HIGH-SPEED ETHERNET AND SONET ENCRYPTION
CN3000 SERIES
CN3000 Series Encryptors

Scalable, efficient data encryption for high-speed network security without compromise.

It is often assumed that data networks are inherently safe. They are not. Data networks are vulnerable to security breaches. To be protected from a data network breach, cyber-attack or innocent routing error, your data must be encrypted. Only when encrypted can data be safe - rendering it useless to unauthorized parties.

SafeNet high-speed data network encryptors are internationally certified by independent testing authorities to protect your data while in motion. It’s why our encryptors are used by governments and defense forces in more than 25 countries!

THE CN3000 SERIES

The CN3000 encryptors are an optimal choice when data protection requires purpose built encryptors for Ethernet or SONET networks.

Their multiple certifications make the CN3000 series ideal in government networks:

→ FIPS, Common Criteria and CAPS (UK)*.

CN3000 encryptors are scalable and flexible simplifying future integration with existing encryptors.

*Specific models
ETHERNET SERVICES
Our CN3000 series platforms provide highly secure, full line rate transparent encryption for data moving across both dark fibre and metro, or wide area Ethernet networks in point-point, hub & spoke, or any meshed environment.

The intrinsic key generation and distribution capability in our CN3000 Encryptors removes reliance on external key servers, providing a robust, fault-tolerant security architecture. The rugged tamper-resistant chassis also gives uncompromising protection to key material held in the encryptor.

Full interoperability with the CN & CS series of encryptors means customers may standardize on one platform to secure data in motion across large hub and spoke or meshed networks, between locations.

SONET SERVICES
The CN3000 Series also supports SONET and is designed to secure synchronous optical networks at 10 Gbps (OC-192).

The CN “SONET” integrates transparently into SONET network architectures and provides protocol transport encryption with extremely low latency. Both path and line encryption are supported, providing completely confidential data transmission across optic fibre.

NETWORK AND MANAGEMENT
The CN3000 encryptor products are configured and managed using CypherManager (CM7) – a purpose built software tool that makes managing your organization's encryption simple and safe.

The local (protected) and network (unprotected) connections are made via XFP optical interfaces. Management connections are via a standard RJ45 port on each device's front panel, and in addition a Command Line Interface connection is available via a 9-pin D-sub RS232 serial connector.

CERTIFICATIONS*
Government and commercial customers benefit from the CN3000 series independent testing authority certifications.

- Common Criteria
- FIPS
- CAPS (UK)

*Detailed certification information available upon request.
What makes SafeNet encryptors stand out?

Security Without Compromise

→ PERFORMANCE
The mix of “designed-in” outstanding performance capabilities makes our encryptors stand out. Our encryptors are world-leading and among them, hold all three major international, independent government testing authority certifications. These certifications are testament to our encryptors’ outstanding performance. They are ideally suited to the most demanding network environments. It’s why they are preferred by many of the world’s most secure organizations.

→ NEAR-ZERO LATENCY
SafeNet high-speed data encryptors are high-performance, operating in full-duplex mode at full speed without loss of packets. Latency is not affected by packet size and is approximately 4 microseconds per unit at 10 Gbps. Importantly, by using Field Programmable Gate Array (FPGA) technology, our encryptors’ outstanding latency performance is predictable and dependable. In summary, maximum throughput with zero protocol overhead.

→ FLEXIBILITY
With designed-in attributes such as FPGA technology, our encryptors enable maximum operational flexibility. This enables the encryptors to better meet customers’ specific and unique requirements and provide an optimized high-speed data encryption solution. The designed-in multi-purpose flexibility enables on-going operational simplicity, such as in-field upgradability as customers’ requirements change – protecting customers’ investment.

→ TRUSTED
Because SafeNet encryptors include the world’s only triple-certified products of their types, they are trusted by governments and defense forces around the world. This successful, exhaustive and rigorous testing over many years provides our government and commercial customers with maximum assurance. Certified CN3000 encryptors provide the assurance of the three leading international, independent government testing authorities: FIPS, Common Criteria and CAPS( UK).

