

## Course RH442: Red Hat Enterprise Performance Tuning

Length	: 4 Days
Audience(s)	: Senior Linux system administrators
Delivery Method	: Instructor-led (classroom)

### About this Course

This course discusses system architecture with emphasis on:

- Understanding the implications on system performance
- Methods for testing the effects of performance adjustments
- Open source benchmarking utilities
- Methods for analyzing system and networking performance
- Tuning configurations for specific application loads

This course can also help you prepare for the Red Hat Certificate of Expertise in Performance Tuning exam (EX442).

### Audience Profile

- Senior Linux system administrators responsible for maximizing resource utilization through performance tuning

### At Course Completion

After completing this course, students learn how to:

- Tuning for use-case scenarios (for example, HPC, large memory, database, and file server)
- Applying tuning profiles with tuned
- Tuning virtual machines (primarily guest, but host is discussed)
- Tuning memory and caches
- Tuning CPU and memory utilization using cgroups (integrated in systemd)
- Gathering performance metrics and other data for tuning purposes

### Pre-Requisites

- Red Hat Certified Engineer (RHCE®) certification or equivalent experience
- Candidates who have not earned their RHCE can confirm they have the correct skills by passing our online skills assessment

## Course Outline

### Module 1: Introduction to performance tuning

- Understand the basic principles of performance tuning and analysis.

### Module 2: Collecting, graphing, and interpreting data

- Gain proficiency using basic analysis tools and evaluating data.

### Module 3: General tuning

- Learn basic tuning theory and mechanisms used to tune the system.

### Module 4: Limiting resource usage

### Module 5: Hardware profiling

- Understand and analyze hardware.

### Module 6: Software profiling

- Analyze CPU and memory performance of applications.

### Module 7: Mail server tuning

- Learn about basic storage tuning using an email server as an example.

### Module 8: Large memory workload tuning

- Understand memory management and tuning.

### Module 9: Tuning for a CPU-intensive workload

- Understand tuning for CPU-bound applications.

### Module 10: File server tuning

- Understand storage and network tuning in the context of a file server application.

### Module 11: Database server tuning

- Tune memory and network performance using a database application as an example.

### Module 12: Power usage tuning

- Tune systems with power consumption in mind.

### Module 13: Virtualization tuning

- Tune 'host' and 'guest' for efficient virtualization.