

Oracle Linux System Administration

Duration: 5 Days

What you will learn

The Oracle Linux System Administration course covers a range of skills including installation, using the Unbreakable Enterprise Kernel, configuring Linux services, preparing the system for the Oracle Database, monitoring and troubleshooting.

Please Note: This course supports Linux 5 and 6 users.

This course teaches you how to handle typical issues faced by administrators in areas including authentication, securing and monitoring. You learn to understand the kernel development model and learn about Linux distributions. You hear about Oracle's comprehensive solutions and Oracle's contributions to the Linux community.

Learn To:

Enable kernel features.

Set up users and groups.

Configure system logging, the boot process, the network, and storage.

Install additional software packages .

Keep the kernel up to date using Ksplice.

Configure services such as NFS, FTP, OpenSSH, PAM.

Benefits To You

Oracle Linux brings you the latest Linux innovations, delivering extreme performance, advanced scalability, and reliability for enterprise applications and systems. Implementing Ksplice provides you zero down time kernel updates.

Audience

Database Administrators

Support Engineer

System Administrator

Technical Administrator

Related Training

Required Prerequisites

Working with files and directories in Unix

Must complete the Unix Basics pre-requisite course or equivalent knowledge

Types of user accounts

Unix shell command line features

UNIX and Linux Essentials

Suggested Prerequisites

Archiving and compressing files in Unix

Basic shell scripting

Text editing using vi

Unix process control

Course Objectives

Perform Security Administration (iptables, chroot, TCP wrappers)

Prepare Oracle Linux system for Oracle database

Troubleshoot problems and perform corrective action

Install software packages from Unbreakable Linux Network and other repositories

Use Ksplice to update the kernel on a running system

Configure system logging

Load and configure the Unbreakable Enterprise Kernel

Maintain swap space

Install Oracle Linux

Load kernel modules and configure kernel module parameters

Perform User and Group administration

Create file systems

Use Logical Volume Manager (LVM)

Configure RAID devices

Configure File Sharing services (NFS, FTP, OpenSSH)

Course Topics

Course Introduction

Virtualization

Elements of course environment

Course structure

Introduction to Oracle Linux

Development of Linux Kernel

Linux kernel development model

Linux distributions

Oracle's commitment to the success of Linux

Oracle's technical contributions to the Linux community

Oracle's Unbreakable Enterprise Kernel (UEK)

Installing Oracle Linux

Obtaining Oracle Linux

Oracle Software Delivery Cloud

Anaconda installer

Installation steps

Firstboot tool

Linux Boot Process

Linux boot process

init process

SysV init runlevels

/etc/rc.d directory

Configure services for runlevels

Xinetd service

Upstart

System Configuration

Configuring system time

Using Network Time Protocol (NTP)

System configuration files

The proc filesystem

The sysfs filesystem

The sysctl utility

Package Management

Introduction to Oracle Linux package management

The rpm utility

Oracle Public Yum server

Yum configuration

Yum utility

Oracle Unbreakable Linux Network (ULN)

ULN channels

Switching from RHN to ULN

Ksplice

Introduction to Ksplice

How Ksplice works

Ksplice implementation

Installation instructions

Using Ksplice Uptrack

Ksplice Uptrack command summary

Ksplice Offline Client

Automate Tasks

- Automating system tasks
- Configuring cron jobs
- Other cron directories and files
- The crontab utility
- Configuring anacron jobs
- The at and batch utilities

Kernel Module Configuration

- Loadable Kernel Modules (LKM)
- Using the lsmod utility
- Using the modinfo utility
- Loading and unloading kernel modules
- Using the modprobe utility
- The insmod, depmod, and rmmod utilities
- ASM Cluster File System (ACFS) and ASM Dynamic Volume Manager (ADVM) drivers
- Kernel module parameters

User and Group Administration

- User and group configuration files
- Adding a user account
- Modifying and deleting user accounts
- Group account administration
- User Private Groups (UPG)
- Password configuration
- User Manager Tools
- su and sudo commands

File Systems

- Disk Partitions
- Partition Table Manipulation Utilities
- File System Types
- Making File Systems
- Mounting File Systems
- The /etc/fstab File
- Swap Space

Storage Administration

- Logical Volume Manager
- Physical Volume Utilities
- Volume Group Utilities
- Logical Volume Utilities
- RAID levels

Network Configuration

- Network interfaces
- Network configuration files
- Network interface utilities
- Address Resolution Protocol (ARP)
- Network interface bonding

Virtual Local Networks (VLANs)

The route utility

NetworkManager

File Sharing

NFS server configuration

The /etc/exports file

Starting the NFS services

The exportfs utility

NFS client configuration

Automounting filesystems

vsftpd configuration options

OpenSSH Service

OpenSSH configuration

Using OpenSSH utilities

The ssh, scp, and sftp utilities

Using the ssh-keygen utility

Connecting to a remote system without supplying a password

Using ssh-agent

Using ssh-add

Pluggable Authentication Modules (PAM)

Introduction to PAM

PAM module types

PAM control flags

PAM implementation examples

The /etc/pam.d/reboot file

The /etc/pam.d/login file

Security Administration

The chroot utility

Implementing a chroot jail

The named and vsftpd services use of chroot jail

Firewall configuration tool

iptables terminology

Beginning iptables maintenance

Using the iptables utility

TCP wrappers

Oracle on Oracle

Oracle software user and group accounts

System resource tuning and network tuning

Linux shared memory kernel parameters

Semaphores kernel parameter

File handles and Asynchronous IO (AIO) kernel parameter

Oracle-related shell limits

Configuring HugePages

Oracle ASM

System Monitoring

The sosreport utility

The iostat, mpstat, vmstat, sar, top, iotop, strace, netstat, and tcpdump utilities
Wireshark GUI and tshark CLI
OSWatcher Black Box (OSWbb)
OSWatcher Black Box Analyzer (OSWbba)
Enterprise Manager Ops Center
Spacewalk

System Logging

System log file configuration
rsyslog.conf
Global directives, modules, rules, and templates
Facility/Priority-based filters
rsyslog Actions
rsyslog Templates
Configuring logrotate
Use logwatch

Troubleshooting

Two-phased approach to troubleshooting
Operating system logs
The dmesg utility
Troubleshooting resources
Problem causes
Boot problems
NFS problems