

NCS4000系统ECU到ECU2的CLI迁移过程

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简介

本文档介绍成功交换安装在NCS4016系统中的在用外部连接单元(ECU)并替换为ECU 2所需的信息。该过程提供了拆卸/安装ECU的步骤。

先决条件

要求

Cisco 建议您了解以下主题：

- 用于Cisco NCS4000系列的CLI Cisco IOS®
- 思科NCS4000系列，包括NCS4016/NCS4009

使用的组件

本文档中的信息基于在开始此过程之前运行6.5.26或更高版本软件的NCS4016系统。

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。如果您的网络处于活动状态，请确保您了解所有命令的潜在影响。

背景信息

本文档中详述的过程不会影响流量。它假设NCS4000机箱是4016或4009机架。如果您的网络处于活动状态，请确保您了解所有命令的潜在影响。

建立与NCS4K的连接并验证6.5.26的最低软件版本

开始之前，请确保已设置与NCS 4016的笔记本电脑连接，且笔记本电脑符合硬件和软件要求。

步骤1.从连接到NCS 4016机架的计算机启动终端仿真程序 (如putty) 并登录NCS4016系统。

步骤2.在命令提示符下 , 执行**show version** , 并验证软件版本是否为6.5.26 , 如图所示。

```
RP/0/RP0:Node_Name#show version
Thu Nov 14 13:44:09.282 CST
Cisco IOS XR Software, Version 6.5.26
Copyright (c) 2013-2019 by Cisco Systems, Inc.

Build Information:
  Built By       : ahoang
  Built On       : Fri Sep 13 13:33:51 PDT 2019
  Built Host     : iox-lnx-060
  Workspace      : /auto/srcarchive11/prod/6.5.26/ncs4k/ws
  Version        : 6.5.26
  Location       : /opt/cisco/XR/packages/

cisco NCS-4000 () processor
System uptime is 2 weeks 5 days 21 hours 42 minutes
```

步骤3.如果软件不在6.5.26或更高版本上 , 请停止该过程并将软件升级到6.5.26 , 然后再继续。

步骤4.验证并记录图中所示的所有警报。

```
RP/0/RP0:Node_Name#show alarms brief system active
Thu Nov 14 13:53:08.689 CST

-----
Active Alarms
-----
Location          Severity    Group      Set Time      Description
-----
0/12              Critical   Environ    10/20/2019 21:30:42 CDT  LC12 - Improper Removal
0/0               Minor     Controller 10/20/2019 21:31:45 CDT  Optics0/0/0/0/5 - Optics Low Transmit Power
0/0               Minor     Controller 10/20/2019 21:31:45 CDT  Optics0/0/0/0/6 - Optics Low Transmit Power
0/6               Minor     Controller 10/20/2019 21:31:53 CDT  Optics0/6/0/6 - Optics Unqualified PPM
0/3               Minor     Controller 10/20/2019 21:31:57 CDT  Optics0/3/0/6 - Optics Unqualified PPM
0/6               Critical   OTN        10/20/2019 21:32:59 CDT  ODU40/6/0/10 - OPUK Client Signal Failure
0/3               Critical   OTN        10/20/2019 21:33:02 CDT  ODU40/3/0/10 - OPUK Client Signal Failure
0/4               Major     Ethernet    10/21/2019 16:41:56 CDT  TenGigECtrlr0/4/0/0/2 - Carrier Loss On The LAN
0/0               Major     Ethernet    10/25/2019 17:11:10 CDT  TenGigECtrlr0/0/0/0/1 - Local Fault
0/3               Critical   OTN        11/01/2019 10:32:48 CDT  OTU40/3/0/11 - Incoming Payload Signal Absent
0/2               Major     Ethernet    10/30/2019 05:41:08 CDT  TenGigECtrlr0/2/0/4/1 - Carrier Loss On The LAN
0/0               Major     Ethernet    10/30/2019 05:41:09 CDT  TenGigECtrlr0/0/0/0/2 - Carrier Loss On The LAN
0/0               Critical   OTN        11/01/2019 10:34:57 CDT  ODU20/0/0/0/1 - OPUK Client Signal Failure
0/0               Critical   OTN        11/01/2019 10:34:59 CDT  ODU20/0/0/0/2 - OPUK Client Signal Failure
RP/0/RP0:Node_Name#
```

步骤5.检验硬盘详细信息。

```

|
sysadmin-vm:0_RP0# sh media
Fri Jun 21 20:21:28.615 UTC
-----
Partition                Size      Used  Percent  Avail
-----
rootfs:                   2.4G     633M    29%     1.6G
log:                       478M     308M    70%     135M
config:                   478M      32M     8%     410M
disk0:                     949M      47M     6%     838M
install:                  3.7G     2.8G    81%     681M
disk1:                     18G      3.0G    18%     14G
-----

rootfs: = root file system (read-only)
log:    = system log files (read-only)
config: = configuration storage (read-only)
install: = install repository (read-only)
sysadmin-vm:0_RP0#

