

# *NUTECH COMPUTER TRAINING INSTITUTE*

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## *Oracle 11g R2 RAC- Course Outlines*

**Total Hours: 28 hrs**

**Tuition Fee: \$2500.00**

### **Oracle 11g Release 2 Real Application Cluster Training**

#### Week 1 – 11gR2 RAC Introduction

- What is a Cluster
- Advantage of using RAC
- Architecture of RAC
- Grid Infrastructure Concepts
  - Grid Foundation Components
  - Oracle Clusterware Architecture
  - Oracle Clusterware Software and Storage
- Cache fusion
- Multi instance transaction behavior
- Extra background process in RAC
- Download Software (VMware, infrastructure, Database, Grid Control)

#### Week2 – Hands-on Build server (VM, OS)

- Pre-requisite before installation
  - Hardware Requirements
  - Network Requirements
  - DNS and DHCP Configuration
- WMware Server Installation
- Virtual Machine Setup
- VM server OS Installation
- Install OS Requirements
- Clone the VM Machine

#### Week3 – Hands-on Grid Installation

- 11g Grid Control Installation

- Grid Control Agent Installation
- Pre and Post installation task
- Cluster verify utility CLUVFY
- Oracle 11g R2 Grid Infrastructure Architecture
- 11gR2 Infrastructure Installation
- Managing Clusterware with Enterprise Manager
- Determining the Location of the Oracle Clusterware Configuration Files
- Backing Up and Recovering the Voting Disk
- Adding, Deleting, or Migrating Voting Disks
- Locating the OCR Automatic Backups
- Oracle Local Registry

#### Week4 – Hands-on Grid Infrastructure configuration

- Oracle 11g R2 Grid Infrastructure
- Administrating Oracle Clusterware
- Managing Oracle Clusterware
- SCAN configuration
- Managing ASM instance
- Managing ASM disk groups, Add and remove disk
- ASM Cluster File System (ACFS) Management
  
- Administering ASM Instances
  - ASM Initialization Parameters
  - Starting and Stopping ASM Instances Using srvctl
  - Starting and Stopping ASM Instances Using ASMCA and ASMCMD
  - Starting and Stopping ASM Instances Containing Cluster Files
  - Starting and Stopping the ASM Listener
- Administering ASM Disk Groups
  - Creating And Deleting ASM Disk Groups
  - ASM Disk Group Attributes
  - ASM Disk Group Maintenance Tasks
  - ASM Files, Directories, and Templates
  - Creating and Managing ASM files, Directories and Aliases
  - Managing Disk Group Templates
  - Managing ASM ACL With Command Line Utilities
  - Managing ASM ACL with Enterprise Manager
- Administering ASM Cluster File Systems
  - ASM Dynamic Volume Manager
  - Managing ASM Volumes
  - Implementing ASM Cluster File System
  - Managing ASM Cluster File System (ACFS)
  - Using Command Line Tools To Manage ACFS

#### Week5 – Hands-on RAC database administration 1

- Oracle 11g RAC Database software Installation

- RAC database Creation
- Oracle RAC database Administration
  - Redo log files
  - Control files
  - Data files
  - Initialization Parameter Files
  - Alert log files
  - Undo management
  - Temporary tablespace
  - Starting and stopping of RAC instances

#### Week6 – Hands-on RAC database administration 2

1. RMAN backup and recovery
  - Protecting Against Media Failure
  - Parallel Recovery in RAC
  - Archived Log File Configurations
  - RAC Backup and Recovery Using EM
  - Archived Redo File Conventions in RAC
  - Channel Connections to Cluster Instances
  - Distribution of Backups
  
2. Monitoring and Tuning the RAC Database
  - Determining RAC-Specific Tuning Components
  - Tuning Instance Recovery in RAC
  - RAC-Specific Wait Events, Global Enqueues, and System Statistics
  - Implementing the Most Common RAC Tuning Tips
  - Using the Cluster Database Performance Pages
  - Using the Automatic Workload Repository in RAC
  - Using Automatic Database Diagnostic Monitor in RAC

#### Week7 - Hands-on RAC database administration 3

- No archive log to Archive log conversion
- Apply patch with 'opatch'
- Rolling Patches
- Rolling Upgrades
- Infrastructure Upgrade
- RAC database Upgrade
- Add and delete disks.
- Add and delete new node
- Oracle 11g One Node RAC
- Service Management