Configure AnyConnect Virtual Private Network (VPN) Connectivity on the RV34x Series Router

Objective

The objective of this document is to show you how to configure AnyConnect VPN connectivity on the RV34x Series Router.

Advantages of using AnyConnect Secure Mobility Client:

1. Secure and persistent connectivity
2. Persistent security and policy enforcement
3. Deployable from the Adaptive Security Appliance (ASA) or from Enterprise Software Deployment Systems
4. Customizable and translatable
5. Easily configured
6. Supports both Internet Protocol Security (IPSec) and Secure Sockets Layer (SSL)
7. Supports Internet Key Exchange version 2.0 (IKEv2.0) protocol

Introduction

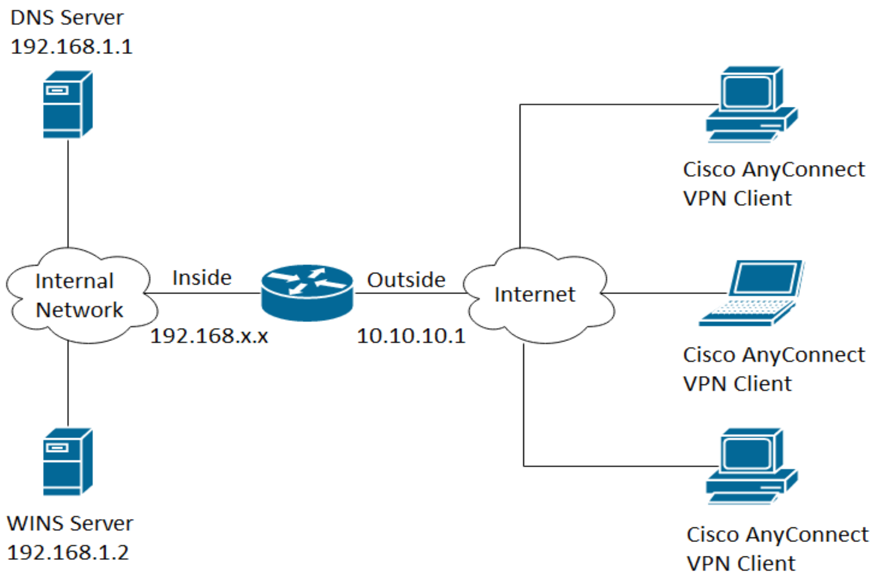
A Virtual Private Network (VPN) connection allows users to access, send, and receive data to and from a private network by means of going through a public or shared network such as the Internet but still ensuring secure connections to an underlying network infrastructure to protect the private network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

A VPN client is software that is installed and ran on a computer that wishes to connect to the remote network. This client software must be set up with the same configuration as that of the VPN server such as the IP address and authentication information. This authentication information includes the username and the pre-shared key that will be used to encrypt the data. Depending on the physical location of the networks to be connected, a VPN client can also be a hardware device. This usually happens if the VPN connection is used to connect two networks that are in separate locations.

The Cisco AnyConnect Secure Mobility Client is a software application for connecting to a VPN that works on various operating systems and hardware configurations. This software application makes it possible for remote resources of another network become accessible as if the user is directly connected to his network, but in a secure way. Cisco AnyConnect Secure Mobility Client provides an innovative new way to protect mobile users on computer-based or smart-phone platforms, providing a more seamless, always-protected experience for end users and comprehensive policy enforcement for IT administrator.

On the RV34x router, starting with firmware version 1.0.3.15 and moving forward, AnyConnect licensing is not necessary. There will be a charge for client licenses only.

For additional information on AnyConnect licensing on the RV340 series routers, please see the article on: AnyConnect Licensing for the RV340 Series Routers.



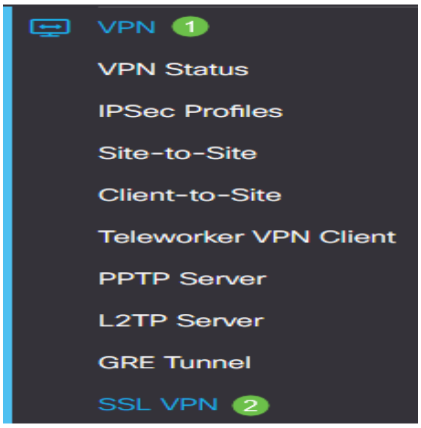
Applicable Devices | Firmware Version

- Cisco AnyConnect Secure Mobility Client | 4.4 (Download latest)
- RV34x Series | 1.0.03.15 (Download latest)

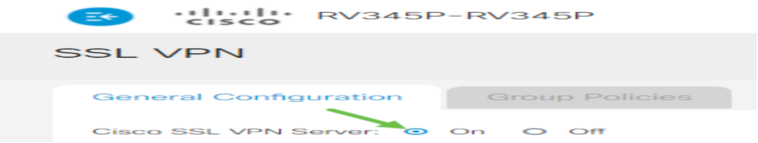
Configure AnyConnect VPN Connectivity on the RV34x

Configure SSL VPN on the RV34x

Step 1. Access the router web-based utility and choose **VPN > SSL VPN**.



Step 2. Click the **On** radio button to enable Cisco SSL VPN Server.



