# **Configure Boot from Local Storage in Intersight Manage Mode (IMM)**

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## Introduction

This document describes the configuration to boot from local storage with MRAID/HDD and M.2 Controller on Intersight Managed Mode (IMM) servers.

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# Prerequisites

### Requirements

Cisco recommends knowledge of these topics:

- Intersight
- Local Boot
- Local Storage Devices (HDD/SSD and M.2 Drives)
- Knowledge of Redundant Array of Independent Disks (RAID) configuration

#### **Components used**

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

- Cisco UCS 6454 Fabric Interconnect, firmware 4.2(1e)
- UCSB-B200-M5 blade server, firmware 4.2(1a)
- Intersight software as a service (SaaS)
- Storage Controllers MRAID, MSTOR-RAID

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

### Local Storage MRAID - HDD

Step 1. Identify the controller installed in the Server and slot ID.

Navigate to Servers > [server name] > Inventory > Storage Controllers. Take note of the ID.

≡	cisco Intersight	OPERATE > Servers > UCS-AS-MOC	P25-02-8-1-1	🗋 🗖 330 🔺 349	ß	<b>ç</b> \$ 34	٩	<b>©</b> Ø	Javier GarcÃa 🗕	
<u>01o</u>		General Inventory HCL Statistics								Actions v
	OPERATE ^		Controller 1 (SAS)							
	Servers Chassis	Motherboard Boot	General Physical Drives Virtual Drives							
	Fabric Interconnects	Management Controller  CPUs	Management Controller Configuration CPUs							
		Memory		24.12.1-0451 6.30.03.3 NA	Controller ID					
	HyperFlex Clusters	Network Adapters		6.30.03.3_4.17.08.00_0xC6130204	ID .					FMEZZ1-SAS
		PCIe Devices							RAIDO, RAID1, R	AID5, RAID6, RAID10
	Integrated Systems	storage Controllers								
×		Controller 1 (SAS)								LSV2031020Z
-		Controller 1 (PCH)								UCSB-MRAID12G-HE
φ	ADMIN									Cisco Systems Inc
	Targets									
	Software Repository									

#### Step 2. Create Boot Order Policy:

Navigate to Policies > Create Policy > UCS Server > Boot Order

=	cisco Intersight	CONFI	GURE > Policies			🗘 🖪 330 🔺 349 🕼 🗣	34 Q, O Javier	GarcÃa 🚨			
<u>00</u> 9							Creat	e Policy			
Ŷ		* 4	I Policies (a) +								
		0	Add Filter								
	Chassis Fabric Interconnects	Plat	lorm Type Usage								
		UC	S Server 116 UCS Chassis 9 S Domain 32 HyperFlex Cluster 1	• Used 77 • Not Used 56							
	HyperFlex Clusters			First and Terry							
	Integrated Systems		Name .	Platform Lype	Type	2 G	Last update .				
×	CONFIGURE ^			UCS Server	SAN Connectivity	و) د ۱ ه	Aus 10, 2022 3:53 PM				
	Orchestration			UCS Server	LAN Connectivity	16	Jul 22, 2022 12:35 PM				
				UCS Server	BIOS	12 ରି	Jul 21, 2022 11:05 AM				
	Templates			UCS Server, UCS Chassis	MC Access	4 6	Jul 21, 2022 11:05 AM				
	Policies			UCS Server	Virtual Media	16 ਫ਼ਿ	Jul 21, 2022 11:05 AM				
				II''' Canar II'''' Charrie	Druser	4 6	bd 21 2022 11 05 AM				
Ţ	ADMIN ^			II's Server	I AN Connectivity	4 कि	Jul 21 2022 11:05 AM				
				1999 Sanuar	Rost Order	10	64 21 2022 11 05 AM				
						, (j					
	Software Repository			ULS SERVER	CAR Connectivity	۵۱ ۱۵	JUI 21, 2022 10.59 AM				
				UCS Server, UCS Chassin	IMC Access	3 (6	Jul 20, 2022 1:22 PM				

Select UCS server and Boot order

	Select Policy Type	
Filters	Q Search	
PLATFORM TYPE	Adapter Configuration	iSCSI Static Target
	O BIOS	LAN Connectivity
UCS Server	🔶 🧿 Boot Order	
UCS Domain	Certificate Management	C Local User
UCS Chassis	O Device Connector	Network Connectivity
HyperFlex Cluster	C Ethernet Adapter	○ NTP
Kubernetes Cluster	C Ethernet Network	Persistent Memory
	Ethernet Network Control	O Power
	Ethernet Network Group	SAN Connectivity

#### Configure Policy Organization, Name, and Description.

Add local Disk boot option, select Legacy Or Unified Extensible Firmware Interface (UEFI).

