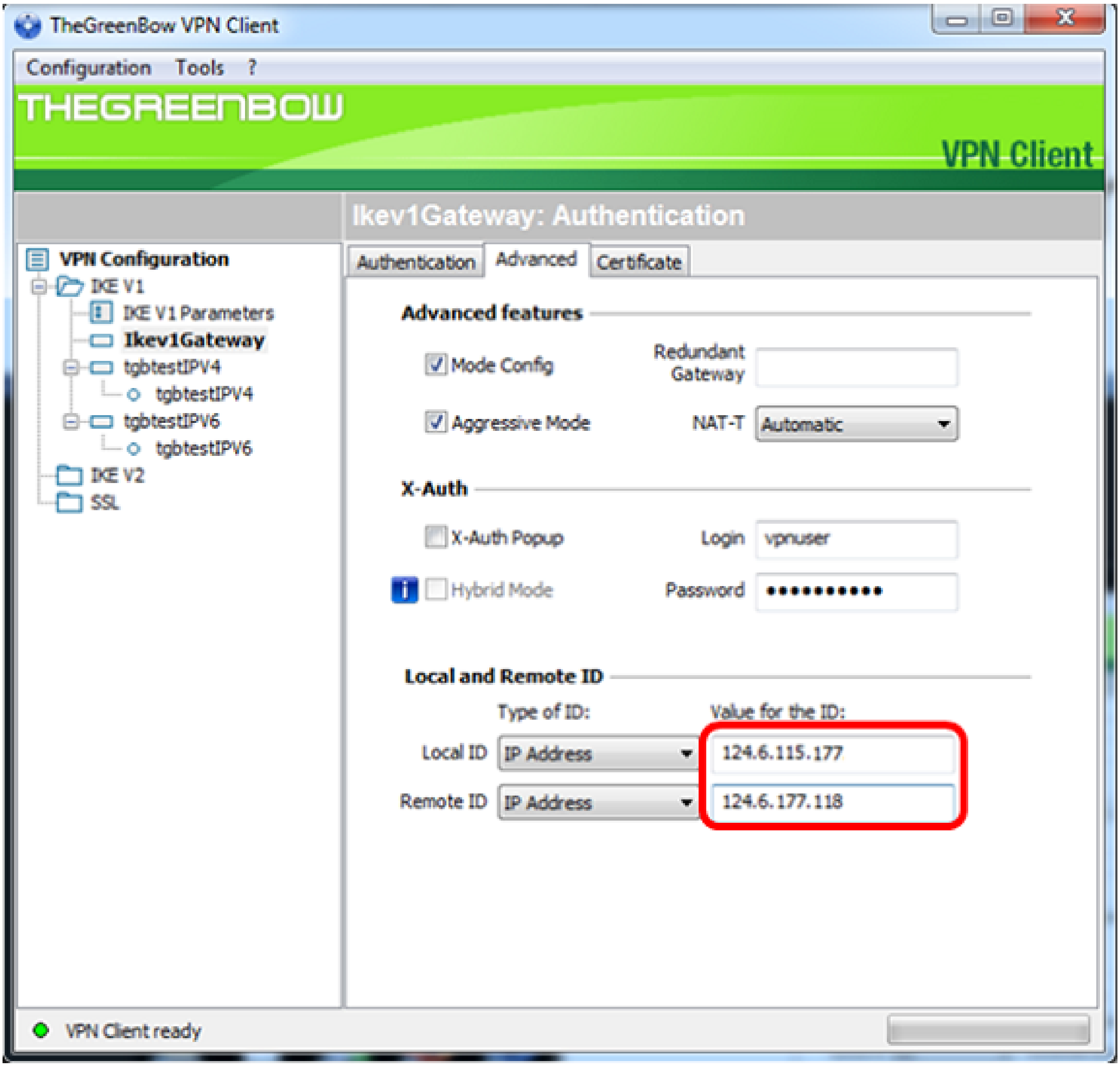
Password ●●●●●●●●●●●

Local and Remote ID

	Type of ID:	Value for the ID:
Local ID	IP Address	124.6.115.177
Remote ID	IP Address	124.6.177.118

Note: In this example, both Local ID and Remote ID are set to IP Address to match the settings of the RV34x VPN gateway.

Step 15. Under Value for the ID, enter the local ID and remote ID in their respective fields.



