使用HTTP服务器重新映像Cisco Nexus控制面板节点的步骤

目录

简介

本文档介绍使用HTTP服务器重新映像Cisco Nexus控制面板节点的步骤，提供清晰的逐步指导，以确保通过远程HTTP托管的映像部署实现标准化和高效的节点重新映像。

先决条件

1. 必须使用OOB IP地址配置思科集成管理控制器(CIMC)。
2. 检查Nexus Dashboard Release notes，确认需要重新映像哪个Nexus Dashboard软件映像。
3. 从software.cisco.com获取软件映像。
4. 确认映像的MD5校验和与在Cisco.com上发布的校验和匹配。
5. 上传HTTP服务器上的Nexus控制面板映像。
6. 必须可以从CIMC管理接口访问HTTP服务器。可使用CIMC GUI或CLI验证此连通性。

使用的组件

本文档不限于特定的软件和硬件版本。
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。

背景信息

当Cisco Nexus控制面板节点由于系统损坏、不支持的更新或无法访问的GUI而发生故障时，管理员可以使用HTTP服务器上托管的ISO重新映像该节点。该过程包括下载Nexus控制面板ISO，将其托管在Web服务器上，并使用CIMC（思科集成管理控制器）通过HTTP映射和启动ISO。这可实现高

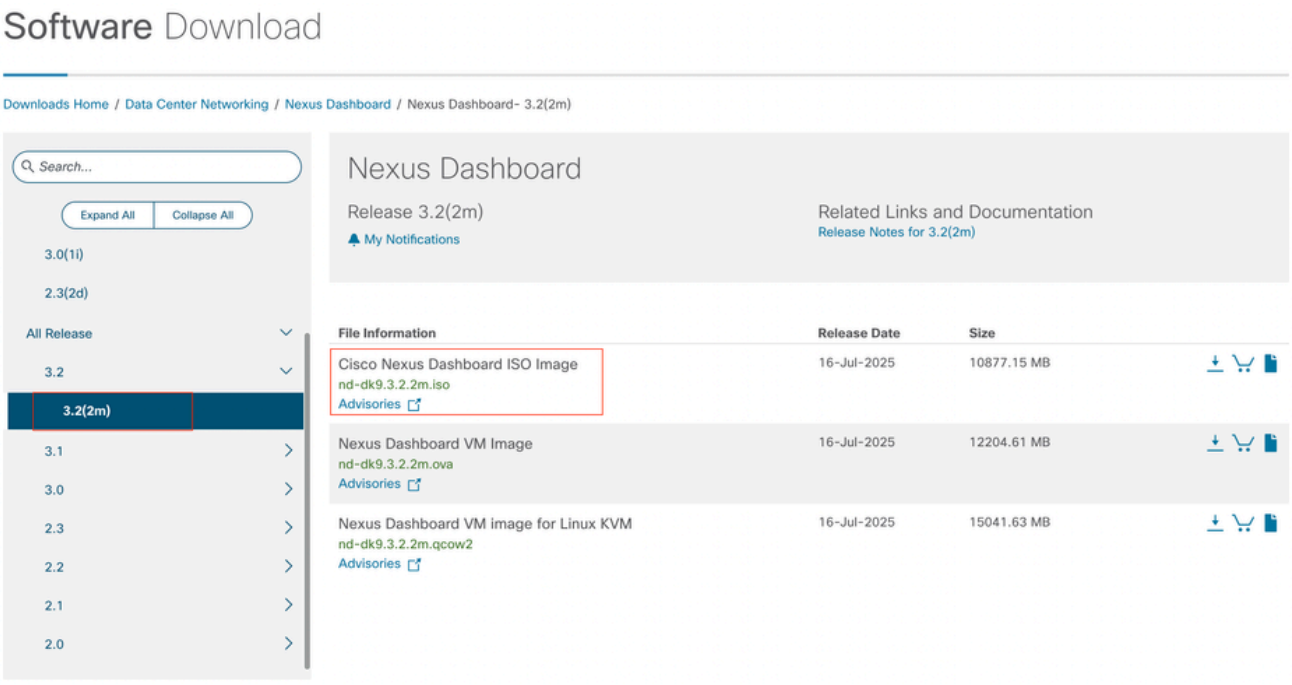
效的远程节点恢复或重新安装，作为集群恢复的一部分。

解决方案

要通过HTTP服务器执行ND重新映像，需要执行以下步骤：

步骤1.从Cisco网站下载固件。
打开software.cisco.com/download。

步骤2.访问Nexus控制面板界面并从可用版本选项中选择适当的软件版本(例如3.2(2m))。
例如:



