

# Nexus 9000 TCAM值設定為0，丟棄Arp、UDLD、LACP資料包

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## 簡介

本檔案將說明在連線埠因UDLD錯誤而關閉時，Nexus 9000 TCAM如何進行疑難排解

其中介紹了當前和常見的概念、故障排除方法和錯誤消息。

本文旨在幫助使用者瞭解當連線埠因UDLD錯誤而關閉時，如何疑難排解TCAM

## 先決條件

瞭解Cisco NXOS命令

[NXOS TCAM配置](#)

## 拓撲

使用簡單的拓撲即可發現問題

(N9k-1)Eth2/1-2—(N9k-2)Eth2/1-2

1.1.1.1 /24 1.1.1.2/24

## 疑難排解

以下協定無法在控制平面上工作：

ARP解析失敗

由於模組1和2的UDLD錯誤，Nexus 9000上的埠報告關閉。

```

N9K-1(config-if)# 2018 Oct 20 07:23:23 N9K-1 %ETHPORT-5-IF_ADMIN_UP: Interface port-channel100
is admin up .
2018 Oct 20 07:23:23 N9K-1 %ETHPORT-5-IF_DOWN_PORT_CHANNEL_MEMBERS_DOWN: Interface port-
channel100 is down (No operational members)
2018 Oct 20 07:23:23 N9K-1 last message repeated 1 time
2018 Oct 20 07:23:23 N9K-1 %ETHPORT-5-IF_DOWN_ERROR_DISABLED: Interface Ethernet2/2 is down
(Error disabled. Reason:UDLD empty echo)
2018 Oct 20 07:23:23 N9K-1 last message repeated 1 time
2018 Oct 20 07:23:23 N9K-1 %ETHPORT-5-IF_DOWN_ERROR_DISABLED: Interface Ethernet2/1 is down
(Error disabled. Reason:UDLD empty echo)
sh 2018 Oct 20 07:23:25 N9K-1 last message repeated 1 time

```

由於模組1和2的機箱上的L2ACLRedirect診斷測試，線卡出現故障。

'Show module'

Mod Online Diag Status

```

----
1  Fail-----cleared the module 1 and 2 error .[show logging nvram]
2  Fail-----module 2 reloaded.
3  Pass

```

Module 1 and 2:

```

11) L2ACLRedirect-----> E
12) BootupPortLoopback: U

```

客戶進入此狀態的另一種可能方法是將基於T2 ASIC的機箱移至基於Tahoe的機箱中的SUP/LC

附註：如果您想瞭解有關ASIC故障排除的更多資訊，請聯絡cisco TAC

[CSCvc36411](#) 從T2升級到基於Tahoe的線卡/FM可能會導致診斷故障和TCAM問題

## 分析

當N9K-2上的TCAM值設定為0時，會出現此問題

```

N9K-2# sh hardware access-list tcam region
                NAT ACL[nat] size = 0
                Ingress PACL [ing-ifacl] size = 0
                VACL [vacl] size = 0
                Ingress RAACL [ing-racl] size = 0
                Ingress RBACL [ing-rbacl] size = 0
                Ingress L2 QOS [ing-l2-qos] size = 0
                Ingress L3/VLAN QOS [ing-l3-vlan-qos] size = 0
                Ingress SUP [ing-sup] size = 0
                Ingress L2 SPAN filter [ing-l2-span-filter] size =
                Ingress L3 SPAN filter [ing-l3-span-filter] size = 0
                Ingress FSTAT [ing-fstat] size = 0
                span [span] size = 0
                Egress RAACL [egr-racl] size = 0
                Egress SUP [egr-sup] size = 0
                Ingress Redirect [ing-redirect] size = 0