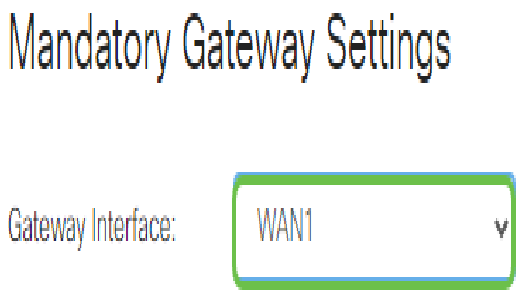
Cisco SSL VPN Server: ● On ○ Off

Mandatory Gateway Settings

The following configuration settings are mandatory:

Step 3. Choose the Gateway Interface from the drop-down list. This will be the port that will be used for passing traffic through the SSL VPN Tunnels. The options are:

- WAN1
- WAN2
- USB1
- USB2

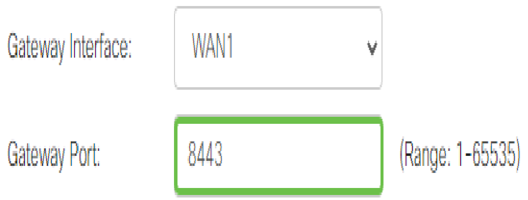


Mandatory Gateway Settings

Gateway Interface: WAN1

Note: In this example, WAN1 is chosen.

Step 4. Enter the port number that is used for the SSL VPN gateway in the *Gateway Port* field ranging from 1 to 65535.

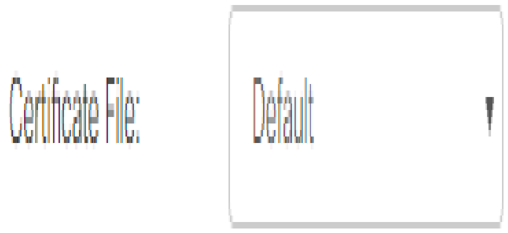


Gateway Interface: WAN1

Gateway Port: 8443 (Range: 1-65535)

Note: In this example, 8443 is used as the port number.

Step 5. Choose the Certificate File from the drop-down list. This certificate authenticates users who attempt to access the network resource through the SSL VPN tunnels. The drop-down list contains a default certificate and the certificates that are imported.

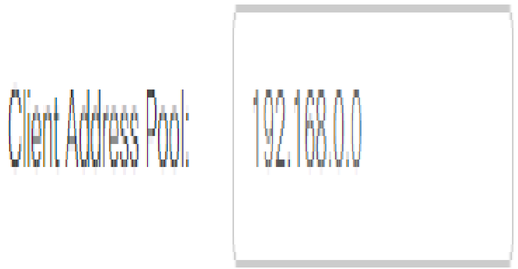


Certificate File: Default

Note: In this example, Default is chosen.

Step 6. Enter the IP address of the client address pool in the *Client Address Pool* field. This pool will be the range of IP addresses that will be allocated to remote VPN clients.

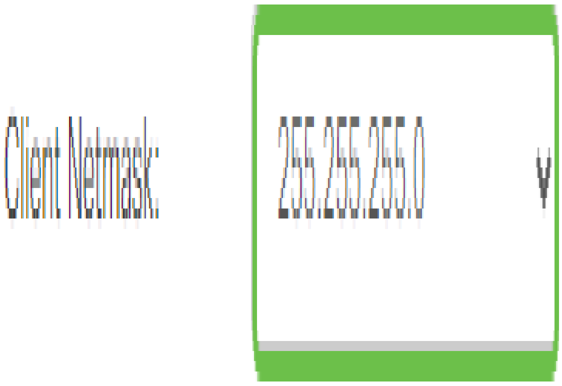
Note: Make sure that the IP address range does not overlap with any of the IP addresses on the local network.



Client Address Pool: 192.168.0.0

Note: In this example, 192.168.0.0 is used.

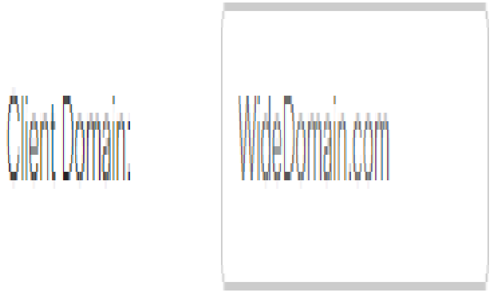
Step 7. Choose the Client Netmask from the drop-down list.



Client Netmask: 255.255.255.0

Note: In this example, 255.255.255.128 is chosen.

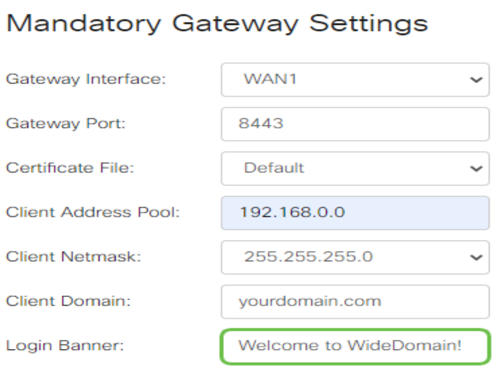
Step 8. Enter the client domain name in the *Client Domain* field. This will be the domain name that should be pushed to SSL VPN clients.



Client Domain: WideDomain.com

Note: In this example, WideDomain.com is used as the client domain name.

Step 9. Enter the text that would appear as login banner in the *Login Banner* field. This will be the banner that will be displayed each time a client logs in.



Mandatory Gateway Settings

Gateway Interface: WAN1

Gateway Port: 8443

Certificate File: Default

Client Address Pool: 192.168.0.0

Client Netmask: 255.255.255.0

Client Domain: yourdomain.com

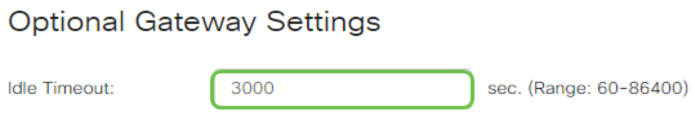
Login Banner: Welcome to WideDomain!

