Effectuer la reprise après sinistre du NCS 6000 sans utiliser d'interface USB

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Introduction

Ce document décrit un moyen de récupérer Network Convergence System 6000 (NCS6K) après l'échec de la mise à niveau sans utiliser de lecteur USB. La récupération avec une clé USB nécessite un accès physique au périphérique, ce qui peut prendre beaucoup de temps et de temps.

La procédure décrite dans ce document utiliserait une machine Linux agissant en tant que serveur TFTP et DHCP pour récupérer le NCS6K via le port Ethernet de gestion RP.

Conditions préalables

Conditions requises

Cisco vous recommande d'avoir des connaissances de base sur Linux, TFTP, DHCP et l'interface de ligne de commande Cisco XR.

Components Used

Ce document est limité à la plate-forme NCS6K.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Procédure pas à pas

1. Téléchargez le fichier de démarrage XR USB requis depuis le site Web de Cisco.

2. Téléchargez le fichier ZIP téléchargé sur le serveur Linux et décompressez-le dans /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. Recherchez l'adresse MAC du port Ethernet de gestion du processeur de routage NCS6K (RP). Il se trouve dans les journaux de console :

```
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. Ajoutez les éléments suivants au fichier dhcpd.conf. Cela allouera une adresse IP statique au port Ethernet de gestion RP lors du démarrage (ex : 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" ;
   }
}
```

Note: 10.48.32.93 est l'adresse du serveur TFTP et DHCP.

5. Faites une copie de grub.cfg (fichier généré à l'étape 2). Nommez le fichier après l'adresse IP que NCS6K obtiendra de DHCP :

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

6. Modifiez le fichier généré ci-dessus pour vous assurer que l'ISO est prélevée sur le réseau (supprimer le début /) :

```
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
```

Pour la version 5.2.3, cela ressemblerait à ceci :

```
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. La configuration sur le serveur Linux est terminée. Lors de la prochaine tentative de démarrage PXE, DHCP allouera 10.48.32.160 au RP NCS6K. Il obtiendra ensuite les fichiers grub .efi et .cfg en utilisant TFTP. Ensuite, GRUB démarrerait automatiquement et chargerait l'ISO à l'aide de TFTP.

   Note: Le fichier ISO est normalement d'environ 700 Mo. Cela prendra un certain temps (jusqu'à 10 minutes) après le démarrage du réseau. s'affiche.Remplir les journaux de l'activité :

```
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
```

Au bout d'un certain temps, d'autres cartes RP et de ligne démarrent également.