Overview

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Cisco Application Policy Infrastructure Controller (APIC) release 6.1(4) added support for the Cisco APIC G5 Server.

Cisco APIC G5 Server—Small form-factor (SFF) drives, with 10-drive NVMe SSD HD back-plane, front panel configuration.

Considerations and Restrictions

The Cisco Application Policy Infrastructure Controller (APIC) G5 Server has these considerations and restrictions:

- The role of the Dual 1-Gb/10-Gb Ethernet ports (LAN1 and LAN2) in previous Cisco APIC Generations is now moved to the mLOM card and Ports available on that card.
- The mLOM numbering doesn't matter; APIC software creates a bond interface automatically.

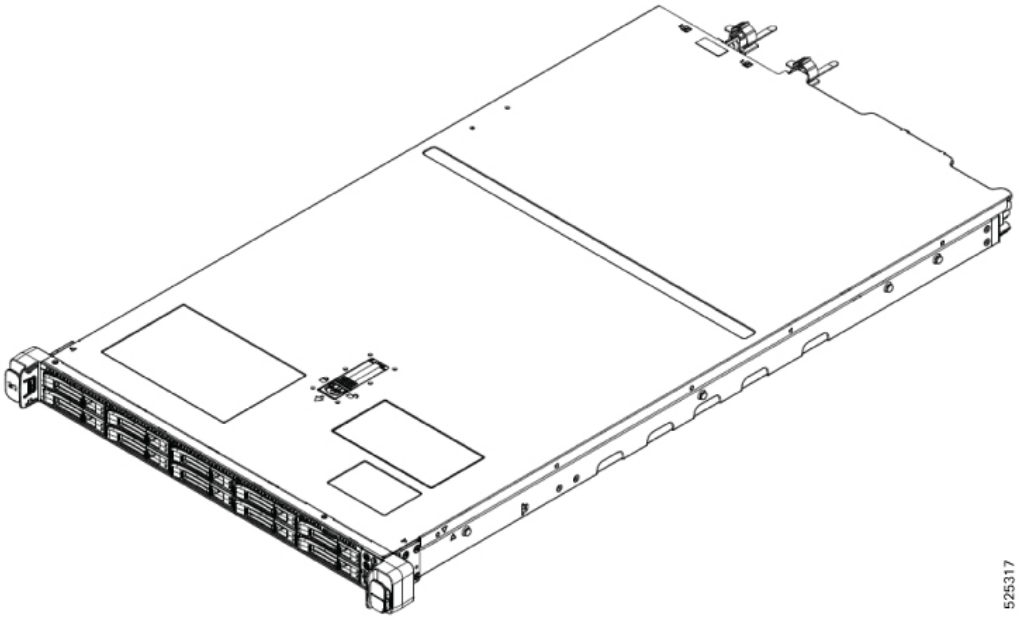
Note There is also an internal M.2 480G SSD boot disk.

External Features

This topic shows the external features of the server versions.

The figure shows the APIC G5 server.

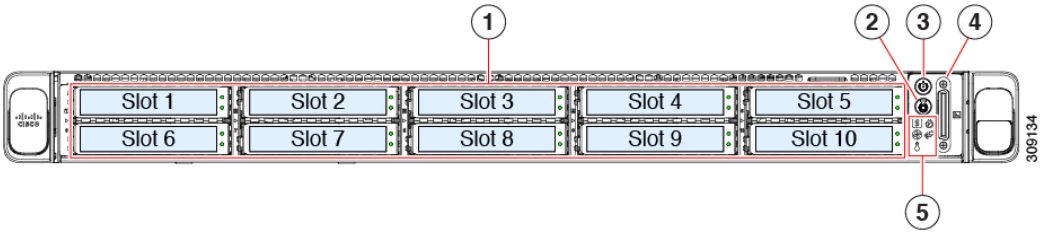
Figure 1: Cisco APIC G5 Server



Cisco APIC G5 Server (SFF Drives) Front Panel Features

The figure shows the front panel features of the small form-factor drive versions of the server.