步骤3.将Nexus控制面板软件ISO映像复制到HTTP服务器。

示例：http://x.x.x.x/iso/

步骤4.通过SSH/控制台连接到思科集成管理控制器。

- 从终端窗口登录到CIMC控制台。

```
# ssh admin@cimc_ip
```

其中cimc_ip是CIMC IP地址。

例如：

```
# ssh admin@x.x.x.x
admin@x.x.x.x's password:
system#
```

- 将范围更改为虚拟介质：

<#root>

system# scope vmedia

system /vmedia #

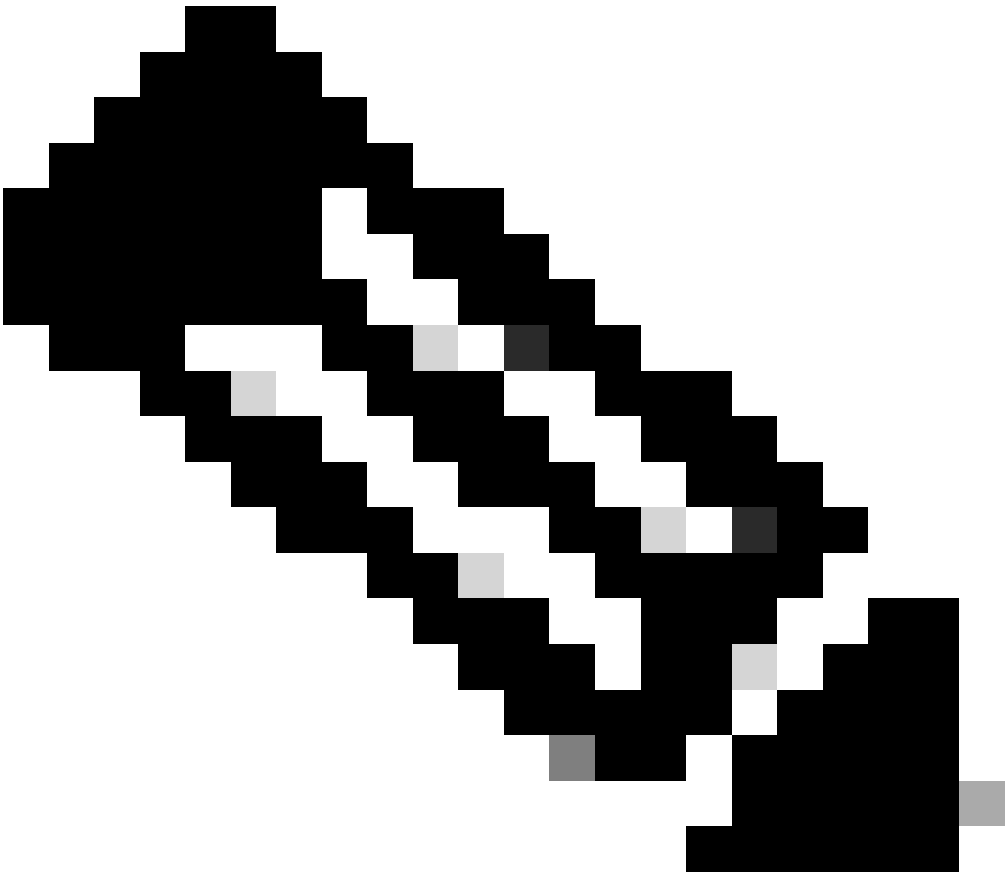
- 将.iso映像映射到HTTP服务器。

<#root>

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

其中：

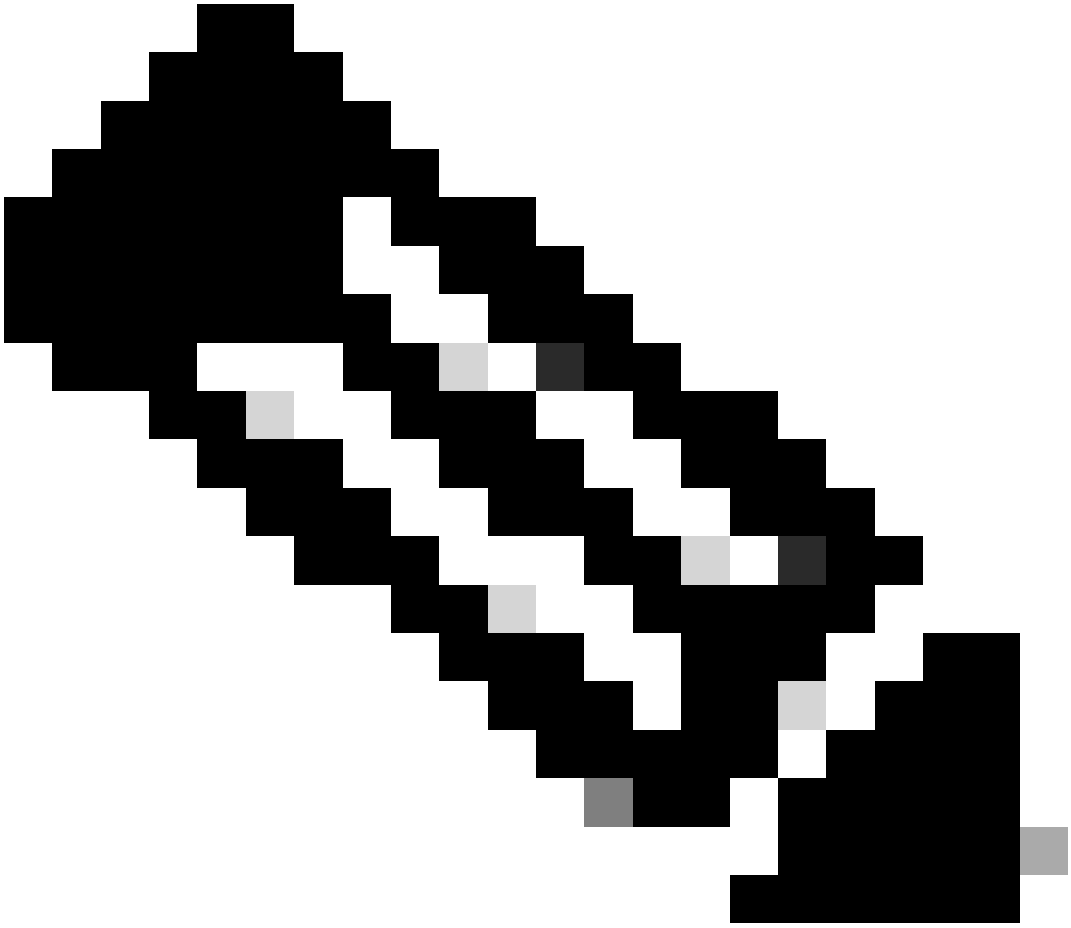
- volume_name是卷的名称。
- http_server_ip_and_path是HTTP服务器的IP地址和.iso文件位置的路径。
- iso_filename是.iso文件的名称。



注意：http_server_ip_and_path与iso_filename之间存在空格。

例如：

```
system /vmedia # map-www apic http://x.x.x.x/iso/ nd-dk9.3.2.2m.iso
Server username: admin
Server password:
Confirm password:
```



注意：输入凭证并按Enter。

- 检查映射状态：

<#root>

```
 system /vmedia #
show mappings detail

The Map-Status must be shown as OK.
For Example:
system /vmedia #
show mappings detail
```

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

    Remote-File:nd-dk9.3.2.2m.iso
    Mount-Type: www
    Mount-Options: noauto,username=admin,password=********3
    system /vmedia #
```

如果映射失败或在映射期间出现错误，可以使用unmap命令删除现有映射，然后再次尝试映射。

