

# Oracle Database 21c: New Features for Administrators

## 1: New Features for Big Data and Data Warehousing

- Analytic View Enhancements to SQL and PL/SQL
- Practice 1-1: Analytic View Enhancements
- Analytical SQL and Statistical Functions
- Practice 2-1: Bitwise Functions
- Practice 2-2: Enhanced Analytic Functions
- New Analytical and Statistical Aggregate Functions
- Practice 3-1: CHECKSUM Function
- Practice 3-2: SKEWNESS Functions
- Practice 3-3: KURTOSIS Functions
- Machine Learning for SQL
- Machine Learning for Python
- Spatial and Graph

## 2: New Features for Security

- Oracle Blockchain Tables
- Practice 1-1: Managing Blockchain Tables and Rows
- Authentication and Authorization
- Practice 2-1: Gradual Database Password Rollover for Applications
- Practice 2-2: Enforcing a Minimum Password Length for All PDBs
- Auditing
- Practice 3-1: Auditing Actions on Connected Sessions
- Practice 3-2: Enforcing Unified Audit Policies on the Current User
- Practice 3-3: SYSLOG Destination for Common Unified Audit Policies
- Advanced Security
- Practice 4-1: Setting Up Transparent Data Encryption
- Practice 4-2: Defining the Default Encryption Algorithm for Tablespace Creation
- Database Vault
- Practice 5-1: Installing Oracle Database Vault
- Practice 5-2: Preventing Local Users from Blocking Common Operations
- Practice 5-3: Uninstalling Oracle Database Vault
- Practice 5-4: Cleaning Up the Environment

### **3: New Features for Management Solutions**

- **Manageability**
- **Demo: Connecting to Training Environment**
- **Practice 1-1: Configure a DBFS file system**
- **Diagnosability**
- **Practice 2-1: Attention Log File**

### **4: New Features for Performance**

- **Automatic Operations**
- **Practice 4-1: Shrinking Secure Files LOBs**
- **Oracle Database In-Memory**
- **Practice 5-1: Configuring and Observing Automatic In-Memory**
- **Practice 5-2: Using In-Memory Hybrid Scans in Queries**

### **5: New Features in Multitenancy**

- **Performing PDB Application Synchronization**
- **Demo: How to Connect to Training Environment**
- **Practice 1-1: Synchronizing Multiple Applications in Application PDBs**
- **MAX\_IDLE\_BLOCKER\_TIME Parameter**
- **Practice 2-1: Using the MAX\_IDLE\_BLOCKER\_TIME Parameter.**
- **DBCA Time Zone Support for PDB**
- **Improving PDB Tenancy Management**
- **Namespace Integration with Database**

### **6: New Features in Sharding**

- **Introduction**
- **Sharding New Features**
- **Oracle Sharding**
- **Oracle Sharded Database Architecture**
- **Oracle Sharded Database Architecture Contd..**
- **What's New in Oracle Sharding 21C**

## **7: New Features for Application Development**

- Enhancements for SQL Set Operators
- Expression in Initialization Parameters
- SQL Macros
- Practice 1-1: Using Expressions in Initialization Parameters
- Practice 1-2: Exploring SQL Set Operator Enhancement
- Practice 1-3: Using SQL Macro Scalar and Table Expressions
- PL/SQL Enhancements
- PL/SQL Extended Iterators
- PL/SQL Qualified Expressions
- Practice 2-1: Using Pragma SUPPRESSES\_WARNING\_6009
- Practice 2-2: Exploring Enhancements to PL/SQL Iterator Constructs
- Practice 2-3: Using Collection Iteration Controls
- JSON Document Store
- Practice 3-1: JSON Document Store

## **8: New Features in Flashback**

- Flashback Database
- Practice 1-1: Flashing Back PDBs to Any Time in the Recent Past
- Practice 1-1: Flashing Back PDBs to Any Time in the Recent Past Continued

## **9: New Features for Upgrade and Utilities**

- Database Utilities
- Practice 1-1: Including and Excluding Objects from Oracle Data Pump Export and Import
- Practice 1-2: Index Compression on Oracle Data Pump Import
- Practice 1-3: Validity Check for Oracle Data Pump Files
- Practice 1-4: Parallelizing Transportable Tablespace Metadata Operations
- Upgrade and Migrations

## **10 :New Features for Globalization**

- Globalization