

UCS SAN故障排除

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本文檔為統一計算系統(UCS)SAN提供了有用的故障排除提示。

[必要條件](#)

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思科建議您瞭解UCS SAN。

[採用元件](#)

本文件所述內容不限於特定軟體和硬體版本。

[慣例](#)

如需文件慣例的詳細資訊，請參閱[思科技術提示慣例](#)。

[疑難排解提示](#)

檢查vHBA是否具有FLOGI進入SAN交換矩陣。

1. 登入到UCS CLI並連線到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                                     EXTERNAL
INTERFACE VSAN FCID                       PORT NAME                               NODE NAME                               INTERFACE
-----
vfc3299    1000 0x5e00ec 20:bb:0a:03:00:00:1d 50:01:23:45:44:55:66:cf fc2/1
vfc3454    1000 0x5e0105 20:00:00:25:b5:b0:25:2d 20:00:00:25:b5:a0:25:2e fc2/1
vfc3468    1000 0x5e00d8 20:00:00:25:b5:b0:05:1f 20:00:00:25:b5:a0:05:1f fc2/1
vfc3474    1000 0x5e00d2 20:00:00:25:b5:b0:05:3f 20:00:00:25:b5:a0:05:0f fc2/1
vfc3506    1000 0x5e0103 20:00:00:25:b5:b0:25:3f 20:00:00:25:b5:a0:25:1e fc2/1
vfc3528    1000 0x5e010a 20:00:00:25:b5:00:05:1a 20:00:00:25:b5:a0:05:01 fc2/1
vfc3607    1000 0x5e00eb 20:00:00:25:b5:b9:30:02 50:01:23:45:44:55:66:bf fc2/1
vfc3611    1000 0x5e00ca 20:00:00:25:b5:b0:05:00 20:00:00:25:b5:a0:05:06 fc2/1
vfc3617    1000 0x5e00f4 20:00:00:25:b5:b3:36:0e 20:00:00:25:b5:a0:36:0f fc2/1

