Using Wireshark to Solve Real Problems for Real People

Step-by-Step Real-World Case Studies in Packet Analysis

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Helping strangers on the Internet

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Slow Network Tput for the First 6.5 Seconds

- Post on /r/networking
- Rack of 7 Dell PowerEdge servers
- 1Gbps TOR switch
- Low throughput
- Initial delay of 6.5 seconds
- Troubleshooting for over a month
- Where’s the pcap?
6.5 Second Delay Take Aways

- Learn the basics of packet analysis
- Add TCP seq numbers to columns
- Have a delta column
- Set a Time reference
- Learn TCP/IP basics
  - PMTUD
  - MTU probing - /proc/sys/net/ipv4/tcp_mtu_probing
Slow FTP Upload

• Replaced Fortigate firewall with new Checkpoint
• Video team complains of slow FTP upload to London
• NetEng team generally doesn‘t deal with many perf issues
• ~5Mbps now, was ~20Mbps before
• To the pcaps!
Slow FTP Upload Take Aways

- Always look at RTT
- Latency is a huge factor for some apps/protocols
- PSH bit can be a buffer size indicator
- Bytes in flight should reach BDP
Slow Web Proxy

• Web proxy isn‘t giving expected performance – same as without
• UI says it was a cache hit
• Lab testing environment
Slow Web Proxy Take Aways

- Always look at RTT
- Tcptrace stream graph is your friend
- Scratch the itch – be thorough
- Work through the layers – don‘t forget layer 2
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