

# اهحال صا وة لصل ل ا تاذ DHCP ءاطخأ فاشك تسأ ىل Nexus 9000

## تا يوت حمل ل ا

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## ةمدقم ل ا

DHCP ليجرت لماعل بسانم ل ا نيوكتل ل ا نم ققحتل ل ا ءمزال ل ا تاوطخل ل ا دنتس م ل ا اذ ه فص ي  
ىل Nexus 9000.

## ةيساس أ ل ا تابل طت م ل ا

### تابل طت م ل ا

ةيل ل ا ل ا عيضاوم ل ا ب ءة فرعم ك ي دل نوكت نأ ب Cisco NXOS® ي صوت

- DHCP
- ELAM
- رزيل ل ا ناا ي ا

### ةمدخت س م ل ا تانوك م ل ا

Nexus 9000 ل ث م ءة ني عم ءزهجأ ل ا دنتس م ل ا اذ ه رصت ق ي

ةصاخ ءة ل م عم ءة ي ب ي ف ءدوچوم ل ا ءزهجأ ل ا نم دنتس م ل ا اذ ه ي ف ءدراول ا تامول عم ل ا ءاشن ا م ت  
ت ناك اذ ا. (يضا رت ف ا) حوس م م نيوكت ب دنتس م ل ا اذ ه ي ف ءمدخت س م ل ا ءزهجأ ل ا عي م ج ت اء ب  
رمأ ي أ ل ل م ت حمل ل ا ر ي ث ا ت ل ل ك م ه ف نم دك ا ت ف ، ل ي غ ش ت ل ا د ي ق ك ت ك ب ش

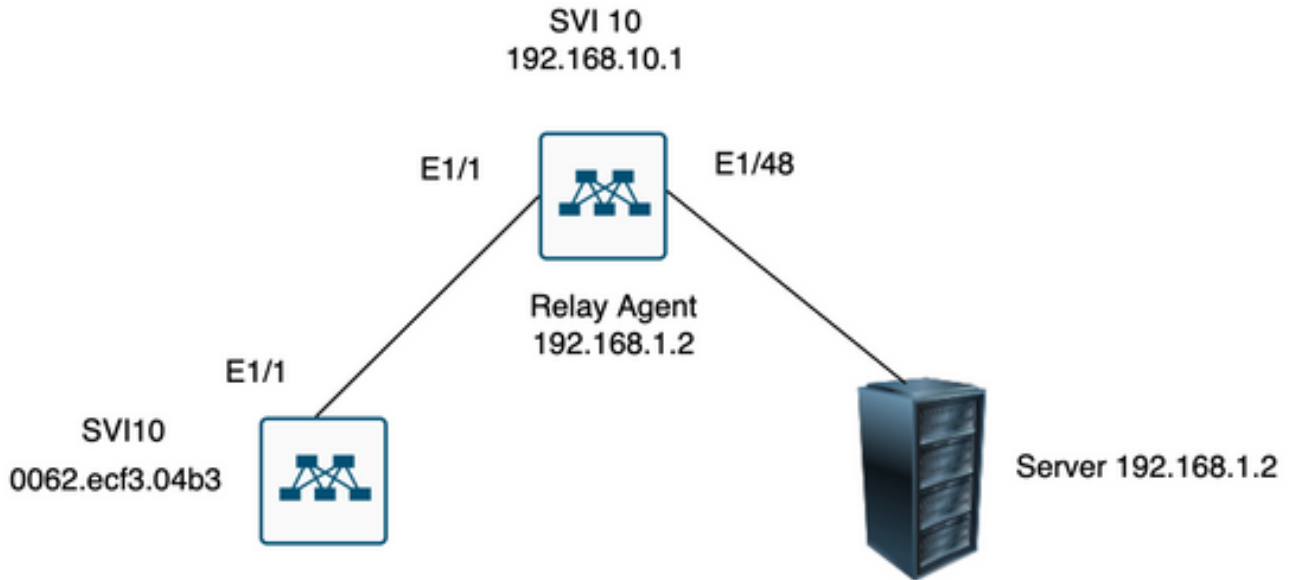
## ةيساس أ تامول عم

DHCP مزح هيجوت ءداع ا ب موق ي ي ذل ا ، DHCP ليجرت ل ي ك و ل ي غ ش ت ل زا ه ج ل ا نيوكت ك ن ك م ي  
ءك ب ش ل ا ل ا ع م داوخل ل ا و ءال م ع ل ا نو ك ي ال ام دنع ءدي ف م ءز ي م ل ا ه ذ ه نو ك ت . م داوخل ل ا و ءال م ع ل ا ني ب

ةلاس رءاشن اب نوم ووقى مث DHCP لئاسر لى حرت الءال وكو ى ق لتي . اءس فن ءى ءام ال ءى عرف ال  
DHCP ءى ءا ءو ى لء الءاسر ال ءى ءء

## طءءم ال

مءءال نم لى مء ال ى ال IP ملى سءل DHCP لى حرت ك Nexus ءال وءم لمءء



## ءءص ال نم ققءء ال

1) نا ون ع نى ى عء مءى مء (ل لى مء ال نى وكء نم ققءء ال)

```
Client# show interface vlan 10
Vlan10 is up, line protocol is up, autostate enabled
Hardware is EtherSVI, address is 0062.ecf3.04b3
MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive not supported
ARP type: ARPA
Last clearing of "show interface" counters never
L3 in Switched:
ucast: 0 pkts, 0 bytes
```

## 2) DHCP نېوكټ نم ققحت

```
Switch1# show run dhcp
```

```
ip dhcp snooping
service dhcp
ip dhcp relay
ipv6 dhcp relay

interface Vlan10
 ip dhcp relay address 192.168.1.2
 ip dhcp snooping vlan 1,10
```

## 3) مداخلاب لاصتالا نم ققحتالا

```
Switch1# ping 192.168.1.2
PING 192.168.1.2 (192.168.1.2): 56 data bytes
64 bytes from 192.168.1.2: icmp_seq=0 ttl=253 time=1.678 ms
64 bytes from 192.168.1.2: icmp_seq=1 ttl=253 time=1.329 ms
64 bytes from 192.168.1.2: icmp_seq=2 ttl=253 time=1.742 ms
64 bytes from 192.168.1.2: icmp_seq=3 ttl=253 time=1.382 ms
64 bytes from 192.168.1.2: icmp_seq=4 ttl=253 time=1.241 ms
--- 192.168.1.2 ping statistics ---
5 packets transmitted, 5 packets received, 0.00% packet loss
round-trip min/avg/max = 1.241/1.474/1.742 ms
Switch1#
```

```
Switch1# show ip route 192.168.1.2
IP Route Table for VRF "default"
'*' denotes best ucast next-hop
 '**' denotes best mcast next-hop
 '[x/y]' denotes [preference/metric]
 '%<string>' in via output denotes VRF <string>
192.168.1.2/32, ubest/mbest: 1/0, attached
 *via 192.168.1.2, Eth1/48, [250/0], 02:13:58, am
Switch1#
```

