

# Encryption key management solutions for Microsoft® SQL Server® and Oracle® Database



## Simplified and protected management for database encryption keys

- Streamlined operations through centralized key management
- Stronger security by separating keys from databases
- Comprehensive key security based on FIPS-certified hardware and software solutions

## Microsoft SQL and Oracle Database key management challenges

Microsoft SQL Server and Oracle Database solutions provide native transparent database encryption (TDE) that protects the data stored in their customers' enterprise and cloud-hosted databases. And, as with any encryption-based security scheme, securing and managing the encryption keys is critically important for robust data security.

Managing encryption keys presents challenges such as isolating them from the assets they protect and storing them securely—not only a best practice for key management, but a common industry data protection mandate. Encryption key management challenges multiply as organizations use multiple databases for different purposes, each requiring dedicated key management to ensure that keys are securely stored, backed up and available when needed.

## Thales key management solutions for transparent database encryption

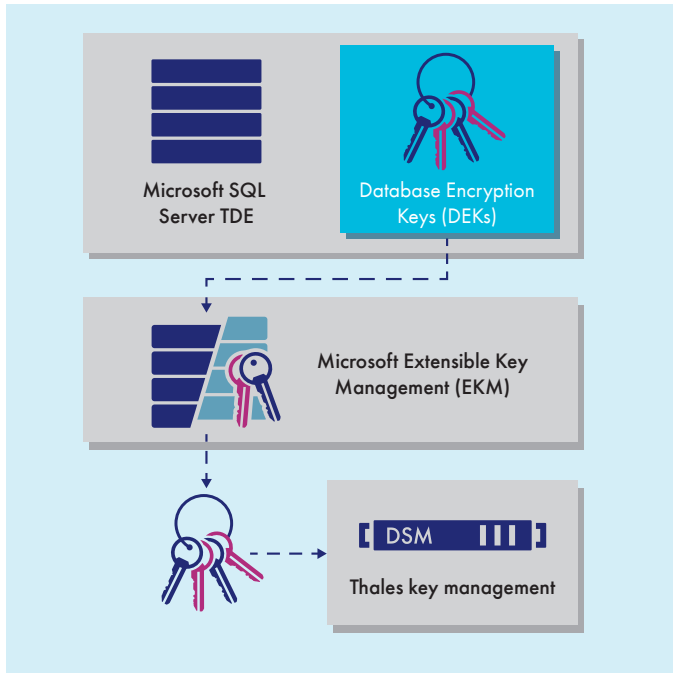
Thales key management solutions centralize key management for your enterprise and cloud-hosted Microsoft SQL Server and Oracle Database, giving you greater command over the keys while increasing your data security.

## Vormetric™ key management using the Vormetric Data Security Manager

The Vormetric Data Security Manager (DSM), the heart of the Vormetric Data Security Platform, centrally manages keys for Microsoft SQL and Oracle TDE keys as follows.

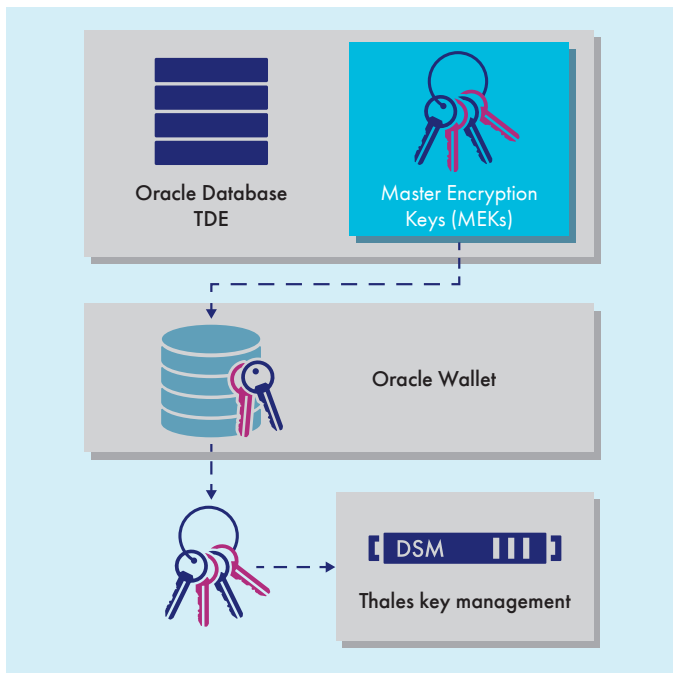
### **Microsoft SQL Transparent Data Encryption**

Thales key management solutions complement Microsoft native TDE by providing secure storage and management of the keys used in Microsoft's database encryption scheme. Microsoft TDE encrypts the sensitive data in the SQL database using a database encryption key (DEK), and Thales interfaces with Microsoft Extensible Key Management (EKM) to store and manage the DEKs in the FIPS-certified Vormetric DSM.



### Oracle Database Transparent Data Encryption

The Vormetric DSM complements Oracle Database native TDE by centrally storing and managing Oracle Database encryption keys. As a part of the Oracle Advanced Security TDE two-tier key architecture, Oracle Database uses master encryption key (MEKs) to encrypt the database encryption keys (DEKs), which are used to encrypt columns and tablespaces within the databases. Thales key management solutions interface with the Oracle Wallet to protect and manage these MEKs within a secure FIPS-certified boundary.



### Enterprise and Cloud Support

Whether your database resides on-premises or in the cloud, Thales solutions provide secure and efficient management of your database encryption keys.

### Vormetric Data Security Manager

The Vormetric Data Security Manager (DSM) is a highavailability appliance that centralizes encryption key management for Oracle Database and Microsoft SQL Server TDE as well as a variety of additional Vormetric and third-party encryption solutions. The DSM manages key life-cycle tasks including generation, back-ups, destruction, import and export.

The Vormetric DSM is available as either hardware or a virtual appliance:

- The V6000 DSM hardware appliance, certified to FIPS 140-2 Level 2, and the V6100 DSM hardware appliance, underpinned by nShield HSM certified to FIPS 140-2 Level 3
- The vDSM, a virtual appliance certified to FIPS 140-2 Level 1

### Vormetric key management solutions

Centrally managing your keys independently from your database applications will help you streamline operations, fulfill compliance mandates and better protect your sensitive data. And as your needs expand, Thales solutions can grow with you. Below is a summary of key management offerings and related products based on the Vormetric Data Security Platform.

- TDE key management
- Database encryption, file encryption, comprehensive data encryption
- KMIP-compliant applications
- Tokenization
- Cloud key management (CipherTrust Cloud Key Manager)
- Key management through APIs
- Key storage

### Learn more

Visit us at [www.thalescpl.com](http://www.thalescpl.com) to learn more about how Thales can help you simplify and strengthen key management for your enterprise database encryption solution.

### About Thales

The people you rely on to protect your privacy rely on Thales to protect their data. When it comes to data security, organizations are faced with an increasing number of decisive moments. Whether the moment is building an encryption strategy, moving to the cloud, or meeting compliance mandates, you can rely on Thales to secure your digital transformation.

Decisive technology for decisive moments.