



TNE10006/TNE60006: Networks and Switching



ARP – Address Resolution Protocol

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Outline

- Interaction between Ethernet MAC and IP
- ARP Purpose
- ARP Operation



MAC and IP

MAC Address

- This address does not change
- Similar to the name of a person
- Known as physical address – physically assigned to the host NIC

IP Address

- Similar to the address of a person
- Based on where the host is actually located
- Known as a logical address because assigned logically
- Assigned to each host by a network administrator

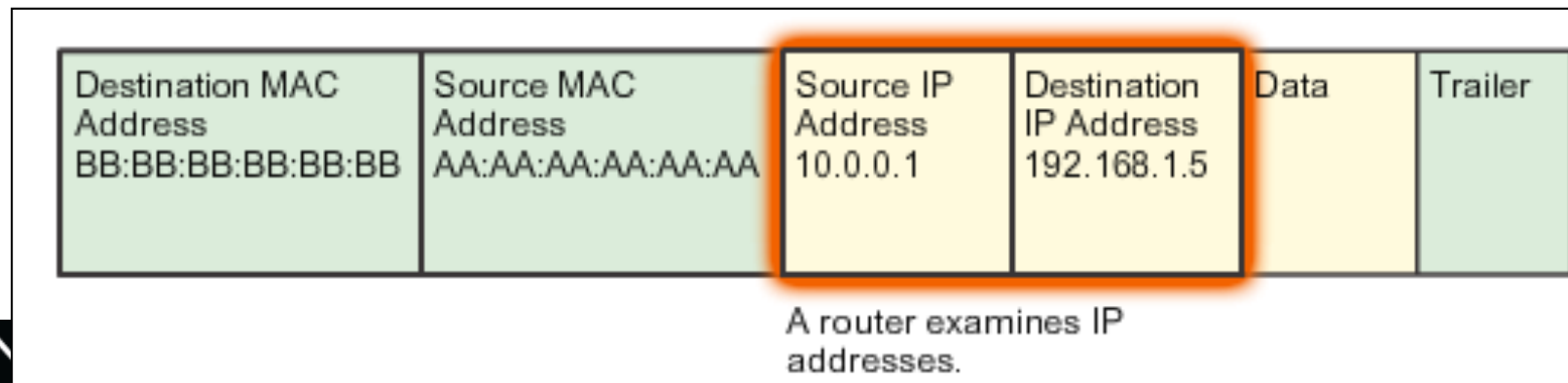
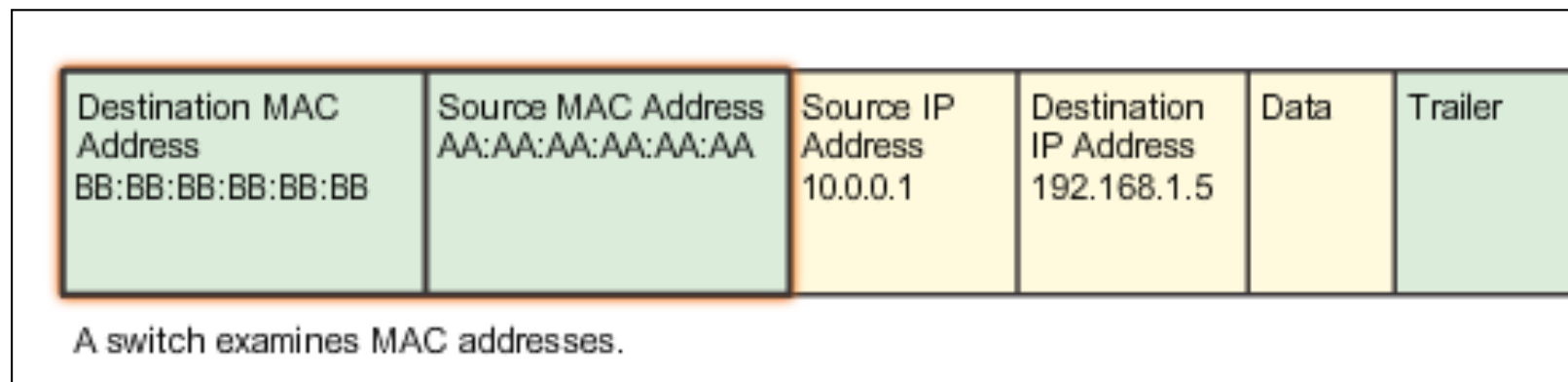
Both the physical MAC and logical IP addresses are required for a computer to communicate just like both the name and address of a person are required to send a letter.



