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UX001 - Course Presentation

Contents

- **UX001 - Course Presentation**
  - Contents
  - Prerequisites
    - Hardware
    - Software
    - Internet
  - Training Program
  - Skills Assessment

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
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- **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**
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    - 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
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        - XFS
            - LAB #18 - Creating an XFS Filesystem
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        - 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

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  - 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
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  - 2.1 - The ping Command
  - 2.2 - The netstat Command
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- LAB #3 - SSH
  - 3.1 - Presentation
    - SSH-1
    - SSH-2
  - 3.2 - Configuring the Server
  - 3.3 - Configuring the Client
  - 3.4 - SCP
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