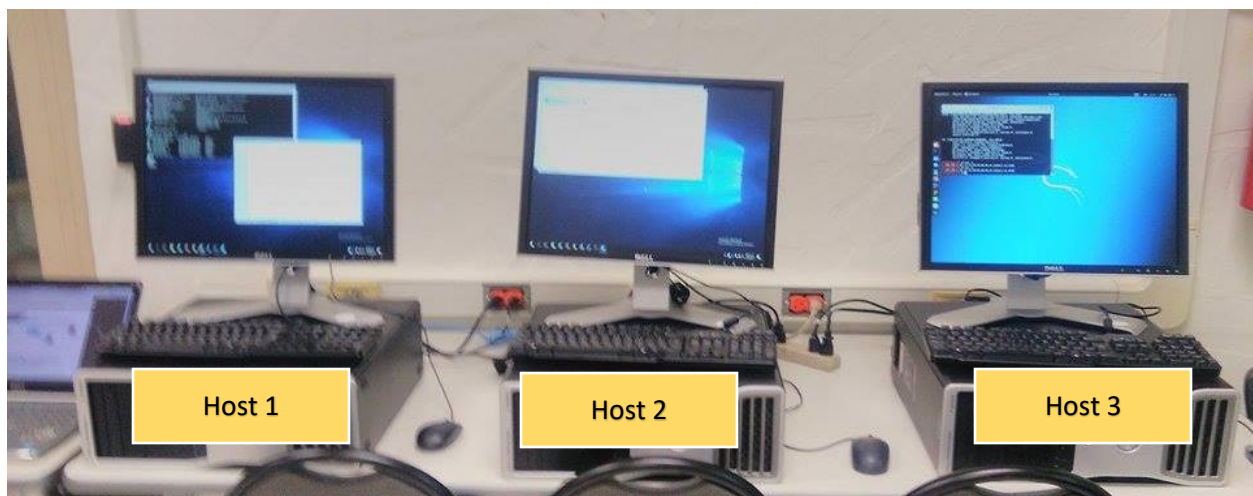
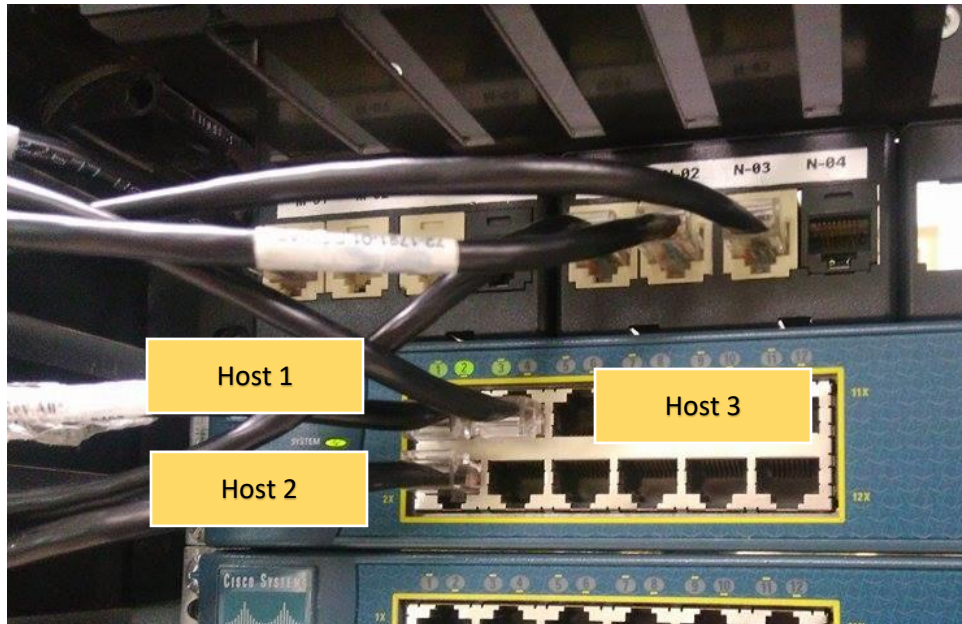


