

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 [Cisco Software Download](#) 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.

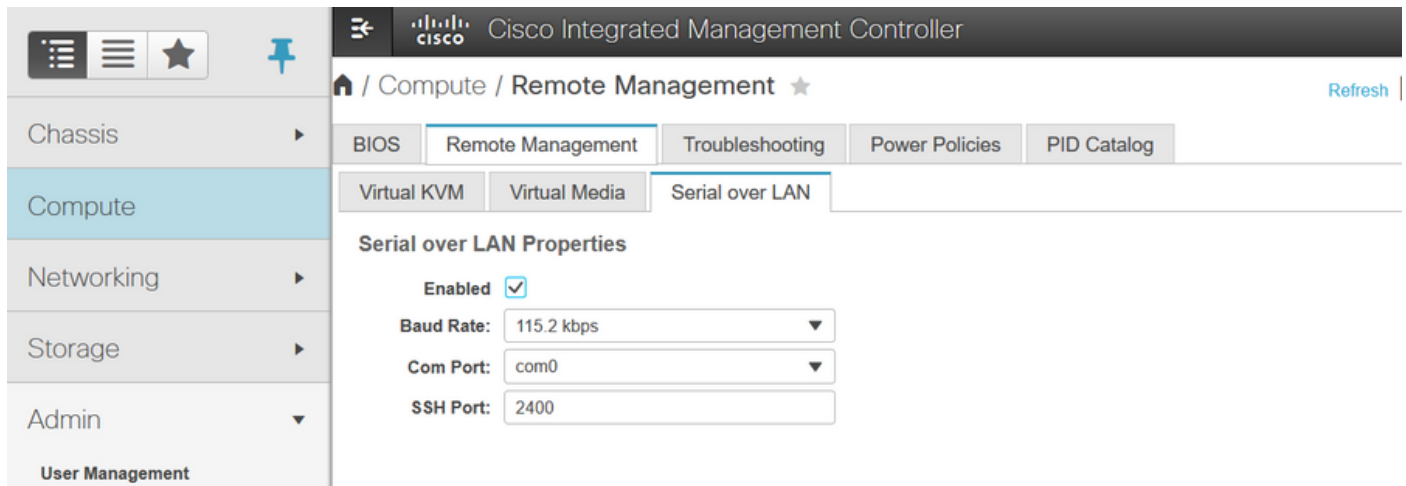
Configure

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:

