UNIX Fundamentals

Category: Infrastructure & IT Operations | **Vendor:** Various

Duration: 40.00 hours (5 days) **32.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format: Instructor Led - Online

Course 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.

Exercises and examples are used throughout the course to give practical hands-on experience with the techniques covered.

About This Course

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.

Exercises and examples are used throughout the course to give practical hands-on experience with the techniques covered.

Who Should Attend

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.

Prerequisites & Entry Requirements

General 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.

Some programming experience may also prove advantageous.

Learning Outcomes

Upon successful completion of this course, participants will be able to:

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

The delegate will learn and acquire skills as follows:

- Creating, copying, renaming, moving and deleting files and directories
- Using the shell's redirection and pipe facilities
- Editing text files using the vi editor
- Setting and changing access permissions on files
- Monitoring and controlling their own processes
- Using the basic file and text searching utilities including regular expressions (regex)
- Customising their own login environment
- Writing simple scripts to enhance basic command output
- Using the various shell quoting mechanisms appropriately
- Manipulating shell variables and user-defined variables in scripts
- Implementing conditional execution facilities
- Using the shell's built-in loop constructs where appropriate
- Writing scripts to trap user interrupts
- User defined Functions
- Developing menu-driven shellscripts

Detailed Course Outline

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

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 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

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

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

- 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

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

Skills You Will Learn:

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

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Frequently Asked Questions

Q: What delivery options are available for UNIX Fundamentals?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: How many CPD hours does this course provide?

The 5-day UNIX Fundamentals course provides up to 32.5 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the UNIX Fundamentals training?

The training takes place over 5 day(s), with each day lasting approximately 40.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for UNIX Fundamentals?

Yes, we provide corporate training, dedicated training, and closed classes for UNIX Fundamentals. Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: UNIX Fundamentals, UNIX, UNIXFUND

Q: Why choose Nexus Human for UNIX Fundamentals?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your UNIX Fundamentals training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

Nexus Human

Professional Training & Development

Email: info@nexushuman.com

Website: www.nexushuman.com

Phone: +353 1 889 8700 (Ireland) | +44 20 8142 8961 (UK)

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