Linux (RHEL, Debian, Ubuntu and SLES) : Basics

Presentation

Objectives : Master the basics of Red Hat Enterprise Server, Debian Linux, SUSE Linux Enterprise Server and Ubuntu Linux.
Who can benefit : Anyone.
Prerequisites : Knowledge of another operating system.
Learning technique : Clear, theoretical course content divided into lessons and extensive LABS available on-line 24/24 7/7.
Duration : 21 hours.
Instructor : Certified **LPI**.
Student Progression : Student progression is monitored both in terms of effective course duration and in terms of student comprehension using self-assessment tests.
Resources : RHEL 7, Debian 8, SLES 12 and Ubuntu 16.04 Virtual Machines.

Cursus

- **File Hierarchy System**
    - Directory Contents
    - Directory Structure
    - File Types
    - The mount command
        - Command Line Switches
    - The /etc/fstab file
        - Understanding the /etc/fstab file
            - Mountpoint Options
    - The umount command
        - Command Line Switches
    - Unix File Systems
        - Superblock

- Inodes
- Data Blocks
- Hard (Physical) Links
- Soft (Symbolic) Links
  - **Commands**: mount, umount.

- **The VIsual Editor**
  - Presentation
  - Creating, Opening and Closing files with VI
    - Commands
    - LAB #1 - Creating a new file with VI
    - LAB #2 - Opening a file in read-only mode using view
    - LAB #3 - Opening a file in read-write mode using VI
  - The set Command
    - Commands
    - LAB #4 - Turning on line numbering using set
  - Moving around within the file
    - Commands
  - Inserting Text
    - Commands
    - LAB #5 - Inserting text
  - Searching for Text
    - Commands
    - LAB #6 - Searching for and replacing text
  - Deleting Text
    - Commands
    - LAB #7 - Deleting lines
  - Copy, Cut and Paste
    - Commands
    - LAB #8 - Copying, Cutting and pasting text
  - Configuring a Personalised Interface
  - **Commands**: view, vi

- **Help and Documentation**
  - Help on external commands

- Help on built-in commands
- The man command
  - Command Line Switches
- The apropos command
  - Command Line Switches
- The makewhatis and whatis Commands under RHEL/CentOS 6
  - Command Line Switches
- The mandb and whatis commands with RHEL/CentOS 7
  - Command Line Switches
- The info command
  - Command Line Switches
- **Commands**: help, man, info, apropos, makewhatis, mandb, whatis.

- **Basic Shell Commands and Text Manipulation Tools**
  - Use of Basic Shell Commands
    - The stty Command
      - Command Line Switches
    - The date command
      - Command Line Switches
    - The who Command
      - Command Line Switches
    - The df Command
      - Command Line Switches
    - The free Command
      - Command Line Switches
    - The whoami Command
      - Command Line Switches
    - The pwd Command
      - Command Line Switches
    - The cd Command
      - Command Line Switches
    - The ls Command
      - Command Line Switches
    - The lsof Command

- Command Line Switches
- The touch Command
  - Command Line Switches
- The echo Command
  - Command Line Switches
- The cp Command
  - Command Line Switches
- The file Command
  - Command Line Switches
- The cat Command
  - Command Line Switches
- The mv Command
  - Command Line Switches
- The mkdir Command
  - Command Line Switches
- The rmdir Command
  - Command Line Switches
- The rm Command
  - Command Line Switches
- The sort Command
  - Command Line Switches
- The more Command
  - Command Line Switches
- The less Command
  - Command Line Switches
- The find Command
  - Command Line Switches
- The su Command
  - Command Line Switches
- The updatedb and locate Commands
  - Command Line Switches
- The whereis Command
  - Command Line Switches
- The which Command

