How to Set Up an IPsec Connection To a Road Warrior (with SIP)



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How to configure Ingate Firewall/SIParator® for IPsec connections from a road warrior

With an IPsec connection between the Firewall/SIParator and a road warrior, the user can use servers and other resources from home or a hotel without exposing the traffic openly on the Internet.

Connections with a road warrior require X.509 certificates.

This is how to set up an IPSec VPN connection to the Firewall/SIParator.

Certificates

If you have many road warriors connecting to the Firewall/SIParator and you don't want to upload every client X.509 certificate separately, you can choose to trust certificates signed by a certain CA. For this, the Firewall/SIParator requires the CA certificate instead. You upload the CA certificate on the **Certificates** page.

Enter a name for the CA certificate. The name is only used internally in the Firewall/SIParator.

Edit Row	Name	CA Certificate	CACRL	Information	Delete Row
×	Main CA	Change/View	Change/View	Subject: /CN+fw.ingate.com Issuer: /CN+fw.ingate.com MD5 Fingerprint: 16:78:3D:D6:D7:56:F4:AE:EB:8D:0D:0B:03:4E:4C:4C Valid to: 2008:04:24:08:12:23	Г

To authenticate itself, the Firewall/SIParator needs an X.509 certificate. This is created on the same page.

Make a new row in the **Private Certificates** table, press **Create new**, and fill in the form. The password fields are only relevant if you want to be able to revoke the certificate.

You can select to let the Firewall/SIParator sign its own certificate (this is the simple way) or create a certificate request and make a CA sign it for you. If you use an outside CA, the signed certificate must be uploaded to the Firewall/SIParator.

Create Certificate or	Certificate Request			
Fill in the certificate data	for "RADIUS" below, th	en create eith	er a certificate or a certificat	te request.
After generating a certific firewall.	cate request, and havin	g it signed by a	a signing authority, the cert	ficate must be imported to the
Expire in (days): * 365	Country code (C):	Organization	(0):	
Common Name (CN): * client.ingate.con	State/province (ST):	Organization	al Unit (OU):	
Email address	Locality/town (L):			
If you generate several should make sure they l	certificates with identica have different serial nur	il data you nbers.	Below you can enter an certificate requests.	optional challenge password for
Serial number:			Challenge password:	
* 0			Challenge password again:	
Fields marked with "*" a	re mandatory.			

IPsec Certificates

Create a self-signed X.509 certificate

Go to the **IPsec Certificates** page under **Virtual Private Networks** and select which certificate the Firewall/SIParator should use for VPN connections. Also add all CA servers which have signed certificates for the VPN clients.

Create an X.509 certificate request

Abort

IPsec Peers	IPsec Tunnels	IPsec Cryptos	IPsec Certificates	IPsec Settings	Authentication Server	IPsec Status	PPTP	PPTP Status
			_		_		-	
Loc	al X.509	Certific	ate (Help)	IPs	ec CA Certific	ates	(Help)	
Use t	his certifi	cate for II	sec:	Edi	t Row CA	Delete	Row	
VP	N cert 🔻	r			Main CA			
				_				,
				Ad	d new rows	1 ro	ws.	

IPsec Peers

Go to the **IPsec Peers** page under **Virtual Private Networks** to define the IP addresses between which the VPN connection should be established. You also define how the VPN peers should authenticate themselves to each other.

Select On under **Status**. Under **Authentication:Type**, select the authentication method. Road warriors must use X.509 certificates, and you can select to upload the client's certificate or trust the CA which signed the client certificate. To use X.509 certificates, you must have access to a CA server (or purchase signings) which will sign certificate requests. If you have your own CA server, you can upload its certificate to the Firewall/SIParator and then trust all certificates signed by that CA (select Trusted CA).

Under **Info**, upload the client certificate or enter the CA/DN, depending on the authentication type selected above. N.B.: The X.509 certificate you upload here is the client certificate, not the Firewall/SIParator's own one.

Under Local side, select a public IP address of the Firewall/SIParator, and enter a "*" under **Remote side**. This means that the peer is a road warrior.

