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QUANTUM<sup>+</sup>

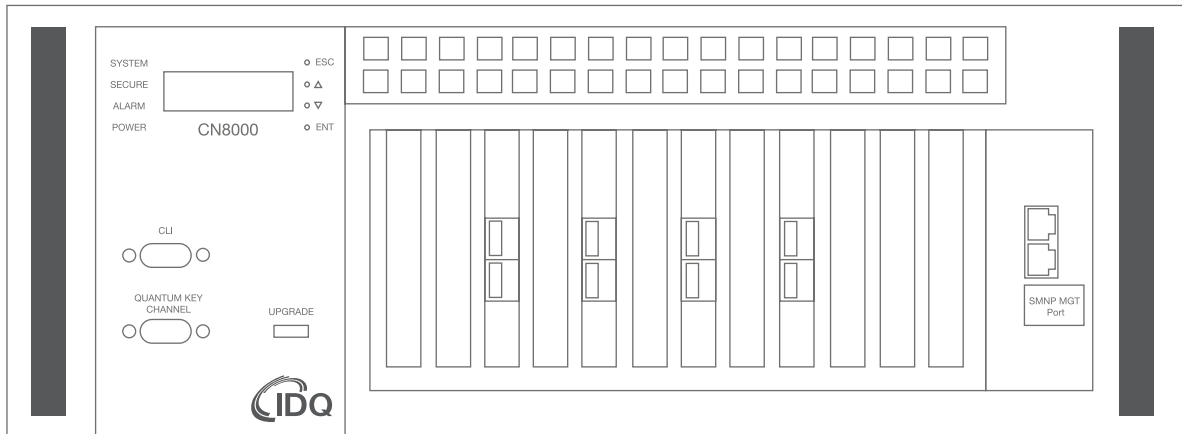
Redefining Security

# Centauris CN8000

## Quantum-Safe Multi-Link (10x10Gbps) Encryptor

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. To be protected from a data network breach or a cyber attack, your data must be encrypted.

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



Cloud Service Providers



Financial Services Companies



Healthcare Organisations



Governments

### Key Benefits



High-performance, scalable encryption



State-of-the-art Swiss Quantum Safe security



Low total cost of ownership



Easy installation and operation

## Quantum-Safe Multi-Link (10x10Gbps) Encryptor

The Centauris CN8000 multi-link encryptor is designed for quantum-safe data protection of traffic on large-scale data networks, up to 10x10 Gbps (aggregated 100 Gbps) of Ethernet or Fibre Channel Layer 2 network traffic with no overhead and minimum latency.



### QUANTUM-SAFE SECURITY

The Centauris CN8000 is Swiss-made for high security, with robust anti-tamper measures and in-built physical protection.

Providing high quality encryption key generation and distribution, the quantum-powered Centauris CN8000 incorporates IDQ's quantum random number generator (Quantis QRNG). By upgrading the Centauris CN8000 with the unconditional security of the Cerberis quantum key distribution (QKD) server, IDQ offers next generation security for point-to-point backbone and storage networks for long-term data protection.

Certified Common Criteria & FIPS 140-2 Level 3, the Centauris CN8000 features a tamper-proof enclosure, automatic key management, authenticated end-to-end encryption and utilises robust AES 256-bit encryption algorithms.

Advanced security features include granular policy management and separation of duties on a per-card and per-device level. This is ideal for multi-tenant environments, enabling crypto separation between data centre clients (service providers) or divisions within an organization.

The intrinsic key generation and distribution capability of the Centauris CN8000 removes reliance on external key servers and provides robust, fault-tolerant security architecture. At the same time, its secure, tamper-proof chassis delivers uncompromising protection to key material held in the encryptor.



### FLEXIBILITY

The Centauris CN8000 delivers cost-effective protection of high-speed data traffic on large-scale data networks. Encrypting Ethernet and Fibre Channel Layer 2 network traffic, it delivers the performance capabilities of 10x10Gbps encryptors in one appliance.

The Centauris CN8000 provides highly secure, full line rate transparent encryption point-to-point for Ethernet and Fibre Channel, hub and spoke or fully meshed environments for Ethernet LANs, MANs, or WANs.



