



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.

**Note**

For Cisco UCS C-Series Rack-Mount Servers integration with Cisco UCS Manager, Cisco VIC adapters can only be connected to Cisco UCS Fabric Interconnects and not to third-party switches.

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 supports an option to connect the Cisco UCS C-Series Rack-Mount Server directly to the FIs. This option enables Cisco UCS Manager to manage the Cisco UCS C-Series Rack-Mount Servers using a single cable for both management traffic and data traffic. The Cisco UCS VIC connects to the FI of the system. This connection uses a single connection from each VIC to each FI.

**Note**

The LOM ports on Cisco UCS C-Series Rack-Mount Servers integrated with Cisco UCS Manager are not managed by Cisco UCS Manager.

Cisco UCS C125 M5 Servers do not contain any LOM ports.

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

- Cisco UCS VIC 1455 (supported in Cisco UCS C125 M5 Servers and other M5 Servers)
- Cisco UCS VIC 1457 (supported only in C220 M5 and C240 M5 servers)
- Cisco UCS VIC 1495 (supported in Cisco UCS C125 M5 Servers, and other M5 Servers)
- Cisco UCS VIC 1497 (supported only in C220 M5 and C240 M5 servers)



Note Cisco UCS C125 M5 Servers, Cisco UCS C480 M5 Servers, and Cisco UCS C480 M5 ML Servers do not support MLOM adapters.



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

Servers	SingleConnect	Direct Connect Mode	Dual-wire Management
Cisco UCS C220 M5 Server	Yes	Yes	Yes
Cisco UCS C240 M5 Server	Yes	Yes	Yes
C480 M5 and C480 M5 ML servers	Yes	Yes	Yes
Cisco UCS C125 M5 Server	Yes	Yes	No

**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 6454 Fabric Interconnect, Cisco UCS 6300 Series Fabric Interconnect, or Cisco UCS 6200 Series Fabric Interconnect, see the documentation at the following links:

- [Cisco UCS 6400 Series Fabric Interconnect documentation](#)
- [Cisco UCS 6300 Series Fabric Interconnect documentation](#)
- [Cisco UCS 6200 Series Fabric Interconnect documentation](#)

For information about the Cisco Nexus 2232PP, 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 6454 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, 1387, 1455, 1457, 1495, and 1497
1	116
2	116
4	116
8	116

Table 3: 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, 1387, 1455, 1457, 1495, and 1497
1	116
2	116
4	116
8	116

Table 4: 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, 1387, 1455, 1457, 1495, and 1497
1	12
2	27
4	57
8	116

New Hardware

New Hardware in Release 4.0(2a)

M5 Servers

- Support for Cisco UCS C480 M5 ML Server (USC-C480-M5ML).

Peripherals

- Support for the following VIC cards:
 - Cisco UCS VIC 1495 (UCSC-PCIE-C100-04)
 - Cisco UCS VIC 1497 (UCSC-MLOM-C100-04)

New Hardware in Release 4.0(1a)

M5 Servers

- Support for Cisco UCS C125 M5 Server (UCSC-C125).

Fabric Interconnect

- Cisco UCS 6454 Fabric Interconnect

Peripherals

- Support for the following VIC cards:
 - Cisco UCS VIC 1455 (UCSC-PCIE-C25Q-04)
 - Cisco UCS VIC 1457 (UCSC-MLOMC25Q-04)

Supported C-Series Servers and Adapter Cards

Adapter Cards

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

Table 5: Adapter Cards for Rack Server Integration

Adapter Model	Dual-Wire Connection	SingleWire Connection	Direct Connection
Cisco UCS VIC 1495 (UCSC-PCIE-C100-04)	No	No	Yes
Cisco UCS VIC 1497 (UCSC-MLOM-C100-04)	No	No	Yes
Cisco UCS VIC 1455 (UCSC-PCIE-C25Q-04)	Yes	Yes	Yes
Cisco UCS VIC 1457 (UCSC-MLOM-C25Q-04)	Yes	Yes	Yes
Cisco UCS VIC 1387 (UCSC-MLOM-C40Q-03)	Yes	Yes	Yes
Cisco UCS VIC 1385 (UCSC-PCIE-C40Q-03)	Yes	Yes	Yes
Cisco UCS VIC 1227T (UCSC-MLOM-C10T-02)	Yes	Yes	No
Cisco UCS VIC 1227 UCSC-MLOM-CSC-02	Yes	Yes	Yes

Adapter Model	Dual-Wire Connection	SingleWire Connection	Direct Connection
Cisco UCS VIC 1225 (UCSC-PCIE-CSC-02)	Yes	Yes	Yes
Cisco UCS VIC 1225T (UCSC-PCIE-C10T-02)	Yes	Yes	No
QLogic QL45412H 40GbE ¹ (UCSC-PCIE-QD40GF)	Yes	No	No

¹ Supported only for Azure-stack solution with FI 6332/6332-16UP and the Qlogic ports should be connected to FI directly and additionally LOM ports needs to be connected to FEX for management.



