

# Packet Analysis Power Workshop (PAPW)

**ID** PAPW **Price** 3,290.— €(excl. tax) **Duration** 5 days

Our Wireshark workshops are now available with new content and in-depth exercises!

More info can be found under "Course Outline".

## Who should attend

Network administrators and all other technical staff responsible for the planning, implementation and ensuring high performance operation of their data networks.

## Prerequisites

Contents of the [Networking & TCP/IP Fundamentals \(NWF\)](#) course

## Course Objectives

In this two-day course, participants receive a systematic introduction to the basic functions and operation of the Wireshark analyzer and learn methods and techniques for monitoring, analyzing and troubleshooting networks at the packet level, as well as how to differentiate between network and application problems. It also provides participants with the knowledge necessary for detailed analysis and troubleshooting of typical network environments using Wireshark Analyzer. The main focus is on the analysis of TCP/IP networks and TCP/IP-based applications.

## Course Content

- Functions and basic operation of Wireshark Analyzer
- Advanced functions of Wireshark
- Methods and techniques for analysis and troubleshooting
- Statistics and baselining
- Network problems vs. application problems
- Switched Ethernet analysis
- TCP/IP analysis of the network layer
- TCP/IP analysis of the transport layer
- Analysis of TCP/IP with Wireshark
- TCP/IP applications

## Detailed Course Outline

### Functions and basic operation of Wireshark Analyzer

- Introduction and operation of the Analyzer
- Live capture and live capture settings
- Display options and analysis possibilities
- Working with Capture Filter and Display Filter
- File Input and Output

### Advanced functions of Wireshark

- Settings and user profiles
- Name resolution
- Reconstruction of user data - Reassembly of the protocol
- Packet coloring

### Methods and techniques for analysis and troubleshooting

- What is packet analysis?
- Steps and techniques of traffic analysis
- Ethernet switch analysis
- Recording of wireless network traffic
- Determining delay and response times
- Measure and determine throughput and overhead
- Statistics and baselining
- Baselining of applications on the network
- Wireshark statistics
- Network problems vs. application problems
- Typical network problems
- Application types and typical application problems
- "Is it the network or the application?" - Isolation of error situations
- Analysis and reconstruction of voice traffic

### Switched Ethernet Analysis

- Ethernet Analysis
- VLANs and VLAN tagging

### TCP/IP analysis of the network layer

- IP Addressing
- Typical IP network problems
- IP options
- ICMP, ARP and DHCP

### **TCP/IP Analysis of the Transport Layer**

- TCP Functions
- Session Setup, Data Transfer and Session Teardown
- Window mechanism and window optimization
- TCP options (SACK, Window Scaling) and TCP timer
- TCP graphs
- UDP functions

### **Analysis of TCP/IP with Wireshark**

- Wireshark settings for advanced TCP/IP analysis
- Typical problems with TCP/IP
- Wireshark Expert info messages and their meaning

### **TCP/IP applications**

- HTTP
- FTP
- DNS
- TLS

# About Fast Lane



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### Germany

**Fast Lane Institute for Knowledge  
Transfer GmbH**  
Tel. +49 40 25334610  
info@flane.de / www.flane.de

### Austria

**ITLS GmbH**  
(Partner of Fast Lane)  
Tel. +43 1 6000 8800  
info@itls.at / www.itls.at

### Switzerland

**Fast Lane Institute for Knowledge  
Transfer (Switzerland) AG**  
Tel. +41 44 8325080  
info@flane.ch / www.flane.ch