Figure 2: Cisco APIC G5 Server (SFF Drives) Front Panel



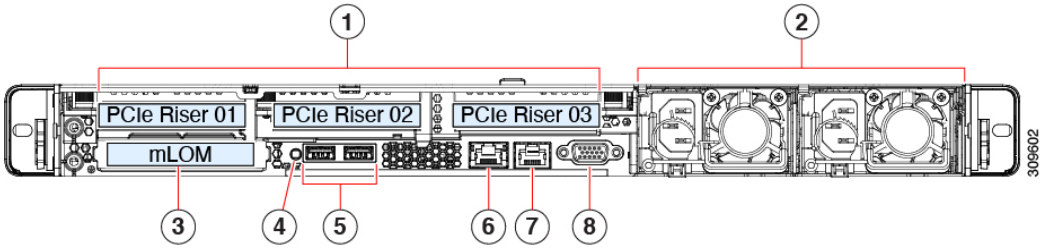
1	As an option, drive bays 1-10 can contain an NVMe drive each. APIC-G5-Server: Drive bays 1 and 2 support NVMe PCIe SSDs.	**2**	Unit identification button/LED	3	Power button/power status LED

4	KVM connector (used with KVM cable that provides one DB-15 VGA, one DB-9 serial, and two USB 2.0 connectors)	**5**	System LED cluster: • Fan status LED • System Status LED • Power supply status LED • Network link activity LED • Temperature status LED		

Cisco APIC G5 Server Rear Panel Features

The rear panel features are the same for all versions of the server.

Figure 3: Cisco APIC G5 Server Rear Panel



1	PCIe slots These PCIe Riser combinations are available: • One half-height riser card in PCIe Riser 1 One of these network interface cards should be installed in PCIe slot 1: • UCSC-P-V5Q50G-D, Quad Port 10/25/50G CNA PCIE		
2	Power supply units (PSUs), two which can be redundant when configured in 1+1 power mode.	**3**	Modular LAN-on-motherboard (mLOM) card bay (x16 PCIe lane). This is used for OOB management. Dual 1-Gb/10-Gb Ethernet ports (LAN1 and LAN2) The dual LAN ports can support 1 Gbps and 10 Gbps, depending on the link partner capability
4	System identification button/LED	**5**	USB 3.0 ports (two)

6	Dedicated 1 GB Ethernet management port. This is used for CIMC management.	**7**	COM port (RJ-45 connector)
8	VGA video port (DB-15 connector)		

- 10/25GbE ports on Cisco UCS VIC 15425 Quad Port 10/25/50G CNA PCIE (UCSC-P-V5Q50G-D) can be used as either 10G or 25G ports. All ports must have the same speed.
- The UCSC-P-V5Q50G-D supports 10G Base-T connectivity to the Cisco ACI TOR switch.
- NIC supports SFP-10G-T-X for 10G Base-T connectivity to the Cisco ACI TOR switch.
- Configure CL74 FEC in CIMC for bringing up the link between APIC-G5 and a leaf switch.

For a list of the 10G and 25G transceivers that are compatible with the APIC G5 server, please see Cisco Optics-to-Device Compatibility Matrix.

Note 50G optics are not supported on APIC-G5 Cisco VIC 15425. Only 10G and 25G variants are supported for connections from APIC-G5 Cisco VIC 15425 to a leaf switch.

