

在思科NCS560路由器上安装最新的FPD

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简介

本文档介绍如何避免思科NCS 560路由处理器(RP)在重新加载或重新通电后无响应的情况。

背景信息

在大多数情况下，NCS 560部署位于远程位置，数量庞大，且人为干预必须保持在最低限度。在这些部署中，根据安装的版本满足必需的SMU安装要求也很重要。

注意：从Cisco IOS XR版本7.2.2及更高版本开始，您不再需要单独安装SMU。

SMU摘要表

IOS XR版本	SMU	链路	备注
6.6.3	CSCvt69762 (sysadmin)	链路	
	CSCvt26907 (sysadmin)		
	CSCv88955 (sysadmin)		
	CSCvw42910 (XR)		
7.0.1	CSCvw52338 (XR)	链路	必须转到同一次版本的扩展维护版本(EMR)。如，IOS XR 7.0.2。此版本中不提供TAM区域损坏的解决方案。
	CSCvw42910 (XR)		
	CSCvt69762 (sysadmin)		
	CSCvt26907 (sysadmin)		
7.0.2	CSCv48056 (sysadmin)	链路	
	CSCvw42910 (XR)		
	CSCvw52338 (XR)		
	CSCv41516 (sysadmin)		
7.1.1	CSCvt69762 (sysadmin)	链路	建议移至同一次版本的EMR版本。例如，IOS 7.1.2。
	CSCvt26907 (sysadmin)		
	CSCvw42910 (XR)		
	CSCvw52338 (XR)		
7.1.2	CSCv41516 (sysadmin)	链路	
	CSCvt69762 (sysadmin)		
	CSCvt26907 (sysadmin)		
	CSCvw42910 (XR)		
7.2.1	CSCvw52338 (XR)	链路	
	CSCv41516 (sysadmin)		
	CSCvt69762 (sysadmin)		
	CSCvt26907 (sysadmin)		

FPD升级MOP

必须升级FPD，以确保FPD的版本始终等于或高于该Cisco IOS® XR版本所需的最低版本。

ADM	1.06
IOFPGA	0.64
BIOS	0.16

本文档假设：

- RP0是活动RP
- RP1是备用RP

省略了指向不同位置的提示符，以便导航不同位置的所有命令。

1. XR - RP0

```
RP/0/RP0/CPU0:ios#
```

2. XR - RP1

```
RP/0/RP1/CPU0:ios#
```

3.sysadmin - RP0

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

4.sysadmin - RP1

```
sysadmin-vm:0_RP1#
```

5.sysadmin - RP0 shell

```
[sysadmin-vm:0_RP0:~]$
```

6.sysadmin - RP1外壳

```
[sysadmin-vm:0_RP1:~]$
```

使用案例.Cisco IOS-XR版本7.1.2的系统，激活了必需的SMUS

这些SMU必须处于活动状态，并在此过程之前提交到系统。

XR虚拟机

```
RP/0/RP0/CPU0:ios#show install active summary Active Packages: 10 ncs560-xr-7.1.2 version=7.1.2  
[Boot image] ncs560-mcast-2.0.0.0-r712 ncs560-mgbl-2.0.0.0-r712 ncs560-mpls-1.0.0.0-r712 ncs560-  
mpls-te-rsvp-2.0.0.0-r712 ncs560-ospf-2.0.0.0-r712 ncs560-k9sec-2.1.0.0-r712 ncs560-iosxr-  
fwding-2.1.0.1-r712.CSCvp67225 ncs560-os-support-2.1.0.1-r712.CSCvv41516 cisco-klm-rsp4-0.1.pl-  
r0.0.r712.CSCvt26907 .xr
```

sysadmin

```
sysadmin-vm:0_RP0# show install active summary Active Packages: 4 ncs560-sysadmin-7.1.2  
version=7.1.2 [Boot image] ncs560-sysadmin-ncs560-7.1.2.1-r712.CSCvv41516 cisco-klm-rsp4-0.1.pl-  
r0.0.r712.CSCvt26907 .admin cisco-klm-rsp4-0.1.pl-r0.0.r712.CSCvt26907 .host
```

