

Troubleshooting Boot from SAN in Intersight Managed Mode

Common issues and where to start your investigation

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TACDCN-2008



Agenda

- Introduction to Intersight
- Boot from SAN Issues
- Troubleshooting
- Solution
- Conclusion

What is Intersight Managed Mode

Why should I use it?

- Cloud based solution
- Secure automatic backups
- Can host multiple domains
- Automatic log collection

https://go2.cisco.com/IMM_Config

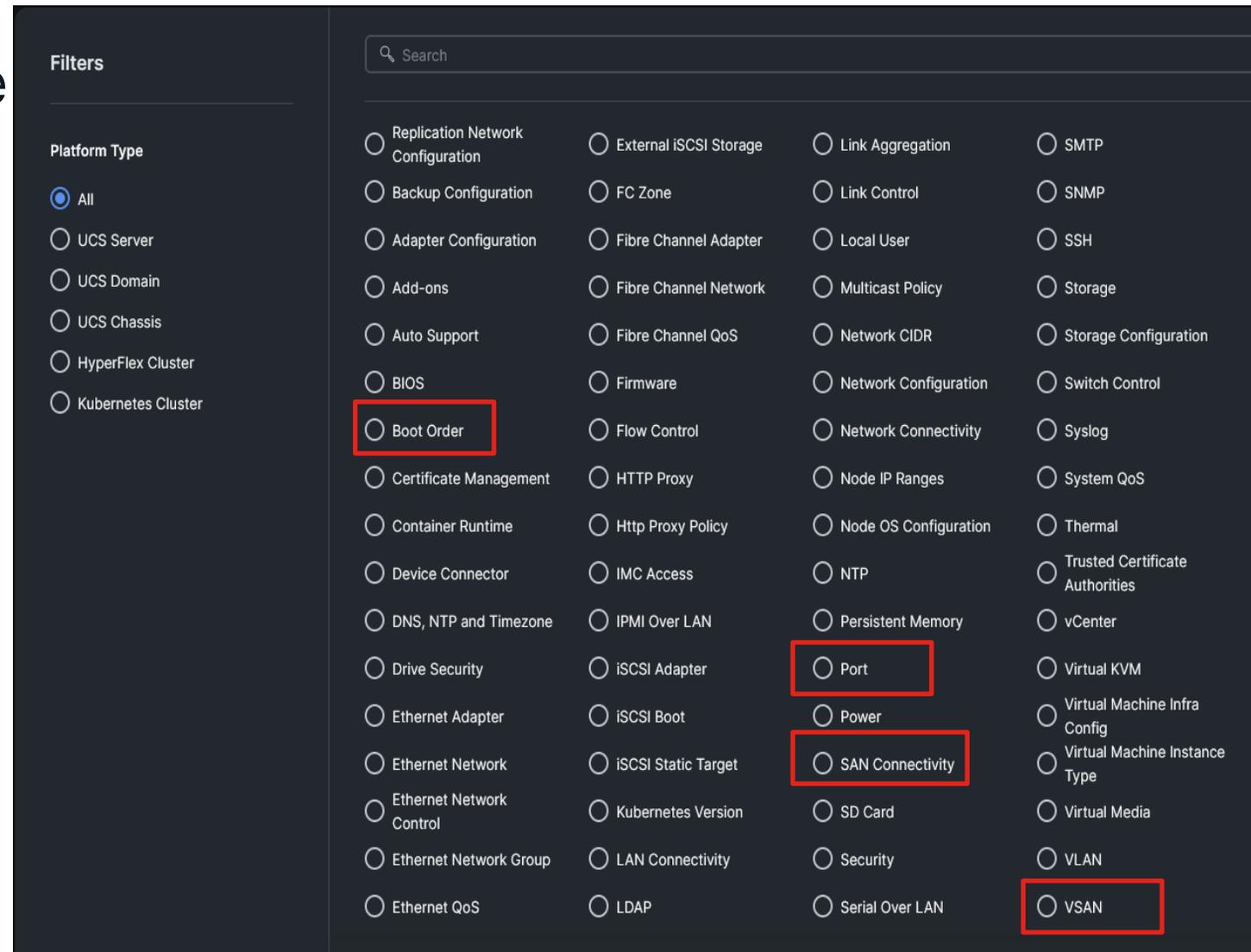
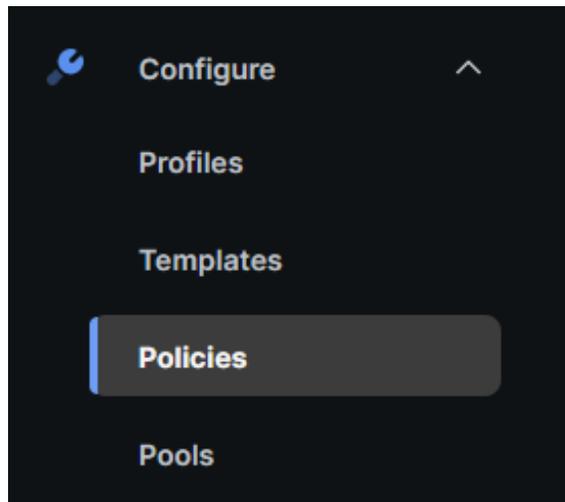