### SCALABILITY

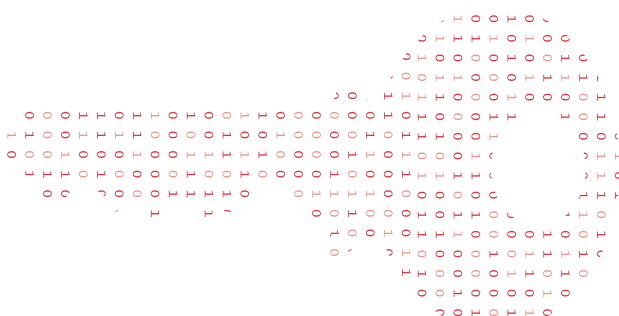
Ensuring maximum cost-effectiveness, flexibility and scalability, the Centauris CN8000 offers transparent, end-to-end network encryption to enable seamless network migrations and upgrades.

Variable speed licenses up to 10x10Gbps Ethernet and 8Gbps Fibre Channel and a 'bump-in-the-wire' design make the Centauris CN8000 easy to install and highly cost-effective. Set-and-forget simplicity and transparency are underlying design themes, helping to ensure ease of implementation, operation and management whilst reducing resource requirements to a minimum. The Centauris CN8000 also features ultra-low latency (< 5 microseconds) at 10Gbps for maximum network performance.

Working in point-to-point, point-to-multipoint and fully meshed topologies, the Centauris CN8000 supports the encryption of unicast, broadcast and multicast communications.

Compatible with all CN encryptors, the Centauris CN8000 encryption cards can be connected to multiple encryptors within a campus or wide area network.

This enables customers to standardize on a single platform to secure data in motion across large hub and spoke or meshed networks.



## 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 CN8000 can be upgraded with IDQ's Cerberis QKD server to secure point-to-point backbone and storage networks into the quantum era.

Advanced group key encryption ensures easy management of multipoint environments, with separate keys for different VLANs or MAC addresses.

Capable of supporting over 500 concurrent encrypted connections, the Centauris CN8000 operates at full line speed without packet loss to ensure the confidentiality of encrypted data regardless of frame size or application.

The Centauris CN8000 also enables telecoms to build a multi-tenant premium quantum-safe "Encryption-as-a-service" solution.



### SIMPLICITY

CypherManager 7 provides easy configuration and scalable management, either locally or remotely via a secure SNMPv3 connection. It is also compatible with any SNMPv3 compliant network management tool (eg NetView, Openview, or Tovoli).

CM7 provides simple, secure remote management 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.

SFP/SFP+ optical interfaces allow operation over single mode fibre, multi-mode fibre or over WDM services by choosing an appropriate wavelength.

Compliant with Ethernet and Fibre Channel standards, the Centauris CN8000 is fully interoperable with industry standard network equipment from leading vendors.

## Why Centauris CN8000 Encryptors?

### No-compromise performance and flexibility

- Maximum bandwidth with near-zero latency
- High availability 10x10Gbps in a single appliance
- Ethernet and Fibre channel support
- Field Programmable Gate Array technology (FPGA)

### State-of-the-art cryptography and security

- Quantum RNG for high quality keys
- AES 256-bit encryption
- FIPS140-2 Level 3 and CC EAL2+ certified
- Multi-link, multi-tenancy architecture



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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.

## Centauris CN8000 at a glance

Model	CN8000
Protocols	Ethernet & Fibre Channel
Maximum port speed	10Gbps
Maximum throughput	100Gbps
Support for jumbo frames	✓
<b>SECURITY</b>	
Tamper-proof enclosure	✓
Flexible encryption policy engine	✓
Per packet confidentiality and integrity with AES-GCM	✓
<b>ENCRYPTION POLICY</b>	
AES 128-bit or 256-bit keys	✓
Quantis QRNG	✓
Support for QKD	✓
Policy based on MAC address or VLAN ID	✓
Self-healing key management	✓
<b>PERFORMANCE</b>	
Low overhead full duplex line-rate encryption	✓
Latency (microseconds per link)	< 5 @ 10 Gbps
FPGA based cut-through architecture	✓
<b>MANAGEMENT</b>	
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	✓
<b>MAINTENANCE / INTEROPERABILITY</b>	
In-field firmware upgrades	✓
Dual hot swappable AC power supplies	✓
User replaceable fans	✓
<b>PHYSICAL AND INSTALLATION</b>	
Front panel access for all interfaces	✓
Front to rear chassis airflow	✓
Local & network interfaces	SFP+
Power	110-230 VAC
	300 watts for 10 links
Dimensions 430 x 460 x 175 (mm)	4 U
<b>ENVIRONMENTAL</b>	
Operating temperature	5° to 40° C
Non-operating temperature	-10° to 60° C
Operating humidity at 40°C	0-80% RH
Non-operating humidity at 40°C	0-95% RH