

Wireshark® Network Analysis

The Official Wireshark Certified Network Analyst Study Guide

Second Edition

Laura Chappell

- Learn **insider tips and tricks** to spot the cause of lousy network performance
- Discover **basic through advanced Wireshark techniques** to quickly identify evidence of discovery processes and breached hosts
- Analyze real world case studies to see how network problems have been solved by IT professionals just like **YOU!**



Foreword by
Gerald Combs
Creator of Wireshark



Wireshark® Network Analysis
The Official Wireshark Certified Network Analyst™ Study Guide
2nd Edition (Version 2.1b)

Laura Chappell
Founder, Chappell University™
Founder, Wireshark University™



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Dedication

This Second Edition is dedicated to Gerald Combs, creator of Wireshark (formerly Ethereal) and a good friend.

Twelve years ago, I sent Gerald a note—just out of the blue—"may I include Ethereal on my CD? I want to give it away at conferences." Expecting some pushback—after all, he didn't know who the heck I was—I was amazed and thrilled to receive his response stating "sure, go ahead—that would be great!"

Gerald is more than the creator of Wireshark. Gerald is one of us. He struggled with a problem. He formulated a solution. Then he did something extraordinary—he shared his solution with the world. In his typical unselfish mode, Gerald opened up his project for the contribution and participation of others.

Ethereal morphed into Wireshark, and Wireshark continued to mature. Wireshark has surpassed every other network analyzer product in the industry to become the de facto standard for network traffic analysis.

In 2011 Wireshark was voted the #1 Security Tool on the SecTools.org Top 125 Network Security Tools survey (conducted by Gordon Lyons, creator of Nmap). This is a much deserved recognition that Wireshark and packet analysis is a must-have skill for IT security professionals.

Throughout Wireshark's rise in popularity, Gerald has remained one of the most honest, humble, dedicated professionals in our field.

Callan

Thank you Gerald.

p.s. Again I want to express very special thanks to Gerald's wife, Karen, and their absolutely cute-beyond-belief, I-have-my-Daddy-wrapped-around-my-little-finger, smarty-pants-who-melts-your-heart daughter! Gerald always beams when he talks about you two very special ladies and it is a treat spending time with you both <girl power!>. I am grateful for the love, support and inspiration you have provided Gerald. Your tremendous humor and joie de vivre inspires me!

ACKs

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First and foremost, I would like to thank my children, **Scott and Ginny**, for your patience, support and humor during the many hours I was huddled over my computer to complete this book. Your words of encouragement really helped me balance work and life during some long days and nights of deadline. It will be a treat to write that "Cooking Badly" book with you someday!

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Special thanks to **Brenda Cardinal and Jill Poulsen** who have worked with me for over 10 years each—you masochists! I am fortunate to have both of you around to brighten my days and put life in perspective.

To **Colton Cardinal**, who provided humorous distractions, smiles and, giggles—thanks for all the time staring at the clocks during the past year and a half. I feel very fortunate to have the chance to watch you grow up!

Joy DeManty—I'm sure you're sick of reading this book over and over and over again! I appreciate your keen eye in reviewing this second edition. Let's agree on this - no more 1,000 page books!

Lanell Allen—again you really pulled through for us on this project! Your tireless hours of work put into finding my typos, half-sentences and dangling prepositions (he he) was invaluable. Thank you for taking on this project.

Gerald Combs—what can I say? You have selflessly shared with us a tremendous tool and I am so very grateful for your devotion to Wireshark. The first and second editions of this book are dedicated to you.

The Wireshark developers—what a group! It has been a pleasure meeting so many of you in person at the Sharkfest conferences. Your continued efforts to improve and enhance Wireshark have helped so many IT professionals find the root of network issues. Thank you for the many hours you have dedicated to making Wireshark the world's most popular network analyzer solution! You can find the developer list at **Help | About Wireshark | Authors**. I hope this book accurately explains the features you have spent so many hours implementing. If I missed anything you'd like included in future editions of this book, please let me know.

Gordon "Fyodor" Lyon—the creation of the First Edition of this book was triggered when you released "Nmap Network Scanning"—an excellent book that every networking person should own. I appreciate your time and effort looking over the network scanning section. I look forward to working with you on some future projects—there are so many possibilities!

Ryan Woodings and Mark Jensen of MetaGeek—it has been a pleasure collaborating with you folks on ideas and microwave popping methods (g)! It has been a blast showing Wi-Spy/Chanalyzer Pro at conferences and sharing these hot products with the IT community. I look forward to more brainstorming sessions. Special thanks to **Trent Cutler** for reviewing the WLAN chapter and sending on some great feedback.

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Ron Nutter—Hey, buddy! Hard to believe we've known each other for a zillion years, eh? Thanks for adding the Cisco spanning instructions in this Second Edition. I know the readers will appreciate that you shared your tips for setting up an efficient capture with Cisco equipment.

