Configure UCS-M2-HWRAID on UCS Blades

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Introduction

This document describes how to configure the Unified Computing System (UCS)-M2-HWRAID so an operating system (OS) can use the disks for storage or as bootable disks.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- UCS M5 Server
- UCSM 3.2.2b or higher
- Compatible OS in UEFI Mode (minimums follow) CentOS 7.6ESXi 6.5U2RHEL 7.6WinServer 2016 WinServer 2019More: UCS Hardware and Software Compatibility Adapters > RAID
 - > Cisco Boot Optimized M.2 HW Raid Controller (Cisco)

Components Used

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

- UCS-M2-HWRAID
- 2x m.2 Drives of the same model and capacity

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.

Background Information

The UCS-M2-HWRAID holds two m.2 gumsticks; one on each side of the carrier. The UCS-M2-

HWRAID and UCS-MSTOR-M2 look similar but in this configuration example hardware RAID requires a UCS-M2-HWRAID controller.

Configure

Check Current Status

1. Check that the necessary parts show in the server's inventory.

In UCSM, navigate to Equipment > Chassis x > Servers > Server x.

Select the **Inventory** tab at the top, **Motherboard**. Select **Mini Storage**. Ensure that your Model shows as **UCS-M2-HWRAID** as shown in this image.

⊖ Mini	Sto	ra	ge
mini-stora	age	-M	2-1
ID		÷	1
Model		;	UCS-M2-HWRAID
Туре		:	M2
Vendor		÷	Cisco Systems Inc
Revision		;	0
Serial		1	FCH23327KSH
VID		÷	V01
Part Nun	nber	r :	73-19532-05
Product	Nan	ne	: Cisco boot optimized M.2 Raid controller
Caption			: Cisco boot optimized M.2 Raid controller
Descript	ion		: Cisco boot optimized M.2 Hardware Raid controller with two SATA slots

2. Check that there are two m.2 drives installed and detected.

Navigate to Inventory > Storage > Disks.

From the drop-down, select Storage Controller Sata 1.

Check what two m.2 disks (253 & 254) are presented, and are in an operable state. On M6 the two m.2 disks will be 245 and 246. The drive state can differ.

ж	All	Equipment / Chassis / Ch	assis 1 / Servers /	Server 6						
	✓ Equipment	General Inventory	Virtual Machines	Installed Firmware CIMC S	essions SEL Logs VI	F Paths Health Diagno	stics Faults Events	FSM Statistics	Temperatures Power	
		Motherboard CIMC	CPUs GPUs	Memory Adapters H	BAS NICS ISCSI VNIC	s Security Storage	Persistent Memory			
*	🕶 Chassis 1 😨	Controller U.B.s	Disks Coouthu							
00	 Fans 	CONFORM LONG	crisks biocumy							
重	 IO Modules 	+ - Ty Advanced Filte	r 🔶 Export 🍈 Pr	int						¢
	 PSUs 	Name	Size (MB)	Serial	Operability	Drive State	Presence	Technology	Bootable	
	* Servers	Storage Controller PC.								
_	 Server 2 	Storage Controller SA.								
-	 Server 3 	Etorage Controller SA								
_	Server 4									
	 Server 5 	Disk 253	228936	17 8	Operable	Jbod	Equipped	SSD	False	
de la	 Server 6 😨 	Disk 254	228936	17 1	Operable	Jbod	Equipped	SSD	False	

3. Check for any orphaned LUNs.

Navigate to Inventory> Storage> LUNs.

Check if there is a drop-down arrow for **Storage Controller SATA 1**. If not, there is not an orphaned LUN.

If you see an orphaned LUN, skip to the Troubleshooting section at the bottom before you begin the configuration.