## 4) لاسرا نم چودزمالا ققحتالا DHCP لوکوتورب تايئاصح| ي ف رظنلل مامالا للاقنا

ححص لكشب تامولعملال

```
Switch1# show ip dhcp relay statistics interface vlan 10
```

```
-----
Message Type Rx Tx Drops
-----
```

```
Discover 1 1 0
```

```
Offer 1 1 0
Request(*) 1 1 0
Ack 1 1 0
Release(*) 0 0 0
Decline 0 0 0
Inform(*) 0 0 0
Nack 0 0 0
```

```
-----
Total 4 4 0
-----
```

```
DHCP server stats:
```

```
-----
Server Vrf Request Response
-----
```

```
192.168.1.2 2 2
-----
```

```
DHCP L3 FWD:
```

```
Total Packets Received : 0
Total Packets Forwarded : 0
Total Packets Dropped : 0
```

```
Non DHCP:
```

```
Total Packets Received : 0
Total Packets Forwarded : 0
Total Packets Dropped : 0
```

```
DROP:
```

```
DHCP Relay not enabled : 0
Invalid DHCP message type : 0
Interface error : 0
Tx failure towards server : 0
Tx failure towards client : 0
Unknown output interface : 0
Unknown vrf or interface for server : 0
Max hops exceeded : 0
Option 82 validation failed : 0
Packet Malformed : 0
DHCP Request dropped on MCT : 0
```

```
Relay Trusted port not configured : 0
* - These counters show correct value when switch
receives DHCP request packet with destination ip as broadcast
address. If request is unicast it is being HW switched
Switch1#
```

```
Switch1# show ip dhcp global statistics
```

```
Packets processed 130
Packets received through cfsoe 0
Packets forwarded 24
Packets forwarded on cfsoe 0
Total packets dropped 106
Packets dropped from untrusted ports 0
Packets dropped due to MAC address check failure 0
Packets dropped due to Option 82 insertion failure 0
Packets dropped due to o/p intf unknown 0
Packets dropped which were unknown 0
Packets dropped due to no trusted ports 106
Packets dropped due to dhcp relay not enabled 0
Packets dropped due to no binding entry 0
Packets dropped due to interface error/no interface 0
Packets dropped due to max hops exceeded 0
Packets dropped due to Queue full 0
Switch1#
```

# اه حال صا و عا ط خ ا ل فاش ك ت سا

1) رز ل ل ا ن ا ث ي ا ل ا ل ي غ ش ت ق ي ر ط ن ع ت ا ع ا ص ح ا ل ا ع ح ص ن م د ك ا ت

```
Switch1# ethanalyzer local interface inband display-filter bootp limit-captured-frames 0  
Capturing on inband
```

```
2023-07-18 21:30:01.935789 0.0.0.0 -> 255.255.255.255 DHCP DHCP Discover - Transaction ID 0x64b6400b  
2023-07-18 21:30:01.937789 192.168.10.1 -> 192.168.1.2 DHCP DHCP Discover - Transaction ID 0x64b6400b  
2023-07-18 21:30:03.938596 192.168.1.2 -> 192.168.10.1 DHCP DHCP Offer - Transaction ID 0x64b6400b  
2023-07-18 21:30:03.938659 192.168.1.2 -> 192.168.10.1 DHCP DHCP Offer - Transaction ID 0x64b6400b  
2023-07-18 21:30:03.940103 192.168.10.1 -> 255.255.255.255 DHCP DHCP Offer - Transaction ID 0x64b6400b  
2023-07-18 21:30:07.939208 0.0.0.0 -> 255.255.255.255 DHCP DHCP Request - Transaction ID 0x64b6400b  
2023-07-18 21:30:07.941220 192.168.10.1 -> 192.168.1.2 DHCP DHCP Request - Transaction ID 0x64b6400b  
2023-07-18 21:30:07.941848 192.168.1.2 -> 192.168.10.1 DHCP DHCP ACK - Transaction ID 0x64b6400b  
2023-07-18 21:30:07.941897 192.168.1.2 -> 192.168.10.1 DHCP DHCP ACK - Transaction ID 0x64b6400b  
2023-07-18 21:30:07.942693 192.168.10.1 -> 255.255.255.255 DHCP DHCP ACK - Transaction ID 0x64b6400b
```

2) س و و ر ك ل ذ ي ف ا م ب ة ي ف ا ض ا ت ا م و ل ع م ر ف و ي ي ذ ل ا ل ي ص ا ف ت ل ا ر ا ي خ ي ل ع ر ز ل ل ا ن ا ث ي ا ل ا ل ي و ت ح ي  
ا ه ا ط ا ق ت ل ا م ت ي ت ل ر و ر م ل ا ة ك ح

```
ethanalyzer local interface inband display-filter "((eth.addr==<MAC_address> and bootp ))" limit-captured-frames 1
```

3) ل ي ص ا ف ت ل ا ن م د ي ز م ر ي ف و ت ي ل ا ر ز ل ل ا ن ا ث ي ا ل ا ط ا ق ت ل ا ي ف ل ي ص ا ف ت ل ا ة م ا ل ع ة ف ا ض ا ي د و ت  
م د ا خ ل ا و ل ي م ع ل ن ي ب ل ا ص ت ا ل ل و ح

ث ب ك ل ي م ع ل ن م DHCP ف ا ش ت ك ل ي ح ر ت ل ل ي ك و م ل ت س ي [1]:  
MAC ل ي م ع و ه MAC: 00:62:ec:f3:04:b3  
MAC ا ه ا ث ب م ت ي ة ه ج و ل MAC: ff:ff:ff:ff:ff:ff  
IP ر د ص م ل ا ن ا ف ، د ع ب IP ن ا و ن ع ه ي د ل س ي ل ل ي م ع ل ن ا م ب  
IP ر د ص م ل ا : 0.0.0.0  
IP ة ه ج و ل : 255.255.255.255  
ر د ص م ل ا ذ ف ن م : bootpc (68)  
ة ه ج و ل ا ذ ف ن م : bootps (67)  
(1) د ي ه م ت ل ل ب ل ط : ة ل ا س ر ل ا ع و ن  
DHCP ف ا ش ت ك = DHCP ة ل ا س ر ع و ن

```
Frame 14 (358 bytes on wire, 358 bytes captured)  
Arrival Time: Jul 19, 2023 21:53:29.339064000  
[Time delta from previous captured frame: 0.096490000 seconds]  
[Time delta from previous displayed frame: 2.618117000 seconds]
```

```
[Time since reference or first frame: 2.618117000 seconds]
Frame Number: 14
Frame Length: 358 bytes
Capture Length: 358 bytes
[Frame is marked: False]
[Protocols in frame: eth:vlan:ip:udp:bootp]
Ethernet II, Src: 00:62:ec:f3:04:b3 (00:62:ec:f3:04:b3), Dst: ff:ff:ff:ff:ff:ff (ff:ff:ff:ff:ff:ff)
Destination: ff:ff:ff:ff:ff:ff (ff:ff:ff:ff:ff:ff)
Address: ff:ff:ff:ff:ff:ff (ff:ff:ff:ff:ff:ff)
.... 1 ..... = IG bit: Group address (multicast/broadcast)
.... 1. .... = LG bit: Locally administered address (this is NOT the factory default)
Source: 00:62:ec:f3:04:b3 (00:62:ec:f3:04:b3)
Address: 00:62:ec:f3:04:b3 (00:62:ec:f3:04:b3)
.... 0 ..... = IG bit: Individual address (unicast)
.... 0. .... = LG bit: Globally unique address (factory default)
Type: 802.1Q Virtual LAN (0x8100)
802.1Q Virtual LAN, PRI: 0, CFI: 0, ID: 10
000. .... = Priority: 0
...0 .... = CFI: 0
.... 0000 0000 1010 = ID: 10
Type: IP (0x0800)
Internet Protocol, Src: 0.0.0.0 (0.0.0.0), Dst: 255.255.255.255 (255.255.255.255)
Version: 4
Header length: 20 bytes
Differentiated Services Field: 0x00 (DSCP 0x00: Default; ECN: 0x00)
0000 00.. = Differentiated Services Codepoint: Default (0x00)
.... 0. = ECN-Capable Transport (ECT): 0
.... 0. = ECN-CE: 0
Total Length: 340
Identification: 0x0000 (0)
Flags: 0x00
0.. = Reserved bit: Not Set
.0. = Do not fragment: Not Set
..0 = More fragments: Not Set
Fragment offset: 0
Time to live: 255
Protocol: UDP (0x11)
Header checksum: 0xba99 [correct]
[Good: True]
[Bad : False]
Source: 0.0.0.0 (0.0.0.0)
Destination: 255.255.255.255 (255.255.255.255)
User Datagram Protocol, Src Port: bootpc (68), Dst Port: bootps (67)
Source port: bootpc (68)
Destination port: bootps (67)
Length: 320
Checksum: 0x2bbb [validation disabled]
[Good Checksum: False]
[Bad Checksum: False]
Bootstrap Protocol
Message type: Boot Request (1)
Hardware type: Ethernet
Hardware address length: 6
Hops: 0
Transaction ID: 0x64b14fa7
Seconds elapsed: 0
Bootp flags: 0x8000 (Broadcast)
1... .... = Broadcast flag: Broadcast
.000 0000 0000 0000 = Reserved flags: 0x0000
Client IP address: 0.0.0.0 (0.0.0.0)
Your (client) IP address: 0.0.0.0 (0.0.0.0)
Next server IP address: 0.0.0.0 (0.0.0.0)
```

