# Instalação do RHEL em um servidor UCS C240 M5 autônomo.

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### Introduction

Este artigo descreve o procedimento para instalar o RHEL na configuração RAID local em um servidor UCSC C240 M5 autônomo.

### Configuração usada

UCSC-C240-M5L Controladora RAID: HBA SAS Cisco 12G (UCSC-SAS-M5) HDDs do setor 4K CIMC: 3.1(3 bis) OS: RHEL 7.3

### Prerequisites

1. Baixe o ISO do RHEL e o ISO do controlador:

RHEL: rhel-server-7.3-x86\_64-boot.iso

ISO do driver: ucs-cxxx-drivers-linux.3.1.3.iso

(No ISO, navegue para Storage -> LS -> UCSC-SAS-M5 -> RHEL -> RHEL7.3 -> mpt3sas-23.00.00.00\_el7.3-1.x86\_64.iso.gz )

2. Se você extrair o arquivo mpt3sas-23.00.00.00\_el7.3-1.x86\_64.iso.gz, você obterá o driver ISO -> mpt3sas-23.00.00.00\_el7.3-1.x86\_64.iso

3. Da mesma forma, se estiver usando um controlador UCSC-RAID-M5 em seu servidor, você poderá navegar até o driver correspondente.

#### Procedimento

Etapa 1. Como o servidor tem drives de setor de 4k, realizaremos uma inicialização UEFI. O pedido de inicialização deve ser semelhante a:

😕 📲 Cisco Integrated Management Controller		🐥 🔽 admir C240-WZP21510DCJ 🏟
n / Compute / BIOS ★		Refresh   Host Power   Launch KVM   Ping   CIMC Reboot   Locator LED   🚱 🕕
BIOS Remote Management Troubleshooting Power Policies	PID Catalog	
Enter BIOS Setup   Clear BIOS CMOS   Restore Manufacturing Custom Settings   Res	store Defaults	
Configure BIOS Configure Root Order Configure BIOS Profile		
Configure BIOS Configure BIOS Prome		
Running Version     C240M5.3.1.3d.0.0312180914       UEFI Secure Boot     UEFi       Actual Boot Mode     UEFi       Configured Boot Order Source     CIMC       Configured One time boot device     Save Chan	▼ ▼ ges	
<ul> <li>✓ Configured Boot Devices</li> <li>Basic</li> <li>✓ ✓ Advanced</li> <li>localCD</li> <li>UEFI</li> </ul>	Actual Boot Devices UEFI: Bull-In EFI Shell (UEFI) UEFI: PXE IP4 Intel(R) Ethernet Controller X550 (NonPolicyTarget) UEFI: PXE IP4 Intel(R) Ethernet Controller X550 (NonPolicyTarget) UEFI: Cisco vKVM-Mapped vDVD1.24 (NonPolicyTarget)	

Etapa 2. Abra o KVM e mapeie o ISO do RHEL:

🗯 Cisco Virtual KVM Console	File View	Macros	Tools	Power	Boot Device	Virtual Media	Help	🤅 🖇 🗞 💿 🖉 🖬 🕹 🛊
• • •						Create Imag	je	
						Activate Virt	tual Devices	
						rhel-server- Map Remov Map Floppy	7.3-x86_64-boot.iso Mapped to CD/DVD able Disk 	
						PI	lease select boot device:	
						UEFI: Built-: UEFI: PXE IP4 UEFI: PXE IP4 UEFI: Cisco V Enter Setup	in EFI Shell 4 Intel(R) Ethernet Controller 4 Intel(R) Ethernet Controller vKVM-Mapped vDVD1.24	x550 x550
						t EN ES	and ↓ to move selection TER to select boot device SC to boot using defaults	

Etapa 3. Pressione F6 e inicialize a partir da UEFI: vDVD1.24 mapeado para Cisco vKVM

