

Oracle Linux 7: Advanced Administration Ed 1

Duration: 5 Days

What you will learn

This Oracle Linux 7: Advanced Administration training is ideal for experienced administrators who need to learn more about Oracle Linux 7. You'll learn how to configure networking services and authentication services, implement virtualization technologies to more effectively manage system resources, perform advanced storage administration tasks, implement shared storage technologies, and develop advanced troubleshooting skills.

Learn To:

- Configure DNS, DHCP, HTTP, Samba, and other network services.
- Configure LDAP, PAM, and other authentication services.
- Automate installation using Kickstart.
- Recover from boot errors.
- Use advanced package management features.
- Configure network bonding, VLANs, and VPNs.
- Implement Linux Containers, Docker, KVM and other virtualization services.
- Allocate system resources to specific Linux processes.
- Use DTrace to identify performance bottlenecks.
- Configure iSCSI, device multipathing, and OCFS2.

Benefits to You

After taking this course, you will be equipped to use the advanced features of Oracle Linux 7 to get the most out of your systems and applications. You'll learn how to automate Oracle Linux installations and implement networking and authentication services to facilitate the management of a large number of systems. You'll also learn how to use Control Groups, Linux Containers, Docker, and KVM to increase your resource utilization by creating secure, isolated environments on a single host. Become familiar with advanced storage features, including encrypted file systems, disk quotas, iSCSI, device multipathing, and the OCFS2 file system to better use your storage resources.

Gain Hands-On Experience

Extensive hands-on practices will guide you through each concept. You will configure network services and authentication services, configure network storage, shared file system types, and device multipathing. You will also configure different virtualization technologies to better utilize system resources such as CPU, memory, network and I/O bandwidth, and to allocate these system resources to critical processes.

Audience

Data Center Manager
Network Administrator

Support Engineer
System Administrator
System Integrator

Related Training

Required Prerequisites

Student should be able to Install Oracle Linux 7

Students should be knowledgeable with Disk partitioning and creation and maintenance of Linux file systems & Software package installation

Students should be knowledgeable with User and Group administration & Security administration using firewall

Students should be knowledgeable with the systemd system & service manager and Network interface configuration files and network configuration

Oracle Linux 7: System Administration Ed 1

Suggested Prerequisites

Oracle Linux 5 & 6 Advanced Administration

Oracle Linux 5 & 6 System Administration

Course Objectives

Configure server virtualization with KVM

Configure network addressing and authentication services

Configure Apache web services

Automate installation using Kickstart

Configure resource management using Control Groups (cgroups)

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

Configure application containers with Docker

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

Virtualization

Elements of course environment

Course structure

Network Addressing and Name Services

Introduction to DHCP

Configuring a DHCP server

Configuring a DHCP client

Introduction to DNS

DNS Nameserver types

Configuring a DNS Cache-Only Nameserver

Configuring an Authoritative Nameserver

Querying a DNS Nameserver

Authentication and Directory Services

Introduction to authentication and directory services

Configuring LDAP authentication

Configuring Winbind authentication

Configuring Kerberos authentication

Configuring IPA Identity Management and Authentication Services

Configuring SSSD services and domains

Pluggable Authentication Modules (PAM)

Introduction to PAM

PAM Configuration Files

PAM Authentication Modules

PAM Module Types

PAM Control Flags

PAM implementation examples

Web and Email Services

Introduction to the Apache HTTP server

Configuring Apache

Email Program Classifications

Email Protocols

Postfix SMTP Server

Sendmail SMTP Server

Configuring Sendmail on a Client

Installing Oracle Linux by using Kickstart

Introduction to the Kickstart installation method

Creating the the Kickstart file
Starting a Kickstart installation
Booting into Rescue mode to correct boot problems

Samba Services

Introduction to Samba
Samba Server Configuration
Samba Server Types
Accessing Linux Shares from Windows
Accessing Windows Shares from Linux

Advanced Software Package Management

Software Management with RPM and Yum
Performing a binary RPM build
Performing package maintenance with Yum
Managing the Yum cache and Yum history
Installing and use Yum plug-ins
Using the PackageKit GUI

Advanced Storage Administration

Creating Access Control Lists (ACLs)
Enabling Disk Quotas
Configuring Encrypted Block Devices
Using kpartx
Introduction to udev
Creating udev rules

Advanced Networking

Introduction to Network Bonding
Configuring Network Bonding
Introduction to VLANs
Configuring VLANs
Introduction to VPNs
Configuring a Site-to-Site VPN

OCFS2 and Oracle Clusterware

Introduction to OCFS2
Configuring OCFS2
OCFS2 Tuning and Debugging
Introduction to Oracle Clusterware

iSCSI and Multipathing

Introduction to iSCSI
Configuring iSCSI Targets
Configuring iSCSI Initiators
Introduction to Device Mapper Multipathing
Configuring iSCSI Multipathing

Managing Resources with Control Groups (cgroups)

Introduction to Control Groups
Control Group Implementation in Oracle Linux 7
systemd slice units

- systemd scope units
- Displaying the Cgroup Tree of Specific Services and Scopes
- Viewing cgroup Resource Control Settings
- Controlling Access to System Resources
- Modifying Unit Configuration Files

Virtualization with Linux

- Virtualization Concepts
- Virtualization Modes
- Linux and Xen Integration
- Running Linux in a Virtual Machine
- Linux as a Virtualization Provider
- Introduction to KVM
- Creating a KVM Virtual Machine
- Managing the Life Cycle of a Virtual Machine

Virtualization with Linux Containers

- Introduction to Linux Containers
- Linux Container template scripts
- Creating a Linux Container by using the Oracle template script
- Working with Linux Containers

Docker

- Introduction to Docker
- The Docker Hub Registry
- Installing and Configuring Docker
- Working with Docker Images and Docker Containers

Security Enhanced Linux (SELinux)

- Introduction to SELinux
- SELinux Modes
- SELinux Policies
- SELinux Booleans
- SELinux File Labeling
- SELinux Context
- SELinux Users

Core Dump Analysis

- System Core Collection: Kexec and Kdump
- Kernel Tuning Parameters
- Magic SysRq Keys
- Using the crash Utility

Dynamic Tracking with DTrace

- Introduction to DTrace
- DTrace-Enabled Applications
- DTrace Probes
- DTrace Providers
- DTrace Actions
- Built-in D Variables
- D Scripts