

EL840

PEP-Box® Server

Elevation Product Family

ELEVATION

Description

The EL840 PEP-Box® Server is a Performance Enhancing Proxy (PEP) appliance that combines a number of advanced traffic enhancement and shaping functionalities for the server side of point-to-point and point-to-multipoint satellite IP network, such as IP trunking networks. The EL840 PEP-Box® Server is to be used in conjunction with the EL810 Mobile PEP-Box® or the EL830 PEP-Box® Gateway. Alternatively, the EL840 PEP-Box® Server can also be used with the TL100 TelliNet Client software installed on third party communication devices.

TCP and HTTP, the most widely used protocols in the Internet, show very poor performance when being used over high latency and/or lossy networks, such as satellite networks. As a result users experience slow download speed and surfing performance. Moreover valuable satellite capacity is not used in the most efficient way.

The ideal solution to overcome such drawbacks is the EL840 PEP-Box® Server. The EL840 integrates a traffic enhancement technology that accelerates any TCP based transmissions over high latency networks. At the same time the EL840 greatly reduces the TCP data traffic on both forward and return link by means of data compression as well as TCP packet aggregation and session multiplexing. This is achieved by using ETCP (Enhanced TCP) instead of TCP over the satellite link.

The EL840 PEP Box can be used in conjunction with the EL860 VCM/ACM shaper and encapsulator, in networks where the transmission bandwidth is varying dynamically. Thanks to the Cross Layer Optimization capability, the EL840 dynamically adjust its performance according to the changing bandwidth availability. As a result, zero packet loss transmission can be ensured.

The EL840 in its default configuration performs the acceleration of popular protocols such as HTTP, FTP, POP3 and SMB (SMB). The HTTP prefetching technology enhances the web surfing experience to an extent that the download time for a web site can be reduced by more than 70 %, so the user has the impression of surfing via regular DSL or Cable based Internet connections. On top of that, the EL840 PEP-Box® Server can secure any data traffic exchanged via the network by building up an encrypted VPN between the hub and the remote sites.

In the Premium option package the PEP-Box® Server regroups all the features of the default version in addition to a network policing engine. This engine allows the distribution of the overall available bandwidth among services and end-users according to configurable criteria, e.g. prioritization of VoIP traffic. A single EL840 PEP-Box® Server appliance supports up to 20 Mbit/s of throughput. For automated fail-over and higher rates, multiple EL840 can be operated in load sharing mode.

The Elevation PEP-Box® appliances are based on TelliNet and TelliShape of the Tellitec® IP software product family.

Key Features

- Superior TCP acceleration and advanced security functionalities
- HTTP, FTP, POP3 and SMB (CIFS) acceleration
- Traffic aggregation, multiplexing and compression
- Traffic classification and policing
- Traffic congestion and packet-loss avoidance
- Out-of-the-box solution \$ no additional hardware or software needed at the server-side
- Server redundancy and load-sharing allows 100 % service availability

Main Advantages

- Reduces bandwidth costs and increases revenues
- Speeds up time-to-market
- Minimizes customer support efforts on remote sides
- Boosts service performance
- Ensures high network security and end user privacy
- Seamless integration into existing infrastructure
- High versatility and flexibility
- Easy to integrate and operate

Applications

- One-way Internet Access
- VSAT Acceleration
- SCPC Links
- IP Backbones
- IP Trunking
- Corporate Networks

Related Products

EL810 Mobile PEP-Box® Terminal
EL830 PEP-Box® Gateway
EL860 CCM/VCM/ACM shaper and encapsulator
EL170 IP Satellite Modulator
EL178 High Speed IP Satellite Modulator
EL470 IP Satellite Modem
EL478 High Speed IP Satellite Modem
TL100 TelliNet Client Software



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Specifications – EL840(R8)

General

System Architecture

- Distributed Performance Enhancing Proxy (dPEP) architecture (RFC 3135)
- Acting a dPEP server in a point-to-point or star network
- Based on IP tunneling technology
- Operates in L3 routing mode (in-path or on-a-stick)
- Supports asymmetric routing between the EL840 PEP-Box® Server and the EL810 Mobile PEP-Box® Terminal, EL820 PEP-Box® Terminal and EL830 PEP-Box® Gateway Client appliances
- Linux OS based
- Built-in CPU watchdog and RAM-usage monitoring
- Supports built-in redundancy and load sharing

Physical/Hardware

- 1RU, width 19", depth 36cm, weight 7 kg
- Rack mountable, rack mount kit included
- Intel Xeon server class CPU
- Harddisk
- Power Supply 100/240AC, 50/60Hz, 260W
- Operational Temperature: 10-35 C
- Operational Humidity: 10%-90%, non condensing
- CE label

Interfaces

Monitoring Only

- 1 x serial
- 2 x PS/2 for keyboard/mouse
- 4 x USB e.g. for keyboard/mouse
- 1 x VGA

