
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](#)

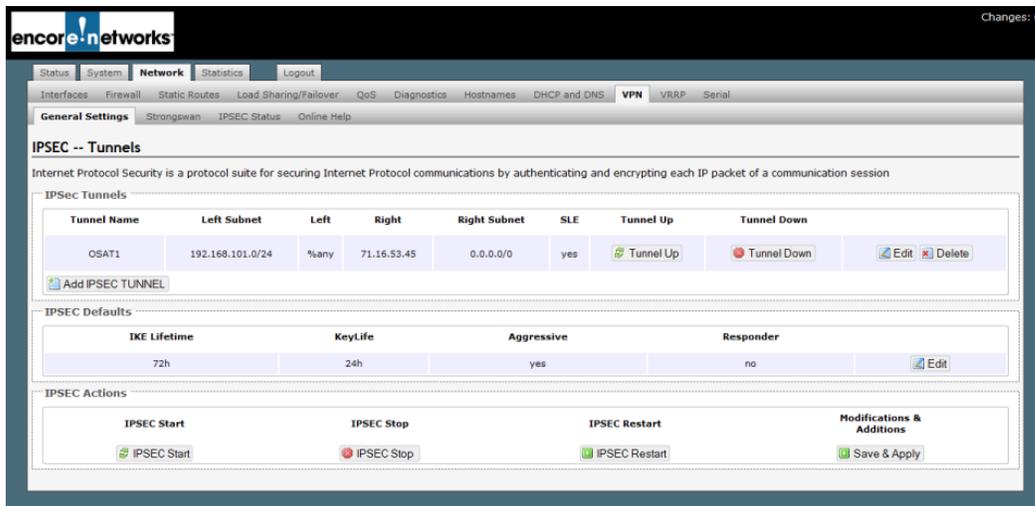
For information about VPNs, review the document [Virtual Private Networks](#).

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



- 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:

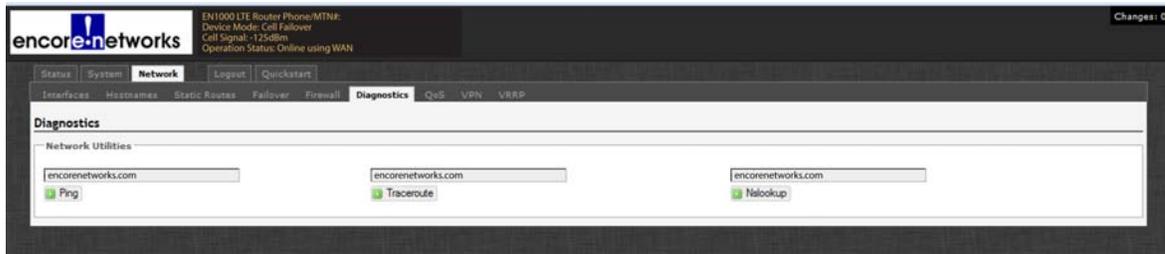
- [Testing VPN Connections](#)
- [Tracking VPN Connections](#)

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



- 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)

