Catalyst 6000平台上的WS-X6608-T1/E1数字网关卡问题解决方法

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简介

列侬卡(WS-X6608-T1/E1)是8端口数字网关和/或数字信号处理器(DSP)场，使用瘦客户端控制协议(SCCP)与Cisco CallManager 3.0交互。

本文档深入概述了可用于排除Lennon网关故障的**debug**和工程级命令。本文档涵盖从如何排除注册问题到如何直接从860处理器和DSP解决的问题获取信息等所有内容。

先决条件

要求

本文档没有任何特定的要求。

使用的组件

本文档中的信息基于以下软件和硬件版本：

- WS-X6608-T1/E1数字网关卡
- Cisco Catalyst 6000 系列交换机

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。

规则

有关文件规则的更多信息请参见“ Cisco技术提示规则”。

通过Catalyst 6000 CLI排除故障

首先，必须确保模块在机箱中可识别、已通电且处于运行状态。

使用show env power命令确保模块已识别并**已通电**。

```
evoice-cat6k-6a (enable) show env power 7
Module 7:
Slot power Requirement/Usage :

Slot Card Type            PowerRequested PowerAllocated CardStatus
Watts    A @42V Watts    A @42V
---- ------------------- ------- ------ ------- ------ ----------
3    WS-X6608-T1           83.16   1.98   83.16   1.98  ok
```

如果卡类型显示正确，则识别模块。卡通电时，CardStatus显示其他。最终显示。如果卡显示deny，则系统中的电源不足，无法为模块通电。

接下来，使用show version命令检查APP加载和DSP加载**版本**:

```
dtl7-1-cat6000-a (enable) show version 3
Mod Port Model               Serial #    Versions
--- ---- ------------------- ----------- ---------------------------------------
3   8    WS-X6608-T1         SAD04380DAW Hw : 1.1
                                         Fw : 5.4(2)
                                         Sw : 6.1(1a)
                                         HP1: D004G300; DSP1: D005B300 (3.3.18)
                                         HP2: D004G300; DSP2: D005B300 (3.3.18)
                                         HP3: D004G300; DSP3: D005B300 (3.3.18)
                                         HP4: D004G300; DSP4: D005B300 (3.3.18)
                                         HP5: C001H300; DSP5: C002F300 (3.1.2)
                                         HP6: C001H300; DSP6: C002F300 (3.1.2)
                                         HP7: M001H300; DSP7: M002F300 (3.1.2)
                                         HP8: M001H300; DSP8: M002F300 (3.1.2)
```

HP代表主机处理器，它是列依机器上八个独立的860处理器。后面的加载ID称为应用加载。DSP字段指示在8个DSP上为该特定列依端口加载的DSP代码的版本号（这总共提供64个DSP）。 如果DSP当前正在更新，则这些字段可以为空。

应用加载版本还告诉您端口当前配置的功能。三个有效设置是数字PRI网关、会议网桥或转码器/消息传输部分(MTP)。 加载文件的前四个字符告诉您它是哪种文件：

- D004 =数字网关应用加载D005 =数字网关DSP负载
- C001 =会议网桥应用加载C002 =会议网桥DSP负载
- M001 =转码器/MTP应用加载M002 =转码器/MTP DSP负载

用户从未配置DSP加载文件名。它直接与特定应用加载文件关联。由于对DSP加载的更改较少，因此多个应用加载文件通常指向同一DSP加载文件。例如，D0040300、D004A300、D004B300应用加载文件都可以使用DSP加载文件D0050300。

