

Advance Bash Shell Scripting

1- Introduction to Shell

- What is shell
- Installation of shell
- Shell features
- Bash Keywords
- Built-in Commands
- Linux Commands
- Specialized Navigation and History Commands
- Shell Aliases
- Bash Hash Table
- The Set and Shopt Commands
- Key binding with bind command
- The Colon Command
- Long and Multi-line Command
- Lab Session

2- Script Basics

- Writing small Script
- How to execute a script
- Creating a Well-Behaved Script
- The Header
- Global Declarations
- Sanity Checks
- The Main Script
- Cleanup
- Stopping a Script
- Lab Session

3- Variables

- Variable basics
- Predefined variables
- System variables
- Special shell variable
- Customizing shell prompt
- Variable attributes
- Arrays variable
- local variable
- Exporting variables
- Use of quotations
- Escape characters Advance Bash Shell Scripting
- The eval command
- Reading keyboard input
- Basic redirection and pipe
- File descriptors

4- Expressions

- Basic if command
- let Features
- File test operators
- Arithmetic comparison operators
- String comparison operators
- Arithmetic comparison with double parentheses
- Parameter substitution and expansion
- Brackets and Extended brackets test construct
- Curly brackets construct
- Parentheses and double parentheses

- Regular expression
- Extended regular expression
- POSIX character classes
- Globbing options
- Here Documents
- Logical expressions
- Lab Session

5- Compound Commands

- Command Status Codes
- if Command
- case Command
- while Loop
- until Loop
- for Loops
- Embedded let
- Grouping Commands
- Lab Session

6- Parameters and getopt

- Positional Parameters
- The getopt Command
- getopt internal variables
- The getopt Command
- Lab Session

7- Job Control and Signals

- Job Control
- Signals
- The suspend Command
- Traps
- Exit Handlers

- The killall Command
- Being Nice
- Process Status
- Lab Session

8- Text File Basics

- Working with Pathnames
- File Truncation
- Identifying Files
- Creating and Deleting Files
- Moving and Copying Files
- More Information About Files
- Verifying Files
- Splitting Large Files
- Tabs and Spaces
- Temporary Files
- Lock Files
- Named Pipes
- Process Substitution
- Opening Files
- Using head and tail
- File Statistics
- Lab Session

9- Text File Processing

- Finding Lines
- Locating Files
- Finding Files
- Sorting
- Character Editing (tr)
- Compressing Files

- Lab Session

10- Console Scripting

- The Linux Console
- The Console Keyboard
- The Console Display
- select Menus
- Custom Menus
- Lab Session .

11- Functions and Script Execution

- Shell Functions
- Local Variables
- Recursion and Nested Functions
- Function Attributes
- Running Scripts
- The Linux Execution Environment
- The Source Command (.)
- Switching Scripts with exec
- Lab Session

12- Shell Security

- The Basic Linux Security Model
- Knowing Who You Are (id)
- Transferring Ownership (chown/chgrp)
- Changing Access Rights (chmod)
- Default Access Rights (umask)
- setuid/setgid and Scripts
- The chroot Command
- Resource Limits (ulimit)
- Restricted Shells
- Secure File Deletion

- Lab Session

13- Sed 'Stream Editor'

- The essential command: s for substitution
- Substitute Flags
- /g - Global replacement
- /1, /2, etc. Specifying which occurrence
- Write to a file with /w filename ,
- Combining substitution flags
- Arguments and invocation of sed
- Multiple commands with -e command
- sed -f scriptname
- sed in shell script
- A sed interpreter script
- Addresses and Ranges of Text
- Restricting to a line number
- Patterns
- Ranges by line number
- Ranges by patterns
- Delete with d
- Grouping with { and }
- Multi-Line Patterns
- Lab Session

14- Awk Progrming

- Getting Started
- The Structure of an A WK Program
- Running an A WK Program
- Computing and Printing
- Printing Line Numbers
- Putting Text in the Output

- Sorting the Output
- Selection by Text Content
- Combinations of Patterns
- BEGIN and END
- Computing with AWK
- Computing Sums and Averages
- String Concatenation
- Built-in Functions
- Counting Lines, Words, and Characters
- Control-Flow Statements
- Expressions as Patterns
- String-Matching, Compound and Range Patterns
- Regular Expressions
- The printf Statement
- Output into Files
- Lab Session