使用UCS C系列伺服器上的Intel X710T2LG介面 卡配置iSCSI啟動

目錄

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簡介

本文檔介紹如何使用英特爾[®] X710T2LG 2x10 GbE RJ45 OCP 3.0 NIC介面卡和UCS C225 M6伺 服器配置從iSCSI引導。

必要條件

思科建議您瞭解以下主題:

- 已配置Cisco Integrated Management Controller(CIMC[®])IP地址。
- 有關Internet小型計算機系統介面(iSCSI)配置的基本知識。
- 從網路介面卡到交換機的物理連線。
- 儲存配置引數:
 - LUN ID
 - 。連接埠
 - ◎ 啟動器IQN
 - ◎ 目標IQ
 - ◎ 啟動器IP地址
 - ◎ 目標 IP 位址
 - CHAP身份驗證資訊(如果需要)

採用元件

本文中的資訊係根據以下軟體和硬體版本:

- 英特爾[®] X710T2LG 2x10 GbE RJ45 OCP 3.0 NIC介面卡
- Cisco[®] UCS C225 M6伺服器
- 已啟用^{iSCSI服務的}Microsoft[®] Windows[®] Server 2022。
- Cisco[®] Catalyst 3560交換器

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。

背景資訊

以前,需要執行英特爾®以太^網iSCSI引導快閃記憶體實用程式來配置iSCSI設定。現在,新的英特爾[®]介面卡可直接在伺服器BIOS上提供iSCSI配置選項。

設定步驟

步驟1. 開啟電源或重新啟動伺服器。在啟動過程中,按F2訪問伺服器BIOS。

cisco
Copyright (c) 2024 Cisco Systems, Inc.
Press <f2> BIOS Setup: <f6> Boot Menu : <f7> Diagnostics Press <f8> CIMC Setup : <f12> Network Boot Bios Version : C225M6.4.3.4a.0.0426240823 Platform ID : C225M6 \ Loading EFI SAS Driver</f12></f8></f7></f6></f2>
Processor(s) AMD EPYC 7543 32–Core Processor Total Memory = 128 GB Effective Memory = 128 GB Memory Operating Speed 3200 Mhz
Cisco IMC IPv4 Address : 10.31.123.36 Cisco IMC MAC Address : 10:F9:20:D5:4F:94
Entering BIOS Setup

步驟 2. 在伺服器BIOS中,選擇Network Stack Configuration選項:

and the second	Aptio Setup	- AMI		
Main Advanced Chipse	et Security Boo	t Save & Exit	Event Logs	•
CPU Configuration PCI Subsystem Settings USB Configuration Network Stack Configura SATA Configuration LOM and PCIE Slots Conf AMD Mem Configuration S Tis Auth Configuration RAM Disk Configuration SCSI Configuration Cisco(R) Ethernet Netwo 3.0 - B4:96:91:B3:90:F0 Cisco(R) X710TLG GbE R3 B4:96:91:B3:90:FD BROADCOM <cisco 12g="" sas<br="">4GB FBWC (16 Drives)> 0 07.26.01.00</cisco>	ation Figuration Status Ork Adapter X710– D J45 PCIe NIC – S RAID Controller Configuration Uti	T2L OCP	twork Stack Settings : Select Screen : Select Item ter: Select -: Change Opt. : General Help : Optimized Defaults O: Save & Reset System C: Exit M: Scroll help UP/DOWN	n
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			e	B

步驟3.選擇Enabled:



步驟4.啟用網路堆疊後,選擇要用於iSCSI引導的網路介面卡。

在本示例中,使用Cisco[®] X710T2LG 2x10 GbE RJ45適配器:

Aptio Setup - AMI					
Main Advanced Chipset Security Boot Save & E	xit Event Logs 🔹 🕨				
 CPU Configuration PCI Subsystem Settings USB Configuration Network Stack Configuration SATA Configuration LOM and PCIe Slots Configuration 	Configure 10 Gigabit Ethernet device parameters.				
 AMD Mem Configuration Status T1s Auth Configuration RAM Disk Configuration iSCSI Configuration Cisco(R) Ethernet Network Adapter X710-T2L OCP 3.0 - B4:96:91:B3:90:FC Cisco(R) X710TLG GbE RJ45 PCIe NIC - B4:96:91:B3:90:FD BROADCOM <cisco 12g="" controller="" raid="" sas="" with<br="">4GB FBWC (16 Drives)> Configuration Utility - 07.26.01.00</cisco> 	<pre>→+: Select Screen †↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F9: Optimized Defaults F10: Save & Reset System ESC: Exit K/M: Scroll help UP/DOWN</pre>				
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步驟5.在網路介面卡選項內,驗證鏈路狀態是已連線。