=	cisco Intersight		Order > Create				🗘 🔳 330 🔺 349		<b>q</b> \$ 34			
<u>010</u>		🚈 Progress				Step 2						
ø		(1) General			E Correction	Policy Details Add policy details						
	Servers	Policy Details			. ಆಗ್ಟಿ							
	Eabric Interconnects					All Platform	ucs Server (Standa)			Attached)		
	Networking			Configured Boot Mode ©								
	HyperFlex Clusters			Cegacy O United E	idensible Firmware Interface (	JEH)						
	Integrated Systems			Enable Secure Boot								
×	CONFIGURE ^			Add Boot Device								
				ISCSI Boot			•	Enabled	0 ^			
				Local Disk				Enabled	<b>1</b> 0 ^			
	Templates			NVMe								
	Policies			PCH Storage								
Ð	ADMIN O			PXE Boot								
-	Targets			SD Card								
				UEFI Shell								
	Software Repository			USB								

Configure the Device Details:

- Device Name is the name for reference on the Policy.
- Slot is the ID saved from Step 1.
- Bootloader fields (optional).

		Enabled	Î ~ ~
	Slot		
0	FMEZZ1-SAS		0
	Bootloader Description		
		Slot • FMEZZ1-SAS • Bootloader Description	Enabled     Slot     FMEZZ1-SAS     Bootloader Description

Add Virtual Media option to install the .iso image.

			Step 2 <b>Policy</b> Add policy	<b>Detail</b> cy details	S						
				7	All Platforms	UCS Server	r (Standale	one)   l	JCS Serve	er (FI-At	tached)
c	onfigured Boot Mode 💿										
	🔵 Legacy 🧿 Unified E	xtensible Firmware Interface (l	JEFI)								
	Enable Secure Boot										
	Add Boot Device   ~										
	iSCSI Boot							Enabled	l m		
	Local CDD	)						Enabled			
	Local Disk							Enabled	1		
	NVMe							Enabled	ារាំ	^	
	PCH Storage										
	PXE Boot										
	SAN Boot										
	SD Card										
	UEFI Shell										
	USB										
	Virtual Media										

Configure Device Name and Type.

	Step 2 Policy Details Add policy details	
	All Platforms UCS Server (Standalone) UCS Server	(FI-Attached)
Configured Boot Mode 🕕		
C Legacy 💿 Unified Extensible Firmware Interface (U	EFI)	
Enable Secure Boot ①		
Add Boot Device		
— Virtual Media (DVD)	C Enabled	~ ~
Device Name * DVD	0	
	Sub-Type	
	KVM MAPPED DVD	~ <u>0</u>

Step 3. Create Storage Policy

Name the Storge Policy and enable the MRAID/RAID Controller Configuration.

# Select Policy Type

Filters	Q Search	
PLATFORM TYPE	<ul> <li>Boot Order</li> </ul>	
) All	Certificate Management	🔘 Local User
UCS Server	O Device Connector	Network Connectivity
O UCS Domain	Ethernet Adapter	
UCS Chassis	Ethernet Network	O Persistent Memory
HyperFlex Cluster	Ethernet Network Control	O Power
C Kubernetes Cluster	C Ethernet Network Group	SAN Connectivity
	C Ethernet QoS	O SD Card
	C FC Zone	O Serial Over LAN
	Fibre Channel Adapter	⊖ smtp
	Fibre Channel Network	
	Fibre Channel QoS	⊖ ssh
	O IMC Access	Storage
	O IPMI Over LAN	◯ Syslog
	iSCSI Adapter	Virtual KVM
	iSCSI Boot	Virtual Media

### Configure Drive Group and Virtual Drive.

MRAID,	/RAID Controller Configuration	on			C Ena
Global	Hot Spares				
Add	Drive Group				
			0 items found	10 ∨ per page	] 0 of 0 > 河 🕴 鑬
	Drive Group Name	RAID Level	Number of Spans	Dedicated Hot Spares	Drive Array Spans
	Drive Group Name	RAID Level	Number of Spans	Dedicated Hot Spares	Drive Array Spans

**Note**: To avoid the addition of a virtual drive, use single drive RAID0 creation.

Step 4. Deploy Server profile.

=	dialia cisco Intersight		CONFI	GURE > Profiles			۹ ا	3 330 🛆 349 🛛 🖓 📢 34	Q 🔕 💿 Jawier Ga	arcĂa 🕰
<u>01o</u>					les UCS Domain Profiles UCS Serve	er Profiles			Create UCS Server	Profile
ø										
			* A	IUCS Server Profiles 🐵 🕂						
	Chassis			Add Filter					16 ✓ perpage K < 1 of 3	N
					Status :	Target Platform			Last Update :	
					Not Assigned	UCS Server (Standalone)			Aug 16, 2022 11:46 AM	
	Networking HyperFlex Clusters				A Not Deployed	UCS Server (Standalone)			Aug 15, 2022 6:29 PM	
						UCS Server (FI-Attached)			Aug 12, 2022 6:06 PM	
	Integrated Systems				© OK	UCS Server (FI-Attached)			Aug 12, 2022 4:22 PM	
×	CONFIGURE	•								
	Orchestration				Not Assigned	UCS Server (H-Attached)			Aug 10, 2022 4:26 PM	
	Profiles				Not Assigned	UCS Server (FI-Attached)			Aug 9, 2022 12:37 PM	
	Templater				Not Assigned	UCS Server (Standalone)			Aug 2, 2022 11:51 PM	
	Delicies				Not Assigned	UCS Server (FI-Attached)			Jul 21, 2022 11:13 AM	
	Policies				Not Assigned	UCS Server (FI-Attached)			Jul 21, 2022 11:05 AM	
-	Pools				Not Assigned	UCS Server (FI-Attached)			Jul 21, 2022 11:01 AM	
(ĝ)	ADMIN				Not Assigned	UCS Server (Standalone)			Jul 21, 2022 10:57 AM	
				UCSX-Server1-HWRAID	E Not Assigned	UCS Server (FI-Attached)			Jul 20, 2022 11:13 AM	

