

qConnect Quantum Safe Key Distributor

Advanced Security for Quantum-Resilient Key Distribution

Securely delivers cryptographic keys using PQC, QKD, or a hybrid approach

Interoperates with ETSI 014, Cisco SKIP, and NOKIA SMS/NE for easy deployment

Extends quantum safe key distribution with PQC, ensuring continuous protection and scalability

OVERVIEW

In an era where quantum computing threatens traditional cryptographic methods, ensuring secure key distribution is more critical than ever. The QuintessenceLabs' qConnect Quantum Safe Key Distributor delivers a future-ready solution for distributing symmetric key material across hybrid cryptographic infrastructures. With support for both Post-Quantum Cryptography (PQC) and Quantum Key Distribution (QKD), qConnect offers unmatched flexibility and security for protecting sensitive data.

FEATURE SUMMARY

- Quantum safe distribution of cryptographic keys protected by PQC and/or QKD
- 1RU 19-inch rack mount with internal QRNG or virtual appliance
- Internal QRNG, network-attached QRNG, or ETSI 014 key sources
- ETSI 014, SKIP, and NOKIA key output
- Hybrid QKD/PQC key delivery
- Provider, pass-through, and buffer modes of operation

The QuintessenceLabs qConnect Quantum Safe Key Distributor manages symmetric key material distribution to devices that support the ETSI 014, Cisco SKIP, and NOKIA interfaces. Quantum Key Distribution (QKD) and/or Post Quantum Cryptography (PQC) can be used to efficiently and securely deliver key material via qConnect to end points.

qConnect's software defined network layer overlays QKD point to point physical links to enable any-to-any routing of key material. mTLS key distribution links established using Post Quantum algorithms can be used to extend the reach beyond the usable physical range of QKD infrastructure. Should QKD links fail, or become unreachable, a fallback to PQC mTLS can be enabled to ensure protected key distribution always remains available.

qConnect seamlessly interoperates with networking and other end point devices that support ETSI 014, Cisco SKIP, or NOKIA SMS/PSS. Support for ETSI 020* provides interoperability with QKMS instances from other vendors.

MODES OF OPERATION

Provider Mode- Key material is generated by qConnect from a QRNG source — internal, network-attached, or cloud service — and delivered to the requesting client. Key material is shared with peer qConnect devices over a quantum-safe tunnel established using PQC. Optionally, the key can be additionally wrapped using a key retrieved from QKD.

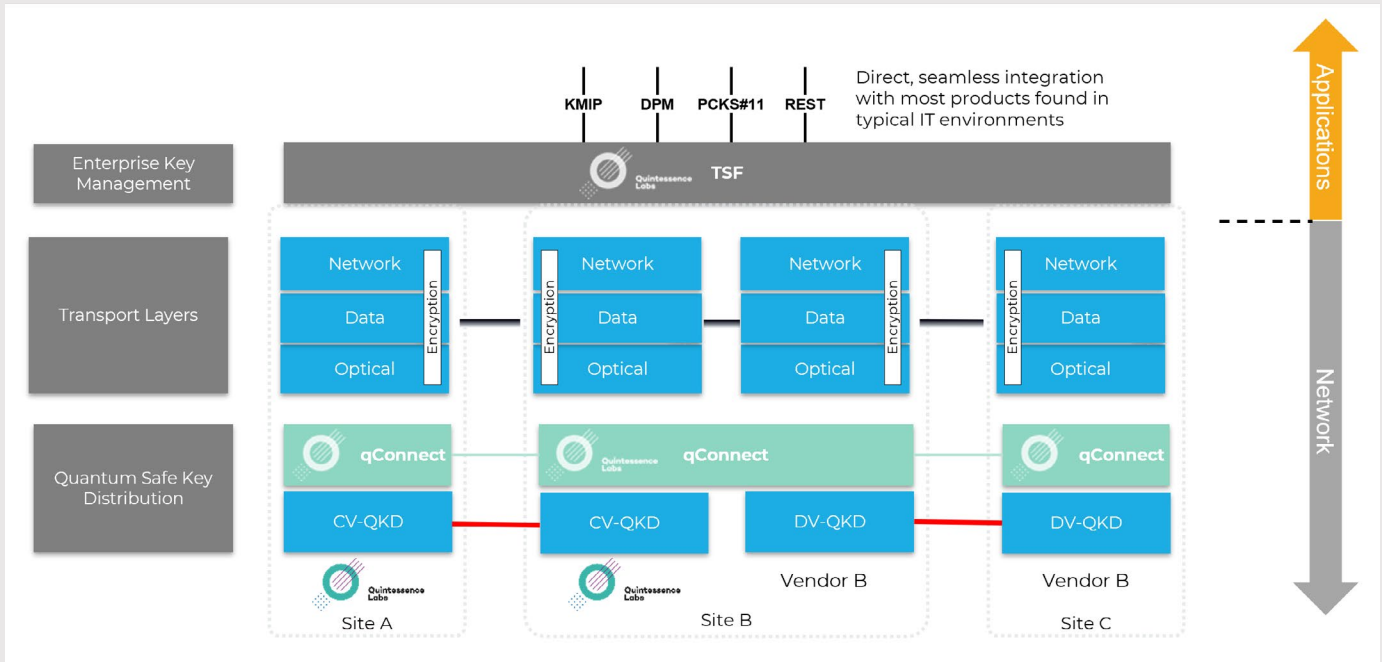
Pass-through Mode- Clients' key requests are relayed to an external key distribution system accessed using ETSI 014. Typically, the external key distribution system will be QKD, but generally, any external provider that supports the ETSI 014 interface can be used.

Buffer Mode- qConnect securely stores client keys in an internal buffer. When a client requests a key, it is taken from the buffer and returned to the client. This mode of operation decouples the client and qConnect from an external key distribution system so that key requests can be served with low latency and during temporary outages or low performance intervals of an external key distribution system.

SPECIFICATIONS

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qConnect is ideal for organizations requiring highly secure key distribution such as telecom providers, financial institutions, government and defense and cloud service providers.

	qConnect 100	qConnect 200
Dimensions	N/A	- Height – 42.8 mm (1.68 inches) - Width – 482.0 mm (18.97 inches) - Depth – 585.3 mm (23.04 inches) without bezel 598.9 mm (23.57 inches) with bezel
Form Factor	Virtual Appliance	1RU 19-inch rack mount with internal QRNG
Power Supplies	N/A	700 W 100 — 240 VAC or 240 VDC, hot swap redundant
Standards & Interoperability	ETSI 014, Cisco SKIP, NOKIA SMS/NE, ETSI 020*	
Admin & Management	Command Line Interface, web (HTTPS)	

* ETSI 020 support is dependent on finalisation of ETSI 020 standard.



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