

Starting and Tracking VPNs in the EN-1000

One of the principal features of routers is their support of virtual private networks (VPNs). This document discusses verification of VPN tunnel status and tracking of VPN tunnel activity.

Make sure you have performed the procedures in the following documents:

- Configuring IPsec VPNs in the EN-1000™
- Configuring the EN-1000's VPN Firewall

Then see the following sections:

- Starting VPN Tunnels
- Testing and Tracking VPN Connections

For information about VPNs, review the document Virtual Private Networks.

7.1 Starting VPN Tunnels

When you have configured all VPN tunnels for the EN-1000, do the following on the VPN tunnel initiator.

- 1 On the EN-1000 that is the VPN tunnel initiator, select the **Network** tab. Then select the **VPN** tab.
 - ◆ The IPsec VPN Tunnel Table for a VPN Tunnel Initiator is displayed (Figure 7-1).

Figure 7-1. IPsec VPN Tunnel Table for a VPN Tunnel Initiator

Status System Network Statistics Logout									
Interfaces Firewall Static Routes Load Sharing/Failover QoS Diagnostics Hostnames DHCP and DNS VPN VRRP Serial									
General Settings Strongswan IPSEC Status Online Help									
C Tunnels									
net Protocol Security i	s a protocol suite for se	curina Inter	net Protocol com	munications by authe	nticating	and encrypting each II	P packet of a communical	tion session	
Sec Tunnels									
Tunnel Name	Left Subnet	Left	Right	Right Subnet	SLE	Tunnel Up	Tunnel Down		
						(d) =	A T 10		
OSAT1	192.168.101.0/24	%any	71.16.53.45	0.0.0/0	yes	No Tunnel Up	Unnel Down	Edit Edit	
Add IPSEC TUNNEL									
SEC Defaults									
IKE Lifetime		Ke	KeyLife Aggress		sive	e Responder			
72h		:	24h yes				no	Z Edit	
SEC Actions									
IPSEC Start		IPSEC Stop			IPSEC Restart		Modifications & Additions		
# IPSEC Start		IPSEC Stop		IPSEC Restar		IPSEC Restart		Save & Apply	

- 2 On that screen, do one of the following:
 - **a** If this is the first IPsec VPN activity since system start-up, select the **IPSEC Start** button (at the lower left of the management window).
 - **b** If IPsec VPN tunnels are already running, select the **IPSEC Restart** button.
 - In either case, IPsec VPN tunnels are started.

Note: After the **IPsec Start** button has been selected, you can select any VPN tunnel's **Tunnel Down** button to bring that tunnel down. Then you can select its **Tunnel Up** button to restart the VPN tunnel.

You can use the **IPsec Stop** button to stop all VPN tunnels. (The VPN packet transmissions will be dropped.) When you are ready to resume use of the tunnels, select the **IPsec Restart** button to re-initiate all IPsec VPN tunnels.

7.2 Testing and Tracking VPN Connections

See the following:

- Testing VPN Connections
- Tracking VPN Connections

7.2.1 Testing VPN Connections

Do the following to test a VPN connection:

- 1 On the EN-1000 management system, select the Network tab.
- 2 Under Networks, select the Diagnostics tab.
 - The Diagnostics Screen is displayed (Figure 7-2).

Figure 7-2. Diagnostics Screen

encor <mark>e n</mark> etworks	EN1000 LTE Router Phone/MTN#: Device Mode: Cell Failover Cell Signal: -125dBm Operation Status: Online using WAN			Changes: 0
Status System Network Interfaces Hostnames Sta Diagnostics	Logout Quickstart rtic Routes Failover Firewall C	Nagnostics QoS VPN VRRP		
- Network Utilities				
encorenetworks.com		encorenetworks.com	encorenetworks.com	

3 Look at the ping set-up area on the left of the screen (Figure 7-3), under the heading **Network Utilities**.

Figure 7-3. Ping Set-Up Area (Detail of Diagnostics Screen)

Network Utilities	
encorenetworks.com	
IPv4 V Ping	

4 In the top field, enter the ping destination.

Note: The destination can be entered as an IP address or as a URL (a website path and name).

5 In the IP selection box below the field, pull down a menu to select IPv4 or IPv6.

Note: If you typed an IP address in Step 4, the IP version you select here must match that IP address's format.

