在Intersight管理模式下配置VNIC調整

目錄

<u>簡介</u> <u>必要條件</u> <u>需求</u> <u>採用元件</u> <u>設定</u> <u>驗證</u> <u>驗證RHEL上的介面卡設定。</u> <u>驗證VMware ESXi上的介面卡設定。</u> <u>直接在UCS上驗證介面卡設定。</u> <u>相關資訊</u>

簡介

本文檔介紹通過伺服器配置檔案在Intersight管理模式(IMM)下對VNIC介面卡進行微調的選項。

必要條件

乙太網介面卡的作業系統建議設定:

運營計算、儲存和管理策略必須預先配置。

需求

思科建議您瞭解以下主題:

- Intersight管理模式
- 物理網路連線
- •作業系統推薦的乙太網介面卡設定
- VNIC微調元素

採用元件

本文中的資訊係根據以下軟體和硬體版本:

- UCS-B200-M5韌體4.2(1a)
- Cisco UCS 6454交換矩陣互聯, 韌體4.2(1e)
- Intersight軟體即服務(SaaS)

本文中的資訊是根據特定實驗室環境內的裝置所建立。文中使用到的所有裝置皆從已清除(預設))的組態來啟動。如果您的網路運作中,請確保您瞭解任何指令可能造成的影響。

設定

步驟1. 確定伺服器上的VIC介面卡和插槽ID

導航到Servers頁籤> Inventory >選擇Network Adapters選項。

OPERATE > Servers > UC\$T\$MXC-P2564541MM1-1					🗘 🗖 370 🔺	348 🕑 🕬 34	۵ O	۵
General Inventory UCS Server Profile HCL Statistics								Actions v
Expand All	Adapter UCS8-MLOM-40G-04_FCH240170R	w						
Motherboard Boot	General Interfaces							
Management Controller	Alarms				Hardware			
Memory	Critical		Info		Adapter ID	UCS8-MLOM-40G-	Part Number	73-19235-02
Network Adapters Adapter UCS8-MLOM-40G- 04_FCH240170RW	Warning				Connection	04_FCH240170RW PCI Slot SlotID:0(MLOM)	Serial	Cisco Systems Inc.
 Storage Controllers 	Configuration				MUUEI	0030 ML0M-400-04		
	Firmware Version	5.2(1a)						
	Interfaces							
	DCE Interfaces NIC Interfaces		HBA Interfaces					

步驟2.建立乙太網介面卡策略

使用作業系統供應商建議的值建立乙太網介面卡策略。

導航到Policies頁籤> Create Policy > Select Ethernet Adapter。

Select Policy Type

Filters	Q Search	
PLATFORM TYPE	Adapter Configuration	C Local User
All	◯ Add-ons	O Multicast
UCS Server	 Auto Support 	Network CIDR
O UCS Domain	Backup Configuration	Network Configuration
UCS Chassis	O BIOS	Network Connectivity
HyperFlex Cluster	O Boot Order	Node IP Ranges
C Kubernetes Cluster	Certificate Management	Node OS Configuration
	O Container Runtime	
	O Device Connector	Persistent Memory
	DNS, NTP and Timezone	O Port
	Ethernet Adapter	O Power
	Ethernet Network	Replication Network Configuration
	Ethernet Network Control	SAN Connectivity
	Ethernet Network Group	O SD Card
	C Ethernet QoS	O Security
	External FC Storage	Serial Over LAN
	External iSCSI Storage	<u></u> мтр
	C FC Zone	
	Fibre Channel Adapter	⊖ ssh

在Create Policy選單中,選擇Organization並提供Policy Name。

CONFIGURE > Policies > Ethernet Adapter > Create	ର୍ 🗖 331 🔺 349 🛛 🖸 🕴 ବ୍ୟ 344 🔍 🐼 💿
⊂ Progress	Step 1
General	General Add a name, description and tag for the policy.
2 Policy Details	
	Organization *
	Name*
	RHEL_Eth_Adapter_Policy
	Set Tags
	No. of the second s
	Recommended settings for RHEL
	Sthemat Advator Dafault Confinuation *

步驟3.配置作業系統供應商建議的設定。通常,列出的功能在乙太網介面卡策略中配置:

- 接收隊列
- 傳輸隊列
- 振鈴大小
- 完成隊列
- 中斷
- 啟用接收端擴展(RSS)或加速接收流引導(ARFS)