Relay agent IP address: 0.0.0.0 (0.0.0.0)  
Client MAC address: 00:62:ec:f3:04:b3 (00:62:ec:f3:04:b3)  
Client hardware address padding: 00000000000000000000  
Server host name not given  
Boot file name not given  
Magic cookie: (OK)  
Option: (t=53,l=1) DHCP Message Type = DHCP Discover  
Option: (53) DHCP Message Type  
Length: 1  
Value: 01  
Option: (t=61,l=18) Client identifier  
Option: (61) Client identifier  
Length: 18  
Value: 0046444F3230323431435548566C616E3130  
Option: (t=51,l=4) IP Address Lease Time = 2 hours  
Option: (51) IP Address Lease Time  
Length: 4  
Value: 00001C20  
Option: (t=60,l=19) Vendor class identifier = "Cisco NXOS® N9K-C9372PX-E"  
Option: (60) Vendor class identifier  
Length: 19  
Value: 436973636F204E394B2D433933373250582D45  
Option: (t=43,l=8) Vendor-Specific Information  
Option: (43) Vendor-Specific Information  
Length: 8  
Value: F1060062ECF304AC  
Option: (t=55,l=8) Parameter Request List  
Option: (55) Parameter Request List  
Length: 8  
Value: 010306070C424396  
1 = Subnet Mask  
3 = Router  
6 = Domain Name Server  
7 = Log Server  
12 = Host Name  
66 = TFTP Server Name  
67 = Bootfile name  
150 = TFTP server address  
End Option  
Padding  
Frame 15 (354 bytes on wire, 354 bytes captured)  
Arrival Time: Jul 19, 2023 21:53:29.340263000  
[Time delta from previous captured frame: 0.001199000 seconds]  
[Time delta from previous displayed frame: 0.001199000 seconds]  
[Time since reference or first frame: 2.619316000 seconds]  
Frame Number: 15  
Frame Length: 354 bytes  
Capture Length: 354 bytes  
[Frame is marked: False]  
[Protocols in frame: eth:ip:udp:bootp]  
Ethernet II, Src: 6c:31:0e:a3:0c:57 (6c:31:0e:a3:0c:57), Dst: c4:c6:03:09:cf:47 (c4:c6:03:09:cf:47)  
Destination: c4:c6:03:09:cf:47 (c4:c6:03:09:cf:47)  
Address: c4:c6:03:09:cf:47 (c4:c6:03:09:cf:47)  
.... 0 .... = IG bit: Individual address (unicast)  
.... 0. .... = LG bit: Globally unique address (factory default)  
Source: 6c:31:0e:a3:0c:57 (6c:31:0e:a3:0c:57)  
Address: 6c:31:0e:a3:0c:57 (6c:31:0e:a3:0c:57)  
.... 0 .... = IG bit: Individual address (unicast)  
.... 0. .... = LG bit: Globally unique address (factory default)  
Type: IP (0x0800)

مداخل إلى إي داح أ ل ث ب ل م ادخ ت س اب ف اش ت ك ل ل ي ح ر ت ل ل ي ك و ل س ر ي [2]

Mac ر د ص م ل م nexus Mac: 6c:31:0e:a3:0c:57

و ه ك ام ل د ان DHCP و ه ك ام ة ي ا غ c4:c6:03:09:cf:47

Nexus IP ل ع SVI10:192.168.10.1 و ه ر د ص م ل م IP

و ه ل د ان DHCP و ه IP ة و ل و ل 192.168.1.2

bootps (67) ر د ص م ل م ذ ف ن م

bootps (67) ة و ل و ل ذ ف ن م

س أ ر ل ع ه ن ي م ص ت م ت ي <<<<<</client MAC ل ي م ع ل اب ص ا خ ل ل MAC ن ا و ن ع

UDP/DHCP

(1) د ي ه م ت ل ل ب ل ط : ة ل س ر ل ا ع و ن

DHCP = ف اش ت ك ل ل DHCP ة ل س ر ر ع و ن

Frame 15 (354 bytes on wire, 354 bytes captured)

Arrival Time: Jul 19, 2023 21:53:29.340263000

[Time delta from previous captured frame: 0.001199000 seconds]

[Time delta from previous displayed frame: 0.001199000 seconds]

[Time since reference or first frame: 2.619316000 seconds]

Frame Number: 15

Frame Length: 354 bytes

Capture Length: 354 bytes

[Frame is marked: False]

[Protocols in frame: eth:ip:udp:bootp]

Ethernet II, Src: 6c:31:0e:a3:0c:57 (6c:31:0e:a3:0c:57), Dst: c4:c6:03:09:cf:47 (c4:c6:03:09:cf:47)

Destination: c4:c6:03:09:cf:47 (c4:c6:03:09:cf:47)

Address: c4:c6:03:09:cf:47 (c4:c6:03:09:cf:47)

.... 0 = IG bit: Individual address (unicast)

... 0. = LG bit: Globally unique address (factory default)

Source: 6c:31:0e:a3:0c:57 (6c:31:0e:a3:0c:57)

Address: 6c:31:0e:a3:0c:57 (6c:31:0e:a3:0c:57)

.... 0 = IG bit: Individual address (unicast)

... 0. = LG bit: Globally unique address (factory default)

Type: IP (0x0800)

Internet Protocol, Src: 192.168.10.1 (192.168.10.1), Dst: 192.168.1.2 (192.168.1.2)

Version: 4

Header length: 20 bytes

Differentiated Services Field: 0x00 (DSCP 0x00: Default; ECN: 0x00)

0000 00.. = Differentiated Services Codepoint: Default (0x00)

... 0. = ECN-Capable Transport (ECT): 0

... 0 = ECN-CE: 0

Total Length: 340

Identification: 0xefab (61355)