Acronyms

UCSM	Unified Compute System Manager
IMM	Intersight Managed Mode
SAN	Storage Area Network
BFS	Boot from SAN
VSAN	Virtual Storage Area Network
WWPN	Worldwide Port Names
(v)HBA	(virtual) Host Bus Adapter

Similarities and differences between UCSM and IMM

- Policies and Service Profile configurations
 - Boot Order Policy
 - Port Policy
 - SAN Connectivity Policy
 - VSAN Policy/ID



Configuring new boot from SAN policy

What we configure from Intersight

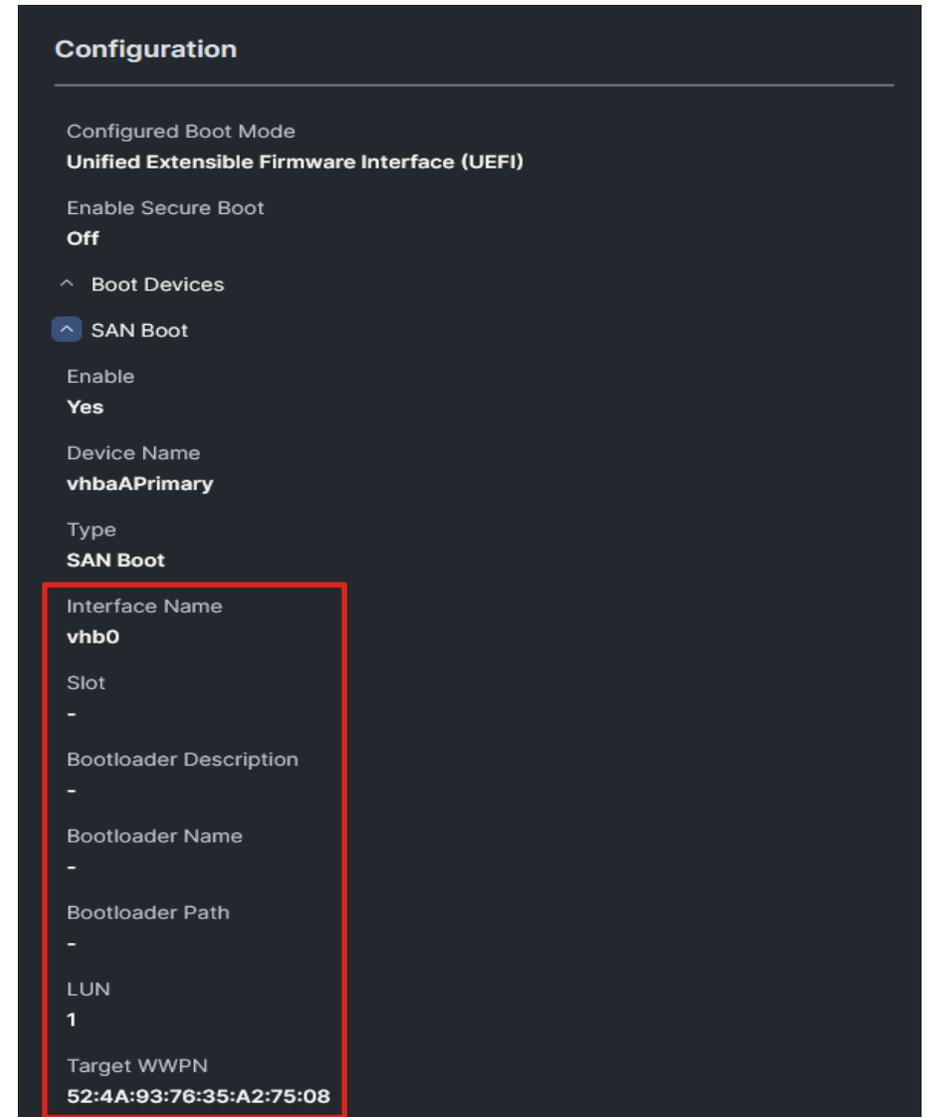
- VSAN ID & Policy
- Port Policy
- vHBA names