Note Different generation VIC adapters are not supported in a single server. For example, if a server has two VIC cards, both these VIC adapters should be either 14XX series or 13XX series or 12XX series.



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 5: Adapter Cards for Rack Server Integration, on page 7](#), 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 5: Adapter Cards for Rack Server Integration, on page 7](#). Beginning with 3.2(2b), Cisco UCS Manager does not allow provisioning any vNICs or vHBAs on adapters which are not listed in [Table 5: Adapter Cards for Rack Server Integration, on page 7](#).

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.



Note Cisco UCS C125 M5 Server server can be integrated only with Cisco UCS 6454 Fabric Interconnect or 6300 series Fabric Interconnect. Cisco UCS C125 M5 Server does not support 6200 series Fabric Interconnect.

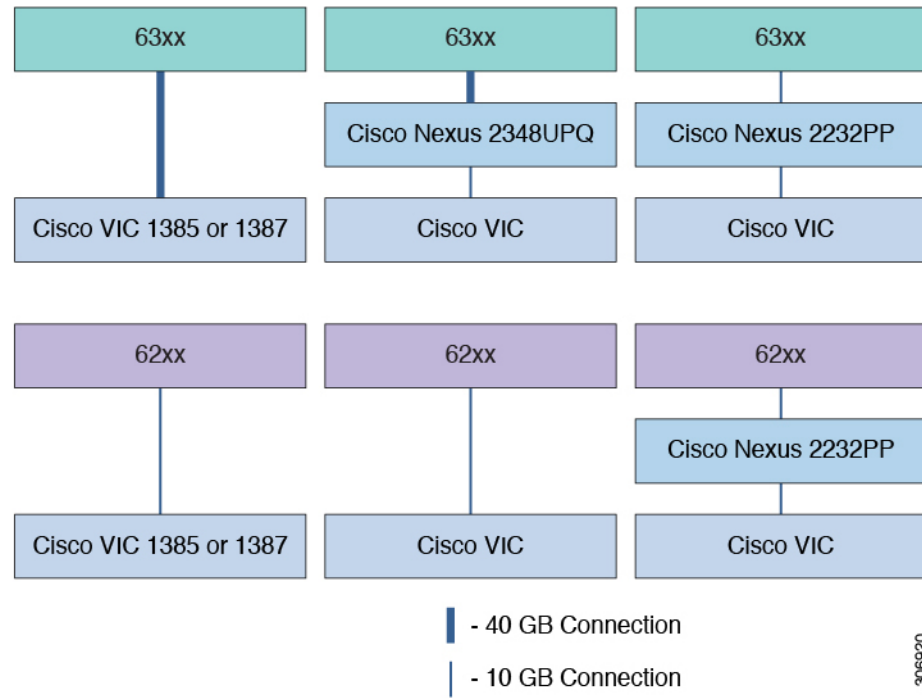
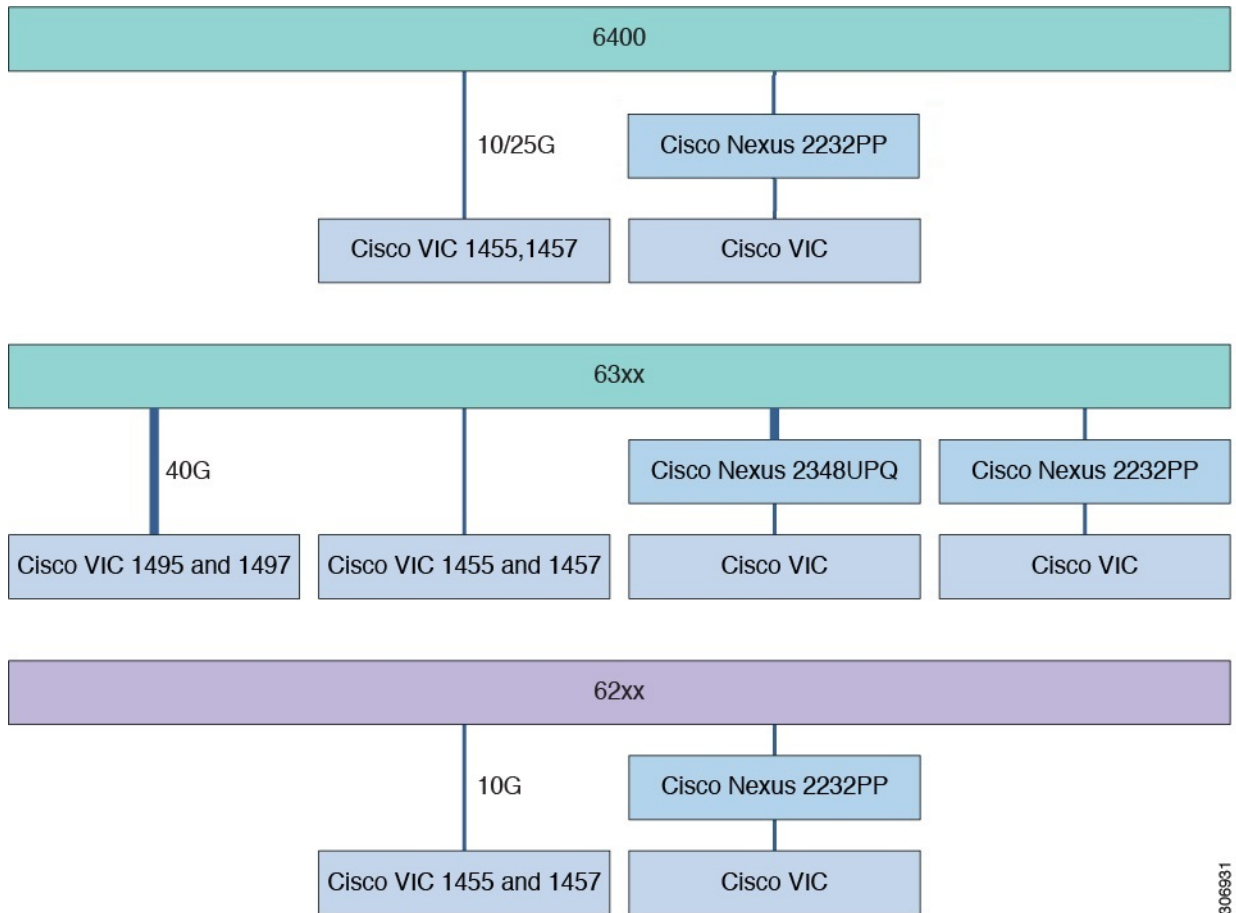
Figure 1: Network Topology for 6200 and 6300 Series Fabric Interconnect with 1300 Series VIC Cards