验证RP上的FPD版本

```
RP/0/RP0/CPU0:ios#show hw-module fpd FPD Versions ===== Location Card type HWver FPD  
device ATR Status Running Programd -----  
----- 0/5 A900-IMA8Z 0.0 IMFPGA NEED UPGD 17.02 17.02 0/14 A900-IMA8CS1Z-M 0.0  
IMFPGA CURRENT 1.95 1.95 0/RP0 N560-RSP4-E 0.0 ADM NEED UPGD 1.04 1.04 0/RP0 N560-RSP4-E 0.0  
IOFPGA NEED UPGD 0.53 0.53 0/RP0 N560-RSP4-E 0.0 PRIMARY-BIOS NEED UPGD 0.15 0.15 0/RP0 N560-  
RSP4-E 0.0 SATA NEED UPGD 1.30 1.30 0/RP1 N560-RSP4-E 0.0 ADM NEED UPGD 1.04 1.04 0/RP1 N560-  
RSP4-E 0.0 IOFPGA NEED UPGD 0.53 0.53 0/RP1 N560-RSP4-E 0.0 PRIMARY-BIOS NEED UPGD 0.15 0.15  
0/RP1 N560-RSP4-E 0.0 SATA NEED UPGD 1.30 1.30 0/FT0 A907-FAN-E 1.0 PSOC CURRENT 1.65 1.65
```

检查两个RP上的TAM区域（评估删除部分）

必须确保TAM区域不损坏；否则，IOFPGA、FPD升级和后续重新加载可能会导致RMA。使用此MOP时，由于FPD版本0.64或更高版本正在使用，此IOFPGA FPD升级过程和RP重新加载会导致TAM损坏恢复。

RP0

```
sysadmin-vm:0_RP0# show control-driver info location 0/RP0 ... Card view from local RP: TAM  
Memory is not corrupted Can proceed with IOFPGA upgrade if required ...
```

RP1

```
sysadmin-vm:0_RP0# show control-driver info location 0/RP1 ... Card view from local RP: TAM  
Memory is not corrupted Can proceed with IOFPGA upgrade if required ...
```

注意：如果TAM内存损坏，则目标IOFPGA版本为0.64或更高版本时不会出现问题。

损坏的TAM内存的输出示例

```
sysadmin-vm:0_RP1# show control-driver info location 0/RP0  
<snip>  
Card view from local RP:  
    TAM Memory is corrupted  
    Do not proceed with IOFPGA upgrade  
<snip>
```

注意：如果本文档中提到的所有先决条件都已满足，则可以继续升级。“Do not proceed with IOFPGA upgrade”是指0.64之前的IOFPGA版本。

在两个RP上执行IOFPGA升级

```
RP/0/RP0/CPU0:ios#upgrade hw-module location all fpd IOFPGA upgrade command issued (use "show  
hw-module fpd" to check upgrade status) RP/0/RP0/CPU0:RONALDO-RF2a#0/RP0/ADMIN0:Oct 16  
15:19:26.609 CEST: fpdserv[4356]: %INFRA-FPD_Manager-1-UPGRADE_ALERT : Upgrade for the following  
FPDs has been committed: 0/RP0/ADMIN0:Oct 16 15:19:26.610 CEST: fpdserv[4356]: %INFRA-  
FPD_Manager-1-UPGRADE_ALERT : Location FPD name Force 0/RP0/ADMIN0:Oct 16 15:19:26.610 CEST:  
fpdserv[4356]: %INFRA-FPD_Manager-1-UPGRADE_ALERT :  
===== 0/RP0/ADMIN0:Oct 16 15:19:26.610 CEST:  
fpdserv[4356]: %INFRA-FPD_Manager-1-UPGRADE_ALERT : 0/RP1 IOFPGA FALSE 0/RP0/ADMIN0:Oct 16  
15:19:26.610 CEST: fpdserv[4356]: %INFRA-FPD_Manager-1-UPGRADE_ALERT : 0/RP0 IOFPGA FALSE
```

