

Quantum-Enhanced Cybersecurity with AppViewX

QuintessenceLabs' partnership with AppViewX provides and enables the strongest security for your key and certificate infrastructure.

Public Key Infrastructure Meets Quantum Resilience

QuintessenceLabs has teamed with AppViewX to deliver a best in class KMIP conformant enterprise key management and PKI system. QuintessenceLabs delivers fully integrated key and policy management services supported by high-entropy quantum random number generation to support strong and quantum resilient encryption. The AppViewX platform offers automated "low-code" lifecycle management of keys and certificates with a host of flexible features. The partnership between AppViewX and QuintessenceLabs means a pairing of two powerful technologies that provide and enable the strongest security for your key and certificate infrastructure.

Key Management with our Trusted Security Foundation® (TSF®)

The Trusted Security Foundation® (TSF®) key and policy manager from QuintessenceLabs is a comprehensive appliance integrating a high-speed true random generator with quantum entropy source and a FIPS 140-2 Level 3 HSM. The TSF platform delivers extensive key and policy management capabilities with a full lifecycle management of cryptographic objects. Its random number generation capabilities enable the generation of the highest quality keys, secret objects and passwords. Its capabilities include:

- A qStream™ quantum random number generator (QRNG) which generates full-entropy random bits to deliver the strongest cryptographic encryption keys and other sensitive security objects.
- An embedded FIPS 140-2 Level 3 validated HSM
- The TSF platform is KMIP conformant for interoperability with a wide range of IT solutions, and the functionality to enable and encourage key management best practices. The built-in Certificate Authority (CA) manages internal and external credentials.
- Synchronous/asynchronous replication means high availability, with redundancy covering 16 nodes per cluster. Automatic synchronization of keys between devices/HSMs is handled by the TSF key and policy manager software.

Enterprise PKI with AppViewX

The AppViewX platform manages and automates PKI lifecycles both internal or external, offering extensive visibility into the certificate and key infrastructure. Features include certificate discovery, generation, renewal, provisioning, and reporting all within an integrated virtual appliance.

The integrated MongoDB database in AppViewX encrypts data using AES-256 keys generated using the high-entropy quantum source of the TSF key and policy manager. Core PKI and CA functions in AppViewX are supplemented by visual automation workflow editing and external ITSM integration and reporting.

The combined system integrating the AppViewX platform with QuintessenceLabs' TSF key and policy manager excels in enhancing overall network security.

How it Works

An AppViewX server is hosted as a secure guest in the TSF key and policy manager appliance. It uses the QuintessenceLabs PKCS#11 provider to access the TSF key and policy manager as a virtual HSM to obtain the security benefits of hardware protection validated to FIPS 140-2 Level 3.

Key management clients connect to the TSF appliance through the KMIP protocol, and KMIP communications between a client and server are protected by mutually authenticated TLS. The TSF key and policy manager provides an internal CA for managing internal and client credentials, yet also supports credentials managed by an external PKI (AppViewX). The TSF key and policy manager is conformant with all approved and published versions of KMIP (1.0 to 2.0).

Furthermore, common administration tasks can be automated with scripts using the TSF RESTful API. Backups can be automatically pushed to external servers at scheduled times, and log records can be pushed to remote systems such as SIEM devices.

Extensibility is fully supported via the qClient™ 100, a KMIP client delivered with the TSF key and policy manager appliance. The qClient 100 supports integration and development of custom applications.

Get in Touch

QuintessenceLabs' quantum-based encryption and key management solutions have effectively strengthened data protection across entire organizations. We secure data so you can focus on what you do your best.

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