Input/Output

- 2 x LAN: auto switching 10/100/1'000 Base-T Ethernet interface, RJ-45
- 1 x additional LAN (optional)

Configuration/Monitoring

- SSH Access
- Web based GUI

Functionalities

Authentication and Accounting

- Server side enforced access control through gateway authentication
- Forward and return channel traffic accounting

TCP Acceleration

- Used transport protocol: ETCP (Enhanced Transmission Control Protocol)
- Fills the available data pipe up to the configured maximum throughput
- Control traffic reduction through session multiplexing and combined NACK/ACK technology (compared to SCPS-TP average bandwidth utilization savings: 80 - 95 % of volume and packets on return channel)
- Packet loss and delay based three-tier congestion control technology
- SYN ACK spoofing for HTTP traffic
- Dynamic RTT based window size adaptations
- Fast start algorithm
- Packet aggregation
- Configurable MTU
- Tolerates dynamically changing network conditions, packet loss, packet reordering and large data queues

Data Compression

- Supports on-the-fly TCP payload compression
- Average compression savings: 25 - 40 %
- Deflate compression algorithm (RFC 1951)
- Selective compression based on URL extension and/or MIME type

VPN Support and Security

- Transparent interception of traffic
- On-the-fly Blowfish encryption
- Available key length: 56 bits (default) up to 448 bits (optional)
- Hides original end-point information (IP, port, etc.)
- Automatic encryption key negotiating according to Diffie-Hellman algorithm (RFC 2631)
- Re-keying on basis of ETCP sessions

Application Acceleration

- Server-to-gateway HTTP prefetching with support for embedded HTML
- Server-side JavaScript and CSS objects prefetching
- SMB (CIFS) read-ahead technology
- POP3 e-mail prefetching

Traffic Policing (Optional)

- Real-time adaptable traffic policy changes without service interruption and without packet dropping
- Three-tier rule support, up to 750 shaping rules configurable
- Shaping IPv4 unicast and multicast traffic
- Supports Peak Information Rate (PIR) policies and equal or weighted bandwidth distribution
- Up to ten configurable traffic priority classes
- Bandwidth is distributed equally or according to a configured weighting factor
- Supports IP ToS (Type of Service) transparency or IP ToS injection, classification and shaping of accelerated and encrypted ETCP traffic

Traffic Classification (Optional)

- Source and/or destination IP address, IP address range or IP subnet
- Protocol type (TCP, UDP, ICMP, RTP, ESP, AH, GRE, ETCP)
- Source/destination port or port range (TCP or UDP)
- IPv4 ToS values

Client Side Component

- EL810 Mobile PEP-Box® Terminal or
- EL830 PEP-Box® Gateway or
- TL100 TelliNet Client software (installed on third party communication devices)

Ordering Information

EL840 PEP-Box® Server		Order n°
Default configuration		
End user Authentication and accounting, TCP acceleration and session aggregation, on the fly compression. Supports the following PEP-Box Gateways: EL810 and EL830. Rack mount hardware platform. 2.5 Mbit/s 2500 TCP connections		EL840
Configuration options		
Category		Max. 1 option per category
Performance*	2.5 Mbit/s, 2500 TCP connections	Default
	2.5 Mbit/s, 2500 TCP connections, Adv.*	TA-26
	2.5 Mbit/s, 75 rules, 2500 con., Prem.*	TA-27
	5 Mbit/s, 5000 TCP connections*	TA-28
	5 Mbit/s, 5000 TCP connections., Adv.*	TA-29
	5 Mbit/s, 150 rules, 5000 con., Prem.*	TA-30
	10 Mbit/s, 10000 TCP connections*	TA-31
	10 Mbit/s, 10000 TCP connections., Adv.*	TA-32
	10 Mbit/s, 300 rules, 10000 con., Prem.*	TA-33
	15 Mbit/s, 15000 TCP connections*	TA-34
	15 Mbit/s, 15000 TCP connexions, Adv.*	TA-35
	15 Mbit/s, 450 rules, 15000 con., Prem.*	TA-36
	20 Mbit/s, 20000 TCP connections*	TA-37
	20 Mbit/s, 20000 TCP connections, Adv.*	TA-38
	20 Mbit/s, 600 rul., 20'000 con., Prem.*	TA-39
	25 Mbit/s, 25000 TCP connections*	TA-48
Services	25 Mbit/s, 25000 TCP connections, Adv.*	TA-49
	25 Mbit/s, 750 rules, 25000 con., Prem.*	TA-50
Services		
Category		
Assistance	Care Pack Basic	GA-06
	Care Pack Extended	GA-07

EL840 PEP-Box® Server Configuration Options:

Authentication and Accounting TCP Acceleration Data Compression Security VPN Support Application Acceleration	DEFAULT
Traffic Policing Traffic Classification	PREMIUM

*Upgradeable via license key

Other configurations and options are available on request. Contact your sales representative for details (sales@newtec.eu).

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