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Keith Parsons—Thanks for clarifying the concepts in the WLAN chapter and adding the awesome "To DS/From DS" graphic and table! You always have great ideas and teaching methods—and you're truly the "geek toy king" as well!

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The pcapr Team—I appreciate you allowing me to provide readers with several trace files from your online repository at www.pcapr.net. Thank you to **Mu Dynamics** (www.mudynamics.com) for supporting the *pcapr.net* project.

David Teng—Thanks for your thorough read through of the first edition and the numerous edits and suggestions you provided. It is difficult to imagine the effort you put into translating this huge book from Chinese, but I do hope to see it in print someday.

My Students—Sincere thanks to the **hundreds of thousands of students** who have taken my online training courses, instructor-led courses and self-paced courses over 20 years of teaching. I've gotten to know so many of you as friends. Your honest and direct feedback has always helped me hone my training materials (and my jokes).

Gary Lewis—you wild guy, you! If anyone out there needs graphic design services, Gary is the "go to" guy with a great (and somewhat twisted) sense of humor. Thanks for a great cover design on the First Edition—and a lovely rework of the Second Edition!

Case Study/Tip Submitters—Case studies were submitted from all around the world. Thanks to all you who overloaded my email with your Wireshark success stories. The following individuals provided case studies that were included in this book to offer a glimpse into how folks use Wireshark to save time and money.

LabNuke99 - P.C. - Jim Aragon - Roy B. - Martin B. - Bill Back - Sake Blok - Jeff Carrell - Coleen D
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If I've missed anyone in this ACK section, I apologize and plead brain-drain at this point!

Contents at a Glance

[Chapter 1: The World of Network Analysis](#)

[Chapter 2: Introduction to Wireshark](#)

[Chapter 3: Capture Traffic](#)

[Chapter 4: Create and Apply Capture Filters](#)

[Chapter 5: Define Global and Personal Preferences](#)

[Chapter 6: Colorize Traffic](#)

[Chapter 7: Define Time Values and Interpret Summaries](#)

[Chapter 8: Interpret Basic Trace File Statistics](#)

[Chapter 9: Create and Apply Display Filters](#)

[Chapter 10: Follow Streams and Reassemble Data](#)

[Chapter 11: Customize Wireshark Profiles](#)

[Chapter 12: Annotate, Save, Export and Print Packets](#)

[Chapter 13: Use Wireshark's Expert System](#)

[Chapter 14: TCP/IP Analysis Overview](#)

[Chapter 15: Analyze Domain Name System \(DNS\) Traffic](#)

[Chapter 16: Analyze Address Resolution Protocol \(ARP\) Traffic](#)

[Chapter 17: Analyze Internet Protocol \(IPv4/IPv6\) Traffic](#)

[Chapter 18: Analyze Internet Control Message Protocol \(ICMPv4/ICMPV6\) Traffic](#)

[Chapter 19: Analyze User Datagram Protocol \(UDP\) Traffic](#)

[Chapter 20: Analyze Transmission Control Protocol \(TCP\) Traffic](#)

[Chapter 21: Graph IO Rates and TCP Trends](#)

[Chapter 22: Analyze Dynamic Host Configuration Protocol \(DHCPv4/DHCPv6\) Traffic](#)

[Chapter 23: Analyze Hypertext Transfer Protocol \(HTTP\) Traffic](#)

[Chapter 24: Analyze File Transfer Protocol \(FTP\) Traffic](#)

[Chapter 25: Analyze Email Traffic](#)

[Chapter 26: Introduction to 802.11 \(WLAN\) Analysis](#)

[Chapter 27: Introduction to Voice over IP \(VoIP\) Analysis](#)

[Chapter 28: Baseline "Normal" Traffic Patterns](#)

[Chapter 29: Find the Top Causes of Performance Problems](#)

[Chapter 30: Network Forensics Overview](#)

[Chapter 31: Detect Network Scanning and Discovery Processes](#)

[Chapter 32: Analyze Suspect Traffic](#)

[Chapter 33: Effective Use of Command Line Tools](#)

[Appendix A: Resources on the Book Website](#)

[All Access Pass Training Offer](#)

Table of Contents

[Contents at a Glance](#)

[List of Tips](#)

[Wireshark Certified Network Analyst Exam Topics](#)

[\\$100 Off All Access Pass \(AAP\) Online Training](#)

[Dedication](#)

[ACKs](#)

[Foreword by Gerald Combs](#)

[Preface](#)

[About This Book](#)

[Wireshark Certified Network Analyst™ Program Overview](#)

[Wireshark University™ and Wireshark University™ Training Partners](#)

