对无法与CIMC通信的UCS C系列mLOM卡进行故 障排除

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简介

本文档介绍如何对无法与CIMC通信的Cisco UCS C系列机架式服务器mLOM卡进行故障排除。

先决条件

要求

本文档没有任何特定的要求。

使用的组件

本文档中的信息基于以下软件和硬件版本:

- 运行固件版本4.0(4i)的思科统一计算系统(UCS) C220-M5
- 运行固件版本4.3(3b)的Cisco UCS VIC 1387(这是模块化板载局域网(mLOM)适配器)

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。如果您的网络处于活动状态,请确保您了解所有命令的潜在影响。

背景信息

mLOM安装在思科UCS控制器、计算、对象存储磁盘(OSD)计算和ceph节点中。

虚拟接口卡(VIC)是充当UCS服务器中mLOM卡的适配器。

mLOM VIC适配器是一个现场可更换单元(FRU),根据Undercloud和Overcloud网络要求放置在控制器、计算和存储服务器中。

- 控制器服务器有一个mLOM(带2个10GigE端口)、一个LOM(带2个1Gb端口)和1Gb思科 集成管理控制器(CIMC)端口。
- 计算服务器有一个mLOM(带2x10GigE端口)、一个LOM(带2x1Gb端口)、2个PCIe卡 (位于插槽1和4中,带2x10GigE)和1个GigE CIMC。
- OSD计算服务器有一个mLOM(带2x10GigE端口)、一个LOM(带2xGb端口)和两个 PCIe卡(位于插槽1和4中,带2x10GigE端口10GigE和1xGb CIMC端口)。
- 存储服务器有一个mLOM(带2个10GigE端口)、一个LOM(带2个Gb端口)和1Gb CIMC端口。

mLOM接口通过为各种网络提供VIM网络接口,为超云调配、VNF管理和协调提供服务。这些网络可以包括外部浮动IP网络、内部API网络、存储网络、存储管理网络和租户网络。

排除mLOM和CIMC之间的通信问题,以帮助维护这些网络中的功能。



1	Modular LAN-on-motherboard (mLOM) card bay (x16 PCIe lane)	7	Rear unit identification button/LED
2	USB 3.0 ports (two)	8	Power supplies (two, redundant as 1+1)
3	Dual 1-Gb/10-Gb Ethernet ports (LAN1 and LAN2) The dual LAN ports can support 1 Gbps and 10 Gbps, depending on the link partner capability.	9	PCIe riser 2/slot 2 (x16 lane) Includes PCIe cable connectors for front-loading NVMe SSDs (x8 lane)
4	VGA video port (DB-15 connector)	10	PCIe riser 1/slot 1 (x16 lane)
5	1-Gb Ethernet dedicated management port	11	Threaded holes for dual-hole grounding lug
6	Serial port (RJ-45 connector)	-	

症状

症状 1.CIMC GUI显示"Unable to communicate with the Adapter Card - mLOM"

在UCS CIMC中访问网络/适配器卡- mLOM时,GUI会显示消息"无法与适配器卡- mLOM通信"。重 新加载WebUI以获取最新数据。"



Unable to communicate with the Adapter Card - MLOM Reload the WebUI to get the latest data.

症状 2.mLOM未出现在UCS适配器列表中

标有tech_support.frupid的UCS技术支持文件(位于UCS技术支持文件路径<TMP >

tech_support.frupid>)的适配器列表中,没有该mLOM条目。

在正常情况下,mLOM显示在UCS技术支持tech_support_frupids适配器列表中。

AdapterList:

Slot: MLOM Description: Cisco UCS VIC1387 Virtual Interface Card - Dual Port 40Gb QSFP+ MLOM PID: UCSC-MLOM-C40Q-03 CPN: xxxxx powMin: xxxxx powMax: xxxxx Vendor: xxxxx Device: xxxxx SubVendor: xxxxx SubVendor: xxxxx SubDevice: xxxxx

症状 3.mLOM未显示在"scope adapter mlom"的CIMC CLI范围机箱输出中

C220-node/chassis # scope adapter mlom Error: Managed object does not exist, use show command to list valid targets

