

ARP

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Kampus ITS Sukolilo Surabaya 60111

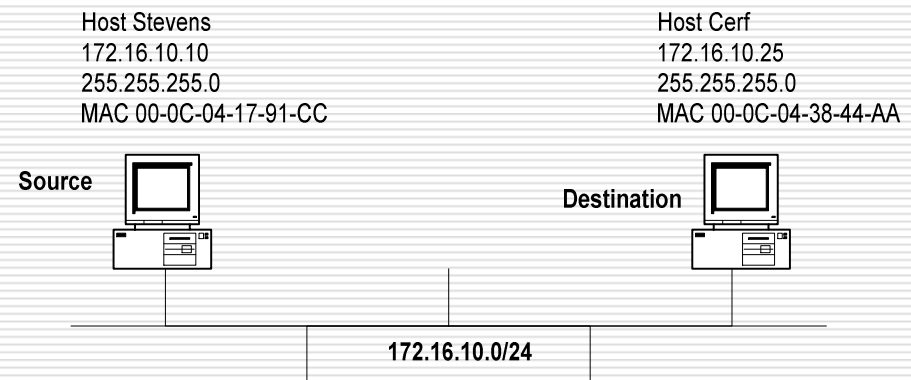
ARP

- ❑ ARP kepanjangan dari Address Resolution Protocol, suatu protokol yang bertugas mengolah pengalamatan logik dan fisik jaringan
- ❑ ARP mengolah sebuah tabel yang berisi Mapping antara IP-address dan Ethernet Card.
- ❑ Tabel arp didapatkan dari request (broadcast) ke jaringan.
- ❑ Berada pada layer 3 Jaringan

ARP Table	
<u>IP Address</u>	<u>MAC Address</u>
172.16.10.3	00-0C-04-32-14-A1
172.16.10.19	00-0C-14-02-00-19
172.16.10.33	00-0C-A6-19-46-C1

Mengapa Butuh Mapping MAC Address dengan IP Address

- Jika host ingin berkomunikasi IP host tertentu, Komputer sumber akan melakukan pengecekan nomor MAC dari komputer tujuan di Tabel ARP
- Jika di tabel ARP tidak ditemukan, maka melakukan arp request

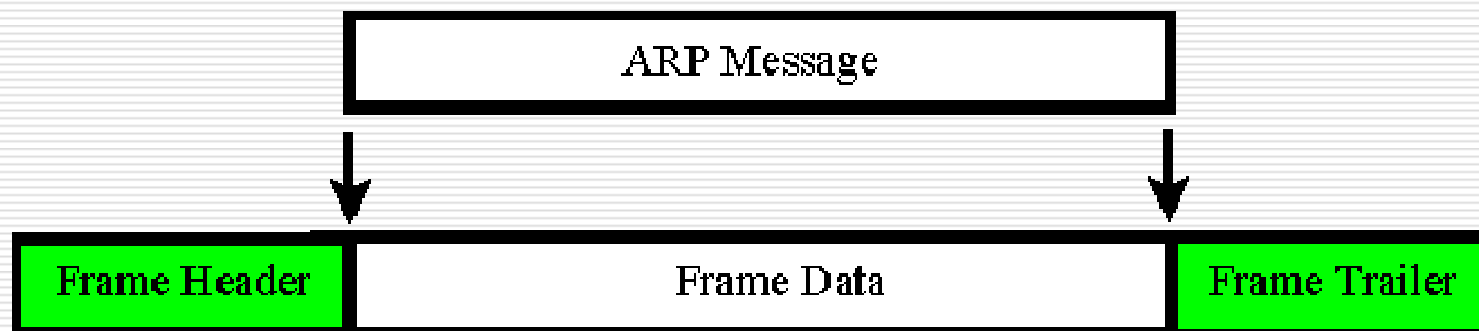


<u>Data link destination address</u>	<u>Data link source address</u>	<u>Other data link fields</u>
???	00-0C-04-17-91-CC	

