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Building World Class MIS Teams, for you!

CL030 is a cSAGE Certification Preparatory Course!

CL030 - 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.

Audience:

System Administrators who want to gain practical, hands-on Linux administration training.

Prerequisites:

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

Course Contents

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

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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 fi nd 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

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

System Startup and Shutdown

- Overview of the Bootup Sequence
- LILO
- The lilo.conf File
- The init Daemon
- /etc/inittab
- The init Command
- The rc Scripts
- Single-User Mode
- The shutdown Command

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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
- 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

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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

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Server Configuration and Management

- Standard Network Services
- File and Print Sharing
- 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