Flags: 0x00

0.. = Reserved bit: Not Set

.0. = Do not fragment: Not Set

..0 = More fragments: Not Set

Fragment offset: 0

Time to live: 255

Protocol: UDP (0x11)

Header checksum: 0x3e99 [correct]

[Good: True]

[Bad: False]

Source: 192.168.10.1 (192.168.10.1)

Destination: 192.168.1.2 (192.168.1.2)

User Datagram Protocol, Src Port: bootps (67), Dst Port: bootps (67)

Source port: bootps (67)

Destination port: bootps (67)



Length: 320  
Checksum: 0xd4bc [validation disabled]  
[Good Checksum: False]  
[Bad Checksum: False]  
Bootstrap Protocol  
Message type: Boot Request (1)  
Hardware type: Ethernet  
Hardware address length: 6  
Hops: 1  
Transaction ID: 0x64b14fa7  
Seconds elapsed: 0  
Bootp flags: 0x8000 (Broadcast)  
1... .... = Broadcast flag: Broadcast  
.000 0000 0000 0000 = Reserved flags: 0x0000  
Client IP address: 0.0.0.0 (0.0.0.0)  
Your (client) IP address: 0.0.0.0 (0.0.0.0)  
Next server IP address: 0.0.0.0 (0.0.0.0)  
Relay agent IP address: 192.168.10.1 (192.168.10.1)  
Client MAC address: 00:62:ec:f3:04:b3 (00:62:ec:f3:04:b3)  
Client hardware address padding: 00000000000000000000  
Server host name not given  
Boot file name not given  
Magic cookie: (OK)  
Option: (t=53,l=1) DHCP Message Type = DHCP Discover  
Option: (53) DHCP Message Type  
Length: 1  
Value: 01  
Option: (t=61,l=18) Client identifier  
Option: (61) Client identifier  
Length: 18  
Value: 0046444F3230323431435548566C616E3130  
Option: (t=51,l=4) IP Address Lease Time = 2 hours  
Option: (51) IP Address Lease Time  
Length: 4  
Value: 00001C20  
Option: (t=60,l=19) Vendor class identifier = "Cisco NXOS® N9K-C9372PX-E"  
Option: (60) Vendor class identifier  
Length: 19  
Value: 436973636F204E394B2D433933373250582D45  
Option: (t=43,l=8) Vendor-Specific Information  
Option: (43) Vendor-Specific Information  
Length: 8  
Value: F1060062ECF304AC  
Option: (t=55,l=8) Parameter Request List  
Option: (55) Parameter Request List  
Length: 8  
Value: 010306070C424396  
1 = Subnet Mask  
3 = Router  
6 = Domain Name Server  
7 = Log Server  
12 = Host Name  
66 = TFTP Server Name  
67 = Bootfile name  
150 = TFTP server address  
End Option  
Padding

لجھرت لال لېك وى لى لى داخالا ثب لال ضرع لى لى داخالا درى [3]  
كام ل دان DHCP وه MAC ردمم c4:c6:03:09:cf:47  
Nexus MAC: 6c:31:0e:a3:0c:57 وه ه جوالا MAC

DHCP: 192.168.1.2 مداخله و ip ردصم  
Nexus IP 192.168.10.1 SVI10: ىلج  
bootps (67) ردصم ال ذفنم  
bootps (67) ةهولال ذفنم  
(2) ديهم تلل ىلج درلا: ةلاس رللا عون  
هذه ضرع ال ةمزح نمضتت <<<< (192.168.10.19) (192.168.10.19): ك ب صاخ ال ال IP ناو نع  
للم عملل هني ي عت متي س ي ذل ال ال IP ناو نع  
للم عمل ال نم MAC ناو نع <<< (00:62:ec:f3:04:b3) (00:62:ec:f3:04:b3): ل للم عمل ال ال MAC ناو نع  
DHCP = ضرع DHCP ةلاس رر عون

```
Frame 27 (348 bytes on wire, 348 bytes captured)
Arrival Time: Jul 19, 2023 21:53:31.340920000
[Time delta from previous captured frame: 0.097549000 seconds]
[Time delta from previous displayed frame: 2.000657000 seconds]
[Time since reference or first frame: 4.619973000 seconds]
Frame Number: 27
Frame Length: 348 bytes
Capture Length: 348 bytes
[Frame is marked: False]
[Protocols in frame: eth:ip:udp:bootp]
Ethernet II, Src: c4:c6:03:09:cf:47 (c4:c6:03:09:cf:47), Dst: 6c:31:0e:a3:0c:57 (6c:31:0e:a3:0c:57)
Destination: 6c:31:0e:a3:0c:57 (6c:31:0e:a3:0c:57)
Address: 6c:31:0e:a3:0c:57 (6c:31:0e:a3:0c:57)
.... 0 = IG bit: Individual address (unicast)
.... 0. = LG bit: Globally unique address (factory default)
Source: c4:c6:03:09:cf:47 (c4:c6:03:09:cf:47)
Address: c4:c6:03:09:cf:47 (c4:c6:03:09:cf:47)
.... 0 = IG bit: Individual address (unicast)
.... 0. = LG bit: Globally unique address (factory default)
Type: IP (0x0800)
Internet Protocol, Src: 192.168.1.2 (192.168.1.2), Dst: 192.168.10.1 (192.168.10.1)
Version: 4
Header length: 20 bytes
Differentiated Services Field: 0x00 (DSCP 0x00: Default; ECN: 0x00)
0000 00.. = Differentiated Services Codepoint: Default (0x00)
.... 0. = ECN-Capable Transport (ECT): 0
.... 0 = ECN-CE: 0
Total Length: 334
Identification: 0x0014 (20)
Flags: 0x00
0.. = Reserved bit: Not Set
.0. = Do not fragment: Not Set
..0 = More fragments: Not Set
Fragment offset: 0
Time to live: 254
Protocol: UDP (0x11)
Header checksum: 0x2f37 [correct]
[Good: True]
[Bad : False]
Source: 192.168.1.2 (192.168.1.2)
Destination: 192.168.10.1 (192.168.10.1)
User Datagram Protocol, Src Port: bootps (67), Dst Port: bootps (67)
Source port: bootps (67)
Destination port: bootps (67)
Length: 314
Checksum: 0x0500 [validation disabled]
[Good Checksum: False]
[Bad Checksum: False]
Bootstrap Protocol
```

