

11th Assignment: Network Protocols and Architectures, WS 14/15

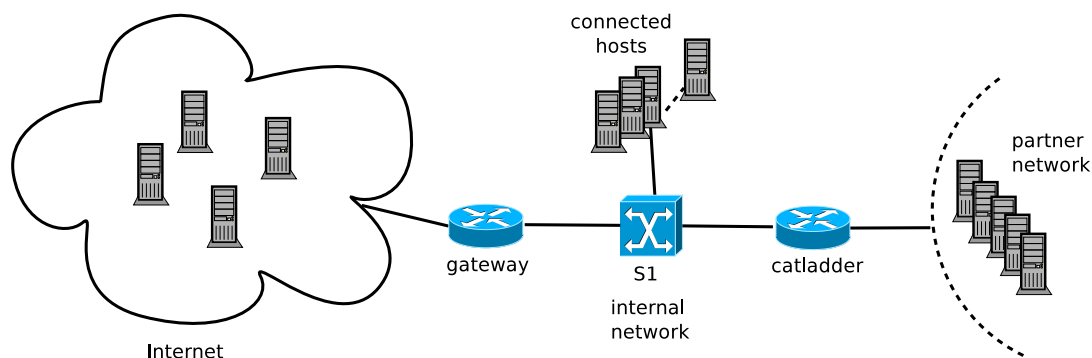
Question 1: (20 + 20 + 20 + 20 = 80 points) Recap: Network topology

The trace found in ¹ was captured on the monitoring port (all incoming packets are mirrored and sent to the monitoring port as well) of the central switch S1 in a LAN segment. The graphic below shows you a rough schematic how the network where the trace has been captured is structured.

Hint: All hosts have just rebooted - all caches are empty.

Derive the full network topology from the captured network traffic. Present your findings with a map of the topology annotated with the following information:

- Hostnames of all the hosts found in the trace
- For each host: IP and MAC address
- IP networks the hosts are located in (with network prefix and broadcast address)
- Which hosts provide which services



The following questions can help you answering the questions above:

- Are there recursively or iteratively resolving DNS servers?
- Which actions are performed by the users of the network?
- To which layers of the Internet model belong the observed protocols?
- Are the IP addresses being assigned statically or dynamically and which additional information can you gather from it?

¹<https://teaching.inet.tu-berlin.de/data/npa/trace-ws1415.pcap>

Question 2: (20 points) *Recap: Routing*

Give the full routing table of the host named "Garfield" as you can deduct from the trace. The host has only one interface, named eth0.

Due Date: Wednesday, January, 21th 2015 only until 14:00 h s. t.

- **As PDF files (no MS Office or OpenOffice files):** Uploaded via ISIS (<https://www.isis.tu-berlin.de/2.0/course/view.php?id=2560>)
- Put your name, StudentID number (Matrikelnummer) **and** the name of your tutor on your solution.