

## LINUX COURSE

This course is expected to take two months with each day having two training hours, you may also suggest to us how many hours your staff can have per day so as to detail a clearer period, which the course can take. The time will entirely depend on your suggestions. It can take lesser time if the number of hours per day is increased.

### Course objectives

- I. Install and configure a Linux server for mission-critical corporate services
- II. Manage user accounts, file systems, networking and system logs
- III. Integrate Linux within a multi-vendor environment
- IV. Configure Linux to provide network services
- V. Customize and upgrade the Linux kernel
- VI. Provide secure access to a Linux server

### Course benefits

Linux is a full-featured, robust UNIX operating system with a wealth of associated free software, capable of supporting high-performance network services. The quality of Linux software makes it a low-cost, reliable, supported computing platform appropriate for the corporate server environment. This comprehensive hands-on course provides the knowledge and skills you need to install, configure and administer a Linux server for mission-critical network services. You learn to install and upgrade key software components with the latest versions and enhance server security.

### Who should attend?

This course is valuable for systems and network administrators, planners and integrators, and those interested in configuring and maintaining Linux servers. "UNIX/Linux Introduction," will be incorporated in the first days of the training as part one of the training. Some experience with TCP/IP is helpful but again if lacking, participants will be offered knowledge on the same.

### Hands-on training

Participants will gain hands-on experience as they learn how to install, configure and administer a Linux server. Practical exercises include:

- I. Installing Linux
- II. Providing network file services in a Windows environment
- III. Building and configuring a new kernel
- IV. Installing and configuring a Web server
- V. Setting up mail services
- VI. Building a Linux print server for a multi-vendor environment
- VII. Enabling secure network connections
- VIII. Implementing an FTP server

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### Course content

## Part 1 Planning and Installation

### **1. Introductions and Overview**

- a. Linux components
- b. Comparing Linux distributions
- c. Obtaining free software from the Internet
- d. Designing a mission-critical server for use in a multi-vendor environment
- e. Linux distributions
- f. Selecting the hardware
- g. Understanding your hardware
- h. Installation planning

### **2. Installing Linux**

- a. Designing the installation
- b. Evaluating automated installations
- c. Planning custom installations
- d. Organizing disk layout
- e. Selecting an installation method
- f. Making the boot disk
- g. Booting the installation program
- h. Disk partitioning
- i. Defining mount points
- j. Formatting partition
- k. Installing the software.

### **3. Performing the installation**

- a. Selecting internationalization settings
- b. Choosing software packages
- c. Monitoring the installation process
- d. Post-installation tasks

### **4. The Boot Process**

- a. Loading the boot sector
- b. Loading the kernel with LILO
- c. The Linux boot prompt
- d. Hardware device driver initialization
- e. Loading Linux services
- f. Start up scripts
- g. Loadable modules

### **5. Basic Commands**

- a. Understanding shells
- b. Understanding shell variables
- c. Understanding processes

## Part 2 Internet server operations

### **Performing System Administration**

- a. Administering the server
- b. Correcting installation problems
- c. Setting up user accounts
- d. Connecting to the network
- e. Configuring utilities

### **Configuring a Mail Server**

- a. Using mail aliases
- b. Using send mail to receive mail
- c. The send mail configuration file
- d. Using m4 to configure send mail
- e. Compiling and installing send mail

#### **The Apache Web Server**

- a. Installing apache
- b. Configuring the apache server
- c. Managing your web server
- d. Creating web content

#### **Maintaining the system**

- a. Examining the boot process
- b. Logging system events
- c. Managing software packages
- d. Verifying software with digital signatures
- e. Adding disk partitions and file systems

#### **Implementing File and Print Services**

- a. Sharing file systems across the network
- b. Linux-to-Windows shares with Samba
- c. Exporting with NFS
- d. Controlling exports with graphical configuration tools

#### **Providing print services to Windows, UNIX, Mac OS and others**

- a. Berkeley (BSD) printing system
- b. Printing with Common UNIX Printing System (CUPS)
- c. Sharing printers to the Windows network neighborhood
- d. Selecting printer drivers
- e. Web-based printer and print queue administration

#### **Login Services**

- a. Starting services with Internet
- b. Creating user accounts
- c. Understanding login security

#### **Linux Name Services**

- a. The host files
- b. Understanding DNS
- c. The bind software
- d. Configuring a domain name server
- e. Running named

#### **Providing Mission-Critical Intranet and Internet Services**

- a. Implementing DNS with BIND 9
- b. Writing zone files
- c. Transferring zone information to secondary servers
- d. Caching non-authoritative information about other zones
- e. Transferring bulk data with FTP
- f. Extending FTP capabilities with **wu-ftpd**
- g. Setting up anonymous FTP service
- h. Serving Web pages with HTTP
- i. Installing Apache
- j. Supporting multiple Web sites on one Linux server with virtual hosting

- k. Delivering mail to reliable servers using ESMTP
- l. Setting up a mail transfer agent
- m. Preventing unacceptable open relay behavior

#### **Other information services**

- a. POP
- b. IMAP
- c. NNTP

#### **Customizing The Linux Kernel**

- a. The anatomy of the kernel
- b. The kernel source tree structure
- c. Device drivers
- d. File systems
- e. Loadable modules
- f. Generic kernels
- g. Building a new kernel
- h. Stable vs. experimental releases
- i. Selecting required kernel components
- j. Improving kernel efficiency with loadable modules
- k. Customizing the kernel for specific tasks
- l. Installing the kernel
- m. Vital safety precautions you need to take before and during installation
- n. Recovering from a bad kernel
- o. Detecting and correcting system administration errors

#### **Improving Network Security**

- a. Defining firewall rules
- b. Establishing secure network connections with SSH, SSL and IPsec
- c.** Detecting unauthorized system changes with Tripwire
- d. Network Gateway Services
- e. Understanding routing
- f. Defining static routes
- g. Using dynamic routing
- h. Network address translation