MikroTik RouterOS

Online Training Class – Chapter 5

i-BEAM
steering ahead

Burmese Version

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ADDRESS RESOLUTION PROTOCOL

What is ARP?

How does it work?

ARP Reply Only Lab with MikroTik Router

WHAT IS ARP?

- ARP stands for Address Resolution Protocol.

- In Ethernet network, ARP is used for mapping Layer 3 address (IP) to Layer 2 address (MAC).

- By default, ARP operates dynamically, but for some security reasons, ARP can also be manually configured.

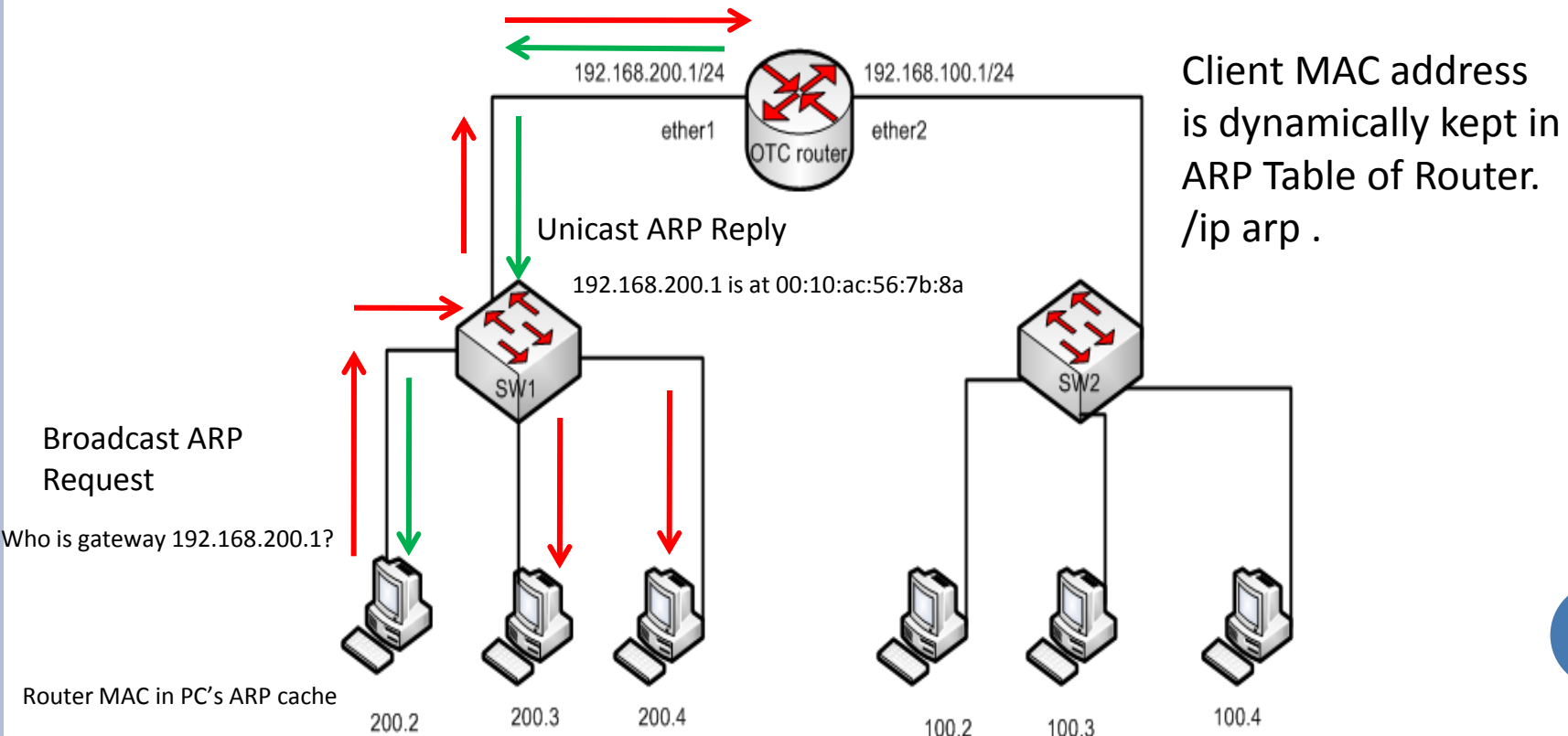- If manually configured, client will not be able to access Internet if they changed IP address or MAC address.

POSITION OF ARP IN TCP/IP PROTOCOL SUITE

HOW DOES ARP WORK?

