Oracle Database 11g: Managing Oracle on Linux for DBAs - LVC

Duration: 2 Days

What you will learn

This course is designed to give the Database Administrator a firm understanding of the components required to successfully deploy an Oracle 11g database on Oracle Enterprise Linux. Students will learn how to configure and verify the Linux operating system for optimal performance with an Oracle database. Students will also learn how to tune the database to take advantage of the Linux operating system and the Enterprise level features of the OS.
The course covers administrative tasks related to the database like file system choices, kernel and memory model selection, automated startup and shutdown scripts, and customizing the database for Linux. Lectures are reinforced with hands-on practices designed to walk the student through the entire installation, tuning, configuration and troubleshooting process.
This course is based on Oracle Database 11g Release 1.
Learn To:

Optimize the Linux environment for Oracle Database, and vice versa
Use Linux tips and tricks especially important for Oracle DBAs
Prepare and update a Linux 64-bit system for an Oracle Database silent installation

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Audience

Database Administrators
Support Engineer
Technical Administrator
Technical Consultant

Prerequisites

Required Prerequisites
Basic knowledge of Linux or Unix operating systems.

Hands-on experience administering Oracle Database 10g or 11g.

Suggested Prerequisites
Oracle Database 11g: Administration Workshop I
Oracle Database 11g: 2 Day DBA
Enterprise Linux: Linux Fundamentals

Course Objectives

Identify the different kernels available for Linux
View installed packages on a Linux system
Prepare and update a system for an Oracle Database installation

Identify and implement the best storage options for an Oracle database
Customize the database to take advantage of Linux features
Optimize Linux for running an Oracle database
Use Linux commands and techniques to automate and streamline DBA tasks
Troubleshoot database errors specific to the Linux OS

Course Topics

Review of Linux Basics
Linux Directory Structure
File Permissions and Security
Common Linux Commands and Programs
Working with Linux Shells
Bash Shell Scripting

Preparing Linux for Oracle
Linux Distributions
Verifying the Linux Kernel
Using the /proc System
Setting Kernel Parameters
Managing Packages
Using the oracle-validated RPM
Creating Groups and Users
The nobody User

Installing Oracle on Linux
Setting Environment Variables Pre-Installation
Optimal Flexible Architecture
Installing New Releases
Managing Multiple Oracle Versions
Setting Oracle Environment Variables
Performing a Silent or Suppressed Installation
Oracle Patch Utility
Oracle Relink Utility

Managing Storage on Linux
Oracle Database Storage Options
Supported Linux I/O Modes
Disks and Partitions
Managing Partitions
Logical Volume Manager Concepts
Attached Storage
Linux and File Systems
Monitoring Disk Usage and Free Space

Using Oracle ASM on Linux
Automatic Storaget Management Library Driver
Installing and Initializing ASMLib
Configuring Disks
Marking Disks as Automatic Storage Management Disks
Creating an ASM Instance

ASM Installation Best Practices
Disk Group Configuration Best Practices

Automating Oracle on Linux
Automating Tasks
Linux Startup Sequence
Linux Runlevels
Automating Startup and Shutdown of Oracle Processes
Working with the dbstart and dbshut Scripts
Linux Scheduling Tools
Scheduling a Backup with cron

Optimizing Linux for Oracle
Standard Linux Measurement Tools
Measuring CPU Activity and Reducing CPU Bottlenecks
Monitoring and Tuning Memory
Monitoring and Tuning Disk I/O
Basic Oracle Database Optimizations
Basic Linux Optimizations
Page Address Extensions for 32-bit Systems
Configuring Hugepages

Additional Linux Tips for DBAs
Simple Shell Scripts to Simplify DBA Tasks
Adding Command History to SQL*Plus
Finding Files with SETUID or SETGID Set
Capturing System Data Using Scripts
Finding Background Processes
Finding Server Processes
Killing Server Processes
Query Output in an Environment Variable

Troubleshooting Oracle Issues on Linux
Monitoring alert log with ADRCI
Resolving ORA-600/ORA-7445 Errors
Process Hierarchy
Viewing the Startup Environment for a Process
Viewing the Status of a Process
Recovering from Database Crashes
Debugging a Core Dump
Using strace