- 6 In the action box below the field, select the **Ping** button.
 - If the ping is successful, the screen displays ping statistics, indicating that the VPN tunnel is active (Figure 7-4).

ncore-networks	Router Phone/MTNR: e: Cell Failover 125dBm atus: Online using WAN		Changes
Status System Network Lopeur			
Interfaces Hostnames Static Routes F	ellever Firewalt Diagnostics Or5 VPN VEEP		
Diagnostics			
- Network Utilities			
100 100 100 100 100 100 100 100 100 100	encommenced nor	encommunities parts	1
Fx4 - Ul Prg	diarocon 🔟	Mikicokup	1
Lab. R - Les desser de la Color	Install joutils tracerouteb for JPv6 tracer	cuto	
P150 conserver worknitzen (24.50.25 61 bytes from 75.51.25.107; seg 3	. ((): 54 deter myles out 64 time 100.995 me		
64 bytes from 74.51.21.1431 and 1 64 bytes from 74.51.15.147; see 1 14 outes from 74.51.21.147; and 1	101 24 1100 110 101 10 111-54 1100-171.014 mm 101 24 1100 102.015 res		
encourenetworks.com ping stati 5 meniate transmittled, 4 meniate court trip sin/ang/ars = 150.845/	50115 Tria Sen, 208 meth L Tree 175.556/108.005 au		

Figure 7-4. Messages Showing Successful Ping

If the ping is unsuccessful, the screen indicates that no acknowledgments were returned. That means that there is no communication (Figure 7-5).

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Figure 7-5. Message Showing Unsuccessful Ping

```
PING encorenetworks.com (74.50.25.147): 56 data bytes
--- encorenetworks.com ping statistics ---
5 packets transmitted, 0 packets received, 100% packet loss
```

Note: If the ping is unsuccessful, check the IP address (or URL) and the physical connections, and repeat Step 4.

7.2.2 Tracking VPN Connections

See the following sections:

- Tracking Specific Information
- Tracking General VPN Activity

7.2.2.1 Tracking Specific Information

1 Select the **Network** tab; then select the **VPN** tab and the **IPsec Status** tab to see which IPsec VPN tunnels are up and active (Figure 7-6).

Figure 7-6. Status of IPsec VPN Tunnels



7.2.2.2 Tracking General VPN Activity

- 1 On the EN-1000 management system, select the Status tab.
- 2 Under Status, select the System Log tab.
 - The System Log is displayed (Figure 7-7), showing a line-by-line log of the EN-1000 activities. You can review the IPsec VPN activities listed in this file.

Figure 7-7. System Log (Partial Display)

