



Firewall HotBrick LB-2

How To

LB-2 IPSec Tunnel Setup Guide

USA

7243 NW 54th Street 33166 Miami, FL www.hotbrick.com support@hotbrick.com

EUROPE

Generatorstraat 26 Hengelo (Ov), 7556 RC Amsterdam - Netherlands www.hotbrick.nl support@hotbrick.nl

BRAZIL

Francisco Tramontano, 100 05686-010 São Paulo/SP www.hotbrick.com.br suporte@hotbrick.com.br



EUROPE

Generatorstraat 26 Hengelo (Ov), 7556 RC Amsterdam Netherlands www.hotbrick.nl BRAZIL Francisco Tramontano, 100 05686-010 – São Paulo/SP www.hotbrick.com.br suporte@hotbrick.com.br

LB-2 IPSec Tunnel Setup Guide

The HotBrick LB-2 is a VPN capable Dual WAN Gateway with industry standard IPsec encryption. It provides extremely secure LAN-to-LAN connectivity over the Internet. The LB-2 supports VPN by encryption, encapsulation, and authentication using the following methods:

DES/3DES/AES MD-5 SHA-1/SHA-2

The maximum tunnels allowed are 10 VPN tunnels. This setup guide will help the user establish an IPsec VPN tunnel between two LB-2s with VPN.

Note: The LB-2 must have the VPN upgrade to establish an IPSec Tunnel. This will also help you setup an IPSec Tunnel if you have an LB-2 VPN with license key. Please upgrade your LB-2 VPN to the latest version by going to our website and clicking on the Downloads link (<u>http://hotbrick.com/support.asp</u>).



IPsec Tunnel between two LB-2 VPN

The picture above displays two sites that are joined by a VPN IPsec tunnel between two LB-2s with VPN. Here is how to setup the VPN IPSec tunnel:

- 1. Login to your LB-2
- 2. Go to Advanced Setup
- 3. VPN Configuration
- 4. Click on Global Setting. Please see the picture below for the IKE Global Setting for site A.



7243 NW 54th Street Miami, FL 33166 www.hotbrick.com support@hotbrick.com

EUROPE

Generatorstraat 26 Hengelo (Ov), 7556 RC Amsterdam Netherlands www.hotbrick.nl

BRAZIL

Francisco Tramontano, 100 05686-010 – São Paulo/SP www.hotbrick.com.br suporte@hotbrick.c<u>om.br</u>

🚰 HotBrick Load Balancer LB-2 - M	Microsoft Internet Explorer		
File Edit View Favorites Too	ols Help		🥂 🕺 🖓
🚱 Back 🝷 💮 🖌 🔀 🔮	🏠 🔎 Search 👷 Favorites Media 🗟	🚱 🗟 • 🛬 🗹 • 🔜 鑬 🦓	
Address http://192.168.2.1			▼ ラ Go Links ≫
HotBrick			Load Balancer LB 2
Login Time: 9:45 A.M.			
De els Cature			_
Basic Setup	IKE Global Setting		📑 HELP
Advanced Port			
Advanced Setup	Global Parameters	WAN1	WAN2
Security Management	Enable Setting		
VPN Configuration	ISAKmp Port	500	500
Global Setting	Phase 1 DH Group	DH Group 1 (768-bit)	DH Group 2 (1024-bit)
Policy Setup	Phase 1 Encryption Method	3DES 🔽	3DES 🔽
Log	Phase 1 Authentication Method	MD5 💌	MD5 💌
QoS Configuration	Phase 1 SA Lifetime	28800 Seconds	28800 Seconds
Anagement Assistant	Retry Counter	5	5
Network Info	Retry Interval	30 Seconds	30 Seconds
	Maxtime to complete Phase 1	300 Seconds	300 Seconds
	Maxtime to complete Phase 2	300 Seconds	300 Seconds
	Count Per Send	1	1
	Force Deletion after Expiry		
	Log Level		
	Log Level	Infomation 💌	
		Submit Reset	
C Done			

Figure 2 - Global Setting for Site A

5. Under the Global Setting, make sure you enable the WAN interface that you want the VPN IPSec tunnel to establish through.

6. Both WAN1 and WAN2 can initiate and establish VPN Tunnels

7. Figure 2 shows the Global Parameters for WAN1. Remember that these parameters must be identical at both sites. Below are some recommended values:

- Phase 1 DH Group DH Group 1 (768 bit)
- Phase 1 Encryption Method 3DES
- Phase 1 Authentication Method MD5
- Phase 1 SA Lifetime 28800

8. Once you have selected the Global Parameters then hit Submit.

9. The LB-2 will be restarted and refreshed to save the settings.

10. After the settings are refreshed, click on Policy Setup

11. Under IPSec Traffic Binding, input a name for "Tunnel Name". In Figures 3 and 4 below, we have the tunnel name "LB2VPN".

12. Make sure you check the enable box for "Tunnel".

13. For *WAN port* you can bind the tunnel to WAN1, WAN2 or ANY. Since we are building a tunnel on WAN1, we will be specific and select WAN1 on the *WAN Port*.