Message type: Boot Reply (2)  
Hardware type: Ethernet  
Hardware address length: 6  
Hops: 0  
Transaction ID: 0x64b14fa7  
Seconds elapsed: 0  
Bootp flags: 0x8000 (Broadcast)  
1... .. = Broadcast flag: Broadcast  
.000 0000 0000 0000 = Reserved flags: 0x0000  
Client IP address: 0.0.0.0 (0.0.0.0)  
Your (client) IP address: 192.168.10.19 (192.168.10.19)  
Next server IP address: 0.0.0.0 (0.0.0.0)  
Relay agent IP address: 192.168.10.1 (192.168.10.1)  
Client MAC address: 00:62:ec:f3:04:b3 (00:62:ec:f3:04:b3)  
Client hardware address padding: 00000000000000000000  
Server host name not given  
Boot file name not given  
Magic cookie: (OK)  
Option: (t=53,l=1) DHCP Message Type = DHCP Offer  
Option: (53) DHCP Message Type  
Length: 1  
Value: 02  
Option: (t=61,l=18) Client identifier  
Option: (61) Client identifier  
Length: 18  
Value: 0046444F3230323431435548566C616E3130  
Option: (t=54,l=4) DHCP Server Identifier = 192.168.1.2  
Option: (54) DHCP Server Identifier  
Length: 4  
Value: C0A80102  
Option: (t=51,l=4) IP Address Lease Time = 1 day  
Option: (51) IP Address Lease Time  
Length: 4  
Value: 00015180  
Option: (t=58,l=4) Renewal Time Value = 12 hours  
Option: (58) Renewal Time Value  
Length: 4  
Value: 0000A8C0  
Option: (t=59,l=4) Rebinding Time Value = 21 hours  
Option: (59) Rebinding Time Value  
Length: 4  
Value: 00012750  
Option: (t=1,l=4) Subnet Mask = 255.255.255.0  
Option: (1) Subnet Mask  
Length: 4  
Value: FFFFFFF0  
Option: (t=3,l=4) Router = 192.168.1.2  
Option: (3) Router  
Length: 4  
Value: C0A80102  
Option: (t=6,l=4) Domain Name Server = 8.8.8.8  
Option: (6) Domain Name Server  
Length: 4  
Value: 08080808  
End Option

م ت ي و ، ث ب ل ا م اد خ ت س ا ب DHCP م دا خ ن م DHCP ض ر ع ه ي ج و ت ة د ا ع ا ب ل ي ح ر ت ل ل ل ي ك و م و ق ي [4]  
ي ل ل ا ل ا ب و ، ل ي م ل ل MAC ن م ض ت ت ا ه ن ك ل و ، ة ي ع ر ف ل ل ة ك ب ش ل ل ة ط س ا و ب ه ذ ه ث ب ل ا م ز ح ي ق ل ت  
ة م ز ح ل ل ا م م ط ق ف MAC ك ل م م و ق ي .

Mac ردصم ل Nexus Mac: 6c:31:0e:a3:0c:57  
MAC تهجول ا اهثب متي ةهجول ا : ff:ff:ff:ff:ff:ff  
Nexus IP لى SVI10:192.168.10.1 وه ردصم ل IP  
اناون ع ثب IP ةياغ : 255.255.255.255  
ردصم ل ذفنم : bootps (67)  
ةهجول ا ذفنم : bootpc (68)  
(2) ديهم تل لى ل ع درل ا : ةل اسرر ل ع ون  
ل ع ون ا ل ا ل ا ل ا ل ا ل ا : (ل ي م ع ل ا) : 192.168.10.19  
ل ع ون ا ل ا ل a : 00:62:ec:f3:04:b3  
DHCP = ل ع ون ا ل ا ل ا ل ا ل ا ل ا ل ا ل ا ل ا ل a

Frame 28 (348 bytes on wire, 348 bytes captured)  
Arrival Time: Jul 19, 2023 21:53:31.341325000  
[Time delta from previous captured frame: 0.000405000 seconds]  
[Time delta from previous displayed frame: 0.000405000 seconds]  
[Time since reference or first frame: 4.620378000 seconds]  
Frame Number: 28  
Frame Length: 348 bytes  
Capture Length: 348 bytes  
[Frame is marked: False]  
[Protocols in frame: eth:ip:udp:bootp]  
Ethernet II, Src: 6c:31:0e:a3:0c:57 (6c:31:0e:a3:0c:57), Dst: ff:ff:ff:ff:ff:ff (ff:ff:ff:ff:ff:ff)  
Destination: ff:ff:ff:ff:ff:ff (ff:ff:ff:ff:ff:ff)  
Address: ff:ff:ff:ff:ff:ff (ff:ff:ff:ff:ff:ff)  
.... ..1 .... = IG bit: Group address (multicast/broadcast)  
.... ..1. .... = LG bit: Locally administered address (this is NOT the factory default)  
Source: 6c:31:0e:a3:0c:57 (6c:31:0e:a3:0c:57)  
Address: 6c:31:0e:a3:0c:57 (6c:31:0e:a3:0c:57)  
.... ..0 .... = IG bit: Individual address (unicast)  
.... ..0. .... = LG bit: Globally unique address (factory default)  
Type: IP (0x0800)  
Internet Protocol, Src: 192.168.10.1 (192.168.10.1), Dst: 255.255.255.255 (255.255.255.255)  
Version: 4  
Header length: 20 bytes  
Differentiated Services Field: 0x00 (DSCP 0x00: Default; ECN: 0x00)  
0000 00.. = Differentiated Services Codepoint: Default (0x00)  
.... ..0. = ECN-Capable Transport (ECT): 0  
.... ...0 = ECN-CE: 0  
Total Length: 334  
Identification: 0x1400 (5120)  
Flags: 0x00  
0.. = Reserved bit: Not Set  
.0. = Do not fragment: Not Set  
..0 = More fragments: Not Set  
Fragment offset: 0  
Time to live: 255  
Protocol: UDP (0x11)  
Header checksum: 0xdbf5 [correct]  
[Good: True]  
[Bad : False]  
Source: 192.168.10.1 (192.168.10.1)  
Destination: 255.255.255.255 (255.255.255.255)  
User Datagram Protocol, Src Port: bootps (67), Dst Port: bootpc (68)  
Source port: bootps (67)  
Destination port: bootpc (68)  
Length: 314  
Checksum: 0xc6a8 [validation disabled]  
[Good Checksum: False]  
[Bad Checksum: False]

```
Bootstrap Protocol
Message type: Boot Reply (2)
Hardware type: Ethernet
Hardware address length: 6
Hops: 1
Transaction ID: 0x64b14fa7
Seconds elapsed: 0
Bootp flags: 0x8000 (Broadcast)
1... .... = Broadcast flag: Broadcast
.000 0000 0000 0000 = Reserved flags: 0x0000
Client IP address: 0.0.0.0 (0.0.0.0)
Your (client) IP address: 192.168.10.19 (192.168.10.19)
Next server IP address: 0.0.0.0 (0.0.0.0)
Relay agent IP address: 192.168.10.1 (192.168.10.1)
Client MAC address: 00:62:ec:f3:04:b3 (00:62:ec:f3:04:b3)
Client hardware address padding: 00000000000000000000
Server host name not given
Boot file name not given
Magic cookie: (OK)
Option: (t=53,l=1) DHCP Message Type = DHCP Offer
Option: (53) DHCP Message Type
Length: 1
Value: 02
Option: (t=61,l=18) Client identifier
Option: (61) Client identifier
Length: 18
Value: 0046444F3230323431435548566C616E3130
Option: (t=54,l=4) DHCP Server Identifier = 192.168.1.2
Option: (54) DHCP Server Identifier
Length: 4
Value: C0A80102
Option: (t=51,l=4) IP Address Lease Time = 1 day
Option: (51) IP Address Lease Time
Length: 4
Value: 00015180
Option: (t=58,l=4) Renewal Time Value = 12 hours
Option: (58) Renewal Time Value
Length: 4
Value: 0000A8C0
Option: (t=59,l=4) Rebinding Time Value = 21 hours
Option: (59) Rebinding Time Value
Length: 4
Value: 00012750
Option: (t=1,l=4) Subnet Mask = 255.255.255.0
Option: (1) Subnet Mask
Length: 4
Value: FFFFFFF0
Option: (t=3,l=4) Router = 192.168.1.2
Option: (3) Router
Length: 4
Value: C0A80102
Option: (t=6,l=4) Domain Name Server = 8.8.8.8
Option: (6) Domain Name Server
Length: 4
Value: 08080808
End Option
```