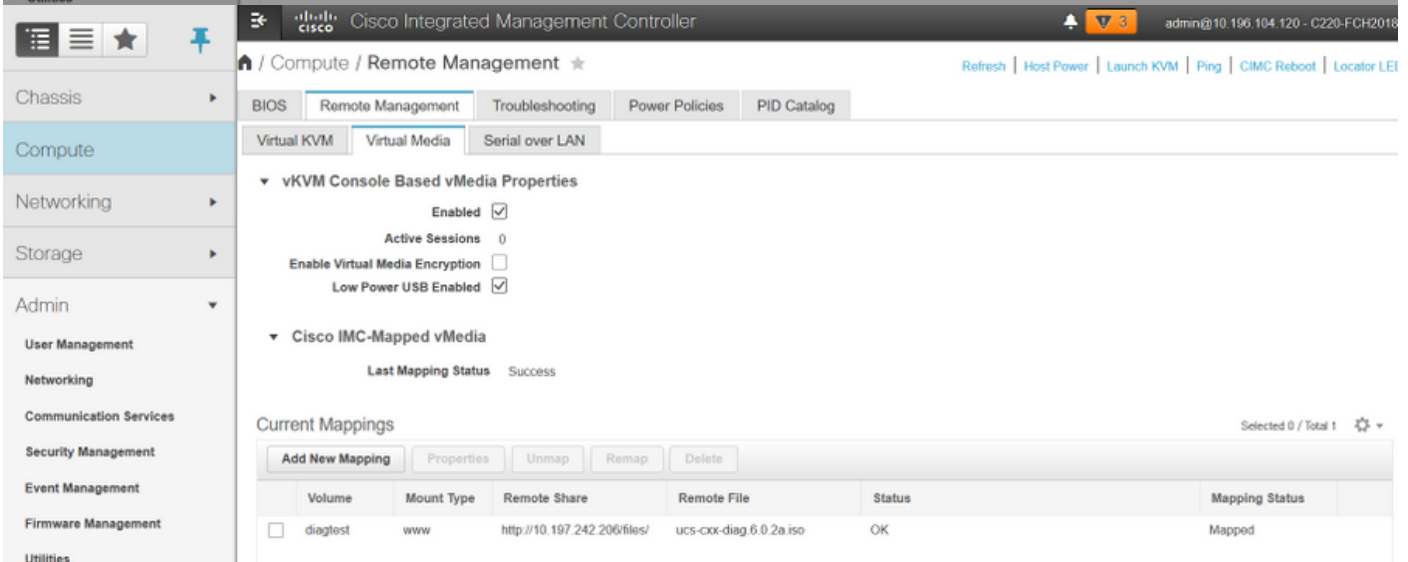
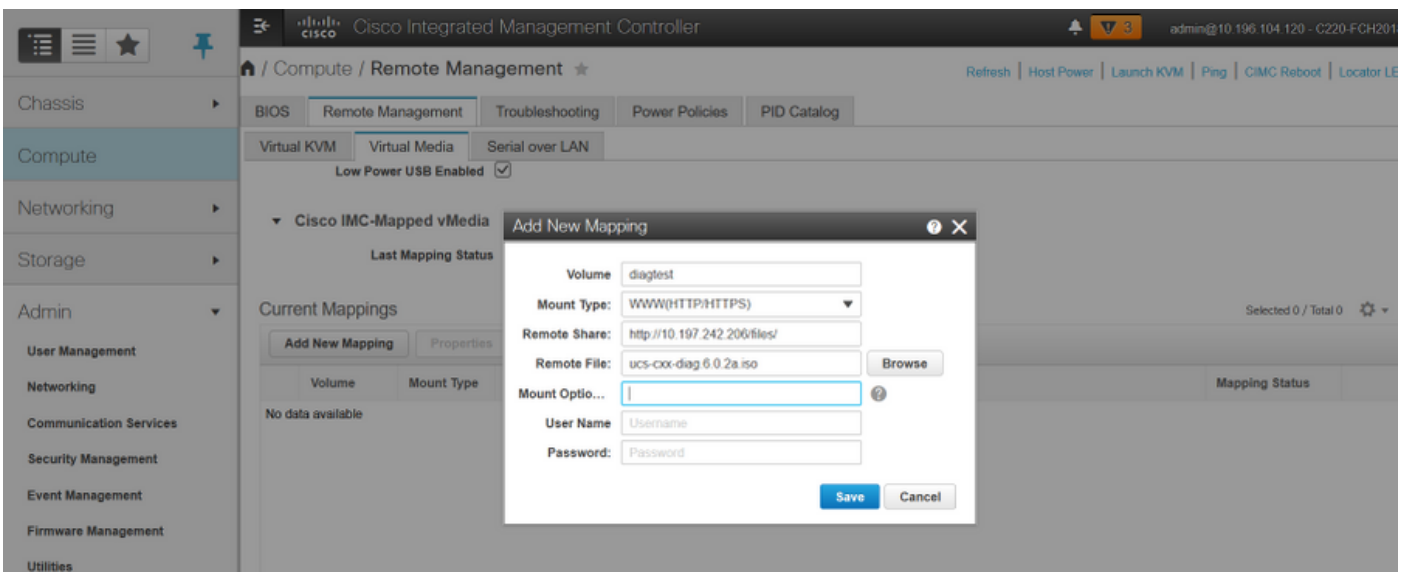
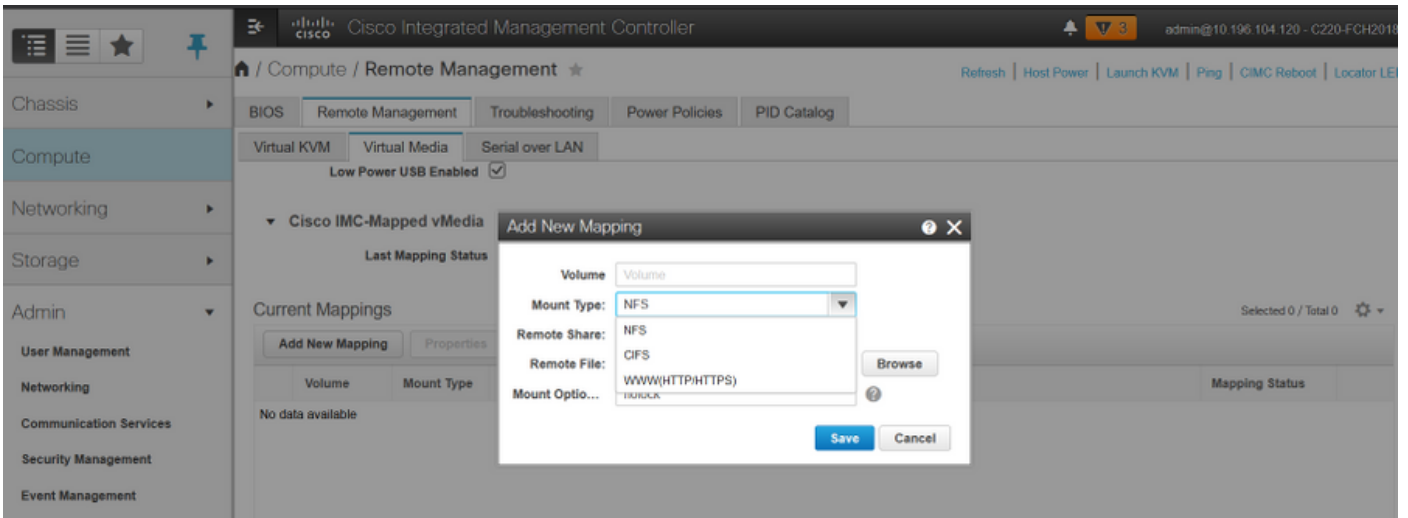
```
Server# scope sol Server /sol # set enabled yes Server /sol *# set baud-rate 115200 Server /sol *# commit
```