Step 4.1 Apply the created policies.

CONFIGURE > Create UCS Server Profile		🗘 🖬 330 🔺 349 📝	<b>द</b> ्य ३४ २, 💿	ා Javier GarcĂa යු
😑 Progress			Select Boot Order	
Ch. General	ξÕ <b>e</b>	Compute Configuration	Policies 13	Create New
	~~~ <u>~</u> ~?>			
2 Server Assignment			M2-HWRAID-Boot	Ð
3 Compute Configuration			27-boot-order-policy	۲
4 Management Configuration			BootfromSAN	۲
5 Storage Configuration			UCSC-boot-order-policy	۵
I			Boot-testing	۵
6 Network Configuration			M2-HWRAID-Booting	Ð
7 Summary			fil test	0
			A LocalPort	
				-
			M2-HWRAID	•
			MM-Boot-policy	¢
			iscsi-boot-daniel	®
			ISCSI-BootPolicy-SV	۲
			i test-BOOT-Jaz	۲

**Note**: Other policies can be added if required. This article explains only the policies required to boot from local storage. Other policies can be added if required.

Step 5. Install the OS through the KVM.



#### Local Storage M.2 Controller

Step 1. Identify the controller installed in the Server and slot ID.

Navigate to Servers > [server name] > Inventory > Storage Controllers. Take note of the ID.

≡	cisco Intersight	OPERATE > Servers > UCS-TS-MXC-	P25-Was-M6-64108-1-1		ل 🖬 369 🔺 348	<b>9</b> \$ 34		
<u>elo</u>		General Inventory UCS Server Profile						Actions
0	OPERATE ^		Controller 2 (M.2-Hwraid)					
	Servers	Motherboard	General Physical Drives Virtual Drives					
	Chassis	Boot						
		Management Controller	Configuration		Hardware			
		CPOs     Memory						
	HonerFlag Chasters	Network Adapters		1.1.17.1002				MSTOR-RAID
		Storage Controllers						RAID1
	Integrated Systems	Controller 1 (Raid)						
×		Controller 2 (M.2-Hwraid)						FCH24427GFL
	Orchestration	1 Pan			Model			UCS-M2-HWRAID
								Cisco Systems Inc
	Templates							

Step 2. Create Boot Order Policy:

Navigate to Policies > Create Policy > UCS Server > Boot Order

(Configure Policy, Organization, Name, and Description).

Add local Disk boot option, select Legacy or Unified Extensible Firmware Interface (UEFI).

Device Name is the name for reference on the Policy.

Slot is the ID saved from Step 1.

Botloader fields (optional).

Add Virtual Media option to install the .iso image.

Step 3. Create Storge Policy

Name the Storge Policy and enable the M.2 RAID Controller Configuration.

All Platforms       UCS Server (Standalone)       UCS Server (FI-Attached)         General Configuration       Image: Configuration       Image: Configuration         Image: Ima
General Configuration         Image: Configuration         Unused Disks State         No Change       Image
● Use JBOD drives for Virtual Drive creation ③ Unused Disks State No Change
M.2 RAID Configuration Enable
Slot of the M.2 RAID controller for virtual drive creation MSTOR-RAID-1,MSTOR-RAID-2 v 0
MRAID/RAID Controller Configuration Enable
MRAID/RAID Single Drive RAID0 Configuration Enable

#### Step 4. Deploy Server profile

**Note**: This article explains only the policies required to boot from local storage. Other policies can be added if required.

Step 4.1 Apply the created policies.

Step 5. Install the OS through the KVM.

## Verify

Use this section in order to confirm that your configuration works properly.

Launch the vKVM-Mapped vDVD.



Verify **RAID** is displayed through OS installation.

Select a Disk to (any existing VMFS-3 will be au = Contains a VMFS partition # Claimed by VMware vSAM	Install or Upgrade itomatically upgraded to VMFS-5)		
Storage Device	Capacity		
Local: AA cisco vo (cio./ Renote: (none)	NIACISCO_VO) 223.51/GIR		
l (Esc) Cancel (F1) Details	(P5) Refresh (Enter) Continue		
		¢.	