验证

```
RP/0/RP0/CPU0:ios#show hw-module fpd Fri Oct 16 15:22:11.256 CEST FPD Versions =====  
Location Card type HWver FPD device ATR Status Running Programd -----  
----- 0/5 A900-IMA8Z 0.0 IMFPGA NEED UPGD 17.02  
17.02 0/14 A900-IMA8CS1Z-M 0.0 IMFPGA CURRENT 1.95 1.95 0/RP0 N560-RSP4-E 0.0 ADM NEED UPGD 1.04  
1.04 0/RP0 N560-RSP4-E 0.0 IOFPGA RLOAD REQ 0.53 0.64 0/RP0 N560-RSP4-E 0.0 PRIMARY-BIOS NEED  
UPGD 0.15 0.15 0/RP0 N560-RSP4-E 0.0 SATA NEED UPGD 1.30 1.30 0/RP1 N560-RSP4-E 0.0 ADM NEED  
UPGD 1.04 1.04 0/RP1 N560-RSP4-E 0.0 IOFPGA RLOAD REQ 0.53 0.64 0/RP1 N560-RSP4-E 0.0 PRIMARY-  
BIOS NEED UPGD 0.15 0.15 0/RP1 N560-RSP4-E 0.0 SATA NEED UPGD 1.30 1.30 0/FT0 A907-FAN-E 1.0  
PSOC CURRENT 1.65 1.65
```

重新加载主用和备用RP，以便IOFPGA升级至完成

首先，重新加载备用RP:

```
sysadmin-vm:0_RP0# hw-module location 0/RP1 reload Reload hardware module ? [no,yes] yes
恢复冗余后，重新加载活动RP(RP0) ( 它触发故障切换 ) ：
```

```
sysadmin-vm:0_RP0# hw-module location 0/RP0 reload Reload hardware module ? [no,yes] yes
```

验证ADM版本

在新的活动RP(RP1)上：

```
[sysadmin-vm:0_RP1:~]$/opt/cisco/calvados/sbin/show_adm_version.sh ADM 1266 Version info
Firmware Version : 1.14.2 Bootloader Version : 0.0.9 Config Version : 1.4
```

在新的备用RP(RP0)上：

```
[sysadmin-vm:0_RP0:~]$/opt/cisco/calvados/sbin/show_adm_version.sh ADM 1266 Version info
Firmware Version : 1.14.2 Bootloader Version : 0.0.9 Config Version : 1.4
```

在两个RP上执行其他FPD升级

1. ADM

```
RP/0/RP1/CPU0:ios#upgrade hw-module location all FPD ADM upgrade command issued (use "show hw-
module fpd" to check upgrade status) RP/0/RP1/CPU0:RONALDO-RF2a#0/RP1/ADMIN0:Oct 16 15:57:14.332
CEST: fpdserv[4503]: %INFRA-FPD_Manager-1-UPGRADE_ALERT : Upgrade for the following FPDs has
been committed: 0/RP1/ADMIN0:Oct 16 15:57:14.333 CEST: fpdserv[4503]: %INFRA-FPD_Manager-1-
UPGRADE_ALERT : Location FPD name Force 0/RP1/ADMIN0:Oct 16 15:57:14.333 CEST: fpdserv[4503]:
%INFRA-FPD_Manager-1-UPGRADE_ALERT : =====
0/RP1/ADMIN0:Oct 16 15:57:14.333 CEST: fpdserv[4503]: %INFRA-FPD_Manager-1-UPGRADE_ALERT : 0/RP1
ADM FALSE 0/RP1/ADMIN0:Oct 16 15:57:14.333 CEST: fpdserv[4503]: %INFRA-FPD_Manager-1-
UPGRADE_ALERT : 0/RP0 ADM FALSE
```

