



Cisco UCS C-Series Integration with Cisco UCS Manager

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Overview

This guide contains information and procedures for installing Cisco UCS Rack Mount Servers for integration with Cisco UCS Manager.

Cisco UCS C-Series Rack-Mount Servers are managed by the built-in standalone software, Cisco Integrated Management Controller (CIMC). When a C-Series Rack-Mount Server is integrated with Cisco UCS Manager, the Cisco IMC does not manage the server anymore. Instead it is managed with the Cisco UCS Manager software. You will manage the server using the Cisco UCS Manager GUI or Cisco UCS Manager CLI.



Important

If your server is not new, make sure to reset the Cisco IMC to factory default settings before integrating the server with Cisco UCS Manager. See *Server Utilities* chapter in [Cisco UCS C-Series Integrated Management Controller GUI Configuration Guide](#) for your release to reset the server to factory default settings.

You can integrate Cisco UCS C-Series Rack-Mount Servers with Cisco UCS Manager in either one of the following setup:

- **Cluster setup:** Using two fabric extenders (FEXes) to connect the C-Series Rack-Mount Server with two fabric interconnects.

- **Non-cluster setup:** Connecting the C-Series Rack-Mount Server with one FEX and one FI.

For Cisco UCS S-Series Rack-Mount Servers integration with Cisco UCS Manager, see the [Cisco UCS S3260 Server Integration with Cisco UCS Manager](#) guide in your specific release.

Integrating C-Series Rack Mount Server with Cisco UCS Manager

Cisco UCS Manager provides three connectivity modes for Cisco UCS C-Series Rack-Mount Server management. The following are the connectivity modes:

- **Dual-wire Management (Shared LOM):** Shared LAN on Motherboard (LOM) ports on the rack server are used exclusively for carrying management traffic. A separate cable connected to one of the ports on the PCIe card carries the data traffic. Using two separate cables for managing data traffic and management traffic is also referred to as dual-wire management.
- **SingleConnect (Sideband):** Using Network Controller Sideband Interface (NC-SI), the Cisco VIC card connects one cable that can carry both data traffic and management traffic. This feature is referred to as SingleConnect.
- **Direct Connect Mode:** Cisco UCS Manager An additional rack server management mode using direct connection (Sideband) to the Fabric Interconnect.



Note

The LOM ports on Cisco UCS C-Series Rack-Mount Servers integrated with Cisco UCS Manager can not be used for data traffic. The LOM ports are disabled when the C-Series Rack-Mount Servers are in Cisco UCS Manager mode.

The general prerequisites for Dual-wire integration with Cisco UCS Manager are built into the C-Series Rack-Mount Server CIMC release 1.4(6) or later. If you want to use the SingleConnect or direct connect modes you must have the following:

- Server CIMC release 1.4(6) or later
- Cisco UCS VIC 1225 Virtual Interface Card
- Cisco UCS VIC 1227 (MLOM)
- Cisco UCS VIC 1225T Virtual Interface Card
- Cisco UCS VIC 1227T (MLOM)
- Cisco UCS VIC 1387 (MLOM)
- Cisco UCS VIC 1385



Important

For the third generation Cisco UCS VIC adapter or later (VIC 13xx), we recommend that you reset CIMC to factory default before connecting the Cisco VIC adapter to the UCS Fabric Interconnect switch.



Note The Cisco UCS VIC 1225T and 1227T adapters are supported only with Cisco Nexus 2232TM-E 10GE Fabric Extender using RJ45 Network cable.

The following table lists the C-Series Rack-Mount Servers and supported management options:



Note Dual-Wire Management is supported only with Cisco VIC adapters and not with third-party adapters.

Table 1: Supported Management Options

Servers	SingleConnect	Direct Connect Mode	Dual-wire Management
Cisco UCS C22 M3 Server	Yes	Yes	Yes
Cisco UCS C24 M3 Server	Yes	Yes	Yes
Cisco UCS C220 M3 Server	Yes	Yes	Yes
Cisco UCS C240 M3 Server	Yes	Yes	Yes
Cisco UCS C420 M3 Server	Yes	Yes	Yes
Cisco UCS C220 M4 Server	Yes	Yes	Yes
Cisco UCS C240 M4 Server	Yes	Yes	Yes
Cisco UCS C460 M4 Server	Yes	Yes	Yes
Cisco UCS C220 M5 Server	Yes	Yes	Yes
Cisco UCS C240 M5 Server	Yes	Yes	Yes
Cisco UCS C480 M5 Server	Yes	Yes	Yes



Note If you have a Cisco UCS Manager release earlier than 2.2(2a), integration is not supported for Cisco UCS C22 and C24 servers that have Intel E5-2400 v2 CPUs at this time. This integration is supported only with Intel E5-2400 v1 CPUs.