Práctica de Laboratorio #6

1. Topología armada:



2. Resultado de show ip arp inspection statistics vlan 1

```
Switch#
Switch#
Switch#
Switch#
Switch#
Switch#
Switch#
Switch#
Switch#
Switch#
Switch#
Switch#show ip arp inspection statistics vlan 1

Vlan      Forwarded      Dropped      DHCP Drops      ACL Drops
-----
1          18              3              0              3

Vlan      DHCP Permits      ACL Permits      Source MAC Failures
-----
1          0                  18              0

Vlan      Dest MAC Failures      IP Validation Failures      Invalid Protocol Data
-----
1          0                      0                          0
Switch#_
```

Connected 00:13:04 | Auto detect | 9600 8-N-1 | SCROLL | CAPS | NUM | Capture | Print echo

3. 5 casos de nping así como resultado en consola

Caso 1:

```
Applications ▾ Places ▾ Terminal ▾ Thu 18:3
root@redes-03: ~
File Edit View Search Terminal Help
SENT (1.7899s) ARP who has 192.168.1.10? Tell 192.168.1.12
SENT (2.0402s) ARP who has 192.168.1.10? Tell 192.168.1.12
SENT (2.2903s) ARP who has 192.168.1.11? Tell 192.168.1.12

Statistics for host 192.168.1.10:
| Probes Sent: 0 | Rcvd: 0 | Lost: 0 (0.00%)
| Max rtt: N/A | Min rtt: N/A | Avg rtt: N/A
Statistics for host 192.168.1.11:
| Probes Sent: 0 | Rcvd: 0 | Lost: 0 (0.00%)
| Max rtt: N/A | Min rtt: N/A | Avg rtt: N/A
Raw packets sent: 10 (420B) | Rcvd: 0 (0B) | Lost: 10 (100.00%)
Nping done: 2 IP addresses pinged in 3.33 seconds
root@redes-03:~# nping -c 5 --delay 250ms --ether-type 0x0806 --arp-type ARP --arp
-sender-ip 192.168.1.10 --arp-sender-mac bc:30:5b:d0:4e:cb 192.168.1.11

Starting Nping 0.7.50 ( https://nmap.org/nping ) at 2017-08-31 18:39 CDT
SENT (0.0358s) ARP who has 192.168.1.11? Tell 192.168.1.10
SENT (0.2859s) ARP who has 192.168.1.11? Tell 192.168.1.10
SENT (0.5359s) ARP who has 192.168.1.11? Tell 192.168.1.10
SENT (0.7863s) ARP who has 192.168.1.11? Tell 192.168.1.10
SENT (1.0363s) ARP who has 192.168.1.11? Tell 192.168.1.10

Max rtt: N/A | Min rtt: N/A | Avg rtt: N/A
Raw packets sent: 5 (210B) | Rcvd: 0 (0B) | Lost: 5 (100.00%)
Nping done: 1 IP address pinged in 2.07 seconds
root@redes-03:~#
```

```
redes - HyperTerminal
File Edit View Call Transfer Help
-----
1      0      100      0
Vlan  Dest MAC Failures  IP Validation Failures  Invalid Protocol Data
-----
1      0      0      0
Switch#
Switch#
Switch#
Switch#
Switch#show ip arp inspection statistics vlan 1
Vlan      Forwarded      Dropped      DHCP Drops      ACL Drops
-----
1      100      23      0      23
Vlan      DHCP Permits      ACL Permits      Source MAC Failures
-----
1      0      100      0
Vlan      Dest MAC Failures  IP Validation Failures  Invalid Protocol Data
-----
1      0      0      0
Switch#_
Connected 00:23:25  Auto detect  9600 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo
```

