

驗證7600裝置的DFC線卡上的BFD硬體計數器

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簡介

本檔案介紹如何在分散式轉送卡(DFC)線路卡上為7600裝置驗證雙向轉送檢測(BFD)硬體計數器。

必要條件

需求

思科建議您瞭解以下主題的基本知識：

- 7600系列路由器的配置和功能
- DFC線路卡模組配置

採用元件

本檔案中的資訊是根據7600 IOS版本15.3。

本文中的資訊是根據特定實驗室環境內的裝置所建立。文中使用到的所有裝置皆從已清除（預設）的組態來啟動。如果您的網路正在作用，請確保您已瞭解任何指令可能造成的影響。

背景資訊

BFD是一種網路協定，旨在檢測系統之間任意路徑（直接物理鏈路、虛擬電路、隧道、MPLS LSP等）中通訊中的亞秒級故障。

DFC代表DFC，DFC和CFC線卡之間的主要區別在於DFC線卡具有內嵌的子卡，該子卡具有L2引擎和L3/4引擎，這減輕了轉發查詢的負擔，在CFC線卡上的這些查詢將傳送到Supervisor以線上卡上本地完成。

硬體對BFD資料包的處理方式使它們不影響CPU，這意味著在DFC卡中，總是接收和轉發此資料包，而不離開線卡。

拓撲

R1(Te3/21)-----R2

故障排除方法

您可以看到R1未與Tengig3/21上的鄰居建立BFD鄰接關係。

檢查鄰居詳細資訊：

```
R1# sh bfd nei det
```

```
IPv4 Sessions
```

| NeighAddr | LD/RD | RH/RS | State | Int |
|--------------|-------|-------|-------|--------|
| 172.31.11.34 | 1/0 | Down | Down | Te3/21 |

```
Session Host: Hardware
```

```
OurAddr: 172.31.11.33
```

```
Handle: 1
```

```
Local Diag: 1, Demand mode: 0, Poll bit: 0
```

```
MinTxInt: 1000000, MinRxInt: 1000000, Multiplier: 5
```

```
Received MinRxInt: 200000, Received Multiplier: 5
```

```
Holddown (hits): 0(0), Hello (hits): 1000(0)
```

```
Rx Count: 37  Notice received packets are too low
```

```
Tx Count: 9401
```

```
Elapsed time watermarks: 0 0 (last: 0)
```

```
Registered protocols: ISIS CEF
```

```
Downtime: 02:36:34
```

```
Last packet: Version: 1 - Diagnostic: 0
```

```
State bit: Up - Demand bit: 0
```

```
Poll bit: 0 - Final bit: 0
```

```
C bit: 1
```

```
Multiplier: 5 - Length: 24
```

```
My Discr.: 77 - Your Discr.: 1
```

```
Min tx interval: 200000 - Min rx interval: 200000
```

Min Echo interval: 0

R1# **sh bfd nei det**

IPv4 Sessions

| NeighAddr | LD/RD | RH/RS | State | Int |
|--------------|-------|-------|-------|--------|
| 172.31.11.34 | 1/0 | Down | Down | Te3/21 |

Session Host: Hardware

OurAddr: 172.31.11.33

Handle: 1

Local Diag: 1, Demand mode: 0, Poll bit: 0

MinTxInt: 1000000, MinRxInt: 1000000, Multiplier: 5

Received MinRxInt: 200000, Received Multiplier: 5

Holddown (hits): 0(0), Hello (hits): 1000(0)

Rx Count: 37 β-----Notice received packets are
not incrementing

Tx Count: 9456 β----- Transmit packets are
incrementing

Elapsed time watermarks: 0 0 (last: 0)

Registered protocols: ISIS CEF

Downtime: 02:36:34

Last packet: Version: 1 - Diagnostic: 0

State bit: Up - Demand bit: 0

Poll bit: 0 - Final bit: 0

C bit: 1

Multiplier: 5 - Length: 24

My Discr.: 77 - Your Discr.: 1

Min tx interval: 200000 - Min rx interval: 200000

Min Echo interval: 0

您還可以檢查給出相同輸出的硬體的相同命令，RX未收到。

R1#**show bfd neighbors hardware details**

IPv4 Sessions

| NeighAddr | LD/RD | RH/RS | State | Int |
|--------------|-------|-------|-------|--------|
| 172.31.11.34 | 1/0 | Down | Down | Te3/21 |

Session Host: Hardware

OurAddr: 172.31.11.33

Handle: 1

Local Diag: 1, Demand mode: 0, Poll bit: 0

MinTxInt: 1000000, MinRxInt: 1000000, Multiplier: 5

Received MinRxInt: 200000, Received Multiplier: 5

Holddown (hits): 0(0), Hello (hits): 1000(0)