Ethernet MAC

End-to-End Connectivity, MAC, and IP

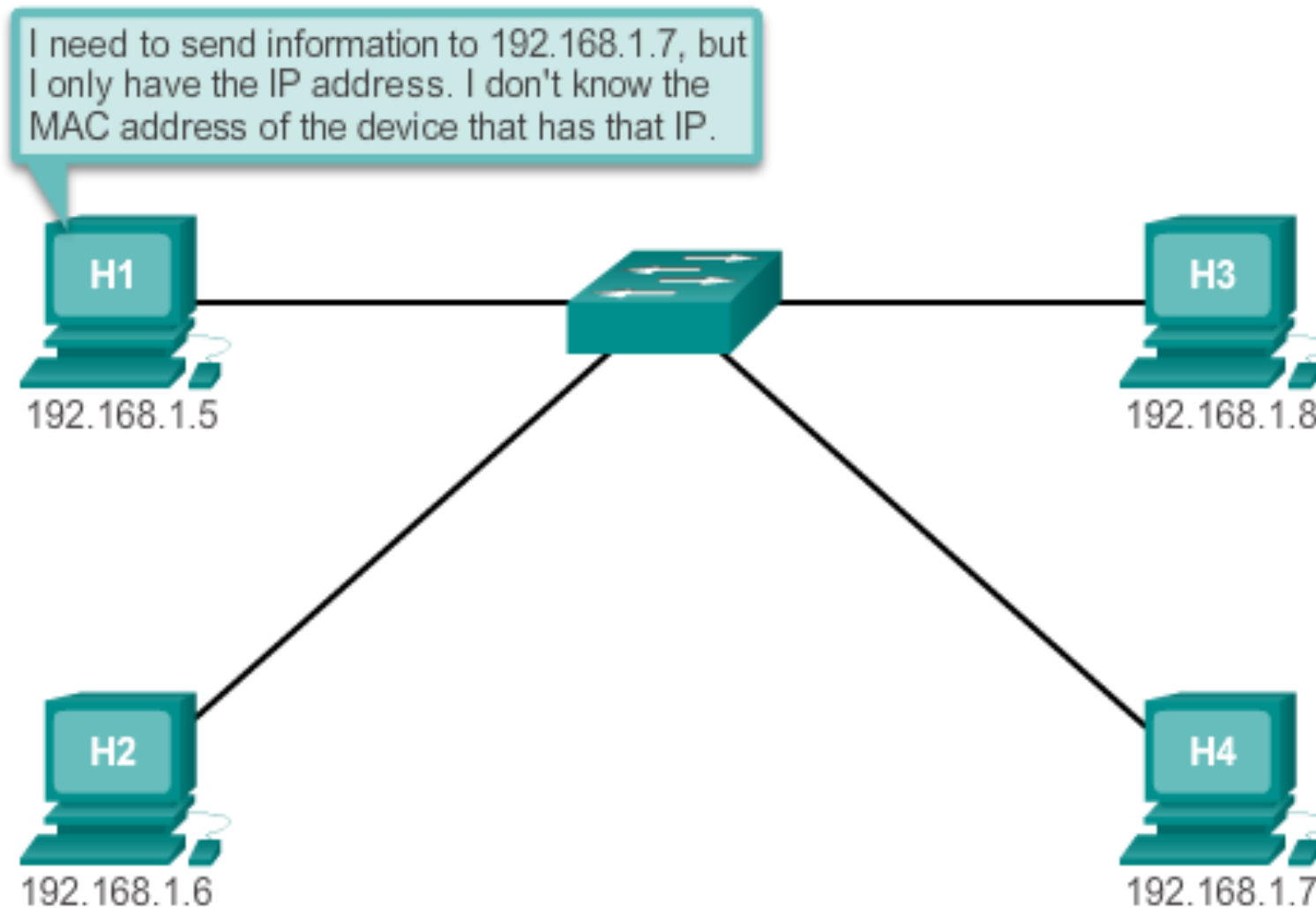
IP Packet Encapsulated in an Ethernet Frame





