

# عم DHCP لوكوتورب ىلع لفطتلا تالعات CAT9000 ىلع 82 رايخو GIADDR

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## عمدقملا

CAT9000 ىلع 82 رايخو GIADDR عم تالعات لفطتلا DHCP لاقىث واذه فصوي

## قيساس الابلطتلا

### تابلطتلا

ةيلاتلا عيضاوملاب ةفرعم كيديل نوكت ناب Cisco ي صوت

- ليغشتلا ونوكتلا رماو ايف Cisco IOS® XE ناقتا
- Cisco Catalyst 9000 Series لوجملا ةينبو ةزهجا ىلع فرعت
- DHCP لوكوتورب ىلع لفطتلا تايلاو DHCP لوكوتورب تايلا م عمل يوق مهف
- ليحرتلا ليكو رودو DHCP 82 رايخلا يروصت مهف

### عمدختسملا تانوكملا



<#root>

```
!
int f1f2/1/0/4 ---> Downlink to Access Switch
    ip dhcp snooping trust
!
    ip dhcp snooping vlan 1-2048
```

```
ip dhcp snooping
```

```
!
```

لوصول حاتفم:

<#root>

```
!
int gig1/0/1 -> uplink to Core
    ip dhcp snooping trust
    switchport mode trunk
!
    ip dhcp snooping vlan 1-1400
```

```
no ip dhcp snooping information option
```

```
ip dhcp snooping
```

```
!
int gig1/0/3 ----> End device connected port
    switchport mode access
    switchport access vlan 287
!
```

ةجيتنل:

حجان.

ةلكشم نودب IP ناونع ىلع يفرطلال زاوجل لاصحي.

حشرل:

رايخ نيكمتم تي. 82 رايخال نود زكرملا ىل ةمزلال لسريو 82 لوصولا لوحم رايخ ليطعت مت صاخلا IP ناونع مادختساب 82 رايخال فيضي وهو، يضارتفا لكشب 82 ساسألا لوحملا DHCP. مداخ ىل هل سريو ةمزلال في لىل حرتلا لىكوب

لوصول لوحه وليمعلا نيب طابترالال ىلع عمزحلا:

No.	Time	Source	Destination	Protoco	Lengt	Info
1	0.000000	0.0.0.0	255.255.255.255	DHCP	379	DHCP Discover - Transaction ID 0x1604
2	0.000156	0.0.0.0	255.255.255.255	DHCP	379	DHCP Discover - Transaction ID 0x1604
3	2.002663	10.88.39.254	255.255.255.255	DHCP	363	DHCP Offer - Transaction ID 0x1604
4	2.002977	10.88.39.254	255.255.255.255	DHCP	359	DHCP Offer - Transaction ID 0x1604
5	2.004966	0.0.0.0	255.255.255.255	DHCP	397	DHCP Request - Transaction ID 0x1604
6	2.005228	0.0.0.0	255.255.255.255	DHCP	397	DHCP Request - Transaction ID 0x1604
7	2.007080	10.88.39.254	255.255.255.255	DHCP	363	DHCP ACK - Transaction ID 0x1604

> Frame 1: Packet, 379 bytes on wire (3032 bits), 379 bytes captured (3032 bits) on interface /tmp/epc\_v

> Ethernet II, Src: Cisco\_97:69:58 (74:88:bb:97:69:58), Dst: Broadcast (ff:ff:ff:ff:ff:ff)

> Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255

> User Datagram Protocol, Src Port: 68, Dst Port: 67

> Dynamic Host Configuration Protocol (Discover)

Message type: Boot Request (1)

Hardware type: Ethernet (0x01)

Hardware address length: 6

Hops: 0

Transaction ID: 0x00001604

Seconds elapsed: 0

> Bootp flags: 0x8000, Broadcast flag (Broadcast)

Client IP address: 0.0.0.0

Your (client) IP address: 0.0.0.0

Next server IP address: 0.0.0.0

Relay agent IP address: 0.0.0.0

**Client MAC address: Cisco\_97:69:58 (74:88:bb:97:69:58)**

Client hardware address padding: 00000000000000000000

Server host name not given

Boot file name not given

Magic cookie: DHCP

> Option: (53) DHCP Message Type (Discover)

> Option: (57) Maximum DHCP Message Size

> Option: (61) Client identifier

> Option: (12) Host Name

> Option: (55) Parameter Request List

> Option: (60) Vendor class identifier

> Option: (124) V-I Vendor Class

> Option: (255) End

لليمعلا سفلنل ةددم طاقنل طاقن ي فو تارم ةدع عمزحلا طاقنل متي: ةظحال  
 ةكرحلا فرعم لهاجت كلذل

