

Course Description: This course describes the standard Linux shell, bash. All facets of the bash shell are discussed: bash productivity features, bash as the user interface, bash user customization, and bash as a programming language. The programming features of bash are emphasized. Many hands-on labs are given to reinforce the lectures.

Who Should Attend: The course is intended for LINUX programmers, end users, managers, and current or future system administrators.

Prerequisites: Students should have completed an introductory course in Linux or some version of UNIX (Solaris/AIX/HPUX/etc.) or have equivalent knowledge.

Benefits of Attendance: Upon completion of this course, students will be able to:

- Write shell scripts to solve a wide variety of problems.
- Customize your environment to suit your personal preferences.
- Increase productivity by using many bash special features including: the history mechanism, command line editing, creating aliases, and writing functions.
- Use bash arithmetic operators.
- Use powerful programming constructs.
- Use the debugging capabilities of bash.
- Use bash job control features.

Course Outline:

Bash Fundamentals

User Interfaces
Shell History
Shell Functions
Startup Files
Changing Directories
Command Line Formats
The File System
Filename Expansion Characters
Input and Output Characters
Quoting
Other Special Characters
Getting Help
Control Keys

Command Line Features

Introduction
Aliases
The set Command
Shell Variables
Exporting Variables
Hashing
Functions
Function Parameters

Command Line Editing

Introduction
bash History
Editing With vi
Editing With emacs
Textual Completion

Fundamentals Of Shell Scripts

Introduction
Writing a Script
Special Shell Variables
Local Variables
Variable Syntax
Pattern Matching
Command Substitution

Decision Making Constructs

Introduction
Exit Status
The return Statement
The if Statement
Compound Tests
Arithmetic Tests
String Tests
File Tests
The test Command
elif
case

Iterative Constructs

Looping Constructs
The for Loop
The while Loop

The until Loop

Bash Arithmetic

Introduction
expr
bash Arithmetic
Typed Variables
Arrays

Miscellaneous Features

Introduction
shift
getopts
read
here documents
select
Processes
Signals
trap
Command Line Processing
printf