



*Training Course:  
Advanced Linux*

*16 - 20 December 2024  
Rome (Italy)*

## Training Course: Advanced Linux

Training Course code: IT1937 From: 16 - 20 December 2024 Venue: Rome (Italy) - Training Course Fees: 5775 € Euro

### Introduction

The Advanced Linux Training Program is designed by Global Horizon to provide participants with an in-depth understanding of Linux operating systems and equip them with advanced skills to effectively manage and administer Linux environments. This comprehensive program covers a wide range of topics, from system administration and networking to security, scripting, automation, and scalability. Participants will gain hands-on experience through practical exercises and real-world scenarios, enabling them to confidently navigate complex Linux environments.

### Methodologies

The training program follows a blended learning approach, combining theoretical instruction, practical exercises, hands-on labs, and interactive discussions. Participants will engage in a variety of activities, including guided demonstrations, group projects, and individual assignments. Real-world examples and case studies will be used to illustrate the application of Linux concepts in practical scenarios. Participants will have access to a Linux environment for hands-on practice, ensuring they can apply their knowledge in a realistic setting.

### Target Audience

The Advanced Linux Training Program is ideal for:

1. IT professionals and system administrators who want to enhance their Linux skills and gain expertise in managing complex Linux environments.
2. Software developers who work with Linux-based systems and want to deepen their understanding of Linux administration and automation.
3. Network administrators who need to configure and maintain Linux-based network services.
4. IT managers and decision-makers who want to broaden their knowledge of Linux systems to make informed strategic decisions.

### Objectives

By the end of the training program, participants will:

1. Have a comprehensive understanding of Linux operating systems, their history, and different distributions.
2. Possess advanced skills in Linux system administration, including user and group management, package management, and system monitoring.
3. Be proficient in network configuration, firewall management, and secure remote access using SSH.

4. Understand file systems, storage management, and advanced concepts like logical volume management and disk encryption.
5. Acquire scripting skills to automate tasks, manipulate files, and process text efficiently.
6. Gain expertise in advanced system administration techniques, troubleshooting, and debugging.
7. Be able to configure and manage web services, DNS, virtualization, containers, and orchestration using tools like Docker and Kubernetes.
8. Understand the principles of automation and configuration management with Ansible.
9. Possess the knowledge to monitor system performance, optimize resources, and troubleshoot performance issues.
10. Have a strong foundation in Linux security practices, including network security, vulnerability assessment, and system hardening.
11. Understand high availability concepts, scalability techniques, and the integration of Linux with cloud computing platforms.

## Course Outline

### Day 1: Linux Fundamentals and System Administration

- Linux history, philosophy, and distributions
- Installation of Linux Ubuntu, CentOS, or Fedora
- Command-line interface CLI essentials
- Basic file system navigation and manipulation
- User and group management
- File permissions and ownership
- Process management
- Package management apt, yum, or dnf
- System monitoring and resource utilization
- Backup and recovery strategies

### Day 2: Networking and Security

- TCP/IP networking fundamentals
- Configuring network interfaces
- Network troubleshooting tools and techniques
- Network services and protocols DHCP, DNS, FTP, etc.
- Network file sharing with NFS and Samba
- Linux security overview
- Basic system hardening techniques
- User and group security
- File system security and access control lists ACLs
- Introduction to firewalls iptables or firewalld

### Day 3: Shell Scripting and Automation

- Introduction to shell scripting
- Variables, conditions, and loops
- File manipulation and text processing
- Script debugging and error handling
- Scripting best practices
- Advanced user and group management

- Advanced package management and repositories
- Disk encryption LUKS
- Systemd service management
- Troubleshooting and debugging techniques

#### Day 4: Web Services and Virtualization

- Apache HTTP Server configuration
- Domain Name System DNS setup bind9 or dnsmasq
- Virtualization concepts KVM or VirtualBox
- Containerization with Docker
- Introduction to Kubernetes
- Introduction to Ansible
- Ansible inventory and variables
- Creating playbooks and roles
- Managing configuration files
- Deploying and managing applications

#### Day 5: Advanced Topics in Security, Scalability, and Cloud Integration

- Advanced network configuration VLANs, bridges
- Network troubleshooting and debugging
- Intrusion detection and prevention systems
- Security audits and vulnerability assessment
- VPN setup and configuration
- Understanding file systems ext4, XFS, Btrfs
- Disk management and partitioning
- Logical Volume Manager LVM advanced concepts
- Network File System NFS advanced configuration
- Disk quotas and RAID
- Advanced troubleshooting techniques and methodologies
- Performance tuning for specific workloads database, web servers
- Advanced storage management SAN, iSCSI
- Linux integration with cloud platforms AWS, Azure, GCP
- Real-world case studies and practical scenarios

## Registration form on the Training Course: Advanced Linux

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Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

### Delegate Information

Full Name (Mr / Ms / Dr / Eng): .....  
 Position: .....  
 Telephone / Mobile: .....  
 Personal E-Mail: .....  
 Official E-Mail: .....

### Company Information

Company Name: .....  
 Address: .....  
 City / Country: .....

### Person Responsible for Training and Development

Full Name (Mr / Ms / Dr / Eng): .....  
 Position: .....  
 Telephone / Mobile: .....  
 Personal E-Mail: .....  
 Official E-Mail: .....

### Payment Method

- Please find enclosed a cheque made payable to Global Horizon
- Please invoice me
- Please invoice my company

### Easy Ways To Register

Telephone:  
+201095004484 to  
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place.

Fax your completed  
registration  
form to: +20233379764

E-mail to us :  
info@gh4t.com  
or training@gh4t.com

Complete & return the  
booking form with cheque  
to: Global Horizon  
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