Distribution/Core لوحه او Access لوحه نيب طابترالال ىلع عمزحلا

عمزحلا هي جوت ةداع مت كلذل، تامولعملال ىلع لفطتل رايخ ىلع لوصول لوحه يوتحي ال  
 عيزوتل لوحه ىل لليمعلا نم ةدراوال اهسفن

No.	Time	Source	Destination	Protocol	Length	Info
5	11.360258	0.0.0.0	255.255.255.255	DHCP	379	DHCP Discover - Transaction ID 0x1147
6	12.858224	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0x8478fad8
7	12.858519	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0x8478fad8
8	13.362861	10.88.39.254	255.255.255.255	DHCP	359	DHCP Offer - Transaction ID 0x1147
9	13.364854	0.0.0.0	255.255.255.255	DHCP	397	DHCP Request - Transaction ID 0x1147
10	13.469795	10.88.39.254	255.255.255.255	DHCP	359	DHCP ACK - Transaction ID 0x1147

> Frame 5: Packet, 379 bytes on wire (3032 bits), 379 bytes captured (3032 bits) on interface /tmp/epc\_ws

> Ethernet II, Src: Cisco\_97:69:58 (74:88:bb:97:69:58), Dst: Broadcast (ff:ff:ff:ff:ff:ff)

> Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255

> User Datagram Protocol, Src Port: 68, Dst Port: 67

> Dynamic Host Configuration Protocol (Discover)

- Message type: Boot Request (1)
- Hardware type: Ethernet (0x01)
- Hardware address length: 6
- Hops: 0
- Transaction ID: 0x00001147
- Seconds elapsed: 0
- > Bootp flags: 0x8000, Broadcast flag (Broadcast)
- Client IP address: 0.0.0.0
- Your (client) IP address: 0.0.0.0
- Next server IP address: 0.0.0.0
- Relay agent IP address: 0.0.0.0
- Client MAC address: Cisco\_97:69:58 (74:88:bb:97:69:58)
- Client hardware address padding: 00000000000000000000
- Server host name not given
- Boot file name not given
- Magic cookie: DHCP
- > Option: (53) DHCP Message Type (Discover)
- > Option: (57) Maximum DHCP Message Size
- > Option: (61) Client identifier
- > Option: (12) Host Name
- > Option: (55) Parameter Request List
- > Option: (60) Vendor class identifier
- > Option: (124) V-I Vendor Class
- > Option: (255) End

DHCP مداخل و يساسأل لوجملا ني بة مزحلا

يساسأل لوجملا جاردا متي، ليحرتلل هنيوكتو DHCP لوكوتورب يلعل لفظتال ني كمت عم IP ليحرتلل ليكو مادختساب 10.88.2.63 DHCP مداخل لة مزحلا هي جوت ةداعإ موق يذل هب صاخلا IP ناو نع هرابت عاب

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	10.88.39.254	10.88.2.63	DHCP	379	DHCP Discover - Transaction ID 0x5df
2	0.000069	10.88.2.63	10.88.39.254	DHCP	359	DHCP Offer - Transaction ID 0x5df
3	0.128743	10.88.39.254	10.88.2.63	DHCP	397	DHCP Request - Transaction ID 0x5df
4	0.128997	10.88.2.63	10.88.39.254	DHCP	359	DHCP ACK - Transaction ID 0x5df

  

```

> Frame 1: Packet, 379 bytes on wire (3032 bits), 379 bytes captured (3032 bits) on interface /tmp/epc_
> Ethernet II, Src: Cisco_de:46:05 (08:f3:fb:de:46:05), Dst: Cisco_f3:6c:e4 (00:aa:6e:f3:6c:e4)
> Internet Protocol Version 4, Src: 10.88.39.254, Dst: 10.88.2.63
> User Datagram Protocol, Src Port: 67, Dst Port: 67
> Dynamic Host Configuration Protocol (Discover)
  Message type: Boot Request (1)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 1
  Transaction ID: 0x000005df
  Seconds elapsed: 0
  > Bootp flags: 0x8000, Broadcast flag (Broadcast)
  Client IP address: 0.0.0.0
  Your (client) IP address: 0.0.0.0
  Next server IP address: 0.0.0.0
  Relay agent IP address: 10.88.39.254
  Client MAC address: Cisco_97:69:58 (74:88:bb:97:69:58)
  Client hardware address padding: 00000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
  > Option: (53) DHCP Message Type (Discover)
  > Option: (57) Maximum DHCP Message Size
  > Option: (61) Client identifier
  > Option: (12) Host Name
  > Option: (55) Parameter Request List
  > Option: (60) Vendor class identifier
  > Option: (124) V-I Vendor Class
  > Option: (255) End

