ARP & RARP Protocols

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What is a Protocol?

- A set of rules in which computers communicate with each other...
- What part of the conversation comes at which time...
- How to end the communication...

Different Protocols Used over Internet

- IP(Internet Protocol)
- HTTP(Hyper Text Transfer Protocol)
- UDP(User Datagram Protocol)
- FTP(File Transfer Protocol)
- TCP(Transfer Control Protocol)
- ARP(Address Resolution Protocol)
- ICMP(Internet Control Message Protocol)

ARP

- Used to **convert an IP address into a physical address** such as an Ethernet address
- **Used by the Internet Protocol (IP)** specifically IPv4, to map IP network addresses to the hardware addresses **used by a data link protocol.**
- **The protocol operates below the network layer** as a part of the interface between the OSI network and OSI link layer.
- **ARP maintains a cache (table) in which**

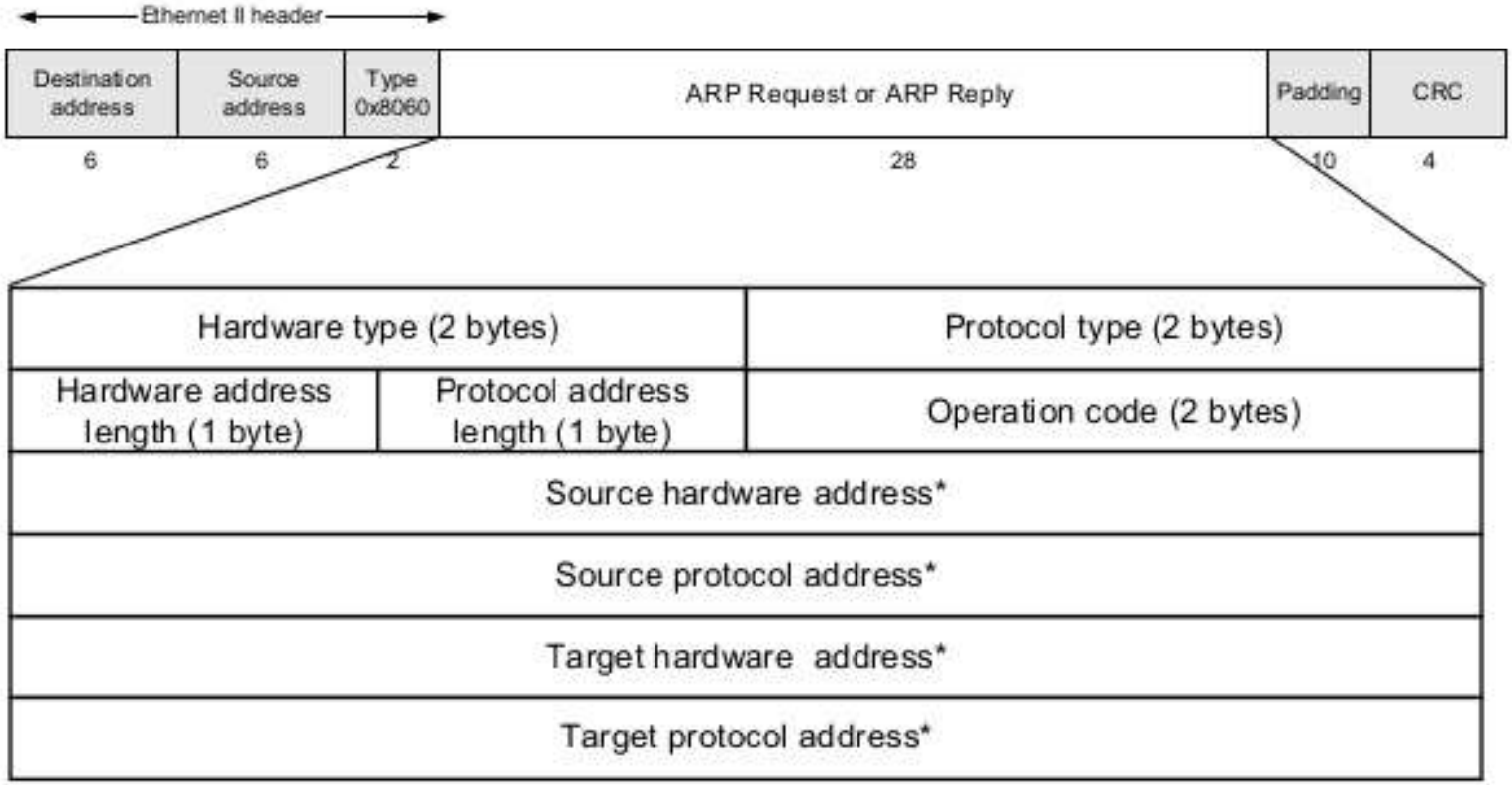
Why We Use ARP?