ARP

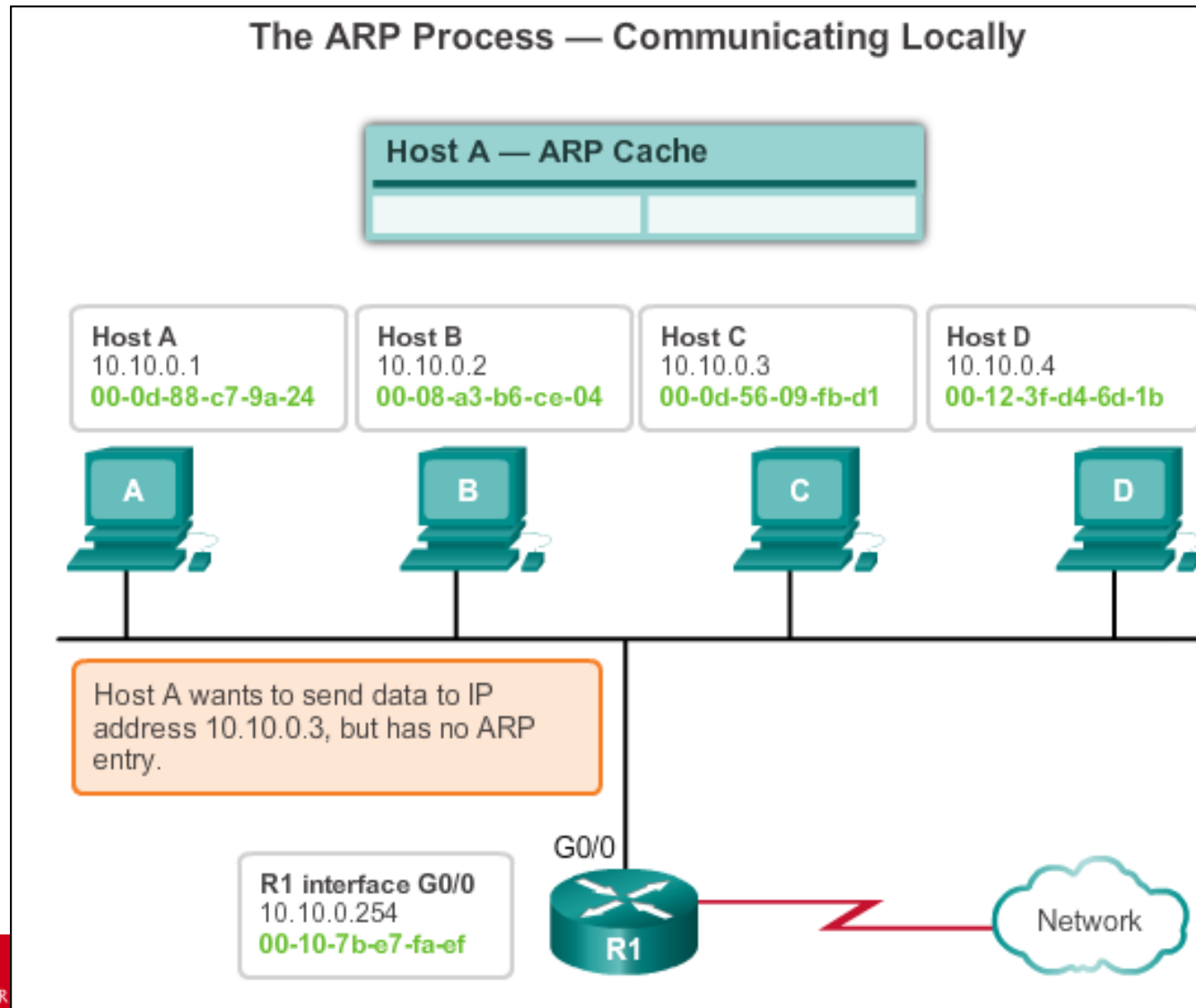
Introduction to ARP





ARP

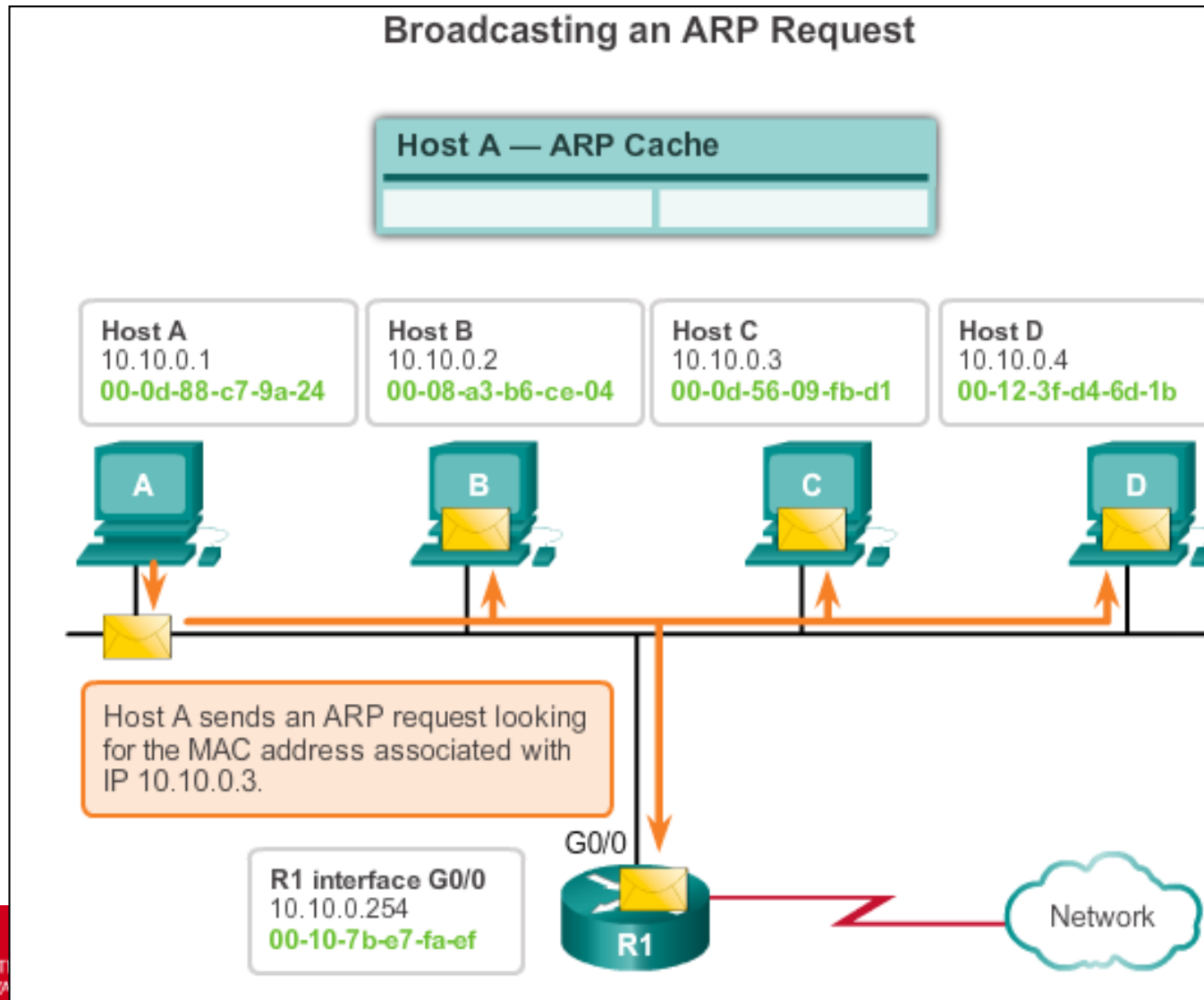