14. If you have multiple PPPoE sessions on the WAN ports make sure you select the appropriate session.



7243 NW 54th Street Miami, FL 33166 www.hotbrick.com support@hotbrick.com

EUROPE

Generatorstraat 26 Hengelo (Ov), 7556 RC Amsterdam Netherlands www.hotbrick.nl

BRAZIL

Francisco Tramontano, 100 05686-010 – São Paulo/SP www.hotbrick.com.br suporte@hotbrick.com.br

HotBrick Load Balancer LB-2 - File Edit View Favorites To	Microsoft Internet Explorer				-	. 8) //
🔾 Back 🔹 🏹 🗸 🔀	🔥 🔎 Search 🔶 Favorites 📢 M	edia 🔗 🙈 i	w • 🗔 🛍 🚜			
ddress http://192.168.2.1					▼ > 60	Links
lot Brick					Lood Balansar	
ngin Time: 9:45 A.M.					Load Balancer	LB
Basic Setup	IPSec Policy Setup				🚺 H E L	P
Advanced Port						
Security Management	VPN Tuppel List	Add New Policy				
VPN Configuration	Tunnel Name	LB-2 VPN				-
Clobal Satting	Tunnel	E Enable				
Policy Setup	WAN Port	WAN 1				
Log	PPPoE Session	Session 1				
005 Configuration	Local Identity Type	Wan IP Address	•			
Management Assistant		p				
Network Info	Traffic Selector					
, Network Theo	Service	Protocol Type	Any 💌			
		Local Type	Subnet 💌			
	Local Security Network	IP Address	10.1.1.0	Mask Address	255.255.255.0	
	· ·	Port Range	0 ~ 0			1
		Pemote Type	Subpet			
	Pemote Security Network	ID Address	192 168 2 0	Mack Address	255 255 255 0	1
	Nomoto occurry Notwork	Port Bange	0 ~ 0	Mask Address	2001200120010	
				-		-
	Remote Security Gateway	Identity Type	IP Address	•		
		IP Address	67.111.37.232			-
	Security Level					
					🔮 Internet	
	Fiau	ire 3 - IPSec Tra	ffic Bindina for S	ite A		
HotBrick Load Balancer LB-2 -	Microsoft Internet Explorer					. 18
ile Edit View Favorites To	ools Help					
🕽 Back 🔹 🏹 👻 🔀	🔥 🔎 Search 🔶 Favorites 📢 M	edia 🔗 🖂 🛃 i	v - 🗔 🎁 🔉			
ddress http://10.1.1.1					▼ → 60	Links
otBrick					Load Balancer	LB
ogin Time: 9:45 A.M.						
Basic Setup	TD0D					
Basic Setup	IPSec Policy Setup				E Hel	P
Basic Setup Advanced Port Advanced Setup	IPSec Policy Setup				<u>р</u>]нег	
Basic Setup Advanced Port Advanced Setup Security Management	IPSec Policy Setup IPSec Traffic Binding VPN Tunnel List	Add New Policy	💌		[]] HEL	
Basic Setup Advanced Port Advanced Setup Security Management YPN Configuration	IPSec Policy Setup IPSec Traffic Binding VPN Tunnel List Tunnel Name	Add New Policy	💌		Ĺ <mark>.</mark> H€L	

2 millioningaration								
Global Setting	Tunnel	🗹 Enable						
Policy Setup	WAN Port	WAN 1 💌	WAN 1					
Log	PPPoE Session	Session 1 🔽						
QoS Configuration	Local Identity Type	Wan IP Address	Wan IP Address 💌					
Management Assistant								
Chinese to take	Traffic Selector							
S NELWORK THIO	Service	Protocol Type	Any 💌					
		Local Type	Subnet 💌					
	Local Security Network	IP Address	192.168.2.0	Mask Address	255.255.255.0			
		Port Range	0 ~ 0					
		Remote Type	Subnet 💌					
	Remote Security Network	IP Address	10.1.1.0	Mask Address	255.255.255.0			
		Port Range	0 ~ 0					
	Remote Security Cateway	Identity Type	IP Address	•				
	Remote Security Galeway	IP Address	67.111.37.227					
		·						
	Security Level							
Done					internet			

Figure 4 - IPSec Traffic Binding for Site B

How To establish an IPSec VPN tunnel with LB-2 VPN



USA	The set
7243 N	W 54th Street
Miami	, FL 33166
WWW.I	iothrick.com
suppo	rt@noturick.coi

EUROPE

Generatorstraat 26 Hengelo (Ov), 7556 RC Amsterdam Netherlands www.hotbrick.nl BRAZIL Francisco Tramontano, 100 05686-010 – São Paulo/SP www.hotbrick.com.br suporte@hotbrick.com.br

- 15. Under Traffic Selector, for Service Protocol Type select ANY.
- 16. Under Local Security Network , for Local Type select Subnet.
- 17. The IP address must reflect the entire subnet. Please see below:
 - a. In Figure 3, Site A IP address is 192.168.2.0 and Mask Address 255.255.255.0
 - b. In Figure 4, Site B IP address is 10.1.1.0 and Mask Address 255.255.255.0
 - c. NOTE LAN subnets and IP addresses must be different or there will be overlapping.
- 18. The Port Range can be left at $0 \sim 0$.

19. For Remote Security Network, for Remote Type select Subnet.

20. The IP address must again reflect the entire subnet. In Figure 3, the remote security network for Site B is 10.1.1.0. In Figure 4, the remote security network for Site A its 192.168.2.0.

21. For the Remote Security Gateway the gateway type is IP Address. The IP address is the WAN1 IP address of the remote site (Site B).

22. Under Security Level, the VPN IPSec Tunnel will be in ESP (Encapsulating Security Payload) mode.

23. For the Encryption method you can choose from: Null, DES/3DES, or AES. In our example we have chosen 3DES. Please see figure 5 and figure 6.

