Solution Brief

Building a Compliant AI-Ready Private Cloud for Financial Services

With HPE Private Cloud and Thales Data Security

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THALES

CYBERSECURITY

HPE

Outcomes at a Glance

- **Modernize virtualization in regulated environments and AI workloads** on a governed private cloud foundation for financial services.
- **Maintain full control** of encryption keys, sensitive data, and cryptographic operations across core banking, payments, and AI workloads.
- **Accelerate compliance** with verifiable encryption, tokenization, and centralized key management aligned to global financial regulations.
- **Strengthen resilience** with hardware-rooted trust, externalized key custody, and consistent security policies across environments.

Challenges for Financial Services

Financial institutions face increasing regulatory pressure to demonstrate encryption, key control, data residency, and auditable governance across distributed environments, including AI workloads handling sensitive data. As modernization accelerates, many organizations struggle to consistently enforce and prove these controls across hybrid environments.

The result is a widening gap between modernization initiatives and the ability to demonstrate verifiable control over sensitive data.

Balancing Innovation and Security: The HPE and Thales Advantage

Financial institutions require more than cloud infrastructure. They need governed platforms that support modernization while maintaining verifiable control over sensitive data.

HPE Private Cloud provides a secure, policy-driven operating model across regulated virtualization and AI workloads. Automated lifecycle management, consistent governance controls, and operational transparency enable financial institutions to modernize core systems and deploy AI capabilities with confidence.

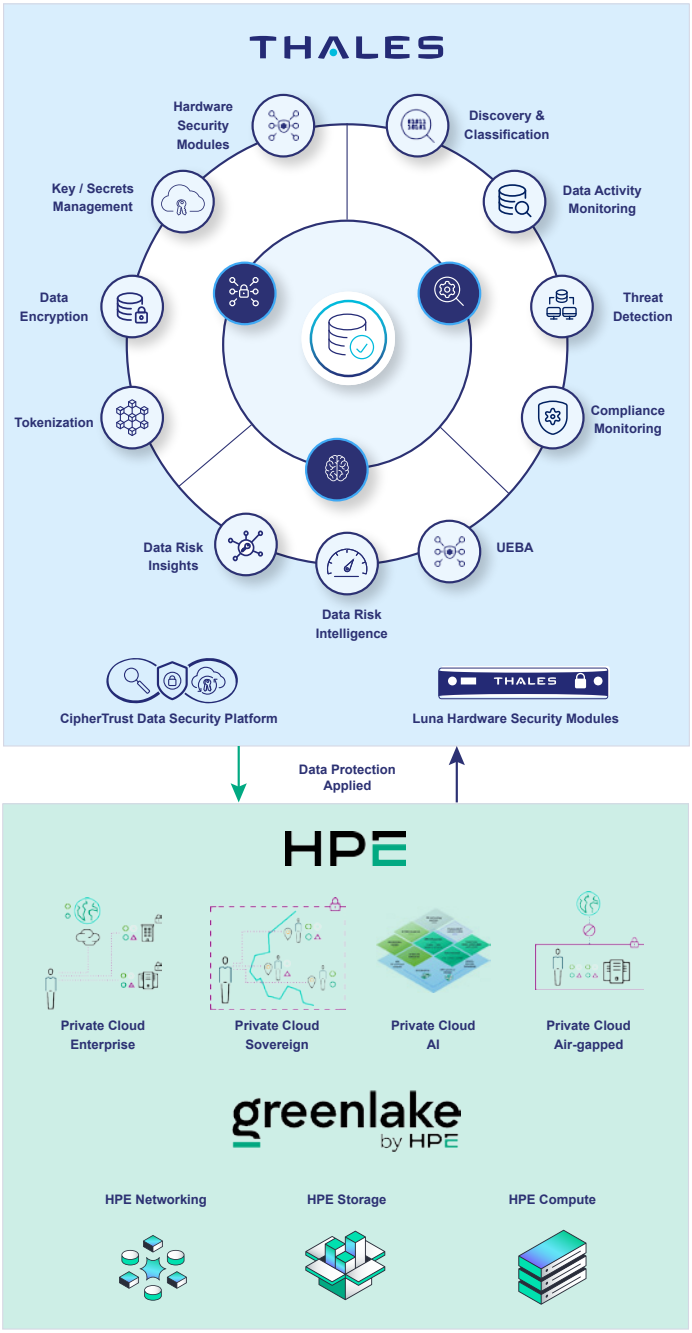
Thales complements this foundation with data-centric security. Centralized key management, encryption, tokenization, and hardware-rooted trust ensure that sensitive financial data remains protected and under institutional control across core banking, payments, analytics, and AI environments.