Based on your server model and CIMC version, you can use either one of these three integration options to connect the rack server with Cisco UCS Manager.

Cisco UCS Manager runs within the fabric interconnect (FI). With earlier Cisco UCS Manager releases, you need to use Fabric Extenders to connect the c-series server with the Fabric Interconnect to enable management with Cisco UCS Manager. You can directly connect the server adapter with the Fabric Interconnect without using the Fabric Extender.

You can use any of the interfaces available with this management service to access, configure, administer, and monitor the network and server resources for all chassis connected to the fabric interconnect. For information about the Cisco UCS 6200 series or Cisco UCS 6300 series fabric interconnects, see the documentation at the following link:

- [Cisco UCS 6200 Series Fabric Interconnect documentation](#)
- [Cisco UCS 6300 Series Fabric Interconnect documentation](#)

For information about the Cisco Nexus 2232, Cisco Nexus 2232TM-E or Cisco Nexus 2348UPQ fabric extenders (FEXes) in the configuration, see the documentation at the following link:

- [Cisco Nexus 2000 Series Fabric Extender documentation](#)

Hardware Maintenance

Replacing servers and certain adapter cards requires that the server be decommissioned and recommissioned. See the decommissioning a Rack-Mount server and recommissioning a Rack-Mount Server sections in the appropriate [Cisco UCS Manager Configuration Guide](#).

FEX Connection Mode and Discovery

You can connect the FEX to the FI in two ways. Cisco UCS Manager FI discovers the FEX based on the FEX/Chassis discovery mode. The FEX connection modes are:

- **Hard-Pinning mode:** The server facing FEX ports are pinned to the connected uplink ports when the FEX is discovered. Cisco UCS Manager pins the server-facing ports to the uplink ports based on the number of acknowledged uplink ports. After the pinning, if you add a new uplink or delete an existing uplink, you must manually acknowledge the FEX to apply the changes.
- **Port-Channel mode:** Port-Channel mode does not have pinning. A single port channel works as the uplink to all server-facing ports. And all uplink ports are members of this single port channel. If one of the uplink ports goes down, the traffic is automatically distributed to another available uplink port.

In port-channel mode, when you cable between FEX and the FI, the available virtual interface (VIF) namespace varies, depending on where the uplinks are connected to the FI ports:

- When port-channel uplinks from the FEX are connected only within a set of eight ports managed by a single chip, Cisco UCS Manager maximizes the number of VIFs used in service profiles deployed on the servers.
- If uplink connections are distributed across ports managed by separate chips, the VIF count is decreased. For example, if you connect seven members of the port channel to ports 1–7, but the eighth member to port 9, this port channel can only support VIFs as though it had one member.

For more information on FEX discovery policies and port-channel allocation, see the appropriate [Cisco UCS Manager Configuration Guide](#).

Maximum Configurable vNICs/vHBAs Based on Number of FEX Uplinks

The following table describes maximum configurable vNICs/vHBAs on a VIC adapter based on the number of FEX uplinks:

Table 2: Cisco UCS 6300 Fabric Interconnect

Acknowledged link between FEX and FI	Maximum configurable vNICs/vHBA on a VIC adapter for the VIC adapters 1225, 1225T, 1227, 1227T, 1385 and 1387
1	117
2	117
4	117
8	117

Table 3: Cisco UCS 6200 Fabric Interconnect

Acknowledged link between FEX and FI	Maximum configurable vNICs/vHBA on a VIC adapter for the VIC adapters 1225, 1225T, 1227, 1227T, 1385 and 1387
1	12
2	27
4	57
8	117

New Hardware in Release 3.2(3a)

