

# Configure EMULEX LPE31002 Boot from SAN

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## Introduction

This document describes the process to configure an Emulex LPE31002 HBA to Boot from SAN via SAN switch connected to the storage array.

## Prerequisites

### Requirements

Ensure that you have these requirements before you attempt this configuration:

- NPIV feature enabled in the MDS switch.
- LUN masking configured on your storage array.

### Components Used

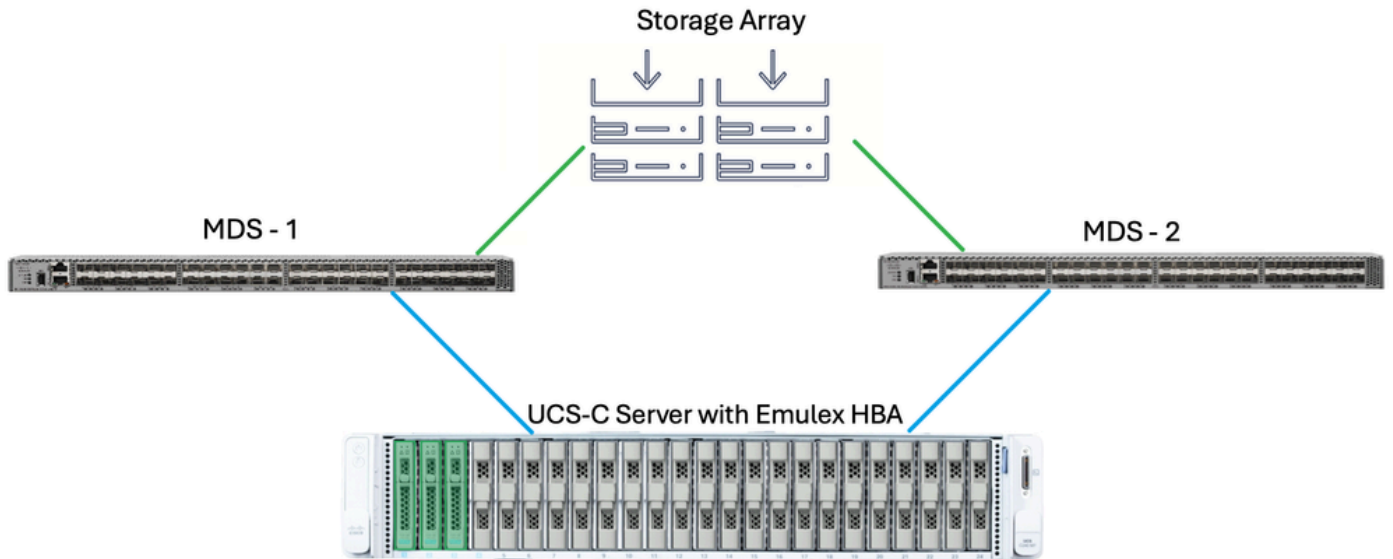
The information in this document is based on these software and hardware versions:

- MDS 9148S, Firmware 9.3(2)
- UCS C220 M7SX, Firmware 4.3(6a.0.0312251839)

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

## Configure

### Diagram



*Setup Topology*

## Configure Emulex LPE31002 HBA from the BIOS

- Power Cycle the server and **Press F2** to enter to the **BIOS Setup**.



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Press <F2> BIOS Setup : <F6> Boot Menu : <F7> Diagnostics

