

D79027GC10
Edition 1.0
December 2013
D84979

ORACLE®

Oracle Database 12c: Admin, Install and Upgrade Accelerated

Student Guide – Volume II

Authors

Donna K. Keesling
Dominique Jeunot
James L. Spiller

Technical Contributors and Reviewers

Darryl Balaski

Rainer Bien
Maria Billings
Andy Fortunak
Gerlinde Frenzen
Mark Fuller
Joel Goodman
Daniela Hansell
Pat Huey
Prakash Jashnani
Gwen Lazenby
Ira Singer
Roy Swonger
Carol Tagliaferri
Lori Tritz
Branislav Valny
Harald Van Breederode

Editors

Daniel Milne
Aju Kumar

Publishers

Pavithran Adka
Veena Narasimhan

Copyright © 2013, Oracle and/or its affiliates. All rights reserved.

Disclaimer

This document contains proprietary information and is protected by copyright and other intellectual property laws. You may copy and print this document solely for your own use in an Oracle training course. The document may not be modified or altered in any way. Except where your use constitutes "fair use" under copyright law, you may not use, share, download, upload, copy, print, display, perform, reproduce, publish, license, post, transmit, or distribute this document in whole or in part without the express authorization of Oracle.

The information contained in this document is subject to change without notice. If you find any problems in the document, please report them in writing to: Oracle University, 500 Oracle Parkway, Redwood Shores, California 94065 USA. This document is not warranted to be error-free.

Restricted Rights Notice

If this documentation is delivered to the United States Government or anyone using the documentation on behalf of the United States Government, the following notice is applicable:

U.S. GOVERNMENT RIGHTS

The U.S. Government's rights to use, modify, reproduce, release, perform, display, or disclose these training materials are restricted by the terms of the applicable Oracle license agreement and/or the applicable U.S. Government contract.

Trademark Notice

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Contents

1 Introduction

Objectives	1-2
Course Objectives	1-3
Suggested Schedule	1-4
Oracle Database Innovation	1-6
Enterprise Cloud Computing	1-7
Course Examples: HR Sample Schema	1-8
Summary	1-9

2 Exploring the Oracle Database Architecture

Objectives	2-2
Oracle Database Server Architecture: Overview	2-3
Oracle Database Instance Configurations	2-4
Connecting to the Database Instance	2-5
Oracle Database Memory Structures	2-6
Shared Pool	2-8
Database Buffer Cache	2-10
Redo Log Buffer	2-11
Large Pool	2-12
Java Pool	2-13
Streams Pool	2-14
Program Global Area (PGA)	2-15
Quiz	2-16
Process Architecture	2-18
Process Structures	2-20
Database Writer Process (DBWn)	2-22
Log Writer Process (LGWR)	2-24
Checkpoint Process (CKPT)	2-26
System Monitor Process (SMON)	2-27
Process Monitor Process (PMON)	2-28
Recoverer Process (RECO)	2-29
Listener Registration Process (LREG)	2-30
Archiver Processes (ARCn)	2-31
Database Storage Architecture	2-32
Logical and Physical Database Structures	2-34

Segments, Extents, and Blocks	2-36
Tablespaces and Data Files	2-37
SYSTEM and SYSAUX Tablespaces	2-38
Oracle Container Database: Introduction	2-39
Multitenant Architecture	2-40
Automatic Storage Management	2-41
ASM Storage Components	2-42
Interacting with an Oracle Database: Memory, Processes, and Storage	2-43
Quiz	2-45
Summary	2-47
Practice 2	2-48

3 Oracle Software Installation Basics

Objectives	3-2
Planning Your Installation	3-3
Configuring Oracle Linux with Oracle RDBMS Pre-Install RPM	3-5
Operating System Groups and Users	3-7
Environment Variables	3-8
Configuring the Oracle Software Owner Environment	3-9
Using Oracle Universal Installer (OUI)	3-10
Installation Option: Silent Mode	3-11
Quiz	3-12
Summary	3-14

4 Installing Oracle Database Software

Objectives	4-2
Oracle Database Installation: System Requirements	4-3
Creating Operating System Groups and Users	4-4
Types of Installations	4-6
Quiz	4-7
Summary	4-8
Practice 4	4-9

5 Creating an Oracle Database by Using DBCA

Objectives	5-2
Planning the Database	5-3
Types of Databases	5-4
Choosing the Appropriate Character Set	5-5
Understanding How Character Sets Are Used	5-7
Setting the NLS_LANG Initialization Parameter	5-8
Using the DBCA to Create a Database	5-9