CL010 - Fundamentals of LINUX

Course Description:

This comprehensive hands-on course provides the knowledge and skills needed to effectively use Linux. In this course you will learn how to use Linux user commands and develop shell scripts.

Audience:

End-users and programmers who are new to the Linux environment.

Prerequisites:

None

Course Contents

Getting Started

- What is UNIX?
- A Brief History of UNIX
- Linux
- Linux Distributions
- 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 less Commands
- The head and tail Commands
- The cp Command
- The mv Command
- The rm Command
- File Names

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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 ..

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 id Utility
- The uname Utility
- The finger Utility
- 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 lpr Utility

File System Security

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

File System Management Utilities

- The fi nd 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 mesg Utility
- Mail Overview
- The mail Utility
- elm - Electronic Mail
- Sending Mail with elm
- Reading Mail with elm
- Customizing elm
- elmrc

Using the Shell

- What is a Shell?
- The Command Line
- Standard Input, Standard Output and Error
- Using Default Standard In and Output
- I/O Redirection
- I/O Redirection - Examples
- I/O Redirection - Warning
- Appending Output of a File
- Pipes
- The tee Utility

Filename Generation

- Filename Generation
- The ? Special Character
- The * Special Character
- The Special Characters
- The ! Special Character

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?
- Which 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
- Subshells
- Command Substitution
- Quoting Mechanisms
- Assigning Variables - Summary

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
- Examples
- The case Construct

Appendix: Bash Shell Features

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