Ikev1Gateway: Authentication

Advanced features

☑ Mode Config

Redundant Gateway

☑ Aggressive Mode

NAT-T Automatic

X-Auth

□ X-Auth Popup

Login vpnuser

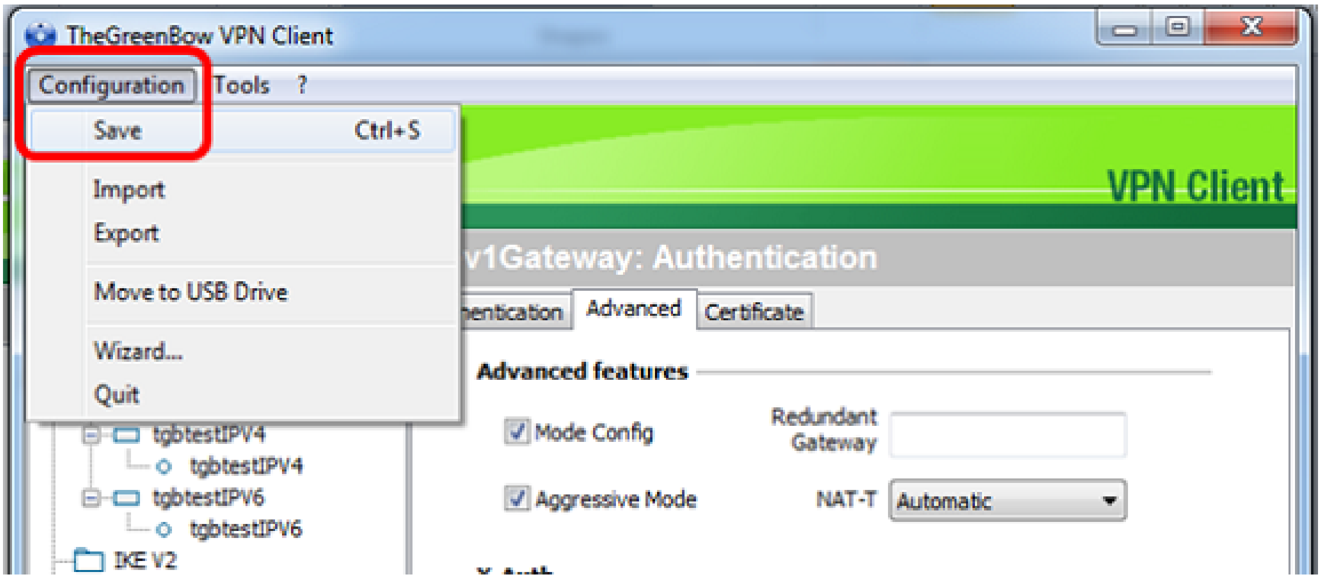
□ Hybrid Mode

Password ●●●●●●●●●●●

Local and Remote ID

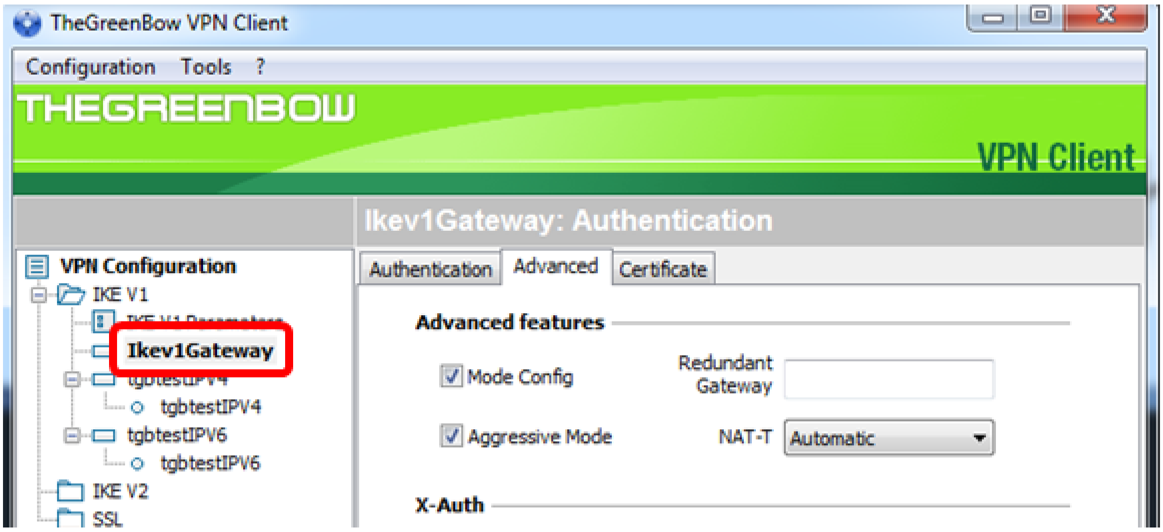
	Type of ID:	Value for the ID:
Local ID	IP Address	124.6.115.177
Remote ID	IP Address	124.6.177.118

Step 16. Click **Configuration > Save** to save the settings.



Configure Phase 2 Settings

Step 1. Right-click **Ikev1Gateway**.



