

## Introduction to the Solaris 10 & 11/Cloud OS Technologies (Professional Edition)

- What you will learn from this professional training course?

### Overview:

This training course introduces you to the Solaris 10 & 11/Cloud OS technologies. Also, it

includes implementation details and detailed hands on experience sessions for some of the

major feature set of Solaris 10 & 11 OS releases as listed below:

Containers (i.e. Zones), Predictive Self Healing, Service Management Framework (i.e. SMF),

Dynamic Trace (i.e. DTrace), Zeta File System (i.e. ZFS), Network File System (i.e. NFS).

### Take away from this training course in terms of learning values:

[ Note: **What I mean Exposure** is => **Expansion of your knowledge base** ]

#### Chapter (1)

- Exposure to **Introduction to the Solaris 10 & 11/Cloud OS Technologies.**
- Exposure to **What is the relevance of this tech. topic in the current high tech. industry?**

#### Chapter (2)

- Exposure to **Solaris OS and its everlasting footprint in the Unix Enterprise System & Storage industry.**
- Exposure to **Why Solaris 10 & 11, has been considered as one of the most Advanced OS releases in the current high tech. industry?**
- Exposure to **Functional overview of some of the great features of Solaris 10 & 11 OS releases:**
  - Containers (i.e. Zones), Predictive Self Healing, Service Management Framework (i.e. SMF),
  - Dynamic Trace (i.e. DTrace), Zeta File System (i.e. ZFS), Network File System (i.e. NFS).

#### Chapter (3)

- **Exposure to how Solaris OS Built-in Virtualization feature (i.e. Containers) is being**  
used effectively to provide the following most-demanding capabilities in the current high tech. industry?:
  - Server Consolidation
  - Cloud computing capability of type “Platform as a Service”
- **Hands on experience** on the following most commonly used zone admin tasks using Zones admin CLI set:
  - Procedure on How to bring up a new local zone?
  - How to find out the status of all the existing zones and any given zone?
  - How to login to any given local zone and run an application/command inside the local zone?
  - Procedure on how to remove any given zone?

#### Chapters (4)

- **Exposure to how Solaris OS feature: Service Management Framework (i.e. SMF) are being used effectively**  
to provide the following most-demanding capabilities in the current high tech. industry?:
  - Maintaining a very well defined system & application services with a clear state & dependency order instead of legacy static init.d config scripts.
    - Examples: NFS, SSH, ZFS, DHCP, HTTP
- **Hands on experience** on the following most commonly used Service management admin tasks using SMF admin CLI set:
  - How to find out the complete status info. of all the existing services and/or Milestones and/or any given service and/or its dependent services details?
  - How to find manage any given service including starting a new instance, stopping the same?
  - How to find manipulate properties of any given service instance including starting a new instance, stopping the same?
  - How to monitor the status of any given service instance and how to setup service status change notification?
  - How to troubleshoot non-active service(s)?
  - How to clear faulty/degraded state of any given service after system admin fixing the service error/fault?

#### Chapters (5)

- **Exposure to how Solaris OS features: Predictive Self Healing based on the Fault-Manager Architecture (i.e. FMA + SMF) are being used effectively to provide the following most-demanding capabilities in the current high tech. industry?:**
  - Automatic system fault diagnosis & corrective action to minimize system downtime due to various types of errors in the following list of major system components:
    - CPU Chips/Cores and/or Memory DIMM(s) and/or IO card(s).
- **Hands on experience** on the following most commonly used system fault management admin tasks using FMA admin CLI set:
  - How to detect system error(s), fault event(s), FRU of faulty and/or degraded components using FMA admin CLI set?
  - How to find & repair faulty and/or degraded component(s) using FMA admin CLI set?
  - How to find & bring up any offlined CPU component(s) using FMA admin CLI set?
  - How to get detailed FMA error and fault logs for the root cause analysis of any system error(s) & fault(s)?

## Chapter (6)

- **Exposure to how Solaris OS features: DTrace (+ SMF + Predictive Self Healing) are being used effectively to provide the following most-demanding capabilities in the current high tech. industry?:**
  - system fault root cause analysis and resolution within an expected turnaround time on a Live system.
- **Hands on experience** on the following most commonly used system fault diagnosis tasks using DTrace tool CLI set:
  - How to find out all the DTrace tool supported Probes and/or specific to a given function and/or module and/or provider?
  - How to find out all the DTrace tool supported Providers supported by a specific function?
  - How to enable all the DTrace tool supported probes or all those probes provided by a specific provider in a specific function?
    - Note: Enabling probe(s) will provide the required system fault diagnosis details for you to perform root cause analysis

of a given system/application fault(s).

- How to specify one or multiple actions (i.e. user programmable statements that are executed within the kernel scope)
- How to write simple D script(s) to perform some complicated DTrace enablings?

## Chapter (7)

- **Exposure to how Solaris OS features: ZFS (+ SMF + Predictive Self Healing) are being used effectively to provide the following most-demanding capabilities in the**

**industry?:**

- What is the relevance of Solaris ZFS in the current high tech. industry?
- The cloud computing capability of type “Infrastructure as a Service” by means of:
  - ZFS Storage Appliance box facility.
- **Hands on experience** on the following most commonly used ZFS pool, file system, volume management related tasks using ZFS admin CLI set:
  - How to delegate a ZFS pool <zpool> from the Global zone in to a local zone?  
Note: This is to empowering the local zone to completely manage the same delegated pool <zpool> including providing zpool usage based **laaS**.
  - How to apply Storage management optimization techniques such as RAID-Z3, Mirroring to the a ZFS pool?
  - How to apply Effective Storage management operations such as Snapshots, Clone, Deduplication, Data Encryption to The ZFS pool to manage underlying massive storage?
  - How to Boost ZFS IO performance by adding dedicated cache and/or log devices to the ZFS pool(s)?

## Chapter (8)

- **Exposure to how Solaris OS features: NFS (+ SMF + Predictive Self Healing + DTrace) are being used effectively to provide the following most-demanding capabilities in the**

**industry?:**

- Providing NFS capability in terms of SMF based Service which is completely managed by Predictive Self Healing  
This includes handling all types of nfs service related faults & their diagnosis based on the DTrace tool.
- **Hands on experience** on the following most commonly used system fault management admin tasks using NFS admin CLI set:
  - How to perform NFS sharing of either file system or directory on a remote system by using ZFS way?

## Chapter (9)

- **Exposure to why Solaris 10 & 11 OS releases can be considered as a Tech. Innovation Hub for doing any research oriented or experimental or exploratory tech. project(s)?:**
  - List of recommended tech. project scenarios for the high tech. professionals.
  - **List of unique values you as a IT professionals bring in, for yourself?**

## Chapter (10)

- **Final conclusion notes with a list of reference material(s) for further learning.**

### Benefits to you:

The same/following list of OS technologies which has been covered as part of this training course, are some of the most demanding Technical skill set from the job interview candidate(s) and working employee(s) by the hiring manager(s) in the enterprise system (storage & server) high tech. industry at present:

- 1) Cloud computing
- 2) Virtualization
- 3) Enterprise system level Predictive Self Healing which is based on the Fault-Management-Architecture (FMA).
- 4) Performing the root cause analysis & finding resolution of system fault(s) which may be due to malfunctioning system and/or application services, within an expected time around frame, by using:
  - FMA admin CLI(s),
  - DTrace tool.
- 5) ZFS

So, expanding your technical knowledge base as well as gaining hands on experience on the above listed OS technologies, are going to hugely

boost your market value in the high tech. industry in terms of career growth & job opportunities.