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:



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:

The image displays two screenshots of the Cisco Integrated Management Controller (CIMC) GUI, specifically the BIOS configuration page.

Top Screenshot: BIOS Properties

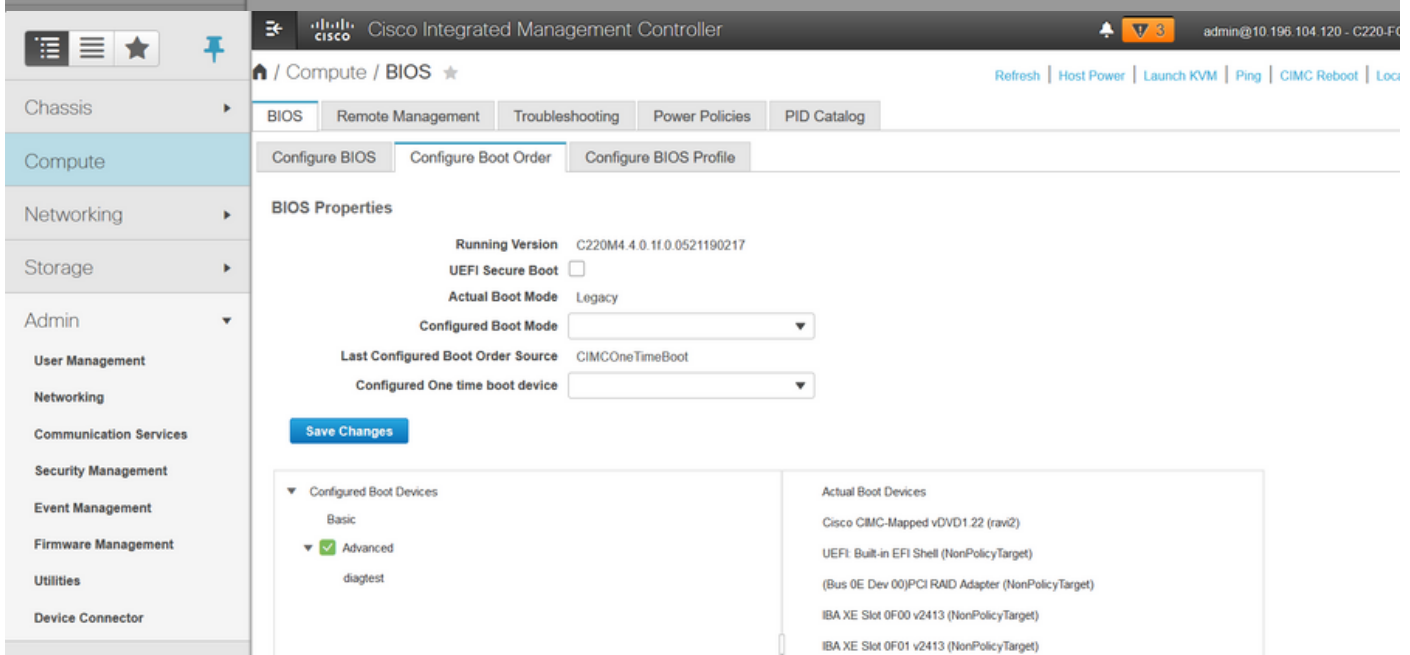
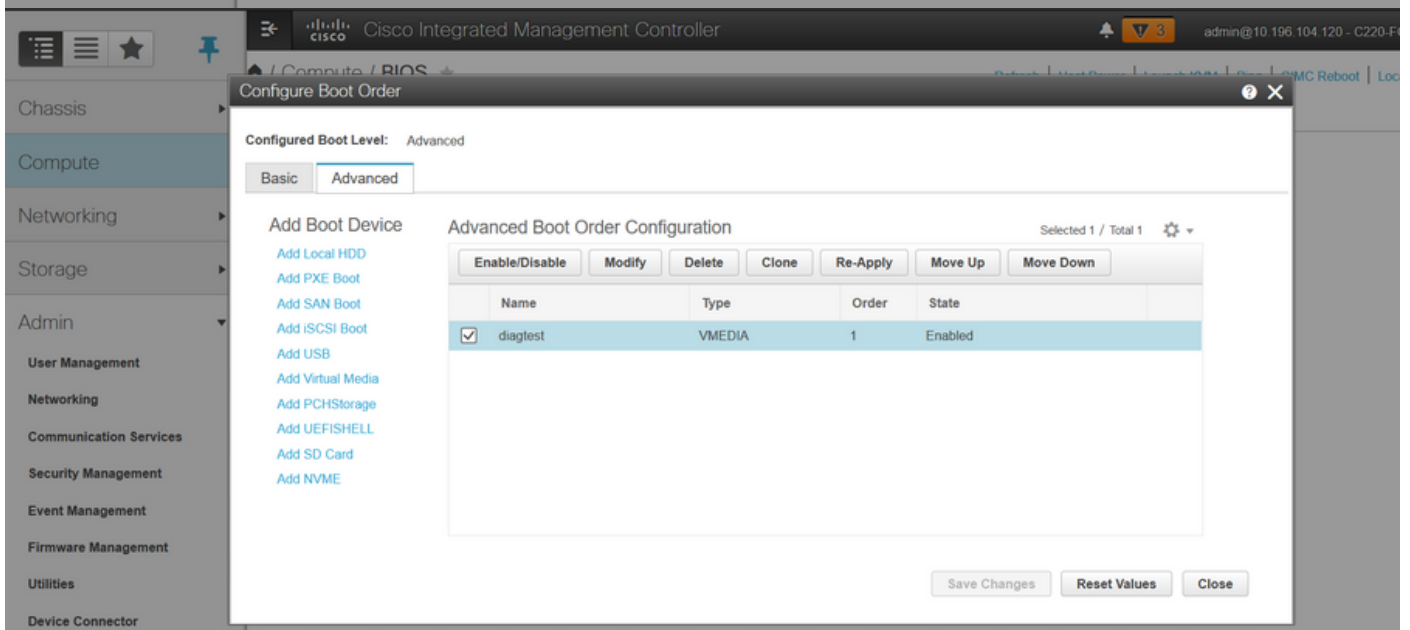
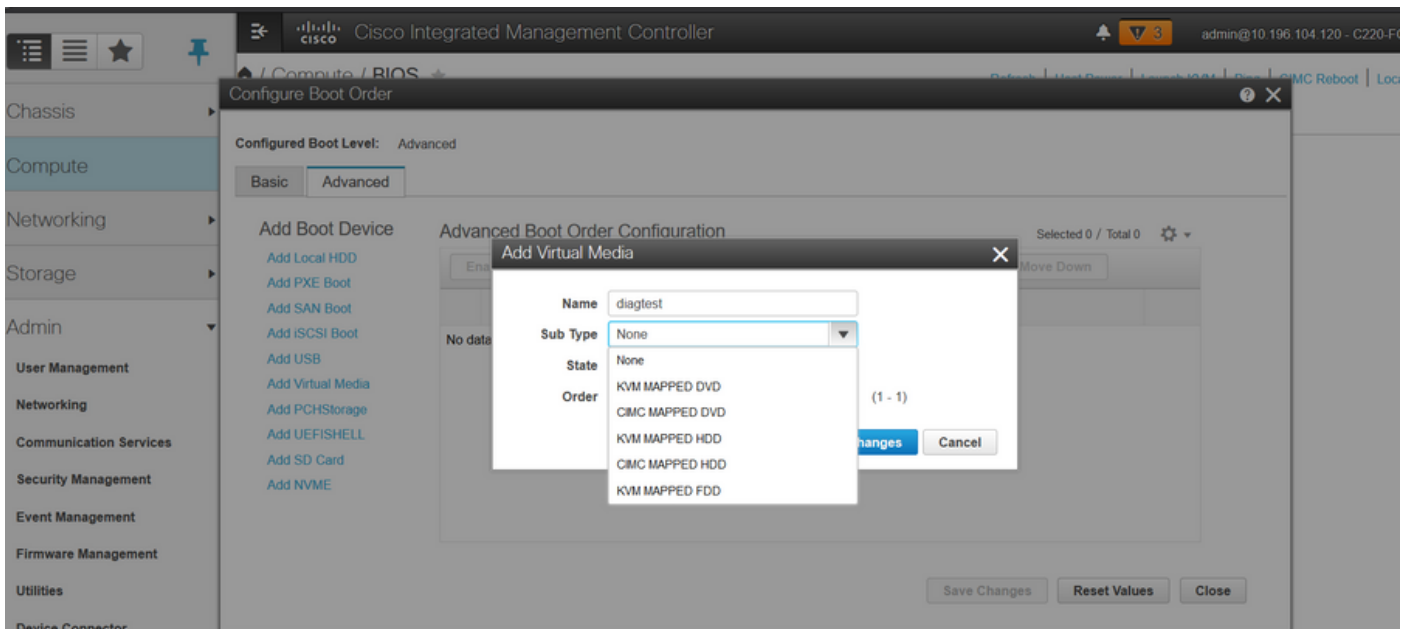
The top screenshot shows the "BIOS Properties" section. The "Running Version" is C220M4.4.0.1f.0.0521190217. The "UEFI Secure Boot" checkbox is unchecked. The "Actual Boot Mode" is Legacy. The "Configured Boot Mode" is set to Legacy. The "Last Configured Boot Order Source" is CIMCOneTimeBoot. The "Configured One time boot device" is set to Legacy. A "Save Changes" button is visible at the bottom of this section.

