

## Oracle Database 12c: Security

**Duration:** 5 Days

### What you will learn

This Oracle Database 12c: Security training teaches you how you can use Oracle Database features to meet the security, privacy and compliance requirements of your organization. You'll get the chance to interact with expert Oracle University instructors through a combination of instruction and hands-on exercises that reinforce new concepts.

### Learn To:

Understand Oracle security solutions and how they can help address your security requirements.

Configure strong authentication for database users using PKI and Kerberos.

Control data access using virtual private database and Oracle Label Security.

Analyze application privileges and reduce the attack surface using Oracle Database Vault Privilege Analysis.

Reduce risk of data exposure using Oracle Advanced Security Data Redaction, Transparent Data Encryption and Oracle Data Masking and Subsetting.

Audit activity inside the database using policy and condition based unified auditing.

Configure network encryption to protect information in transit.

Audit activity inside the database using policy and condition based unified auditing.

Protect against application bypass using Oracle Database Vault Realms.

### Benefits to You

The current regulatory environment of the Sarbanes-Oxley Act, HIPAA, the UK Data Protection Act, and others requires better security at the database level. By investing in this course, you'll learn how to secure access to your databases and use database features that enhance data access and confidentiality. This course provides suggested Oracle solutions for common problems.

### Deep Dive into Security Features

Expert Oracle University instructors discuss the following security features of the database: authentication, data access control including user authorizations using privileges and roles, Privilege Analysis, Virtual Private Database, Oracle Label Security as well as data confidentiality. This includes Data Redaction, Oracle Data Masking and Subsetting, Transparent Sensitive Data Protection and encryption at the column, tablespace and file levels using Transparent Data Encryption.

### Auditing

Throughout this course, you'll also get a chance to discuss auditing using different features, including unified auditing and fine-grained auditing. You'll deep dive into some of the Oracle Network security topics, like securing the listener and restricting connections by IP address.

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## Gain Hands-On Experience

Hands-on practices and available demonstrations help you learn how to use most of the features of Oracle Database 12c to secure your data center. Develop an understanding of how to use Oracle Enterprise Manager Cloud Control and other tools like SQL\*Plus.

## Audience

Database Administrators  
Network Administrator  
Security Administrators  
Security Compliance Auditors  
Support Engineer System  
Analysts

## Related Training

### *Required Prerequisites*

Good knowledge of Oracle Database

### *Suggested Prerequisites*

Administer listeners  
Create and manage users, roles, and privileges  
Perform RMAN backup and recovery  
Use Oracle Data Pump export and import

## Course Objectives

Analyze any security risks of their organization  
Find appropriate Oracle solutions to meet the security, privacy and compliance requirements of their organization  
Find solutions to secure database access through the network  
Configure appropriate authentication for the database or enterprise users in the organization  
Control data access and integrity in their organization using the appropriate feature or option or product like privileges or Oracle Label Security  
Ensure data confidentiality using an encryption solution like Transparent Data Encryption, or Data Redaction or Oracle Data Masking and Subsetting  
Audit user actions using any of the auditing features like unified auditing

## **Course Topics**

Introduction  
Course Objectives  
Course Schedule and Appendices

### **Understanding Security Requirements**

Fundamental Data Security Requirements  
Security Risks  
Exploits  
Techniques to Enforce Security

### **Choosing Security Solutions**

Network Access Control  
Database Access Control  
Data Access Control  
Data Confidentiality  
Data Integrity  
Audit  
Compliance

### **Implementing Basic Database Security**

Database Security Checklist  
Reducing Administrative Effort  
Principle of Least Privilege Objects  
Protection

### **Securing Data on the Network**

Network Access Control  
Listener Security  
Listener Usage Control

### **Using Basic and Strong User Authentication**

Basic Authentication  
Strong Authentication  
Database Link Passwords Protection

### **Configuring Global User Authentication**

About Enterprise User Management (EUS)  
EUS and Oracle Internet Directory Integration

### **Using Proxy Authentication**

Security Challenges of Three-Tier Computing Proxy  
Authentication Solutions

## **Using Privileges and Roles**

Separation of Duties

Roles Management

Managing Security for Definer's Rights and Invoker's Rights Managing  
RMAN Virtual Private Catalogs

## **Using Privilege Analysis**

Privilege Analysis Flow

Privilege Analysis Implementation

## **Using Application Contexts**

Description of Application Context

Application Context Implementation

## **Implementing Virtual Private Database**

Fine-Grained Access Control and VPD

FGAC Policies Management VPD

Policies Management

## **Implementing Oracle Label Security**

Access Control Overview

Oracle Label Security Registration

Oracle Label Security Policies Management

## **Redacting Data**

Redacting Data

Masking Policies Implementation

## **Using Oracle Data Masking and Subsetting**

Overview

Data Masking Definition Implementation

Data Masking Process

Data Subsetting Process

## **Using Transparent Sensitive Data Protection**

TDPS Implementation

## **Encryption Concepts and Solutions**

Concepts

Solutions

Oracle Solutions

## **Encrypting with DBMS\_CRYPTO Package Usage**

## **Using Transparent Data Encryption**

Overview

The Master Keys and the Key store

Hardware Key store Encryption

### **Database Storage Security**

RMAN and OSB Backups

RMAN Encryption Modes

Data Pump Export and Import of Encrypted Data

### **Using Unified Audit**

Auditing Overview

Unified Audit Management Specific

Audit Situations

### **Using Fine-Grained Audit**

Comparison with Unified Auditing

Overview

FGA Implementation