Linux Shell : Scripting with Bash/Ksh

Presentation

Objectives : Master the basics of bash/ksh scripting under 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 or Debian 8 or Ubuntu 16.04 or SLES 12 Virtual Appliance.

Cursus

- **Text Manipulation Tools**
  - 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.

- **Scripting Workshop**
    - LAB #1 - Automating User Management
        - The **create_user** function
        - The **modif_user** function
        - The **show_user** function
        - The **create_list_user** function

        - The **create_group**function
        - The **modif_group**function
        - The **delete_group**function
        - The **show_group** function
        - Creating a menu
    - LAB #2 - Automating Backups,
        - The **archive_rep** function
        - The **restore_rep** function
        - The **show_archive** function
        - The **compress_archive** function
        - The **decompress_archive** function
        - Managing errors