接下来检查模块是否具有有效的IP配置信息，以及是否已向Cisco CallManager注册。使用**show port**命令。

```
dtl7-1-cat6000-a (enable) show port 3
```

```
Port  Name               Status     Vlan       Duplex Speed Type
----- ------------------ ---------- ---------- ------ ----- ------------
 3/1                     connected  17           full 1.544 T1
 3/2                     connected  17           full 1.544 T1
 3/3                     connected  17           full 1.544 T1
 3/4                     connected  17           full 1.544 T1
 3/5                     enabled    17           full     - Conf Bridge
 3/6                     enabled    17           full     - Conf Bridge
 3/7                     enabled    17           full     - MTP
 3/8                     enabled    17           full     - MTP

Port     DHCP    MAC-Address       IP-Address      Subnet-Mask
-------- ------- ----------------- --------------- ---------------
 3/1     enable  00-01-c9-d8-55-74 10.192.17.98    255.255.255.0
 3/2     enable  00-01-c9-d8-55-75 10.192.17.107   255.255.255.0
 3/3     enable  00-01-c9-d8-55-76 10.192.17.108   255.255.255.0
 3/4     enable  00-01-c9-d8-55-77 10.192.17.109   255.255.255.0
 3/5     enable  00-01-c9-d8-55-78 10.192.17.110   255.255.255.0
 3/6     enable  00-01-c9-d8-55-79 10.192.17.93    255.255.255.0
 3/7     enable  00-01-c9-d8-55-7a 10.192.17.95    255.255.255.0
 3/8     enable  00-01-c9-d8-55-7b 10.192.17.96    255.255.255.0

Port     Call-Manager(s)   DHCP-Server     TFTP-Server     Gateway
-------- ----------------- --------------- --------------- ---------------
 3/1     172.18.112.17*    172.18.112.11   172.18.112.17   10.192.17.254
         172.18.112.18
 3/2     172.18.112.17*    172.18.112.11   172.18.112.17   10.192.17.254
         172.18.112.18
 3/3     172.18.112.17*    172.18.112.11   172.18.112.17   10.192.17.254
         172.18.112.18
 3/4     172.18.112.17*    172.18.112.11   172.18.112.17   10.192.17.254
         172.18.112.18
 3/5     172.18.112.17*    172.18.112.11   172.18.112.17   10.192.17.254
         172.18.112.18
 3/6     172.18.112.17*    172.18.112.11   172.18.112.17   10.192.17.254
         172.18.112.18
 3/7     172.18.112.17*    172.18.112.11   172.18.112.17   10.192.17.254
         172.18.112.18
 3/8     172.18.112.17*    172.18.112.11   172.18.112.17   10.192.17.254
         172.18.112.18
(*): Primary

Port     DNS-Server(s)     Domain
-------- ----------------- ------------------------------------------------
 3/1     161.44.15.250*    cisco.com
         161.44.21.250
 3/2     161.44.15.250*    cisco.com
         161.44.21.250
 3/3     161.44.15.250*    cisco.com
         161.44.21.250
 3/4     161.44.15.250*    cisco.com
         161.44.21.250
 3/5     161.44.15.250*    cisco.com
         161.44.21.250
 3/6     161.44.15.250*    cisco.com
         161.44.21.250
 3/7     161.44.15.250*    cisco.com
         161.44.21.250
 3/8     161.44.15.250*    cisco.com
         161.44.21.250
(*): Primary

Port     CallManagerState DSP-Type
-------- ---------------- --------
```

```
 3/1     registered       C549
 3/2     registered       C549
 3/3     registered       C549
 3/4     registered       C549
 3/5     registered       C549
 3/6     registered       C549
 3/7     registered       C549
 3/8     registered       C549

Port  NoiseRegen NonLinearProcessing
----- ---------- -------------------
 3/1  enabled    enabled
 3/2  enabled    enabled
 3/3  enabled    enabled
 3/4  enabled    enabled
 3/5  disabled   disabled
 3/6  disabled   disabled
 3/7  disabled   disabled
 3/8  disabled   disabled

Port   Trap       IfIndex
-----  --------   -------
 3/1   disabled   1262
 3/2   disabled   1263
 3/3   disabled   1264
 3/4   disabled   1265
 3/5   disabled   1266
 3/6   disabled   1267
 3/7   disabled   1268
 3/8   disabled   1269
```

在此**show port**命令输出中，确保IP地址、子网掩码、网关、DNS服务器、域和TFTP服务器地址正确。另请确保端口位于正确的VLAN中。每个列依端口可以置于不同的子网中，并独立于同一模块上的其他端口运行。

