服务配置文件场景中的虚拟接口适配器

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<u>简介</u>

新的思科统一计算系统(UCS)思科刀片服务器B440 M1允许在UCS Manager(UCSM)服务配置文件中放置虚拟接口适配器。这称为虚拟主机接口放置分配。

虚拟主机接口放置分配指定vNIC和vHBA如何放置在服务器硬件配置中彼此独立的物理网络接口 (夹层)卡上。当逻辑服务器与刀片关联时,虚拟接口适配器会分配给物理适配器。

使用新的B440 M1刀片服务器时,有两个虚拟接口适配器可以将vNIC/vHBA分配给特定虚拟接口适 配器(1至2)。 如果未将vNIC/vHBA分配给虚拟接口适配器,则统一计算管理器(UCM)会根据pci bdf顺序应用默**认策略**。此外,UCSM还允许您自定义每个单独的虚拟接口适配器并创建可在服务器 刀片实施或恢复*后使*用的虚拟接口适配器配置文件。

<u>先决条件</u>

<u>要求</u>

Cisco 建议您了解以下主题:

- Cisco UCS 5108机箱
- 带版本4.1(3)N2的Cisco UCS 6100XP交换矩阵互联
- 思科UCS B440-M1刀片服务器
- Cisco UCSM版本1.3

<u>使用的组件</u>

本文档中的信息基于以下软件和硬件版本:

• 思科UCS B440-M1刀片服务器

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原 始(默认)配置。如果您使用的是真实网络,请确保您已经了解所有命令的潜在影响。

<u>规则</u>

有关文档规则的详细信息,请参阅 Cisco 技术提示规则。

<u>背景信息</u>

Cisco UCSM允许您定义B440-M1 10Gb夹层适配器,现在有四个:

- •基于QLogic Schultz的CNA(M72KR-Q)
- •基于Emulex Tigershark的CNA(M72KR-E)
- •基于Intel Niantic的NIC(M61KR-I)
- •基于Broadcom Everest的网卡(M51KR-I)

本文档中使用的B440-M1 10Gb夹层适配器是基于Emulex的CNA M72KR-E,支持两个 vHBA/vNIC。

以下是2插槽(1和2)接口适配器的示例,每个虚拟接口适配器具有2个HBA和2个NIC:



注意:上图是Emulex安装适配器的Cisco UCSM设备视图。

服务配置文件还支持在UCSM GUI中放置vNIC/vHBA,这允许选择首选项的虚拟接口适配器属性配置:

- •全部:任何vNIC/vHBA都可分配给此虚拟接口适配器。
- 仅分配:只有明确分配的vNIC/vHBA才能属于此虚拟接口适配器。
- 排除 动态: UCSM无法将动态vNIC分配给此虚拟接口适配器。

• 排除 — 未分配: UCSM无法将静态(非动态)vNIC分配给此虚拟接口适配器。

上述选择首选项选项指示UCSM在分配vNIC/vHBA时如何使用此虚拟接口适配器。

注意:数字顺序意味着vNIC/vHBA可在虚拟接口适配器内订购。

这显示了选择首选项,其中vCon1被分配,vCon2被分配为仅分配:

🟯 Wedify sNIC/sHBA Placement		×
Modify vNIC/vHBA Placement	nt	6
Specify how wNICs and vHBAs are place	d an physical network interface cards	
vMC/WHRA Placement specifies how vMCs and v4RAs a in a server hardware configuration independent way.	we placed an physical reburnk interface (meznanice) cards	
Selbct Pagement: Specify Manualy	Create Placement Profile	
Victual Network Interface canaection provides a me *NCS and VHBAs are assigned to one of VHLas Nat- performed explicitly by selecting which Virtual Netw- automatically by selecting "arr", *NDCVHBA placement on physical network interface Network select one Virtual Network Interface one one	chanism of placing vfIICs and vHBA: on physical network interface coads. twork interface connection specified below. This assignment can be ork Interface connection is used by vhIIC or vfIIA or it can be done els controlled by placement preferences. aor more vNIICs or vHBAs	
	Specific With el Merwork Interfaces (clok on a cell to ecb)	
Nous HIDAS	Name Order Selection Fine/sence Image: Selection Fine/sence all Image: Selection Fine/sence assigned-only	
		Carcel

