UNIX SYSTEM ADMINISTRATION

Course Description

Learn and practice essential administration tasks. Generic system administration concepts are covered and related to specific vendors' systems.

Course Length: 4 Days
Course Tuition: $1000 (US)

Prerequisites

Fundamentals of UNIX, and some system administration experience recommended.

Course Outline

• Overview of System Administration
System Administrator Responsibilities
A Brief History of UNIX
Evolving Standards
Navigating the Documentation
• User Administration
What is a "user" in UNIX?
The /etc/passwd File
Groups
The /etc/group File
Passwords
Adding Users
Deleting Users
Modifying User Attributes
The Login Process
/etc/profile and .profile
Communicating with Users: /etc/motd
Communicating with Users: The wall Command
• File System Basics
The Hierarchy
Files
Directories
• System Startup and Shutdown
Run States
The init Daemon
/etc/inittab
The inittab Actions
The init Command
The rc Scripts
Single-User Mode
The shutdown Command
• UNIX System Security
Security Overview
Physical Security
Account Security
SUID and SGID Settings
File and Directory Permissions
Software Security
• Performance Monitoring and Tuning
Performance Issues
Methods of Improving Performance
Swapping and Paging
The sar Utility
Using sar
The truss Command

Device Files
Character and Block Devices
The/dev Directory
Links
Symbolic Links
A File System Tour
The df Command
The du Command
The find Command
• Advanced File System Concepts
The Physical File System
The Inode File
File Storage in Disk Blocks
The Superblock
The Free List
• Slices and File Systems
File System Types
• Disk Management
Making a File System
The mkfs Command
Sharing Filesystems
The mount Command
The fstab File
The fsck Command
The lost+found Directory
The prtvtoc Command
• Backups
Backup Strategies
Backup Tools
The tar Command
The cpio Command
The dump Command
Network Backup Strategies
• UNIX Processes
Overview of Processes
Process Space
Process Table
The fork/exec Mechanism
The ps Command
Background Processes
The kill Command
Scheduling Jobs
The cron Daemon
The at Command
The crontab Command
Format of cron Files

• IP Addressing
Basic Network Needs
Ethernet Addresses
IP Addresses
DNS vs /etc/hosts to Resolve IP Addresses
Network Addresses
Network Classes
Broadcast Addresses
Subnet Masks
• Configuring TCP/IP
The /etc/hosts File
The ifconfig Command
The /etc/services File
The inetd Daemon
The /etc/inetd.conf File
Simple TCP/IP Troubleshooting: The ping and netstat Commands
• The LP Print Service
Printing Overview
The lp, lpstat, and cancel Commands
Adding a Printer
The lpadmin Command
The accept and reject Commands
The enable and disable Commands
Adding a Networked Printer
Other Administrative Commands
• Network Utilities
Network Services
telnet - Terminal Emulator
ftp - File Transfer
rcp - Remote Copy
rlogin - Remote Login
rsh - Remote Commands
• Kernel Reconfiguration
Overview of Reconfiguration
Kernel Parameters
Steps to Reconfigure a Kernel
Specific Steps for SVR4
• Overview of NIS
What is NIS?
Why Use NIS?
NIS Design and Implementation
NIS Maps
Configuring NIS

Access to Scheduling Facilities