→ COMPREHENSIVE RANGE
The CN range of Layer 2 encryptors provides the widest feature-set able to operate at 10 Mbps to 10 Gbps and able to support Ethernet, Fibre Channel, SONET/SDH and LINK protocols.
→ INTEROPERABILITY
Encryptors that support the same protocol are fully interoperable. For example, locations that have minimal needs may use CS encryptors, which can interoperate with a CN unit at a larger central site under the same CM7 platform.

→ EASY TO INSTALL
The ‘Bump in the Wire’ design of our encryptors makes them easy to install and highly effective. You simply place the encryptor at the access point to the public or private Layer 2 network and all data passing through the device is encrypted using an AES 256 bit encryption algorithm.

→ SIMPLICITY
Throughout the encryptor range, “set and forget” and transparency are underlying design themes. They help ensure simplicity of implementation, operation and management. Simplicity begins with ease of installation and continues with an intuitive user interface providing meaningful descriptive diagnostics – such as early warnings and simple fault-finding. The encryptors just sit and do their job – with minimal resource requirements.

→ LOW IMPACT
The low impact of our world-leading encryptor performance is not limited to network bandwidth and speed. It extends to network operations and management. Our encryptors simply “drop in” within the user network. They don’t require changes to other devices or network reorganization. Minimal network impact makes our encryptors a favorite among network engineers because the encryptors do not add load to the network operations or management.

→ RELIABILITY
SafeNet encryptors are designed, developed and manufactured to exacting standards. In addition to the high levels of security, the encryptors conform to international requirements for safety and environmental concerns, as well as providing high availability features with 99.999% uptime.

→ LOCAL OR CENTRALIZED MANAGEMENT
Configuration can be performed locally or remotely through our intuitive CM7 management software that also acts as the Certificate Authority in a network of encryptors by signing and distributing X.509 certificates.
## Your Assurance
- Government and defense-grade assurance certified.
- The CN3000 Series are certified FIPS, Common Criteria and CAPS (UK)*.
- No-compromise certified performance provides exceptional assurance, network performance and peace of mind.

*Specific models

## Why CN3000 Series Encryptors?
- No-compromise performance:
  - Near-zero latency
  - Maximum bandwidth
  - Minimum overhead
  - Scalable and flexible
  - Simple to manage
- Secure transmission of data through Layer 2 networks
- Defense-grade and ultra-reliable 99.999% up-time data network security
- Our high-speed encryptor technology is used by governments, defense forces and commercial organizations in more than 25 countries.

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## CN3000 Series Encryptors at-a-glance

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CN3000</th>
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<tbody>
<tr>
<td>Protocol</td>
<td>Ethernet</td>
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<tr>
<td></td>
<td>SONET/SDH</td>
</tr>
<tr>
<td>Speed</td>
<td>10 Gbps</td>
</tr>
<tr>
<td></td>
<td>10 Gbps (OC-192)</td>
</tr>
<tr>
<td>Protocol and application transparent</td>
<td>✓</td>
</tr>
<tr>
<td>Common Criteria certified</td>
<td>✓</td>
</tr>
<tr>
<td>FIPS certified</td>
<td>✓</td>
</tr>
<tr>
<td>CAPS certified</td>
<td>✓</td>
</tr>
<tr>
<td>Low overhead full duplex line-rate encryption</td>
<td>✓</td>
</tr>
<tr>
<td>Ultra low latency for high performance</td>
<td>✓</td>
</tr>
<tr>
<td>Support for external (X.509v3) CAs</td>
<td>✓</td>
</tr>
<tr>
<td>Robust AES encryption algorithm</td>
<td>✓</td>
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<tr>
<td>CRL and OCSP server support</td>
<td>✓</td>
</tr>
<tr>
<td>Automatic key management</td>
<td>✓</td>
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<tr>
<td>Flexible encryption policy engine</td>
<td>✓</td>
</tr>
<tr>
<td>Encrypts Unicast, Multicast and Broadcast traffic</td>
<td>✓</td>
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<tr>
<td>Policy based on MAC address or VLAN ID</td>
<td>✓</td>
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<tr>
<td>Support for Jumbo frames</td>
<td>✓</td>
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<tr>
<td>Self-healing key management in the event of network outages</td>
<td>✓</td>
</tr>
<tr>
<td>Per packet confidentiality and integrity with AES-GCM encryption*</td>
<td>✓</td>
</tr>
<tr>
<td>Smart network discovery and automatic connection establishment</td>
<td>✓</td>
</tr>
<tr>
<td>Centralized configuration and management using CM7</td>
<td>✓</td>
</tr>
<tr>
<td>Remote management using SNMPv3 (in-band and out-of-band)</td>
<td>✓</td>
</tr>
<tr>
<td>FPGA based cut-through architecture</td>
<td>✓</td>
</tr>
<tr>
<td>Tamper resistant and evident enclosure</td>
<td>✓</td>
</tr>
<tr>
<td>Dual swappable AC or DC power supplies</td>
<td>✓</td>
</tr>
<tr>
<td>Fully interoperable with related CN/CS models</td>
<td>✓</td>
</tr>
</tbody>
</table>