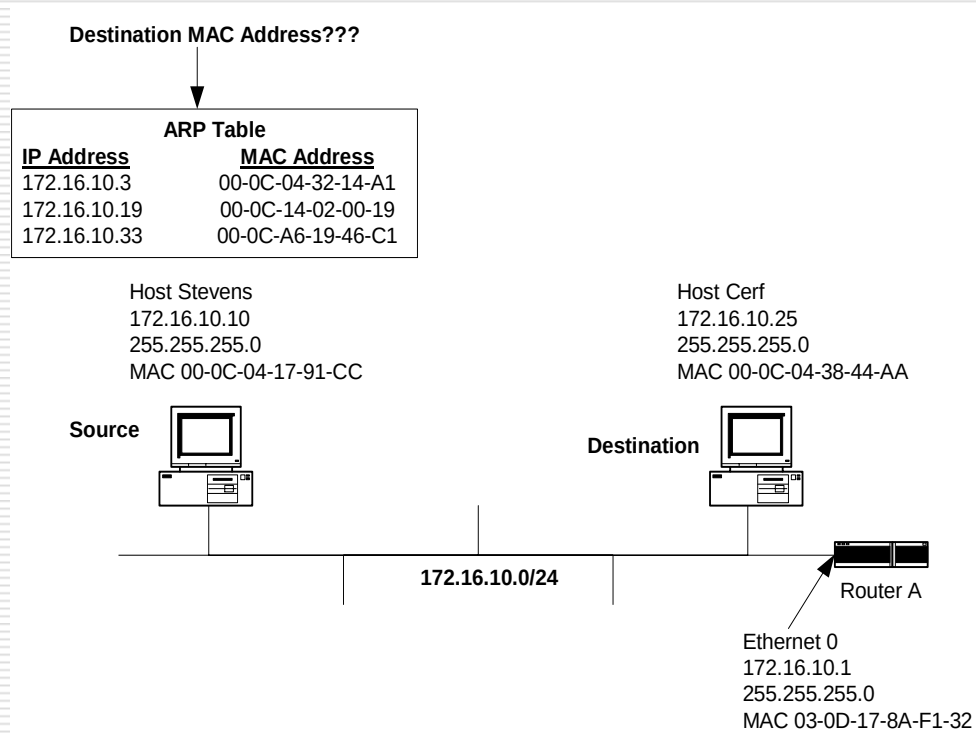
<u>IP Destination Address</u>	<u>IP Source Address</u>	<u>Other IP fields and data</u>
172.16.10.25	172.16.10.10	

ARP Request

Ethernet Header			Ethernet Data – 28 byte ARP request/reply				
Ethernet Destination Address (MAC)	Ethernet Source Address (MAC)	Frame Type	ARP headers , i.e. op field	Sender's Ethernet Address (MAC)	Sender's IP Address	Target's Ethernet Address (MAC)	Target's IP Address

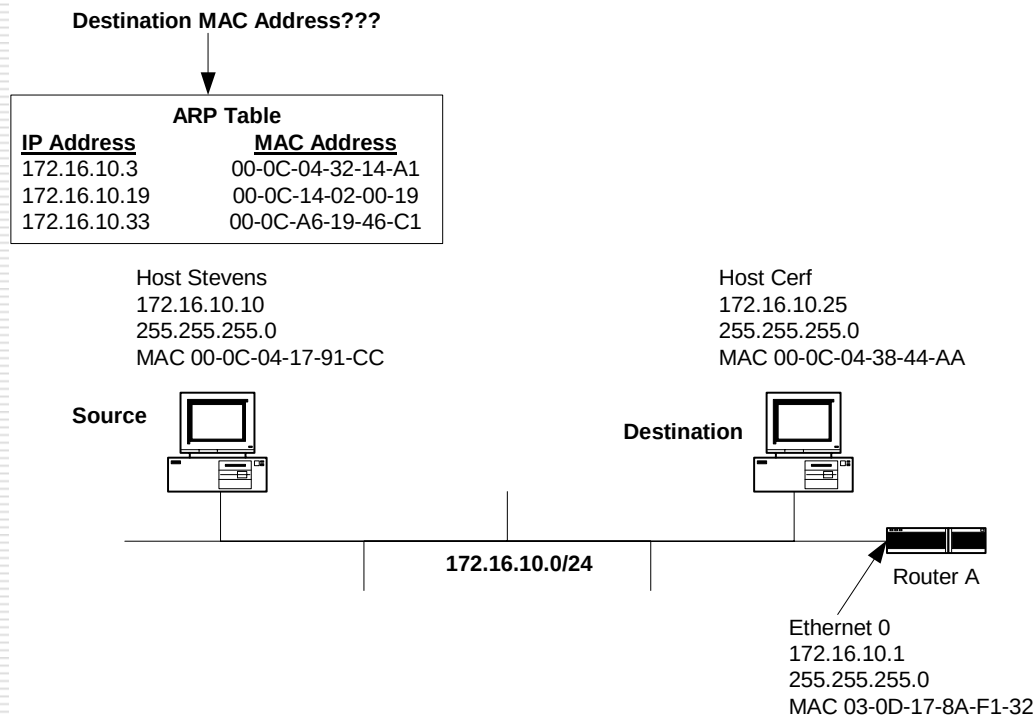


ARP Request



ARP Request from 172.16.10.10

Ethernet Header			Ethernet Data – 28 byte ARP request/reply				
Ethernet Destination Address (MAC)	Ethernet Source Address (MAC)	Frame Type	ARP headers , i.e. op field	Sender's Ethernet Address (MAC)	Sender's IP Address	Target's Ethernet Address (MAC)	Target's IP Address
FF-FF-FF-FF-FF-FF	00-0C-04-17-91-CC	0x806	op = 1	00-0C-04-17-91-CC	172.16.10.10		172.16.10.25



ARP Reply

ARP Reply dari Host Cerf
 “Hey pengirim ARP Request!
 Ini alamat MAC yang kamu
 butuhkan.”