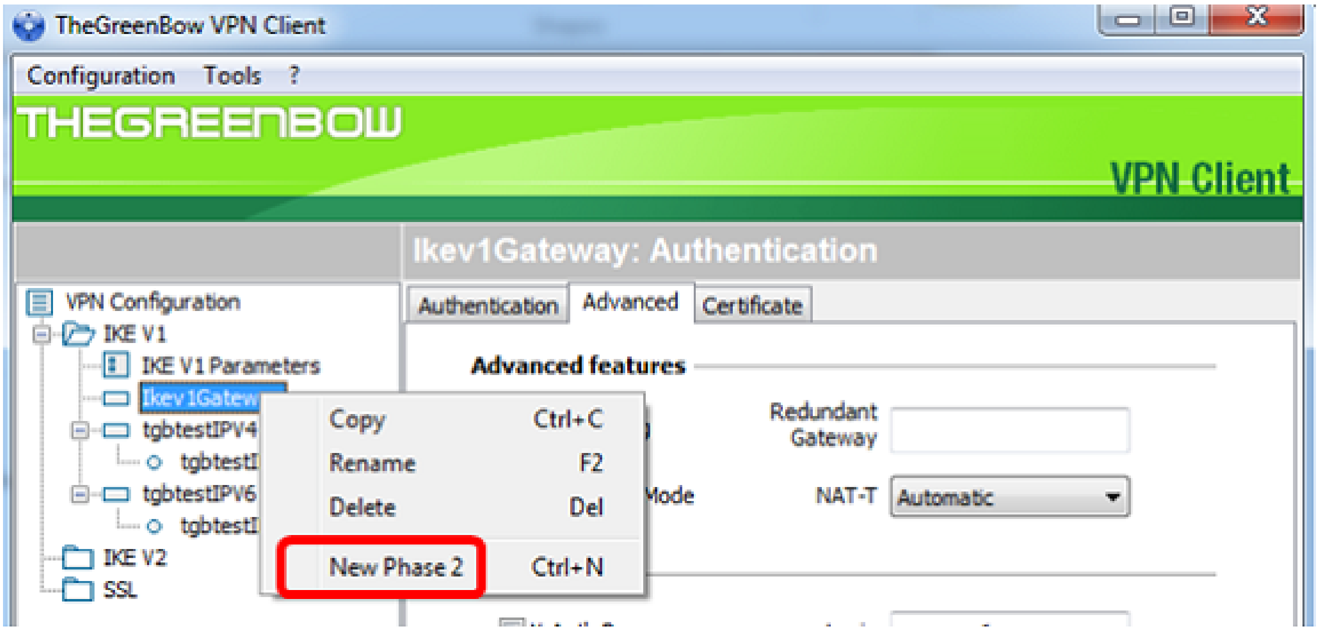
☑ Mode Config

☑ Aggressive Mode

Redundant Gateway

NAT-T: Automatic

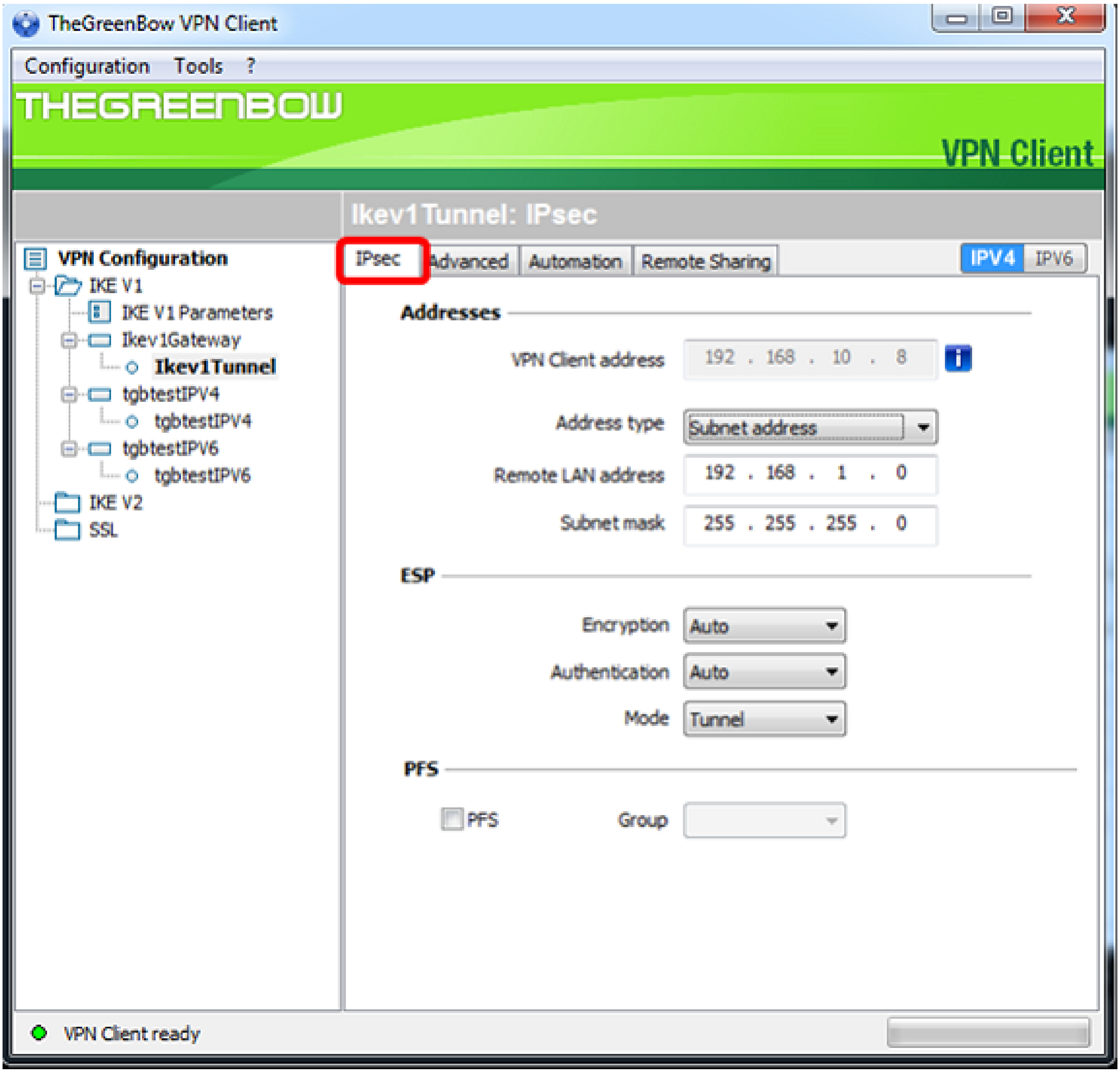
Step 2. Choose **New Phase 2**.



Redundant Gateway

NAT-T: Automatic

Step 3. Click the **IPsec** tab.



Addresses

VPN Client address: 192 . 168 . 10 . 8

Address type: Subnet address

Remote LAN address: 192 . 168 . 1 . 0

Subnet mask: 255 . 255 . 255 . 0

ESP

Encryption: Auto

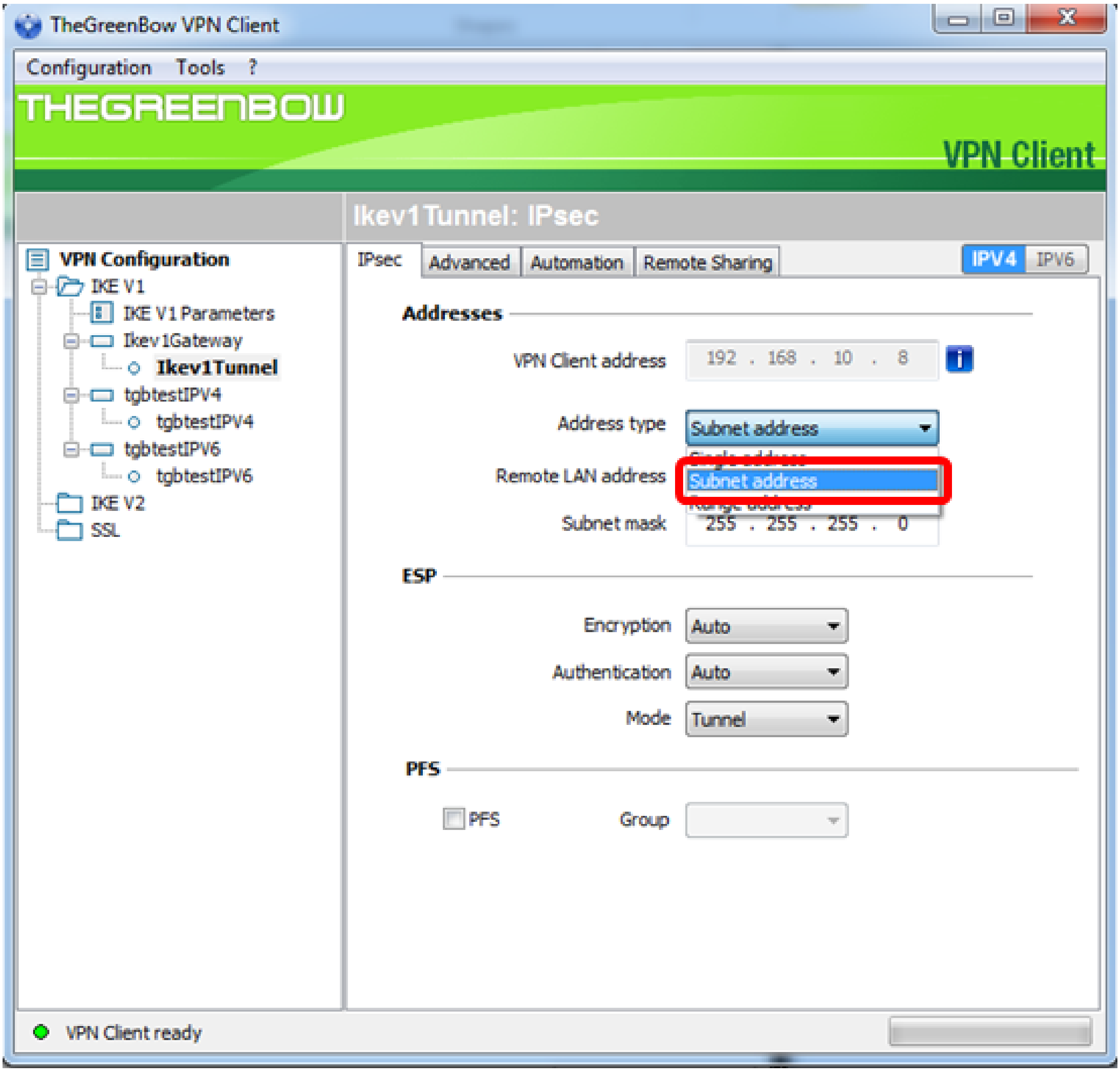
Authentication: Auto

Mode: Tunnel

PFS

□ PFS Group:

Step 4. Choose the address type that the VPN client can access from the Address type drop-down list.



