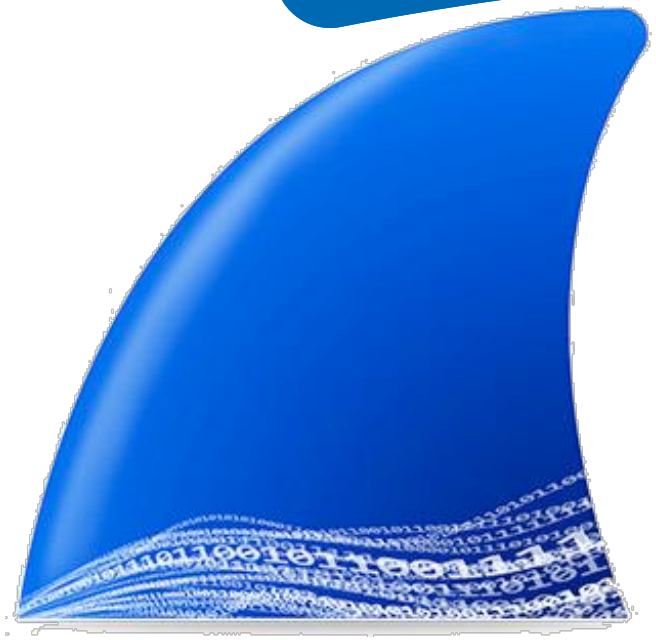
AV-Netzwerktechnik

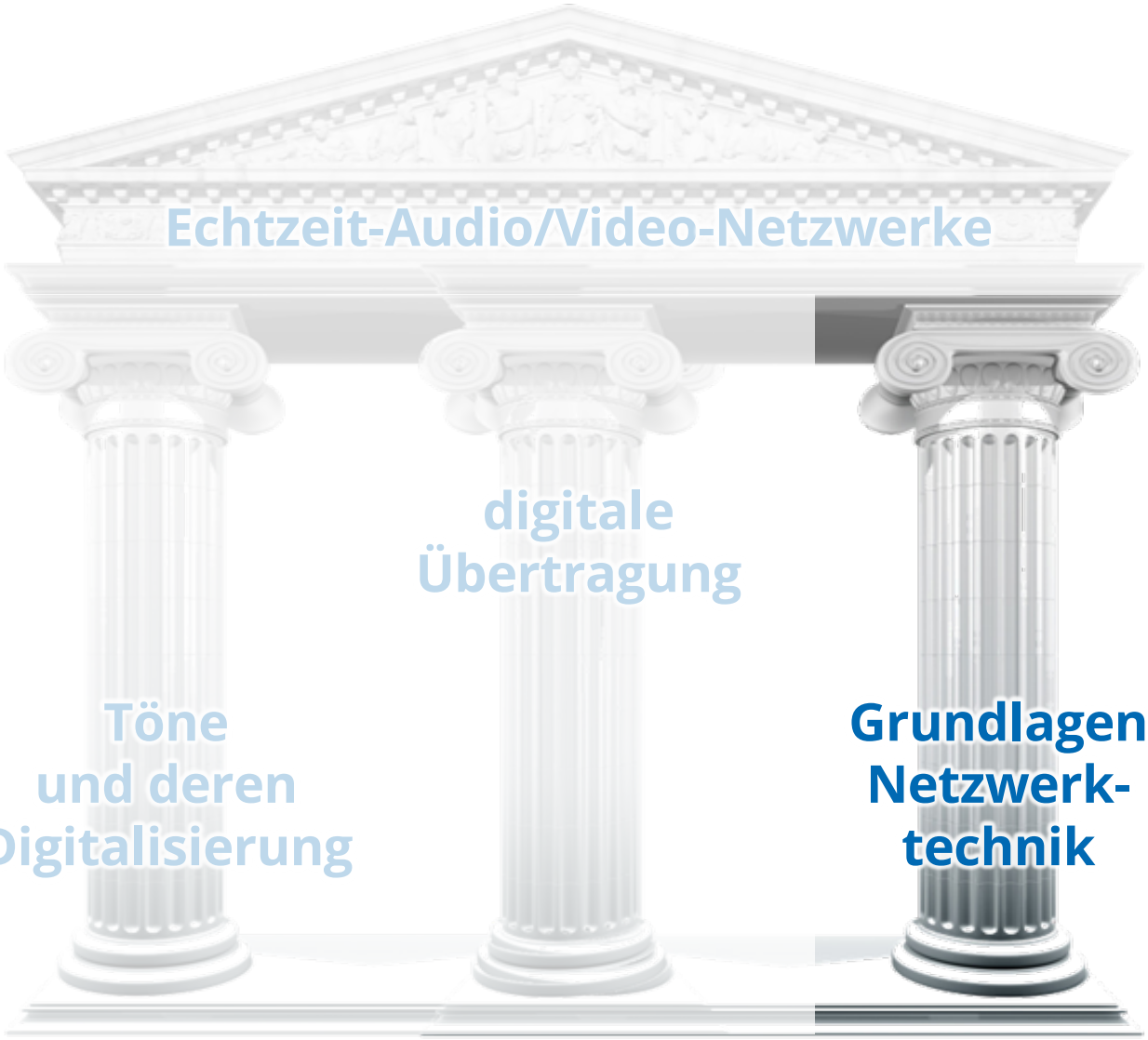
Netzwerkanalyse mit Wireshark

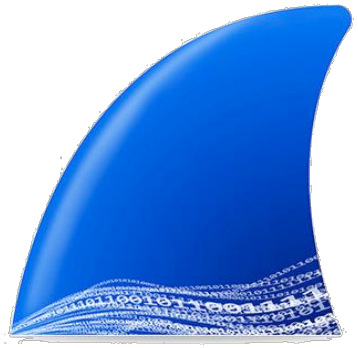
Benny Platte



HOCHSCHULE MITTWEIDA
University of Applied Sciences

hs-mittweida.de





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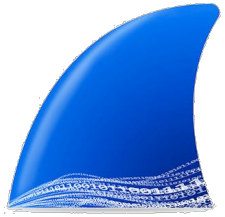
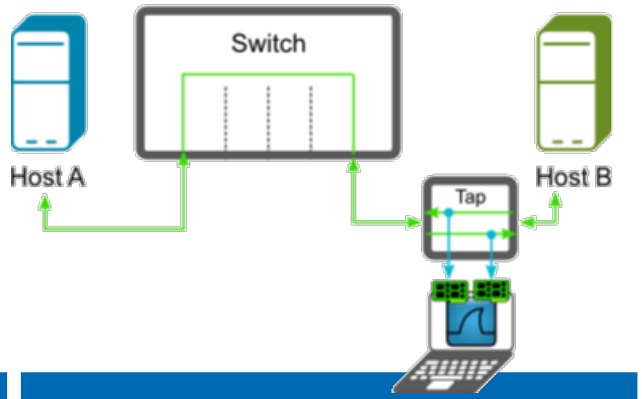
