Big Data Network Monitoring and Performance Training Course

14 - 18 Dec 2026

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4100 € (Per Person)

Ref: #NO8428_264198

Course Introduction / Overview:

This comprehensive training course is designed to equip network professionals with the specialized skills needed for big data network monitoring and performance optimization. In an era where organizations generate and process massive volumes of data, the network infrastructure is the lifeline that must be managed with precision. This course goes beyond traditional network monitoring tools, focusing on how to analyze and manage network performance in high-volume, data-intensive environments. Participants will learn how to use advanced monitoring techniques, implement network automation, and leverage data analytics to predict and prevent network issues. We will cover a wide range of topics, including real-time traffic analysis, application performance monitoring (APM), and the use of machine learning for network anomaly detection. Drawing on influential works in the field, such as "Network Monitoring: The Complete Reference" by Greg Page, this program at BIG BEN Training Center provides a solid academic and practical foundation. The curriculum is built to address the unique challenges of modern data centers, including the complexities of cloud networking, virtualization, and distributed systems. By the end of this course, you will be equipped to design and implement a robust network monitoring strategy that ensures optimal performance and reliability for your organization's most critical data applications.

Target Audience / This training course is suitable for:

- Network engineers and administrators.
- DevOps and Site Reliability Engineers (SREs).
- Data center managers.
- Cloud and infrastructure architects.
- IT operations specialists.
- Data analysts and scientists working with network data.
- Cybersecurity professionals.

Target Sectors and Industries:

- Information Technology and software development.
- Telecommunications and internet service providers.
- Cloud computing and data centers.
- Financial services.
- E-commerce and online services.
- Government agencies and defense.
- Telecommunications.

Target Organizations Departments:

- IT and Network Operations.
- DevOps and Infrastructure.
- Data Analytics and Business Intelligence.
- Cybersecurity.
- Application Development.
- System Administration.
- Quality Assurance.

Course Offerings:

By the end of this course, the participants will have able to:

- Implement a comprehensive network monitoring strategy for big data environments.
- Utilize advanced tools for real-time network traffic analysis.
- Identify and resolve network performance bottlenecks.
- Apply machine learning techniques for network anomaly detection.
- Automate network management and troubleshooting tasks.
- Monitor application performance across the network stack.
- Design scalable and resilient network architectures for big data.

Course Methodology:

This training course at BIG BEN Training Center employs a hands-on, problem-solving methodology designed to prepare professionals for the real-world challenges of big data network management. The course combines expert-led lectures with practical lab exercises that simulate high-traffic network scenarios. Participants will work with modern monitoring tools and platforms, learning how to configure them and analyze the data they produce. Case studies will be used to explore how successful organizations have used big data analytics to optimize their network performance and security. Group exercises will encourage teamwork and collaborative troubleshooting, helping participants to develop their analytical and problem-solving skills. The instructor will provide personalized feedback and guidance throughout the course, ensuring that every participant gains a deep and practical understanding of the subject matter. This approach ensures that the skills learned are not just theoretical but are directly applicable to the job, enabling professionals to handle the most demanding network performance challenges.

Course Agenda (Course Units):

Unit One: Fundamentals of Network Performance

- Network monitoring metrics and key performance indicators (KPIs).
- Network traffic analysis and packet sniffing.
- The difference between traditional and big data network monitoring.
- Architecting a monitoring system.
- Log analysis and event correlation.
- Introduction to network automation tools.
- Case study on a network performance incident.

Unit Two: Advanced Monitoring Tools and Platforms

- Overview of popular monitoring tools like Nagios and Zabbix.
- Using Elastic Stack for network data visualization.
- Implementing network performance monitoring (NPM).
- Understanding Application Performance Monitoring (APM).
- Deploying a monitoring agent on servers.
- Dashboard creation and reporting.
- Practical lab on tool configuration.

Unit Three: Network Data Analytics and Machine Learning

- Collecting network data for analysis.
- Introduction to machine learning for networks.
- Anomalous traffic detection.
- Predicting network failures.
- Using machine learning models to optimize network routing.
- Data visualization for network analytics.
- Case study: A large-scale network data analysis project.

Unit Four: High-Performance Network Management

- Optimizing network performance for big data transfers.
- Managing network devices with automation.
- Configuration management and compliance.
- Load balancing and traffic shaping.
- Network virtualization and its impact on monitoring.
- Troubleshooting complex network issues.
- Practical lab on performance tuning.

Unit Five: Security, Cloud, and Future Trends

- Monitoring network security threats.
- Cloud network monitoring and hybrid environments.
- Zero-trust architecture and monitoring.
- The role of AI in future network management.
- Scaling network monitoring for exabyte-scale data.
- Final project: Designing a comprehensive monitoring strategy.
- Emerging technologies and their impact.
- Frequently Asked Questions:

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

As network traffic and data volumes continue to grow exponentially, how can professionals move beyond reactive monitoring to proactive, predictive network management using big data and machine learning?

What unique qualities does this course offer compared to other courses?

This course stands out by its specialized focus on big data network monitoring, a crucial skill set that is not typically covered in general networking or data science programs. It bridges the gap between network engineering and data analytics, providing a holistic view of how to manage modern, high-volume networks. The curriculum emphasizes the use of data to drive network decisions, moving beyond simple alerts to proactive and predictive insights. The training is highly practical, with hands-on labs that allow participants to work with real tools and datasets, simulating the challenges of a data-intensive environment. This focus on real-world application, combined with an exploration of emerging technologies like machine learning for network management, ensures that participants are not only prepared for today's challenges but are also equipped for the future. The course is designed to transform network professionals into data-savvy experts who can ensure the reliability and performance of their organization's most critical systems.