Ikev1Tunnel: IPsec

Addresses

VPN Client address 192 . 168 . 10 . 8

Address type Subnet address

Remote LAN address

Subnet mask 255 . 255 . 255 . 0

ESP

Encryption Auto

Authentication Auto

Mode Tunnel

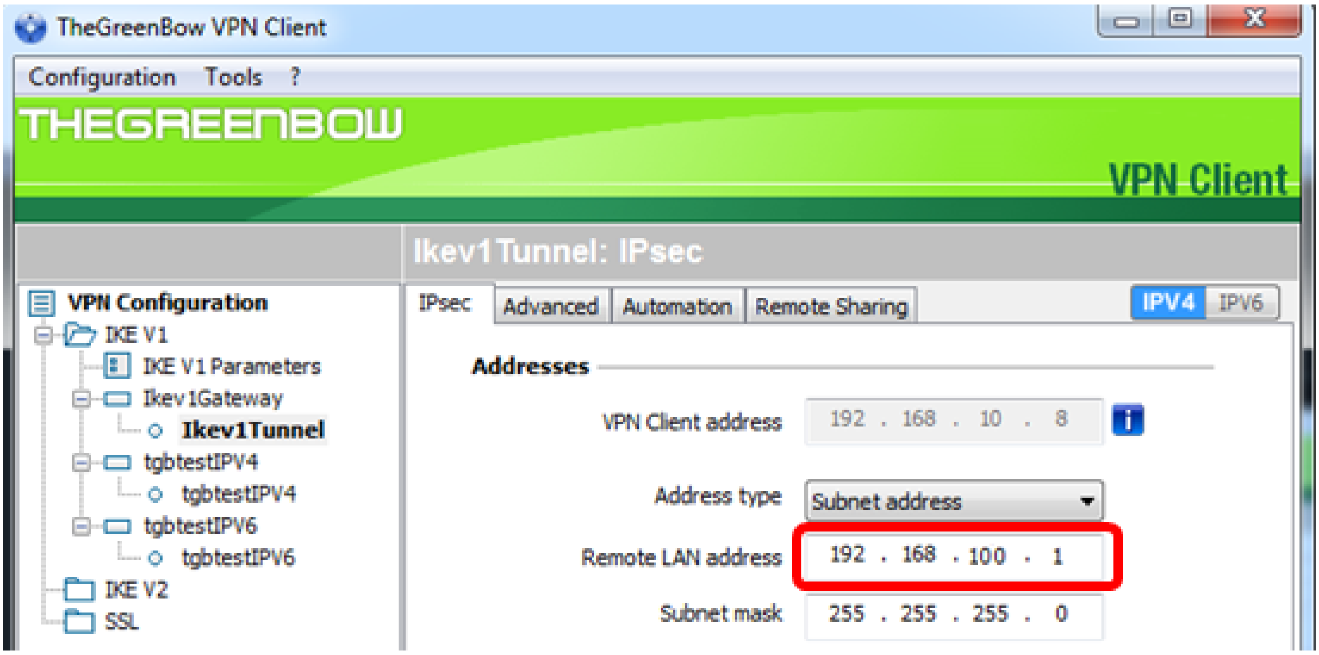
PFS

☐ PFS Group

VPN Client ready

Note: In this example, Subnet address is chosen.

Step 5. Enter the network address that should be accessed by the VPN tunnel in the *Remote LAN address* field.



VPN Client address: 192 . 168 . 10 . 8

Address type: Subnet address

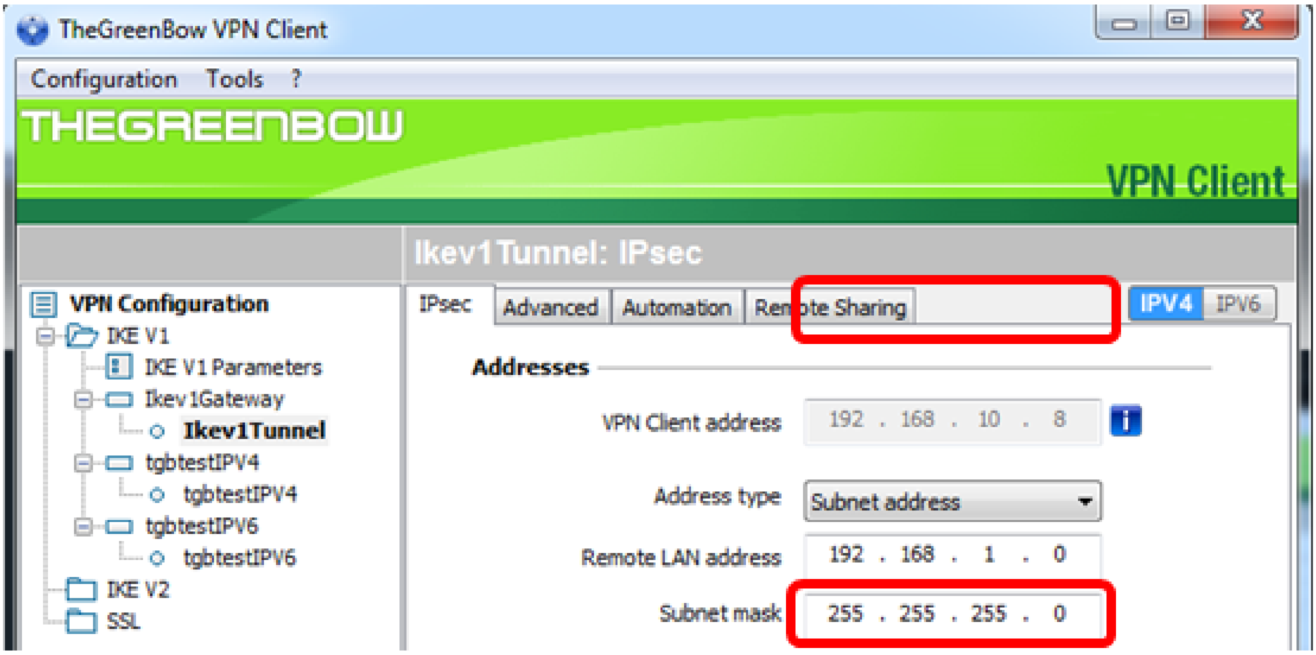
Remote LAN address: 192 . 168 . 100 . 1

Subnet mask: 255 . 255 . 255 . 0

Note: In this example, 192.168.100.1 is entered.