检查卡是否已向Cisco CallManager注册。如果卡未注册，并且已在Cisco CallManager上配置，请参阅本文档的排除注册问题部分。

show port命令也可用于检查卡上每个端口的状态。状态字段根据端口类型（网关/会议/MTP）而异。

对于未向Cisco CallManager注册的任何端口，该端口根据该端口上的配置状态处于或状态。MTP和会议网桥端口也显示或已。

注册的数字网关端口根据D信道的状态已连接或未连接。请记住，D信道在Cisco CallManager上终止，而不是在Lennon卡上终止。

呼叫启动后，**show port voice active**命令可用于收集有关系统上所有活动呼叫的信息以及有关各个呼叫的详细信息。类型显示端口的呼叫、议端口的呼叫以及转码和MTP

```
dtl7-1-cat6000-a (debug-eng) show port voice active
Port  Type         Total Conference-ID/ Party-ID IP-Address
Transcoding-ID
----- ------------ ----- -------------- -------- ---------------
 3/1  call         2     -              -        10.192.17.115
                                                  10.192.17.93
 3/6  conferencing 1     1              6        10.192.17.98
                                        7        10.192.17.112
                                        5        10.192.17.114
```

```
 3/8  transcoding  1     2             9        172.18.112.109
                                      11       10.192.17.113
```

为单个端口**发出show port voice active**命令，以获取更多详细信息。网关呼叫类似于此输出，字段不言自明。

```
dtl7-1-cat6000-a (debug-eng) show port voice active 3/1
Port  3/1 :
  Channel #22:
    Remote IP address                       : 10.192.17.115
    Remote UDP Port:                          20972
    ACOM Level Current                      : 200
    Call State     :                          voice
    Codec Type     :                          G711 ULAW PCM
    Coder Type Rate:                          20
    ERL Level      :                          200
    Voice Activity Detection                : disabled
    Echo Cancellation                       : enabled
    Fax Transmit Duration (ms)              : 0
    Hi Water Playout Delay                  : 65
    Low Water Playout Delay                 : 65
    Receive Bytes  :                          0
    Receive Delay  :                          65
    Receive Packets:                          0
    Transmit Bytes :                          7813280
    Transmit Packets                        : 48833
    Tx Duration (ms)                        : 3597580
    Voice Tx Duration (ms)                  : 3597580
```

这是会议端口的相同命令输出。每个会议都显示会议的参与者以及所使用的编解码器和数据包大小。

```
dtl7-1-cat6000-a (debug-eng) show port voice active 3/6
Port  3/6 :
  Conference ID: 1
    Party ID: 6
      Remote IP address                     : 10.192.17.98
      UDP Port     :                          26522
      Codec Type   :                          G711 ULAW PCM
      Packet Size (ms)                      : 20
    Party ID: 7
      Remote IP address                     : 10.192.17.112
      UDP Port     :                          17164
      Codec Type   :                          G711 ULAW PCM
      Packet Size (ms)                      : 20
    Party ID: 5
      Remote IP address                     : 10.192.17.114
      UDP Port     :                          19224
      Codec Type   :                          G711 ULAW PCM
      Packet Size (ms)                      : 20
```

这是转码端口的输出。这里，您会看到两个不同的编码解码器被转码。如果端口仅执行MTP而不进行转码，则两个参与者的编解码器类型相同。

```
dtl7-1-cat6000-a (debug-eng) show port voice active 3/8
Port  3/8 :
  Transcoding ID: 2
    Party ID: 9
      Remote IP address                     : 172.18.112.109
      UDP Port     :                          17690
      Codec Type   :                          G7231 HIGH RATE
```

```
      Packet Size (ms)                    : 30
    Party ID: 11
      Remote IP address                   : 10.192.17.113
      UDP Port     :                        18732
      Codec Type   :                        G729 B CS ACELP VAD
      Packet Size (ms)                    : 20
Total: 1
```