What is provided by SAN/storage teams

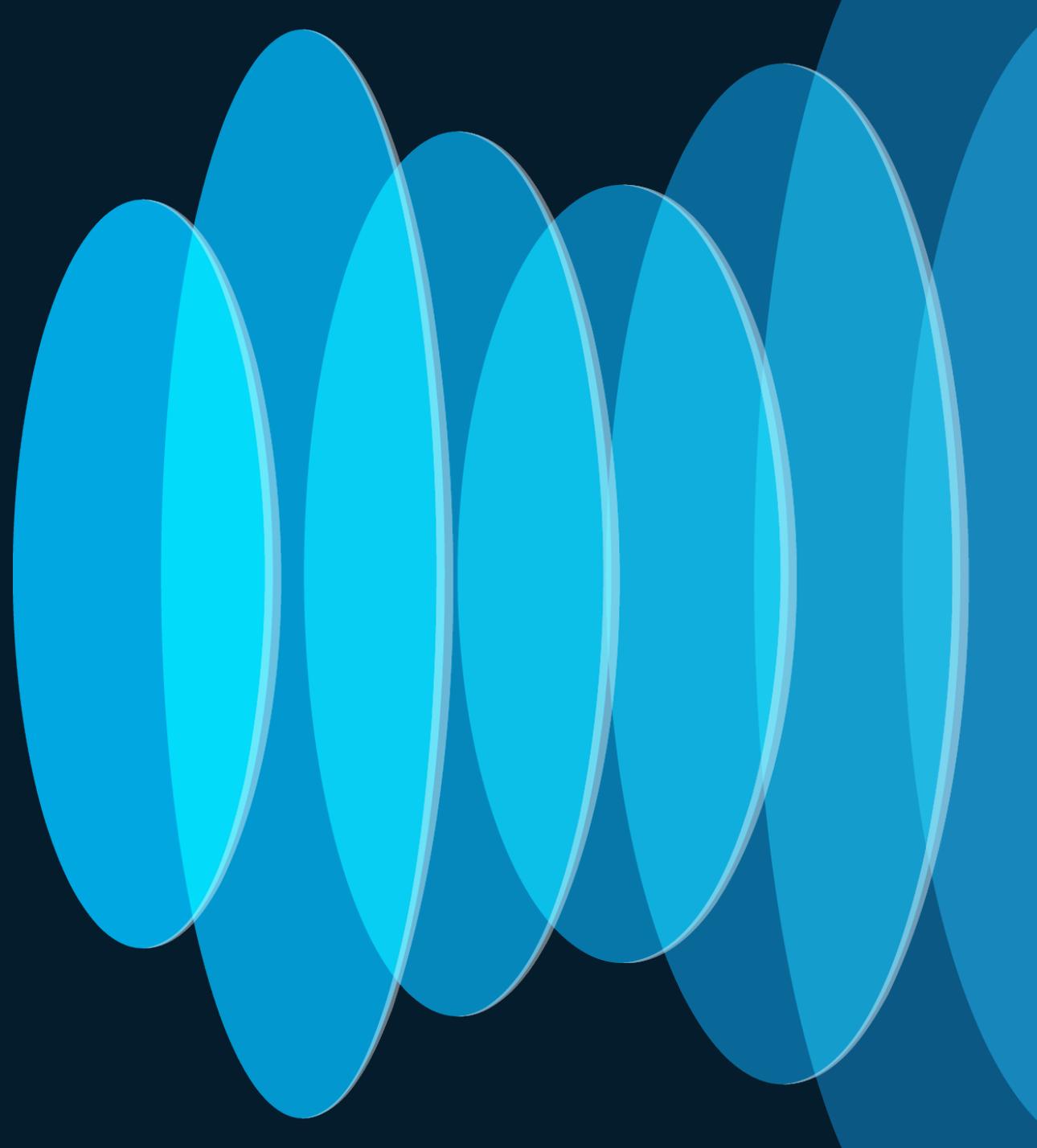
- Worldwide Port Names (WWPNs)
- LUN IDs

<https://go2.cisco.com/BootFromSAN>

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Questions



I've configured boot from SAN...

...and I still can't see my targets

- Configured the VSAN Policy
- Configured Port Policy
- Created Service Profile
- Created Boot Order Policy

- Deployed and rebooted servers
- Server still booting to the shell

```
Cisco UEFI Interactive Shell v2.2
EDK II
UEFI v2.80 (American Megatrends, 0x00050016)
Mapping table
  BLK0: Alias(s):
        PciRoot(0x0)/Pci(0x1D,0x0)/Pci(0x0,0x0)/Scsi(0x0,0x0)
  BLK1: Alias(s):
        PciRoot(0x0)/Pci(0x1D,0x0)/Pci(0x0,0x0)/Scsi(0x1,0x0)
  BLK2: Alias(s):
        PciRoot(0x5)/Pci(0x2,0x0)/Pci(0x0,0x0)/NVMe(0x1,37-63-0D-00-81-EE-14-0
0)
  BLK3: Alias(s):
        PciRoot(0x5)/Pci(0x3,0x0)/Pci(0x0,0x0)/NVMe(0x1,8E-61-0D-00-81-EE-14-0
0)
  BLK4: Alias(s):
        PciRoot(0x5)/Pci(0x4,0x0)/Pci(0x0,0x0)/NVMe(0x1,CF-62-0D-00-81-EE-14-0
0)
  BLK5: Alias(s):
        PciRoot(0x5)/Pci(0x5,0x0)/Pci(0x0,0x0)/NVMe(0x1,A4-62-0D-00-81-EE-14-0
0)
Press ESC in 1 seconds to skip startup.nsh or any other key to continue.
Shell> _
```

Where to start?

