

Oracle Solaris 10 Advanced System Administration

Course Summary

Length: 5 Days

Prerequisite: Oracle Solaris 10 System Administration 1

Recommendation Statement:

To succeed fully in this course, students should already know how to:

Manage files and directories · Control the user work environment · Archive files · Use remote commands · Manage ZFS file systems · Administer Zones · Install software · Manage software packages and repositories using IPS tools · Perform system boot procedures · Understand user and security administration · Manage system processes · Perform system backups and recovery · Configure Network Connectivity · Understand system startup procedures and the Service Management Facility.

Course Description:

This course teaches advanced topics in Solaris 10 system administration. The operating system will be Oracle Solaris 10 1/13 update 11. The course is taught on both Sun SPARC and x86-based servers and students will have access to both server architectures for their labs. This course will teach students how to administer a Solaris 10 server.

This course prepares the student for the Oracle Certified Solaris 10 System Administrator Examination Part 2

Upon completion of this course, you should be able to:

- Describe network basics
- Describe remote administration with the Solaris Management Console software
- Manage virtual file systems and core dumps
- Manage storage volumes (SVM)
- Control access and configure system messaging
- Configure role-based access control (RBAC)
- Set up name services
- Perform advanced installation procedures (Flash archive, JumpStart and WAN boot)
- Install the OS on a mirrored ZFS root pool
- Perform a Solaris Live Upgrade
- Perform a Solaris Flash installation
- Understand differences between SPARC and x86-based Solaris Operating environments.
- Understand and administer zones.
- Understand and administer ZFS file systems
- Migrate a UFS root file system to a ZFS root pool
- Introduction to DTrace
- Install updates using Sun Connection Manager

Advanced Installation Procedures

- Perform a Flash Installation
 - Describe a Flash install
 - Manipulate a flash archive
 - Using a flash archive for installation
 - WANboot Flash installation
- Perform a JumpStart and PXE Installation
 - Setting up the Server
 - Setting up the Install Server
 - Setting up the Boot Server
 - The rules File
 - Creating profiles
 - Perform a JumpStart instation
- Pre-Execution Boot Environment (PXE)
 - Prepare a PXE boot client
 - Network booting the x86-based system
- Install the OS Using a Flash Archive
 - Create a Flash Archive
 - Create a differential Flash Archive
- WAN Boot
 - The WAN boot process
 - Configure the WAN boot environment and the WAN boot server
 - Booting the WAN boot client
- Solaris Live Upgrade
 - Understand the Solaris Live Upgrade Process
 - Create a new boot environment on the SPARC and x86 platforms
 - Upgrade a boot environment
 - Activate a new boot environment on the SPARC and x86 platforms
 - Maintain the Solaris Live Upgrade boot environment

Introduction to Zones

- Consolidation and Resource Management
- Branded Zones for Solaris 8,9, and Linux environments
- Solaris Zones
 - Types of Zones
 - Zone States
 - Zone Features
- Non-global Zone Root File System Models
 - Whole Root Zones
 - Sparse Root Zones
- Networking in a Zone Environment
- Zone Daemons
- Configuring a Zone
 - The zonecfg Command
- Viewing the Zone Configuration File
- Installing a Zone
- Booting a Zone
- Halting a Zone
- Rebooting a Zone
- Deleting a Zone
- Cloning a zone
- Migrating a zone
- Backing up a zone
 - Zone Login
 - Initial Zone Login

- Using a sysidcfg File
- Logging in to the Zone Console
- Logging in to a Zone
- Running a Command in a Zone
- Creating a Zone
- Security Considerations when Using Solaris Zones

Role Based Access Control (RBAC)

- Describe RBAC fundamentals
- Overview of Roles
 - Authorizations
 - Rights profiles
- Using RBAC
 - Manage RBAC by using the Solaris Management Console
 - Manage RBAC by using the command line
- Describe RBAC components and their interaction within RBAC

The Solaris Management Console (SMC)

