System Fault Analysis Workshop

(ST-350-S10, 5 days)

Overview

The Sun Systems Fault Analysis Workshop teaches system administrators and field engineers how to analyze faults, perform diagnostics analysis, and use Sun's Predictive Self-Healing technology and DTrace toolkit for the SPARC-based and x86-based Solaris computing environments. These skills directly translate to higher availability levels and increased uptime of the Solaris Operating System (Solaris OS). The course provides instruction in the use of a fault analysis method, platform-based diagnostic tools, and the fault isolation capabilities of the Service Management Facility and Fault Management Architecture as well as providing hands-on fault isolation practice in the workshop.

Students who can benefit from this course:

- System Administrators, System Maintainers, and Field Engineers

Required Prerequisites:

- System Administration for the Solaris 10 Operating System, Part 2 (SA-202-S10)
- Experience administering a Solaris 10 environment
- Ability to manage system processes
- Experience in using the Service management Facility
- Solaris 10 Features for Experienced System Administrators (SA-225-S10)

Suggested Prerequisites:

- Knowledge of system boot procedures
- Network Administration for the Solaris 10 Operating System (SA-300-S10)

Course Objectives:

- Outline the fundamentals of fault analysis and diagnosis
- Execute OBP diagnostics and POST
- Diagnose the system using online tools
- Diagnose the system using online tools
- Analyze system degradation using the FMA and SMF facilities
- Select analysis tools from the DTrace Toolkit

Suggested Next Courses:

- Solaris System Performance Management (SA-400)

Course Topics:

Introducing the Fault Analysis and Diagnosis Methodology

- Describe the fault analysis methodology
- Introduce the fault diagnosis methodology
- Identify the basic layers in Sun systems
- Identify the error types that occur in Sun systems

Performing Solaris OS Diagnostics

- Use the device management commands
- Use the disk and file system management commands
- Use the software package management commands
- Use the file-checking commands
- Use the CPU and memory management commands
- Use the network management commands
- Use the general-purpose commands
- Use the program execution management commands

Introducing OBP Components, Features, and Diagnostics

- Introduce OBP components
- Introduce Non-Volatile RAM
- Display system information using OBP commands
- Modify OBP variables
- Run OBP diagnostics

Enabling and Monitoring POST Diagnostics

- Introduce POST concepts
- Manipulate the OBP Device Tree
- View extended diagnostics during POST

The Boot Sequence

- Compare phases of the Boot process
- Isolate boot process errors

Predictive Self-Healing

- Describe contract file system
- Describe the benefits of Predictive Self-Healing
- Describe the Fault Management Architecture
- Interpret recommended system maintenance actions using FMA message ID(s)
- Describe the Service Management Facility (SMF)
- Write a service manifest
- Manage services using SMF
- Diagnose problems using SMF

System Fault Analysis Workshop
(ST-350-S10, 5 days)

Introducing Types of System Failures

- Introduce system crashes and core files
- Generate a system crash dump
- Interpret watchdog resets

Analyzing Core Dumps Using the mdb Utility

- Introduce the mdb utility
- Analyze the source of a crash dump

Working With the DTrace Toolkit

- Introduce the Solaris Dynamic Tracing (DTrace) facility
- Interpret DTrace Command-Lines
- Select the correct DTrace tools for given monitoring requirements
- Write D Scripts