- Used to convert an IP address into a physical address such as an Ethernet address
- A host wishing to obtain a physical address broadcasting ARP request onto the TCP/IP network.

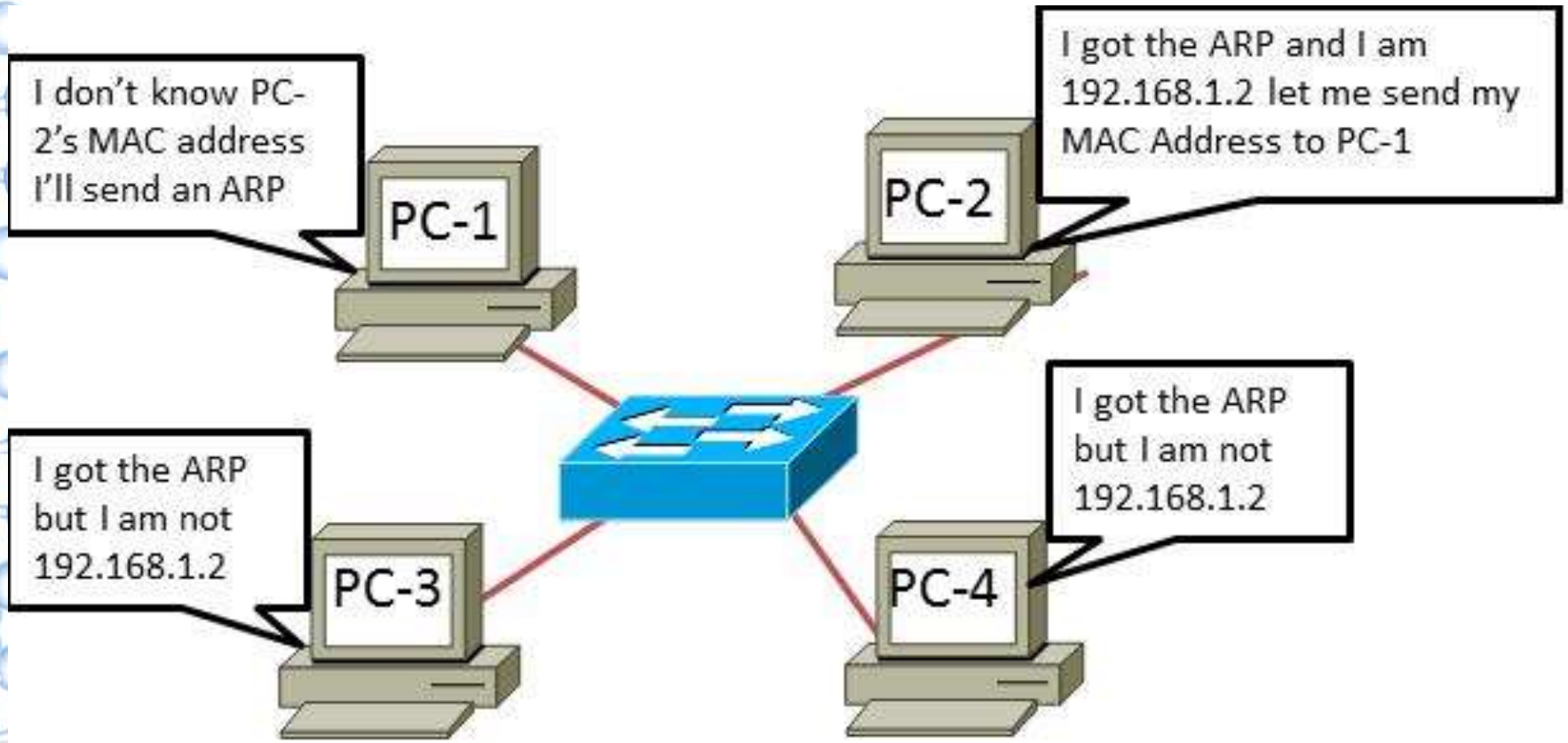
The Format of ARP packet

Hardware Type		Protocol Type
Hardware length	Protocol length	Operation Request 1, Reply 2
Sender hardware address (For example, 6 bytes for Ethernet)		
Sender protocol address (For example, 4 bytes for IP)		
Target hardware address (For example, 6 bytes for Ethernet) (It is not filled in a request)		
Target protocol address (For example, 4 bytes for IP)		