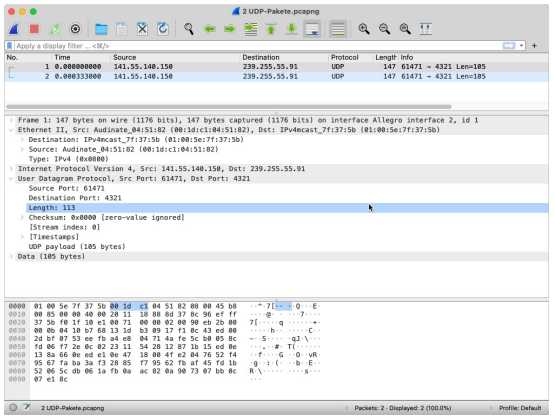
Themen

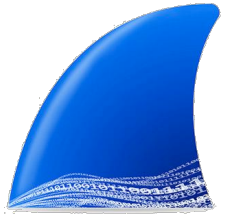


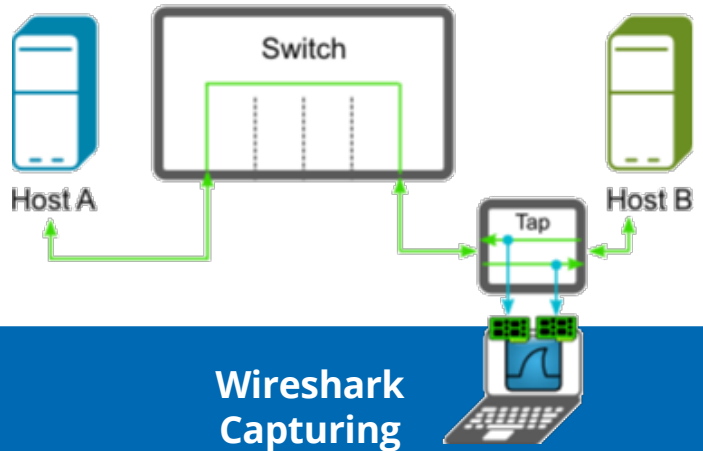


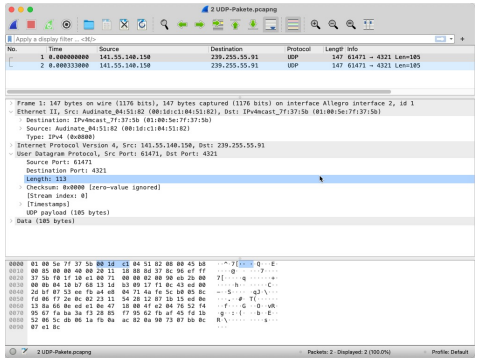


Wireshark Literatur und Software	Wireshark Capturing	Wireshark Pakete im Detail
	• Hubbing • Man in the middle • Tapping • Port Mirroring	• Bedienung Software • Paketzusammensetzung • Herleitung

Sie können...

