Red Hat Enterprise Linux Diagnostics and Troubleshooting

Course Duration: 40 Hours **Course Code RH342**

1. Course Overview

The **Red Hat Enterprise Linux Diagnostics and Troubleshooting (RH342)** course is designed to help system administrators develop the skills to diagnose, analyze, and resolve common issues in Red Hat Enterprise Linux (RHEL) environments. The course emphasizes a **practical, hands-on approach**, guiding learners through scenarios where they will investigate, troubleshoot, and resolve problems related to **booting, networking, storage, applications, and security**.

This course prepares participants to **proactively manage and maintain RHEL systems** by identifying root causes and applying best practices for prevention and recovery.

2. What You'll Learn

- Diagnose and fix **boot and system initialization issues**.
- Identify and resolve **networking problems**.
- Troubleshoot **storage and file system errors**.
- Analyze and fix **application failures and performance issues**.
- Investigate **security-related problems**.
- Use **command-line tools and log files** for diagnostics.
- Apply **systematic approaches** to isolate and resolve complex issues.

3. Target Audience

- **Linux system administrators** responsible for maintaining RHEL systems.
- **Support engineers** and **IT professionals** working in enterprise environments.
- Those seeking to enhance troubleshooting expertise to reduce downtime.

4. Pre-Requisites

- Red Hat Certified System Administrator (**RHCSA**) certification or equivalent knowledge.
- Red Hat Certified Engineer (**RHCE**) is recommended but not mandatory.
- Strong Linux command-line skills.

5. Course Content

Module 1: Introduction to Troubleshooting Methodology

- Systematic approaches to problem-solving
- Tools and resources for diagnostics

Module 2: Troubleshooting Boot Issues

- GRUB and kernel troubleshooting
- Repairing system initialization failures

Module 3: Troubleshooting File Systems and Storage

- Diagnosing storage device issues
- Repairing corrupted file systems

- LVM and partition troubleshooting

Module 4: Troubleshooting Networking

- Network configuration issues
- DNS and routing problems
- Firewall and security-related network errors

Module 5: Troubleshooting Applications

- Identifying failed services
- Debugging application errors
- Analyzing logs and core dumps

Module 6: Performance Troubleshooting

- CPU, memory, and I/O bottlenecks
- Performance tuning techniques

Module 7: Troubleshooting Security Issues

- SELinux troubleshooting
- User authentication and access problems

Module 8: Advanced Diagnostics and Recovery

- Using rescue mode and system recovery tools
- Automating problem detection and resolution

Module 9: Comprehensive Troubleshooting Labs

- Real-world scenarios covering boot, network, storage, and security failures