症状 4.IPMI传感器未检测到mLOM

根据UCS技术支持文件<UCS Tech support > tmp > tech_support>,智能平台管理接口(IPMI)传感 器未检测到mLOM卡。

mLOM卡部分检测

CIMC通过服务器主板上的传感器和连接观察服务器库存,但服务器操作系统通过服务器数据通道观 察硬件。由于CIMC和服务器操作系统清单使用不同的物理路径来监控mLOM卡,因此可以部分检 测到mLOM卡,或者CIMC清单数据显示的结果可能与服务器操作系统不同。

mLOM将显示在现场可替换单元(FRU)记录中<UCS技术支持> TMP > tech_support.frupid>。

====== Dumping IPMI FRU Records ====== FRU Device Description : FRU_MLOM (ID Board Mfg : Cisco Systems Inc Board Product : UCSC-MLOM-C40Q-03 Board Serial : FCH2328764C Board Part Number : 73-17793-06 Board Extra : A03V04 Board Extra : 000000000 OEM (0xUnknown (0x9)) Record

 mLOM在线状态似乎已在UCS技术支持SEL解码<UCS技术支持>var > sel_decode>中进行了 断言。

Id: 757 severity: Normal dateTime: 2023-12-29 11:08:15 EST dateTimeOrder: 00028 description: "FRU_MLOM MLOM_PRSNT: Presence sensor for FRU_MLOM, Device Inserted / Device Present was a

 BIOS技术日志<UCS Tech Support > mnt > jffs2 > BIOS > bt > BiosTech.log>可以显示之前 已检测到mLOM卡。

7:2023 Dec 29 11:04:33 EST:mLomPresent = TRUE 7:2023 Dec 29 11:04:33 EST:mLomSku = mLOM-x8

 mLOM可以显示在UCS技术支持库存适配器列表和FRU详细信息列表中<UCS技术支持>var >清单-all>。

Adapter List slot-number: MLOM serial-number: FCH2328764C card-type: 81 asic-type: 1 product-id: UCSC-MLOM-C40Q-03 asic-name: cruz hw-part-no: 73-17793-06 hw-revision: 3 i2cLogicalBus: 112 new-card: no active: no standby-power: no overtemp-condition: no fan-running: no ncsiPackageId: 1 eth-interface: eth0 bmc-mac0: 2c:f8:9b:29:7d:de bmc-mac1: 2c:f8:9b:29:7d:df

cruz-mac: 2c:f8:9b:29:7d:c2 ipAddress: 127.16.3.1 remoteIPAddress: 127.16.3.2 virtual-eth-if: eth0_m3.4043 actions-blocked: yes capabilities: 0x1 diagnostic-mode: no UCSM-mode: Standalone description: . . . FRU Details FRU_MLOM(ID8) Board Mfg : Cisco Systems Inc Board Product : UCSC-MLOM-C40Q-03 Board Serial : FCH2328764C Board Part Number : 73-17793-06 Board Extra : A03V04 Board Extra : 000000000 OEM (OxUnknown (Ox9)) Record

• mLOM将显示在CIMC CLI mLOM适配器范围<show detail>输出中。

C220-WZP2204006C /chassis # scope adapter MLOM C220-WZP2204006C /chassis/adapter # show detail PCI Slot MLOM: Product Name: N/A Serial Number: FCH22127H6J Product ID: UCSC-MLOM-C40Q-03 Adapter Hardware Revision: 3 Current FW Version: N/A VNTAG: N/A FIP: N/A LLDP: N/A PORT CHANNEL: N/A Configuration Pending: Cisco IMC Management Enabled: no VID: N/A Vendor: N/A Description: Bootloader Version: N/A FW Image 1 Version: N/A FW Image 1 State: N/A FW Image 2 Version: N/A FW Image 2 State: N/A FW Update Status: N/A FW Update Error: N/A FW Update Stage: N/A FW Update Overall Progress: N/A

故障排除步骤

在每个步骤之间,检查<show pci-adapter>的scope chassis输出中是否能看到mLOM卡。



注意:由于服务器状态(而非与mLOM卡通信时出现的任何问题),这些输出中仍会显示 "Not-Loaded"。

C220-node# scope chassis C220-node /chassis # show pci-adapter Slot Vendor ID Device ID SubVendor ID SubDevice ID Firmware Version Product Name Option ROM Status MLOM 0x1137 0x0042 0x1137 0x015d 4.3(3b) Cisco UCS VIC 1387 MLOM Not-Loaded <<<<<< MRAID 0x1000 0x0014 0x1137 0x020e 51.10.0-3151 Cisco 12G Modular Raid... Not-Loaded L 0x8086 0x1563 0x1137 0x01a3 0x80000EC9... Intel X550 LOM Not-Loaded