Note: In this example, Welcome to Widedomain! is used as the Login Banner.

Optional Gateway Settings

The following configuration settings are optional:

Step 1. Enter a value in seconds for the Idle Timeout ranging from 60 to 86400. This will be the time duration that the SSL VPN session can remain idle.

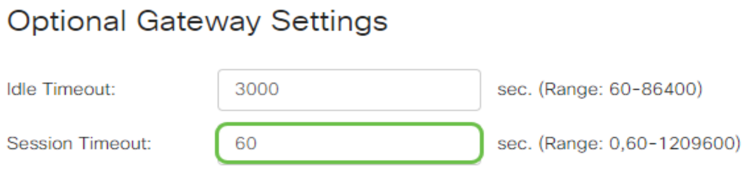


Optional Gateway Settings

Idle Timeout: 3000 sec. (Range: 60-86400)

Note: In this example, 3000 is used.

Step 2. Enter a value in seconds in the *Session Timeout* field. This is the time it takes for the Transmission Control Protocol (TCP) or User Datagram Protocol (UDP) session to time out after the specified idle time. The range is from 60 to 1209600.



Optional Gateway Settings

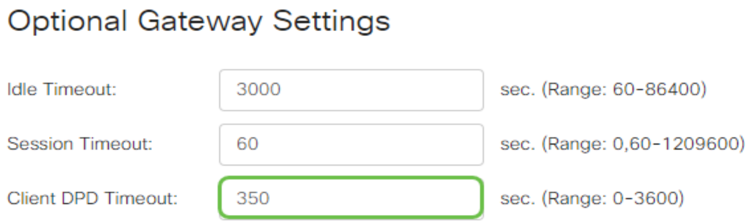
Idle Timeout: 3000 sec. (Range: 60-86400)

Session Timeout: 60 sec. (Range: 0,60-1209600)

Note: In this example, 60 is used.

Step 3. Enter a value in seconds in the *ClientDPD Timeout* field ranging from 0 to 3600. This value specifies the periodic sending of HELLO/ACK messages to check the status of the VPN tunnel.

Note: This feature must be enabled on both ends of the VPN tunnel.



Optional Gateway Settings

Idle Timeout: 3000 sec. (Range: 60-86400)

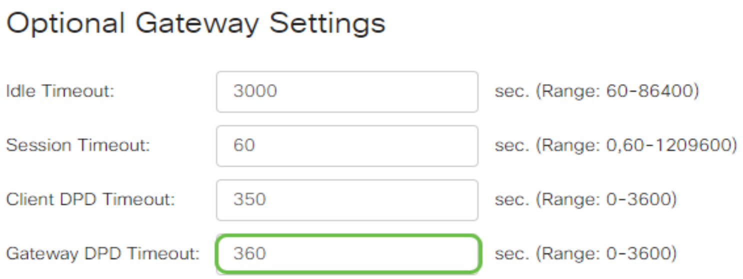
Session Timeout: 60 sec. (Range: 0,60-1209600)

Client DPD Timeout: 350 sec. (Range: 0-3600)

Note: In this example, 350 is used.

Step 4. Enter a value in seconds in the *GatewayDPD Timeout* field ranging from 0 to 3600. This value specifies the periodic sending of HELLO/ACK messages to check the status of the VPN tunnel.

Note: This feature must be enabled on both ends of the VPN tunnel.

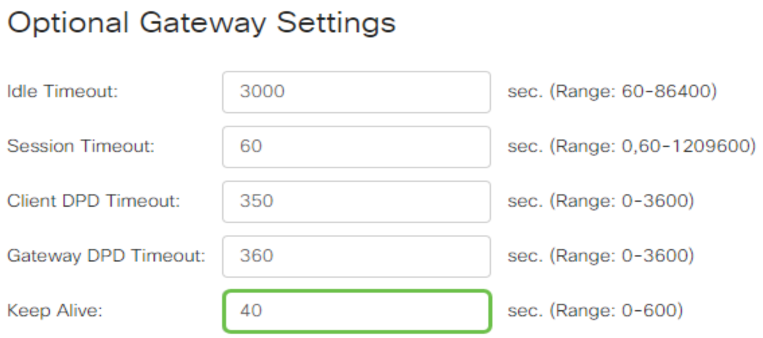


Optional Gateway Settings

Idle Timeout:	3000	sec. (Range: 60-86400)
Session Timeout:	60	sec. (Range: 0,60-1209600)
Client DPD Timeout:	350	sec. (Range: 0-3600)
Gateway DPD Timeout:	360	sec. (Range: 0-3600)

Note: In this example, 360 is used.

Step 5. Enter a value in seconds in the *Keep Alive* field ranging from 0 to 600. This feature ensures that your router is always connected to the Internet. It will attempt to re-establish the VPN connection if it is dropped.

