



Encrypted Key Injection On-Demand With *CryptoHub*



As of January 2024, PCI PIN v3 Security Requirement 32.9 prohibits cleartext key injection for POI v5 and higher devices. This makes encrypted key injection the new standard going forward.

Futurex's encrypted key injection solution is the first to deliver support for encrypted key loading to help comply with control objective 32.9 - making Futurex the encrypted key injection solution standard going forward.

Is my organization impacted?

Any organizations that inject keys into payment devices must implement encrypted key injection to comply with the new PCI regulations. That includes:

- Payment processors loading keys onto their own devices,
- Encryption Support Organizations (ESOs) loading keys on behalf of payment processors,
- Independent Sales Organizations (ISOs) loading keys on behalf of payment processors.

Key loading compliance simplified

Futurex provides an encrypted key injection protocol developed with leading payment terminal manufacturers. Our solution delivers streamlined encrypted key injection solutions that can be deployed as an on-premises appliance and in the cloud for easy integration into existing workflows. This solution brief explains how to solve encrypted key injection challenges with Futurex.



Key Injection Defined

- ▶ Key injection is the process of securely transmitting cryptographic keys into hardware devices. The keys safeguard any data captured or transmitted by the devices.
- ▶ CryptoHub's encrypted key injection is an enhanced method where keys are encrypted from creation through use in the field. This makes the keys indecipherable at all times, achieving the highest security and compliance.



Key injection challenges



Compliance

Compliance is constantly evolving, and PCI is no exception. Security Requirement 32.9 of PCI PIN 3.1 went into effect on January 2024, organizations must adopt encrypted key injection and pivot away from loading cleartext keys. Organizations with legacy key injection solutions are struggling to find (much less implement) PCI-compliant encrypted key injection solutions, given so few options on the market.

Complexity

The reality is that traditional key injection has significant room for improvement. Organizations that load keys usually service multiple POI types for various customers. This variety breeds complexity. Organizations must manage cryptographic servers, key injection devices, terminals, and secure rooms – normally involving manual processes and multiple tools. Specifically, key injection was done via direct key injection, often performed by manufacturing floor-level workers who need training and management. In short, a new and improved key injection solution is necessary to simplify the process and reduce training overhead.



WHAT KINDS OF KEYS MUST BE ENCRYPTED?

Any keys used to acquire and protect PIN data, and any keys that protect those keys.

This applies to the following keys:

Device-specific private keys used with asymmetric remote key loading

Keys that protect data conveyed between a device's SCR and PIN pad

Terminal Master Keys (TMKs) and initial DUKPT keys

Gain compliance and productivity with CryptoHub



Faster compliance

Login to CryptoHub, deploy key injection from the service menu with just a few clicks, and enjoy compliance with PCI PIN's encrypted key injection requirement. Easy as that.

CryptoHub creates and encrypts top-level keys of various key algorithms and sizes. It injects these encrypted keys into endpoint devices to encrypt all subsequent keys. This ensures that keys are never injected, loaded, or transmitted as clear text, meeting PCI PIN v3's new compliance requirements.

Automation accelerates deployment

CryptoHub accelerates deployment by making key injection simpler. CryptoHub's automation features greatly reduce manual data entry. For example, you can save custom key injection templates for commonly used key injection processes. The platform's wizard-driven interface makes it easy for non-technical staff to execute key injection operations. CryptoHub's graphical user interface (GUI) also features tooltips to explain on-screen items.





WHAT IF YOU'RE LOADING KEYS INTO POI V4 AND LOWER?

As with all technologies, older versions will be sunset as development ceases and support is no longer available. Payment brands will eventually mandate that POI lower than v5 are removed from service. Key injection organizations are well-advised to prepare for this transition instead of waiting until the EOS/EOL dates. CryptoHub future-proofs your key injection infrastructure compliance.

Load keys from anywhere

A highly sought-after capability is to have a mobile terminal management system (TMS) where POI devices can be deployed at scale in the field. Prior to CryptoHub, this was prohibitive due to encryption requirements that necessitated pre-loading devices in a secure facility. Additionally, a lack of compatible protocols across cryptographic solutions complicated TMS integration. CryptoHub supports all common cryptographic interfaces to smoothly integrate with terminal management systems and provides the flexibility to directly inject keys into on-premises devices or remotely load them into terminals deployed in the field.