cisco.	UCS Manager			🛞 💟 2 27					٩		0 😔 🏾
.	Al v										
	· Equipment	General Inventory V	Irtual Machines	installed Firmware CIMC	C Sessions SEL Logs	VIF Paths Health	Diagnostics	Faults Events F	SM Statistics	Temperatures Powe	ar
		Motherboard CIMC	CPUs GPUs	Memory Adapters	HBAs NICs ISCS	I vNICs Security	Storage Persiste	ant Memory			
홌	- Chassis 1 🤨	Controller 111Na Die	ka Consultu					,			
	 Fans 	CONTROLLED DIS	ka decunty								
1	 IO Modules 	+ - Ty Advanced Filter	🕈 Export 🛛 🖷 Print								¢
	 PSUs 	Name	Size (MB)	 Raid Type 	Config S	tate Dep	loy Action	Operability	Presence	Bootable	
	✓ Servers	Storage Controller PCH 1									
_	Server 2	Storage Controller SAS 1									
-	 Server 3 	Storage Controller SATA 1									
	Server 4	Virtual Drive m.2	228872	RAID 1 Mir	rrored Orphane	d No.	Action	Operable	Equipped	True	
	 Server 5 										
30	Server 6 👽										
	Server 7 🚫	Actions		Properties							
	 Rack-Mounts 	-									
	Enclosures	Rename		Virtual Drive Nar	me : m.2		Size (MB)	228872		
	FEX	Set Transport Rearly		Type	: RAID	1 Mirrored	Block	Size	: 512		
	 Servers 			Available Size o	n Disk Group (MB) : 0		Numb	er of Blocks	468729856		
	 Fabric Interconnects 			ID	: 1000		Drive	Security	: No		
	 Fabric Interconnect A (primary) 👽 			Oper Device ID	: 0		Drive	State	: Optimal		
	 Fabric Interconnect B (subordinate) 🦁 	Secure Virtual Drive		Strip Size (KB)	: 64		Acces	is Policy	: Read Write		
	▼ Policies			Read Policy	: Norm	al	Actua	Write Cache Policy	: Write Through		
	Port Auto-Discovery Policy			IO Policy	Direc	t	Config	ured Write Cache Policy	: Write Through		
				Bootable	True		Drive	Cache	No Change		
				States					-		
				Operability	: Oper	able	Oper	Qualifier Reason	: N/A		
				Config State	Orph	aned	Deplo	y Action	No Action		
				Storage							
				Profile Name							
				Assigned To Se	erver :						
				Service Profile	: Dist. Comm. (MD) : .						
				Drive Member	rs						
				Slot ID	Role		Presence	Span ID		Operability Qualifier Re	ason
				253	Norma	1	Equipped	Unspecifi	ed	N/A	
				254	Norma		Equipped	Unspecifi	ed	N/A	

Setup Storage Configuration

1. First, you need to make a storage policy. Navigate **Storage > Storage Policies > Add** as shown in the image.



Storage / Storage Policies

Disk Group Policies

+ - 🛧 Export 🖷 Print

In the Create Disk Group Policy window:

- Enter a name
- Description (optional)
- RAID Level RAID1 Mirrored is used in this guide and is the safest option.

 \oplus Add

• Select the Disk Group Configuration Manual Radio Button.

Create Disk Group Policy

Name : m.2_raid1			
Description : Raid1 group policy for m2. d	rives		
RAID Level : RAID 1 Mirrored]		
Disk Group Configuration (Automatic) Dis	k Group Configuration (Manual)		
Disk Group Configuration (Manual)			
🏹 Advanced Filter 🔺 Export 🚔 Print			¢
Slot Number	Role	Span ID	
	No data	a available	
	Add in	Delete @ Info	
Virtual Drive Configuration			
Strip Size (KB) : Platform Default	V		
Access Policy : Platform Default	Read Write CRead Only Blocked		
			OK Cancel

Click the Add Button in the Disk Group Configuration (Manual) box.

This opens a new window Create Local Disk Configuration Reference.

- Slot Number can be set to 253 (the ID of the first m.2. This value can be checked in the prerequisites)
- The role must be Normal
- Leave the Span ID as unspecified

Click **OK** as shown in this image.

Create Disk Group Polic	су	? ×
Name : m.2_raid1		
Description : Raid1 group policy for r	m2. drives	
RAID Level : RAID 1 Mirrored	T	
O Disk Group Configuration (Automatic) Disk Group Configuration (Manual)	Create Local Disk Configuration Reference $? \times$	
🏹 Advanced Filter 🔺 Export 🖷 Prin	Slot Number : 253 [1-254]	¢
Slot Number	Role : O Normal O Dedicated Hot Spare O Global Hot Spare	
253	Span ID : unspecified [0-8]	
	OK Cancel	
Virtual Drive Configuration		
		—
Strip Size (KB) : Platform Default	Ψ	
Access Policy : Platform Defa	ault 🔿 Read Write 🔿 Read Only 🔿 Blocked	
	ОК Салс	el

? ×

Repeat the last step for the other disk, but use slot number 254 as shown in this image.

