

对Firepower 4100和9300系列中的FXOS执行完全重新映像

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简介

本文档介绍如何重新格式化整个系统、清除映像并将其恢复为出厂默认设置。

要求

-TFTP服务器连接到Firepower上的管理接口

— 到设备的控制台连接

使用的组件

- Firepower 4100或9300系列

-TFTP服务器


-Recovery Image Software Bundle，恢复映像包括三个单独的文件(K.ickstart、Manager、System)。例如，接下来是FXOS 2.13(0.212)的恢复映像

— 用于FX-OS 2.13(0.212)的恢复映像 (启动启动)

— 用于FX-OS 2.13(0.212)的恢复映像 (管理器)

- FX-OS 2.13(0.212)的恢复映像 (系统)

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。如果您的网络处于活动状态，请确保您了解所有命令的潜在影响。

 注：执行此过程后，管理员密码将重置为Admin123。

开始使用前

- 如果Supervisor板载闪存损坏且系统不再能够成功启动，您可以使用此程序恢复系统。要完成

此过程，您必须使用TFTP引导启动映像，重新格式化闪存下载新系统并重新启动 Supervisor。

步骤

步骤1:

访问ROMMON提示符

- a. 连接到控制台端口。
- b. 重新启动系统。
系统启动引导过程并显示倒计时计时器。
- c. 在倒计时期间按Escapekey进入ROMMON模式

```
Cisco System ROMMON, Version 1.0.15, RELEASE SOFTWARE
Copyright (c) 1994-2019 by Cisco Systems, Inc.
Compiled Thu 04/11/2019 21:15:59.58 by builder
Current image running: Boot ROM0
Last reset cause: PowerOn
DIMM Slot 0 : Present
DIMM Slot 1 : Present
No USB drive !!
BIOS has been locked !!

Platform FPR-4145-SUP with 8192 Mbytes of main memory
MAC Address: 88:fc:5d:4b:fa:b8

find the string ! boot bootflash:/installables/switch/fxos-k9-kickstart.5.0.3.N2.4.130.81.SPA bootflash:/installables/switch/fxos-k9-system.5.0.3.N2.4.130.81.SPA

Use BREAK, ESC or CTRL+L to interrupt boot.
Use SPACE to begin boot immediately.
Boot interrupted.

rommon 1 > █
```

第二步：

通过TFTP使用kickstarter映像启动系统

- a. 为管理接口、地址、网络掩码和网关设置正确的参数。

```
rommon 1 > address <IP-Address>
rommon 2 > netmask <Network-Mask>
rommon 3 > gateway <Default-Gateway>
```


- b.使用set命令验证管理接口上的信息。

```
rommon 4 > set
ADDRESS=
NETMASK=
GATEWAY=
SERVER=
IMAGE=
PS1="rommon ! > "
```

c.将启动映像复制到可通过管理接口从Firepower4100/9300机箱访问的TFTP目录。

```
rommon 15 > boot tftp://10.88.7.12/fxos-k9-kickstart.5.0.3.N2.4.130.81.SPA
ADDRESS: 10.201.183.202
NETMASK: 255.255.255.248
GATEWAY: 10.201.183.201
SERVER: 10.88.7.12
IMAGE: fxos-k9-kickstart.5.0.3.N2.4.130.81.SPA


TFTP_MACADDR: 88:fc:5d:4b:fa:b8
.....
Receiving fxos-k9-kickstart.5.0.3.N2.4.130.81.SPA from 10.88.7.12
#####
#####
#####
File reception completed.
!! Kickstart Image verified successfully !!
```

 注:您也可以使用插入Firepower4100/9300机箱前面板上USB插槽的USB媒体设备从ROMMON启动kickstart。如果在系统运行时插入USB设备,则需要在系统识别USB设备之前重新启动系统。

第三步:

一旦kickstart图像是已加载,重新格式化此flash使用此init system命令。

```
switch(boot)# init system
This command is going to erase your startup-config, licenses as well as the contents of your bootflash:.
Do you want to continue? (y/n) [n] y
Detected 32GB flash...
Initializing the system
mke2fs 1.46.1 (9-Feb-2021)
Checking for bad blocks (read-only test): done
Initializing startup-config and licenses
mke2fs 1.46.1 (9-Feb-2021)
Checking for bad blocks (read-only test): done
mke2fs 1.46.1 (9-Feb-2021)
Checking for bad blocks (read-only test): done
mke2fs 1.46.1 (9-Feb-2021)
Checking for bad blocks (read-only test): done
mke2fs 1.46.1 (9-Feb-2021)
Checking for bad blocks (read-only test): done
Formatting bootflash:
mke2fs 1.46.1 (9-Feb-2021)
Checking for bad blocks (read-only test): done
Formatting SAM partition:
mke2fs 1.46.1 (9-Feb-2021)
Checking for bad blocks (read-only test): done
Formatting Workspace partition:
mke2fs 1.46.1 (9-Feb-2021)
Checking for bad blocks (read-only test): done
Formatting Sysdebug partition:
mke2fs 1.46.1 (9-Feb-2021)
Checking for bad blocks (read-only test): done
Resetting CMOS to default configuration
CMOS I/O operation succeeded
Reinitializing NVRAM contents
Reinitializing OBFL contents
Initialization completed
```

 注意：“init system”命令会清除闪存的内容，包括下载到系统的所有软件映像以及系统上的所有配置。完成此过程大约需要20-30分钟。

第四步：

下载Firepower 4100/9300机箱的恢复映像。

a. 您必须 set 此 管理 IP 地址 和 网关 到 下载 此 恢复 图像。

```
switch(boot)# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(boot)(config)# interface mgmt 0
switch(boot)(config-if)# ip address <IP Address> <Netmask>
switch(boot)(config-if)# no shutdown
switch(boot)(config-if)# exit
switch(boot)(config)# ip default-gateway <Gateway>
switch(boot)(config-if)# exit
```

 注:这些映像无法通过USB下载。

b.将所有三个恢复映像从远程服务器复制到bootflash。

c.指定文件的URL，以使用下一个语法之一导入映像：

- ftp://username@hostname/path/image_name
- scp://username@hostname/path/image_name

- sftp://username@hostname/path/image_name
- tftp://hostname/path/image_name

```
switch(boot)# copy tftp://10.88.7.12/fxos-k9-kickstart.5.0.3.N2.4.130.81.SPA bootflash:
Trying to connect to tftp server.....
Connection to server Established. Copying Started.....
/
TFTP get operation was successful
Copy complete, now saving to disk (please wait)...
switch(boot)# copy tftp://10.88.7.12/fxos-k9-system.5.0.3.N2.4.130.81.SPA bootflash:
Trying to connect to tftp server.....
Connection to server Established. Copying Started.....
-
TFTP get operation was successful
Copy complete, now saving to disk (please wait)...
switch(boot)# copy tftp://10.88.7.12/fxos-k9-manager.4.13.0.81.SPA bootflash:
Trying to connect to tftp server.....
Connection to server Established. Copying Started.....
/
TFTP get operation was successful
Copy complete, now saving to disk (please wait)...
switch(boot)# █
```

d.将映像成功复制到Firepower 4100/9300机箱后，请从nuova-sim-mgmt-nsg.0.1.0.001.bin创建指向管理器映像的符号链接。此链接告知加载机制加载哪个管理器映像。

无论您尝试加载什么映像，符号链接名称必须始终为nuova-sim-mgmt-nsg.0.1.0.001.bin。

```
switch(boot)# copy bootflash:<manager-image> bootflash:nuova-sim-mgmt-nsg.0.1.0.001.bin
^

switch(boot)# copy bootflash:fxos-k9-manager.4.13.0.81.SPA bootflash:nuova-sim-mgmt-nsg.0.1.0.001.bin
Copy complete, now saving to disk (please wait)...
```

第五步：

重新加载交换机。

```
switch(boot)# reload
This command will reboot this supervisor module. (y/n) ? y
[ 6267.402202] reboot: Restarting system

!! Rommon image verified successfully !!

Cisco System ROMMON, Version 1.0.15, RELEASE SOFTWARE
Copyright (c) 1994-2019 by Cisco Systems, Inc.
Compiled Thu 04/11/2019 21:15:59.58 by builder
Current image running: Boot ROM0
Last reset cause: ResetRequest
DIMM Slot 0 : Present
DIMM Slot 1 : Present
No USB drive !!
BIOS has been locked !!

Platform FPR-4145-SUP with 8192 Mbytes of main memory
MAC Address: 88:fc:5d:4b:fa:b8

autoboot: Can not find autoboot file 'menu.lst.local'
          Or can not find correct boot string !!
rommon 1 >
```