Caso 2:

```
Applications ▾  Places ▾  Terminal ▾  Thu 18:4
root@redes-03: ~
File Edit View Search Terminal Help
-sender-ip 192.168.1.10 --arp-sender-mac bc:30:5b:d0:4e:cb 192.168.1.11

Starting Nping 0.7.50 ( https://nmap.org/nping ) at 2017-08-31 18:39 CDT
SENT (0.0358s) ARP who has 192.168.1.11? Tell 192.168.1.10
SENT (0.2859s) ARP who has 192.168.1.11? Tell 192.168.1.10
SENT (0.5359s) ARP who has 192.168.1.11? Tell 192.168.1.10
SENT (0.7863s) ARP who has 192.168.1.11? Tell 192.168.1.10
SENT (1.0363s) ARP who has 192.168.1.11? Tell 192.168.1.10

Max rtt: N/A | Min rtt: N/A | Avg rtt: N/A
Raw packets sent: 5 (210B) | Rcvd: 0 (0B) | Lost: 5 (100.00%)
Nping done: 1 IP address pinged in 2.07 seconds
root@redes-03:~# nping -c 5 --delay 250ms --ether-type 0x0806 --arp-type ARP --arp
--sender-mac bc:30:5b:e5:09:1b --source-mac bc:30:5b:d0:4e:cb 192.168.1.11

Starting Nping 0.7.50 ( https://nmap.org/nping ) at 2017-08-31 18:43 CDT
SENT (0.0391s) ARP who has 192.168.1.11? Tell 192.168.1.12
SENT (0.2892s) ARP who has 192.168.1.11? Tell 192.168.1.12
SENT (0.5393s) ARP who has 192.168.1.11? Tell 192.168.1.12
SENT (0.7893s) ARP who has 192.168.1.11? Tell 192.168.1.12
SENT (1.0396s) ARP who has 192.168.1.11? Tell 192.168.1.12

Max rtt: N/A | Min rtt: N/A | Avg rtt: N/A
Raw packets sent: 5 (210B) | Rcvd: 0 (0B) | Lost: 5 (100.00%)
Nping done: 1 IP address pinged in 2.07 seconds
root@redes-03:~#
```

```
redes - HyperTerminal
File Edit View Call Transfer Help
-----
1          113          33          0          33
Vlan  DHCP Permits  ACL Permits  Source MAC Failures
1          0          113          0
Vlan  Dest MAC Failures  IP Validation Failures  Invalid Protocol Data
1          0          0          0
Switch#show ip arp inspection statistics vlan 1
Vlan  Forwarded  Dropped  DHCP Drops  ACL Drops
1          125          38          0          38
Vlan  DHCP Permits  ACL Permits  Source MAC Failures
1          0          125          0
Vlan  Dest MAC Failures  IP Validation Failures  Invalid Protocol Data
1          0          0          0
Switch#_
Connected 00:28:59  Auto detect  9600 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo
```