Create Disk Group Polic	су	? ×
Name : m.2_raid1 Description : Raid1 group policy for r	m2. drives	
RAID Level : RAID 1 Mirrored Disk Group Configuration (Automatic) Disk Group Configuration (Manual)	Create Local Disk Configuration Reference	
Tre Advanced Filter ↑ Export	Slot Number : 254 [1-254] Role : <in>Normal Dedicated Hot Spare</in>	\$
253 254	Span ID : unspecified [0-8]	
	OK Cancel	
Virtual Drive Configuration Strip Size (KB) : Platform Default		
Access Policy : • Platform Defa	ault 🔿 Read Write 🔿 Read Only 🔿 Blocked	
	OK Can	

Now your Disk Policy must look like this:

Create Disk Group Policy			?
Name : m.2_raid1			
Description : Raid1 group policy for m2. de	rives		
RAID Level : RAID 1 Mirrored			
) Disk Group Configuration (Automatic) Disk Group Configuration (Manual)	k Group Configuration (Manual)		
🏹 Advanced Filter 🔺 Export 🖷 Print			\$
Slot Number	Role	Span ID	
253	Normal	Unspecified	
254	Normal	Unspecified	
	🕀 Add 🗈 Delete	e 🚯 Info	
Virtual Drive Configuration			
Strip Size (KB) : Platform Default	v .		
Access Policy : Platform Default	Read Write ORead Only OBlocked		
			OK Cancel

2. Make a Storage Profile.

Navigate to Storage > Storage Profiles > Create a Storage Profile as shown in this image.



A Create Storage Profile window opens that asks for:

- Name: Enter a logical name
- Description (optional)
- Click the Add button as shown in this image.

Create Storage Profile

Name :	m.2_raid1				
Description :	Profile for m.2 ra	id1 storage			
LUNs					
Local LUN	s LUN Set	Controller Definitions	Security Policy		
▼ Advanced	Filter 🔶 Export	🖶 Print			₽
Name	Si	ze (GB)	Order	Fractional Size (MB)	
		No data	available		
		🕀 Add 💼	Delete 👩 Info		
				OK Cance	

? ×

In the Create Local LUN window:

- Select the Create Local LUN radio button
- Give the LUN a name (I used m.2)
- Set the Size to 1
- Set the Fractional Size 0
- Select if you would like to have the LUN auto-deploy (if you select no you have to manually enable the LUN on each service profile)
- Tick the Expand to Available box
- Select the previously made disk group configuration
- Click OK as shown in this image

UNs config hared amo	ng n Create Stor	age Profile	and can be dedicated to a ener	niño convor or	? ×
Ising Store	Name : m.2 Create Local L Name Size (GB) Fractional Size (MB) Auto Deploy Expand To Available Select Disk Group Config	raid1 UN Create Local LUN Prep : m.2 : 1 : 0 : ○ Auto Deploy ⊙ No : ☑ guration : <not set=""> ▼ <not set=""> Domain Policies m.2_raid1</not></not>	are Claim Local LUN [0-245760] Auto Deploy Create Disk Group Policy		
				OK Can	cel

Your Storage Profile must now look like this:

Create S	Storage Profile		? ×
Name : Description : LUNs	m.2_raid1 Profile for m.2 raid1 storage		
Local LUN	s LUN Set Controller Defi	nitions Security Policy	
▼ Advanced	Filter 🔶 Export 🚔 Print		\$
Name	Size (GB)	Order	Fractional Size (MB)
m.2	1	Not Applicable	0
	(\div)	Add 🛅 Delete 🚯 Info	
			OK Cancel

Click **OK** and you get a message that says the storage profile was successfully created. Push **OK** on that message to clear it.

3. Apply the Storage Profile

Navigate to **Servers > Service Profiles** and select your service profile. Click the **Storage** tab at the top of the service profile as shown in this image.