Step 6. Enter the subnet mask of the remote network in the *Subnet mask* field.

Note: In this example, 255.255.255.0 is entered.



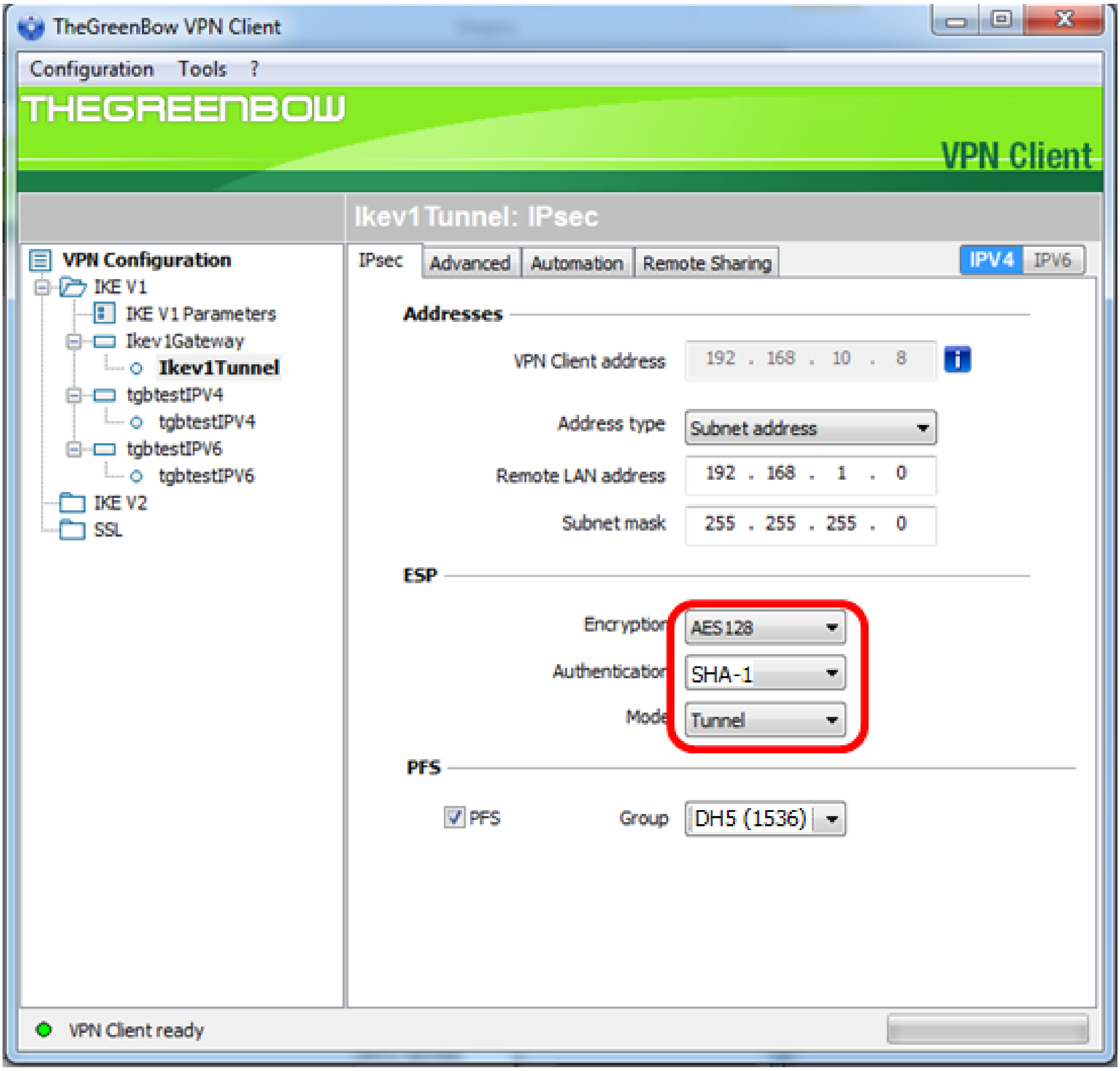
VPN Client address: 192 . 168 . 10 . 8

Address type: Subnet address

Remote LAN address: 192 . 168 . 1 . 0

Subnet mask: 255 . 255 . 255 . 0

Step 7. Under ESP, set the Encryption, Authentication, and Mode to match the settings of the VPN gateway.



