How to configure a VPN tunnel that routes all traffic to the Remote Gateway

This shows how to set up a VPN tunnel between an RV042 (branch site) and RV082 (central site) and make sure all the traffic originating from branch site would be directed over the IPsec tunnel to the central site.

RV042 with WAN1 = 50.50.50.2 RV082 with WAN1 = 10.10.10.2

RV042 Configuration

							10/100 4	l-port V	PN Route	r R	W042
System Summary	System Summary Setup		rstern igernent Ma	Port nagement	Firewall	ProtectLink	VPN	Log	Wizard	Support	Logout
T									_		
System Information	Serial Number : DHY0	05A02640	Firmwar	e version :	1.3.10.1RC10	I-tm (Mar 10 200	08 15:06:2	(4)	_ 1	S SI	TEMAP
	CPU: Intel IXP425-266	3	DRAM :	32M		Flash	: 8M			The System S screen displa	ummary ys the router's
	System up time : 1 Da	ys 17 Hours 56 Min	utes 42 Seconds	(Now: Thu	Jan 2 2003 1	2:56:34)				current status This information	and settings. on is read
		ProtectLink Gat	ieway		Service	is activated				only. If you cli with underline hyperlink to re	e, it will
Configuration	If you need guideline to re	-configure the rout	er vou mev leuno	h wizard	Setup Wizard					pages. On the the screen an	id all other
	n you need galacine to re	-corriguie the road	or, you may laan						_	a link to the Si	e Utility will be te Map, which
										has links to all tabs.	l of the Utility's
Port Statistics	ſ				CDMZ					Serial Number	
		1	2 3	4 Inte	rnet Unteri	RV042			_	number of the System up tim	
		•		N.		Cisco Sestens allo-allo-			_	of time in Day: Minutes that th	s, Hours, and
	U		LAN	10/	AN1 WAN	2				active.	1011104213
			LAN	vw	ANT WAN	2				Firmware ver current versio	
Network Setting Status	LAN IP :		192.168	51					_	the firmvvare i this unit.	
, i i i i i i i i i i i i i i i i i i i	WAN1 IP :		50.50.50						_		e of the RV042
	<u>VVAN2 IP :</u> Mode :		0.0.0.0 Gatewa	v					_	processor. It i IXP425/422.	
	DNS (WAN1):		0.0.0.0	0.0.0.0					_		
	(VVAN2) : DDNS (VVAN1 VVAN	2) :	64.102.6 Off	6.247 171.7 Off	0.168.183					DRAM: The si on the board.	
	DMZ Host :		Disabled	I						Flash: The siz	e of Flash on
									- 1	the board. It is	: 8MB.
										Configuration: quideline to re	If you need
Firewall Setting Status	SPI (Stateful Packet Ins	pection) :	On						_	router, you ma Wizard.	
	DoS (Denial of Service)	1:	On						_		
	Block WAN Request :		Off						_	Port Statistics click the port r	number from
										port diagram t status of the :	
VPN Setting Status	VPN Summary:									More	
	Tunnel(s) Used :		3								
	Turnol(o) Ituoiloklo :		47								

The RV042 is connected to the network.

The VPN tunnel Configuration from this branch office to the Central Office. The Remote Group Setup can be set to all zero's to specify ALL traffic to route over the tunnel to that other Router, which in my case is an RV082 with WAN IP 10.10.10.2.

