

ADVANCED SHELL SCRIPTING

1. Introduction to Shell Scripting

- What is Shell Scripting?
- Where Shell Scripts are used?
- Who uses Shell Scripts?

2. Writing Shell Scripts

- Rules for writing Shell Scripts
- Structure of Shell Script
- Saving Shell Script
- Compilation and execution of shell script

3. Shell Scripting Basics

- Displaying output
- Commenting in Shell Scripts
- Command Separator
- Null command
- Terminator
- Wild cards
- Code blocks
- Misc. Special characters

4. Introduction to variables and parameters

- Declaration of Variables
- Types of Variables
- Data types of variables
- constants
- Using parameters
- Reading data interactively

5. Usage of Quoting

- Importance of Quotations in Shell Scripting
- Different ways of using quotations
- Escape Characters

6. Generating & Delivering Reports

- Shell Script Execution status
- Preparing report on execution of shell script
- Working with exit status of shell scripts

- Dispatching reports to concerned

7. Test Constructs

- Writing Expressions
- Arithmetic operators
- Bitwise operators
- Writing arithmetic expressions
- Writing conditional expressions
- Relational operators
- File test operators
- Comparison operators
- Compound comparison
- If statement
- Case statement

8. Advanced concepts related to variables

- Internal Variables
- Positional Parameters
- Other Special symbols
- Manipulating Strings
- Parameter substitution
- Typing variables
- Indirect references
- Double Parentheses usage

9. Loop statements

- While loop
- Until loop
- For loop
- Loop controlling

10. Advanced Filters and others

- Text Processing
- Time/Date Commands
- Complex Searching commands (find, grep, egrep etc.)
- Usage of awk
- Usage of sed

11. Regular Expressions

- What is regular expression?
- Need of Regular Expressions
- Using regular expressions
- Globbing

12. Command Substitution

- Command list in parentheses
- Running parallel processes

13. I/O Redirection

- Using exec
- Redirecting code blocks
- Applications

14. Here Documents

- What is here document?
- Creating files with documenting
- Preparation of multiline messages
- Here documents and functions
- Anonymous here document
- Self documenting

15. Sub shells

- Command list in parentheses
- Running parallel processes

16. Restricted Shells

- Running shells in restricted mode

17. Process Substitution

- Command substitution Template
- Running commands in background
- Traps
- Signals

18. Functions

- Writing functions
- Passing parameters to functions
- Returning values from functions

19. Aliases

- Writing alias in a script
- Setting and unsetting alias

20. List Constructs

- Chaining together commands
- Using or lists
- Using and lists

21. Arrays

- What is array?
- Using simple array
- Properties of arrays
- Empty arrays and empty elements
- Array initialization
- Copying and concatenating arrays
- Complex arrays

22. Files

- Startup files
- Logout files

23. Working with /dev & /proc

- Understanding /dev directory
- Understanding /proc directory
- Monitoring processes

24. Zeros and Nulls

- Uses of /dev/null
- Uses of /dev/zero

25. Debugging

- What is bug in script?
- Buggy Script
- Finding and correcting bugs in the script

26. Scheduling Scripts

- One time scheduling
- Executing scripts repeatedly

27. Performing System administration with scripts

- Monitoring system resources
- Monitoring processes
- Monitoring Jobs

28. most common operations with shell scripts