



**Quintessence
Labs**

Data Uncompromised

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.

True Random Numbers: protecting your data from the vulnerabilities of weak encryption keys.

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.

“Nearly 60% of companies do not have a consistent enterprise-wide encryption strategy.”

– Ponemon Institute®
Research Report

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.

QuintessenceLabs Solutions



qStream™
Random Number
Generator

qStream™ 100A | 100P

High Speed Quantum Entropy

qStream forms the foundational layer of all our security products. It uses patented quantum technology to deliver unpredictable true random numbers at 1Gbit/s. Practical applications for qStream 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 Entropy Enhancer, ensuring applications always have sufficient entropy, and preventing performance and security issues.

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



qRand™
Entropy Enhancer

qRand™

Quantum Entropy Enhancer

qRand 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 qCrypt appliance.

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

Comprehensive Key Management: addressing the most difficult challenges of encryption implementations.



qCrypt™
Key & Policy
Management

qCrypt™ 200V | 250A | 300H | 300R | 350TSF

Interoperable Key Management Appliances

Tackle the toughest key management challenges with qCrypt. It provides highly capable and fully interoperable centralized key and policy management with outstanding performance, availability, and integrity. qCrypt can be deployed as a virtual machine (qCrypt 200V) or a selection of hardware appliances (250A, 300H, 300R). It can integrate our QRNG with a FIPS 140-2 Level 3 HSM to meet the highest security needs (350TSF).



qClient™
Software Solutions

qClient™ SDK | qClient™ KDP

Software Development Kit

With qClient, 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 standalone SDK, or as part of the qClient KMIP Development Platform (KDP) together with a not-for-resale qCrypt 200V VM license.



qProtect™
Ultimate Encryption

qProtect™

Ultimate Data Protection Anywhere

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

qProtect-VZ 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.

qProtect-DP 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.



QKD
Quantum Key
Distribution

Quantum Key Distribution

Quantum Safe Key Exchange

QuintessenceLabs' second-generation 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.

“RSA and DSA fail catastrophically when used with weak random number generators.”

– Heninger, 2012

Next Generation Security: QuintessenceLabs delivers highly advanced products strengthened by quantum technology.



QuintessenceLabs has offices in Canberra and Brisbane in Australia as well as in San Jose and Washington DC in the US. We are a world-class team of information security experts, quantum physicists, communications experts and business leaders who are here to deliver the best security solutions for your organization.

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