

Oracle Solaris 11.4 New Features Update

Course Summary

Length: 5 Days

Prerequisite: Oracle Solaris 11 System Administration 1

Recommendation Statement:

The student must have take a Solaris 11 Administration 1 course or have equivalent experience.

Course Description:

This course is for system administrators who need to learn new features added in Solaris 11.3 and 11.4.

A 3 day course is available covering the 11.4 update only.

Upon completion of this course, you will understand the new features affecting:

- New Zone Features
- Kernel Zones
- Oracle VM (Logical Domains)
- Unified Archives
- Image Packaging System (IPS)
- ZFS
- OS Installation and the Automated Installer (AI)
- Networking and Configuration
- The Service Management Facility (SMF)
- System Administration Utilities
- Security
- Overview of all end of life features

Oracle Solaris 11.3 New Features Update
Detailed Course Outline

I. Overview of all end of life features

II. Zones

- A. Overview of new zone features
- B. New options for backing up zones
- C. Enhancements to commands for monitoring zones and zone activity
- D. Zone Boot Environments
- E. Overview of kernel zones

New in 11.4

- Control zones boot order of zones
- Live Zone Reconfiguration (LZR)
- Dynamic zones
- Zone Delegated Restarter
- Virtual-CPU for kernel zones
- Add datasets to running zones
- Changes to `zonecfg` and properties
- Zone trusted path
- Modify immutable zones without a reboot
- Per zone kstats
- New options for backing up zones
- Evacuate a zone
- Cold zone migration
- `zoneadm move`: moving a zone between local and shared storage
- Manage zones with the `sysadm` utility

III. Logical Domains

- A. `ldmconsole`
- B. Multi-pathing for LDOMs with virtual SCSI HBAs

IV. Unified Archives

- A. Backup, clone, recover, and provision servers (physical, LDom or zone) using Unified archives.
- B. Configure the AI server to install, clone and recover servers using unified archives
- C. Use Unified archives to deploy zones
- D. OpenStack and support for unified archives
- E. Dehydrate and rehydrate an archive

V. New IPS Features

- A. Minimal server pkg group
- B. Understand automatic repository mirroring
- C. Install and manage platform firmware through IPS
- D. Oracle database prerequisites package
- E. Recursive package operations on zones
- F. Bootable USB media for SPARC
- G. The `solaris-11-cpu` package
- H. Understanding SRUs (Support Repository Updates), CPUs (Critical Patch Updates) and CVE's (Common Vulnerabilities and Exposures) and how to apply them.
- I. New options to the `pkg` command

New in 11.4

- Clone a package repository
- New FMRI format for packages
- Enhancements to Boot Environments
- Changes to the `uname` command
- SMTP notification of core files

VI. Installing and Configuring the OS

- A. Changes to Package groups and package naming
- B. Changes to the interactive installer
- C. Automated Installer enhancements
- D. Tools for creating an AI manifest
- E. `sysconfig` utility
- F. `network-boot-arguments` - overview
- G. Distribution Constructor

VII. ZFS Features

- A. ZFS send progress reporting
- B. Review ZFS snapshot differences recursively
- C. ZFS default user or group quotas
- D. `zpool monitor`
- E. Persistent L2ARC
- F. Limiting ZFS ARC Cache
- G. Changes with the ZFS rpool
- H. Cloning ZFS files (`cp -z`)
 - New in 11.4
 - Remove a device from a Zpool
 - Resume `zfs send` and `zfs recv` operations
 - Compressed `zfs send` and `zfs recv` operations
 - Replicate a cloned dataset
 - Scheduled scrubs
 - Changes to `/var/tmp`
 - NFS version 4.1
 - Dedup features
 - Changes to `fsstat`
 - Set ZFS read/write limits
 - `zpool label` enhancements
 - `zpool destroy` enhancements

VIII. New Administration Features

- A. The `sysconfig` utility
- B. Enhancements to `fmadm`; managing faults, defects and alerts
- C. `stackdiag` for tracking bugs that may have caused a fault
- D. `kstat2`: Enhanced `kstat` to provide historic `kstats`
- E. `useradm`: manage user accounts and roles interactively
- F. `sysadm`: control maintenance mode for a system and perform evacuation of zones hosted on the system
- G. Enhancements to the `fcinfo` utility
- H. Web Dashboard: A performance management GUI tool with realtime and historical data gathered through `statstore`.
- I. `admhist` for displaying the history of system administration related events

IX. New Networking Features

- A. `ipstat` and `tcpstat` monitoring tools
- B. `netstat -u` monitoring option
- C. Private VLANS (`dladm create-vlan`)
- D. `mtr` command (`my traceroute`)
- E. Elastic virtual switch (EVS)
- F. Network and IP configuration using SMF
- G. Changes to NFS mounting
- H. Configuring named routes
- I. Monitor network I/O latency
- J. Enhancements to `fsstat` and `iostat`

X. SMF Features

- A. SMF profiles and managing service properties
- B. New `-xL` option for viewing log files
- C. `editprop` and `delcust` utilities
- D. SMF service snapshots
- E. New `svccfg` options and properties
- F. Timezone settings
- G. Other things that moved from config files to services
- H. Profiles
- I. `smf_stencils`
- J. SMF goal services and milestone
- K. `svc-create-first-boot` tool
- L. `svccfg extract`
- M. Nested property groups

XI. Security

- A. Understand the `compliance` utility for maintaining security of enterprise systems
- B. Secure end-to-end provisioning using the automated installer
- C. Baseline install with IPS `exact-install` subcommand
- D. RBAC Profiles and enhancements
- E. RBAC time based and location based access control at the user level
- F. Understand the verified boot feature

New in 11.4

- Overview of labeled security: Trusted Extensions labeled security is always activated
- Use the Security Compliance Tool to assess the security on a system
- Changes to SSH
- One time passwords and 2-factor authentication
- New Auditing features
- CVE (Common Vulnerabilities and Exposures) compliance reporting
- Sandboxing
- Migrate from IPF to PF (Packet Filter)

XII. Misc Solaris 11 Features

- A. Setting system identity configuration settings
- B. Root backup and recovery options
- C. IPS mirroring
- D. Virtual Network Components
- E. IPMP
- F. Configuring NFS
- G. Deferred dump
- H. Gnome3