```

لوصول لوجم 82 راىخلى نىكىم مت

يساسال لوجم:

<#root>

```

!
int fif2/1/0/4 ---> Downlink to Access Switch
ip dhcp snooping trust
!
ip dhcp snooping vlan 1-2048

ip dhcp snooping
!
```

لوصول احاتم:

<#root>

```

!
int gig1/0/1 -> uplink to Core
  ip dhcp snooping trust
  switchport mode trunk
!
ip dhcp snooping vlan 1-1400

ip dhcp snooping information option

ip dhcp snooping
!
int gig1/0/3
  switchport mode access
  switchport access vlan 287
!

```

تجربة:

حاجات.

كل شئ نودب IP ناونع ىلع يفرطال زاهاجلا لصحي.

حرجل:

لسري و هؤاشنإ مت يذلا SVI ىلع لوحملا اذه يوتحي ال نكلو 82 لوصولا لوحم راخي نيكم مت مت وهو، يضارتفا لكش ب 82 ىساسألا لوحملا راخي نيكم مت متي. 82 راخي نود زكرملا ىلا ةمزل DHCP مداخل ىلا هلسري و ةمزل ي ف ليحرتلا ليكوب صاخلا IP ناونع عم 82 راخلا فيضي.

لوصولا لوحم ىلا ليמעلا نم ةمزل:

Time	Source	Destination	Protocol	Length	Info
1 0.000000	0.0.0.0	255.255.255.255	DHCP	379	DHCP Discover - Transaction ID
2 0.000161	0.0.0.0	255.255.255.255	DHCP	399	DHCP Discover - Transaction ID
3 1.110008	Cisco_9e:c8:c6	Broadcast	ARP	64	Who has 10.88.0.254? Tell 10.88
4 2.002486	10.88.39.254	255.255.255.255	DHCP	383	DHCP Offer - Transaction ID
5 2.002871	10.88.39.254	255.255.255.255	DHCP	379	DHCP Offer - Transaction ID
6 2.004750	0.0.0.0	255.255.255.255	DHCP	397	DHCP Request - Transaction ID
7 2.004994	0.0.0.0	255.255.255.255	DHCP	417	DHCP Request - Transaction ID
8 2.006887	10.88.39.254	255.255.255.255	DHCP	383	DHCP ACK - Transaction ID
9 2.108976	10.88.39.254	255.255.255.255	DHCP	379	DHCP ACK - Transaction ID

```

> Frame 1: Packet, 379 bytes on wire (3032 bits), 379 bytes captured (3032 bits) on interface
> Ethernet II, Src: Cisco_97:69:58 (74:88:bb:97:69:58), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
> Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255
> User Datagram Protocol, Src Port: 68, Dst Port: 67
> Dynamic Host Configuration Protocol (Discover)
  Message type: Boot Request (1)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 0
  Transaction ID: 0x00000121
  Seconds elapsed: 0
  > Bootp flags: 0x8000, Broadcast flag (Broadcast)
  Client IP address: 0.0.0.0
  Your (client) IP address: 0.0.0.0
  Next server IP address: 0.0.0.0
  Relay agent IP address: 0.0.0.0
  Client MAC address: Cisco_97:69:58 (74:88:bb:97:69:58)
  Client hardware address padding: 00000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
  > Option: (53) DHCP Message Type (Discover)
  > Option: (57) Maximum DHCP Message Size
  > Option: (61) Client identifier
  > Option: (12) Host Name
  > Option: (55) Parameter Request List
  > Option: (60) Vendor class identifier
  > Option: (124) V-I Vendor Class
  > Option: (255) End

```

Core/Distribution switch إلى Access Switch نم ة مزحل

لخدي، ذفنم حاتفم ال ىلع اىضارتفا تنكم نوكي 'ip dhcp snooping information option' نأ امب  
 0.0.0.0 مساب IP ليحرت عم 82 راىخل لوصوحاتفم

لوحمل اةطساوب اةطاقساوب اىلع بچيو ةقرام ةمزح هذه، DHCP لوكوتورب ىلع لفطتلا مل اعل اقبط  
 ةمزحل اةل اعم متيسف، اهب قووثوملا ةهجال نمضتي Core لوحمل نأ امب نكلو. يسئزل  
 DHCP مداخ وحن ليحرتل

