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Nota di contenuto	Intro -- Table of Contents -- About the Author -- About the Technical Reviewers -- Acknowledgments -- Introduction -- Chapter 1: Introduction to Wireshark -- Introduction to Network Traffic Analysis -- Network Sniffing -- Sniffer Placement -- Number of Sniffer Placements -- Network Tap -- Overview of Wireshark -- Installing Wireshark -- Installing Wireshark on Windows -- Installing Wireshark on Mac -- Installing Wireshark on Ubuntu -- Setting Up Port Mirroring -- SPAN on Cisco IOS/IOS-XE -- SPAN on Cisco Nexus Switches -- Enabling Port Mirroring on Arista EOS -- Enabling Port Mirroring on JunOS -- Summary -- References in This Chapter -- Chapter 2: Getting Familiar with Wireshark -- Overview of Wireshark Tool -- Wireshark Preferences -- Appearance -- Capture -- Expert -- Filter Buttons -- Name Resolution -- Protocols -- RSA Keys -- Statistics -- Advanced -- Performing Packet Capture Using Wireshark -- Dissectors -- Configuration Profiles -- Filtering with Wireshark -- Capture Filters -- Display Filters -- Working with Wireshark Capture Files -- PCAP vs. PCAPng -- Capture from Multiple Interfaces -- Timestamps -- Embedding Comments -- Metadata -- Extendable Format -- Splitting Packet Captures into Multiple Files -- Merging Multiple Capture Files --

Analyzing Packets in Wireshark -- OSI Model -- Analyzing Packets -- Time -- Length -- Capture File Properties -- Summary -- Chapter 3: Analyzing Layer 2 and Layer 3 Traffic -- Layer 2 Frames -- Ethernet Frames -- Layer 3 Packets -- Address Resolution Protocol -- IPv4 Packets -- IPv4 Addressing -- ICMP -- IP Fragmentation and Reassembly -- IPv6 Packets -- IPv6 Addressing -- Extension Headers -- ICMPv6 -- IPv6 Neighbor Discovery -- Analyzing QoS Markings -- Summary -- Reference in This Chapter -- Chapter 4: Analyzing Layer 4 Traffic -- Understanding the TCP/IP Model -- Problem of Ownership. Transmission Control Protocol -- TCP Flags -- TCP Three-Way Handshake -- Port Scanning -- Investigating Packet Loss -- TCP Retransmission -- TCP Out-of-Order Packets -- Troubleshooting with Wireshark Graphs -- TCP Stream Graphs -- Time Sequence (Stevens) -- Time Sequence (tcptrace) -- Throughput Graph -- Window Scaling Graph -- RTT Graph -- I/O Graphs -- Flow Graphs -- TCP Expert -- Wireshark Profile for TCP -- User Datagram Protocol -- Summary -- References in This Chapter -- Chapter 5: Analyzing Control Plane Traffic -- Analyzing Routing Protocol Traffic -- OSPF -- EIGRP -- Hello Packet -- Update Packet -- Acknowledge Packet -- Query Packet -- Reply Packet -- BGP -- PIM -- PIM Hello Message -- PIM Register Message -- PIM Register-Stop Message -- PIM Join/Prune Message -- Analyzing Overlay Traffic -- GRE -- IPsec -- VXLAN -- Summary -- Index.

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## Sommario/riassunto

Understand the fundamentals of the Wireshark tool that is key for network engineers and network security analysts. This book explains how the Wireshark tool can be used to analyze network traffic and teaches you network protocols and features. Author Vinit Jain walks you through the use of Wireshark to analyze network traffic by expanding each section of a header and examining its value. Performing packet capture and analyzing network traffic can be a complex, time-consuming, and tedious task. With the help of this book, you will use the Wireshark tool to its full potential. You will be able to build a strong foundation and know how Layer 2, 3, and 4 traffic behave, how various routing protocols and the Overlay Protocol function, and you will become familiar with their packet structure. Troubleshooting engineers will learn how to analyze traffic and identify issues in the network related to packet loss, bursty traffic, voice quality issues, etc. The book will help you understand the challenges faced in any network environment and how packet capture tools can be used to identify and isolate those issues. This hands-on guide teaches you how to perform various lab tasks. By the end of the book, you will have in-depth knowledge of the Wireshark tool and its features, including filtering and traffic analysis through graphs. You will know how to analyze traffic, find patterns of offending traffic, and secure your network. What You Will Learn Understand the architecture of Wireshark on different operating systems Analyze Layer 2 and 3 traffic frames Analyze routing protocol traffic Troubleshoot using Wireshark Graphs Who This Book Is For Network engineers, security specialists, technical support engineers, consultants, and cyber security engineers.

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