Red Hat Certified Specialist in Performance Tuning exam

Course code: EX442

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.

Who is the course for

- Experienced Linux system administrators responsible for maximizing resource utilization through performance tuning
- An RHCE interested in earning Red Hat Certified Architect (RHCA)

Study points for the exam

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.

Required skills

- 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

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- Review the objectives for this exam

What you need to know

Preparation

Red Hat encourages you to consider taking Red Hat Performance Tuning: Linux in Physical, Virtual, and Cloud (RH442) to help prepare. Attendance in this class is not required, so one can choose to take just the exam. Many successful candidates who have come to class already possessing substantial skills and knowledge have reported that the class made a positive difference for them.

While attending Red Hat classes can be an important part of one's preparation to take this exam, attending class does not guarantee success on the exam. Previous experience, practice, and native aptitude are also important determinants of success.

Many books and other resources on system administration for Red Hat's products are available. Red Hat does not officially endorse any as preparation guides for its exam. Nevertheless, you may find additional reading deepens understanding and can prove helpful.

Exam format

This exam is a performance-based evaluation of system administration skills and knowledge. Candidates perform a number of routine system administration tasks and are evaluated on whether they have met specific objective criteria.

Performance-based testing means that candidates must perform tasks similar to what they perform on the job.

Prospective employers of a Red Hat Certified Specialist in Linux Performance Tuning should verify any and all claims by people claiming to hold this credential by requesting their certificate number and verifying it using the Red Hat certification verification tool.

Scores and reporting

Official scores for exams come exclusively from Red Hat Certification Central. Red Hat does not authorize examiners or training partners to report results to candidates directly. Scores on the exam are usually reported within 3 U.S. business days.

Exam results are reported as section scores. Red Hat does not report performance on individual items, nor will it provide additional information upon request.

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