排除注册问题

遇到的最常见问题之一是，检查卡是否已启动并运行，并已通过DHCP或手动配置接收其IP地址。

show port命令显示Cisco CallManager IP地址信息。确保IP信息和TFTP IP地址正确。。这将提供Cisco CallManager的IP地址。如果列依端口无法获取有效的DHCP信息，可以使用tracy实用程序来确定问题所在。从Catalyst 6000 **CLI发出*tracy_start*** mod port命令。

在本例中，列依是模块3。为排除端口3/1故障而发出的命令**是tracy_start 3 1**。

```
dtl7-1-cat6000-a (debug-eng)

      |            |
      |            |
     |||          |||
    |||||        |||||
..:|||||||:....:|||||||:..
C i s c o   S  y s t e m s
CAT6K Digital Gateway (Lennon)
APP Version : D004G300, DSP Version : D005B300, Built Sep 13 2000 15:06:02
Device Name : SDA0001C9D85577
02:38:26.620 (CFG) DHCP Timeout Waiting on Server, DHCPState = INIT
02:38:58.620 (CFG) DHCP Timeout Waiting on Server, DHCPState = INIT
02:39:02.620 (CFG) DHCP Timeout Waiting on Server, DHCPState = INIT
```

如果此超时消息继续滚动，则与DHCP服务器联系时出现问题。首先检查列依端口是否在正确的VLAN中。此信息在**show port**命令中。如果DHCP服务器与列依端口不在同一VLAN中，则确保配置了适当的IP帮助地址，以将DHCP请求转发到DHCP服务器。在devtest中，在VLAN号更改后，Lennon会陷入此INIT状态，直到Lennon重置为止。在此状态下，如果所有配置都正确，请重置列依。每次重置860时，您都会失去tracy会话。因此，您必须关闭活动会话并通过发出以下命令重新建立新会话：

```
tracy_close mod port
tracy_start mod port
```

检查以确保网络管理处理器(NMP)也能与列依端口通信。尝试从NMP ping其内部IP地址。IP地址的格式为：

```
127.1.module.port
```

对于列依端口5/4:

```
Console (enable) ping 127.1.5.4
127.1.5.4 is alive
```

如果所有这些都检出，而您仍然看到`DHCPState = INIT`息，则请确保DHCP服务器正常工作。之后

，获取嗅探器跟踪，查看请求是否被发送以及服务器是否做出响应。

一旦DHCP工作正常，tracy命令的输出需要显示：

```
00:09:05.620 (CFG) DHCP Server Response Processed, DHCPState = REQUESTING
00:09:05.620 (CFG) DHCP Server Response Processed, DHCPState = BOUND
00:09:05.620 (CFG) Requesting DNS Resolution of CiscoCM1
00:09:05.620 (CFG) DNS Error on Resolving TFTP Server Name.
00:09:05.620 (CFG) TFTP Server IP Set by DHCP Option 150 = 10.123.9.2
```

下一步是确保TFTP服务器IP地址正确，并确保Elvis从TFTP服务器获取其配置文件。如果在tracy输出中看到这一点，您的TFTP服务可能无法正常工作，或者Cisco CallManager上可能未配置Elvis:

```
00:09:05.620 (CFG) Requesting SAA00107B0013DE.cnf File From TFTP Server
00:09:18.620 (CFG) TFTP Error: Timeout Awaiting Server Response for .cnf File!
```

如果Lennon端口未获得配置文件，则尝试连接到与TFTP服务器相同的IP地址。除非您处于集群环境中，网关需要接收其冗余Cisco Call Manager列表，否则此操作无妨。如果卡未正确获取其TFTP信息，请检查Cisco CallManager上的TFTP服务并确保其运行。此外，检查Cisco CallManager上的TFTP跟踪。

另一个常见问题是Cisco CallManager上的列依端口配置不正确。典型错误是您错误地输入了Elvis的MAC地址。如果出现这种情况，您可能会每两分钟在NMP控制台上继续获得此输出：

```
2000 Apr 14 19:24:08 %SYS-4-MODHPRESET:Host process (860) 7/1 got reset asynchronously
2000 Apr 14 19:26:05 %SYS-4-MODHPRESET:Host process (860) 7/1 got reset asynchronously
2000 Apr 14 19:28:02 %SYS-4-MODHPRESET:Host process (860) 7/1 got reset asynchronously
```

