

**RELATED PRODUCTS**

- Oracle Database Vault
- Oracle Database Firewall
- Oracle Audit Vault
- Oracle Label Security
- Oracle Data Masking

accessed data blocks are cached in memory in the same manner as traditional non-encrypted data blocks. This efficient use of native database performance optimizations enables TDE to minimize overhead. TDE tablespace and column encryption also can be used in combination within the same database for hybrid encryption solutions.

**Key Management**

Oracle Advanced Security provides a built-in, two-tier key management architecture, consisting of a master encryption key and one or more data encryption keys. The TDE master encryption key is used to encrypt and protect the data encryption keys. The master encryption key resides outside of the database in the Oracle Wallet.

**Strong Protection for Data In Transit**

Oracle Advanced Security provides standards-based network encryption for protecting all communication to and from the Oracle Database. Connections can be rejected from clients that have encryption turned off. No changes to existing applications are required, allowing businesses to easily deploy network encryption.

**Strong Authentication Replaces Password Based Authentication**

Oracle Advanced Security provides strong authentication to the database using Kerberos, PKI or RADIUS. Oracle Advanced Security interoperates with the Microsoft Kerberos and MIT Kerberos v5. With Oracle Advanced Security, customers can require their users to plug-in a Smart Card (CAC, HSPD-12) as part of their SSL-based authentication to the Oracle Database.

**Strong Protection for Database Backups**

Data encrypted with TDE remains encrypted when the database files are backed-up to disk with Oracle RMAN. Oracle RMAN can also use TDE during the backup process to encrypt the entire database backup, including the SYSTEM and SYSAUX tablespaces. In addition, Oracle RMAN compression and TDE can be used together to generate backups that are both compact and secure.

**Application Certification with Transparent Data Encryption**

Oracle Advanced Security TDE is certified with many applications, including Oracle E-Business Suite, Oracle PeopleSoft Enterprise, Oracle Siebel CRM, Oracle JD Edwards EnterpriseOne and SAP.

**Contact Us**

For more information about Oracle Advanced Security, visit [oracle.com](http://oracle.com) or call +1.800.ORACLE1 to speak to an Oracle representative.



Oracle is committed to developing practices and products that help protect the environment

Copyright © 05/2011, Oracle and/or its affiliates. All rights reserved.

This document is provided for information purposes only and the contents hereof are subject to change without notice. This document is not warranted to be error-free, nor subject to any other warranties or conditions, whether expressed orally or implied in law, including implied warranties and conditions of merchantability or fitness for a particular purpose. We specifically disclaim any liability with respect to this document and no contractual obligations are formed either directly or indirectly by this document. This document may not be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without our prior written permission.

Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their

respective owners. 0109