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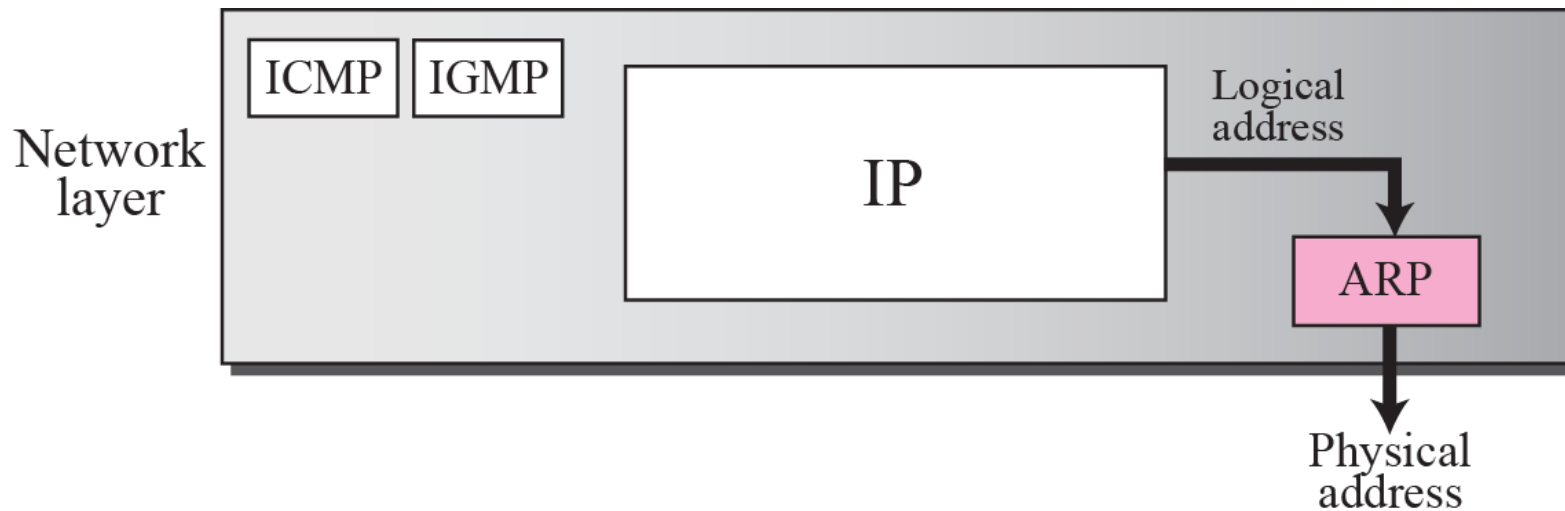
192.168.200.2 wants to communicate with 192.168.100.2.
192.168.200.2 needs to find MAC of gateway IP 192.168.200.1

192.168.200.1/24   192.168.100.1/24

ether1   ether2
OTC router

Client MAC address
is dynamically kept in
ARP Table of Router.
/ip arp .

Unicast ARP Reply

192.168.200.1 is at 00:10:ac:56:7b:8a

SW1   SW2

Broadcast ARP
Request

Who is gateway 192.168.200.1?

Router MAC in PC's ARP cache

200.2   200.3   200.4

100.2   100.3   100.4
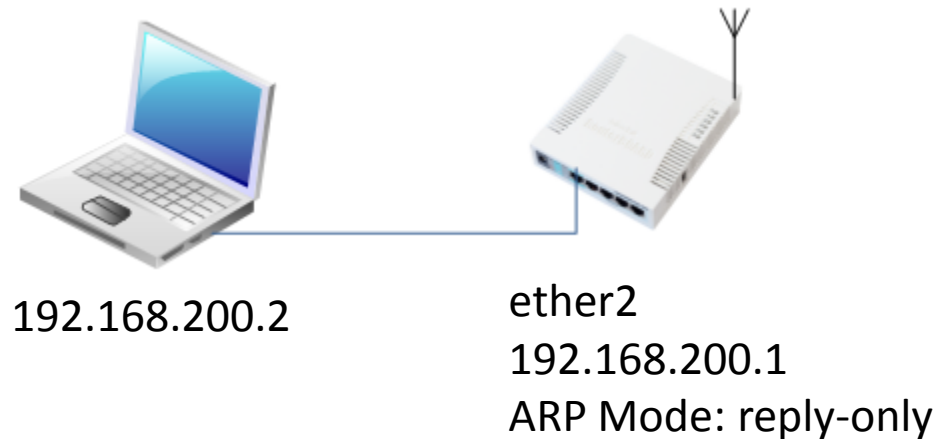
ARP Modes

- There are 4 ARP modes for Ethernet interfaces in RouterOS:
  - enabled
    - Default mode.
    - Router replies to ARP requests and add known IP-MAC entry to its ARP list.
  - proxy-arp
    - Router acts as a proxy and answers ARP requests destined to networks that directly connected to it.
  - reply-only
    - Router replies to ARP requests but does not add IP-MAC entry to its ARP list.
  - disabled
    - ARP requests from clients are not answered by the router, therefore, static IP-MAC entry should be configure either on router or on PC.
    - To configure static ARP in Windows, use "arp" command.
      - C: \> arp -s 192.168.2.1 00-aa-00-62-c6-09