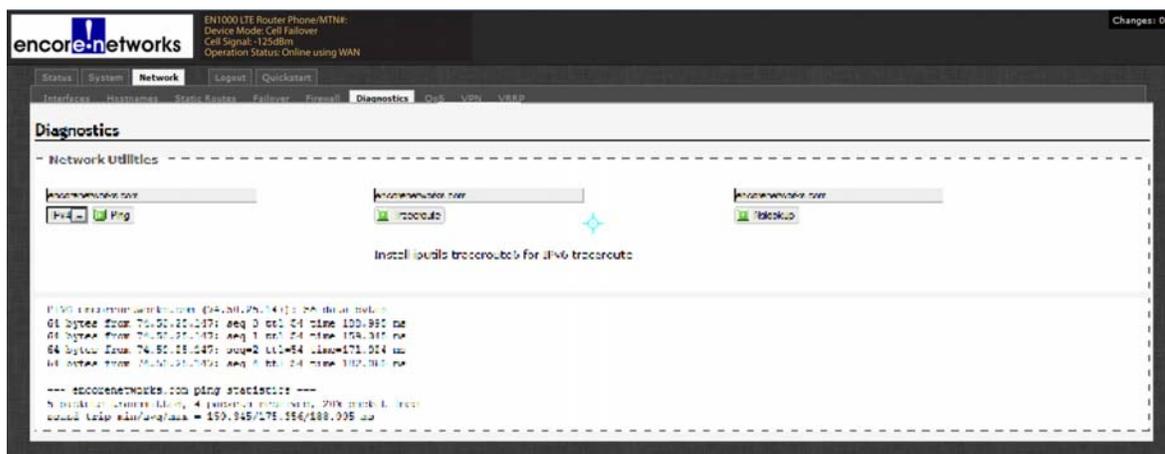


- 4 In the top field, enter the ping destination.

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).

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).

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)

The screenshot shows the 'System Log' tab in the EN-1000 management interface. The top status bar indicates 'EN1000 LTE Router Phone/MTN: Device Mode: Cell Failover, Cell Signal: 125dbm, Operation Status: Online using WAN'. The log content is as follows:

```

Jan 15 15:04:09 EN1000 kern.warn kernel: [ 0.000000] Zone PFN ranges:
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 15:04:09 EN1000 kern.warn kernel: [ 0.000000] Early memory PFN ranges
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 0.000000] 0: 0x00000000 -> 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, VFP, 4-way, linesize 32 bytes.
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 0.000000] Primary data cache 32KB, 4-way, VFP, cache aliases, linesize 32 bytes
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 0.110000] ar724x-pci ar724x-pci: PCIe link is down
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 0.110000] registering PCI controller with io_map_base unset
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 0.290000] m2p80 spi0.0: found mx25l12805d, expected m2p80
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 14.430000] ACVMinfree = 16
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 14.440000] ACVMinfree = 0
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 14.440000] CABMinfree = 48
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 14.440000] UAPSDMinfree = 0
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 14.460000] SPECTRAL : get_capability not registered
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 14.470000] HAL_CAP_PHYDIAG : Capable
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 14.470000] SPECTRAL : Need to fix the capability check for RADAR (spectral_attach : 226)
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 14.480000] SPECTRAL : get_capability not registered
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 14.490000] HAL_CAP_RADAR : Capable
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 14.490000] SPECTRAL : Need to fix the capability check for SPECTRAL
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 14.490000] (spectral_attach : 231)
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 14.500000] SPECTRAL : get_capability not registered
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 14.500000] HAL_CAP_SPECTRAL_SCAN : Capable
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 14.510000] SPECTRAL : get_ts64 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
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 14.520000] SPECTRAL : module attached
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 14.530000] Green-AP : Green-AP : Attached
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 14.530000]
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 14.540000] ath_get_caps[5962] rx chainmask mismatch actual 3 sc_chainmak 0
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 14.540000] ath_get_caps[5957] tx chainmask mismatch actual 3 sc_chainmak 0
Jan 15 15:04:09 EN1000 kern.warn kernel: [ 14.550000] ath_attach_dfs[11964] dfsdomain 0
Jan 15 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.
Jan 15 15:04:12 EN1000 kern.warn kernel: [ 19.460000] athr_gmac_ring_alloc Allocated 2048 at 0x825f1800
Jan 15 15:04:12 EN1000 kern.warn kernel: [ 19.460000] athr_gmac_ring_alloc Allocated 2048 at 0x825f2000
Jan 15 15:04:12 EN1000 kern.warn kernel: [ 19.770000] WAMP ----> AR8236 PHY MDIO
Jan 15 15:04:12 EN1000 kern.warn kernel: [ 19.770000] AR8236: resetting ar8236
Jan 15 15:04:12 EN1000 kern.warn kernel: [ 19.880000] AR8236: ar8236 reset done
Jan 15 15:04:12 EN1000 kern.warn kernel: [ 19.890000] 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.