透過HTTP伺服器重新映像APIC控制器的步驟

目錄

簡介

本文檔介紹如何藉助HTTP伺服器對APIC進行重新映像。

問題

如果APIC集群發生故障或硬體從L2/M2遷移到L4/M4，單個APIC裝置可能需要重新映像才能恢復功能。此過程概述了使用HTTP伺服器逐一對APIC進行重新映像的簡化方法，有助於以最小的中斷實現更快的群集恢復。

對需要重新映像的每個APIC裝置依次重複此過程。重新映像所有APIC後，根據需要恢復集群配置，並進行徹底測試以驗證功能。

此簡明程式可實現高效的APIC恢復，使管理員能夠及時解決集群故障並有效地恢復網路運營。

必要條件

1. 必須使用OOB IP地址配置CIMC。
2. 檢視APIC版本說明，並確認您需要對哪個APIC軟體映像進行重新映像。

3. 從software.cisco.com獲取軟體映像
4. 確認映像的MD5校驗和與Cisco.com上發佈的校驗和匹配
5. 將APIC映像上傳到HTTP伺服器上。

解決方案

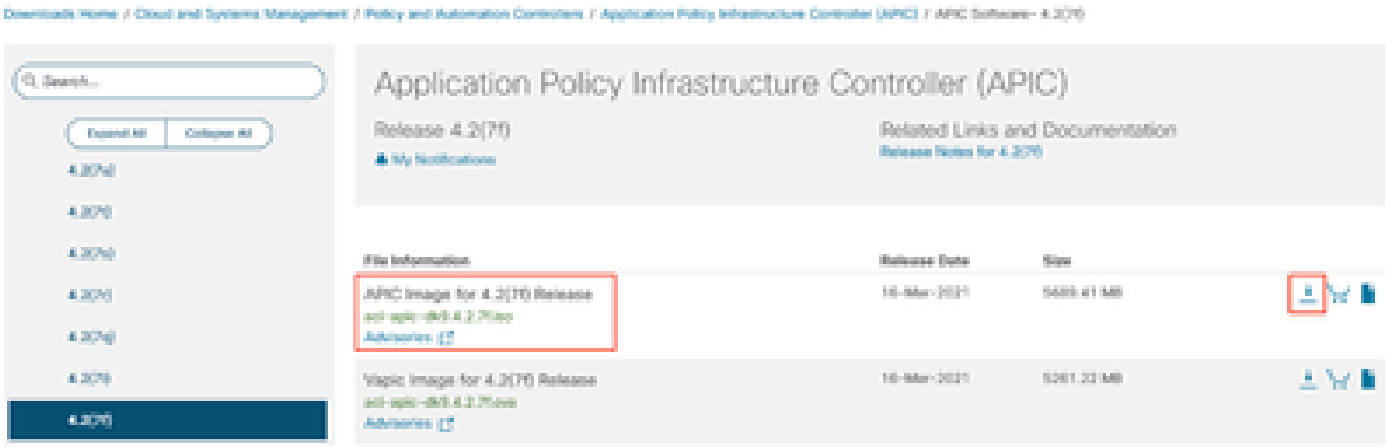
要使用HTTP伺服器重新映像APIC，需要執行以下步驟。

步驟1.首先，您需要從Cisco網站下載韌體。

打開software.cisco.com/download。

第2步：輸入APIC並在此處為ACI選擇適當的版本。在此選擇4.2(7f)。

舉例來說：



步驟 3.將APIC軟體.iso映像複製到HTTP伺服器

示例：- http://x.x.x.x/iso/

Index of /iso

Name	Last modified	Size	Description
Parent Directory		-	
DCApps/	2024-03-28 11:06	-	
NAB for ND_NDFC_NDI.pdf	2023-10-21 13:35	401K	
aci-apic-dk9.2.2.3j.iso	2021-04-16 08:18	2.9G	
aci-apic-dk9.2.2.3t.iso	2020-11-11 17:31	2.9G	
aci-apic-dk9.2.2.4r.iso	2020-11-11 17:34	3.1G	
aci-apic-dk9.3.0.2k.iso	2020-11-26 13:56	3.3G	
aci-apic-dk9.3.2.3n.iso	2020-10-26 11:56	3.5G	
aci-apic-dk9.3.2.4d.iso	2021-02-26 13:41	3.3G	
aci-apic-dk9.3.2.7f.iso	2020-12-08 08:55	2.7G	
aci-apic-dk9.3.2.7k.iso	2024-03-07 20:58	2.7G	
aci-apic-dk9.3.2.8d.iso	2020-09-24 16:41	3.0G	
aci-apic-dk9.3.2.9h.iso	2020-11-10 22:07	3.2G	
aci-apic-dk9.4.2.3l.iso	2020-04-20 18:19	5.1G	
aci-apic-dk9.4.2.4k.iso	2020-09-18 14:21	5.6G	
