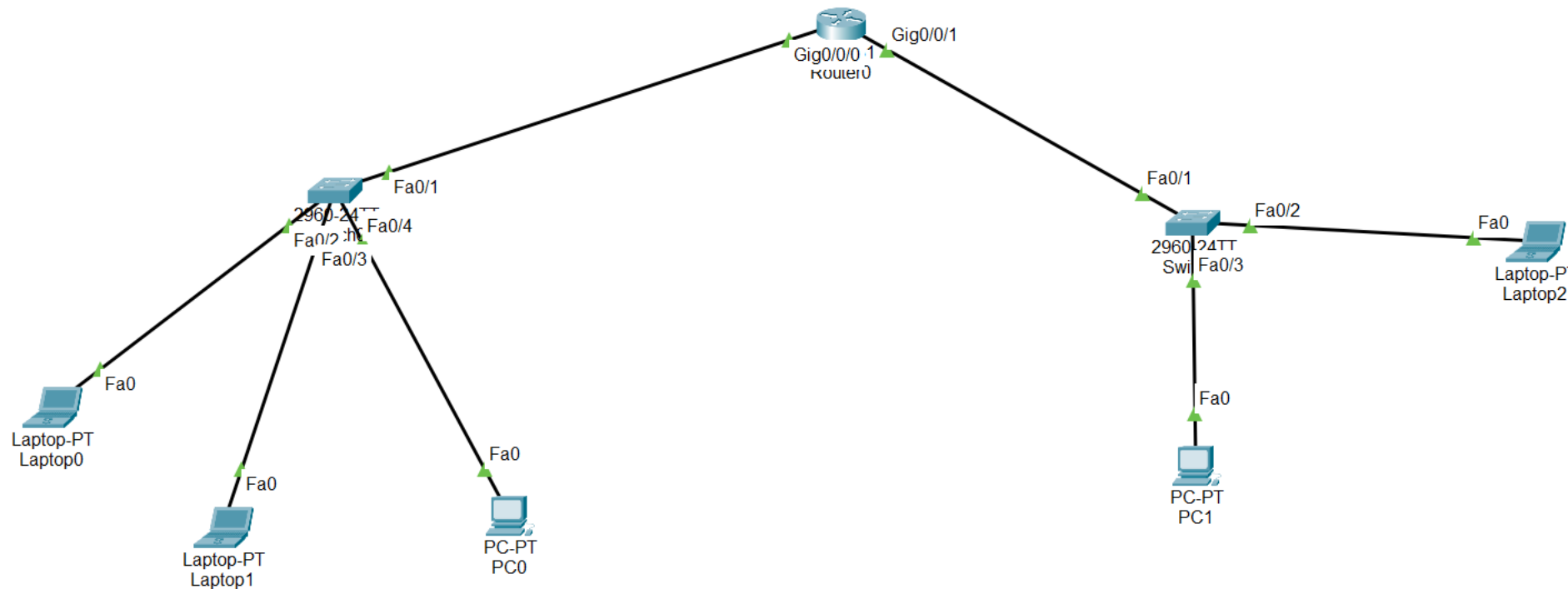


# W2-D1

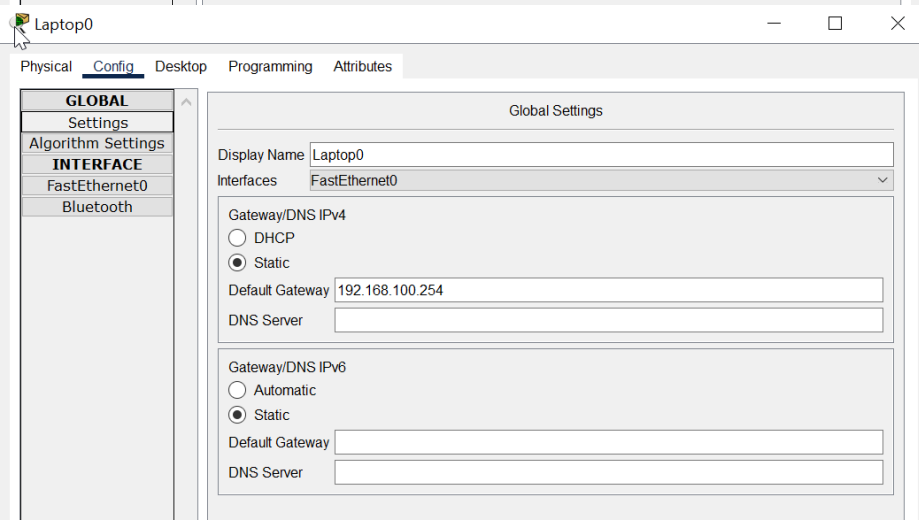
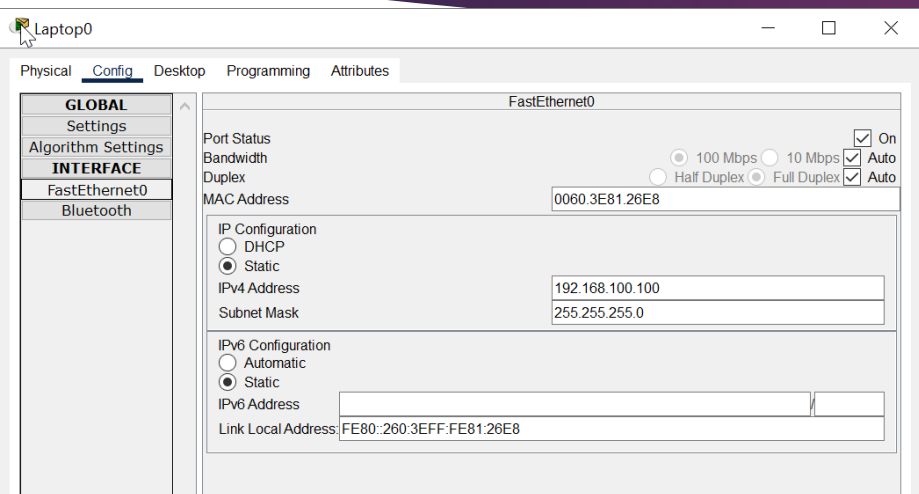
CISCO PACKET TRACER –CONFIGURAZIONE DI UNA RETE DI CALCOLATORI

# Realizzazione topologia di rete



Esercizio:

- Mettere in comunicazione il laptop-PT0 con il PC-PT-PC0
- Mettere in comunicazione il laptop-PT0 con il laptop-PT2
- Mostrare qualitativamente (non inserire i valori) come cambiano «source MAC e destination MAC» e «source IP & destination IP» quando un pacchetto viene inviato dal Laptop-PT-Laptop0 verso Laptop-PT-Laptop2



Ho impostato l'ip e il gateway dei laptop, anche quelli della LAN diversa tramite le due schermate mostrate a sinistra. Ho provato prima il ping tra i due pc della stessa LAN (LAPTOP0 E LAPTOP1) e il laptop risulta raggiungibile.

Impostati ip e DG dei due laptop ho effettuato il ping dal laptop della prima LAN a quello della seconda LAN, LAPTOP0 E LAPTOP2. Oltre a ciò per permettere il routing ho configurato le porte del router g0/0/0 e g0/0/1 , ognuna facente parte a una delle due LAN

```
C:\>ping 192.168.200.100

Pinging 192.168.200.100 with 32 bytes of data:

Request timed out.
Reply from 192.168.200.100: bytes=32 time=8ms TTL=127
Reply from 192.168.200.100: bytes=32 time=8ms TTL=127
Reply from 192.168.200.100: bytes=32 time=8ms TTL=127

Ping statistics for 192.168.200.100:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 8ms, Maximum = 8ms, Average = 8ms
```

PDU Information at Device: Switch0

OSI Model [Inbound PDU Details](#) Outbound PDU Details

PDU Formats

EthernetII

0 4 8 Bytes

PREAMBLE: 101010.10 DEST ADDR:0000.0C63.0B01

SRC ADDR: 0000.3E81.2 TYPE:0 DATA (VARIABLE LENGTH) FCS:0x00000000

IP

0 4 8 16 20 24 Bits

VER:4 IHL:5 DSCP:0x00 TL:128

ID:0x0006 FLAGS:0x0 FRAG OFFSET:0x000

TTL:128 PRO:0x01 CHKSUM

SRC IP:192.168.100.100

DST IP:192.168.200.100

DATA (VARIABLE LENGTH)