Total number of flogi = 9.
```

確保已分配WWPN的FCID，並且VSAN正確。

2. 或者，從Cisco MDS交換機，檢查WWPN是否具有FLOGI。

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

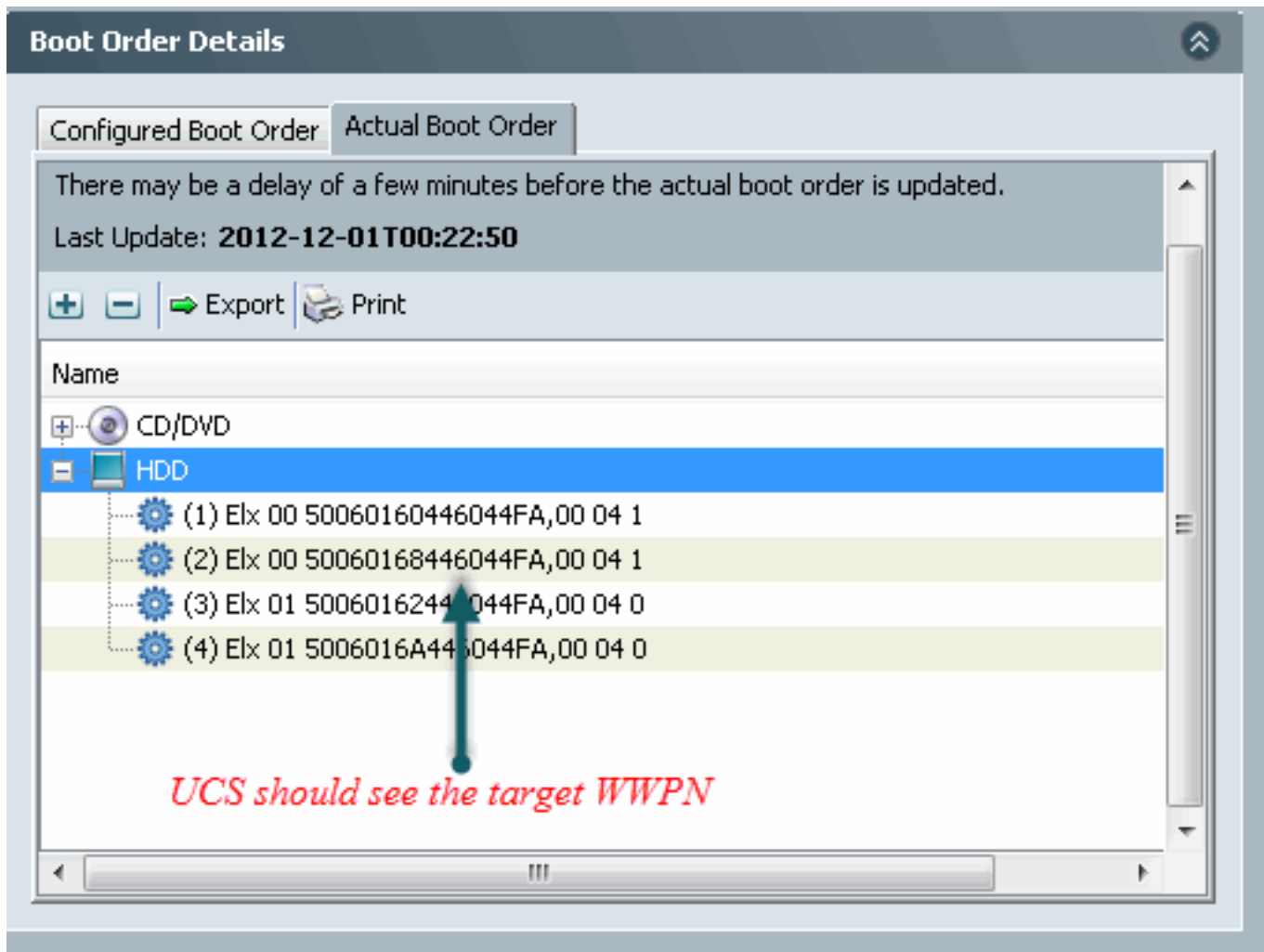
```
SV-35-06-MDS9222i# show fcns database
```

檢查MDS交換機上的分割槽，以確保vHBA(WWPN)和儲存目標處於聯機狀態且位於同一分割槽中。

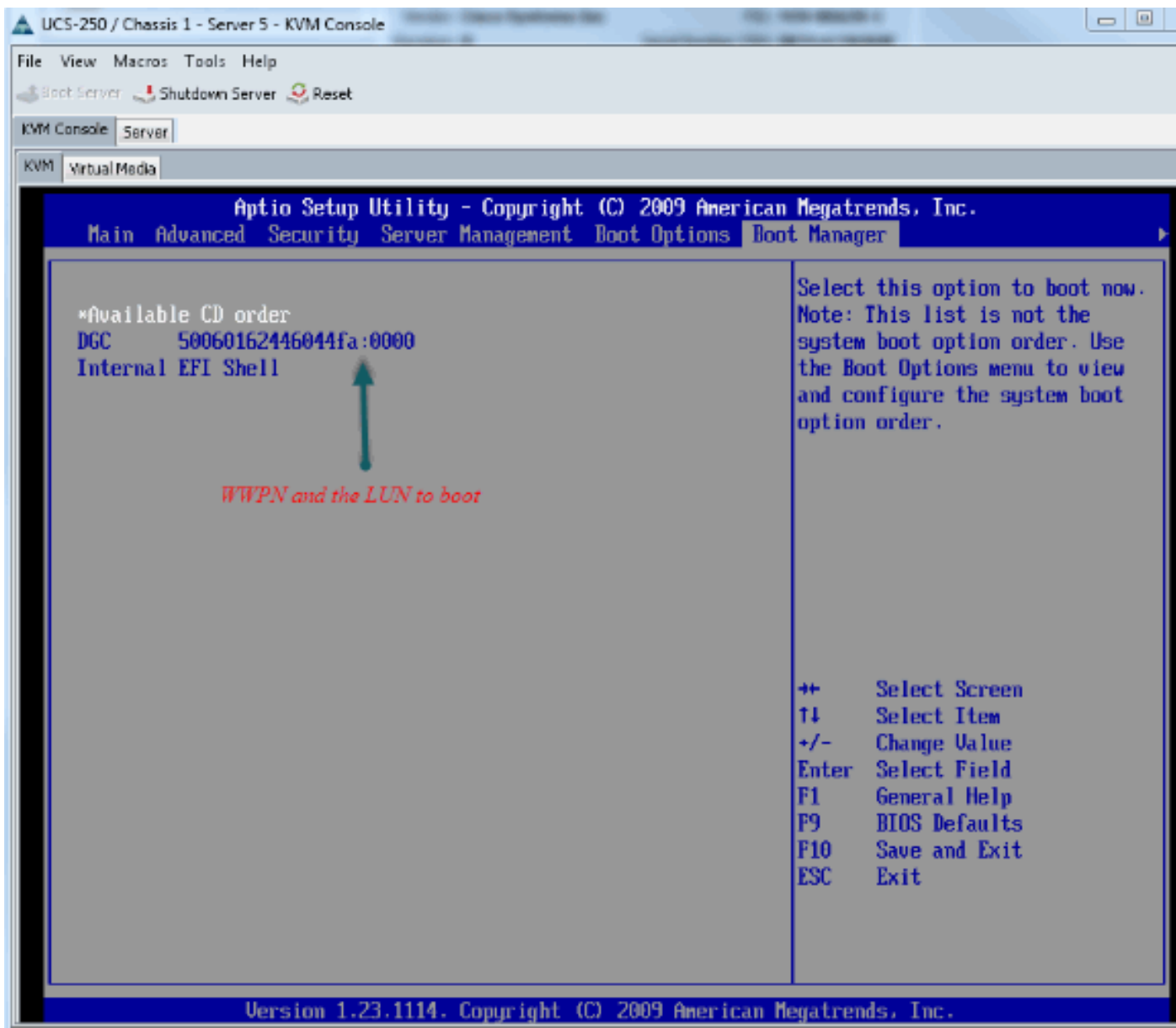
```
SV-35-06-MDS9222i# show zoneset active vsan 1000
SV-35-06-MDS9222i# show zoneset active vsan 1000 | begin matao
zone name matao vsan 1000
  pwwn 20:00:00:25:b5:b3:05:0f
  * fcid 0x5e00ef [pwwn 50:06:01:62:44:60:44:fa] [SPA2] SAN
  * fcid 0x5e01ef [pwwn 50:06:01:6a:44:60:44:fa] [SPB2] target
  * fcid 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
```

檢查vHBA在SAN引導期間是否可以看到目標。

在UCS Manager上，如果刀片可以從SAN引導，則UCS Manager「實際引導順序」應該能夠檢視所有目標的WWPN。



啟動刀片時，按F2進入BIOS並導航至引導管理器。BIOS應該能夠看到要啟動的LUN。



對於PALO介面卡，在此階段（OS尚未啟動時），還可以連線到介面卡以檢查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-map
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  00:00:00:00:00:00:00:00  0000000000000000  Y

adapter 1/5/1 (fls):4# lunlist 9
vnic : 0 lifid: 6
- FLOGI State : flogi act [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, DGC , 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

作業系統啟動後，輸出會有所不同。這是意料之中的。