Together, HPE and Thales unify platform governance with cryptographic control, enabling financial services organizations to:

- Modernize regulated workloads without sacrificing data control
- Operate AI and analytics with verifiable encryption and key custody
- Demonstrate compliance through centralized policy and auditability
- Maintain sovereignty and separation of duties across distributed environments

Modernization becomes controlled, auditable, and resilient by design, aligned with the regulatory and trust expectations of financial services institutions.

Unified Governance and Data-Centric Security Across Financial Workloads



HPE Private Cloud Platforms for Regulated Financial Workloads

Financial institutions require private cloud platforms engineered for regulated performance, continuous availability, and verifiable governance. HPE delivers this foundation through HPE Private Cloud Enterprise and HPE Private Cloud AI, enabling secure virtualization, AI, and mission-critical workloads within a controlled operating model.

HPE Private Cloud Enterprise

Designed for regulated virtualization and mixed workloads, HPE Private Cloud Enterprise provides automated provisioning, policy-driven governance, lifecycle management, and cost transparency across virtualized and cloud-native environments. Financial institutions gain a consistent operating model with built-in security baselines and operational controls aligned to compliance requirements. When combined with Thales Data Security, including externalized key management, institutions can extend governance from infrastructure operations to cryptographic control over sensitive data.

HPE Private Cloud AI

Purpose-built to run AI models and analytics pipelines where sensitive financial data must remain protected, HPE Private Cloud AI provides secure infrastructure and integrated software to support model training and inference under institutional control. Financial institutions can operate AI within a governed private cloud environment, preserving compliance, data sovereignty, and cryptographic assurance while minimizing exposure to external risk.

Integrated with Thales encryption, key custody, and hardware-rooted trust, AI workloads can operate under verifiable data protection and regulatory control.

Supporting this foundation, HPE infrastructure, including HPE ProLiant Compute with hardware-rooted security, HPE Alletra Storage, and HPE NonStop systems, delivers resilient, high-performance environments for mission-critical banking and payments workloads.

Together, these platforms deliver the governance, availability, and performance required by financial institutions, while enabling controlled adoption of AI, digital banking, and real-time services under verifiable security and compliance control.

Thales Data Security Solutions for Financial Services

Thales provides a comprehensive portfolio for securing and controlling sensitive data across hybrid and private cloud environments.

CipherTrust Data Security Platform

CipherTrust Data Security Platform (CDSP) is a comprehensive framework for discovering, analyzing, protecting, and controlling sensitive data throughout HPE Private Cloud, enabling consistent, policy-driven, data-centric security.

Core Components:

- **CipherTrust Manager** centralizes key lifecycle operations while providing externalized key custody for digital sovereignty.
- **CipherTrust Cloud Key Management (CCKM)** extends centralized key control into hybrid and multicloud environments, supporting BYOK/HYOK strategies aligned with PCI DSS, PSD2, and cloud regulations.
- **CipherTrust Transparent Encryption (CTE)** protects data at rest across VMs, containers, and databases without code changes.
- **CipherTrust Database Protection (CDP)** encrypts structured data (PII, PAN, account data) while preserving performance.
- **CipherTrust Tokenization** protects sensitive data by replacing original values with tokens known only to the tokenization system.

Hardware Root of Trust with Thales Luna HSMs

Thales Luna Hardware Security Modules (HSMs) safeguard cryptographic keys and operations in tamper-resistant hardware certified to FIPS 140-3 Level 3 and Common Criteria EAL4+. Keys never leave the module, ensuring strong separation of duties and verifiable control for encryption, signing, TLS, and tokenization workflows.

