CU003 - UNIX Korn Shell Programming

Length: 5 Days

See Also “UNIX for Programmers”

Description

The Korn shell implements job control, command line editing, aliases, and new built-in commands and functions in addition to those features found in the Bourne shell. Topics include an overview of the shell and it’s functions, control constructs (for, while, case, etc.), conditional branching, quoting, positional parameters, command substitution, pipelines, use of built-in shell commands, job control, command line editing, alias mechanisms, functions, subshells, signals, traps, shell programming efficiencies, and debugging. The course covers both ksh88 and ksh93. This course is applicable to all releases of UNIX which support the Korn shell.

Course Objectives

Upon completion of this course the attendee should be able to:

- State how the shell functions as a user interface and command line interpreter
- Modify built-in shell variables and create and use user-defined shell variables
- Use I/O redirection, pipes, quoting, and filename expansion mechanisms
- Create structured shell programs which accept and use positional parameters and exported variables
- Use the shell flow control and conditional branching constructs (while, for, case, if, etc.)
- Create shell programs which process interrupts, pass signals, invoke subshells and functions, and trap signals
- Use shell debugging mechanisms to improve shell program efficiency and detect and correct errors
- Develop a user interface menu system using shell programming constructs

Course Materials

UNIX Korn Shell Programming Student Guide and course notes.

Prerequisites

UNIX for Programmers or equivalent experience using UNIX.

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Course Content

1. Overview of the Shell

1. Command Interpretation
2. Processes
   - Process creation
   - *fork* and *exec*
   - Process invocation
3. User Environment
4. Setting and Printing Variables
5. I/O Redirection
6. Pipelines
7. File Name Generation
8. Quoting
9. Command Substitution
10. Background Processing
11. Aliases
12. Tilde Substitution
13. Arithmetic Evaluation
14. Job control
15. Command Re-entry
16. In-line Editing Options

2. Creating and Executing Shell Programs

1. Creating a Shell Program
2. Executing a Shell Program
3. Debugging Shell Programs

3. Shell Variables & Parameters

1. Variables
2. Assigning Variables
3. Printing Variables
4. Reading Input
5. Variable Types
6. Exporting Variables
7. Variable Arrays
8. Special Shell Parameters
9. Conditional Parameters
10. Positional Parameters
11. *shift* command
12. *set* and *unset* commands
13. The . (dot) Command

4. Conditional Testing

1. The *test* Command
2. *if*, *else*, and *elif* statements
3. The *case* statement
4. The *select* statement
5. The *expr* statement
6. The *let* statement
7. The *exit* statement

5. Looping Mechanisms

1. The *for*, *while*, and *until* loops
2. The *true* and *false* statements
3. The *break* and *continue* statements

6. Signals and Traps

1. Signals
2. Traps

7. Subshells and Functions

1. Subshells
2. Functions

8. Programming Considerations

1. Resource Consumption
2. Processes and Files
3. Programming Hints

9. Case Study

10. Course Conclusion