Time	Source	Destination	Protocol	Length	Info
2 0.000129	0.0.0.0	255.255.255.255	DHCP	399	DHCP Discover - Transaction I
3 0.002398	10.88.39.254	255.255.255.255	DHCP	379	DHCP Offer - Transaction I
4 0.005010	0.0.0.0	255.255.255.255	DHCP	397	DHCP Request - Transaction I

```

> Frame 2: Packet, 399 bytes on wire (3192 bits), 399 bytes captured (3192 bits) on interface
> Ethernet II, Src: Cisco_97:69:58 (74:88:bb:97:69:58), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
> Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255
> User Datagram Protocol, Src Port: 68, Dst Port: 67
v Dynamic Host Configuration Protocol (Discover)
  Message type: Boot Request (1)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 0
  Transaction ID: 0x000026a5
  Seconds elapsed: 0
  > Bootp flags: 0x8000, Broadcast flag (Broadcast)
  Client IP address: 0.0.0.0
  Your (client) IP address: 0.0.0.0
  Next server IP address: 0.0.0.0
  Relay agent IP address: 0.0.0.0
  Client MAC address: Cisco_97:69:58 (74:88:bb:97:69:58)
  Client hardware address padding: 00000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
  > Option: (53) DHCP Message Type (Discover)
  > Option: (57) Maximum DHCP Message Size
  > Option: (61) Client identifier
  > Option: (12) Host Name
  > Option: (55) Parameter Request List
  > Option: (60) Vendor class identifier
  > Option: (124) V-I Vendor Class
  v Option: (82) Agent Information Option
    Length: 18
    v Option 82 Suboption: (1) Agent Circuit ID
      Length: 6
      Agent Circuit ID: 0004011f0103
    v Option 82 Suboption: (2) Agent Remote ID
      Length: 8
      Agent Remote ID: 000690eb5000eb80
  v Option: (255) End
    Option End: 255

```

DHCP: مداخل و سياسات الواجهة المحلية

نم لي حرت ال ليكو لادبت س اب Core لوجم الم موق ي ، ا ه ب ق و ث و م ي ل ف س ل ل ط ا ب ت ر ا ل ا ه ج ا و ن ا م ب  
 ة ل ص و ل ا ل ل ا س ر ا و 10.88.39.254 ل ل 0.0.0.0

IP. ن ا و ن ع ل ل ع ل ل ل ص ح ي و ة ي ع ر ش DORA ة ي ل م ع ل م ت ك ت ، ك ل ذ د ع ب

Time	Source	Destination	Protocol	Length	Info
1 0.000000	10.88.39.254	10.88.2.63	DHCP	399	DHCP Discover - Transaction ID 0x9fc
2 2.000064	10.88.2.63	10.88.39.254	DHCP	379	DHCP Offer - Transaction ID 0x9fc
3 2.003716	10.88.39.254	10.88.2.63	DHCP	417	DHCP Request - Transaction ID 0x9fc
4 2.003963	10.88.2.63	10.88.39.254	DHCP	379	DHCP ACK - Transaction ID 0x9fc

```

> Frame 1: Packet, 399 bytes on wire (3192 bits), 399 bytes captured (3192 bits) on interface /t
> Ethernet II, Src: Cisco_de:46:05 (08:f3:fb:de:46:05), Dst: Cisco_f3:6c:e4 (00:aa:6e:f3:6c:e4)
> Internet Protocol Version 4, Src: 10.88.39.254, Dst: 10.88.2.63
> User Datagram Protocol, Src Port: 67, Dst Port: 67
< Dynamic Host Configuration Protocol (Discover)
  Message type: Boot Request (1)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 1
  Transaction ID: 0x000009fc
  Seconds elapsed: 0
  > Bootp flags: 0x8000, Broadcast flag (Broadcast)
  Client IP address: 0.0.0.0
  Your (client) IP address: 0.0.0.0
  Next server IP address: 0.0.0.0
  Relay agent IP address: 10.88.39.254
  Client MAC address: Cisco_97:69:58 (74:88:bb:97:69:58)
  Client hardware address padding: 00000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
  > Option: (53) DHCP Message Type (Discover)
  > Option: (57) Maximum DHCP Message Size
  > Option: (61) Client identifier
  > Option: (12) Host Name
  > Option: (55) Parameter Request List
  > Option: (60) Vendor class identifier
  > Option: (124) V-I Vendor Class
  < Option: (82) Agent Information Option
    Length: 18
    < Option 82 Suboption: (1) Agent Circuit ID
      Length: 6
      Agent Circuit ID: 0004011f0103
    < Option 82 Suboption: (2) Agent Remote ID
      Length: 8
      Agent Remote ID: 000690eb5000eb80
  > Option: (255) End