```
Server # scope vmedia
Server /vmedia # show mappings
Volume  Map-status   Drive-type     remote-share        remote-file                mount-type
------  ----------  ------------  ------------------ -------------------        -----------
Huu     OK           removable    http://x.x.x.x/ rhel-server-6.1-x86_6.iso      www
Server /vmedia # unmap Huu
Server /vmedia # show mappings
Volume  Map-status   Drive-type     remote-share        remote-file                mount-type
------  ----------  ------------  ------------------ -------------------        -----------
```

- 连接到SOL以监控安装过程：

<#root>

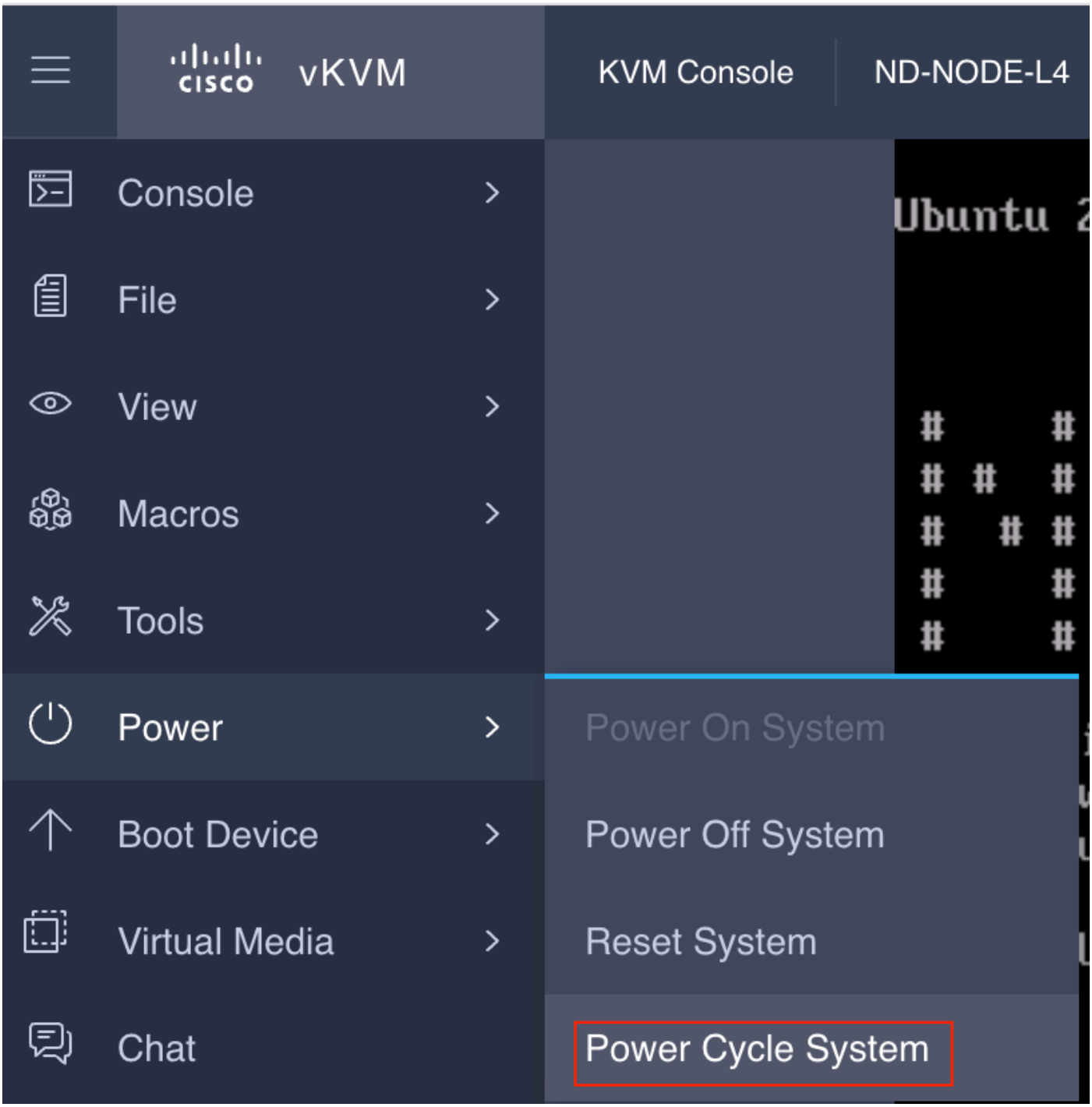
```
system /vmedia #
```

connect host

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

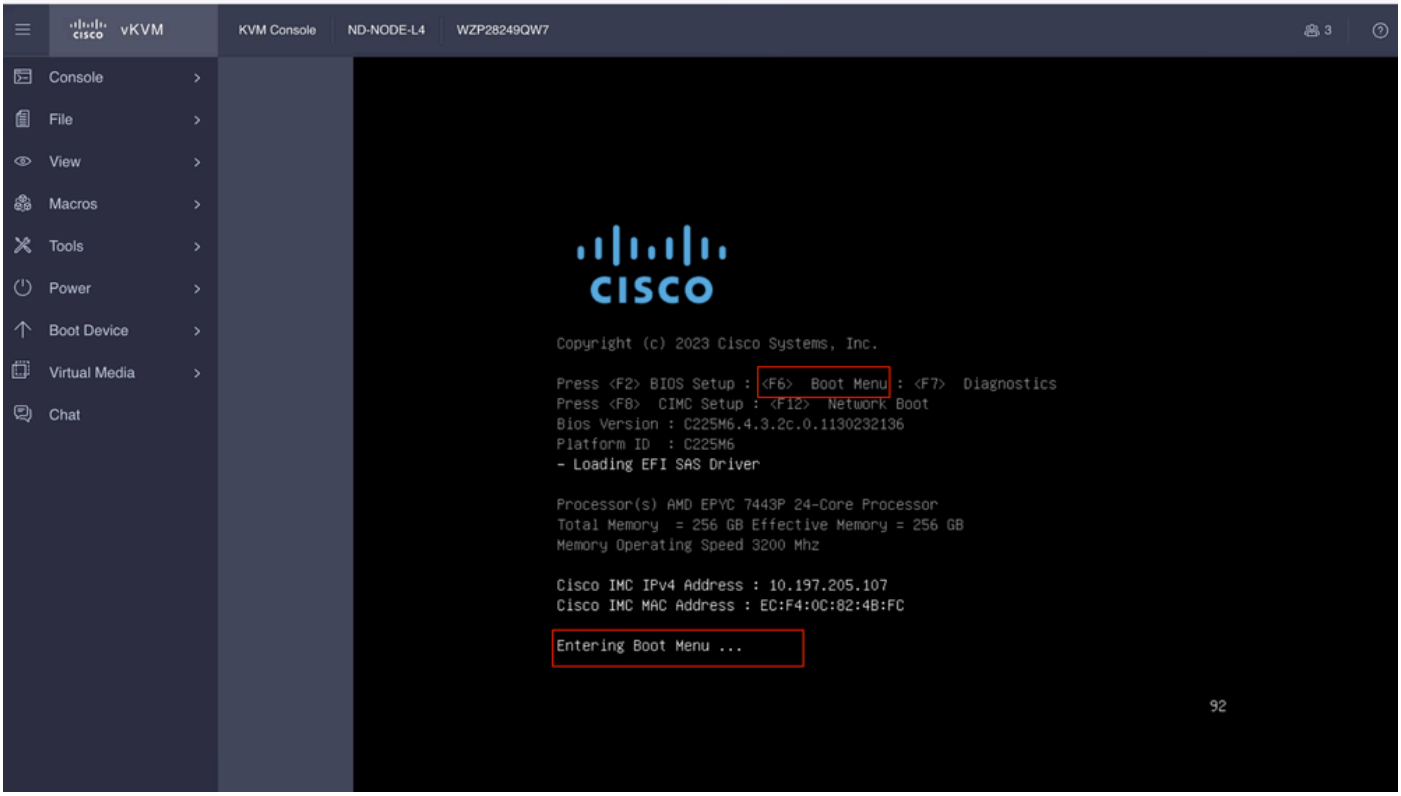
步骤5.从CIMC GUI的KVM控制台重新通电。