```

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  00:00:00:00:00:00:00:00  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

```

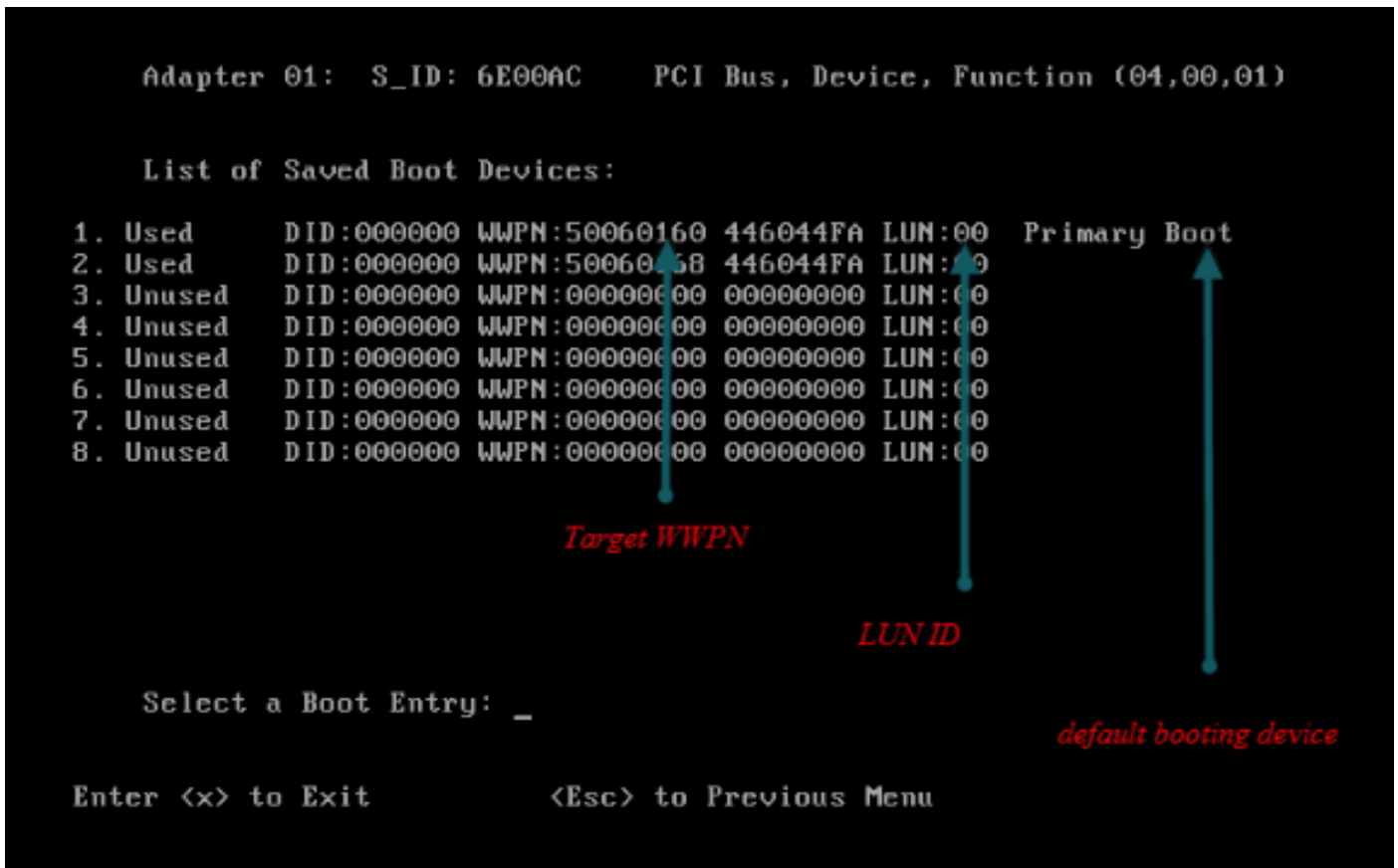
FID 0x000000

FLOGI N

Expected when OS is loaded

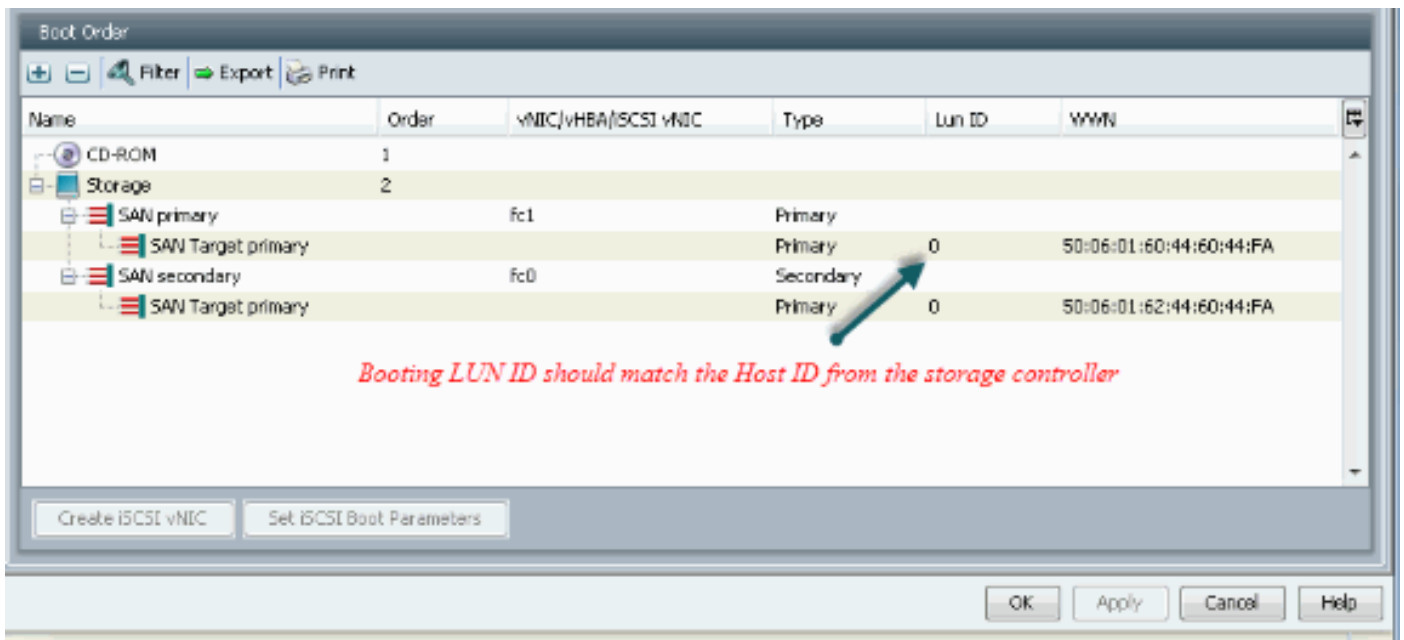
access failure

對於M71KR-E介面卡，當引導伺服器時，按control + E進入Emulex HBA配置實用程式。然後，選擇vHBA並列出引導裝置。vHBA應該能夠看到目標。

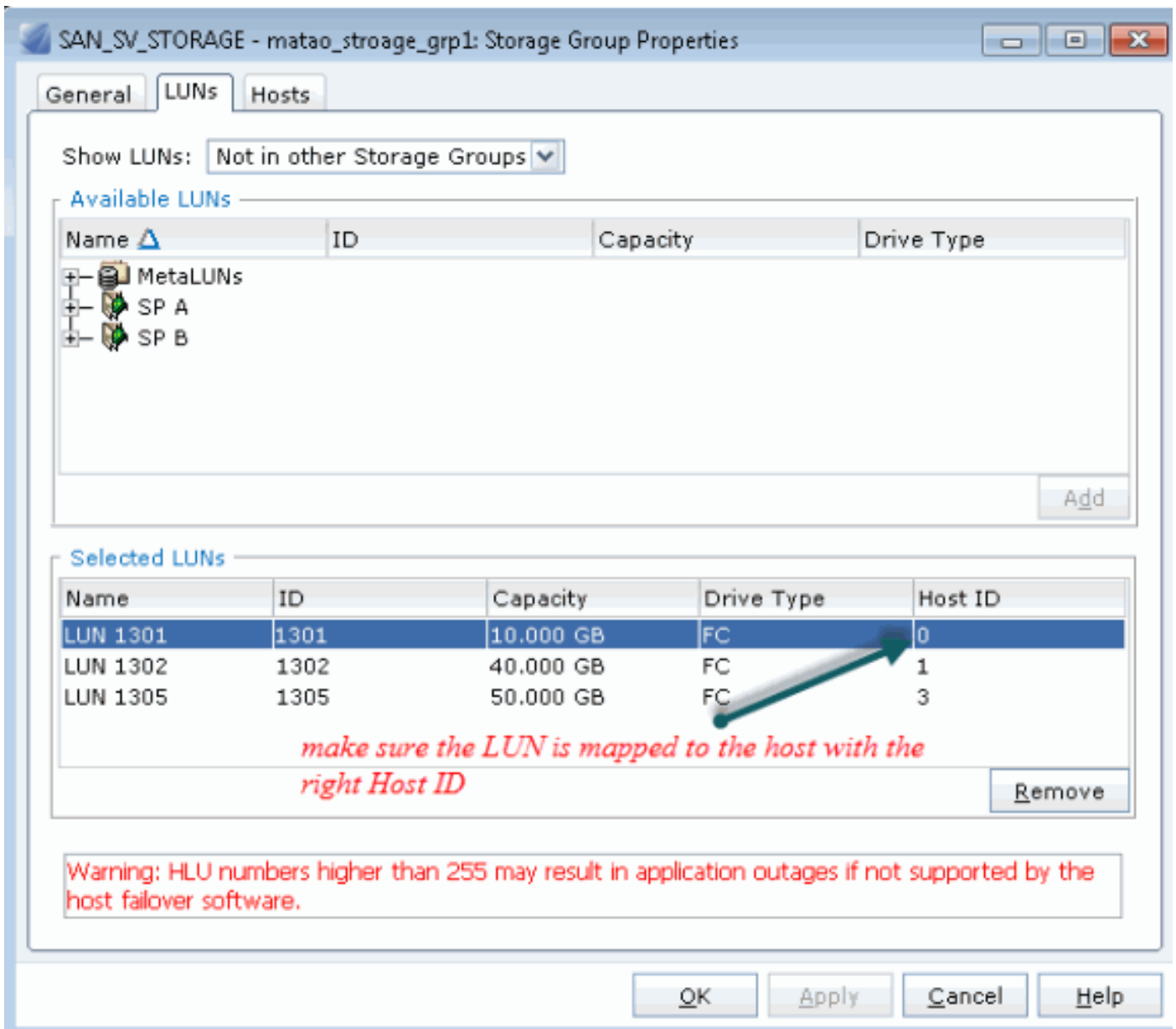


檢查vHBA是否具有從SAN引導的正確LUN ID。

與服務配置檔案關聯的引導策略具有引導配置。確保目標的WWPN正確並且LUN ID也與儲存中定義的LUN匹配。



下面是EMC儲存的一個示例。在儲存組中，LUN 1301對映到ID為0的主機，該主機必須與啟動策略中定義的ID匹配。



檢查FC目標是否可以看到vHBA(WWPN)，以及它是否具有目標的PLOGI。

joyce-esx.server [10.66.71.233; Fibre; Manually registered]	None Assigned		
