IT Job Essentials

Course Overview

This course provides hands-on training in **IT infrastructure and systems administration**, covering the core areas of **Windows Desktop and Server Administration**, **Linux Administration**, **Virtualization**, **Networking**, **Security**, and **IT Tools & Utilities**. It is designed to build practical skills essential for modern IT support, help desk, and system administrator roles. The course integrates real-world scenarios and labs to ensure learners gain both theoretical understanding and hands-on experience.

Course Objectives

By the end of this course, learners will be able to:

- Install and configure **Windows 10/11 and Windows Server 2022** systems, including user management and security settings.
- Perform **Linux system administration** using AlmaLinux and Ubuntu, including user, service, and firewall management.
- Understand and apply **virtualization concepts** using VMware, VirtualBox, and Hyper-V.
- Configure and troubleshoot **network settings** across different operating systems.
- Secure systems through **firewalls, BitLocker, encryption, antivirus, and group policies**.
- Set up and manage **Active Directory**, DNS, DHCP, and other server roles.
- Manage and configure **routers (Home/SOHO, MikroTik)** for secure internet access.
- Use **administrative tools** such as RDP, AnyDesk.
- Apply **email concepts**, including protocol understanding, account configuration, and threat prevention.

Target Audience

This course is ideal for:

- **Aspiring System Administrators and IT Support Professionals**
- **Help Desk Technicians**
- **Network Administrators**
- **Students pursuing careers in IT Infrastructure or Cybersecurity**
- **Entry-level professionals preparing for certifications** (e.g., CompTIA, MCSA, LPIC, etc.)
- **Home Lab Enthusiasts** and Self-learners looking to enhance practical IT skills

Prerequisites

To successfully follow this course, learners should have:

- Basic computer literacy (file operations, installing software, internet usage)
- General understanding of IT concepts (what is an OS, basic networking)
- Familiarity with Windows OS usage (user-level)
- Optional but helpful:
  - Exposure to Linux command line
  - Awareness of networking basics (IP address, DNS, routers)

Windows Desktop Administration

- Creating Bootable USB for Windows Installation
- Windows Partitioning: MBR and GPT
- Windows 10/11 Installation and Setup
- User and Group Management
- File and Folder Permissions
- Networking Configuration
- Group Policy Management
- Firewall and Security Configuration
- BitLocker Encryption and Recovery
- Software Installation and Management
- Windows Services Management
- Task Scheduler Automation
- Windows Update Management
- RDP Configuration and Security
- Microsoft Defender and AV Settings
- System Maintenance

Windows Server 2022 Administration

- Overview of Windows Server 2022
- Installation and Configuration
- Server Roles and Features (AD DS)
- Creating and Managing Users, Groups, and OUs
- Configuring IP Settings
- Remote Access and Management
- User and Group Management
- Active Directory Sites and Services

- Group Policy Objects (GPO)
- Join a Client to a Domain

Linux Administration (AlmaLinux / Ubuntu)

- Install AlmaLinux 9 / Ubuntu 24 OS
- Basic Linux Commands
- Working with Files and Permissions
- User and Group Management
- Package Management
- Networking Basics
- Systemd and Services Management
- FirewallD / UFW Configuration
- SSH Configuration
- Scheduled Tasks (cron)
- Installing and Configuring FTP

Virtualization (VMware, VirtualBox, Hyper-V)

- Basics of Virtualization
- Download and Install VMware Workstation Pro / VirtualBox
- Create Your First Virtual Machine
- Virtual Hardware Settings (CPU, RAM, Disk, etc.)
- Network Configuration (Bridged, NAT, Host-only)
- Shared Folders Between Host and Guest
- Encrypting Virtual Machines
- Snapshots and Clones
- Import/Export Virtual Appliances
- Hyper-V Basics (for Windows Users)

Networking Fundamentals

- OSI & TCP/IP Model
- IP Addressing and Subnetting
- Private vs. Public IPs
- DNS Resolution Process
- Tools: ping, tracert, nslookup, ipconfig/ifconfig

Networking Security Fundamentals

- Security Fundamentals
- Firewall Rules and Configuration
- MAC Filtering and Access Control
- Port Forwarding
- Firmware Updates and Recovery
- Parental Controls and Usage Logs

Router Configuration & Management

Traditional (Home/SOHO) Routers

- Router Initial Setup and Access
- Basic Configuration
- Wireless Network Setup
- Advanced Features
- Security Configuration
- Backup and Restore
- Guest Network Configuration
- Bridging and Repeater Modes

MikroTik RouterOS

- MikroTik RouterOS Overview and Licensing
- Router Board Models and Hardware Overview
- Initial Access and RouterOS Installation/Upgrade
- WinBox and WebFig Usage
- Internet Setup (LAN + WAN)
- DHCP Server and NAT Configuration
- Bridge and VLAN Configuration
- Static Routing Basics
- Firewall Rules, Filtering, and Address Lists
- Port Forwarding and Port Knocking
- Bandwidth Management (Simple Queues and Queue Trees)
- Wireless Configuration and CAPsMAN Basics
- Hotspot Setup and User Management
- PPPoE Server and Client Configuration
- Basic Failover and Load Balancing
- Monitoring Tools: Torch, Bandwidth Test, Graphing

- Introduction to RouterOS Scripting
- Backup, Restore, and Export Config

Tools & Utilities

- Remote Desktop Tools: AnyDesk, RDP, VNC
- USB Boot Tools: Rufus, Ventoy
- Disk Imaging Tools
- Network Tools: IP Scanner
- Process Monitor
- Troubleshooting Tools: Event Viewer, Reliability Monitor

Email Fundamentals

- Introduction to Email and Its Protocols
- Email Clients vs. Webmail
- Setting Up and Configuring Email Accounts
- Spam, Malware, and Email Threats
- Email Storage and Management