♦ 附註:請注意埠MAC地址,因為此地址對於標識很有用。

Advanced	Aptio Setup – AMI	
 Firmware Image Propert NIC Configuration 	ies:	Click to configure the network device port.
Blink LEDs	0	
UEFI Driver Adapter PBA Device Name Chip Type PCI Device ID	Intel(R) 40GbE 4.8.08 M31142-001 Cisco(R) X710TLG GbE RJ45 PCIe NIC Intel X710 15FF	++: Select Screen
PCI Address Link Status	01:00:01 [Connected]	T∔: Select Item Enter: Select +/-: Change Opt.
MAC Address Virtual MAC Address	B4:96:91:B3:90:FD 00:00:00:00:00:00	F1: General Help F9: Optimized Defaults F10: Save & Reset System ESC: Exit K/M: Scroll help UP/DOWN
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步驟6.返回主選單,然後選擇iSCSI配置選項:

AB

Aptio Setup – AMI	
Main Advanced Chipset Security Boot Save &	& Exit Event Logs
 CPU Configuration PCI Subsystem Settings USB Configuration Network Stack Configuration SATA Configuration LOM and PCIE Slots Configuration AMD Mem Configuration Status T1s Auth Configuration 	Configure the iSCSI parameters.
 RAM Disk Configuration ISCSI Configuration Cisco(R) Ethernet Network Adapter X710-T2L OCP 3.0 - B4:96:91:B3:90:FC Cisco(R) X710TLG GbE RJ45 PCIe NIC - B4:96:91:B3:90:FD BROADCOM <cisco 12g="" controller="" raid="" sas="" with<br="">4GB FBWC (16 Drives)> Configuration Utility - 07.26.01.00</cisco> 	<pre>++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F9: Optimized Defaults F10: Save & Reset System ESC: Exit K/M: Scroll help UP/DOWN</pre>
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步驟7.選擇主機iSCSI配置選項:

AB



步驟8.為啟動器新增ISCSI限定名稱(IQN)。

iSCSI限定名稱(IQN)格式採用iqn.yyyy-mm.naming-authority:unique name的形式。

Advanced	Aptio Setup – AMI				
iSCSI Initiator Name	iqn.1987-05.com.intel: esx01	The worldwide unique name of iSCSI Initiator, Only ION			
 Add an Attempt Delete Attempts 		format is accepted.Range is from 4 to 223			
▶ Change Attempt Order					
		<pre>++: Select Screen tl: Select Item Enter: Select +/-: Change Opt. F1: General Help F9: Optimized Defaults F10: Save & Reset System ESC: Exit K/M: Scroll help UP/DOWN</pre>			
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步驟9.選擇Add an Attempt選項:



步驟10.選擇正確的介面卡以配置iSCSI設定。您可以使用步驟5中註冊的mac地址驗證適配器:



步驟1.配置iSCSI設定:



此示例的值包括:

- iSCSI模式:已啟用
- Internet協定: IPv4
- 連線重試計數:0(預設)
- 連線建立超時:1000(毫秒)
- OUI格式ISID:(預設)
- 配置ISID:(預設)
- 啟用DHCP:已停用
- 啟動器IP地址: 192.168.1.141
- 啟動器子網掩碼: 255.255.255.0
- 網關: 192.168.1.1

步驟12.配置目標資訊:

navancea		
Enable DHCP Initiator IP Address Initiator Subnet Mask Gateway	[Disabled] 192.168.1.141 255.255.255.0 192.168.1.1	 Must reboot system manually for changes to take place.
Target Name Target Address Target Port	iqn.1991–05.com.micros oft:iscsiserver–iscsi– 02–target 192.168.1.55 3260	++: Select Screen ↑↓: Select Item
Boot LUN Authentication Type Save Changes ▶ Back to Previous Page	0 [None]	Enter: Select +/-: Change Opt. F1: General Help F9: Optimized Defaults F10: Save & Reset System ESC: Exit K/M: Sccoll belo UP/DOWN