24. For the Authentication Method you can choose from: Null, MD5, SHA-1/SHA-2. In our example we have chosen MD-5.

e Edit View Favorites To	ols Help		
Back 🔹 📀 🔹 💌 💈	🏠 🔎 Search 🤺 Favorites 🌒 M	ia 🚱 🗟 - 💺 🔟 + 📴 🏭 🔏	
ress http://192.168.2.1			💌 🄁 Go Lir
ot <mark>Brick</mark>	1999		Load Balancer I
gin Time: 9:45 A.M.	-		
Basic Setun	Remote Security Network	IP Address 192.168.2.0 Mask Address	255.255.255.0
Advanced Port		Port Range 0 ~ 0	
Advanced Setun	Pernete Convitu Cotovov	Identity Type IP Address	
Security Management	Remote Security Gateway	IP Address 67.111.37.232	
VDN Configuration			
Colobal Catting	Security Level		
Baliau Catur	Encryption Method	3DES T	
S Foncy Secup	Authentication Method	MD5	
Coo Coofinition	ESP Mode	Tunnel	
g uos configuration	Key Management		
S Management Assistant	Key Type	AutoKey (IKE)	
Network Into	Phase 1 Negotiation	Main Mode	
	Perfect Foward Secrecy	DH Group 2 (1024-bit)	
	Preshared Key	bethrick (Characters / Hev:0v))
		In Time 28800 Seconds (Note : 0 for no evniry)	,
	Key Lifetime	In Volume 0 Kbytes	
		in roland p	
	Action		
	Connect Flush Tunnel	Reload Policy Tunnel Status	Set Options
		Add Delete Lindate Reset	
	Security Association List		

Figure 5 - Policy Setup for Site A



7243 NW 54th Street Miami, FL 33166 www.hotbrick.com support@hotbrick.com

EUROPE

Generatorstraat 26 Hengelo (Ov), 7556 RC Amsterdam Netherlands www.hotbrick.nl

BRAZIL

Francisco Tramontano, 100 05686-010 – São Paulo/SP www.hotbrick.com.br suporte@hotbrick.com.br

HotBrick Load Balancer LB-2 -	Microsoft Internet Explorer		. <u>8 ×</u>
File Edit View Favorites Too	ols Help		1
🌏 Back 🛛 🌍 🗸 💌 🛃	🏠 🔎 Search 👷 Favorites 🚷	ñedia 🤣 😥 - 😓 🔟 - 📙 🎉 🦓	
Address http://10.1.1.1		💌 🄁 Go 🛛	Links »
oBrick		Load Balancer	LB 2
Login Time: 9:45 A.M.			
Basic Setun	Remote Security Network	IP Address 10.1.1.0 Mask Address 255.255.255.0	
Aduanced Port		Port Range 0 ~ 0	
Advanced Fortun	Remote Coquity Catework	Identity Type IP Address	
Sourceu Secup	Remote Security Gateway	IP Address 67.111.37.227	
g Security Management			
> VPN Configuration	Security Level		
Global Setting	Encryption Method	3DES 🔽	
Policy Setup	Authentication Method	MD5	
Log	ESP Mode	Tunnel	
QoS Configuration			
Anagement Assistant	Key Management		
Network Info	Кеу Туре	AutoKey (IKE)	- 11
	Phase 1 Negotiation	Main Mode	-81
	Perfect Foward Secrecy	DH Group 2 (1024-bit) 💌	
	Preshared Key	hotbrick (Characters / Hex:0x)	
	Key Lifetime	In Time 28800 Seconds (Note : O for no expiry)	
	Key Lifetime	In Volume 0 Kbytes	
	Action	Defend Defey Turned Other	
	Connect Flush Tunnel	Keluau Policy Tunnel Status Set Options	
		Add Delete Update Reset	
	Security Association List		
Dopo		I I Security I I Physical Neootiation	

Figure 6 - Policy Setup for Site B

25. Under Key Management there are two types: Autokey (IKE) or Manual Key.

26. If AutoKey (IKE) is selected, your Phase 1 Negotiation can be Main Mode or Aggressive Mode. In our example we used Main Mode.

27. For Perfect Forward Secrecy you can choose to enable it or not. In our example we have used DH Group 2 (1024-bit).

28. The Preshared Key must be characters and/or hexadecimal units. The preshared key entered in our example is "hotbrick".

29. The Key life time can be set in seconds with zero indicating no expirations. In our example we used 28800 seconds or eight hours.

30. For the service In Volume we left the default 0 Kbytes.

31. If Manual Key was chosen the encryption key and authentication key would have to be entered using characters and/or hexadecimal units. Please see figure 7 below.

Кеу Туре	Manual Key 💙
Encryption Key	(Characters / Hex:0x)
Authentication Key	(Characters / Hex:0x)
Inbound SPI	0 (Dec / Hex:0x)
Outbound SPI	0 (Dec / Hex:0x)



USA 7243 NW 54th Street Miami, FL 33166 www.hotbrick.com support@hotbrick.com EUROPE

Generatorstraat 26 Hengelo (Ov), 7556 RC Amsterdam Netherlands www.hotbrick.nl BRAZIL Francisco Tramontano, 100 05686-010 – São Paulo/SP www.hotbrick.com.br suporte@hotbrick.com.br

32. The Inbound and Outbound Stateful Packet Inspection must also be set.

33. Once all these values all entered you click on Add.

34. Now under *Action*, select **Set Options**. This brings you to the **IPSec Policy Options** page. We recommend that you use this section to always keep the tunnels up.

35. Under Dead Peer Detection Feature, make sure the enable box is checked.

Under Check Method there are three options:

Heartbeat ICMP host

DPD (RFC 3706)

In our example we have selected DPD (RFC 3706). Under Action, it is important that you select Keep Tunnel Alive.

36. Under **Options**, you can enable NetBIOS Broadcast to be able to send NetBIOS traffic through the tunnel. Also enable **Auto Triggered**, to always reconnect the tunnel if the tunnel happens to drop.

37. When you are finished click Set. This will take you back to the Policy Setup page,

then scroll down to the bottom and under Action hit the Update button.

38. You must then configure site two to match the entries in site one.

When you have finished, click on connect on any of the two LB-2s. In our example the connect button was hit on Site A (Initiator) and the tunnel was established to Site B (Responder).