*Pending firmware release
A brochure cannot provide all the information to determine the right encryptors for your data protection. We have data security and network technical specialists who can help. We also work with data network providers and systems integrators to specify the best encryption solution for your needs. Wherever you are, just contact us to discuss your needs. Or, if you prefer, your service provider can contact us on your behalf. The optimal specification of encryptors for your data network is dependent upon many factors, including your IT and data network environments and business needs.

Specifications

**CN3000 10 Gbps Ethernet Encryptor**
Providing maximum security within modern Ethernet networks. The system supports Layer 2 protocol and can be configured for point-to-point or multipoint operation.

- Full duplex line-rate encryption at up to 10 Gbps
- Ultra low latency cut-through architecture
- Latency not affected by packet size and is less than 7.5 microseconds per unit
- Operates over point-to-point or meshed topologies
- Fully compatible with service provider Ethernet services (MEF, VPLS)
- Flexible encryption policy
- Encrypts unicast, multicast and broadcast traffic
- Provides per VLAN cryptographic separation
- Per packet confidentiality and integrity using AES-GCM mode
- Automatic key management
- Certificate revocation; OCSP, CRL
- Comprehensive alarm and event reporting
- Secure remote management using SNMPv3
- Network connections via xFP interfaces
- Interoperable with CS10, CS100 and CN1000 series Ethernet encryptors
- Dual redundant hot swappable AC and/or DC power supplies
- Supported Networks: Ethernet II 802.3 Ethernet over MPLS Carrier Ethernet VLAN/MPLS transparency
- Size: 435mm/17.1" (19"), 133mm/5.2" (3U), 380mm/15" (WxHxD)
- 19" rack mountable
- Weight: 9kg/19.8 lbs
- 0°/32°F to 50°C/122°F operating temperature
- 0 to 80% RH at 40°C/104°F operating
- Power requirements: 90–240 VAC / 47–63 Hertz 105 Watts and/or 48 VDC

**CN3000 SONET Encryptor**
Providing maximum security within modern telecommunications networks. The system is configured for operation at a speed of 9.9522 Gbps (OC-192), and supports both Line

- Full duplex line-rate encryption at 9.952 Gbps
- Latency of 20 microseconds max
- Supports Line and Path connections
- Independent multiplexed path encryption
- Network connections via pluggable xFP interfaces
- Dual redundant hot swappable AC or DC power supplies
- Supported Networks: SONET OC-192 SDH STM-64 Line mode Path mode
- Size: 482mm/19" (19"), 133mm/5.2" (3U), 380mm/15" (WxHxD)
- Weight: 9kg/19.8 lbs
- 0°/32°F to 50°C/122°F operating temperature
- 0 to 80% RH at 40°C/104°F operating
- Power requirements: 90–240 VAC / 47–63 Hertz 105 Watts and/or 48 VDC

All specifications are accurate as at the time of publishing and are subject to change without notice to meet the ongoing requirements of our customers.