

Oracle Linux 7: System Administration Ed 1

Duration: 5 Days

What you will learn

The Oracle Linux 7: System Administration training helps you develop a range of skills, including installation, using the Unbreakable Enterprise Kernel, configuring Linux services, preparing the system for the Oracle Database, monitoring and troubleshooting. Work with expert Oracle University instructors to develop expertise using this solution to benefit your business. In this course, you will be introduced to the Oracle IaaS Cloud Solution.

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 by using Ksplice.

Understand how implementing Ksplice gives you zero down time kernel updates.

Configure services such as NTP, NFS, FTP, OpenSSH, firewalls and iptables.

Gain an understanding of the Oracle IaaS Cloud Solution.

Benefits to You

By taking this course, you'll walk away with the knowledge and skills to handle typical issues faced by administrators, while understanding the kernel development model and Linux distributions. Become more familiar with how Oracle Linux brings you the latest Linux innovations, delivering extreme performance, advanced scalability and reliability for enterprise applications and systems.

Related Training

Required Prerequisites

Types of user accounts & Working with files and directories in Unix

Unix shell command line features & Basic shell scripting

Archiving and compressing files in Unix & Performing remote connections and file transfers

Text editing using vi & Unix process control

UNIX and Linux Essentials Ed 1

Course Objectives

Create Ext

XFS

and Btrfs file systems

Maintain swap space

Use Logical Volume Manager (LVM)

Configure RAID devices

Configure File Sharing services (NFS

FTP

OpenSSH)

Perform Security Administration (firewalld

iptables

chroot

TCP wrappers)

Gain an understanding of the Oracle IaaS Cloud Solution

Install software packages from Unbreakable Linux Network and other repositories

Use Ksplice to update the kernel on a running system

Configure system logging

Load kernel modules and configure kernel module parameters

Prepare Oracle Linux system for Oracle database

Troubleshoot problems and perform corrective action

Install Oracle Linux 7

Load and configure the Unbreakable Enterprise Kernel

Perform User and Group administration

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 7

- Obtaining Oracle Linux 7
- Oracle Software Delivery Cloud
- Anaconda installer
- Installation steps
- Firstboot tool

Oracle Linux 7 Boot Process

- Oracle Linux 7 boot process
- GRUB 2 bootloader
- kernel boot parameters
- systemd system and service manager
- systemd service units
- The systemctl utility
- systemd target units

System Configuration

- Configuring system date time
- Using Network Time Protocol (NTP)
- Configuring NTP by using Chrony
- 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
- The yum utility
- Oracle Unbreakable Linux Network (ULN)
- ULN channels
- Switching from RHN to ULN

Ksplice

- Introduction to Ksplice
- How Ksplice works
- Ksplice implementation
- Ksplice packages on ULN
- 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

Partitions, File Systems, and Swap

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

Implementing the XFS File System

- XFS: Introduction
- Creating an XFS File System
- The xfs_growfs utility
- The xfs_admin utility
- Enabling disk quotas
- The xfs_quota utility
- Backing up and restoring XFS File Systems
- XFS File Systems Maintenance

Implementing the Btrfs File System

- Btrfs: Introduction
- Creating a Btrfs File System
- The btrfs utility
- Btrfs Subvolumes and Snapshots
- Mounting a Subvolume or Snapshot
- Btrfs File Systems Maintenance
- Converting Ext File Systems to Btrfs

Storage Administration

- Logical Volume Manager
- Physical Volume Utilities
- Volume Group Utilities
- Logical Volume Utilities
- Backing up and restoring volume group metadata
- LVM Thin Provisioning
- The snapper utility
- Configuring RAID devices

Network Configuration

- Network interface file naming
- Network configuration files
- Starting the Network Service
- The ethtool utility
- NetworkManager
- The nmcli utility
- The ip utility

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

Security Administration

- The chroot utility
- Implementing a chroot jail
- Packet-filtering firewalls
- The firewalld service
- The firewall-config utility
- The firewall-cmd utility
- The iptables service
- 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 & System Logging

- The sosreport utility
- The iostat, mpstat, vmstat, sar, top, iotop, strace, netstat, and tcpdump utilities
- Wireshark GUI and tshark CLI
- OSWatcher Black Box (OSWbb)
- System Logging: Introduction
- rsyslog configuration
- Facility/Priority-based filters
- rsyslog Actions and Templates

Troubleshooting

- Two-phased approach to troubleshooting
- Operating system logs
- The dmesg utility
- Troubleshooting resources

Problem causes

Boot problems

NFS problems

Oracle Cloud Computing

Overview of the different Oracle Cloud Solutions

Begin with Oracle Compute Cloud Subscriptions

Oracle Compute Cloud Service Terminology

Oracle-Provided Linux Images on the Cloud

Workflow to Create Your First Oracle Linux Instance on the Cloud

Create an SSH-Enabled User on an Oracle Linux Instance