附註:RSS和ARFS互斥,因此僅配置一個。不要同時配置兩者。

≡	cisco Intersight	CONFIGURE > Policies > Ethernet Adapter > Cr	eate		💭 🖪 331 🔺 349		34 🔍 💮	0
<u>00o</u>	MONITOR	▲ E Progress	Interrupt Settings					
ធ	OPERATE ^		Interrupts		Interrupt Mode		Interrupt Timer, us	
¥		1 General	18	U 0 1 - 1024	MSIx	~ 0	125	
	Servers	2 Policy Details	Interrunt Coalescino Type					
	Chassis		Min					
	Fabric Interconnects							
	Networking		Receive					
	Humor Flow Churton		Receive Queue Count		Receive Ring Size			
	hypernex clusters		8	1 - 1000	4096	64 - 16384		
	Integrated Systems		Transmit					
×	CONFIGURE ^		Transmit Queue Count		Transmit Ring Size			
	Orchestration		8	0	4096	<u></u> 0		
				1 - 1000		64 - 16384		
	Profiles		Completion					
	Templates		Completion Queue Count		Completion Ring Size			
	Policies		16	1 - 2000	1	1 - 256		
	Basia		Unlink Failback Timeout (seconds)	. 2000		. 200		
	Pools		5	ە ()				
Q	ADMIN ^			0 - 600				
	Targets		TCP Offload					

建立後,將乙太網介面卡策略分配給LAN連線策略。

步驟4.創建LAN連線策略

導航到Policies頁籤> Create Policy > LAN Connectivity

≡	cisco Intersight	CONFIGURE > Policies > Create		🗘 🛚 331 🖌	🛦 349 🖸 🥵 🕫 🔿
<u>00o</u>	MONITOR				
Ŷ	OPERATE ^			Select Policy Type	
	Servers		Filters	Q. Search	
	Chassis	-			
	Fabric Interconnects				Svslag
	Networking		UCS Server	Http Proxy Policy	System QoS
	HyperFlex Clusters		UCS Domain	MC Access) Thermal
	Integrated Systems		UCS Chassis	IPMI Over LAN	Trusted Certificate Authorities
×	CONFIGURE ^		HyperFlex Cluster	iSCSI Adapter	UCSM Configuration
	Orchestration		Kubernetes Cluster	iSCSI Boot	○ vCenter
	Profiles			SCSI Static Target	Virtual KVM
	Templates			Kubernetes Version	Virtual Machine Infra Config
	Policies			LAN Connectivity	Virtual Machine Instance Type
	Pools			Link Aggregation	
ē	ADMIN ^			C Link Control	○ VSAN
	Targets				<u></u>

選擇Organization並提供Policy Name。

在target下,平台選擇UCS Server(FI連線)。

≡	cisco Intersight	CONFIGURE > Policies > LAN Connectivity > Create	다 🖪 369 🛦 348 🕝 🥵 4 5 34 다
000	MONITOR	⊂ Progress	Step 1
Ŷ	OPERATE ^	General General	General Add a name, description and tag for the policy.
	Servers Chassis Fabric Interconnects	2 Policy Details	Organization * default ~
	Networking HyperFlex Clusters	[Name * RHEL_LAN_CP
	Integrated Systems		Target Platform 💿
×	CONFIGURE ^		UCS Server (Standalone) UCS Server (FI-Attached)
	Orchestration		Set Tags
	Profiles		
	Templates		Description
	Policies		
	Pools		

在LAN連線策略中,導航到vNIC配置部分並配置至少兩個網路介面。在此示例中,建立了eth0和 eth1介面。

在Add vNIC 配置頁籤的General下,提供名稱eth0。

在「MAC Address」部分下,選擇適當的MAC Address Pool。

在Placement部分下,將Slot ID配置為MLOM。

將PCI Link 和PCI Order 選項的值保留為0 ,將Switch ID 選項保留為A。

	Add vNIC		
General			
Name * eth0	<u>o</u> !	Pin Group Name	<u>~ 0</u>
MAC Address			
Pool Static MAC Address Pool * ① Selected Pool MAC-IMM-POOL			
Placement			
Slot ID * MLOM	0	PCI Link 0	<u>()</u> © 0 - 1
Switch ID *	× 0		

