



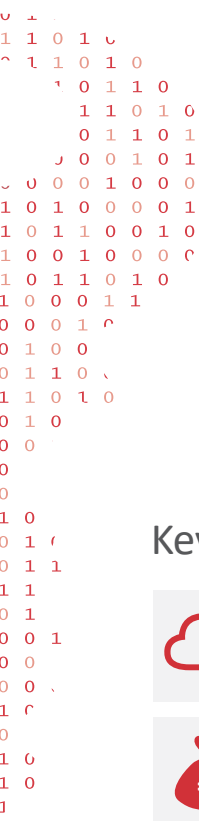
Redefining Security

# Centauris CN9000 Series

## 100 Gbps High Speed Data-in-Motion Encryptors

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

-  Robust, ultra-fast high-assurance encryption
-  State-of-the-art Swiss Quantum Safe security
-  Enabling next-generation encryption
-  Easy installation and operation



# Centauris CN9000 Series

## 100 Gbps High Speed Data-in-Motion Encryptors

The Centauris CN9000 Series are high-assurance encryptors designed to provide 100 Gbps highly secure, full line rate Layer 2 encryption of all voice, video and data communications moving across dark fibre, and metro or wide area and Carrier Ethernet networks (MAN or WAN).



### QUANTUM-SAFE SECURITY

The Centauris CN9000 series are the ideal solution for organisations that are seeking for high security at full speed, at 100 Gbps.

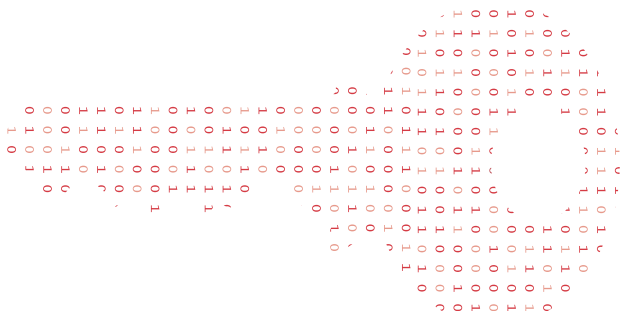
Providing high quality encryption key generation and distribution, the Centauris CN9000 series incorporate IDQ's quantum random number generator (Quantis QRNG). By upgrading the Centauris CN9000 series with the unconditional security of Cerberis quantum key distribution (QKD) server, IDQ offers next generation security for point-to-point backbone and storage networks for long-term data protection.

Designed for security conscious organisations, the tamper resistant Centauris CN9000 series are in process for Common Criteria and FIPS 140-2 Level 3 certifications and support automatic zero-touch key management.

Enabling crypto-agility, the Centauris CN9000 series advanced security features include support for a wide range of elliptic curves (Safe Curves, Brainpool, NIST). Custom curves and custom entropy are a standard feature of the encryptors' software.

VLAN based encryption provides unique key pairs in hub and spoke environments to protect against misconfigured traffic.

The intrinsic key generation and distribution capability of the Centauris CN9000 series removes reliance on external key servers and provides robust, fault-tolerant security architecture. At the same time, their secure, tamper-proof chassis delivers uncompromising protection to key material held in the encryptors.



### PERFORMANCE

The Centauris CN9000 series are ultra-high-performance encryptors, operating in full-duplex mode at 100 Gbps line rate speed.

Using Field Programmable Gate Array (FPGA) technology, the Centauris CN9000 series' architecture enables real-time data processing and high throughput. This ensures consistent low latency across all packet sizes for optical performance. Throughput is maximized in a zero protocol overhead mode. At 1U unit, they operate with minimal power and rack space consumption.



### SCALABILITY

Ethernet standards compliant, the Centauris CN9000 series are fully interoperable with industry standard network equipment from leading vendors.

The 'Bump in the Wire' design provides a vendor-agnostic and drop in the network approach to 100 Gbps encryption. The Centauris CN9000 series are 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. Devices can be field upgraded on site with ease, for maintenance, feature enhancements and security updates.

Working in point-to-point, point-to-multipoint and fully meshed topologies, the Centauris CN9000 series support the encryption of unicast, broadcast and multicast communications.

Compatible with all CN encryptors, the Centauris CN9000 series encryption cards can be connected to multiple encryptors within a campus or wide area network.

## 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 CN9000 Series can be upgraded with IDQ's Cerberis QKD server to secure point-to-point backbone and storage networks into the quantum era.

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

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



### SIMPLICITY

The Centauris CN9000 series 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 Authentication, Authorization, and Accounting (AAA) operations. This provides end users with additional flexibility and security for day to day operations and large scale deployments.

The built-in operational flexibility also avoids additional costs of third party optical transport equipment in their network (e.g. OTN provider backbone).

## Why Centauris CN9000 Series Encryptors?

### Certified maximum data protection

- Ultra-fast 100 Gbps network encryption
- Maximum security performance of dedicated secure hardware encryption
- Zero latency impact
- Field Programmable Gate Array chip technology (FPGA)

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

- Upgradable to Quantum-Safe Security (QKD)
- Quantum RNG for high quality keys
- AES 256-bit encryption
- FIPS140-2 Level 3 and CC EAL2+ certified\*
- Zero-touch automatic key management

\*In progress



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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 CN9000 Series at a glance

Model	CN9000 Series
Protocol	Ethernet
Maximum throughput	100Gbps
Support for jumbo frames	✓
Network design - Metro Area	CN9120
<b>SECURITY</b>	
Tamper-proof enclosure	✓
Flexible encryption policy engine	✓
<b>ENCRYPTION POLICY</b>	
AES 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)	< 2
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	✓
Interoperable with all CN Series encryptors	✓
<b>PHYSICAL AND INSTALLATION</b>	
Front panel access for all interfaces	✓
Front to rear chassis airflow	✓
Network interface - MAN (up to 80 kms)	QSFP 28 (CN9120)
Power	100-240 VAC
	80 watts
Dimensions 435 x 480 x 43 (mm)	1 U
<b>ENVIRONMENTAL</b>	
RoHS compliant	✓
Maximum operating temperature	40°C 0-80% RH at 40°C