

DCX-100 PDU中无ACK错误消息

目录

[简介](#)

[先决条件](#)

[要求](#)

[使用的组件](#)

[问题](#)

[解决方案](#)

[数据包视图](#)

简介

本文档介绍此错误消息以及如何确定根本原因："%ETHPORT-2-IF_DOWN_ERROR_DISABLED:接口Ethernet115/1/17关闭(错误禁用。原因CX — 在100个PDU中没有ACK)。

先决条件

要求

Cisco 建议您了解以下主题：

- Nexus CLI
- 以太网光纤通道(FCoE)协议

使用的组件

本文档中的信息基于所有Nexus 5000和5500系列交换机平台。

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您使用的是真实网络，请确保您已经了解所有命令的潜在影响。

问题

数据中心桥接功能交换(DCBX)类型长度值(TLV)封装在交换机和融合网络适配器(CNA)之间交换的链路层发现协议(LLDP)帧中。其中一个控制子TLV用于确认(ACK)，该确认基于序列。例如，交换机发送SeqNo为1、AckNo为2的控制子TLV。主机应反转此值，并发送SeqNo为2、AckNo为1的控

制子TLV帧。有关详细信息，请参阅本文的数据包捕获部分。

交换机希望每30秒从主机进行一次交换。如果交换机未看到100协议数据单元(PDU)的此交换，即3000秒或50分钟，则交换机禁用，并显示以下错误：

```
N5k %ETHPORT-2-IF_DOWN_ERROR_DISABLED: Interface Ethernet115/1/17 is down
(Error disabled. Reason:DCX-No ACK in 100 PDUs)
N5k %ETHPORT-2-IF_DOWN_ERROR_DISABLED: Interface Ethernet116/1/16 is down
(Error disabled. Reason:DCX-No ACK in 100 PDUs)
```

解决方案

如果禁用LLDP，则可以解决此问题。但是，如果运行FCoE，则需要LLDP，因为没有虚拟光纤通道端口，虚拟光纤通道端口就无法启动。要禁用LLDP，请输入以下命令：

```
N5k(config)# interface E1/1
N5k(config-if)# no lldp receive
N5k(config-if)# no lldp send
```

以下是交换机上的一些命令，有助于缩小根本原因。

```
N5k# show lldp interface ethernet 1/22
```

Interface Information:

```
Enable (tx/rx/dcbx): Y/Y/Y      Port Mac address: 00:05:73:ab:29:bd
```

Peer's LLDP TLVs:

Type Length Value

```
001 007 040000c9 9d2372
002 007 030000c9 9d2372
003 002 0078
006 045 456d756c 6578204f 6e65436f 6e6e6563 74203130 4762204d 756c7469
2066756e 6374696f 6e204164 61707465 72
007 004 00800080
127 055 001b2102 020a0000 00000002 00000001 04110000 c0000001 00003232
00000000 00000206 060000c0 00080808 0a0000c0 00890600 1b2108
000 000
```

```
N5k# show lldp dcbx interface ethernet 1/22
```

Local DCBXP Control information:

```
Operation version: 00 Max version: 00 Seq no: 1 Ack no: 2 <<---Our sequence
```

and Ack

Type/

```
Subtype Version En/Will/Adv Config
003/000 000 Y/N/Y 0808
004/000 000 Y/N/Y 8906001b21 08
002/000 000 Y/N/Y 0001000032 32000000 00000002
```

Peer's DCBXP Control information:

```
Operation version: 00 Max version: 00 Seq no: 2 Ack no: 1 <<---Peer sequence #
```

and Ack # should be reversed.

