Linux Basic Administration

Objetivos Gerais

Este Curso é dirigido a todos os que pretendem tornar-se profissionais em Linux, e pretende dotar os participantes dos conhecimentos técnicos e experiência nas tarefas de administração mais básicas em sistemas Linux.

Objetivos Específicos

No final do Curso os formandos ficaram aptos a:

- Conhecer, instalar, aplicar e administrar o Sistema Operativo Linux.

Destinatários

Este Curso destina-se a todos os profissionais que necessitem conhecer, instalar e administrar o Sistema Operativo Linux.

Carga Horária
35 Horas

Conteúdo Programático

Módulo I - Getting Started

- ➢ Starting with Linux

    - Understanding What Linux Is
    - Understanding How Linux Differs from Other Operating Systems
    - Exploring Linux History
        - o Free-flowing UNIX culture at Bell Labs
        - o Commercialized UNIX
            - Berkeley Software Distribution arrives
            - UNIX Laboratory and commercialization
        - o GNU transitions UNIX to freedom
        - o BSD loses some steam
        - o Linus builds the missing piece
        - o OSI open source definition
    - Understanding How Linux Distributions Emerged
        - o Choosing a Red Hat distribution
            - Using Red Hat Enterprise Linux
            - Using Fedora
        - o Choosing Ubuntu or another Debian distribution
    - Finding Professional Opportunities with Linux Today
        - o Understanding how companies make money with Linux

- o Becoming Red Hat Certified
  - ▪ RHCSA topics
  - ▪ RHCE topics
- Summary

➢ Creating the Perfect Linux Desktop

- Understanding Linux Desktop Technology
- Starting with the Fedora GNOME Desktop Live CD
- Using the GNOME 3 Desktop
  - o After the computer boots up
    - ▪ Navigating with the mouse
    - ▪ Navigating with the keyboard
  - o Setting up the GNOME 3 desktop
  - o Extending the GNOME 3 desktop
    - ▪ Using GNOME shell extensions
    - ▪ Using the GNOME Tweak Tool
  - o Starting with desktop applications
    - ▪ Managing files and folders with Nautilus
    - ▪ Installing and managing additional software
    - ▪ Playing music with Rhythmbox
  - o Stopping the GNOME 3 desktop
- Using the GNOME 2 Desktop
  - o Using the Metacity window manager
  - o Changing GNOME appearance
  - o Using the GNOME panels
    - ▪ Using the Applications and System menus
    - ▪ Adding an applet
    - ▪ Adding another panel
    - ▪ Adding an application launcher
    - ▪ Adding a drawer
    - ▪ Changing panel properties
  - o 3D effects with AIGLX
- Summary
- Exercises

Módulo II - Becoming a Linux Power User

➢ Using the Shell

- About Shells and Terminal Windows
  - o Using the shell prompt
  - o Using a terminal window
  - o Using virtual consoles
- Choosing Your Shell
- Running Commands
  - o Understanding command syntax

- o Locating commands
- Recalling Commands Using Command History
  - o Command-line editing
  - o Command-line completion
  - o Command-line recall
- Connecting and Expanding Commands
  - o Piping between commands
  - o Sequential commands
  - o Background commands
  - o Expanding commands
  - o Expanding arithmetic expressions
  - o Expanding variables
- Using Shell Variables
  - o Creating and using aliases
  - o Exiting the shell
- Creating Your Shell Environment
  - o Configuring your shell
  - o Setting your prompt
  - o Adding environment variables
- Getting Information About Commands
- Summary
- Exercises

➢ Moving Around the Filesystem

- Using Basic Filesystem Commands
- Using Metacharacters and Operators
  - o Using fi le-matching metacharacters
  - o Using fi le-redirection metacharacters
  - o Using brace expansion characters
- Listing Files and Directories
- Understanding File Permissions and Ownership
  - o Changing permissions with chmod (numbers)
  - o Changing permissions with chmod (letters)
  - o Setting default fi le permission with umask
  - o Changing file ownership
- Moving, Copying, and Removing Files
- Summary
- Exercises

➢ Working with Text Files

- Editing Files with vim and vi
  - o Starting with vi
    - ▪ Adding text
    - ▪ Moving around in the text
    - ▪ Deleting, copying, and changing text

- - - Pasting (putting) text
    - Repeating commands
    - Exiting vi
  - Skipping around in the fi le
  - Searching for text
  - Using ex mode
  - Learning more about vi and vim
- Finding Files
  - Using locate to find fi les by name
  - Searching for files with find
    - Finding files by name
    - Finding files by size
    - Finding files by user
    - Finding files by permission
    - Finding files by date and time
    - Using not and or when finding files
    - Finding files and executing commands
  - Searching in fi les with grep
- Summary
- Exercises

➢ Managing Running Processes

- Understanding Processes
- Listing Processes
  - Listing processes with ps
  - Listing and changing processes with top
  - Listing processes with System Monitor
- Managing Background and Foreground Processes
  - Starting background processes
  - Using foreground and background commands
- Killing and Renicing Processes
  - Killing processes with kill and killall
    - Using kill to signal processes by PID
    - Using killall to signal processes by name
  - Setting processor priority with nice and renice
- Summary
- Exercises