Press <F8> CIMC Setup : <F12> Network Boot

Bios Version : C220M7.4.3.6a.0.0312251839

Platform ID : C220M7

- Loading Emulex FC SLI4 SCSI Pass Thru Driver

Processor(s) INTEL(R) XEON(R) GOLD 6530

Total Memory = 256 GB Effective Memory = 256 GB

Memory Operating Speed 4800 Mhz

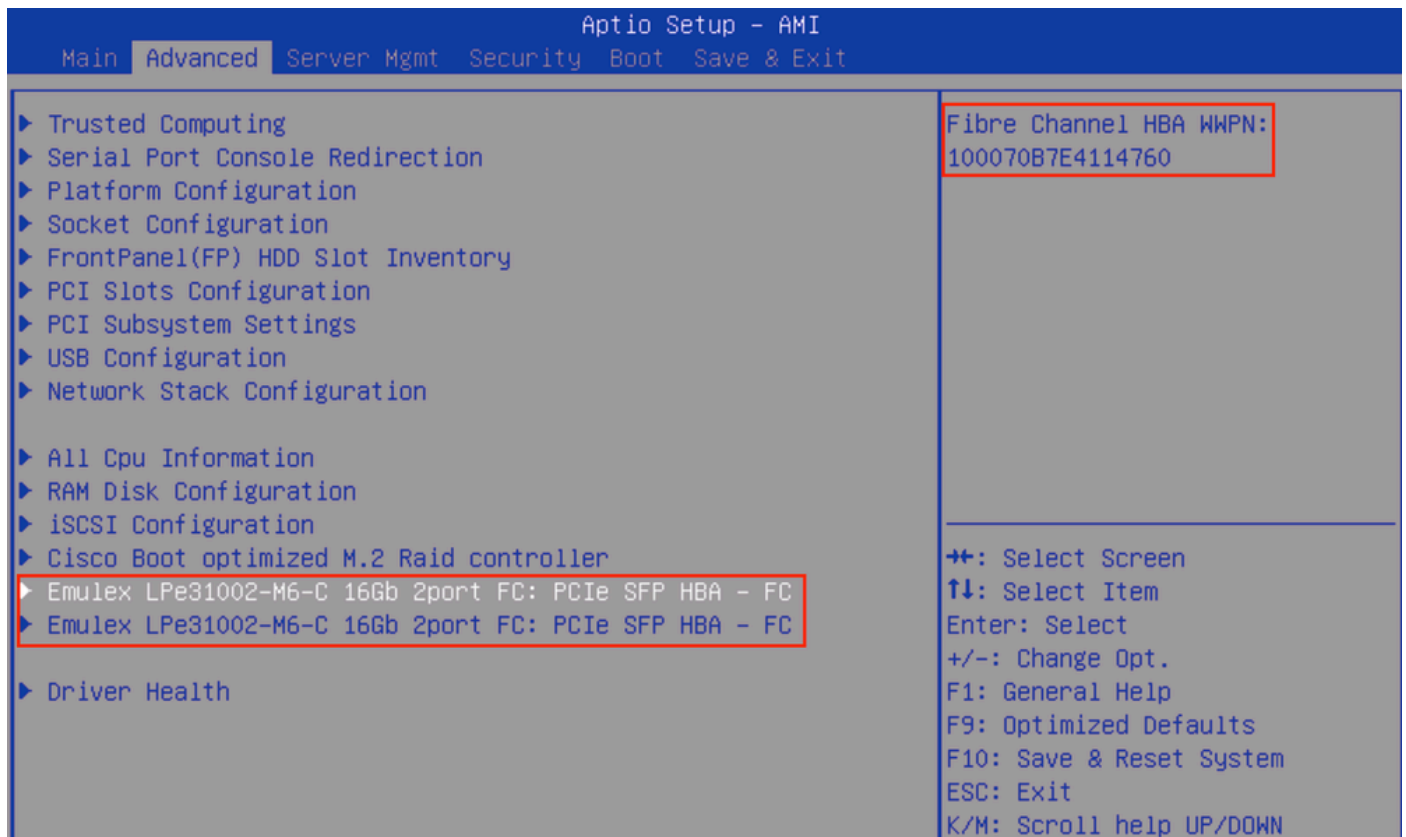
Cisco IMC IPv4 Address :

Cisco IMC MAC Address :

Entering BIOS Setup ...

