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Oracle Database 12*c*: Administration Workshop

Student Guide – Volume I
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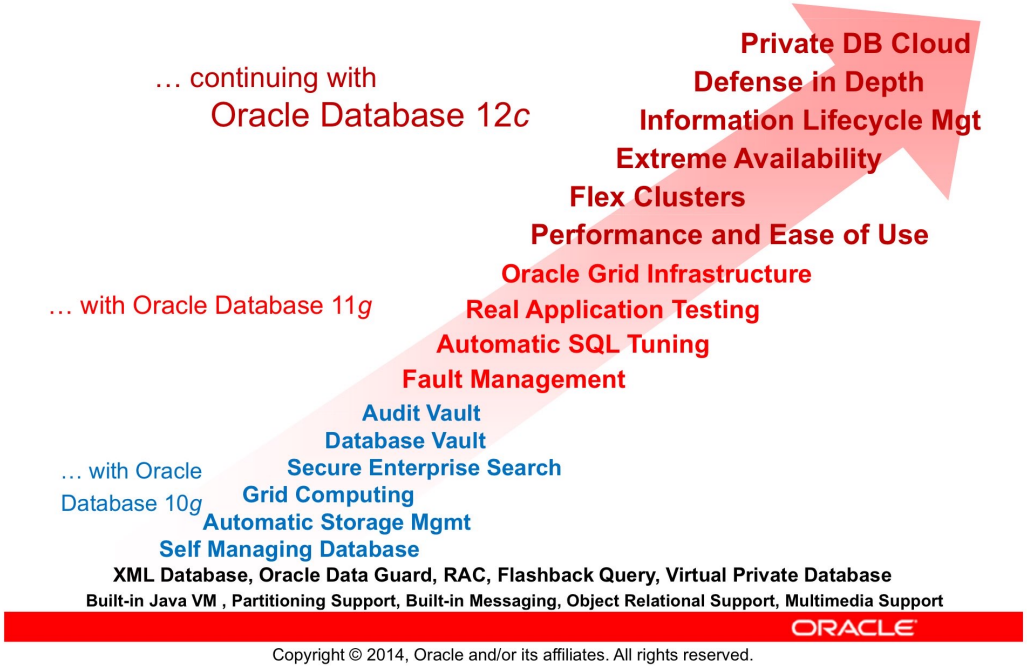
1 Introduction

Suggested Schedule

Day	Lessons
1	1. Introduction 2. Exploring the Oracle Database Architecture 3. Oracle Database Management Tools 4. Managing the Database Instance
2	5. Configuring the Oracle Network Environment 6. Administering User Security 7. Managing Database Storage Structures 8. Managing Space 9. Managing Undo Data
3	10. Managing Data Concurrency 11. Implementing Oracle Database Auditing 12. Backup and Recovery Concepts 13. Backup and Recovery: Configuration
4	14. Performing Database Backups 15. Performing Database Recovery 16. Moving Data 17. Performing Database Maintenance
5	18. Managing Performance 19. Managing Performance: SQL Tuning 20. Using Resource Manager 21. Using Oracle Scheduler

Oracle Database Innovation

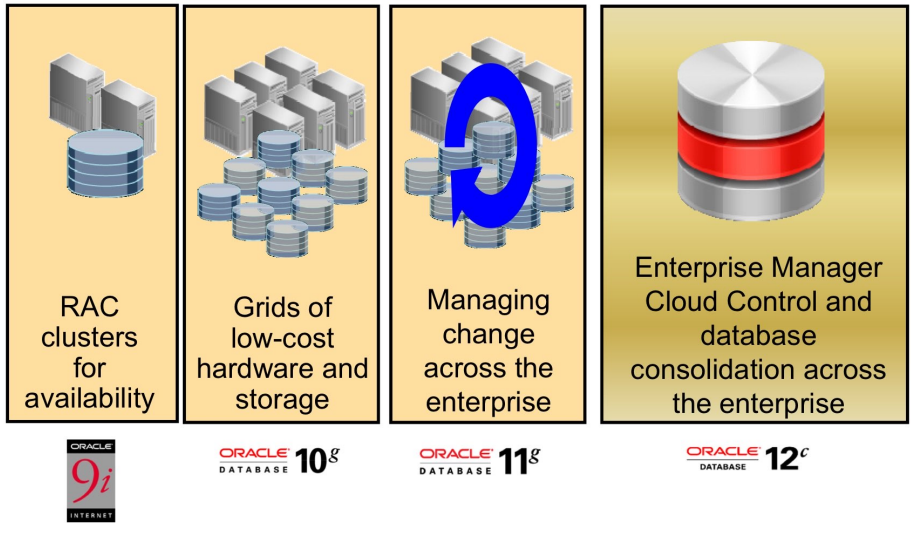


As a result of its early focus on innovation, Oracle has maintained the lead in the industry with a large number of trend-setting products.