Luna HSMs support strict regulatory requirements such as PCI-DSS, PSD2, eIDAS, DORA, and NIS2, and provide audit-ready cryptographic operations across payments, core banking, AI, and cloud workloads. When integrated with CipherTrust Manager, they extend digital trust from silicon to cloud across HPE Private Cloud.

Additional Thales Capabilities for Financial Services

- **Data Security Posture Management (DSPM)** provides visibility into where sensitive data is stored and who has access.
- **Data Discovery & Classification (DDC)** identifies regulated or high-risk data across hybrid and private clouds.
- **Database Activity Monitoring (DAM)** detects threats and supports audit requirements for FFIEC, PCI DSS, and SOX.
- **File Activity Monitoring (FAM)** tracks and audits sensitive file access, detects unauthorized activity, and supports compliance
- **CipherTrust Secrets Management (CSM)** secures credentials and secrets used in DevOps pipelines.
- **Thales High Speed Encryption (HSE)** delivers low-latency, wire-speed encryption to protect data-in-motion across networks.

Post-Quantum Readiness

Thales delivers post-quantum readiness for Luna HSM and CDSP through quantum-safe encryption and crypto-agile key management. Compliant with emerging standards such as CNSA 2.0 and FIPS 203–205, these capabilities allow financial institutions to begin migrating to quantum-safe security without disrupting current operations.

Securing AI, GenAI and Agentic AI

Complementing this quantum-safe foundation, Thales strengthens AI, GenAI and Agentic AI security with data-centric protection and hardware-rooted trust. CDSP manages and safeguards sensitive data entering AI pipelines, while Luna HSMs provide

cryptographic assurance for model integrity, identity verification, and API authentication. These capabilities collectively enable financial institutions to adopt AI securely, protect proprietary models and regulated data, ensure compliance, and minimize the risk of data leakage or manipulation. Additionally, these features enhance governance and visibility throughout the data lifecycle within HPE Private Cloud.

Unified for Trust and Performance

HPE and Thales combine their strengths to deliver an integrated platform for financial-grade operations. HPE provides secure compute, storage, orchestration, and lifecycle automation, while Thales delivers data-centric protection through hardware-rooted key custody, cryptographic assurance, and unified policy enforcement.

Core workloads, including core banking, payments, fraud analytics, and AI pipelines, operate with integrity and protection. Encryption, access controls, and auditability are consistently applied, enabling governance at the speed of business. The result is a resilient, high-performance operating model for financial services that supports modernization while maintaining continuous data security and compliance.

Redefining Secure Transformation for Financial Services

HPE Private Cloud Enterprise and HPE Private Cloud AI with Thales Data Security Solutions helps financial institutions modernize confidently and build a strong foundation of digital trust. Backed by Thales' extensive leadership in the financial industry, securing over 3,000 financial institutions, including all of the top 10 global banks, the combined solution accelerates innovation, strengthens risk management, and maintains full control over sensitive data as institutions expand AI, analytics, and digital services.

This collaborative approach delivers agility without sacrificing data security, ensures compliance with evolving regulations, and protects data across its entire lifecycle. Innovative yet compliant, agile yet controlled, cloud-ready while maintaining sovereignty. This is secure data transformation redefined for modern financial services.

About HPE

HPE is the edge-to-cloud company that helps organizations accelerate outcomes by unlocking value from all of their data, everywhere. Built on decades of reimagining the future and innovating to advance the way people live and work, HPE delivers unique, open, and intelligent technology solutions, with a consistent experience across all clouds and edges, to help customers develop new business models, engage in new ways, and increase operational performance.

About Thales

Thales is a global leader in cybersecurity, helping the most trusted companies and organizations around the world protect critical applications, sensitive data, and identities anywhere at scale. Through our innovative services and integrated platforms, Thales helps customers achieve better visibility of risks, defend against cyber threats, close compliance gaps, and deliver trusted digital experiences for billions of consumers every day.