```
Choose Power > Power Cycle System (cold boot) to power cycle the controller.
```

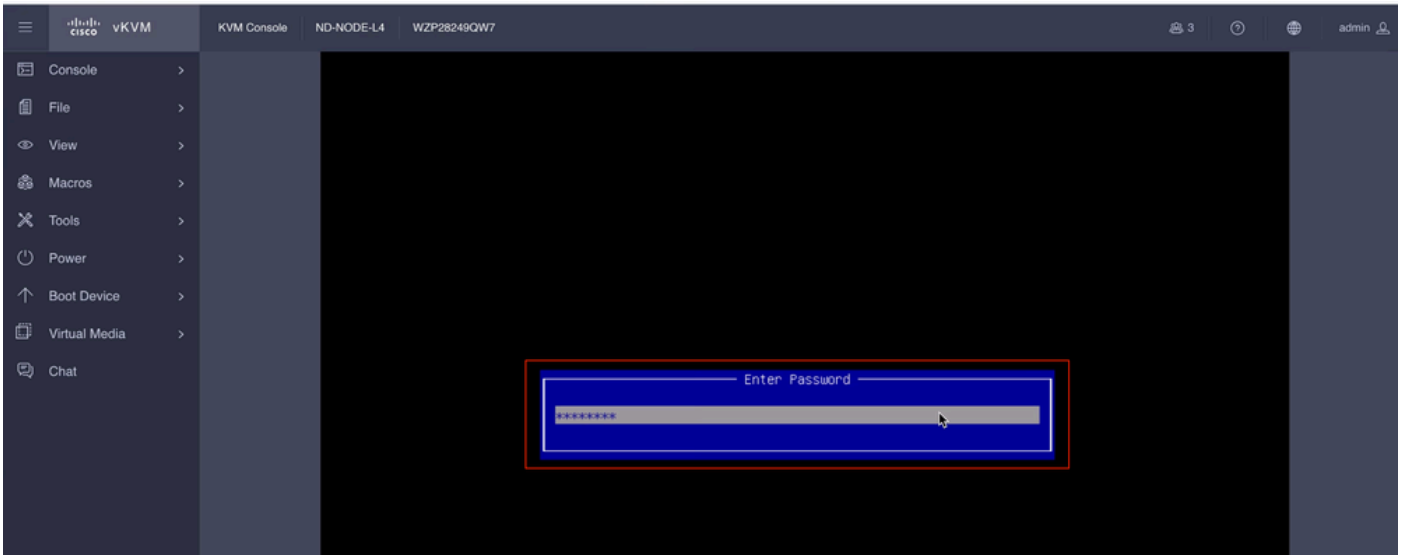


从SOL控制台：在启动过程中观察屏幕，并准备在适当的时间按F6以进入启动选择菜单。

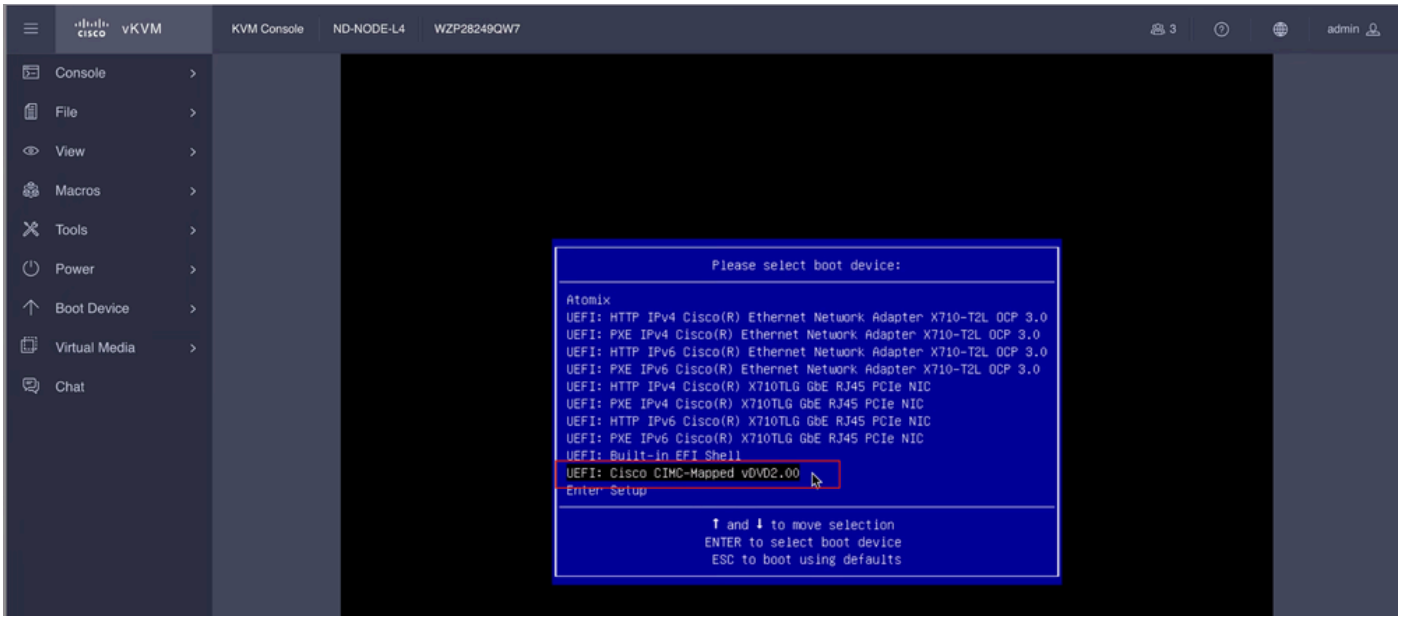
例如：



您还必须输入BIOS密码。默认密码是password。



在启动选择菜单中，选择Cisco CIMC-Mapped vDVD2.00选项作为一次性启动设备。



步骤6.返回CIMC CLI并监控连接主机的输出。
监控CIMC cli ，当收到以下消息时：要加速安装，请在接下来的10分钟内输入iso url，然后输入带有Nexus控制面板映像的http服务器URL。

<#root>

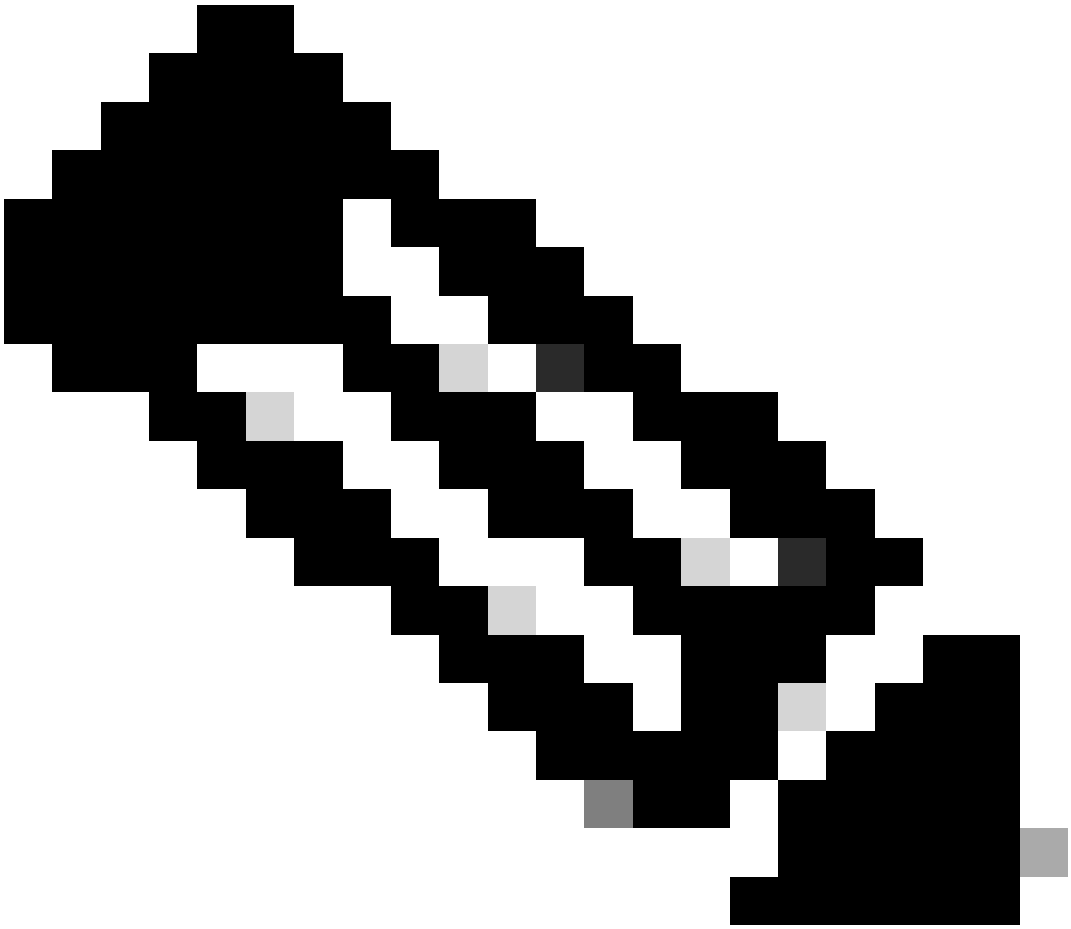
```
Boot000A* UEFI: Cisco CIMC-Mapped vDVD2.00 PciRoot(0x1)/Pci(0x8,0x1)/Pci(0x0,0x3)/USB(1,0)/USB(2,0)/Uni
+ return 1
+ '[' -n '' ']'
++ mount
++ grep /run/install/repo
++ cut -f 1 -d ' '
++ tr -d '[:digit:]'
++ true
+ usbdevice=
+ mkdir /mnt/usbdata
+ '[' -n '' ']'
+ '[' true = true ']'
+ read_iso_url
+ dmesg --console-off
+ true
+ echo 'To speed up the install, enter iso url. Type '\''skip'\'' to use local media:'
To speed up the install, enter iso url. Type 'skip' to use local media:
+ echo ' Either http://server/path/to/file or nfs:server:/path/to/file are supported'
Either http://server/path/to/file or nfs:server:/path/to/file are supported
+ read -r -p '? ' url
```

http://x.x.x.x197.204.4/iso/DCApps/ND/nd-dk9.3.2.1i.iso **<< Enter the http server details >>**