Etapa 4.Selecione a opção "Install Red Hat Enterprise Linux 7.3" (Instalar o Red Hat Enterprise Linux 7.3) e pressione "e"



Etapa 5. Você verá a tela abaixo:



Etapa 6. Digite o comando "linux dd" e faça uma ação Ctrl + x



Passo 7. O comando acima iniciará o modo Interativo:



Etapa 8. Desmapeie o ISO do RHEL e mapeie o ISO do driver da controladora:

🔹 Cisco Virtual KVM Console	File View Macros Tools Power Boot Device	Virtual Media Help	🔀 🚰 🥥 🕙 验 💫 🖇 奈 🕪 38% 🗈 🛛 Mon 17 Dec 11:19
• • •		Create Image	
		✓ Activate Virtual Devices	
		✓ mpt3sas-23.00.00.00_el7.3-1.x86_64.iso Mapped to CD/DVD Map Removable Disk Map Elenov	
L	18.162151J 18042: Can't read CIK wh		
L F	OK I Started Show rightuth boot Stro		
r	OK 1 Reached target Basic Sustem		
ŕ	OK 1 Started Deuice-Manner Multinat	h Deuice Controller.	
	Starting Open-iSCSI		
ſ	OK ] Started Open-iSCSI.		
	Starting dracut initgueue hook		
ſ	22.7502541 nouveau 0000:60:00.0: pr	iv: HUB0: 10ecc0 ffffffff (1e40822c)	
I I	22.8240431 nouveau 0000:60:00.0: DR	M: Pointer to TMDS table invalid	
Ľ	22.824060] nouveau 0000:60:00.0: DR	M: Pointer to flat panel table invalid	
C C	23.3998721 nouveau 0000:61:00.0: pr	iu: HUBO: 10ecc0 ffffffff (1a40822c)	
L.	23.4630121 nouveau 0000:61:00.0: DR	M: Pointer to TMDS table invalid	
L	23.463029J nouveau 0000:61:00.0: DK	T: Pointer to flat panel table invalid	
	24.0375981 nouveau 0000:62:00.0; pr	N: Rointen to TMDS table invalid	
	24 1013031 nouveau 0000.02.00.0. DR	M: Pointer to flat papel table invalid	
L L	24 6768501 nouveau 0000.02.00.0. ph	iu: HIBA: 10ecco ffffffff (1c40822c)	
ŗ	24.7408811 nouveau 0000:63:00.0: DR	M: Pointer to TMDS table invalid	
i i	24.7408971 nouveau 0000:63:00.0: DR	M: Pointer to flat panel table invalid	
C C	OK ] Created slice system-driver\x2	dupdates.slice.	
	Starting Driver Update Disk UI	on tty1	
I	OK ] Started Show Plymouth Boot Scr	een.	
ſ	OK ] Reached target Paths.		
[	OK ] Reached target Basic System.		
l l	OK ] Started Device-Mapper Multipat	h Device Controller.	
r	Starting Upen-ISCSI		
L	UK J Started Upen-ISCSI.		
r	OK 1 Created slice sustem-driversy2	dundates slice	
L	Starting Driver Undate Disk III	on tul	
D	D: starting interactive mode	on vigari i	
0	Page 1 of 1) Driver disk device select	ion	
	✓DEVICE TYPE LABEL	UUID	
	1) sda1 ufat ESXi	591C-E3E2	
	2) sda2 ufat		
	3) Sda3 VMFS_VOI	5aabe18a-304835ba-1711-4c77bd99be2e	
	$\frac{41}{50a5}  \text{Utat}$	4060-A20D	
	5) sdag ufat	4060-4208	
	7) sra isa9660 $BHEL = 7.3 \times 20 \times 86.64$	4 2016-10-19-17-41-40-00	
#	to select, 'r'-refresh, or 'c'-contin		

Etapa 9. Digite "r" para atualizar a lista de discos de driver:

	LIC AICM	Macios Iouis Fower Boor De	vice virtuarivieura rielp		
• • •				- KVM Console	
[	OK ] Sta	rted Open-iSCSI.			
	Sta	rting dracut initgueue h	ook		
ſ	22.75025	1] nouveau 0000:60:00.0:	priv: HUBO: 10ecc0 ffff	ffff (1e40822c)	
I	22.82404	3] nouveau 0000:60:00.0:	DRM: Pointer to TMDS tal	ble invalid	
r	22.82406	1 nouveau 0000:60:00.0:	DRM: Pointer to flat nam	nel table invalid	
r	23 39987	21 nouveau 0000:61:00 0:	nriu: HUBA: 10ecco ffff	ffff(1a40822c)	
r	23 46301	21 nouveau 0000:01:00.01	DRM: Pointer to TMDS tal	hle invalid	
L r	22 46202	1 nouveau 0000:61:00.0:	DPM: Pointen to flat nay	nel table invalid	
L 7	24 02759		mini HIPO: 10000 fff		
L .	24 10120	31  nouveau  0000.62.00.01	DPM: Pointon to TMDS tol	liii (1040022C)	
L	24 10130		DRM: Pointer to INDS tal	ble invalla	
L	24.10140	J nouveau 0000:62:00.0:	UKH: Fointer to flat par		
L	24.67685	JI nouveau 0000:53:00.0:	priu: HUBU: 10ecc0 ffff	ffff (1c408ZZc)	
L	24.74088	LI nouveau 0000:63:00.0:	DRM: Pointer to IMDS tal	ble invalid	
L L	24.74089	71 nouveau 0000:63:00.0:	DRM: Pointer to flat par	nel table invalid	
l l	OK J Cre	ated slice system-driver	xZdupdates.slice.		
	Sta	rting Driver Update Disk	UI on tty1		
ſ	OK ] Sta	rted Show Plymouth Boot S	Screen.		
[	OK ] Rea	ched target Paths.			
[	OK ] Rea	ched target Basic System			
[	OK 1 Sta	rted Device-Mapper Multi	path Device Controller.		
	Sta	ting Open-iSCSI			
ſ	OK ] Sta	rted Open-iSCSI.			
	Sta	rting dracut initgueue h	ook		
ſ	OK 1 Cre	ted slice sustem-driver	x2dupdates.slice.		
-	Sta	rting Driver Undate Disk	UI on ttu1		
ממ	: starting	interactive mode	or on org		
<u></u>	. starting	Interactive note			
(P	are 1 of 1	) Driver disk device sel	ection		
	ADDELLICE	TVPF IARFI			
1	) sda1		591C_F3F2		
2	) suar	ufat Loni	4060_62D4		
2	) saaz	UMES upl	Fas6a194_20492Eba	1711_4-7764996-2-	
3	) sdas	VHFS_001	5ddbe18d-304835ba	-1/11-40//60336626	
4	J Sda5	Ufat	4UBU-HZUH		
5	J Sdab	Ufat	ACPC-HSCD		
Ь	J Sda8	ufat	4060-8208		
7	) sr0	iso9660 RHEL-7.3\x20x8	5_64 2016-10-19-17-41-4	40-00	
# '	to select,	'r'-refresh, or 'c'-com	tinue: r		
(P.	age 1 of 1	) Driver disk device sel	ection		
	✓DEVICE	TYPE LABEL	UUID		
1	) sda1	ufat ESXi	591C-E3E2		
2	) sda2	ufat	4C6C-A2D4		
3	) sda3	VMFS_vol	5aa6e18d-304835ba	-1711-4c776d996e2e	
4	) sda5	ufat	4C6C-A2CA		
5	) sda6	ufat	4C6C-A2CD		
6	) sda8	ufat	4C6C-A2C8		
7	) sr0	iso9660 CDROM	2017-05-26-05-44-0	09–00	
	to select.	'r'-refresh, or 'c'-com	timue:		