M5 Servers

- Support for the following NVMe-optimized M5 servers:
 - UCSC-C220-M5SN—The PCIe MSwitch is placed in the dedicated MRAID slot for UCS C220 M5 servers. This setup supports up to 10 NVMe drives. The first two drives are direct-attached through the riser. The remaining eight drives are connected and managed by the MSwitch. This setup does not support any SAS/SATA drive combinations.
 - UCSC-C240-M5SN—The PCIe MSwitch is placed in the riser-2 at slot-4 for UCS C240 M5 servers. The servers support up to 24 drives. Slots 1-8 are the NVMe drives connected and managed by the MSwitch. The servers also support up to two NVMe drives in the rear and are direct-attached through the riser. This setup supports SAS/SATA combination with the SAS/SATA drives from slots 9-24. These drives are managed by the SAS controller placed in the dedicated MRAID PCIe slot.
 - UCS-C480-M5—UCS C480 M5 servers support up to three front NVMe drive cages, each supporting up to eight NVMe drives. Each cage has an interposer card, which contains the MSwitch. Each server can support up to 24 NVMe drives (3 NVMe drive cages x 8 NVMe drives). The servers also support a rear PCIe Aux drive cage, which can contain up to eight NVMe drives managed by an MSwitch placed in PCIe slot-10.

This setup does not support:


- a combination of NVMe drive cages and HDD drive cages
- a combination of the Cisco 12G 9460-8i RAID controller and NVMe drive cages, irrespective of the rear Auxiliary drive cage



Note The UCS C480 M5 PID remains same as in earlier release.

Peripherals

- Support for the Cisco 12G 9460-8i RAID controller with 2GB cache (UCSC-SAS9460-8I) for UCS C480 M5 rack-mount servers.
Support for UCS C480 M5 (UCSC-C480-8AUX) Auxiliary Drive Modules for the Cisco 12G 9460-8i RAID controller.
- Support for the following new NVMe SSD drives on all M5 servers:
 - HGST SN200 1.6TB 2.5 in SSD (UCSC-NVMEHW-H1600)
 - HGST SN200 3.2TB 2.5 in SSD (UCSC-NVMEHW-H3200)
 - HGST SN200 6.4TB 2.5 in SSD (UCSC-NVMEHW-H6400)
 - HGST SN200 7.7TB 2.5 in SSD KNCCD101 (UCSC-NVMEHW-H7680)
 - HGST SN200 800GB 2.5 in SSD (UCSC-NVMEHW-H800)
- Support for the following new NVMe SSD drives on NVMe-optimized M5 servers:
 - Cisco 2.5" 375GB Intel Xpoint BRAND NVMe Extreme Perf (UCSC-NVMEXP-I375) - Supported only on C220 M5
 - Cisco 2.5" 750GB Intel Xpoint BRAND NVMe Extreme Perf. (UCSC-NVMEXP-I750) - Supported only on C220 M5

- Cisco 2.5" 1.6TB Intel P4600 NVMe High Perf High Endurance (UCSB-NVMEHW-I1600)
 - Cisco 2.5" 2TB Intel P4600 NVMe High Perf High Endurance (UCSB-NVMEHW-I2000)
 - Cisco 2.5" 3.2TB Intel P4600 NVMe High Perf High Endurance (UCSB-NVMEHW-I3200)
 - Cisco 2.5" 1TB Intel P4500 NVMe High Perf Value Endurance (UCSB-NVMEHW-I1000)
 - Cisco 2.5" 2TB Intel P4500 NVMe High Perf Value Endurance (UCSB-NVMEHW-I2TBV)
 - Cisco 2.5" 4TB Intel P4500 NVMe High Perf Value Endurance (UCSB-NVMEHW-I4000)
 - Cisco 2.5" 500GB Intel P4501 NVMe Med. Perf. Value Endurance (UCSB-NVMELW-I500)
 - Cisco 2.5" 1TB Intel P4501 NVMe Med. Perf. Value Endurance (UCSB-NVMELW-I1000)
 - Cisco 2.5" 2TB Intel P4501 NVMe Med. Perf. Value Endurance (UCSB-NVMELW-I2000)
- Support for the following MSwitch card in NVMe optimized M5 servers:
 - UCS-C480-M5 HDD Ext NVMe Card (UCSC-C480-8NVME)—Front NVMe drive cage with an attached interposer card containing the PCIe MSwitch. Each server supports up to three front NVMe drive cages and each cage supports up to 8 NVMe drives. Each server can support up to 24 NVMe drives (3 NVMe drive cages x 8 NVMe drives).
 - UCS-C480-M5 PCIe NVMe Switch Card (UCSC-NVME-SC)—PCIe MSwitch card to support up to eight NVMe drives in the rear auxiliary drive cage inserted in PCIe slot 10.
-  **Note** Cisco UCS-C480-M5 servers support a maximum of 32 NVMe drives (24 NVMe drives in the front + 8 NVMe drives in the rear auxiliary drive cage)
- UCSC-C220-M5SN and UCSC-C240-M5SN do not have separate MSwitch PIDs. MSwitch cards for these servers are part of the corresponding NVMe optimized server.
- Support for the following NVIDIA GPUs:
 - P4 GPUs with C220 M5 and C240 M5 servers
 - V100 GPUs with C240 M5, C480 M5 servers
- Support for the following Intel adapter with UCS M5 servers:
 - Intel XL710 adapter (UCSC-PCIE-ID40GF)
 - Intel XXV710-DA2 adapter (XXV710-DA2)
 - Intel X710-DA4 adapter (UCSC-PCIE-IQ10GF)
 - Intel X710-DA2 adapter (UCSC-PCIE-ID10GF)
 - Intel X710-T4 adapter (X710-T4)
 - Intel X550-T2 adapter (UCSC-PCIE-ID10GC)
 - Intel X520 dual port adapter (N2XX-AIPCI01)