第六步：

Boot 从 kickstart 和 系统映像。

```
rommon 1 > boot <kickstart-image> <system-image>

rommon 2 > boot fxos-k9-kickstart.5.0.3.N2.4.130.81.SPA fxos-k9-system.5.0.3.N2.4.130.81.SPA
!! Kickstart Image verified successfully !!

Linux version: 5.10.79-yocto-standard+ (pvasapur@sjc-vms-vm0185) #1 SMP Tue Mar 22 23:16:22 PDT 2022
cp: setting permissions for '/new-root/bootflash': Operation not supported
cp: setting permissions for '/new-root/proc': Operation not supported
cp: setting permissions for '/new-root/slot0': Operation not supported
cp: setting permissions for '/new-root/sys': Operation not supported
linuxrc.ext Sun Jan 1 00:09:40 UTC 2012
[ 4.286394] Nuova i2c initialization done successfully
```

 注意：在加载系统映像时，您可以看到许可证管理器错误消息。您可以放心地忽略这些消息。

步骤 7.

加载映像后，系统提示您输入初始配置设置。有关详细信息，请参阅[使用控制台端口的初始配置](#)。

```
Type Ctrl-C at any time for more options
or to abort configuration and reboot system.
You have chosen to setup a new Security Appliance.
Continue? (yes/no): yes
```

步骤 8

使用已设置的凭证登录系统。

步骤 9

下载用于Firepower 4100/9300机箱的平台捆绑包映像。

```
FPR-4145# scope firmware
FPR-4145 /firmware # download image tftp://10.88.7.12/fixos-k9.2.13.0.212.SPA
Please use the command 'show download-task' or 'show download-task detail' to check download progress.
% Download-task fixos-k9.2.13.0.212.SPA : transferring 28624 KB download-task

Download task:
  File Name Protocol Server          Port      Userid      State
-----
  fixos-k9.2.13.0.212.SPA
           Tftp    10.88.7.12          0          Downloading
% Download-task fixos-k9.2.13.0.212.SPA : completed successfully.
```

步骤 10

1. 进入自动安装模式。
2. 安装FXOS平台捆绑包。
3. 系统首先验证要安装的软件包。系统会通知您当前安装的应用程序与指定的FXOS平台软件包之间的任何不兼容性。
4. 输入yes以确认要继续安装，或输入no以取消安装。

```
FPR-4145 /firmware # show package
Name                               Version
-----
fixos-k9.2.13.0.212.SPA            2.13(0.212)
FPR-4145 /firmware # scope auto-install
FPR-4145 /firmware/auto-install # install platform platform-vers 2.13(0.212)
The currently installed FXOS platform software package is not set

INFO: There is no service impact to install this FXOS platform software 2.13(0.212)

This operation upgrades firmware and software on Security Platform Components
Here is the checklist of things that are recommended before starting Auto-Install
(1) Review current critical/major faults
(2) Initiate a configuration backup
Do you want to proceed? (yes/no):yes

Triggering Install-Platform with:
  FXOS platform software package version 2.13(0.212)
Note: the upgrade status can be monitored with 'show firmware monitor' under system scope
command executed
FPR-4145 /firmware/auto-install #
```

步骤 11

监控安装。

```
FPR-4145 /firmware/auto-install # show fsm status expand

FSM Status:

Affected Object: sys/fw-system/fsm
Current FSM: Deploy
Status: Success
Completion Time: 2012-01-01T00:56:29.615
Progress (%): 100

FSM Stage:

Order  Stage Name                               Status    Try
-----
1      DeployWaitForDeploy                         Success   0
2      DeployResolveDistributableNames            Skip     0
3      DeployResolveDistributable                 Skip     0
4      DeployResolveImages                         Skip     0
5      DeployValidatePlatformPack                 Success   1
6      DeployDebundlePort                         Skip     0
7      DeployPollDebundlePort                     Success   1
8      DeployActivateUCSM                         Skip     0
9      DeployPollActivateOfUCSM                   Success   0
10     DeployActivateMgmtExt                       Skip     0
11     DeployPollActivateOfMgmtExt                 Skip     0
12     DeployUpdateIOM                             Skip     0
13     DeployPollUpdateOfIOM                       Skip     0
14     DeployActivateIOM                           Skip     0
15     DeployPollActivateOfIOM                     Skip     0
16     DeployActivateRemoteFI                      Skip     0
17     DeployPollActivateOfRemoteFI                Skip     0
18     DeployWaitForUserAck                        Skip     0
19     DeployActivateLocalFI                       Success   0
20     DeployPollActivateOfLocalFI                 Success   0
```