[Schedule Customized Onsite/Web-Based Training](#)

Chapter 1: The World of Network Analysis

[Define Network Analysis](#)

[Follow an Analysis Example](#)

[Walk-Through of a Troubleshooting Session](#)

[Walk-Through of a Typical Security Scenario \(aka Network Forensics\)](#)

[Understand Security Issues Related to Network Analysis](#)

[Overcome the "Needle in the Haystack Issue](#)

[Review a Checklist of Analysis Tasks](#)

[Understand Network Traffic Flows](#)

[Launch an Analysis Session](#)

[Case Study: Pruning the "Puke"](#)

[Case Study: The "Securely Invisible" Network](#)

[Summary](#)

[Practice What You've Learned](#)

[Review Questions](#)

[Answers to Review Questions](#)

Chapter 2: Introduction to Wireshark

[Wireshark Creation and Maintenance](#)

[Capture Packets on Wired or Wireless Networks](#)

[Open Various Trace File Types](#)

[Understand How Wireshark Processes Packets](#)

[Use the Start Page](#)

[Identify the Nine GUI Elements](#)

[Navigate Wireshark's Main Menu](#)

[Use the Main Toolbar for Efficiency](#)

[Focus Faster with the Filter Toolbar](#)

[Make the Wireless Toolbar Visible](#)

[Work Faster Using RightClick Functionality](#)

[Sign Up for the Wireshark Mailing Lists](#)

[Join ask.wireshark.org!](#)

[Know Your Key Resources](#)

[Get Some Trace Files](#)

[Case Study: Detecting Database Death](#)

[Summary](#)

[Practice What You've Learned](#)

[Review Questions](#)

[Answers to Review Questions](#)

Chapter 3: Capture Traffic

[Know Where to Tap Into the Network](#)

[Run Wireshark Locally](#)

[Capture Traffic on Switched Networks](#)

[Analyze Routed Networks](#)

[Analyze Wireless Networks](#)

[Capture at Two Locations \(Dual Captures\)](#)

[Select the Right Capture Interface](#)

[Capture on Multiple Adapters Simultaneously](#)

[Interface Details \(Windows Only\)](#)

[Capture Traffic Remotely](#)

[Automatically Save Packets to One or More Files](#)

[Optimize Wireshark to Avoid Dropping Packets](#)

[Conserve Memory with Command-Line Capture](#)

[Case Study: Dual Capture Points the Finger](#)

[Case Study: Capturing Traffic at Home](#)

[Summary](#)

[Practice What You've Learned](#)

[Review Questions](#)

[Answers to Review Questions](#)

Chapter 4: Create and Apply Capture Filters

[The Purpose of Capture Filters](#)

[Apply a Capture Filter to an Interface](#)

[Build Your Own Set of Capture Filters](#)

[Filter by a Protocol](#)

[Filter Incoming Connection Attempts](#)

[Create MAC/IP Address or Host Name Capture Filters](#)

[Capture One Application's Traffic Only](#)

[Use Operators to Combine Capture Filters](#)

[Create Capture Filters to Look for Byte Values](#)

[Manually Edit the Capture Filters File](#)

[Share Capture Filters with Others](#)

[Case Study: Kerberos UDP to TCP Issue](#)

[Summary](#)

[Practice What You've Learned](#)

[Review Questions](#)

[Answers to Review Questions](#)

Chapter 5: Define Global and Personal Preferences

[Find Your Configuration Folders](#)

[Set Global and Personal Configurations](#)

[Customize Your User Interface Settings](#)

[Define Your Capture Preferences](#)

[Automatically Resolve IP and MAC Names](#)

[Plot IP Addresses on a World Map with GeoIP](#)

[Resolve Port Numbers \(Transport Name Resolution\)](#)

[Resolve SNMP Information](#)

[Configure Filter Expressions](#)

[Configure Statistics Settings](#)

[Define ARP, TCP, HTTP/HTTPS and Other Protocol Settings](#)

[Configure Protocol Settings with RightClick](#)

[Case Study: NonStandard Web Server Setup](#)

[Summary](#)

[Practice What You've Learned](#)

[Review Questions](#)

[Answers to Review Questions](#)

Chapter 6: Colorize Traffic

[Use Colors to Differentiate Traffic Types](#)

[Disable One or More Coloring Rules](#)

[Share and Manage Coloring Rules](#)

[Identify Why a Packet is a Certain Color](#)

[Create a "Butt Ugly" Coloring Rule for HTTP Errors](#)

[Color Conversations to Distinguish Them](#)

[Temporarily Mark Packets of Interest](#)

[Alter Stream Reassembly Coloring](#)

[Case Study: Colorizing SharePoint Connections During Login](#)

[Summary](#)

[Practice What You've Learned](#)

[Review Questions](#)

[Answers to Review Questions](#)

