Red Hat High Availability Clustering (RH436) Training

Duration: **5 Day**

BILGINÇ IT Academy
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Overview

Build and manage highly available Red Hat Enterprise Linux clusters for mission-critical workloads.

The **{*training}** teaches senior Linux system administrators how to deploy, configure, and manage high availability (HA) clusters using **Pacemaker** and shared storage technologies.
Through intensive, hands-on labs, you'll gain the practical skills to ensure your applications remain **reliable, fault-tolerant, and continuously available**, even in case of system or hardware failure.

Participants will configure clustered storage components from the **Resilient Storage Add-On**, allowing multiple cluster nodes to simultaneously access shared data through **LVM Shared Volume Groups**, **Red Hat Global File System 2 (GFS2)**, and **Device Mapper Multipath**.

> *This course is based on Red Hat Enterprise Linux 8.3.*

Prerequisites

Before taking this course, students should have:

- **Red Hat Certified System Administrator (RHCSA)** certification or equivalent skills.
- **Red Hat Certified Engineer (RHCE)** certification or equivalent experience.
- Familiarity with **Linux storage administration** and TCP/IP networking.

Who Should Attend

This course is designed for:

- **Senior Linux System Administrators** responsible for deploying high availability and fault-tolerant infrastructure.
- IT professionals managing **critical production services** that require continuous uptime and resilient storage.

What You Will Learn

By the end of this {*training}, you will have gained knowledge and skills in the following areas:

- Install and configure a **Pacemaker-based high availability cluster**.
- Create and manage **highly available services and resource groups**.

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- Troubleshoot and recover from common cluster issues.
- Configure **iSCSI-based shared storage** and multipath I/O.
- Implement **LVM in cluster-aware configurations**.
- Set up **GFS2 file systems** for shared access by multiple cluster nodes.
- Automate cluster and resource deployment using **Red Hat Ansible Automation**.
- Identify and eliminate **single points of failure**.

Impact on the Organization

Implementing **Red Hat High Availability Clustering** improves the **resilience, uptime, and reliability** of mission-critical systems.
Organizations benefit through:

- **Reduced downtime** for applications and services.
- **Easier maintenance** and updates without service interruption.
- **Improved disaster recovery readiness**.
- Greater **operational consistency** across on-premise and hybrid environments.

This course equips IT teams with the tools and best practices to deliver **continuous service availability and fault tolerance** across critical workloads.

Impact on the Individual

Upon completing this course, you will be able to:

- Deploy and manage **Pacemaker clusters** that ensure application uptime.
- Configure **shared storage** using iSCSI, multipath, and GFS2.
- Implement **cluster-aware LVM** and manage storage in HA environments.
- Troubleshoot node and service failures effectively.
- Design clusters that **eliminate single points of failure** for improved resilience.

These skills prepare you to operate and support **enterprise-grade, highly available Linux environments**, ensuring uninterrupted business operations.

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Outline

1. Creating High Availability Clusters
Install, configure, and initialize a basic Pacemaker-based cluster.

2. Managing Cluster Nodes and Quorum
Control node membership, quorum policies, and understand their effect on cluster stability.

3. Isolating Malfunctioning Nodes
Detect and fence (isolate) failed or unresponsive cluster nodes to maintain data integrity.

4. Creating and Configuring Resources
Define and configure resources and resource groups to ensure service failover.

5. Troubleshooting High Availability Clusters
Diagnose and resolve common cluster and resource-related issues.

6. Automating Cluster and Resource Deployment
Use **Red Hat Ansible Automation Platform** to automate cluster creation and management.

7. Managing Two-Node Clusters
Configure and operate two-node clusters, while addressing the unique challenges they present.

8. Accessing iSCSI Storage
Connect cluster nodes to shared iSCSI block storage for distributed access.

9. Accessing Storage Devices Resiliently
Implement **Device Mapper Multipath** to ensure resilient and redundant access to storage devices.

10. Configuring LVM in Clusters
Configure **HA-LVM** or **LVM Shared Volume Groups** for clustered storage environments.

11. Providing Storage with GFS2 File System
Create and configure **GFS2 file systems** to enable simultaneous access to shared data across nodes.

12. Eliminating Single Points of Failure
Design resilient architectures and cluster configurations that prevent downtime and data loss.