- Single out a server

FI-A # **connect adapter x/y/z** -> (x = Chassis, y = Blade, z = Adapter)

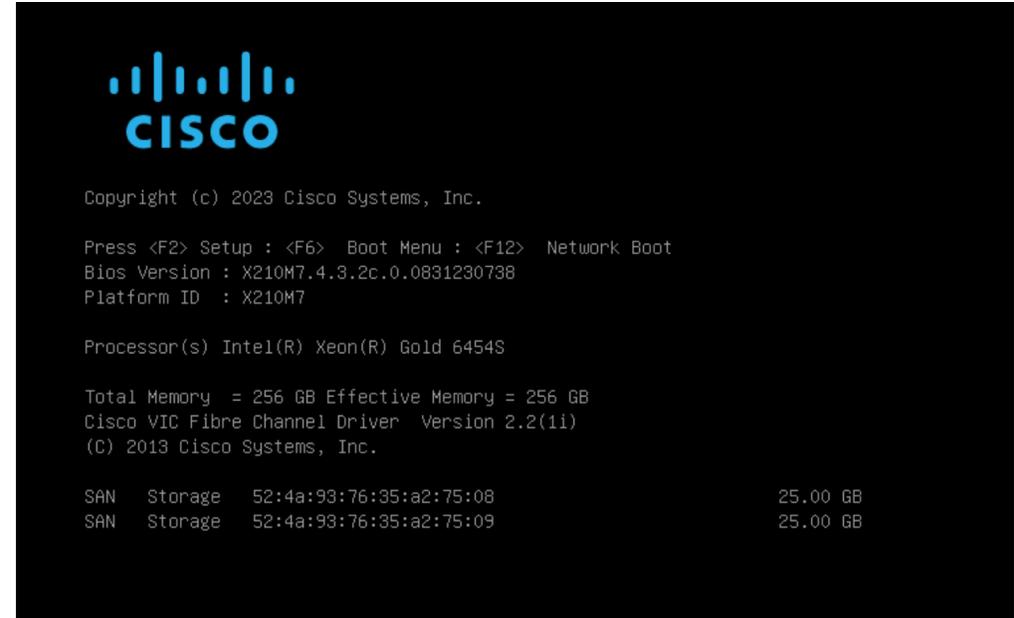
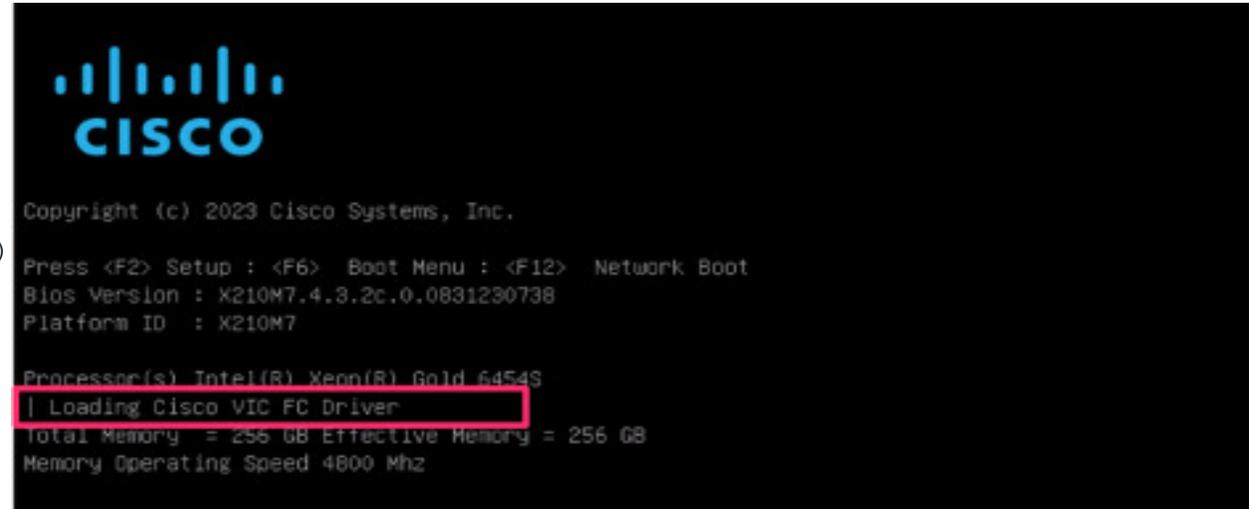
Entering character mode
Escape character is '^]'.
(none) login: **dbgsh**

