

UCS SAN故障排除

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本文档提供了有关统一计算系统(UCS)SAN的有用故障排除提示。

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思科建议您了解UCS SAN。

[使用的组件](#)

本文档不限于特定的软件和硬件版本。

[规则](#)

有关文档规则的详细信息，请参阅 [Cisco 技术提示规则](#)。

[故障排除提示](#)

检查vHBA在SAN交换矩阵中有FLOGI。

1. 登录UCS CLI并连接到NXOS。

```
# connect nxos a|b
(nxos)# show npv flogi-table
```

```

UCS-250-A# connect nxos
Cisco Nexus Operating System (NX-OS) Software
TAC support: http://www.cisco.com/tac
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The copyrights to certain works contained in this software are
owned by other third parties and used and distributed under
license. Certain components of this software are licensed under
the GNU General Public License (GPL) version 2.0 or the GNU
Lesser General Public License (LGPL) Version 2.1. A copy of each
such license is available at
http://www.opensource.org/licenses/gpl-2.0.php and
http://www.opensource.org/licenses/lgpl-2.1.php
UCS-250-A(nxos)# show npv flogi-table
-----
SERVER
INTERFACE VSAN FCID PORT NAME NODE NAME EXTERNAL
INTERFACE
-----
vfc3299 1000 Ox5e00ec 20:bb:0a:03:00:00:00:1d 50:01:23:45:44:55:66:cf fc2/1
vfc3454 1000 Ox5e0105 20:00:00:25:b5:b0:25:2d 20:00:00:25:b5:a0:25:2e fc2/1
vfc3468 1000 Ox5e00d8 20:00:00:25:b5:b0:05:1f 20:00:00:25:b5:a0:05:1f fc2/1
vfc3474 1000 Ox5e00d2 20:00:00:25:b5:b0:05:3f 20:00:00:25:b5:a0:05:0f fc2/1
vfc3506 1000 Ox5e0103 20:00:00:25:b5:b0:25:3f 20:00:00:25:b5:a0:25:1e fc2/1
vfc3528 1000 Ox5e010a 20:00:00:25:b5:00:05:1a 20:00:00:25:b5:a0:05:01 fc2/1
vfc3607 1000 Ox5e00eb 20:00:00:25:b5:b9:30:02 50:01:23:45:44:55:66:bf fc2/1
vfc3611 1000 Ox5e00ca 20:00:00:25:b5:b0:05:00 20:00:00:25:b5:a0:05:06 fc2/1
vfc3617 1000 Ox5e00f4 20:00:00:25:b5:b3:36:0e 20:00:00:25:b5:a0:36:0f fc2/1
-----
Total number of flogi = 9.

```

确保已分配WWPN的FCID，且VSAN正确。

2. 或者，从Cisco MDS交换机检查WWPN是否具有FLOGI。

```
SV-35-06-MDS9222i# show flogi database
```

```
SV-35-06-MDS9222i# show fcns database
```

