RED HAT CERTIFIED SPECIALIST IN LINUX PERFORMANCE TUNING EXAM (EX442)

Course Code: 1296

The Red Hat Certified Specialist in Performance Tuning exam (EX442) tests your ability to use standard system tools to analyze the performance of Red Hat® Enterprise Linux® and its applications.

The offering also validates the knowledge needed to use standard system tools and mechanisms to modify the behavior of the system and applications to improve performance.

By passing this exam, you become a Red Hat Certified Specialist in Performance Tuning, which also counts toward becoming a Red Hat Certified Architect (RHCA®).

Objectives listed for this exam are based on the most recent Red Hat product version available.

What You'll Learn

Students will learn to,

- Use utilities to analyze system behavior
- Monitor and alter kernel behavior
- Analyze system and application performance
- Tune running systems
- Tune memory utilization
- Configure disk and file subsystems
- Tune network performance

Who Needs to Attend

- Experienced Linux system administrators responsible for maximizing resource utilization through performance tuning
- A Red Hat Certified Engineer (RHCE®) interested in becoming a Red Hat Certified Architect (RHCA)

Prerequisites

- Be a Red Hat Certified System Architect (RHCSA®) or have comparable work experience and skills (RHCE would be even better)

- Take Red Hat Performance Tuning: Linux in Physical, Virtual, and Cloud (RH442) or have extensive work experience in performance tuning
- Review the objectives for this exam

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ON-DEMAND	$500 USD

On-Demand Outline

You should be able to perform the tasks listed below:

- **Use utilities to analyze system behavior**
  - Use utilities such as vmstat, iostat, mpstat, sar, gnome-system-monitor, top, powertop, and others to analyze and report system and application behavior
  - Use utilities such as Performance Co-Pilot (PCP) to analyze system behaviour
  - Use utilities such as dmesg, dmidecode, and sosreport to profile system hardware configurations
- **Monitor and alter kernel behavior**
  - Use /proc/sys, sysctl, and /sys to examine, modify, and set kernel run-time parameters
  - Configure kernel behavior by altering module parameters
- **Analyze system and application performance**
  - Analyze system and application behavior using tools such as ps, top, and Valgrind
  - Configure systems to run SystemTap scripts
  - Use the eBPF family of tools (e.g. syscount, gethostlatency and others) to diagnose system and application behavior
  - Given multiple versions of applications that perform the same or similar tasks, choose which version of the application to run on a system based on its observed performance characteristics
- **Tune running systems**
  - Alter process priorities of both new and existing processes

    - Select and configure tuned profiles
    - Manage system resource usage using control groups
- **Tune memory utilization**
    - Configure systems to support alternate page sizes for applications that use large amounts of memory
- **Configure disk and file subsystems**
    - Select proper I/O scheduling algorithm
    - Tune file system layout for a given use
- **Tune network performance**
    - Calculate network buffer sizes based on known quantities such as bandwidth and round-trip time
    - Set system buffer sizes based on those calculations

As with all Red Hat performance-based exams, configurations must persist after reboot without intervention.

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Date created: 5/9/2025 3:29:30 AM