

# Securing Database Data and Demonstrating Compliance on Oracle Exadata



Optimized, high-performing databases are essential for some organizations. Often these organizations process significant quantities of data—such as online payment transactions—quickly. Much of this data tends to be highly sensitive and subject to compliance obligations. Oracle’s native encryption functionality for Exadata—also known as transparent data encryption (TDE)—is an important tool for protecting this sensitive, regulated data. Oracle Exadata TDE encrypts data at the tablespace with very little impact on the applications accessing that protected data. While TDE secures data, it is an incomplete protection strategy by itself because it stores encryption keys locally in software, on the database server. Local key storage is especially problematic when regulatory compliance is a consideration.

Fortunately, **Thales** solves this problem for Exadata TDE customers with its SafeNet KeySecure enterprise key management platform.

Separating encryption keys from the encrypted data is a best practice and the foundation of an effective encryption strategy. Organizations that choose Oracle TDE on Exadata can use SafeNet KeySecure to secure and manage their database encryption keys to ensure that their database cannot be accessed without proper authentication by the key manager. Such a strong barrier to entry both secures data and serves as a deterrent to any would-be attackers. Compliance obligations are a significant concern for many Oracle Exadata

customers. Requirements such as the Payment Card Industry Data Security Standard (PCI-DSS) state that keys should be secured in separate hardware devices ultimately pushing customers to look for complementary solutions to Oracle TDE.

## Benefits

### Transparent and Efficient Encryption

- Transparently encrypt sensitive data in Exadata environments
- Secure data without making application changes
- Compliance Made Straightforward
- Address compliance requirements for data encryption, separate key storage, and separation of duties

### High Performance Security

- Perform cryptographic operations locally or offload to SafeNet KeySecure to leverage external processing power
- Built-in connection pooling, health checking, and multi-tiered load balancing maintain high performance

### Risk Mitigation with Maximum Key Security

- Built-in tamperproof hardware options or hardware root of trust integration with SafeNet Luna HSM address FIPS 140-2 Level 3 requirements

## SafeNet TDE Connector and SafeNet KeySecure

The SafeNet TDE connector secures Oracle Exadata TDE keys in their software wallet, with a master encryption key, on SafeNet KeySecure. SafeNet KeySecure is a centralized platform for managing cryptographic content (keys and related data) that is capable of running on-premises, in the cloud, or in hybrid environments. Available as a physical or virtual appliance, organizations can choose from amongst a range of FIPS 140-2 Level 1 or 3 options.

### SafeNet KeySecure supports TDE key management for the following database versions:

- Oracle 11g: 11.1.0.6–11.1.0.7
- Oracle 11g: 11.2.0.1–11.2.0.4
- Oracle 12c: 11.1.0.1–2.1.0.2.0
- Oracle 12c: 12.2.0.1 0 12.2.0.1.0
- Oracle 18c:

## SafeNet Oracle TDE Connector Benefits

### Persistent Data Protection

With Oracle TDE and SafeNet KeySecure, Exadata customers can use encryption and key management to secure database data throughout its at-rest lifecycle, wherever it is copied or transferred. With SafeNet KeySecure, authorized users and processes readily have appropriate levels of access to the information they need for their roles even as the data remains secured.

### Facilitate Compliance

Oracle Exadata databases' ability to quickly store and categorize large quantities of data—much of it sensitive—make it an important compliance concern for organizations. Oracle TDE secures data while SafeNet KeySecure's external key storage and logging capabilities allow administrators to demonstrate control over their data per compliance requirements. With SafeNet KeySecure, organizations can also address a host of miscellaneous internal policy requirements and relevant regulatory obligations such as; the Payment Card Industry Data Security Standard (PCI DSS) and the Health Insurance Portability and Accountability Act (HIPAA), and the General Data Protection Regulation (GDPR).



Streamline Key Management Across the Enterprise With SafeNet KeySecure customers can consolidate the Oracle TDE keys for their Exadata environments into an easy to use management platform where they also manage keys from a wide variety of encryption products including the SafeNet Data Protection Portfolio, self-encrypting drives, tape archives, Storage Area Networks, and a growing list of vendors supporting the OASIS Key Management Interoperability Protocol (KMIP) standard.

## Separate Administrative Duties with Granular Access and Authorization Controls

Organizations can consolidate Oracle Exadata TDE key administration operations in a centralized management console with other encryption deployments and products, where they can ensure administrators are restricted to access defined for their scope of responsibilities. SafeNet KeySecure utilizes existing LDAP or AD directories to map administrative and key access for databases, applications and end users.

## 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.

> [thalescp.com](https://thalescp.com) <



**Americas** – Thales eSecurity Inc. 2860 Junction Ave, San Jose, CA 95134 USA • Tel:+1 888 744 4976 or +1 954 888 6200 • Fax:+1 954 888 6211 • E-mail: [sales@thalessec.com](mailto:sales@thalessec.com)

**Asia Pacific** – Thales Transport & Security (HK) Lt, Unit 4101-3, 41/F, Sunlight Tower, 248 Queen's Road East, Wanchai, Hong Kong • Tel:+852 2815 8633 • Fax:+852 2815 8141 • E-mail: [asia.sales@thales-ecurity.com](mailto:asia.sales@thales-ecurity.com)

**Europe, Middle East, Africa** – Meadow View House, Long Crendon, Aylesbury, Buckinghamshire HP18 9EQ • Tel:+44 (0)1844 201800 • Fax:+44 (0)1844 208550 • E-mail: [emea.sales@thales-ecurity.com](mailto:emea.sales@thales-ecurity.com)