步骤1:检查物理连接

跟踪mLOM上两个端口到其网络交换机的电缆以确保它们未损坏。如有必要,请更换电缆和小型封装热插拔(SFP)。

- 断开并重新连接服务器端的SFP并评估mLOM连接。

- 断开并重新连接mLOM卡上的SFP并评估mLOM连接。

第二步:确认BIOS已启用所有端口。如果未启用,请启用端口。

步骤 2.1通过重新启动服务器并单击F2进入Aptio设置实用程序来访问服务器上的BIOS。

步骤 2.2在BIOS菜单中,导航到高级LOM和PCI选项,并确保启用所有板载LOM端口。

Aptio Setup Utility – Copyright (C) 2019 American Megatrends, Inc. LOM and PCIe Slots Configuration				
Current Boot Mode SecureBoot Support	UEFI Disabled	PCIe Slots Inventory Details		
SWRAID Configuration pSATA SATA OpROM M.2 SATA OpROM	[DISABLED] [AHCI]			
M.2 HWRAID Controller MSTOR-RAID Option ROM Mode	[Enabled]			
LOW and PCIe Slots Confi	dupation	++: Select Screen		
All Onboard LOM Ports	[Enabled]	Enter: Select +/-: Change Opt.		
▶ PCIe Slots Inventory Det	ails	F1: General Help		
PCIE Link Speed Configur	ation	F9: Optimized Defaults		
PCI OpROM Configuration		F10: Save & Reset System		
		ESC: Exit K/M: Scroll help UP/DOWN		
Version 2.20.1276. Copyright (C) 2019 American Megatrends, Inc.				

步骤 2.3导航至PCIe插槽库存详细信息。插槽mLOM卡详细信息必须显示在此处。例如,Missing Slot mLOM。



第三步:重新启动CIMC

CIMC重新启动仅重新启动CIMC管理平面。服务器数据平面不受影响。

步骤 3.1进入CIMC命令模式, Server# scope cimc。

步骤 3.2使用Server /cimc # reboot重新启动CIMC。

第四步:运行Cisco UCS主机升级实用程序(HUU)以刷新UCS

步骤 4.1使用<show brief>命令收集其固件版本。

Running: showBrief Fri Dec 29 11:13:29 EST 2023 BMC Version Info ver: 4.0(4i) <<<<<< Firmware Version

步骤 4.2从思科软件下载网站,下载适用于UCS固件版本的相应Cisco UCS主机升级实用程序。 https://software.cisco.com/download/home 例如,对于版本为4.0(4i)的UCS C220 M5,正确的实用程序版本为ucs-c220m5-huu-4.0.4i.iso。

https://software.cisco.com/download/home/286318809/type/283850974/release/4.0(4i)

步骤 4.3使用同一型号Cisco UCS服务器的《思科主机升级实用程序用户指南》中"使用全部更新选项更新固件"部分列出的步骤刷新UCS固件。

例如,对于UCS C220 M5型号服务器,更新固件的指南位于

: <u>https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/c/sw/lomug/2-0-x/3_0/b_huu_3_0_1/b_huu_2_0_13_chapter_011.html</u>。

• 如果HUU出现提示"Running and packaged versions are same, skip update.",在刷新过程中,正确的固件已在此UCS服务器中运行。