							10/100 4	-port V	PN Route		RV042
VPN	Summary	etup DHCP	System Management	Port Management		ProtectLink		Log	Wizard	Suppor	t Logout
	Summary	Gateway to Gatew	ay Client ti	o Gateway	VPN Client Acce	ess 🚺 🔪	/PN Pass Th	rough	PPTP 3	Server	
Edit the Tunnel										1	SITEMAP
		Tur	nnel No. 1								
		Tunne	el Name rv042T0	rv082							his page, users e new tunnel
		In	terface WAN1	*						between tv	vo VPN devices.
			Enable 🔽								The tunnel be generated
											ly from 1~50.
Local Group Setup											e: Enter the
Local Group Setup	Lo	cal Security Gatewa			_		*		_	Office, Bra	
				50 . 50	. 2					Corporate :	Site, etc.
		Local Security Grou								<u>More</u>	
			ddress 192 .	168 . 5	. 0						
		Subne	et Mask 255 .	255 . 255	. 0						
									_		
Remote Group Setup	Rem	ote Security Gatewa	y Type IP Only				*				
		IP address	v 10 .	10 . 10	. 2						
	R	emote Security Grou	p Type Subnet	*							
		IP a	ddress 0 .	0.0	. 0						
		Subne	et Mask 0.	0.0	. 0						
	L								_		
IPSec Setup		Keyin	g Mode IKE with	Preshared key 💊					_ 1		
		Phase1 DH	Group Group1	*							
			cryption DES	~							
			itication MD5								
			ife Time 28800	seconds							
		Perfect Forward S									
			Group Group1	~							
			tication MD5								
		Phase2 SA Li		seconds							
			ed Key cisco123								
	Aduspood										

RV082 Configuration

This router has dual WAN, but the tunnel is over WAN1 so ignore the WAN2 for this example. WAN1 = 10.10.10.2

	10/100 8-port VPN Router								
System Summary	System Summary Setup DHCP	System Port Management Management	Firewall VPN	Log Wizard	Support Logout				
System Information	Serial Number: DEZ006B01167 CPU: Intel IXP425-533 System up time: 26 Days 1 Hours 19 I	Firmware version : 1.3.9. DRAM : 32M Minutes 31 Seconds (Now: Fri May 1	Flash :		The System Summary screen displays the router's current status and settings.				
Configuration	If you need guideline to re-configure the re	outer, you may launch wizard. Setup) Wizard		This information is read only. If you click the button with underline, it will hyperlink to related setup pages. On the right side of the screen and all other screens in the Utility will be a link to the Ste May, which				
Port Statistics	Lovicever DWG Internet 1		DMZ/Internet Interne	Circo Sverence utilización	has links to all of the Utility's tabs. Serial Number: The serial number of the RV082 unit. System up time: The length				
		LAN	WAN2 WAN		of time in Days, Hours, and Minutes that the RV082 is active.				
Network Setting Status	L <u>AN IP</u> : <u>WAN1 IP :</u> <u>WAN2 IP :</u> <u>Mode</u> :	192.168.1.1 10.10.10.2 172.18.218.225 Gateway			Firmware version: The current version number of the firmware installed on this unit.				
	DNS (WAN1) : (WAN2) : DDNS (WAN1 WAN2) :	64.102.6.247 171.70.168 64.102.6.247 171.70.168 Off I Off			CPU: The type of the RV082 processor. It is Intel IXP425.				
	DMZ Host :	Disabled			DRAM: The size of DRAM on the board. It is 32MB.				
					Flash: The size of Flash on the board. It is 16MB.				
Firewall Setting Status	<u>SPI (Stateful Packet Inspection)</u> : DoS (Denial of Service) : Block WAN Request :	On On Off			Configuration: If you need guideline to re-configure the router, you may launch Wizard.				
VPN Setting Status	<u>VPN Summary</u> :				Port Statistics: Users can click the port number from port diagram to see the status of the selected port.				
	Tunnel(s) Used : Tunnel(s) Available : No Group VPN was defined.	3 97			<u>More</u>				