Chapter 7: Define Time Values and Interpret Summaries

[Use Time to Identify Network Problems](#)

[Send Trace Files Across Time Zones](#)

[Identify Delays with Time Values](#)

[Identify Client, Server and Path Delays](#)

[View a Summary of Traffic Rates, Packet Sizes and Overall Bytes Transferred](#)

[Case Study: Time Column Spots Delayed ACKs](#)

[Summary](#)

[Practice What You've Learned](#)

[Review Questions](#)

[Answers to Review Questions](#)

Chapter 8: Interpret Basic Trace File Statistics

[Launch Wireshark Statistics](#)

[Identify Network Protocols and Applications](#)

[Protocol Settings Can Affect Your Results](#)

[Identify the Most Active Conversations](#)

[List Endpoints and Map Them on the Earth](#)

[Spot Suspicious Targets with GeoIP](#)

[List Conversations or Endpoints for Specific Traffic Types](#)

[Evaluate Packet Lengths](#)

[List All IPv4/IPv6 Addresses in the Traffic](#)

[List All Destinations in the Traffic](#)

[List UDP and TCP Usage](#)

[Analyze UDP Multicast Streams](#)

[Graph the Flow of Traffic](#)

[Gather Your HTTP Statistics](#)

[Examine All WLAN Statistics](#)

[Case Study: Application Analysis: Aptimize Website Accelerator™](#)

[Case Study: Finding VoIP Quality Issues](#)

[Summary](#)

[Practice What You've Learned](#)

[Review Questions](#)

[Answers to Review Questions](#)

Chapter 9: Create and Apply Display Filters

[Understand the Purpose of Display Filters](#)

[Create Display Filters Using Auto-Complete](#)

[Apply Saved Display Filters](#)

[Use Expressions for Filter Assistance](#)

[Make Display Filters Quickly Using RightClick Filtering](#)

[Filter on Conversations and Endpoints](#)

[Filter on the Protocol Hierarchy Window](#)

[Understand Display Filter Syntax](#)

[Combine Display Filters with Comparison Operators](#)

[Alter Display Filter Meaning with Parentheses](#)

[Filter on the Existence of a Field](#)

[Filter on Specific Bytes in a Packet](#)

[Find Key Words in Upper or Lower Case](#)

[More Interesting Regex Filters](#)

[Let Wireshark Catch Display Filter Mistakes](#)

[Use Display Filter Macros for Complex Filtering](#)

[Avoid Common Display Filter Mistakes](#)

[Manually Edit the *dfilters* File](#)

[Case Study: Using Filters and Graphs to Solve Database Issues](#)

[Case Study: The Chatty Browser](#)

[Case Study: Catching Viruses and Worms](#)

[Summary](#)

[Practice What You've Learned](#)

[Review Questions](#)

[Answers to Review Questions](#)

Chapter 10: Follow Streams and Reassemble Data

[The Basics of Traffic Reassembly](#)

[Follow and Reassemble UDP Conversations](#)

[Follow and Reassemble TCP Conversations](#)

[Follow and Reassemble SSL Conversations](#)

[Reassemble an SMB Transfer](#)

[Case Study: Unknown Hosts Identified](#)

[Summary](#)

[Practice What You've Learned](#)

[Review Questions](#)

[Answers to Review Questions](#)

Chapter 11: Customize Wireshark Profiles

[Customize Wireshark with Profiles](#)

[Case Study: Customizing Wireshark for the Customer](#)

[Summary](#)

[Practice What You've Learned](#)

[Review Questions](#)

[Answers to Review Questions](#)

Chapter 12: Annotate, Save, Export and Print Packets

[Annotate a Packet or an Entire Trace File](#)

[Save Filtered, Marked and Ranges of Packets](#)

[Export Packet Content for Use in Other Programs](#)

[Export SSL Keys](#)

[Save Conversations, Endpoints, IO Graphs and Flow Graph Information](#)

[Export Packet Bytes](#)

[Case Study: Saving Subsets of Traffic to Isolate Problems](#)

[Summary](#)

[Practice What You've Learned](#)

[Review Questions](#)

[Answers to Review Questions](#)

Chapter 13: Use Wireshark's Expert System

[Let Wireshark's Expert Information Guide You](#)

[Understand TCP Expert Information](#)

[Case Study: Expert Info Catches Remote Access Headaches](#)

[Summary](#)

[Practice What You've Learned](#)

[Review Questions](#)

[Answers to Review Questions](#)

Chapter 14: TCP/IP Analysis Overview

[TCP/IP Functionality Overview](#)

[Build the Packet](#)

[Case Study: Absolving the Network from Blame](#)

[Summary](#)

[Practice What You've Learned](#)

[Review Questions](#)

[Answers to Review Questions](#)

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