- Command Line Switches
  - The uptime Command
    - Command Line Switches
  - The w Command
    - Command Line Switches
  - The uname Command
    - Command Line Switches
  - The du Command
    - Command Line Switches
  - The clear Command
  - The exit Command
    - Command Line Switches
  - The logout Command
    - Command Line Switches
  - The sleep Command
    - Command Line Switches
  - The wall Command
  - The seq Command
    - Command Line Switches
  - The screen Command
    - Command Line Switches
- Switches and Arguments
- Manipulating Text Files
  - Regular Expressions
    - BREs
    - EREs
  - Text-search Utilities
    - The grep Command
      - Command Line Switches
    - The egrep Command
      - Command Line Switches
    - The fgrep Command
    - LAB #1 - Using grep, egrep and fgrep
  - The Stream EDitor SED

- Command Line Switches
- LAB #2 - Using sed
- The Text Processor AWK
    - Presentation
    - Field Separation
    - Conditions
        - A regular expression applied to a record
        - A regular expression applied to a field
        - Comparisons
        - Logical Operators
        - Built-in Variables
    - Awk Scripts
    - The printf function
    - Control Statements
        - if
        - for
        - while
        - do-while
    - Command Line Switches
    - LAB #3 - Using awk
- Other Useful Commands
    - The expand Command
        - Command Line Switches
    - La Commande unexpand
        - Command Line Switches
    - The cut command
        - Command Line Switches
    - The uniq Command
        - Command Line Switches
    - The tr Command
        - Command Line Switches
    - The paste Command
        - Command Line Switches
    - The split Command

- Command Line Switches
    - The diff Command
        - Command Line Switches
    - The cmp Command
        - Command Line Switches
    - The patch Command
        - Command Line Switches
    - The strings Command
        - Command Line Switches
    - The comm Command
        - Command Line Switches
    - The head Command
        - Command Line Switches
    - The tail Command
        - Command Line Switches
    - LAB #4 - Use the grep, tr and cut to extract your IP address from the output of ifconfig
  - **Commands**: stty, date, who, df, free, whoami, pwd, cd, ls, touch, echo, cp, file, cat, mv, mkdir, rmdir, rm, sort, more, find, su, locate, updatedb, whereis, which, uptime, w, uname, du, lsmod, modprobe, rmmod, modinfo, clear, exit, logout, sleep, grep, egrep, fgrep, sed, awk, tr, paste, cut, split, diff, cmp, uniq, patch, strings, comm, od, head, tail, wall, screen.

- **Command Line Interface**
  - The Shell
  - /bin/bash
    - Internal And External Commands
    - Aliases
    - The Prompt
    - The history Command
    - The TAB key
    - Metacharacters
        - The * Metacharacter
        - The ? Metacharacter
        - The [] Metacharacter
        - The extglob Option
        - ?(expression)

- *(expression)
- +(expression)
- @(expression)
- !(expression)
  - Protecting Metacharacters
  - Exit Status
  - Redirections
  - Pipes
  - Command Substitution
  - Conditional Command Execution
- Environment Variables
  - Principal Variables
  - Internationalisation and Localisation
  - Special Variables
  - The env Command
- Bash Shell Options
  - noclobber
  - noglob
  - nounset
- Basic Shell Scripting
  - Execution
  - The read command
    - Code de retour
    - The IFS Variable
  - The test Command
    - Testing Files
      - LAB #1
    - Testing Strings
      - LAB #2
    - Testing Numbers
      - LAB #3
    - Expressions
      - LAB #4
    - Testing the User Environment

- LAB #5
  - The [[expression]] Command
    - LAB #6
  - Shell Operators
    - LAB #7
  - The expr Command
    - Maths
    - Comparisons
    - Logic
      - LAB #8
    - The let Command
      - Maths
      - Comparisons
      - Logic
      - Binary
        - LAB #9
    - Control Structures
      - If
      - case
      - Loops
        - for
        - while
          - Example
      - Start-up Scripts
      - LAB #10
        - ~~/.bash_profile
        - ~/.bashrc
  - **Commands**: type, alias, unalias, chsh, history, wc, tee, set, vi, script, read, test, expr, let, if, case, for, while.