

## UNIX Fundamentals

Duration: 5 Days    Course Code: UF

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### Overview:

#### UNIX Fundamentals Course Overview

**English - Please note this course is only available in English.**

Nederlands - Let op: deze training is alleen in het Engels beschikbaar.

Français - Veuillez noter que ce cours est uniquement disponible en anglais.

This Unix Operating System and Shell Programming training course introduces the delegate to the main concepts of the UNIX Operating System. The most

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### Target Audience:

#### Who will the Course Benefit?

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 shell scripts, automate procedures and write their own utilities.

Some programming experience may also prove advantageous.

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### Objectives:

■ Course 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:

Further Learning

- Oracle SQL
  - UNIX Advanced Shell Programming Tools
  - Linux Networking
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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 / Linux
- The UNIX / Linux kernel
- The UNIX / Linux file system structure
- File and directory management commands
- Absolute vs Relative Pathnames
- Further basic commands
- Exercise: Navigating the file system

#### Session 2: BASIC COMMANDS

- Command line syntax
- Basic file handling commands
- Basic Directory handling commands
- Filename wildcard characters
- Using commands with logical AND and OR
- Sequential command execution
- Exercise: Manipulating files and directories

#### Session 3: REDIRECTION AND PIPES

- Input and Output redirection
- Redirecting errors
- Piping commands
- Exercise: Using redirection and pipe facilities UNIX Fundamentals Training Course Course Contents - DAY 2

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

- Overview of the vi/Vim editor
- The language of vi
- Undoing and Redoing changes
- Input Mode and Last Line Mode
- Further vi functions
- Executing commands within vi / Vim
- Customising the vi / Vim Environment
- Getting Help
- Exercises: Using the vi editor

#### Session 5: SEARCHING AND REPLACING TEXT

- Searching and replacing text using the vi/Vim 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 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
- Number sequencing
- 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
- Assessing variable values
- Using quotes
- Delimiting variable names
- Echo control sequences
- Exercise: Add variables to a script

#### Session 15: INTEGER ARITHMETIC

#### 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: SCRIPTING WITH AWK

- Fundamentals of AWK
- Basic AWK scripts
- AWK within Bash constructs
- Exercise: AWK scripts

#### Session 22: FUNCTIONS

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

#### Session 23: INTERRUPT HANDLING

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

#### Appendix A: ADDITIONAL FEATURES AND FACILITIES

- The exec commands
- The includes notation
- More about loops
- Arrays

#### Appendix B: VIM QUICK REFERENCE

#### Appendix C: UNIX COMMANDS QUICK REFERENCE

#### Appendix D: ADDITIONAL EXERCISES

## Session 6: RECALLING AND EDITING 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

## Session 8: FILTERING AND FORMATTING TEXT

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

- 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

## 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

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### Further Information:

For More information, or to book your course, please call us on 0800/84.009

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[www.globalknowledge.com/en-be/](http://www.globalknowledge.com/en-be/)