Type/

```
Subtype Version En/Will/Err Config
002/000 000/000 Y/Y/N 0001000032 32000000 00000002
003/000 000/000 Y/Y/N 0808
004/000 000/000 Y/Y/N 8906001b21 08
```

在大多数情况下，此问题的根本原因是CNA/服务器行为错误或CNA上的固件/驱动程序不正确。为版本5.2(1)N1(1)及更高版本的Nexus 5000系列交换机平台引入了一个命令，以便自动从此错误禁用状态恢复。

```
N5k(config)# errdisable recovery cause dcbx-no-ack
```

注意：思科漏洞ID [CSCtg30118](#)加强版：DCX-No ACK in 100 PDU已归档，以增强功能，以便对此问题进行故障排除。此修复程序还允许客户启用从此情况恢复。

数据包视图

Nexus 5000发送LLDP帧DCBX控制子TLV的内联数据包捕获 (序列号1和确认号2)

| | | | | |
|-------|----------------------------|----------------|----------------|------|
| 10 FR | 08/29 20:03:10.575_052_649 | 00.706_750_925 | GE Port(1,4,2) | LLDP |
| 10 FR | 08/29 20:03:39.867_113_179 | 29.292_060_530 | GE Port(1,4,1) | LLDP |
| 10 FR | 08/29 20:03:40.576_388_319 | 00.709_275_140 | GE Port(1,4,2) | LLDP |
| 10 FR | 08/29 20:04:09.865_923_214 | 29.289_534_895 | GE Port(1,4,1) | LLDP |
| 10 FR | 08/29 20:04:10.577_700_451 | 00.711_777_238 | GE Port(1,4,2) | LLDP |
| 10 FR | 08/29 20:04:39.864_735_359 | 29.287_034_907 | GE Port(1,4,1) | LLDP |
| 10 FR | 08/29 20:04:40.579_057_684 | 00.714_322_325 | GE Port(1,4,2) | LLDP |
| 10 FR | 08/29 20:05:09.863_548_219 | 29.284_490_535 | GE Port(1,4,1) | LLDP |
| 10 FR | 08/29 20:05:10.580_492_379 | 00.716_944_160 | GE Port(1,4,2) | LLDP |
| 10 FR | 08/29 20:05:39.862_363_081 | 29.281_870_702 | GE Port(1,4,1) | LLDP |
| 10 FR | 08/29 20:05:40.581_813_856 | 00.719_450_775 | GE Port(1,4,2) | LLDP |
| 10 FR | 08/29 20:06:09.861_173_574 | 29.279_359_718 | GE Port(1,4,1) | LLDP |

```

General
  ...interface number = 0x05000000
  ...OID string length = 0
  - DCBX TLV v1.01
    ...TLV type = 0x7F Organizationally Specific TLV (DCBX)
    ...TLV information string length = 55 Bytes
    ...organizationally unique identifier = Intel
    ...organizationally defined subtype = 0x02 DCBX is version 1.01
    - DCBX Control Sub-TLV
      ...type = 0x01 DCBX Control
      ...length = 10
      ...Oper_Version = 0
      ...Max_Version = 0
      ...SeqNo = 1
      ...AckNo = 2
    - Priority-based Flow Control Sub-TLV
      ...type = 0x03 Priority-based Flow Control
  
```

CNA发送LLDP帧DCBX控制子TLV的内联数据包捕获 (序列号2和确认号1)

| | | | | | |
|----|----|----------------------------|----------------|----------------|------|
| 10 | FR | 08/29 20:03:39.867_113_179 | 29.292_060_530 | GE Port(1,4,1) | LLDP |
| 10 | FR | 08/29 20:03:40.576_388_319 | 00.709_275_140 | GE Port(1,4,2) | LLDP |
| 10 | FR | 08/29 20:04:09.865_923_214 | 29.289_534_895 | GE Port(1,4,1) | LLDP |
| 10 | FR | 08/29 20:04:10.577_700_451 | 00.711_777_238 | GE Port(1,4,2) | LLDP |
| 10 | FR | 08/29 20:04:39.864_735_359 | 29.287_034_907 | GE Port(1,4,1) | LLDP |
| 10 | FR | 08/29 20:04:40.579_057_684 | 00.714_322_325 | GE Port(1,4,2) | LLDP |
| 10 | FR | 08/29 20:05:09.863_548_219 | 29.284_490_535 | GE Port(1,4,1) | LLDP |
| 10 | FR | 08/29 20:05:10.580_492_379 | 00.716_944_160 | GE Port(1,4,2) | LLDP |
| 10 | FR | 08/29 20:05:39.862_363_081 | 29.281_870_702 | GE Port(1,4,1) | LLDP |
| 10 | FR | 08/29 20:05:40.581_813_856 | 00.719_450_775 | GE Port(1,4,2) | LLDP |
| 10 | FR | 08/29 20:06:09.861_173_574 | 29.279_359_718 | GE Port(1,4,1) | LLDP |