Rx Count: 37

Tx Count: 19337

Elapsed time watermarks: 0 0 (last: 0)

Registered protocols: ISIS CEF

Downtime: 05:22:16

Last packet: Version: 1 - Diagnostic: 0

State bit: Up - Demand bit: 0

Poll bit: 0 - Final bit: 0

C bit: 1

Multiplier: 5 - Length: 24

My Discr.: 77 - Your Discr.: 1

Min tx interval: 200000 - Min rx interval: 200000

Min Echo interval: 0

R1#show bfd neighbors hardware details

IPv4 Sessions

| NeighAddr | LD/RD | RH/RS | State | Int |
|--------------|-------|-------|-------|--------|
| 172.31.11.34 | 1/0 | Down | Down | Te3/21 |

Session Host: Hardware

OurAddr: 172.31.11.33

Handle: 1

Local Diag: 1, Demand mode: 0, Poll bit: 0

MinTxInt: 1000000, MinRxInt: 1000000, Multiplier: 5

Received MinRxInt: 200000, Received Multiplier: 5

```
Holddown (hits): 0(0), Hello (hits): 1000(0)

Rx Count: 37

Tx Count: 19348

Elapsed time watermarks: 0 0 (last: 0)

Registered protocols: ISIS CEF

Downtime: 05:22:28

Last packet: Version: 1           - Diagnostic: 0
              State bit: Up       - Demand bit: 0
              Poll bit: 0         - Final bit: 0
              C bit: 1
              Multiplier: 5       - Length: 24
              My Discr.: 77       - Your Discr.: 1
              Min tx interval: 200000 - Min rx interval: 200000
```

之後，您可以直接線上路卡上檢查計數器。

因此您需要show bfd neighbors details輸出上的本機鑑別器(LD)值，此案例的LD值為1。

LD，此值用於唯一標識此會話，對於此裝置中的所有BFD會話，該值必須是唯一且非零的。

您確實會顯示module，並看到Linecard 3是DFC。

您將在要檢查BFD值的位置附加線路卡，在本例中為線路卡3。

```
R1# attach 3
```

```
R1-dfc3# show platform npc bfd ld 1
```

```
bfd_pak_big 0
```

```
bfd_pak_authenticated 0
```

```
bfd_x40g_xlifid_ifnum0 0
```

```
bfd_wd_hash_table_retry_count 0
```

```
bfd_ld_hash_table_retry_count 0
```

```
x40g_sso_differ_ld_count 0
```

```
Current normal_event_qsize 0 and 0 paks crossed the limit.
```

```
****BFD Session info for ld(1) avlnode ld (1) ****
```

```

ifnum(25), slotunit(21), txtimer(1000000) detect_timer(0)
p bit(0), f bit(0), srcip(172.31.11.33) dstip(172.31.11.34)
wdog cnterid(65664) tags inner(0) outer(0) tx sess info(0x19F4B7E0)
ADJ registered(0x1) tag_count(0) tx sessid(830)
dmac(dccc.eeee.aaaa), smac(5033.eeeee.8888), rx statid(508546), tx statid(508545)
RX pkt count(5838365), TX pkt count (5208864) B----- Here
you can see the counters for the RX and TX
IPV6 SA(::), IPV6 DA(::), no_adj_retry_tx (0)
R1# show platform npc bfd ld 1
bfd_pak_big 0
bfd_pak_authenticated 0
bfd_x40g_xlifid_ifnum0 0
bfd_wd_hash_table_retry_count 0
bfd_ld_hash_table_retry_count 0
x40g_sso_differ_ld_count 0
Current normal_event_qsize 0 and 0 paks crossed the limit.
****BFD Session info for ld(1) avlnode ld (1) ****
ifnum(25), slotunit(21), txtimer(1000000) detect_timer(0)
p bit(0), f bit(0), srcip(172.31.11.33) dstip(172.31.11.34)
wdog cnterid(65664) tags inner(0) outer(0) tx sess info(0x19F4B7E0)
ADJ registered(0x1) tag_count(0) tx sessid(830)
dmac(dccc.eeee.aaaa), smac(5033.eeeee.8888), rx statid(508546), tx statid(508545)
RX pkt count(5838365), TX pkt count (5208864) B----- RX is not increasing
IPV6 SA(::), IPV6 DA(::), no_adj_retry_tx (0)

```

此時，請進一步進行疑難排解，並建議在相鄰裝置上進行SPAN擷取，以便檢視該裝置是否實際傳送封包。