Etapa 10. Agora você verá a lista ISO do driver da controladora. Digite "7" e faça a seleção:

	8 - KVM Console
[ 23.463012] nouveau 0000:61:00.0: DRM	I: Pointer to TMDS table invalid
[ 23.463029] nouveau 0000:61:00.0: DRM	I: Pointer to flat panel table invalid
[ 24.037598] nouveau 0000:62:00.0: pri	u: HUB0: 10ecc0 ffffffff (1d40822c)
[ 24.101383] nouveau 0000:62:00.0: DRM	I: Pointer to TMDS table invalid
[ 24.101400] nouveau 0000:62:00.0: DRM	: Pointer to flat panel table invalid
[ 24.676850] nouveau 0000:63:00.0: pri	u: HUB0: 10ecc0 ffffffff (1c40822c)
[ 24.740881] nouveau 0000:63:00.0: DRM	I: Pointer to TMDS table invalid
[ 24.740897] nouveau 0000:63:00.0: DRM	I: Pointer to flat panel table invalid
[ OK ] Created slice system-driver\x2d	updates.slice.
Starting Driver Update Disk UI	on tty1
[ OK ] Started Show Plymouth Boot Scre	en.
[ OK ] Reached target Paths.	
[ OK ] Reached target Basic System.	
[ OK ] Started Device-Mapper Multipath	Device Controller.
Starting Open-iSCSI	
[ OK ] Started Open-iSCSI.	
Starting dracut initqueue hook.	
[ OK ] Created slice system-driver\x2d	updates.slice.
Starting Driver Update Disk UI	on tty1
DD: starting interactive mode	
(Page 1 of 1) Driver disk device selection	on
1) sda1 ufat FSYi	591C-F3F2
$\frac{17}{3} \text{ sda1}  \text{orac}  \text{Low1}$	4666-4204
3) sda3 UMFS unl	5aa6e18d-304835ba-1711-4c776d996e2e
$\frac{4}{3} sda5 ufat$	4C6C-A2CA
5) sdab ufat	4C6C-A2CD
6) sda8 ufat	4C6C-A2C8
7) sr0 iso9660 RHEL-7.3\x20x86 64	2016-10-19-17-41-40-00
<pre># to select, 'r'-refresh, or 'c'-continu</pre>	e: r
(Page 1 of 1) Driver disk device selection	on
ZDEVICE TYPE LABEL	UUID
1) sda1 ufat ESXi	591C-E3EZ
2) sda2 Ufat	9UDU-H2U9 Factor101 20402Fta 4711 4-7761006-2-
	5ddb210d-304035Dd-1711-4C77bd33be2e
4) saas Utat	
5) stab Utat	4060-4208
7 such iso9666 CDROM	2017-05-26-05-44-09-00
# to select. 'r'-refresh, or 'c'-continu	e: 7
DD: Examining /deu/sr0	
mount: /dev/srθ is write-protected, mour	ting read-only
(Page 1 of 1) Select drivers to install	
1) [ ] /media/DD-1/rpms/x86_64/kmod-mpt	.3sas-23.00.00.00_e17.3-1.x86_64.rpm
<pre># to toggle selection, or 'c'-continue:</pre>	

Etapa 11. Digite '1' e 'c' para continuar:

- KVM Console to flat panel table invalid

24.101400] nouveau 0000:62:00.0: DRM: Pointer to flat panel table invalid 24.676850] nouveau 0000:63:00.0: priv: HUB0: 10ecc0 ffffffff (1c40822c) 24.740881] nouveau 0000:63:00.0: DRM: Pointer to TMDS table invalid 24.740897] nouveau 0000:63:00.0: DRM: Pointer to flat panel table invalid E ] Created slice system-driver\x2dupdates.slice. Starting Driver Update Disk UI on tty1... Started Show Plymouth Boot Screen. ] Reached target Paths. E ſ ] Reached target Basic System. 1 Started Device-Mapper Multipath Device Controller. Ľ Starting Open-iSCS1... ] Started Open-iSCSI. Starting dracut initqueue hook... ] Created slice system-driver\x2dupdates.slice. Starting Driver Update Disk UI on tty1... DD: starting interactive mode (Page 1 of 1) Driver disk device selection DEVICE TYPE LABEL UUID 1) sda1 ufat ESXi 591C-E3E2 2) sda2 ufat 4C6C-A2D4 3) sda3 VMFS\_uo1 5aa6e18d-304835ba-1711-4c776d996e2e 4) sda5 4C6C-A2CA ufat 5) sda6 ufat 4C6C-A2CD 4C6C-A2C8 6) sda8 ufat iso9660 RHEL-7.3\x20x86\_64 2016-10-19-17-41-40-00 7) sr0 'r'-refresh, or 'c'-continue: r # to select, (Page 1 of 1) Driver disk device selection DEVICE TYPE LABEL UUID 1) sda1 ufat ESXi 591C-E3E2 2) sda2 ufat 4C6C-A2D4 3) sda3 VMFS\_uo1 5aa6e18d-304835ba-1711-4c776d996e2e 4) sda5 ufat 4C6C-A2CA 5) sda6 ufat 4C6C-A2CD 4C6C-A2C8 6) sda8 ufat 2017-05-26-05-44-09-00 sr0 iso9660 CDROM 'r'-refresh, or 'c'-continue: 7 # to select, DD: Examining /deu/sr0 mount: /dev/sr0 is write-protected, mounting read-only (Page 1 of 1) Select drivers to install 1) [ ] /media/DD-1/rpms/x86\_64/kmod-mpt3sas-23.00.00.00\_e17.3-1.x86\_64.rpm # to toggle selection, or 'c'-continue: 1 (Page 1 of 1) Select drivers to install 1) [x] /media/DD-1/rpms/x86\_64/kmod-mpt3sas-23.00.00.00\_e17.3-1.x86\_64.rpm # to toggle selection, or 'c'-continue:

Etapa 12. O driver .rpm está dentro do arquivo .iso. Você pode receber um aviso de que "DD repo content not a file" (Não é um arquivo), mas é apenas um aviso - o driver teria sido instalado.

Etapa 13. Você deve estar no menu "Seleção do dispositivo do disco do driver" novamente. Desmapeie o ISO do driver e mapeie o ISO do RHEL novamente. Pressione "r" para atualizar e depois - pressione "c" para continuar com a instalação do RHEL. O instalador deve ser capaz de reconhecer o controlador RAID e os discos gerenciados por ele.