Data link destination address Data link source address Other data link fields

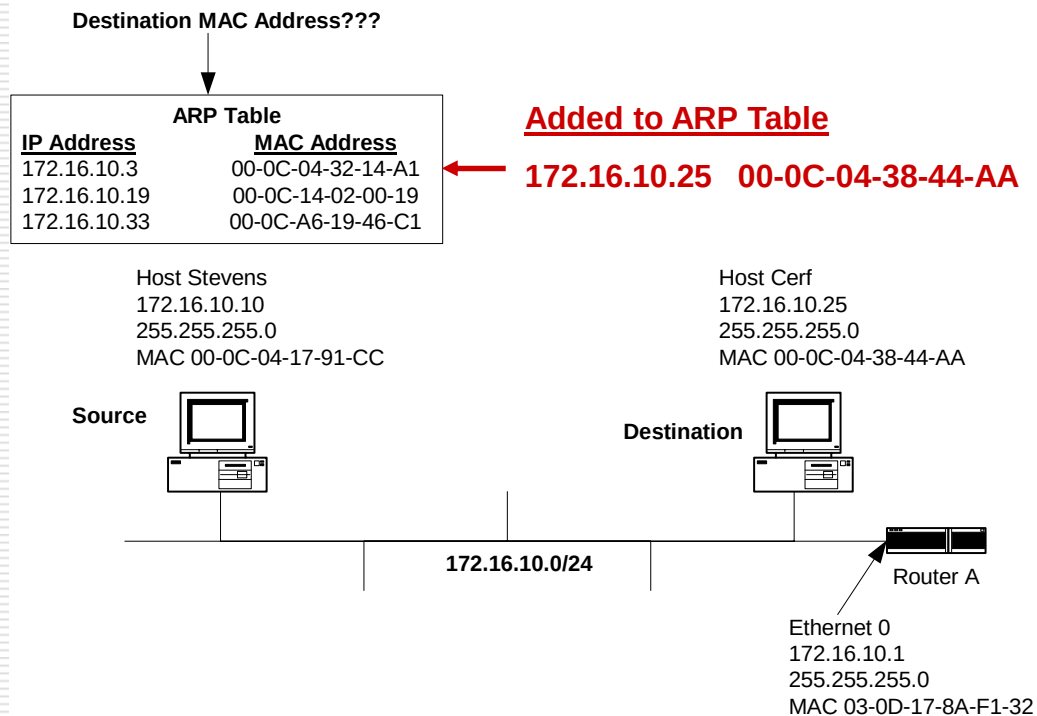
00-0C-04-38-44-AA 00-0C-04-17-91-CC

IP Destination Address IP Source Address Other IP fields and data

172.16.10.25 172.16.10.10

ARP Reply from 172.16.10.25

Ethernet Header			Ethernet Data – 28 byte ARP request/reply				
Ethernet Destination Address (MAC)	Ethernet Source Address (MAC)	Frame Type	ARP headers, i.e. op field	Sender's Ethernet Address (MAC)	Sender's IP Address	Target's Ethernet Address (MAC)	Target's IP Address
00-0C-04-17-91-CC	00-0C-04-38-44-AA	0x806	op = 2	00-0C-04-38-44-AA	172.16.10.25	00-0C-04-17-91-CC	172.16.10.10



ARP Reply

- Host Stevens menerima ARP Reply dan memasukkan IP address dan MAC address ke tabel ARP-nya.
- Selanjutnya Host Stevens bisa mengirimkan paket secara langsung ke Host Cerf.

Data link destination address Data link source address Other data link fields

00-0C-04-38-44-AA 00-0C-04-17-91-CC

IP Destination Address IP Source Address Other IP fields and data

172.16.10.25 172.16.10.10

Ethernet Frame

Ethernet Header			IP Datagram from above				Ethernet Trailer
MAC Destination Address	MAC Source Address	Other Header Info	IP Header Info	IP Original Source Address	IP Final Destination Address	Data	FCS
00-0C-04-38-44-AA	00-0C-04-17-91-CC			172.17.10.10	172.16.10.25		