```

步骤6.创建数据库备份。

```

RP/0/RP0:Node_Name# save configuration database disk1:Node_Name_DB_BACKUP
Thu Nov 14 13:59:54.631 CST
Configuration database successfully backed up at:
/harddisk:/disk1:Node Name DB BACKUP.tgz

RP/0/RP0:Node_Name# show run | file disk1:Node_Name_DB_BACKUP
Thu Nov 14 14:00:41.974 CST
Building configuration...

[OK]
RP/0/RP0:Node_Name#

```

步骤7.检验BITS计时。如果NCS4K使用BITS定时，请记录这些命令的输出。如果未使用计时，请跳至步骤8。记录show controller timing controller clock命令的输出，如图所示。

```
RP/0/RP0:Node_Name| #show controller timing controller clock
Wed Nov 13 14:53:18.781 CST
```

SYNCEC Clock-Setting: Rack 0

| | BITS0-IN | BITS0-OUT | BITS1-IN | BITS1-OUT |
|------------|----------|------------|----------|------------|
| Config | : Yes | No | Yes | No |
| PORT Mode | : T1 | - | T1 | - |
| Framing | : ESF | - | ESF | - |
| Linecoding | : B8ZS | - | B8ZS | - |
| Submode | : - | - | - | - |
| Shutdown | : No | No | No | No |
| Direction | : RX | TX | RX | TX |
| QL Option | : O2 G1 | O2 G1 | O2 G1 | O2 G1 |
| RX_ssm | : PRS | - | PRS | - |
| TX_ssm | : - | - | - | - |
| If_state | : UP | ADMIN_DOWN | UP | ADMIN_DOWN |

| | TE0-E | TE1-E | TE0-W | TE1-W |
|------------|--------|-------|-------|-------|
| Config | : NA | NA | NA | NA |
| PORT Mode | : ICS | ICS | ICS | ICS |
| Framing | : - | - | - | - |
| Linecoding | : - | - | - | - |
| Submode | : - | - | - | - |
| Shutdown | : No | No | No | No |
| Direction | : - | - | - | - |
| QL Option | : O1 | O1 | O1 | O1 |
| RX_ssm | : - | - | - | - |
| TX_ssm | : - | - | - | - |
| If_state | : DOWN | DOWN | DOWN | DOWN |

如图所示，记录show frequency synchronization clock-interfaces brief命令的输出。

```
RP/0/RP0: Node_Name #show frequency synchronization clock-interfaces brief
Tue Nov 5 16:38:03.711 CST
Flags: > - Up          D - Down          S - Assigned for selection
       d - SSM Disabled s - Output squelched L - Looped back
Node 0/RP0:
=====
Fl  Clock Interface  QLrcv  QLuse  Pri  QLsnd  Output driven by
=====
>S  Rack0-Bits0-In   PRS    PRS    50  n/a    n/a
D   Rack0-Bits0-Out n/a    n/a    n/a  PRS    Rack0-Bits0-In
>S  Rack0-Bits1-In   PRS    PRS    50  n/a    n/a
D   Rack0-Bits1-Out n/a    n/a    n/a  PRS    Rack0-Bits0-In
D   0/TE0-E         n/a    n/a    n/a  n/a    n/a
D   0/TE1-E         n/a    n/a    n/a  n/a    n/a
D   0/TE0-W         n/a    n/a    n/a  n/a    n/a
D   0/TE1-W         n/a    n/a    n/a  n/a    n/a
>S  Internal0       n/a    ST3    255  n/a    n/a
```

步骤8.准备拆除ECU。为了安全地将ECU从服务中移除，请发出detach命令hw-module provision ecu detach disk rack 0，如图所示。

```
RP/0/RP0:Node_Name#hw-module provision ecu detach disk rack 0
Thu Nov 14 14:30:25.864 CST
provision: detach triggered for rack :0
RP/0/RP0:Node_Name#hw-module provision ecu status disk rack 0
Thu Nov 14 14:30:57.139 CST
provision: status triggered for rack :0
detach: operation ongoing
RP/0/RP0:Node_Name#
```

```
RP/0/RP0:Node_Name#show alarms brief system active
Thu Nov 14 14:32:51.469 CST
```

Active Alarms

| Location | Severity | Group | Set Time | Description |
|----------|----------|----------|-------------------------|---------------------------------------|
| 0/RP1 | Minor | Software | 11/14/2019 14:30:28 CST | disk provision is in progress |
| 0/RP0 | Minor | Software | 11/14/2019 14:31:57 CST | The detach provision for disk started |

```
RP/0/RP0:Node_Name#
```

