

Course Specifications

UNIX Fundamentals

Course number:

Course length: 5 days

Registration:

Micro Market Business Centre
700 Progress Avenue
Kingston, Ontario, K7M 4W9

Toll Free: 1-877-996-6622
Local: (613) 634-8125 Kingston
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UNIX Fundamentals

Course Description: This course provides a comprehensive introduction to the full range of UNIX user commands and utilities. Students will develop shell programming and vi editing skills.

Audience: End-users and programmers who are new to the UNIX environment.

Prerequisites: None

Getting Started

- What is UNIX?
- A Brief History of UNIX
- Logging In
- Logging Out
- Try a Few More Commands
- Changing Your Password
- Using On-line Manuals

The File System - Files

- What is a File?
- The ls Command
- The cat Command
- The more and pg Commands
- The head and tail Commands
- The cp Command
- The mv Command
- The rm Command
- File names

The File System - Directories

- Hierarchical File System
- Pathnames
- The pwd Command - Print Working Directory
- The cd Command - Change Directory
- The mkdir Command - Make Directories
- The rmdir Command - Remove Directories
- The cp Command (again) - Copy Files
- Two useful directory names - . and ..

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Editing With vi

- What is vi?
- The vi Buffering Process
- Command Mode and Insert Mode
- Modes Diagram
- Getting Started
- Moving the Cursor Around
- Inserting Text
- Deleting a Character or Line
- Undo Last Command
- Opening a New Line
- Save Your Work or Abort the Session
- Review of vi Commands

More Editing With vi

- Scrolling the Buffer
- Cursor Motion Commands - w, W, b, B, e, E
- Cursor Motion Commands - \$, ^, 0, G
- Cursor Motion Commands - f, t, F, T
- Delete Operator - d
- Change Operator - c
- Yank Operator - y
- Put Commands - p, P
- Searching For a Pattern - /, n, N, ?
- The join Command
- The file Command - :f
- Edit file Command - :e
- Cut and Paste Between Files
- Read file Command - :r
- Set options Command
- Set options Command - .exrc file

Personal Utilities

- The date Utility
- The bc Utility
- The expr Utility
- The cal Utility
- The news Utility
- The id Utility
- The uname Utility
- The finger Utility

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- The script Utility
- The clear Utility
- Appendix: The at and crontab Utilities

Text Handling Utilities

- The grep Utility
- The tr Utility
- The cut Utility
- The paste Utility
- The sort Utility
- The wc Utility
- The diff Utility
- The lp Utility

File System Security

- File Permissions
- The chmod Utility
- Directory Permissions
- The umask Command

File System Management Utilities

- The find Utility
- The df Utility
- The du Utility
- Compressing Files
- The ln Utility
- The ulimit Utility
- The tar Utility

Communication Utilities

- The write and talk Utilities
- The msg Utility
- Mail Overview
- The mail Utility
- The mailx Utility

Using the Shell

- What is a Shell?
- Which Shell?
- The Command Line
- Standard Input, Standard Output and Standard Error
- Using Default Standard In and Standard Output

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- I/O Redirection
- Appending Output of a File
- Pipes
- The tee Utility

Filename Generation

- Filename Generation
- The ? special Character
- The * special Character
- The [] special Characters
- The ! special Characters

UNIX Processes

- What is a Process?
- Process Structure
- The ps Utility
- Options to the ps Utility
- Background Commands (&)
- Killing Background Processes
- Redirecting the Standard Error

Shell Programming Concepts

- What is a Shell?
- What is a Shell Script?
- Why Use Shell Scripts?

Flow Control

- The Exit Status of Commands
- Command Line Examples
- The test Command
- The if-then-else Construct
- The elif Construct
- A loop Example

Variables

- User Created Variables
- The read Command
- The Shell Environment
- The export Command
- Sub-shells
- Command Substitution
- Quoting Mechanisms
- Assigning Variables - Summary

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Special Variables

- Command Line Arguments
- \$# - Number of Arguments
- The shift Command
- \$* - All Arguments
- \$\$ - PID of Shell

More Flow Control

- The for Loop
- The while Loop
- The Case Construct

Appendix: Korn shell features

- Viewing your Command History
- Editing and Re-executing Commands
- Aliases

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