adapter (top):2# **attach-fls**
adapter (fls):1# **lunlist**

```
lunlist
vnic : 16 lifid: 16
• FLOGI State : flogi est (fc_id 0x010303)
• PLOGI Sessions
• WWNN 58:cc:f0:98:49:62:0b:fa WWPN 58:cc:f0:98:49:62:0b:fa fc_id 0x000000
• LUN's configured (SCSI Type, Version, Vendor, Serial No.)
LUN ID : 0x0000000000000000 access failure
• REPORT LUNs Query Response
• WWNN 58:cc:f0:90:49:62:0b:fa WWPN 58:cc:f0:90:49:62:0b:fa fc_id 0x000000
• LUN's configured (SCSI Type, Version, Vendor, Serial No.)
LUN ID : 0x0000000000000000 access failure
• REPORT LUNs Query Response
• Nameserver Query Response
```



← Missing queries



Where to start?

- Adapter logging in correctly:

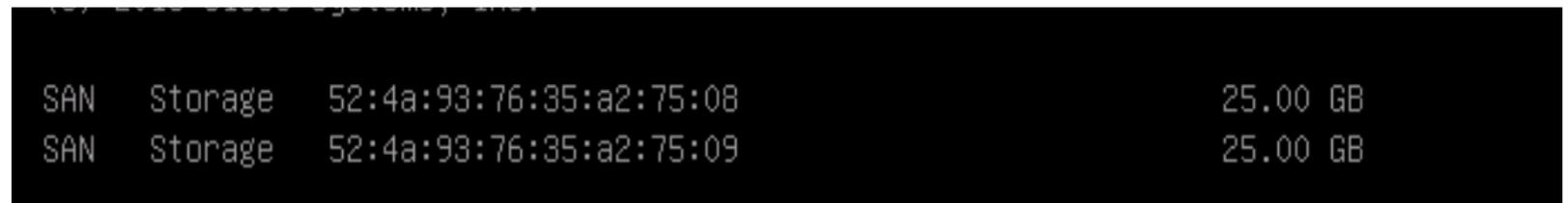
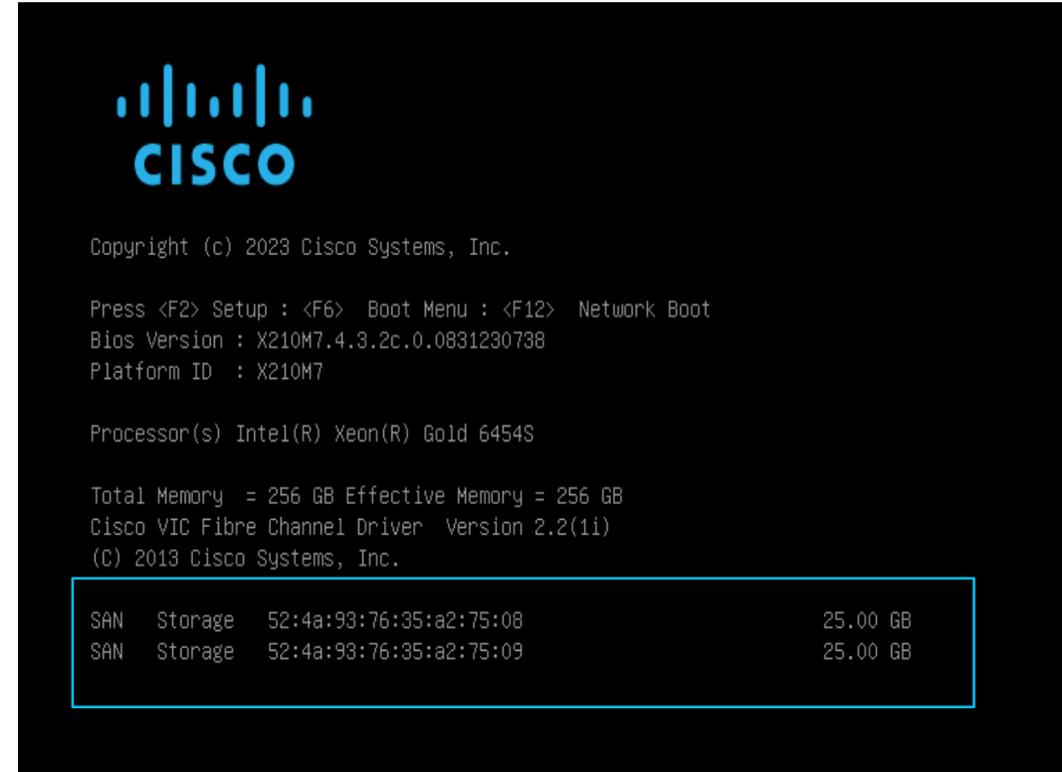
```