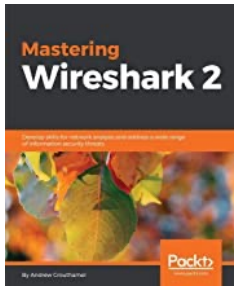


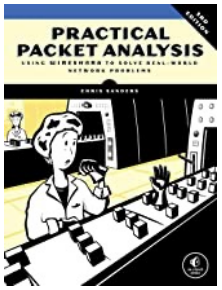


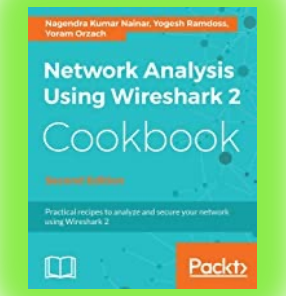


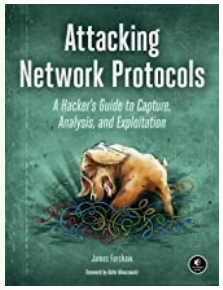
Wireshark Literatur und Software	Wireshark Capturing	Wireshark Pakete im Detail
	• Beschreiben, wie Sie Pakete aufzeichnen würden • Technologische Voraussetzungen benennen • Vor- und Nachteile von Hubbing, Tapping und Port Mirroring erklären • für einen gegebenen Fall Vorschläge unterbreiten, welches Verfahren Sie anwenden würden	• Mit Hilfe von Wiresharkk ein als Hexwert aufgezeichnetes Paket dekodieren und die enthaltenen Adressen benennen • Dekodieren, ob es sich um ein IPv4 oder IPv6-Paket handelt • Angeben, ob es sich um ein fragmentiertes Paket handelt

