



SWISS
QUANTUM⁺

Redefining Security

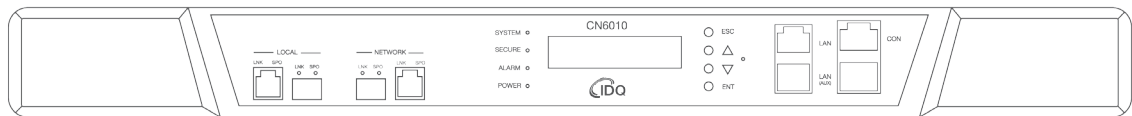
Centauris CN6000 Series

High-Assurance Data-in-Motion Encryptors, up to 10 Gbps

It is often assumed that data networks are inherently safe. They are not. Neither today, nor tomorrow in the quantum era. Data networks are vulnerable to security breaches. In order to be protected from a data network breach, cyber attack or innocent routing error, your data must be encrypted.

The consequences of a data breach go beyond simple business disruption and include a loss of intellectual property, competitive advantage, corporate knowledge and customer loyalty. Worse still, a data loss could result in lost revenue, breach of compliance regulations and, under the new EU General Data Protection Regulation (GDPR) which will become law in May 2018, serious financial penalties. Encryption is now more than ever the last line of defense.

ID Quantique provides high-performance quantum-safe network encryption solutions for the protection of data in transit, using state-of-the-art algorithms and highly secure quantum key generation and quantum key distribution (quantum cryptography).



Key Markets



Financial Services Companies



Healthcare Organisations



Businesses subject to GDPR



Governments

Key Benefits



Robust, high-assurance encryption



State-of-the-art Swiss Quantum Safe security



Support all topologies



Easy installation and management

Up to 10 Gbps Scalable, High-Assurance Data-in-Motion Encryptors

The Centauris CN6000 Series provide highly secure, full line-rate transparent encryption for data moving across both dark fibre and metro or wide area Ethernet networks in point-to-point, hub & spoke or any meshed environments.



QUANTUM-SAFE SECURITY

The Centauris CN6000 series are rack-mounted, high-speed encryptors for business-critical applications, offering bandwidth speeds from 100 Mbps to 10 Gbps.

The Centauris CN6000 encryptors may be upgraded to quantum cryptography through the addition of the Cerberis Quantum Key Distribution (QKD) server to ensure that the solutions are quantum-safe for the long-term protection of sensitive data. This also ensures investment-protection of the encryptors. Such quantum cryptography is provably secure, ensures anti-eavesdropping detection and provides long-term forward secrecy against brute force hacking and attacks by quantum computers. Additional security is provided by advanced anti-tamper proofing and physical protections, as well as best-practice separation of duties.

The tamper resistant Centauris CN6000 series utilise robust AES 256-bit algorithms, are certified Common Criteria and FIPS 140-2 Level 3. They support standards based, end-to-end authenticated encryption and client-side key management. Advanced security features include traffic flow security and support for a wide range of elliptic curves (Safe Curves, Brainpool, NIST). VLAN based encryption provides unique key pairs in hub and spoke environments to protect against misconfigured traffic. For high-assurance environments, the encryptors also support nested encryption.

The intrinsic key generation and distribution capability in the Centauris CN6000 series 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 encryptors.

Full interoperability with the Centauris CN series encryptors enables customers to standardise on one platform to protect transmitted data across large hub and spoke or meshed networks.



PERFORMANCE

The Centauris CN6000 series are high-performance encryptors, operating in full-duplex mode at full speed without loss of packets.

Using Field Programmable Gate Array (FPGA) technology, the Centauris CN6000 series' cut-through architecture processes data frames as they are received. This ensures consistent low latency across all packet sizes for optimal performance. Throughput is maximized in a zero protocol overhead mode. As a 1U unit, they operate with 30-60% less power consumption than typical Ethernet encryptors.



SCALABILITY

Compliant with Ethernet standards, the Centauris CN6000 series are fully interoperable with industry standard network equipment from leading vendors. The 'Bump in the Wire' design and variable speed licenses up to 10 Gbps Ethernet make the Centauris CN6000 series easy to install and highly cost-effective. "Set and forget" simplicity, and application and protocol transparency are underlying design themes, ensuring easy implementation, operation and management, and minimal resource requirements.