ثب ك يتأي و ليمع ال نم ابلط ليجرتل ل ل ك و ي قولتي [5]  
MAC ليمع و ه MAC: 00:62:ec:f3:04:b3  
MAC ه ج و ل ا: ff:ff:ff:ff:ff

0.0.0.0 لازي ال IP ردصم ال نكلو، دعب IP ناوع ليمع ال يدل دجوي ال، ةطقن ال هذه دنع

ردصم ال IP: 0.0.0.0

IP ةهوجلل: 255.255.255.255

ردصم ال ذفنم: bootpc (68)

ةهوجلل ذفنم: bootps (67)

IP 192.168.10.19 ل ليمع ال نم بلطال يه ةلاسرل ال هذه <<<< (1) دي هم تل بلط: ةلاسرل ال عون

ةطساوب هنيي عت مت يذل ال IP ناوع بلطي <<<<</client = 192.168.10.19 بولطم ال IP ناوع

مداخ DHCP

DHCP = بلط DHCP ةلاسرر عون

Frame 47 (370 bytes on wire, 370 bytes captured)

Arrival Time: Jul 19, 2023 21:53:35.342380000

[Time delta from previous captured frame: 0.097649000 seconds]

[Time delta from previous displayed frame: 4.001055000 seconds]

[Time since reference or first frame: 8.621433000 seconds]

Frame Number: 47

Frame Length: 370 bytes

Capture Length: 370 bytes

[Frame is marked: False]

[Protocols in frame: eth:vlan:ip:udp:bootp]

Ethernet II, Src: 00:62:ec:f3:04:b3 (00:62:ec:f3:04:b3), Dst: ff:ff:ff:ff:ff:ff (ff:ff:ff:ff:ff:ff)

Destination: ff:ff:ff:ff:ff:ff (ff:ff:ff:ff:ff:ff)

Address: ff:ff:ff:ff:ff:ff (ff:ff:ff:ff:ff:ff)

.... ..1 .... = IG bit: Group address (multicast/broadcast)

.... ..1. .... = LG bit: Locally administered address (this is NOT the factory default)

Source: 00:62:ec:f3:04:b3 (00:62:ec:f3:04:b3)

Address: 00:62:ec:f3:04:b3 (00:62:ec:f3:04:b3)

.... ..0 .... = IG bit: Individual address (unicast)

.... ..0. .... = LG bit: Globally unique address (factory default)

Type: 802.1Q Virtual LAN (0x8100)

802.1Q Virtual LAN, PRI: 0, CFI: 0, ID: 10

000. .... = Priority: 0

...0 .... = CFI: 0

.... 0000 0000 1010 = ID: 10

Type: IP (0x0800)

Internet Protocol, Src: 0.0.0.0 (0.0.0.0), Dst: 255.255.255.255 (255.255.255.255)

Version: 4

Header length: 20 bytes

Differentiated Services Field: 0x00 (DSCP 0x00: Default; ECN: 0x00)

0000 00.. = Differentiated Services Codepoint: Default (0x00)

.... ..0. = ECN-Capable Transport (ECT): 0

.... ...0 = ECN-CE: 0

Total Length: 352

Identification: 0x0000 (0)

Flags: 0x00

0.. = Reserved bit: Not Set

.0. = Do not fragment: Not Set

..0 = More fragments: Not Set

Fragment offset: 0

Time to live: 255

Protocol: UDP (0x11)

Header checksum: 0xba8d [correct]

[Good: True]

[Bad : False]

Source: 0.0.0.0 (0.0.0.0)

Destination: 255.255.255.255 (255.255.255.255)

User Datagram Protocol, Src Port: bootpc (68), Dst Port: bootps (67)

Source port: bootpc (68)

Destination port: bootps (67)

Length: 332  
Checksum: 0xbaae [validation disabled]  
[Good Checksum: False]  
[Bad Checksum: False]  
Bootstrap Protocol  
Message type: Boot Request (1)  
Hardware type: Ethernet  
Hardware address length: 6  
Hops: 0  
Transaction ID: 0x64b14fa7  
Seconds elapsed: 0  
Bootp flags: 0x8000 (Broadcast)  
1... .... = Broadcast flag: Broadcast  
.000 0000 0000 0000 = Reserved flags: 0x0000  
Client IP address: 0.0.0.0 (0.0.0.0)  
Your (client) IP address: 0.0.0.0 (0.0.0.0)  
Next server IP address: 0.0.0.0 (0.0.0.0)  
Relay agent IP address: 0.0.0.0 (0.0.0.0)  
Client MAC address: 00:62:ec:f3:04:b3 (00:62:ec:f3:04:b3)  
Client hardware address padding: 00000000000000000000  
Server host name not given  
Boot file name not given  
Magic cookie: (OK)  
Option: (t=53,l=1) DHCP Message Type = DHCP Request  
Option: (53) DHCP Message Type  
Length: 1  
Value: 03  
Option: (t=61,l=18) Client identifier  
Option: (61) Client identifier  
Length: 18  
Value: 0046444F3230323431435548566C616E3130  
Option: (t=50,l=4) Requested IP Address = 192.168.10.19  
Option: (50) Requested IP Address  
Length: 4  
Value: C0A80A13  
Option: (t=51,l=4) IP Address Lease Time = 2 hours  
Option: (51) IP Address Lease Time  
Length: 4  
Value: 00001C20  
Option: (t=54,l=4) DHCP Server Identifier = 192.168.1.2  
Option: (54) DHCP Server Identifier  
Length: 4  
Value: C0A80102  
Option: (t=60,l=19) Vendor class identifier = "Cisco NXOS® N9K-C9372PX-E"  
Option: (60) Vendor class identifier  
Length: 19  
Value: 436973636F204E394B2D433933373250582D45  
Option: (t=43,l=8) Vendor-Specific Information  
Option: (43) Vendor-Specific Information  
Length: 8  
Value: F1060062ECF304AC  
Option: (t=55,l=8) Parameter Request List  
Option: (55) Parameter Request List  
Length: 8  
Value: 010306070C424396  
1 = Subnet Mask  
3 = Router  
6 = Domain Name Server  
7 = Log Server  
12 = Host Name  
66 = TFTP Server Name  
67 = Bootfile name

150 = TFTP server address  
End Option  
Padding

DHCP مداخل لى لى ماعلا نم DHCP بلط هي جوت ةداع اب لي حرتلا لي ك و موقى [6]

