



LINUX TRAINING

Linux Performance Tuning

Optimize Linux systems for peak performance. Learn to identify and resolve bottlenecks, ensuring efficient operation.

DURATION

2 hours

LEVEL

Intermediate

FORMAT

Instructor-Led

- Globally Recognized Certification

- Expert-Led Hands-On Training

- Flexible Scheduling

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COURSE OVERVIEW

This intermediate-level course on Linux Performance Tuning is meticulously designed to equip IT professionals with the essential skills and knowledge to diagnose, troubleshoot, and optimize the performance of Linux systems. Participants will delve deep into the core mechanics of the Linux kernel, understanding how CPU, memory, disk I/O, and network subsystems interact and impact overall system efficiency. The curriculum emphasizes practical application, utilizing a range of powerful native Linux tools and methodologies to identify bottlenecks, analyze resource utilization, and implement effective tuning strategies.

Duration	2 hours
Level	Intermediate
Vendor	Linux

COURSE CURRICULUM

01 Module 1: Introduction to Linux Performance Monitoring

- Understanding Performance Bottlenecks
- Key Performance Indicators (KPIs) in Linux
- Overview of Performance Monitoring Tools (top, htop, vmstat, iostat, sar)
- Interpreting Performance Data

02 Module 2: CPU Performance Tuning

- CPU Utilization Metrics
- Process and Thread Management
- Understanding CPU Scheduling
- Tuning CPU-bound Applications
- Tools for CPU Analysis (perf, mpstat, pidstat)

03 Module 3: Memory Management and Optimization

- Linux Memory Architecture (RAM, Swap, Cache)
- Identifying Memory Leaks and Swapping Issues
- Tuning Kernel Memory Parameters (sysctl.conf)
- Optimizing Application Memory Usage
- Memory Analysis Tools (free, atop, smem)

04 Module 4: Disk I/O Performance Analysis

- Understanding Disk I/O Subsystems
- Identifying I/O Bottlenecks
- Filesystem Performance Considerations (ext4, XFS)
- RAID and LVM Optimization
- Disk I/O Tuning Parameters
- Tools for Disk I/O (iostat, blktrace, iotop)

05 Module 5: Network Performance Tuning

- Network Stack Overview
- Identifying Network Bottlenecks (latency, bandwidth, packet loss)
- Tuning Network Interfaces and Kernel Parameters
- Optimizing TCP/IP Settings

- Network Analysis Tools (netstat, ss, ip, tcpdump, nmap)

06 Module 6: Advanced Troubleshooting and Best Practices

- System-wide Performance Troubleshooting Methodologies
- Benchmarking Linux Systems
- Proactive Monitoring with Prometheus/Grafana (overview)
- Scripting for Automated Performance Analysis
- Container Performance Considerations (Docker, Kubernetes overview)

CAREER PATHWAYS

Graduates of this program are prepared for the following roles:

- > **Senior Linux Systems Administrator**
- > **DevOps and Site Reliability Engineer (SRE)**
- > **System Performance Analyst**

FREQUENTLY ASKED QUESTIONS

Q: What prior Linux experience is recommended to gain the most from this Performance Tuning course?

This intermediate-level course assumes participants have a solid foundational understanding of Linux administration, including command-line proficiency, file system navigation, package management, and basic understanding of Linux services. Experience with managing users, permissions, and networking configurations is highly beneficial, as the course focuses on optimizing these underlying components rather than introducing them from scratch.

Q: How will mastering Linux performance tuning directly enhance my career as a Systems Administrator or DevOps Engineer?

Mastering Linux performance tuning will transform your ability to manage complex IT infrastructures by enabling you to proactively identify and resolve critical system bottlenecks before they impact users. You'll gain expertise in optimizing resource utilization, leading to more stable, efficient, and cost-effective deployments. This specialized skill set is highly sought after, differentiating you as an expert capable of ensuring high availability and peak performance for mission-critical applications.

Q: What specific performance analysis and tuning tools will I become proficient with during this training?

Throughout this course, you will gain hands-on proficiency with a comprehensive suite of industry-standard Linux performance tools. This includes top, htop, vmstat, iostat, sar, free, mpstat, pidstat, perf, atop, smem, blktrace, iotop, netstat, ss, ip, and tcpdump. We will cover their practical application, interpreting their output, and using them to diagnose and implement effective tuning strategies across various system components.

ABOUT COMPUTER PRIDE

**computerpride*****East Africa's Premier IT Training Center***

With over 15 years of excellence, Computer Pride delivers globally recognized certification programs from leading technology vendors. Located on Kenyatta Avenue in Nairobi's CBD, our state-of-the-art facilities and expert instructors have empowered thousands of professionals across East Africa.

15+

Years of Excellence

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Take the next step in your technology career.

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