➢ Writing Simple Shell Scripts

- Understanding Shell Scripts
  - Executing and debugging shell scripts
  - Understanding shell variables
    - Special shell positional parameters
    - Reading in parameters
    - Parameter expansion in bash

- o Performing arithmetic in shell scripts
- o Using programming constructs in shell scripts
  - The "if   then" statements
  - The case command
  - The "for   do" loop
  - The "while   do" and "until   do" loops
- o Trying some useful text manipulation programs
  - The general regular expression parser
  - Remove sections of lines of text (cut)
  - Translate or delete characters (tr)
  - The stream editor (sed)
- o Using simple shell scripts
  - Telephone list
  - Backup script
- Summary
- Exercises

Módulo III - Becoming a Linux System Administrator

➢ Learning System Administration

- Understanding System Administration
- Using Graphical Administration Tools
- Using the root User Account
  - o Becoming root from the shell (su command)
  - o Allowing administrative access via the GUI
  - o Gaining administrative access with sudo
- Exploring Administrative Commands, Configuration Files, and Log Files
  - o Administrative commands
  - o Administrative configuration fi les
  - o Administrative log files
- Using Other Administrative Accounts
- Checking and Configuring Hardware
  - o Checking your hardware
  - o Managing removable hardware
  - o Working with loadable modules
    - Listing loaded modules
    - Loading modules
    - Removing modules
- Summary
- Exercises

➢ Installing Linux

- Choosing a Computer
- Installing Fedora from a Live CD
- Installing Red Hat Enterprise Linux from Installation Media

- Installing Linux in the Enterprise
- Exploring Common Installation Topics
  - Upgrading or installing from scratch
  - Dual booting
  - Installing Linux to run virtually
  - Using installation boot options
    - Boot options for disabling features
    - Boot options for video problems
    - Boot options for special installation types
    - Boot options for kickstarts and remote repositories
    - Miscellaneous boot options
  - Using specialized storage
  - Partitioning hard drives
    - Understanding different partition types
    - Partitioning during Fedora installation
    - Reasons for different partitioning schemes
    - Tips for creating partitions
  - Using the GRUB boot loader
    - Using GRUB Legacy (version 1)
    - Using GRUB 2
- Summary
- Exercises

➢ Getting and Managing Software

- Managing Software with PackageKit
  - Enabling repositories and getting updates
  - Searching for packages
  - Installing and removing packages
  - Going beyond PackageKit
- Understanding Linux RPM Software Packaging
  - Understanding RPM packaging
    - What is in an RPM?
    - Where do RPMs come from?
    - Installing RPMs
- Managing RPM Packages with YUM
  - Understanding how yum works
    - Checking /etc/yum conf
    - Checking /etc/sysconfi g/rhn/up2date (RHEL only)
    - Checking /etc/yum repos d/* repo fi les
    - Downloading RPM packages and metadata from a YUM repository
    - RPM packages installed to Linux fi le system
    - Store YUM repository metadata to local RPM database
  - Using YUM with third-party software repositories
  - Managing software with the YUM command
    - Searching for packages

- - Installing and removing packages
  - Updating packages
  - Updating groups of packages
  - Maintaining your RPM package database and cache
  - Downloading RPMs from a yum repository
- Installing, Querying, and Verifying Software with the rpm Command
  - Installing and removing packages with rpm
  - Querying rpm information
  - Verifying RPM packages
- Managing Software in the Enterprise
- Summary
- Exercises

➢ Managing User Accounts

- Creating User Accounts
  - Adding users with useradd
  - Setting user defaults
  - Modifying users with usermod
  - Deleting users with userdel
- Understanding Group Accounts
  - Using group accounts
  - Creating group accounts
- Managing Users in the Enterprise
  - Setting permissions with Access Control Lists
    - Setting ACLs with setfacl
    - Setting default ACLs
    - Enabling ACLs
  - Adding directories for users to collaborate
    - Creating group collaboration directories (set GID bit)
    - Creating restricted deletion directories (sticky bit)
- Centralizing User Accounts
  - Using the Authentication Confi guration window
- Summary
- Exercises

➢ Managing Disks and Filesystems

- Understanding Disk Storage
- Partitioning Hard Disks
  - Viewing disk partitions
  - Creating a single-partition disk
  - Creating a multiple-partition disk
- Using Logical Volume Management Partitions
  - Checking an existing LVM
  - Creating LVM logical volumes
  - Growing LVM logical volumes

- Mounting Filesystems
- Supported fi lesystems
  - o Enabling swap areas
  - o Disabling swap area
  - o Using the fstab file to define mountable fi le systems
  - o Using the mount command to mount fi le systems
  - o Mounting a disk image in loopback
  - o Using the umount command
- Using the mkfs Command to Create a Filesystem
- Summary
- Exercises