HotBrick Load Balancer LB-2 -	Microsoft Inte	rnet Explorer							. 81
🔆 Back 🔹 💮 🖌 💌 💋 (🏠 🔎 Sea	rch 🤺 Favo	orites 📢 Media	🚱 👌 🦉	w • 🔜 🎎 🦓				
Address http://192.168.2.1								💌 🄁 Go	Links
HotBrick		< label{eq:started_startes					Lo	ad Balancer	LB
Basic Setup	IPSec F	olicy opt	ions					1	P
Advanced Setup	Tunnel at	tributes							
Security Management	State	Name	Security Gatev	vay Remote Sit	e Security Policy	/ Кеу Туре	Physical Status	Negotiation Status	
Global Setting	Enable	LB-2 VPN	67.111.37.23	192.168.2.	0 3DES/MD5	AutoKey (IKE)	WAN 1 Connected	Responder (Main) : 3rd	
Policy Setup	Dead Pee	er Detectio	n Feature						
Log	Detection			🗹 Enable					
QoS Configuration	Check Me	thod		C Heartbeat C ICMP Host 0.0.0.0			⊙ DPD	(RFC 3706)	
Anagement Assistant	Check Aft	er Idle		60 Seconds			I		
Network Info	Retry Tim	es	1	10					
	Action			C Do Nothing C Remove Tunnel			🖲 Kee	Keep Tunnel Alive	
	Logging			🗹 Enable	Enable				
	Outlens								
		Aroadcast		🗹 Enable	Check ESP Par	4	[] Enable		
	Auto Tria	aered			Allow Full ECN		Enab	ile	-
	Anti Repla	 IV		Enable	Copy DF Flag		Enab)le	
	Passive(R	ésponder) M	/lode	🗆 Enable	Set DF Flag		🗆 Enat	le	
			ľ	Set G	io Back Reset				
Done								Internet	

Figure 8 – IPSec Policy Option for Site A



7243 NW 54th Street Miami, FL 33166 www.hotbrick.com support@hotbrick.com

EUROPE

Generatorstraat 26 Hengelo (Ov), 7556 RC Amsterdam Netherlands www.hotbrick.nl

BRAZIL

Francisco Tramontano, 100 05686-010 – São Paulo/SP www.hotbrick.com.br suporte@hotbrick.com.br

🚰 HotBrick Load Balancer LB-2 - N	Microsoft Inte	rnet Explorer							7 ×
File Edit View Favorites Tool	ils Help								
😋 Back 🔹 🕥 🖌 🔀 🔮	🏠 🔎 Sear	rch 🤺 Favi	orites 😢 Media ∢	3 😒 😒	• 🔜 🎎 🦓				
Address http://10.1.1.1								💌 🔁 Go 🛛 Link	s »
oBrick	THE A						Lo	oad Balancer Li	B 2
Login Time: 9:45 A.M.									
Basic Setup	1000							69	Ê
Advanced Port	IPSec P	olicy opt	lions					L <mark>_</mark> H€LP	
Advanced Setup	Tunnol at	tributos							
Security Management	Ctoto	Namo	Coourity Cotour	Bamata Sita	Coourity Boliov	Kou Tupo	Physical	Negotiation	
VPN Configuration	State	Name	Security Gatewa	iy Remote Site	Security Policy	Key Type	Status	Status	
Global Setting	Enable	Home LB-	67.111.37.227	10.1.1.0	3DES/MD5	AutoKey (IKE)	Connected	Idle	
Policy Setup									
Log	Dead Pee	er Detectio	in Feature						
0oS Configuration	Detection			Enable					
Management Assistant	Check Me	thod	C	Heartbeat	C ICMP Host O	.0.0.0	© DPD	(RFC 3706)	
Network Info	Check Aft	er Idle	6	60 Seconds					
	Retry Timi	es	1	10					
	Action		C	C Do Nothing C Remove Tunnel			🔍 Kee	C Keep Tunnel Alive	
	Logging		I <u>×</u>	Enable					
	Options								
	NetBIOS E	Broadcast	<u>.</u>	Enable	Check ESP Pad		🗖 Enal	ble	
	Auto Trigo	gered	⊡	Enable	Allow Full ECN		🗖 Ena	ble	
	Anti Replay			l Enable	Copy DF Flag		🗖 Enal	ble	
	Passive(R	esponder) M	Mode 🗌	Enable	Set DF Flag		🗆 Ena	ble	
				Set Go B	ack Reset				
Done								Internet	

Figure 9 – IPSec Policy Option for Site B

Figures 10 and 11 show the tunnel established under Policy Setup. Figures 11 and 12 show the log with all the phases of the IPSec tunnel established.



7243 NW 54th Street Miami, FL 33166 www.hotbrick.com support@hotbrick.com

EUROPE

Generatorstraat 26 Hengelo (Ov), 7556 RC Amsterdam Netherlands www.hotbrick.nl

BRAZIL

Francisco Tramontano, 100 05686-010 – São Paulo/SP www.hotbrick.com.br suporte@hotbrick.com.br