Figure 2: Network Topology for 6200, 6300, and 6400 Series Fabric Interconnect with 1400 Series VIC Cards



The Cisco UCS 6454 Fabric Interconnect, 6300, and 6200 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, the thin line represents a 10 Gigabit Ethernet connection. 40 Gigabit Ethernet connections are supported only on the Cisco VIC 1385, 1387, 1495, and 1497 adapters. 10 Gigabit Ethernet connections are supported on the Cisco VIC 1225, 1227, 1385, 1387, 1455, and 1457 adapters. 25 Gigabit Ethernet connections are supported only on the Cisco VIC 1455 and 1457. 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

For the 25 Gigabit Ethernet, the following cables are used:

- 25G SFP 28



Note While using Cisco VIC 1385 and 1387 in a 10G connection you would require a 40G to 10G QSFP convertor and you cannot use the 4x10 Breakout Small Form-Factor Pluggable (SFP) cables or 4x10 Active Optical (OAC) cables. Break-out is not supported from VIC when connecting towards FI or FEX. Break-out cables are supported from FI towards VIC 1225/1227 and VIC 1455/1457.

Cisco UCS 6454 Fabric Interconnect	Cisco VIC 1385 or 1387 or 1455 or 1457
Cisco UCS 6454 Fabric Interconnect	Cisco Nexus 2232PP Cisco VIC 1385 or 1387 or 1455 or 1457 (10 G link)
Cisco UCS 6300 Series FI (63xx)	Cisco VIC 1385 or 1387 or 1455 or 1457 or 1495 or 1497
Cisco UCS 6300 Series FI (63xx)	Cisco Nexus 2232PP (4x10 G breakout cable) or 2348UQ (40 G link) Cisco VIC 1385 or 1387 or 1455 or 1457 (10 G link) Cisco VIC 1495 and 1497 (40 G link)
Cisco UCS 6200 Series FI (62xx)	Cisco VIC 1385 or 1387 or 1455 or 1457
Cisco UCS 6200 Series FI (62xx)	Cisco Nexus 2232PP Cisco VIC 1385 or 1387 or 1455 or 1457 (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.



Note Cisco C-Series servers cannot be integrated with Cisco UCS Manager using a combination of Cisco UCS 6324 Fabric Interconnect and Cisco UCS VIC 14xx.

