

W2D1 Pratica 2: indirizzi MAC ed IP con Cisco Packet Tracer.

Dal laptop-PT-laptop0 allo switch 0

The screenshot displays the Cisco Packet Tracer interface. On the left, the 'PDU Information at Device: Switch0' window is open, showing the 'OSI Model' tab. The 'In Layers' and 'Out Layers' sections are visible, with 'Layer 1: Port FastEthernet0/1' highlighted. The 'Event List' window on the right shows a list of events, with '0.001 Laptop0' selected. The 'Simulation Panel' at the bottom right shows the 'Event List Filters - Visible Events' section.

PDU Information at Device: Switch0

At Device: Switch0
Source: Laptop0
Destination: Laptop2

In Layers

- Layer7
- Layer6
- Layer5
- Layer4
- Layer3
- Layer 2: Ethernet II Header 0001.C7CB.20A3 >> 0001.43AB.3A01
- Layer 1: Port FastEthernet0/1**

Out Layers

- Layer7
- Layer6
- Layer5
- Layer4
- Layer3
- Layer 2: Ethernet II Header 0001.C7CB.20A3 >> 0001.43AB.3A01
- Layer 1: Port(s): GigabitEthernet0/1

1. FastEthernet0/1 receives the frame.

Challenge Me << Previous Layer Next Layer >>

Simulation Panel

Event List

Vis.	Time(sec)	Last Device
	0.000	--
	0.001	Laptop0
	0.002	Switch0
	0.003	Router0
	0.004	Switch1
	0.005	Laptop2
	0.006	Switch1
	0.007	Router0
Visible	0.008	Switch0

Reset Simulation ☒ Constant Delay Captured to: 0.008 s

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

Dallo switch 0 al router

The screenshot displays the Cisco Packet Tracer interface. On the left, the 'PDU Information at Device: Router0' window is open, showing the 'OSI Model' tab. The 'In Layers' and 'Out Layers' sections are visible, with 'Layer 1: Port GigabitEthernet0/0/0' highlighted. The 'Event List' window on the right shows a list of events, with '0.002 Switch0' selected. The 'Simulation Panel' at the bottom right shows the 'Event List Filters - Visible Events' section.

PDU Information at Device: Router0

At Device: Router0
Source: Laptop0
Destination: Laptop2

In Layers

- Layer7
- Layer6
- Layer5
- Layer4
- Layer 3: IP Header Src. IP: 192.168.100.100, Dest. IP: 192.168.200.100 ICMP Message Type: 8
- Layer 2: Ethernet II Header 0001.C7CB.20A3 >> 0001.43AB.3A01
- Layer 1: Port GigabitEthernet0/0/0**

Out Layers

- Layer7
- Layer6
- Layer5
- Layer4
- Layer 3: IP Header Src. IP: 192.168.100.100, Dest. IP: 192.168.200.100 ICMP Message Type: 8
- Layer 2: Ethernet II Header 0001.43AB.3A02 >> 00E0.B018.56BE
- Layer 1: Port(s): GigabitEthernet0/0/1

1. GigabitEthernet0/0/0 receives the frame.

Challenge Me << Previous Layer Next Layer >>

Simulation Panel

Event List

Time(sec)	Last Device
0.000	--
0.001	Laptop0
0.002	Switch0
0.003	Router0
0.004	Switch1
0.005	Laptop2
0.006	Switch1
0.007	Router0
0.008	Switch0

Reset Simulation ☒ Constant Delay Captured to: 0.008 s

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

Dal router allo switch 1

PDU Information at Device: Switch1

At Device: Switch1
Source: Laptop0
Destination: Laptop2

In Layers

- Layer7
- Layer6
- Layer5
- Layer4
- Layer3
- Layer 2: Ethernet II Header 0001.43AB.3A02 >> 00E0.B018.56BE
- Layer 1: Port GigabitEthernet0/2

Out Layers

- Layer7
- Layer6
- Layer5
- Layer4
- Layer3
- Layer 2: Ethernet II Header 0001.43AB.3A02 >> 00E0.B018.56BE
- Layer 1: Port(s): FastEthernet0/2