Simulation Panel

Event List

Vis.	Time(sec)	Last Dev	At Device	Type
13.719	Switch0	PC0		STP
13.728	--	Laptop0		ICMP
13.729	Laptop0	Switch0		ICMP
13.730	Switch0	Router0		ICMP
13.731	Router0	Switch1		ICMP
13.732	Switch1	Laptop2		ICMP
13.733	Laptop2	Switch1		ICMP
13.734	Switch1	Router0		ICMP
13.735	Router0	Switch0		ICMP
13.736	Switch0	Laptop0		ICMP
14.737	--	Laptop0		ICMP
14.738	Laptop0	Switch0		ICMP
14.739	Switch0	Router0		ICMP
14.740	Router0	Switch1		ICMP

Reset Simulation ☒ Constant Delay

Play Controls

Event List Filters - Visible Events

ACL Filter: ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISAKMP, IoT, IoT TCP, LACP, LLDP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoE, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

Edit Filters Show All/None

PDU Information at Device: Switch1

OSI Model [Inbound PDU Details](#) Outbound PDU Details

PDU Formats

EthernetII

0 4 8 Bytes

PREAMBLE: 101010.10 DEST ADDR:0002.4A9E.B893

SRC ADDR: 0000.0C63.0 TYPE:0 DATA (VARIABLE LENGTH) FCS:0x00000000

IP

0 4 8 16 20 24 Bits

VER:4 IHL:5 DSCP:0x00 TL:128

ID:0x0006 FLAGS:0x0 FRAG OFFSET:0x000

TTL:127 PRO:0x01 CHKSUM

SRC IP:192.168.100.100

DST IP:192.168.200.100

DATA (VARIABLE LENGTH)

Simulation Panel

Event List

Vis.	Time(sec)	Last Dev	At Device	Type
13.719	Switch0	PC0		STP
13.728	--	Laptop0		ICMP
13.729	Laptop0	Switch0		ICMP
13.730	Switch0	Router0		ICMP
13.731	Router0	Switch1		ICMP
13.732	Switch1	Laptop2		ICMP
13.733	Laptop2	Switch1		ICMP
13.734	Switch1	Router0		ICMP
13.735	Router0	Switch0		ICMP
13.736	Switch0	Laptop0		ICMP
14.737	--	Laptop0		ICMP
14.738	Laptop0	Switch0		ICMP
14.739	Switch0	Router0		ICMP
14.740	Router0	Switch1		ICMP

Reset Simulation ☒ Constant Delay

Play Controls

Event List Filters - Visible Events

ACL Filter: ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISAKMP, IoT, IoT TCP, LACP, LLDP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoE, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

Edit Filters Show All/None

PDU Information at Device: Router0

OSI Model [Inbound PDU Details](#) Outbound PDU Details

PDU Formats

EthernetII

0 4 8 Bytes

PREAMBLE: 101010.10 DEST ADDR:0000.0C63.0B01

SRC ADDR: 0000.3E81.2 TYPE:0 DATA (VARIABLE LENGTH) FCS:0x00000000

IP

0 4 8 16 20 24 Bits

VER:4 IHL:5 DSCP:0x00 TL:128

ID:0x0006 FLAGS:0x0 FRAG OFFSET:0x000

TTL:128 PRO:0x01 CHKSUM

SRC IP:192.168.100.100

DST IP:192.168.200.100

DATA (VARIABLE LENGTH)

Simulation Panel

Event List

Vis.	Time(sec)	Last Dev	At Device	Type
13.719	Switch0	PC0		STP
13.728	--	Laptop0		ICMP
13.729	Laptop0	Switch0		ICMP
13.730	Switch0	Router0		ICMP
13.731	Router0	Switch1		ICMP
13.732	Switch1	Laptop2		ICMP
13.733	Laptop2	Switch1		ICMP
13.734	Switch1	Router0		ICMP
13.735	Router0	Switch0		ICMP
13.736	Switch0	Laptop0		ICMP
14.737	--	Laptop0		ICMP
14.738	Laptop0	Switch0		ICMP
14.739	Switch0	Router0		ICMP
14.740	Router0	Switch1		ICMP

Reset Simulation ☒ Constant Delay

Play Controls

Event List Filters - Visible Events

ACL Filter: ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISAKMP, IoT, IoT TCP, LACP, LLDP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoE, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

Edit Filters Show All/None

Nella comunicazione tra LAPTOP0 e LAPTOP2 tramite ping possiamo osservare che per ogni passaggio attraverso un diverso nodo per ognuno di esso vi è la modifica dell'header di livello 2 cambiando ogni volta il MAC address in base al nodo di destinazione e sorgente.

Si noti che quando i pacchetti passano per dispositivi che operano a 3 livello SOURCE IP e DESTINATION IP rimangono sempre uguali.