```

要隔離進一步刪除UDLD，但ping無法正常工作

## Arp請求從N9K-2發出

N9K-2# ethanalyzer local interface inband

Capturing on inband

```
2018-10-23 10:46:47.282551      1.1.1.1 -> 1.1.1.2      ICMP Echo (ping) request
2018-10-23 10:46:47.286072 b0:aa:77:30:75:bf -> ff:ff:ff:ff:ff:ff ARP Who has 1.1.1.1? Tell
1.1.1.2
2018-10-23 10:46:49.284704      1.1.1.1 -> 1.1.1.2      ICMP Echo (ping) request
2018-10-23 10:46:51.286150 b0:aa:77:30:75:bf -> ff:ff:ff:ff:ff:ff ARP Who has 1.1.1.1? Tell
1.1.1.2
2018-10-23 10:46:51.286802      1.1.1.1 -> 1.1.1.2      ICMP Echo (ping) request
2018-10-23 10:46:53.288989      1.1.1.1 -> 1.1.1.2      ICMP Echo (ping) request
2018-10-23 10:46:55.289920      1.1.1.1 -> 1.1.1.2      ICMP Echo (ping) request
2018-10-23 10:46:57.292070      1.1.1.1 -> 1.1.1.2      ICMP Echo (ping) request
2018-10-23 10:46:59.292568      1.1.1.1 -> 1.1.1.2      ICMP Echo (ping) request
2018-10-23 10:46:59.292818 b0:aa:77:30:75:bf -> ff:ff:ff:ff:ff:ff ARP Who has 1.1.1.1? Tell
1.1.1.2
10 packets captured
```

## N9K-1# ethanalyzer本機介面頻內

Capturing on inband

```
2018-10-23 04:02:40.568119 b0:aa:77:30:75:bf -> ff:ff:ff:ff:ff:ff ARP Who has 1.1.1.1? Tell
1.1.1.2
2018-10-23 04:02:40.568558 cc:46:d6:af:ff:bf -> b0:aa:77:30:75:bf ARP 1.1.1.1 is at
cc:46:d6:af:ff:bf
2018-10-23 04:02:48.574800 b0:aa:77:30:75:bf -> ff:ff:ff:ff:ff:ff ARP Who has 1.1.1.1? Tell
1.1.1.2
2018-10-23 04:02:48.575230 cc:46:d6:af:ff:bf -> b0:aa:77:30:75:bf ARP 1.1.1.1 is at
cc:46:d6:af:ff:bf——arp reply packet sent by agg1.
```

## N9K-2上的ELAM有來自N9K-1的ARP響應

附註：請聯絡思科TAC以驗證ELAM捕獲

module-2(TAH-elam-insel6)# reprot

Initting block addresses

SUGARBOWL ELAM REPORT SUMMARY

slot - 2, asic - 1, slice - 0

=====

Incoming Interface: Eth2/2

Src Idx : 0x42, Src BD : 4489

Outgoing Interface Info: dmod 0, dpid 0

Dst Idx : 0x0, Dst BD : 4489

**Packet Type: ARP**

**Dst MAC address: B0:AA:77:30:75:BF**

**Src MAC address: CC:46:D6:AF:FF:BF**

**Target Hardware address: B0:AA:77:30:75:BF ----- Arp packet captured on Linecard**

**Sender Hardware address: CC:46:D6:AF:FF:BF**

**Target Protocol address: 1.1.1.2**

**Sender Protocol address: 1.1.1.1**

ARP opcode: 2



```

dropped 0 bytes;
dropped 0 bytes;
dropped 0 bytes;
dropped 0 bytes;
dropped 0 bytes;
dropped 0 bytes;
dropped 0 bytes;
dropped 0 bytes;
dropped 0 bytes;
dropped 0 bytes;
dropped 0 bytes;
dropped 0 bytes;

```

## 擾流器

指向Sup的活動調頻是模組22。要驗證是否運行以下命令

```
module-30# show mvdxn internal port-status
```

```
Switch type: Marvell 98DXN41 - 4 port switch
```

Port	Descr	Enable	Status	ANeg	Speed	Mode	InByte	OutByte	InPkts	OutPkts
6	Local AXP CPU	Yes	UP	No	2	6	781502852	1006219901	6868852	3506128
7	This SC BCM EOBC switch	Yes	UP	No	2	6	654791960	430206276	1833465	3523170
8	Other SC BCM EOBC switch	Yes	DOWN	No	2	6	72282	176	3	2
9	This SC EPC switch	Yes	UP	No	2	6	351355874	351309506	1672662	3345683

```
Switch type: Marvell 98DXN11 - 10 port switch
```

