

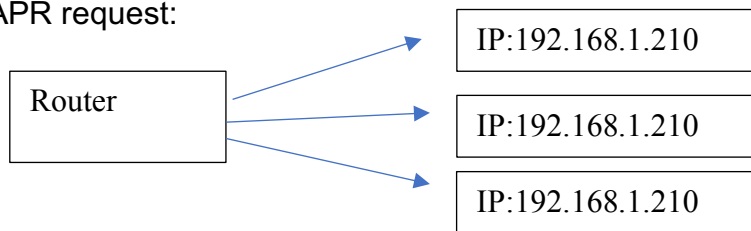
Lab Exercise – ARP Ying Di

Step 2: Inspect the Trace

eth.addr==88:e9:fe:6f:e9:2e						
No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	Netgear_6d:c6:6b	Apple_6f:e9:2e	ARP	42	Who has 192.168.1.7? Tell 192.168.1.1
2	0.000062	Apple_6f:e9:2e	Netgear_6d:c6:6b	ARP	42	192.168.1.7 is at 88:e9:fe:6f:e9:2e
3	15.621424	Apple_6f:e9:2e	Broadcast	ARP	42	Who has 192.168.1.1? Tell 192.168.1.7
4	15.624160	Netgear_6d:c6:6b	Apple_6f:e9:2e	ARP	42	192.168.1.1 is at 78:d2:94:6d:c6:6b
5	21.906661	Apple_6f:e9:2e	Broadcast	ARP	42	Who has 192.168.1.3? Tell 192.168.1.7
6	37.799351	Netgear_6d:c6:6b	Apple_6f:e9:2e	ARP	42	Who has 192.168.1.7? Tell 192.168.1.1
7	37.799413	Apple_6f:e9:2e	Netgear_6d:c6:6b	ARP	42	192.168.1.7 is at 88:e9:fe:6f:e9:2e
13	75.527587	Netgear_6d:c6:6b	Apple_6f:e9:2e	ARP	42	Who has 192.168.1.7? Tell 192.168.1.1
14	75.527640	Apple_6f:e9:2e	Netgear_6d:c6:6b	ARP	42	192.168.1.7 is at 88:e9:fe:6f:e9:2e

► Frame 3: 42 bytes on wire (336 bits), 42 bytes captured (336 bits) on interface 0
► Ethernet II, Src: Apple_6f:e9:2e (88:e9:fe:6f:e9:2e), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
▼ Address Resolution Protocol (request)
 Hardware type: Ethernet (1)
 Protocol type: IPv4 (0x0800)
 Hardware size: 6
 Protocol size: 4
 Opcode: request (1)
 Sender MAC address: Apple_6f:e9:2e (88:e9:fe:6f:e9:2e)
 Sender IP address: 192.168.1.7
 Target MAC address: 00:00:00:00:00:00 (00:00:00:00:00:00)
 Target IP address: 192.168.1.1

Step 3: ARP request and reply drawing of the ARP exchange: APR request:



Source IP: 192.168.1.1
Source MAC address: 78:d2:94:6d:c6:6b
Target IP: 192.168.1.7
Target MAC address: 00:00:00:00:00:00

APR reply:



Source IP: 192.168.1.7
Source MAC address: 88:e9:fe:6f:e9:2e
Target IP: 192.168.1.1
Target MAC address: 78:d2:94:6d:c6:6b

Step 4: Details of ARP over Ethernet

Q: 1. What opcode is used to indicate a request? What about a reply?

A: "1" is request; "2" is reply

Q: 2. How large is the ARP header for a request? What about for a reply?

A: A request is 42 bytes long. A reply is also 42 bytes long.

Q: 3. What value is carried on a request for the unknown target MAC address?

A: It is "Sender MAC address"

Q: 4. What Ethernet Type value which indicates that ARP is the higher layer protocol?

A: "Protocol type: IPV4(0x0800)" under "Address Resolution Protocol", It indicates that the upper layer protocol is Internet Protocol version 4 (IPv4)

Q: 5. Is the ARP reply broadcast (like the ARP request) or not?

A: Yes