ual KVM Console File View Macros Tools Power Boot Device	Virtual Media Help	_ Inform 🖪 🕀 🕙 発 🕥 🤴 🛜 🐠
	Create Image	
3) sda3 VMFS_vo1	Activate Virtual Devices	
4) sda5 ufat	Activate virtual Devices	
5) sdab Utat	rhel-server-7.3-x86_64-boot.iso Mapped to CD/DVD	
D Sado VIat 7) she iso9660 RHFI_7 3x20x86 64	Map Removable Disk	
t to select. 'r'-refresh, or 'c'-continu	Map Floppy	
(Page 1 of 1) Driver disk device selection	on	
✓DEVICE TYPE LABEL	UUID	
1) sda1 vfat ESXi	591C-E3E2	
2) sda2 ufat	4C6C-A2D4	
3) sda3 VMFS_vo1	5aa6e18d-304835ba-1711-4c776d996e2e	
4) sda5 vfat	4C6C-A2CA	
5) sdab ufat	4C6C-A2CD	
b) sda8 Ufat	4UbC-A2C8	
7) Sr0 1SO9660 CDRUM	2017-05-26-05-44-09-00	
# to select, r -refresh, or c -continue		
nount: deutson is write-protected nount	ting read-only	
Mount: 7 acorsio is write protected, Mount	ering read-billy	
(Page 1 of 1) Select drivers to install		
1) [] /media/DD-1/rpms/x86 64/kmod-mpt3	3sas-23.00.00.00 e17.3-1.x86_64.rpm	
# to toggle selection, or 'c'-continue: 1	1	
(Page 1 of 1) Select drivers to install		
1) [x] /media/DD-1/rpms/x86_64/kmod-mpt3	3sas-23.00.00.00_e17.3-1.x86_64.rpm	
# to toggle selection, or 'c'-continue: 1		
(Page 1 of 1) Select drivers to install		
1) [] /media/DD-1/rnms/y86 64/kmod-mut	3sas-23 AA AA AA AA e12 3-1 x86 64 mm	
# to toggle selection, or 'c'-continue:	1	
w to toggie serection, or e continues ;	*	
(Page 1 of 1) Select drivers to install		
1) [x] /media/DD-1/rpms/x86_64/kmod-mpt3	3sas-23.00.00.00_e17.3-1.x86_64.rpm	
<pre># to toggle selection, or 'c'-continue:</pre>		
DD: Extracting: kmod-mpt3sas		
DD: WARNING: DD repo content not a file:	/media/DD-1/rpms/x86_64/repodata	
(Deve 4 of 4) Deiver diel de territ		
(rage 1 of 1) Driver disk device selection		
1) sdat ufat FSVi	5910-F3F2	
$\frac{1}{2} \operatorname{sda2} \operatorname{ufat}$	4060-6204	
3) sda3 UMFS up1	5aa6e18d-304835ba-1711-4c776d996e2e	
4) sda5 $ufat$	4C6C-A2CA	
5) sda6 vfat	4C6C-A2CD	
6) sda8 vfat	4C6C-A2C8	
7) sr0 iso9660 CDROM	2017-05-26-05-44-09-00	
# to select, 'r'-refresh, or 'c'-continue		

🥞 redhat	INSTALLATION SUMMARY			RED HAT ENTERPRISE LINUX 7.3 INSTALLATION		
	LOCALIZA	TION				
	Θ	DATE & TIME Americas/New York timezone		KEYBOARD English (US)		
	á	LANGUAGE SUPPORT English (United States)				
	SOFTWAR	E				
	0	<b>INSTALLATION SOURCE</b> Setting up installation source		SOFTWARE SELECTION	ıр	
	SYSTEM					
	<u>S</u>	INSTALLATION DESTINATION No disks selected	Q	KDUMP Kdump is enabled		
	∻	NETWORK & HOST NAME Not connected		SECURITY POLICY Not ready		
			We v	Quit Quit won't touch your disks until you cli	Begin Installation	
	A Please complete	items marked with this icon before continuing	to the next step.			

- KVM Console

INSTALLATION DESTINATION		RED HA	T ENTERPRISE LINUX 7.3 INSTALL	ATION Help!
Device Selection Select the device(s) you'd like to Local Standard Disks	install to. They will be left untou	iched until you click on the main i	menu's "Begin Installation" button.	
223.57 GiB	5589.03 GiB	5589.03 GiB	5589.03 GiB	
ATA Mircon_5100_MTFD sda / 79 KiB free	sdf / 5589.03 GiB free	TOSHIBA MGO4SCA6OEA sdg / 5589.03 GiB free	TOSHIBA MGO4SCA6OEA sdh / 5589.03 GiB free	TO sc
Specialized & Network Disks				
Other Storage Options	<b>k</b>			
Partitioning	a O I will configure partitioning			
<ul> <li>I would like to make additional sp</li> </ul>	ace available.			
Encryption Encrypt my data. You'll set a pass;	phrase next.			
			O disks selected; O B capacity; O B free	Refresh
A No disks selected; please select at	least one disk to install to.			