

Aluno: João Victor da Silva Prado

Redes de computadores 1

Prof: Henrique Dinarte

Lista de exercícios 9

1.1) Não. Foi visto apenas o protocolo ICMP

1.2) Não. Sabemos que o HUB atua como repetidor, por causa disso o quadro é enviado para PC2 e PC4.

I - PC1 envia o quadro para o HUB

II - O HUB recebe e envia para todos PCs exceto PC1

III - PC2 e PC4 recebem o quadro e descartam, porém PC3 recebe e confirma.

IV - PC3 manda o quadro para o HUB

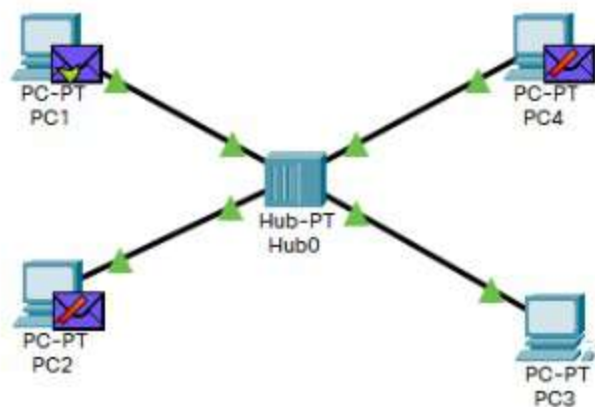
V - O HUB recebe e envia para todos exceto PC3

VI - Novamente PC2 e PC4 recebem e descartam, mas PC1 recebe e confirma.

1.3) Não. Pois o HUB não consegue repassar os quadros enviados de maneira simultânea.

Um domínio de colisão (O HUB)

1.1)



## Simulation Panel

## Event List

Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC1	ICMP
	0.001	PC1	Hub0	ICMP
	0.002	Hub0	PC2	ICMP
	0.002	Hub0	PC4	ICMP
	0.002	Hub0	PC3	ICMP
	0.003	PC3	Hub0	ICMP
	0.004	Hub0	PC1	ICMP
	0.004	Hub0	PC2	ICMP
	0.004	Hub0	PC4	ICMP

Reset Simulation

☒ Constant DelayCaptured to:  
0.004 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, Meraki, 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

Time: 00:24:11.306 PLAY CONTROLS



Copper Straight-Through



Scenario 0

New

Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Successful	PC1	PC3	ICMP		0.000	N	0	(edit)

Digite aqui para pesquisar



35% 21°C 20:58 16/08/2021



2.1) A tabela se encontra vazia, pois o switch ainda não sabe como as ligações foram feitas.

2.2) PC1 envia para o SWITCH e o SWITCH envia para o PC3 apenas.

I - PC1 envia para o switch

II - SWITCH recebe a mensagem e envia apenas para PC3

III - PC3 recebe a mensagem

IV - PC3 confirma e retorna para o SWITCH

V - O SWITCH recebe a mensagem e envia apenas para o PC1

VI - PC1 recebe e confirma.

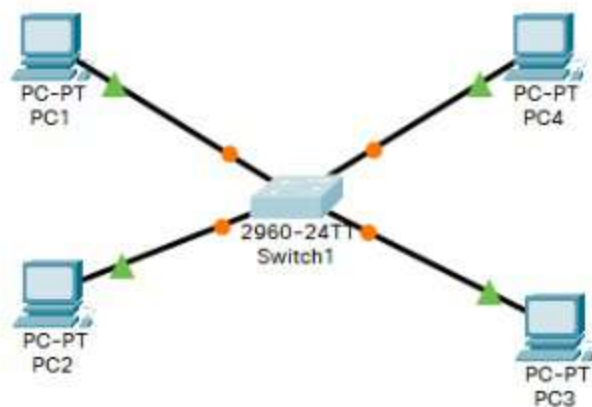
2.3) Vê-se a presença de: os endereços de origem e destino, além de suas conexões no switch.

2.4) Não houve mudança.

2.5) Sim. O switch pode receber e enviar quadros corretamente. Não houve domínio de colisão na simulação.