Mac رصم ال nexus Mac: 6c:31:0e:a3:0c:57

DHCP كام لدان DHCP وه كام ةياغ c4:c6:03:09:cf:47

Nexus IP لى SVI10:192.168.10.1 وه رصم ال

DHCP وه IP ةجول 192.168.1.2 لدان

bootps (67) رصم ال ذفنم

bootps (67) ةجول ال ذفنم

(1) دي هم تال بلط :ةال س رل ا عون

IP ناونع = 192.168.10.19 بولط م ال

MAC ناونع 00:62:ec:f3:04:b3 <<<<</client MAC س ا ر لى ع ه ن ي م ض ت م ت ي

UDP/DHCP

DHCP = بلط DHCP ةال س ر ر عون

```
Frame 48 (366 bytes on wire, 366 bytes captured)
Arrival Time: Jul 19, 2023 21:53:35.343718000
[Time delta from previous captured frame: 0.001338000 seconds]
[Time delta from previous displayed frame: 0.001338000 seconds]
[Time since reference or first frame: 8.622771000 seconds]
Frame Number: 48
Frame Length: 366 bytes
Capture Length: 366 bytes
[Frame is marked: False]
[Protocols in frame: eth:ip:udp:bootp]
Ethernet II, Src: 6c:31:0e:a3:0c:57 (6c:31:0e:a3:0c:57), Dst: c4:c6:03:09:cf:47 (c4:c6:03:09:cf:47)
Destination: c4:c6:03:09:cf:47 (c4:c6:03:09:cf:47)
Address: c4:c6:03:09:cf:47 (c4:c6:03:09:cf:47)
.... 0.... = IG bit: Individual address (unicast)
.... 0.... = LG bit: Globally unique address (factory default)
Source: 6c:31:0e:a3:0c:57 (6c:31:0e:a3:0c:57)
Address: 6c:31:0e:a3:0c:57 (6c:31:0e:a3:0c:57)
.... 0.... = IG bit: Individual address (unicast)
.... 0.... = LG bit: Globally unique address (factory default)
Type: IP (0x0800)
Internet Protocol, Src: 192.168.10.1 (192.168.10.1), Dst: 192.168.1.2 (192.168.1.2)
Version: 4
Header length: 20 bytes
Differentiated Services Field: 0x00 (DSCP 0x00: Default; ECN: 0x00)
0000 00.. = Differentiated Services Codepoint: Default (0x00)
.... 0.. = ECN-Capable Transport (ECT): 0
.... 0.. = ECN-CE: 0
Total Length: 352
Identification: 0xefac (61356)
Flags: 0x00
0.. = Reserved bit: Not Set
.0. = Do not fragment: Not Set
..0 = More fragments: Not Set
Fragment offset: 0
Time to live: 255
Protocol: UDP (0x11)
Header checksum: 0x3e8c [correct]
[Good: True]
```



[Bad : False]  
Source: 192.168.10.1 (192.168.10.1)  
Destination: 192.168.1.2 (192.168.1.2)  
User Datagram Protocol, Src Port: bootps (67), Dst Port: bootps (67)  
Source port: bootps (67)  
Destination port: bootps (67)  
Length: 332  
Checksum: 0x63b0 [validation disabled]  
[Good Checksum: False]  
[Bad Checksum: False]  
Bootstrap Protocol  
Message type: Boot Request (1)  
Hardware type: Ethernet  
Hardware address length: 6  
Hops: 1  
Transaction ID: 0x64b14fa7  
Seconds elapsed: 0  
Bootp flags: 0x8000 (Broadcast)  
1... .... = Broadcast flag: Broadcast  
.000 0000 0000 0000 = Reserved flags: 0x0000  
Client IP address: 0.0.0.0 (0.0.0.0)  
Your (client) IP address: 0.0.0.0 (0.0.0.0)  
Next server IP address: 0.0.0.0 (0.0.0.0)  
Relay agent IP address: 192.168.10.1 (192.168.10.1)  
Client MAC address: 00:62:ec:f3:04:b3 (00:62:ec:f3:04:b3)  
Client hardware address padding: 00000000000000000000  
Server host name not given  
Boot file name not given  
Magic cookie: (OK)  
Option: (t=53,l=1) DHCP Message Type = DHCP Request  
Option: (53) DHCP Message Type  
Length: 1  
Value: 03  
Option: (t=61,l=18) Client identifier  
Option: (61) Client identifier  
Length: 18  
Value: 0046444F3230323431435548566C616E3130  
Option: (t=50,l=4) Requested IP Address = 192.168.10.19  
Option: (50) Requested IP Address  
Length: 4  
Value: C0A80A13  
Option: (t=51,l=4) IP Address Lease Time = 2 hours  
Option: (51) IP Address Lease Time  
Length: 4  
Value: 00001C20  
Option: (t=54,l=4) DHCP Server Identifier = 192.168.1.2  
Option: (54) DHCP Server Identifier  
Length: 4  
Value: C0A80102  
Option: (t=60,l=19) Vendor class identifier = "Cisco N9K-C9372PX-E"  
Option: (60) Vendor class identifier  
Length: 19  
Value: 436973636F204E394B2D4339333373250582D45  
Option: (t=43,l=8) Vendor-Specific Information  
Option: (43) Vendor-Specific Information  
Length: 8  
Value: F1060062ECF304AC  
Option: (t=55,l=8) Parameter Request List  
Option: (55) Parameter Request List  
Length: 8  
Value: 010306070C424396  
1 = Subnet Mask

3 = Router  
6 = Domain Name Server  
7 = Log Server  
12 = Host Name  
66 = TFTP Server Name  
67 = Bootfile name  
150 = TFTP server address  
End Option  
Padding

ليحرتلالي كويلى | (ACK) يداخال ثبلل مداخل بيحتسي [7]  
ردصم MAC وه DHCP كام لدان c4:c6:03:09:cf:47  
Nexus MAC: 6c:31:0e:a3:0c:57 يه ةجولال MAC  
DHCP: 192.168.1.2 مداخل وه ip ردصم  
SVI10: 192.168.10.1 لىع IP Nexus IP ةجولال  
bootps (67): ردصم لال ذفنم  
bootps (67): ةجولال ذفنم  
(2) ديهم تلالي لىع دلل: ةالاسر لال عون  
192.168.10.19: (للمع لال) ك ب صاخ لال IP ناونع  
00:62:ec:f3:04:b3: لىم لال MAC ناونع  
مداخلال نم ACK وه اذه <<<< DHCP = DHCP ACK ةالاسر عون