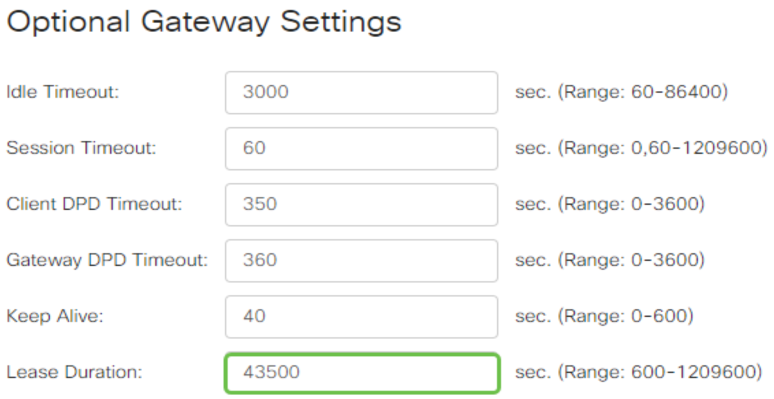


Optional Gateway Settings

Idle Timeout:	3000	sec. (Range: 60-86400)
Session Timeout:	60	sec. (Range: 0,60-1209600)
Client DPD Timeout:	350	sec. (Range: 0-3600)
Gateway DPD Timeout:	360	sec. (Range: 0-3600)
Keep Alive:	40	sec. (Range: 0-600)

Note: In this example, 40 is used.

Step 6. Enter a value in seconds for the duration of the tunnel to be connected in the *Lease Duration* field. The range is from 600 to 1209600.

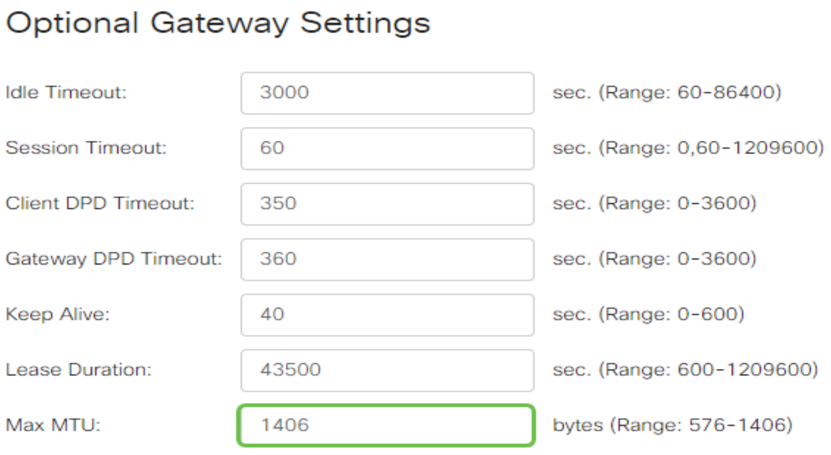


Optional Gateway Settings

Idle Timeout:	3000	sec. (Range: 60-86400)
Session Timeout:	60	sec. (Range: 0,60-1209600)
Client DPD Timeout:	350	sec. (Range: 0-3600)
Gateway DPD Timeout:	360	sec. (Range: 0-3600)
Keep Alive:	40	sec. (Range: 0-600)
Lease Duration:	43500	sec. (Range: 600-1209600)

Note: In this example, 43500 is used.

Step 7. Enter the packet size in bytes that can be sent over the network. The range is from 576 to 1406.

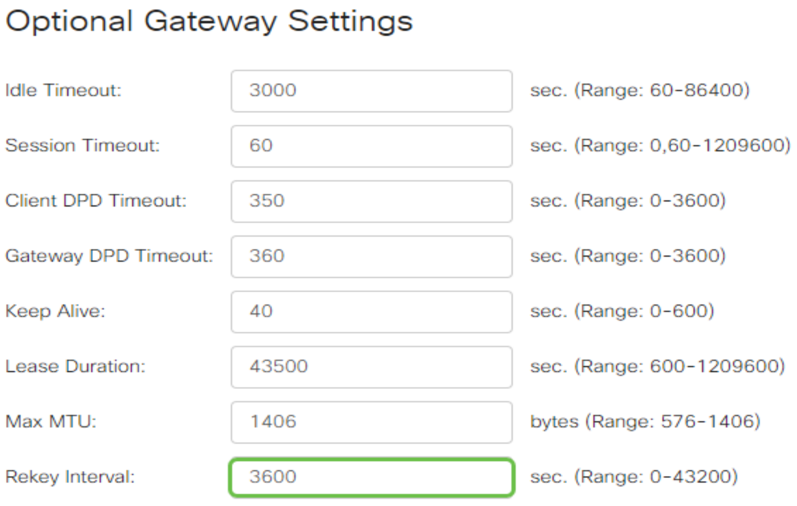


Optional Gateway Settings

Idle Timeout:	3000	sec. (Range: 60-86400)
Session Timeout:	60	sec. (Range: 0,60-1209600)
Client DPD Timeout:	350	sec. (Range: 0-3600)
Gateway DPD Timeout:	360	sec. (Range: 0-3600)
Keep Alive:	40	sec. (Range: 0-600)
Lease Duration:	43500	sec. (Range: 600-1209600)
Max MTU:	1406	bytes (Range: 576-1406)

Note: In this example, 1406 is used.

Step 8. Enter the relay interval time in the *Rekey Interval* field. The Rekey feature allows the SSL keys to renegotiate after the session has been established. The range is from 0 to 43200.



Optional Gateway Settings

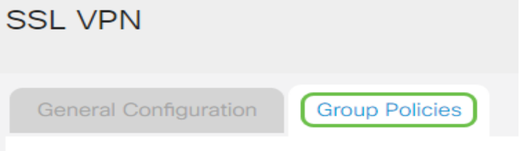
Idle Timeout:	3000	sec. (Range: 60-86400)
Session Timeout:	60	sec. (Range: 0,60-1209600)
Client DPD Timeout:	350	sec. (Range: 0-3600)
Gateway DPD Timeout:	360	sec. (Range: 0-3600)
Keep Alive:	40	sec. (Range: 0-600)
Lease Duration:	43500	sec. (Range: 600-1209600)
Max MTU:	1406	bytes (Range: 576-1406)
Rekey Interval:	3600	sec. (Range: 0-43200)

Note: In this example, 3600 is used.

