

执行NCS 6000灾难恢复，无需使用USB

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简介

本文描述方式恢复网络收敛系统6000 (NCS6K)，在失败的升级后，无需使用USB驱动。与USB驱动的恢复要求对可以大多时间挑战和费时的设备的物理访问。

在本文描述的步骤将使用作为TFTP和DHCP服务器的Linux计算机通过RP管理以太网端口恢复NCS6K。

先决条件

要求

思科建议您有Linux、TFTP、DHCP和思科XR基础知识CLI。

使用的组件

本文限制到NCS6K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。

逐步程序

1. 下载从Cisco网站的需要的XR USB启动文件。
2. 上传下载的压缩文件到Linux服务器并且解它压缩在/tftpboot :

```
root@xxxr:/tftpboot# unzip ncs6k-usb-boot-5.2.3.zip
Archive:  ncs6k-usb-boot-5.2.3.zip
  inflating:  EFI/boot/bootx64.efi
  inflating:  EFI/boot/grub.cfg
  inflating:  boot/install-image.iso
```
3. 查找NCS6K路由处理器(RP)管理以太网端口的MAC地址。可以在控制台日志找到 :

```
Press F12
to go to Boot Manager..

Booting System Host OS..
Verifying Image for Secure Boot failed with status 15
```

```
System Host OS boot failed.
```

```
Booting Int Network 0 for IPv4 (4C-4E-35-B6-63-33)..
```

```
>>Start PXE over IPv4.
```

```
PXE-E18: Server response timeout.
```

```
Int Network 0 for IPv4 (4C-4E-35-B6-63-33) boot failed.
```

```
Booting Ext Network 0 for IPv4 (4C-4E-35-B6-63-33)..
```

4. 添加以下到dhcpd.conf文件。这将分配一个静态IP地址到RP mgmt以太网端口，当启动时(即：10.48.32.160)：
- ```
root@xxxxr:/tftpboot/0A3020A0# cat /etc/dhcp/dhcpd.conf
```

```
allow bootp;
```

```
allow booting;
```

```
subnet 10.48.32.0 netmask 255.255.255.0 {
```

```
 option routers 10.48.32.1;
```

```
 next-server 10.48.32.93;
```

```
 host pani0-rp {
```

```
 hardware ethernet 4c:4e:35:b6:63:33;
```

```
 fixed-address 10.48.32.160;
```

```
 filename "EFI/boot/bootx64.efi" ;
```

```
 }
```

}注意：10.48.32.93是TFTP和DHCP服务器地址。

5. 做复制grub.cfg (在步骤生成的文件2)。在IP地址NCS6K从DHCP后，将获得请名叫文件

```
: root@xxxxr:/tftpboot# cp /tftpboot/EFI/boot/grub.cfg /tftpboot/10.48.32.160.cfg
```

6. 编辑生成的文件以上保证ISO从网络(删除导致/)被选择：
- ```
root@xxxxr:/tftpboot# diff
```

```
/tftpboot/EFI/boot/grub.cfg /tftpboot/10.48.32.160.cfg
```

```
11,12c11,12
```

```
<         echo "Booting from USB.."
```

```
<         loopback loop /boot/install-image.iso
```

```
---
```

```
>         echo "Booting from network.."
```

```
>         loopback loop boot/install-image.iso对于5.2.3，它将查找如此物
```

```
: root@xxxxr:/tftpboot# cat /tftpboot/10.48.32.160.cfg
```

```
set default=0
```

```
serial --unit=0 --speed=115200
```

```
terminal_input console
```

```
terminal_output serial
```

```
set timeout=2
```

```
menuentry "System Install OS" {
```

```
    echo "Booting from network..."
```

```
    loopback loop boot/install-image.iso
```

```
    root=loop
```

```
    echo "Loading Kernel.."
```

```
    linux (loop)/boot/bzImage root=/dev/ram install=/dev/sda console=ttyS0,115200
```

```
    prod=1 crashkernel=192M@0 bigphysarea=10M quiet pci=assign-busses noissu aer=off
```

```
    pci=hpmemsize=0M,hpiosize=0M
```

```
    echo "Loading initrd.."
```

```
    initrd (loop)/boot/initrd.img signfile=/boot/signature.initrd.img
```

```
}
```