導航到Consistent Device Naming(CDN)選單,然後選擇VNIC Name。

新增乙太網路組策略、乙太網路控制策略、乙太網QoS和乙太網介面卡策略。

Consistent Device Naming (CDN)
Source vNIC Name v ©
Failover
Enabled O
Ethernet Network Group Policy * ①
Selected Policy IMM-Ethernet ③ ×
Ethernet Network Control Policy * () Selected Policy IMM_policy () ×
Ethernet QoS * ①
Selected Policy UCSC-veth-qos-policy1
Ethernet Adapter * © Selected Policy RHEL_Eth_Adapter_Policy ③ ×
iSCSI Boot ① Select Policy 🗐

重複相同步驟以建立介面eth1,相應地配置PCI Link、PCI Order和Switch ID值。

≡	cisco Intersight		CONFIGURE > Policies > LAN Co	nnectivity > Create				۵ ه	369 🔺 348	₽ ₽	34 🔍	0 0	
<u>00o</u>	MONITOR	Â	☑ Progress		IUN								
Ŷ	OPERATE ^		1 General			None	Pool		Static				
	Servers		Ĭ							_			
	Chassis		2 Policy Details		0 T	This option ensures	the IQN name is n	ot associated with	the policy				
	Fabric Interconnects				vNIC Co	onfiguration							
	Networking				_								
	HyperFlex Clusters					Manual vNICs	Placement	Aut	o vNICs Placement				
	Integrated Systems					or manual placem	ent ontion you need	to specify places	ent for each vNIC.	Learn more at He	In Center		
×	CONFIGURE ^					or mandar process	en opnon you need	no opeeny ploten			p oenter		
	Orchestration	l			A	dd vNIC						Graphic vNI	Cs Editor
	Profiles												۵
	Templates					Name	Slot ID	Switch ID	DCI Link	PCI Order	Cailouar	Pin Group	
	Policies					Name	310110	SWILLIND	POLIIK	FCI Oldei	Failovei	Fill Gloup	
	Pools					eth0	MLOM	A	0	0	Disabled		
-						eth1	MLOM	В			Disabled		
۹.	ADMIN ^												
	Targets												

最後,建立LAN連線策略。建立後,將其分配到UCS服務器配置檔案。

步驟5.建立伺服器配置檔案。

導航到Profiles頁籤,然後選擇Create UCS Server Profile。

提供Organization和Name詳細資訊。

≡	cisco Intersight	CONFIGURE > Create UCS Server Profile	다 🖬 369 🛦 348 🛛 🤤 🕫 34 🔍 🐯
<u>00o</u>	MONITOR	⊂ Progress	Step 1
Ŷ	OPERATE ^	General	General Enter a name, description, tag and select a platform
	Servers	2 Server Assignment	for the server profile.
	Fabric Interconnects	3 Compute Configuration	Organization *
	Networking	4 Management Configuration	Name *
	HyperFlex Clusters	5 Storage Configuration	RHEL_TZ_Adapter O
	Integrated Systems	6 Network Configuration	Target Platform ©
×	CONFIGURE ^	7 Summary	UCS Server (Standalone)
	Orchestration		
	Profiles		Set Tags
	Templates		
	Policies		Description
	Pools		<pre></pre>

選擇所有相關配置,如計算、管理和儲存設定。

在網路配置下,選擇適當的LAN連線策略。

≡	cisco Intersigi	ht	CONFIGURE > Edit UCS Server Profil	e (RHEL_Server_Profile)	
<u>00o</u>	MONITOR	Â	⊂ Progress	Step 6	
Ŷ	OPERATE	^	1 General	Network Configuration Create or select existing Network Configuration policies that you want to associate with this profile.	
	Chassis		2 Server Assignment		
	Fabric Interconnects		3 Compute Configuration	Adapter Configuration	
	Networking		4 Management Configuration	LAN Connectivity	
	HyperFlex Clusters		5 Storage Configuration	SAN Connectivity	
	Integrated Systems		Network Configuration	Auto Placement Configuration for vNICs & vHBAs	
×	CONFIGURE	^	7 Summary	Graphical representation of vNICs & vHBAs placement is only applicable for Auto Configuration mode.	
	Orchestration		•		
	Profiles				
	Templates			÷G	
	Policies			No vNICs & vHBAs Placement Available Assign server and attach LAN/SAN connectivity policies to view representation	
	Pools			radigit of the and attach bird or the connecting policies to then type administration	
٩	ADMIN	^			
	Targets				

s Constant P	Rep 6 Network Configuration Create or select existing Network Configuration Policies that you want to associate with this profile.	
Adapter Configuration		
LAN Connectivity		⊘ RHEL_LAN_CP
SAN Connectivity		
Auto Placement Configuration for vNICs & vHBAs		
• Graphical representation of vNICs & vHBAs placement is	only applicable for Auto Configuration mode.	

