

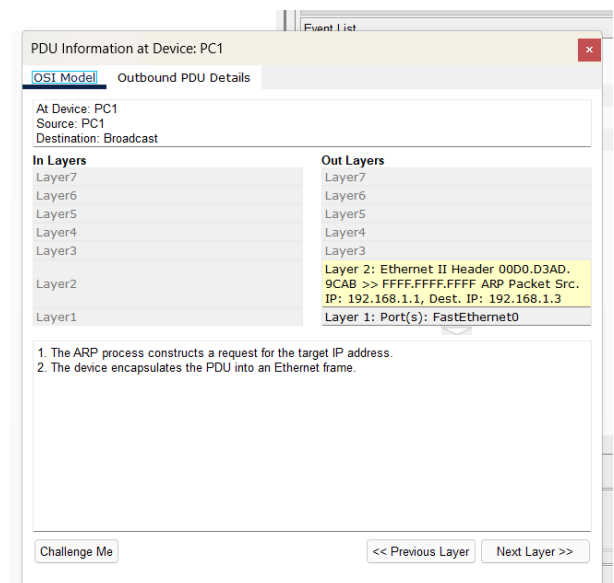
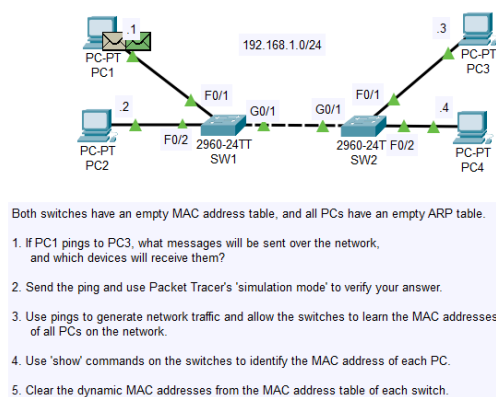
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1. If PC1 pings to PC3, what messages will be sent over the network, and which devices will receive them?

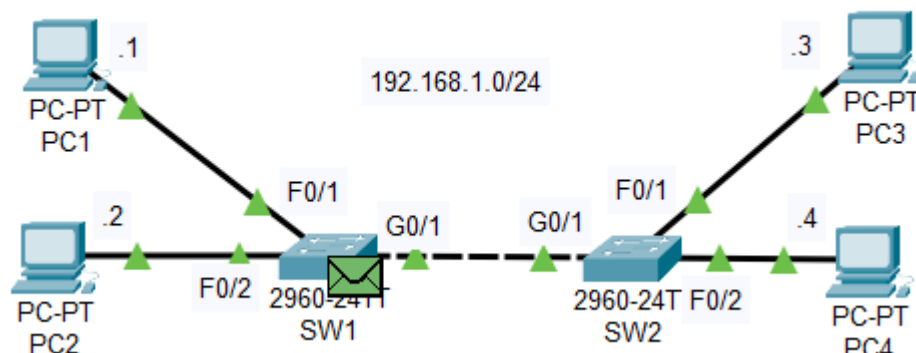
- ARP request will be sent over the network to find which MAC address has ip of 192.168.1.3 (PC3) then it will reply back to PC1 (This is called Unknow Unicast Frame or **Flood**). After that the ping request, which is an ICMP message, will be sent to PC3 then PC3 will receive it and respond back to PC1 (This is called Known Unicast or **Forward**).
- PC3 will receive the data and respond back to PC1

2. Send the ping and use Packet Tracer's 'simulation mode' to verify your answer.

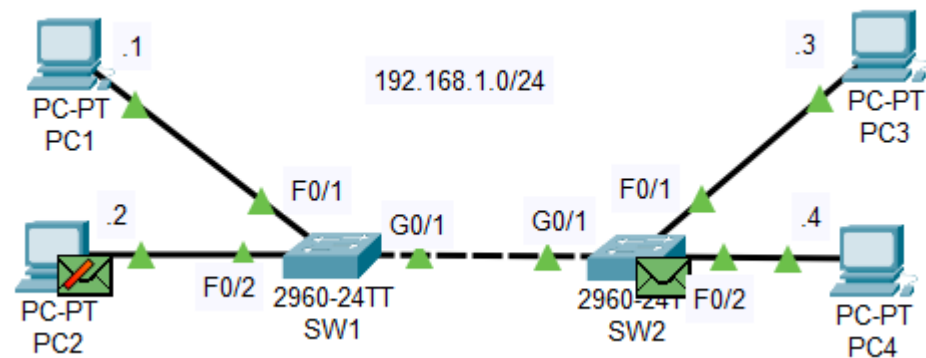
- ARP request in Broadcast mode.



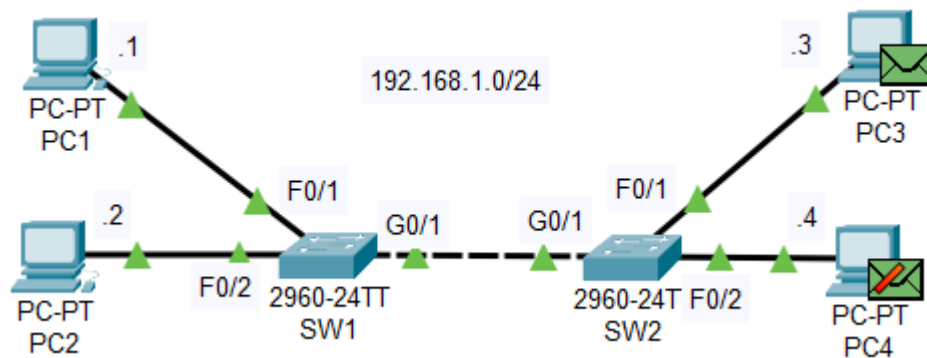
- ARP packet sent to Switch1



- Switch flood sent the packet to all the devices, we can see that PC2 didn't have an IP of 192.198.1.2 (the red X sign)



- Switch 2 receive and broadcast ARP packet to all devices, we can see that PC4 didn't have the IP we are looking for, and PC3 has it! So it will respond back to PC1.



3. Use pings to generate network traffic and allow the switches to learn the MAC addresses of all PCs on the network.
4. Use 'show' commands on the switches to identify the MAC address of each PC.
5. Clear the dynamic MAC addresses from the MAC address table of each switch.

- Switch 1

```
SW1#show mac address-table
      Mac Address Table
-----
Vlan    Mac Address      Type    Ports
----    -
1       0001.647b.3119    DYNAMIC Gig0/1
1       0004.9a6e.d870    DYNAMIC Gig0/1
1       0060.5c56.14d3    DYNAMIC Fa0/2
1       00d0.d3ad.9cab    DYNAMIC Fa0/1
SW1#clear mac address-table dynamic
SW1#show mac address-table
      Mac Address Table
-----
Vlan    Mac Address      Type    Ports
----    -
SW1#
```

- Switch 2

```
SW2>en
SW2#show mac address-table
      Mac Address Table
-----
Vlan    Mac Address      Type    Ports
----    -
1       0001.647b.3119    DYNAMIC Fa0/2
1       0004.9a6e.d870    DYNAMIC Fa0/1
1       0060.5c56.14d3    DYNAMIC Gig0/1
1       00d0.d3ad.9cab    DYNAMIC Gig0/1
SW2#clear mac address-table dynamic
SW2#show mac address-table
      Mac Address Table
-----
Vlan    Mac Address      Type    Ports
----    -
SW2#
```