2. BIOS

```
RP/0/RP1/CPU0:ios#upgrade hw-module location all FPD PRIMARY-BIOS upgrade command issued (use
"show hw-module fpd" to check upgrade status) RP/0/RP1/CPU0:RONALDO-RF2a#0/RP1/ADMIN0:Oct 16
16:00:29.257 CEST: fpdserv[4503]: %INFRA-FPD_Manager-1-UPGRADE_ALERT : Upgrade for the following
FPDs has been committed: 0/RP1/ADMIN0:Oct 16 16:00:29.257 CEST: fpdserv[4503]: %INFRA-
FPD_Manager-1-UPGRADE_ALERT : Location FPD name Force 0/RP1/ADMIN0:Oct 16 16:00:29.257 CEST:
fpdserv[4503]: %INFRA-FPD_Manager-1-UPGRADE_ALERT :
===== 0/RP1/ADMIN0:Oct 16 16:00:29.257 CEST:
fpdserv[4503]: %INFRA-FPD_Manager-1-UPGRADE_ALERT : 0/RP1 PRIMARY-BIOS FALSE 0/RP1/ADMIN0:Oct 16
16:00:29.257 CEST: fpdserv[4503]: %INFRA-FPD_Manager-1-UPGRADE_ALERT : 0/RP0 PRIMARY-BIOS FALSE
```

3. SATA

```
RP/0/RP1/CPU0:ios#upgrade hw-module location all FPD SATA upgrade command issued (use "show hw-
module fpd" to check upgrade status) RP/0/RP1/CPU0:RONALDO-RF2a#0/RP1/ADMIN0:Oct 16 16:02:06.472
CEST: fpdserv[4503]: %INFRA-FPD_Manager-1-UPGRADE_ALERT : Upgrade for the following FPDs has
been committed: 0/RP1/ADMIN0:Oct 16 16:02:06.472 CEST: fpdserv[4503]: %INFRA-FPD_Manager-1-
UPGRADE_ALERT : Location FPD name Force 0/RP1/ADMIN0:Oct 16 16:02:06.472 CEST: fpdserv[4503]:
%INFRA-FPD_Manager-1-UPGRADE_ALERT : =====
0/RP1/ADMIN0:Oct 16 16:02:06.472 CEST: fpdserv[4503]: %INFRA-FPD_Manager-1-UPGRADE_ALERT : 0/RP1
```

```
SATA FALSE 0/RP1/ADMIN0:Oct 16 16:02:06.472 CEST: fpdserv[4503]: %INFRA-FPD_Manager-1-
UPGRADE_ALERT : 0/RP0 SATA FALSE
```

验证升级

```
RP/0/RP1/CPU0:ios#show hw-module fpd FPD Versions ===== Location Card type HWver FPD
device ATR Status Running Programd -----
-----
0/5 A900-IMA8Z 0.0 IMFPGA NEED UPGD 17.02 17.02 0/14 A900-IMA8CS1Z-M 0.0
IMFPGA CURRENT 1.95 1.95 0/RP0 N560-RSP4-E 0.0 ADM RLOAD REQ 1.04 1.04 0/RP0 N560-RSP4-E 0.0
IOFPGA CURRENT 0.64 0.64 0/RP0 N560-RSP4-E 0.0 PRIMARY-BIOS RLOAD REQ 0.15 0.16 0/RP0 N560-RSP4-
E 0.0 SATA RLOAD REQ 1.30 2.10 0/RP1 N560-RSP4-E 0.0 ADM RLOAD REQ 1.04 1.04 0/RP1 N560-RSP4-E
0.0 IOFPGA CURRENT 0.64 0.64 0/RP1 N560-RSP4-E 0.0 PRIMARY-BIOS RLOAD REQ 0.15 0.16 0/RP1 N560-
RSP4-E 0.0 SATA RLOAD REQ 1.30 2.10 0/FT0 A907-FAN-E 1.0 PSOC CURRENT 1.65 1.65
```

