

## Red Hat - Linux

### EX442: Red Hat Enterprise Performance Tuning Exam

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- Certification Exam for RH442 Red Hat Enterprise Performance Tuning

## Upcoming Dates

## Course Description

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®). This exam is based on Red Hat Enterprise Linux 8.

## Course Outline

**You should be able to perform the tasks listed below:**

- Use utilities such as vmstat, iostat, mpstat, sar, gnome-system-monitor, top, and powertop to analyze and report system and application behavior
- Configure systems to provide performance metrics, using utilities such as Performance Co-Pilot (PCP)
- Use the pluggable authentication module (PAM) mechanism to implement restrictions on critical system resources
- Use /proc/sys, sysctl, and /sys to examine, modify, and set kernel run-time parameters
- Use utilities such as dmesg, dmidecode, x86info, and sosreport to profile system hardware configurations
- Analyze system and application behavior using tools such as ps, strace, top, and Valgrind
- Configure systems to run SystemTap scripts
- Alter process priorities of both new and existing processes
- Configure systems to support alternate page sizes for applications that use large amounts of memory
- 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
- Configure disk subsystems for optimal performance using mechanisms such as swap partition placement, I/O scheduling algorithm selection, and file system layout
- Configure kernel behavior by altering module parameters
- Calculate network buffer sizes based on known quantities such as bandwidth and round-trip time, then set system buffer sizes based on those calculations
- Select and configure tuned profiles
- Manage system resource usage using control groups

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

## Audience

- 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

## **What You Will Learn**