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UX001 - Course Presentation

Contents

Prerequisites

Hardware

- A computer running either MacOS, Linux, Windows™ or Solaris™,
- QWERTY US Keyboard,
- 4 GB of RAM,
- Headphones,
- A mic (optional).

Software

- Web Chrome version 72+ or
- Microsoft Edge version 79+ or
- Firefox version 65+.

Internet

- A fast, **direct** (no proxy or VPN), Internet connection (4G minimum),

Training Program

- **LCE400 - Course Presentation**
  - Prerequisites
    - Hardware
    - Software
    - Internet
  - Training Program
- **LCE401 - File Hierarchy System**
  - Linux File Hierarchy System
  - File Types
  - The mount Command
  - The /etc/fstab file
    - Understanding the /etc/fstab file
      - Mount Options
  - The umount Command
  - Unix File Systems
    - Superblock
    - Inodes
    - Data Blocks
    - Hard (Physical) Links

        - Soft (Symbolic) Links

- **LCE402 - The VIsual Editor**
    - Presentation
    - LAB #1 - Creating, Opening and Closing files with VI
        - 1.1 - Commands
        - 1.2 - Creating a new file with VI
        - 1.3 - Opening a file in read-only mode using view
        - 1.4 - Opening a file in read-write mode using VI
    - LAB #2 - The set Command
        - 2.1 - Commands
        - 2.2 - Turning on line numbering using set
    - LAB #3 - Moving around within the file
        - 3.1 - Commands
    - LAB #4 - Inserting Text
        - 4.1 - Commands
        - 4.2 - Inserting text
    - LAB #5 - Searching for Text
        - 5.1 - Commands
        - 5.2 - Searching for and replacing text
    - LAB #6 - Deleting Text
        - 6.1 - Commands
        - 6.2 - Deleting lines
    - LAB #7 - Copy, Cut and Paste
        - 7.1 - Commands
        - 7.2 - Copying, Cutting and pasting text
    - LAB #8 - Configuring a Personalised Interface

- **LCE403 - 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

- **LCE404 - Basic Shell Commands and Text Manipulation Tools**
  - LAB #1 - Use of Basic Shell Commands
    - 1.1 - The stty Command
    - 1.2 - The date command
    - 1.3 - The who Command
    - 1.4 - The df Command
    - 1.5 - The free Command
    - 1.6 - The whoami Command
    - 1.7 - The pwd Command
    - 1.8 - The cd Command
    - 1.9 - The ls Command
    - 1.10 - The lsof Command
    - 1.11 - The touch Command
    - 1.12 - The echo Command
    - 1.13 - The cp Command
    - 1.14 - The file Command
    - 1.15 - The cat Command
    - 1.16 - The mv Command
    - 1.17 - The mkdir Command
    - 1.18 - The rmdir Command
    - 1.19 - The rm Command
    - 1.20 - The sort Command
    - 1.21 - The more Command
    - 1.22 - The less Command
    - 1.23 - The find Command
    - 1.24 - The su Command
    - 1.25 - The updatedb and locate Commands

        - 1.26 - The whereis Command
        - 1.27 - The which Command
        - 1.28 - The uptime Command
        - 1.29 - The w Command
        - 1.30 - The uname Command
        - 1.31 - The du Command
        - 1.32 - The clear Command
        - 1.33 - The exit Command
        - 1.34 - The logout Command
        - 1.35 - The sleep Command
        - 1.36 - The wall Command
        - 1.37 - The seq Command
        - 1.38 - The screen Command
    - LAB #2 - Switches and Arguments
    - LAB #3 - Regular Expressions
        - BREs
        - EREs
    - Manipulating Text Files
        - Text-search Utilities
            - The grep Command
            - The egrep Command
            - The fgrep Command
            - LAB #4 - Using grep, egrep and fgrep
        - The Stream EDitor SED
            - LAB #5 - 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
        - LAB #3 - Using awk
    - LAB 7 - Other Useful Commands
        - 7.1 - The expand Command
        - 7.2 - The unexpand Command
        - 7.3 - The cut Command
        - 7.4 - The uniq Command
        - 7.5 - The tr Command
        - 7.6 - The paste Command
        - 7.7 - The split Command
        - 7.8 - The diff Command
        - 7.9 - The cmp Command
        - 7.10 - The patch Command
        - 7.11 - The strings Command
        - 7.12 - The comm Command
        - 7.13 - The head Command
        - 7.14 - The tail Command
    - LAB #8 - Use the grep, tr and cut commands to extract your IPv4 address from the output of ifconfig
    - LAB #9 - Use the grep, awk and sed commands to extract your IPv4 address from the output of ip

