

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" ;
```

```
    }
```

```
}
```

Note: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。

Note: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 xrninstall
Thu Jun 25 14:07:13 UTC 2015: Running in Data LV support model
/etc/rc3.d/S60xrninstall: 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

在一些时间以后，其他RP和线卡也将开始引导。