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Foundational Linux

Mastering Ubuntu 24.04 LTS for Remote Server Management - 2 days

FA-0209 · 2 days

DevOps, Cloud & Infrastructure

Introduction

In today's digital landscape, the ability to efficiently manage remote servers is a critical skill for IT professionals. Ubuntu 24.04 LTS, codenamed "Noble Numbat," offers a robust platform for server operations, emphasizing performance, security, and long-term support. This course is designed to provide participants with practical, hands-on experience in deploying and managing Ubuntu servers in headless environments, utilizing platforms like DigitalOcean and AWS. With guidance from an instructor boasting over 30 years of industry experience, attendees will gain insights into real-world scenarios and best practices that transcend academic theory.

Learning outcomes

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

- **Installation Proficiency:** Perform a clean installation of Ubuntu 24.04 LTS on remote servers, optimized for headless operation.
- **Command-Line Mastery:** Navigate and manage Ubuntu servers using command-line interfaces to enhance efficiency and control.
- **Remote Management:** Securely access and administer servers remotely using SSH.
- **User and Permission Management:** Implement best practices for creating users, managing groups, and setting permissions to maintain a secure server environment.
- **Software Management:** Install, update, and remove software packages to ensure servers remain up-to-date and functional.
- **Service and Process Control:** Manage system services and processes, configuring essential server functions and applications.
- **Network Configuration:** Understand and apply fundamentals of network setup and troubleshooting for reliable server connectivity.

- **Firewall Implementation:** Configure firewall settings to protect servers from unauthorized access and potential threats.
- **System Monitoring and Logging:** Monitor system performance and interpret logs to aid in proactive server management and issue resolution.
- **Data Backup and Recovery:** Establish strategies for regular data backups and understand recovery procedures to safeguard against data loss.

Prerequisites

Participants should have:

- Good understanding of computer systems and networking concepts.
- Familiarity with using a terminal or command-line interface.

Training outline

1. 1. Introduction to Ubuntu 24.04 LTS

- Overview of Ubuntu and its significance in server environments.
- Key features and enhancements in the "Noble Numbat" release, including the Linux 6.8 kernel and GNOME 46.
- Understanding Long-Term Support (LTS) and its benefits for enterprise environments.

2. 2. Preparing for Installation

- Hardware and system requirements for Ubuntu 24.04 LTS.
- Downloading the official Ubuntu 24.04 LTS server ISO.
- Creating bootable media for installation.
- Configuring BIOS/UEFI settings for server readiness.

3. 3. Installing Ubuntu 24.04 LTS on a Headless Server

- Setting up a headless installation environment.
- Step-by-step walkthrough of the installation process on DigitalOcean and AWS platforms.
- Configuring initial system settings without a graphical interface.
- Post-installation tasks and system updates.

4. 4. Navigating the Command Line Interface (CLI)

- Introduction to the Linux shell and its importance.
- Basic command-line operations and shortcuts.
- File system structure and navigation commands.
- File and directory manipulation techniques.

5. 5. Remote Access and Secure Shell (SSH) Configuration

- Understanding SSH and its role in remote server management.
- Installing and configuring the OpenSSH server.
- Establishing secure remote connections from various clients.
- Implementing key-based authentication for enhanced security.
- Troubleshooting common SSH connectivity issues.

6. 6. User and Group Management

- Creating and managing user accounts.
- Setting and updating user passwords.
- Understanding and configuring user groups.
- Assigning and modifying file and directory permissions.
- Implementing sudo privileges and security considerations.

7. 7. Package Management with APT

- Overview of the Advanced Package Tool (APT) system.
- Searching for and installing software packages.
- Upgrading and removing installed packages.
- Adding and managing third-party repositories.
- Automating updates and understanding unattended upgrades.

8. 8. Managing Services and Processes

- Introduction to systemd and its role in service management.
- Starting, stopping, and restarting services.
- Enabling and disabling services at boot.
- Monitoring active processes and resource usage.

- Identifying and terminating unresponsive processes.

9. 9. Network Configuration and Management

- Understanding network interfaces and configurations.
- Configuring static and dynamic IP addresses.
- Managing network interfaces using Netplan.
- Troubleshooting network connectivity issues.

10. 10. Firewall Implementation

- Introduction to UFW (Uncomplicated Firewall).
- Configuring firewall rules to allow or deny traffic.
- Enabling and disabling the firewall.
- Monitoring firewall status and logs.

11. 11. System Monitoring and Logging

- Utilizing tools like top, htop, and df for system monitoring.
- Understanding and analyzing system logs using journalctl and log files in /var/log.
- Setting up log rotation and retention policies.

12. 12. Data Backup and Recovery

- Strategies for regular data backups using tools like rsync and tar.
- Automating backups with cron jobs.
- Understanding and implementing recovery procedures.
- Testing backup integrity and restoration processes.

This comprehensive course is tailored for IT professionals seeking to enhance their skills in Linux server management. Through practical exercises and expert instruction, participants will be equipped to deploy and maintain secure, efficient, and reliable Ubuntu 24.04 LTS servers in real-world environments.

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