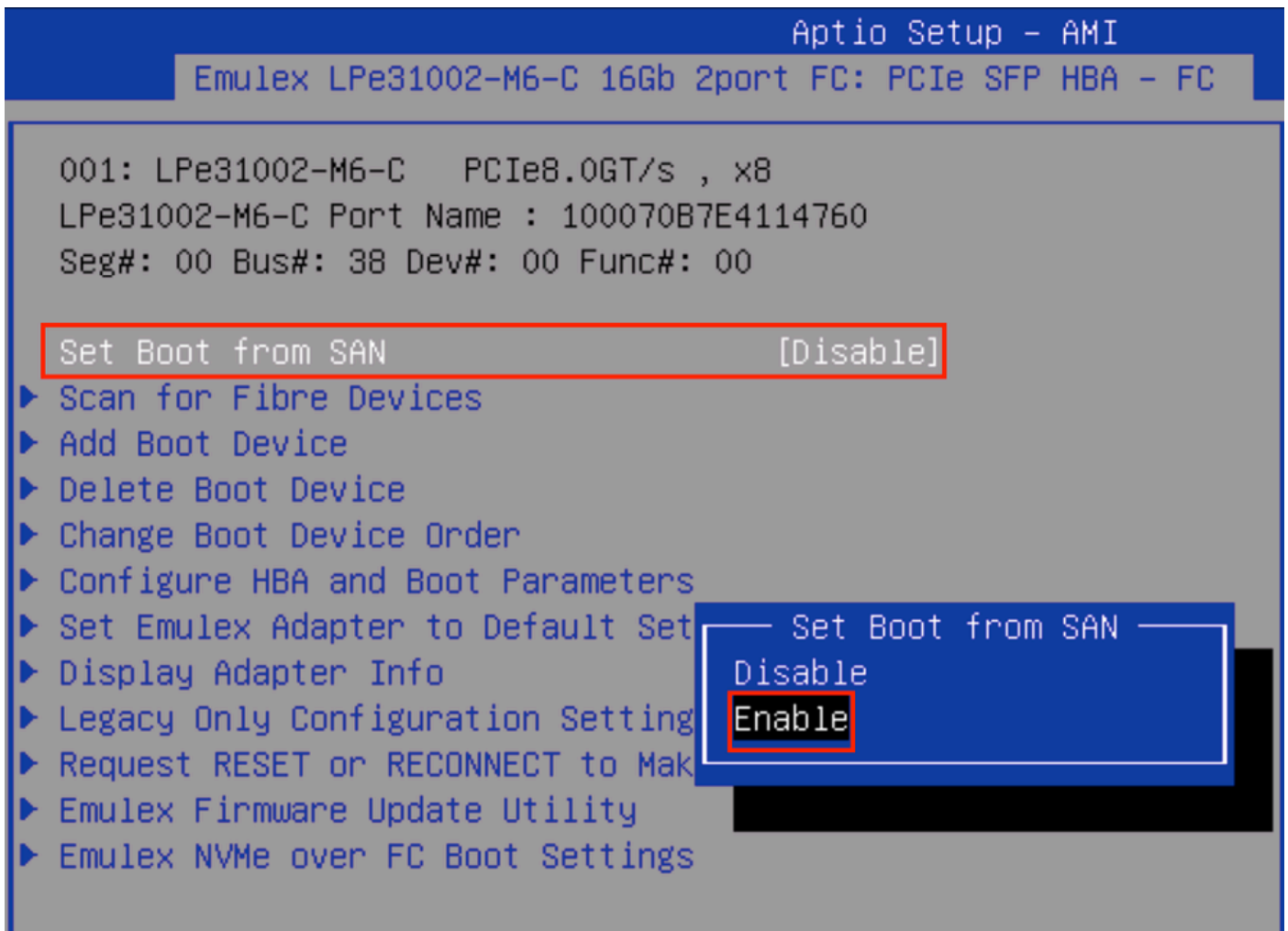
*Press F2 to Enter BIOS Settings*

- Navigate to **Advanced** and select the **Emulex LPe31992 HBA**. The World Wide Port Name of each port is displayed in the upper right corner.