							10/	'100 8-po	rt VPN Rout	ter	RV082	
System Summary	System Summary	Setup	DHCP	System Management	Port Management	Firewall	VPN	Log	Wizard	Support	Logout	
System Information	CPU: Intel I			DRAM :	e version : 1.3.9.3 32M (Now: Fri May 1.20		Flash :	16M		The System screen disp current stat	SITEMAP Summary plays the router's us and settings. ation is read	
Configuration	lf you need gui	deline to re-co	nfigure the r	outer, you may launo	sh wizard. Setup V	Vizard				with underli hyperlink to pages. On t the screen screens in t	related setup he right side of and all other the Utility will be	
Port Statistics	Locaya		10/100 8 ternet averret CM2 Mode	Port VPN Rister 1 2 3 4 5 6 7 8 5 5 5	2 3 4 6 7 8 LAN	DMZ/Internet	Internet		sto Svertine http://www.	has links to tabs. Serial Numb number of ti System up t of time in Da	Site Map, which all of the Utility's her: The serial he RV082 unit. time: The length ays, Hours, and t the RV082 is	
Network Setting Status	LAN IP: WAN1 IP: WAN2 IP: DNS (WAN1) (WAN2) DDNS (WAN1) DDNS (WAN2) DDNS (WAN2)				1.2 118.225 y 3.247 171.70.168.1 3.247 171.70.168.1 Off					Firmware w current vers the firmwar this unit. CPU: The ty processor. DRAM: The on the board	sion number of e installed on pe of the RV082 It is Intel IXP425. size of DRAM d. It is 32MB. size of Flash on	
Firewall Setting Status	SPI (Stateful DoS (Denial o Block WAN R		<u>tion)</u> :	On On Off						guideline to router, you Wizard. Port Statisti	on: If you need re-configure the may launch cs: Users can t number from	
VPN Setting Status	<u>VPN Summar</u> Tunnel(s) Use Tunnel(s) Av No Group VP	ed :	d.	3 97						port diagram status of the <u>More</u>	n to see the e selected port.	

Set the Local Group to all Zero's on the tunnel to the RV042

							10/1	100 8-port	VPN Rot	ıter	RV082
VPN	System Summary	Setup	DHCP	System Management	Port Management	Firewall	VPN	Log	Wizard	Support	Logout
	Summary	Gateway to	Gateway	Client to Gatew	ay 📔 🛛 VPN Clien	t Access	VPN Pa	ass Through	PP'	TP Server	
Edit the Tunnel			Tunnel No	o. 5 e rv082T0rv042							ITEMAP
			Interfac	e WAN1 💌 e 🔽							o VPN devices. The tunnel se generated
Local Group Setup]	Local Security	Gateway Typ IP addres rity Group Typ	s 10 . 10	. 10 . 2		~			Office, Bran Corporate Si	e, such as LA ch Site,
			IP addres Subnet Mas	s 0 . 0	. 0 . 0 . 0 . 0					<u>More</u>	
Remote Group Setup		Remote Security IP addre Remote Secu		50 . 50 e Subnet 💌 s 192 . 168	. <u>50</u> . 2 . <u>5</u> . 0 . <u>255</u> . 0		~				
IPSec Setup		Ph Phase Perfect Fi Ph Ph Phse		n MD5 v e 28800 s y V p Group1 v n DES v n MD5 v e 3600 s	ed key 💙 econds econds						

Then add the subnet of the RV042 to the RV082 (Multiple Subnet):

		_					10/100 8-p	ort VPN Rout	er RV082			
Setup	System Summary	Setup	DHCP	System Management	Port Management	Firewall	VPN Log	₩izard	Support Logout			
	Network	Password	Time	DMZ Host	Forwarding	UPnP	One-to-One NA	r More	>>			
Network LAN Setting		192	Host Domain Device IP / . 168	(MAC Address: Address 1 1	00-16-66-84-13-74	ired by some ired by some () Subnet Mask 5.255.255.0	ISPs)		SITEMAP The Setup screen contains all of the router's basic setup functions. The device can be used in most network settings without changing any of the default values. Some users may need to enter additional information in order to connect to the Internet through an ISP (internet Service Provider) or broadband (DSL, cable modem) carrier.			
Dual-WAN / DMZ Setting		Multiple Subnet Setting Multiple Subnet Add / Edit Subnet 1 : 192168.5.1 / 255.255.255.0										
WAN Connection Type				Static IP	WAN1				settings can be obtained from your ISP. In most cases, leaving these fields blank will work. LAN Setting:			
			WAN IP Ad Subnet ateway Ad	Mask: 255 . 2	0 . 10 . 2 255 . 255 . 0 0 . 10 . 1				This is the Router's LAN IP Address and Subnet Mask. The default value is 192.168.11 for IP address and 255.255.255.0 for the Subnet Mask.			
			ver (Requir	red) 1: 64 . 1	02 . 6 . 247 70 . 168 . 183 O Manual				<u>More</u>			
					WAN2							

