



Advanced Shell Programming (sed and awk tools)

REFERENCE	CLS
INTENDED PARTICIPANTS	This course is intended for administrators, developers and all those whose productivity can benefit from shell programming. A basic knowledge of UNIX tools and utilities would be useful. Knowledge of UNIX or Linux is essential.
LEARNING OBJECTIVES	Writing shell scripts to improve the productivity of administrators and users of the Unix/Linux system. Using the key features of the shell: variables, branches, loops and functions. Improving efficiency: handling complex files, string manipulation, mathematical calculations without using external tools. Customizing and extending the user environment with Shell scripting. Mastering writing programmes in Bourne, Bourne Again Shell (bash) and the Korn Shell. Adding to the power of the Unix shell with SED and AWK tools to make maintenance and administration scripts.
DURATION	3 days
DELIVERY PRICE	Contact Us

COURSE CONTENT

INTRODUCTION

- The role of the shell
- Different shells
- The features of the various shells

COMMANDS REMINDER

- Commands reminder, the vi mode
- Setting the commands reminder

USING THE SHELL IN INTERACTIVE MODE

- Wildcards
- Escape characters
- Redirects (>, >>)
- Redirects (<)
- Redirects (2>)
- Redirects, pipes (|)
- Redirects (> |) ksh
- Replacing commands
- Special characters panorama

SHELL SCRIPTS

- The scripts principle
- Comments
- Running a script
- Focus
- Shell options
- Message display: echo, print (ksh)



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VARIABLES

- Notions on variables
- Shell variables
- The environment
- Environment variables
- The *.profile* file
- Parameters
- The read command
- Proxies
- Arrays (ksh)

CONTROL INSTRUCTIONS

- if: the alternative
- The return code
- The alternative with the operators && and ||
- The test command
- case: multiple choice
- while: the while loop
- until: the until loop
- for: the "for such values, do" loop
- break, continue: unconditional jumps

ALIASES AND FUNCTIONS

- General information on aliases (ksh)
- The individual alias
- Sub-programme as a script
- Subroutine as a function
- Data exchange
- The library functions (ksh)

ARITHMETIC

- using expr in arithmetic
- Arithmetic in POSIX shell
- Loops
- The bc command

REGULAR EXPRESSIONS

- Reminder of using grep
- Metacharacters for regular expressions
- Implementation of regular expressions with grep
- egrep possibilities
- GNU grep possibilities

STRINGS

- expr: string manipulation
- Variable expressions
- Assignment chains with typeset (ksh)
- basename and dirname commands and generic expressions

FILES MANAGEMENT

- Update a file with the redirection >>
- << Redirection
- Define field separator: IFS



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- Redirect any script input-output
- Playing a file in a loop
- Redirect input-output ksh
- Test the inputs/outputs standard

MULTITASK PROGRAMMING IN SHELL

- Overview of process management commands
- Parallel programming in shell
- The consolidation of commands
- The \$ and ! variables
- Signal handling: trap and kill
- Process groups
- Data exchange by named pipe
- Locks
- Coprocesses
- Work management in the Korn Shell

SOME USEFUL COMMANDS

- eval: reinterpreting a command
- select: Menu Management (ksh)
- getopts: decoding options for a script

SIMPLE AND CONVENIENT COMMANDS

- The what command
- The xargs command
- The tput command

THE SED FILTER (ADVANCED TOOL)

- Operating principle of sed
- Sed commands
- Using regular expressions in sed
- Subexpressions

THE AWK TEXT PROCESSOR (ADVANCED TOOL)

- Operating principles of awk
- Structure of an awk programme
- Criteria
- Predefined variables
- Variables and expressions
- Arrays
- Instructions
- Predefined functions
- User functions

THE SHELL AND UNIX/LINUX ADMINISTRATION

- Using shell to better administer

PRACTICAL WORK

Theoretical lectures alternate with immediate application through several practical sessions to provide effective instruction.

Methods and best practices to effectively programme Linux servers.

Feedback from Linux specialists.