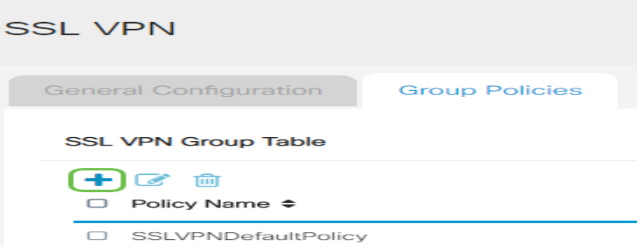
Step 9. Click **Apply**.

Configure Group Policies

Step 1. Click the **Group Policies** tab.

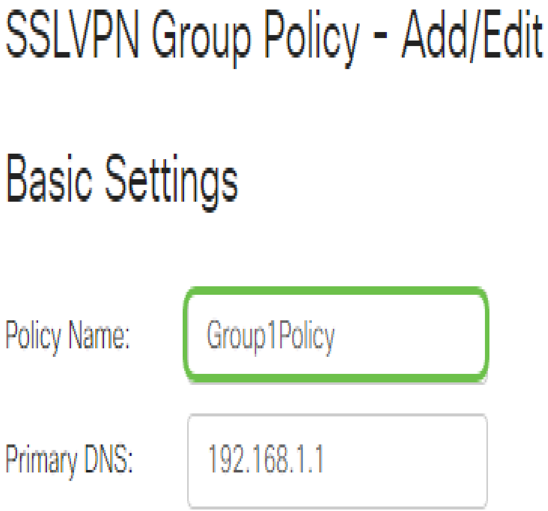


Step 2. Click the **Add** button under the SSL VPN Group Table to add a group policy.



Note: The SSL VPN Group table will show the list of group policies on the device. You can also edit the first group policy on the list, which is named SSLVPNDefaultPolicy. This is the default policy supplied by the device.

Step 3. Enter your preferred policy name in the *Policy Name* field.



SSLVPN Group Policy - Add/Edit

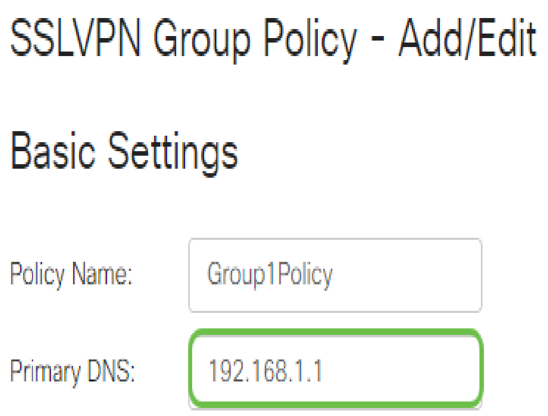
Basic Settings

Policy Name: Group1Policy

Primary DNS: 192.168.1.1

Note: In this example, Group 1 Policy is used.

Step 4. Enter the IP address of the Primary DNS in the field provided. By default, this IP address is already supplied.



SSLVPN Group Policy - Add/Edit

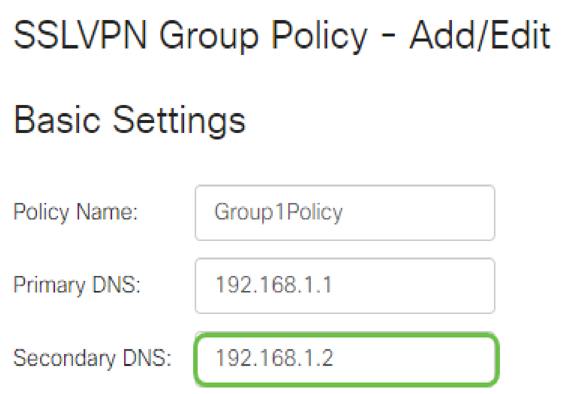
Basic Settings

Policy Name: Group1Policy

Primary DNS: 192.168.1.1

Note: In this example, 192.168.1.1 is used.

Step 5. (Optional) Enter the IP address of the Secondary DNS in the field provided. This will serve as a backup in case the primary DNS failed.



SSLVPN Group Policy - Add/Edit

Basic Settings

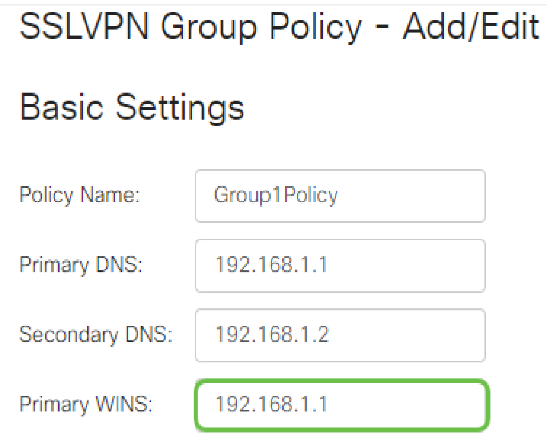
Policy Name: Group1Policy

Primary DNS: 192.168.1.1

Secondary DNS: 192.168.1.2

Note: In this example, 192.168.1.2 is used.

Step 6. (Optional) Enter the IP address of the primary WINS in the field provided.



