# Linux Fundamentals

**Duration: 5 Days     Course Code: LF     Delivery Method: Virtual Learning**

## Overview:

### Linux Fundamentals Course Overview

This Linux Operating System and Bash Shell Programming training course introduces the delegate to the main concepts of the LINUX Operating System. The most commonly used 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 Bash shell are introduced.
This course is designed to give delegates practical experience in developing and writing shell scripts. Most of the built-in Bash shell commands are introduced together with the main program control structures. This course is not suitable for C shell programmers.
Similarly,the course is targeted to closely follow the official Linux Professional Institute (LPI) curriculum for certification.
Exercises and examples are used throughout the course to give practical hands-on experience with the techniques covered.

Virtual Learning

This interactive training can be taken from any location, your office or home and is delivered by a trainer. This training does not have any delegates in the class with the instructor, since all delegates are virtually connected.  Virtual delegates do not travel to this course, Global Knowledge will send you all the information needed before the start of the course and you can test the logins.

## Target Audience:

### Who will the Course Benefit?

There are no formal pre-requisites for the Linux Fundamentals course,although an understanding of and exposure to information technology is advantageous.
Programmers,administrators and support personnel who need to understand the LINUX Operating system,existing shellscripts,automate procedures and write their own utilities.

## Objectives:

- Course Objectives

- To provide the skills needed to work productively in a LINUX environment to develop and customise shell programs.

## Prerequisites:

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

## Follow-on-Courses:

Further Learning

- Linux System Administration (LPI)
- Oracle SQL
- Linux Advanced Shell Programming Tools
- Linux Networking

## Content:

Linux 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 LINUX 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  Linux 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 8: FILTERING AND FORMATTING TEXT

- Overview
- The paste command
- 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
- Number sequencing
- Exercise: More Basic Commands  Linux Fundamentals Training Course  Course Contents - DAY 4

Session 12: UNIX COMMAND REVIEW

- Basic Unix commands
- General commands
- File and directory handling commands
- Filename generation characters and regular expressions (regex)
- 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

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  Linux 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

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
  Linux Fundamentals Training Course
  Course Contents - DAY 3

- 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

- 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 0800/84.009

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www.globalknowledge.com/en-be/