Storage Controller Considerations

This appendix provides storage controller (RAID and HBA) information.

Supported Storage Controllers and Cables

Cisco UCS C240 SD M5 server supports a singleCisco 12G SAS HBA (JBOD/Pass-through Mode) controller that plugs into a dedicated internal socket.

Note NVMe PCIe SSDs cannot be controlled by this RAID controller.

This server supports the RAID and HBA controller options and cable requirements shown in the following table.

Controller	Maximum Drives Controlled	RAID Levels	Optional Supercap Backup?	Required Cables
Cisco 12G Modular SAS HBA UCSC-SAS-M5	Includes 2-GB cache; controls up to 16 drives.	Non-RAID JBOD mode is also supported.	No	Factory-installed in the dedicated internal slot

Storage Controller Card Firmware Compatibility

Firmware on the storage controller (RAID or HBA) must be verified for compatibility with the current Cisco IMC and BIOS versions that are installed on the server. If not compatible, upgrade or downgrade the storage controller firmware using the Host Upgrade Utility (HUU) for your firmware release to bring it to a compatible level.

Note **For servers running in standalone mode only:** After you replace controller hardware (UCSC-SAS-M5) you must run the Cisco UCS Host Upgrade Utility (HUU) to update the controller firmware, even if the firmware Current Version is the same as the Update Version. This is necessary to program the controller's suboem-id to the correct value for the server SKU. If you do not do this, drive enumeration might not display correctly in the software. This issue does not affect servers controlled in UCSM mode.

See the HUU guide for your Cisco IMC release for instructions on downloading and using the utility to bring server components to compatible levels: HUU Guides.

Write-Cache Policy for Cisco 12G SAS Modular RAID Controllers

For this server and other Cisco Generation M5 servers, the default write-cache policy for the Cisco Modular RAID controllers is *Write Through* (irrespective of the presence of a charged supercap or "good BBU"). This utilizes the optimal performance characteristics of the controller.

The write policy can be set to *Write Back*, if preferred. You can set the write policy using the following methods:

- For standalone servers, use the Cisco IMC interface to set Virtual Drive Properties > Write Policy. See the "Managing Storage Adapters" section in your Cisco IMC Configuration Guide.

  Cisco IMC GUI and CLI Configuration Guides

- For Cisco UCS-integrated servers, use the Cisco UCS Manager interface to set the write-cache policy as part of virtual drive configuration in your storage profile.

  Cisco UCS Manager Configuration Guides

- Use the LSI Option ROM Configuration Utility.

For More RAID Utility Information

The Broadcom utilities have help documentation for more information about using the utilities.

- For basic information about RAID and for using the utilities for the RAID controller cards that are supported in Cisco servers, see the Cisco UCS Servers RAID Guide.
- For hardware SAS MegaRAID configuration—Broadcom 12Gb/s MegaRAID SAS Software User Guide, Version 2.8
- For embedded software MegaRAID and the utility that is accessed via the server BIOS (refer to Chapter 4)—Broadcom Embedded MegaRAID Software User Guide, March 2018.