1. GigabitEthernet0/2 receives the frame.

Challenge Me << Previous Layer Next Layer >>

Simulation Panel

Event List

Time(sec)	Last Device
000	--
001	Laptop0
002	Switch0
003	Router0
004	Switch1
005	Laptop2
006	Switch1
007	Router0
008	Switch0

Reset Simulation ☒ Constant Delay Captured to: 0.008 s

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

Scenario 1

Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete

Successful Laptop0 Laptop2 ICMP 0.000 N 0 (edit) (delete)

Toggle PDU List Window

Dallo switch 1 al laptop-PT-laptop2

PDU Information at Device: Laptop2

At Device: Laptop2
Source: Laptop0
Destination: Laptop2

In Layers

- Layer7
- Layer6
- Layer5
- Layer4
- Layer 3: IP Header Src. IP: 192.168.100.100, Dest. IP: 192.168.200.100 ICMP Message Type: 8
- Layer 2: Ethernet II Header 0001.43AB.3A02 >> 00E0.B018.56BE
- Layer 1: Port FastEthernet0

Out Layers

- Layer7
- Layer6
- Layer5
- Layer4
- Layer 3: IP Header Src. IP: 192.168.200.100, Dest. IP: 192.168.100.100 ICMP Message Type: 0
- Layer 2: Ethernet II Header 00E0.B018.56BE >> 0001.43AB.3A02
- Layer 1: Port(s): FastEthernet0

1. FastEthernet0 receives the frame.

Challenge Me << Previous Layer Next Layer >>

Simulation Panel

Event List

Time(sec)	Last Device	At Device
000	--	--
001	Laptop0	Laptop0
002	Switch0	Switch0
003	Router0	Router0
004	Switch1	Switch1
005	Laptop2	Laptop2
006	Switch1	Switch1
007	Router0	Router0
008	Switch0	Switch0

Reset Simulation ☒ Constant Delay Captured to: 0.008 s

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

Scenario 1

Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete

Successful Laptop0 Laptop2 ICMP 0.000 N 0 (edit) (delete)

Echo reply dal laptop-PT-laptop2 allo switch 1

The screenshot displays the Packet Tracer interface with the following components:

- PDU Information at Device: Switch1**:
 - At Device: Switch1
 - Source: Laptop0
 - Destination: Laptop2
 - In Layers**: Layer7, Layer6, Layer5, Layer4, Layer3, Layer2: Ethernet II Header (00E0.B018.56BE >> 0001.43AB.3A02), **Layer 1: Port FastEthernet0/2**.
 - Out Layers**: Layer7, Layer6, Layer5, Layer4, Layer3, Layer2: Ethernet II Header (00E0.B018.56BE >> 0001.43AB.3A02), Layer 1: Port(s): GigabitEthernet0/2.
 - 1. FastEthernet0/2 receives the frame.
- Simulation Panel**:
 - Event List**: A table showing the sequence of events from Laptop0 to Switch1.
 - Reset Simulation** and **Constant Delay** (checked) buttons.
 - Play Controls**: Play button and a progress bar.
 - Event List Filters - Visible Events**: A list of protocols like ACL, ARP, BGP, etc.
- Bottom Toolbar**: Includes a scenario dropdown (Scenario 1), a fire button, and a table of network events.

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	Laptop0	Laptop2	ICMP	Blue	0.000	N	0	(edit)	

Echo reply dallo switch 1 al router

The screenshot displays the Packet Tracer interface with the following components:

- PDU Information at Device: Router0**:
 - At Device: Router0
 - Source: Laptop0
 - Destination: Laptop2
 - In Layers**: Layer7, Layer6, Layer5, Layer4, Layer3: IP Header Src. IP: 192.168.200.100, Dest. IP: 192.168.100.100 ICMP Message Type: 0, Layer2: Ethernet II Header (00E0.B018.56BE >> 0001.43AB.3A02), **Layer 1: Port GigabitEthernet0/0/1**.
 - Out Layers**: Layer7, Layer6, Layer5, Layer4, Layer3: IP Header Src. IP: 192.168.200.100, Dest. IP: 192.168.100.100 ICMP Message Type: 0, Layer2: Ethernet II Header (0001.C7CB.20A3 >> 0001.43AB.3A01), Layer 1: Port(s): GigabitEthernet0/0/0.
 - 1. GigabitEthernet0/0/1 receives the frame.
- Simulation Panel**:
 - Event List**: A table showing the sequence of events from Laptop0 to Switch1.
 - Reset Simulation** and **Constant Delay** (checked) buttons.
 - Play Controls**: Play button and a progress bar.
 - Event List Filters - Visible Events**: A list of protocols like ACL, ARP, BGP, etc.
- Bottom Toolbar**: Includes a scenario dropdown (Scenario 1), a fire button, and a table of network events.

