Storage Controller Considerations

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

Supported Storage Controllers and Cables

This Cisco CSP 5400 supports a single, PCIe-style controller that plugs into a dedicated internal socket.

This Cisco CSP 5400 supports the RAID controller option and cable requirements shown in the following table.

Controller	Cisco CSP 5400 Version/Maximum Drives Controlled	RAID Levels	Optional Supercap Backup?	Required Cables
Cisco 12G Modular RAID Controller CSP-RAID-M5HD	This controller is supported only in the following Cisco CSP 5400 version: • SFF 24-drives: 24 front-loading, SAS/SATA drives	10	Yes	Use SAS/SATA cable included with chassis to connect controller to drive backplanes.

Storage Controller Card Firmware Compatibility

Firmware on the storage controller (RAID) must be verified for compatibility with the current Cisco IMC and BIOS versions that are installed on the Cisco CSP 5400. 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.

See the HUU guide for your Cisco IMC release for instructions on downloading and using the utility to bring Cisco CSP 5400 components to compatible levels: HUU Guides.

RAID Backup (Supercap)

This Cisco CSP 5400 supports installation of one supercap unit. The unit mounts to a bracket in-line with the fan modules.

The optional SCPM provides approximately three years of backup for the disk write-back cache DRAM in the case of a sudden power loss by offloading the cache to the NAND flash.

For supercap unit replacement instructions, see Replacing the Supercap (RAID Backup).

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

For this Cisco CSP 5400 and other Cisco Generation M5 Cisco CSP 5400s, 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:

- 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

Storage Controller Cable Connectors and Backplanes

This section describes cabling for the storage controllers and backplanes. The SAS/SATA cables are factory-installed and are used for all supported internal controllers.

This section also contains diagrams that show the cable-to-drive mapping.

Cisco 12G Modular SAS RAID Controller (CSP-RAID-M5HD)

This controller is supported only in this Cisco CSP 5400 version:

- SFF 24-Drives

This HW RAID option can control up to 24 front-loading SAS/SATA drives in this Cisco CSP 5400 version, plus 2 rear-loading SAS/SATA drives.

1. Connect SAS/SATA cable A double-connectors A1 and A2 to the A1 and A2 connectors on the controller card.
2. Connect SAS/SATA cable A, single connector CONN-A to the CONN-A backplane connector.
3. Connect SAS/SATA cable B double-connectors B1 and B2 to the B1 and B2 connectors on the controller card.
4. Connect SAS/SATA cable B, single connector CONN-B to the CONN-B backplane connector.
5. Connect SAS/SATA cable C double-connectors C1 and C2 to the C1 and C2 connectors on the controller card.

6. Connect SAS/SATA cable C, single connector CONN-C to the CONN-C backplane connector.
7. Optional for rear drives: Connect SAS/SATA cable D from the D1 card connector (on the reverse side of the card) to the rear backplane connector.

Figure 1: SFF, 24-Drive CSP 5400 Cabling With CSP-RAID-M5HD