aci-apic-dk9.4.2.4o.iso	2020-07-29 13:21	5.6G	
aci-apic-dk9.4.2.5k.iso	2020-09-24 16:08	5.6G	
aci-apic-dk9.4.2.5l.iso	2024-03-15 10:08	5.6G	
aci-apic-dk9.4.2.5n.iso	2020-11-02 17:20	5.6G	
aci-apic-dk9.4.2.6d.iso	2020-12-03 19:30	0	
aci-apic-dk9.4.2.6h.iso	2023-07-26 13:53	6.0G	
aci-apic-dk9.4.2.7f.iso	2021-03-26 18:32	5.6G	

步驟 4.透過SSH/控制檯連線到思科整合管理控制器

- 從終端窗口登入CIMC控制檯

<#root>

```
 # ssh admin@cimc_ip
```

其中cimc_ip是CIMC IP地址。舉例來說：

<#root>

```
# ssh admin@x.x.x.x

admin@x.x.x.x's password:

system#
```

- 將範圍變更為虛擬媒體：

<#root>

```
system# scope vmedia

system /vmedia #
```

- 將.iso映像對映到HTTP伺服器

<#root>

```
system /vmedia # map-www volume_name http://http_server_ip_and_path iso_file_name
```

其中：

- volume_name是磁碟區的名稱。
- http_server_ip_and_path是HTTP伺服器的IP地址和.iso檔案位置的路徑。
- iso_filename是.iso檔案的名稱。

注意：http_server_ip_and_path和iso_filename之間存在空格

舉例來說：

```
system /vmedia # map-www apic http://x.x.x.x/iso/ aci-apic-dk9.4.2.7f.iso
Server username: admin
Server password:
Confirm password:
```

注意： /*如果此處不需要身份驗證，請按Enter鍵

- 檢查對映狀態：

<#root>

```
 system /vmedia #
```

show mappings detail

Map-Status必須顯示為OK。

舉例來說：

<#root>

```
system /vmedia #
```

show mappings detail

```
Volume apic:
    Map-Status: OK
    Drive-Type: CD
    Remote-Share: http://x.x.x.x/iso/

    Remote-File: aci-apic-dk9.4.2.7f.iso
    Mount-Type: www
    Mount-Options: noauto,username=admin,password=********3
    system /vmedia #
```