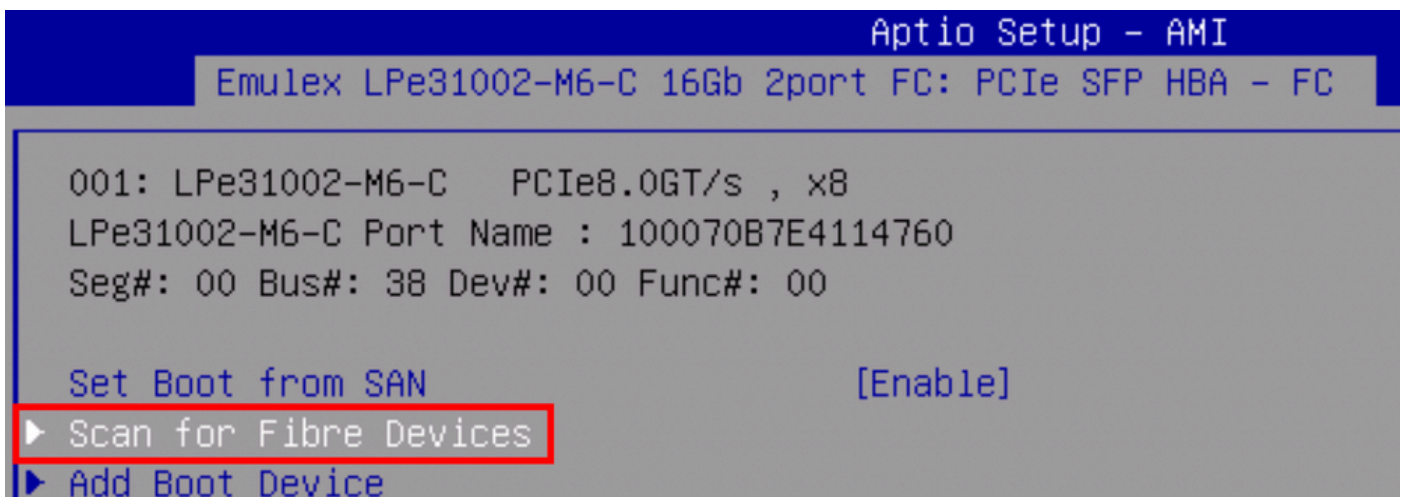
Select Emulex HBA

- Within the configuration settings, select the **Boot from SAN** option and **Enable**.



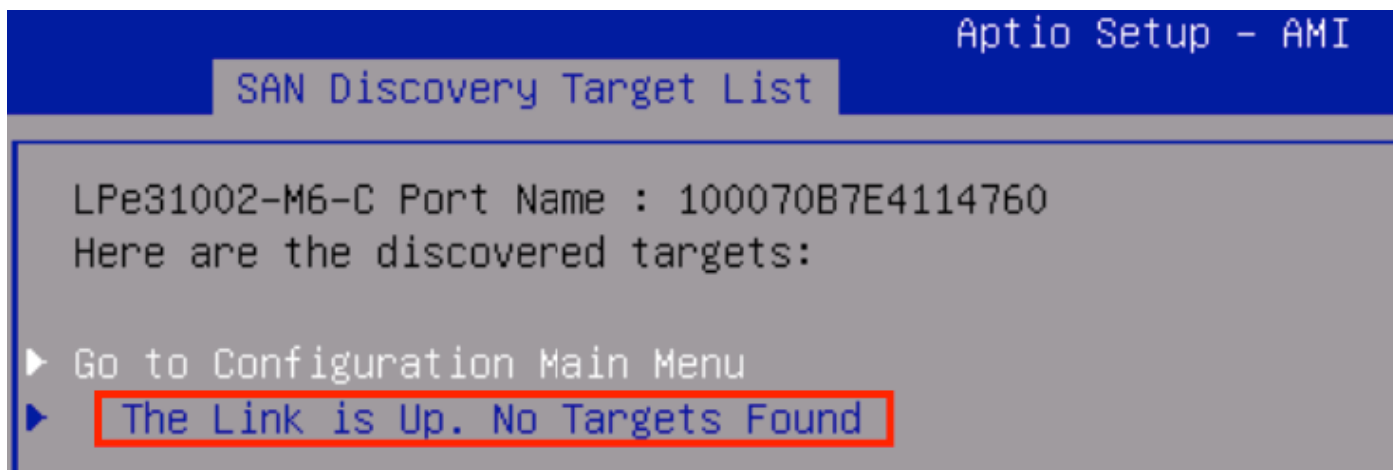
*Enable the Boot from SAN Option*

- Select **Scan for Fibre Devices**. Within this option, you can check if the physical Link connectivity is up.