DCBX TLV v1.01

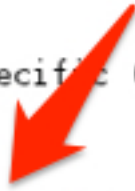
- TLV type = 0x7F Organizationally Specific TLV (DCBX)
- TLV information string length = 55 Bytes
- organizationally unique identifier = Intel
- organizationally defined subtype = 0x02 DCBX is version 1.01
- DCBX Control Sub-TLV**
 - type = 0x01 DCBX Control
 - length = 10
 - Oper_Version = 0
 - Max_Version = 0
 - SeqNo = 2
 - AckNo = 1
- Priority Group Sub-TLV**
 - type = 0x02 Priority Groups
 - length = 17
 - Oper_Version = 0

Wireshark不解码LLDP子TLV。它们在LLDP报头中显示为“未知子类型”。使用上一节中命令的序列号，以便在Wireshark跟踪中找到它们。以下是来自交换端口分析器(SPAN)会话的跟踪。

Nexus 5000发送LLDP帧DCBX控制子TLV的Wireshark捕获 (序列号1和确认号2)

```
4 2011-08-31 08:23:58.483005390 Cisco_ab:29:bd
5 2011-08-31 08:24:00.217113680 Emulex_9d:23:72
6 2011-08-31 08:24:28.484536460 Cisco_ab:29:bd
7 2011-08-31 08:24:30.216221870 Emulex_9d:23:72
```

```
Interface Subtype: ifIndex (2)
Interface Number: 83886080
OID String Length: 0
▼ Unknown - Unknown
  1111 111. .... .... = TLV Type: Organization Specific (127)
  .... ...0 0011 0111 = TLV Length: 55
  Organization Unique Code: Unknown (0x001b21)
  Unknown Subtype Content: 02020a0000000000010000000206060000080000
▼ Unknown - Unknown
  1111 111. .... .... = TLV Type: Organization Specific (127)
  .... ...0 0000 0101 = TLV Length: 5
  Organization Unique Code: Unknown (0x000142)
  Unknown Subtype Content: 0101
▼ IEEE 802.1 - Port VLAN ID
  1111 111. .... .... = TLV Type: Organization Specific (127)
  .... ...0 0000 0110 = TLV Length: 6
  Organization Unique Code: IEEE 802.1 (0x0080c2)
  IEEE 802.1 Subtype: Port VLAN ID (0x01)
  Port VLAN Identifier: 1 (0x0001)
▼ End of LLDPDU
  0000 000. .... .... = TLV Type: End of LLDPDU (0)
  .... ...0 0000 0000 = TLV Length: 0
```



CNA发送LLDP帧DCBX控制子TLV的Wireshark捕获 (序列号2和确认号1)

```
5 2011-08-31 08:24:00.217113680 Emulex_9d:23:72
```

```
6 2011-08-31 08:24:28.484536460 Cisco_ab:29:bd
```

```
7 2011-08-31 08:24:30.216221870 Emulex_9d:23:72
```

```
.... ...0 0000 0010 = TLV Length: 2
```

```
Seconds: 120
```

```
▼ System Description = Emulex OneConnect 10Gb Multi function Adapter
```

```
0000 110. .... .... = TLV Type: System Description (6)
```

```
.... ...0 0010 1101 = TLV Length: 45
```

```
System Description = Emulex OneConnect 10Gb Multi function Adapter
```

```
▼ Capabilities
```

```
0000 111. .... .... = TLV Type: System Capabilities (7)
```

```
.... ...0 0000 0100 = TLV Length: 4
```

```
▼ Capabilities: 0x0080
```

```
.... .... 1... .... = Station only
```

```
▼ Enabled Capabilities: 0x0080
```

```
.... .... 1... .... = Station only
```

```
▼ Unknown - Unknown
```

```
1111 111. .... .... = TLV Type: Organization Specific (127)
```

```
.... ...0 0011 0111 = TLV Length: 55
```

```
Organization Unique Code: Unknown (0x001b21)
```

```
Unknown Subtype Content: 02020a0000000000020000000104110000c000000
```

```
▼ End of LLDPDU
```

```
0000 000. .... .... = TLV Type: End of LLDPDU (0)
```

```
.... ...0 0000 0000 = TLV Length: 0
```