步骤 12

如果安装的平台捆绑包映像与您用于恢复系统的映像相对应，则必须手动激活启动映像和系统映像，以便在以后加载系统时使用这些映像。

安装与使用的恢复映像具有相同映像的平台捆绑包时，不会发生自动激活。


1. 设置交换矩阵互联a的范围：
2. 使用show version命令可显示正在运行的内核版本和正在运行的系统版本。使用这些字符串激活图像。

 注意：如果Startup-Kern-Vers和Startup-Sys-Vers已设置并且与Running-Kern-Vers和Running-Sys-Vers匹配，则无需激活映像，即可继续执行步骤13。

c.输入下一个命令以激活映像。activate firmware kernel-version <running_kernel_version> system-version <running_system_version>

```
FPR-4145# scope fabric-interconnect a
FPR-4145 /fabric-interconnect # show version
Fabric Interconnect A:
  Running-Kern-Vers: 5.0(3)N2(4.130.81)
  Running-Sys-Vers: 5.0(3)N2(4.130.81)
  Package-Vers: 2.13(0.212)
  Startup-Kern-Vers:
  Startup-Sys-Vers:
  Act-Kern-Status: Ready
  Act-Sys-Status: Ready
  Bootloader-Vers:

FPR-4145 /fabric-interconnect # activate firmware kernel-version 5.0(3)N2(4.130.81) system-version 5.0(3)N2(4.130.81)
Warning: When committed this command will reset the end-point
FPR-4145 /fabric-interconnect* # commit-buffer
FPR-4145 /fabric-interconnect # show version
Fabric Interconnect A:
  Running-Kern-Vers: 5.0(3)N2(4.130.81)
  Running-Sys-Vers: 5.0(3)N2(4.130.81)
  Package-Vers: 2.13(0.212)
  Startup-Kern-Vers: 5.0(3)N2(4.130.81)
  Startup-Sys-Vers: 5.0(3)N2(4.130.81)
  Act-Kern-Status: Activating
  Act-Sys-Status: Activating
  Bootloader-Vers:
```

 注：服务器状态可以更改为“磁盘故障”。您无需担心此消息，可以继续此过程。


步骤 13

重新启动系统。

```
FPR-4145# top
FPR-4145# scope chassis 1
FPR-4145 /chassis # reboot no-prompt
Starting chassis reboot. Monitor progress with the command "show fsm status"
FPR-4145 /chassis # show fsm status

Chassis: 1

  FSM 1:
    Remote Result: Not Applicable
    Remote Error Code: None
    Remote Error Description:
    Status: Reboot Chassis Wait For Blade Shutdown
    Previous Status: Reboot Chassis Wait For Blade Shutdown
    Timestamp: 2012-01-01T01:15:19.564
    Try: 1
    Progress (%): 65
    Current Task: Waiting for blade shutdown(FSM-STAGE:sam:dme:EquipmentChas
sisRebootChassis:WaitForBladeShutdown)
    Flags: 0
FPR-4145 /chassis #
```

 注：系统在最后关闭并重新启动Firepower4100/9300机箱之前关闭每个安全模块/引擎的电源。此过程大约需要5-10分钟。

步骤 14

监控系统状态。服务器状态必须从“发现”变为“配置”，最后变为“正常”。

```
FPR-4145# show server status
Server Slot Status Overall Status Discovery
-----
1/1 Equipped Discovery Retry

FPR-4145# show server status
Server Slot Status Overall Status Discovery
-----
1/1 Equipped Config Complete

FPR-4145# show server status
Server Slot Status Overall Status Discovery
-----
1/1 Equipped Ok Complete
```

关于此翻译

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