

# Oracle Database 11g R2: Administration II

Length of Course: 5 days

This course brings database administrators beyond a basic understanding of their duties and to transfer advanced skills needed to effectively administer an Oracle database installation within a large-scale enterprise. Important subject areas include advanced database configuration, performance monitoring and tuning, configuring for recovery, troubleshooting and fault diagnosis, and use of the extensive advisory framework. Sometimes configuration and operational problems can exist within an Oracle database installation because important technologies are either not fully understood or not properly implemented.

Advanced technologies which should be applied to any mission-critical database installation. The Database Resource Manager is an essential tool for database tuning and achieving optimum performance, and is often used in combination with the advisors. The Database Scheduler is a sophisticated tool which can automate many administration tasks and integrate the database into the larger data center and systems infrastructure. All of the data within a database installation is at risk unless one has designed, tested and implemented a robust backup and recovery strategy.

When a major failure occurs, a variety of recovery and troubleshooting techniques must be employed. The Oracle Recovery Manager (RMAN) tool is discussed with additional facilities including the Data Recovery Advisor, Redo Log File Size Advisor and MTTR Advisor. It is tempting to short-cut appropriate backup procedures if they perform poorly, so special attention is giving to performance optimization.

## Target Audience

The primary target audiences for this course are:

- Database administrators
- Web server administrators
- System administrators
- Implementation specialists
- Data center support engineers
- Senior application designers and developers

## Prerequisites

Specific prerequisites for this course are the following, or equivalent experience:

- ORACLE DATABASE 11G R2: SQL FUNDAMENTALS – COMPLETE LIBRARY
- ORACLE DATABASE 11G R2: PL/SQL FUNDAMENTALS – COMPLETE LIBRARY
- ORACLE DATABASE 11G R2: ADMINISTRATION I

## Next Course

Administrators may wish to proceed onto more focused and specialized courses with these modules:

- ORACLE DATABASE 11G R2: GRID INFRASTRUCTURE & ASM
- ORACLE DATABASE 11G R2: PERFORMANCE TUNING
- ORACLE DATABASE 11G R2: SQL TUNING
- ORACLE DATABASE 11G R2: ENCRYPTION & ADVANCED DATA SECURITY
- ORACLE ENTERPRISE MANAGER 11G R2: GRID CONTROL



### Objectives

This course brings database administrators beyond a basic understanding of their duties and to transfer advanced skills needed to effectively administer an Oracle database installation within a large-scale enterprise.

- Automatic database management, monitoring and tuning facilities. Included are automatic management of storage space and memory resources within the database and the role of the Segment Advisor and Memory Advisors.
- Automatic resumption of database operations even in the face of storage space allocation failures and errors.
- Setting metric and alert thresholds for proactive database monitoring.
- Using deferred segment creation to improve performance and establish efficient use of space.
- Globalization features within the database to support applications in multiple languages, currencies, time zones and countries.
- Utilizing diagnostic sources in troubleshooting database problems and employing the Fault Diagnosability Infrastructure, the Database Instance Health monitor and the Support Workbench to capture and process fault data.
- Configuring the database to recover from a wide variety of failures. This includes configuring redo log files and the Flash or Fast Recovery Area.
- Using Oracle flashback technology to recover from user errors and from database failures, including Flashback Data Archive and Flashback Transaction Backout as part of the Oracle Total Recall technology.
- Perform other flashback operations, including Flashback Version Query, Flashback Transaction Query and Flashback Database.
- Controlling resource utilization on database servers whose resource demand exceeds its capacity.
- Advanced resource management for complex configurations involving multiple CPUs and multiple database instances.
- Automating launching routine maintenance tasks and even application functions using the database Scheduler.
- Tune performance of database operations and SQL statement execution using the extensive advisory framework and the Automatic Database Diagnostic Monitoring (ADDM) facility. Included in this framework are the SQL Tuning and SQL Access advisors.
- User-managed and automatically managed backup strategies and database recovery operations using RMAN and other database facilities.
- Database instance recovery, tuning checkpoints, the Redo Log File Size Advisor and the MTTR Advisor.
- User-managed recovery scenarios, including recovery from temporary, read-only and index tablespaces.
- Automatically managed backup strategies and database recovery operations using RMAN and other database facilities. Complete and incomplete media recovery, including database point-in-time recovery and tablespace point-in-time recovery.
- Build upon basic RMAN capabilities with a centralized recovery catalog. Deploy standardized and consistent backup and recovery procedures throughout the enterprise by means of dynamic stored scripts and variable substitution.
- Optimizing backups for faster performance and parallelization of operations, employing compression algorithms and other strategies for optimum efficiency.
- Data preservation through archival backups.
- Duplicate databases for regulatory compliance, Real Application Testing database replay, test configuration and other purposes.
- Detecting and handling failures and corruption, including the use of RMAN block recovery and the Data Recovery Advisor.

### Certification

This course covers information relevant for the certification test EXAM #1Z1-053 ORACLE DATABASE 11G R2: ADMINISTRATION II.



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### **Flashback Database & Flashback Data Archive**

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#### **Managing Database Performance**

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### Configuring Rman

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### Backup With Rman

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- Performing full backups
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- Establishing backup retention policy
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### Rman Management With Em

- Monitoring the flash recovery area
- The em interface to rman
- Scheduling rman backups
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- Manage current backups
- Backup reports
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### User-Managed Recovery Operations

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- Recover temporary tablespaces
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- Recover redo log group member
- Recreate the password file

### Recovery With Rman

- Complete media recovery
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- Recovery using em

### Using The Rman Recovery Catalog

- Understanding catalog concepts
- Create the recovery catalog
- Manage virtual private catalogs
- Protection of the recovery catalog
- Using rman scripts

### Database Duplication & Cloning

- Why perform database duplication?
- Rman duplicate database
- Rman duplicate
- Database cloning
- Advanced rman capabilities
- Backup optimization
- Enhancing parallelism, section sizes
- Backup performance & control



- MINIMIZE TIME vs. MINIMIZE LOAD
- ARCHIVAL BACKUPS
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### Transporting Tablespaces

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