æ	All	Servers / Service Profiles / root / Service Pro	file m2_test	
•	✓ Servers	General Storage Network iSCSI v	NICs vMedia Policy Boot Order	Virtual Machines FC Zones
-	✓ Service Profiles	Storage Profiles Local Disk Configuration P	olicy vHBAs vHBA Initiator Groups	
몲	▼ root 🕚			
	 alfedeli-esxi-01 	Actions	Storage Profile Policy	
	▶ alfedeli-esxi-02	Modify Storage Profile	Name :	
	▶ alfedeli-esxi-03		Description :	
▣	▶ alfedeli-esxi-04		Storage Profile Instance :	
	 alfedeli-proxmox-01 			
	▶ m2_test ▶ 	Local LUNs LUN Set Controller Definit	ions Security Policy Faults	
	 Sub-Organizations 	🏹 Advanced Filter 🔺 Export 🖷 Print		
	 Service Profile Templates 	Name RAID Level	Size (MB)	Config State
20	▼ root 🕚			No data available
	 Service Template Standard 			
	 Sub-Organizations 			
	✓ Policies			
	🕶 root 🕔			
	 Adapter Policies 			
	 BIOS Defaults 			🕀 Add 🝈 Delete 👩 In
				Contra El ponoto (Con

Select the **Modify Storage Profile** link as shown in this image.

General Storage	Network ISCSI vNICs	vMedia Policy Bo	oot Order	Virtual Machines	FC Zones	Policies	Server Details	CIMC Sessions	FSM	VIF Paths	Faults	Events	
Storage Profiles Loc	al Disk Configuration Policy	vHBAs vHBA Init	tiator Groups										
Actions		Storage Profile Po	olicy										
Modify Storage Profile		Name	:										
		Description	:										
		Storage Profile Ins	stance :										
Local LUNs LUN Set	Controller Definitions	Security Policy Fa	aults										
Y Advanced Filter ↑ E	xport 🚔 Print												٥
Name	RAID Level	Size (MB)		Config St	tate	Dep	loy Name	LUN ID			Drive State		
				N	o data available								
Details					Delete								
Details Actions		LUN Details		⊕ Add	Delete	Info							
Details Actions Set LUN Name		LUN Details Profile LUN Nam	ne :	④ Add	Delete	Info	Order						
Details Actions Set LUN Name Rename Referenced LU	un	LUN Details Profile LUN Nam RAID Level	ne : :	⊕ Add	Delete	info	Order Size (MB)	: :					
Details Actions Set LUN Name Rename Referenced LU Set Online		LUN Detalls Profile LUN Nam RAID Level Configured Size	ne : ; (GB);	⊕ Add	Delete	Info	Order Size (MB) Admin State						
Details Actions Set LUN Name Rename Referenced LI Set Online Set Undeployed Claim Openand LUN	UN	LUN Details Profile LUN Nam RAID Level Configured Size Config State	ne : ; (GB): ;	⊕ Add	Delete G	Info	Order Size (MB) Admin State Bootable						
Details Actions Set LUN Name Rename Referenced LU Set Online Set Undeployed Claim Orphaned LUN	UN	LUN Details Profile LUN Nam RAID Level Configured Size Config State Deployed LUN D	ne : ; (GB): ; Details	Add (Delete ()	Info	Order Size (MB) Admin State Bootable						
Details Actions Set LUN Name Rename Referenced LU Set Online Set Undeployed Claim Orphaned LUN		LUN Details Profile LUN Nam RAID Level Configured Size Config State Deployed LUN D LUN New Name	ne : ; (GB): ; Dotalls ;	€ Add	Delete C	Info	Order Size (MB) Admin State Bootable Referenced LU	: : : N Name :					
Details Actions Set LUN Name Rename Referenced LU Set Online Set Undeployed Claim Orphaned LUN		LUN Details Profile LUN Nam RAID Level Configured Size Config State Deployed LUN D LUN New Name Deploy Name	ne : ; (GB): ; Dotails ;	€ Add	Delete C	Info	Order Size (MB) Admin State Bootable Referenced LU LUN ID	: : : N Name : :					
Details Actions Set LUN Name Rename Referenced LU Set Online Set Undeployed Claim Orphaned LUN	UN	LUN Details Profile LUN Nam RAID Level Configured Size Config State Deployed LUN D LUN New Name Deploy Name Drive State	ne : ; (GB): ; Details	€ Add	Delete ()	Info	Order Size (MB) Admin State Bootable Referenced LU LUN ID	: : : N Name : :					

In the Modify Storage Profile Window:

- Select the Storage Profile Policy tab
- In the Storage Profile dropdown, select the previously created profile as shown in this image



Your window must now look like this:

Modify Stora	age Profile		? ×
Specific Storage Pro	ofile Storage Profile Policy		
Storage Profile: m.2	?_raid1 ▼	Create Storage P	rofile
Name : m.2 Description : Pro LUNs	?_raid1 file for m.2 raid1 storage		
Local LUNs	LUN Set Controller Definitions	Security Policy	
Te Advanced Filte	er 🛉 Export 🚔 Print		
Name	Size (GB)	Order	Fractional Size (MB)
m.2	1	Not Applicable	0
			OK Cancel

General Storage Network iSCSI vNICs	vMedia Policy Boot Order	Virtual Machines FC Z	ones Policies Server Detail	s CIMC Sessions FSM	VIF Paths Faults Events	
Storage Profiles Local Disk Configuration Policy	vHBAs vHBA Initiator Groups	1				
Actions	Storage Profile Policy					
Modify Storage Profile	Name : m.2 Description : Pro Storage Profile Instance : org	2_raid1 offie for m.2 raid1 storage I-root/profile-m.2_raid1				
Local LUNs LUN Set Controller Definitions	Security Policy Faults					
Ty Advanced Filter ↑ Export ♣ Print						¢
Name RAID Level	Size (MB)	Config State	Deploy Name	LUN ID	Drive State	
m.2 RAID 1 Mirrored	0	Not Applied				
		🕀 Add 📋 Del	ete 🌒 Info			
Details		🕀 Add 🖄 Del	ete 🍈 Info			
Details Actions	LUN Details	① Add ① Del	iete 🕕 Info			
Details Actions Set LUN Name	LUN Details Profile LUN Name : m.2	⊕ Add	ete () Info Order	: Not Applicable		
Details Actions Set LUN Name Rename Referenced LUN Set Online	LUN Details Profile LUN Name : m.2 RAID Level : RAII	Add Def Def D D D I Mirrored	ete () Info Order Size (MB)	: Not Applicable : 0		
Details Actions Set LUN Name Rename Referenced LUN Set Online Set Undeployed	LUN Details Profile LUN Name : m.2 RAID Level : RAII Configured Size (GB) : 1	Add Del Control Del Del Del Del Del Del Del Del Del De	ete () Info Order Size (MB) Admin Sta	: Not Applicable : 0 te : Undeployed		
Details Actions Set LUN Name Rename Referenced LUN Set Online Set Undeployed Cialm Orphaned LUN	LUN Details Profile LUN Name : m.2 RAID Level : RAII Configured Size (GB) : 1 Config State : Not	Add Del Del	ete 1 info Order Size (MB) Admin Sta Bootable	: Not Applicable : 0 te : Undeployed : Disabled		
Details Actions Set LUN Name Rename Referenced LUN Set Online Set Undeployed Claim Orphaned LUN	LUN Details Profile LUN Name : m.2 RAID Level : RAII Configured Size (GB) : 1 Config State : Not Deployed LUN Details LUN New Name :	Add Del Del Trored Add Del	ete O Info Order Size (MB) Admin Sta Bootable Reference	: Not Applicable : 0 te : Undeployed : Disabled d LUN Name :		
Details Actions Set LUN Name Rename Referenced LUN Set Online Set Undeployed Claim Orphaned LUN	LUN Details Profile LUN Name : m.2 RAID Level : RAII Configured Size (GB) : 1 Config State : Not Deployed LUN Details LUN New Name : Deploy Name :	Add Det	ete info Crder Size (MB) Admin Sta Bootable Reference LUN ID	: Not Applicable : 0 te : Undeployed : Disabled d LUN Name : :		
Details Actions Set LUN Name Rename Referenced LUN Set Online Set Undeployed Claim Orphaned LUN	LUN Details Profile LUN Name : m.2 RAID Level : RAII Configured Size (GB) : 1 Config State : Not Deployed LUN Details LUN New Name : Deploy Name : Deploy Name : Drive State :	Add Delay	ete O Info Order Size (MB) Admin Sta Bootable Reference LUN ID	: Not Applicable : 0 te : Undeployed : Disabled d LUN Name : :		

Select **OK** on the window, and success window.

If auto-deploy is enabled or disabled, ensure the Local LUN is set to online. In order to set the LUN online, click the **Set Online** button as shown in this image.