New Hardware in Release 3.2(2b)

M5 Servers

- Support for the UCS B480 M5 blade server



Note Only Cisco UCS VIC 1340 and VIC 1380 adapters are supported on UCS B480 M5 servers.

- Support for the UCS C480 M5 rack-mount servers



Note Only Cisco UCS VIC 1385 is supported on UCS C480 M5 servers.

Peripherals

- Support for the following new NVMe devices with relevant UCS M4 and M5 servers:
 - Cisco 2.5" U.2 800GB HGST SN200 NVMe High Perf. High Endurance:
 - For UCS M4 Servers - UCSC-NVMEM4-H800
 - For UCS M5 Servers - UCSC-NVMEHW-H800
 - Cisco 2.5" U.2 1.6 TB HGST SN200 NVMe High Perf. High Endurance:
 - For UCS M4 Servers - UCSC-NVMEM4-H1600
 - For UCS M5 Servers - UCSC-NVMEHW-H1600
 - Cisco HHHL AIC 6.4TB HGST SN260 NVMe Extreme Perf High Endurance for UCS M4 and M5 servers (UCSC-NVME-H64003)
 - Cisco HHHL AIC 7.7TB HGST SN260 NVMe Extreme Perf High Endurance for UCS M4 and M5 servers (UCSC-NVME-H76801)
 - Cisco HHHL AIC 3.2TB SN260 NVMe Extreme Perf High Endurance for UCS M4 and M5 servers (UCSC-NVME-H32003)
- Support for NVIDIA P4 GPUs with UCS C240 M5 servers
- Support for the following Qlogic adapters with UCS M5 servers:
 - QLogic QL41212H 25GbE (UCSC-PCIE-QD25GF)
 - QLogic QL45212H 40GbE (UCSC-PCIE-QD40GF)
- Support for the following Intel adapter with UCS M5 servers:
 - Intel X710-T4 (UCSC-PCIE-IQ10GC)

- Azure stack support on the following adapters:
 - QLogic 40G card (UCSC-PCIE-QD40GF)
 - Cisco HHHL AIC 3.2TB SN260 (UCSC-NVME-H32003)

New Hardware in Release 3.2(1)

M5 Servers

- Support for C220 M5 and C240 M5 rack-mount servers
- Enablement for HX220 M5, HX240 M5, HXAF 220 M5, HXAF 240 M5 servers
- Support for M5 servers on Cisco UCS 6200 Series, 6300 Series, and 6324 fabric interconnects
- Support for M5 servers with UCS IOMs 2204, 2208, and 2304
- Support for UCS FEX-based connectivity to M5 rack-mount servers.