```

يساسأل لوجم لل DHCP لوكوتورب ىلع لفطت لل لىطعت مت

لوصول لوجم ل 82 راىخ لل نىكمت مت

يساسأل لوجم ل:

<#root>

! Int fif2/1/0/4 --> Downlink to Access Switch  
no Ip dhcp snooping trust  
!

```
no ip dhcp snooping vlan 1-2048
```

```
no ip dhcp snooping
```

```
!
```

لوصول حات فم:

```
<#root>
```

```
!
int gig1/0/1 -> uplink to Core
ip dhcp snooping trust
switchport mode trunk
!
ip dhcp snooping vlan 1-1400
```

```
ip dhcp snooping information option
```

```
ip dhcp snooping
!
int gig1/0/3
switchport mode access
switchport access vlan 287
!
```

ةجيت نل:

لش فال.

IP ناونع ىل ع يفرط ل زاه ل ل ص ح ي ال

ح ر ش ل:

اذك ه Relay و SVI لى ك و ىل ع يوت ح ي ال ل و ح م ل ا ذه ن ك ل و 82 ل و ص و ل ا ل و ح م ر ا ي خ ن ي ك م ت م ت ل ل ى ل ع ل ف ط ت ي ز ج ع ي DHCP ن ا م ب . 0.0.0.0 ك relay ip و 82 ر ا ي خ ع م ز ك ر م ل ا ل ى ل ا ة م ز ح ل ل س ر ي ح ا ت ف م ل ل ش ف ي ك ل ل ذ ل . ك ا ن ه ه ج ا ر د ا و ه ر ي ر ح ت و 82 ر ا ي خ ل ل ن م ق ق ح ت ل ل ل ي ط ع ت م ت ي ؛ ح ا ت ف م core . ة م ز ح ل ل ط ق س ي و ل ي ح ر ت ل ل ة ف ا ض ا ي ف Core

ح ا ت ف م ذ ف ن م ل ل ا ب ه ذ ي و ن و ب ز ن م م د ا ق ط ب ر ف ش ت ك ي DHCP ل ي م ع ل ا

	Time	Source	Destination	Protocol	Length	Info
1	0.000000	0.0.0.0	255.255.255.255	DHCP	379	DHCP Discover - Transaction ID
2	0.000187	0.0.0.0	255.255.255.255	DHCP	399	DHCP Discover - Transaction ID
3	3.223897	0.0.0.0	255.255.255.255	DHCP	399	DHCP Discover - Transaction ID
4	7.224730	0.0.0.0	255.255.255.255	DHCP	399	DHCP Discover - Transaction ID

```

> Frame 1: Packet, 379 bytes on wire (3032 bits), 379 bytes captured (3032 bits) on interface
> Ethernet II, Src: Cisco_97:69:58 (74:88:bb:97:69:58), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
> Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255
> User Datagram Protocol, Src Port: 68, Dst Port: 67
< Dynamic Host Configuration Protocol (Discover)
  Message type: Boot Request (1)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 0
  Transaction ID: 0x00001617
  Seconds elapsed: 0
  > Bootp flags: 0x8000, Broadcast flag (Broadcast)
  Client IP address: 0.0.0.0
  Your (client) IP address: 0.0.0.0
  Next server IP address: 0.0.0.0
  Relay agent IP address: 0.0.0.0
  Client MAC address: Cisco_97:69:58 (74:88:bb:97:69:58)
  Client hardware address padding: 0000000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
  > Option: (53) DHCP Message Type (Discover)
  > Option: (57) Maximum DHCP Message Size
  > Option: (61) Client identifier
  > Option: (12) Host Name
  > Option: (55) Parameter Request List
  > Option: (60) Vendor class identifier
  > Option: (124) V-I Vendor Class
  > Option: (255) End

```

يعزوتال لوحم/زكرمال ال لوصول لوحم نم ةمزال قفدت

في ببستي ي، ip dhcp snooping information option enabled، رمأل لوصول احاتم يقلت ي .  
رايخال في ليحرتال لماعل IP ناونع نييعت متي، ةالجال هذه في DHCP مزح في 82 رايخال جاردا  
0.0.0.0 لىل 82

ةيرهاظلا ةيلحملا ةكبشلل ةيناثلا ةقبطلا في ضحم لكشب Access لوحم لمعي .  
287 مقر

لوحمة طساوب اءاردا متي يتال 82 رايخال تاذ ةمزال ربتعت، ياساسأل لوحملا روظنم نم .  
اهنيوك مت ياساسأل لوحملا لىل لي زنتال ةءاوانا امب، كلذ عمو . ةيعرش ريغ لوصول  
ةءاولا يوتسم لىل اءاطاقسا نم الءب ةمزال ةءالءامب موقبي Core لوحملا ناف، اءب قوئومك

