

CEP Variable Speed Encryptors

FIPS Validated Multi-Layer 3Mbps to 10Gbps Tunnel-less Encryptors

Product Overview

The Certes Enforcement Point (CEP) Variable Speed Encryptors (VSEs) are bandwidth customizable multi-layer encryption appliances that provide tunnel-less data protection, including Ethernet frame encryption for Layer 2 networks, IP packet encryption for Layer 3 networks, and Layer 4 data payload encryption for IP and MPLS networks. The VSEs offer full-duplex encryption at 15 standardized rates ranging from 3Mbps to 10Gbps using the AES 256 algorithm.

The VSEs enable organizations to standardize on a single platform capable of encrypting at various throughputs, based on software licenses. This allows organizations to continue to use the same encryption hardware as their bandwidth needs increase, providing both flexibility and investment protection. The VSEs integrate easily into any existing network, operating transparently to the network infrastructure; ensuring data transmissions are encrypted, without compromising performance.

Scalable and Secure Group Encryption

The VSEs use scalable group encryption to provide encrypted and authenticated low-latency any-to-any connectivity. The VSEs use Certes Networks' web-based management platform, TrustNet Manager, to securely generate and distribute group keys to authorized endpoints. By avoiding the use of IPsec tunnels, group encryption greatly reduces deployment complexity and provides fully meshed encryption that is easy to manage. The solution is also compatible with load balancing, highly available network designs, QoS and network monitoring tools.

Ethernet Frame Encryption

The VSEs are compatible with all Layer 2 unicast, multicast, point-to-point, and multi-point-to-multipoint topologies. They also authenticate all Ethernet frames, preventing man in the middle attacks. Encryption policies can be based on VLAN ID's for cryptographic segmentation of data, or can be set to encrypt all Ethernet frames.

Persistent authentication of frames ensures that the data received at the remote end of a connection originated from a trusted source. While encryption directly protects data, without authentication, data streams remain vulnerable to modification from man in the middle attacks. Unlike many encryption solutions, the VSE's provide continuous authentication to ensure that both the data and the communication streams are uncompromised. Without both, the network and data are less than secure.

IP Packet Encryption

Using the IP Security (IPsec) protocol, the VSEs provide full data encryption for Layer 3 IP networks. The VSE family utilizes the Certes Networks Encapsulating Security Payload protocol (CN-ESP) to encrypt the IP packet, while preserving the original IP header. This unique functionality maintains network transparency, while providing maximum data protection. By preserving the original header and encrypting only the payload, the VSEs can protect data over any IP infrastructure including multi-carrier, load-balanced, and high availability networks.

Payload Only Encryption

In addition to standard IPsec encryption, (which encrypts the Layer 4 header), the VSEs offer a Layer 4 compatible "payload only" encryption option. This unique, patent-pending capability allows network services, such as Netflow/Jflow, and Class of Service (CoS) based traffic shaping, to be maintained through the service provider network while the payload itself is encrypted.

Central Policy Management

The VSEs can be configured and centrally managed via the TrustNet Manager. TrustNet allows both security and network administrators to quickly and easily manage network security from a centralized interface with simple yet powerful drag and drop policy creation capability. Encryption policies can be based on source or destination IP addresses, source or destination port numbers, protocol IDs, or VLAN tags. Policies can be quickly and easily modified in seconds on even the largest networks, without traffic disruptions or interaction with remote personnel. TrustNet Manager also provides logging and audit mechanisms to meet or exceed compliance and audit requirements.



PRODUCT FAMILY

- Encrypted throughput from 3Mbps to 10Gbps
- Layer 2 Ethernet frame, Layer 3 IP packet, and Layer 4 payload protection
- Per-frame/packet authentication
- Microsecond latency
- Preserves VLAN and MPLS tags
- FIPS 140-2 validated
- Common Criteria EAL4+ Certified

FEATURES AND BENEFITS

- Multiple encrypted throughput options
- Transparent to network and applications
- Seamless scalability
- Infrastructure neutral
- Easy installation and management
- Create secure network groups

COMPREHENSIVE DATA PROTECTION

- IPsec site-to-site networks
- MPLS meshed networks
- Metro Ethernet and VPLS networks
- Voice and video over IP applications

Variable Speed Encryptors (VSEs)

Multi-Layer 3Mbps to 10Gbps Tunnel-less Encryptors

Encrypted Throughput

CEP10 VSE:

- 3, 6, 10, 25, or 50Mbps

CEP100 VSE:

- 25, 50, 75, 100, 155, or 250Mbps

CEP1000 VSE:

- 100, 155, 250, 500, 650Mbps and 1Gbps

CEP10G VSE:

- 500, 650Mbps and 1, 2.5, 5 and 10Gbps

Encryption Support

- AES: (256 bit keys) CBC mode
- 3DES (TDEA)

