

## **Solaris 10 Update Workshop**

### **Course Summary**

#### **Description**

This workshop is intended for Solaris Administrators who wish to quickly get up to speed with the new features of Solaris 10. It covers all the major new facilities, in a workshop environment, providing extensive hands-on practicals. The notes also contain detailed information of significant changes provided by Solaris 8 and 9 releases, and these features will be explained in extended sessions if students require.

#### **Topics**

- Zones
- User Authentication
- File System Features
- Fault and Service Management
- Dtrace Basics
- Internet Protocol Features in Solaris 10
- NFS Version 4
- Security Features
- Other Changes to Networking
- Solaris 10 OS Installation
- Significant Solaris Changes in Recent History

#### **Audience**

This workshop is intended for Solaris Administrators who wish to quickly get up to speed with the new features of Solaris 10.

#### **Prerequisites**

This course is only suitable for experienced Solaris administrators

#### **Duration**

days

## Solaris 10 Update Workshop

### Course Outline

#### I. Zones

- A. Purpose of zones; how zones exist within a standard Solaris 10 system; creating a zone
- B. Zone configuration, including disk and network resources; controlling zones
- C. (booting, halting, etc); zone limitations; zone resource capping and resource pools
- D. Software installations and packages within zones; zones FAQ; how zones are likely to be developed

#### II. User Authentication

- A. Password history checking and nobody account changes; Least Privilege and the pp
- B. riv command
- C. Least privilege and RBAC (Role-Based Access control)
- D. Kerberos changes

#### III. File System Features

- A. Changes to UFS; the new ZFS (Zettabyte File System)
- B. Creating and managing storage pools with zpool
- C. Adding new devices to a storage pool
- D. Creating mirror and RAID Z devices; creating and managing file
- E. Systems with zfs
- F. Assigning properties such as quotas and NFS sharing to ZFS file systems
- G. Creating snapshots and clones of filesystems; exporting and importing storage pools
- H. Using zfs backup and restore
- I. The new ACL model (NFS v4) as used within ZFS filesystems; emulated volumes
- J. Using ZFS within a zone troubleshooting

#### IV. Fault and Service Management

- A. The Fault Management Architecture (FMA) – overview
- B. The Service Management Facility (SMF); changes to /etc/inittab
- C. The svc.startd process
- D. The svc.configd process
- E. Using svcs to list and obtain information about services
- F. Using svcadm to control system services
- G. Using svccfg to modify service definitions
- H. Examination of the /var/svc and /lib/svc directories
- I. Using SMF facilities to trace services failures
- J. Adding services (creating scripts, XML files, etc)
- K. The use of legacy scripts under SMF
- L. How inetd services are affected

#### V. Dtrace Basics

- A. dtrace is a facility for monitoring low-level system activity, for fault tracing
- B. Performance management. Using dtrace effectively relies upon a solid programming foundation, especially the C language
- C. Fundamentals of dtrace, with lots of example dtrace programs to try out

#### VI. Internet Protocol features in Solaris 10

- A. Solaris 10 includes a number of enhancements (mostly transparent to the administrator) in the area of IP networking
- B. These will be explained, with practical examples where possible, including Quality of Service (IPQoS), Performance improvements (Fire engine project), MDT multi-data transmission (Solaris 9 in fact), and others

**Solaris 10 Update Workshop****Course Outline (cont'd)****VII. NFS Version 4**

- A. Solaris 10 introduces a new version of the Network File System protocol, which includes a number of changes and new features, including a stateful architecture
- B. NFS in depth

**VIII. Security features**

- A. The new Solaris OS Cryptographic Framework, a facility for developers to ease the use of encryption, signing, random number generation and so on
- B. Availability of hardware encryption accelerators
- C. The Solaris IP Filter
- D. Firewall facilities

**IX. Other Changes to Networking**

- A. The System Management Agent (SMA) (an SNMP agent that is based on an open source project, Net-SNMP)
- B. <http://www.net-snmp.org>); DHCP under Solaris 10
- C. routing changes

**X. Solaris 10 OS Installation**

- A. Although the basic installation mechanisms of Solaris 10 will be familiar to experienced administrators there will be a number of changes of which they should be made aware, including installation media
- B. the ability to configure multiple network interfaces
- C. modify hard disk partitions using a VTOC
- D. minor changes to Jumpstart and flash archives
- E. Live Upgrade enhancements
- F. using the WAN boot facility
- G. the new web patching and update facility

**XI. Significant Solaris changes in recent history**

- A. Not all those coming to Solaris 10 will have experience in intermediate versions, so this section documents (and will cover if required) significant changes in recent versions, such as IP Multipathing
- B. Flash Archive creation and use in Solaris installations
- C. The fssnap utility for freezing file system before backup
- D. Solaris Volume Manager, the integrated advanced disk management facility, previously know as Online: DiskSuite.
- E. This section will also review the Solaris Management Console in its latest incarnation, showing how to modify it to add servers, make it Name Service aware, and add legacy applications
- F. The working of RBAC (Role Based Access Control), a feature combined in SMC but prevalent throughout the
- G. Solaris system