服务配置文件中的虚拟接口适配器

为虚拟接口适配器配置服务配置文件需要了解软件如何为B440-M1分配适配器:

- vNIC和vHBA由用户隐式或UCSM在LS关联期间自动分配给虚拟接口适配器。
- •在LS关联期间,虚拟接口适配器映射到物理夹层卡。

<u>vNIC/vHBA放置</u>

vNIC/vHBA的默认位置:

 如果存在2个适配器,默认情况下,B440-M1适配器从右侧插槽(插槽1)开始分配 vNIC/vHBA,并在2个适配器之间平均分配总数。例如:如果您有4个vNIC(即1、2、3和

4),它将在插槽1适配器上分配1和2,在插槽0适配器上分配3和4。 vNIC/vHBA的特定位置:

如果需要对如何将vNIC/vHBA放置到特定适配器进行更多控制,则可以使用虚拟接口适配器的
 概念。

服务配置文件

请执行以下步骤:

1. 服务配置文件的创建对Cisco UCS来说并不新,可在配置服务配置文件中参<u>考,以了</u>解有关创

建的详细信息。

- 2. 在创建服务配置文件期间使用Cisco UCSM,您可以执行所需的虚拟接口适配器放置,或在网络(vNIC)或存储(vHBA)操作下使用修改vNIC/vHBA放置。有关虚拟接口适配器的服务配置文件配置的详细信息,请参阅设置vNIC/vHBA位置。
- 以下是在创建CE-B440-M1-SP服务配置文件后vNIC/vHBA的虚拟接口适配器放置的图示:



存储修改vHBA虚拟接口适配器的放置

Cisco Unified Computing System Manager - Pubs		_ 🗆 🛛
Fault Summary	🗄 🕝 🍩 😃 New - 🛃 Options 🕹 🕕 🞯 Exit	cisco.
1 4 13 15	>> 🥪 Service ? 🍮 Service Profiles + 🙏 root + 🝮 Service Profile CE-0440-ML-SP 💦 😓 Service Profile CE-	0440-ML-5P
Equipment Servers LAN SAN VM Admin	General Storage Jetwork Boot Order Virtual Machines Policies Server Details PSM Faults Events	
Filter: Al	Actions World Wide Node Name	
Servers Servers Servers Server Profiles Server Profiles Server Profile Server P	Change World Wide Node Name Change World Wide Node Name Change World Wide Node Name: 20:00:87:00:82:E2:01:00 WWNN Pool: WWNN Pool: WWNN Pool: WWNN Pool: WWNN Pool: WWNN Pool: Local Disk Configuration Policy Local Disk Policy: default Local Disk Policy: default Local Disk Policy: mstance: org-root,flocal-disk-config-default	
VHBA If vsan300	Name WWPN Desired Order Actual Order Desired Placement Actual	Nacement
WICs	B - ■ vHBA vsan1 derived unspecified 17 any any	
Service Prome rescronsance	🛞 📲 📲 vH®A vsan2 derived unspecified 16 any any	
WHEA fro		

硬件适配器验证

本节介绍如何验证Cisco UCS 5108机箱中安装的物理适配器:

从UCSM的**Equipment** 选项卡中,在服务器的Interface Cards下选择相应的接口卡。有关UCSM GUI设备<u>选项卡</u>窗格的更多功能,请参阅管理固件。

适配器硬件标识

Fault Summary	^	Co in D New - De Cotions (2) 0 In Ext	-0-0-
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1 4	13 15	>> 📅 Baylpment + 🖏 Chassis + 🖏 Chassis 1 + 🥪 Servers + 🧼 Server 7 + 📜 Interface Cards + 📜 Interface Ca	rd 1
The second s	(and (and a))	General Interfaces NICs HEAs Faults Events Statistics	
Equipment Servers LAN SAN	V VM Admin		
Filten: Al	-	Fault Summary Properties	
😑 📑 Equipment		0 0 0 0 Product Name: Claco CNA M72KR-E	
🗟 👘 Chassis		Status Revision: 0 Serial Marker (20): FX01	00500111
E Mill Chassis 1		Prevision of Sense Handler (July: Exect	0030010
IO Modules		Overal Status: 1 operable Part Details	8
E PSUs		Artions	
E - Servers		Name: Cisco CNA M72KR-E	
B sp Server 1		Lipstra Emanare Description: PCI Express Dual Port 10Gb Converged	
E Server 2		Pitter N20-AF0112	
B - gp Server 5		VID: VID:	
B Server 6		Wew POST Results Part Number: 74-7019-01	
E sp Server 7		SKU: N20-AE0102	
	race Cards		
	DCE Interface		
- i	HBAs		
<u>⊛</u> -4	NICs		
🗰 📷 br	nterface Card 2		