Joyce_BFS [10.66.71.220; Fibre; Manually registered; Host Agent	Joyce-BFS		
Joyce_BFS_2 [10.66.71.241; Fibre; Manually registered; Host Ag	Joyce_BFS_2		
Lloyds-1 [10.67.80.141; Fibre; Manually registered; Host Agent	nNone Assigned		
Lloyds-2 [10.67.80.142; Fibre; Manually registered; Host Agent	nNone Assigned		
localhost [10.66.87.126; Fibre; Manually registered]	jinkkim-esx-51		
metao-u172-c1-b3 [10.66.87.194; Fibre; Manually registered; H	metao_stroage_grp1		
20:00:00:25:B5:A0:05:0F:20:00:00:25:B5:B0:05:2F		Yes	Yes A-0 Fibre
20:00:00:25:B5:A0:05:0F:20:00:00:25:B5:B0:05:2F		Yes	Yes B-0 Fibre
20:00:00:25:B5:A0:05:0F:20:00:00:25:B5:B0:05:3F		Yes	Yes A-2 Fibre
20:00:00:25:B5:A0:05:0F:20:00:00:25:B5:B0:05:3F		Yes	Yes B-2 Fibre
metao-ucs250-c4-b7 [10.66.87.196; Fibre; Manually registered; h	metao_stroage_grp2		
20:00:00:25:B5:A0:05:1F:20:00:00:25:B5:B0:05:0F		Yes	Yes A-0 Fibre
20:00:00:25:B5:A0:05:1F:20:00:00:25:B5:B0:05:0F		Yes	Yes B-0 Fibre
20:00:00:25:B5:A0:05:1F:20:00:00:25:B5:B0:05:1F		Yes	Yes A-2 Fibre
20:00:00:25:B5:A0:05:1F:20:00:00:25:B5:B0:05:1F		Yes	Yes B-2 Fibre

Storage see all the vHBA paths login

檢查Cisco自定義ESXi映像是否用於SAN引導。

如果ESXi在啟動階段無法看到SAN上的LUN，而vHBA在啟動階段無法看到LUN，那麼ESXi映像可能沒有正確的驅動程式。檢查客戶是否使用思科自定義ESXi映像。轉到VMware網站並搜尋「Cisco ESXi」以下載Cisco自定義映像。

