Comprehensive UNIX

Duration

5 days.

Participants

Technical and non-technical personnel, including technical managers, programmers, system and network administrators.

Objectives

Upon successful completion of this course you will be able to:

- Organize and protect your own file and directory structure.
- Create and modify files using the vi editor.
- Select lines from files using the grep command and RE metacharacters.
- Direct file input and output from/ to the proper file or process using redirection and pipes.
- Control the execution of foreground and background jobs
- Use shell command line features such as filename generation to perform work in an efficient manner.
- Tailor the interactive environment by using aliases and variables established in .profile and the ksh ENV file.
- Create shell programs using command and variable substitution, positional parameters, and control structures. (Please note that this part of the course is optional; as much is presented as time permits, however, most classes cover all of it.)

Overview

This course provides a comprehensive introduction to UNIX, including programming with Bourne and Korn shells. It is designed for those who need a robust understanding of UNIX.

Prerequisites

None.

Format

Lecture and discussion (50%) with interactive and programming exercises (50%).

Topic Outline

Introductory Concepts and Simple Commands

Login and logoff, passwd, ignoreeof
Command line format
Erase and interrupt characters
Metacharacters and backslash, single and double quotes
stty, date, who, echo, ls, banner, cal, man

File System

File system structure
Types of UNIX files: ordinary, special, directory, links
Full and relative pathnames
pwd, ls options -lpadiFR, cd

Topic Outline

File System *(continued)*

HOME directory
File permission modes, chmod, umask
mkdir, rmdir, rm, mv, cp

File Processing Commands

cat, pr, pg, more, nl, wc, grep, sort, cut, tr

vi Editor In-Depth

Re Metacharacters with grep, pg, and vi

Shell Features Requested on the Command Line

I/ O redirection of standard input, standard output,
and standard error
Pipelines
Process and job control: ps, jobs, kill, wait, nohup, sleep,
fg, and bg
Filename generation with * ? [!] and dot files

Shell Environment

Environment variables: TERM, HOME, PATH,
LOGNAME, USER, PS1, PS2, IFS,
and set, env, and export
Profile and the ksh ENV file
The . command, semicolon, and grouping with parentheses

Introduction to Shell Programming

(This part of the course is optional; as much is presented as time permits.)

Creation of subshells, fork, wait, exec, and exit
Command and variable substitution
Positional parameters, including $1-$9, ${10} etc, $#,
$0, $*, $$
Interactive programs using read
Control structures: if, while, until, for, case and its
pattern matching capabilities
Debugging with the -x trace

Korn Shell Features

Command history, editing, and re-execution
Options such as ignoreeof and noglob
Aliases