Enter a lifetime for the ISAKMP (IKE) keys. The lifetime must be the same on both VPN peers.



IPsec Peers (Help)

These settings are called "Phase 1 settings" in some other IPsec products.

					R	emote Sid	e		
Edit Row	Name	Subgroup	Active	Local Side	DNS Name or IP Address	Dynamic	IP Address	RADIUS	Blacklist
	+ Martin	-	Yes	Internet (193.12.253.113)	ż	No	ż	Yes	*

1				Authe	ntication	
	Key Lifetime (seconds)	Initiate Re-keying	Encryption	Type Info		Delete Row
	3600	Yes	AES/3DES	Trusted CA, with DN	/CN=ingate /O=Ingate	

IPsec Tunnels

Next, go to the **IPsec Tunnels** page and enter the networks which will use the VPN tunnel.

In the **IPsec Networks** table, define the local office network that will be used through the VPN tunnel.

You must also enter the IP address of the authentication server here, either as a part of the office network or as a separate network.

Psec Networks (Help)											
Edit Row	Name	DNS Name or Network Address	Network Address	Netmask / Bits	Delete Row						
	Atlantic network	10.20.30.0	10.20.30.0	24							
	Boston side	13.7.3.22	13.7.3.22	32							
	Chicago network	192.168.10.0	192.168.10.0	24							
	DMZ network	172.16.0.0	172.16.0.0	24							
	Home network	10.47.0.0	10.47.0.0	16							

Add new rows 1 rows.

Under **Peer**, select the newly created VPN tunnel.

Under **Local network**, select Network as the **Address type** and the local network (connected to the Firewall/SIParator) that you defined below under **IPsec Networks**.

Under **Remote network**, you have the following options:

- The road warrior has a public IP address on the Internet. Select Remote side address under Address type. This means "the same IP address as on the IPsec Peers page".
- The road warrior is located behind a NAT:ing device, and you know which IP network it belongs to. Enter that network in the **IPsec Networks** table. In the **IPsec Tunnels** table, select Network, allow subset under **Address type** and select the network you just created under **Network**.
- Usually, you won't know the private IP address of the road warrior in advance, or it will change a lot. You might not even know if the client is NAT:ed or not.

Select Remote/private address as the **Address type**. This will allow all private IP addresses as well as the public address presented by the client at the negotiation.

When **Network** or **Network**, **allow subset** was selected, there must be a line for every pair of networks that should be able to communicate with each other through the VPN connection.

The IPsec key lifetime is optional, but if you enter a lifetime, it must be the same on both VPN peers.

IPsec Peers	IPsec Tunnels	IPsec Cryptos	IPsec Certificates	IPsec Setting	Authentication s Server	IPsec Status	PPTP Sta	TP tus				
IP se The se	IPsec Tunnels (Help) These settings are called "Phase 2 settings" in some other IPsec products.											
Edit Row	Peer	Lo Addre: Type	ss Network	k NAT As	Remote Net Address Type	twork Network	IPsec Key Lifetime (second optiona	Encryption s,	PFS Group	Delete Row		
	1				-		1000	LECOPEC.	6			

SIP through IPsec



Additionally, for SIP to work over your IPsec connections, you require a tunnel under **IPsec tunnels** between the client and the **public** IP address of the Firewall/SIParator, i.e. the Local side address under **IPsec Peers**. This requires a Phase 2 connection in the client (The Greenbow) also.

Example: if your DNS record sip.abc.com points to the WAN IP of the Firewall/SIParator then you must have a tunnel between the client and this IP address.

This is so that all SIP and RTP media through the b2bua or proxy is permitted.

Ensure that:

- The remote (road warrior) client also has a tunnel/Phase2 to the external IP of the Firewall/SIParator. This means "the same IP address as on the IPsec Peers page". Optionally, a tunnel to a network or subnet that includes the external IP of the Firewall/SIParator, i.e. to a DMZ range.
- The external IP (or DMZ range) of the Firewall/SIParator is a network in the **IPsec Networks** table. In the **IPsec Tunnels** table, select Network under **Address type** and select the network you just created under **IPsec Networks**.