Cisco ESXi 5.1.0自定義映像

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

Cisco ESXi 5.0.0 U1 自定義映像

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

Cisco ESXi 4.1 U2 自定義映像

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

vSphere 5.0 Rollup ISO 映像 (提供一個可安裝的ESXi ISO映像，其中包括由VMware合作夥伴生產的各種產品的驅動程式)，例如C220 M3伺服器、CIMC 1.46c和LSI 9266-8i。即使自定義的ESXi映像也沒有檢測本地儲存的驅動程式。

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

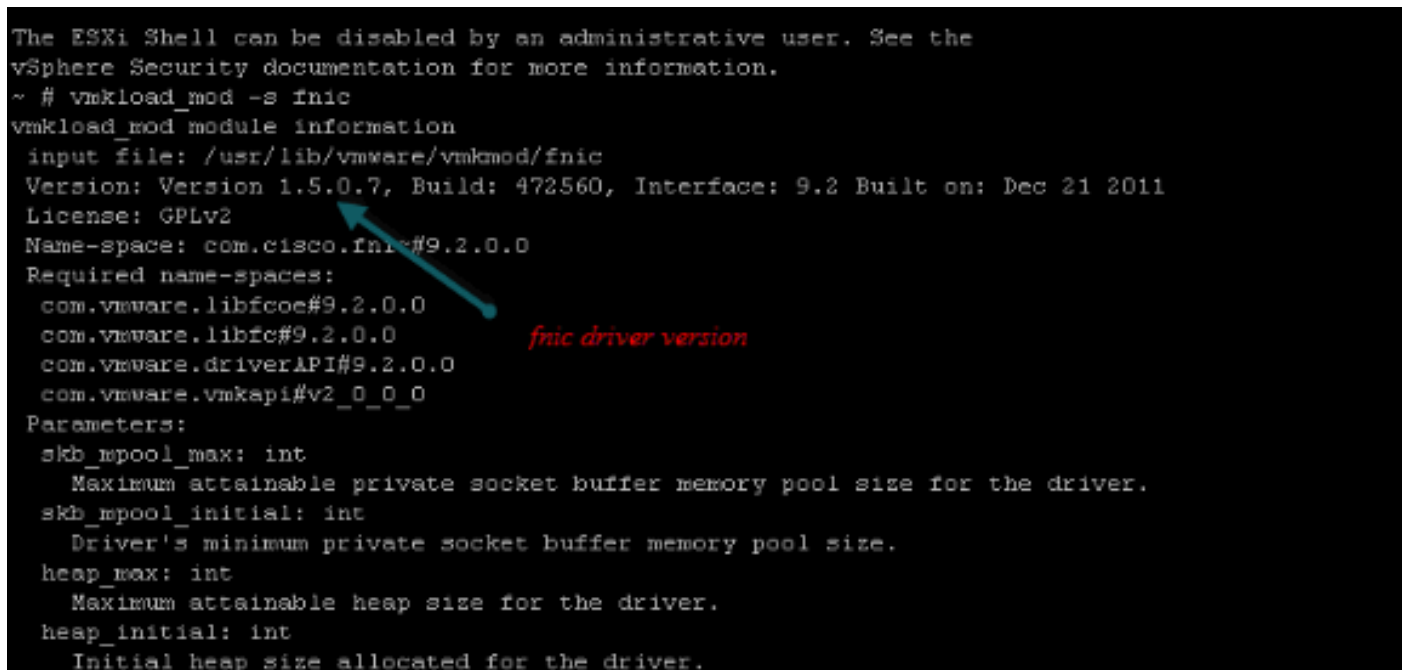
此外，請參閱彙總發佈說明

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

檢查ESXi是否使用相同的正確的網絡卡驅動程式。

啟用SSH和ESX SHELL並登入到ESXi主機。然後，運行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.
```



