SUSE Linux Enterprise Server 12 Advanced Administration

Course Duration: 40 Hours **Course code: SLESAA**

1. Course Overview

This course is designed to provide advanced administrative skills for managing SUSE Linux Enterprise Server (SLES) 12 in enterprise environments. Learners will gain expertise in system performance tuning, advanced storage management, network configuration, security, and automation to efficiently manage and optimize Linux systems.

2. What you'll learn?

By the end of the course, you will be able to:

- Perform advanced system administration tasks on SLES 12
- Configure and manage advanced storage solutions
- Optimize system performance and resource utilization
- Implement advanced networking configurations
- Secure Linux systems using best practices
- Automate administrative tasks using scripting tools
- Troubleshoot complex system and network issues
- Manage enterprise-level Linux environments

3. Target Audience

- Linux System Administrators
- System Engineers
- Infrastructure Engineers
- IT Professionals managing Linux environments

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4. Pre-Requisites

Before taking this course, you should have:

- Basic knowledge of Linux administration
- Familiarity with SUSE Linux Enterprise Server
- Experience with command-line tools
- Understanding of networking fundamentals

5. Course content

Module 1: Course Introduction

- Course objectives and structure
- Overview of advanced Linux administration
- Enterprise use cases of SLES 12

Module 2: Advanced System Management

- Managing system services (systemd)
- Process management and scheduling
- Kernel management and tuning
- System resource control

Module 3: Advanced Storage Management

- Disk partitioning and file systems
- Logical Volume Manager (LVM)
- RAID configuration
- File system tuning and optimization

Module 4: Network Configuration and Management

- Advanced network configuration
- Managing network interfaces
- Routing and bridging
- Network troubleshooting tools

Module 5: Security and Access Control

- User and group management
- PAM (Pluggable Authentication Modules)
- File permissions and ACLs
- System security best practices

Module 6: Firewall and SELinux/AppArmor

- Configuring firewall rules
- Using SuSEfirewall2 / firewalld
- AppArmor profiles and policies
- Securing services and applications

Module 7: Performance Tuning and Optimization

- Monitoring system performance
- CPU, memory, and disk optimization
- Identifying bottlenecks
- Performance tuning tools

Module 8: Automation and Scripting

- Shell scripting basics
- Automating administrative tasks
- Scheduling jobs with cron and at
- Using scripting for system management

Module 9: System Monitoring and Logging

- Log management with journald
- Monitoring tools and utilities
- Centralized logging
- Troubleshooting system issues

Module 10: Software Management and Repositories

- Managing packages with Zypper
- Repository configuration
- Software updates and patching
- Managing dependencies

Module 11: Virtualization and Containers

- Introduction to virtualization
- Managing KVM on SLES
- Container basics (Docker)
- Use cases for virtualization

Module 12: Backup and Recovery

- Backup strategies and tools
- System recovery techniques
- Disaster recovery planning
- Data protection best practices

Module 13: High Availability Basics

- Introduction to clustering
- HA concepts overview
- Integration with SLES HA extension
- Basic cluster management

Module 14: Hands-On Labs and Real-World Scenarios

- Advanced system configuration
- Storage and network setup
- Security implementation
- Troubleshooting real-world issues

Module 15: Capstone Project

- Configure and optimize an enterprise Linux server
- Implement security, storage, and networking
- Automate system tasks
- Final project evaluation and presentation

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