

Course Code: AN51G

Course Title: Power Systems for AIX IV: Performance Management

Description:

Develop the skills to measure, analyze, and tune common performance issues on IBM Power Systems running AIX.

Learn about performance management concepts and techniques and how to use the basic AIX tools to monitor, analyze, and tune an AIX system. The course covers how virtualization technologies such as the PowerVM environment and workload partitions affect AIX performance management. Monitoring and analyzing tools discussed in this course include vmstat, iostat, sar, tprof, svmon, netstat, lvmstat, and topas. Tuning tools include schedo, vmo, ioo, no, and nfs0.

The course also covers how to use Performance Problem Reporting (PerfPMR) to capture a variety of performance data for later analysis.

Each lecture is reinforced with extensive hands-on lab exercises which provide practical experience.

The materials include AIX 7.1 enhancements and the exercises are executed on a POWER8 lab environment.

Objectives:

- Define performance terminology
- Describe the methodology for tuning a system
- Identify the set of basic AIX tools to monitor, analyze, and tune a system
- Use AIX tools to determine common bottlenecks in the central processing unit (CPU), virtual memory manager (VMM), logical volume manager (LVM), internal disk input/output (I/O), and network subsystems
- Use AIX tools to demonstrate techniques to tune the subsystems

Prerequisites:

You are expected to have basic AIX system administration skills. These skills can be obtained by attending the following courses:

- AIX Jumpstart for UNIX professionals (AN14G) **or**
- Power Systems for AIX II: Implementation and Administration (AN12G)

It is very helpful to have a strong background in TCP/IP networking to support the network performance portion of the course. These skills can be built **or** reinforced by attending:

- TCP/IP for AIX Administrators (AN21G)

It is also very helpful to have a strong background in PowerVM (particularly micro partitioning **and** the role of the Virtual I/O Server). These skills can be built **or** reinforced by attending:

- Power Systems for AIX - Virtualization I: Implementing Virtualization (AN30G)

Duration:

40 Hrs

Topics:**Day 1**

- Unit 1 - Performance analysis and tuning overview
- Exercise 1 - Working with tunable files
- Unit 2 - Data collection
- Exercise 2 - Data collection
- Unit 3 - Monitoring, analyzing, and tuning CPU usage
- Exercise 3 - Monitoring, analyzing, and tuning CPU usage (parts 1 and 2)

Day 2

- Exercise 3 - Monitoring, analyzing, and tuning CPU usage (parts 3, 4 and 5)
- Unit 4 - Virtual memory performance monitoring and tuning
- Exercise 4 - Virtual memory performance monitoring and tuning
- Student's choice optional exercise from exercise 3 or exercise 4

Day 3

- Unit 5 - Physical and logical volume performance
- Exercise 5 - Physical and logical volume performance
- Unit 6 - File system performance monitoring and tuning (topic 1)
- Exercise 6 - File system performance monitoring and tuning (parts 1, 2, and 3)

Day 4

- Unit 6 - File system performance monitoring and tuning (topic 2)
- Exercise 6 - File system performance monitoring and tuning (part 4)
- Unit 7 - Network performance
- Exercise 7 - Network performance
- Student's choice optional exercise from exercises 3, 4, or 6

Day 5

- Unit 8 - NFS performance
- Exercise 8 - NFS performance tuning
- Unit 9 - Performance management methodology
- Exercise 9 - Summary exercise
- Student's choice optional exercises from exercises 3, 4, 6, or 7

Audience:

This advanced course is for:

- AIX technical support personnel
- Performance benchmarking personnel
- AIX system administrators