en	cor	e-net	worl	KS Cell S	000 LTE Route ice Mode: Cel Signal: -125d ration Status:	er Phone/MTN#: I Failover 8m Online using WAN		Changes:
	Status	System						
	Overvie	w Routes	Syste	m Log Real				
.								
S	ysten	n Log						
1	Jan 15	15:04:09	EN1000	kern.warn	kernel:	[0.000000]	Zone PFN ranges:	
1	Jan 15	15:04:09	EN1000	kern.warn	kernel:	[0.000000]	Normal 0x00000000 -> 0x00004000	
	Jan 15	15:04:09	EN1000	kern.warn	kernel:	[0.000000]	Movable zone start PFN for each node	
	Jan 15	5 15:04:09	EN1000	kern.warn	kernel:	[0.000000]	Early memory PFN ranges	
	Jan 15	5 15:04:09	EN1000	kern.warn	kernel:	[0.000000]	0: 0x0000000 -> 0x00004000	
	Jan 15	15:04:09	EN1000	kern.warn	kernel:	[0.000000]	Built 1 zonelists in Zone order, mobility grouping on. Total pages: 16256	
	Jan 15	15:04:09	EN1000	kern.warn	kernel:	[0.000000]	Primary instruction cache 64kB, VIPT, 4-way, linesize 32 bytes.	
	Jan 15	5 15:04:09	EN1000	kern.warn	kernel:	[0.000000]	Primary data cache 32kB, 4-way, VIPT, cache aliases, linesize 32 bytes	
	Jan 15	15:04:09	EN1000	kern.warn	kernel:	[0.110000]	ar724x-pc1 ar724x-pc1: PCIe link is down	
	Jan 15	15:04:09	EN1000	kern.warn	kernel:	[0.110000]	registering PCI controller with io map base unset	
	an is	15:04:09	ENICOU	kern.warn	kernel:	[0.290000]	m25p80 spl0.0: Found mx25i12805a, expected m25p80	
	Jan 13	15:04:09	ENICOU	kern.warn	kernel:	[14.430000]	ACVIMINITEE = 16	
	Jan 13	15:04:09	ENICOC	kern.warn	kernel:	[14.440000]	acvoniniree = 0	
	Jan 13	15:04:09	ENICOC	kern.warn	kernel:	[14.440000]	LADMANIFE = 10	
	Jan 1:	15:04:09	ENICOO	kern.warn	kernel:	[14.440000]	URPSMAINING = 0	
	Jan 15	15:04:09	EN1000	kern.warn	kernel.	[14.400000]	SECOND SUCCESSION OF PERSONNEL	
	Tan 15	15.04.09	EN1000	kern varn	kernel:	14.470000]	INE_INE_FILTERS . Capable SEFETERI . Need to fix the canablity check for BADAD (spectral attach : 226)	
	Tan 19	15.04.09	EN1000	kern warn	kernel:	14 4800001	SPECTRDI - get combility not registered	
	Tan 19	15.04.09	EN1000	kern warn	kernel:	14 4900001	HAI CAD DINID - Canable	
	Jan 15	15:04:09	EN1000	kern.warn	kernel:	14.4900001	SPECTRAL : Need to fix the canablity check for SPECTRAL	
	Jan 15	15:04:09	EN1000	kern.warn	kernel:	14.4900001	(spectral attach : 231)	
	Ian 15	15:04:09	EN1000	kern.warn	kernel:	14.5000001	SPECTRAL: get capability not registered	
	Jan 15	15:04:09	EN1000	kern.warn	kernel:	14.5000001	HAL CAP SPECTRAL SCAN : Capable	
	Jan 15	15:04:09	EN1000	kern.warn	kernel:	14.5100001	SPECTRAL : get tsf64 not registered	
	Jan 15	15:04:09	EN1000	kern.warn	kernel:	14.510000	spectral init netlink 52 NULL SKB	
	Jan 15	15:04:09	EN1000	kern.warn	kernel:	[14.520000]	SPECTRAL : No ADVANCED SPECTRAL SUPPORT	
100	Jan 15	15:04:09	EN1000	kern.warn	kernel:	[14.520000]	SPECTRAL : module attached	
	Jan 15	5 15:04:09	EN1000	kern.warn	kernel:	[14.530000]	Green-AP : Green-AP : Attached	
1	Jan 15	5 15:04:09	EN1000	kern.warn	kernel:	[14.530000]		
	Jan 15	15:04:09	EN1000	kern.warn	kernel:	[14.540000]	ath_get_caps[5982] rx chainmask mismatch actual 3 sc_chainmak 0	
1	Jan 19	15:04:09	EN1000	kern.warn	kernel:	[14.540000]	ath_get_caps[5957] tx chainmask mismatch actual 3 sc_chainmak 0	
	Jan 15	5 15:04:09	EN1000	kern.warn	kernel:	[14.550000]	ath_attach_dfs[11964] dfsdomain 0	
	Jan 15	5 15:04:09	EN1000	kern.warn	kernel:	[14.560000]	SPECTRAL : module already attached	
	Jan 15	15:04:09	EN1000	kern.warn	kernel:	[14.570000]	ath_tx_paprd_init_sc 832a8000 PAPRD Enabled	
	Jan 15	15:04:09	EN1000	kern.err)	kernel: [14.790000]	cdc_acm 1-1:1.2: This device cannot do calls on its own. It is not a modem.	
	an 18	15:04:12	EN1000	kern.warn	xernel:	[19.460000]	athr gmac ring alloc Allocated 2048 at 0x225f1800	
	Jan 15	15:04:12	ENICOO	kern.warn	xernel:	[13.460000]	athr gmac ring alloc Allocated 2046 at 0x62512000	
	an 15	15:04:12	ENICOO	kern.warn	kernel:	19.770000]	RADY ARGING FRI HULO	
	an 18	15:04:12	ENICOO	kern.warn	kernel:	19.770000]	ARC230: 1232124 Paget dopa	
	Ian 15	15:04:12	EN1000	kern.warn	kernel	19.8900001	Setting Drop CRC Errors, Pause Frames and Length Error frames	

Note: The System Log is live; it shows activity up to the second that you open it. Although the file continues recording information while it is open, it will not show new information until you refresh the browser window.

The file is not permanent; it refreshes when the EN-1000 reboots.