



Technical Educational Services

Course Specification

Course Number: EW2100

Course Title: PowerMAX OS™ System Administration

Course Duration: 5 Days

Purpose:

The PowerMAX OS™ operating system running on the Night Hawk®, Power Hawk®, and PowerMAXION® Series of real-time, multiprocessing, supermicrocomputers provides “off-the-shelf” technology coupled with industry standard interfaces to satisfy real-time processing demands. PowerMAX OS™ system administrators are responsible for maintaining file systems and software, managing users, and performing various daily functions. The PowerMAX OS™ System Administrator course guides students through system administrator functions including user management, file system creation/maintenance, file backup and restoration, system startup and shutdown, system generation and configuration, new product and operating system release installation, printer management, and system activity monitoring. Emphasis is placed on the utilities, commands, and internal processing used to complete these processes.

Intended Audience:

This course is intended for software engineers or system operators who must configure, support, or maintain a Concurrent system running the PowerMAX OS™ operating system.

Course Objectives:

Upon successful completion of this course students are able to:

- Add, delete, update, or limit the capabilities of users on a PowerMAX OS™ system.
- Install software packages including the basic software package, any special product packages, and patch packages.
- Shut down and reboot the system under normal circumstances, and reboot the system into special maintenance modes.
- Manage devices attached to the system including disk drives, tape drives, terminals, and system support devices.
- Monitor system level activity and resolve any problems that may arise.
- Monitor system level activity and optimized system performance as needed.
- Configure a system scheduler to automate routine system management functions.

Prerequisites:

- UNIX System Capability - Students need to understand and be able to use basic UNIX system commands such as those taught in a UNIX introductory course.
 - A working knowledge of the **vi** editor is assumed
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Course Topic Outline:

- I. Overview of PowerMAX OS™ (2 Hours)
 - A. Basic System Architectures
 - B. System Resources
 - C. Process Management
 - D. Files and Directories
 - E. System Security Issues
 - F. PowerMAX OS™ Documentation
- II. User Management Procedures (2 Hours)
 - A. System User Management
 - B. Adding User Logins
 - C. Modifying User Attributes
 - D. Removing Users from the System
 - E. User Information Commands
 - F. Process Access Privileges
 - G. The **cron** Daemon
- III. Booting and System Run States..... (4 Hours)
 - A. System Operational Modes
 - B. Console Processor Boot Commands
 - C. Bootable Processes
 - D. System Boot Procedure
 - E. Analyzing System Boot Problems
 - F. Shutting Down the System
- IV. Managing Storage Devices (6 Hours)
 - A. Types of Storage Devices
 - B. Disk File Systems
 - C. Adding Disk Drives

- D. File System Management Commands
- E. Using Disk Quotas
- F. Tape Drive Management
- V. Port Management..... (6 Hours)
 - A. Service Access Facility
 - B. Listener Port Monitor
 - C. Printer Configuration
- VI. Basic Network Configuration (4 Hours)
 - A. Internet Protocol Suite
 - B. Network Configuration Files
 - C. Network Commands
 - D. TCP/IP Troubleshooting
 - E. NFS Administration
- VII. System Backup and Restore (4 Hours)
 - A. File Archiving and Restoration
 - B. The Basic Backup Service
 - C. The Extended Backup Service
 - D. File System Backup and Restoration
- VIII. Software Installation (6 Hours)
 - A. System Hardware and Adapters
 - B. Software Package Structure
 - C. Related Console Processor Commands
 - D. Mini-Kernel and Ram-Disk Partition
 - E. Initial System Installation
 - F. Adding Additional Software Packages
 - G. System Recovery Procedure
- IX. System Configuration and Tuning (4 Hours)
 - A. Kernel Tuning and Building
 - B. Driver Software Packages
 - C. System Configuration Structure
 - D. Kernel Build Tools
 - E. The **config** Utility Program

- F. Process Priority Mappings
 - X. System Monitoring (2 Hours)
 - A. System Monitoring Commands
 - B. System Activity Reporting
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Laboratory Exercises:

Exercises are provided for all topics presented and consist of two basic types:

- Review exercises are fill-in type questions that require the student to review the material presented to respond. These questions reinforce the important points presented in each topic.
- Hands-on exercises provide the student with experience in using the commands, utilities, calls, and techniques from the material allowing the student to better understand what he or she has learned.