服务配置文件默认和虚拟接口放置接口适配器卡的选择2

"默<u>认虚拟接口放置</u>"部分介绍如何使用Cisco B440-M1 Emulex适配器接口卡2和UCSM使用默认和 选择的虚拟接口放置。

<u>默认虚拟接口位置</u>

请执行以下步骤:

1. 验证B440-M1 Emulex适配器接口卡2的硬件:验证B440-M1 Emulex适配器的硬件。确定 B440-M1接口卡(slot1和slot2)的适配器类型

	Interface Cards	•							
Equipment Servers LAN SAN VM Admin	🛃 Filter 👄 Exp	ort 😸 Print							
Filter: Al 💌	Name	Vendor	PID	Serial	Overal Status	Operability	Thermal	(T)	
± =	Therface C	Cisco Systems Inc	N20-AE0102	EX81005001U	operabe	operable	N/A	~	
Equipment Chassis C	Titerface C	Osco Systems Inc	N20-4E0002	C77/1755 (002D	operabe	operable	N/A		間合臣

验证B440-M1 Emulex适配器硬件详细信息,了解接口卡2。验证插槽2接口卡2的接口适配器



- 2. 配置B440-M1 Emulex适配器接口卡2的服务配置文件:
- 3. 检验默认虚拟接口放置。

创建服务配置文件

有关创建服<u>务配置文件的</u>详细信息,请参阅配置服务配置文件。

- 1. 为接口卡2创建服务配置文件。
- 2. 为创建的服务配置文件创建两个vNIC。使用默认2个vNIC创建的服务器配置文件



以下快照显示为服务配置文件中定义的vNIC分配了放置默认接口卡1插槽1的订单放置vCon



Pubs-B /org # scope service-profile server 1/7
Pubs-B /org/service-profile # show vnic detail

Name: **vnic-emulex-a** Fabric ID: A Dynamic MAC Addr: 00:25:B5:03:03:0B

```
Desired Order: 1
Actual Order: 1
Desired VCon Placement: 1
Actual VCon Placement: 1
Equipment: sys/chassis-1/blade-7/adaptor-1/host-eth-1
```

```
Name: vnic-emulex-b
Fabric ID: B
Dynamic MAC Addr: 00:25:B5:04:B2:07
Desired Order: 2
Actual Order: 2
Desired VCon Placement: 1
Actual VCon Placement: 1
Equipment: sys/chassis-1/blade-7/adaptor-1/host-eth-2
```

3. 验证vNIC默认虚拟接口适配器的放置。默认虚拟接口位置



Pubs-B /org # scope service-profile server 1/7

Pubs-B /org/service-profile # show vnic detail

Name: vnic-emulex-c Fabric ID: A Dynamic MAC Addr: 00:25:B5:00:A5:00 Desired Order: 3 Actual Order: 1 Desired VCon Placement: Any Actual VCon Placement: 2 Equipment: sys/chassis-1/blade-7/adaptor-2/host-eth-1

Name: vnic-emulex-d

Fabric ID: B
Dynamic MAC Addr: 00:25:B5:00:00
Desired Order: 4
Actual Order: 2
Desired VCon Placement: Any
Actual VCon Placement: 2
Equipment: sys/chassis-1/blade-7/adaptor-2/host-eth-2