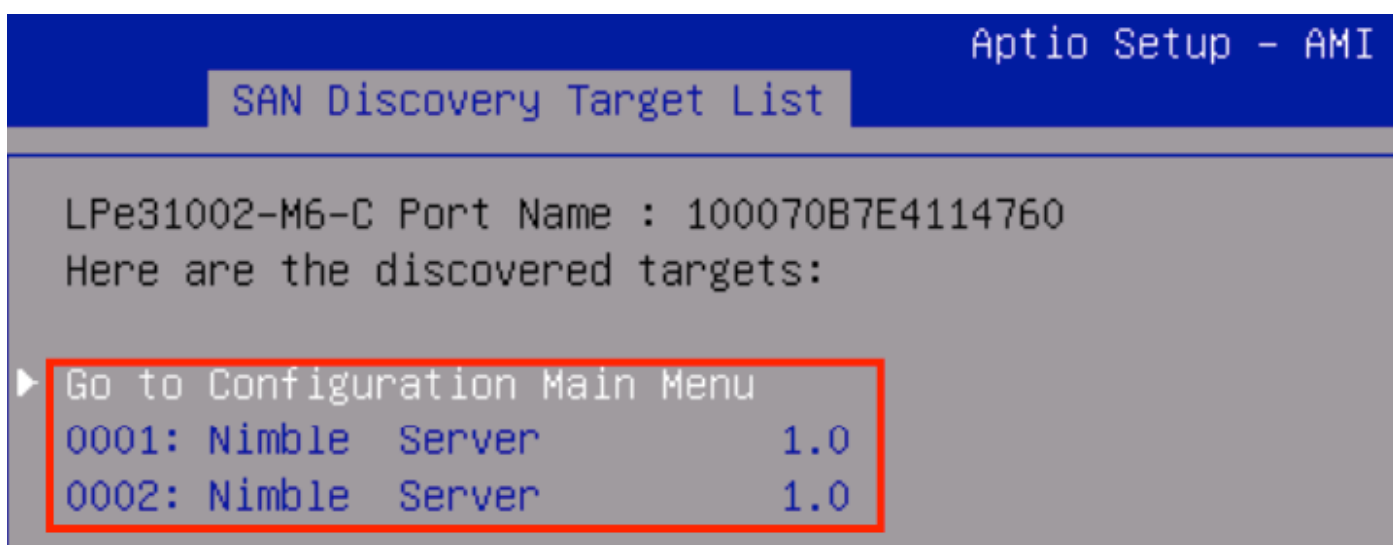
*Scan for Fibre Devices*

- If the zoning is not yet configured, the **No Targets Found** message is displayed. In the next section, there is a zoning configuration on Cisco MDS example for reference.



