



# Institute of Accountancy Arusha

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**IAA/BP/4**

**RE: INVITATION TO THE TRAINING ON LINUX NETWORKING AND TROUBLESHOOTING PROGRAMME**

The Institute of Accountancy Arusha is pleased to announce “the above said short course. This hands-on course will provide the prospective participants with the fundamentals, tools, techniques and use case examples to configure, manage and troubleshoot Linux in a networking context. You will work with tools like nc, ss, tcpdump, wireshark and more to develop the experience to understand networking protocols, addressing, routing, and subnetting. By the end of this course, the participants will feel comfortable in working with a large variety of networking tools and configurations to manage complex Linux networking implementations.

## **1.0 Course Objectives**

Upon completion of the Red Hat RHCSA Course, you will demonstrate competence and learn to master:

### **A. Networking Concepts**

#### **i. Machine Interface**

- ✓ Using the Network Environment Interface Tools (ip, nmcli, and more)
- ✓ Hands-On-Lab: Locating Network Information

#### **ii. Network Topology**

- ✓ Basic Network Topology
- ✓ OSI Layers
- ✓ Anatomy of an IP Address

#### **iii. Network Flow**

- ✓ Routing
- ✓ Address Resolution Protocol(ARP)
- ✓ DNS
- ✓ TCP and the Basic Handshaking
- ✓ Packet Flow
- ✓ VPN

### **B. Machine Level Configuration**

#### **i. Network Interfaces**

- ✓ Static IP versus DHCP
- ✓ Multiple IP Addresses
- ✓ NIC bonding and Teaming

- ✓ Hands-On Lab: Setting a Static IP
- ✓ Hands-On Lab: Multiple IPs on the Same Interface
- ✓ Hands-On Lab: Creating an Interface Team
- ii. Routing
  - ✓ Static Routes
  - ✓ Troubleshooting
  - ✓ Hands-On Working with Static Routes
- iii. Domain Name Service (DNS)
  - ✓ Local Name Resolution
  - ✓ Name Servers
  - ✓ Troubleshooting DNS
  - ✓ Hands-On Lab: Establish Local Resolution
  - ✓ Hands-On Lab: Creating Name (DNS) Servers
  - ✓ Hands-On Lab: Troubleshooting DNS
- C. Administrator Services and Tools
  - i. Firewalls
    - ✓ Firewalls Explained
    - ✓ iptables
    - ✓ firewalld
    - ✓ Troubleshooting the Firewall
    - ✓ Hands-On Lab: Permitting and Blocking Traffic with the Firewall
    - ✓ Advanced Firewalld
    - ✓ Firewall Troubleshooting
  - ii. Connection Troubleshooting
    - ✓ Connection Testing
    - ✓ Packet Captures
    - ✓ Hands-On Lab: Testing a Connection
    - ✓ Hands-On Lab: Performing a Packet Capture
- D. Advanced Use Cases
  - i. Port Forwarding
    - ✓ Port Forwarding Explained
    - ✓ Port Forwarding Examples
    - ✓ Hands-On Lab: Port Forwarding with the Firewall
  - ii. SSH Tunneling
    - ✓ Explaining SSH Tunnel
    - ✓ Creating SSH Tunnel
    - ✓ Hands-On Lab: Create an SSH Tunnel
  - iii. Proxy Servers
    - ✓ Proxy Servers Explained
    - ✓ Setting Up Squid
    - ✓ Hands-On Lab: Installing and Configuring Squid
  - iv. Load Balancing
    - ✓ Load Balancing Explained
    - ✓ Load Balancing with HAProxy

- ✓ Load Balancing with NGINX
- ✓ Hands-On Lab: Creating a Load Balancer
- v. VPN
  - ✓ Setting up OpenVPN Part 1
  - ✓ Setting up OpenVPN Part 2
  - ✓ Hands-On Lab: Setup OpenVPN
- vi. IDS
  - ✓ IDS Explained
  - ✓ Using Snort as an IDS
  - ✓ Hands-On Lab: Setting Up NIDS

## 2.0 Target Participants

System Administrators, IT Technician, systems analysts, systems engineers, Network Engineers, ICT Managers, ICT Help Desk Support and all others with ICT backgrounds

## 3.0 Fees

The fee for the course is **TShs 1,500,000/=** (One million five hundred thousand only) to cover for course materials and tea/coffee and lunch only. Payment may be in cash, cheque or bankers draft addressed to the Rector, Institute of Accountancy Arusha or directly to our Bank Account **No. 014103007130 NBC**, Arusha Branch. Participants are encouraged to come with their laptops. The Institute may make accommodation arrangements on your behalf at your own costs provided you inform us well in advance.

## 4.0 Dates & Venue

From Monday, **28<sup>th</sup> October – 01<sup>st</sup> November, 2019** in at the **Institute of Accountancy Arusha.**

## 5.0 Contact

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Arusha.

Yours Faithfully,

**THE INSTITUTE OF ACCOUNTANCY ARUSHA**



**Sifael N. Sabaya**

**FOR RECTOR**