CONTENTS

Chapter 1 ■ Introduction to Oracle 11g 1

Understanding the Oracle 11g Database 2
- Features of Oracle 11g 2
- Architecture of Oracle 11g 8

Installing the Oracle 11g Database 15
- System Requirements to install Oracle 11g 15
- Installing Oracle 11g using the Universal Installer 17

Upgrading to Oracle 11g Database 29
- Manual Upgrade 29
- Upgrading to Oracle 11g using DBUA 31

Administration Tools of Oracle 11g Database 36
- Server Manager 36
- Oracle Enterprise Manager 37
- SQL Developer 38

Summary 41

Chapter 2 ■ Working with Oracle 11g Database 43

Creating the Database 44
- Creating Database with DBCA 44

Configuring a Database 54
- Configuring a Database using DBCA 54
- Configuring a Database using OEM 61

Dropping the Database 73

Deleting the Database 74

Working with Parameter files 74

Starting and Stopping the Database 76
- Starting and Stopping the Database Using Enterprise Manager 76
- Starting and Stopping the Database Using SQL *PLUS 79

Defining the Alert Files 80

Summary 81

Chapter 3 ■ Administering Tablespaces and Schemas 83

Administering Tablespaces 84
- Creating Tablespaces 86
- Deleting a Tablespace 90
- Editing a Tablespace 90
- Viewing Tablespace Information 91
- Space Management with Tablespaces 92

Administering Schema Objects 95
- Creating a New Schema Object 95

Working with Existing Schema Objects 103
Administrating Automatic Storage Management (ASM) 106
The ASM Instance 106
Summary 108

Chapter 4 ■ Securing the Oracle 11g Database 109

Privileges in Oracle 11g 110
Managing Database with Users and Privileges 111
Creating Users 111
Creating Roles 116
Granting and Revoking Database Privileges 121
Controlling the Resources Access 127
Working with the Default User Account 128
Implementing the Password Policy 129
Password settings related to default profile 129
Password complexity 129
Password Case Sensitivity 130
Default Password 130
Inspecting the Database 134
Summary 137

Chapter 5 ■ Database Management with PL/SQL 139

Implementing the Database Interface 140
Using the INSERT, DELETE, and UPDATE Statement 141
INSERT Statement 142
DELETE Statement 143
UPDATE Statement 143
Triggers 144
Types of Triggers 144
Creating Triggers 145
Summary 148

Chapter 6 ■ Oracle Net Services 149

Oracle Net Services 150
Features of Oracle Net Services 150
Naming Methods 151
Enhanced Performance 152
Using the Oracle Enterprise Manager 152
The Oracle Connection Manager 153
Configuring Net Services 153
Configuring the Client Connection 153
Summary 162

Chapter 7 ■ Monitoring and Tuning the Oracle 11g Database 163

Monitoring the Database Aspects 164
Tuning the Database Areas 164
Fault Diagnosability Infrastructure 165
Automatic Diagnostic Repository (ADR) 165
Support Workbench 166
adrci (ADR command Interpreter) 169
Monitoring using the ADDM 173
Running ADDM using OEM 173
Running ADDM using Command Prompt 181
Managing ADDM using the DBMS_ADDM Package 183
Implementing the OEM-Tuning Pack 184
Using SQL Tuning Advisor 185
Running SQL Access Advisor 190
Managing AWR 194
Accessing AWR through OEM 195
Managing AWR using DBMS_WORKLOAD_REPOSITORY package 197
Using OEM to View AWR Report 199
Using SQL Scripts to Generate AWR Report 200
Summary 203

Chapter 8 ■ Data Consistency and Concurrency 205

Undo Management 206
Configuring Undo Management 206
Monitoring Undo Management 212
Working with Undo Tablespaces 214
Working with Lock Conflicts 223
Locks and Transactions 224
Various Modes of Locking 224
Resolving Lock Conflicts 224
Deadlock Management 225
Summary 226

Chapter 9 ■ Backup and Recovery in Oracle 11g 227

Types of Database Failure 228
Media Failure 228
Statement Failure 228
Process Failure 228
Instance Failure 229
User Error 229
Types of Database Backups 229
Data that Need to be Backed Up 230

Datafiles 230
Control Files 231
Archived Redo log 232
Backing up the Data 233
Monitoring the Flash Recovery Area 233
Creating Full Backup 238
Creating Incremental Backup 242
Recovery of Data 244
Recovery Strategies 245
Using the Recovery Manager (RMAN) 246
Recovery using SQL Commands 251
Data Recovery Advisor 252
Summary 256