Table 6: 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 / 10G Rack VIC / Connector	VIC 1225				VIC 1227			
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)
Cisco UCS 6454 Fabric Interconnect	Yes	NA	NA	NA	Yes	NA	NA	NA

Table 7: Supported 10G/25G Adapter and Optics

FI / 10G Rack VIC / Connector	VIC 1455 and 1457			
	10 G	QSA	25 G	Breakout Cable
FI 62xx	Yes	NA	NA	NA
FI 6324	NA	NA	NA	NA
FI 6332	NA	NA	NA	Yes (4x10 fabric ports only)
FI 6332-16UP	Yes	NA	NA	NA
Cisco UCS 6454 Fabric Interconnect	Yes	NA	Yes	NA

Table 8: Supported 40G Adapter and Optics

FI / 40G Rack VIC / Connector	VIC 1495			VIC 1497		
	QSA	40G	Breakout Cable	QSA	40G	Breakout Cable
FI 62xx	NA	NA	NA	NA	NA	NA
FI 6324	NA	NA	NA	NA	NA	NA
FI 6332	NA	Yes	NA	NA	Yes	NA

FI / 40G Rack VIC / Connector	VIC 1495			VIC 1497		
FI 6332-16UP	NA	Yes	NA	NA	Yes	NA
Cisco UCS 6454 Fabric Interconnect	NA	NA	NA	NA	NA	NA

Table 9: 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 6332-16UP	Yes	Yes	NA	Yes	Yes	NA
Cisco UCS 6454 Fabric Interconnect	Yes	NA	NA	Yes	NA	NA

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 C220 M4 (UCSC-C220-M4)
- Cisco UCS C240 M4 (UCSC-C240-M4)
- Cisco UCS C460 M4 (UCSC-C460-M4)
- 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)
- Cisco UCS C480 M5 ML Server (UCSC-C480-M5ML)



Note Cisco UCS C125 M5 Servers do not support multiple PCIe RAID controllers. There are only 2 PCIe slots; one for a VIC card and the other for a RAID controller.

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 10: 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

Server	Supported 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 12G Modular SAS Pass through Controller • Cisco 9300-8E 12G SAS HBA controller • Cisco UCSC-PSAS12GHBA storage 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 12G Modular HBA pass through controller • Cisco 9300-8E 12G SAS HBA 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 9300-8E 12G SAS HBA 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 C220 M5 (UCSC-C220-M5L)	<ul style="list-style-type: none"> • Cisco UCS 12G SAS Modular 8-Port RAID Controller (UCSC-MRAID12G)

Server	Supported RAID Controller
Cisco UCS C220 M5 (UCSC-C220-M5SN)	<ul style="list-style-type: none"> • Cisco UCS 12G SAS Modular 8-Port RAID Controller (UCSC-MRAID12G) or Cisco 12G Modular SAS HBA (max 16 drives) (UCSC-SAS-M5) • Up to 10 SFF NVMe PCIe SSDs. <p>Note The drives in slots 1 and 2 are connected from Riser 2 and the drives in slots 3 through 10 are connected from the PCIe switch card plugged into the internal HBA slot.</p> <p>UCSC-C220-M5SN does not support embedded RAID.</p>
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 C240 M5 (UCSC-C240-M5SN)	<ul style="list-style-type: none"> Up to eight front-facing SFF NVMe PCIe SSDs only (replacing SAS/SATA drives). <p>Note These drives must be placed in front drive bays 1 through 8 only and are connected from Riser 2 slot 4 (from a PCIe switch).</p> <ul style="list-style-type: none"> 16 SFF front-facing SAS/SATA hard drives (HDDs) or SAS/SATA solid state drives (SSDs). <p>Note Drives occupy slots 9-24.</p> <ul style="list-style-type: none"> Optionally, up to two SFF, rear-facing SFF NVMe PCIe SSDs (must be NVMe only). Rear facing NVMe drives are connected from Riser 2. <p>UCSC-C240-M5SN does not support embedded RAID.</p>
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 12G Modular RAID (UCSC-RAID-M5HD) controller with a 4GB cache with a supercap cache backup (UCSC-SCAP-M5) Cisco UCS C480 M5 (UCSC-C480-8AUX) Auxiliary Drive Modules for the Cisco 12G 9460-8i RAID controller
Cisco UCS C125 M5 Server (UCSC-C125)	<ul style="list-style-type: none"> Cisco 12G 9460-8i RAID controller with 2GB cache (UCSC-SAS9460-8I) Onboard SATA storage controller (FCH) in AHCI mode is supported SWRAID is not supported
Cisco UCS C480 M5 ML Server (USC-C480-M5ML)	<ul style="list-style-type: none"> Cisco 12G Modular RAID Controller (UCSC-RAID-M5HD) <p>Includes 4-GB cache; controls up to 26 drives</p>

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.