SUSE Linux Enterprise 15 High Availability Operations

Course Duration: 32 Hours **Course code: HAE321v15**

1. Course Overview

This course focuses on the day-to-day operations, monitoring, and maintenance of High Availability (HA) clusters using SUSE Linux Enterprise Server (SLES) 15. Learners will gain practical skills to manage cluster resources, troubleshoot issues, perform maintenance, and ensure continuous service availability in enterprise environments.

2. What you'll learn?

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

- Manage and operate SUSE HA clusters effectively
- Monitor cluster health and performance
- Handle resource allocation and failover operations
- Troubleshoot and resolve cluster issues
- Perform maintenance and updates with minimal downtime
- Manage storage and replication in HA environments
- Implement operational best practices for HA systems

3. Target Audience

- Linux System Administrators
- System Engineers
- Data Center Operators
- Infrastructure Support Engineers
- IT Professionals managing HA environments

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4. Pre-Requisites

Before taking this course, you should have:

- Knowledge of Linux administration
- Understanding of SUSE Linux Enterprise Server
- Basic knowledge of High Availability concepts
- Experience with command-line tools

5. Course content

Module 1: Course Introduction

- Course objectives and structure
- Overview of HA operations
- Role of an HA administrator

Module 2: HA Cluster Overview (Operational Perspective)

- Review of HA architecture
- Cluster components (Pacemaker, Corosync)
- Understanding cluster states and transitions
- Operational workflows

Module 3: Cluster Monitoring and Status Management

- Monitoring cluster health
- Using crm and Hawk tools
- Checking node and resource status
- Alerts and notifications

Module 4: Resource Management in Operations

- Managing cluster resources
- Starting, stopping, and migrating resources
- Managing resource groups and constraints
- Handling resource failures

Module 5: Failover and Recovery Operations

- Monitoring failover events
- Manual and automatic failover
- Resource recovery and failback
- Testing failover scenarios

Module 6: Storage and Data Management

- Managing shared storage
- DRBD monitoring and operations
- Ensuring data consistency
- Storage troubleshooting

Module 7: Troubleshooting HA Clusters

- Identifying common issues
- Log analysis and debugging
- Resolving split-brain scenarios
- Network and communication issues

Module 8: Maintenance Operations

- Performing routine maintenance
- Putting nodes in standby mode
- Rolling updates and patching
- Managing cluster upgrades

Module 9: Security and Access Management

- Managing user roles and permissions
- Securing cluster communication
- Authentication and access control
- Best practices for secure operations

Module 10: Performance Monitoring and Optimization

- Monitoring resource utilization
- Performance tuning strategies
- Optimizing cluster operations
- Capacity planning

Module 11: Backup and Disaster Recovery Operations

- Backup strategies for HA clusters
- Recovery procedures
- Multi-site failover operations
- DR testing and validation

Module 12: Automation in HA Operations

- Automating routine tasks
- Using scripts for operations
- Scheduling and cron jobs
- Integration with monitoring tools

Module 13: Logging, Auditing, and Reporting

- Managing logs in HA clusters
- Audit trails and compliance
- Generating reports
- Incident documentation

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

- Monitoring and managing live clusters
- Performing failover and recovery
- Troubleshooting real-world issues
- Maintenance and upgrade simulations

Module 15: Capstone Project

- Operate and manage a production HA cluster
- Handle failures and recovery scenarios
- Perform maintenance and optimization
- Final assessment and presentation

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