检查MDS交换机上的分区，确保vHBA(WWPN)和存储目标在线且位于同一区域。

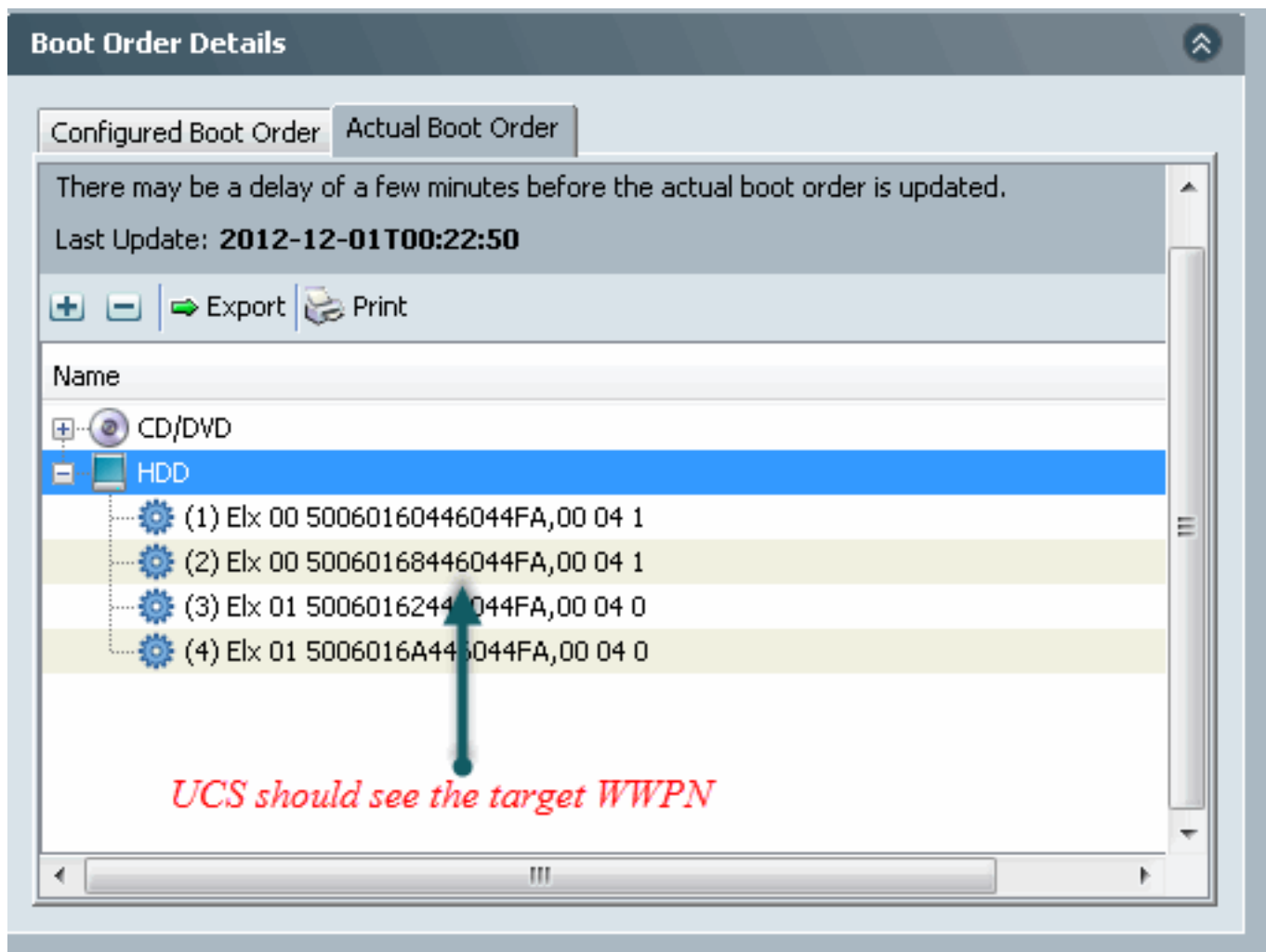
```

SV-35-06-MDS9222i# show zoneset active vsan 1000
SV-35-06-MDS9222i# show zoneset active vsan 1000 | begin matao
zone name matao vsan 1000
  pwwn 20:00:00:25:b5:b3:05:0f
  * fcid 0x5e00ef [pwwn 50:06:01:62:44:60:44:fa] [SPA2] SAN