Peripherals

- Support for the following new NVMe devices with relevant M5 servers:
 - Cisco 2.5" U.2 800GB HGST SN200 NVMe High Perf. High Endurance (UCSC-NVMEHW-H800)
 - Cisco 2.5" U.2 1.6 TB HGST SN200 NVMe High Perf. High Endurance (UCSC-NVMEHW-H1600)
 - Cisco 2.5" U.2 3.2 TB HGST SN200 NVMe High Perf. High Endurance (UCSC-NVMEHW-H3200)
 - Cisco 2.5" U.2 6.4 TB HGST SN200 NVMe High Perf. High Endurance (UCSC-NVMEHW-H6400)
 - Cisco 2.5" U.2 7.7 TB HGST SN200 NVMe High Perf. High Endurance (UCSC-NVMEHW-H7680)
 - Cisco 3.5" LFF 800GB HGST SN200 NVMe High Perf. High Endurance (UCSC-NVMEHY-H800)
 - Cisco 3.5" LFF 1.6TB HGST SN200 NVMe High Perf. High Endurance (UCSC-NVMEHY-H1600)
 - Cisco 3.5" LFF 3.2TB HGST SN200 NVMe High Perf. High Endurance (UCSC-NVMEHY-H3200)
 - Cisco HHHL AIC 1.6TB HGST SN250 NVMe Extreme Perf High Endurance (UCSC-NVME-H16003)
 - Cisco HHHL AIC 3.2TB HGST SN250 NVMe Extreme Perf High Endurance (UCSC-NVME-H32003)
 - Cisco HHHL AIC 3.8TB HGST SN250 NVMe Extreme Perf High Endurance (UCSC-NVME-H38401)
 - Cisco HHHL AIC 6.4TB HGST SN250 NVMe Extreme Perf High Endurance (UCSC-NVME-H64003)
 - Cisco HHHL AIC 7.7TB HGST SN250 NVMe Extreme Perf High Endurance (UCSC-NVME-H76801)
- Support for the following NVIDIA P40 GPU with the C240 M5 rack-mount server:
 - UCSC-GPU-P40

- Support for the following Qlogic adapters with C220 M5 and C240 M5 rack-mount servers:
 - Qlogic QLE2692 dual-port 16G Fibre Channel HBA (UCS-PCIE-QD16GF)
 - Qlogic QLE2672-CSC, 16Gb Fibre Channel with SR Optics HBA (UCSC-PCIE-Q2672)
 - Qlogic QLE2742 dual-port 32G Fibre Channel HBA (UCSC-PCIE-QD32GF)
- Support for the following Emulex adapters with C220 M5 and C240 M5 rack-mount servers:
 - Emulex LPe32000-M2 single-port 32G HBA (UCSC-PCIE-BS32GF)
 - Emulex LPe32000-M2 dual-port 32G HBA (UCSC-PCIE-BD32GF)
 - Emulex LPe16002-M6 16G FC rack HBA (UCSC-PCIE-E16002)
- Support for SD storage modules (UCS-MSTOR-SD) on M5 servers
- Support for the following SD cards with UCS-MSTOR-SD:
 - UCS-SD-32G-S
 - UCS-SD-64G-S
 - UCS-SD-128G
- Support for M.2 SATA storage modules (UCS-MSTOR-M2) on M5 servers
- Support for the following M.2 SATA drives with UCS-MSTOR-M2:
 - 240GB M.2 6G SATA SSD (UCS-M2-240GB)
 - 960GB M.2 6G SATA SSD (UCS-M2-960GB)
- Support for the following RAID controllers:
 - Cisco 12G Modular Raid controller with 2GB cache (max 16 drives) (UCSC-RAID-M5) - For C220 M5 and C240 M5 rack-mount servers.
 - Cisco 12G Modular Raid controller with 4GB cache (max 26 drives) (UCSC-RAID-M5HD) - For C240 M5 rack-mount server
 - Cisco 12G Modular SAS HBA (max 16 drives) (UCSC-SAS-M5) - For C220 M5 and C240 M5 rack-mount servers.
 - Cisco 12G Modular SAS HBA (max 26 drives) (UCSC-SAS-M5HD) - For C240 M5 rack-mount server.
 - LSI MegaRAID SAS 3108 (UCSC-MRAID12G) - For C220 M5 rack-mount server.

