Linux Basic Administration

Objetivos Gerais

Este curso é dirigido a todos os que pretendem tornar-se Profissionais em Linux, bem como um caminho para a obtenção da certificação em Administração de sistemas Linux.

Objetivos Específicos:

No final do curso os formandos ficaram aptos:

Conhecer, instalar, aplicar e administrar o Sistema Operativo Linux

Destinatários:

A todos os profissionais que necessitem conhecer, instalar e administrar o Sistema Operativo Linux

Carga Horária: 30 – 50 horas

CONTEÚDO:

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
    - o Skipping around in the fi le
    - o Searching for text
    - o Using ex mode
    - o Learning more about vi and vim
  - ✓ Finding Files
    - o Using locate to find fi les by name
    - o 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
    - o Searching in fi les with grep
  - ✓ Summary
  - ✓ Exercises

- ➢ Managing Running Processes
  - ✓ Understanding Processes
  - ✓ Listing Processes

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

- ➢ Writing Simple Shell Scripts

  - ✓ Understanding Shell Scripts
    - o Executing and debugging shell scripts
    - o 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
  - o Upgrading or installing from scratch
  - o Dual booting
  - o Installing Linux to run virtually
  - o 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
  - o Using specialized storage
  - o Partitioning hard drives
    - ▪ Understanding different partition types
    - ▪ Partitioning during Fedora installation
    - ▪ Reasons for different partitioning schemes
    - ▪ Tips for creating partitions
  - o Using the GRUB boot loader
    - ▪ Using GRUB Legacy (version 1)
    - ▪ Using GRUB 2
- ✓ Summary
- ✓ Exercises

➢ Getting and Managing Software

- ✓ Managing Software with PackageKit
  - o Enabling repositories and getting updates
  - o Searching for packages
  - o Installing and removing packages
  - o Going beyond PackageKit
- ✓ Understanding Linux RPM Software Packaging
  - o Understanding RPM packaging
    - ▪ What is in an RPM?
    - ▪ Where do RPMs come from?
    - ▪ Installing RPMs
- ✓ Managing RPM Packages with YUM
  - o 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
  - o Using YUM with third-party software repositories
  - o 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
    - o Installing and removing packages with rpm
    - o Querying rpm information
    - o Verifying RPM packages
  - ✓ Managing Software in the Enterprise
  - ✓ Summary
  - ✓ Exercises

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

- ➢ Managing Disks and Filesystems
  - ✓ Understanding Disk Storage
  - ✓ Partitioning Hard Disks
    - o Viewing disk partitions
    - o Creating a single-partition disk
    - o Creating a multiple-partition disk
  - ✓ Using Logical Volume Management Partitions
    - o Checking an existing LVM
    - o Creating LVM logical volumes
    - o 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