  * fcid 0x5e01ef [pwwn 50:06:01:6a:44:60:44:fa] [SPB2] target
  * fcid 0x5e00d2 [pwwn 20:00:00:25:b5:b0:05:3f]
  * fcid 0x5e00d8 [pwwn 20:00:00:25:b5:b0:05:1f] wwpn online
  pwwn 20:00:00:25:b5:b5:05:0f wwpn not online
  pwwn 20:00:00:25:b5:b5:05:2f

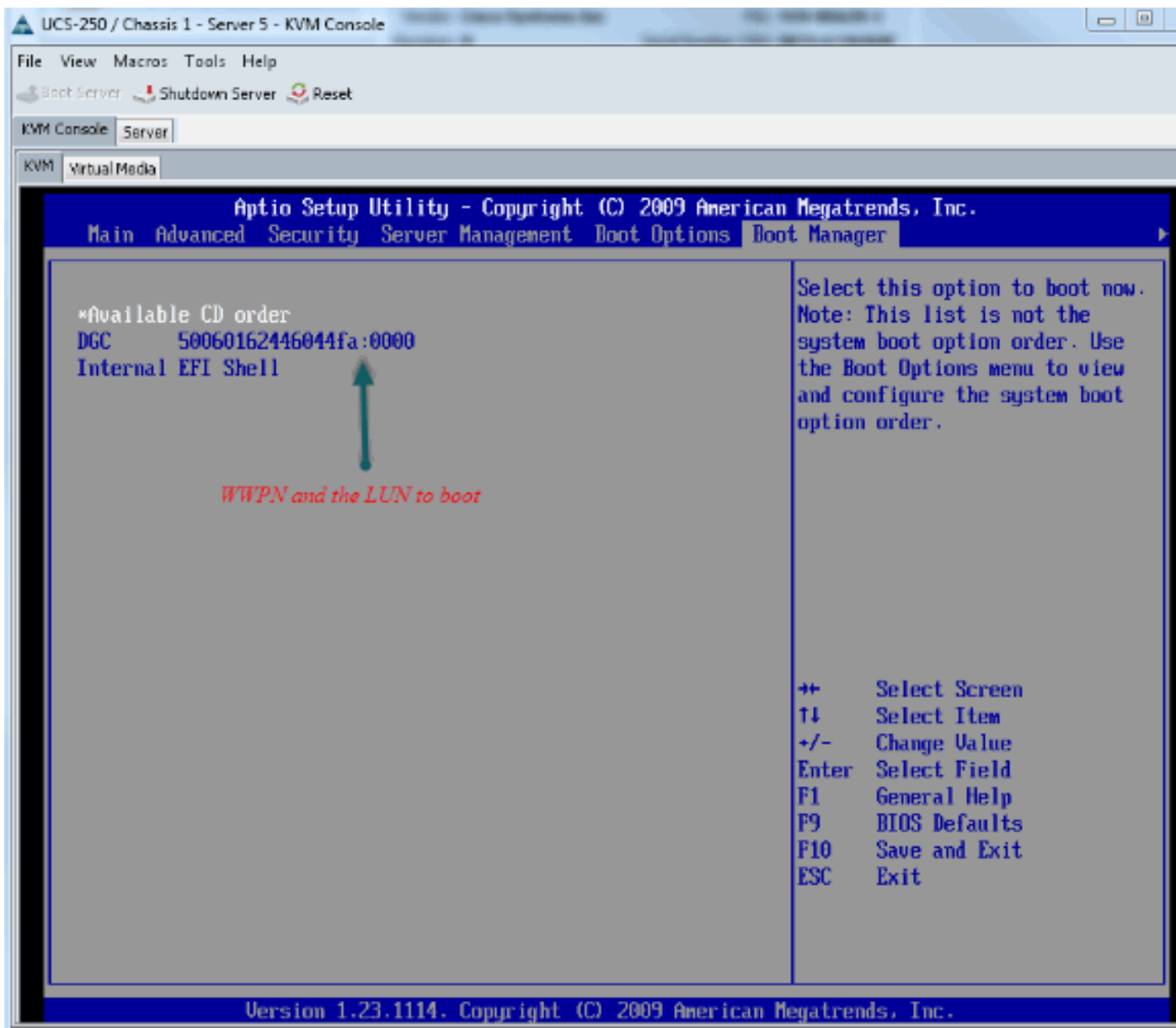
```