ءءاعاب موقبي ال كلذل، لطمع DHCP لوكوئورب لىل لفطتال لىل يسيرللا لوحملا يوتحي .  
82 رايخال لىل يوتحت يتال مزحلل هءوت

DHCP فاشتك مزح عم Core لوحم كولس

- دعاسملا ناو نع ىلإ ةيدأال DHCP فاشتك ةمزح لاسرا ةداع| Core switch لوحملا لواح
- 10.88.2.63 هنيوكت مت يذلا
- (GIADDR) ليجرتلل IP ناو نع نبيعت يسيئرلا لوحملا ىلع بجي ،ءارجإلا اذهب مايقلل DHCP ةمزح ي
- ،لوصولا لوحم ةطساوب اهلأخدا مت يتلا تانايبلا عم لعفلاب دوجوم 82 راىخل نأ امب ،لجرتلل IP نبيعت لبق 82 راىخل نم يسيئرلا لوحملا ققحتي نأ بجي
- نم ققحتلا نكمي الف ، CORE لوحملا ىلع لطم DHCP لوكتورب ىلع لفظتلا نأ امب 82 راىخل
- يأساسأل لوحملا سىل ،هلديعتو 82 راىخل نم ققحتلا ىلع هذه ةردقلا مدعل ارظن DHCP فاشتك ةمزح طاقسإ ىوس راىخ

Time	Source	Destination	Protocol	Length	Info
1 0.000000	0.0.0.0	255.255.255.255	DHCP	399	DHCP Discover - Transaction ID 0
2 3.974135	0.0.0.0	255.255.255.255	DHCP	399	DHCP Discover - Transaction ID 0
3 7.075625	0.0.0.0	255.255.255.255	DHCP	399	DHCP Discover - Transaction ID 0

```

> Frame 1: Packet, 399 bytes on wire (3192 bits), 399 bytes captured (3192 bits) on interface
> Ethernet II, Src: Cisco_97:69:58 (74:88:bb:97:69:58), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
> Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255
> User Datagram Protocol, Src Port: 68, Dst Port: 67
√ Dynamic Host Configuration Protocol (Discover)
  Message type: Boot Request (1)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 0
  Transaction ID: 0x000018b1
  Seconds elapsed: 0
  > Bootp flags: 0x8000, Broadcast flag (Broadcast)
  Client IP address: 0.0.0.0
  Your (client) IP address: 0.0.0.0
  Next server IP address: 0.0.0.0
  Relay agent IP address: 0.0.0.0
  Client MAC address: Cisco_97:69:58 (74:88:bb:97:69:58)
  Client hardware address padding: 00000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
  > Option: (53) DHCP Message Type (Discover)
  > Option: (57) Maximum DHCP Message Size
  > Option: (61) Client identifier
  > Option: (12) Host Name
  > Option: (55) Parameter Request List
  > Option: (60) Vendor class identifier
  > Option: (124) V-I Vendor Class
  √ Option: (82) Agent Information Option
    Length: 18
    √ Option 82 Suboption: (1) Agent Circuit ID
      Length: 6
      Agent Circuit ID: 0004011f0103
    √ Option 82 Suboption: (2) Agent Remote ID
      Length: 8
      Agent Remote ID: 000690eb5000eb80
  > Option: (255) End

```

DHCP. مداخل وحن CORE لوحمل نم فاشتك ةمزه لقون متي نل

لمعل مدع ويراني سل CORE لوحمل لعل عاخال احيصت

```
DHCPD: Reload workspace interface Vlan287 tableid 0.
DHCPD: tableid for 10.88.39.254 on Vlan287 is 0
DHCPD: client's VPN is .
DHCPD: No option 125
DHCPD: Option 124: Vendor Class Information
DHCPD: Enterprise ID: 9
DHCPD: Vendor-class-data-len: 13
DHCPD: Data: 43~~~~58
DHCPD: inconsistent relay information.
DHCPD: relay information option exists, but giaddr is zero.
```

لوصول لوحمل 82 راخال ليطعت مت

يساس ال لوحمل

<#root>

```
!
int fif2/1/0/4 --> Downlink to Access Switch
no ip dhcp snooping trust
!
no ip dhcp snooping vlan 1-2048

no ip dhcp snooping
```

لوصول احاتفم

```
!
int gig1/0/1 -> uplink to Core
ip dhcp snooping trust
switchport mode trunk
!
ip dhcp snooping vlan 1-1400
no ip dhcp snooping information option
ip dhcp snooping
!
int gig1/0/3
switchport mode access
switchport access vlan 287
!
```

ةجيتنل:

حجان.