Supported C-Series Servers and Adapter Cards

Adapter Cards

The following table shows the adapter cards for C-Series Rack-Mount Servers integration with Cisco UCS Manager:

Table 4: Adapter Cards for Rack Server Integration

Adapter Model	Dual Wire Connection	SingleWire Connection	Direct Connection
Cisco MLOM 1387 (UCSC-MLOM-C40Q-03)	Yes	Yes	Yes
Cisco UCS 1385 VIC (UCSC-PCIE-C40Q-03)	Yes	Yes	Yes
Cisco MLOM 1227T (UCSC-MLOM-C10T-02)	Yes	Yes	No
Cisco UCS 1227 MLOM UCSC-MLOM-CSC-02	Yes	Yes	Yes
Cisco UCS 1225 VIC (UCSC-PCIE-CSC-02)	Yes	Yes	Yes
Cisco UCS 1225T VIC (UCSC-PCIE-C10T-02)	Yes	Yes	No
QLogic QL41212H 40GbE ¹ (UCSC-PCIE-QD40GF)	Yes	No	No

¹ Should be connected directly to the FI and not through FEX.



Note For rack server and adapter compatibility, see the respective rack server spec sheet. For connectivity options with Cisco UCS Manager, see [Configuration Guides](#).

For any other adapter or card which is not listed in [Table 4: Adapter Cards for Rack Server Integration, on page 11](#), Cisco UCS Manager supports only inventory and firmware management.

Cisco UCS Manager Upgrade Consideration

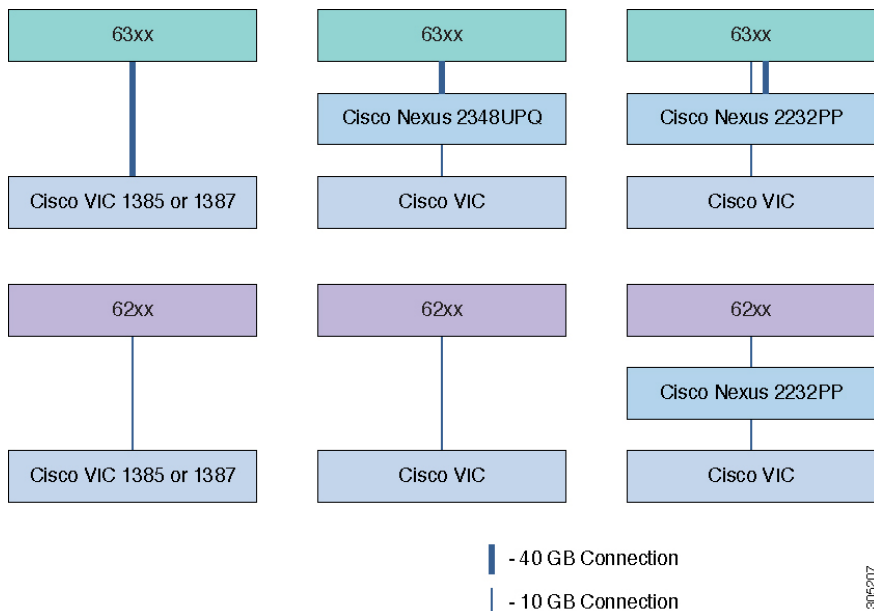
Rack server integration with Cisco UCS Manager 3.2(2b) and higher release is possible only with the adapters listed in [Table 4: Adapter Cards for Rack Server Integration, on page 11](#). Beginning with 3.2(2b), Cisco UCS

Manager does not allow provisioning any vNICs or vHBAs on adapters which are not listed in [Table 4: Adapter Cards for Rack Server Integration, on page 11](#).

Network Topology and Supported Cables

The following image is a graphical representation of the over-all network topology supported in the C-Series server integration with Cisco UCS Manager.

Figure 1: Network Topology for 6200 and 6300 Series Fabric Interconnect



The 6200 and 6300 Series FIs can be connected to Cisco VIC adapters and FEXs as shown in the table below. The thick blue line represents a 40 Gigabit Ethernet connection and the thin line represents a 10 Gigabit Ethernet connection. 40 Gigabit Ethernet connections are supported only on the Cisco VIC 1385 and 1387 adapters, 10 Gigabit Ethernet connections are supported on the Cisco VIC 1225, 1227 1385, and 1387 adapters. For the 10 Gigabit Ethernet, the following cables are used:

- 4x10 Breakout Small Form-Factor Pluggable (SFP) cables
- 4x10 Active Optical (OAC) cables
- 10G Small Form-Factor Pluggable (SFP) cable that uses the Qualified Security Assessor (QSA) module



Note

While using Cisco VIC 1385 and 1387 in a 10G connection you would require a 40G to 10G QSFP convertor but you cannot use the 4x10 Breakout Small Form-Factor Pluggable (SFP) cables and 4x10 Active Optical (OAC) cables.