General	Storage Network ISCSI vNICs	vMedia Policy Boot Order	Virtual Machines FC Zor	nes Policies S	Server Details	CIMC Sessions FSM	VIF Paths Faults Even	nts
Storage Profil	Local Disk Configuration Policy	vHBAs vHBA Initiator Group	S					
Actions		Storage Profile Policy						
Modify Storag	ge Profile	Name : m.	2_raid1					
		Storage Profile Instance : or	g-root/profile-m.2_raid1					
Local LUNs	LUN Set Controller Definitions	Security Policy Faults						
Te Advanced P	Filter 🔶 Export 🎂 Print							٥
Name	RAID Level	Size (MB)	Config State	Deploy	Name	LUN ID	Drive State	
m.2	RAID 1 Mirrored	0	Not Applied					
Detalls								
Actions		LUN Detalls						
Set LUN N	ame	Profile LUN Name : m.:	2		Order	: Not Applicable		
Rename Re		RAID Level : RA	ID 1 Mirrored		Size (MB)	: 0		
Set Undep		Configured Size (GB): 1			Admin State	: Undeployed		
Claim Orph	haned LUN	Config State : No	t Applied		Bootable	Disabled		
		LUN New Name :			Referenced LUN	Name :		
		Deploy Name :			LUN ID	:		
		Drive State :						
D	etalls							
	Actions							
	0-411 N N							
	Set LUN Name							
	Rename Refere	nced LUN						
Г								
	Set Online							
_	- · · · · ·							
	Set Undeployed	1						
	Claim Orphaneo	LUN						

The LUN can take a minute to initialize and come online.

Once the LUN is online, it shows an **Applied Config** state and the **Optimal Drive** state.

4. Verify The LUN.

Servers / Service Profiles / root / Service Profile m2_test

Under the **General** tab of the service profile, click the link for the **Associated Server** as shown in this image.

Servers / Service Profiles / root / Service Profile m2_test

General	Storage Network	iSCSI vNICs	vMedia Policy	Boot Order	Virtual Machines	FC Zones	Policies	Server Details	CIMC Sessions	FSM	VIF Paths	Faults	Events
Fault Sumn	nary			Properties									
8	•	^	0	Pending Ac	ctivities								
0	0	0	1	Reboot now									
				Pending Di	isruptions : default	Value							
Status				Pending Ct	hanges : operati	ional-policies							
Overall Sta	tus : OConfig			(+) Detai	ils								
(+) Statu	s Details			Name	: m2	2_test							
				User Label	:								
Actions				Description	: [
				Accet Tea									
				Asset Tag		cal							
Shutdown S	Server			Unique Ident	tifier : d8	1b94dc-8601-1	1e9-0000-00	000000001f					
Reset				UUID Pool	: alf	edell_prod							
KVM Conso	le >>			UUID Pool In	istance : org	g-root/uuid-pool-	-alfedeli_prod						
				Associated S	Server : sys	s/chassis-1/blade	9-6						
Rename Se	rvice Profile			Service Profi	ile Template :								
Create a Cl	one			Template Ins	stance :								
Create a Se	rvice Profile Template			Assign	ned Server or Se	erver Pool							
Disassociat	e Service Profile												
Change Ser	vice Profile Association			Hanag	gement IP Addre	SS							
				(O Malana	0.1								
Bind to a Te	mplate			(+) Mainte	enance Policy								
Reapply Co	nfiguration												
Change Ma	intenance Policy												
Set UUID S	nc Behavior												
Change UU	D												
Reset UUID													
Change Ma	nagement IP Address												
Modify vNIC	/vHBA Placement												
Start Fault S	Suppression												
Suppression	n Task Properties												
Delete													

Navigate to Inventory> Storage> LUNs.

Select the drop-down arrow to the left of **Storage Controller SATA 1**. You must see **Virtual Drive** [your drive profile name]

The drive must have auto-configured its size, and be in an **Operable**, **Equipped**, **and Bootable** state as shown in this image.

C General Inventory Virtual Machines Installed Firmware CIMC Sessions SEL Logs VIF Paths Health Diagnostics Faults Events	501
	F51/ 2
Motherboard CIMC CPUs GPUs Memory Adapters HBAs NICs iSCSI vNICs Security Storage Persistent Memory	
Controller LUNS Disks Security	
+ - Ty Advanced Filter 🔶 Export 🚔 Print	¢
Name Size (MB) Raid Type Config State Deploy Action Operability Presence Bootable	
Storage Controller PCH 1	
Storage Controller SAS 1	
Ftorage Controller SATA 1	
Virtual Drive m.2 228872 RAID 1 Mirrored Applied No Action Operable Equipped True	
OK Apply Cancel (Help

5. Set the Boot Order to boot off the m.2 arrays.

In the service profile, select the **Boot Order** tab as shown in this image.