		earch 🌟 F	avorites 😵 Mei	dia 🍕	🕑 🔗 - 놀 👿	• 🔜 🚳			
ess http://192.168.2.1			_						🖌 🄁 Go 🛛 L
Brick		6							ad Balancer I
in Time: 10:09 A.M.									
Denis Colum	Authentication Method		SH/	1 💌					
Advanced Port	ESP Mode			Tur	inel 🔽				
Advanced Setun	Key Mana	aement							
Security Management	Key Type			AutoKey (IKE) 🗸					
VPN Configuration	Phase 1 N	egotiation		Mai	n Mode 🔽				
Global Setting	Perfect Fo	ward Secr	есу	DH	Group 2 (1024-bit)) ~			
Policy Setup	Preshared	Кеу		hotb	rick	(Cha	racters / Hex:0	x)	
Log	Kev Lifetin	пе		In T	ime 28800 Sei	conds (Note:O	for no expiry)		
QoS Configuration	,			In V	olume 0 H	<bytes< td=""><td></td><td></td><td></td></bytes<>			
Management Assistant	Action								
Network Info	Disconne	ct Flus	h Tunnel	R	eload Policy			(Set Options
					Add Delete	Update Reset			
	Security /	Associatio	in List						
	State	Name	Security Gate	eway	Remote Site	Security Policy	Кеу Туре	WAN	Status
	Enable	401VPN	67.111.37.2	228	172.16.2.0	3DES/MD5	AutoKey (IKE)	WAN 1	(Quick) :
								Connected	established
	Enable	LB2VPN	67.111.37.2	232	10.1.1.0	3DES/SHA1	AutoKey (IKE)	WAN 1	(Quick) :
								Connecteu	established
ne <mark>otBrick Load Balancer LB-</mark> Edit View Favorites Tor	- <mark>2 - Microsoft</mark> ols Help	Internet Ex	Fig.	ure	10 - Site A tur	nnel establish	ned		Internet
one IotBrick Load Balancer I B: Edit View Favorites Tor Back - © - 💌 😰	<mark>-2 - Microsoft</mark> ols Help 🔗 🔎 Se	<mark>Internet Ex</mark> earch ☆ F	Figu plorer avorites Med	ure dia 🎸	10 - Site A tur 3 ⊘ - چ 🗑	nnel establish	ned		Internet
one otBrick Load Balancer LB: Edit View Favorites Tor Back • • • • • • • • • • • • • • • • • • •	- <mark>2 - Microsoft</mark> ols Help 🔗 🔎 Se	<mark>Internet Ex</mark> earch ∕∕∕ F	Figu plorer avorites 🔮 Mec	Jre dia 🎸	10 - Site A tur ∂ ⊗ - چ 🗑	nnel establish	ned		Internet
one otBrick Load Balancer LB: Edit View Favorites Tor Back • • • • • • • • • bit bit://10.1.1.1 • • • • • • • • • • • • •	- <mark>2 - Microsoft</mark> ols Help	Internet Ex earch 👷 F	Figu plorer avorites 💓 Mec	ure dia 🏼	10 - Site A tur 3 🔗 <table-cell> 🖉</table-cell>	nnel establish	ned	Lo	Internet
one otBrick Load Balancer LB- Edt View Fevorites Tor Back • • • • • • • • • Back • • • • • • • Back •	12 - Microsoft ols Help	Internet Ex earch 🔬 F	Figu plorer iavorites 🌒 Mec	ure ·	10 - Site A tur	nnel establish	ned	Lo	Internet
ne tBrick Load Balancer LB- Edt View Favorites Tor Back • • • • • • • • • • • • • • • • • • •	2 - Microsoft ols Help Authentica	Internet Ex earch 🔮 F	Figu plorer evontes (2) Mec	dia 📢	10 - Site A tur 3 🔗 🍛 🖉	nnel establish	ned	Lo	Internet
ne otBrick Load Balancer LB- Edt View Favorites Tor Back • • • • • • • • • • • • • • • • • • •	2 - Microsoft ols Help Authentica ESP Mode	Internet Ex earch 👷 F	Figu plorer evontes 🔊 Med	dia 📢	10 - Site A tur 3 & & & @ x2 (512 bits) ¥ inel ¥	nnel establish	ned	Lo	Internet Go L Go L Control
ne otBrick Load Balancer LB- Edt View Favorites Tor Back • • • • • • • • • • • • • • • • • • •	2 - Microsoft ols Help Authenticz ESP Mode Kgy Mate	Internet Ex earch ☆ F ation Metho	Figu plorer evontes 🔊 Med	da 🔇	10 - Site A tur 3 & & & @ @ x2 (512 bits) ¥ mel ¥	nnel establish	ned	Lc	Internet Goo L
ne otBrick Load Balancer LB. Edt View Favorites Tor Back • • • • • • • • • • • • • • • • • • •	2 - Microsoft ols Help 2 - So 2 - So 4 - So 5 - So	Internet Ex earch 🌟 F ation Metho igement	Figu plorer evontes 🔊 Med	JIE dia 🔮	10 - Site A tur 3	nnel establish	ned	La	Diternet
ne otBrick Load Balancer LB. Edk View Favorites To Back • • • • • • • • • • • • • • • • • • •	2 - Microsoft ols Help 2 - So 2 - So 4 - So 5 - So	Internet Ex earch 🔆 F ation Metho igement equitation	Figu plorer evontes 🔊 Med	dia	10 - Site A tur	nnel establish	ned	Lo	Diternet
ne otBrick Load Balancer LB. Edk View Favorites To Back • • • • • • • • • • • • • • • • • • •	2 - Microsoft ols Help Authentics ESP Mode Key Mana Key Type Phase 1 Nr Perfect Fo	Internet Ex earch $$ F ation Metho igement egotiation ward Secre	Figu plorer evontes Med	JIE	10 - Site A tur	nnel establish	ned	Lo	Contraction of the second seco
ne otBrick Load Balancer LB. Edt View Favorites To Back V View Favorites To Note: The State Stat	2 - Microsoff ols Help Authentica ESP Mode Key Mana Key Type Phase 1 Nr Perfect Fo Preshared	Internet Ex earch $rightarrow F$ ation Metho agement egotiation ward Secret Key	Figu plorer evontes	JIE	10 - Site A tur 3	nnel establist	ned	Lc	Diternet
nne otBrick Load Balancer LB Edk View Favorites To Back V Pavorites To Basic Setup Advanced Port Advanced Setup Security Management VPN License Key Global Setting	2 - Microsoff ols Help C P S Authentica ESP Mode Key Mana Key Type Phase 1 N Perfect Fo Preshared	Internet Ex earch 🔆 F ation Metho agement egotiation ward Secret Key	Figu plorer evontes	JIE	10 - Site A tur 2 (512 bits) ♥ nel ♥ oKey (IKE) ♥ n Mode ♥ Group 5 (1536-bit) 1990888	nnel establist	ned	La ×)	Internet Go L Go L Anticipation Go L Ant
nne otBrick Load Balancer LB Edk View Favorites To Back View Favorites To	2 - Microsoff ols Help C P S Authentica ESP Mode Key Mana Key Type Phase 1 N Perfect Fo Preshared Key Lifetim	Internet Ex earch 🔆 F ation Metho agement egotiation ward Secret Key ne	Figu plorer evontes	JIE SHA Tun Auti DH 3053 In Ti In Vi	10 - Site A tur 2	nnel establist	racters / Hex:0: for no expiry)	Lc ×)	Internet Go L Go L Control Go C
ne DIBrick Load Balancer LB Edit View Favorites To Back V Pavorites T	2 - Microsoff ols Help C P S Authentica ESP Mode Key Mana Key Type Phase 1 N Perfect Fo Preshared Key Lifetim	Internet Ex earch 🔆 F ation Metho agement egotiation ward Secret Key ne	Figu plorer avontes Mec	JIE dia SHA Tun Auti Main DH 3053 In Ti In Vi	10 - Site A tur 2 2 - ≥ ■ ■ 2 (512 bits) ▼ nel ▼ 0Key (IKE) ▼ n Mode ▼ Group 5 (1536-bit) 1980888 me 3600 Sec olume 0	nnel establist	racters / Hex:0: for no expiry)	Lc ×)	Internet Go L Go L Control Contro Control Control Control Control
nne otBrick Load Balancer LB Edk View Favorites To Back View Favorites To Part View Favorites To Back View Favorites To	2 - Microsoff ols Help C P S Authentica ESP Mode Key Mana Key Type Phase 1 No Perfect Fo Preshared Key Lifetim Action	Internet Ex earch 🔆 F ation Metho agoniation ward Secret Key ne	Figu plorer avontes Mec	Auti Maii DH 3053 In Ti In Vi	10 - Site A tur 2	I	racters / Hex:0: for no expiry)	×)	Internet Go C C C C C C C C C C C C C C C C C C