- 1. 要使用Cisco UCSM修改vNIC/vHBA放置,请参阅设置vNIC/vHBA放置。
- 2. 从插槽2将新的vNIC(vnic-emulex-c和vnic-emulex-d)分配到接口卡1(插槽1),并分配vnicemulex-a/b vNIC。此步骤验证是否可手动指定vnic-emulex-c/d。 Modify vNIC/vHBA Placement Specify how vNICs and vHBAs are placed on physical network interface cards NIC/VHBA Placement specifies how VAICs and VHBAs are placed on physical network interface (mezzanine) cards n a server hardware configuration independent way. Select Placement: Specify Manually . 🕂 Create Placement Profile Virtual Network Interface connection provides a mechanism of placing vNICs and vHBAs on physical network interface cards, vNICs and vHBAs are assigned to one of Virtual Network Interface connection specified below. This assignment can be performed expicitly by selecting which Virtual Network Interface connection is used by vNIC or vHBA or it can be done automatically by selecting "any". vNIC/vHBA placement on physical network interface is controlled by placement preferences. Please select one Virtual Network Interface and one or more vNICs or vHBAs Specific Virtual Network Interfaces (dick on a cell to edit) Selection Preference NICs Name Order **VHBAs** 🖃 - 🗐 vCon 1 all Name æ vnic-emulex-c ~ -I vhiiC mie er vnic-emulex-d >> assign >> S vCon 2 all 🔺 Move Up 🛛 🤝 Move Down 重新分配vNIC位置。 Modify vNIC/VHBA Placement Modify vNIC/vHBA Placement Specify how vNICs and vHBAs are placed on physical network interface cards NDC/VHBA Placement specifies how VNDCs and VHBAs are placed on physical network interface (mezzanine) cards a server hardware configuration independent way. Select Placement: Specify Manually Create Placement Frofile Virtual Network Interface connection provides a mechanism of placing vNICs and vHBAs on physical network interface cards. vNICs and vHBAs are assigned to one of Virtual Network Interface connection specified below. This assignment can be performed explicitly by selecting which Virtual Network Interface connection is used by vNIC or vHBA or it can be done automatically by relecting "any". Replaced wICs a/b to slot 2 vNIC/vHBA placement on physical network interface is controlled by placement preferences.

Please select one Virtual Network Interface and one or more vNDCs or vHBAs

ne EB	■ SvCon 1		al le	
>> assign >> << remove <<		enuleo-c 1 enuleo-d 2 enuleo-a 1 enuleo-b 2		
×		🔺 Move Up 🤝	Move Down	

Name: vnic-emulex-a Fabric ID: A Dynamic MAC Addr: 00:25:B5:03:03:0B Desired Order: 1 Actual Order: 1 Desired VCon Placement: 2 Actual VCon Placement: 2 Equipment: sys/chassis-1/blade-7/adaptor-2/host-eth-1 Name: vnic-emulex-b Fabric ID: B Dynamic MAC Addr: 00:25:B5:04:B2:07 Desired Order: 2 Actual Order: 2 Desired VCon Placement: 2 Actual VCon Placement: 2 Equipment: sys/chassis-1/blade-7/adaptor-2/host-eth-2 Name: vnic-emulex-c Fabric ID: A Dynamic MAC Addr: 00:25:B5:00:A5:00 Desired Order: 1 Actual Order: 1 Desired VCon Placement: 1 Actual VCon Placement: 1 Equipment: sys/chassis-1/blade-7/adaptor-1/host-eth-1 Name: vnic-emulex-d Fabric ID: B Dynamic MAC Addr: 00:25:B5:00:00:00 Desired Order: 2 Actual Order: 2 Desired VCon Placement: 1 Actual VCon Placement: 1 Equipment: sys/chassis-1/blade-7/adaptor-1/host-eth-2 Pubs-B /org/service-profile # show vcon expand detail Virtual Network Interface: Virtual Network Interface ID: 1 This is Adapter ID:1 Slot1 Selection Preference: All Virtual Network Interface ID: 2 This is Adapter ID:2 Slot2 Selection Preference: All Pubs-B /chassis/server # show server adapter vnics Eth Interface: Adapter Interface Vnic Dn Dynamic MAC Addr Type ----- ----- ----- ------ -----1 1 org-root/ls-CE-B440-M1-SP/ether-vnic-emulex-c 00:25:B5:00:A5:00 Ether 1 2 org-root/ls-CE-B440-M1-SP/ether-vnic-emulex-d 00:25:B5:00:00:00 Ether 2 1 org-root/ls-CE-B440-M1-SP/ether-vnic-emulex-a 00:25:B5:03:03:0B Ether 2 2 org-root/ls-CE-B440-M1-SP/ether-vnic-emulex-b 00:25:B5:04:B2:07 Ether



- Cisco UCS Manager GUI配置指南,版本1.3(1)
- 设置vNIC/vHBA位置

• <u>技术支持和文档 - Cisco Systems</u>