

Perpetuals.com Ltd Unveils Quantum-Resilient Vaults: a new Self-Custody Solution

New technology combines institutional-grade security with true self-custody, designed to reduce reliance on third-party custodians and vulnerable hardware devices

Potsdam, Germany / Tokyo, Japan – Perpetuals.com Ltd (NASDAQ: PDC), a fintech company specializing in advanced AI, digital asset trading solutions, and regulated market infrastructure, today announced Quantum-Resilient Crypto Vaults (“Perpetuals.com Vaults”), which is a self-custody solution that lets crypto investors pursue self-custody with enhanced security features, without relying on third-party custodians or managing physical hardware devices.

The current crypto custody landscape presents users with the choice of using third-party custodians or hardware wallets. Third-party custodians require surrendering private key control, introducing counterparty risk, misappropriation potential, regulatory seizure exposure, and operational failures seen in recent high-profile collapses. Hardware wallets provide self-custody but involve physical device management, firmware vulnerabilities, supply chain risks, and potential fund loss if devices are lost or damaged.

Perpetuals.com Vaults offer an alternative option: professional custody-level security and capabilities combined with self-custody control and no hardware dependencies.

The Zero-Access Model features:

- No third party (including Perpetuals.com) can access, manage, or freeze user assets
- Private keys are not exposed, stored, or controlled by anyone other than the asset owner
- Multi-layer encryption and cryptographic signing designed to ensure only the asset owner can authorize transactions
- Proprietary cryptographic vault generation reduces centralized points of failure
- Full interoperability allows Layer-1 private key export to third-party wallets like Electrum or Go-Ethereum

Quantum resilience is a feature of these vaults with native Quantum-Resilient RSA encryption keys to protect all fund control and access operations. Additionally, quantum entropy injection - implemented through a dedicated quantum entropy source with hardware and software integration - is intended to strengthen the randomness foundation behind key generation, secure session establishment, and key rotation.

This is designed to help protect assets against potential future quantum computing threats, a consideration for long-term holdings.

For exchanges and platforms, Perpetuals.com Vaults offer an alternative to traditional proof-of-reserves approaches. Users retain verifiable control of their assets, potentially reducing centralized holdings to audit and associated counterparty risk. They can cryptographically prove ownership and generate compliance-ready signatures for identity verification, proof of funds, and regulations without surrendering custody.

The vaults support high-performance use cases like margin trading and liquidity pool transfers with low latency, while delegation of authority enables sophisticated multi-signature and corporate wallet setups without compromising self-custody.

To advance quantum-resilient development, Perpetuals.com Ltd has partnered with the German University of Digital Science (German UDS), which will launch Germany's first Quantum Computing Master's Program (see <https://german-uds.de/study/msc-quantum-computing> for more information). This collaboration gives the university real-world industry data while helping Perpetuals.com Ltd maintain its edge in crypto wallet security.

Patrick Gruhn, co-CEO of Perpetuals.com Ltd, stated: "The crypto industry has operated under a false binary: trust a custodian with your assets or accept hardware wallet limitations. Our Quantum-Resilient Vault system creates a third option with institutional-grade security, true self-custody, no physical devices, and protection against quantum threats. This provides an alternative approach to digital asset security."

Patrick Gruhn who was the Head of FTX Europe before he founded Perpetuals.com explains "With our quantum-resilient self-custody wallet, we believe that something like the FTX fraud could not have happened, our wallet is designed to reduce certain fraud".

Prof. Dr. Christoph Meinel, the co-founding president of the German UDS states: "Quantum computing will fundamentally break the cryptographic foundations that secure today's digital assets. This partnership with Perpetuals.com allows our researchers to work on real-world quantum-resilient implementations, exactly the kind of applied research that prepares our students to solve tomorrow's security challenges before they become crises.

At openHPI, we proved that world-class digital education could reach millions globally. With German UDS and this Perpetuals.com partnership, we're taking that further, training the quantum specialists that industry desperately needs while contributing to solutions that protect billions in digital assets. Theory and practice must advance together."