- 連線到SOL以監視安裝過程：

<#root>

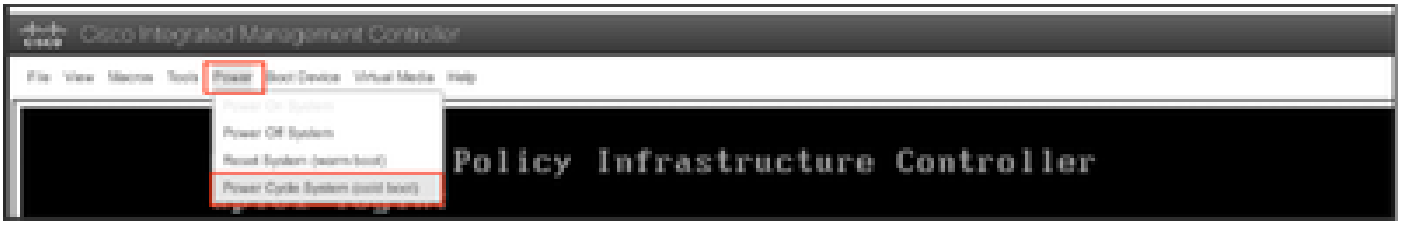
```
system /vmedia #
```

connect host

```
CISCO Serial Over LAN:
Press Ctrl+x to Exit the session
```

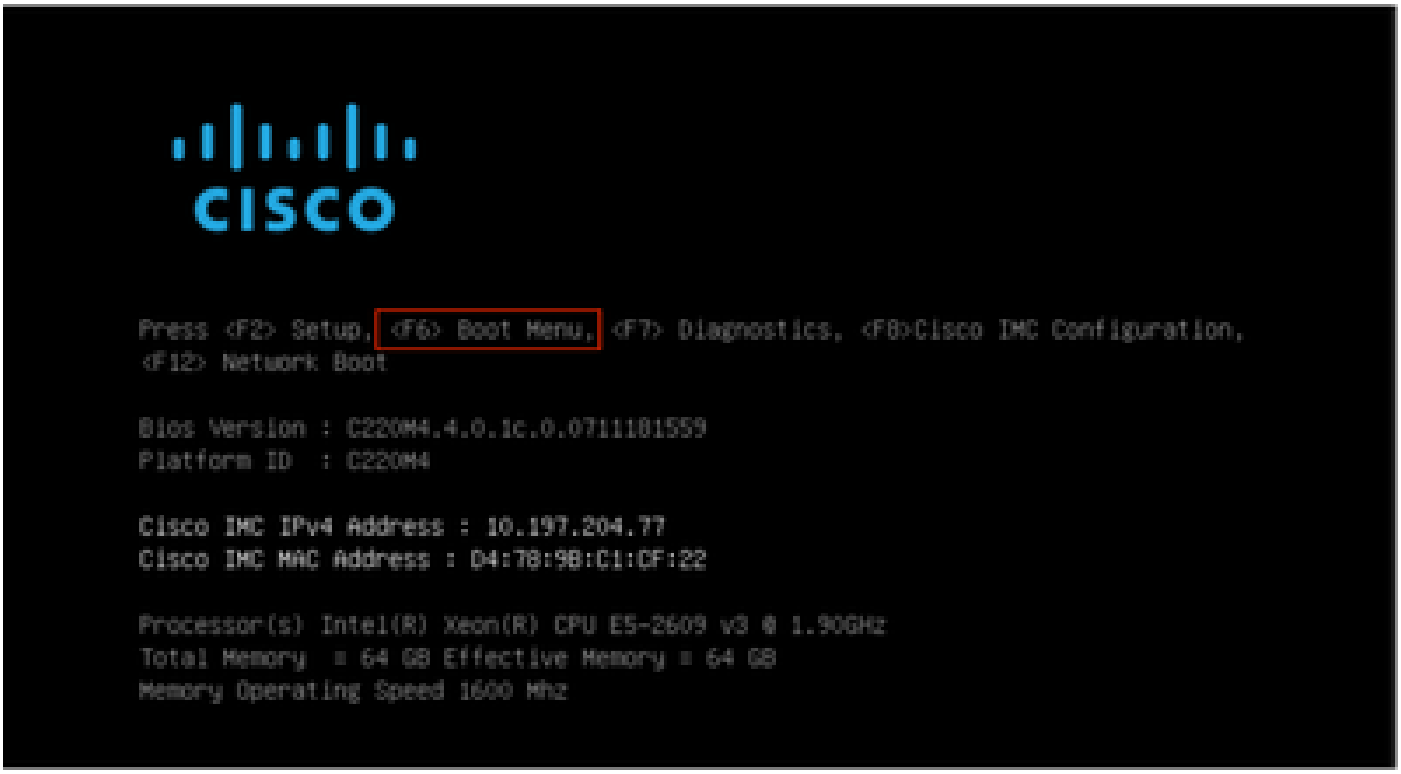
步驟 5.從CIMC GUI的KVM控制檯重新通電

選擇「Power > Power Cycle System (cold boot)(電源>重新通電系統（冷啟動）)」，對控制器重新通電



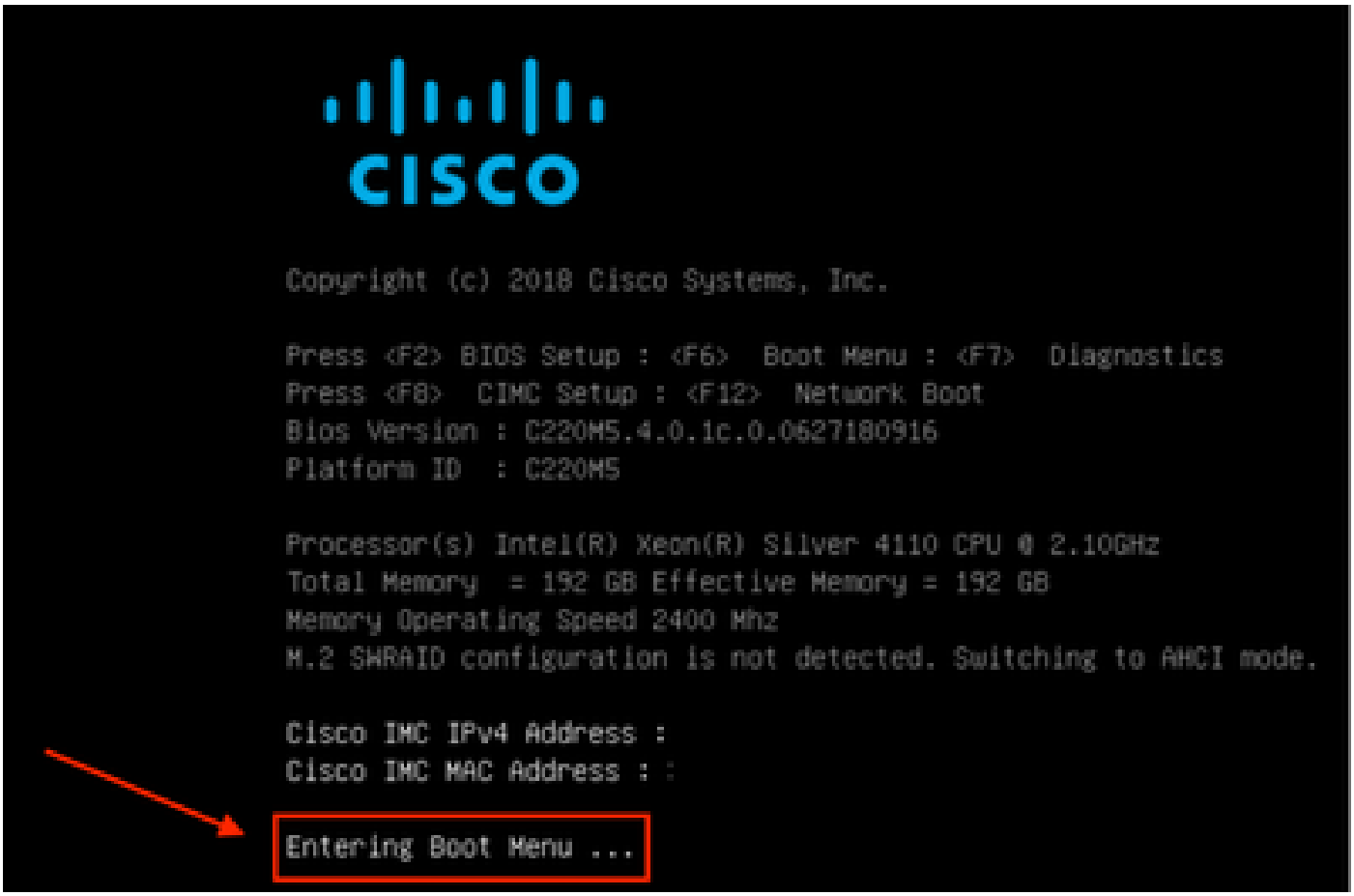
從SOL控制檯：在引導過程中觀察螢幕，準備在適當的時間按F6進入引導選擇選單。

舉例來說：

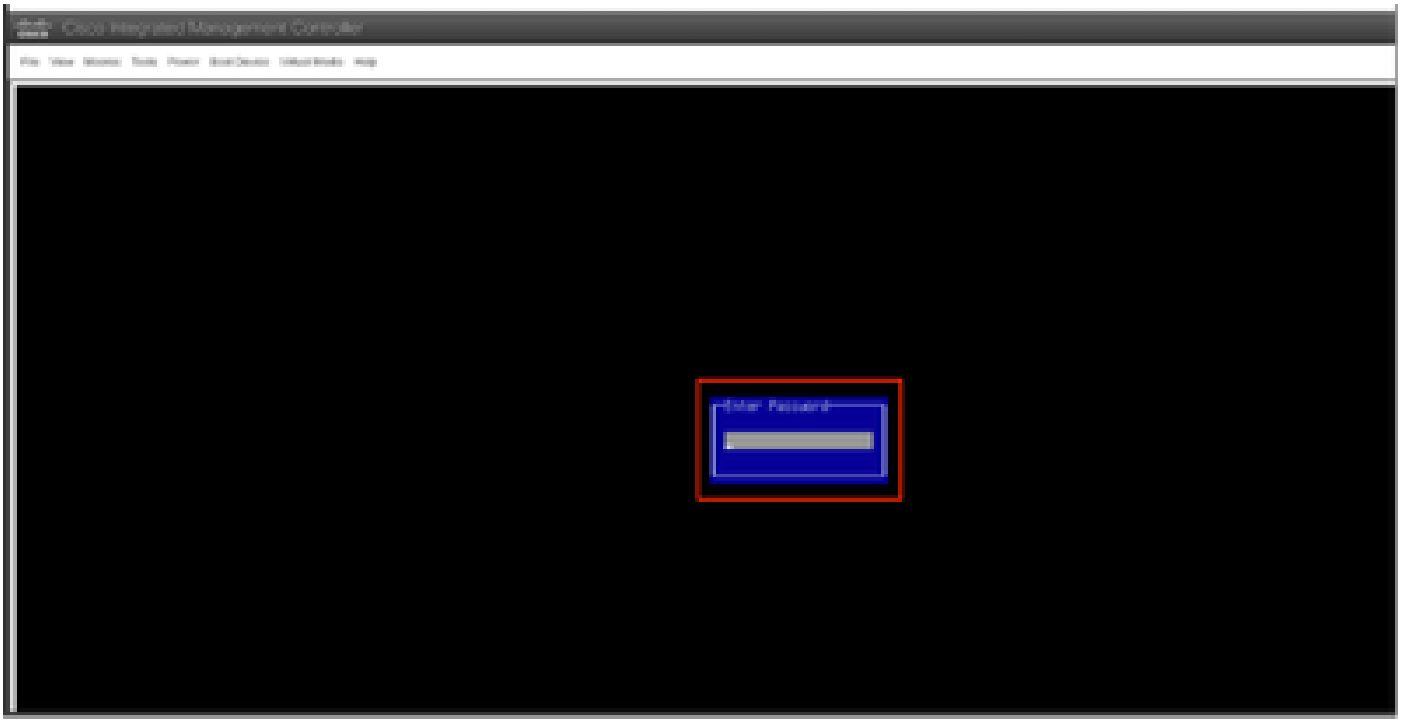


按下F6之後

注意：如果錯過機會，並且無法在適當的時刻按F6，請返回步驟5以重新啟動控制器並重複該過程，直到可以按F6進入引導選擇選單為止。



您也必須輸入BIOS密碼。預設密碼為password