FI-A # connect adapter x/y/z -> (x = Chassis, y = Blade, z = Adapter)

Entering character mode
Escape character is '^]'.

(none) login: dbgsh

adapter (top):2# attach-fls
adapter (fls):1# lunlist

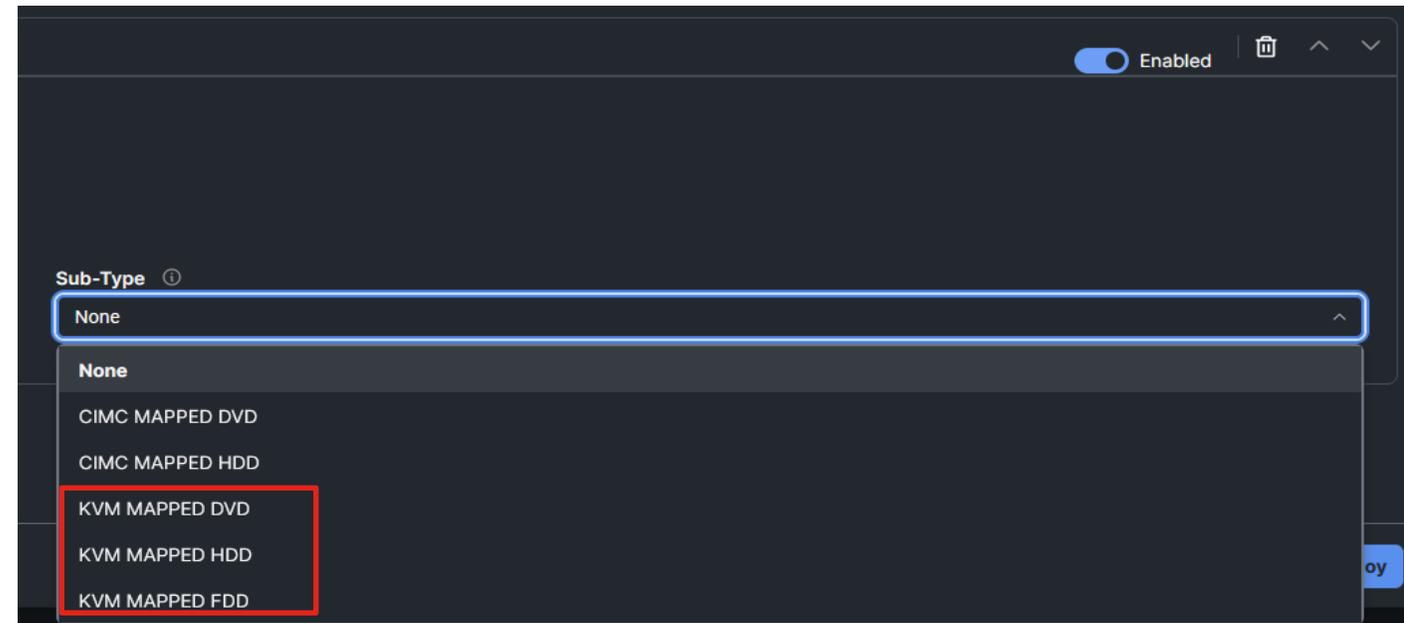
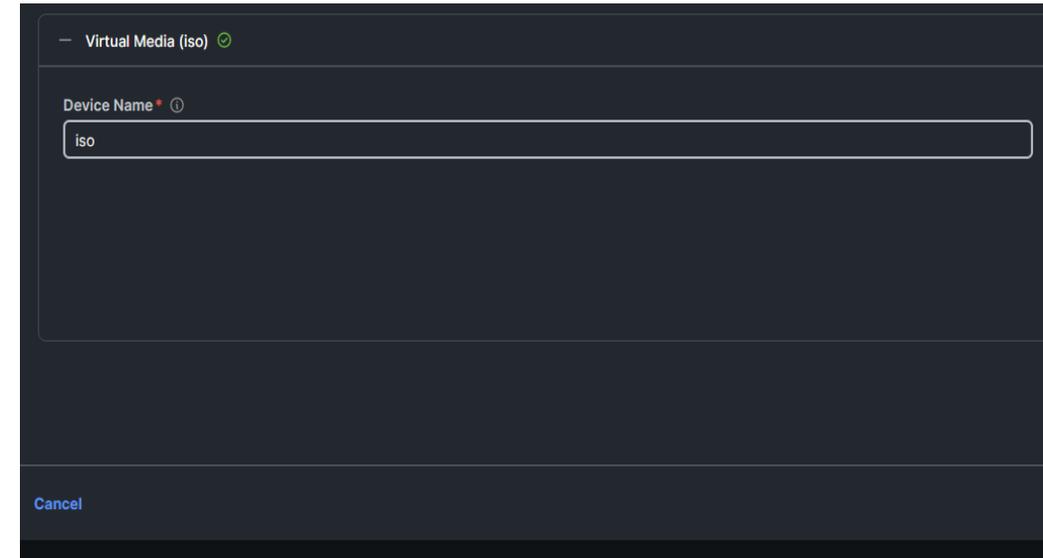
lunlist
vnic : 16 lifid: 16
• FLOGI State : flogi est (fc_id 0x010303)
• PLOGI Sessions
• WWNN 58:cc:f0:98:49:62:0b:fa WWPN 58:cc:f0:98:49:62:0b:fa fc_id 0x600020
• LUN's configured (SCSI Type, Version, Vendor, Serial No.)
LUN ID : 0x0000000000000000
• REPORT LUNs Query Response
• WWNN 58:cc:f0:90:49:62:0b:fa WWPN 58:cc:f0:90:49:62:0b:fa fc_id 0x600020
• LUN's configured (SCSI Type, Version, Vendor, Serial No.)
LUN ID : 0x0000000000000000
• REPORT LUNs Query Response
• Nameserver Query Response
- WWPN : 58:cc:f0:98:49:62:0b:fa
```



