Ripristino di emergenza NCS 6000 senza USB

Sommario

Introduzione

In questo documento viene descritto come ripristinare Network Convergence System 6000 (NCS6K) dopo un aggiornamento non riuscito senza utilizzare un'unità USB. Il ripristino con unità USB richiede l'accesso fisico al dispositivo, che nella maggior parte dei casi può essere un'operazione lunga e complessa.

La procedura descritta in questo documento prevede l'utilizzo di un computer Linux che agisca come server TFTP e DHCP per ripristinare l'NCS6K tramite la porta Ethernet di gestione RP.

Prerequisiti

Requisiti

Cisco raccomanda la conoscenza di base di Linux, TFTP, DHCP e Cisco XR CLI.

Componenti usati

Questo documento è limitato alla piattaforma NCS6K.

Le informazioni discusse in questo documento fanno riferimento a dispositivi usati in uno specifico ambiente di emulazione. Su tutti i dispositivi menzionati nel documento la configurazione è stata ripristinata ai valori predefiniti. Se la rete è operativa, valutare attentamente eventuali conseguenze derivanti dall'uso dei comandi.

Procedura dettagliata

1. Scaricare il file di avvio USB XR richiesto dal sito Web Cisco.

2. Caricare il file ZIP scaricato sul server Linux e decomprimerlo in /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. Individuare l'indirizzo MAC della porta Ethernet di gestione NCS6K Route Processor (RP). È

disponibile nei log della 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. Aggiungere quanto segue al file dhcpd.conf. In questo modo, all'avvio viene allocato un indirizzo IP statico alla porta Ethernet di gestione RP (ad esempio: 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" ;
   }
}
```

Nota: 10.48.32.93 è l'indirizzo del server TFTP e DHCP.

5. Creare una copia di grub.cfg (file generato nel passaggio 2). Assegnare al file il nome che seguirà l'indirizzo IP che NCS6K riceverà da DHCP:

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

6. Modificare il file generato in precedenza per assicurarsi che ISO venga selezionato dalla rete (rimuovere l'interlinea /):

```
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
```

Per la versione 5.2.3, la risposta sarebbe simile alla seguente:

```
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. Configurazione sul server Linux completata. Al successivo tentativo di avvio tramite PXE, DHCP allocherà 10.48.32.160 all'RP NCS6K. Otterrà quindi il grub .efi e .cfg utilizzando TFTP. Successivamente, GRUB si avviava automaticamente e caricava l'ISO utilizzando il protocollo TFTP.

   Nota: Il file ISO normalmente è di circa 700 MB. Dopo l'"avvio dalla rete" ci vorrà del tempo (fino a 10 minuti). viene visualizzato un messaggio.Registri completi dell'attività:

```
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
```

Dopo qualche tempo, anche altre schede RP e di linea inizieranno l'avvio.