完成其他FPD升级的重新通电过程

注意：如果ADM固件版本为1.14.2，则必须先同步所有VM/主机上的所有文件系统，然后才能使用重新加载脚本。

```
[sysadmin-vm:0_RP1:~]$chvrf 0 ssh 192.0.0.1 sync [sysadmin-vm:0_RP1:~]$chvrf 0 ssh 192.0.0.4
sync [sysadmin-vm:0_RP1:~]$chvrf 0 ssh 192.0.4.4 sync [sysadmin-vm:0_RP1:~]$chvrf 0 ssh
192.0.4.1 sync [sysadmin-vm:0_RP1:~]$chvrf 0 ssh 192.0.4.1 chvrf 0 ssh 10.0.2.2 sync [sysadmin-
vm:0_RP1:~]$chvrf 0 ssh 192.0.0.1 chvrf 0 ssh 10.0.2.2 sync
```

注意：这些命令没有输出。

要重新加载机箱，请执行以下操作：

```
[sysadmin-vm:0_RP1:~]$/opt/cisco/calvados/sbin/reboot_system.sh Initiating power-cycle of 0/RP0
Initiating power-cycle of 0/RP1
```

注意：如果ADM固件版本为1.14.3，则RP上的FPD需要重新加载。

首先，重新加载备用RP(RP0):

```
sysadmin-vm:0_RP1# hw-module location 0/RP0 reload Reload hardware module ? [no,yes] yes
恢复冗余后，重新加载活动RP(RP1) (它触发故障切换)：
```

```
sysadmin-vm:0_RP1# hw-module location 0/RP1 reload Reload hardware module ? [no,yes] yes
```

验证FPD版本

```
RP/0/RP0/CPU0:ios#show hw-module fpd Fri Oct 16 16:24:18.849 CEST FPD Versions =====
Location Card type HWver FPD device ATR Status Running Programd -----
-----
0/5 A900-IMA8Z 0.0 IMFPGA NEED UPGD 17.02
17.02 0/14 A900-IMA8CS1Z-M 0.0 IMFPGA CURRENT 1.95 1.95 0/RP0 N560-RSP4-E 0.0 ADM CURRENT 1.06
1.06 0/RP0 N560-RSP4-E 0.0 IOFPGA CURRENT 0.64 0.64 0/RP0 N560-RSP4-E 0.0 PRIMARY-BIOS CURRENT
0.16 0.16 0/RP0 N560-RSP4-E 0.0 SATA CURRENT 2.10 2.10 0/RP1 N560-RSP4-E 0.0 ADM CURRENT 1.06
1.06 0/RP1 N560-RSP4-E 0.0 IOFPGA CURRENT 0.64 0.64 0/RP1 N560-RSP4-E 0.0 PRIMARY-BIOS CURRENT
0.16 0.16 0/RP1 N560-RSP4-E 0.0 SATA CURRENT 2.10 2.10 0/FT0 A907-FAN-E 1.0 PSOC CURRENT 1.65
1.65
```

验证ADM版本

```
[sysadmin-vm:0_RP0:~]$ /opt/cisco/calvados/sbin/show_adm_version.sh ADM 1266 Version info  
Firmware Version : 1.14.3 Bootloader Version : 0.0.9 Config Version : 1.6
```

```
[sysadmin-vm:0_RP1:~]$ /opt/cisco/calvados/sbin/show_adm_version.sh ADM 1266 Version info  
Firmware Version : 1.14.3 Bootloader Version : 0.0.9 Config Version : 1.6
```

升级其他位置上的其他FPD (如果有)

```
RP/0/RP0/CPU0:ios#upgrade hw-module location 0/5 FPD IMFPGA Fri Oct 16 16:28:15.006 CEST upgrade  
command issued (use "show hw-module fpd" to check upgrade status)
```