Verify Tunnel is up: RV082 side:

								10/100 8-po	rt VPN Rou
VPN	System Set Summary Set		etup DHCP Syst Manage			Port nagement	Firewall	VPN Log	Wizard
	Summary	y 📔 Gai	teway to Gatev	way Clier	nt to Gateway	VPN Client .	Access	VPN Pass Throug	jh PPT
Summary									
			4	Tunnel(s) Use	d 96 Tu	nnel(s) Available	Detail		
Tunnel Status									
					Add New Tu	innel			
				Jump to 1 🔽	/1 page	All 💌 -	entries per pag	e	
	No.	Name	Status	Phase2 Enc/Auth/Grp	Local Group	Remote Group	Remote Gateway	Tunnel Test	Config.
	1	Test	Disabled	DES/MD5/1	192.168.150.0 255.255.255.0	N/A	10.10.10.10	N/A	Edit
	2	rv082tor v016	Connected	DES/MD5/1	192.168.1.0 255.255.255.0	192.168.2.0 255.255.255.0	20.20.20.2	Disconnect	Edit
	3	rv082TOw rvs	Connected	3DES/SHA1/1	192.168.1.0 255.255.255.0	192.168.3.0 255.255.255.0	30.30.30.2	Disconnect	Edit
	4	rv082TOr vs	Connected	3DES/SHA1/1	192.168.1.0 255.255.255.0	192.168.4.0 255.255.255.0	40.40.40.2	Disconnect	Edit
	5	rv082⊺0r v042	Connected	DES/MD5/1	0.0.0.0 0.0.0.0	192.168.5.0 255.255.255.0	50.50.50.2	Disconnect	Edit
	L	4	Tunnel(s) En	abled	5	Tunnel(s) De	fined		
GroupVPN Status									
	Group	o Name	Connected Tunnels E	Phase2 inc/Auth/Grp	Local Group	Remote Client	Remote Client Statu	Tunnel Is Test	Config.

RV042 side

(This router was previously used in a full mesh network, but I disabled those tunnels to avoid routing ambiguity)

								10/100 4-po	rt VPN Rou
VPN	System Summar		р DHCP	System Managemen	Port t Managerr	Firewal	I ProtectLini	K VPN LO	og Wizaro
	Summar	ry Ga	teway to Gate	way Clier	t to Gateway	VPN Client /	Access	VPN Pass Throu	gh PP
Summary									
o dinimary									
			1	Tunnel(s) Used	49 Tur	nnel(s) Available	Detail		
Tunnel Status									
Tunner Status					Add New Tu	nnol			
				Jump to 🚺 💌 .			entries per page		
				Phase2	Local	Remote	Remote	Tunnel	
	No.	Name	Status	Enc/Auth/Grp	Group	Group	Gateway	Test	Config.
	1	v042TOr v082	Connected	DES/MD5/1	192.168.5.0 255.255.255.0	0.0.0.0 0.0.0.0	10.10.10.2	Disconnect	Edit
	2	rv042TOr v016	Disabled	DES/MD5/1	192.168.5.0 255.255.255.0	192.168.2.0 255.255.255.0	20.20.20.2	N/A	Edit
	з	rv042TOw rvs	Disabled	3DES/SHA1/1	192.168.5.0 255.255.255.0	192.168.3.0 255.255.255.0	30.30.30.2	N/A	Edit
	4	rv042TOr vs	Disabled	3DES/SHA1/1	192.168.5.0 255.255.255.0	192.168.4.0 255.255.255.0	40.40.40.2	N/A	Edit 🗍
		1	Tunnel(s) Ena	ibled	4	Tunnel(s) De	fined		

With the PC Client plugged into RV082, ping the DGW of the interface of WAN2 on the RV082 all traffic should not travel over the tunnel to RV082 and use its WAN interface.