检查vHBA在SAN引导期间是否能看到目标。

在UCS Manager上，如果刀片可以从SAN启动，则UCS Manager的“实际启动顺序”应能查看所有目标的WWPN。



启动刀片时，按F2进入BIOS并导航至引导管理器。BIOS应该能够看到要启动的LUN。



对于PALO适配器，在此阶段（当操作系统尚未启动时），您还可以连接到适配器以检查vHBA是否具有FLOGI和PLOGI。

```

000-000-1# connect adapter 1/5/1
adapter 1/5/1 # connect
adapter 1/5/1 (top):1# att
attach-1# attach-sec
adapter 1/5/1 (top):1# attach-fls
adapter 1/5/1 (fls):1# vnic
-----
vnic ecpu type state  lif
-----
9 1 fc active 6
10 2 fc active 7
adapter 1/5/1 (fls):2# login 9
lifid: 6
  ID  PORTNAME  NODENAME  FID
  0: 50:06:01:62:44:60:44:fa  00:00:00:00:00:00:00:00  0x5e00ef

adapter 1/5/1 (fls):3# lunmap 9
lunmapid: 0 port_cnt: 1
  lif_id: 6
  PORTNAME  NODENAME  LUN  FLOGI
  50:06:01:62:44:60:44:fa  00:00:00:00:00:00:00  0000000000000000  Y

adapter 1/5/1 (fls):4# lunlist 9
vnic : 0 lifid: 6
- FLOGI State : flogi est [fc_id 0x5e00ef]
- FLOGI Sessions
- WRRN 50:06:01:62:44:60:44:fa WWPN 50:06:01:62:44:60:44:fa fc_id 0x5e00ef
- LUN's configured (SCSI Type, Version, Vendor, Serial No.)
  LUN ID : 0x0000000000000000 (CxD, Cx4, DDC , FCNCM:01500662)
- REPORT LUNs Query Response
  LUN ID : 0x0000000000000000
  LUN ID : 0x0001000000000000
  LUN ID : 0x0003000000000000
- Nameserver Query Response
- WWPN : 20:00:00:25:b5:b0:05:1f
- WWPN : 50:06:01:62:44:60:44:fa
- WWPN : 50:06:01:6a:44:60:44:fa

```

vHBA has FLOGI to LUN 0

vHBA has FLOGI

LUNs presented to the vHBA

操作系统启动后，输出会有所不同。这是预期。

```

adapter 1/5/1 # connect
adapter 1/5/1 (top):1# attach-fls
adapter 1/5/1 (fls):1# vnic
-----
vnic ecpu type state  lif
-----
9 1 fc active 6
10 2 fc active 7
adapter 1/5/1 (fls):2# login 9
lifid: 6
  ID  PORTNAME  NODENAME  FID
  0: 50:06:01:62:44:60:44:fa  00:00:00:00:00:00:00:00  0x000000

adapter 1/5/1 (fls):3# lunmap 9
lunmapid: 0 port_cnt: 1
  lif_id: 6
  PORTNAME  NODENAME  LUN  FLOGI
  50:06:01:62:44:60:44:fa  00:00:00:00:00:00:00  0000000000000000  N

adapter 1/5/1 (fls):4# lunlist 9
vnic : 9 lifid: 6
- FLOGI State : init [fc_id 0x000000]
- FLOGI Sessions
- WRRN 50:06:01:62:44:60:44:fa WWPN 50:06:01:62:44:60:44:fa fc_id 0x000000
- LUN's configured (SCSI Type, Version, Vendor, Serial No.)
  LUN ID : 0x0000000000000000
- REPORT LUNs Query Response
  LUN ID : 0x0000000000000000
  LUN ID : 0x0001000000000000
  LUN ID : 0x0003000000000000
- Nameserver Query Response
- WWPN : 20:00:00:25:b5:b0:05:1f
- WWPN : 50:06:01:62:44:60:44:fa
- WWPN : 50:06:01:6a:44:60:44:fa

