



## UNIX Fundamentals

**Duration: 5 Days    Course Code: UF    Delivery Method: Company Event**

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### Overview:

This Unix Operating System and Shell Programming training course introduces the delegate to the main concepts of the UNIX Operating System. The most commonly used unix commands are described in detail as are the command line wildcard and redirection facilities. The mechanisms by which a user acquires a login environment are discussed and the main features of the Korn/Posix/Bash Shells are introduced. It is designed to give delegates practical experience in developing and writing shellscripts. Most of the built-in unix shell commands are introduced together with the main program control structures.

### Company Events

These events can be delivered exclusively for your company at our locations or yours, specifically for your delegates and your needs. The Company Events can be tailored or standard course deliveries.

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### Target Audience:

For the UNIX Fundamentals course, there are no formal pre-requisites, although an understanding of and exposure to information technology is advantageous.

Programmers, administrators and support personnel who need to understand the UNIX Operating system, existing shellscripts, automate procedures and write their own utilities.

Some programming experience may also prove advantageous.

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### Objectives:

- To provide the skills needed to work productively in a UNIX environment to develop and customise shell programs.
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### Prerequisites:

There are no formal pre-requisites for this UNIX Fundamentals training course, although an understanding of and exposure to information technology and an understanding of operating systems is required.

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### Follow-on-Courses:

- UNIX System Administration (USA)
  - Oracle SQL (OSP)
  - UNIX Advanced Shell Programming Tools (UT)
  - TCP/IP Networking (TN)
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## Content:

### UNIX Fundamentals Training Course Course Contents - DAY 1

#### Course Introduction

- Administration and Course Materials
- Course Structure and Agenda
- Delegate and Trainer Introductions

#### Session 1: INTRODUCTION TO THE UNIX OPERATING SYSTEM

- A brief history of UNIX
- The UNIX kernel
- The UNIX file system
- A login session
- Getting started navigating the file system
- The file system structure
- Directories and files
- Pathnames
- Navigating the file system
- Exercise: Logging on to the system
- Exercise: Navigating the file system

#### Session 2: BASIC COMMANDS

- Command line syntax
- Basic file handling commands
- Basic Directory handling commands
- Filename wildcard characters
- Exercise: Manipulating files and directories

#### Session 3: REDIRECTION AND PIPES

- Input redirection
- Output redirection
- Pipes
- Exercise: Using redirection and pipe facilities UNIX Fundamentals Training Course Course Contents - DAY 2

#### Session 4: INTRODUCTION TO THE vi EDITOR

- Overview of the vi editor
- Basic functions
- Switching to input mode
- Other useful commands
- Exercises: Using the vi editor
- Exercise: Using more advanced vi features

#### Session 5: SEARCHING AND REPLACING TEXT

- Searching and replacing text using the vi editor
- Using regular expressions (regex)
- Using sed for search and replace
- Searching for text with grep, egrep and fgrep
- Exercises: Searching and Replacing Text

#### Session 6: RECALLING AND EDITING

#### Session 8: FILTERING TEXT

- Overview
- The cut command
- An introduction to awk
- The nl command
- Exercises: Filtering Text

#### Session 9: PROCESSES

- What is a process?
- Monitoring processes
- Killing processes
- Background processes
- Job Control
- Grouping commands
- Exercise: Monitoring and controlling processes

#### Session 10: THE USER ENVIRONMENT

- Customising the .profile or .bash\_profile
- Customising the .kshrc or .bashrc
- Exercise: Setting up an environment

#### Session 11: MORE BASIC COMMANDS

- The find command
- Using xargs command
- The locate command
- The df command
- The cut command
- The sort command
- Finding duplicate content
- The finger and pinky commands
- Exercise: More Basic Commands UNIX Fundamentals Training Course Course Contents - DAY 4

#### Session 12: UNIX COMMAND REVIEW

- Basic Unix commands
- General commands
- File and directory handling commands
- Filename generation and regular expression characters
- I/O Redirection features
- Other commands

#### Session 13: GETTING STARTED

- What is a shell script?
- Development guidelines
- Creating and editing shell scripts
- Naming and storing shell scripts
- Executing shell scripts
- Exercise: Write a simple shell script

#### Session 14: USING VARIABLES

- Environment variables
- Local variables
- Assigning values to variables

#### Session 17: CONDITIONAL EXECUTION

- The if statement
- The test command
- Exercise: Adding validation to previous scripts

#### Session 18: ADDITIONAL KORN, BASH ; POSIX SYNTAX

- Other test notations
- Default and substitute variables
- Exit status codes
- Exercise UNIX Fundamentals Training Course Course Contents - DAY 5

#### Session 19: LOOP CONSTRUCTS

- The while loop
- The until loop
- The for loop
- The while true and until false loops
- Loop control commands
- Exercise: Enhancing the previously written scripts
- Exercise: Writing a script to copy files using a 'for' loop
- Exercise: Writing a script to generate numbers with the 'while' loop

#### Session 20: MULTI-BRANCH DECISIONS

- The case statement
- Menu driven applications
- Exercise: Developing and writing a menu system

#### Session 21: FUNCTIONS

- What is a function?
- Syntax
- Examples
- Exercise: Add a function to a script

#### Session 22: INTERRUPT HANDLING

- Interrupt signals
- Trapping interrupts
- Exercise: Adding traps to the menu script

#### Session 23: ADDITIONAL FEATURES AND FACILITIES

- The exec commands
- The includes notation
- More about loops
- Arrays
- Here Documents
- Exercise: Create a here script

## COMMANDS

- Overview
- The bash shell
- The korn shell
- Exercises: Recall and Edit Commands

### Session 7: FILE PERMISSIONS AND ACCESS CONTROL

- Users and user groups
- File access permissions
- Changing file attributes
- Switching users and user groups
- Linking files
- Exercise: Setting and access permissions

UNIX Fundamentals Training Course  
Course Contents - DAY 3

- Assessing variable values
- Using quotes
- Delimiting variable names
- Echo control sequences
- Exercise: Add variables to a script

### Session 15: INTEGER ARITHMETIC

- Using the expr command
- Using the (( )) notation
- Exercise: Add integer arithmetic to a shell script

### Session 16: HANDLING RUN TIME DATA

- The read command
- Command line arguments
- Exercise: Writing a generic shell script
- Exercise: Writing an interactive shell script

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## Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

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