



ALMA MATER STUDIORUM
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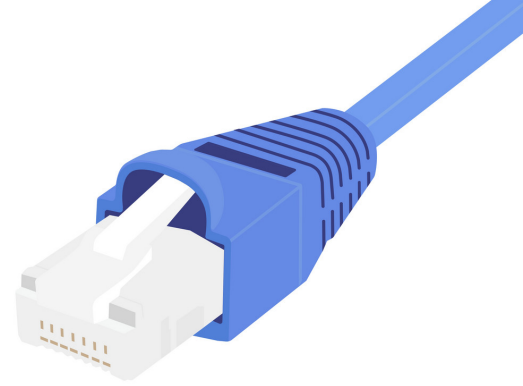
Computer Networks: Lab 2 - Ethernet

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Introduction to Lab2

- We will carry out this exercise concerning ethernet
- We are at ISO/OSI Level 2
- We need the *ethernet--ethereal-trace-1* from the *wireshark-traces.zip* file
- We will also investigate ARP related messages



Recap

- Network interfaces have a unique address, called MAC
 - Part of it identify the manufacturer, the rest is a progressive counter
- Computer receive messages through their MAC
- Through a protocol (ARP) it is possible to uniquely identify a computer on a network
- ARP builds its table dynamically
- How many mac addresses? With a 48 bit addressing space, **281,474,976,710,656**



Lab2

- Open the *ethernet--ethereal-trace-1* file
- What is the ethernet address of your computer?
- What is the ethernet address of the destination?
- What is the hexadecimal value for the 2-byte Frame type field?
- Is it the address of `gaia.cs.umass.edu`?
- What device has this as its Ethernet address?
- How many bytes from the very start of the Ethernet frame does the ASCII “G” in “GET” appear in the Ethernet frame?
- What is the source Ethernet address in the HTTP OK answer?
- Is it the address of `gaia.cs.umass.edu`?
- What is the destination address in the HTTP OK answer?



Lab2

- What are the source/destination addresses of the ARP request?
- What is the hexadecimal value for the 2-byte Frame type field?
- Does the ARP message contains the sender IP (if yes, what it is)?
- In the ARP reply, what are the Ethernet and IP addresses of the machine having the Ethernet address whose corresponding IP address is being queried?