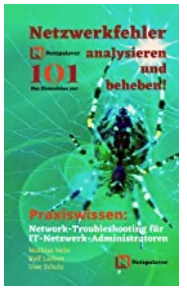
Bücherdaten befinden sich in OPAL unter

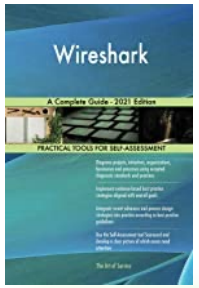


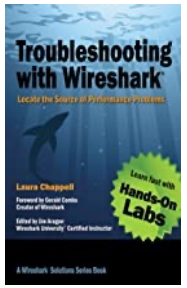


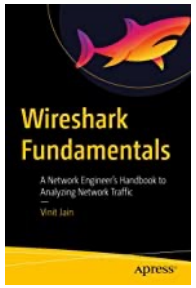


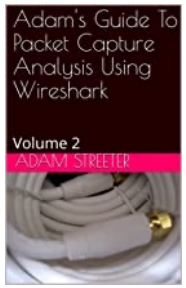


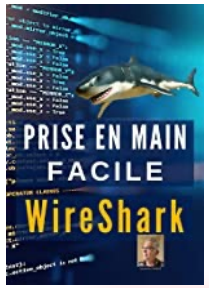


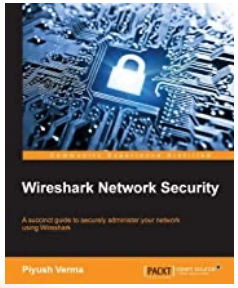


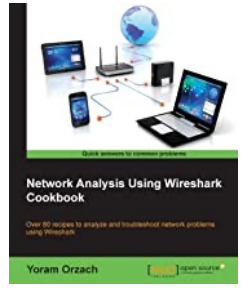


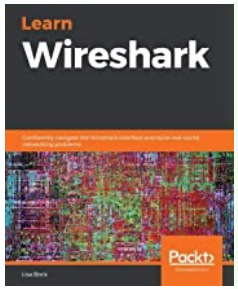


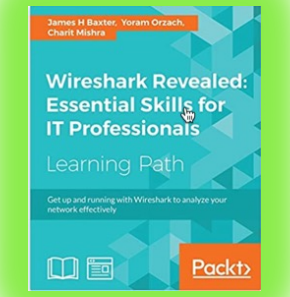


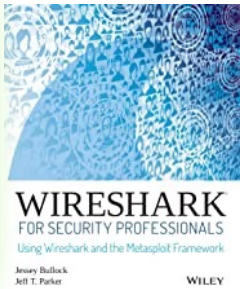


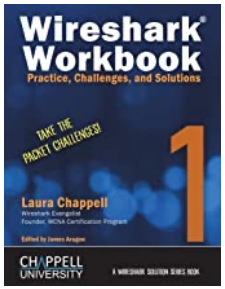


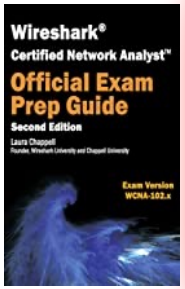


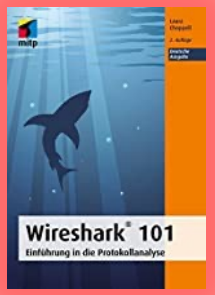