2.6) Usei o comando: clear mac-address-table

# 2.1)



Switch1

Physical Config **CLI** Attributes

IOS Command Line Interface

```
SOFTWARE (PC1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2013 by Cisco Systems, Inc.
Compiled Wed 26-Jun-13 02:49 by mnguyen

Press RETURN to get started!

%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up

Switch>show mac-address-table
      Mac Address Table
-----
Vlan    Mac Address      Type    Ports
----    -
Switch>
```

Ctrl+F6 to exit CLI focus

Copy Paste

Time: 00:25:10.431

PLAY CONTROLS

4331 4321 1941 2901 2911 8191OX 8191GW

(Select a Device to Drag and Drop to the Workspace)

Realtime Simulation

(sec) Periodic Num Edit



# 2.3)

PC-PT  
PC1

PC-PT  
PC2

2960-24T1  
Switch1

PC-PT  
PC4

PC-PT  
PC3

Time: 00:25:50.397

PLAY CONTROLS

4331

4321

1941

Switch1

Physical Config CLI Attributes

IOS Command Line Interface

%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up

Switch>show mac-address-table

Mac Address Table

Vlan	Mac Address	Type	Ports
1	0090.2108.2643	DYNAMIC	Fa0/1
1	00e0.a328.0030	DYNAMIC	Fa0/3

Switch>show mac-address-table

Mac Address Table

Vlan	Mac Address	Type	Ports
1	0090.2108.2643	DYNAMIC	Fa0/1
1	00e0.a328.0030	DYNAMIC	Fa0/3

Switch>show mac-address-table

Mac Address Table

Vlan	Mac Address	Type	Ports
1	0090.2108.2643	DYNAMIC	Fa0/1
1	00e0.a328.0030	DYNAMIC	Fa0/3

Switch>

Ctrl+F6 to exit CLI focus

Copy Paste

Top

Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC1	ICMP
	0.001	PC1	Switch1	ICMP
	0.002	Switch1	PC3	ICMP
	0.003	PC3	Switch1	ICMP
	0.004	Switch1	PC1	ICMP

Reset Simulation

☒ Constant Delay

Captured to: 0.004 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, Meraki, 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

Realtime

Simulation

Destination	Type	Color	Time(sec)	Periodic	Num	Edit
PC3	ICMP		0.000	N	0	(edit)

Copper Straight-Through

Toggle PDU List Window

27%

21°C

POR PTB

21:09

16/08/2021

# 2.6)

PC-PT PC1

PC-PT PC2

PC-PT PC3

PC-PT PC4

2960-24T1 Switch1

Switch1

Physical Config CLI Attributes

IOS Command Line Interface

```

Switch>show mac-address-table
Mac Address Table
-----
Vlan    Mac Address      Type      Ports
----    -
Switch>show mac-address-table
Mac Address Table
-----
Vlan    Mac Address      Type      Ports
----    -
Switch>show mac-address-table
Mac Address Table
-----
Vlan    Mac Address      Type      Ports
----    -
1       0090.2108.2543   DYNAMIC   Fa0/1
1       00e0.a328.0030   DYNAMIC   Fa0/3
Switch>enable
Switch#clear mac-address-table
Switch#show mac-address-table
Mac Address Table
-----
Vlan    Mac Address      Type      Ports
----    -
Switch#

```

Ctrl+F6 to exit CLI focus

Copy Paste

Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC1	ICMP
	0.000	--	PC2	ICMP
	0.001	PC1	Switch1	ICMP
	0.001	PC2	Switch1	ICMP
	0.002	Switch1	PC3	ICMP
	0.002	--	Switch1	ICMP
	0.003	Switch1	PC3	ICMP
	0.003	PC3	Switch1	ICMP
	0.004	PC3	Switch1	ICMP
	0.004	Switch1	PC1	ICMP
<input checked="" type="checkbox"/>	0.005	Switch1	PC2	ICMP

Reset Simulation ☒ Constant Delay Captured to: 0.005 s

Play Controls

Event List Filters - Visible Events

ACL Filter, ARP, BGP, Bluetooth, CAPWAP, ODP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, IoT, IoT TCP, LACP, LLDP, Meraki, 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

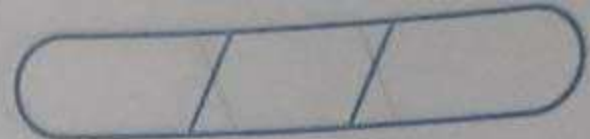
Event List Realtime Simulation

Destination	Type	Color	Time(sec)	Periodic	Num	Edit
PC3	ICMP		0.000	N	0	(edit)
PC3	ICMP		0.000	N	1	(edit)

Copper Straight-Through

Toggle PDU List Window





3.1) As tabelas já estavam preenchidas. Cada uma possuía um elemento.

