

Networking Fundamentals

Duration: 2 days

Day 1

OSI model

- Model theory
- Full review through all the layers (2 - 7)
- Protocols (Ethernet, IP, TCP and UDP)
- Networks model and topology (LAN, WAN)
- Network elements (Switch, Router, FW, Server)

Network management

- What is SNMP and how to use it
- Network elements API - how to manage router or switch.
- FW - Allow and deny access.
- Protocols
 - o Ethernet
 - o IP
 - o TCP, UDP
 - o HTTP

Day 2 – Protocols in depth

- Specials focus on IP headers flags and fragmentation
- Special focus on TCP flow
 - o TCP retransmit
 - o Previous segment lost
 - o Ack lost
 - o Segment not captured or not seen
 - o Duplicate ack
 - o Out of order segment
 - o Windows full
 - o Special focus on HTTP flow and headers
 - o Special focus on UDP flow
 - o TCP infinite state machine
- HTTP
 - o HTTP payload structure
 - o HTTP full session analysis and troubleshooting
 - o HTTPS - understanding the flow.
 - o HTTPS full session analysis and troubleshooting