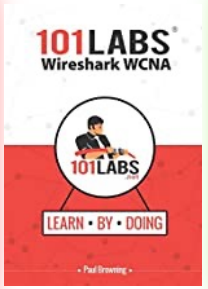




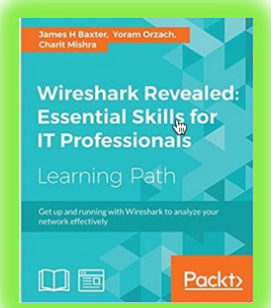


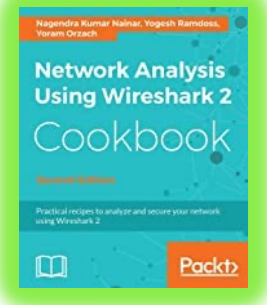


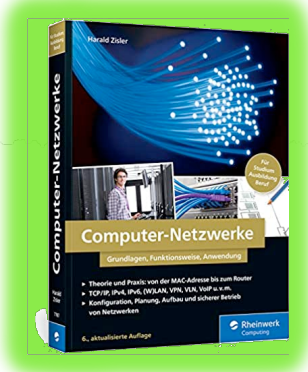


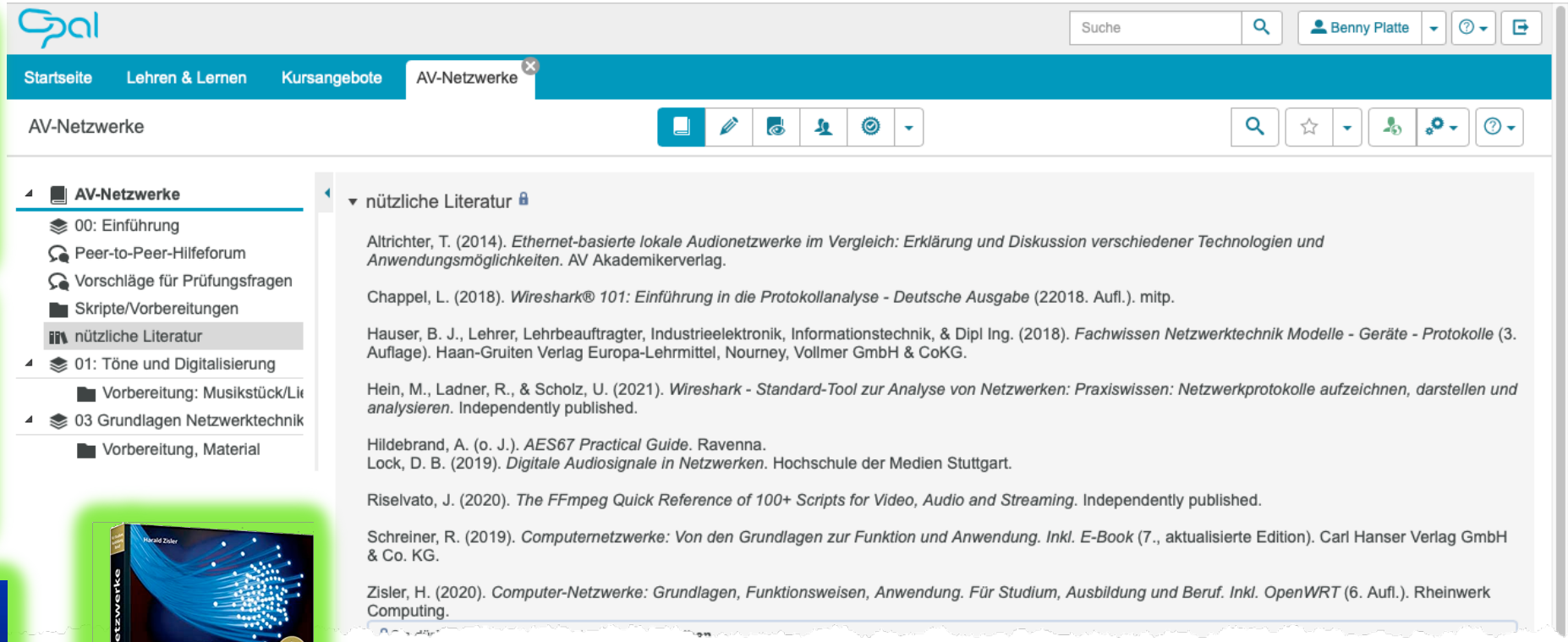


Bücherdaten in OPAL



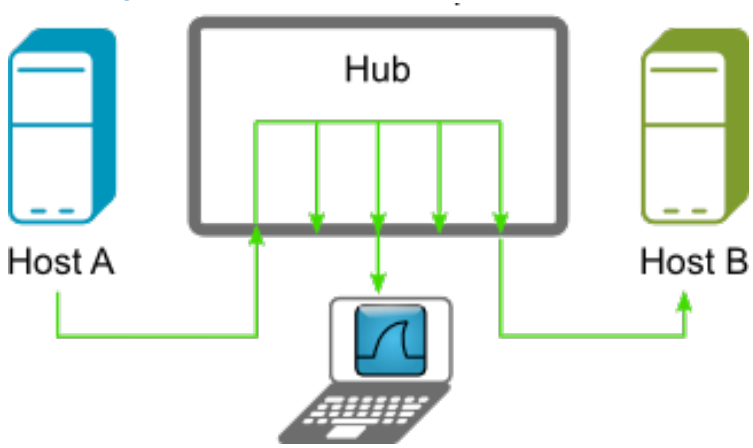




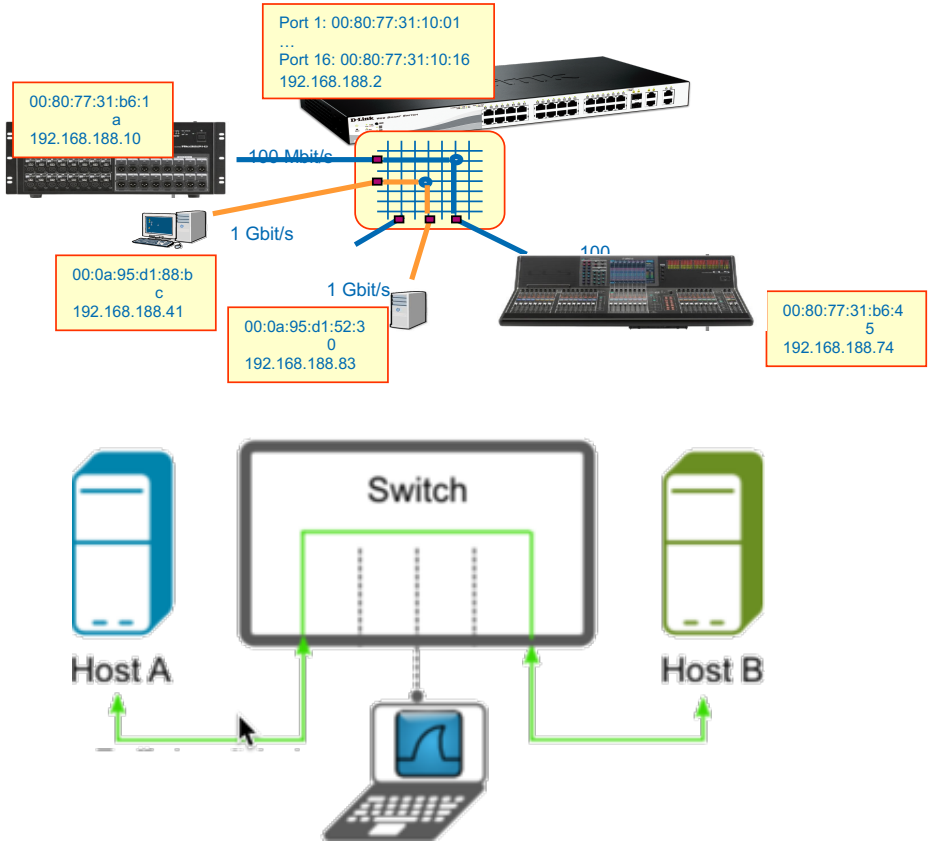


Wireshark Setup

Shared Network (früher, WLAN)
„jeder hört alles“



Switched Network



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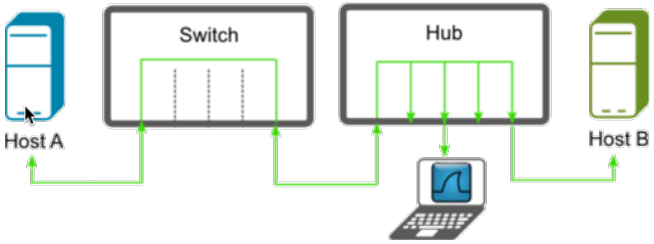
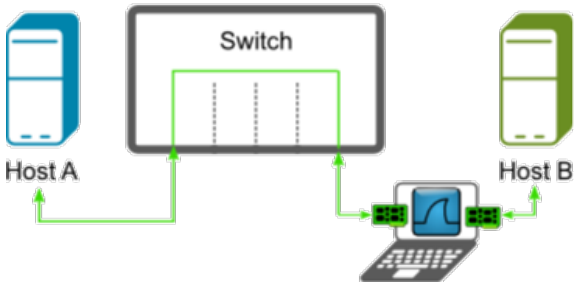
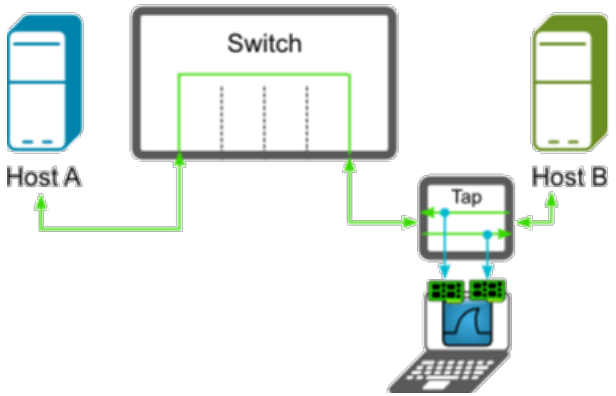
Wireshark Aufzeichnung an switched network