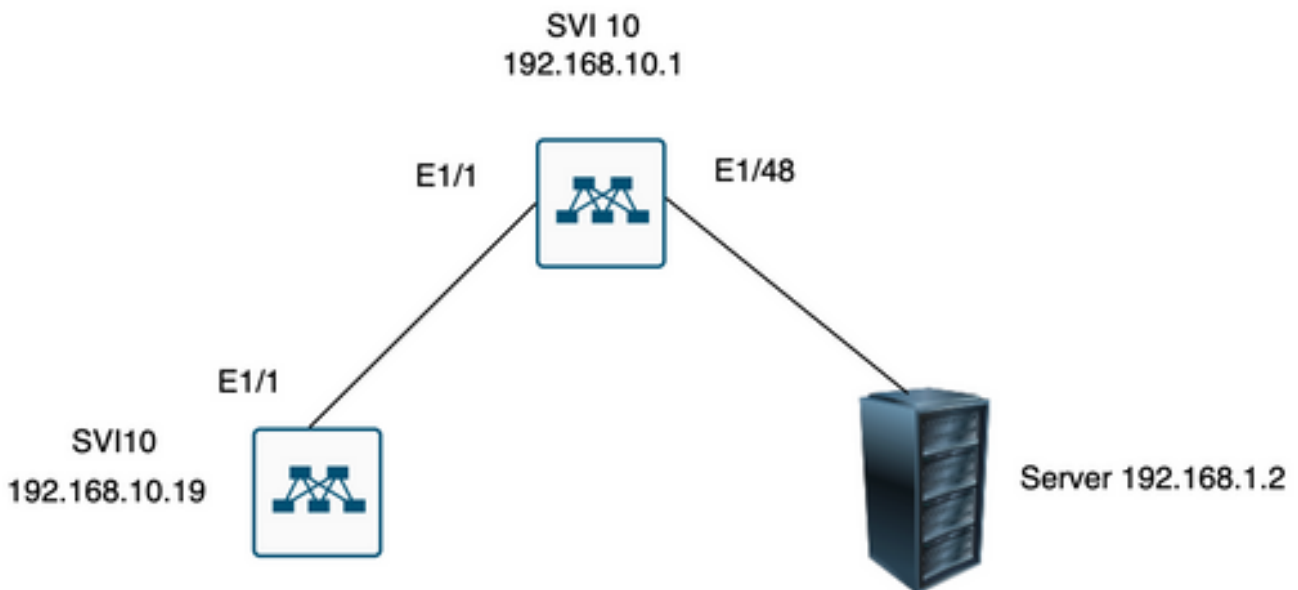
Frame 49 (348 bytes on wire, 348 bytes captured)  
Arrival Time: Jul 19, 2023 21:53:35.344310000  
[Time delta from previous captured frame: 0.000592000 seconds]  
[Time delta from previous displayed frame: 0.000592000 seconds]  
[Time since reference or first frame: 8.623363000 seconds]  
Frame Number: 49  
Frame Length: 348 bytes  
Capture Length: 348 bytes  
[Frame is marked: False]  
[Protocols in frame: eth:ip:udp:bootp]  
Ethernet II, Src: c4:c6:03:09:cf:47 (c4:c6:03:09:cf:47), Dst: 6c:31:0e:a3:0c:57 (6c:31:0e:a3:0c:57)  
Destination: 6c:31:0e:a3:0c:57 (6c:31:0e:a3:0c:57)  
Address: 6c:31:0e:a3:0c:57 (6c:31:0e:a3:0c:57)  
.... 0 .... = IG bit: Individual address (unicast)  
.... 0. .... = LG bit: Globally unique address (factory default)  
Source: c4:c6:03:09:cf:47 (c4:c6:03:09:cf:47)  
Address: c4:c6:03:09:cf:47 (c4:c6:03:09:cf:47)  
.... 0 .... = IG bit: Individual address (unicast)  
.... 0. .... = LG bit: Globally unique address (factory default)  
Type: IP (0x0800)  
Internet Protocol, Src: 192.168.1.2 (192.168.1.2), Dst: 192.168.10.1 (192.168.10.1)  
Version: 4  
Header length: 20 bytes  
Differentiated Services Field: 0x00 (DSCP 0x00: Default; ECN: 0x00)  
0000 00.. = Differentiated Services Codepoint: Default (0x00)  
.... 0. = ECN-Capable Transport (ECT): 0  
.... 0 = ECN-CE: 0  
Total Length: 334  
Identification: 0x0015 (21)  
Flags: 0x00  
0.. = Reserved bit: Not Set  
.0. = Do not fragment: Not Set  
..0 = More fragments: Not Set

Fragment offset: 0  
Time to live: 254  
Protocol: UDP (0x11)  
Header checksum: 0x2f36 [correct]  
[Good: True]  
[Bad : False]  
Source: 192.168.1.2 (192.168.1.2)  
Destination: 192.168.10.1 (192.168.10.1)  
User Datagram Protocol, Src Port: bootps (67), Dst Port: bootps (67)  
Source port: bootps (67)  
Destination port: bootps (67)  
Length: 314  
Checksum: 0x0200 [validation disabled]  
[Good Checksum: False]  
[Bad Checksum: False]  
Bootstrap Protocol  
Message type: Boot Reply (2)  
Hardware type: Ethernet  
Hardware address length: 6  
Hops: 0  
Transaction ID: 0x64b14fa7  
Seconds elapsed: 0  
Bootp flags: 0x8000 (Broadcast)  
1... .... = Broadcast flag: Broadcast  
.000 0000 0000 0000 = Reserved flags: 0x0000  
Client IP address: 0.0.0.0 (0.0.0.0)  
Your (client) IP address: 192.168.10.19 (192.168.10.19)  
Next server IP address: 0.0.0.0 (0.0.0.0)  
Relay agent IP address: 192.168.10.1 (192.168.10.1)  
Client MAC address: 00:62:ec:f3:04:b3 (00:62:ec:f3:04:b3)  
Client hardware address padding: 00000000000000000000  
Server host name not given  
Boot file name not given  
Magic cookie: (OK)  
Option: (t=53,l=1) DHCP Message Type = DHCP ACK  
Option: (53) DHCP Message Type  
Length: 1  
Value: 05  
Option: (t=61,l=18) Client identifier  
Option: (61) Client identifier  
Length: 18  
Value: 0046444F3230323431435548566C616E3130  
Option: (t=54,l=4) DHCP Server Identifier = 192.168.1.2  
Option: (54) DHCP Server Identifier  
Length: 4  
Value: C0A80102  
Option: (t=51,l=4) IP Address Lease Time = 1 day  
Option: (51) IP Address Lease Time  
Length: 4  
Value: 00015180  
Option: (t=58,l=4) Renewal Time Value = 12 hours  
Option: (58) Renewal Time Value  
Length: 4  
Value: 0000A8C0  
Option: (t=59,l=4) Rebinding Time Value = 21 hours  
Option: (59) Rebinding Time Value  
Length: 4  
Value: 00012750  
Option: (t=1,l=4) Subnet Mask = 255.255.255.0  
Option: (1) Subnet Mask  
Length: 4  
Value: FFFFFFF0

```
Option: (t=3,l=4) Router = 192.168.1.2
Option: (3) Router
Length: 4
Value: COA80102
Option: (t=6,l=4) Domain Name Server = 8.8.8.8
Option: (6) Domain Name Server
Length: 4
Value: 08080808
End Option
```

ليعمل هنيديعت مت دق هنأ دكؤويو، IP ناونع مادختسا في لي عمل ادبي، ةطقنللا هذه دنع.

```
Client# show interface vlan 10
Vlan10 is up, line protocol is up, autostate enabled
Hardware is EtherSVI, address is 0062.ecf3.04b3
Internet Address is 192.168.10.19/24 <<<<<<< It is using the IP address
MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive not supported
ARP type: ARPA
Last clearing of "show interface" counters never
L3 in Switched:
ucast: 0 pkts, 0 bytes
Client#
```



# ەلص تاذ تامولعم

[DHCP نېوكت](#)

[رزىلاناشيا](#)

ةمچرتل هذه ل و ح

ةلأل تاي نقتل ن م ة و مچ م ادخت ساب دن تسم ل ا ذه Cisco ت مچرت  
م ل ا ل ا ا ن ا ع مچ ي ف ن م دخت س م ل ل م عد ي و ت م م م دقت ل ة ي ر ش ب ل و  
امك ة ق ي ق د ن و ك ت ن ل ة ي ل ا ة مچرت ل ض ف ا ن ا ة ظ ح ال م ي ج ر ي . ة ص ا خ ل ا م ه ت غ ل ب  
Cisco ي ل خ ت . ف ر ت م م مچرت م ا م د ق ي ي ت ل ا ة ي ف ا ر ت ح ال ا ة مچرت ل ا م ل ا ح ل ا و ه  
ي ل ا م ا د ا د ع و ج ر ل ا ب ي ص و ت و ت ا مچرت ل ا هذه ة ق د ن ع ا ه ت ي ل و ئ س م Cisco  
Systems (ر ف و ت م ط ب ا ر ل ا) ي ل ص ا ل ا ي ز ي ل ج ن ا ل ا دن ت س م ل ا