Course Name: Solaris 11 Zones (Containers) Administration

Length: 4 days

Prerequisite:
Solaris 11 System Administration course or three months of experience administering the Solaris operating system. Must be proficient in the following areas:
- File management commands (vi, cp)
- Navigating file systems
- Understand and set file permissions
- Setting up user accounts and customizing the shell environment
- Image Package System (IPS)
- Service Management Facility (SMF)

Course Description:

This course teaches the student how to administer zones (containers) in the Solaris 11 operating environment. A container is Oracle's implementation of virtualization within the Solaris OE. You'll learn the advantages of using zones and how to contain the resources of a zone.   You'll understand the issues associated with administering Solaris zones in a real world environment. The course includes plenty of hands-on labs and each student will have their own system to practice on.

Upon completion of this course, the student will possess the following skills:

- Introduction to Solaris Zones
- Configuring and Administering non-global Zones
- Configure immutable zones
- Booting, halting, cloning and uninstalling non-global Zones
- Moving and migrating Zones
- Backup and Recover Zones
- Allocate and delegate ZFS file systems to Zones
- Administer Packages in Zones
- Update the OS image and packages in a Zone
- Configure networking in a Zone
- Delegate administration to a zone
- Troubleshoot a Zone
- Configure Resource Management within a Zone

Solaris 11 Zones Administration
Detailed Course Outline

Introduction to Solaris Zones
- Describe virtualization
- Zones overview
- When to implement zones
- An overview of how zones operate
- Why use Solaris zones
- Describe networking in Zones

Overview of Global and Non-global Zones
- Describe global and non-global zones
- Describe zone components
- Zone configuration files
- Zone daemons
- solaris10 brand zones

Configuring Non-global Zones
- The zonecfg command
- Using a Configuration Profile

Administering Zones
- Installing, verifying and booting zones
- Understanding zone states
- Halting and rebooting zones
- Cloning non-global zones
- Uninstalling and Deleting zones
- Logging into zones
- Export zone configurations
- Moving and migrating Zones
- Renaming zones
- Monitoring the health of zones
- Backup and Restore Zones
- Backup and restore data in zones
- Delegating administrative privileges to a zone

Immutable Zones
- The file-mac-profile property
- Configure a strict immutable zone
- Configure a fixed-configuration zone
- Configure a flexible-configuration zone
- Disable the file-mac-profile property

Using ZFS with Zones
- Allocate ZFS datasets to Zones
- Delegating ZFS datasets to Zones

Networking in a Zone
- shared vs exclusive IP stacks
- Configure networking in a zone
- Network virtualization between zones

Administration Packages and Patches in Zones
- Adding and removing packages to a zone
- Adding and removing patches to a zone
- Updating packages in a zone
- Administering Boot Environments in a Zone

P2V and V2V Migrations
- Migrate a Solaris 10 global zone to a solaris10 brand zone (P2V)
- Migrate a Solaris 10 non-global zone to a Solaris 11 host (V2V)
- Use the zonep2vchk tool

Configuring Resource Management Within Zones
- Describe zone resource management features
- Utilize resource controls to contain zone resources
- Describe and implement use of the Fair Share Scheduler class

Monitoring and Tune Oracle Solaris Zone Environments
- Monitor zone resources (zonestat)
- Extended Accounting Facility
- Monitoring Zone Resource Consumption
- Monitoring Workloads
- Tune Solaris Zones

Perform Zone Backups and Restores
- Describe creating backups on systems with zones installed
- Relate non-global zone configurations to backup and recovery requirements
- Make zone backups from the global zone
- Make various backups from the non-global zone
- Understand limitations on backing up loopback file system directories
- Save and restore non-global zone configuration inform