

Symmetrics Encryption Protocol (SDK)***Empower Every Application with Quantum-Secure™ Encryption*****SYMMETRICS
ENCryption
PROTOCOL
(SDK)****KEY FEATURES:**

Our SDK enables secure, symmetric key delivery & one-time pad encryption for developers building high-security systems, powered by the Symmetrics Protocol.

Quantum-Secure™ Encryption

Protect data using symmetric (non-algorithmic) one-time keys.

Developer-Ready SDK

Simple API integration in Rust or language-agnostic adoption via the System Daemon. Flexible to meet the needs of existing environment architecture.

Zero-Trust by Design

Each device is uniquely authenticated through a secure onboarding process; no passwords, no public key infrastructure, and no certificates.

Interoperable Ecosystem

Seamlessly works alongside the Symmetrics product suite, including Symmetrics VPN & AuthAM, to deliver robust end-to-end symmetric protection.

Lightweight Deployment

Optimized for on-prem environments, minimal performance overhead.

END USERS:

Security and technology teams needing to embed high-assurance encryption in applications, devices, or network systems without the complexity and uncertainty of asymmetric key management.

TECHNICAL SPECS:

One-time
symmetric
keys (SKs) per
session

Kyber post-
quantum key
encapsulation

AES-256-CTR
encryption

No persistent
secrets

***Integrate post-quantum,
symmetric-key encryption into any
application without changing a
single line of business logic***

USE CASES:

The Symmetrics SDK brings quantum-secure, symmetric encryption to every layer of enterprise architecture, from APIs & IoT devices to hybrid clouds and business applications, without changing how your systems work today.

1. Enterprise Application Integration**Challenge:**

Migrating legacy enterprise applications to post-quantum security often requires expensive code changes and certificate re-engineering.

Solution:

The Symmetrics SDK integrates behind existing business applications, delivering symmetric key encryption and authentication without altering application logic.

Value:

- Seamless integration across any language or framework
- Removes public key infrastructure and credential management burden
- Enables immediate quantum-safe operation



Symmetrics Encryption Protocol (SDK)

USE CASES: Continued

2. Quantum-Secure API Encryption

Challenge:

Modern applications rely on TLS and PKI systems that are increasingly vulnerable to quantum decryption and certificate compromise.

Solution:

The Symmetrics SDK delivers one-time symmetric keys through the Key Distribution Center (KDC), allowing services to encrypt every API call independently, and without certificates or static secrets.

Value:

- Instantly upgrades API communication to quantum-resilient encryption
- Eliminates certificate management overhead
- Enables faster, simpler compliance with emerging post-quantum cryptography (PQC) standards

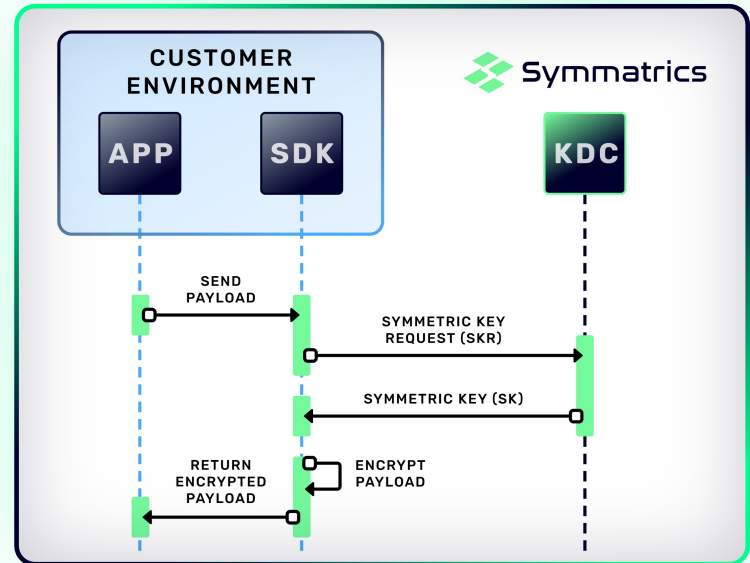


Fig 1.1 – SDK Key Request & Encryption Flow

3. Secure Edge, IoT, & Machine-to-Machine Networks

Challenge:

Edge and IoT environments often rely on hard-coded credentials or shared keys that cannot scale securely.

Solution:

By embedding the Symmetrics SDK, every device becomes a Secure Access Portal (SAP) that is authenticated through the Symmetrics Protocol and provisioned with unique, one-time symmetric keys.

Value:

- Password-free, certificate-free authentication
- Quantum-safe symmetric encryption across distributed devices
- Lightweight footprint ideal for constrained hardware



Symmetrics Encryption Protocol (SDK)

USE CASES: Continued

4. Confidential Cloud Data Exchange

Challenge:

Hybrid and multi-cloud workloads expose data in transit between providers and regions, where PKI trust boundaries fail.

Solution:

The SDK establishes a symmetric key exchange fabric between cloud services, enabling quantum-secure data transfers and verifiable encryption consistency across infrastructure.

Value:

- Secure cross-cloud data motion with no intermediaries
- Simplifies compliance for regulated industries

FURTHER READING:

Discover the simplest path to post-quantum security.

*Explore our Full Product Suite & Review
More Technical Documentation*



QUICK LINKS

[SDK Technical Documentation](#)

[Product Solution Briefs](#)

[Industry Data Sheets](#)

[SDK Website Page](#)

[Symmetrics FAQ & Glossary](#)



Symmetrics delivers mathematically unbreakable, quantum-secure encryption to security-conscious enterprises across high-stakes, data-driven industries. Founded by tenured intelligence scientists with deep roots in government security, we empower bold decision-makers in forward-thinking technologies by making perfect secrecy practical and accessible to organizations worldwide.



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