```

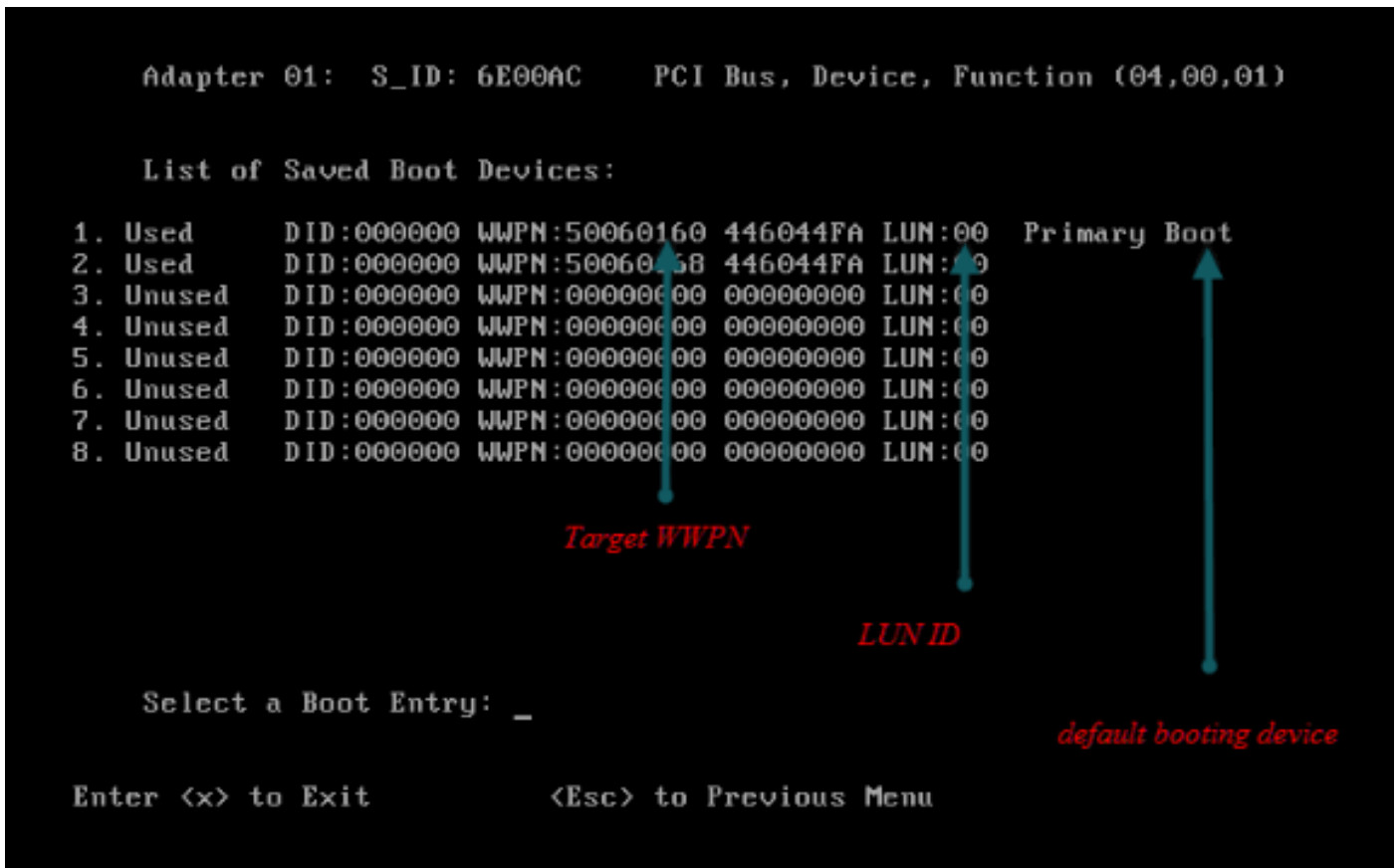
FID 0x000000

FLOGI N

Expected when OS is loaded

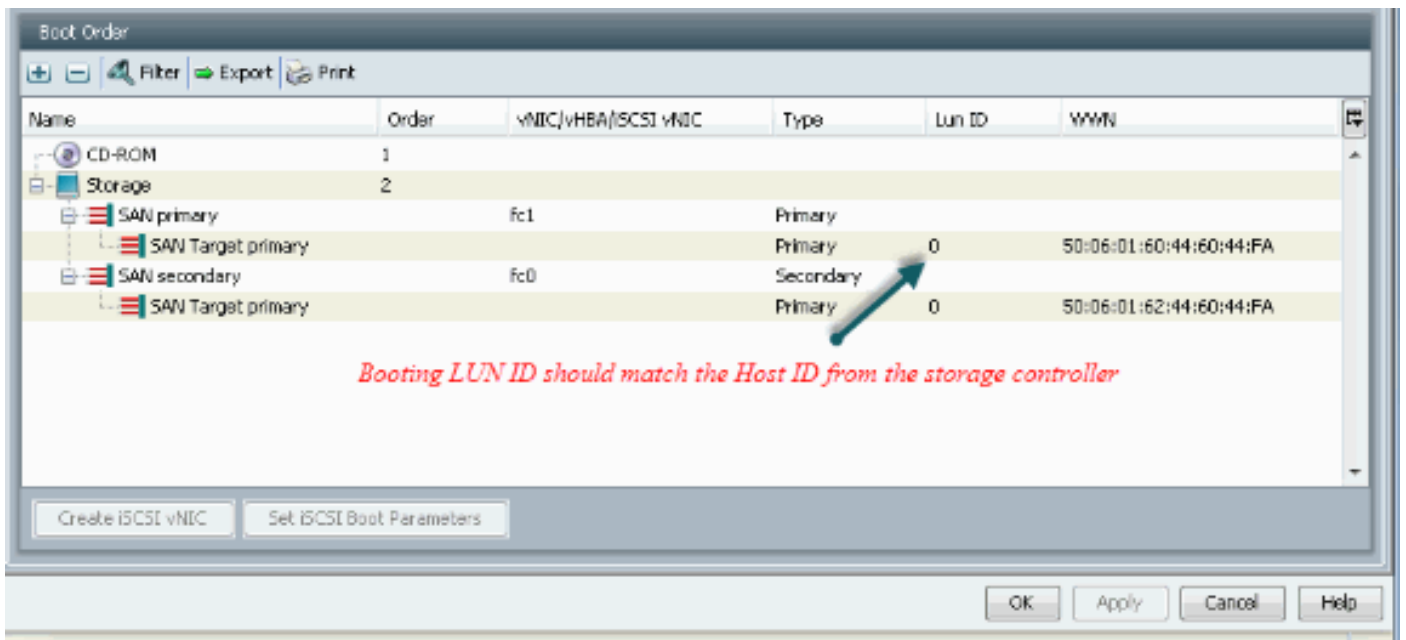
access failure

对于M71KR-E适配器，在启动服务器时，按Control + E进入Emulex HBA配置实用程序。然后，选择vHBA并列出引导设备。vHBA应该能够查看目标。