1	Cisco UCS 6300 Series FI (63xx)	Cisco VIC 1385 or MLOM 1387
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2	Cisco UCS 6300 Series FI (63xx)	Cisco Nexus 2232PP (4x10 G breakout cable) or 2348UQ (40 G link) Cisco VIC 1385 or MLOM 1387 (10 G link)
3	Cisco UCS 6200 Series FI (62xx)	Cisco VIC 1385 or MLOM 1387
4	Cisco UCS 6200 Series FI (62xx)	Cisco Nexus 2232PP or 2348UQ (10 G link) Cisco VIC 1385 or MLOM 1387 (10 G link) Note When you connect the 10 G cable to the Cisco VIC 1385 and 1387 adapter, you need to use a 40 G to 10 G converter.

Table 5: Supported 10G Adapter and Optics

FI / 10G Rack VIC / Connector	VIC 1225				VIC 1227			
	10 G	QSA	40 G	Breakout Cable	10 G	QSA	40 G	Breakout Cable
FI 62xx	Yes	NA	NA	NA	Yes	NA	NA	NA
FI 6324	Yes	NA	NA	Yes (4x10 fabric ports only)	Yes	NA	NA	Yes (4x10 fabric ports only)
FI 6332	NA	Yes	NA	Yes (4x10 fabric ports only)	NA	Yes	NA	Yes (4x10 fabric ports only)
FI 6332-16UP	Yes	Yes	NA	Yes (4x10 fabric ports only)	Yes	Yes	NA	Yes (4x10 fabric ports only)

Table 6: Supported 40G Adapter and Optics

FI / 40G Rack VIC / Connector	VIC 1385			VIC 1387		
	QSA	40 G	Breakout Cable	QSA	40 G	Breakout Cable
FI 62xx	Yes	NA	NA	Yes	NA	NA
FI 6324	Yes	NA	NA	Yes	NA	NA
FI 6332	Yes	Yes	NA	Yes	Yes	NA

FI / 40G Rack VIC / Connector	VIC 1385			VIC 1387		
	FI 6332-16UP	Yes	Yes	NA	Yes	Yes

Supported RAID/Storage Controller Configurations

Only servers without expanders can have more than one RAID controllers in the Cisco UCS Manager integrated mode. The following servers are allowed to have more than one RAID controllers in the Cisco UCS Manager integrated mode:

- Cisco UCS C24 M3 (UCSC-C24-M3S2)
- Cisco UCS C420 M3 (UCSC-C420-M3)
- Cisco UCS C240 M3 (UCSC-C240-M3S2)
- Cisco UCS C240 M3 NEBS (UCSC-C240-SNEBS)
- Cisco UCS C240 M5 (UCSC-C240-M5L)
- Cisco UCS C240 M5 (UCSC-C240-M5S)
- Cisco UCS C240 M5 (UCSC-C240-M5SX)
- Cisco UCS C240 M5 (UCSC-C240-M5SN)
- Cisco UCS C220 M5 (UCSC-C220-M5L)
- Cisco UCS C220 M5 (UCSC-C220-M5SX)
- Cisco UCS C220 M5 (UCSC-C220-M5SN)
- Cisco UCS C480 M5 (UCSC-C480-M5)

Any server not on this list that has more than one RAID controller installed, fails discovery.

The following RAID/Storage controllers are supported for C-Series rack-mount servers integration with Cisco UCS Manager.



Note

A fully loaded LSI controller supports RAID 0, 1, 5, 50, 6, 10 and 60. If you remove a memory card from an LSI controller, UCS Manager cannot create RAID 6 and 10.