Caso 3:

```
Applications ▾  Places ▾  Terminal ▾  Thu 18:50
root@redes-03: ~
File Edit View Search Terminal Help
root@redes-03:~# nping -c 5 --delay 250ms --ether-type 0x0806 --arp-type ARP --arp
-sender-mac bc:30:5b:e5:09:1b --source-mac bc:30:5b:d0:4e:cb 192.168.1.11

Starting Nping 0.7.50 ( https://nmap.org/nping ) at 2017-08-31 18:43 CDT
SENT (0.0391s) ARP who has 192.168.1.11? Tell 192.168.1.12
SENT (0.2892s) ARP who has 192.168.1.11? Tell 192.168.1.12
SENT (0.5393s) ARP who has 192.168.1.11? Tell 192.168.1.12
SENT (0.7893s) ARP who has 192.168.1.11? Tell 192.168.1.12
SENT (1.0396s) ARP who has 192.168.1.11? Tell 192.168.1.12

Max rtt: N/A | Min rtt: N/A | Avg rtt: N/A
Raw packets sent: 5 (210B) | Rcvd: 0 (0B) | Lost: 5 (100.00%)
Nping done: 1 IP address pinged in 2.07 seconds
root@redes-03:~# nping -c 5 --delay 250ms --ether-type 0x0806 --arp-type ARP --arp
-sender-mac bc:30:5b:e5:09:1b --source-mac bc:30:5b:e5:09:1b 192.168.1.11

Starting Nping 0.7.50 ( https://nmap.org/nping ) at 2017-08-31 18:45 CDT
SENT (0.0473s) ARP who has 192.168.1.11? Tell 192.168.1.12
SENT (0.2974s) ARP who has 192.168.1.11? Tell 192.168.1.12
SENT (0.5474s) ARP who has 192.168.1.11? Tell 192.168.1.12
SENT (0.7978s) ARP who has 192.168.1.11? Tell 192.168.1.12
SENT (1.0479s) ARP who has 192.168.1.11? Tell 192.168.1.12

Max rtt: N/A | Min rtt: N/A | Avg rtt: N/A
Raw packets sent: 5 (210B) | Rcvd: 0 (0B) | Lost: 5 (100.00%)
Nping done: 1 IP address pinged in 2.08 seconds
```



```
redes - HyperTerminal
File Edit View Call Transfer Help
-----
1      125      38      0      38
Vlan  DHCP Permits  ACL Permits  Source MAC Failures
1      0      125      0
Vlan  Dest MAC Failures  IP Validation Failures  Invalid Protocol Data
1      0      0      0
Switch#show ip arp inspection statistics vlan 1
Vlan  Forwarded  Dropped  DHCP Drops  ACL Drops
1      128      43      0      43
Vlan  DHCP Permits  ACL Permits  Source MAC Failures
1      0      128      0
Vlan  Dest MAC Failures  IP Validation Failures  Invalid Protocol Data
1      0      0      0
Switch#_
Connected 00:30:45  Auto detect  9600 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo
```

Caso 4:

```
Applications ▾ Places ▾ Terminal ▾ Thu 18:4
root@redes-03: ~
File Edit View Search Terminal Help
SENT (0.7978s) ARP who has 192.168.1.11? Tell 192.168.1.12
SENT (1.0479s) ARP who has 192.168.1.11? Tell 192.168.1.12

Max rtt: N/A | Min rtt: N/A | Avg rtt: N/A
Raw packets sent: 5 (210B) | Rcvd: 0 (0B) | Lost: 5 (100.00%)
Nping done: 1 IP address pinged in 2.08 seconds
root@redes-03:~# nping -c 5 --delay 250ms --ether-type 0x0806 --arp-type ARP --arp
-sender-mac bc:30:5b:e5:09:16 --source-mac bc:30:5b:e5:09:16 192.168.1.11

Starting Nping 0.7.50 ( https://nmap.org/nping ) at 2017-08-31 18:47 CDT
SENT (0.0391s) ARP who has 192.168.1.11? Tell 192.168.1.12
RCVD (0.2254s) ARP reply 192.168.1.11 is at BC:30:5B:E5:09:1B
SENT (0.2892s) ARP who has 192.168.1.11? Tell 192.168.1.12
RCVD (0.4294s) ARP reply 192.168.1.11 is at BC:30:5B:E5:09:1B
SENT (0.5393s) ARP who has 192.168.1.11? Tell 192.168.1.12
RCVD (0.6334s) ARP reply 192.168.1.11 is at BC:30:5B:E5:09:1B
SENT (0.7893s) ARP who has 192.168.1.11? Tell 192.168.1.12
RCVD (0.8374s) ARP reply 192.168.1.11 is at BC:30:5B:E5:09:1B
SENT (1.0397s) ARP who has 192.168.1.11? Tell 192.168.1.12
RCVD (1.0414s) ARP reply 192.168.1.11 is at BC:30:5B:E5:09:1B

Max rtt: N/A | Min rtt: N/A | Avg rtt: N/A
Raw packets sent: 5 (210B) | Rcvd: 5 (250B) | Lost: 0 (0.00%)
Nping done: 1 IP address pinged in 1.07 seconds
root@redes-03:~#
root@redes-03:~#
root@redes-03:~#
```

```

redes - HyperTerminal
File Edit View Call Transfer Help
-----
1      128      43      0      43
Vlan  DHCP Permits  ACL Permits  Source MAC Failures
-----
1      0      128      0
Vlan  Dest MAC Failures  IP Validation Failures  Invalid Protocol Data
-----
1      0      0      0
Switch#show ip arp inspection statistics vlan 1
Vlan  Forwarded  Dropped  DHCP Drops  ACL Drops
-----
1      141      43      0      43
Vlan  DHCP Permits  ACL Permits  Source MAC Failures
-----
1      0      141      0
Vlan  Dest MAC Failures  IP Validation Failures  Invalid Protocol Data
-----
1      0      0      0
Switch#_
Connected 00:32:48  Auto detect  9600 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo

```

Caso 5:

```

Applications ▾ Places ▾ Terminal ▾ Thu 18:5
root@redes-03: ~
File Edit View Search Terminal Help
RCVD (0.6334s) ARP reply 192.168.1.11 is at BC:30:5B:E5:09:1B
SENT (0.7893s) ARP who has 192.168.1.11? Tell 192.168.1.12
RCVD (0.8374s) ARP reply 192.168.1.11 is at BC:30:5B:E5:09:1B
SENT (1.0397s) ARP who has 192.168.1.11? Tell 192.168.1.12
RCVD (1.0414s) ARP reply 192.168.1.11 is at BC:30:5B:E5:09:1B

Max rtt: N/A | Min rtt: N/A | Avg rtt: N/A
Raw packets sent: 5 (210B) | Rcvd: 5 (250B) | Lost: 0 (0.00%)
Nping done: 1 IP address pinged in 1.07 seconds
root@redes-03:~#
root@redes-03:~#
root@redes-03:~#
root@redes-03:~# nping -c 5 --delay 250ms --ether-type 0x0806 --arp-type ARP --arp
-target-mac bc:30:5b:e5:09:1b --dest-mac bc:30:5b:d0:4e:cb 192.168.1.11

Starting Nping 0.7.50 ( https://nmap.org/nping ) at 2017-08-31 18:51 CDT
SENT (0.0354s) ARP who has 192.168.1.11? Tell 192.168.1.12
SENT (0.2855s) ARP who has 192.168.1.11? Tell 192.168.1.12
SENT (0.5359s) ARP who has 192.168.1.11? Tell 192.168.1.12
SENT (0.7859s) ARP who has 192.168.1.11? Tell 192.168.1.12
SENT (1.0360s) ARP who has 192.168.1.11? Tell 192.168.1.12

Max rtt: N/A | Min rtt: N/A | Avg rtt: N/A
Raw packets sent: 5 (210B) | Rcvd: 0 (0B) | Lost: 5 (100.00%)
Nping done: 1 IP address pinged in 2.07 seconds
root@redes-03:~#

```

redes - HyperTerminal

File Edit View Call Transfer Help

117343043

VlanDHCP PermitsACL PermitsSource MAC Failures

101730

VlanDest MAC FailuresIP Validation FailuresInvalid Protocol Data

10000

Switch#show ip arp inspection statistics vlan 1

VlanForwardedDroppedDHCP DropsACL Drops

117343043

VlanDHCP PermitsACL PermitsSource MAC Failures

101730

VlanDest MAC FailuresIP Validation FailuresInvalid Protocol Data

10000

Switch#_

Connected 00:37:03

Auto detect

9600 8-N-1

SCROLL

CAPS

NUM

Capture

Print echo