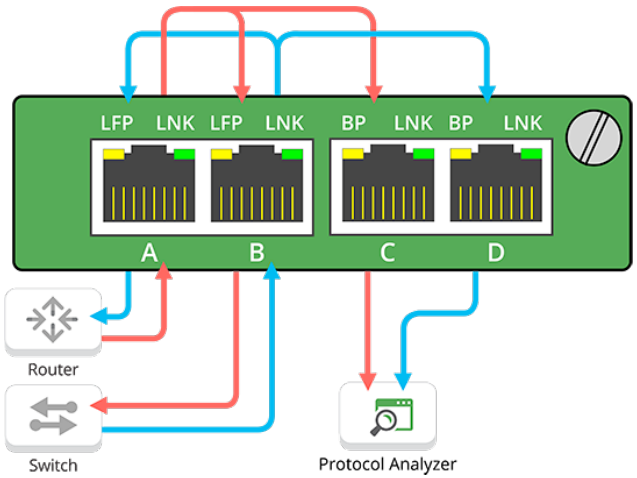




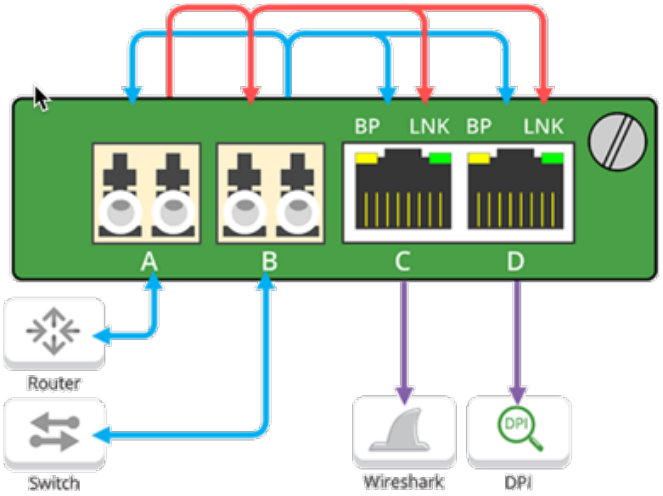


Wireshark Aufzeichnung „tapped“

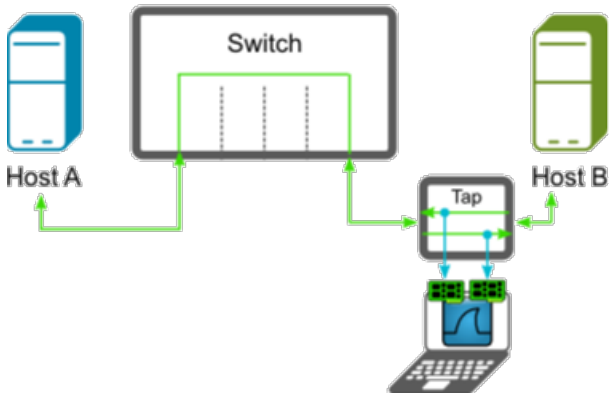
„Breakout-Tap“



„Media Conversion TAP“



„Tapping“



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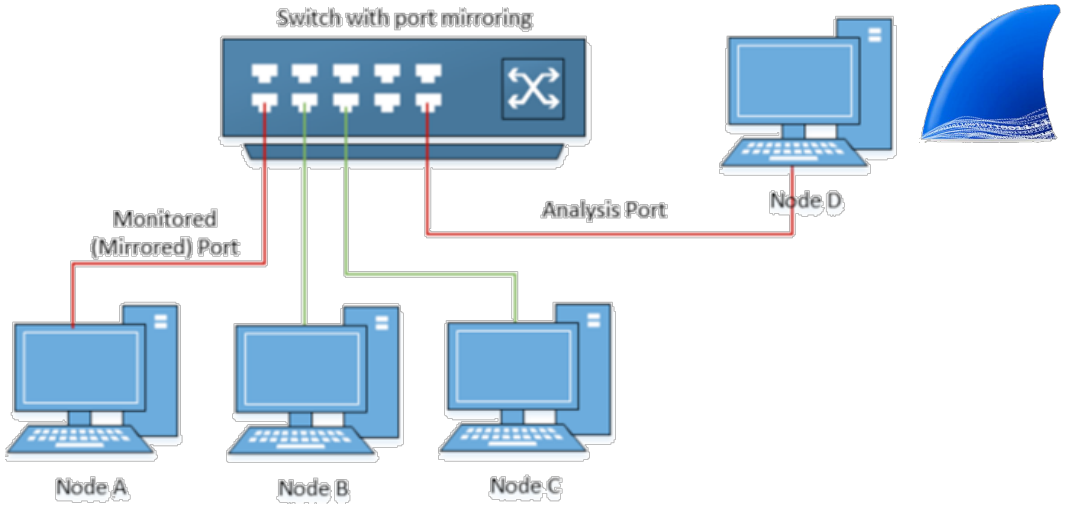
Managed Switch: Port Mirroring



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Managed Switch: Port Mirroring


LINKSYS

Linksys Smart Gigabit Switches

8-Port Business Smart Gigabit Switch (LGS308)

18-Port Business Smart Gigabit Switch (LGS318)

26-Port Business Smart Switch (LGS326)

Key Features

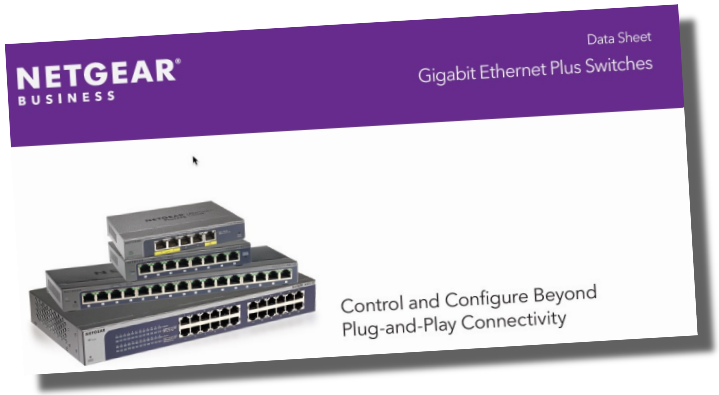
- 8, 18, or 26 Gigabit Ethernet ports
- Easy configuration and management
- Proven performance and reliability
- Energy efficient
- Network security
- IP telephony support
- IPv6 support
- Limited lifetime warranty

Designed for business-class management, security, speed, and quality of service, Linksys Smart Gigabit Switches provide a network your business can grow on.