Addresses

VPN Client address 192 . 168 . 10 . 8

Address type Subnet address

Remote LAN address 192 . 168 . 1 . 0

Subnet mask 255 . 255 . 255 . 0

ESP

Encryption AES128

Authentication SHA-1

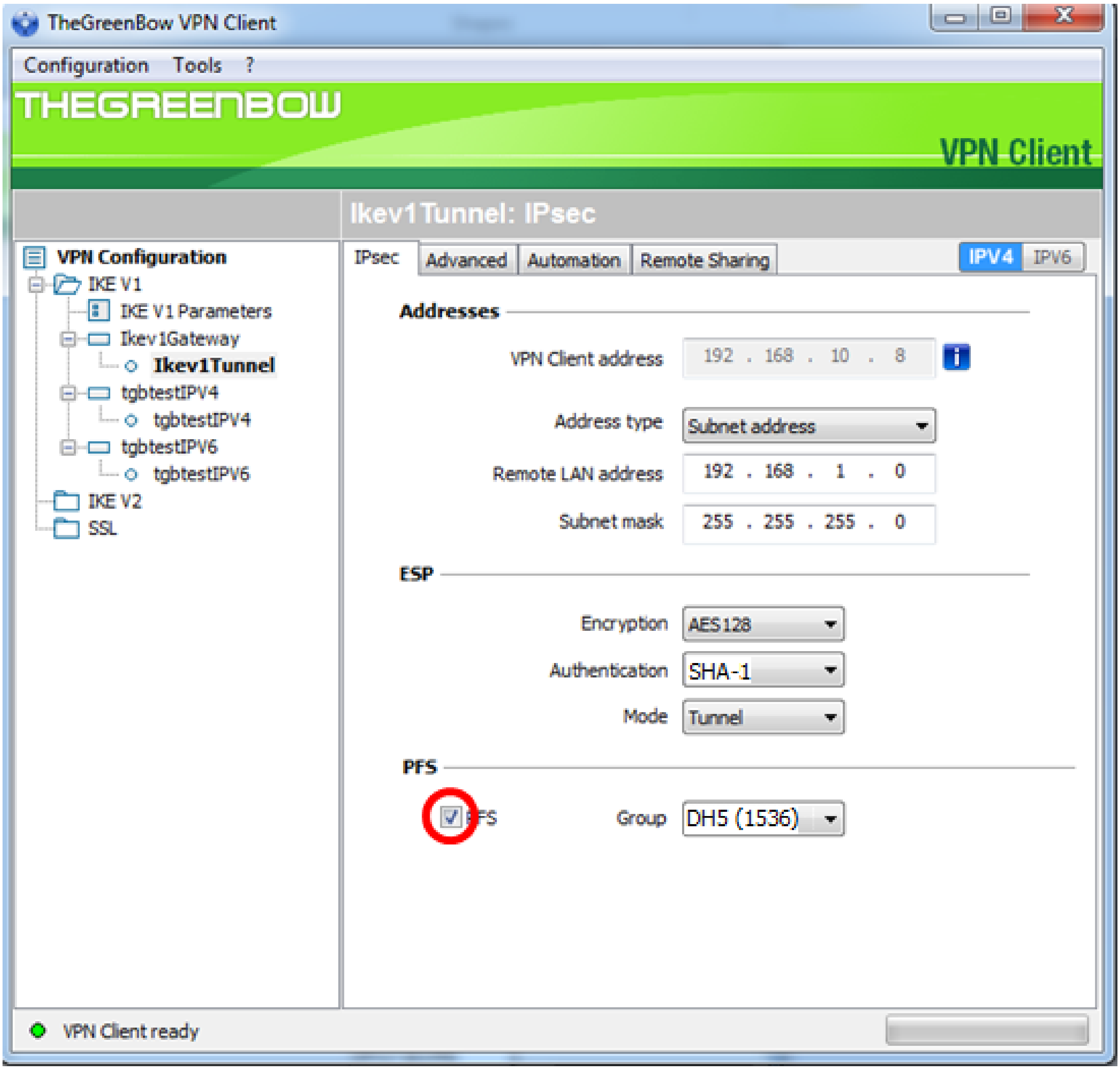
Mode Tunnel

PFS

☑ PFS Group DH5 (1536)

VPN Client ready

Step 8. (Optional) Under PFS, check the **PFS** check box to enable Perfect Forward Secrecy (PFS). PFS generates random keys for encrypting the session.



Addresses

VPN Client address: 192 . 168 . 10 . 8

Address type: Subnet address

Remote LAN address: 192 . 168 . 1 . 0

Subnet mask: 255 . 255 . 255 . 0

ESP

Encryption: AES128

Authentication: SHA-1

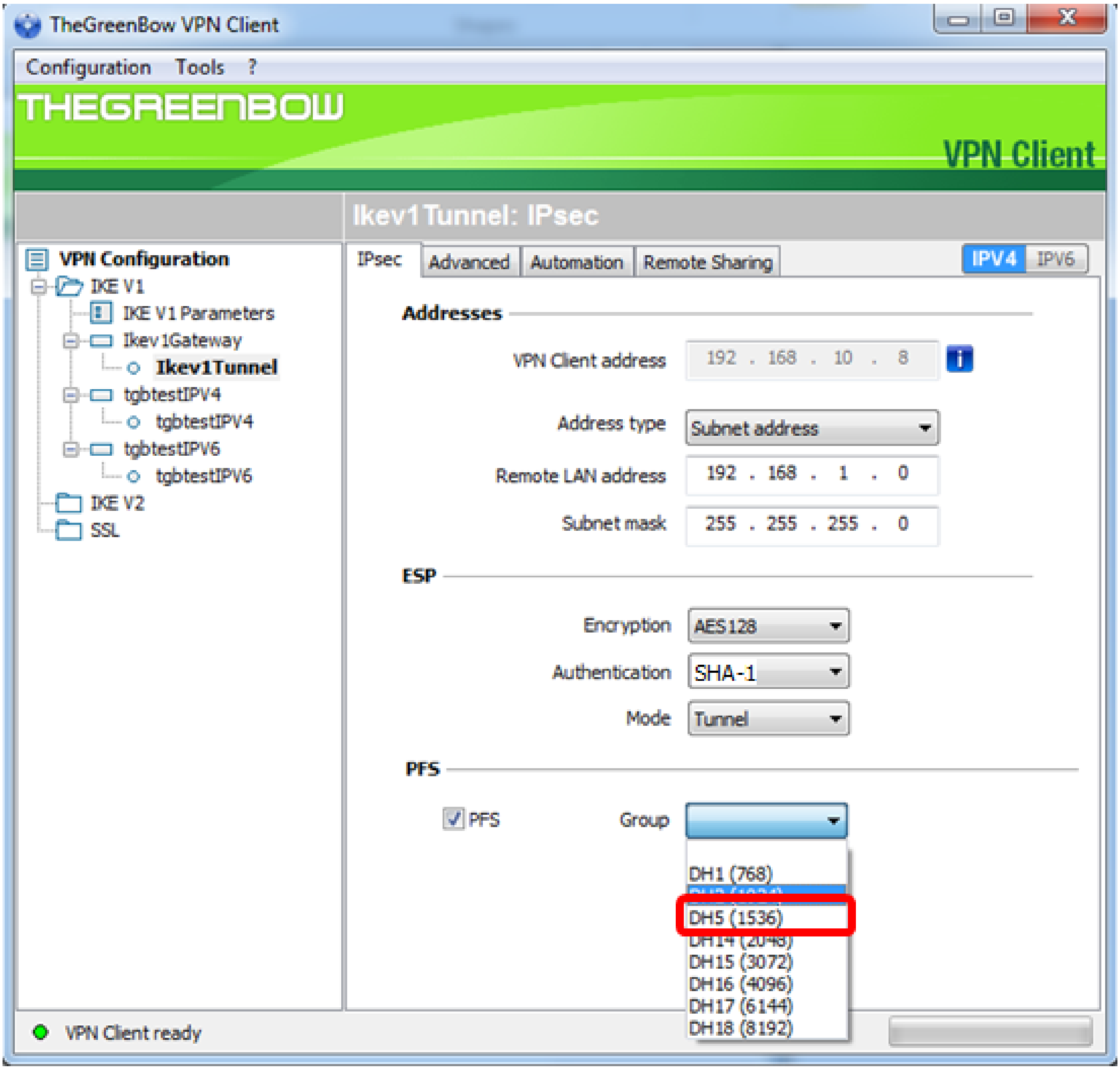
Mode: Tunnel

PFS

☑ PFS Group: DH5 (1536)

Step 9. Choose a PFS group setting from the Group drop-down list.

