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](https://teaching.inet.tu-berlin.de/data/npa/trace-ws1415.pcap) 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:

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

The following questions can help you answering the questions above:

- Are there recursively or interactively 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?

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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.