Quality of Service (QoS)
Numerous QoS features ensure that traffic is prioritized properly to deliver the best possible user experience for real-time applications like voice and video along with bandwidth-intensive graphic/video file uploads and downloads. IGMP snooping limits IP multicast traffic to the ports that requested it, enabling the rest of the network to operate at peak efficiency.

Network Security
Unauthorized access to the network and mission-critical data is a constant concern. Linksys smart switches help secure networks through port authentication and MAC-based port security, requiring clients to authenticate themselves before any data is passed. Advanced DHCP snooping and IP-MAC binding functions ensure network integrity and help prevent network attacks.

Network Expansion
Linksys smart switches include features for quickly expanding and growing your network. Multiple high-bandwidth trunks between switches enhance availability and redundancy. Spanning Tree Protocol (STP) and Storm Control features help control planned or inadvertent cable loops, so you can confidently build a mesh of switches and quickly expand your network to support your growing workforce.


NETGEAR
BUSINESS

Data Sheet
Gigabit Ethernet Plus Switches

Control and Configure Beyond Plug-and-Play Connectivity


CISCO SG350-10p

Also shown: Internet Service from Cisco RV340

Guide Version: 0.993, November 2020

SG350 Firmware Version: 2.4.0.94

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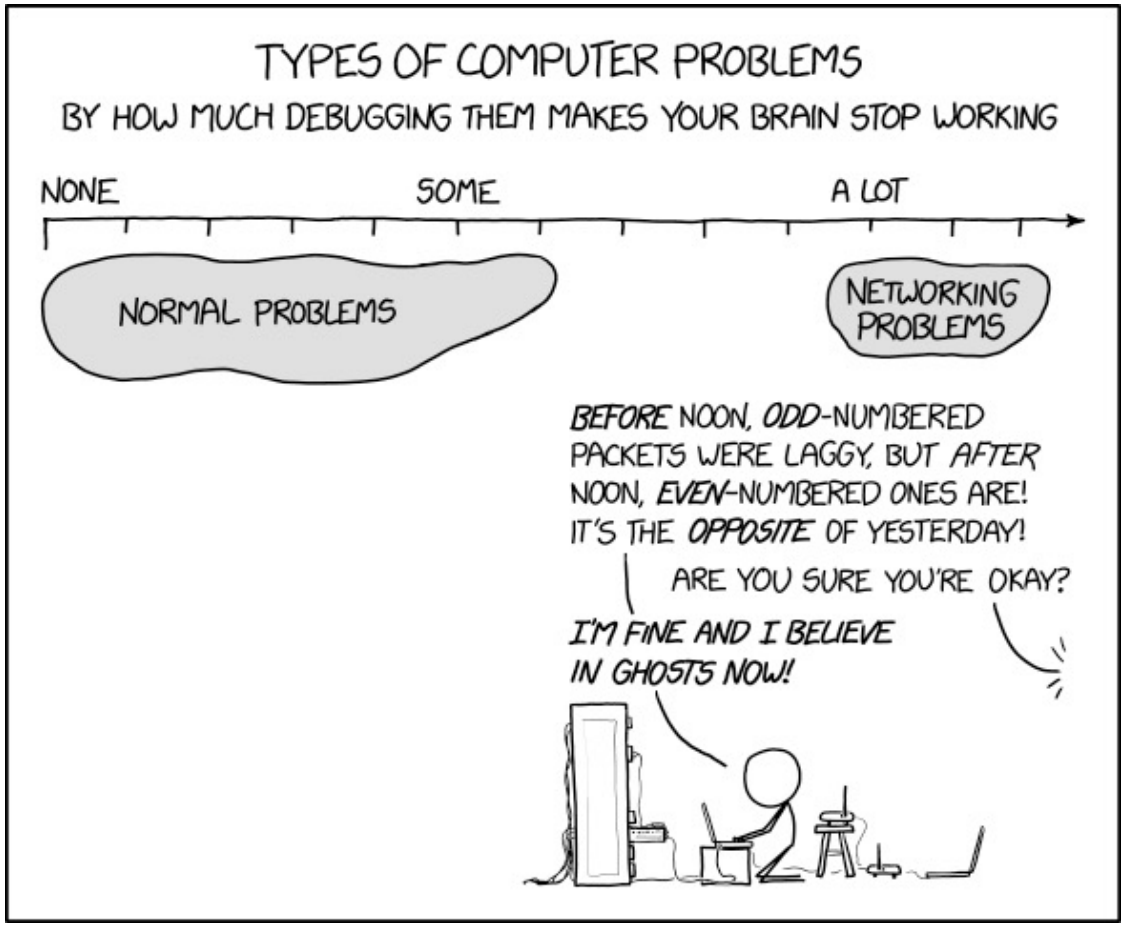
Wireshark Paketanalyse



