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.

Audience

Database Administrators
Support Engineer
System Administrator
Technical Consultant

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

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