```
+ '[' http://x.x.x.x197.204.4/iso/DCApps/ND/nd-dk9.3.2.1i.iso = skip ']'
+ '[' http://x.x.x.x197.204.4/iso/DCApps/ND/nd-dk9.3.2.1i.iso = '' ']'
+ '[' http = nfs: ']'
+ echo http://x.x.x.x197.204.4/iso/DCApps/ND/nd-dk9.3.2.1i.iso
+ grep -q '\[.*\]'
++ awk -F '/|:' '{print $4}'
+ urlip=x.x.x.x197.204.4
```

```
+ '[' -z x.x.x.x197.204.4 ']'
+ break
+ dmesg --console-on
+ '[' -n http://x.x.x.x197.204.4/iso/DCApps/ND/nd-dk9.3.2.1i.iso ']'
+ '[' http://x.x.x.x197.204.4/iso/DCApps/ND/nd-dk9.3.2.1i.iso '!=' skip ']'
+ dmesg --console-of
```

第 7 步： 输入HTTP URL后，引导过程将继续。



注意：选择static选项，系统将要求您输入接口名称、管理IP地址和网关。

<#root>

```
+ set +e
+ configured=0
+ interface=none
+ addr=none
+ gw=none
+ '[' 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:

'

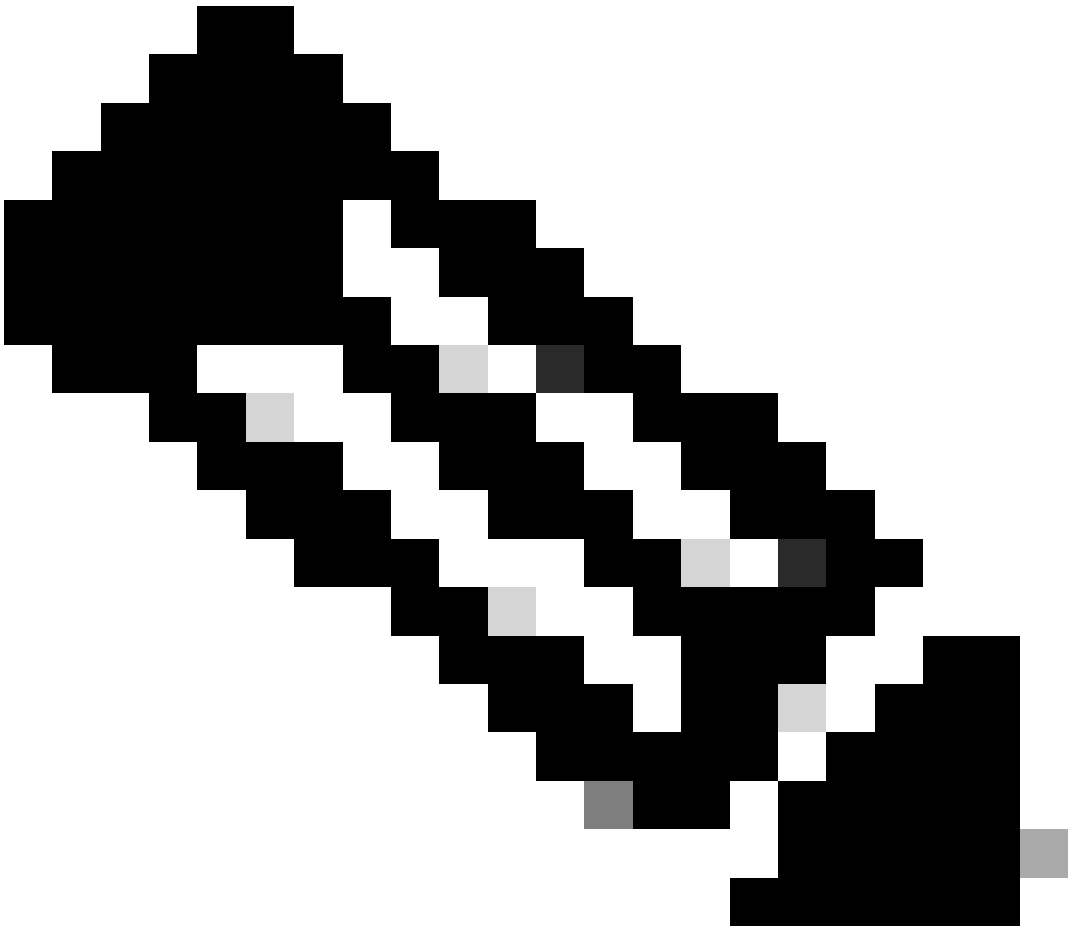
```
type static, dhcp, bash for a shell to configure networking, or url to re-enter the url:
+ read -p '? ' ntype
```