此示例的值包括:

- 目標名稱:(儲存的目標IQN)
- 目標地址: 192.168.1.55
- 目標埠: 3260(iSCSI預設埠)
- 啟動Lun:0
- 身份驗證型別:無

選擇Save Changes。

步驟13.選擇Save & Exit Menu,然後選擇Save Changes and Reset:

Aptio Setup – A Main Advanced Chipset Security Boot S	MI ave & Exit Event Logs 🌒
Exit Options Save Changes and Reset Discard Changes and Exit	Reset the system after saving the changes.
Save/Discard Changes Options Save Changes Discard Changes	
Load Defaults Options Load Defaults	
Save as User Defaults	++: Select Screen
Load Manufacturing Defaults	Enter: Select +/-: Change Opt.
Boot Override	F1: General Help
UEFI: Built-in EFI Shell	F9: Optimized Defaults F10: Save & Reset System ESC: Exit K/M: Scroll help UP/DOWN
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步驟 14. 伺服器啟動後, 啟動過程中會顯示iSCSI儲存資訊:



步驟15.使用Virtual Media > vKVM-Mapped DVD選項映射作業系統ISO:

	cisco vKVM		KVM Console	UCSC-C225-M6S	i
E	Console	>			
1	File	>			
0	View	>			
କୁତ୍ର ତତ୍ତ୍ୱ	Macros	>			
×	Tools	>			
\bigcirc	Power	>			
\uparrow	Boot Device	>			
٥	Virtual Media	>	Create Image		
Q	Chat		vKVM-Mapped	vDVD	
			vKVM-Mapped	vHDD	
			vKVM-Mapped	vFDD	
			CIMC-Mapped	vDVD	
			CIMC-Mapped	vHDD	

步驟16.選擇對映驅動器:

Browse	Selected File	VMware-ESX	i-7.0.3i-208	×
Read Only				

步驟17.對映ISO後,使用F6選單從它啟動。等待安裝程式載入。安裝程式顯示要安裝的儲存選項後 ,即可看到遠端iSCSI儲存:

(any e * Contains # Claimed	xisting VMFS-3 wi a VMFS partition by VMware vSAN	ll be automa	itically upgraded	i to VMFS-5)
Storage De	vice			Capacity
Local:	CISCO VD	CT 10.ATA	CISCO VD) 223.51 GiB
Remote: MSFT	Virtual HD	(naa.60003	ff44dc75adcabc48	3) 30.00 GiB
(Ecc) (ancel (E1) Det	ails (E5)	Defresh (En	ter) Continue

步驟18.使用遠端儲存繼續執行安裝過程。完成後,重新啟動伺服器,然後按F2輸入伺服器BIOS設定。在BIOS設定中,選擇Boot Menu,並將選項VMware® ESXi移動到Boot Option # 1:

Main Advanced Chipset	Aptio Setup – AMI Security Boot Save	& Exit Event Logs 🔹 🕨			
Boot Configuration Setup Prompt Timeout SecureBoot Support Boot Mode PCIe Slots CDN Control OptionROM Launch Optimization BIOS Techlog Level CDN Control	1 Disabled [UEFI Mode] [Enabled] [Enabled] [Minimum] [Enabled]	Sets the system boot order			
Boot Option Priorities Boot Option #1 Boot Option #2 Add New Boot Option Delete Boot Option	[VMware ESXi] [UEFI: Built-in EFI Shell]	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F9: Optimized Defaults F10: Save & Reset System ESC: Exit K/M: Scroll help UP/DOWN</pre>			
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步驟19.導覽至Save & Exit功能表,然後選擇Save Changes and Reset選項:



驗證

伺服器成功引導至VMware[®] ESXi OS:

6	\rightarrow C		Q https://	/cimc-ip/kvm/				•	ຄ ≡
=	-dualu- cisco	VKVM	KVM Console	UCSC-C225-M6S		82	0	•	admin <u>A</u>
团	Console					1			
۵									
Ð	View				VMware ESXi 7.0.3 (VMKernel Release Build 20042708)				
۵	Macros				Cisco Systems Inc UCSC-C225-M6S				
×	Tools				AND EPYC 7543 32-Core Processon 127 9 GIB Memory				
Ø	Power				and the varies indianally				
\uparrow	Boot Devi	ice							
ø	Virtual Me	edia							
9	Chat								
					To manage this host, go to: https://192.168.1.141/ (STATIC) https://128.1696.91917:feb3/9961/ (STATIC) https://128011428:140e:2102:b696:91FF:Feb3:90FdJ/ (AUTOCOMF)				
					(#2) Custonize System/View Logs (#12) Shut Down/Restart				

