

LINUX SYSTEM ADMINISTRATION

Course Description

Learn and practice essential Linux system administration tasks. This course is not specific to a particular Linux distribution and presents information about using Linux in a commercial environment.

Course Length: 4 Days

Course Tuition: \$1000 (US)

Prerequisites

Linux Fundamentals, installation, configuration, and some system administration experience recommended.

Course Outline

- Overview of System Administration
 - A System Administrator's Responsibilities
 - A Brief History of UNIX
 - Linux
 - Linux Distributions
 - Navigating the Documentation
- User Administration
 - What is a "user" in Linux?
 - The `/etc/passwd` File
 - Groups
 - The `/etc/group` File
 - Passwords
 - The `/etc/shadow` File
 - Adding Users
 - Deleting Users
 - Modifying User Attributes
 - The Login Process
 - `/etc/profile` and `.profile`
 - Communicating With Users: `/etc/issue`
 - Communicating With Users: The Wall Command
- System Startup and Shutdown
 - Overview of the Bootup Sequence
 - LILLO
 - The `lilo.conf` File
 - The `init` Daemon
 - `/etc/inittab`
 - The `init` Command
 - The `rc` Scripts
 - Single-User Mode
 - The `shutdown` Command
- Linux System Security
 - Security Overview
 - Physical Security
 - Account Security
 - SUID and SGID Settings
 - File and Directory Permissions
 - Software Security
 - Securing a Network Server
 - Firewalls
- Performance Monitoring and Tuning
 - Performance Issues
 - Methods of Improving Performance

- File System Basics
 - The Hierarchy
 - Files
 - Directories
 - Special 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 Virtual File System
 - The Physical File System
 - The Inode Table
 - File Storage in Disk Blocks
 - The Superblock
 - Linux File Attributes
- Disk Management
 - Partitions and File Systems
 - Making a File System
 - The mkfs Command
 - The mount Command
 - Sharing File Systems
 - The fstab File
 - The fsck Command
 - The lost+found Directory
 - The fdisk Command
- Backups
 - Backup Strategies
 - Backup Tools
 - The tar Command
 - The cpio Command
 - The dump Command
 - Network Backup Strategies
- Linux Processes
 - Overview of Processes
 - Process Space
 - Process Table
 - The fork/exec Mechanism
 - The ps Command
 - The /proc File System
 - Background Processes
 - The kill Command

- Swapping and Paging
 - Managing Swap Space
 - The top Command
 - The vmstat Command
 - The strace Command
- Networking Utilities
 - Basic Network Needs
 - IP Addresses
 - The /etc/hosts File
 - DNS
 - The nslookup Command
 - Subnets
 - Telnet
 - FTP
 - Ping
- Configuring TCP/IP
 - Network Interfaces
 - The ifconfig Command
 - TCP/IP and Ports
 - The /etc/services File
 - The inetd Daemon
 - The /etc/inetd.conf File
 - Network Startup
 - The netstat Command
 - The route Command
 - The traceroute Command
- The Print System
 - Printing Overview
 - Adding a Printer
 - The lpd Daemon
 - The /etc/printcap File
 - The lpr, lpq, and lprm Commands
 - The lpc Command
 - Network Printers
 - Interfaces and Filters
- Package Management
 - Software Installation and Management
 - The rpm Command
 - Installing and Upgrading Software With rpm
 - Removing Packages
 - The rpm Database
 - Building Software From Source
- Server Configuration and Management
 - Standard Network Services
 - File and Print Sharing

Scheduling Jobs
The cron Daemon
The at Command
The crontab Command
Format of cron Files
Access to Scheduling Facilities

Samba
The Apache Web Server
Managing FTP
Internet Mail Service
Managing a DNS Server
• Overview of NIS
What is NIS?
Why Use NIS?
NIS Design and Implementation
NIS Maps
Configuring NIS