SSLVPN Group Policy - Add/Edit

Basic Settings

Policy Name: Group1Policy

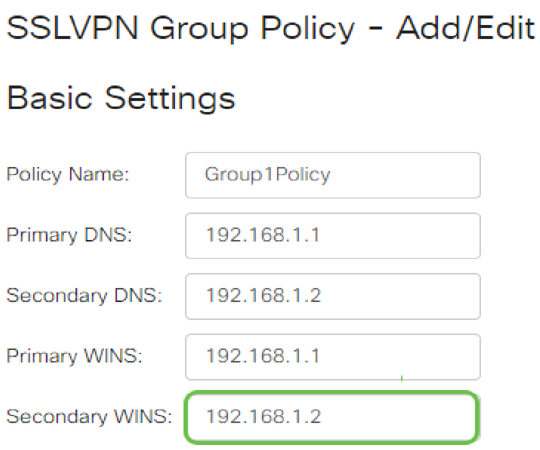
Primary DNS: 192.168.1.1

Secondary DNS: 192.168.1.2

Primary WINS: 192.168.1.1

Note: In this example, 192.168.1.1 is used.

Step 7. (Optional) Enter the IP address of the secondary WINS in the field provided.



SSLVPN Group Policy - Add/Edit

Basic Settings

Policy Name: Group1Policy

Primary DNS: 192.168.1.1

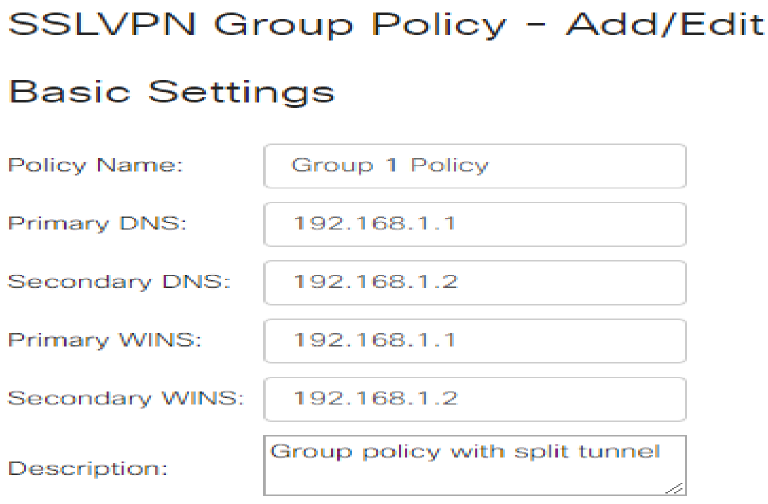
Secondary DNS: 192.168.1.2

Primary WINS: 192.168.1.1

Secondary WINS: 192.168.1.2

Note: In this example, 192.168.1.2 is used.

Step 8. (Optional) Enter a description of the policy in the *Description* field.



SSLVPN Group Policy - Add/Edit

Basic Settings

Policy Name: Group 1 Policy

Primary DNS: 192.168.1.1

Secondary DNS: 192.168.1.2

Primary WINS: 192.168.1.1

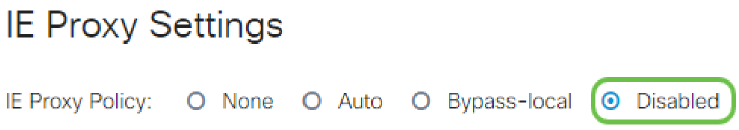
Secondary WINS: 192.168.1.2

Description: Group policy with split tunnel

Note: In this example, Group Policy with split tunnel is used.

Step 9. (Optional) Click on a radio button to choose the IE Proxy Policy to enable Microsoft Internet Explorer (MSIE) proxy settings to establish VPN tunnel. The options are:

- None - Allows the browser to use no proxy settings.
- Auto - Allows the browser to automatically detect the proxy settings.
- Bypass-local - Allows the browser to bypass the proxy settings that are configured on the remote user.
- Disabled - Disables the MSIE proxy settings.

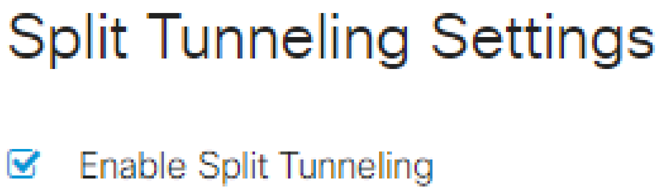


IE Proxy Settings

IE Proxy Policy: ○ None ○ Auto ○ Bypass-local ● Disabled

Note: In this example, Disabled is chosen. This is the default setting.

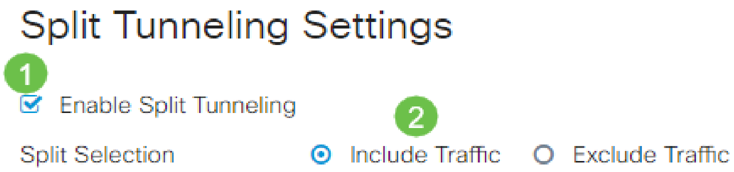
Step 10. (Optional) In the Split Tunneling Settings area, check the **Enable Split Tunneling** check box to allow Internet destined traffic to be sent unencrypted directly to the Internet. Full Tunneling sends all traffic to the end device where it is then routed to destination resources, eliminating the corporate network from the path for web access.



Split Tunneling Settings

☑ Enable Split Tunneling

Step 11. (Optional) Click on a radio button to choose whether to include or exclude traffic when applying the split tunneling.