Some of the marquee areas in the Oracle Database 12*c* release are the following:

- Private Database Cloud
- Defense in Depth including Oracle Data Redaction, Real Application Security
- Information Lifecycle Management (ILM), which includes hot/cold data classification, declarative compression and tiering, In-database Archiving, and Valid-Time Temporal
- Flex Clusters
- Extreme Availability, which includes Data Guard Far-Sync and Application Continuity
- Lower Cost Migrations
- Performance and Ease of Use, which includes “just-in-time” optimizations, attribute clustering, and zone maps for Exadata only

Enterprise Cloud Computing



Oracle Database 10*g* was the first database management system designed for grid computing.

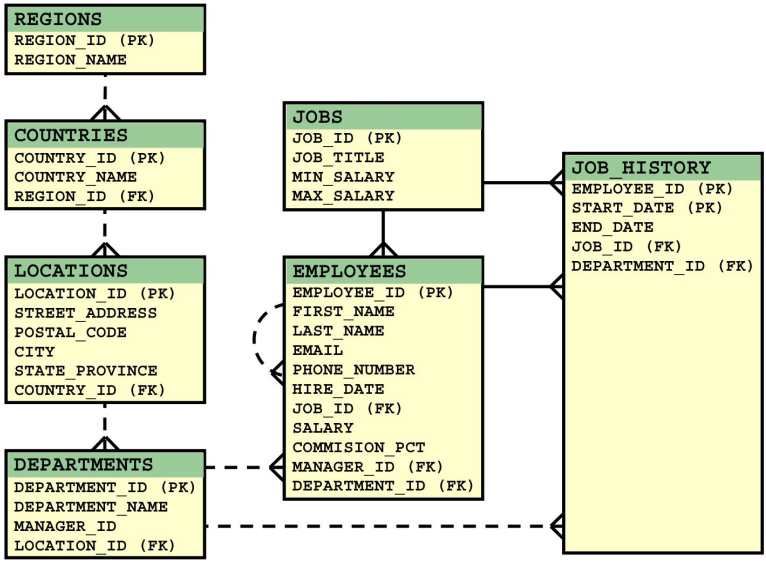
Oracle Database 11*g* consolidates and extends Oracle's unique ability to deliver the benefits of grid computing, transforming data centers from silos of isolated system resources to shared pools of servers and storage.

Oracle Database 12*c* and Enterprise Manager Cloud Control are designed for cloud computing. Cloud computing creates a complete, pre-integrated, off-the-shelf private cloud solution that allows you to quickly transform the enterprise data center into a private cloud.

The key benefits are the following:

- Reduce server sprawl and improve CPU utilization by consolidating on fewer servers.
- Reduce the amount of time a DBA spends installing and configuring databases, by automating deployment of standard database configurations.
- A single console manages the entire Cloud life cycle—plan, set up, deliver, and operate.
- Prevent resource hogging by setting quotas for individual users.
- Forecast future resource needs by analyzing trending reports.
- Compute chargeback based on performance and configuration metrics.

Course Examples: HR Sample Schema



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The examples used in this course are from a human resources (HR) schema, which can be created as part of the starter database.

The following are some principal business rules implemented in the HR schema:

- Each department may be the employer of one or more employees. Each employee may be assigned to only one department.
- Each job must be a job for one or more employees. Each employee must be currently assigned to only one job.
- When an employee changes his or her department or job, a record in the JOB_HISTORY table records the start and end dates of the past assignments.
- JOB_HISTORY records are identified by a composite primary key (PK): the EMPLOYEE_ID and the START_DATE columns.

Notation: PK = Primary Key, FK = Foreign Key

Solid lines represent mandatory foreign key (FK) constraints and dashed lines represent optional FK constraints.

The EMPLOYEES table also has an FK constraint with itself. This is an implementation of the business rule: Each employee may be reporting directly to only one manager. The FK is optional because the top employee does not report to another employee.