

Deep Dive into TCP

Online Class with Laura Chappell

LEARN TCP IN-DEPTH

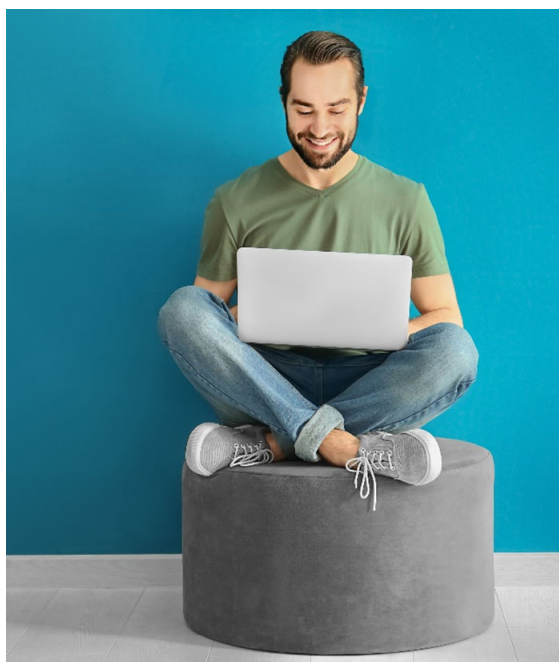
Understand to thoroughly analyze TCP communications to detect the cause of network problems and identify suspicious traffic.

LEARN FROM THE BEST

Laura Chappell is consistently ranked as a top presenter at industry conferences and custom courses. With almost 30 years analyzing thousands of networks, Laura brings a set of tips and techniques that will help you analyze networks faster and more accurately.

SAVE TIME AND MONEY

Why waste time and money on airfare and hotels when you take this highly-interactive course from home or work?



- Learn to capture and analyze TCP-based traffic for troubleshooting, security, and optimization.
- In three 4-hour sessions, Laura will take you inside the TCP header, TCP options, recovery from packet loss, receiver and network congestion symptoms, optimization techniques and more.
- Laura will walk you through Selective Acknowledgments, Window Scaling, and introduce you to “Fast TCP.”
- The **Troubleshooting with Wireshark** online class on June 3-5 is a great follow-up course.

Basic Course Contents (see next page)

- TCP handshake
- TCP flags
- Congestion control
- Packet loss and recovery
- MUST learn TCP capture filters
- MUST learn TCP Wireshark features
- MUST learn TCP display filters
- Segment sizes and MTU values
- Wireshark’s Expert System
- Graphing TCP behavior
- Automating TCP analysis, troubleshooting and error detection
- Resources for additional training
- and more...

Become a TCP expert! Learn how TCP performs from the TCP handshake to the connection teardown process in this highly-interactive online class featuring Laura Chappell.

Date May 20-22
Time 9:00am – 1:00pm PST
(Pacific Time)
Location Online!*

Price \$495 until March 15, 2019
\$595 after March 15, 2019

Register www.chappellu.com

* We will use GoToWebinar for this course. Visit <https://support.logmeininc.com/gotowebinar/system-check-attendee> to test your system in advance of the course.

OTHER ONLINE COURSES

Fundamentals of Wireshark and TCP/IP Analysis

May 13-15 - 9:00am-1:00pm PST

Price \$495 (through March 15)

Learn more and register at

www.chappellu.com.

Troubleshooting with Wireshark

June 3-5 - 9:00am-1:00pm PST

Price \$495 (through March 15)

Learn more and register at

www.chappellu.com.

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Course Content Overview

- Compare TCP Capture Techniques in Wireshark
- Use Command-Line Capture Tools (Tshark/Dumpcap)
- Analyze the TCP Header In-Depth including TCP Flag Settings (URG/ACK/PSH/RST/SYN/FIN)
- Detect Issues Related to TCP Congestion
- Handshake and TCP Options Analysis
- Initial Round Trip Time and Path Latency Analysis
- Quickly Identify Delays within Individual TCP Streams
- Differentiate between Service Refusals and Terminations (FIN/Reset)
- Perform Sequence and Acknowledgment Analysis (Using Relative and Actual Numbering)
- Analyze and Troubleshoot Window Scaling and Receive Buffer Issues
- Evaluate Maximum Segment Size (MSS) and the Maximum Transmission Unit (MTU) Values
- Identify TCP Segmentation Offload (TSO) Use
- Use Display Filter Tricks to Catch TCP Problems Fast
- Identify Problems Using Wireshark's Expert Information and the TCP Dissector Code
- Identify the Location of Packet Loss on a Network
- Analyzing Duplicate ACKs, Fast Retransmissions, and Selective ACKs (SACKs)
- Detect the Cause of Standard and Spurious Retransmissions
- Identify Issues Related to Out-of-Order Segments
- Analyze Zero Window and Low Window Conditions and their Impact on Performance
- Analyze Keep-Alives Processes
- Determine when Port Reuse is the Cause of Problems
- Depict Problems Using TCP Time Sequence Graphs
- Identify TCP Fast Open (New TCP Feature)
- Resources for Additional Training



"Great class, very informative. Laura is a great teacher and kept class fun and fast paced."

"Tons of great info that is relevant to my job. Thank you for your superb teaching."

"Great content and fantastic instructor."

Also from Laura Chappell

All Access Pass Online Training

Numerous Wireshark Books

Custom Onsite Courses

www.chappellu.com

Recommended Setup

- It is recommended (but not required) that you use two computers during this class. One computer to run Wireshark and follow along with Laura's demonstrations and another to watch the course.
- We will use GoToWebinar for this course. Visit <https://support.logmeininc.com/gotowebinar/system-check-attendee> to test your system in advance of the course.

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