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## Введение

Этот документ описывает способ восстановить Систему Схождения сети 6000 (NCS6K) после подведенного обновления, не используя Карту памяти. Восстановление с Картой памяти требует физического доступа к устройству, которое большую часть времени может быть проблемой и трудоемким.

Процедура, описанная в этом документе, использовала бы Машину Linux, действующую как TFTP и сервер DHCP для восстановления NCS6K через Ethernet - порт управления RP.

## Предварительные условия

### Требования

Cisco рекомендует иметь базовые знания о Linux, TFTP, DHCP и Cisco CLI XR.

### Используемые компоненты

Этот документ ограничен Платформой NCS6K.

Сведения, представленные в этом документе, были получены от устройств, работающих в специальной лабораторной среде. Все устройства, описанные в этом документе, были запущены с чистой (стандартной) конфигурацией. В рабочей сети необходимо изучить потенциальное воздействие всех команд до их использования.

## Пошаговая процедура

1. Загрузите требуемый загрузочный файл USB XR от Web - сайта Cisco.
2. Загрузите загруженный Файл архива zip к серверу Linux и разархивируйте zip на нем в/tftpboot:
3. Найдите мак адрес Ethernet - порта управления Процессора маршрута (RP) NCS6K.

Это может быть найдено в console log:  
Press F12 to go to Boot Manager..Booting System Host OS..Verifying Image for Secure Boot failed with status 15System 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. Добавьте следующее к dhcpd.conf файлу. Это выделит статический IP - адрес порту Ethernet mgmt RP при начальной загрузке (например:

```
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" ;
    }
}
```

} **Примечание:** 10.48.32.93 адрес сервера TFTP и адрес сервера DHCP.

5. Сделайте копию grub.cfg (файл генерируемый в шаге 2). Назовите файл в честь IP-адреса, который NCS6K получит от DHCP:root@xxxr:/tftpboot# cp

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

6. Отредактируйте файл, генерируемый выше, чтобы гарантировать, что ISO выбран от сети (удалите продвижение!):root@xxxr:/tftpboot# diff /tftpboot/EFI/boot/grub.cfg

```
/tftpboot/10.48.32.160.cfg11,12c11,12<         echo "Booting from USB.."<         loopback
loop /boot/install-image.iso--->         echo "Booting from network..">         loopback
```

```
loop boot/install-image.isoДля 5.2.3, это выглядело бы примерно так:root@xxxr:/tftpboot#
cat /tftpboot/10.48.32.160.cfgset default=0serial --unit=0 --speed=115200terminal_input
consoleterminal_output serialset timeout=2menuentry "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. Конфигурация на сервере Linux завершена. При следующей попытке загрузки PXE DHCP выделит 10.48.32.160 NCS6K RP. Это тогда получит личинку .efi и .cfg использование TFTP. После этого GRUB запустился бы автоматически и загрузил бы ISO с помощью TFTP.

**Примечание:** Файл ISO обычно - приблизительно 700 МБ. Это займет время (до 10 минут) после "Начальной загрузки от сети.." сообщение отображено. Завершенные

**журналы действия:**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 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

Через какое-то время другой RP и Линейные карты также начнут загружаться.