

# SAFEGUARDING YOUR DATA IN A QUANTUM FUTURE WITH NETAPP



Integrate NIST-approved PQC algorithms to secure data at rest, enabling long-term integrity and confidentiality.

In an era where quantum computing is no longer a distant threat but an accelerating reality, the security of your data demands a new standard. NetApp, a trusted leader in data storage, plans on pioneering a post-quantum cryptography (PQC) solution that protects your data at rest. Our cutting-edge approach ensures your sensitive information—whether financial records, intellectual property, or customer data—remains secure today and infallible tomorrow.

Built on NetApp® cyber resilience pillars—Trusted, Compliant, and Secure by Design—our PQC solution will align with the National Institute of Standards and Technology (NIST) [FIPS standards](#) for post-quantum cryptography, delivering unmatched resilience in an evolving threat landscape.

Quantum computers, with their ability to solve complex mathematical problems exponentially faster than classical computing systems, threaten to dismantle today's encryption standards like RSA, DHE, or DSA. NIST finalized its first PQC algorithms in 2024, signaling an urgent shift.

Meanwhile, “harvest now, decrypt later” attacks mean adversaries could steal encrypted data today for future decryption. For businesses, the stakes are clear: data you store or transmit now must withstand tomorrow's quantum breakthroughs. A NetApp secure-by-design solution for PQC will meet this challenge head-on, offering robust protection across your data lifecycle.

## A partner you can trust

Trust is the bedrock of our relationship with you. Our secure-by-design storage will keep your data protected against quantum threats, fostering confidence among customers, partners, and regulators. By leveraging algorithms vetted by NIST—a globally recognized standards body and authority—you can rely on a defense that's battle-tested and future-proof. Whether you're safeguarding decades-long archives or real-time transactions, NetApp delivers peace of mind with a track record of reliability.

## Secure by design

Across the globe, data breaches are on the rise—and so is the financial impact. Today, the average cost of a single data breach is at an all-time high of \$4.88M. The need for robust defenses has never been greater.

At NetApp, security isn't an afterthought—it's engineered into our DNA. By embedding PQC into our storage, we will proactively neutralize quantum threats before they materialize. Our secure-by-design approach mitigates "harvest now, decrypt later" risks, making sure that encrypted data stolen today remain indecipherable tomorrow. With dynamic key management and zero-trust principles, we reduce attack surfaces, delivering resilience that scales with your business.

NetApp offers the most secure storage on the planet with proactive resilience with security built-in to our entire storage portfolio. Key capabilities include:

- **End-to-end protection:** NetApp storage encryption is configured to use FIPS 140-2 level 2 self-encrypting drives to facilitate compliance and spares return by enabling the protection of data at rest through AES 256-bit transparent disk.
- **Dynamic key management:** Automated key generation, rotation, and revocation minimize vulnerabilities, adapting to evolving threats in real time.
- **Zero Trust integration:** PQC pairs perfectly with our data-centric, Zero Trust architecture, verifying every access request to prevent unauthorized breaches, even in the quantum future.

## KEY BENEFITS

### Quantum-resistant encryption.

- Our solution will integrate NIST-approved PQC algorithms (e.g., CRYSTALS-Kyber, CRYSTALS-Dilithium) to secure data at rest, enabling long-term integrity and confidentiality.

### NIST PQC compliance across the NetApp portfolio

- For both file and block, NetApp built-in encryption adheres to NIST's 2024 PQC standards.
- NetApp enables full alignment with NIST Cybersecurity Framework guidelines for all six functions: Govern, Identify, Protect, Detect, Respond, and Recover.

### Secure by design

- NetApp solutions deliver proactive resilience with security built in, not bolted on.

## Get started today

Quantum computing's rapid ascent—marked by 2024 breakthroughs in qubit stability—shrinks the window for preparation. NetApp is committed to your security, compliance, and trust. With NIST-aligned post-quantum cryptography, we empower you to stay ahead of the curve, safeguarding your data against tomorrow's threats today.



Contact Us

## About NetApp

NetApp is the intelligent data infrastructure company, combining unified data storage, integrated data services, and CloudOps solutions to turn a world of disruption into opportunity for every customer. NetApp creates silo-free infrastructure, harnessing observability and AI to enable the industry's best data management. As the only enterprise-grade storage service natively embedded in the world's biggest clouds, our data storage delivers seamless flexibility. In addition, our data services create a data advantage through superior cyber resilience, governance, and application agility. Our CloudOps solutions provide continuous optimization of performance and efficiency through observability and AI. No matter the data type, workload, or environment, with NetApp you can transform your data infrastructure to realize your business possibilities. [www.netapp.com](http://www.netapp.com)



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