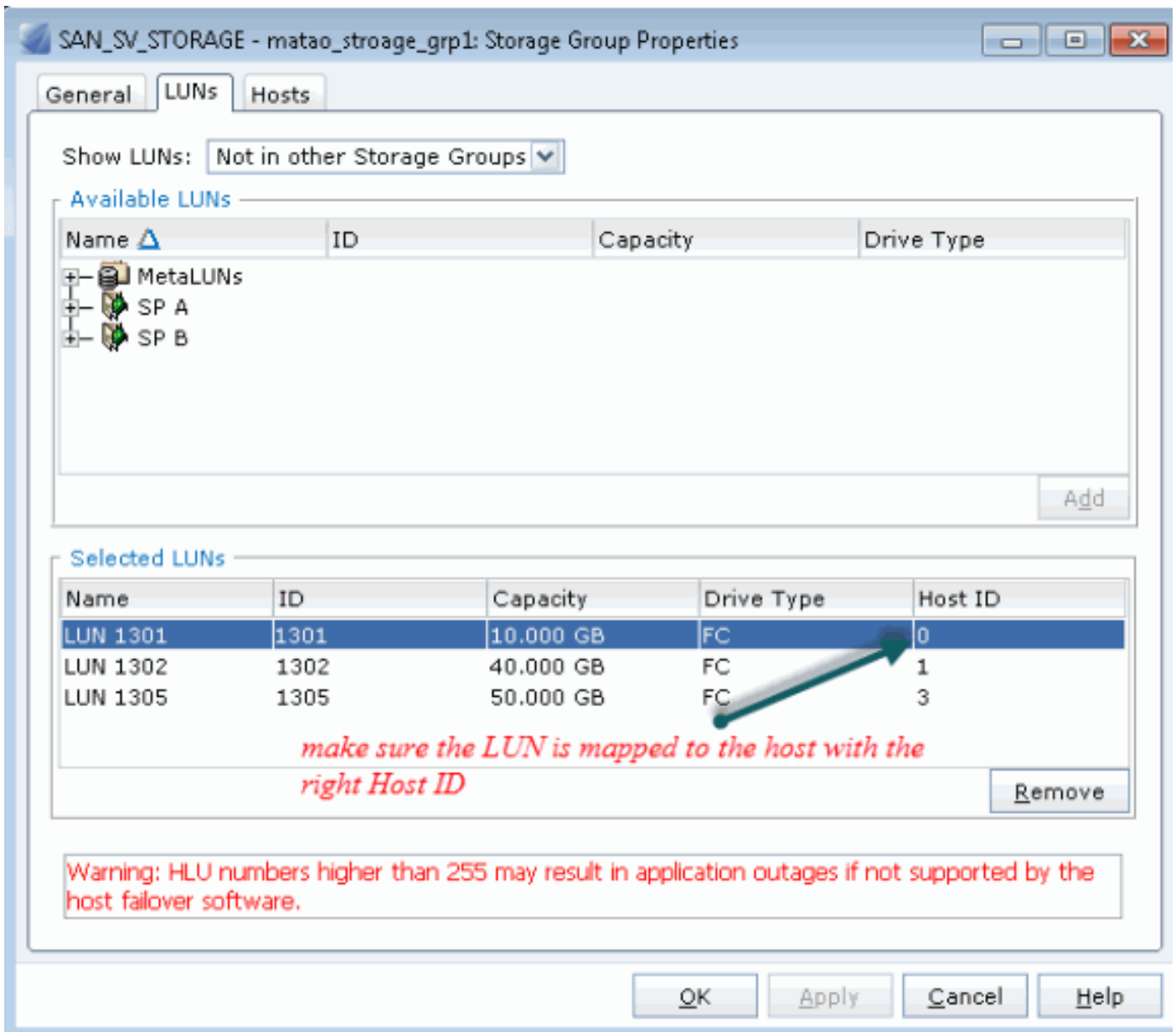


检查vHBA是否具有从SAN启动的正确LUN ID。

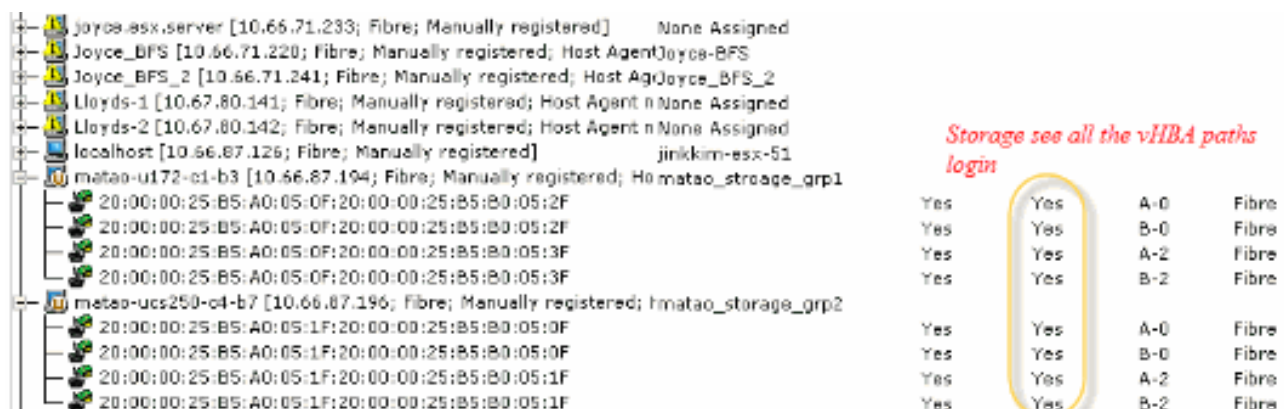
与服务配置文件关联的引导策略具有引导配置。确保目标的WWPN正确，并且LUN ID也与存储中定义的LUN匹配。



下面是EMC存储的示例。在存储组中，LUN 1301映射到ID为0的主机，该主机必须与启动策略中定义的ID匹配。



检查FC目标是否可以看见vHBA(WWPN)，以及它是否具有到目标的PLOGI。



检查思科自定义ESXi映像是否用于SAN引导。

如果ESXi在启动阶段未能看到SAN上的LUN，而vHBA在启动阶段确实看到LUN，则ESXi映像可能没有正确的驱动程序。检查客户是否使用思科自定义的ESXi映像。转到VMware网站并搜索“Cisco ESXi”以下载思科自定义映像。

思科针对ESXi 5.1.0的自定义映像

<https://my.vmware.com/web/vmware/details?downloadGroup=CISCO-ESXI-5.1.0-GA-25SEP2012&productId=285>

适用于ESXi 5.0.0 U1的思科自定义映像

<https://my.vmware.com/web/vmware/details?downloadGroup=CISCO-ESXI-5.0.0-U1-28AUG2012&productId=268>

思科针对ESXi 4.1 U2定制的映像

<https://my.vmware.com/web/vmware/details?downloadGroup=OEM-ESXI41U2-CISCO&productId=230>

vSphere 5.0 Rollup ISO映像（提供可安装的ESXi ISO映像，包括VMware合作伙伴生产的各种产品的驱动程序），例如C220 M3服务器、CIMC 1.46c和LSI 9266-8i。即使自定义的ESXi映像也没有检测本地存储的驱动程序。

https://my.vmware.com/web/vmware/details?downloadGroup=ROLLUPISO_50_2&productId=229