Networks and Computers

Go to the **Networks and Computers** page under **Network** and make sure that there are groups for all networks that will use the VPN tunnel. These are used for building rules for the VPN traffic. You don't need a network for the authentication server.

The network on the other side of the VPN tunnel (see *VPN network* in the example) must have "-" selected under **Interface**.

Network Compu	ts and uters	Default Gateways	Default All Gateways Interfaces NAT VL/		VLAN	Eth0	Eth 1	Eth2	Eth3	Eth4	Eth5	Interface Status	PPPoE			
Netwo	Networks and Computers															
	Edit Name				Lower	Limit	:		0	Upper for IP r	Limit anges)					
Edit Row			Subgroup	D Na or Add	NS ume r IP tress	IP Address		DN or IP	S Nar Addr	ne ess	IP /	Address	Interf	Interface/VLAN		
	• DH	CP clients	-	10.2	2.0.0	10.22	.0.0	10.22.0.255		10.22.0.255		10.22.0.255		DHCI untag	P (eth3 ged)	
	• DM	z	-	172.	16.0.0	172.1	6.0.0	172.16.0.255 172.1		6.0.255	DMZ untag	(eth2 ged)				
	+ Eve	rywhere	-	0.0.0	0.0	0.0.0.	0	255.2	55.255	5.255	255.2	55.255.255	-			
	🛨 Inte	rnet	-	0.0.0	.0	0.0.0.	0	255.2	55.255	5.255	255.2	55.255.255	Externuntag	nal (eth1 ged)		
	⊕ _{Маі}	l server	-	10.4	7.2.13	10.47	.2.13						Internuntag	al (eth0 ged)		
	• offi	ce network	-	10.4	7.0.0	10.47	.0.0	10.47	255.2	55	10.47	255.255	Intern untag	al (eth0 ged)		
	• PPT	ΓP	-	10.7	0.100	10.7.0	0.100	10.7.0	.150		10.7.0	.150	-			
	• VPN	N network	-	0.0.0	0.0	0.0.0.	0	255.2	\$5.255	5.255	255.2	\$5.255.255	-			

Rules

Go to the **Rules** page and create rules to let traffic through the VPN tunnel. If there are no rules, no traffic will be let through, even if the tunnel is established.

Select the VPN tunnel under **From VPN** if the **Client** network is the road warrior network. Select the VPN tunnel under **To VPN** if the **Server** network is the road warrior network.

		DHCP			Time
Rules	Relays	Relay	Services	Protocols	Classes

Rules	5												
Edit Row	Rule No.	Active	Client	From IPsec Peer	Server	To IPsec Peer	Direction	Service	Action	Time Class	Log Class	Comment	Delete Row
	1	Yes	VPN network	Martin	Office network	-	(VPN) -> Internal	tcp	Allow	24/7	Local		
	2	Yes	VPN network	Martin	Office network	-	(VPN) -> Internal	udp	Allow	24/7	Local		
	3	Yes	Office network	-	VPN network	Martin	Internal -> (VPN)	udp	Allow	24/7	Local		

Save/Load Configuration

Finally, go to the **Save/Load Configuration** page under **Administration** and apply the new settings by pressing **Apply configuration**.

Save/Load Configuration	Show Configuration	User Administration	ι
Test Run a Duration of li	and Apply Co	nf <u>(Help)</u> e:	
30 see	conds		
Apply cont	figuration		

When the configuration has been applied, you should save a backup to file. Press **Save config to CLI file** to save the configuration.

Save/Load CLI Command File (Help)			
The permanent configuration might be affected by loading a CLI file.			
Save config to CLI file	Load CLI file Local file:		Browse

Configuring the Client

The road warrior itself must also be configured. The exact moves for this is of course dependant of what client software you use. See http://www.ingate.com/Interaction.php for configuration instructions for several VPN clients.