Port	Descr	Enable	Status	ANeg	Speed	Mode	InByte	OutByte	InPkts	OutPkts
0	FM6 EPC switch	Yes	DOWN	No	2	6	0	0	0	0
1	FM5 EPC switch	Yes	DOWN	No	2	6	0	0	0	0
2	SUP ALT EPC	Yes	DOWN	No	2	6	0	0	0	0
3	SUP PRI EPC	Yes	DOWN	No	2	6	0	0	0	0
4	<b>FM4 EPC switch</b>	<b>Yes</b>	<b>DOWN</b>	<b>No</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
5	<b>FM3 EPC switch</b>	<b>Yes</b>	<b>DOWN</b>	<b>No</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
6	<b>FM2 EPC switch</b>	<b>Yes</b>	<b>DOWN</b>	<b>No</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
7	<b>FM1 EPC switch</b>	<b>Yes</b>	<b>DOWN</b>	<b>No</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
8	Other SC EPC switch	Yes	UP	No	2	6	351356399	351310095	1672664	3345687
9	Local SC 4-port switch	Yes	UP	No	2	6	351310031	351356399	3345688	1672664

```
Rule Rule_name Match_ctr Pol_en Pol_idx inProfileBytes outOfProfileBytes
```

```

指向Sup的活動FM是模組22。要驗證在命令module-30# show mvdxn internal port-status下運行交
換機型別：Marvell 98DXN41 - 4埠交換機埠解碼啟用狀態Aneg Speed Mode InByte OutByte
InPkts OutPkts - ----- 6本地AXP
CPU是UP否2 781502852 1006219901 6868852 3506128 7此SC BCM EOBC交換機是UP否2
654791960 430206276 1833465 3523170 8其他SC BCM EOBC交換機是DOWN否2 72282 176 3
2 9此SC EPC交換機是啟動否2 6 351355874 351309506 16726623345683 Switch型別：Marvell
98DXN11 - 10埠交換機埠描述啟用狀態Aneg速度模式InByte OutByte InPkts OutPkts - -----
----- 0 FM6 EPC交換機是向下否2 6 0 0 0 1 FM5
EPC交換機是向下否2 6 0 0 0 2 SUP EPC是向下否2 6 0 0 0 3 SUP PRI EPC是向下是2 6 0 0 0 0
4 FM4 EPC交換機是關閉否2 6 0 0 0 5 FM3 EPC交換機是關閉否2 6 0 0 0 6 FM2 EPC交換機是關
閉否2 6 0 0 0 7 FM1 EPC交換機是關閉否2 6 0 0 0 8其他SC EPC交換機是啟動否2 6
351356399 351310095 1672664 3345687 9本地SC 4埠交換機是啟動否2 6 351310031
351356399 3345688 1672664Rule_name Match_ctr Pol en Pol_idx inProfileBytes
outOfProfileBytes-----
-----

```

## 解決方案

TCAM值設定為0會導致線路卡中的所有控制流量丟失。

將TCAM值更改為預設的udld後，系統將啟動並解析arp

已將配置新增到N9K-2以解決此問題

組態變更後需要重新載入

```

N9K-2(config)# hardware access-list tcam region ing-sup 512
Warning: Please reload all linecards for the configuration to take effect

N9K-2(config)# hardware access-list tcam region ing-racl 1536
Warning: Please reload all linecards for the configuration to take effect

N9K-2(config)# hardware access-list tcam region ing-l2 ing-l2-qos ing-l2-span-filter

N9K-2(config)# hardware access-list tcam region ing-l2-qos 256
Warning: Please reload all linecards for the configuration to take effect

N9K-2(config)# hardware access-list tcam region ing-l3-vlan-qos 512
Warning: Please reload all linecards for the configuration to take effect

N9K-2(config)# hardware access-list tcam region ing-l2 ing-l2-qos ing-l2-span-filter
N9K-2(config)# hardware access-list tcam region ing-l2-span-filter 256

N9K-2(config)# hardware access-list tcam region ing-l3-span-filter 256
N9K-2(config)# hardware access-list tcam region span 512

Warning: Please reload all linecards for the configuration to take effect

N9K-2(config)# hardware access-list tcam region egr-racl 1792

Warning: Please reload all linecards for the configuration to take effect

N9K-2(config)# show run | grep tcam
hardware access-list tcam region ing-redirect 0

```

```
N9K-2(config)# hardware access-list tcam region ing-redirect 256
```

Warning: Please reload all linecards for the configuration to take effect

## 有用的命令

Show hardware access-list tcam region

顯示運行 | inc TCAM">-----輸出表示TCAM設定為預設設定。

## 有用連結

[Nexus 9000 TCAM雕刻](#)