

Course Description: This course takes Linux System Administrators to the next level of maintaining Linux systems and implementing advanced levels of security and administration.

Who Should Attend: The course is intended for those people who will be responsible for the operation and management of LINUX systems.

Prerequisites: Participants are expected to have completed the Linux System Administration Course or have equivalent experience.

Benefits of Attendance: Upon completion of this course, students will be able to:

- Create and manage Linux filesystems.
- Manage user and group accounts.
- Add and remove devices.
- Install and compile new Linux kernels.
- Perform administrator level networking tasks.
- Setup and manage access to network services such as ftp, telnet, and NTP.
- Enable or disable services according to runlevel.
- Setup and configure sendmail.
- Setup and configure apache.
- Setup and configure NFS.
- Setup a DHCP server and manage client access.
- Manage network security.
- Learn basic firewall configuration.
- Perform network Linux installations.

Course Outline:

What You Should Already Know

Booting Linux
 LILO
 GRUB
 Modules.conf
 dmesg
 /var/log/messages
 System Runlevels
 /etc/inittab
 Overview of Red Hat Printing
 Printer Configuration
 CUPS
 Filesystems
 Kinds of Partitions
 Device Naming Conventions
 The root Filesystem
 Partitioning Disks
 Creating Filesystems
 Introduction
 The /etc/passwd File
 The /etc/group File
 The useradd Program
 The /etc/shadow File
 Scheduling Automatic Job Execution
 Backups
 tar
 The mt Command
 cpio
 dd
 dump and restore
 The dump Command
 The restore Command
 Naming Services Overview
 The NIS+ Environment
 The NIS Environment
 NIS Servers and Clients
 NIS Components

Devices, Filesystems, And The Filesystem Hierarchy Standard

Maintaining the Integrity of Filesystems
 Monitoring Free Disk Space and Inodes
 The df Command
 The du Command
 The fsck Command
 Controlling Filesystem Mounting and Unmounting
 The mount Command and /etc/fstab
 Unmounting Filesystems
 Setting and Viewing Disk Quotas
 Using Quotas
 Controlling Access to Files
 Establishing Permissions for Files and Directories
 umask
 Special Permissions
 chmod
 Managing File Ownership

Creating Hard and Symbolic Links
 Soft Links
 Preserving Links and Finding Links
 The Linux Filesystem Structure
 Specific Filesystems
 Helpful Commands Used to Locate Files
 Troubleshooting

Administrative Tasks

User Administration Commands
 More on useradd
 Group Management
 Tuning the User Environment
 Using System Log Files
 Linux Time
 NTP

Documentation

Paginators
 man
 Organization of man Pages
 Creating Your Own man Pages
 Other Documentation
 info
 Finding Information on the Internet
 Communicating with Users

Kernel

Kernel Modules
 The lsmod Command
 The insmod Command
 The rmmod Command
 The modprobe Command
 The modinfo Command
 Installing a Custom Kernel
 Configuring the Linux Kernel
 Installing a Custom Kernel
 Configuring your Boot Manager
 Installing a Kernel RPM

Linux Networking Fundamentals

Introduction
 Network Models
 The TCP/IP Model
 TCP/IP Protocols
 Packets
 Internet Addresses
 Subnets
 CIDR
 Ports
 Domain Name System
 dig
 host
 whois
 ftp
 vsFTP
 telnet

ping
 ifconfig
 route
 netstat
 tcpdump
 traceroute
 Miscellaneous Commands

Configuring Networking Services

Networking Services
 Enabling Services
 xinetd
 DHCP
 Configuring a DHCP Server
 The dhcpd.conf File
 DHCP Clients
 sendmail
 Configuring sendmail
 Configuring Apache
 The Network File System (NFS)
 DNS
 Secure Shell
 PPP
 Samba Configuration

Security

TCP Wrappers
 Finding Executable SUID Files
 Verifying Packages
 Host-Level Security
 ulimit
 Security Announcements
 The proc Filesystem
 Network Security Applications
 tcpdump
 nmap
 netcat

Firewalls

Introduction
 iptables
 Logging
 iptables Logging
 The nat Table
 nat
 The mangle Table

Network Installation

Introduction
 Server Setup
 FTP and HTTP Installation
 NFS Installation
 The Kickstart File
 Editing The Kickstart File
 Installation