ARP Operation





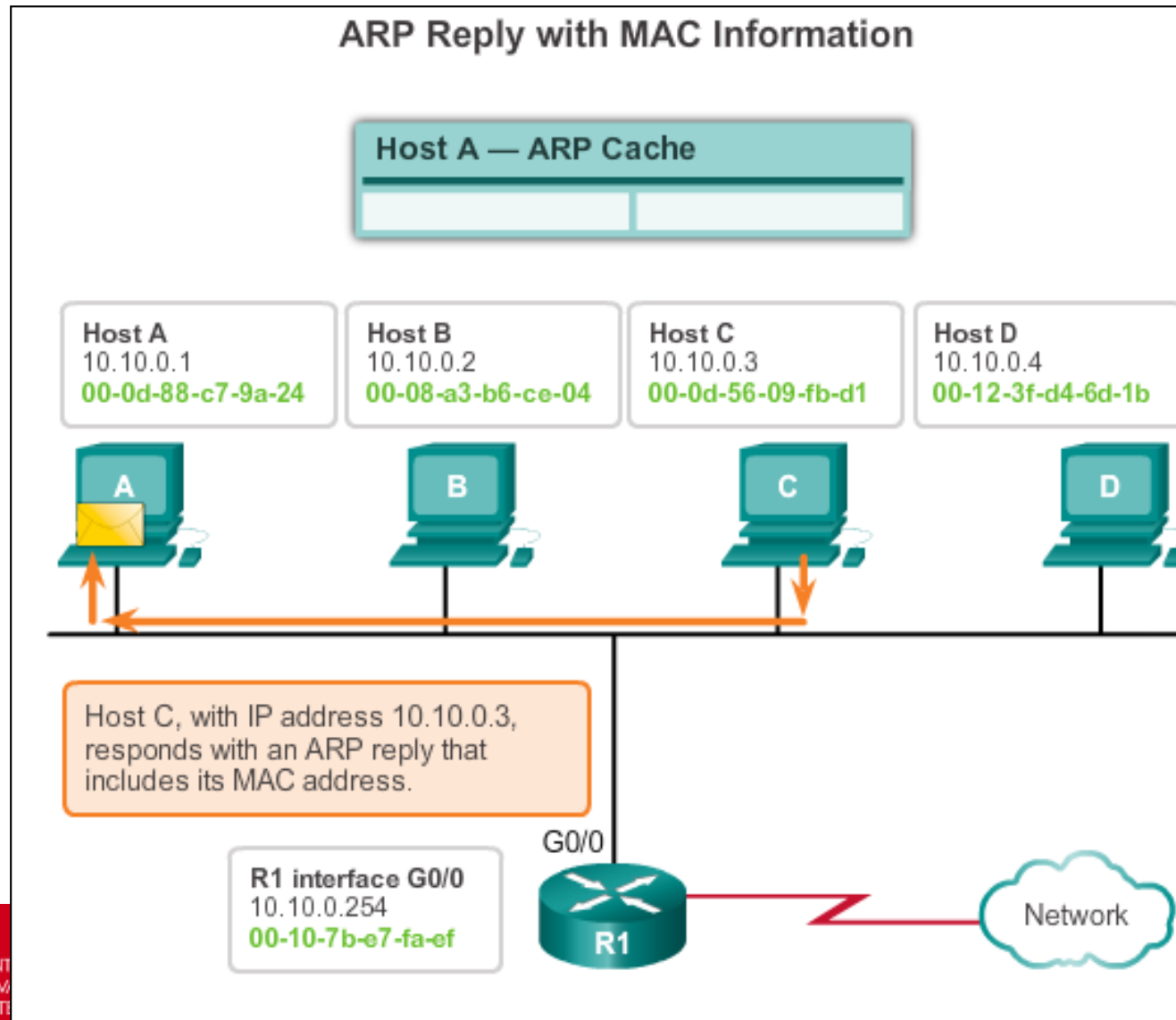
ARP

ARP Operation