選擇Deploy以配置伺服器配置檔案並驗證所有步驟是否成功完成。



Execution Flow

0	Deploy Boot Order Policy Completed
⊘	Deploy LAN Connectivity Policy Completed
⊘	Deploy Virtual Media Policy Completed
⊘	Deploy BIOS Policy Completed
⊘	Validate Virtual Media Policy Completed
⊘	Validate Boot Order Policy Completed
⊘	Validate LAN Connectivity Policy Completed
Ø	Validate BIOS Policy Completed
⊘	Prepare Server Profile Deploy



使用本節內容,確認您的組態是否正常運作。

驗證RHEL上的介面卡設定。

要檢查VIC介面卡提供的當前可用資源,請驗證dmesg檔案上的傳輸和接收隊列:

\$ qr	ep enic	/var/log/dmesg	grep	resources
-------	---------	----------------	------	-----------

[roo	tOlocalhost	t ~]#	grep enic ∕va	r/log/d	dmesg Igr	ep res	ourc	:es								
[2.647884]	enic	0000:62:00.0:	vNIC 1	resources	avail:	ωq	8 r	q 8	сq	16	intr	18			
[2.6494301	enic	0000:62:00.0:	vNIC 1	resources	used:	ωq	8 r	q 8	сq	16	intr	18	intr	mode	MSI-X
]	2.657201]	enic	0000:62:00.1:	VNIC 1	resources	avail:	ωq	8 r	q 8	сq	16	intr	18			
[2.6582721	enic	0000:62:00.1:	VNIC 1	resources	used:	ωq	8 r	qΒ	сq	16	intr	18	intr	mode	MSI-X

ethtool -g interface_name

[root@localhost	~]# ethtool -g enp98s0f0
Ring parameters	for enp98s0f0:
Pre-set maximums	s:
RX:	4096
RX Mini:	0
RX Jumbo:	0
TX:	4096
Current hardware	e settings:
RX:	4096
RX Mini:	0
RX Jumbo:	0
TX:	4096
[root@localhost	~]# ethtool -g enp98s0f1
[root@localhost Ring parameters	~]# <mark>ethtool -g enp98s0f1</mark> for enp98s0f1:
[root@localhost Ring parameters Pre-set maximums	~]# <mark>ethtool -g enp98s0f1</mark> for enp98s0f1: s:
[root@localhost Ring parameters Pre-set maximums RX:	~]# <mark>ethtool -g enp98s0f1</mark> for enp98s0f1: s: 4096
[root@localhost Ring parameters Pre-set maximums RX: RX Mini:	~]# ethtool -g enp98s0f1 for enp98s0f1: s: 4096 0
[root@localhost Ring parameters Pre-set maximums RX: RX Mini: RX Jumbo:	~]# ethtool -g enp98s0f1 for enp98s0f1: s: 4096 0 0
[root@localhost Ring parameters Pre-set maximums RX: RX Mini: RX Jumbo: TX:	~]# ethtool -g enp98s0f1 for enp98s0f1: s: 4096 0 0 4096
[root@localhost Ring parameters Pre-set maximums RX: RX Mini: RX Jumbo: TX: Current hardware	~]# ethtool -g enp98s0f1 for enp98s0f1: s: 4096 0 4096 settings:
[root@localhost Ring parameters Pre-set maximums RX: RX Mini: RX Jumbo: TX: Current hardware RX:	~]# ethtool -g enp98s0f1 for enp98s0f1: s: 4096 0 4096 settings: 4096
[root@localhost Ring parameters Pre-set maximums RX: RX Mini: RX Jumbo: TX: Current hardware RX: RX Mini:	~]# ethtool -g emp98s0f1 for emp98s0f1: s: 4096 0 4096 settings: 4096 0
<pre>[root@localhost Ring parameters Pre-set maximums RX: RX Mini: RX Jumbo: TX: Current hardware RX: RX Mini: RX Jumbo:</pre>	~]# ethtool -g emp98s0f1 for emp98s0f1: s: 4096 0 4096 e settings: 4096 0 0