I can see the storage array...

...but I can't install the OS using the .iso file

- Lunlist populates all fields, no failures seen
- Return to the Boot Policy
- Review virtual media configuration
 - CIMC mapped = using vMedia policy
 - KVM mapped = using KVM



https://go2.cisco.com/vMedia_Config

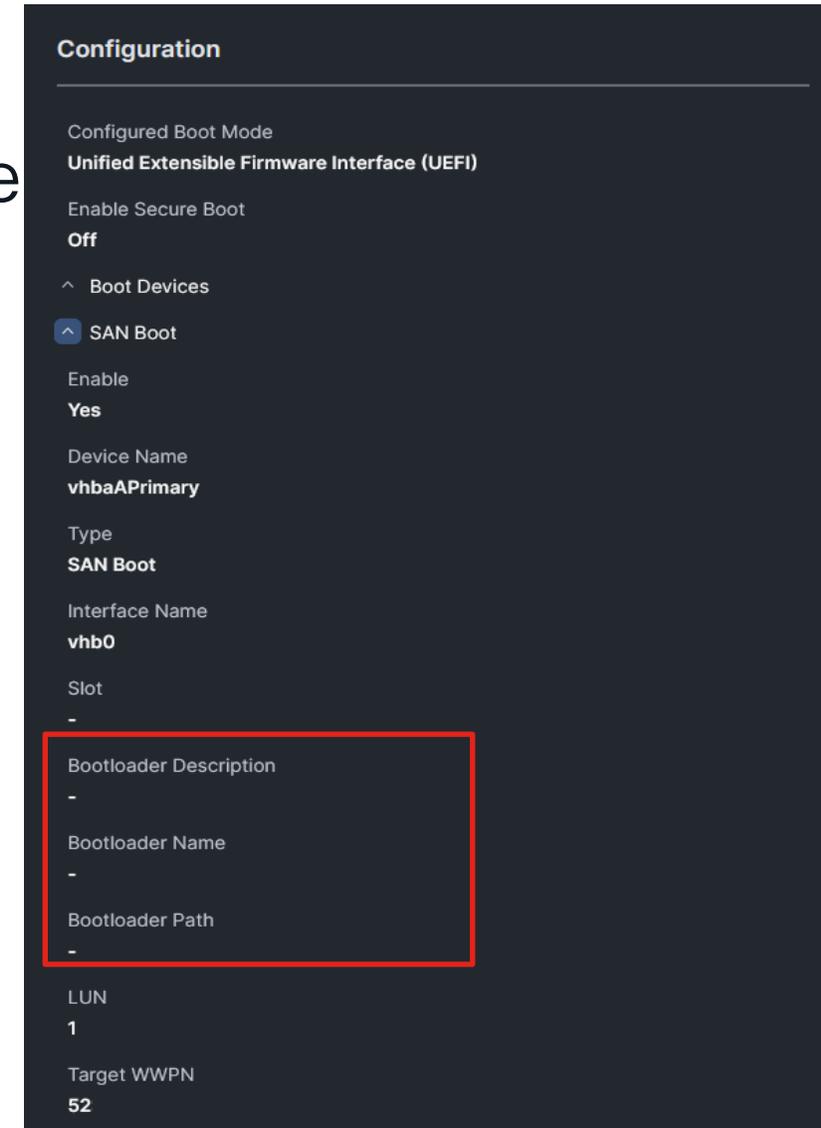
cisco *Live!*

I can see the storage array...