Bottom Screenshot: Configured Boot Devices

The bottom screenshot shows the "Configured Boot Devices" section. The "Advanced" tab is selected. The "Actual Boot Devices" list includes:

- Cisco CIMC-Mapped vDVD1.22 (ravi2)
- UEFI: Built-in EFI Shell (NonPolicyTarget)
- (Bus 0E Dev 00)PCI RAID Adapter (NonPolicyTarget)
- IBA XE Slot 0F00 v2413 (NonPolicyTarget)
- IBA XE Slot 0F01 v2413 (NonPolicyTarget)
- UNIGEN PHF16H0CM1-DTE PMAP (NonPolicyTarget)
- CiscoVD Hypervisor (NonPolicyTarget)
- Cisco vKVM-Mapped vDVD1.22 (NonPolicyTarget)
- Cisco vKVM-Mapped vHDD1.22 (NonPolicyTarget)
- Cisco vKVM-Mapped vFDD1.22 (NonPolicyTarget)
- Cisco CIMC-Mapped vHDD1.22 (NonPolicyTarget)

A "Configure Boot Order" button is highlighted at the bottom of the list.

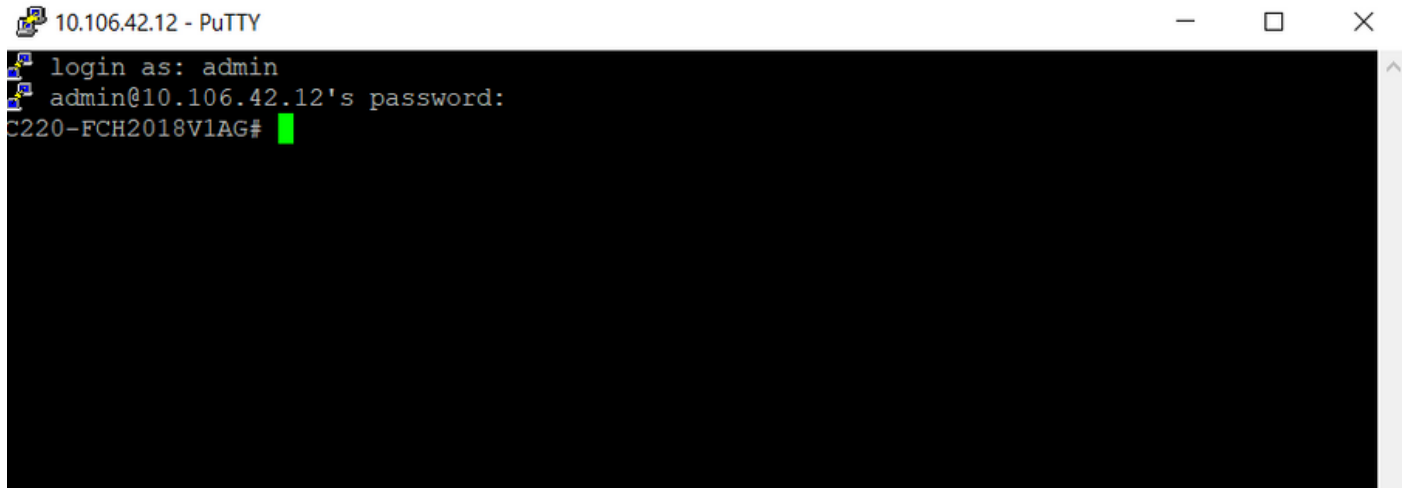


Alternatively: if don't want to change the boot order, **Configure One Time Boot Order to CIMC Mapped DVD**. This allows the diag-ISO to boot on the next reboot irrespective of the configured

boot order.

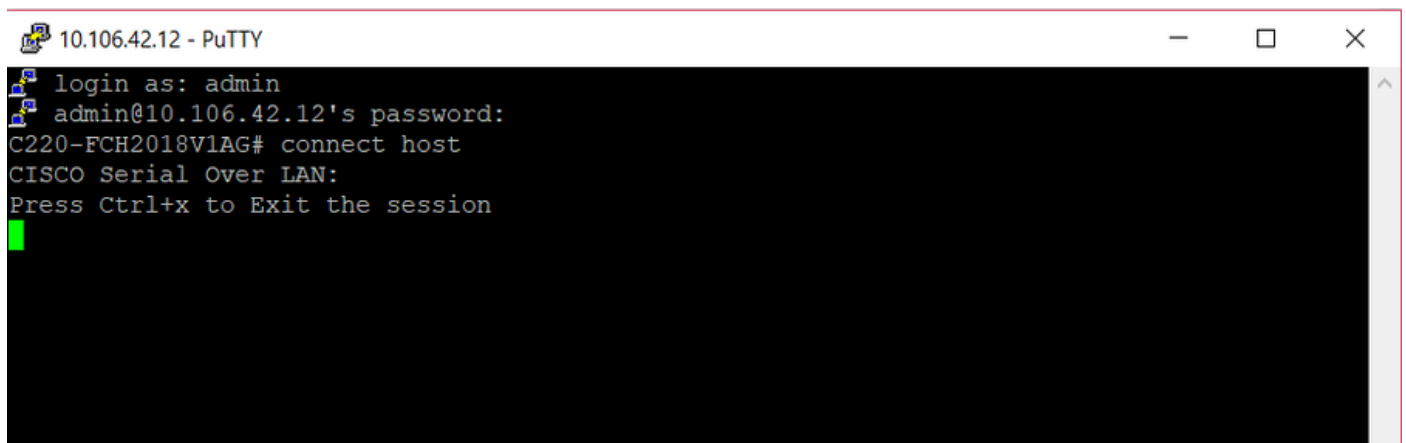
Now, SoL is enabled, Diagnostics ISO is mapped as CIMC Mapped DVD and boot order is configured, ready to launch SSH session to the CIMC IP and do **connect host** to re-direct the output on SSH.

1. 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.



```
10.106.42.12 - PuTTY
login as: admin
admin@10.106.42.12's password:
C220-FCH2018V1AG#
```

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



```
10.106.42.12 - PuTTY
login as: admin
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.

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
cpu                 show /proc/cpuinfo
ecc                 show ecc info
ipmi                show ipmi sensor info
log                 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 Ddiag tool version:

```
diag# show version
6.0.2a
```