3.2) Só o SWITCH 2 foi acionado. A sequência foi:

PC1 → SWITCH 1 → SWITCH 2 → PC3 → SWITCH 1 →  
PC1 ← SWITCH 1 ←

3.3) PC2 → SWITCH 1 → SWITCH 2 → PC4 → SWITCH 2 →  
PC1 ← SWITCH 1 ←

### 3.1)

Switch0

Physical Config CLI Attributes

IOS Command Line Interface

```
Switch Ports Model          SW Version  SW Image
-----
*    1 26    WS-C2960-24TT-L  15.0(2)SE4  C2960-LANBASEK9-M

Cisco IOS Software, C2960 Software (C2960-LANBASEK9-M), Version 15.0(2)SE4, RELEASE
SOFTWARE (fcl)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2013 by Cisco Systems, Inc.
Compiled Wed 26-Jun-13 02:49 by mnguyen

Press RETURN to get started!

%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up

Switch>show mac-address-table
      Mac Address Table
-----
Vlan  Mac Address      Type      Ports
----  -
1     000a.41d2.4d02    DYNAMIC   Fa0/3
Switch>
```

Ctrl+F6 to exit CLI focus

Copy Paste

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Switch1

Physical Config CLI Attributes

IOS Command Line Interface

```
Switch Ports Model          SW Version  SW Image
-----
*    1 26    WS-C2960-24TT-L  15.0(2)SE4  C2960-LANBASEK9-M

Cisco IOS Software, C2960 Software (C2960-LANBASEK9-M), Version 15.0(2)SE4, RELEASE
SOFTWARE (fcl)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2013 by Cisco Systems, Inc.
Compiled Wed 26-Jun-13 02:49 by mnguyen

Press RETURN to get started!

%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up

Switch>show mac-address-table
      Mac Address Table
-----
Vlan  Mac Address      Type      Ports
----  -
1     0030.f217.0a03    DYNAMIC   Fa0/2
Switch>
```

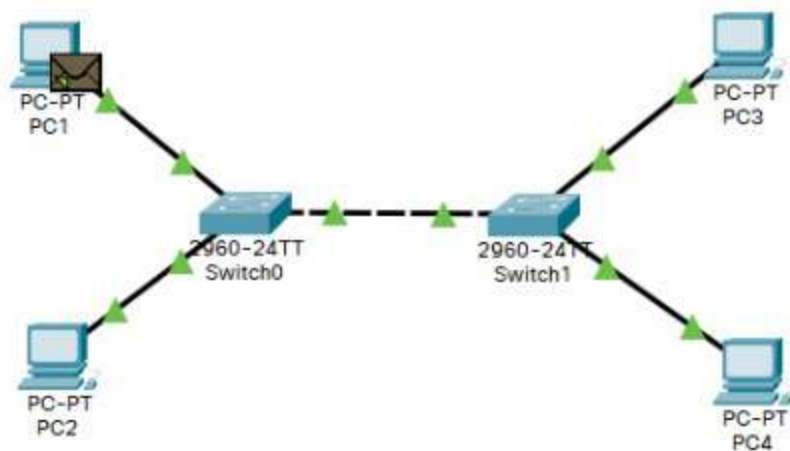
Ctrl+F6 to exit CLI focus

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Top



# 3.2)



Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC1	ICMP
	0.001	PC1	Switch0	ICMP
	0.002	Switch0	Switch1	ICMP
	0.003	Switch1	PC3	ICMP
	0.004	PC3	Switch1	ICMP
	0.005	Switch1	Switch0	ICMP
	0.006	Switch0	PC1	ICMP

Reset Simulation
☒ Constant Delay
Captured to: 0.006 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, Meraki, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoE, PTP, RADIUS, REP, RIP, RIPv6, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