Note: In this example, DH5 (1536) is chosen to match the DH Group setting of the router.



VPN Client address: 192 . 168 . 10 . 8

Address type: Subnet address

Remote LAN address: 192 . 168 . 1 . 0

Subnet mask: 255 . 255 . 255 . 0

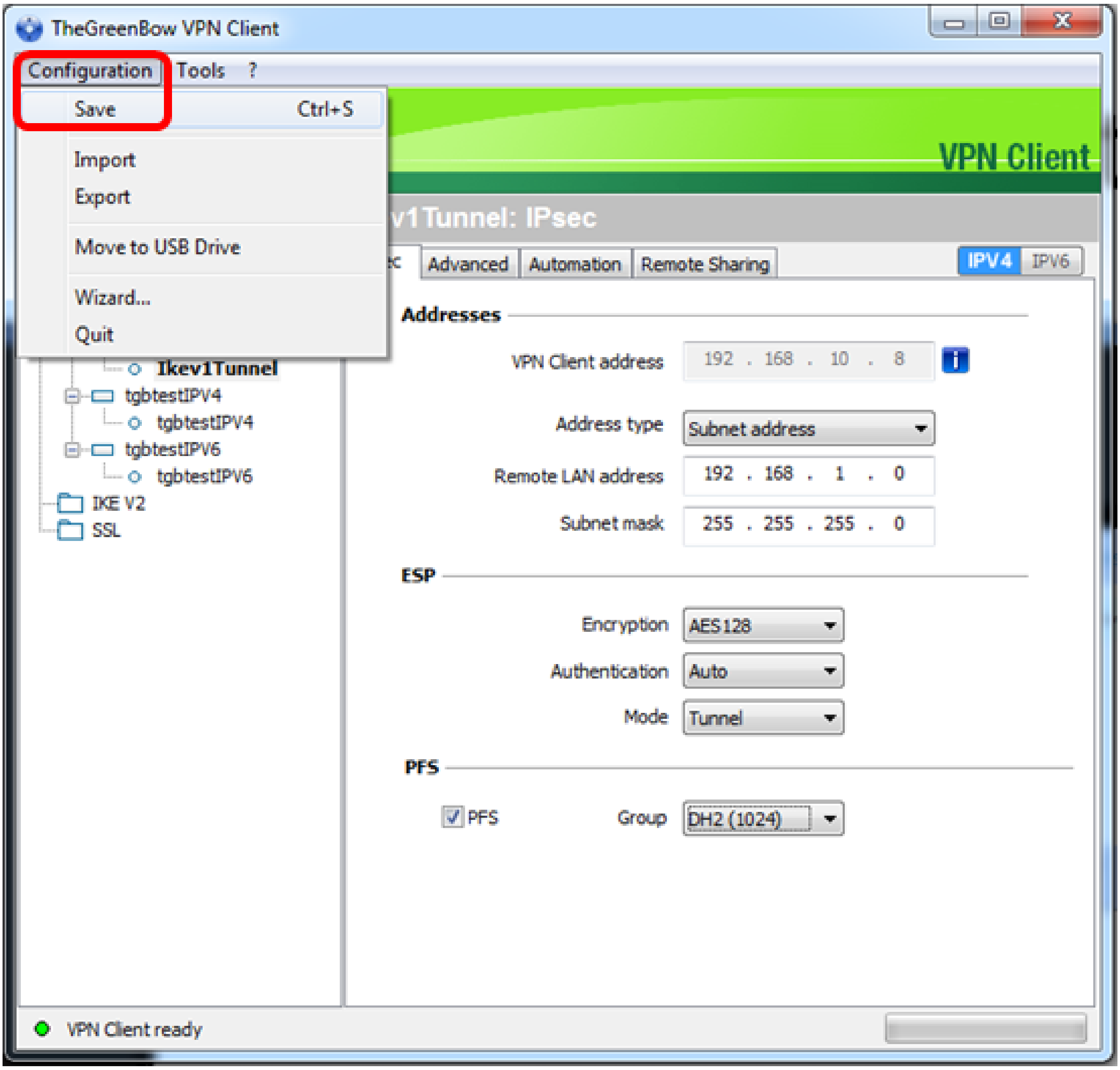
Encryption: AES128

Authentication: SHA-1

Mode: Tunnel

☑ PFS Group: DH5 (1536)

Step 10. Right-click **Configuration** and choose Save.



VPN Client address 192 . 168 . 10 . 8

Address type Subnet address

Remote LAN address 192 . 168 . 1 . 0

Subnet mask 255 . 255 . 255 . 0

Encryption AES128

Authentication Auto

Mode Tunnel

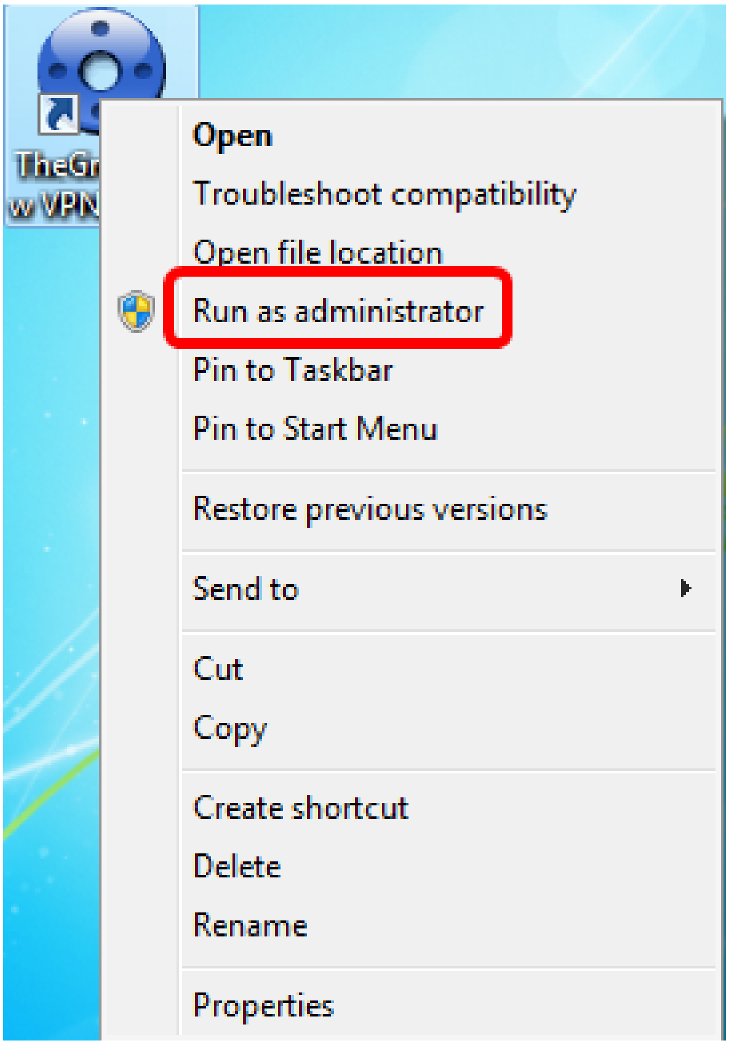
☑ PFS Group DH2 (1024)