IP ناونع ىلع يفرطلا زاهجلا لصحي

ةظحالملا

ىقلت ي امنيب 82 راىخ نود زكرملا ىلإ ةمزحلا لسري وهو 82 لوصولا لوجم راىخ لىطعت مت  
ىلإ ناونع لىك و core لى relay حاتفملا فىضى. لكش ي Relay عم دوجوملا SVI لى CORE لوجم  
لدىل DHCP لىلإ هلسرى و طبرلا

لوصولا حاتفم برضت يتلا ةمزحلا DHCP لىمىل فىشتكى

Time	Source	Destination	Protocol	Length	Info
6	11.127914	0.0.0.0	255.255.255.255	DHCP	379 DHCP Discover - Transaction ID
7	12.467192	0.0.0.0	255.255.255.255	DHCP	342 DHCP Discover - Transaction ID
8	12.467511	0.0.0.0	255.255.255.255	DHCP	342 DHCP Discover - Transaction ID
9	13.130633	10.88.39.254	255.255.255.255	DHCP	359 DHCP Offer - Transaction ID
10	13.132841	0.0.0.0	255.255.255.255	DHCP	397 DHCP Request - Transaction ID
11	13.236938	10.88.39.254	255.255.255.255	DHCP	359 DHCP ACK - Transaction ID

```

> Frame 6: Packet, 379 bytes on wire (3032 bits), 379 bytes captured (3032 bits) on interface
> Ethernet II, Src: Cisco_97:69:58 (74:88:bb:97:69:58), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
> Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255
> User Datagram Protocol, Src Port: 68, Dst Port: 67
√ Dynamic Host Configuration Protocol (Discover)
  Message type: Boot Request (1)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 0
  Transaction ID: 0x00002336
  Seconds elapsed: 0
  > Bootp flags: 0x8000, Broadcast flag (Broadcast)
  Client IP address: 0.0.0.0
  Your (client) IP address: 0.0.0.0
  Next server IP address: 0.0.0.0
  Relay agent IP address: 0.0.0.0
  Client MAC address: Cisco_97:69:58 (74:88:bb:97:69:58)
  Client hardware address padding: 00000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
  > Option: (53) DHCP Message Type (Discover)
  > Option: (57) Maximum DHCP Message Size
  > Option: (61) Client identifier
  > Option: (12) Host Name
  > Option: (55) Parameter Request List
  > Option: (60) Vendor class identifier
  > Option: (124) V-I Vendor Class
  > Option: (255) End

```

Core إلى Packet نم Access Switch نم لوحم

مزم هي جوت ةداع اب Access لوحم الموقيس، Access لوحم الم لطمع 82 راخال لالخد انا امب  
ةلصولا لاصتا طخ لعل عيه امك ثبل

	Time	Source	Destination	Protocol	Length	Info
6	10.652455	0.0.0.0	255.255.255.255	DHCP	379	DHCP Discover - Transaction ID
7	11.292839	Cisco_9e:c8:c6	Broadcast	ARP	64	Who has 10.88.0.254? Tell 10.8
8	12.653654	10.88.39.254	255.255.255.255	DHCP	359	DHCP Offer - Transaction ID
9	12.655561	0.0.0.0	255.255.255.255	DHCP	397	DHCP Request - Transaction ID
10	12.655730	0.0.0.0	255.255.255.255	DHCP	397	DHCP Request - Transaction ID
11	12.760079	10.88.39.254	255.255.255.255	DHCP	359	DHCP ACK - Transaction ID

```

> Frame 6: Packet, 379 bytes on wire (3032 bits), 379 bytes captured (3032 bits) on interface
> Ethernet II, Src: Cisco_97:69:58 (74:88:bb:97:69:58), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
> Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255
> User Datagram Protocol, Src Port: 68, Dst Port: 67
< Dynamic Host Configuration Protocol (Discover)
  Message type: Boot Request (1)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 0
  Transaction ID: 0x000003fd
  Seconds elapsed: 0
  > Bootp flags: 0x8000, Broadcast flag (Broadcast)
  Client IP address: 0.0.0.0
  Your (client) IP address: 0.0.0.0
  Next server IP address: 0.0.0.0
  Relay agent IP address: 0.0.0.0
  Client MAC address: Cisco_97:69:58 (74:88:bb:97:69:58)
  Client hardware address padding: 00000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
  > Option: (53) DHCP Message Type (Discover)
  > Option: (57) Maximum DHCP Message Size
  > Option: (61) Client identifier
  > Option: (12) Host Name
  > Option: (55) Parameter Request List
  > Option: (60) Vendor class identifier
  > Option: (124) V-I Vendor Class
  > Option: (255) End