Edit Filters
Show All/None

Time: 00:07:19.844 PLAY CONTROLS:



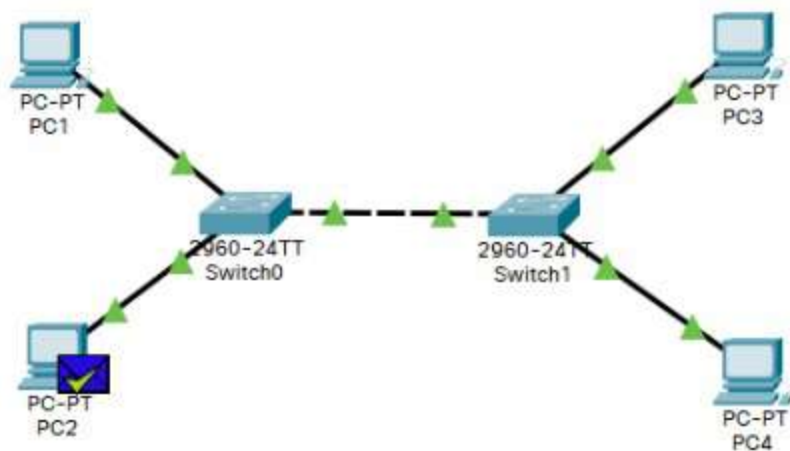
Scenario 0

New Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Successful	PC1	PC3	ICMP		0.000	N	0	(edit)

# 3.3)



## Simulation Panel

### Event List

Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC2	ICMP
	0.001	PC2	Switch0	ICMP
	0.002	Switch0	Switch1	ICMP
	0.003	Switch1	PC4	ICMP
	0.004	PC4	Switch1	ICMP
	0.005	Switch1	Switch0	ICMP
<input checked="" type="checkbox"/>	0.006	Switch0	PC2	ICMP

Reset Simulation

☒ Constant Delay

Captured to: 0.006 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, Meraki, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoE, PTP, RADIUS, REP, RIP, RIPv6, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

Edit Filters

Show All/None

Time: 00:07:39.817 **PLAY CONTROLS**

**Event List**

**Realtime**

**Simulation**

Toolbar with various network simulation tools and a search bar.

Search: Digite aqui para pesquisar

Current selection: Copper Straight-Through

Scenario 0

New Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
<input checked="" type="checkbox"/>	Successful	PC2	PC4	ICMP	Blue	0.000	N	0	(edit)



# 3.4)

Physical Config **CLI** Attributes

IOS Command Line Interface

Press RETURN to get started!

```
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up
```

Switch>show mac-address-table  
Mac Address Table

Vlan	Mac Address	Type	Ports
1	000a.41d2.4d02	DYNAMIC	Fa0/3

Switch>  
Switch>show mac-address-table  
Mac Address Table

Vlan	Mac Address	Type	Ports
1	0001.42c3.bc4c	DYNAMIC	Fa0/1
1	0001.63d2.aace	DYNAMIC	Fa0/3
1	000a.41d2.4d02	DYNAMIC	Fa0/3
1	0060.3e01.b9bc	DYNAMIC	Fa0/3
1	00d0.bc18.1c5b	DYNAMIC	Fa0/2

Switch>

Ctrl+F6 to exit CLI focus

Copy

Paste

Physical Config **CLI** Attributes

IOS Command Line Interface

Press RETURN to get started!

```
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up
```

Switch>show mac-address-table  
Mac Address Table

Vlan	Mac Address	Type	Ports
1	0030.f217.0a03	DYNAMIC	Fa0/2

Switch>  
Switch>show mac-address-table  
Mac Address Table

Vlan	Mac Address	Type	Ports
1	0001.42c3.bc4c	DYNAMIC	Fa0/2
1	0001.63d2.aace	DYNAMIC	Fa0/1
1	0030.f217.0a03	DYNAMIC	Fa0/2
1	0060.3e01.b9bc	DYNAMIC	Fa0/3
1	00d0.bc18.1c5b	DYNAMIC	Fa0/2

Switch>

Ctrl+F6 to exit CLI focus

Copy

Paste

Top



Digite aqui para pesquisar



POR  
PTB

22:44  
16/08/2021