

Introduction to UNIX and Korn Shell Programming

Course No.	2016
Description	This course covers an introduction to the UNIX Operating system. Days 1 and 2 of this course will cover basic UNIX concepts (portable to all variants of UNIX including AIX, HP-UX and Solaris) such as the directory structure, file system navigation and management, file level security, basic commands, and the vi text editor. Days 3 and 4 of the course will cover Korn Shell environment, Shell fundamentals, and script interpretation and programming, including some advanced topics.
Audience	Familiarity with any command line based operating system.
Objectives	<ul style="list-style-type: none">• Become comfortable understanding the UNIX environment• Learn how to operate and navigate within UNIX• Hands-on practice interpreting UNIX commands• Learn about the Korn Shell environment• Understand Shell fundamentals
Major Topics	<ul style="list-style-type: none">• The UNIX Kernel• The UNIX File System, File Naming Conventions• Logging In and Out• The UNIX Shells• A UNIX Process• Process Control• File Permissions• Basic UNIX Commands• vi Text Editor• Piping, Redirection, and Filters• Shell Variables• Introduction to Shell Programming• vi Extended• Quoting Rules• Special String Characters• Passing and Retrieving Variables• Shell Script Facilities• Integer and String Operators• Built-In Features• Relationship Between Processes• Shell Metacharacters• Shell Commands



**Major Topics
cont.**

- Shell Programming Constructs
- Korn Shell Specific Features
- Functions
- Advanced sed
- Daemons
- Advanced Shell Techniques

Duration

3-4 days



Course Contents

1. Overview

- UNIX History
- File naming Conventions
- The Shell
- The Kernel
- The Process
- Logging In and Out
- A Few Commands (cd, echo, exit, is, man, passwd, ps)
- Lab

2. The Shell

- Overview
- Three Shells
- Standard Command Syntax
- Locating the Proper Command
- Shell Metacharacters
- A Few Commands (alias, env, sleep, unalias, whence)
- Variable Creation and Assignment
- Exporting Variables
- Quoting Rules
- Special Characters
- Lab

3. File System

- Overview
- File Inode
- File Type and Permissions
- Changing File Permissions
- Setting default File Permissions
- Changing File Ownership
- Mounting and unmounting File Systems
- Copying, Moving, and Renaming Files
- Deleting and Linking Files
- Creating and Deleting Directories
- Finding Files
- File System Navigation
- A Few command
- Lab

4. The vi Text Editor

- Overview
- Entering and Leaving vi
- Moving Between Modes
- Command Mode
- Buffer manipulation
- Summary
- Lab

5. The Environment

- Overview
- /etc/profilce and .profile
- System environment Variables
- Read-Only
- Lab

6. Communication with Users and Processes

- Overview
- exec
- Background Submission
- fg, bg, nohup, nice
- Submitting with (.)
- wait, kill
- write
- mesg, wall
- mail
- Lab

7. File Processing and Regular Expressions

- Overview
- A few basic Commands
- Redirection
- Regular Expressions
- The grep family (grep, fgrep, egrep)
- The /etc/passwd file
- Piping and Filters
- Special Logical Devices(/dev/tty,/de/null)
- Lab

8. Miscellaneous Commands

- Overview
- cal, clear, date, df
- expr, fold, split, su, tee,
- time, wc, who, who am I, whoami, xargs
- lab



9. Printing

- lp Print Command Summary
- lp
- lpmove
- enable
- disable
- lpstat
- lpsched
- cancel
- accept
- reject
- lpshut
- lpadmin

10. Introduction to Shell Scripting

- Overview
- Process of Creation, Permission Setting, and Submission
- Comments
- Built-In Variables
- Integer and String Operators
- Korn Shell Specifics
- RANDOM
- Lab

11. System Administration

Appendix 1

- UNIX Command Reference Sheet

Appendix 2

- Table of ASCII Characters