one otBrick Load Balancer LB Edt Vew Favorites To Back Vew Favori	2 - Microsoff ols Help C P S Authentica ESP Mode Key Type Phase 1 Ni Perfect Fo Preshared Key Lifetim Disconner	Internet Ex earch 🔆 F ation Metho agotiation ward Secret Key ne	Figu plorer iavorites Med	dia C SHA Tun Auti Main DH 3053 In Ti In Vi Re	10 - Site A tur	nnel establist	racters / Hex:0: for no expiry)	×)	Set Options
ane ofBrick Load Balancer LB Edt View Favorites To Back View Favorites To Back View Favorites To Back View Favorites To Back View Favorites To Edit View Favorites To Second Sector Second Sector Second Sector Second Sector VPN License Key Global Setting Policy Setup Log QoS Configuration Management Assistant Network Info	2 - Microsoff ols Help C P S Authentica ESP Mode Key Mana Key Type Phase 1 No Perfect Fo Preshared Key Lifetim Disconner	Internet Ex earch 🔆 F ation Metho agoniation ward Secret Key ne	Figu plorer avorites Med	dia SHA Tun Aut DH 3053 In Ti In Vi	10 - Site A tur	I	racters / Hex:0: for no expiry)	×)	Internet
nne ofBrick Load Balancer LB Edk View Favorites To Back View Favorites To	2 - Microsoff ols Help C P So Authentica ESP Mode Key Mana Key Type Phase 1 N Perfect Fo Preshared Key Lifetim Disconner	Internet Ex earch 🔆 F ation Metho agoniation ward Secret Key ne et Flush	Figu plorer avorites Med	dia Auti Auti Maii DH 3 3053 In Ti In Vi Re	10 - Site A tur	Innel establish	racters / Hex:0: for no expiry)	×)	Internet
ane ofBrick Load Balancer LB Edt View Favorites To Back View Favorites To Back View Favorites To Back View Favorites To Edit View Favorites To Edit View Favorites To Edit View Favorites To Edit View Favorites To Back View Favorites To Back View Favorites To Edit View Favorites To Back View Favorites To Policy Setup Log QoS Configuration Management Assistant Network Info	2 - Microsoft ols Help Authentica ESP Mode Key Mana Key Type Phase 1 Nr Perfect Fo Preshared Key Lifetin Disconner Security /	Internet Ex earch 🔆 F ation Metho egotiation ward Secre Key ne et Flust	Figu plorer avorites Med ad	dia Auti Maii John Ti In Vi Re	10 - Site A tur	I - Cha (Cha conds (Note : O (bytes Update Reset	racters / Hex:0: for no expiry)	×)	Internet Internet Internet Internet Internet Internet Internet Internet Inte
ane ofBrick Load Balancer LB Edt View Favorites To Back View Favorites To Back View Favorites To Back View Favorites To Edit View Favorites To Edit View Favorites To Back View Favorites To Edit View Favorites To Edit View Favorites To Back View Favorites To Edit View Favorites To Back View Favorites To View Favorites To Vie	2 - Microsoft ols Help Authentica ESP Mode Key Mana Key Type Phase 1 Na Perfect Fo Preshared Key Lifetim Disconner Security J State	Internet Ex earch 🔆 F ation Metho egotiation ward Secret Key te t Flust Associatio Name	Figu plorer avorites Med od od ecy h Tunnel security Gate	dia CHA	10 - Site A tur	Inel establish I	racters / Hex:0: for no expiry)	×)	Thermet Thermet Thermet Thermet Thermet
ane otBrick Load Balancer LB. Edt View Favorites To Back • • • • • • • • • • • • • • • • • • •	2 - Microsoft ols Help Authentica ESP Mode Key Mana Key Type Phase 1 No Perfect Fo Preshared Key Lifetim Action Disconner Security J State Enable	Internet Ex earch $rightarrow F$ F ation Metho agoniation egotiation ward Secret Key te te Flust Name TL2	Figu plorer avorites Med od od ecy h Tunnel security Gate 67.111.37.2	Auti Auti Auti In Tun Joh Joh Re Re Re Re Re Re Re Re Re Re Re Re Re	10 - Site A tur	Update Reset	racters / Hex:0: for no expiry)	Lc X) WAN WAN	Internet
ane atternet to a the second	2 - Microsoft ols Help Authentica ESP Mode Key Mana Key Type Phase 1 No Perfect Fo Preshared Key Lifetim Disconne Security J State Enable	Internet Ex earch $rightarrow F$ F ation Methe agotiation ward Secret Key te te Flust Name TL2	Figu plorer avorites Med od od ecy h Tunnel security Gate 67.111.37.2	Auti Auti Auti In Tun Jin Tun Sub Sub Sub Sub Sub Sub Sub Sub Sub Sub	10 - Site A tur 2 Site A tur 2 (512 bits) 10 - Site A tur 2 (512 bits) 10 - Site Site 10 - Site A tur 10 - Site Site 10 - Site A tur 10 - Site A tur	I •	racters / Hex:0: for no expiry) Key Type AutoKey (IKE)	X)	Internet Internet Internet Internet Internet Internet Internet Internet Internet Intiator (Quick): established Desenation
ane otBrick Load Balancer LB Edt View Favorites To Back • • • • • • • • • • • • • • • • Back • • • • • • • • • • • • • • • Basic Setup Advanced Port Advanced Port Advanced Setup Security Management PNI Configuration VPN License Key Global Setting Policy Setup Log QoS Configuration Management Assistant Network Info	2 - Microsoft ols Help Authentica ESP Mode ESP Mode Key Type Phase 1 No Perfect Fo Preshared Key Lifetim Disconne Security J State Enable Enable	Internet Ex earch $rightarrow F$ F ation Methe agotiation ward Secret Key ne et Flus Associatio Name TL2 LB2VPN	Figu	Auti Auti Maia DH 3053 In Ti In V R R R R R R R R R R R R R R R R R R R	10 - Site A tur 2 (512 bits) 2 (512 bits) 10 - Site A tur 2 (512 bits) 10 - Site A tur 10 - Site A	Update Reset	racters / Hex:0: for no expiry) key Type AutoKey (IKE)	X) WAN WAN 1 Connected WAN 1	Status Status Initiator (Quick): established Responder (Quick):
ne otBrick Load Balancer LB Edt View Favorites To Back • • • • • • • • • • • • • • • • Back • • • • • • • • • • • • • • • BBRICK n Time: 2:04 P.M. Basic Setup Advanced Port Advanced Port Advanced Setup Security Management PN Configuration VPN License Key Global Setting Policy Setup Log 205 Configuration Management Assistant Network Info	2 - Microsoft ols Help Authentica ESP Mode ESP Mode Key Type Phase 1 No Perfect Fo Preshared Key Lifetim Disconne Security J State Enable Enable	Internet Ex earch $rightarrow F$ F ation Methe agotiation ward Secret Key ne et Flus Associatio Name TL2 LB2VPN	Figu	Auti Auti Maia DH 3053 In Tri In V R R R R R R R R R R R R R R R R R R R	10 - Site A tur 2 (512 bits) 2 (512 bits) 10 - Site A tur 2 (512 bits) 10 - Site A tur 10 - Site A	I •	racters / Hex:0: for no expiry) key Type AutoKey (IKE) AutoKey (IKE)	X) WAN WAN 1 Connected WAN 1	Status Initiator (Quick): established Responder (Quick): established