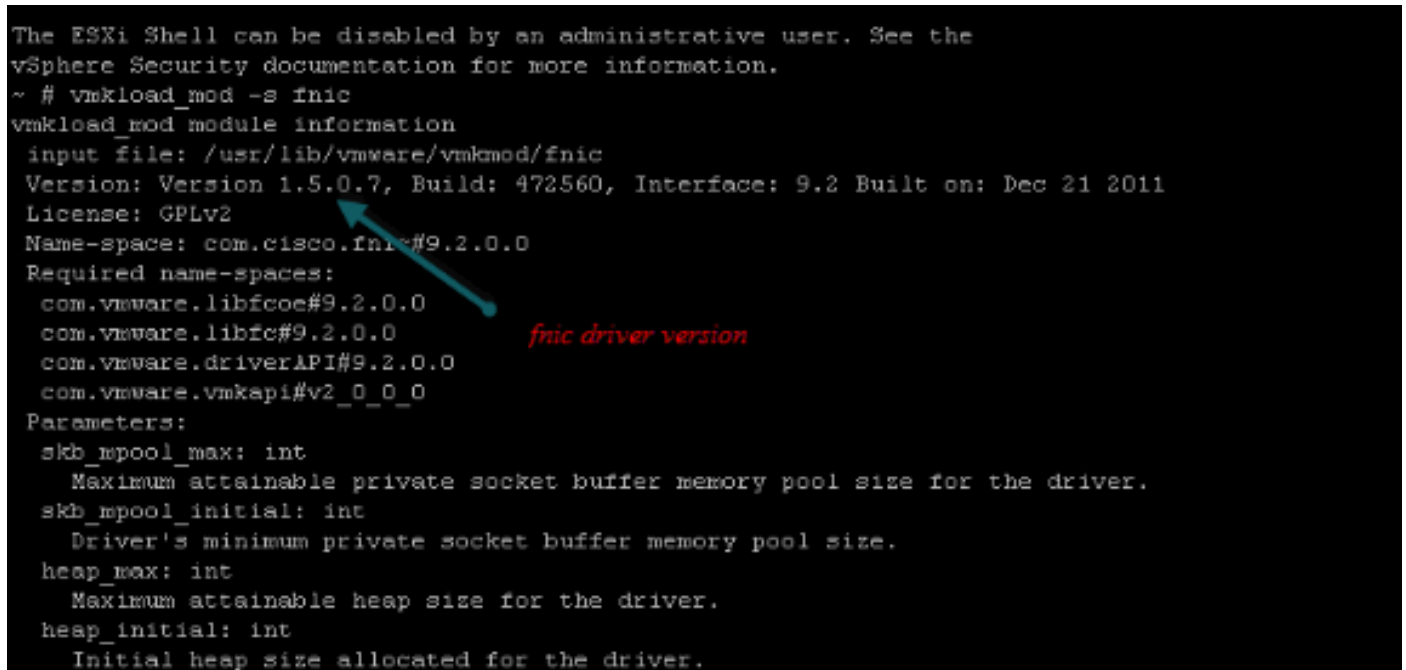
另请参阅汇总版本说明

<http://www.vmware.com/support/vsphere5/doc/vsphere-esxi-50-driver-rollup2-release-notes.html>

检查ESXi是否使用相同的正确fnic驱动程序。

启用SSH和ESX SHELL并登录到ESXi主机。然后，运行vmkload_mod -s fnic。

```
The ESXi Shell can be disabled by an administrative user. See the
vSphere Security documentation for more information.
~ # vmkload_mod -s fnic
vmkload_mod module information
input file: /usr/lib/vmware/vmkmod/fnic
Version: Version 1.5.0.7, Build: 472560, Interface: 9.2 Built on: Dec 21 2011
License: GPLv2
Name-space: com.cisco.fnic#9.2.0.0
Required name-spaces:
com.vmware.libfcoe#9.2.0.0
com.vmware.libfc#9.2.0.0
com.vmware.driverAPI#9.2.0.0
com.vmware.vmkapi#v2_0_0_0
Parameters:
skb_mpool_max: int
Maximum attainable private socket buffer memory pool size for the driver.
skb_mpool_initial: int
Driver's minimum private socket buffer memory pool size.
heap_max: int
Maximum attainable heap size for the driver.
heap_initial: int
Initial heap size allocated for the driver.
```



