

This course provides an introduction to the Linux operating environment for programmers, system administrators, and users who are familiar with computer use but new to the UNIX/Linux environment. The course also introduces advanced UNIX/Linux utilities for text and data manipulation, job handling, and user productivity features.

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## Audience

- Applications programmers
- System administrators
- Operations staff
- End users

## Prerequisites

- General knowledge of data processing and computer use

## Course Length

- Five days

## Learning Objectives

- Access a Linux system and execute basic commands
- Utilize the features of the Linux shell to maximize command efficiency and user productivity
- Achieve familiarity with Linux utilities for file/directory, data, and text manipulation

## Teaching Methods

- A combination of presentation, discussion, and hands-on exercises (exercises constitute approximately 33% of class time).

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## Course Outline

CA2

### The Linux Environment

- Linux environment, features, tools
- The shell
- Linux system versions

### Logging-In and Executing Commands

- Logging-in
- Basic commands (*cat*, *more*, *pg*, and more)
- The online *User's Manual*
- Changing your password & logging-off

### The Linux File System

- Files, directories, and special files
- Pathnames
- File system organization
- File and directory commands: *cd*, *pwd*, *ls*, *mkdir*, *rmdir*, *cp*, *mv*, *ln*, *rm*

### The *vi* Screen Editor

### Command Line History and Editing

- The *history* and *r* commands
- Command line recall and editing using *vi*

### Shell Features

- Input/output redirection
- Diagnostic output and command pipelines
- Shell variables
- Background command execution

- Variable and command substitution
- Creating simple shell programs

### Managing Linux Processes

- Monitoring processes with *ps*
- Controlling processes with *kill* and Job Control

### File Access Permissions

- Setting and changing permissions with *chmod*

### Customizing your Shell Environment

- Customizing special shell variables
- Customizing the *.profile* and *ENV* files

### Commands for Text and Data Manipulation

- *grep*, *sed*, *awk*, *cut*, *sort*, *find*

### Using TCP/IP Utilities in Linux

- *telnet*, *rlogin*, *rexec*, and *ftp*

### Advanced Linux Utilities

- *stty*, *exec*, *tee*, *bc*, *calendar*, *mail* & others

### Advanced Text Processing Utilities

- Advanced use of the *grep* commands
- Translate, paste, and compare files
- Advanced use of *sed* and *awk*

### Job Scheduling Using *at* and *cron*