

## Transition from Solaris 10 to Solaris 11

### Course Summary

**Length:** 5 Days

**Prerequisite:** Solaris 10 Administration Experience

#### **Recommendation Statement:**

It is assumed that the student has an understanding of Solaris 10 System Administration with at least 6 months of experience. This is a fast pace, advanced course. The student should be comfortable using ZFS, creating Zones, administering SMF and managing RBAC accounts. If you do not have a working knowledge of these topics, you should consider the Solaris 11 Administration course which covers these topics in detail.

#### **Course Description:**

This is an advanced course in Solaris 11 system administration. The course teaches skills which build on current Solaris 10 system administration skills (ie. ZFS, Zone, SMF and RBAC administration). The course focuses on topics required to help Solaris 10 administrators make the move from Solaris 10 to Solaris 11. The course does not teach system administration tasks currently supported on Solaris 10 or previous versions of Solaris.

The course highlights all of the new features in Solaris 11.3

#### **Topics covered:**

- Solaris 11.3 New Features and Enhancements
- Understand the new Image Packaging System (IPS) and Managing Repositories
- Manage Software Packages in Solaris 11 using IPS
- Understand the methods used to install the Solaris 11 OS
- Use the Distribution Constructor tool
- Configure an Automated Install (AI) Server and AI clients (standalones, LDoms and zones)
- Install Guest LDoms and Zones using the Automated Installer
- Build a “Golden Image” using the Distribution Constructor
- Backup and Restore using unified archives
- Understand how to Utilize Boot Environments to improve system uptime
- Understand changes in the boot and shutdown process
- Understand user environment enhancements
- Understand issues and methods for migrating from Solaris 10 to Solaris 11
- Understand changes in administering zones including kernel zones
- Understand changes in Network Service administration
- Understand VNICs and Virtual Networking
- Solaris 11 Storage Enhancements and New ZFS Features
- Understand the ZFS boot disk including backup and recovery techniques
- Solaris 11 Security Enhancements and new RBAC features
- Compare Solaris 11 enhancements to existing Solaris 10 Features
- Understand Security Enhancements in Solaris 11
- Performance management in the Solaris 11 Environment

## Transition to Solaris 11 System Administration

### Detailed Course Outline

#### **Solaris 11 New Features and Enhancements**

- Oracle Solaris 11 New Features and Enhancements (11.3)
- What's new and what's different from Solaris 10
- Best practices for moving from Solaris 10 to Solaris 11

#### **Solaris 11 boot and startup**

- What has changed in the boot up and shutdown process (ie. Fast reboot, ZFS boot drive, GRUB2)
- SMF changes including using `svcbundle` to create manifests and services
- Understand how SMF has replaced many of the configuration files
- Understand how to customize SMF, configuring notifications including the use of `editprop`, `delcust` and `listcust`

#### **User Environment Changes**

- Open Source packages
- BASH shell
- Enhanced desktop
- Enhanced manual pages
- Virtual console terminals
- CUPS printing

#### **Managing and Updating Software with IPS**

- Understanding IPS and the IPS Repository
- Understand software packaging changes
- Use IPS Components
- Understand the local package repository
- Describe how to create a local IPS Repository
- Describe how to create a repository mirror
- Understand how to update the local IPS repository
- Understand how to setup multiple repositories
- Describe how to setup an IPS Client
- Understand the software update manager
- Understand Boot Environments (BE's) and how they are utilized in Solaris 11 (and how they have changed from Solaris 10)
- Understand Boot Environments in Zones

#### **Installing the Solaris 11 Operating Environment**

- Describe the methods of installing Solaris 11
  - Live Media GUI Installer
  - Text Installer
  - Automated Installer
- Describe the upgrade process: Upgrading From a Previous Version of Solaris
- Update the IPS Repository and Solaris 11 OS with an SRU
- Understand how to configure a Solaris 11 Automated Installation (AI)
- Compare AI to JumpStart
- Learn how to configure an AI Server
- Understand the AI manifest and how to customize the manifest
- Create AI manifests using the Interactive Automated Installer wizard
- Understand how to create and use system Configuration Profiles
- Understand the Distribution Constructor

- Learn how to build a custom OS Image using the Distribution Constructor

### **Solaris 11 Zones**

- Zone features and enhancements
- `solaris10` brand zones
- Migrate Solaris 10 Zones to Solaris 11 (V2V)
- Migrate a Solaris 10 Global Zone to a `solaris10` brand zone in Solaris 11 (P2V)
- The P2V and V2V preflight checker
- Configure a non-global zone using the AI installer
- Configure an NFS server in a zone
- Zone manifests and profiles
- Exclusive-IP zones
- Virtual Network: Understand VNICs and creating VNICs for a zone
- Monitor zones and resources: using the new monitoring tools
- Delegate zone administration to users
- Zone Boot Environments (BEs)
- Zone ZFS dataset layout improvements
- Enhanced shutdown procedures for a zone
- Create and manage Immutable zones
- Live Zone Reconfiguration
- Understand Zone Templates and Template Properties
- Understand Kernel Zones

### **Solaris 11 Network Administration**

- Understand the network enhancements and architecture changes
- Understand Manual / Automatic networking and Network Profiles
- Understand Datalinks
- Understand Reactive Networks (formerly NWAM)
- Learn how to configure a Reactive Network
- Learn how to configure a Fixed Network
- Network administration through `ipadm` and `dladm`
- Virtual Networking (build/configure/manage)
- Configure and monitor IP Multipathing (IPMP) and Aggregation
- Observe and Manage Network Traffic and Bandwidth
- Enhancements to IP Observability and Monitoring
- NFS and SMB sharing
- Mirror NFS mounts

### **Storage Enhancements**

- New ZFS Features including: Temporary mounts, snapshot alias, shadow migration, encryption)
- Understand the ZFS boot disk structures
- Understand ZFS root pool recovery procedures
- ZFS Shadow Data Migration
- Configure and Split mirrored storage pools
- Tools to identify ZFS snapshot differences (ZFS Diffs)
- Deduplication
- Time slider snapshots
- COMSTAR overview
- Configuring COMSTAR
- Recover ZFS storage pools

- ZFS backup and recovery techniques on the boot drive
- Delegate ZFS administrative tasks to users

#### **Security Enhancements**

- The root role
- Cryptographic Framework
- ZFS Pool and Dataset Encryption
- Basic Audit Reporting Tool (BART)
- Changes in Role Based Access Accounts (RBAC)
- Utilize Profile shells to delegate privileged commands
- Custom profiles
- rsyslog
- Immutable Global Zones

#### **Unified Archives**

- Backup, clone, recover, and provision servers (physical, LDom or zone) using Unified archives.
- Configure the AI server to install, clone and recover servers using unified archives
- Use Unified archives to deploy zones
- OpenStack and support for unified archives