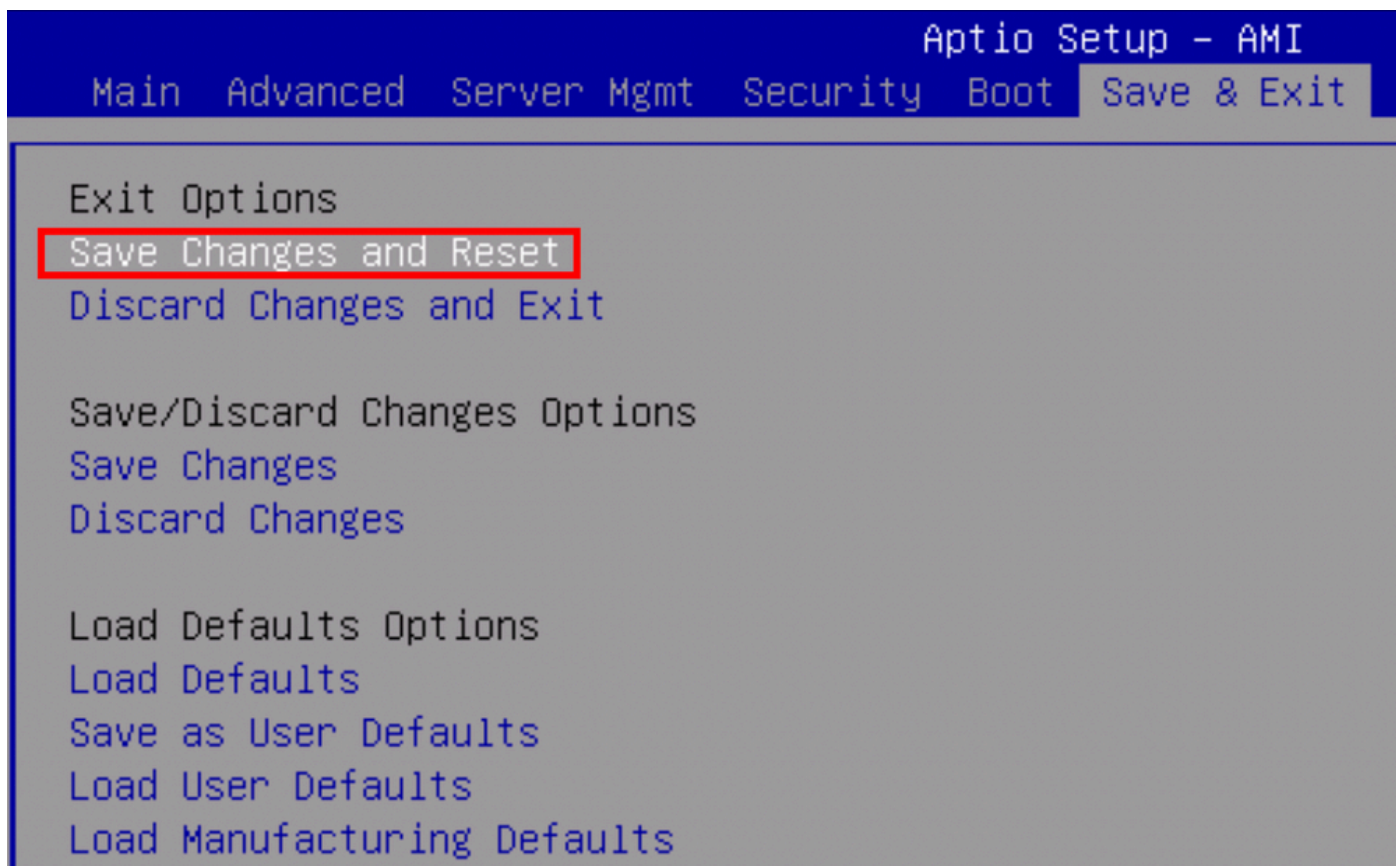
*Link Up - No Targets*

- If the zoning is already configured in the SAN switch, the storage targets are listed.



