

BASH PROGRAMMING

Current Version: bash-1.1.3

Course Length: 3 days

Course Description: Students learn to read, write, and debug shell scripts, thus increasing productivity by taking full advantage of the bash shell.

Audience: Linux or UNIX users, programmers, and system administrators.

Prerequisites: Fundamentals of UNIX or Fundamentals of Linux

Course Contents

UNIX Processes

- What is a Process?
- Process Structure
- The ps Utility
- Options to the ps Utility
- Background Commands (&)
- Killing Background Processes
- Redirecting the Standard Error

Getting Started

- What is a Shell?
- Running Scripts
- Specifying the Script's Interpreter
- The PATH Environment Variable
- Sub-shells

Variables

- Shell Variables
- The read Command
- The export Command
- The Shell Environment
- Parameter Expansion
- Command Substitution

The Login Process

- The Login Process
- The System Profile Script
- Your .bash_profile Script
- The . Command

Conditional Statements

- The Exit Status of Commands
- Command Line Examples
- The test Command
- The if-then-else Construct
- The elif Construct
- case Statements

Loops

- The for Loop
- The while Loop
- break and continue
- Reading Lines From Files
- Using Arrays with Loops

Special Variables

- \$\$ - PID of Shell
- Command-Line Arguments
- \$# - Number of Arguments
- \$* - All Arguments
- The shift Command
- The set Command
- Getting Options

Quoting Mechanisms

- Single vs. Double Quotes
- What is a Here Document?
- Using a Here Document
- Here Document Quoting
- Ignoring Leading Tabs

Functions

- Shell Functions
- Passing Arguments to Functions
- Returning Values from Functions
- Function Declarations

Advanced Programming

- Shell Arithmetic
- The select Statement
- Terminal Independence in Scripts
- The eval Command

Debugging Techniques

- Using echo
- Using Standard Error
- Script Tracing
- Options for Debugging
- Conditional Debugging