General	Storage	Network	iSCSI vNICs	vMedia Poli	cy I	Boot Order	Virtual Machines	FC Zones
Storage Prof	iles Loo	al Disk Conf	iguration Policy	vHBAs	vHBA In	nitiator Groups	5	
Actions				Storage I	Profile P	Policy		
Modify Stora	ge Profile			Name		: m.	2_raid1	
				Descripti	on	: Pro	ofile for m.2 raid1 sto	orage
				Storage	Profile Ir	nstance : org	g-root/profile-m.2_rai	id1
Local LUNs	LUN Se	t Contro	ller Definitions	Security Poli	cy I	Faults		
Te Advanced	Filter 🔶 E	xport 🛛 🚔 Pr	int					
NI		DA		0	ize (MB	0	Config St	ate

Set your boot policy to use **Uefi.** After your install media (if any), select the **Add Local Disk** option. Here is an example that the Boot Policy might not match exactly:

Modify Boot Policy

 Local Devices 	Boot Order	r Change i 🗐								
	Enforce vNIC/vHBA//S	SCSI Name :								
	Boot Mode	: 6	Legacy 🔍 L	efi						
	Poot Socurity									
	WARNINGS:									
	The type (primary/second The effective order of the type of type of the type of type o	ondary) does not boot devices with	indicate a bo	t order p evice cla	presence. ass (LAN/Stor:	ace/iSCSI)	is determined	i by PCle bu	is scan orde	r.
	If Enforce vAllChillBA	ISCSI Name is s	elected and t	e vNIC/	/HBA/ISCSI do	pes not exi	st, a config er	ror will be re	eported.	
	If it is not selected, the	WICe/vUDAe ar	a calacted if t	ou oviet	othonwice the		2A with the lea	weet DCla b	ue econ ord	or ie ueod
	If it is not selected, the	VNICs/vHBAs ar	e selected if t	ney exist	, otherwise th	∋ vNIC/vHE	3A with the lo	west PCle b	us scan ord	er is used.
Add External USB Add Embedded Local LUN Add Embedded Local Disk	If it is not selected, the + - Ty Advanced	VNICs/vHBAs ar	t e selected if t	ney exist	, otherwise the		Slot Nu	Poot N	Poot Da	er is used.
Add External USB Add Embedded Local LUN Add Embedded Local Disk dd CD/DVD	If it is not selected, the + - Ty Advanced Name	d Filter 🔶 Expor	e selected if t t e Print vNIC/v	ney exist	, otherwise the	e vNIC/vHE	Slot Nu	Boot N	us scan ord Boot Pa	er is used.
Add External USB Add Embedded Local LUN Add Embedded Local Disk dd CD/DVD Add Local CD/DVD	If it is not selected, the + - T _e Advanced Name CD/DVD	d Filter 🔶 Expor	e selected if t t Print vNIC/v	ney exist Type	, otherwise the	e vNIC/vHE	Slot Nu	Boot N	Boot Pa	er is used.
Add External USB Add Embedded Local LUN Add Embedded Local Disk dd CD/DVD Add Local CD/DVD Add Remote CD/DVD	If it is not selected, the + - T _e Advanced Name CD/DVD Local Disk	VNICs/vHBAs ar d Filter ♠ Expor Order ▲ 1 2	e selected if t t Print vNIC/v	ney exist Type	, otherwise the	e vNIC/vH	Slot Nu	Boot N	Boot Pa	er is used.
Add External USB Add Embedded Local LUN Add Embedded Local Disk dd CD/DVD Add Local CD/DVD Add Remote CD/DVD dd Floppy	If it is not selected, the + - Tr Advanced Name CD/DVD Local Disk	I Filter A Expor	e selected if t t	ney exist, Type	, otherwise th	www	Slot Nu	Boot N	Boot Pa	er is used.
Add External USB Add Embedded Local LUN Add Embedded Local Disk dd CD/DVD Add Local CD/DVD Add Remote CD/DVD dd Floppy Add Local Floppy	If it is not selected, the + - T _e Advanced Name CD/DVD Local Disk	VNICS/VHBAs ar I Filter	e selected if t t Print vNIC/v	rype	, otherwise th	WWN	Slot Nu	Boot N	Boot Pa	er is used.
Add External USB Add Embedded Local LUN Add Embedded Local Disk dd CD/DVD Add Local CD/DVD Add Remote CD/DVD dd Floppy Add Local Floppy Add Remote Floppy	If it is not selected, the + - T _e Advanced Name CD/DVD Local Disk	VNICs/VHBAs ar d Filter	e selected if t t Print vNIC/v	Type	, otherwise th	WWN	Slot Nu	Boot N	Boot Pa	er is used.
Add External USB Add Embedded Local LUN Add Embedded Local Disk Add CD/DVD Add Local CD/DVD Add Remote CD/DVD Add Floppy Add Local Floppy Add Remote Floppy add Remote Virtual Drive	If it is not selected, the + - T _e Advanced Name CD/DVD Local Disk	VNICs/VHBAs ar I Filter	e selected if t t Print vNIC/v	Type	, otherwise th	www	Slot Nu	Boot N	Boot Pa	er is used.