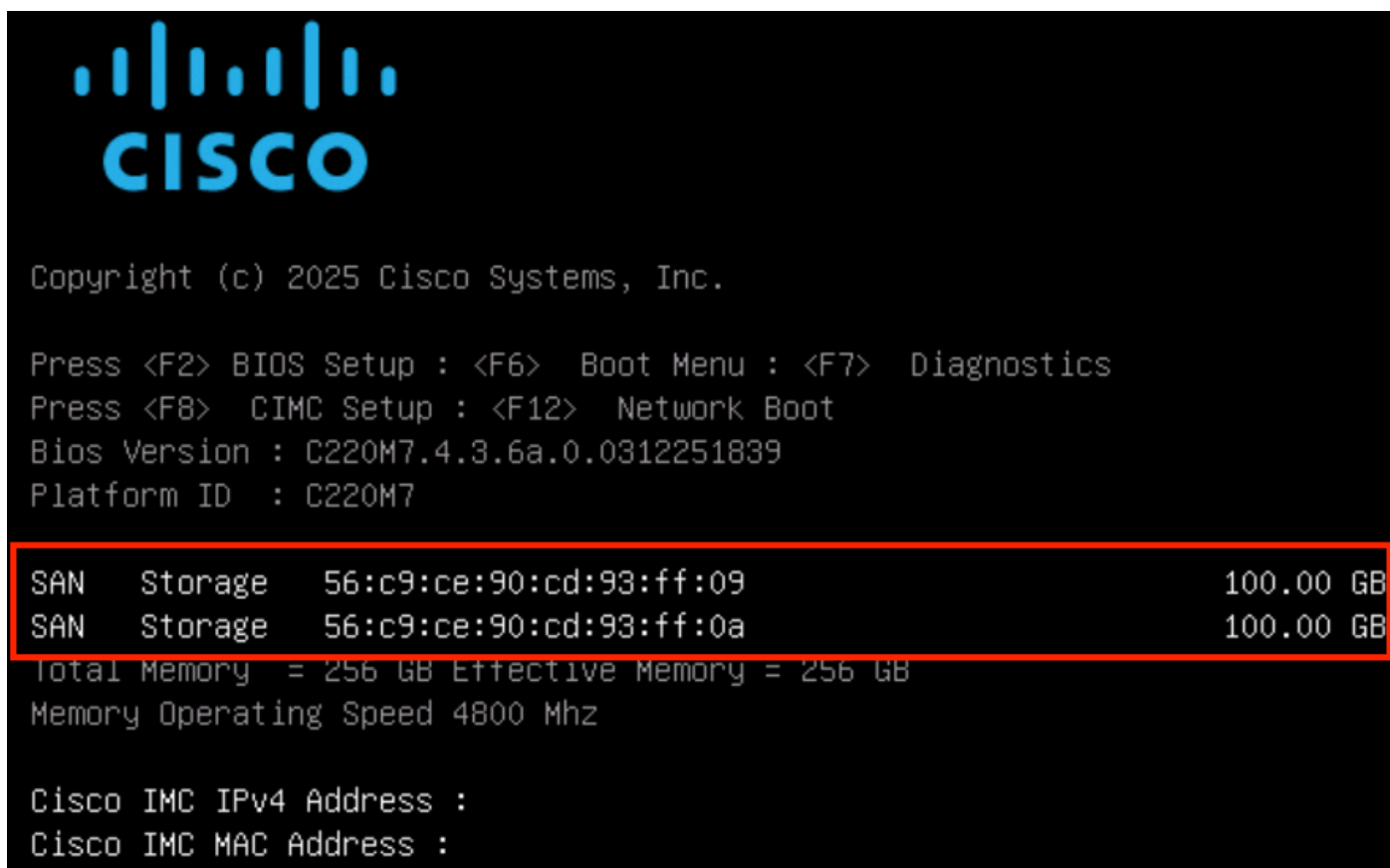
*Targets Found*

- **Press F10** or navigate to **Save & Exit** and press **Save Changes and Reset**.



*Save Changes and Power Cycle*

- When the server boots up, the storage targets are listed.



*Storage Paths*

## Example of MDS Zoning

In this example, the MDS setup is configured in high availability mode.



**Note:** If you need more detail about Zoning configuration in a MDS device, please refer to [Configuring Zones and Zone Sets](#).

---

- MDS 1
  - Emulex HBA Port 0 WWPN: 10:00:70:b7:e4:11:47:61 VSAN 100
  - Storage Array Port FC1 wwpn: 56:c9:ce:90:cd:93:ff:05 VSAN 100
  - Storage Array Port FC2 wwpn: 56:c9:ce:90:cd:93:ff:0a VSAN 100
- MDS 2
  - Emulex HBA Port 1 WWPN: 10:00:70:b7:e4:11:47:60 VSAN 200
  - Storage Array Port FC1 56:c9:ce:90:cd:93:ff:09 VSAN 200
  - Storage Array Port FC2 56:c9:ce:90:cd:93:ff:06 VSAN 200
- Interface configuration for Emulex HBA ports on both MDS switches.

```
interface fc1/25
switchport mode F
switchport description "EMULEX - C220M7 PORT X"
switchport trunk mode off
port-license acquire
no shutdown
```