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	Laptop0	Laptop2	ICMP	Blue	0.000	N	0	(edit)	(delete)

Echo reply dal router allo switch 0

PDU Information at Device: Switch0

At Device: Switch0
Source: Laptop0
Destination: Laptop2

In Layers

- Layer7
- Layer6
- Layer5
- Layer4
- Layer3
- Layer 2: Ethernet II Header 0001.43AB.3A01 >> 0001.C7CB.20A3
- Layer 1: Port GigabitEthernet0/1

Out Layers

- Layer7
- Layer6
- Layer5
- Layer4
- Layer3
- Layer 2: Ethernet II Header 0001.43AB.3A01 >> 0001.C7CB.20A3
- Layer 1: Port(s): FastEthernet0/1

1. GigabitEthernet0/1 receives the frame.

Challenge Me << Previous Layer Next Layer >>

Simulation Panel

Event List

Time	Device
0:00	Laptop0
0:00	Switch0
0:00	Router0
0:00	Switch1
0:00	Laptop2
0:00	Switch1
0:00	Router0
0:00	Switch0
0:00	Laptop0

Reset Simulation ☒ Constant Delay Captured to: 0.008 s

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

Event List Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
<input checked="" type="checkbox"/>	Successful	Laptop0	Laptop2	ICMP		0.000	N	0	(edit)	(delete)

Echo reply dallo switch 0 al laptop-PT-laptop0

PDU Information at Device: Laptop0

At Device: Laptop0
Source: Laptop0
Destination: Laptop2

In Layers

- Layer7
- Layer6
- Layer5
- Layer4
- Layer 3: IP Header Src. IP: 192.168.200.100, Dest. IP: 192.168.100.100 ICMP Message Type: 0
- Layer 2: Ethernet II Header 0001.43AB.3A01 >> 0001.C7CB.20A3
- Layer 1: Port FastEthernet0

Out Layers

- Layer7
- Layer6
- Layer5
- Layer4
- Layer3
- Layer2
- Layer1

1. FastEthernet0 receives the frame.

Challenge Me << Previous Layer Next Layer >>

Simulation Panel

Event List

Time	Device
0:00	--
0:01	Laptop0
0:02	Switch0
0:03	Router0
0:04	Switch1
0:05	Laptop2
0:06	Switch1
0:07	Router0
0:08	Switch0

Reset Simulation ☒ Constant Delay Captured to: 0.008 s

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, UDR, USB, VTP

Edit Filters Show All/None

Event List Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
<input checked="" type="checkbox"/>	Successful	Laptop0	Laptop2	ICMP		0.000	N	0	(edit)	(delete)

Spiegazione dei cambiamenti degli indirizzi MAC ed IP: Gli screenshot riportano tutti i cambiamenti degli indirizzi IP e degli indirizzi MAC. Osservando gli indirizzi IP, l'indirizzo source è sempre l'indirizzo del Laptop0 (IP 192.168.100.100), mentre l'indirizzo destination è quello del laptop2 (IP 192.168.200.100). Gli indirizzi restano sempre uguali e si invertono solo nel momento della echo reply, quando l'indirizzo source diventa quello del laptop2 (IP 192.168.200.100), mentre l'indirizzo destination diventa quello del laptop0 (IP 192.168.100.100). Gli indirizzi MAC, invece, cambiano sempre in base ai nodi della rete tra i quali avviene lo scambio dei dati. L'indirizzo MAC resta invariato per ogni device, trattandosi di un indirizzo per l'identificazione univoca, ma gli indirizzi MAC compaiono come header nel pacchetto di dati solo quando il nodo in questione è coinvolto nello scambio dei dati. Si può notare il ruolo del router nell'indirizzare i pacchetti tra le due sottoreti.