Status LEDS and Buttons

Front-Panel LEDs

Figure 4: Front Panel LEDs

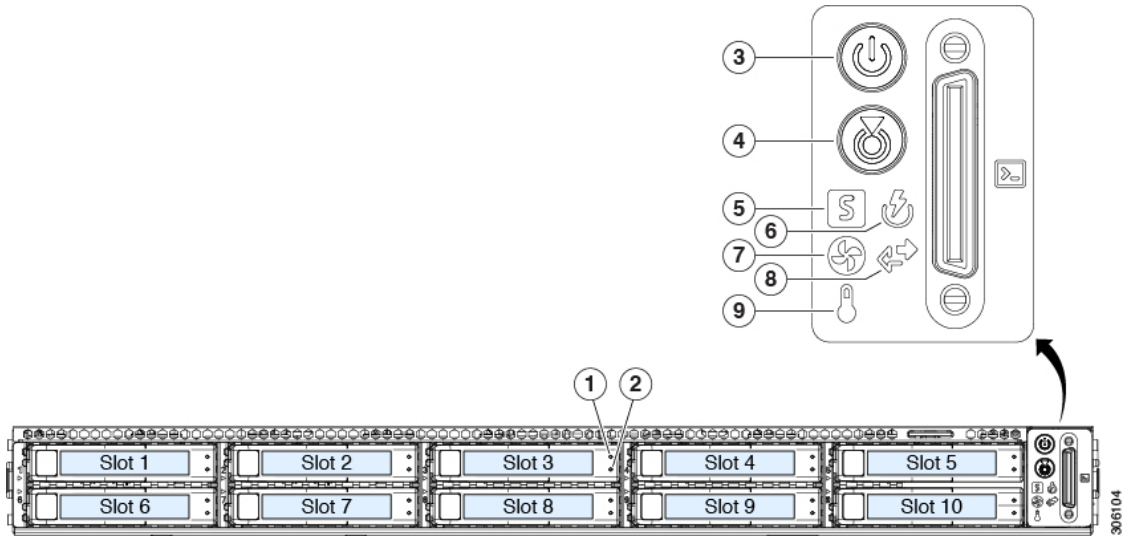


Table 1: Front Panel LEDs, Definition of States

	LED Name	States
1 **U.3**	U.3 drive fault **Note** NVMe solid state drive (SSD) drive tray LEDs have different behavior than U.3 drive trays.	• Off—The hard drive is operating properly. • Amber—Drive fault detected. • Amber, blinking—The device is rebuilding. • Amber, blinking with one-second interval—Drive locate function activated in the software.
2 **U.3**	U.3 drive activity LED	• Off—There is no hard drive in the hard drive tray (no access, no fault). • Green—The hard drive is ready. • Green, blinking—The hard drive is reading or writing data.
3	Power button/LED	• Off—There is no AC power to the server. • Amber—The server is in standby power mode. Power is supplied only to the Cisco IMC and some motherboard functions. • Green—The server is in main power mode. Power is supplied to all server components.
4	Unit identification	• Off—The unit identification function is not in use. • Blue, blinking—The unit identification function is activated.

5	System health	• Green—The server is running in normal operating condition.
		• Green, blinking—The server is performing system initialization and memory check.
		• Amber, steady—The server is in a degraded operational state (minor fault). For example:
		  • Power supply redundancy is lost.
		  • CPUs are mismatched.
		  • At least one CPU is faulty.
		  • At least one DIMM is faulty.
		• Amber, 2 blinks—There is a major fault with the system board.
		• Amber, 3 blinks—There is a major fault with the memory DIMMs.
		• Amber, 4 blinks—There is a major fault with the CPUs.

6	Power supply status	• Green—All power supplies are operating normally. • Amber, steady—One or more power supplies are in a degraded operational state. • Amber, blinking—One or more power supplies are in a critical fault state.
7	Fan status	• Green—All fan modules are operating properly. • Amber, blinking—One or more fan modules breached the non-recoverable threshold.

8	Network link activity	• Off—The Ethernet mLOM port link is idle.
		• Green—One or more Ethernet mLOM ports are link-active, but there is no activity.
		• Green, blinking—One or more Ethernet mLOM ports are link-active, with activity.
		Note
		Intel NIC may display these LED statuses:
		  • Green—10Gbps
		  • Yellow—1Gbps
		  • Blinking green—transmitting or receiving data
		  • Off—no link

9	Temperature status	• Green—The server is operating at normal temperature. • Amber, steady—One or more temperature sensors breached the critical threshold. • Amber, blinking—One or more temperature sensors breached the non-recoverable threshold.

