

## Using Wireshark to Analyze and Troubleshoot TCP/IP Networks

Durée: 5 Jours    Réf de cours: GK840150    Version: 1.0

### Résumé:

**Master the art of packet analysis and network troubleshooting with Wireshark in this immersive, hands-on course built for real-world challenges.**

Using Wireshark to Analyze and Troubleshoot TCP/IP Networks is a hands-on course designed for IT professionals who want to sharpen their skills in network traffic analysis. The course blends theory with practical labs, guiding learners through capturing, filtering, and interpreting network packets using Wireshark. Participants will explore real-world scenarios involving performance bottlenecks, security threats, and protocol-specific behaviors, gaining the confidence to troubleshoot complex network issues.

Throughout the course, learners will build custom Wireshark profiles, apply advanced filtering techniques, and analyze traffic across wired and wireless networks. From identifying scanning activity and suspicious payloads to visualizing TCP trends and using command-line tools, the curriculum is structured to provide both foundational knowledge and advanced troubleshooting strategies. While not marketed as official certification prep, the course aligns well with the Wireshark Certified Analyst (WCA) exam objectives, making it a valuable resource for those pursuing certification or simply looking to deepen their expertise.

### Public visé:

- Network engineers, IT professionals, and cybersecurity practitioners aiming to learn network analysis and troubleshooting using Wireshark.
- Developers and administrators responsible for monitoring and managing network infrastructure effectively.
- Professionals seeking to implement best practices in network security and performance analysis with Wireshark

### Objectifs pédagogiques:

- Explain the purpose of network analysis and the role of Wireshark in troubleshooting, optimization, and security.
- Describe Wireshark's functionality, including installation, configuration, and navigation.
- Capture network traffic on wired and wireless networks, and apply capture filters to isolate specific traffic.
- Analyze TCP/IP communications, including DNS, ARP, IPv4/IPv6, ICMP, UDP, and TCP traffic.
- Create and apply display filters to focus on specific packets and interpret trace file statistics.
- Follow streams and reassemble data for deeper analysis of conversations.
- Customize Wireshark profiles for different analysis scenarios.
- Annotate, save, export, and print packets for documentation and further analysis.
- Use Wireshark's expert system to identify and troubleshoot network issues.
- Graph IO rates and TCP trends to visualize network performance.
- Detect scanning and discovery processes, and analyze suspect traffic for security purposes.
- Effectively use command-line tools for advanced network analysis.

### Pré-requis:

- Basic understanding of networking concepts and TCP/IP protocols.
- Familiarity with network analysis tools and techniques.
- Knowledge of foundational network security principles and practices.
- Experience with packet analysis and troubleshooting (recommended).
- GK3150 - Understanding Networking Fundamentals
- GK9025 - TCP/IP Networking

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## Contenu:

### Introduction to Network Analysis and Wireshark

- Overview of TCP/IP Analysis
- Identifying Common Performance Issues
- Installing and Updating Wireshark
- Capturing Network Traffic
- Network Forensics Overview
- Network Forensics Techniques

### Capture Methods and Filters

- Analyzing Switched Networks
- Using Network TAPs for Full-Duplex Links
- Wireless Network Analysis
- Configuring Capture Filters
- Detect Scanning and Discovery Processes
- Detecting Scanning and Discovery Processes

### Customization and Advanced Navigation

- Creating a Troubleshooting Profile
- Setting Up a Custom Troubleshooting Profile
- Customizing the User Interface
- Adding Custom Columns and Configuring Preferences
- Advanced Navigation Techniques
- Building Permanent Coloring Rules
- Creating and Applying Coloring Rules
- Analyze Suspect Traffic
- Analyzing Suspect Traffic

### Time Values, Summaries, and Basic Statistics

- Examining Delta Time
- Setting Time References
- Comparing Timestamp Values
- Using TCP Conversation Timestamps
- Enabling and Analyzing TCP Conversation Timestamps
- Effective Use of Command-Line Tools
- Using Command-Line Tools for Network Analysis

### Protocol-Specific Traffic Analysis and Troubleshooting

- Using Display Filters
- Filtering Conversations and Endpoints
- Building Filters Based on Packets
- Building and Applying Packet-Based Filters
- TCP/IP Communications and Resolutions

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## Autres moyens pédagogiques et de suivi:

- Compétence du formateur : Les experts qui animent la formation sont des spécialistes des matières abordées et ont au minimum cinq ans d'expérience d'animation. Nos équipes ont validé à la fois leurs connaissances techniques (certifications le cas échéant) ainsi que leur compétence pédagogique.
- Suivi d'exécution : Une feuille d'émargement par demi-journée de présence est signée par tous les participants et le formateur.
- En fin de formation, le participant est invité à s'auto-évaluer sur l'atteinte des objectifs énoncés, et à répondre à un questionnaire de satisfaction qui sera ensuite étudié par nos équipes pédagogiques en vue de maintenir et d'améliorer la qualité de nos prestations.

### Délais d'inscription :

- Vous pouvez vous inscrire sur l'une de nos sessions planifiées en inter-entreprises jusqu'à 5 jours ouvrés avant le début de la formation sous réserve de disponibilité de places et de labs le cas échéant.
- Votre place sera confirmée à la réception d'un devis ou "booking form" signé. Vous recevrez ensuite la convocation et les modalités d'accès en présentiel ou distanciel.
- Attention, si cette formation est éligible au Compte Personnel de Formation, vous devrez respecter un délai minimum et non négociable fixé à 11 jours ouvrés avant le début de la session pour vous inscrire via [moncompteformation.gouv.fr](http://moncompteformation.gouv.fr).

### Accueil des bénéficiaires :

- En cas de handicap : plus d'info sur [globalknowledge.fr/handicap](http://globalknowledge.fr/handicap)
- Le Règlement intérieur est disponible sur [globalknowledge.fr/reglement](http://globalknowledge.fr/reglement)