在引導選擇選單中，選擇Cisco CIMC-Mapped vDVD1.22選項作為一次性引導裝置。

步驟 6.返回CIMC CLI並監控「連線主機」的輸出。

監控CIMC cli ，當收到To speed the install， enter iso url in next ten minutes消息時，請輸入帶有APIC映象的http伺服器URL。

<#root>

```
++ grep /run/install/repo
++ cut -f 1 -d ' '
++ tr -d '[:digit:]'
+ usbdevice=/dev/sr
+ mkdir /mnt/usbdata
+ mount /dev/sr2 /mnt/usbdata
mount: special device /dev/sr2 does not exist
+ true
+ '[' -f /mnt/usbdata/ifabric.iso ']'
+ mountpoint -q /mnt/usbdata
+ true
+ echo 'INFO: found second partition on install media but did not find ifabric.iso. '
INFO: found second partition on install media but did not find ifabric.iso.
+ echo 'Continuing on to ISO URL prompt.'
Continuing on to ISO URL prompt.
+ '[' 0 -eq 0 ']'
+ read_iso_url
+ true,,
+ echo
```

'To speed up the install, enter iso url in next ten minutes

```
: '
```

<< Enter the http server URL with apic image >>

```
To speed up the install, enter iso url in next ten minutes:
+ read -t 600 -p '? ' url
?
```

<#root>

http://x.x.x.x/iso/aci-apic-dk9.4.2.7f.iso

```
5:program-log
```

<< Enter the http server details >>

```
[anaconda] 1:main* 2:shell  3:log  4:storage-lo> Switch tab: Alt+Tab | Help: F1
```