...but after install server is still booting to shell

- Lunlist populates Nameserver Query Response
- LUN ID is correct
- FC_ID of array is identified correctly

- Bootloader Name
 - BOOTX64.EFI
- Bootloader Path
 - \EFI\BOOT\





Engaging TAC after troubleshooting

The most efficient way to the quickest solution

- Provide as much logging as possible
 - ✓ Lunlist command outputs
 - ✓ Other troubleshooting performed to the point of opening a TAC case
 - ✓ Automatic log uploads through Intersight
- Provide as much detail about the environment as possible
 - ✓ New setup vs modifying existing setup?

<https://go2.cisco.com/OpeningNewCase>

VMware ESXi 7.0.3 (VMKernel Release Build 22348816)

Cisco Systems Inc UCSC-C240-M7SX

2 x Intel(R) Xeon(R) Gold 6448H
766.7 GiB Memory

To manage this host, go to:

[https://\[REDACTED\]](https://[REDACTED]) (STATIC)

[https://\[REDACTED\]](https://[REDACTED]) (STATIC)

<F2> Customize System/View Logs

<F12> Shut Down/Restart

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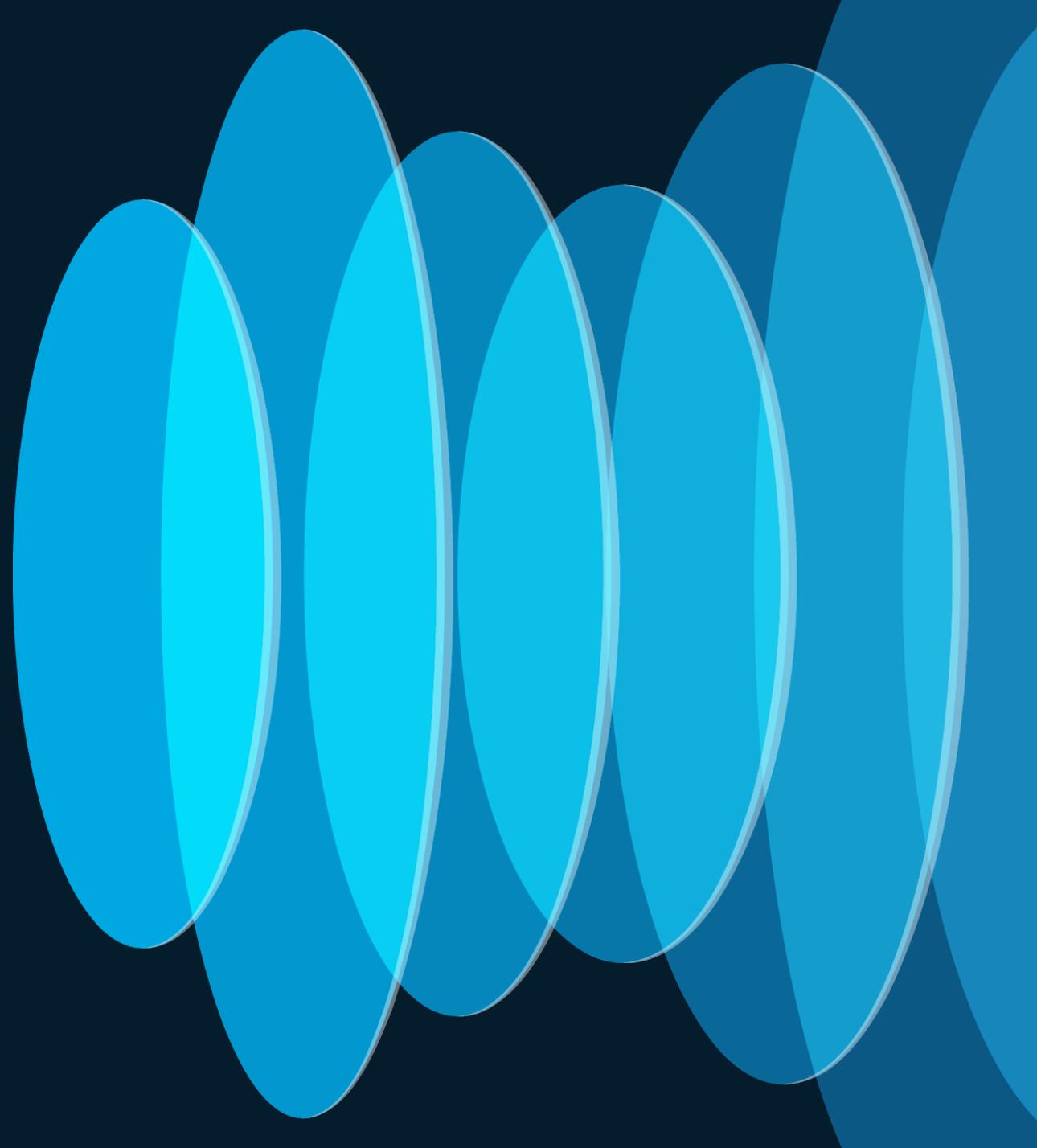


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Questions





The bridge to possible

Thank you

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