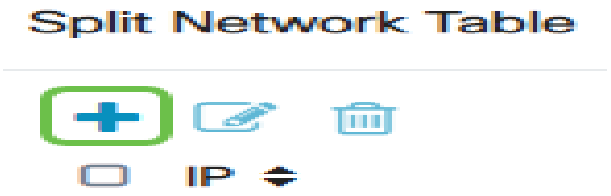
Split Tunneling Settings

☑ Enable Split Tunneling

Split Selection ● Include Traffic ○ Exclude Traffic

Note: In this example, Include Traffic is chosen.

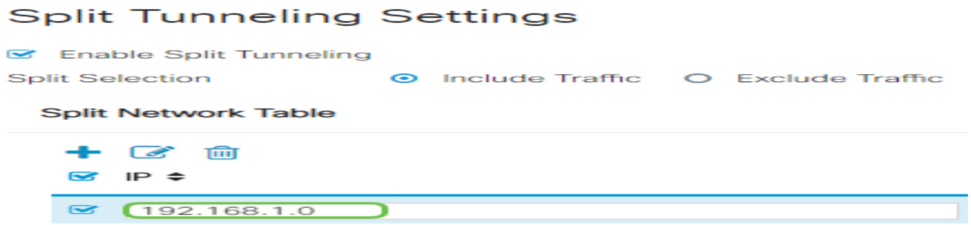
Step 12. In the Split Network Table, click the **Add** button to add split Network exception.



Split Network Table

□ IP

Step 13. Enter the IP address of the network in the field provided.



Split Tunneling Settings

☑ Enable Split Tunneling

Split Selection ● Include Traffic ○ Exclude Traffic

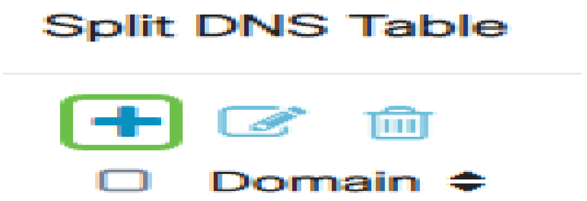
Split Network Table

☑ IP

☑ 192.168.1.0

Note: In this example, 192.168.1.0 is used.

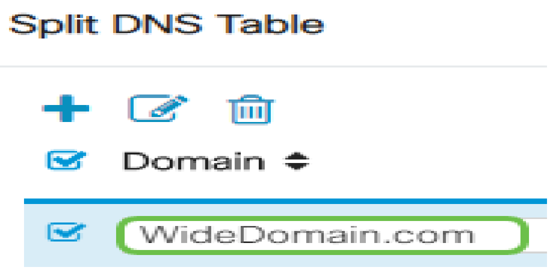
Step 14. In the Split DNS Table, click the **Add** button to add split DNS exception.



Split DNS Table

□ Domain

Step 15. Enter the Domain name in the field provided and then click **Apply**.

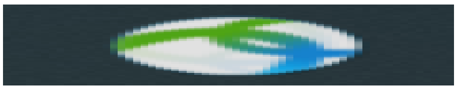


Split DNS Table

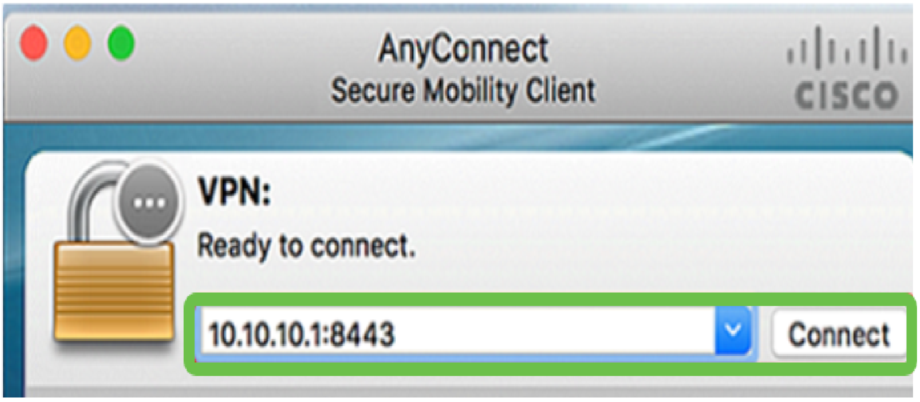
	Domain
☑	WideDomain.com

Verify AnyConnect VPN Connectivity

Step 1. Click on the **AnyConnect Secure Mobility Client** icon.



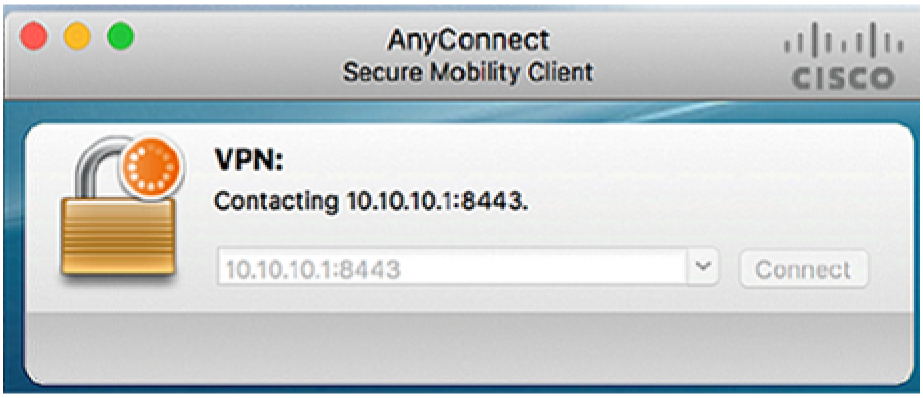
Step 2. In the AnyConnect Secure Mobility Client window, enter the gateway IP address and the gateway port number separated by a colon (:), and then click **Connect**.