Rear-Panel LEDs

Figure 5: Rear Panel LEDs

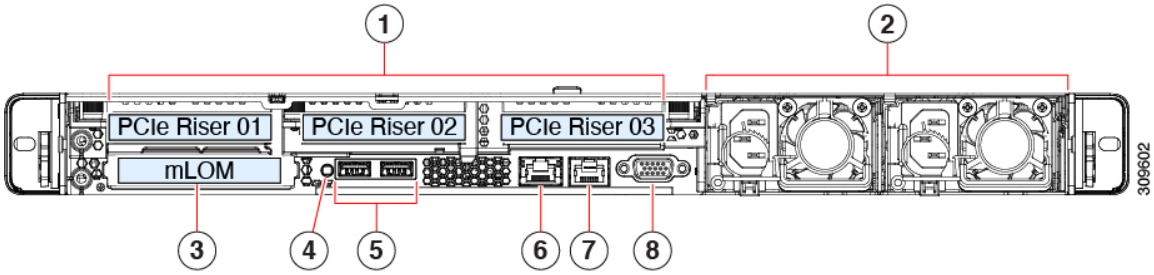


Table 2: Rear Panel LEDs, Definition of States

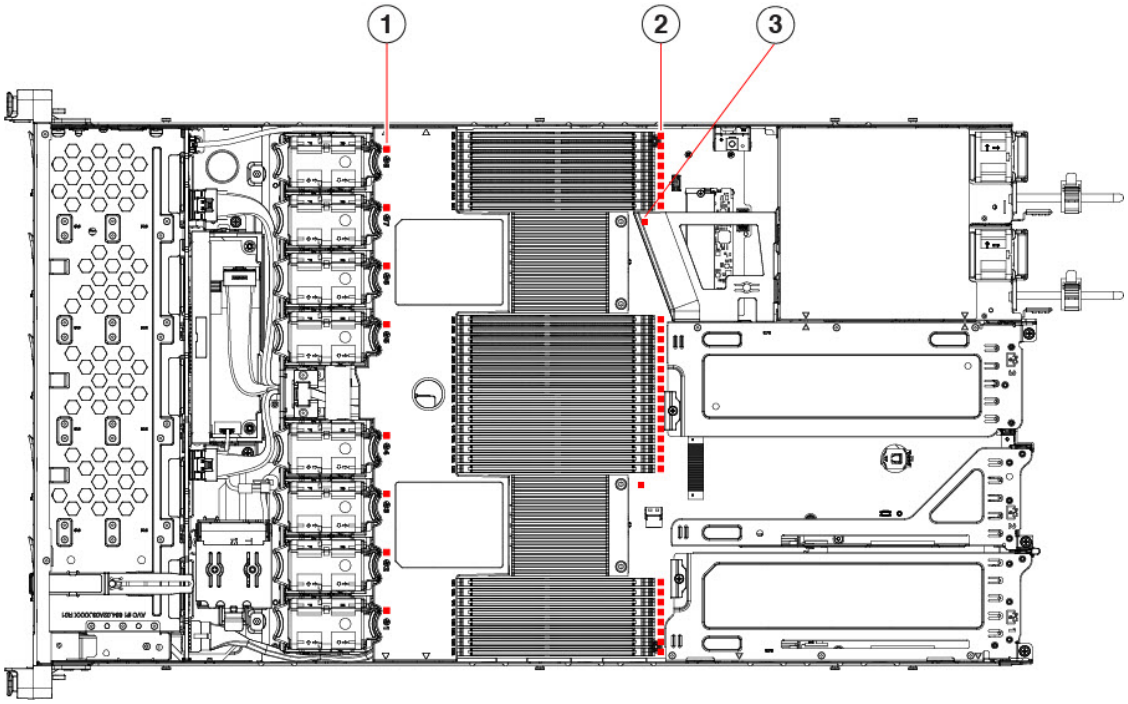
	LED Name	States
4	System Identification LED	• Off— system is not operational. • Amber— critical error detected. • Green— system is operating normally.