注意：http_server_ip_and_path和iso_filename之間沒有空格。

第7步：輸入HTTP URL後，引導過程將繼續進行。

注意：如果選擇靜態選項，系統會要求您輸入介面名稱、管理IP地址和網關。

<#root>

```
+ '[' 0 -eq 0 ']'
+ read_iso_url
+ true
+ echo 'To speed up the install, enter iso url in next ten minutes: '
```

```
To speed up the install, enter iso url in next ten minutes:
+ read -t 600 -p '? ' url
?
[ahttp://x.x.x.x/iso/aci-apic-dk9.4.2.7f.iso 5:program-log
++ awk -F '/|:' '{print $4}'
+ urlip=x.x.x.x
+ '[' -z http://x.x.x.x/iso/aci-apic-dk9.4.2.7f.iso ']'
+ '[' -z x.x.x.x ']'
+ break
+ '[' -n http://x.x.x.x/iso/aci-apic-dk9.4.2.7f.iso ']'
+ set +e
+ configured=0
+ '[' 0 -eq 0 ']'
+ echo 'Configuring network interface'
Configuring network interface
+ echo
```

'type static, dhcp, bash for a shell to configure networking,

```
 or url to re-enter the url: '
>>
```

<< Type static and configure the APIC OOB IP address with it's gateway>>

```
type static, dhcp, bash for a shell to configure networking, or url to re-enter the url:
+ read -p '? ' ntype
```

<#root>

?

static

.

<< Enter the static to configure the networking >>

```
[anaconda] 1:main* 2:shell  3:log  4:storage-lo> Switch tab: Alt+Tab | Help: F1
```

注意：鍵入靜態地址後，它將列出CIMC介面，選擇正確的介面。如果選擇了錯誤的介面，則資料包丟失率為100%，在三次嘗試執行ping失敗後，它將再次要求選擇正確的介面，直到資料包丟失為0。如果您不知道介面，則逐一選擇所有介面。

舉例來說：

<#root>

```
+ case $ntype in
+ configure_static
+ echo 'Available interfaces'
Available interfaces
+ ls -l /sys/class/net
total 0
lrwxrwxrwx. 1 root root 0 May  3 07:08
```

enp11s0

```
 -> ../../devices/pci0000:00/0000:00:03.0/0000:06:00.0/0000:07:01.0/0000:09:00.0/0000:0a:00.0/0000:0b:0
lrwxrwxrwx. 1 root root 0 May  3 07:08
```

enp12s0

```
 -> ../../devices/pci0000:00/0000:00:03.0/0000:06:00.0/0000:07:01.0/0000:09:00.0/0000:0a:01.0/0000:0c:0
lrwxrwxrwx. 1 root root 0 May  3 07:08
```

enp1s0f0

```
 -> ../../devices/pci0000:00/0000:00:01.0/0000:01:00.0/net/enp1s0f0
lrwxrwxrwx. 1 root root 0 May  3 07:08
```

enp1s0f1

```
 -> ../../devices/pci0000:00/0000:00:01.0/0000:01:00.1/net/enp1s0f1
lrwxrwxrwx. 1 root root 0 May  3 07:08 lo -> ../../devices/virtual/net/lo
+ read -p 'Interface to configure: ' interface
```

<#root>

```
Interface to configure:
```

enp1s0f0

<< select the correct interface   >>

```
[anaconda] 1:main* 2:shell  3:log  4:storage-lo>
```

第8步：正確介面檢查

進入介面後，它將嘗試ping http伺服器，如果選定的介面正確，則資料包丟失率必須為0%，並開始從http伺服器提取映像。

例如：在輸入正確介面但0%的資料包丟失後。

<#root>

```
+ read -p 'Interface to configure: ' interface
Interface to configure:
```

enp1s0f0

```
+ read -p 'address: ' addr
address: x.x.x.x/24
+ read -p 'gateway: ' gw
gateway: x.x.x.x
+ ip addr add x.x.x.x/24 dev enp1s0f0
+ ip link set enp1s0f0 up
+ ip route add default via x.x.x.x
++ seq 1 2
+ for count in '$(seq 1 2)'
+ ping -c 1 x.x.x.x
```

```
PING x.x.x.x (x.x.x.x) 56(84) bytes of data.
64 bytes from x.x.x.x: icmp_seq=1 ttl=64 time=55.0 ms
--- x.x.x.x ping statistics ---
1 packets transmitted, 1 received, 0% packet loss, time 0ms
rtt min/avg/max/mdev = 55.056/55.056/55.056/0.000 ms
+ configured=1
+ break
+ '[' 1 -eq 0 ']'
+ echo 'Fetching http://x.x.x.x/iso/aci-apic-dk9.4.2.7f.iso'
```

