Protocols Refresher

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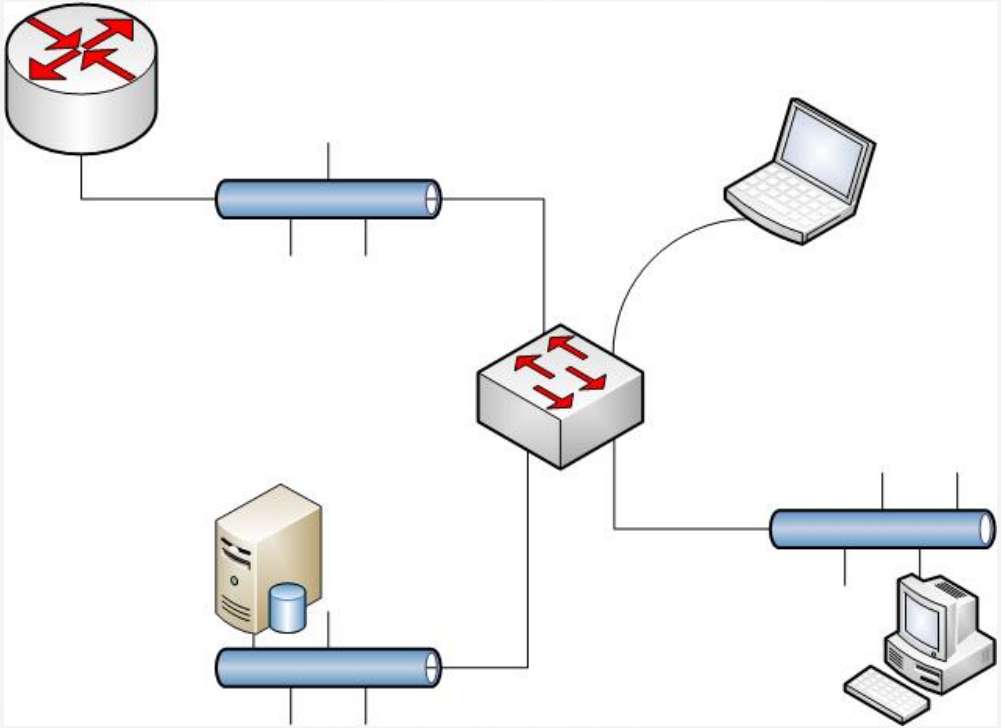
- Fundamental network knowledge needed to use Wireshark
- How data traverses a network
  - Traffic flow concepts from source to destination
- OSI model
  - 7 layers and mapping of different protocol stacks
  - Understanding of encapsulation of data and the protocol stack (headers)

Protocols Refresher



Connectivity & the OSI Model

- Layer 1
  - Cabling and electrical signals
  - Wireless
- Layers 2–7
  - As data flows from endpoints on a network, it changes while traversing different layer devices
  - Data is encapsulated and addresses are changed
- Ports, sockets, etc.
  - Higher-layer protocols use other functionality to establish connections

Traffic Flow Analysis

- Data captured for analysis can reveal many issues
  - Bandwidth
  - Corruption
  - Incorrect path
  - Latency
  - Many others
- Source to destination
  - Data is commonly captured and analyzed from a source computer to a destination computer
  - Data is analyzed to isolate and find root cause of a known or unknown problem

Encapsulation

- Traffic flow and the OSI model
- Data encapsulation
  - Headers
  - Protocol analysis of traffic flow
- Protocol decode and inspection
  - When data is captured, it can be analyzed at all applicable layers to show the “under the hood” details needed to solve problems

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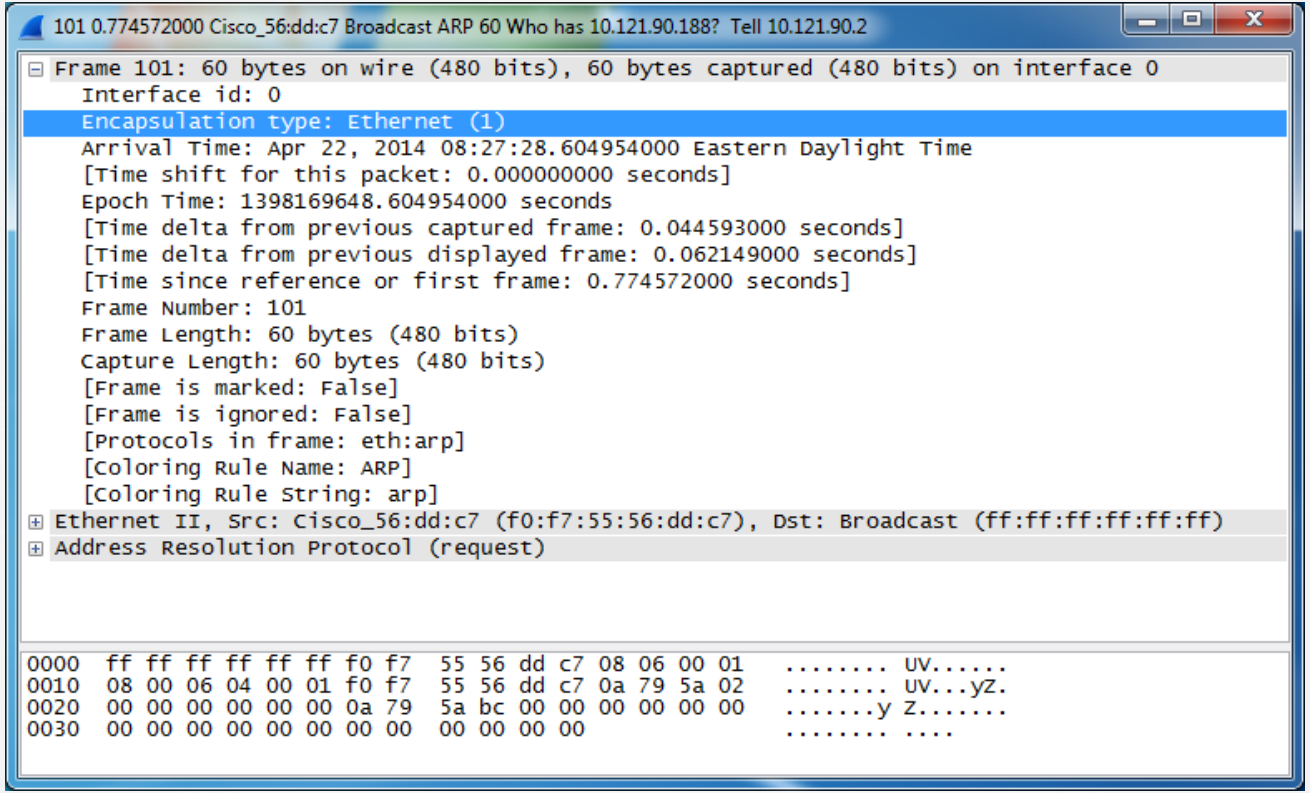

Capturing Protocol Data

- Captured protocol data can be inspected for issues
- Protocol analysis
  - Opens up the data for inspection
  - Helps find problems you cannot see without capturing data for inspection
- Traffic analysis
  - Used to find bandwidth, latency, and other network issues

Questions?