7. 在Linux服务器的配置完成。在下PXE请启动尝试，DHCP将分配10.48.32.160到NCS6K RP。使用TFTP，它然后将获得幼虫.efi和.cfg。使用TFTP，在此以后，请除草根将自动地开始并且装载ISO。

注意：ISO文件通常是在700Mb附近。它在“启动将采取一些时间(10分钟)从网络以后”。消息显示。活动的完整日志：

Cisco BIOS version : SB.Panini.0014.00

BIOS Build Date : 07/10/2014 by lchinnad

System Memory Speed : 1600 MHz

Processor Type : Intel(R) Xeon(R) CPU E5-2448L @ 1.80GHz

Press F12 to goto Boot Manager..

Booting System Host OS..

Verifying Image for Secure Boot failed with status 15

System Host OS boot failed.

Booting Int Network 0 for IPv4 (4C-4E-35-B6-63-33)..

Start PXE over IPv4.

PXE-E18: Server response timeout.

Int Network 0 for IPv4 (4C-4E-35-B6-63-33) boot failed.

Booting Ext Network 0 for IPv4 (4C-4E-35-B6-63-33)..

Start PXE over IPv4.

Station IP address is 10.48.32.160

Server IP address is 10.48.32.93

NBP filename is bootx64.efi

Downloading NBP file...

Succeed to download NBP file.

GNU GRUB version 2.00

Press F2 to goto grub Menu..

Booting from network..

[6.338259] i8042: No controller found

Starting udev: [OK]

Actual changes:

large-receive-offload: off [requested on]

ntuple-filters: on

Setting hostname host: [OK]

Checking filesystems:[OK]

Remounting root filesystem in read-write mode: [OK]

Entering non-interactive startup

Bringing up loopback interface: [OK]

Starting system logger: [OK]

Starting kernel logger: [OK]

Starting kdump:[OK]

Starting system message bus: [OK]

Starting smartd: [OK]

Generating SSH1 RSA host key: [OK]

Generating SSH2 RSA host key: [OK]

Generating SSH2 DSA host key: [OK]

Starting sshd: [OK]

Starting xinetd: [OK]

Checking PCI block device /dev/sdb disk space

Thu Jun 25 14:07:13 UTC 2015: Detected /iso/host.iso

mount: block device /iso/host.iso is write-protected, mounting read-only

Thu Jun 25 14:07:13 UTC 2015: Mounted /iso/host.iso to /tmp/isomnt.iV1833

Thu Jun 25 14:07:13 UTC 2015: Found /tmp/isomnt.iV1833/rpm/ncs6k-sysadmin-hostos.all-5.2.3-Default.x86_64.rpm in host.iso

Thu Jun 25 14:07:13 UTC 2015: Installing /tmp/isomnt.iV1833/rpm/ncs6k-sysadmin-hostos.all-5.2.3-Default.x86_64.rpm