<#root>

? static

<< Enter the static to configure the networking >>

```
+ case $ntype in
+ configure_static
+ '[' none '!=' none ']'
```



注意：键入静态后，它将列出CIMC接口，选择正确的接口。如果选择了错误的接口，则丢包率为100%，然后ping尝试三次失败后，它会再次要求选择正确的接口，直到丢包为0。如果您不知道接口，请依次选择所有接口。

例如

<#root>

```
+ echo 'Available interfaces'
Available interfaces
+ ls -l /sys/class/net
total 0
lrwxrwxrwx 1 root root 0 Aug 12 03:53
```

eno5

```
 -> ../../devices/pci0000:40/0000:40:03.1/0000:46:00.0/0000:47:01.0/0000:49:00.0/0000:4a:00.0/0000:4b:0
lrwxrwxrwx 1 root root 0 Aug 12 03:53
```

eno6

```
 -> ../../devices/pci0000:40/0000:40:03.1/0000:46:00.0/0000:47:01.0/0000:49:00.0/0000:4a:00.0/0000:4b:0
lrwxrwxrwx 1 root root 0 Aug 12 03:53
```

enp1s0f0

```
 -> ../../devices/pci0000:00/0000:00:01.1/0000:01:00.0/net/enp1s0f0
lrwxrwxrwx 1 root root 0 Aug 12 03:53
```

enp1s0f1

```
 -> ../../devices/pci0000:00/0000:00:01.1/0000:01:00.1/net/enp1s0f1
lrwxrwxrwx 1 root root 0 Aug 12 03:51 lo -> ../../devices/virtual/net/lo
+ read -p 'Interface to configure: ' interface
```

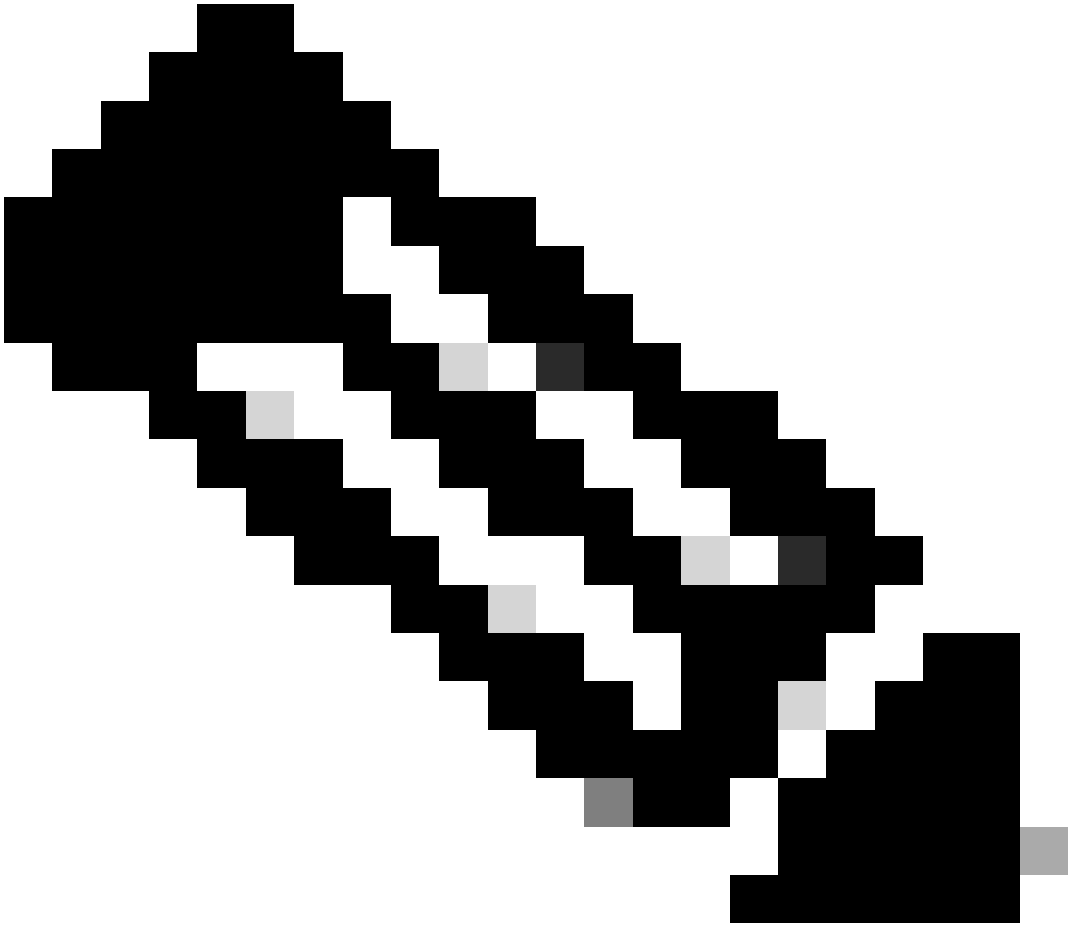
<#root>

```
Interface to configure:
```