Fetching http://x.x.x.x/iso/aci-apic-dk9.4.2.7f.iso

>> started fetching the apic image from HTTP server

```
+ wget -o /dev/null -O /tmp/cdrom.iso http://x.x.x.x/iso/aci-apic-dk9.4.2.7f.iso
```

如果選擇了錯誤的介面，則資料包丟失率將為100%，在三次嘗試執行ping失敗後，它將再次要求選擇正確的介面。

例如：在輸入錯誤介面且資料包丟失100%後

<#root>

```
+ read -p 'Interface to configure: ' interface
Interface to configure:
```

enp11s0

```
+ read -p 'address: ' addr
address: x.x.x.x/24
+ read -p 'gateway: ' gw
gateway: x.x.x.x
+ ip addr add x.x.x.x/24 dev enp11s0
+ ip link set enp11s0 up
+ ip route add default via x.x.x.x
++ seq 1 2
+ for count in '$(seq 1 2)'
+ ping -c 1 x.x.x.x
PING x.x.x.x (x.x.x.x) 56(84) bytes of data.
From x.x.x.x icmp_seq=1 Destination Host Unreachable

--- x.x.x.x ping statistics ---
1 packets transmitted, 0 received, +1 errors, 100% packet loss, time 0ms

+ sleep 20
+ for count in '$(seq 1 2)'
+ ping -c 1 x.x.x.x
PING x.x.x.x (x.x.x.x) 56(84) bytes of data.
From x.x.x.x icmp_seq=1 Destination Host Unreachable

--- x.x.x.x ping statistics ---
1 packets transmitted, 0 received, +1 errors, 100% packet loss, time 0ms

+ sleep 20
+ '[' 0 -eq 0 ']'
+ echo 'Configuring network interface'
```

```
Configuring network interface
+
```

echo 'type static, dhcp, bash for a shell to configure networking, or url to re-enter the url: '

<<Asking again to select the interface after selecting the type i,e static >>

```
type static, dhcp, bash for a shell to configure networking, or url to re-enter the url:
+ read -p '? ' ntype
?
```

請保持監控CIMC CLI並等待約40-50分鐘，您將在CLI上獲得以下輸出。

```
[anaconda] 1:main* 2:shell  3:log  4:storage-lo> Switch tab: Alt+Tab | Help: F1
[  OK  ] Started Show Plymouth Power Off Screen.
[  OK  ] Stopped Availability of block devices.
         Stopping Logout off all iSCSI sessions on shutdown...
         Stopping LVM2 metadata daemon...
[  OK  ] Stopped LVM2 metadata daemon.
[  OK  ] Stopped Logout off all iSCSI sessions on shutdown.
[  OK  ] Stopped target Network.
[  OK  ] Stopped Remount Root and Kernel File Systems.
         Stopping Remount Root and Kernel File Systems...
[  OK  ] Started Restore /run/initramfs.
[  OK  ] Reached target Shutdown.
dracut Warning: Killing all remaining processes
Powering off.
reboot: Power down
```