Preparing packages for installation...

```
ncs6k-sysadmin-hostos.all-5.2.3-Default.x86_64
hushd_static: no process killed
hushd restarted
Thu Jun 25 14:07:13 UTC 2015: Did not detect new pxe install script, keep going with old
xrnginstall
Thu Jun 25 14:07:13 UTC 2015: Running in Data LV support model
/etc/rc3.d/S60xrnginstall: line 239: SIMULATION: readonly variable
Thu Jun 25 14:07:13 UTC 2015: Prepping System with calvados.iso
Thu Jun 25 14:07:13 UTC 2015: Installer will install image on sda
Thu Jun 25 14:07:13 UTC 2015: Running in LVM support model
Thu Jun 25 14:07:15 UTC 2015: Partition creation on /dev/sda took 1 seconds
Thu Jun 25 14:07:15 UTC 2015: File system creation on /dev/sda1 took 0 seconds
Thu Jun 25 14:07:15 UTC 2015: Install host image on /dev/sda1
Thu Jun 25 14:07:23 UTC 2015: Installing host image size of 183M took 8 seconds
Thu Jun 25 14:07:33 UTC 2015: File system creation on /dev/sda2 took 4 seconds
Thu Jun 25 14:08:38 UTC 2015: Copying XR iso to repository took 65 seconds
Partitioning PCI block device /dev/sdb
Added VLAN with VID == 513 to IF --eth-pf1:-
Thu Jun 25 14:08:40 UTC 2015: Copying boot/install-image.iso from tftpserver 10.48.32.93
Thu Jun 25 14:16:58 UTC 2015: Copying Pxeboot files from tftpserver 10.48.32.93 took 498
seconds
Thu Jun 25 14:17:28 UTC 2015: File system creation on /dev/panini_vol_grp/calvados_lv0 took
5 seconds
Thu Jun 25 14:17:28 UTC 2015: Install sysadmin-vm image on /dev/panini_vol_grp/calvados_lv0
mount: block device /iso/ncs6k-sysadmin.iso is write-protected, mounting read-only
Thu Jun 25 14:17:35 UTC 2015: sysadmin-vm: RP based installation
Thu Jun 25 14:18:22 UTC 2015: Installing sysadmin-vm image size of 444M took 54 seconds
Install EFI on /dev/sda4
Thu Jun 25 14:18:24 UTC 2015: Install finished on sda
Resetting BIOS Boot Mode register ...
Automatic rebooting system after installation ...

Cisco BIOS version : SB.Panini.0014.00
BIOS Build Date : 07/10/2014 by lchinnad
System Memory Speed : 1600 MHz
Processor Type : Intel(R) Xeon(R) CPU E5-2448L @ 1.80GHz

Press F12 to goto Boot Manager..

Booting System Host OS..

GNU GRUB version 2.00
Press F2 to goto grub Menu..
Booting from Disk..
Loading Kernel..
Loading initrd..
Starting udev: [ OK ]
Setting hostname sysadmin-vm: [ OK ]
Checking filesystems:[ OK ]
Mount /dev/vdd at /misc/disk1
Entering non-interactive startup
Bringing up loopback interface: [ OK ]
Starting system logger: [ OK ]
Starting kernel logger: [ OK ]
Starting system message bus: [ OK ]
Starting smartd: [FAILED]
Generating SSH1 RSA host key: [ OK ]
Generating SSH2 RSA host key: [ OK ]
Generating SSH2 DSA host key: [ OK ]
Starting sshd: [ OK ]
Starting xinetd: [ OK ]
Starting crond: [ OK ]
Starting libvirtd daemon: [ OK ]
Starting NCS6k programs for RP on sysadmin-vm: [ OK ]
```

```
starting pm
sysadmin_startup: Starting Cisco Login Program on ttyS0
sysadmin initialized
sysadmin_startup: Starting Cisco Login Program on ttysl
sysadmin initialized
```

```
0_0_0Jun 25 14:19:32 : Send To Helper Failed - Msg : aaad[2600]: %MGBL-AAAD-7-DEBUG : AAA
Init successful
0_0_0Jun 25 14:19:33 : Send To Helper Failed - Msg : vm_manager[2628]: %INFRA-VM_MANAGER-4-
INFO : Info: VM Manager started. arguments -W
0_0_0Jun 25 14:19:34 : Send To Helper Failed - Msg : sdr_mgr[2619]: %SM-SDR_MANAGER-4-INFO
: Info: SDR Manager started.
```

SYSTEM IS NOT READY FOR LOGIN

!!!NO root-system username is configured. Need to configure root-system username!!!