VPN:
Ready to connect.

10.10.10.1:8443

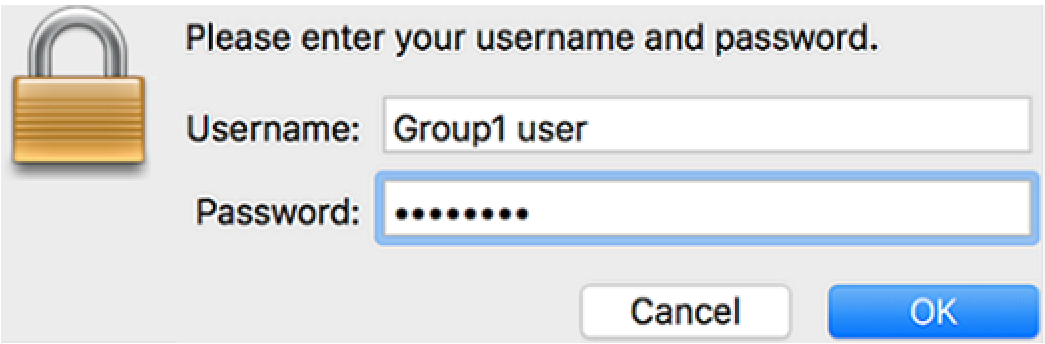
Note: In this example, 10.10.10.1:8443 is used. The software will now show that it is contacting the remote network.



VPN:
Contacting 10.10.10.1:8443.

10.10.10.1:8443

Step 3. Enter your server username and password in the respective fields and then click **OK**.



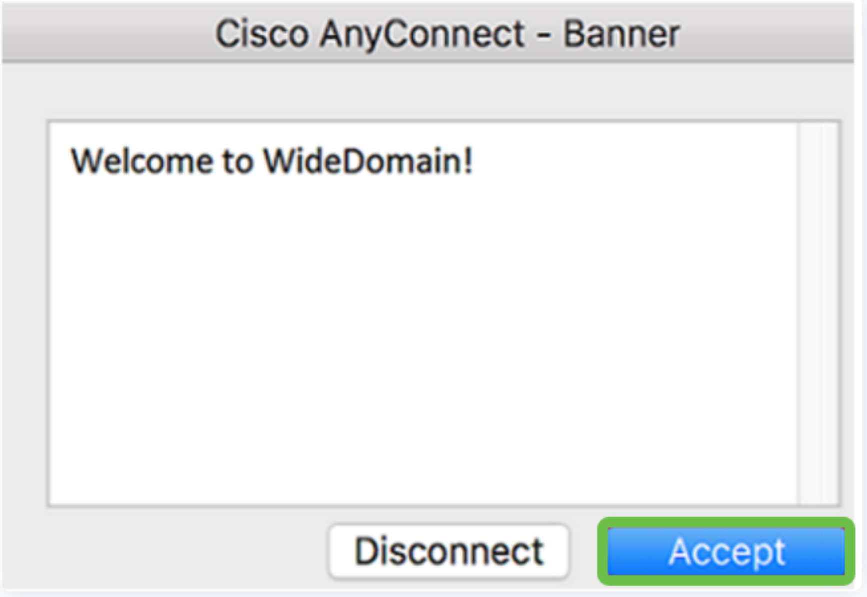
Please enter your username and password.

Username: Group1 user

Password: •••••••••

Note: In this example, Group1 user is used as the Username.

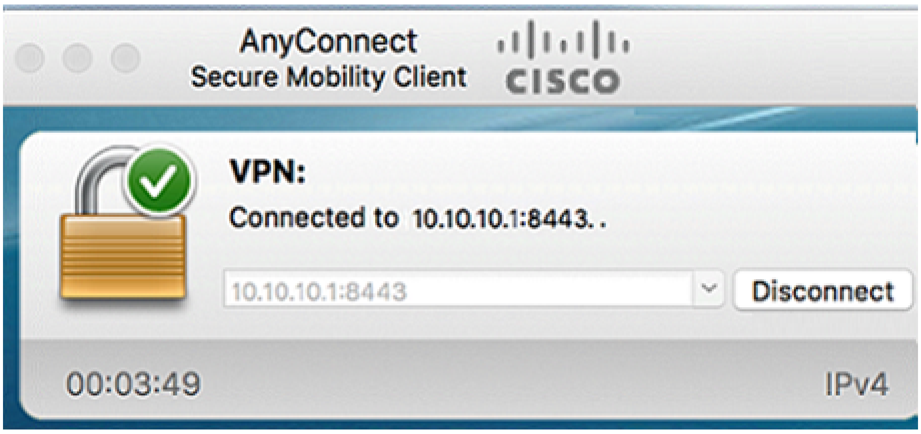
Step 4. As soon as the connection is established, the Login Banner will appear. Click **Accept**.



Cisco AnyConnect - Banner

Welcome to WideDomain!

The AnyConnect window should now indicate the successful VPN connection to the network.



VPN:

Connected to 10.10.10.1:8443. .

Step 5. (Optional) To disconnect from the network, click **Disconnect**.

You should now have successfully configured AnyConnect VPN connectivity using an RV34x Series Router.