或者，在Nexus 5000系列交换机平台中使用内置嗅探器，以便查看LLDP帧。使用源MAC地址作为显示过滤器。

CNA发送LLDP帧DCBX控制子TLV的Ethanalyzer捕获（序列号2和确认号1）。

```
N5k# ethanalyzer local interface inbound-hi det display-filter eth.src==
```

```
00:00:c9:9d:23:72
```

```
Capturing on eth4
```

```
Frame 1215 (152 bytes on wire, 152 bytes captured)
```

```
Arrival Time: Aug 31, 2011 09:06:25.549049000
```

```
[Time delta from previous captured frame: 0.021367000 seconds]
```

```
[Time delta from previous displayed frame: 1314795985.549049000 seconds]
```

```
[Time since reference or first frame: 1314795985.549049000 seconds]
```

```
Frame Number: 1215
```

```
Frame Length: 152 bytes
```

```
Capture Length: 152 bytes
```

```
[Frame is marked: False]
```

```
[Protocols in frame: eth:vlan:lldp]
```

```
Ethernet II, Src: 00:00:c9:9d:23:72 (00:00:c9:9d:23:72), Dst: 01:80:c2:00:00:0e
```

```

(01:80:c2:00:00:0e)
  Destination: 01:80:c2:00:00:0e (01:80:c2:00:00:0e)
    Address: 01:80:c2:00:00:0e (01:80:c2:00:00:0e)
      .... .1. .... = IG bit: Group address (multicast/broadcast)
      .... .0. .... = LG bit: Globally unique address (factory default)
  Source: 00:00:c9:9d:23:72 (00:00:c9:9d:23:72)
    Address: 00:00:c9:9d:23:72 (00:00:c9:9d:23:72)
      .... .0. .... = IG bit: Individual address (unicast)
      .... .0. .... = LG bit: Globally unique address (factory default)
  Type: 802.1Q Virtual LAN (0x8100)
802.1Q Virtual LAN
  000. .... = Priority: 0
  ...0 .... = CFI: 0
  .... 0000 0001 0100 = ID: 20
  Type: 802.1 Link Layer Discovery Protocol (LLDP) (0x88cc)
Link Layer Discovery Protocol
  Chassis Subtype = MAC address
    0000 001. .... = TLV Type: Chassis Id (1)
    .... .0. 0000 0111 = TLV Length: 7
    Chassis Id Subtype: MAC address (4)
    Chassis Id: 00:00:c9:9d:23:72 (00:00:c9:9d:23:72)
  Port Subtype = MAC address
    0000 010. .... = TLV Type: Port Id (2)
    .... .0. 0000 0111 = TLV Length: 7
    Port Id Subtype: MAC address (3)
    Port Id: 00:00:c9:9d:23:72 (00:00:c9:9d:23:72)
  Time To Live = 120 sec
    0000 011. .... = TLV Type: Time to Live (3)
    .... .0. 0000 0010 = TLV Length: 2
    Seconds: 120
  System Description = Emulex OneConnect 10Gb Multi function Adapter
    0000 110. .... = TLV Type: System Description (6)
    .... .0. 0010 1101 = TLV Length: 45
    System Description = Emulex OneConnect 10Gb Multi function Adapter
  Capabilities
    0000 111. .... = TLV Type: System Capabilities (7)
    .... .0. 0000 0100 = TLV Length: 4
    Capabilities: 0x0080
      .... .1. .... = Station only
    Enabled Capabilities: 0x0080
      .... .1. .... = Station only
  Unknown - Unknown
    1111 111. .... = TLV Type: Organization Specific (127)
    .... .0. 0011 0111 = TLV Length: 55
    Organization Unique Code: Unknown (0x001b21)
    Unknown Subtype Content: 02020A000000000002000000104110000C0000001000032... <<<<<
  End of LLDPDU
    0000 000. .... = TLV Type: End of LLDPDU (0)
    .... .0. 0000 0000 = TLV Length: 0

```

N5k# 1 packets captured