Figure 11 - Site B tunnel established

7243 NW 54th Street Miami, FL 33166 www.hotbrick.com support@hotbrick.com

EUROPE

Generatorstraat 26 Hengelo (Ov), 7556 RC Amsterdam Netherlands www.hotbrick.nl

BRAZIL

Francisco Tramontano, 100 05686-010 – São Paulo/SP www.hotbrick.com.br suporte@hotbrick.com.br

				💙 🔁 Go 🛛 Links 🍊
ogin Time: 2:04 P.M.	A. K			Load Balancer LB 2
Basic Setup	VPN Log			
Advanced Port	Message Sta	tus: 49 mes	ssages	
Advanced Setup	Time	Priority	Module	Messages
	0 00:38:55	Info.	ike	Phase2 Responder(Quick) : established : Wan1
Security Management	0 00:38:54	Info.	ike	Phase2 Responder(Quick) : 1st : Wan1
VPN Configuration	0 00:38:54	Info.	ike	Phase2 Responder(Quick) : 1st : Wan1
VPN License Key	0 00:38:53	Info.	ike	Respond phase 2 negotiation (67.111.37.232:0, 67.111.37.227:0) : Wan1
Set Lie w	0 00:38:51	Info.	ike	ISAKMP SA(67.111.37.232:500, 67.111.37.227:500) established : Wan1
; Global Setting	0 00:38:51	Info.	ike	Phase1 Responder(Main) : 3rd : Wan1
Policy Setup	0 00:38:51	Info.	ike	Phase1 Responder(Main) : 2nd : Wan1
Log	0 00:38:50	Info.	ike	Set DPD Vendor ID
0oS Configuration	0 00:38:50	Info.	ike	Received DPD Vendor ID
	0 00:38:49	Info.	ike	Phase1 Responder(Main) : 1st : Wan1
Management Assistant	0 00:38:49	Info.	ike	Set DPD Vendor ID
Network Info	0 00:38:49	Info.	ike	Start Main mode
	0 00:38:49	Info.	ike	Respond phase1 negotiation (67.111.37.232:500, 67.111.37.227:500)
	0 00:38:30	Info.	ike	ISAKMP SA(67.111.37.232:500, 67.111.37.227:500) deleted : Wan1
	0 00:38:29	Error	ike	Invalid isakmp Informational exchange type received
			Pr	ovious Page Refresh Next Page Clear All

How To establish an IPSec VPN tunnel with LB-2 VPN

USA 7243 NW 54th Street Miami, FL 33166 www.hotbrick.com support@hotbrick.com EUROPE

Generatorstraat 26 Hengelo (Ov), 7556 RC Amsterdam Netherlands www.hotbrick.nl BRAZIL Francisco Tramontano, 100 05686-010 – São Paulo/SP www.hotbrick.com.br suporte@hotbrick.com.br

VPN Policy References

IPSec Global Setting

Enable

Enabling WAN 1, WAN 2 or Both will start global setting.