疑難排解

- 1. 驗證啟動器和目標的IQN以避免任何配置錯誤。
- 2. 驗證交換機埠配置,因為NIC介面卡不支援任何VLAN標籤。
- 3. 驗證是否已在交換機上的正確埠上獲取了介面卡埠mac地址。

<#root>

switch#show mac address-table address b496.91b3.90fd Mac Address Table

Vlan Mac Address Type Ports

10

b496.91b3.90fd

DYNAMIC

Te1/0/45

Total Mac Addresses for this criterion: 1

利用Cisco IOS®軟體中的嵌入式資料包捕獲(EPC)功能,通過資料包捕獲驗證iSCSI^協商。

範例:

<#root>

switch#monitor capture ISCSI buffer size 100 circular interface TenGigabitEthernet1/0/45 both match any switch#monitor capture ISCSI start

--> This command starts the capture

switch# monitor capture ISCSI stop

--> Stop the capture, once the server has attempted to boot from the Intel[®] NIC Adapter.

switch#show monitor capture ISCSI buffer brief

--> This command shows the capture content

Starting the packet display Press Ctrl + Shift + 6 to exit

21 0.000285 192.168.1.141 -> 192.168.1.55

iscsı

114 NOP Out 22 0.000299 192.168.1.55 -> 192.168.1.141

iscsı

118 NOP In 23 0.000313 192.168.1.55 -> 192.168.1.141

iscsı

118 [TCP Retransmission] NOP In 24 0.000327 192.168.1.141 -> 192.168.1.55 TCP 66 57954 > iscsi-target [ACK] Seq=49 Ack=49 Win=514 Len=0 25 0.000341 192.168.1.141 -> 192.168.1.55 TCP 1514 [TCP segment of a reassembled PDU] 26 0.000357 192.168.1.141 -> 192.168.1.55 TCP 1514 [TCP segment of a reassembled PDU] 27 0.000382 192.168.1.141 -> 192.168.1.55 iSCSI 1514 SCSI:

Write(10) LUN: 0x00 (LBA: 0x0105f758, Len: 8)SCSI: Data Out LUN: 0x00 (Write(10) Request Data)

28 0.000399 192.168.1.141 -> 192.168.1.55 TCP 102 [TCP segment of a reassembled PDU] 29 0.000413 192.168.1.55 -> 192.168.1.141 TCP 70 iscsi-target > 57954 [ACK] Seq=49 Ack=4429 Win=8195 Le 30 0.000427 192.168.1.141 -> 192.168.1.55 TCP 1514 [TCP segment of a reassembled PDU] 31 0.000448 192.168.1.141 -> 192.168.1.55 TCP 1514 [TCP segment of a reassembled PDU] 32 0.000464 192.168.1.141 -> 192.168.1.55 iscsi 1078 Scsi:

Write(10) LUN: 0x00 (LBA: 0x0105f548, Len: 8)SCSI: Data Out LUN: 0x00 (Write(10) Request Data)

33 0.000480 192.168.1.55 -> 192.168.1.141 TCP 70 iscsi-target > 57954 [ACK] Seq=49 Ack=8337 Win=8195 Le 34 0.000494 192.168.1.55 -> 192.168.1.141 iSCSI 118 SCSI:

Response LUN: 0x00 (Write(10)) (Good)

35 0.000508 192.168.1.55 -> 192.168.1.141 iSCSI 118 SCSI:

Response LUN: 0x00 (Write(10)) (Good)

對於RJ45 NIC介面卡,建議至少使用Cat6 UTP電纜,並連線到10 GbE埠。

相關資訊

- Windows伺服器iSCSI目標伺服器概述
- Cisco社群 如何 iSCSI 啟動,使用UCS伺服器上的Intel i350介面卡
- iSCSI命名約定
- 設定及擷取軟體的內嵌封包

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)。