如果列依端口不在Cisco CallManager数据库中，则tracy命令输出如下所示：

```
 |           |
      |            |
     |||          |||
    |||||        |||||
..:|||||||:....:|||||||:..
C i s c o   S  y s t e m s
CAT6K Digital Gateway (Lennon)
APP Version : D004G300, DSP Version : D005B300, Built Sep 13 2000 15:06:02
Device Name :
00:00:00.020 (XA) MAC Addr : 00-01-C9-D8-55-77
00:00:00.020 NMPTask:got message from XA Task
00:00:00.020 (NMP) Open TCP Connection ip:7f010101
00:00:00.030 NMPTask:Send Module Slot Info
00:00:00.030 NMPTask:get DIAGCMD
00:00:00.030 NMPTask:send DIAGCMD TCP ack
00:00:00.030 SPAN: Transmit clock slaved to span 3
00:00:00.030 SPAN: Transmit clock set to internal osc.
00:00:00.580 (DSP) Test Begin -> Mask<0x00FFFFFF>
00:00:01.570 SPAN: Transmit clock slaved to span 3
00:00:01.570 SPAN: Transmit clock set to internal osc.
00:00:01.570 (DSP) Test Complete -> Results<0x00FFFFFF/0x00FFFFFF>
00:00:01.810 NMPTask:get VLANCONFIG
00:00:02.870 (CFG) Starting DHCP
00:00:02.870 (CFG) Booting DHCP for dynamic configuration.
00:00:03.170 (CFG) DHCP Request or Discovery Sent, DHCPState = INIT
```

```
00:00:03.170 (CFG) DHCP Server Response Processed, DHCPState = REQUESTING
00:00:03.170 (CFG) DHCP Server Response Processed, DHCPState = BOUND
00:00:03.170 (CFG) Requesting DNS Resolution of CiscoCM1
00:00:16.170 (CFG) DNS Server Timeout on Resolving TFTP Server Name.
00:00:16.170 (CFG) TFTP Server IP Set by DHCP Option 150 = 172.18.112.17
00:00:16.170 (CFG) Requesting SDA0001C9D85577.cnf File From TFTP Server
00:00:16.170 (CFG) TFTP Error: .cnf File Not Found!
00:00:16.170 (CFG) Requesting SDADefault.cnf File From TFTP Server
00:00:16.170 (CFG) .cnf File Received and Parsed Successfully.
00:00:16.170 (CFG) Updating Configuration ROM...
00:00:16.620 GMSG: GWEvent = CFG_DONE --> GWState = SrchActive
00:00:16.620 GMSG: CCM#0 CPEvent = CONNECT_REQ --> CPState = AttemptingSocket
00:00:16.620 GMSG: Attempting TCP socket with CCM 172.18.112.17
00:00:16.620 GMSG: CCM#0 CPEvent = SOCKET_ACK --> CPState = BackupCCM
00:00:16.620 GMSG: GWEvent = SOCKET_ACK --> GWState = RegActive
00:00:16.620 GMSG: CCM#0 CPEvent = REGISTER_REQ --> CPState = SentRegister
00:00:16.770 GMSG: CCM#0 CPEvent = CLOSED --> CPState = NoTCPSocket
00:00:16.770 GMSG: GWEvent = DISCONNECT --> GWState = SrchActive
00:00:16.770 GMSG: CCM#1 CPEvent = CONNECT_REQ --> CPState = AttemptingSocket
00:00:16.770 GMSG: Attempting TCP socket with CCM 172.18.112.18
00:00:16.770 GMSG: CCM#1 CPEvent = SOCKET_NACK --> CPState = NoTCPSocket
00:00:16.770 GMSG: GWEvent = DISCONNECT --> GWState = Rollover
00:00:31.700 GMSG: GWEvent = TIMEOUT --> GWState = SrchActive
00:00:31.700 GMSG: CCM#0 CPEvent = CONNECT_REQ --> CPState = AttemptingSocket
00:00:31.700 GMSG: Attempting TCP socket with CCM 172.18.112.17
00:00:31.700 GMSG: CCM#0 CPEvent = SOCKET_ACK --> CPState = BackupCCM
00:00:31.700 GMSG: GWEvent = SOCKET_ACK --> GWState = RegActive
00:00:31.700 GMSG: CCM#0 CPEvent = REGISTER_REQ --> CPState = SentRegister
00:00:31.850 GMSG: CCM#0 CPEvent = CLOSED --> CPState = NoTCPSocket
00:00:31.850 GMSG: GWEvent = DISCONNECT --> GWState = SrchActive
00:00:31.850 GMSG: CCM#1 CPEvent = CONNECT_REQ --> CPState = AttemptingSocket
00:00:31.850 GMSG: Attempting TCP socket with CCM 172.18.112.18
00:00:31.850 GMSG: CCM#1 CPEvent = SOCKET_NACK --> CPState = NoTCPSocket
00:00:31.850 GMSG: GWEvent = DISCONNECT --> GWState = Rollover
```

