

**Price:** R8,400.00 excl. VAT  
**Duration:** 3 days  
**Delivery:** Virtual classroom or  
on-site training

## Linux Shell Scripting

### Description

Whether you are a Linux system administrator, a developer or a power user, you spend a lot of time on repetitive tasks. You can increase your productivity and save hours by learning to write efficient shell scripts that automate simple and complex processes.

### Objectives

After you have completed the Linux Shell Scripting course, you will be able to:

- Understand how you can use shell scripts to increase productivity.
- Read and write shell scripts that automate tasks.
- Read and write shell scripts that control command-line processes.
- Understand and use the power of regular expressions.
- Increase your daily productivity by using tools like sed and awk.

### Intended Audience

You should attend the Linux Shell Scripting course if:

- You are a programmer working on Linux and you want to automate some of your processes.
- You are a Linux system administrator and you want to write shell scripts to automate tasks.
- You are a Linux power user and you want to be able to read and write shell scripts for your own work.

### Prerequisites

Before you attend the Linux Shell Scripting course:

- You should have some experience using a command-line interface and a text editor.
- You should have some experience with the Linux operating system.
- It would be beneficial if you have some programming experience.

### Course Contents

#### **Introduction**

- Posix standards, shell concepts and versions.
- Advantages and uses of shell scripts.
- Editors.
- Customising your shell.
- Basic shell commands and options.
- File and directory manipulation.
- Standard Input / Output / Error.
- Processes, pipes and redirection.

- Basic security model — permissions and file modes.

### Script Basics

- Shells scripts vs an interactive shell.
- Creating and running a script.
- Console control.
- Creating portable scripts.
- I/O.
- Common pitfalls and good practices.

### Scripting Syntax

- Comment syntax.
- Variables.
- Expressions.
- Operators: assignment, comparison, logical, arithmetic, string.
- Selection (conditional) statements.
- Iterative statements.
- Functions, parameters and return values.
- File globbing.

### Regular Expressions

- Regular expression concepts and principles.
- Character classes.
- Anchors.
- Meta-characters.
- Escaping.
- Searching.
- Substitution.
- Splitting text.
- Translation.
- grep & map functions.

### Programming with sed

- Basic syntax and commands.
- Special characters.
- Loops.
- Branches.
- Pattern buffer and pattern range.

### Programming with awk

- Awk versions.

- Typical uses of awk.
- Awk workflow and commands.
- Standard variables.
- Operators.
- Control statements.
- Built-in and user-defined functions.
- Arrays.

### **Bash**

- Bash extensions.
- Advanced parameter expansion.
- Conditional blocks.
- Arrays.
- I/O redirection.

### **Additional Programming Topics**

- Perl.
- Python.
- GCC (GNU compiler).
- Make files.
- Compiling.
- Debugging.
- AutoConf and AutoMake.
- Libraries.
- Kernel compilation.
- Processes & threads.
- Socket programming.
- X programming.

*\*\* The lecturer reserves the right to modify the contents of the course to suit the needs of the delegates.*