LAB: ARP

192.168.200.2

ether2
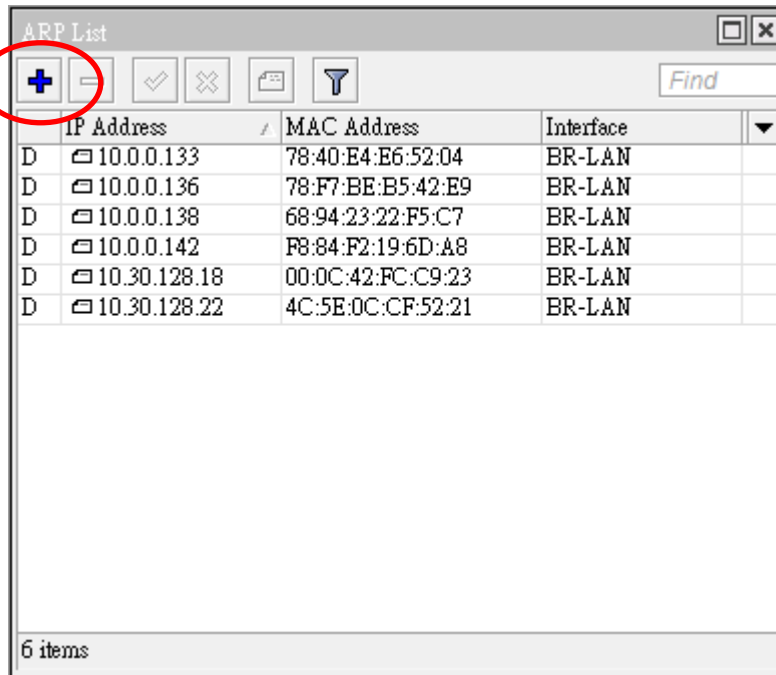192.168.200.1
ARP Mode: reply-only

- Connect your laptop to interface ether2 on router, add IP address of both devices in the same subnet, so that you can ping the router.
  - Router: 192.168.200.1
  - PC: 192.168.200.2
- Set ARP mode of interface ether2 as "reply-only" and try to ping the router from your laptop.
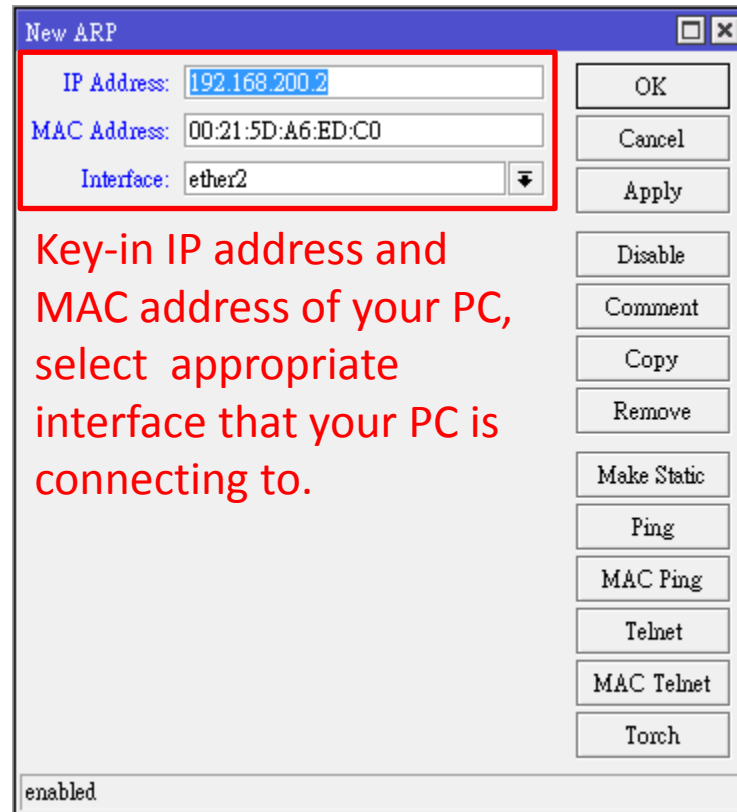
LAB: ARP (CONT.)

- If there is no reply on ping, add an static ARP entry, then try to ping again.
- Static ARP entry can be added in menu **IP → ARP**.

Key-in IP address and MAC address of your PC, select appropriate interface that your PC is connecting to.

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TO BE CONTINUED…

THANKS FOR YOUR ATTENTION!

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