Authentication and Integrity

- HMAC- SHA-256-96

Network Support

- Ethernet
- VLAN tag preservation
- MPLS tag preservation
- IPv4
- IPv6 (Layer 2 Ethernet encryption mode)
- NTP

Policy Selector Options

- Source or destination IP address
- Source or destination port number
- Protocol ID (L3 and L4 options)
- VLAN ID (L2 option)
- Multicast address

Transforms

- Certes Networks ESP Tunnel Mode (header preservation option)
- Certes Networks ESP Transport Mode (L4 option)
- Certes Networks Ethernet ESP Mode

Device Management

- TrustNet Manager
- Command Line Interface
- Out-of-band management
- Alarm condition detection and reporting
- Syslog support
- SNMPv2c and SNMPv3 managed object support
- Audit Log

Management Communication Security Options

- X.509 v3 digital certificates
- TLS (full authentication)
- SSH

Environmental

- Operating temperature: 0° to 40° C (32° to 104° F)
- EU WEEE
- EU RoHS-5

Regulatory

- Safety: UL 60950-1
- Emissions for CEP10, CEP1000, CEP10G VSEs: FCC part 15 subpart B class A
- Emissions for CEP100 VSE: FCC part 15 subpart B class B

Indicators

- Power
- Alarm
- LED Status
- Link Status, Encrypting and 2x8 segment display (CEP10G VSE)
- Encrypting (CEP10G VSE)

Physical

CEP10 VSE:

- 1U tamper evident chassis
- Dimensions: 1.69" H X 9.1" W and 7.1" D
- Rack mountable in standard 19" rack or desktop option
- External Power Adapter: 100-240V A/C @ 1.5A, 50/60Hz, output 12V D/C, 5A max (60W max)
- Thermal: In-rush 102 BTU/hr, Steady-state 102 BTU/hr
- Nominal input current: 0.25A
- Weight: 3 lbs as rackmount; 1 lb., 5 oz. as desktop
- MTBF: 388,999 hours
- FIPS 140-2 Level 2 validated (certificate #1798)
- Common Criteria EAL4+ Certified

CEP100 VSE:

- 1U tamper evident chassis
- Dimensions: 1.75" H x 17" W x 10" D
- Rack mountable in standard 19" rack or desktop option
- Power: 100-240V A/C @ 4A, 50/60Hz, auto-sensing
- Thermal: In-rush 380 BTU/hr, Steady-state 140 BTU/hr
- Nominal input current: 1.0A
- Weight: 6 lbs
- MTBF: 59,794 hours
- FIPS 140-2 Level 2 validated (certificate #1799)
- Common Criteria EAL4+ Certified

CEP1000 VSE:

- 1U tamper evident chassis
- Dimensions: 1.75" H x 17" W x 10" D
- Rack mountable in standard 19" rack
- Power: Dual A/C hot swappable 100V@3.A - 240V@1.5A, 47-63Hz, auto-sensing
- Thermal: In-rush 380 BTU/hr, Steady-state 140 BTU/hr
- Nominal input current: .65A@110V
- Weight: 9 lbs
- MTBF: 158,520 hours
- FIPS 140-2 Level 2 validated (certificate #1799)
- Hardware designed to meet FIPS 140-2 Level 3 requirements
- Common Criteria EAL4+ Certified

CEP10G VSE:

- 2U tamper resistant chassis
- Dimensions: 3.5" H x 17" W x 15" D
- Rack mountable in standard 19" rack
- Power: 100-240V A/C @ 4A, 50/60Hz, auto-sensing
- Dual hot-swappable internal power supplies- AC or DC (-48V)
- Customer replaceable fan assemblies
- FIPS 140-2 Level 2 validated (certificate #1797)
- Hardware designed to meet FIPS 140-2 Level 3 requirements
- Common Criteria EAL4+ Certified

Interfaces

CEP10 VSE:

- Data: Two 10/100/1000 RJ45 Ethernet ports
- Management: One 10/100 RJ45 Ethernet and one RS232 serial port

CEP100 VSE:

- Data: Two 10/100/1000 Mbps RJ45 Ethernet ports
- Management: One 10/100 RJ45 Ethernet and one RS232 serial port

CEP1000 VSE:

- Data: Two full-duplex Gigabit Ethernet ports with SFP interfaces (single mode, multimode or copper)
- Management: One 10/100 RJ45 Ethernet and one RS232 serial port
- Management SFP port and Aux1 SFP port are for future use

CEP10G VSE:

- Data: Two full-duplex 10 Gigabit Ethernet ports with SFP+ interfaces (single mode, multimode or copper)
- Management: One 10/100/1000 Ethernet RJ45, one Gigabit Ethernet (SFP) and one RJ45 serial port
- Three full-duplex Gigabit Ethernet ports with SFP interfaces (single mode, multimode or copper) or three full-duplex 10/100/1000 Ethernet ports with RJ45 interfaces (reserved for future use)
- Two USB ports (reserved for future use)

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