

Oracle Solaris 11.4 System Administration

3-day High Intensity / 5-day regularly paced course

FA-0413

DevOps, Cloud & Infrastructure

Introduction

This is a detailed Solaris 11.4 System Administration course. This comprehensive training is designed to equip system administrators with the knowledge and skills necessary to manage Solaris 11.4 systems efficiently. Whether you are new to Solaris or upgrading your skills from previous versions, this course will take you through the core concepts to advanced administration techniques.

Learning outcomes

By the end of this course, participants will be able to:

- Understand the key features and architecture of Solaris 11.4.
- Install Solaris 11.4 and perform system boot procedures.
- Manage file systems and storage options in Solaris.
- Configure network settings and manage network services.
- Administer system processes and utilize service management facilities.
- Implement system security and user administration best practices.
- Perform system backup and recovery operations.
- Update and maintain the Solaris 11.4 system.
- Monitor and troubleshoot system performance.
- Understand virtualization and manage zones in Solaris 11.4.

Prerequisites

Participants are expected to have:

- Basic understanding of UNIX or Linux operating systems.
- Familiarity with command-line operations and scripting.
- Fundamental knowledge of network principles.

Training outline

1. Solaris 11.4 Overview and Installation

Introduction to Solaris 11.4

1. History of Solaris
2. Features and Benefits of Solaris 11.4
3. Differences between Solaris 10 and 11.4

Planning the Installation

1. System Requirements
2. Installation Methods

Performing a Basic Install

1. Live Media vs. Text Installer
2. Installation Options

Post-Installation Setup

1. Initial Configuration
2. Software Package Repositories

2. System Boot and Shutdown Procedures

Boot Process Overview

1. Understanding the Boot Environment
 2. Service Management Facility (SMF)
2. Managing the GRUB Bootloader
 3. Boot and Shutdown Commands
 4. Troubleshooting Boot Issues
 5. Emergency Boot and Recovery

3. File System and Storage Management

ZFS File System Essentials

1. ZFS Features and Advantages
2. Creating and Managing ZFS Pools and File Systems
3. Snapshots and Clones

Legacy UFS File Systems

1. Differences and Use-Cases

Storage Management

1. Disk Management and Naming Conventions
2. Managing Disk Labels and Partitions
3. iSCSI and SAN Configurations

4. Network Configuration and Services

Basic Network Configuration

1. IP Addressing and Network Interfaces
2. Persistent and Reactive Network Configuration

Advanced Networking Features

1. Link Aggregation and IP Multipathing
2. Network Virtualization

Network Services

1. SSH, FTP, and DNS Configuration
2. Configuring DHCP and IP Filter

5. Process Control and Service Management

Managing System Processes

1. Viewing and Controlling Processes
2. Scheduling Jobs with cron and at

Service Management

1. Understanding SMF and Its Components
2. Managing Services and Service Properties
3. Customizing Service Manifests

6. User and Security Administration

User and Group Management

1. Adding and Modifying User Accounts
2. Security and Password Policies

Role-Based Access Control (RBAC)

1. Configuring Sudo and User Roles

System Security Features

1. Auditing and Compliance
2. Configuring Solaris Secure Shell (SSH)
3. File and Directory Permissions

7. System Backup and Disaster Recovery

Backup Strategies

1. File System Archiving (ufs, ZFS)
2. Solaris Backup Utilities (fssnap, flarcreate)

Disaster Recovery Planning

1. Creating and Managing System Restore Points
2. Bare-Metal Recovery Techniques

8. System Updates and Maintenance

Package Management

1. IPS Repository Management
2. Installing and Updating Software Packages
3. Managing Package Publishers

Patch Management

1. Analyzing and Applying Patches
2. Patching Best Practices

System Monitoring and Maintenance

1. Automated Crash Dump Analysis
2. Log File Management

9. Performance Monitoring and Troubleshooting

Monitoring Tools

1. prstat, vmstat, iostat, netstat
2. DTrace for Advanced Troubleshooting

Performance Tuning

1. Kernel Parameters and Tuning Resources
2. Network Tuning

Troubleshooting Techniques

1. System Diagnostics
2. Troubleshooting Network Issues

10. Virtualization and Zones

Solaris Zones

1. Types of Zones and Use-Cases
2. Configuring and Managing Zones

Resource Management

1. Projects and Resource Pools
2. Fair Share Scheduler (FSS)

Oracle VM Server for SPARC (Logical Domains)

1. Overview and Concepts
2. Creating and Managing Logical Domains

This course will take a hands-on approach, with participants engaging in practical exercises and labs throughout to solidify the understanding and gain experience in a controlled environment.