Let Futurex do it for you

Key injection requires organizations to hire, train, and manage key injection personnel—not to mention the capital expenditure of key injection technology. Some organizations would rather allocate those resources elsewhere. In that case, we've got you covered.

Futurex offers complete key management as a service (KMaaS) and key agent services. You get to offload key management and injection to our expert services team, who can also assist with audit preparation.



Futurex has enabled us to radically streamline the deployment and maintenance of our payment devices across a whole range of geographic markets and customer use cases.



MIURA
SYSTEMS

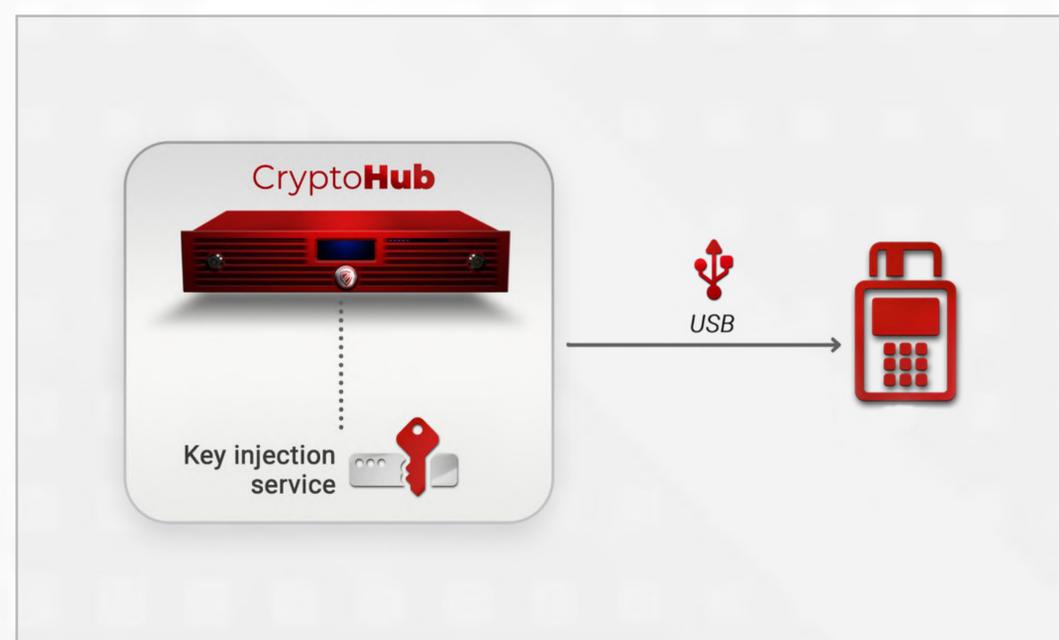
— Darren Shaw,
Chief Product Officer,
Miura Systems

Securing Keys With CryptoHub

CryptoHub combines hardware-based cryptography with the cloud, expanding your key management possibilities to an almost unlimited degree.

Hardware-based key management

Whether on-premises or in the cloud, CryptoHub provides hardware-based security for cryptographic keys. Like all of Futurex's key management solutions, cryptographic keys are stored in PCI and FIPS-validated hardware that physically protects the integrity of stored data.