步骤9.在物理移除ECU模块之前，请确保警报系统上已清除磁盘的分离操作。

```
RP/0/RP0:Node_Name#hw-module provision ecu status disk rack 0
Thu Nov 14 14:36:07.406 CST
provision: status triggered for rack :0
detach: operation completed successfully
```

步骤10.从NCS4K机箱卸下ECU模块：

a.确保用户佩戴防静电腕带。

b.拔下连接到NCS4K-ECU模块的所有电缆。

c.移除EMS电缆时，会将所有远程管理丢弃到机架中。在步骤11中重新连接EMS电缆后，它才会恢复。使用控制台端口仍可实现远程访问。

e.拔下连接到设备的所有单独定时电缆。

f.使用飞利浦螺丝刀拧松ECU单元上的螺钉。

g.使用两侧的锁闩将NCS4K-ECU单元拔出。

h.从原始NCS4K-ECU中卸下两个2.5英寸SATA驱动器(SSD)。注意ECU中的确切位置（左或右）。

我.将从NCS4K-ECU卸下的2.5英寸SATA驱动器插入新的NCS4K-ECU2模块。确保它们安装在与原始ECU相同的位置。

步骤11.安装ECU2模块并重新连接电缆：

a.将新的NCS4K-ECU2模块（两个2.5英寸SATA驱动器）放入原始ECU插槽中。

b.将步骤10中移除的所有电缆重新连接到新的ECU2模块。

c.正确定位锁闩后拧紧螺钉。

d.确保与NE的远程管理连接再次可用。

e. 确保NE的前面板LCD工作正常。



步骤12. 在NCS4K机箱中初始化新的ECU2。等待2到3分钟，NCS4K-ECU2模块初始化。

步骤13. 如图所示，在命令提示符下执行attach命令。

```
RP/0/RP0:Node Name#hw-module provision ecu attach disk rack 0
Thu Nov 14 14:47:05.299 CST
provision: attach triggered for rack :0
RP/0/RP0:Node Name#hw-module provision ecu status disk rack 0
Thu Nov 14 14:47:49.869 CST
provision: status triggered for rack :0
attach: operation ongoing
RP/0/RP0:Node Name#hw-module provision ecu status disk rack 0
Thur Nov 14 14:50:13.884 CST
provision: status triggered for rack :0
attach: operation completed successfully
RP/0/RP0:Node_Name#
```

步骤14. 一旦ECU成功连接到机箱，ECU从NCS4K-ECU迁移到NCS4K-ECU2完成。

过帐检查

验证警报

验证警报并确保机架上没有新警报或意外警报。

注意：对于RP0和RP1，位置警报的磁盘空间警报可能需要稍长的时间才能空闲，但您可以使用sh media命令验证磁盘是否运行正常。

| Num | Ref | New | Date | Object | Eqpt Type | Slot | Unit | Port | Wavelength | Path Width | Sev | ST | SA | Cond | Description | Direction | Location |
|-----|-----|-----|-------------------|--------|-------------|------|------|------|------------|------------|-----|----|----|-------------------|--|-----------|----------|
| NA | NA | ✓ | 06/21/19 14:40:34 | 0/RP0 | Route Pr... | RP0 | NA | NA | NA | NA | CR | C | NA | DISK1-DISK-SPA... | Disk space alert for location "Sysadmin/mis... | NA | NEAR |
| NA | NA | ✓ | 06/21/19 14:40:01 | 0/RP0 | Route Pr... | RP0 | NA | NA | NA | NA | MN | C | NA | ECU_CAL_DISK... | disk provision is in progress | NA | NEAR |
| NA | NA | ✓ | 06/21/19 14:40:00 | 0/RP0 | Route Pr... | RP0 | NA | NA | NA | NA | MN | C | NA | ECU_CAL_PROV... | The attach provision for disk started | NA | NEAR |