驗證VMware ESXi上的介面卡設定。

為了檢查VIC介面卡提供的當前可用資源,請使用以下命令驗證傳輸和接收隊列,其中X是vmnic編 號。

vsish -e get /net/pNics/vmnicX/txqueues/info vsish -e get /net/pNics/vmnicX/rxqueues/info 運行此命令以驗證環大小:

esxcli network nic ring current get -n vmnicX

直接在UCS上驗證介面卡設定。

為了驗證設定,請通過SSH連線到任何交換矩陣互聯。

使用命令connect adapter x/y/z 連線到伺服器介面卡,其中x是機箱編號,y是插槽編號,z是介面卡 編號。

連線到介面卡時,在額外登入時輸入dbgsh。

執行命令attach-mcp。

接下來,運行命令**vnicl** ,列出可用的VNIC。

查詢相應的vnic名稱eth0和eth1,並驗證設定。

```
UCS-IMM-A# connect adapter 1/1/1
Entering character mode
Escape character is '^]'.
(none) login: dbgsh
adapter (top):1#
adapter (top):4# attach-mcp
adapter (mcp):1# vnicl
adapter (mcp):19# vnicl
------
vnicid : 18
name : eth0
type : enet
state : UP
adminst : UP
flags : OPEN, INIT, LINKUP, NOTIFY_INIT, ENABLE, USING_DEVCMD2
ucsm name : eth0
spec_flags : MULTIFUNC, TRUNK
mq_spec_flags :
slot : 0
h:bdf : 0:03:00.0
vs.mac : 00:25:b5:01:00:46
mac : 00:25:b5:01:00:46
vifid : 801
vifcookie : 801
uif : 0
portchannel_bypass : 0x0
cos : 0
vlan : 0
rate_limit : unlimited
cur_rate : unlimited
stby_vifid : 0
stby_vifcookie : 0
stby_recovery_delay : 0
channel : 0
stdby_channel : 0
profile :
stdby_profile :
init_errno : 0
cdn : eth0
devspec_flags : TSO, LRO, RXCSUM, TXCSUM, RSS, RSSHASH_IPV4, RSSHASH_TCPIPV4, RSSHASH_IPV6,
RSSHASH_TCPIPV6
lif : 18
vmode : STATIC
encap mode : NONE
host wq : [11-18] (n=8)
```

host rg : [2010-2017] (n=8) (h=0x080107da) host cq : [2002-2017] (n=16) host intr : [3008-3025] (n=18) notify : pa=0x10384de000/40 intr=17 devcmd2 wg : [19] (n=1) vnicid : 19 name : eth1 type : enet state : UP adminst : UP flags : OPEN, INIT, LINKUP, NOTIFY_INIT, ENABLE, USING_DEVCMD2 ucsm name : eth1 spec_flags : MULTIFUNC, TRUNK mq_spec_flags : slot : 0 h:bdf : 0:03:00.1 vs.mac : 00:25:b5:01:00:45 mac : 00:25:b5:01:00:45 vifid : 800 vifcookie : 800 uif : 1 portchannel_bypass : 0x0 cos : O vlan : 0 rate_limit : unlimited cur_rate : unlimited stby_vifid : 0 stby_vifcookie : 0 stby_recovery_delay : 0 channel : 0 stdby_channel : 0 profile : stdby_profile : init_errno : 0 cdn : ethl devspec flags : TSO, LRO, RXCSUM, TXCSUM, RSS, RSSHASH_IPV4, RSSHASH_TCPIPV4, RSSHASH_IPV6, RSSHASH TCPIPV6 lif : 19 vmode : STATIC encap mode : NONE host wq : [20-27] (n=8) host rq : [2002-2009] (n=8) (h=0x080107d2) host cq : [1986-2001] (n=16) host intr : [2976-2993] (n=18) notify : pa=0x1038e27000/40 intr=17 devcmd2 wq : [28] (n=1)

相關資訊

<u>技術支援與文件 - Cisco Systems</u>

Intersight中的伺服器配置檔案

<u>Cisco UCS虛擬介面卡調整指南(白皮書)</u>

Red Hat Enterprise Linux網路效能調整指南

關於此翻譯

思科已使用電腦和人工技術翻譯本文件,讓全世界的使用者能夠以自己的語言理解支援內容。請注 意,即使是最佳機器翻譯,也不如專業譯者翻譯的內容準確。Cisco Systems, Inc. 對這些翻譯的準 確度概不負責,並建議一律查看原始英文文件(提供連結)。