show port命令将列依端口显示为册，如以下输出所示：

```
dtl7-1-cat6000-a (debug-eng) show port 3/4
Port  Name               Status     Vlan       Duplex Speed Type
----- ------------------ ---------- ---------- ------ ----- ------------
 3/4                     enabled    17           full     - unknown

Port     DHCP    MAC-Address       IP-Address      Subnet-Mask
-------- ------- ----------------- --------------- ---------------
 3/4     enable  00-01-c9-d8-55-77 10.192.17.109   255.255.255.0

Port     Call-Manager(s)   DHCP-Server     TFTP-Server     Gateway
-------- ----------------- --------------- --------------- ---------------
 3/4     -                 172.18.112.11   172.18.112.17   10.192.17.254

Port     DNS-Server(s)     Domain
-------- ----------------- ------------------------------------------------
 3/4     161.44.15.250*    cisco.com
         161.44.21.250
(*): Primary

Port     CallManagerState DSP-Type
-------- ---------------- --------
 3/4     notregistered    C549

Port  NoiseRegen NonLinearProcessing
----- ---------- -------------------
 3/4  -          -
```

```
Port   Trap       IfIndex
-----  ---------  -------
 3/4   disabled   1265
```

另一个可能的注册问题可能是加载信息不正确或加载文件损坏。如果TFTP服务器不工作，也可能出现问题。在这种情况下，tracy显示TFTP服务器报告未找到文件：

```
00:00:07.390 GMSG: CCM#0 CPEvent = REGISTER_REQ --> CPState = SentRegister
00:00:08.010 GMSG: TFTP Request for application load D0041300
00:00:08.010 GMSG: CCM#0 CPEvent = LOADID --> CPState = AppLoadRequest
00:00:08.010 GMSG: *** TFTP Error:  File Not Found ***
00:00:08.010 GMSG: CCM#0 CPEvent = LOAD_UPDATE --> CPState = LoadResponse
```

在这种情况下，Lennon请求App Load D0041300，但正确的负载名称是D0040300。当新的App Load也需要获取其相应的DSP负载时，可能会出现同样的问题。如果未找到新的DSP负载，则会显示类似消息。

检查列侬的物理层统计信息

最初，从配置为T1/E1网关的列侬端口获得的唯一第1层统计信息是通过此命令获得的。此选项仅适用于T1端口，因为E1上没有设备数据链路(FDL)。

```
cat6k-2 (enable) show port voice fdl 3/1

Port  ErrorEvents       ErroredSecond     SeverlyErroredSecond
      Last 15' Last 24h Last 15' Last 24h Last 15' Last 24h
----- -------- -------- -------- -------- -------- -----------
 3/1  65535    65535    900      20864    900      20864
Port  FailedSignalState FailedSignalSecond
      Last 15' Last 24h Last 15' Last 24h
----- -------- -------- -------- ---------
 3/1  1        1        900      20864
Port         LES               BES               LCV
      Last 15' Last 24h Last 15' Last 24h Last 15' Last 24h
----- -------- -------- -------- -------- -------- --------
 3/1  0        0        0        0        0        0
```

