

Thales High Speed Encryption Solutions

Delivering Data-in-Motion Security without Compromise

The exponential growth of big data, cloud services, and use of remote data centers has resulted in an unprecedented movement of data throughout networks. Transmitted data is increasingly valuable and bandwidth demands are constantly increasing.

Organizations need network encryption solutions that protect data in motion without slowing down critical operations.

Thales High Speed Encryption Solutions

Thales High Speed Encryption (HSE) solutions provide Federal agencies with a unified platform to encrypt data everywhere—across data centers, headquarters, cloud environments, backup sites, and disaster recovery locations.

Built for performance and high assurance security, Thales HSEs deliver maximum throughput with minimal latency, enabling agencies to safeguard data, voice, video, and metadata from eavesdropping, surveillance, and both overt and covert interception. All of this is delivered at an affordable cost and without compromising network performance.

High-Speed, Quantum-Ready Performance

Thales HSE appliances are engineered to provide strong security without sacrificing network performance. Each device delivers deterministic, wire speed encryption at rates up to 100 Gbps, supported by ultra low latency cut through packet processing to minimize delay in mission critical environments. The platform's tunnel free encryption options help preserve bandwidth and reduce overhead, making it suitable for high volume or latency sensitive applications.

All HSE models operate within a FIPS 140-3 Level 3 validated architecture and incorporate classical and post quantum cryptography to protect against both current and emerging threats, including Harvest Now Decrypt Later (HNDL) scenarios. This combination of performance and cryptographic assurance enables organizations to maintain secure, resilient communications—even as quantum capable adversaries continue to advance.

Advantages of Thales High Speed Encryption Solutions

Robust Security for Sensitive Traffic

Thales HSEs include FIPS 140-3 Level 3 tamper-resistant key management and are rigorously evaluated against Common Criteria and FIPS standards. They have also been vetted by organizations such as DISA (DODIN APL) and NATO.

Thales HSEs support Suite B algorithms (AES-256, ECDSA, ECDH, SHA-512) and use NIST-certified random number generators to produce high-quality cryptographic keys stored securely in hardware—ensuring full customer control, even in multi-tenant environments.

Maximum Performance and High Availability

Designed for performance-intensive environments, Thales HSE solutions can operate at full line speed in full-duplex mode with near-zero, deterministic latency unaffected by packet size. A zero-overhead encryption option is available for optimal throughput. Built-in diagnostic tools provide early warnings to administrators, helping maintain maximum uptime.

Optimal Flexibility

Thales HSEs offer vendor-agnostic interoperability and support diverse architectures, speeds, and security requirements. Solutions range from 10 Mbps to 100 Gbps and are available in both physical and virtual form factors—making them adaptable to evolving networks and mission demands.

Crypto-Agility

Thales HSEs are built for future cryptographic needs, offering customizable support for elliptic and custom curves, as well as bring-your-own-entropy capabilities. This crypto-agile architecture enables rapid deployment of emerging or custom algorithms.

Thales HSEs integrate Quantum Key Distribution (QKD) and Quantum Random Number Generation (QRNG), providing a foundation for long-term, quantum-resilient data protection.

Transport Independent Mode

Thales HSEs feature Transport Independent Mode (TIM), delivering tunnel-free encryption at Layers 2, 3, or 4 across virtually any network transport—including MPLS, public internet, satellite links, and hybrid environments.

TIM uses a NIST approved Key Derivation Function (KDF) to generate strong, efficient encryption keys and supports detailed 5 tuple policy enforcement, enabling organizations to control traffic flows, prevent data exfiltration, and align with mission specific security rules.

Thales CN Series High Speed Encryption Platforms

Thales delivers a comprehensive range of HSE platforms to meet diverse performance, security, and budget requirements. All CN Series encryptors are fully interoperable and centrally manageable, supporting up to 512 concurrent encrypted connections. Hardware models hold FIPS 140-3 Level 3 and Common Criteria EAL2+/EAL4+ certifications.

CN4000 Series



Compact and versatile, the CN4000 Series provides 10 Mbps to 1 Gbps encryption in a small-form-factor chassis—ideal for branch offices, remote sites, and cost-sensitive deployments that still require certified, high-performance security.

CN6000 Series



The CN6000 Series delivers highly secure, full line-rate encryption for data in transit across dark fiber, metro, and wide-area Ethernet networks. Available in 1 Gbps to 10 Gbps configurations, these rack-mounted platforms support point-to-point, hub-and-spoke, and fully meshed environments for mission-critical operations.

CN7000 Series



The CN7000 Series provides quantum-resistant, military-grade encryption for air, land, and maritime missions. Designed for extreme and contested environments, it protects voice, video, and mission data with low-overhead Layer 2–4 encryption, ensuring resilient C3I communications from the tactical edge to command centers.

CN9000 Series



Delivering 100 Gbps of high-assurance encryption with <2μs latency, the CN9000 Series ensures uncompromised performance for real-time, high-throughput applications. Its near-zero overhead design protects data moving across data centers, cloud environments, and high-capacity networks without impacting operations.

CV1000 Series



The CV1000 is the industry's first hardened virtual encryptor, engineered for extended WAN and SD-WAN deployments. Scalable to thousands of endpoints, it provides policy-based, multi-layer protection at speeds up to 5 Gbps. The CV1000 offers a cost-effective alternative to hardware appliances for organizations seeking flexible, high-assurance encryption for data in motion.

About Thales Trusted Cyber Technologies

Thales Trusted Cyber Technologies, a business area of Thales Defense & Security, Inc., is a trusted, U.S. provider of cybersecurity solutions dedicated to U.S. Government. We protect the government's most vital data from the core to the cloud to the edge with a unified approach to data protection. Our solutions reduce the risks associated with the most critical attack vectors and address the government's most stringent encryption, key management, and access control requirements.

For more information, visit www.thalestct.com