Advanced Cybersecurity Solutions

QuintessenceLabs offers security products that enable organizations to protect their valuable data, whether at rest, in transit, or in use. Through the combined power of quantum science and advanced data protection, QuintessenceLabs' solutions maximize security, increase the ROI of existing assets, and ultimately reduce the complexities inherent in data security management.

Priorities in Data Security

Security threats worldwide have increased both in number and in sophistication, making it crucial for organizations to improve their data protection. But as with any big upgrade to infrastructure, it can be a significant challenge to secure information effectively, affordably, and without hindering operations.

A founding principle of data protection is encryption, keeping the data safe even if a breach occurs. Yet generating and effectively managing encryption keys can be quite an undertaking, particularly when integrating multiple devices spread across locations and users. And for the most sensitive assets, organizations must consider stronger protection, such as solutions with automatic zeroization, one-time pad (OTP) encryption, and ultimately quantum key distribution (QKD).

Cybersecurity is taking big steps forward, and QuintessenceLabs is already there with powerful technologies and products enhanced by quantum science. We can partner with your organization for targeted data security solutions that address today's and tomorrow's challenges.

> *RSA and DSA fail catastrophically when used with weak random number generators.*
>
> – Heninger, 2012

QuintessenceLabs Solutions

qStream™ Quantum Random Number Generator (QRNG) 100 | 200

qStream™
Quantum Random
Number Generator
(QRNG) Appliance

High Speed Quantum Entropy

The qStream QRNG appliance forms the foundational layer of all our security products. It uses patented quantum technology to deliver unpredictable true random numbers at 1Gbit/sec. Practical applications for the qStream QRNG appliance include key generation, certificate seeding, deterministic Random Number Generator (RNG) seeding, security parameter generation, PIN generation, numerical modeling and more.
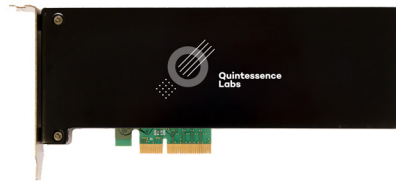
Can be deployed with the qRand™ 100 entropy enhancer, ensuring applications always have sufficient entropy, and preventing performance and security issues.

Deployment is available as a PCIe card module (qStream 100) or as an appliance (qStream 200).

qRand™ Quantum Entropy Enhancer

qRand™
Quantum Entropy
Enhancer

Quantum Entropy Enhancer

The qRand 100 quantum entropy enhancer feeds quantum random numbers to the entropy pool of your computer, solving the problem of "entropy starvation". This prevents performance degradation for applications that use entropy, or the security compromise of using low entropy pseudo-randomness. The entropy provided is delivered from QuintessenceLabs' QRNG installed in a Trusted Security Foundation® (TSF®) key and policy manager appliance.

qRand is a Linux daemon, running as a native system service, monitoring entropy status in the system.

Trusted Security Foundation® (TSF®) Key and Policy Manager 100 | 200 | 300 | 400

Interoperable Key Management Appliances

TSF®
Key & Policy
Management

Tackle the toughest key management challenges with the TSF key and policy manager. It provides highly capable and fully interoperable centralized key and policy management with outstanding performance, availability, and integrity. The TSF can be deployed as a virtual machine (TSF 100) or a selection of hardware appliances (TSF 200, TSF 300, TSF 400). It can integrate our QRNG with a FIPS 140-2 Level 3 HSM to meet the highest security needs (TSF 400).

qClient™ 100 | qClient™ 200 Software Development Kit (SDK)

Key Management-focused Software Development Kit

qClient™
Software Solutions

With qClient™ 100, developers can quickly integrate QuintessenceLabs' key management and random number generation into any application. A suite of libraries, functions, and additional APIs makes it easy to create and manage keys as needed, and all compliant with PKCS#11 and KMIP.

qClient is available as a stand-alone SDK, or as part of the qClient™ 200 KMIP development Platform (KMIP) together with a not-for resale TSF® key and policy manager VM license.

Quantum Key Distribution

Quantum-Safe Key Exchange

qOptica™
Quantum Key
Distribution
(QKD)

QuintessenceLabs' continuous variable quantum key distribution (QKD) technology is the most secure means of distributing keys, protected by the laws of physics. Our current solution integrates a quantum entropy source and distributes keys over existing optic fiber between network nodes. Free space applications are under development. **Contact us** to learn more.

qProtect™ Secure Storage Solutions

Ultimate Data Protection Anywhere

qProtect™
Ultimate Encryption

The qProtect secure storage solution offers data protection choices for storage devices, to meet the needs of your organization.

QuintessenceLabs' qProtect™ 100 secure storage solution delivers the highest-grade data protection in uncontrolled environments. Virtual zeroization automatically erases one-time key material as it records and encrypts data, ensuring that the data and its encryption key are never co-located on the same device.

The qProtect™ 200 secure storage solution is a flexible encryption capability integrating a SD/microSD card with a secure element that protects data with AES-XTS full flash encryption. Encryption keys are stored in and protected by the secure element.

> "
> *Nearly 60% of companies do not have a consistent enterprise-wide encryption strategy.*
>
> — Ponemon Institute® Research Report

About QuintessenceLabs

QuintessenceLabs' portfolio of modular products addresses the most difficult security challenges, helping implement robust security strategies to protect data today and in the future.

For more information on QuintessenceLabs' data protection solutions, please visit **www.quintessencelabs.com** or email **info@quintessencelabs.com**.

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