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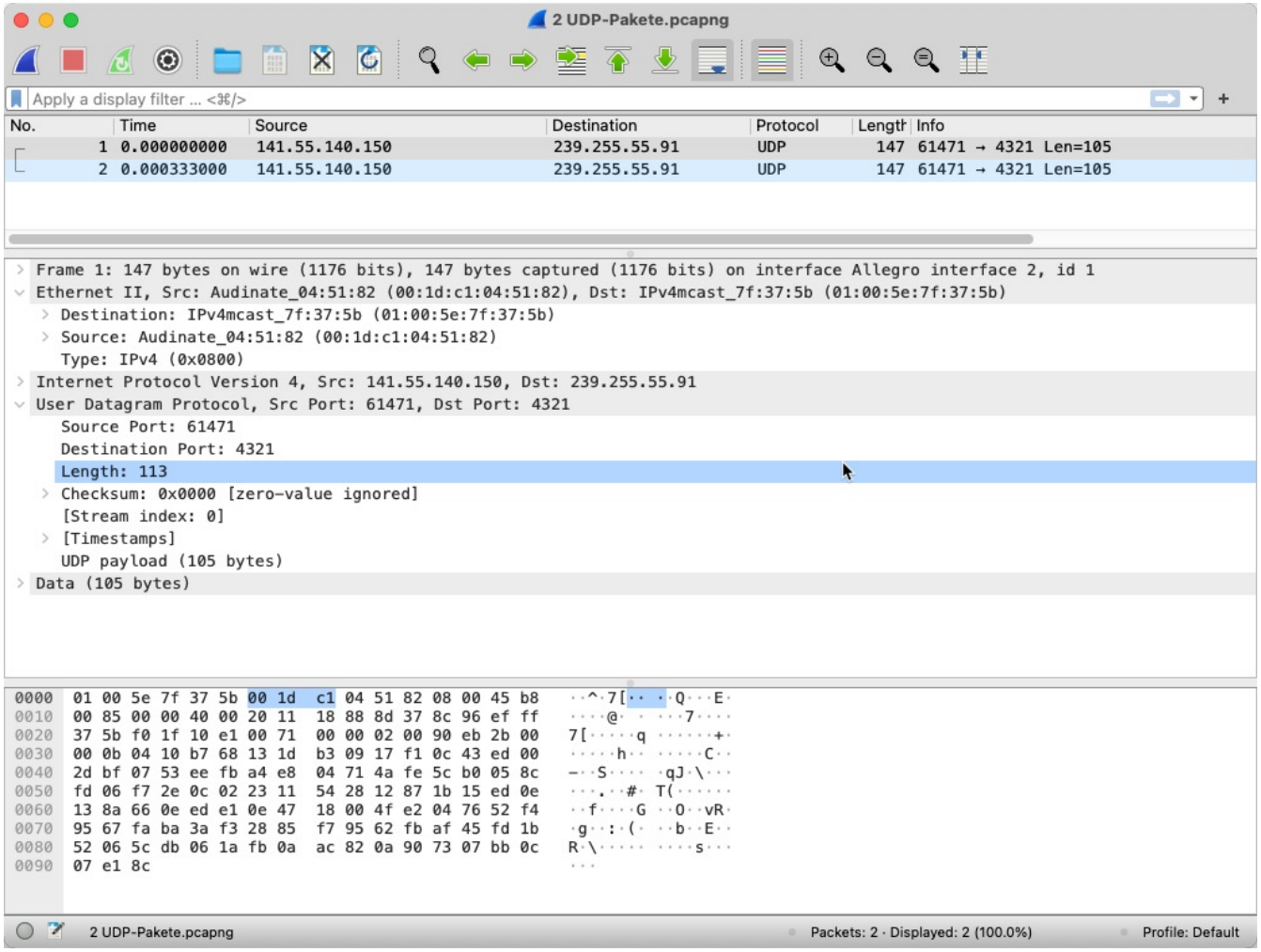
Wireshark Paketanalyse



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Wireshark Paketanalyse

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0010   00 85 00 00 40 00 20 11 18 88 8d 37 8c 96 ef ff
0020   37 5b f0 1f 10 e1 00 71 00 00 02 00 90 eb 2b 00
0030   00 0b 04 10 b7 68 13 1d b3 09 17 f1 0c 43 ed 00
0040   2d bf 07 53 ee fb a4 e8 04 71 4a fe 5c b0 05 8c
0050   fd 06 f7 2e 0c 02 23 11 54 28 12 87 1b 15 ed 0e
0060   13 8a 66 0e ed e1 0e 47 18 00 4f e2 04 76 52 f4
0070   95 67 fa ba 3a f3 28 85 f7 95 62 fb af 45 fd 1b
0080   52 06 5c db 06 1a fb 0a ac 82 0a 90 73 07 bb 0c
0090   07 e1 8c
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