- Describe the function of the Solaris Management Console
 - SMC tools
 - SMC commands
- The SMC Toolbox
- Using SMC
- Customizing the SMC

Configuring Access Control Lists (ACL's)

- Describe ACLs
- Setting ACL's
- Manipulate ACLs using the command line
- Manipulate ACLs using the File Manager graphic user interface (GUI)
- Create default ACLs

Device Administration

- Device Drivers
- Physical Device names
- Device Auto-Configuration
- Mapping devices from the OS to hardware devices in OpenBoot and physical attachments
- Instance names
- Major and Minor Device numbers
- Logical Device names
- Meta devices

Managing SWAP Space

- Describe swap and virtual memory concepts
- Configure and manage swap space

Managing Crash Dumps and Core Files

- Manage crash dump behavior
- Manage core file behavior

Using the Solaris Volume Manager Software

- Describe redundant array of independent disks (RAID) as related to SVM
- Describe Solaris Volume Manager software concepts
 - SVM volumes
 - Soft partitions
 - Stripes
 - Mirrors
 - RAID5

- Use the SVM utilities to configure disks
 - Planning your SVM Configuration
- Metadisk driver
- SVM Commands
- Creating the State Database
- Monitoring the state database
- Creating a soft partition
- Expanding an SVM Volume
- Creating a Mirror
- Unmirroring a Non-critical File System
- Mirroring the Root File System on SPARC based systems
- Mirroring the Root File System on x86/x64 based systems
- Unmirroring the Root File System

Introduction to the ZFS File System

- What is ZFS?
- ZFS Terms
- Hardware and Software requirements
- Creating a ZFS file system
- ZFS Storage pools
 - Mirrored storage pools
 - RAID-Z
 - Creating / Destroying Storage pools
 - Querying Pool Status
- Creating / Destroying ZFS file systems
- ZFS Properties
- Querying file system status
- Mounting ZFS file systems
- ZFS snapshots
- Move/Copy ZFS file systems
- Clone ZFS file systems
- Backing up ZFS file systems

Networking

- Network Fundamentals
 - Network Topologies
 - Network Protocols
 - Network Hardware
- Configuring and Monitoring network interfaces
- Planning the Network
- Setting Up the Network
 - /etc/hostname.interface
 - /etc/nodename
 - /etc/defaultdomain
 - /etc/inet/hosts
- Starting server processes
 - inetd
 - Administering SMF for network services
 - Network ports and starting services on well-known ports
- Network Security Files
- The secure shell (ssh)
- IP Addressing
- Name Service
- TCP/IP Commands (ie. telnet, ssh, rlogin, rcp, rsh, rexec, ftp, rwho, finger)
- Network Maintenance

The NFS/AutoFS Environment

- Servers and Clients
- NFSv4
- The benefits of NFS on Solaris
- NFS Daemons
- Setting up NFS
- NFS Security
- NFS logging
- Mounting a Remote File System
- WebNFS
 - How to Enable WebNFS Access
 - Using a Browser to Access an NFS URL
- Describe the fundamentals of the AutoFS file system
 - AutoFS Maps
 - Master Map
 - Direct Map
 - Indirect Map
 - When to use Automount

Name Services

- Describe the Name Service concept
 - Local files vs. a naming service
- Structure of the NIS Network
 - Server, slaves, and clients
- Information Managed by NIS
- Name Service Switch
 - Setting up NIS Clients
- Configuring the DNS client
- Setting up the LDAP client

Configuring System Messaging

- Describe the fundamentals of the syslog function
 - Important system log files
 - Configure syslog messaging
- Using the Solaris Management Console log viewer
- Monitoring Users and System Usage
- Monitoring loggins
- Describe the trusted host
 - /etc/hosts.equiv
 - .rhosts
- Securing and restricting super user access
 - RBAC
 - SUDU
 - ASET
- Other security issues

Introduction to DTrace

- DTrace overview
- Understand how to use Dtrace and D scripts