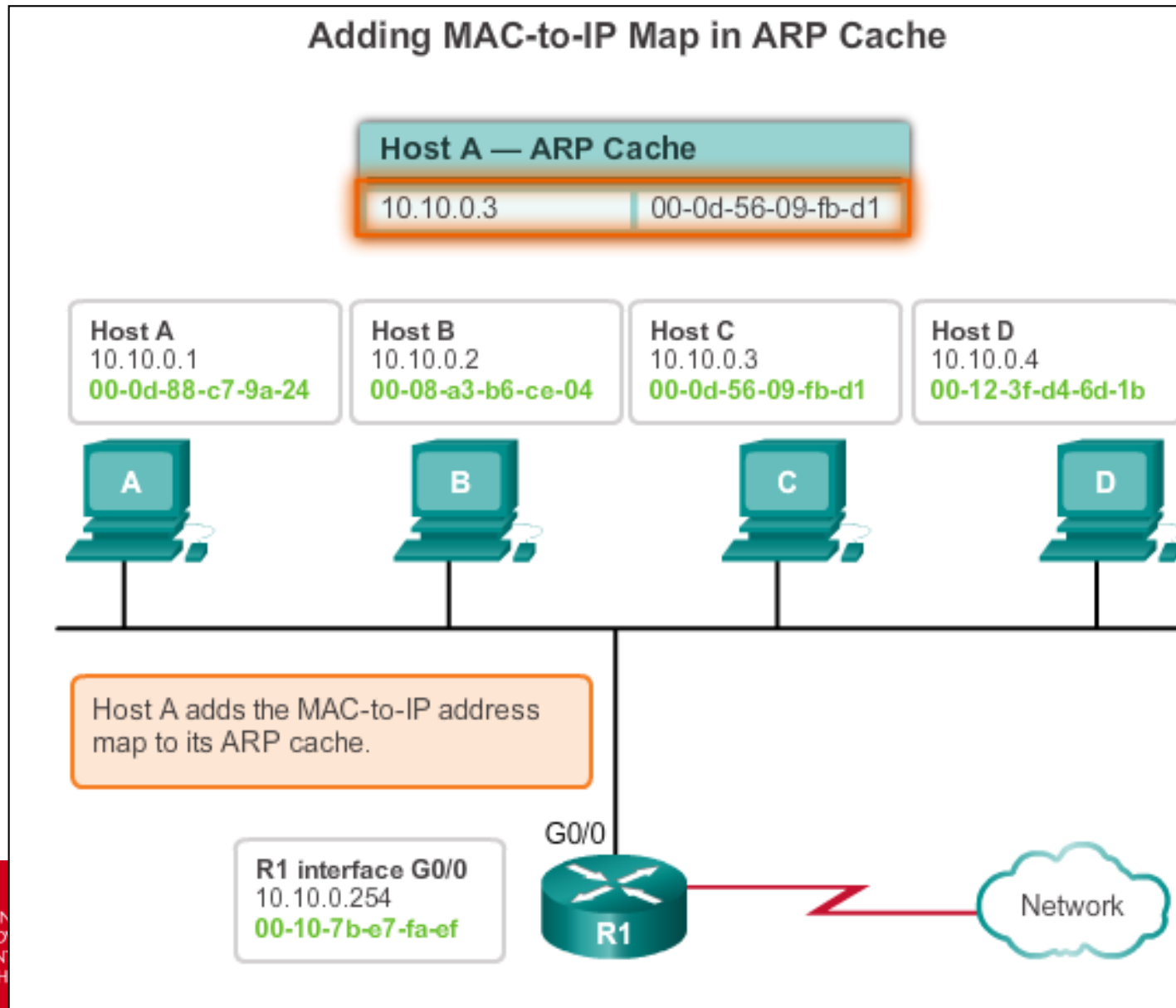
ARP ARP Operation





ARP

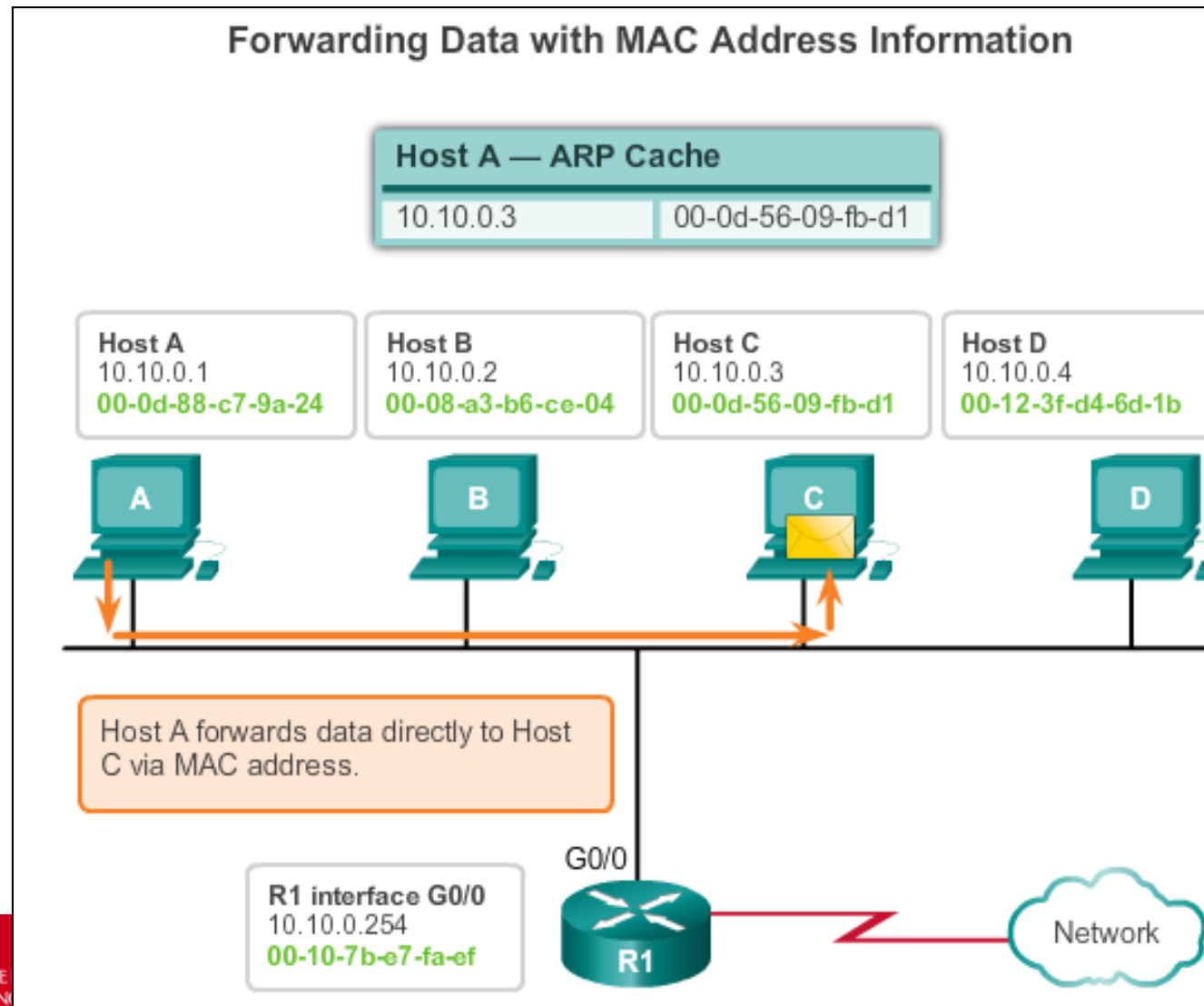
ARP Operation

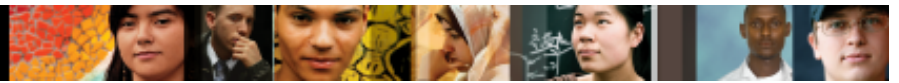




ARP

ARP Functions/Operation





ARP Summary

In this lecture, we covered:

- Interaction between Ethernet MAC and IP
- ARP Purpose
- ARP Operation