



*Training Course:  
Linux Server Management: From Basics to  
Deployment*

*8 - 19 July 2024  
Accra (Ghana)*

## Training Course: Linux Server Management: From Basics to Deployment

Training Course code: IT1936 From: 8 - 19 July 2024 Venue: Accra (Ghana) - Training Course Fees: 10470 ₵ Euro

### Introduction

Linux server management is a critical skill for IT professionals and system administrators who seek to deploy and maintain robust, secure, and efficient server environments. This training program aims to provide participants with a comprehensive understanding of Linux server management, from the basics to advanced techniques and deployment strategies. Participants will gain practical knowledge and hands-on experience to effectively configure, secure, monitor, and optimize Linux servers for various applications and workloads.

### Methodologies

- Instructor-led sessions: Engaging lectures and demonstrations delivered by experienced Linux server management professionals.
- Hands-on labs: Practical exercises and projects to reinforce concepts and develop real-world skills.
- Case studies: Analyzing and solving server management challenges in simulated environments.
- Group discussions: Collaborative learning and sharing of experiences among participants.
- Q&A sessions: Addressing specific queries and clarifying doubts to enhance understanding.
- Practical application: Applying acquired knowledge to solve practical server management problems.

### Target Audience

- IT professionals and system administrators responsible for managing Linux servers.
- Professionals seeking to enhance their skills in Linux server management for career advancement.
- Students or individuals interested in pursuing a career in system administration or DevOps.

### Objectives

By the end of this training program, participants will be able to:

- Understand the fundamentals of Linux server architecture and its advantages.
- Install, configure, and administer a Linux server, choosing an appropriate distribution.
- Effectively manage user accounts, groups, and file permissions.
- Configure and troubleshoot network settings, including DNS, DHCP, and firewall.
- Implement server security measures, including access control and intrusion detection.
- Deploy and optimize web servers, databases, and other essential server services.
- Monitor server performance and troubleshoot common issues.

- Implement backup and disaster recovery strategies.
- Gain proficiency in virtualization and containerization technologies.
- Automate server provisioning and configuration management.
- Explore advanced topics such as container orchestration, serverless computing, and emerging trends in Linux server management.

## Outline

### Day 1: Linux Server Fundamentals and Networking

- Linux server architecture overview
- Linux kernel and system initialization process
- Understanding network protocols: TCP/IP, UDP, DNS, DHCP
- Network troubleshooting tools: ping, traceroute, netstat, tcpdump
- Configuring advanced network settings: VLANs, bridging, bonding
- Network file sharing: NFS Network File System, Samba

### Day 2: Server Security and Hardening

- Advanced firewall management: iptables, firewalld
- Secure remote access: SSH hardening, key-based authentication, two-factor authentication
- Intrusion detection and prevention: fail2ban, Snort
- Security auditing and vulnerability scanning: OpenVAS, Nessus
- Security-enhanced Linux SELinux: concepts and configuration
- Server hardening best practices and security compliance frameworks

### Day 3: Web Server Setup and Performance Optimization

- Installing and configuring Apache HTTP Server or Nginx
- Virtual hosts and domain-based configuration
- SSL/TLS certificate installation and configuration
- Web server performance optimization: caching, compression, load balancing
- Monitoring web server logs and access statistics
- Implementing web application firewalls WAF

### Day 4: Database Server Administration

- Installing and configuring MySQL or PostgreSQL database server
- Database user management and access control
- Database backup and recovery strategies
- Database replication and high availability
- Performance tuning and optimization techniques
- Query optimization and indexing

### Day 5: Virtualization and Containerization

- Introduction to virtualization technologies: KVM, VirtualBox, VMware
- Creating and managing virtual machines
- Virtual machine networking and storage management
- Introduction to containerization: Docker and container basics

- Container orchestration with Kubernetes: concepts and deployment

#### Day 6: Server Monitoring and Performance Tuning

- System monitoring tools: Nagios, Zabbix, Prometheus
- Monitoring server health, resource usage, and services
- Performance tuning techniques: CPU, memory, disk I/O optimization
- Analyzing and troubleshooting system bottlenecks
- Kernel tuning and parameter optimization
- Scaling and load-balancing strategies

#### Day 7: Automation and Configuration Management

- Introduction to configuration management tools: Ansible, Puppet, Chef
- Creating Ansible playbooks for server provisioning and configuration
- Infrastructure as Code IaC principles and practices
- Automating repetitive tasks with shell scripting
- Version control for infrastructure: Git and GitOps

#### Day 8: Backup and Disaster Recovery

- Backup strategies and methodologies
- Implementing data backup and restoration processes
- Off-site backup and cloud storage solutions
- Disaster recovery planning and procedures
- Testing backup and recovery procedures
- High availability and fault tolerance techniques

#### Day 9: Advanced Topics in Linux Server Management

- Container orchestration with Kubernetes: advanced concepts and management
- Infrastructure monitoring and visualization with Grafana
- Server provisioning and configuration with Terraform
- Serverless computing with AWS Lambda or Google Cloud Functions
- Advanced security topics: intrusion detection systems, secure code ctices
- Exploring emerging trends and technologies in Linux server management

#### Day 10: Practical Application and Case Studies

- Real-world scenarios and case studies
- Hands-on exercises and projects
- Troubleshooting and problem-solving sessions
- Q&A session and open discussion
- Recap and review of key concepts
- Closing remarks and certification distribution

## Registration form on the Training Course: Linux Server Management: From Basics to Deployment

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

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- ☐ Please find enclosed a cheque made payable to Global Horizon
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