How to Run UCS C Series Diagnostics Tool without KVM?

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Introduction

This document describes how to run the Cisco Unified Computing System (UCS) diagnostics tool in command-line mode without using the Kernel Virtual Machine (KVM).

It leverages the Serial Over Lan (SOL) feature to connect with the diagnostics tool.

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Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Compatible diagnostics tool: Diagnostics tool image can be downloaded from the <u>Cisco</u> <u>Software Download</u> website for the specific server model.
- Secure Shell (SSH) should be enabled on the Cisco Integrated Management Controller (CIMC) and allowed in the network.

Components Used

The information in this document is based on these software and hardware versions:

- UCS C240-M4
- Server Firmware: 4.0(2f)
- UCS C Series Diagnostics tool version 6.0(2a)

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

Configure

Step 1. Enable Sol

Serial over LAN (SoL) is a mechanism that enables the input and output of the serial port of a managed system to be redirected via an SSH session over IP.

1. Log in to CIMC and navigate to **Compute > Remote Management > Serial over LAN**.

2. Enable Serial over LAN.

GUI:



CLI:

Server# scope sol Server /sol # set enabled yes Server /sol *# set baud-rate 115200 Server /sol *# commit

Step 2. Map Diagnostics ISO as CIMC Mapped vMedia Volume.

- 1. Navigate to Compute > Remote Management > Virtual Media.
- 2. Under Cisco-IMC mapped vMedia, Add a new mapping.
- 3. In the Add New Mapping pop-up window, fill in the details of the to create the mapping.

Note: HTTP mount type is used, there are other options like SMB and NFS.

GUI:

		Be disco Integrated Management Controller					🌲 👿 3	
		A / Compute / Remote Manag		Refresh Host Power Launch KVM Ping CIMC Reboot Locator Li				
Chassis	•	BIOS Remote Management	Troubleshooting	Power Policies	PID Catalog			
Compute		Virtual KVM Virtual Media Se Low Power USB Enabled	erial over LAN					
Networking	•	▼ Cisco IMC-Mapped vMedia	Add New Map	ping		0 X		
Storage	۲	Last Mapping Status	Volume	Volume]		
Admin	•	Current Mappings	Mount Type:	NFS	Ψ			Selected 0 / Total 0 🛛 🤹 👻
User Management		Add New Mapping Properties	Remote Share:	NFS				
Networking		Volume Mount Type	Remote File: Mount Optio	WWW(HTTP/HTTPS)		Browse		Mapping Status
Communication Services		No data available			Save	Cancel		
Security Management								
Event Management								

	➡ diata cisco Cisco Integrated	Management (🐥 🔽 3	admin@10.196.104.120 - C220-FC	:H201
	A / Compute / Remote Manag	gement 🚖			Refres	h Host Power Launch	KVM Ping CIMC Reboot Loca	itor LE
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		Volume	diagtest					
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User Management	Add New Mapping Properties	Remote File:	ucs-cox-diag.6.0.2a.i	50	Browse			
Networking	Volume Mount Type	Mount Optio	1		0		Mapping Status	
Communication Services	No data available	User Name	Username					
Security Management		Password:	Password					
Event Management				Save	Cancel			
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Utilities								
	Se Cisco Integrated I	Management (Controller			🌲 🔽 3	admin@10.196.104.120 - C220-FC	H2018
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Chassis •	BIOS Remote Management 1	roubleshooting	Power Policies	PID Catalog				
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Compute	▼ vKVM Console Based vMedia	Properties						
Networking •	Enabled 5	2						
Storage •	Active Sessions	0						
	Enable Virtual Media Encryption	2						
Admin 🔹								
User Management	 Cisco IMC-Mapped vMedia 							
Networking	Last Mapping Status	Success						
Communication Services	Current Mappings						Selected 0 / Total 1 🐇	3-
Security Management	Add New Mapping Properties	Unmap	map Delete					
Event Management	Volume Mount Type	Remote Share	Remote File	,	Status		Mapping Status	
Firmware Management	diagtest www	http://10.197.242.206	/files/ ucs-cxx-diag	.6.0.2a.iso	OK		Mapped	
Utilities								

Ensure that the mapping status shows **OK** and Mapping status is **Mapped**. This means that CIMC has mapped the ISO and can boot the server using this ISO.

Step 3. Configure Boot Order and make Cisco CIMC-Mapped vDVD as Boot Device.

1. Navigate to Compute > Bios > Configure Boot Order

- 2. Scroll down to the bottom, click on Configure Boot order.
- 3. A window pop-up on the screen, navigate to the Advanced tab.
- 4. Under Add Boot Device select Add Virtual Media.
- 5. Another window pop-up to fill in the information for Add virtual Media.
- 6. Enter the desired Name and in Sub Type drop-down menu, select CIMC MAPPED DVD.
- 7. Keep the order to 1st Priority and save changes.