--- Administrative User Dialog ---

```
Enter root-system Username: 0_0_0Jun 25 14:20:58 : Send To Helper Failed - Msg :
plx_fpd[2616]: %INFRA-FPD_Driver-1-UPGRADE_ALERT : Driver missing fpd obfl log function for
fpd PLX-8748, FPD init continues but debugability impacted
0/RP0/ADMIN0:Jun 25 14:20:58.410 : envmon[2609]: %PKT_INFRA-FM-4-FAULT_MINOR : ALARM_MINOR
:Unsupported power module detected :DECLARE :0/PT0-PM0:
0/RP0/ADMIN0:Jun 25 14:20:58.417 : envmon[2609]: %PKT_INFRA-FM-4-FAULT_MINOR : ALARM_MINOR
:Unsupported power module detected :DECLARE :0/PT0-PM1:
0/RP0/ADMIN0:Jun 25 14:20:58.418 : envmon[2609]: %PKT_INFRA-FM-4-FAULT_MINOR : ALARM_MINOR
:Unsupported power module detected :DECLARE :0/PT0-PM2:
0/RP0/ADMIN0:Jun 25 14:20:58.434 : envmon[2609]: %PKT_INFRA-FM-4-FAULT_MINOR : ALARM_MINOR
:Unsupported power module detected :DECLARE :0/PT3-PM0:
0/RP0/ADMIN0:Jun 25 14:20:58.445 : envmon[2609]: %PKT_INFRA-FM-4-FAULT_MINOR : ALARM_MINOR
:Unsupported power module detected :DECLARE :0/PT3-PM1:
0/RP0/ADMIN0:Jun 25 14:20:58.451 : envmon[2609]: %PKT_INFRA-FM-4-FAULT_MINOR : ALARM_MINOR
:Unsupported power module detected :DECLARE :0/PT3-PM2:
0/RP0/ADMIN0:Jun 25 14:20:58.517 : zen[2630]: %INFRA-FPD_Driver-1-UPGRADE_ALERT : Driver
missing fpd obfl log function for fpd CPU Complex FPGA, FPD init continues but debugability
impacted
```

Enter root-system Username: root

Enter secret:

Enter secret again:

Successfully created root-system user

System Admin Username: root

Password:

root connected from 127.0.0.1 using console on sysadmin-vm:0_RP0

sysadmin-vm:0_RP0# show platform

Thu Jun 25 14:21:33.150 UTC

Location	Card Type	HW State	SW State	Config State
0/1	NC6-60X10GE-M-S	POWERED_ON	SW_INACTIVE	NSHUT
0/7	NC6-10X100G-M-P	POWERED_ON	SW_INACTIVE	NSHUT
0/RP0	NC6-RP	OPERATIONAL	OPERATIONAL	NSHUT
0/RP1	NC6-RP	POWERED_ON	SW_INACTIVE	NSHUT

0/FC0	P-L-FC-S	POWERED_ON	N/A	NSHUT
0/FC1	P-L-FC-S	POWERED_ON	N/A	NSHUT
0/FC2	P-L-FC-S	POWERED_ON	N/A	NSHUT
0/FC3	P-L-FC-S	POWERED_ON	N/A	NSHUT
0/FC4	P-L-FC-S	POWERED_ON	N/A	NSHUT
0/FC5	P-L-FC-S	POWERED_ON	N/A	NSHUT
0/CI0	NCS-CRFT=	OPERATIONAL	N/A	NSHUT
0/FT0	NC6-FANTRAY	OPERATIONAL	N/A	NSHUT
0/FT1	NC6-FANTRAY	OPERATIONAL	N/A	NSHUT
0/PT0	NCS-AC-PWRTRAY	OPERATIONAL	N/A	NSHUT
0/PT1	NCS-AC-PWRTRAY	OPERATIONAL	N/A	NSHUT
0/PT2	NCS-AC-PWRTRAY	OPERATIONAL	N/A	NSHUT
0/PT3	NCS-AC-PWRTRAY	OPERATIONAL	N/A	NSHUT
0/PT4	NCS-AC-PWRTRAY	OPERATIONAL	N/A	NSHUT
0/PT5	NCS-AC-PWRTRAY	OPERATIONAL	N/A	NSHUT

RP和线卡也将开始引导。

在一些时间以后，其他