USB를 사용하지 않고 NCS 6000 재해 복구 수행

목차

소개

이 문서에서는 USB 드라이브를 사용하지 않고 업그레이드 실패 후 NCS6K(Network Convergence System 6000)를 복구하는 방법에 대해 설명합니다.USB 드라이브를 사용하여 복구하려면 장치에 대한 물리적 액세스가 필요합니다. 대부분의 시간이 도전이고 시간이 많이 걸릴 수 있습니다.

이 문서에 설명된 절차는 TFTP 및 DHCP 서버 역할을 하는 Linux 시스템을 사용하여 RP 관리 이더넷 포트를 통해 NCS6K를 복구합니다.

사전 요구 사항

요구 사항

Linux, TFTP, DHCP 및 Cisco XR CLI에 대한 기본적인 지식이 있는 것이 좋습니다.

사용되는 구성 요소

이 문서는 NCS6K 플랫폼으로 제한됩니다.

이 문서의 정보는 특정 랩 환경의 디바이스를 토대로 작성되었습니다.이 문서에 사용된 모든 디바이스는 초기화된(기본) 컨피그레이션으로 시작되었습니다.현재 네트워크가 작동 중인 경우, 모든 명령어의 잠재적인 영향을 미리 숙지하시기 바랍니다.

단계별 절차

1. Cisco 웹 사이트에서 필요한 XR USB 부팅 파일을 다운로드합니다.

2. 다운로드한 ZIP 파일을 Linux 서버에 업로드하고 /tftpboot에서 압축을 해제합니다.
```
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. NCS6K RP(Route Processor) 관리 이더넷 포트의 MAC 주소를 찾습니다.콘솔 로그에서 찾을 수 있습니다.
```
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. dhcpd.conf 파일에 다음을 추가합니다.이렇게 하면 부팅 시 RP 관리 이더넷 포트에 고정 IP 주소가 할당됩니다(예:10.48.32.160):

```
root@xxxr:/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" ;
   }
}
```

참고:10.48.32.93은 TFTP 및 DHCP 서버 주소입니다.

5. grub.cfg의 복사본을 만듭니다(2단계에서 생성된 파일). DHCP에서 NCS6K IP 주소 다음에 파일 이름을 지정합니다.

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

6. 위에서 생성된 파일을 편집하여 네트워크에서 ISO가 선택되도록 합니다(선행/제거).

```
root@xxxr:/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
```

5.2.3의 경우 다음과 같습니다.

```
root@xxxr:/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. Linux 서버의 구성이 완료되었습니다.다음 PXE 부팅 시도에서 DHCP는 NCS6K RP에 10.48.32.160을 할당합니다.그런 다음 TFTP를 사용하여 grub .efi 및 .cfg를 가져옵니다.그런 다음 GRUB가 자동으로 시작되고 TFTP를 사용하여 ISO를 로드합니다.

참고:ISO 파일은 일반적으로 약 700Mb입니다."네트워크에서 부팅.."한 후 시간이 다소 걸릴 수 있습니다(최대 10분). 메시지가 표시됩니다.활동의 전체 로그:

```
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 ttys1
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
```

시간이 지나면 다른 RP 및 라인 카드도 부팅을 시작합니다.