

# Transitioning to Oracle Solaris 11.1

## COURSE DESCRIPTION

This course presents to an **Oracle Solaris 10** user, systems administrator, or application/system programmer, the techniques needed to effectively and successfully move to **Oracle Solaris 11.1**.

## COURSE OBJECTIVES

Each participant will see and use the new and modified areas and features of **Oracle Solaris 11.1**. Hands-on usage and lab exercises will be performed with **Solaris 11.1** virtual machines (for each participant), along with one (1) **IPS** repository server (for each participant).

The overall **emphasis** will be to build on a **Solaris 10** knowledge base, showing all of the **important** and **useful features** and **capabilities** that are needed for the **best** effective **use** of **Solaris 11.1**.

## COURSE TOPICS

### **User- and Programmer- Level New Features and Changes**

- removed and deprecated utilities
- new and improved (system) utilities
- shells (**bash** and **Korn**)
  - change in default shell
  - change in **root** account **environment**
  - comparison** of **bash** and **ksh scripting** features

### **Installing and Upgrading Solaris 11.1**

- changes to the **Solaris** installation media
- methods of starting a **Solaris 11.1** installation
  - text and automated installer (**AI**)
  - JumpStart** migration
- post installation operations
- creating a customized **AI** server
- creating custom installation media (**Distribution Constructor**)

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## COURSE TOPICS

### **Software Packaging and Installation**

- Image Packaging System (**IPS**)
- IPS** repositories and operations
- compatibility with the **pkg\*** utilities

### **Boot and Startup Mechanisms**

- changes in **Solaris 11.1** startup
- new areas controlled by **SMF**
  - building a customized manifest
  - interacting with **startd** and **configd**
- new **GRUB 2** loader features (**bootadm** enhancements)

### **Zones**

- new features and enhancements
  - Solaris 11.1** implementation
    - creation and usage of control daemons
  - mirrored storage pools
  - migration of **Solaris 10** zones (**P2V** or **V2V**)
  - virtual networking capabilities
    - creating a **VNIC**
    - connecting a zone with a **VNIC**
  - package management
  - patch control, addition, removal
  - Solaris 11.1** update considerations with active zones
  - renaming, moving, cloning, migrating zones

### **Zone I/O Performance Management**

- daemon control
- zpool** creation considerations
  - SMF** service(s) (overhead)
  - disabling unnecessary services

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## COURSE TOPICS

### **Networking**

- new utilities and enhancements
  - Auto-magic (**NWAM**)
  - network configuration profiles and locations
  - creating and using **flows**
  - IPMP**

### **User Account Security**

- new and improved features
  - password hashing algorithms
  - data encryption

### **General Utilities**

- User and Programmer
  - replacement of **vi** with **vim**
  - vim** setup and initialization
  - old and new style general utilities
- Systems Administrator
  - removal of **Bourne** shell
  - new **/root** home directory

### **Storage**

- ZFS** new and enhanced storage features
  - deduplication
  - snapshots
  - zpool** (mirror) split
- UFS** changes
- COMSTAR**

### **ZFS I/O Performance Management**

- zpool** creation considerations
- ZFS** file system parameters
- ZFS** compression performance
- controlling the **ZFS ARC** and **L2ARC**
- using the **zdb** utility

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## COURSE TOPICS

### Security Features in Solaris 11.1

#### **BART**

configuring and using **targeted auditing**  
file and Directory **ACLs**  
role Based Access Control (**RBAC**)  
Principle of Least Privilege (**PLP**)  
assigning privileges to users and programs

### Solaris 11.1 Performance Monitoring Capabilities

**kstat** (command, modules, libraries)  
**dtrace** (introduction to usage)  
kernel tunables (viewing, changing)

## COURSE DURATION

This course requires **four (4)** or **five (5)** days, 50% lecture and hands-on commands, and 50% lab exercises.

## COURSE PREREQUISITES

It is assumed that the participant has **experience** with **Solaris 10** in the capacity of a (general) user, programmer, system administrator, network analyst/administrator, or performance management specialist.