Table 7: Supported RAID/Storage Controllers

Server	Supported RAID Controller
Cisco UCS C240 M3 (UCSC-C240-M3)	<ul style="list-style-type: none"> • Cisco UCSC RAID SAS 2008M-8i • LSI MegaRAID SAS 9271-8i or 9271CV-8i 8-port PCIe RAID controller • LSI MegaRAID 9286CV-8e 8-port PCIe RAID controller • Cisco Nytro MegaRAID 200 GB PCIe RAID controller
Cisco UCS 220 M3 (UCSC-C220-M3)	<ul style="list-style-type: none"> • Cisco UCSC RAID SAS 2008M-8i • LSI MegaRAID SAS 9271-8i or 9271CV-8i RAID 8-port PCIe RAID controller • LSI MegaRAID 9286CV-8e PCIe RAID controller
Cisco UCS 22 M3 (UCSC-C22-M3)	<ul style="list-style-type: none"> • LSI MegaRAID 9270CV-8i • LSI MegaRAID 9240-8i RAID 8-port PCIe RAID controller • LSI MegaRAID 9220-8i RAID 8-port PCIe RAID controller
Cisco UCS C24 M3 (UCSC-C24-M3)	<ul style="list-style-type: none"> • LSI MegaRAID 9270CV-8i • LSI MegaRAID 9240-8i RAID 8-port PCIe RAID controller • LSI MegaRAID 9220-8i RAID 8-port PCIe RAID controller
Cisco UCS C240 M4 (UCSC-C240-M4)	<ul style="list-style-type: none"> • Embedded SATA-only storage controller • Cisco 12G SAS Modular RAID controller • Cisco 12 Gbps Modular SAS HBA RAID controller • Cisco 9300-8E 12G SAS HBA RAID controller • Cisco UCSC-PSAS12GHBA storage controller

Server	Supported RAID Controller
Cisco UCS C220 M4 (UCSC-C220-M4)	<ul style="list-style-type: none"> • Embedded SATA-only storage controller • Cisco 12G SAS Modular RAID controller • Cisco 12 Gbps Modular SAS HBA RAID controller • Cisco 9300-8E 12G SAS HBA RAID controller • Cisco UCSC-PSAS12GHBA storage controller
Cisco UCS C460 M4 (UCSC-C460-M4)	<ul style="list-style-type: none"> • Cisco 12G SAS Modular RAID controller • Cisco 12G SAS C460M4 RAID controller • Cisco 12 Gbps Modular SAS HBA RAID controller • Cisco 9300-8E 12G SAS HBA RAID controller • LSI MegaRAID SAS 9361-8i RAID controller
Cisco UCS C220 M5 (UCSC-C220-M5SX)	<ul style="list-style-type: none"> • Cisco 12G Modular Raid controller with 2GB cache(max 16 drives) (UCSC-RAID-M5) • Cisco 12G Modular SAS HBA (max 16 drives) (UCSC-SAS-M5)
Cisco UCS C240 M5 (UCSC-C240-M5S)	<ul style="list-style-type: none"> • Cisco 12G Modular Raid controller with 2GB cache(max 16 drives) (UCSC-RAID-M5) • Cisco 12G Modular SAS HBA (max 16 drives) (UCSC-SAS-M5)
Cisco UCS C240 M5 (UCSC-C240-M5L)	<ul style="list-style-type: none"> • Cisco 12G Modular Raid controller with 2GB cache(max 16 drives) (UCSC-RAID-M5) • Cisco 12G Modular SAS HBA (max 16 drives) (UCSC-SAS-M5)
Cisco UCS C240 M5 (UCSC-C240-M5SX)	<ul style="list-style-type: none"> • Cisco 12G Modular Raid controller with 4GB cache(max 26 drives) (UCSC-RAID-M5HD) • Cisco 12G Modular SAS HBA (max 26 drives)(UCSC-SAS-M5HD)

Server	Supported RAID Controller
Cisco UCS C480 M5 (UCSC-C480-M5)	<ul style="list-style-type: none">• Cisco 12G 9460-8i RAID controller with 2GB cache (UCSC-SAS9460-8I)• Cisco UCS C480 M5 (UCSC-C480-8AUX) Auxiliary Drive Modules for the Cisco 12G 9460-8i RAID controller

Supported FlexFlash Configuration

Some Cisco UCS C-Series Rack-Mount Servers support an internal Cisco FlexFlash Secure Digital (SD) memory card for storage of server software tools and utilities. FlexFlash is disabled by default. You can enable FlexFlash in a local disk policy used in a service profile.



Note Cisco UCS C-Series standalone servers with Cisco FlexFlash SD memory cards configured in Utility mode are not supported in the Cisco UCS Manager Integrated mode.

After upgrading CIMC if you are unable to install Cisco FlexFlash, apply the scrub policy before configuring the FlexFlash SD cards.

The FlexFlash SD cards can also be scrubbed using the format SD cards option, if the controller supports the same.