enp1s0f0

<< select the correct interface   >>

```
+ read -p 'address: ' addr
```



注意：ND-NODE-L4需要格式为enp1s0fX的接口名称，其中X是数字标识符。SE-NODE-G2需要enoX格式，其中X是数字。

第8步： 正确的接口检查。

进入接口后，它将尝试ping http服务器，如果所选接口正确，则数据包丢失必须为0%，并开始从http服务器获取映像。

例如:在进入0%丢包的正确接口后。

<#root>

```
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 6
+ for count in $(seq 1 6)
+ ping -c 1 x.x.x.x
PING x.x.x.x (x.x.x.x): 56 data bytes

---x.x.x.x ping statistics ---
1 packets transmitted, 0 packets received, 100% packet loss
+ sleep 20
+ for count in $(seq 1 6)
+ ping -c x.x.x.x
PING x.x.x.x (x.x.x.x): 56 data bytes
64 bytes from x.x.x.x : seq=0 ttl=63 time=0.512 ms

---x.x.x.x ping statistics ---
1 packets transmitted, 1 packets received, 0% packet loss
round-trip min/avg/max = 0.512/0.512/0.512 ms
+ configured=1
+ break
+ '[' 1 -eq 0 ']'
+ set -e
+ tmpiso=/tmp/cdrom.iso
+ echo 'Fetching http://x.x.x.x/iso/DCApps/ND/nd-dk9.3.2.2f.iso to /tmp/cdrom.iso'
Fetching http://x.x.x.x/iso/DCApps/ND/nd-dk9.3.2.2f.iso to /tmp/cdrom.iso
```

>> started fetching the apic image from HTTP server

```
+ '[' http = nfs: ']'
+ download http://x.x.x.x/iso/DCApps/ND/nd-dk9.3.2.2f.iso /tmp/cdrom.iso
+ local url=http://x.x.x.x/iso/DCApps/ND/nd-dk9.3.2.2f.iso dest=/tmp/cdrom.iso tries=5
+ wget --server-response --no-check-certificate --tries=5 --progress=dot:mega --read-timeout=60 --outpu
--2025-08-12 09:39:08-- http://x.x.x.x197.204.4/iso/DCApps/ND/nd-dk9.3.2.2f.iso
Connecting to x.x.x.x:80... connected.
HTTP request sent, awaiting response...
HTTP/1.1 200 OK
Date: Tue, 12 Aug 2025 09:39:09 GMT
Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips mod_wsgi/3.4 Python/2.7.5
Last-Modified: Tue, 10 Jun 2025 06:51:41 GMT
ETag: "2c66bd000-637322f3b940"
Accept-Ranges: bytes
Content-Length: 11918888960
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
Content-Type: application/octet-stream
Length: 11918888960 (11G) [application/octet-stream]
Saving to: '/tmp/cdrom.iso.tmp'
```

如果您选择了错误的接口，则数据包丢失将为100%，在三次尝试ping失败后，它会再次要求选择正确的接口。

例如:在进入错误接口后出现100%的数据包丢失。

<#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: '

<

>

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

保持监控CIMC CLI并等待约40至50分钟，您将在CLI上获得以下输出。

<#root>

```
+ log 'Shutting down Atomix Installer'
+ echo 'Shutting down Atomix Installer'
Shutting down Atomix Installer
+ log 'reboot: Power down'
+ echo 'reboot: Power down'
reboot: Power down
+ sleep 5
+ poweroff
+ ec[  533.195532] sysrq: Emergency Sync
ho s
[  533.195563] sysrq: Emergency Sync
[  533.212106] sysrq: Emergency Sync
[  533.212117] sysrq: Emergency Remount R/O
[  533.212189] sysrq: Power Off
[  533.212226] kvm: exiting hardware virtualization
[  533.213874] EXT4-fs (sdf1): re-mounted. Opts: (null). Quota mode: none.
[  533.215431] sd 1:0:0:0: [sdf] Synchronizing SCSI cache
[  533.215749] EXT4-fs (dm-3): re-mounted. Opts: (null). Quota mode: none.
[  533.216395] EXT4-fs (dm-1): re-mounted. Opts: (null). Quota mode: none.
[  533.217221] EXT4-fs (sdf6): re-mounted. Opts: (null). Quota mode: none.
[  533.217689] EXT4-fs (sdf4): re-mounted. Opts: (null). Quota mode: none.
[  533.218965] Emergency Remount complete
[  533.218997] Emergency Sync complete
[  533.218997] Emergency Sync complete
[  533.219002] Emergency Sync complete
[  533.359024] sd 1:0:0:0: [sdf] Stopping disk
+ echo s
+ echo s
+ echo u
+ echo o
+ log 'Nap time'
+ echo 'Nap time'
Nap time
+ true
+ sleep 60
[  535.571545] megaraid_sas 0000:41:00.0: megasas_disable_intr_fusion is called outbound_intr_mask:0x40
[  535.692202] ACPI: PM: Preparing to enter system sleep state S5
[  535.706849]
```

reboot: Power down

第9步： 关闭电源后退出SOL

等待，直到您在SOL控制台中看到消息关闭为止，然后按Ctrl和x(Ctrl+x)退出SOL，然后再次登录CIMC并再次更改范围。

```
(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
```

关闭电源后，您需要使用KVM重新打开系统电源，然后继续执行后续步骤。

步骤x.x.x.x首次启动设置

```
[  274.210045] nd_bootstrap.sh[2628]:   INFO[0174] bootDisk: found disk=/dev/sdf bootPart=/dev/sdf4 esp
[  274.224041] nd_bootstrap.sh[2628]:   INFO[0174] boot devices/filesystems have been mounted
[  274.236038] nd_bootstrap.sh[2628]:   INFO[0174] |12231-start| ["expand-stub.bash" "/boot/efi/EFI/atx
[  274.251228] nd_bootstrap.sh[2628]:   INFO[0174] |12231-out  | 21870+1 records in
[  274.262061] nd_bootstrap.sh[2628]:   INFO[0174] |12231-out  | 21870+1 records out
[  274.272065] nd_bootstrap.sh[2628]:   INFO[0174] |12231-out  | 11197856 bytes (11 MB, 11 MiB) copied,
[  274.287060] nd_bootstrap.sh[2628]:   INFO[0174] |12231-out  | 0+1 records in
[  274.297060] nd_bootstrap.sh[2628]:   INFO[0174] |12231-out  | 0+1 records out
[  274.307049] nd_bootstrap.sh[2628]:   INFO[0174] |12231-out  | 187 bytes copied, 7.2325e-05 s, 2.6 MB
[  274.566030] nd_bootstrap.sh[2628]:   INFO[0175] |12231-out  | 102375+1 records in
[  274.576055] nd_bootstrap.sh[2628]:   INFO[0175] |12231-out  | 102375+1 records out
[  274.588059] nd_bootstrap.sh[2628]:   INFO[0175] |12231-out  | 52416297 bytes (52 MB, 50 MiB) copied,
[  274.604075] nd_bootstrap.sh[2628]:   INFO[0175] |12231-out  | 0+1 records in
[  OK  ] Finished atomix-boot-setup.
[  274.615055] nd_bootstrap.sh[2628]:   INFO[0175] |12231-out  | 0+1 records out
Starting Initial cloud-init job (pre-networking)...
[  274.634046] nd_bootstrap.sh[2628]:   INFO[0175] |12231-out  | 82 bytes copied, 9.4287e-05 s, 870 kB/
[  274.656064] nd_bootstrap.sh[2628]:   INFO[0175] |12231-exit | rc=0
[  274.666047] nd_bootstrap.sh[2628]:   INFO[0175] Boot()                    duration=175321
[  274.837851] cloud-init[12253]: Cloud-init v. 24.1.3-0ubuntu1~22.04.5 running 'init-local' at Tue, 12
Press any key to run first-boot setup on this console...
Starting Nexus Dashboard setup utility
Welcome to Nexus Dashboard 3.2.2f
Press Enter to manually bootstrap your first master node..
```