Components Storage Dakas Persistent Mamory Heig Select Al Ma Component Name VAA Current Version AUA Current Version VAA AUA AUA AUA AUA AUA AUA AUA AUA AU	Cisco Host Update Utility v4.0.4i							
Component: Storage Drives Persistent Memory Help Select Al d Component Name Slot Current Version Package Version A Sold Current Version Package Version Pac	Cisco UCSC-C220-M5SX Server							
Select Al Ist Current Version Package Version 1 BOS3 N/A C220M5 4.0.40.011122191020 C220M5 4.0.40.011122191020 C220M5 4.0.40.011122191020 2 C.INC N/A C4040 4.040 4.040 3 Intel X1710-QDA2 Dual Port 4056 QSFP converged NIC(Enable Security Checks) 1 0.0880042E3-1.816.1 0x800042E3-1.816.1 0x800042E3-1.816.1 5 Cisco 125 Modular Raid Controller with 268 cache (max 16 drives) MRAD 50.8.0-2649 50.8.0-2649 6 Intel X550 LOM(Enable Security Checks) L 0x800042E3-1.816.1 0x800002E4C-1.816.1 7 Texasee Management Controls Update 6 Activate All Update Restore CIMC Defaults Save Logs Ext Current Activate Current Activate Current Activate Outpdate in Progress Current Activate Current Activate Current Activate Outpdate in Progress Current Activate Current Activate Current Activate Outpdate in Progress	Components Storage Drives Persistent Memory Help							
I BIOS N/A C220M5 4.0.46.0.1112191020 C220M5 4.0.46.0.11101000000	Select A	bi II	Component Name			Slot	Current Version	Package Version
2 CIMC N/A 4.0(4) 4.0(4) 3 Intel X2.710-QDA2 Dual Port 400b QSFP converged NIC(Enable Security Checks) 1 0x80004283-1.816.1 0x800004283-1.816.1 0x8000064C-1.816.1 0x8000064C-1.816.		1	BIOS			N/A	C220M5 4 0 4o 0 11121910	20 C220M5 4 0 4o 0 111219
a Intel XL710-QDA2 Dual Port 40Gb QSFP converged NIC(Enable Security Checks) 1 0x800042E3-1.816.1 0x80000E4C-1.816.1 0x80000E4C-1.816.		2	CIMC			N/A	4.0(4)	4.0(4i)
4 Intel X2710-QDA2 Dual Port 400b QSFP converged NIC(Enable Security Checks) 2 0x800042E3-1.816.1 0x800042E3-1.816.1 5 Cisco 126 Modular Paid Controller with 208 cache (max 16 drives) MRAD 59.8.0-2649 59.8.0-2649 6 Intel X550 LOM(Enable Security Checks) L 0x80000E4C-1.816.1 0x80000E4C-1.816.1 r 0x80000E4C-1.816.1 0x80000E4C-1.816.1 0x80000E4C-1.816.1 r 0x80000E4C-1.816.1 0x80000E4C-1.816.1 r r		3	Intel XL710-QDA2 Dual Port 40G	ib QSFP converged NIC(En	able Security Checks)	1	0x800042E3-1.816.1	0x800042E3-1.816.1
s Cisco 12G Modular Raid Controller with 2GB cache (max 16 drives) MRAID 50.8.0.2649 50.8.0.2649 6 Intel XSS0 LOM(Enable Security Checks) L 0x80000E4C-1.816.1 0x80000E4C-1.816.1 v 0x80000E4C-1.816.1 0x80000E4C-1.816.1 0x80000E4C-1.816.1 Firmware Management Controls Verify Last Update Restore CIMC Defaults Save Logs Exit Current Activity No Update in Progress Execution Logs Current Activity No Update in Progress Current Activity No Update in Progress </td <td></td> <td>4</td> <td>Intel XL710-QDA2 Dual Port 400</td> <td>b QSFP converged NIC(En</td> <td>able Security Checks)</td> <td>2</td> <td>0x800042E3-1.816.1</td> <td>0x800042E3-1.816.1</td>		4	Intel XL710-QDA2 Dual Port 400	b QSFP converged NIC(En	able Security Checks)	2	0x800042E3-1.816.1	0x800042E3-1.816.1
6 Intel XSS0 LOM(Enable Security Checks) L 0x80000E4C-1.816.1 0x80000E4C-1.816.1 v v r v Firmware Management Controls Verity Last Update Activate Verity Last Update Restore CIMC Detaults Save Logs Exit Current Activity No Update in Progress Intel XS74 516 INFO Running and packaged versions are same skip update for XX710, stort. Intel XS74 516 INFO Running and packaged versions are same skip update for XX710, stort. 2024-010-818.577.43,518 INFO Running and packaged versions are same skip update for XX710, stort. Intel XX70, stort. Intel XX70, stort. 2024-010-818.577.43,518 INFO Running and packaged versions are same skip update for XX710, stort. Intel XX70, stort. Intel XX70, stort. 2024-010-818.577.43,518 INFO Running and packaged versions are same skip update for XX710, stort. Intel XX70, stort. Intel XX70, stort. 2024-010-818.577.43,518 INFO Running and packaged versions are same skip update for XX710, stort. Intel XX70, stort. Intel XX70, stort. 2024-010-818.577.43,518 INFO Running and packaged versions are same skip update for XX710, stort. Intel XX70, stort. Intel XX70, stort. 2024-010-818.577.43,518 INFO Running and packaged versions are same skip update for XX710, stort. Intel XX70, stort. Intel XX70, stort. I		5	Cisco 12G Modular Raid Control	ler with 2GB cache (max 16	5 drives)	MRAID	50.8.0-2649	50.8.0-2649
		6	Intel X550 LOM(Enable Security	Checks)		L	0x80000E4C-1.816.1	0x80000E4C-1.816.1
Verity Last Update Restore CIMC Defaults Save Logs Exit Current Activity No Update in Progress Execution Logs Execution Logs Current Activity	Image: Second							
Current Activity No Update in Progress Execution Logs Execution Execution Logs Execution Logs Execution Logs Execution Logs Execution Logs Execution			Verify Last Update	Restore CIMC Defaults	Sa	re Logs		Exit
No Update in Progress Execution Logs Execution Logs Execution Logs Execution Logs Execution Logs Execution 1:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0	Current Activ	ity						
	No Update in Progress							
(c) 2018.19 Cisco Sustems Inc All rights reserved	Execution Lo 2024-01-08 1 2024-01-08 1 2024-01-08 1 2024-01-08 1 2024-01-08 1 2024-01-08 1	8 57 43 8 57 43	516 INFO:Running and package 516 INFO:Running and package 517 INFO:Running and package 518 INFO:Running and package 518 INFO:Running and package 518 INFO:Running and package 519 INFO:Exit	versions are same,skip up dversions are same,skip up	date for CLMC, slot N date for 20,710, slot N date for 20,710, slot 1 date for 20,710, slot 2 date for 30,550-LOM, sl	A. MS, slot: lot:L.	MRAID.	
fel vara a super a statematine an utilita reactiven	<u> </u>			(c) 2018-19 Cisco S	ystems,Inc.All rights	reserve	1	Þ