- **LCE405 -Command Line Interface**
    - Contents
    - The Shell
    - /bin/bash
        - Internal And External Commands
        - Aliases
        - The Prompt
        - The history Command

        - The TAB key
        - Metacharacters
        - 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
        - The test Command
        - The expression Command
        - Shell Operators
        - The expr Command
        - The let Command
        - Control Structures
        - Loops
        - Start-up Scripts
        - LAB #1 - Start-up Scripts

- **LCE503 - Managing File Permissions**
    - Contents
    - Presentation
    - Preparation

- LAB #1 - Basic Unix File Permissions
  - 1.1 - Changing Permissions with chmod
    - Symbolic Mode
    - Octal Mode
    - The umask Command
  - 1.2 - Changing the Owner or the Group with chown and chgrp
    - The chown Command
    - The chgrp Command
- LAB #2 - Advanced Unix Permissions
  - 2.1 - SUID/SGID bit
  - 2.2 - Inheritance Flag
  - 2.3 - Sticky bit
- LAB #3 - Extending Linux Permissions using ACLs and Attributes
  - 3.1 - ACLs
  - 3.2 - Attributes

- **LCE504 - Managing Disks and Filesystems**
  - Contents
  - Peripherals
  - Partitions
  - Partitioning
    - LAB #1 - Partioning your Disk with the fdisk Command
    - LAB #2 - Modifier les Drapeaux des Partitions avec fdisk
  - Logical Volume Manager (LVM)
    - LAB #3 - Linear Logical Volumes
      - Physical Volumes (PV)
      - Volume Groups (VG) and Physical Extents (PE)
      - Logical Volumes (LV)
    - LAB #4 - Grow a Volume
    - LAB #5 - Snapshots
    - LAB #6 - Deleting Volumes
    - LAB #7 - Mirrored Volumes
    - LAB #8 - Changing LVM Attributes
    - LAB #9 - Striped Volumes

        - LAB #10 - Managing Meta-data
    - Journaled Filesystems
        - Ext3
            - Managing Ext3
            - LAB #11 - Converting Ext3 to Ext2
            - LAB #12 - Converting Ext2 to Ext3
            - LAB #13 - Using another Partition for the Journal
            - LAB #14 - Changing the File System Check interval on an ext3 Filesystem
        - Ext4
            - LAB #15 - Creating an Ext4 Filesystem
            - LAB #16 - Adding a Label to an Ext4 Filesystem
            - LAB #17 - Converting Ext3 to Ext4
        - XFS
            - LAB #18 - Creating an XFS Filesystem
            - LAB #19 - Adding a Label to an XFS Filesystem

- **LCE507 - Process Management**
    - Contents
    - Presentation
    - Process Types
    - Process Commands
        - The ps Command
        - The pgrep Command
        - The pstree Command
        - The top Command
        - The fg, bg and jobs Commands
        - The wait Command
        - The nice Command
        - The renice Command
        - The nohup Command
        - The kill Command
        - The pkill Command

- **LCE513 - Managing the Network**
    - Contents

- Presentation
  - The nmcli Command
- LAB #1 - Configuring the Network
  - 1.1 - Connections and Profils
  - 1.2 - Name Resolution
  - 1.3 - Adding a Second IP Address to a Profile
  - 1.4 - The hostname Command
  - 1.5 - The ip Command
  - 1.6 - Manually Activating and Disactivating a Device
  - 1.7 - Static Routing
    - The ip Command
    - Disactivating/Activating Internal Routing on a Server
- LAB #2 - Diagnostics
  - 2.1 - The ping Command
  - 2.2 - The netstat Command
  - 2.3 - The traceroute Command
- LAB #3 - SSH
  - 3.1 - Presentation
    - SSH-1
    - SSH-2
  - 3.2 - Configuring the Server
  - 3.3 - Configuring the Client
  - 3.4 - SCP
    - Presentation
    - Usage
  - 3.5 - Authentication with Asymetric Keys