檢查主機是否可以看到從VMware ESXi到儲存目標的所有路徑。

1. 檢查任何vHBA都可以看到的LUN資訊。

```
~ # 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
```



```
1f0280000e47af49150e111)
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. 檢查哪個vHBA可以看到哪些LUN。

```
~ # esxcfg-scsidevs -A
vmhba1 naa.6006016081f0280000e47af49150e111
vmhba1 naa.6006016081f028007a6ffec12985e111
vmhba1 naa.6006016081f02800ca79c3b09150e111
vmhba2 naa.6006016081f0280000e47af49150e111
vmhba2 naa.6006016081f028007a6ffec12985e111
vmhba2 naa.6006016081f02800ca79c3b09150e111
```

在上面的此示例中， vmhba1和vmhba2都可以看到3個LUN。

3. 檢查LUN的路徑。

```
~ # esxcfg-mpath -b
naa.6006016081f0280000e47af49150e111 : 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 WWPNN:
20:00:00:25:b5:b0:05:3f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPNN: 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 WWPNN:
20:00:00:25:b5:b0:05:3f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPNN: 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 WWPNN:
20:00:00:25:b5:b0:05:2f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPNN: 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 WWPNN:
20:00:00:25:b5:b0:05:2f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPNN: 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 WWPNN:
20:00:00:25:b5:b0:05:3f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPNN: 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 WWPNN:
20:00:00:25:b5:b0:05:3f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPNN: 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 WWPNN:
20:00:00:25:b5:b0:05:2f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPNN: 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 WWPNN:
20:00:00:25:b5:b0:05:2f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPNN: 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 WWPNN:
20:00:00:25:b5:b0:05:3f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPNN: 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 WWPNN:
20:00:00:25:b5:b0:05:3f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPNN: 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 WWPNN:
20:00:00:25:b5:b0:05:2f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPNN: 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 WWPNN:
20:00:00:25:b5:b0:05:2f Target: WWNN: 50:06:01:60:c4:60:44:fa WWPNN: 50:06:01:68:
44:60:44:fa
```

在此示例中，每個LUN有四個路徑：兩個來自vmhba1，兩個來自vmhba2。

相關資訊

- [技術支援與文件 - Cisco Systems](#)