检查Cisco HUU是否显示mLOM卡的存在。以下是不显示mLOM卡的Cisco HUU实用程序的示例。

Cisco Host U	pdate Utility	y v4.0.4i
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Cisco UCSC-C220-M5SX Server

Components Storage Drives Persistent Memory Help							
Select All	ld.	Component Name	Slot	Current Version	Package Version		
	1	BIOS	N/A	C220M5.4.0.4o.0.1112191020	C220M5.4.0.40.0.111219		
	2	CIMC	N/A	4.0(4i)	4.0(4i)		
	3	Intel XL710-QDA2 Dual Port 40Gb QSFP converged NIC(Enable Security Checks)	1	0x800042E3-1.816.1	0x800042E3-1.816.1		
	4	Intel XL710-QDA2 Dual Port 40Gb QSFP converged NIC(Enable Security Checks)	2	0x800042E3-1.816.1	0x800042E3-1.816.1		
	5	Cisco 12G Modular Raid Controller with 2GB cache (max 16 drives)	MRAID	50.8.0-2649	50.8.0-2649		
	6	Intel X550 LOM(Enable Security Checks)	L	0x80000E4C-1.816.1	0x80000E4C-1.816.1		
	Verify Last Update Restore CIMC Defaults Save Logs Exit						
Current Activity							
No Update In Progress							
Execution Logs		*****					
*					-		
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第五步:以物理方式重新拔插mLOM适配器卡

按照同一型号Cisco UCS服务器的《服务器安装和维修指南》中的"更换mLOM卡"中所述的步骤实际 重新拔插mLOM适配器卡。

例如,对于UCS C220 M5型号服务器,重新拔插mLOM的指南位于

: https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/c/hw/C220M5/install/C220M5/C220M5_cl

Figure 34. Location of the mLOM Card Socket Below the mRAID Riser



结论

如果验证了物理连接和BIOS端口,则表明已在CIMC上执行硬重新启动,服务器固件已使用正确的 固件重新刷新,并且已实际重新拔插mLOM卡,但mLOM卡未出现在<show pci-adapter>的输出中 ,则可以推断mLOM硬件故障。在这种情况下,请更换mLOM卡。

相关信息

- <u>更换mLOM卡- Cisco UCS C220 M5服务器安装和维修指南</u>
- <u>包含CVIM的Ultra-M解决方案指南,版本6.2.bx</u>
- <u>技术支持和文档 Cisco Systems</u>

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