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#### **Oracle RAC Syllabus**

#### **Oracle 11g R2 Grid Infrastructure Concepts**

- What is a Cluster
- Grid Foundation Components
- Oracle Clusterware Architecture
- Oracle Clusterware Software and Storage
- Describe ASM Architecture
- Creating and Managing ASM Disk Groups
- Creating and Managing ASM Cluster File systems
- Administering Oracle Clusterware
- Troubleshooting Oracle Clusterware

#### **Grid Infrastructure Installation and Configuration**

- Hardware Requirements
- Network Requirements
- Software Requirements
- DNS and DHCP Configuration
- Grid Plug and Play Considerations
- Single Client Access Names
- Post installation tasks

#### **Oracle Automatic Storage Management concepts**

- ASM Instance
- ASM Disks
- ASM Disk Groups
- ASM Redundancy

#### **Cluster installation Prerequisite for Oracle 11g R2 RAC**

- Linux OS Software Installation
- Create OS Group and User Accounts



- Networking
- Synchronizing the Time on ALL Nodes
- Configuring Kernel Parameters
- Set shell limits for the oracle & grid user
- Create the Oracle Inventory Directory
- Creating the Oracle Grid Infrastructure Home Directory
- Creating the Oracle Base Directory
- Creating the Oracle RDBMS Home Directory
- Stage the Oracle Software
- Check OS Software Requirements
- Cluster Verification Utility

## **Shared Storage Configuration**

- Types of Shared Storage
- Partition the Shared Disks
- Installing and Configuring ASMLib
- Using ASMLib to Mark the Shared Disks as Candidate Disks

## **Oracle 11g Grid Infrastructure Installation**

- Basic/Advanced Grid Infrastructure Install (without GNS and IPMI)...
- Grid Infrastructure Home Patching
- RDBMS Software Install
- Run ASMCA to create diskgroups

## **Oracle 11g R2 RAC Database Software Installation**

- Installing The Oracle Database Software
- Creating A Cluster Database
- Post database Creation Tasks



## **Administering Oracle Clusterware**

- 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
- Migrating OCR Locations to ASM
- Managing Network Settings
- Managing Oracle Clusterware

#### **Administering ASM Instances**

- ASM Initialization Parameters
- Adjusting ASM Instance Parameters in SPFILEs
- 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
- Viewing ASM Disk Statistics

#### **Prerequisite Steps for Extending a Cluster**

- Using addNode.sh to add a Node to a Cluster
- Rolling Patches and Rolling Upgrades



- Installing a Patchset with the OUI Utility
- Installing a Patch With The opatch Utility

#### **Cluster Node Management**

- Add/Deleting the instance
- Add the Node
- Remove the Node
- Single-Instance Conversion Using rconfig
- Single-Instance Conversion Using DBCA

## **Troubleshooting Oracle Clusterware**

- Oracle Clusterware Log Files
- Gathering Log Files Using diagcollection.pl
- Component-level Debugging
- RAC-Specific Wait Events, Global Enqueues, and System Statistic
- 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



#### Overview

- What Is Oracle Data Guard?
- Oracle Data Guard Architecture
- Types of Standby Databases
- Types of Services
- Benefits of Implementing Oracle Data Guard

## **Understanding the Oracle Data Guard Architecture**

- Data Guard Redo Apply Architecture
- Data Guard SQL Apply Architecture
- Standby Database Modes

## **Configuring Data Protection Modes**

- Maximum Protection
- Maximum Availability
- Maximum Performance
- Comparisons
- How to Set the Mode

## **Creating a Physical Standby Database by Using SQL**

- Preparing the Primary Database
- Setting Initialization Parameters on the Primary Database
- Backing Up the Primary Database
- Creating a Control File for the Standby Database
- Setting Initialization Parameters on the Standby Database



- Setting Up the Environment to Support the Standby Database
- Starting the Physical Standby Database
- Performing Additional Configuration Tasks

## **Creating a Logical Standby Database by Using SQL**

- Preparing to Create a Logical Standby Database
- Creating a Physical Standby Database
- Preparing the Primary Database
- Transitioning to a Logical Standby Database
- Opening the Logical Standby Database
- Verifying the Logical Standby Database

#### **Performing Switchover and Failover**

- Choosing the Best Role Transition Operation
- Performing a Switchover by Using SQL
- Performing a Failover by Using SQL

## Other Activities



#### Assessments

- •Objective Assessments
- -- Syntactical based
- -- Scenario based
- Note: At least 2 objective based assessments in each module
- •Hands On Practical Assessments
- -- Scenario based
- Note: At least 2 Hands on assessments in each module

#### Assignments

•Hands On – Practical Assignments

Note: At least 4 Hands on assignments in each module

Tasks – Home Work

•Regular tasks on each module

Note: Tasks are focused more to improve self learning

Resume Support & Interview Preparation

•Work on one or two mini projects

•Discuss and convert the current working project into RAC project to

add in resume & to explain Oracle RAC experience in interviews