



## Module Checklist

# Operating Systems & Linux Basics

By Techworld with Nana



# Video Overview

- ★ Introduction to Operating Systems
- ★ Introduction to Virtual Machines (VM Part 1)
- ★ Setup a Linux Virtual Machine (VM Part 2)
- ★ Linux File System
- ★ Introduction to Command Line Interface (CLI Part 1)
- ★ Basic Linux Commands (CLI Part 2)
- ★ Package Manager - Installing Software on Linux
- ★ Vi & Vim Text Editor
- ★ Users & Permissions - Part 1
- ★ Users & Permissions - Part 2
- ★ Basic Linux Commands - Pipes & Redirects (CLI Part 3)
- ★ Shell Scripting - Part 1 (Intro to Shell Scripting)
- ★ Shell Scripting - Part 2 (Basic Concepts & Syntax)
- ★ Shell Scripting - Part 3 (Basic Concepts & Syntax)
- ★ Environment Variables
- ★ Networking
- ★ SSH - Secure Shell

# Check your progress... 1/4

## Introduction to Operating Systems

- ☐ Watched video

## Introduction to Virtual Machines (VM Part 1)

- ☐ Watched video

## Setup a Linux Virtual Machine (VM Part 2)

- ☐ Watched video
- ☐ **Demo executed**
  - ☐ Setup VirtualBox
  - ☐ Setup Linux Virtual Machine

### Useful Links:

- Download VirtualBox: <https://www.virtualbox.org/wiki/Downloads>
- Download Ubuntu: <https://ubuntu.com/download/desktop>

## Linux File System

- ☐ Watched video

## Introduction to Command Line (CLI Part 1)

- ☐ Watched video



# Check your progress... 2/4

## Basic Linux Commands (CLI Part 2)

- ☐ Watched video
- ☐ Demo executed

Useful Links:

- Cheat Sheet: <https://cheatography.com/davechild/cheat-sheets/linux-command-line/>
- Cheat Sheet: <https://www.guru99.com/linux-commands-cheat-sheet.html>



## Package Manager - Installing Software on Linux

- ☐ Watched video
- ☐ Demo executed

Useful Links:

- Snap Package Manager: <https://snapcraft.io/>

## Vi & Vim Text Editor

- ☐ Watched video
- ☐ Demo executed

Useful Links:

- Cheat Sheet: <https://vim.rtorr.com/>

## Users & Permissions - Part 1

- ☐ Watched video
- ☐ Demo executed

# Check your progress... 3/4

## Users & Permissions - Part 2

- ☐ Watched video
- ☐ Demo executed

## Basic Linux Commands - Pipes & Redirects (CLI Part 3)

- ☐ Watched video
- ☐ Demo executed

## Shell Scripting Part 1 - Intro to Shell Scripting

- ☐ Watched video
- ☐ Demo executed

## Shell Scripting Part 2 - Basic Concepts & Syntax

- ☐ Watched video
- ☐ Demo executed

## Shell Scripting Part 3 - Basic Concepts & Syntax

- ☐ Watched video
- ☐ Demo executed



# Check your progress... 4/4



## Environment Variables

- ☐ Watched video
- ☐ **Demo executed**

## Networking

- ☐ Watched video

## SSH - Secure Shell

- ☐ Watched video
- ☐ **Demo executed**
  - ☐ Create remote server on DigitalOcean
  - ☐ Generate SSH Key Pair on your computer
  - ☐ Copy Bash Script via SCP
  - ☐ Execute Bash Script on the remote server
  - ☐ Don't forget to delete Droplet when you are done!



# More Resources... 1/2

## Best practices

### Security Best Practices for Linux Servers:

- Use SSH instead of password for logging into servers
- If somehow that's not possible, use strong and unique passwords:
  - Same password should never be used for multiple users or software systems
  - Configure expiration, to update the passwords regularly
  - Use password manager for two-factor authentication, password generation, cloud password storage etc.
- Update your software regularly or enable automatic updates
- Avoid unnecessary software, as each new software can expose the server to potential problems
- Regularly backup your data. The application "rsync" is a popular option in Linux

### Users & Permissions

- Only use the root account for systems administration. Login with normal user and su to root
- Remove or lock user accounts that are no longer needed
- Make sure that passwords on active accounts are changed regularly
- Lock User Accounts after a number of unsuccessful login attempts



# More Resources... 2/2

## Best practices

### Bash Scripting

- Best Practices: <https://bertvv.github.io/cheat-sheets/Bash.html>

### Networking

- Always have a Firewall
- Restrict network access as much as possible
  - Ports, which you don't need should be closed

### SSH

- SSH, like all network services, should be disabled if not needed
- Disable root logins via SSH
  - Can be configured here: `/etc/ssh/sshd_config`
  - Login with a normal user and su to root