ISAkmp Port

Designed to negotiate, establish, modify and delete security associations and their attributes which was assigned by IANA UDP port 500.

Phase 1 DH Group

Use DH Group 1 (768-bits), DH Group 2 (1024-bits), Group 5 (1536-bits) to generate IP Sec SA Keys.

Phase 1 Encryption Method

There are 3 data encryption methods available: DES, 2DES, and AES.

Phase 1 Authentication Method

There are 2 authentication methods available: MD5 and SHA1 (Secure Hash Algorithm)

Phase 1 SA Life Time

By default the Security Association lifetime is set at 28800 Sec.

Maxtime to complete phase 1

Aim of phase 1 is to authenticate and establish a secure tunnel, which will protect further IKE negotiation. The maximum time default is 30 Sec.

Maxtime to complete phase 2

Maximum time to establish the IPSec SAs. By default the maximum time is 30 Sec.

Log Levels

Select a VPN log level that you like to display on VPN log.

VPN Policy Setup

IPSec Traffic Binding

VPN Tunnel List

Shows tunnels you have entered. The router can be setup to 50 tunnels.

Tunnel Name

Distinguishes "tunnels" by names

Tunnel

The tunnel can only be connected when the **ENABLE** check box is selected.

WAN port

You can choose WAN 1, WAN 2 or any to make the VPN connection.

USA 7243 NW 54th Street Miami, FL 33166

7245 NW 34th Street Miami, FL 33166 www.hotbrick.com support@hotbrick.com EUROPE Generatorstraat 26 Hengelo (Ov), 7556 RC Amsterdam Netherlands www.hotbrick.nl BRAZIL Francisco Tramontano, 100 05686-010 – São Paulo/SP www.hotbrick.com.br suporte@hotbrick.com.br

PPPoE Session

Some ISP's offer multiple sessions when using PPPoE to make VPN connections. These PPPoE sessions can be selected to construct VPN tunnels.

Traffic Selector

Service

Protocol Type: Choices are TCP/UDP/ICMP/GRE as your connection protocol. By default the protocol type is "Any".

Local Security Network

These entries identify the private network on the VPN gateway and the hosts of which can use the LAN-to-LAN connection. You can choose a single IP address, the subnet, or a selected IP Range to make VPN LAN-to-LAN connection.

Remote Security Network

These entries identify the private network on the remote peer VPN router whose hists can use the LAN-to-LAN connection. You can choose a single IP address, the subnet, or a selected IP Range to make VPN connection.

Remote Security Gateway

Select either remote side domain name or remote side IP address (WAN IP Address) as your remote side security gateway.

Security Level

Encryption Method

It specifies the encryption method to use. Data encryption makes the data unreadable if intercepted. There are 3 encryption methods available: DES, 3DES, and AES. The default is null.

Authentication

This specifies the packet authentication mechanism to use. Packet authentication confirms the data's source. There are 3 authentications available: MD5, SHA1 and SHA2.

Key Management

Key – Key Type:

There are 2 key types (manual key and auto key) available for the key exchange management.

Manual Key

If manual key is selected, no key negotiation is needed.

Encryption Key

This field specifies a key to encrypt and decrypt IP traffic.

Authentication Key

This field specifies a key to use to authentication IP traffic

Inbound/outbound

SPI (Security Parameter Index) is carried on the ESP header. Each tunnel must have a unique inbound and outbound SPI and no 2 share the same SPI. Notice that Inbound SPI must match the other router's outbound SPI.

USA 7243 NW 54th Street Miami, FL 33166

7243 NW 54th Street Miami, FL 33166 www.hotbrick.com support@hotbrick.com Generatorstraat 26 Hengelo (Ov), 7556 RC Amsterdam Netherlands www.hotbrick.nl

EUROPE

BRAZIL Francisco Tramontano, 100 05686-010 – São Paulo/SP www.hotbrick.com.br suporte@hotbrick.com.br

AutoKey (IKE)

There are 2 types of operation modes can be used:

Main Mode accomplishes a phase 1 IKE exchange by establishing a secure channel. **Aggressive Mode** is another way of accomplishing a phase 1 exchange. It is faster and simpler than main mode, but does not provide identity protection for the negotiating nodes.

Perfect Forward Secrecy (PFS)

If PFS is enabled, IKE phase 2 negotiation will generate a new key Material for IP traffic encryption & authentication.

Preshared Key

This field is to authenticate the remote IKE peer.

Key Lifetime

This specifies the lifetime of the IKE generated Key. If the time expires or data is passed over this volume, a new key will be renegotiated. By default, 0 is set for no limit.

Options

NetBIOS Broadcast

This is used to forward NetBIOS broadcast across the Internet.

Keep Alive

This is to help maintain the IPSec connection tunnel. It can be reestablished immediately if a connection is dropped.

Anti Replay

This mechanism works by keeping track of the sequence numbers in packets as they arrive.

Passive Mode

When enabled, your PC establishes the data connection.

Check ESP Pad

When checked, this will enable ESP (Encapsulating Security Payload) padding.

Allow Full ECN

Enable will allow full Explicit Congestion Notification (ECN). ECN is a standard proposed by the IETF that will minimize congestion on a network and the gateway dropping packets.

Copy DF Flag

When an IP packet is encapsulated as payload inside another IP packet, some of the outer header fields can be newly written and others are determined by the inner header. Among these fields is the IP DF (Do Not Fragment) flag. When the inner packet DF flag is clear, the outer packet may copy it or set it. However, when the inner DF flag is set, the outer header MUST copy it.

Set DF Flag

If the DF (Do Not Fragment) flag is set, it means the fragmentation of this packet at the IP level is not permitted.