步骤11.配置Nexus Dashboard管理接口的管理员密码和管理网络

```
Starting Nexus Dashboard setup utility
Welcome to Nexus Dashboard 3.2.2f
Press Enter to manually bootstrap your first master node...

Admin Password:
Reenter Admin Password:
Management Network:
  IP Address/Mask: x.x.x.x/24
  Gateway: x.x.x.x
```

重新输入config?(y/N):n

```
System configured successfully
Initializing System on first boot. Please wait..
[  OK  ] Listening on Network Service Netlink Socket.
[  OK  ] Finished Initial cloud-init job (pre-networking).
[  OK  ] Reached target Preparation for Network.
         Starting Network Configuration...
[  OK  ] Started Network Configuration.
[  OK  ] Reached target Network.
Starting Wait for Network to be Configured...
```

步骤12. Nexus控制面板节点已准备好登录。您可以使用管理界面IP登录至ND GUI进行其余配置

从控制台：

<#root>

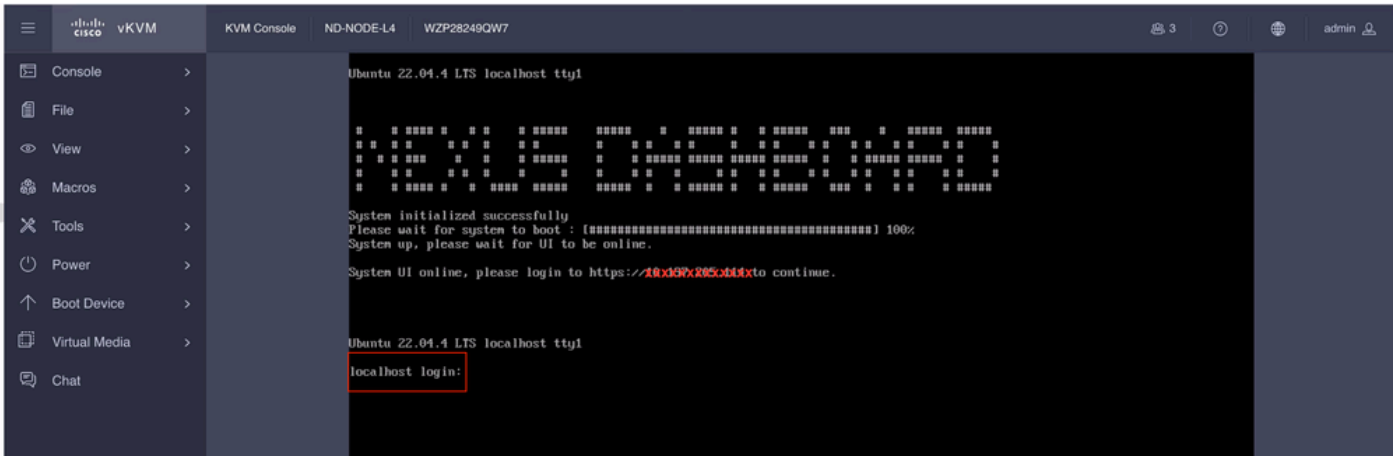
```
Ubuntu 22.04.4 LTS localhost ttyS0

#    # #### #   # #    # #####    #####    #   ##### #   # #####   ###    #   #####  #####

# #  # #    # #  #    # #        #    # #   # #     #   # #    # #   # #   # #    # #    #

#  # # ###    #   #    # #####    #    # ##### ##### ##### #####  #   # ##### #####  #    #

#    # #    # #  #    #    #     #    # #   #     # #   # #    # #   # #   # #    # #    #

#    # #### #   #  ####  #####    #####  #   # ##### #   # #####   ###  #   # #    # #####
System initialized successfully
[  564.309561] cloud-init[12560]: Cloud-init v. 24.1.3-0ubuntu1~22.04.5 running 'modules:final' at Tue,
ci-info: no authorized SSH keys fingerprints found for user ubuntu.
<14>Aug 12 09:58:29 cloud-init: #############################################################
<14>Aug 12 09:58:29 cloud-init: -----BEGIN SSH HOST KEY FINGERPRINTS-----
<14>Aug 12 09:58:29 cloud-init: 256 SHA256:vKu7Zj3MAP+vFOXaeW14HClEhAwrSpA9AqcUC4SZVlU root@localhost (
<14>Aug 12 09:58:29 cloud-init: 256 SHA256:I7eiUnQq6pZsoFPy+UxIUQ66jQOgHyG4zGuF6cAtSlO root@localhost (
<14>Aug 12 09:58:29 cloud-init: 3072 SHA256:SvodRIEgWzEAaQQdH2rlw0qLziBbv0e88VAGkt/ox14 root@localhost
<14>Aug 12 09:58:29 cloud-init: -----END SSH HOST KEY FINGERPRINTS-----
<14>Aug 12 09:58:29 cloud-init: #############################################################

-----BEGIN SSH HOST KEY KEYS-----
ecdsa-sha2-nistp256 AAAAE2VjZHNhLXNoYTItbmlzdHAyNTYAAAAIbmlzdHAyNTYAAABBBBf9S1BXcR48cWcIKhvfjLGYufJgycG
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAIGWTN7hoB2/dYSVAOgpV88FWh2iRD2hwJ2LMryhhhQHg root@localhost
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABgQCeM+In/dciDwCKEPLV/97oIA5pHHRBRf0Lij5NcUwzYAf9q/m/lUsdzv2zVYc4WAJ
-----END SSH HOST KEY KEYS-----
[  564.364630] cloud-init[12560]: Cloud-init v. 24.1.3-0ubuntu1~22.04.5 finished at Tue, 12 Aug 2025 09
Please wait for system to boot : [########################################] 100%
System up, please wait for UI to be online.
System UI online, please login to https://x.x.x.x to continue. <<
```

Access the Nexus Dashboard GUI via this URL

>>
Ubuntu 22.04.4 LTS localhost ttyS0

localhost login:

从KVM:



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