但是，从App Load D004S030.bin开始，可以使用CLI调试选项tracy_send_cmd从列侬端口获取更详细的统计信息，如以下输出所示：

```
cat6k-2 (debug-eng) tracy_start 3 1
cat6k-2 (debug-eng) tracy_send_cmd
Usage: tracy_send_cmd <modN> <portN> " <taskID> <enable/set/get> <cmd>[options]
<level>/[level] "
```

Tracy调试也可以通过在PC上运行“DickTracy”应用程序，并通过IP会话访问Lennon上的HP860主机处理器来完成。如果使用“DickTracy”应用程序，则在与860建立IP会话后，使用菜单选项将成帧器任务ID设置为16并执行这些命令。

- show config

```
00:00:51.660 SPAN: CLI Request --> Show Span Configuration
      Applique type is Channelized E1
      Line Encoding --------> HDB3
      Framing Format -------> CRC4
      Signaling Mode -------> ISDN
      Facility Data Link --> NONE (Disabled)
      D-channel ------------> Enabled
```

```
      Timing Source -------> slaved to Span 0 Rx Clock
      Line Loopback Type --> No Loopback
      Span Description ---->
(or for T1 example)
00:01:11.020 SPAN: CLI Request --> Show Span Configuration
      Applique type is Channelized T1
      Line Encoding -------> B8ZS
      Framing Format ------> ESF
      Signaling Mode ------> ISDN
      Facility Data Link --> AT&T PUB 54016
      Yellow Alarm Mode ---> F-bit Insertion
      Line Buildout -------> 0dB
      D-channel -----------> Enabled
      Timing Source -------> Internal Osc.
      Line Loopback Type --> No Loopback
      Span Description ---->
```

- **show status**

```
00:00:36.160 SPAN: CLI Request --> Show Span Summary Status
    E1 6/1 is up
      No alarms detected.
    Alarm MIB Statistics
      Yellow Alarms -------> 1
      Blue Alarms ---------> 0
      Frame Sync Losses ---> 0
      Carrier Loss Count --> 0
      Frame Slip Count ----> 0
      D-chan Tx Frame Count ----> 5
      D-chan Tx Frames Queued --> 0
      D-chan Tx Errors ---------> 0
      D-chan Rx Frame Count ----> 5
      D-chan Rx Errors ---------> 0
(or for T1 example)
00:00:51.310 SPAN: CLI Request --> Show Span Summary Status
    T1 6/1 is down
      Transmitter is sending Remote Alarm
      Receiver has AIS Indication
    Alarm MIB Statistics
      Yellow Alarms -------> 1
      Blue Alarms ---------> 2
      Frame Sync Losses ---> 2
      Carrier Loss Count --> 0
      Frame Slip Count ----> 0
      D-chan Tx Frame Count ----> 43
      D-chan Tx Frames Queued --> 0
      D-chan Tx Errors ---------> 0
      D-chan Rx Frame Count ----> 0
      D-chan Rx Errors ---------> 0
```

- **show fdlintervals 3** — 数字3是从最近开始要显示的间隔数。

```
00:01:21.350 SPAN: CLI Request --> Dump local FDL 15-min interval history
  0 Complete intervals stored.
  Data in current interval (78 seconds elapsed):
    1 Line Code Violations, 0 Path Code Violations, 0 Received E-bits
    0 Slip Secs, 3 Fr Loss Secs, 1 Line Err Secs
    3 Errored Secs, 0 Bursty Err Secs, 3 Severely Err Secs, 0 Unavail Secs
  24-Hr Totals:
    0 Line Code Violations, 0 Path Code Violations, 0 Received E-bits
    0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs
    0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs
```

- **show dtefdl 3** — 数字3是间隔数。此命令通过使用FDL提供远端统计信息。因此，仅当FDL正常运行且请求由CO处理时，才适用于T1。

相关信息

- 语音技术支持
- 语音和 IP 通信产品支持
- Cisco IP 电话故障排除
- 技术支持 - Cisco Systems