VPN Client ready

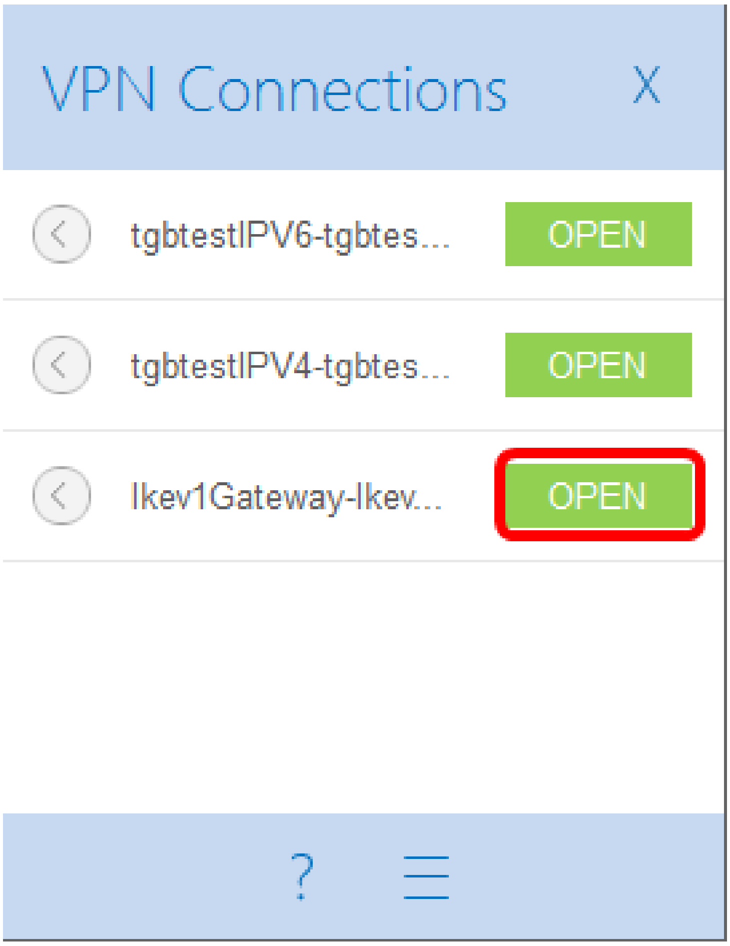
You should now have successfully configured TheGreenBow VPN Client to connect to the RV34x Series Router through VPN.

Start a VPN Connection

Step 1. Right-click TheGreenBow VPN Client and choose **Run as administrator**.



Step 2. Choose the VPN connection that you need to use and then click **OPEN**. The VPN connection should start automatically.

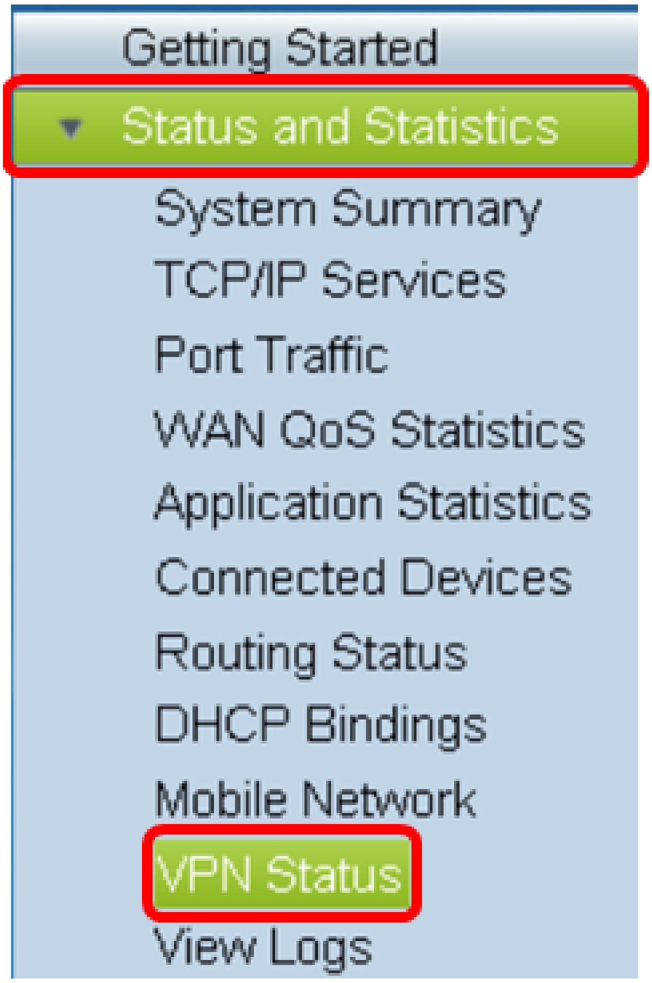


Note: In this example, the configured Ikev1Gateway was chosen.

Verify the VPN Status

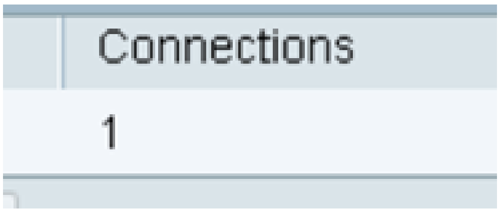
Step 1. Login to the web-based utility of the VPN gateway.

Step 2. Choose **Status and Statistics > VPN Status**.



Step 3. Under Client-to-Site Tunnel Status, check the Connections column of the Connection Table.

Note: In this example, one VPN connection has been established.



Connections
1

You should now have successfully verified the VPN connection status on the RV34x Series Router. TheGreenBow VPN Client is now configured to connect to the router through VPN.