ARP Packet Format



* Note: The length of the address fields is determined by the corresponding address length fields


I don't know PC-2's MAC address I'll send an ARP
PC-1
I got the ARP and I am 192.168.1.2 let me send my MAC Address to PC-1
PC-2
I got the ARP but I am not 192.168.1.2
PC-3
I got the ARP but I am not 192.168.1.2
PC-4

RARP

- The **Reverse Address Resolution Protocol** (RARP) is an obsolete computer networking protocol used by a client computer to request its Internet Protocol (IPv4) address from a computer network.

Why We Use RARP?

- Reverse Address Resolution Protocol (RARP) is a **network layer protocol** used to resolve an IP address from a given hardware address (such as an Ethernet address).
- It has been rendered obsolete by BOOTP and the more modern DHCP, which both support a much greater feature set than RARP.

Figure 7.11 *RARP packet*

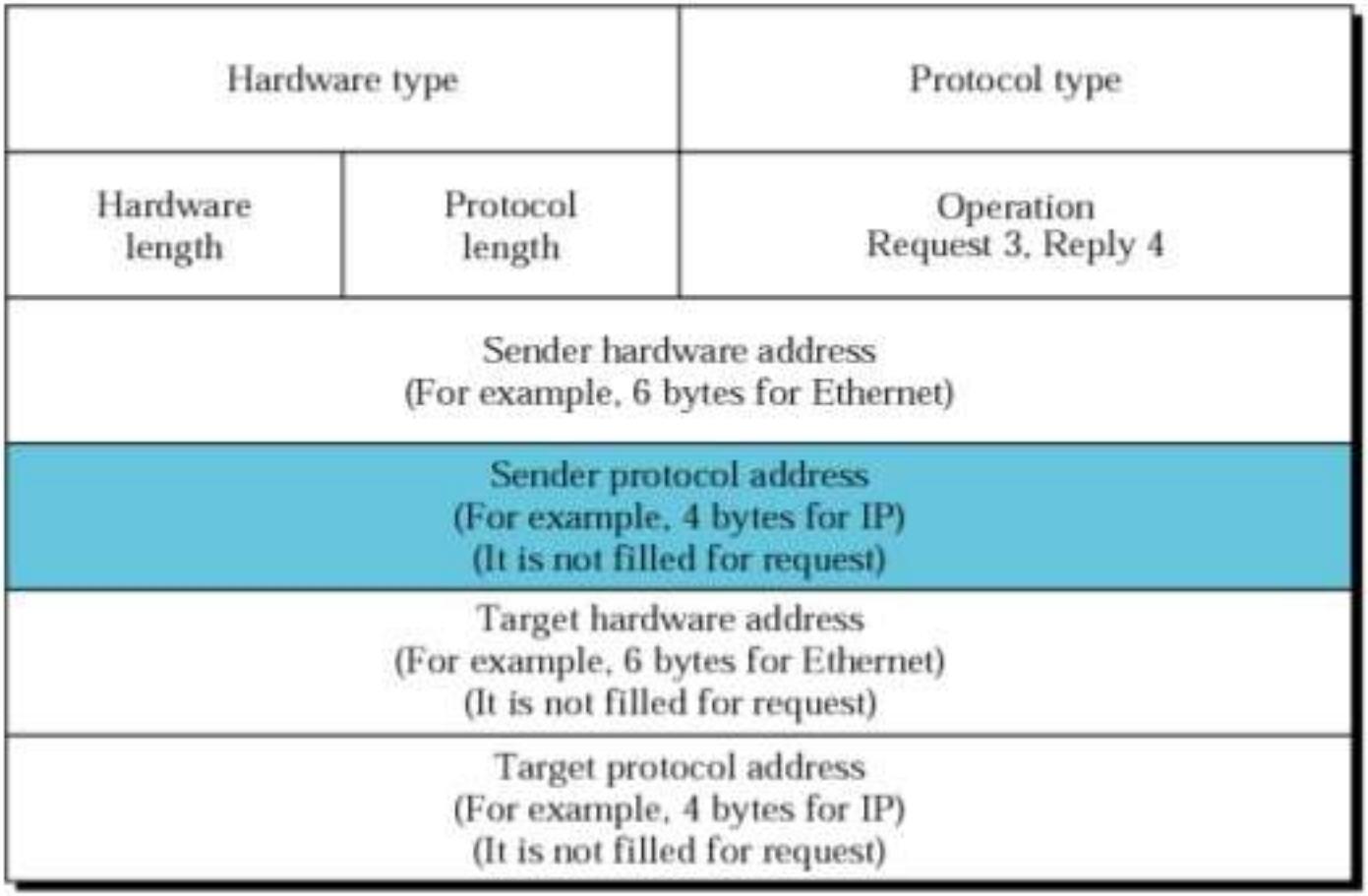
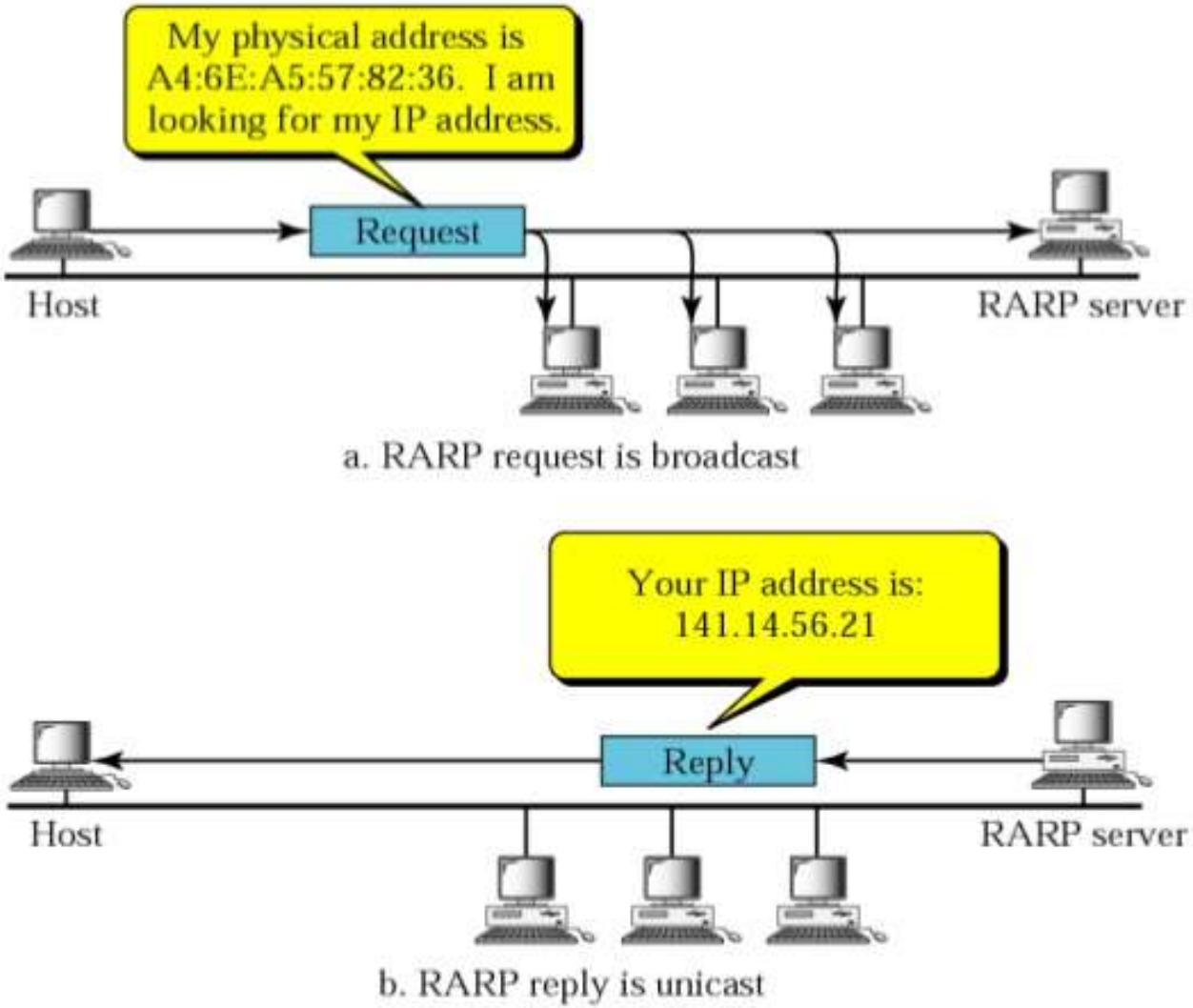


Figure 7.10 *RARP operation*



References

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Thank
You