You can need to reboot the host for the configs to apply. This changes the **Bootable** field from **Disabled to Enabled** in the Storage Profile.

Verify

Check Inventory > Storage > LUN > Config State is Applied

Troubleshoot

This section provides information you can use in order to troubleshoot your configuration.

When an orphaned LUN is found, select the LUN and **Delete** it. This removes any and all data that exists on the array as shown in this image.

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cisco. UCS Manager

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• **6 9 9 0** © ©

All + Equipment • Chassis • Chassis 1 🦁 Fans IO Modules PSUs · Servers Server 2 Server 3 Server 4 Server 4
Server 5
Server 6
Server 7 Rack-Mounts

Enclosures FEX Servers + Fabric Interconnects

· Policies

Al v						
Equipment	General Inventory Virtual Machines Installe	d Firmware CIMC Sessions	SEL Logs VIF Paths Healt	th Diagnostics Faults Events	FSM Statistics	Temperatures Power
▼ Chassis	Motherboard CIMC CPUs GPUs Mem	ory Adapters HBAs NIC	s ISCSI vNICs Security	Storage Persistent Memory		
🕶 Chassis 1 👽	Controller 1184e Dieke Society					
 Fans 	Controller Conto Disko Security					
 IO Modules 	+ - Ty Advanced Filter + Export - Print					¢
 PSUs 	Name Size (MB)	 Raid Type 	Config State De	ploy Action Operability	Presence	Bootable
▼ Servers	Storage Controller PCH 1					
 Server 2 	Storage Controller SAS 1					
 Server 3 	Storage Controller SATA 1					
 Server 4 	Virtual Drive m.2 228872	RAID 1 Mirrored	Ornhaned	Action Operable	Equipped	True
 Server 5 	THE STOCK	1000 1 10100			robableen	
🔸 Server 6 🛛 😨						
 Server 7 😗 	Actions	Properties				
 Rack-Mounts 	-					
Enclosures	Rename	Virtual Drive Name	: m.2	Size (MB)	228872	
FEX	Cal Transad Davids	Туре	: RAID 1 Mirrored	Block Size	: 512	
 Servers 		Available Size on Disk Group (M	B) : O	Number of Blocks	468729856	
 Fabric Interconnects 		ID	: 1000	Drive Security	: No	
 Fabric Interconnect A (primary) 😗 		Oper Device ID	: 0	Drive State	Optimal	
 Fabric Interconnect B (subordinate) 🦁 	Secure Virtual Drive	Strip Size (KB)	: 64	Access Policy	: Read Write	
 Policies 		Read Policy	Normal	Actual Write Cache Policy	Write Through	
Port Auto-Discovery Policy		IO Policy	Direct	Configured Write Cache P	olicu: Write Through	
		io Folicy	- Direct	Configured white Cache P		
		States	: True	Drive Cache	: No Change	
		Operability	Operable	Oper Qualifier Reason	: N/A	

Config State	Orphaned	Deploy A	Action : No Action	
Storage				
Profile Name				
Assigned To Server				
Service Profile				
Available Size On Disk Grou	up (MB) : 0			
Drive Members				
Slot ID	Role	Presence	Span ID	Operability Qualifier Reason
253	Normal	Equipped	Unspecified	N/A
254	Normal	Equipped	Unspecified	N/A