



WSU03: Troubleshooting Network Performance

This course focuses on the cause of poor network performance including packet loss, retransmissions, high latency, low throughput rates, application errors, configuration faults, resolution problems and protocol behavior issues.

Course Contents

Course Introduction

Section 1: Analyzer Placement

- Module A. Analyzing Hubbed, Switched and Routed Networks
- Module B. Analyzing Full-Duplex Networks
- Module C. Capturing in Stealth Mode

Section 2: Normal Network Communications

- Module A. When Everything Goes Right
- Module B. The Multi-Step Resolution Process
- Module C. Reviewing Normal Traffic
- Module D. Is this Normal?

Section 3: Causes of Performance Problems

- Module A. Where Network Faults Occur
- Module B. Where Delays are Incurred
- Module C. Test Yourself – DNS Errors

Section 4: Wireshark Functions for Troubleshooting

- Module A. Using Pre-Defined Coloring Rules
- Module B. Basic and Advanced IO Graphs
- Module C. Use the Delta Time Value
- Module D. Analyze Expert Information
- Module E. Look Who's Talking
- Module F. Follow the Stream
- Module G. Bandwidth Use, Round Trip Time, TCP Performance
- Module H. Flow Graphing
- Module I. Statistics (Various)

Section 5: Latency Issues

- Module A. The Five Primary Points in Calculating Latency
- Module B. Plotting High Latency Times
- Module C. Using the frame.time_delta Filter

Section 6: Packet Loss and Retransmissions

- Module A. Indications of Packet Loss
- Module B. Reading Wireshark Code
- Module C. Packet Loss and Recovery

Section 7: Misconfigurations and Redirections

Module A. Visible Misconfigurations

Module B. Don't Forget the Time

Section 8: Dealing with Congestion

Module A. Congestion Areas

Module B. Flooded Out

Section 9: Baseline Network Communications

Module A. Your First Task When You Leave Class

Appendix A: Wireshark Lab Exercises

Lab Exercise Information

Slow Browsing

Slow DHCP

Bad FTP

Failed FTP Session

POST No Bills

Poisoned

Frustrated Client

Appendix B: Trace File Catalog

Appendix C: Wireshark Code Sample

Appendix D: ICMP Type and Code List

Appendix E: Command-Line Tools Reference

Appendix F: Wireshark University Course List