Perpetuals.com Ltd co-CEO Gruhn adds: "The quantum threat isn't limited to cryptocurrency, it poses potential risks to financial systems. The same cryptographic foundations that secure blockchain also protect traditional banking infrastructure. Our Quantum-Resilient Vault architecture addresses this fundamental vulnerability, and we're already in discussions to extend this technology beyond crypto custody to protect traditional financial authorizations."

Prof. Dr. Mike Friedrichsen as an experienced entrepreneur and researcher adds: "I've watched digital disruption transform industries for three decades, from e-commerce in the 1990s to blockchain today. Quantum computing represents the next inflection point. Companies like Perpetuals.com that invest in quantum resilience now will define the financial infrastructure of the next generation. Our partnership ensures German UDS students are prepared to lead that transformation."

"Germany faces a critical shortage of quantum computing specialists at the very moment this technology is becoming commercially essential. This partnership with Perpetuals.com does more than advance research, it creates a pipeline of industry-ready talent with hands-on experience in quantum-resilient financial systems. That's how you build technological sovereignty."

The launch timing aligns with institutional interest for digital asset infrastructure. According to [axios.com](https://www.axios.com), a leading U.S.-based crypto custody firm achieved a \$2.59 billion valuation after its shares opened 24.6% higher on its New York Stock Exchange debut Thursday, marking 2026's first major crypto IPO amid investor demand. A prominent French hardware wallet manufacturer is preparing a New York Stock Exchange IPO this year that could value it at more than \$4 billion, nearly triple its 2023 valuation, while collaborating with Goldman Sachs, Jefferies, and Barclays. A well-known blockchain security auditing

company is exploring an IPO around its current \$2 billion valuation, with analysts projecting \$3.5 billion to \$5 billion publicly.

Perpetuals.com Ltd offers an alternative approach that seeks to address certain limitations of existing models: it provides true self-custody free from counterparty risk, reduces all physical hardware vulnerabilities, and incorporates native quantum-resilient cryptographic protection at the infrastructure level—capabilities that differ from custodial, hardware, or audit-based solutions.

Given investor enthusiasm for crypto infrastructure that functions as essential financial utility, Perpetuals.com Ltd's advanced combination of regulated exchange technology, genuine self-custodial vaults, and quantum-resilient security features positions it to compete in these high-growth, multi-billion-dollar segments.

About Perpetuals.com Group

Perpetuals.com (NASDAQ: PDC) is a financial technology company combining blockchain infrastructure and artificial intelligence to transform digital asset trading. The company develops and operates Kronos X®, a proprietary multi-asset exchange platform and blockchain-based settlement solution fully compliant with European regulations including MiFID II, MiCA, DORA, and EMIR. The company provides financial market infrastructure as a service from Equinix FR2 in Frankfurt, Germany, alongside Eurex and Xetra, enabling clients to operate 24/7 trading of crypto spot, derivatives, tokenized securities, and structured products.

The Perpetuals.com team pioneered regulated tokenized financial products, including Pre-IPO contracts for Coinbase, Airbnb, and Robinhood—as reported by Forbes—as well as tokenized stocks traded on major exchanges. Building on machine learning analysis of millions of retail trade transactions, the company has developed AI-powered risk intelligence designed to analyze trading patterns in real-time.

For more information, visit group.perpetuals.com.

About German University of Digital Science

The German University of Digital Science (German UDS) is a state-accredited digital university based in Potsdam, Germany, offering fully online Master's, MBA, and Micro-Degree programs to students worldwide. Accredited by the German Science Council (Wissenschaftsrat) and ASIIN, the university is led by renowned computer scientists Prof. Dr. Christoph Meinel and Prof. Dr. Mike Friedrichsen. German UDS maintains research centers in Artificial Intelligence, Cybersecurity, Extended Reality, Educational Technologies, and Digital Transformations. For more information, visit german-uds.de.

Trademark Information: Kronos X® is a registered trademark in the European Union under filing number 019097099. Perpetuals.com™ is the subject of a pending trademark application in the European Union under filing number 019186468.

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