

„Linux – BASH shell programming”

Course description:

Linux training – BASH shell programming is addressed to Linux administrators, network administrators who want to learn about the bash shell programming methods. The participants of Linux training - BASH programming should have basic knowledge of Linux and networks in this system.

Training program:

1. **The simplest script**
2. **Choosing a shell (magic number #!, sha-bang)**
3. **Calling a script**
4. **External and built-in commands**
5. **Some special characters**
 - Comment (#)
 - End of line (;)
 - Whitespace (:)
 - Output, input redirection (>, <, >>)
 - Output redirection
 - Input redirection
 - Pipe (|)
 - Start a process in background (&)
6. **Variables and parameters**
 - Deleting of variables (unset)
 - Null variable
 - Saving a program result into a variable (backquotes ` `)
 - Script call parameters (\$0, \$#, \$1, \$2, \$3....)
 - Shift instruction
 - Citation
 - Escape sign (\)
7. **Regular Expressions**

8. Conditional statements

- If/then statement
- If/then/else statement
- Nested the if statement
- If/elif statement
- Case statement
- Operators
- Operators and, or (&&, ||)
- Test command

9. Ending script

- Exit statement
- Using the program exit status in scripts (\$?)

10. Tests and operators

- File test operators
- File type tests
- File attribute Tests

11. Comparison operators

- Arithmetic comparison using the if statement
- Integer comparison operators
- String comparison
- Complex comparison (and, or)
- Nested comparison operators
- Assignment operator
- Arithmetic operators
- Bitwise operators
- Logical operators
- Numerical constants

12. Loops

- For/in loop
- Seq command
- While loop
- Until loop
- Loop control (break, continue)

13. Text processing

- Head, tail commands
- Sort, Uniq, Expand, Unexpand
- Cut, Paste, Join, Wc, Tr

14. Text search (grep)

15. **Stream Editor (sed)**

16. **Interactive programs**

Read command

Select statement

17. **Functions**

18. **Steep command**

19. **If the script does not work (debugging)**

Methodology:

- PowerPoint mini lectures
- working on computers (each participant works on a separate computer)
- mini training videos

Organizational information:

Number of training hours: 14 hours / 2 days

Time of training 9:15-16:15

Place of training: Łódź, Piotrkowska 125 – KM Studio - trainings