

# Solaris System Performance Management (SA-400)

## Product Description

### [Product Outline/Details](#)

The Solaris System Performance Management course provides students with an introduction to performance tuning principles and monitoring tools for the Solaris Operating System (Solaris OS). This course presents the principles of performance tuning and usage of performance measurement tools, such as sar, vmstat, iostat, netstat, and nfsstat. Central processing unit (CPU), memory, and input/output (I/O) bottlenecks are described and solutions are recommended. Determining virtual file system performance is also covered. The Solaris System Performance Management course includes lab exercises that enable students to analyze Solaris OS-related performance issues.

<i>Product ID:</i> <b>SA-400</b>	<i>Duration:</i> <b>5 days</b>	<i>Price:</i> <b>\$3000.00</b>
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## Who Can Benefit

Senior system administrators and system maintainers.

## Prerequisites

**To succeed fully in this course, students should be able to:**

- Install and configure the Solaris OS
- Have a minimum of 12 months of hands-on administration experience in a Solaris OS server environment
- Manage pseudo and distributed file systems
- Manage storage volumes
- Describe network basics

## Skills Gained

**Upon completion of this course, you should be able to:**

- Describe performance management fundamentals and the Solaris OS monitoring tools
- View and set tuning parameters
- Monitor processes and threads
- Perform CPU scheduling and memory tuning
- Monitor system caches and manage system buses
- Perform I/O and UNIX File System (UFS) tuning and network tuning

## Related Courses

- **Before:** SA-299: Advanced System Administration for the Solaris 9 Operating Environment
- **After:** SA-399: Network Administration for the Solaris 9 Operating System

## Course Content

## **Module 1 - Describing the Fundamentals of Performance Management**

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- Describe the philosophy of performance tuning
- Describe performance tuning
- Describe the terminology of measuring performance

## **Module 2 - Using the Solaris OS Monitoring Tools**

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- Describe the monitoring tools provided with the Solaris OS
- Identify performance problems using the Solaris OS monitoring tools
- Identify performance problems using other utilities
- Monitor system performance using the SymbEI (SE) Toolkit
- Describe sources for obtaining utilities from sources other than Sun Microsystems

## **Module 3 - Viewing and Setting Tuning Parameters**

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- View tuning parameters
- Set tuning parameters

## **Module 4 - Monitoring Processes and Threads**

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- Describe a process
- Describe threads
- Compare the performance of single-threaded and multithreaded processes
- Monitor processes

## **Module 5 - Performing CPU Scheduling**

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- Describe scheduling
- Display and change scheduler parameters
- Change the scheduling behavior of a process
- Describe kernel thread dispatching
- Control and monitor CPUs
- Monitor CPUs by using SE Toolkit programs

## **Module 6 - Monitoring System Caches**

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- Describe a cache
- Describe the characteristics of a cache
- Identify cache problems associated with multiple CPUs

## **Module 7 - Performing Memory Tuning**

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- Monitor memory utilization
- Describe virtual memory
- Cache disk-based files
- Identify paging statistics
- Describe swapping
- Identify the memory requirements of an application
- Identify memory shortage in a system

## **Module 8 - Managing Systems Buses**

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- Describe a bus
- Describe the prtdiag utility
- Diagnose the problems associated with buses
- Use bus monitoring commands

## **Module 9 - Performing I/O Tuning**

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- Describe the characteristics of a SCSI bus
- Describe the time components of disk I/O
- Describe drive caching and fast writes
- View device properties and configuration
- Describe I/O performance planning
- Describe storage arrays
- Describe the differences and similarities between VERITAS Volume Manager and Sun StorEdge Volume Manager
- Tune the I/O subsystem
- Monitor disks by using the SE Toolkit programs

## **Module 10 - Tuning UFS**

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- Describe the file system interface
- Describe cache structures
- Describe links
- Describe volume-managed file systems
- Allocate data blocks
- Describe an application I/O
- Monitor the performance statistics of a file system
- Describe the characteristics of a file system that affect system performance
- Set the cluster size for redundant array of independent disks (RAID) volumes
- Control writes to a file system
- Describe the performance statistics of an application I/O

## **Module 11 - Performing Network Tuning**

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- Describe network performance
- Describe IP trunking
- Describe Transmission Control Protocol (TCP)
- Describe the performance of network hardware
- Monitor the performance of networks
- Monitor networks by using SE Toolkit programs

## **Module 12 - Tuning System Performance**

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- Tune a system
- Determine problems with the applications running on a system
- Eliminate performance bottlenecks
- Describe the basic tips for tuning a system

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