CIMC GUI:



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		*			Balaah I Ua	at Damas I. Lawson 10		IC Reboot Loc
Chassis 🔸	Configure Boot Order				_		@ X	
Computo	Configured Boot Level: Advar	ced						
Compute	Basic Advanced							
Networking •	Add Boot Device	Advanced Boot Ord	der Configuration		Select	ed 0 / Total 0 🛛 🛱 👻		
Storage	Add Local HDD	Add Virtual I	Media	_	Move De			
	Add PAE Boot	Nam	e diagtest					
Admin 🔹	Add iSCSI Boot	No data Sub Typ	e None	•				
User Management	Add Usb Add Virtual Media	Stat	e None KVM MAPPED DVD					
Networking	Add PCHStorage	Orde	CIMC MAPPED DVD	(1 - 1)				
Communication Services	Add SD Card		CIMC MAPPED HDD	hanges	Cancel			
Security Management	Add NVME		KVM MAPPED FDD					
Event Management								
Firmware Management								
Utilities					Save Changes	Reset Values	Close	
Device Connector	_							
	🗄 🖞 🖓 Cisco In	tegrated Manager	nent Controller			🐥 🔻 3	admin@10.196.1	04.120 - C220-F
	Configure Boot Order							IC Reboot Loc
Chassis •	Configure Door order							
Compute	Configured Boot Level: Adva	anced						
	Basic Advanced							
Networking •	Add Boot Device	Advanced Boot Or	rder Configuration		Selec	ted 1 / Total 1 🖧 👻	.	
Storage •	Add Local HDD Add PXE Boot	Enable/Disable	Modify Delete C	Clone Re-Apply	Move Up Move D	own		
Admin	Add SAN Boot	Name	Туре	Order	State			
Admin	Add iSCSI Boot Add USB	✓ diagtest	VMEDIA	1	Enabled			
User Management	Add Virtual Media							
Networking	Add PCHStorage Add UEFISHELL							
Communication Services	Add SD Card							
Security Management	Add NVME							
Event Management								
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Device connector								
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Chassis	BIOS Remote Manag	gement Troubleshoo	Dring Power Policies	PID Catalog				
Compute	Configure BIOS Con	nfigure Boot Order	Configure BIOS Profile					
Networking	BIOS Properties							
Networking		Running Version C2	20M4.4.0.1f.0.0521190217					
Storage	•	UEFI Secure Boot						
Admin	•	Actual Boot Mode Le	gacy	_				
User Management	Last Configure	d Boot Order Source Cli	MCOneTimeBoot	•				
Networking	Configured (One time boot device		•				
Communication Services	Save Changes							
Security Management								
Event Management	 Configured Boot Device 	5		Actual Boot Device	es			
Firmware Management	Basic			Cisco CIMC-Mapp	ed vDVD1.22 (ravi2)			
Utilities	diagtest			(Bus 0E Dev 00)P	Sneii (NonPolicyTarget) PCI RAID Adapter (NonPolicyTa	rget)		
Device Connector				IBA XE Slot 0F00	v2413 (NonPolicyTarget)			
				IBA XE Slot 0F01	v2413 (NonPolicyTarget)			

Alternatively: if don't want to change the boot order, **Configure One Time Boot Order** to **CIMC Mapped DVD**. This allows the diag-ISO to boot on the next reboot irrespective of the configured boot order.

Now, SoL is enabled, Diagnostics ISO is mapped as CIMC Mapped DVD and boot order is configured, ready to launch SSH session to the CIMC IP and do **connect host** to re-direct the output on SSH.

- Power cycle the server to boot the diag test tool; Since the diag tool is mounted on CIMC mapped vDVD and configured it as the first boot device (or one-time boot device), the Diag test should boot automatically
- 2. SSH to CIMC IP.



3. Run connect host to connect to the server serial console via SSH (SOL).

_		
🛃 10.106.42.12 - PuTTY	-	\times
📲 login as: admin		\sim
🚰 admin@10.106.42.12's password:		
C220-FCH2018V1AG# connect host		
CISCO Serial Over LAN:		
Press Ctrl+x to Exit the session		

4. Wait for output to be redirected to the SOL (SSH Session), please be advised it may not see any activity on the SSH screen while the server is doing bios post and diag tool is booting in the background. Once diag tool has booted, it presents the End-User License Agreement screen (EULA) and that's when the output starts coming on the SOL (SSH session). It took 3-5 minutes in the lab for the diag tool to boot.



5. After EULA (either press **a** or hit enter when **Accept** is highlighted) is accepted, it gets the **diag#** command line. Commands available are shown in this image.



Note: Ensure that the SSH port used in the SOL configuration is allowed in the network.

Verify

UCS Rack Server Diagnostics v6.0.2a

Left and Right-click the scrollbar to scroll down and up respectively

Press? anytime to see a list of commands/sub-commands available

diag#?	
Cimc	cimc tests
clear	clear commands
comprehensive	comprehensive test suite
cpu	cpu tests
gui	enter GUI mode
memory	memory tests
pci	pci tests
quick	quick test suite
reboot	reboot the server
saveusb	save logs to USB drive
server	server information
show	show information
smbios	show smbios information
diag# show	
analysis	show test analysis
CDU	show /proc/cpuinfo
ecc	show ecc info
ipmi	show ipmi sensor info
loq	show test log
memory	show /proc/memory
performance	show processor perf ctr monitor info
sel	show sel log
spd	show dimm spd info
status	show test status
temperature	show system temperature info
version	blade diagnostics software version

In order to check the Dlag tool version:

diag# show version
6.0.2a