| Num | Ref | New | Date | Object | Eqpt Type | Slot | Unit | Port | Wavelength | Path Width | Sev | ST | SA | Cond | Description | Direction | Location |
|-----|-----|-----|-------------------|--------|-------------|------|------|------|------------|------------|-----|----|----|-------------------|--|-----------|----------|
| NA | NA | ✓ | 06/21/19 14:40:34 | 0/RP0 | Route Pr... | RP0 | | NA | NA | NA | CR | C | NA | DISK1-DISK-SPA... | Disk space alert for location "Sysadmin/mis... | NA | NEAR |
| NA | NA | ✓ | 06/21/19 14:40:01 | 0/RP0 | Route Pr... | RP0 | | NA | NA | NA | MN | C | NA | ECU_CAL_DISK_... | disk provision is in progress | NA | NEAR |
| NA | NA | ✓ | 06/21/19 14:40:00 | 0/RP0 | Route Pr... | RP0 | | NA | NA | NA | MN | C | NA | ECU_CAL_PROV... | The attach provision for disk started | NA | NEAR |
| NA | NA | ✓ | 06/21/19 14:38:41 | 0/RP0 | Route Pr... | RP0 | | NA | NA | NA | MN | R | NA | ECU_CAL_PROV... | The attach provision for disk started | NA | NEAR |
| NA | NA | NA | 06/21/19 14:22:31 | 0/RP1 | Route Pr... | RP1 | | NA | NA | NA | CR | R | NA | DISK1-DISK-SPA... | Disk space alert for location "Sysadmin/mis... | NA | NEAR |
| NA | NA | NA | 06/21/19 14:21:07 | 0/RP1 | Route Pr... | RP1 | | NA | NA | NA | MN | R | NA | ECU_CAL_DISK_... | disk provision is in progress | NA | NEAR |

验证介质

验证两个固态硬盘驱动器的插槽是否正确且是否可达，如图所示。

```
sysadmin-vm:0_RP0# sh media
```

```
Fri Jun 21 20:21:28.615 UTC
```

```
-----
Partition                               Size      Used  Percent  Avail
-----
```

```
rootfs:                                2.4G      633M    29%     1.6G
```

```
log:                                    478M      308M    70%     135M
```

```
config:                                 478M       32M     8%      410M
```

```
disk0:                                  949M       47M     6%      838M
```

```
install:                                3.7G      2.8G    81%     681M
```

```
disk1:                                  18G       3.0G    18%     14G
-----
```

```
rootfs: = root file system (read-only)
```

```
log:    = system log files (read-only)
```

```
config: = configuration storage (read-only)
```

```
install: = install repository (read-only)
```

```
sysadmin-vm:0_RP0#
```

BITS计时重新检查

如果已配备BITS定时，并且第1.5节已完成，请在将BITS定时重新连接到ECU2后再次运行命令，并与图中所示的先前结果进行比较。

RP/0/RP0:node_name#show controller timing controller clock

Wed Nov 13 14:53:18.781 CST

SYNCEC Clock-Setting: Rack 0

| | BITS0-IN | BITS0-OUT | BITS1-IN | BITS1-OUT |
|------------|----------|------------|----------|------------|
| Config | : Yes | No | Yes | No |
| PORT Mode | : T1 | - | T1 | - |
| Framing | : ESF | - | ESF | - |
| Linecoding | : B8ZS | - | B8ZS | - |
| Submode | : - | - | - | - |
| Shutdown | : No | No | No | No |
| Direction | : RX | TX | RX | TX |
| QL Option | : O2 G1 | O2 G1 | O2 G1 | O2 G1 |
| RX_ssm | : PRS | - | PRS | - |
| TX_ssm | : - | - | - | - |
| If_state | : UP | ADMIN_DOWN | UP | ADMIN_DOWN |

| | TE0-E | TE1-E | TE0-W | TE1-W |
|------------|--------|-------|-------|-------|
| Config | : NA | NA | NA | NA |
| PORT Mode | : ICS | ICS | ICS | ICS |
| Framing | : - | - | - | - |
| Linecoding | : - | - | - | - |
| Submode | : - | - | - | - |
| Shutdown | : No | No | No | No |
| Direction | : - | - | - | - |
| QL Option | : O1 | O1 | O1 | O1 |
| RX_ssm | : - | - | - | - |
| TX_ssm | : - | - | - | - |
| If_state | : DOWN | DOWN | DOWN | DOWN |

RP/0/RP0: Node_Name #show frequency synchronization clock-interfaces brief

Tue Nov 5 16:38:03.711 CST

Flags: > - Up D - Down S - Assigned for selection
 d - SSM Disabled s - Output squelched L - Looped back

Node 0/RP0:

```
=====  
Fl  Clock Interface  QLrcv  QLuse  Pri  QLsnd  Output driven by  
=====  
>S  Rack0-Bits0-In    PRS    PRS    50  n/a    n/a  
D    Rack0-Bits0-Out  n/a    n/a    n/a  PRS    Rack0-Bits0-In  
>S  Rack0-Bits1-In    PRS    PRS    50  n/a    n/a  
D    Rack0-Bits1-Out  n/a    n/a    n/a  PRS    Rack0-Bits0-In  
D    0/TE0-E          n/a    n/a    n/a  n/a    n/a  
D    0/TE1-E          n/a    n/a    n/a  n/a    n/a  
D    0/TE0-W          n/a    n/a    n/a  n/a    n/a  
D    0/TE1-W          n/a    n/a    n/a  n/a    n/a  
>S  Internal0        n/a    ST3    255  n/a    n/a
```