第9步：關閉電源後退出SOL

請等候您在SOL主控台中看到關閉電源訊息，然後按下Ctrl和x (Ctrl+x)從SOL結束，再登入CIMC並再次變更範圍。

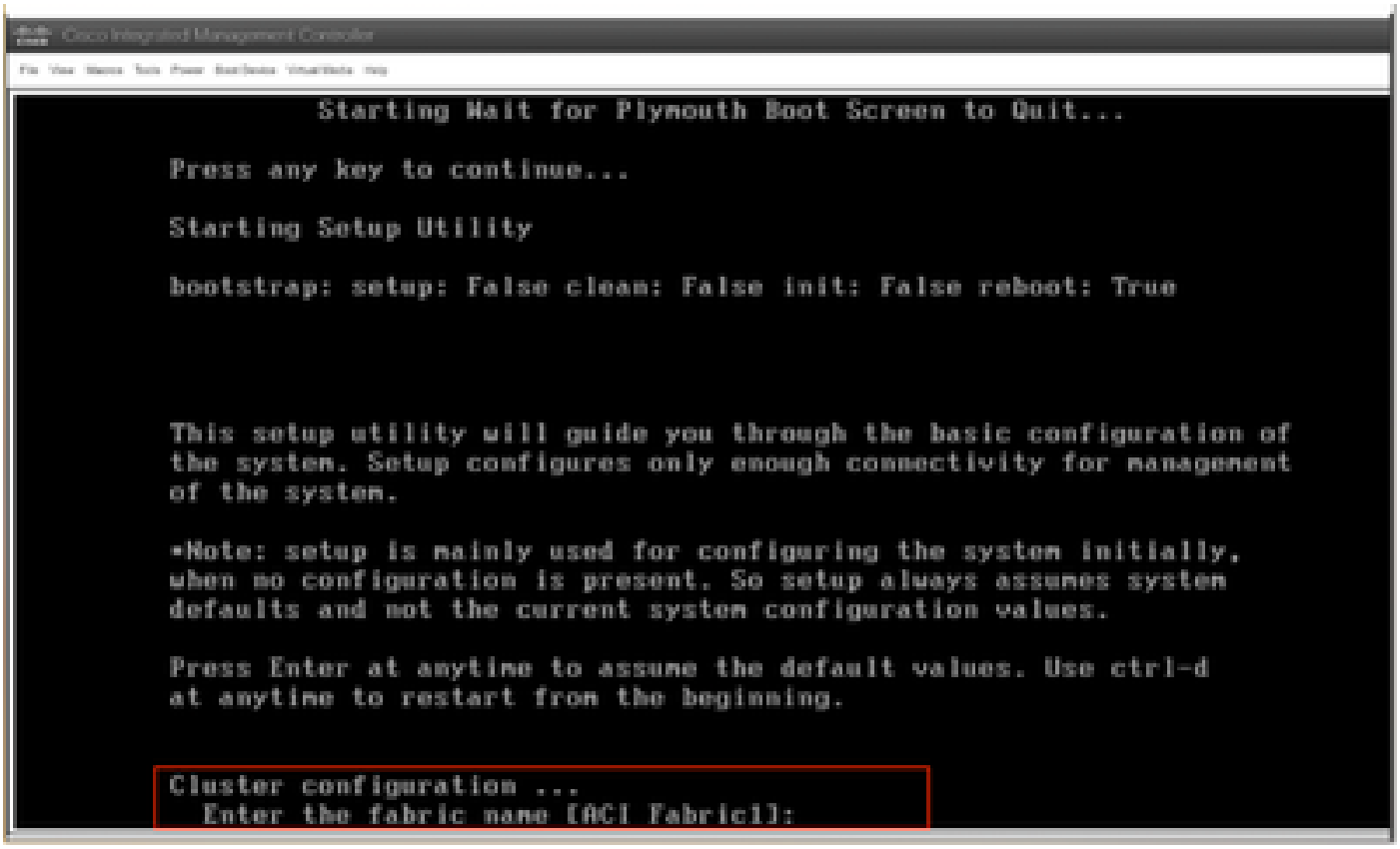
```
(i) Change the scope to virtual media again:
system# scope vmedia
system /vmedia #
```

```
 (ii) Unmap the .iso image that you mapped in 2.c:
 system /vmedia # unmap volume_name
 At the Save mapping prompt, enter yes if you want to save the mapping or no if you do not want to save
 system /vmedia # unmap apic
 Save mapping? Enther 'yes' or 'no' to confirm (CTRL-C to cancel) → yes
 system /vmedia #
```

```
 (iii) Connect back to SOL again:
       system /vmedia #  connect host
```

第10步：初始配置

在KVM控制檯上：選擇Power > Power on System以打開控制器和Lunch KVM的電源，它將要求APIC初始配置



關於此翻譯

思科已使用電腦和人工技術翻譯本文件，讓全世界的使用者能夠以自己的語言理解支援內容。請注意，即使是最佳機器翻譯，也不如專業譯者翻譯的內容準確。Cisco Systems, Inc. 對這些翻譯的準確度概不負責，並建議一律查看原始英文文件（提供連結）。