Oracle Linux Advanced Administration

Duration: 5 Days

What you will learn

This Oracle Linux Advanced Administration training is ideal for experienced administrators who need to learn more about advanced features of Oracle Linux. You'll learn to configure network and authentication services, implement virtualization technologies to more effectively manage system resources, and deploy new types of file systems to improve performance and increase data integrity, while developing troubleshooting and advanced storage administration skills.

Learn To:

Automate installation using Kickstart.
Recover from boot errors.
Address today's large storage requirements.
Manage resources to deliver consistent response times and performance.
Allocate system resources to specific Linux processes.
Use DTrace to identify performance bottlenecks.
Configure the Oracle Cluster File System.
Use new technologies, including Linux Containers.

Benefits To You

After taking this course, you will be equipped to use the advanced features of Oracle Linux to get the most out of your systems and applications. Discover how to take advantage of XFS, which improves file system performance, and Btrfs, with its data integrity, copy-on-write, and snapshotting functionality. You'll also learn how to use Control Groups and Linux Containers to increase your resource utilization by creating secure, isolated environments on a single host.

Gain Hands-On Experience

Extensive hands-on practices will guide you through each concept. You will install different types of file systems, including OCFS2, XFS, and Btrfs. You will also experience how to share storage devices across multiple systems, allocate system resources such as CPU, memory, network and I/O bandwidth to critical processes.

Audience

Data Center Manager
Network Administrator
Support Engineer
System Administrator
System Integrator

Related Training

Required Prerequisites

Oracle Linux System Administration

Course Objectives

Configure network addressing and authentication services

Configure Apache web services

Automate installation using Kickstart

Create and use Btrfs file systems

Create and use XFS file systems

Configure resource management using Control Groups (cgroups)

Configure operating system-level virtualization with Linux Containers (LXC)

Configure server virtualization with KVM

Configure iSCSI shared storage

Configure Device Mapper Multipathing

Create Udev rules for persistent device naming

Configure a shared disk cluster file system using Oracle Cluster File System Version 2 (OCFS2)

Collect and analyze core dumps

Explore your system using Dynamic Tracing (DTrace)

Configure and use SELinux

Perform advanced software package management

Course Topics

Course Introduction
Course Goals
Schedule
Virtualization with Oracle VM Server for x86
Classroom System Configuration
Local Yum Repository

Network Addressing and Name Services
Introduction to DHCP
Configuring a DHCP server
Configuring a DHCP client

Introduction to DNS
BIND
Zone Files
Reverse Name Resolution
The host and dig utilities

Authentication and Directory Services
Authentication configuration tool
NIS Authentication
Introduction to LDAP
OpenLDAP
Configuring LDAP Authentication
Configuring Winbind authentication
Configuring Kerberos Authentication
System Security Services Daemon (SSSD)

Web and Email Services
Apache HTTP server
Configuring Apache
Apache Containers
Apache Virtual Hosts
Email Program Classifications
Email Protocols
Postfix SMTP Server
Sendmail SMTP Server

Installing Oracle Linux using Kickstart
Kickstat Installation Method
Kickstart File
Kickstart Configurator
Beginning a Kickstart Installation
Rescue Mode

Samba Services
Introduction to Samba
Samba Daemons and Services
Samba Server Configuration
Accessing Linux Shares from Windows
Accessing Windows Shares from Linux
Samba Utilities

Advanced Software Package Management
Software Management with RPM and Yum
The Binary RPM Build Process
Managing RPM-Based Software with Yum
Yum Cache
Yum History
Extending Yum Functionality with Plug-Ins
PackageKit Software Package Manager GUI

Advanced Storage Administration
Access Control Lists (ACLs)

The getfacl and setfacl Utilities
Enabling Disk Quotas
Encrypted Block Devices
The cryptsetup command
The kpartx Utility
Udev: Introduction
The udevadm Utility

OCFS2 and Oracle Clusterware
OCFS2: Introduction
OCFS2 Features
Using OCFS2
The o2cb Utility
OCFS2 Heartbeat
The o2cb Initialization Script
OCFS2 Tuning and Debugging
Introduction to Oracle Clusterware

iSCSI and Multipathing
Introduction to iSCSI
iSCSI Target
iSCSI Initiators
iSCSI Discovery
iSCSI Initiator Sessions
iSCSI Block Devices
Device Mapper Multipathing
iSCSI Multipathing

Implementing the XFS File System
Introduction to XFS File System
Creating an XFS File System
The xfs_growfs and xfs_admin Utilities
Enabling Disk Quotas on an XFS File System
The xfs_quota Utility
Backing up and Restoring XFS File Systems
The xfsdump and xfsrestore Utilities
XFS File System Maintenance

Implementing the Btrfs File System
Btrfs: Introduction
Creating a Btrfs File System
Btrfs Subvolumes and Snapshots
Btrfs filesystem Utilities
Btrfs device Utilities
Btrfs scrub Utilities
Converting Ext File Systems to Btrfs
UEK Boot ISO

Managing Resources with Control Groups (cgroups)
Control Groups: Introduction
Cgroup Subsystems (Resource Controllers)
Cgroup Subsystem Parameters

Cgroup Configuration Rules and Constraints
Assigning Processes to a Cgroup
Cgroup Rules Configuration File
Enabling PAM to Use Cgroup Rules
Getting Information About Cgroups

Virtualization with Linux
Virtualization Concepts
Virtualization Modes
Linux and Xen Integration
KVM
libvirt
Virtual Networks
Creating Virtual Machines
Managing the Life Cycle of a Virtual Machine

Virtualization with Linux Containers
Linux Containers: Introduction
Linux Container Resource Isolation
Linux Container Configuration File
Linux Container Template Scripts
lxc-oracle Container Template
Starting and Stopping a Container
Linux Container Utilities
Creating a Linux Container from an Existing root file system

Security Enhanced Linux (SELinux)
Introduction to SELinux
SELinux Administration GUI
SELinux Modes
SELinux Policies
SELinux Booleans
SELinux File Labeling
SELinux Context
SELinux Users

Core Dump Analysis
System Core Collection: Kexec and Kdump
Kdump Setup Configuration GUI
netdump Utility
Kernel Tuning Parameters
Magic SysRq Keys
crash Utility
kernel-debuginfo RPM Packages
General Guidelines for Using crash

Dynamic Tracking with DTrace
DTrace: Introduction
Reasons to Use DTrace on Linux
DTrace-Enabled Applications
DTrace Probes
DTrace Providers

DTrace Actions
Built-in D Variables
D Scripts