```

DHCP: مداخل وحن CORE حاتفم اهل سرې یتلا ةمزحلا

Time	Source	Destination	Protocol	Length	Info
1 0.000000	10.88.39.254	10.88.2.63	DHCP	379	DHCP Discover - Transaction ID 0x271
2 0.000139	10.88.2.63	10.88.39.254	DHCP	359	DHCP Offer - Transaction ID 0x271
3 0.463381	10.88.39.254	10.88.2.63	DHCP	397	DHCP Request - Transaction ID 0x271
4 0.463628	10.88.2.63	10.88.39.254	DHCP	359	DHCP ACK - Transaction ID 0x271

```

> Frame 1: Packet, 379 bytes on wire (3032 bits), 379 bytes captured (3032 bits) on interface /tm
> Ethernet II, Src: Cisco_de:46:05 (08:f3:fb:de:46:05), Dst: Cisco_f3:6c:e4 (00:aa:6e:f3:6c:e4)
> Internet Protocol Version 4, Src: 10.88.39.254, Dst: 10.88.2.63
> User Datagram Protocol, Src Port: 67, Dst Port: 67
< Dynamic Host Configuration Protocol (Discover)
  Message type: Boot Request (1)
  Hardware type: Ethernet (0x01)
  Hardware address length: 6
  Hops: 1
  Transaction ID: 0x00000271
  Seconds elapsed: 0
  > Bootp flags: 0x8000, Broadcast flag (Broadcast)
  Client IP address: 0.0.0.0
  Your (client) IP address: 0.0.0.0
  Next server IP address: 0.0.0.0
  Relay agent IP address: 10.88.39.254
  Client MAC address: Cisco_97:69:58 (74:88:bb:97:69:58)
  Client hardware address padding: 00000000000000000000
  Server host name not given
  Boot file name not given
  Magic cookie: DHCP
  > Option: (53) DHCP Message Type (Discover)
  > Option: (57) Maximum DHCP Message Size
  > Option: (61) Client identifier
  > Option: (12) Host Name
  > Option: (55) Parameter Request List
  > Option: (60) Vendor class identifier
  > Option: (124) V-I Vendor Class
  > Option: (255) End

```

يساس ال لوجم ال يل ع ااطخ ال احي حصت

```

Option 82 not present
DHCPD: Reload workspace interface Vlan287 tableid 0.
DHCPD: tableid for 10.88.39.254 on Vlan287 is 0
DHCPD: client's VPN is .
DHCPD: No option 125
DHCPD: No option 124
DHCPD: FSM state change INVALID
DHCPD: Workspace state changed from INIT to INVALID
DHCPD: Finding a relay for client ~~~~ on interface Vlan287.
DHCPD : Locating relay for Subnet 10.88.39.254
DHCPD: there is no pool for 10.88.39.254.
DHCPD: Looking up binding using address 10.88.39.254
DHCPD: setting giaddr to 10.88.39.254

```

IP. ناوع لي مع ال لبق تس ي، ةالاحل هذه ي ف

## صخلم

- 82 مقرر DHCP راىخ تامولعم جارءال لولم لل DHCP لوكوتورب ىلع لفظتلا نىكم ت بچى .  
اهتحص نم ققحتلا واهتلازا و
- وائلءال فئاضو لولم ل ذفنل ال ، DHCP لوكوتورب ىلع لفظتلا لىطعت مئى امءنع  
82 راىخلل ءلازالا
- ىلع ، 82 راىخلل ماءءتساب مزحلل ءامسلا واطاقس لكذى ف امب ، 82 راىخلل ءءلام ءمءت  
هنىوكءو DHCP لوكوتورب ىلع لفظتلا نىكم ت

ةمچرتل هذه لوج

ةللأل تاي نقتل نمة ومة مادختساب دن تسمل اذة Cisco تمةرت  
ملاعلاء انء مء مء نمة دختسمل معد و تمة مء دقتل ةر شبل او  
امك ةق قء نوك ت نل ةللأل ةمچرت لصف أن ةظحال مء ءرء. ةصاأل مء تءل ب  
Cisco ةلخت. فرتمة مچرت مء مء دقء ةل ةل ةفارتحال ةمچرتل عم لءال وه  
ىل إءمءءاد ءوچرلاب ةصوء و تءمچرتل هذه ةقء نء اهءل ءوئس م Cisco  
Systems (رفوتم طبارل) ةلصلأل ةزىل ءنلءل دن تسمل