

THALES

CYBERSECURITY

 yugabyteDB

Thales Enterprise Key Management for YugabyteDB

The Challenge

Today's IT environments are increasingly complex, with data scattered across databases, file servers, virtual systems, and the cloud.

While choosing native security tools for each database or storage system can be a sound decision, the resulting patchwork of solutions often becomes complex and cumbersome to manage.

This accumulation of disparate methods can create an environment where gaps in protection and compliance are more likely to occur. Siloed key management makes it easy for gaps to form, especially when keys are stored alongside the data they protect or administered through manual, inconsistent processes.

The Solution

Unlock a new level of protection and control with [CipherTrust Manager](#), Thales' industry leading enterprise key management solution.

CipherTrust Manager enables organizations to centrally manage encryption keys, provide granular access control and configure security policies. It manages key lifecycle tasks including generation, rotation, destruction, import and export, provides role-based access control to keys and policies, supports robust auditing and reporting, and offers developer friendly REST API.

Why Choose Thales CipherTrust Manager with YugabyteDB?

Thales CipherTrust Manager integrates with YugabyteDB Anywhere to deliver a streamlined, secure, and scalable approach to managing database encryption keys.

Organizations gain centralized control over encryption at rest, ensuring that master keys and universe keys are securely managed through robust key management configurations. This means you can easily assign, rotate, and protect keys across all your database universes, reducing complexity and minimizing risk.

For YugabyteDB, encryption at rest is handled by a master key that encrypts and decrypts universe keys. The details of this master key are securely stored in [YugabyteDB Anywhere's key management service \(KMS\)](#) configurations.

To enable encryption at rest for a database universe, simply assign a KMS configuration to it. The master key from that configuration (stored in CipherTrust Manager) will then generate the universe keys used to protect your data.

Multi Tenancy

CipherTrust Manager enables strong separation of duties, which boosts security by making sure no single administrator can access all key management domains.

The platform supports multi-tenancy, meaning you can create distinct key management environments for different business lines, customers, or service providers.

This added layer of separation helps ensure the highest level of protection.

With CipherTrust Manager, roles are clearly defined, and access is strictly controlled. This means no single administrator has unchecked authority over all key domains. This protects sensitive data from internal threats and aligns with regulatory requirements for access control.

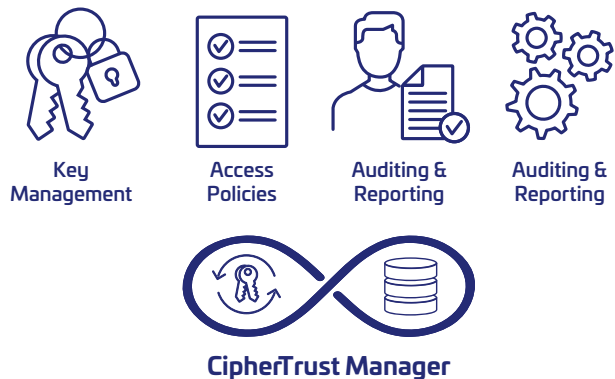
While multi-tenancy is a powerful feature for organizations serving multiple customers or business units, it may not be essential if your primary goal is to manage database encryption keys for a single environment. However, even in single-tenant scenarios, CipherTrust Manager's unified platform simplifies key management and provides strong security controls, making it relevant for organizations seeking to centralize and automate their encryption practices.

Security

CipherTrust Manager is available in both virtual and physical appliances that integrate with FIPS 140-3 Level 3 compliant Thales Luna or third-party Hardware Security Modules (HSMs) for securely storing keys with the highest root of trust.

These appliances can be deployed on-premises in physical or virtualized infrastructures and in public cloud environments to efficiently address compliance requirements, regulatory mandates, and industry best practices for data security.

A unified management console makes it easy to set policies, discover and classify data, and protect sensitive data wherever it resides.



The Benefits of Using CipherTrust Manager with YugabyteDB

- **Improve Operational Efficiency**

CipherTrust Manager simplifies cryptographic key management, enabling security teams to consolidate and unify key and certificate management across the enterprise, reducing the cost of ownership and minimizing overall risk.

- **Regulatory Compliance**

CipherTrust Manager enables organizations to meet regulatory requirements with thorough auditing, strong access controls, and centralized reporting. Supporting standards like PCI DSS, HIPAA, and GDPR, it helps demonstrate compliance and streamlines audit preparation through automated key management.

- **Minimize Unplanned Downtime**

Minimize key availability and redundancy by leveraging secure key replication across multiple appliances with automated backups. Automated alerts help prevent unexpected key expiration.

Summary

Data is only as secure as the system that manages the encryption keys protecting the data.

A centralized enterprise key management solution is critical to ensuring all sensitive enterprise data is secure and available. CipherTrust Manager helps organizations maximize IT efficiency through a centralized, extensible platform-based solution, and supports the burdens of encryption key management across the enterprise and into the cloud – without disrupting existing application or database environments.

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.

About Yugabyte

YugabyteDB is a cloud-native, AI-native, multi-modal distributed PostgreSQL database that underpins modern business-critical applications, including GenAI apps, with built-in resilience, seamless scalability, and flexible geo-distribution. YugabyteDB combines powerful relational DBMS capabilities, including ACID transactions, strong consistency, and secondary indexes, to accelerate innovation, decrease risk, and deliver enhanced enterprise capabilities. YugabyteDB Anywhere provides deployment, orchestration, and monitoring to manage YugabyteDB universes. The YugabyteDB Anywhere Platform helps with linear scaling of workloads by transparently adding new nodes to the cluster without downtime. Visit www.yugabyte.com to find out more.