检查主机是否能看到从VMware ESXi到存储目标的所有路径。

1. 检查任何vHBA都能看到的LUN信息。

```
~ # esxcfg-scsidevs -c
Device UID                               Device Type      Console
Device                                   Size             Multipath PluginDisplay Name
naa.6006016081f0280000e47af49150e111  Direct-Access   /vmfs/devices/disks/naa.60060
16081f0280000e47af49150e111 40960MB         NMP             DGC Fibre Channel Disk (naa.600601608
```



```
1f028000e47af49150e111)
naa.6006016081f028007a6ffec12985e111 Direct-Access /vmfs/devices/disks/naa.600601
6081f028007a6ffec12985e111 51200MB NMP DGC Fibre Channel Disk (naa.6006016081f
028007a6ffec12985e111)
naa.6006016081f02800ca79c3b09150e111 Direct-Access /vmfs/devices/disks/naa.600601
6081f02800ca79c3b09150e111 10240MB NMP DGC Fibre Channel Disk (naa.6006016081f
02800ca79c3b09150e111)
```

2. 检查哪个vHBA可以查看哪些LUN。

```
~ # esxcfg-scsidevs -A
vmhba1 naa.6006016081f028000e47af49150e111
vmhba1 naa.6006016081f028007a6ffec12985e111
vmhba1 naa.6006016081f02800ca79c3b09150e111
vmhba2 naa.6006016081f028000e47af49150e111
vmhba2 naa.6006016081f028007a6ffec12985e111
vmhba2 naa.6006016081f02800ca79c3b09150e111
```

在上述示例中，vmhba1和vmhba2都可以看到3个LUN。

3. 检查LUN的路径。

```
~ # esxcfg-mpath -b
naa.6006016081f028000e47af49150e111 : DGC Fibre Channel Disk (naa.6006016081f02800
00e47af49150e111)
vmhba1:C0:T0:L1 LUN:1 state:active fc Adapter: WWNN: 20:00:00:25:b5:a0:05:0f WWPN:
20:00:00:25:b5:b0:05:3f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPN: 50:06:01:6a:
44:60:44:fa
vmhba1:C0:T1:L1 LUN:1 state:active fc Adapter: WWNN: 20:00:00:25:b5:a0:05:0f WWPN:
20:00:00:25:b5:b0:05:3f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPN: 50:06:01:62:
44:60:44:fa
vmhba2:C0:T0:L1 LUN:1 state:active fc Adapter: WWNN: 20:00:00:25:b5:a0:05:0f WWPN:
20:00:00:25:b5:b0:05:2f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPN: 50:06:01:60:
44:60:44:fa
vmhba2:C0:T1:L1 LUN:1 state:active fc Adapter: WWNN: 20:00:00:25:b5:a0:05:0f WWPN:
20:00:00:25:b5:b0:05:2f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPN: 50:06:01:68:
44:60:44:fa

naa.6006016081f028007a6ffec12985e111 : DGC Fibre Channel Disk (naa.6006016081f028007a
6ffec12985e111)
vmhba1:C0:T0:L3 LUN:3 state:active fc Adapter: WWNN: 20:00:00:25:b5:a0:05:0f WWPN:
20:00:00:25:b5:b0:05:3f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPN: 50:06:01:6a:
44:60:44:fa
vmhba1:C0:T1:L3 LUN:3 state:active fc Adapter: WWNN: 20:00:00:25:b5:a0:05:0f WWPN:
20:00:00:25:b5:b0:05:3f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPN: 50:06:01:62:
44:60:44:fa
vmhba2:C0:T0:L3 LUN:3 state:active fc Adapter: WWNN: 20:00:00:25:b5:a0:05:0f WWPN:
20:00:00:25:b5:b0:05:2f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPN: 50:06:01:60:
44:60:44:fa
vmhba2:C0:T1:L3 LUN:3 state:active fc Adapter: WWNN: 20:00:00:25:b5:a0:05:0f WWPN:
20:00:00:25:b5:b0:05:2f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPN: 50:06:01:68:
44:60:44:fa

naa.6006016081f02800ca79c3b09150e111 : DGC Fibre Channel Disk (naa.6006016081f02800ca
79c3b09150e111)
vmhba1:C0:T0:L0 LUN:0 state:active fc Adapter: WWNN: 20:00:00:25:b5:a0:05:0f WWPN:
20:00:00:25:b5:b0:05:3f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPN: 50:06:01:6a:
44:60:44:fa
vmhba1:C0:T1:L0 LUN:0 state:active fc Adapter: WWNN: 20:00:00:25:b5:a0:05:0f WWPN:
20:00:00:25:b5:b0:05:3f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPN: 50:06:01:62:
44:60:44:fa
vmhba2:C0:T0:L0 LUN:0 state:active fc Adapter: WWNN: 20:00:00:25:b5:a0:05:0f WWPN:
20:00:00:25:b5:b0:05:2f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPN: 50:06:01:60:
44:60:44:fa
vmhba2:C0:T1:L0 LUN:0 state:active fc Adapter: WWNN: 20:00:00:25:b5:a0:05:0f WWPN:
20:00:00:25:b5:b0:05:2f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPN: 50:06:01:68:
44:60:44:fa
```

在本示例中，每个LUN有四条路径：两个来自vmhba1，两个来自vmhba2。

相关信息

- [技术支持和文档 - Cisco Systems](#)