- Zone creation on MDS switch 1.

```
zone name UCSC_220M7_EMULEX_PORT_0_SPA_FC1 vsan 100
member pwwn 10:00:70:b7:e4:11:47:61
member pwwn 56:c9:ce:90:cd:93:ff:05
```

```
zone name UCSC_220M7_EMULEX_PORT_0_SPB_FC2 vsan 100
member pwwn 10:00:70:b7:e4:11:47:61
member pwwn 56:c9:ce:90:cd:93:ff:0a
```

- Zoneset creation on MDS switch1.

```
zoneset name EMULEX_HBA vsan 100
member UCSC_220M7_EMULEX_PORT_0_SPA_FC1
member UCSC_220M7_EMULEX_PORT_0_SPB_FC2
```

- Zoneset activation on MDS 1.



```
zoneset activate name EMULEX_HBA vsan 100
```

- Zone creation on MDS switch 2.

```
zone name UCSC_220M7_EMULEX_PORT_1_SPA_FC2 vsan 200
member pwwn 10:00:70:b7:e4:11:47:60
member pwwn 56:c9:ce:90:cd:93:ff:06
```

```
zone name UCSC_220M7_EMULEX_PORT_1_SPB_FC1 vsan 200
member pwwn 10:00:70:b7:e4:11:47:60
member pwwn 56:c9:ce:90:cd:93:ff:09
```

- Zoneset creation on MDS switch 2.

```
zoneset name EMULEX_HBA vsan 200
member UCSC_220M7_EMULEX_PORT_1_SPA_FC2
member UCSC_220M7_EMULEX_PORT_1_SPB_FC1
```

- Zoneset activation on MDS Switch 2.

```
zoneset activate name EMULEX_HBA vsan 200
```

## Verify

Verify the HBA and the Storage Arrays are successfully logged in the fabric. Open an ssh session to the MDS Switches and verify the wwpns with the **show flogi database** command Example:

```
MDS-01# show flogi database
```

```
-----
INTERFACE VSAN FCID PORT NAME NODE NAME
-----
```

```
fc1/25 100 0x162f00 10:00:70:b7:e4:11:47:61 20:00:70:b7:e4:11:47:61
fc1/47 100 0x160100 56:c9:ce:90:cd:93:ff:05 56:c9:ce:90:cd:93:ff:00
fc1/48 100 0x160400 56:c9:ce:90:cd:93:ff:0a 56:c9:ce:90:cd:93:ff:00
```

```
MDS-02# show flogi database
```

```
-----
INTERFACE VSAN FCID PORT NAME NODE NAME
-----
```

```
fc1/25 200 0x742800 10:00:70:b7:e4:11:47:60 20:00:70:b7:e4:11:47:60
fc1/47 200 0x740200 56:c9:ce:90:cd:93:ff:09 56:c9:ce:90:cd:93:ff:00
fc1/48 200 0x740300 56:c9:ce:90:cd:93:ff:06 56:c9:ce:90:cd:93:ff:00
```

Verify all the wwpns have a valid fcid assigned and are active (with the star \* sign ) with the **show zoneset active** command

MDS-01# show zoneset active

```
zone name UCSC_220M7_EMULEX_PORT_0_SPA_FC1 vsan 100
* fcid 0x162f00 [pwwn 10:00:70:b7:e4:11:47:61]
* fcid 0x160100 [pwwn 56:c9:ce:90:cd:93:ff:05]
```

```
zone name UCSC_220M7_EMULEX_PORT_0_SPB_FC2 vsan 100
* fcid 0x162f00 [pwwn 10:00:70:b7:e4:11:47:61]
* fcid 0x160400 [pwwn 56:c9:ce:90:cd:93:ff:0a]
```

MDS-02# show zoneset active

```
zone name UCSC_220M7_EMULEX_PORT_1_SPB_FC1 vsan 200
* fcid 0x742800 [pwwn 10:00:70:b7:e4:11:47:60]
* fcid 0x740200 [pwwn 56:c9:ce:90:cd:93:ff:09]
```

```
zone name UCSC_220M7_EMULEX_PORT_1_SPA_FC2 vsan 200
* fcid 0x742800 [pwwn 10:00:70:b7:e4:11:47:60]
* fcid 0x740300 [pwwn 56:c9:ce:90:cd:93:ff:06]
```