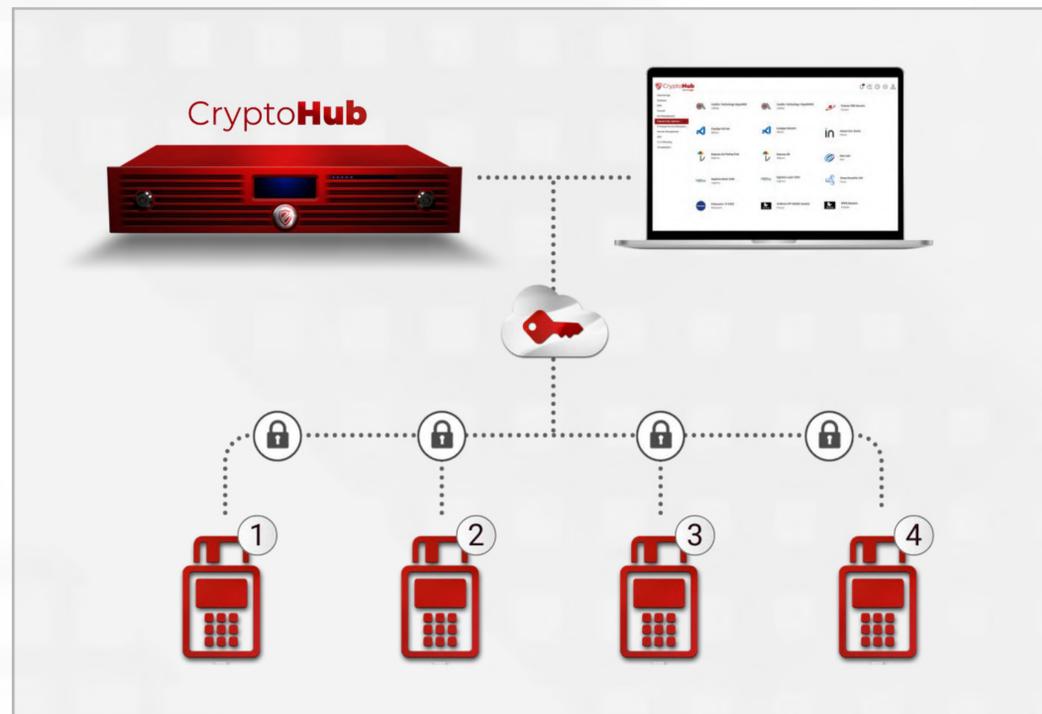


Public key infrastructure (PKI)

CryptoHub performs a diverse range of asymmetric encryption functions to secure networks, protect communications, and authenticate digital objects and users via PKI.

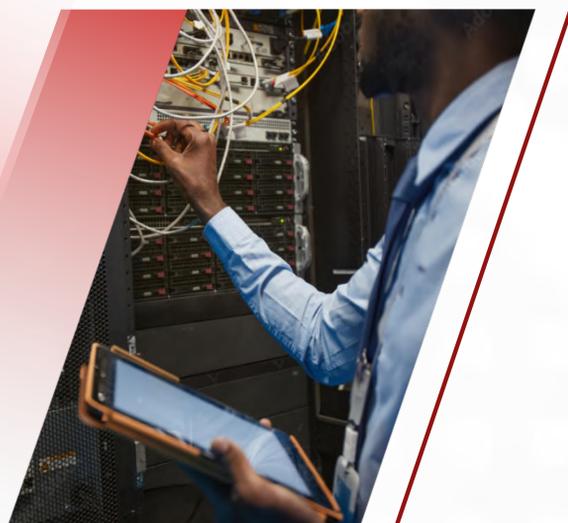
Integration from the outset

Futurex developed our encrypted key injection solution in partnership with major payment device manufacturers. The result is a platform that easily integrates with hundreds of different devices.



It's time to move to encrypted key injection

The CryptoHub key injection license gives organizations on-demand access to a full cloud key injection solution suite.



Key Benefits

- ▶ Achieve PCI PIN v3 compliance faster than ever before
- ▶ Reduce time and effort with streamlined key injection/key loading
- ▶ Support for hundreds of POI devices and cryptographic interfaces
- ▶ Gain cost-efficiency with CryptoHub's OpEx financial model and licensing system

To learn more about how CryptoHub can make your organization more efficient and PCI-compliant within a single day, contact us today.

Payments at a glance

- ▶ 3,000+ ESOs, TPS, ATM ISOs, processors, and payment facilitators (in VISA alone)
- ▶ 23+ million POS terminals in the USA as of 2022
- ▶ 160+ billion card payments per year in the USA
→ (That's a lot of encryption keys!)



For over 40 years, Futurex has been an award-winning leader and innovator in the encryption market, delivering uncompromising enterprise-grade data security solutions. Over 15,000 organizations worldwide trust Futurex to provide groundbreaking hardware security modules, key management servers, and cloud HSM solutions.

Futurex is headquartered outside of San Antonio, Texas, with regional offices worldwide and over a dozen data centers across five continents, Futurex delivers unmatched support for its clients' mission-critical data encryption and key management requirements.

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