Supporting over 500 concurrent encrypted connections, the Centauris CN6000 series ensure the confidentiality of encrypted data in point-to-point, hub and spoke, or any meshed environment. They support unicast, multicast and broadcast consistent domains.

Devices can be field upgraded on-site with ease, for maintenance, feature enhancements and security updates. Full interoperability with the CN series encryptors including all the lower bandwidth devices provides end users with secure data transmission across any Ethernet network environment.



Centauris CN6000 Series

Unparalleled protection for long-term data

By harnessing the power of quantum mechanics, quantum key distribution (QKD) ensures provably secure key exchange and forward secrecy of the encryption keys. The Centauris CN6000 Series can be upgraded with IDQ's Cerberis QKD server to secure point-to-point backbone networks into the quantum era.

SIMPLICITY

Centauris CN series encryptors are easily managed through a simple to use local and remote encryptor management application that provides users with comprehensive and intuitive management functionality. The encryptors can be securely managed either out-of-band – using a dedicated Ethernet management interface or in-band – using the encrypted Ethernet port. Local management using a command line interface is available via a serial console connector.

TACAS+ and RADIUS protocols are supported to allow for Authentication, Authorization, and Accounting (AAA) operations. This provides end users with additional flexibility and security for day to day operations and large scale deployments.



Centauris CN6010 Ethernet 1 Gbps Certified Encryptor



Centauris CN6100 Ethernet 10 Gbps Certified Encryptor



GDPR at a glance

Goal

Protect all EU citizens from privacy and data breaches

Application

All companies processing and holding the personal data of EU residents

Penalties

Up to €20 Million or 4% of annual global turnover (whichever is greater)

**Keep you and your customers' data safe.
Turn GDPR into an opportunity.**

Why Centauris CN6000 Series Encryptors?

Certified maximum data protection

- Enterprise, Government and Defense grade
- Ultra reliable — 99.999% up-time
- Scalable and flexible
- Zero latency impact, minimum overhead

State-of-the-art cryptography and security

- Upgradable to Quantum-Safe Security (QKD)
- Crypto agile
- FIPS, CC and NATO certified
- AES 256-bit encryption
- Zero-touch automatic key management

Centauris CN6000 Series at a glance

Model	CN6010	CN6100
Protocols	Ethernet	Ethernet
Maximum port speed	1 Gbps	10Gbps
Maximum throughput	1 Gbps	10 Gbps
Support for jumbo frames	✓	✓
SECURITY		
Tamper-proof enclosure	✓	✓
Flexible encryption policy engine	✓	✓
Per packet confidentiality and integrity with AES-GCM	✓	✓
ENCRYPTION POLICY		
AES 128-bit or 256-bit keys	✓	✓
Support for QKD	✓	✓
Policy based on MAC address or VLAN ID	✓	✓
Self-healing key management	✓	✓
PERFORMANCE		
Low overhead full duplex line-rate encryption	✓	✓
Latency (microseconds per link)	< 10 @ 1Gbps	< 10
FPGA based cut-through architecture	✓	✓
MANAGEMENT		
Centralized configuration & management	✓	✓
Support for external (X.509v3) CAs	✓	✓
Remote management using SNMPv3 (in-band and out-of-band)	✓	✓
NTP (time server) support	✓	✓
CRL & OCSP (certificate) server support	✓	✓
MAINTENANCE / INTEROPERABILITY		
In-field firmware upgrades	✓	✓
Dual hot swappable AC power supplies	✓	✓
User replaceable fans	✓	✓
PHYSICAL AND INSTALLATION		
Front panel access for all interfaces	✓	✓
Front to rear chassis airflow	✓	✓
Local & network interfaces	RJ45, SFP	XFP
Power	100-240 VAC	100-240 VAC
	18W	50W
Dimensions 436 x 328 x 43 (mm)	1U	1U
ENVIRONMENTAL		
Operating temperature	50° C	50° C
Operating humidity at 40°C	0-80% RH	0-80% RH



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ID Quantique (IDQ) is the world leader in quantum-safe security solutions, designed to protect data for the long-term future. The company provides quantum-safe network encryption, secure quantum key generation and quantum key distribution solutions and services to the financial industry, enterprises and government organisations globally.

IDQ also commercializes a quantum random number generator, which is the reference in the gaming and security industries.

Additionally, IDQ is a leading provider of optical instrumentation products; most notably photon counters and related electronics. The company's innovative photonic solutions are used in both commercial and research applications.