

Hands-on course , 5
day(s)
Ref : MUX

Pre-requisites

Learners should have general
knowledge in computing.

Next sessions

Mastering Unix

OBJECTIVES

This intensive training has several goals: to allow you to reach a real knowledge of the system through pedagogical paths, both theoretical and using various labs on different versions of Unix (AIX, HP-UX, Solaris and Linux), to give you synthetic information useful for an everyday use of the system, and present a set of selected examples that show the system capabilities, and to underline some differences between versions of Unix.

[1\) Basic concepts and functions](#)

[2\) Executing commands](#)

[3\) Tools and shell programming](#)

[4\) Internals and communication](#)

[5\) Operating the system](#)

[6\) Usual Unix server operations](#)

1) Basic concepts and functions

Hands-on the system

- Login, interaction and special characters.
- Graphical User Interfaces (CDE-GNOME, KDE).
- Files and directories, mount.

Exploring the system

- Directory tree and path.
- Managing file access.
- File access on files and directory.
- Using the online manual pages.

Managing files

- Implementation.
- Physical and symbolic links.
- Mapping of files.
- Special files.
- Unix directory tree.

Text editors and regular expressions

- Using regular expressions.
- Text editors (ed, sed, vi).
- Using vi.

Various Unix versions (AIX, HP-UX, Solaris, Linux)

- Why do we have various Unix versions ?
- Compatibility.
- Which version for which application ?

2) Executing commands

Executing programs

- Shell execution.
- Processes and environment.

Basic shell features

- Variables and special characters.
- Redirecting commands.
- Dynamic generation of commands.

Shell scripts

- How shell-scripts are working ?
- Shell scripts execution mode.

Additional information on shells (ksh, bash, csh)

- Functions.
- Startup files.
- Additional features of bash and ksh.

3) Tools and shell programming

Toolbox

- Splitting, comparing and analyzing files.
- Tools for operators.
- Complex tools.
- Awk utility.

Pipes

- Concepts and use.
- Building new tools with pipes.

Shell programming

- Variables.
- Operators.
- Loop instructions.
- Conditional instructions.
- Interactive programs examples.
- Shell tips and tricks.

4) Internals and communication

Internals and file management

- Tables and system calls.
- Link with processes management.
- Interface summary and case study.

Managing processes

- Multitasking and associated calls.
- Signals.
- Processes and commands relationships.
- Threads.

Inter-processes communication

- Pipes.
- Named pipes.
- IPCs.
- Sockets.
- RPC.

Local and remote communication. TCP/IP

- Local communication.
- Unix on a local area network (TCP/IP).
- ARPA commands (telnet, ftp).
- R-commands (rcp, rsh, rlogin).
- Secured commands (ssh, scp).
- Informational commands (rnp, rusers, ...).
- Sharing files with NFS.
- Name services (hosts, NIS et DNS).
- Introduction to administration (ping, netstat, ifconfig).

5) Operating the system

Backups and restore

- Managing tapes.
- Backup and restore commands.

Scheduling tasks

- Using crontab.
- The at command.

Operating the filesystem

- Standard directory tree.
- Comparing AIX, HP-UX, Solaris and Linux.
- Basic operating tasks.

Booting the system

- Boot and shutdown. Run-levels management.

Managing users

- Concepts and essential files.
- User creation.

Security features

- Filesystems, network, tools.

Freeware and open source tools

- Downloading and using freeware and open source tools.
- Overview of useful tools.

6) Usual Unix server operations

Oracle and Unix

- User environment.
- Oracle files and processes.

Unix web server features

- Essential setup and session example.

Working with Windows

- Samba features.