

## 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.

### Pré-requisitos

Os pré-requisitos necessários para frequentar este curso são:

- Ter acesso a um computador ou um tablet com ligação à Internet e um browser (programa para navegar na web), como o Chrome, Safari, Firefox ou Internet Explorer.
- Pode aceder ao curso a partir de qualquer computador (por exemplo, em casa e no escritório), tablet ou smartphone.

### Carga Horária

35 Horas

### Conteúdo Programático

#### Módulo 0 – Apresentação de Plataforma e Método de Utilização

#### Módulo I - Getting Started

##### ➤ Starting with Linux

- Understanding What Linux Is
- Understanding How Linux Differs from Other Operating Systems
- Exploring Linux History
  - Free-flowing UNIX culture at Bell Labs
  - Commercialized UNIX
    - Berkeley Software Distribution arrives
    - UNIX Laboratory and commercialization
  - GNU transitions UNIX to freedom
  - BSD loses some steam

- Linus builds the missing piece
- OSI open source definition
- Understanding How Linux Distributions Emerged
  - Choosing a Red Hat distribution
    - Using Red Hat Enterprise Linux
    - Using Fedora
  - Choosing Ubuntu or another Debian distribution
- Finding Professional Opportunities with Linux Today
  - Understanding how companies make money with Linux
  - 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
  - After the computer boots up
    - Navigating with the mouse
    - Navigating with the keyboard
  - Setting up the GNOME 3 desktop
  - Extending the GNOME 3 desktop
    - Using GNOME shell extensions
    - Using the GNOME Tweak Tool
  - Starting with desktop applications
    - Managing files and folders with Nautilus
    - Installing and managing additional software
    - Playing music with Rhythmbox
  - Stopping the GNOME 3 desktop
- Using the GNOME 2 Desktop
  - Using the Metacity window manager
  - Changing GNOME appearance
  - 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
  - 3D effects with AIGLX
- Summary
- Exercises

## **Módulo II - Becoming a Linux Power User**

### ➤ Using the Shell

- About Shells and Terminal Windows
  - Using the shell prompt
  - Using a terminal window
  - Using virtual consoles
- Choosing Your Shell
- Running Commands
  - Understanding command syntax
  - Locating commands
- Recalling Commands Using Command History
  - Command-line editing
  - Command-line completion
  - Command-line recall
- Connecting and Expanding Commands
  - Piping between commands
  - Sequential commands
  - Background commands
  - Expanding commands
  - Expanding arithmetic expressions
  - Expanding variables
- Using Shell Variables
  - Creating and using aliases
  - Exiting the shell
- Creating Your Shell Environment
  - Configuring your shell
  - Setting your prompt
  - Adding environment variables
- Getting Information About Commands
- Summary
- Exercises

### ➤ Moving Around the Filesystem

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

- Summary
- Exercises

## ➤ Working with Text Files

- Editing Files with vim and vi
  - 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 file
  - Searching for text
  - Using ex mode
  - Learning more about vi and vim
- Finding Files
  - Using locate to find files 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 files 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
    - Performing arithmetic in shell scripts
    - Using programming constructs in shell scripts
      - The “if then” statements
      - The case command
      - The “for do” loop
      - The “while do” and “until do” loops
    - 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)
    - 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
    - Becoming root from the shell (su command)
    - Allowing administrative access via the GUI
    - Gaining administrative access with sudo
  - Exploring Administrative Commands, Configuration Files, and Log Files
    - Administrative commands
    - Administrative configuration files
    - Administrative log files
  - Using Other Administrative Accounts
  - Checking and Configuring Hardware
    - Checking your hardware
    - Managing removable hardware
    - 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 file 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 Configuration 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 file systems
  - Enabling swap areas
  - Disabling swap area
  - Using the fstab file to define mountable file systems
  - Using the mount command to mount file systems
  - Mounting a disk image in loopback
  - Using the umount command
- Using the mkfs Command to Create a Filesystem
- Summary
- Exercises

### Metodologia

Este curso tem sempre presente o formador, que irá mesmo dar a formação presencial através da plataforma.

O Formando pode intervir juntamente com o formador ou com os restantes formandos tal como faz na sala de aula.

As apresentações e exercícios serão sempre disponibilizados pelo formador no final de cada sessão de formação.

No final do curso receberá um Certificado de Formação Profissional caso frequente pelo menos 90% das aulas, realize os trabalhos e os testes propostos, participe nas discussões online e tenha avaliação final positiva.

Esta formação é certificada e reconhecida.