	LED Name	States
	Power supply status (one LED each power supply unit)	**AC power supplies:** • Off—No AC input (12 V main power off, 12 V standby power off). • Green, blinking—12 V main power off; 12 V standby power on. • Green, solid—12 V main power on; 12 V standby power on. • Amber, blinking—Warning threshold detected but 12 V main power on. • Amber, solid—Critical error detected; 12 V main power off (for example, over-current, over-voltage, or over-temperature failure). **DC power supplies:** • Off—No DC input (12 V main power off, 12 V standby power off). • Green, blinking—12 V main power off; 12 V standby power on. • Green, solid—12 V main power on; 12 V standby power on. • Amber, blinking—Warning threshold detected but 12 V main power on. • Amber, solid—Critical error detected; 12 V main power off (for example, over-current, over-voltage, or over-temperature failure).

Internal Diagnostic LEDs

The server has internal fault LEDs for CPUs, DIMMs, and fan modules.

Figure 6: Internal Diagnostic LED Locations



Callout	Description
1	Fan module fault LEDs (one behind each fan connector on the motherboard) • Amber—Fan has a fault or is not fully seated. • Green—Fan is OK.
2	DIMM fault LEDs (one behind each DIMM socket on the motherboard) These LEDs operate only when the server is in standby power mode. • Amber—DIMM has a fault. • Off—DIMM is OK.
3	CPU fault LEDs (one behind each CPU socket on the motherboard). These LEDs operate only when the server is in standby power mode. • Amber—CPU has a fault. • Off—CPU is OK.

Summary of Server Features

The table lists a summary of server features.

Feature	Description
Chassis	One rack-unit (1RU) chassis
Central Processor	1x AMD EPYC 9354P 32-Core Processor
Memory	8x 32GB DDR5 5600 MHZ, total memory of the server is 256GB, with support for RDIMMs
Multi-bit error protection	Multi-bit error protection is supported
Video	The Cisco Integrated Management Controller (CIMC) provides video using the Matrox G200e video/graphics controller: • Integrated 2D graphics core with hardware acceleration • Embedded DDR memory interface supports up to 512 MB of addressable memory (8 MB is allocated by default to video memory) • Supports display resolutions up to 1920 x 1200 16bpp @ 60Hz • High-speed integrated 24-bit RAMDAC • Single lane PCI-Express host interface running at Gen 1 speed
Baseboard management	BMC, running Cisco Integrated Management Controller (Cisco IMC) firmware. Depending on your Cisco IMC settings, Cisco IMC can be accessed through the 1-Gb dedicated management port, the 1-Gb/10-Gb Ethernet LAN ports, or a Cisco virtual interface card.
Network and management I/O	Rear panel: • Two RJ-45 Management ports which support 10G/1G. The port model is Intel X710T2LOCPV3G1L 2x10GbE RJ45 OCP3.0 NIC • One RS-232 serial port (RJ-45 connector) • One VGA video connector port (DB-15 connector) • Two USB 3.0 ports • One flexible modular LAN on motherboard (mLOM)/OCP 3.0 slot that can accommodate various interface cards • One KVM console connector (supplies two USB 2.0 connectors, one VGA DB15 video connector, and one serial port (RS232) RJ45 connector) Front panel: • One KVM console connector (supplies two USB 2.0 connectors, one VGA DB15 video connector, and one serial port (RS232) RJ45 connector)

Feature	Description
Modular LAN on Motherboard (mLOM)/ OCP3 3.0 slot	The dedicated mLOM/OCP 3.0 slot on the motherboard can flexibly accommodate these cards: • Cisco Virtual Interface Cards • OCP 3.0 network interface card (APIC-O-ID10GC)
WoL	The two 1-Gb/10-Gb BASE-T Ethernet LAN ports support the wake-on-LAN (WoL) standard.
Power	Two of these hot-swappable power supplies: • 1050 W (DC) • 1200 W (AC) One power supply is mandatory; add one more for 1 + 1 redundancy. **Note** Do not mix AC and DC PSUs because they are different watts. Use two AC PSUs or two DC PSUs.
ACPI	The advanced configuration and power interface (ACPI) 4.0 standard is supported.
Front Panel	The front panel controller provides status indications and control buttons
Cooling	Eight hot-swappable fan modules for front-to-rear cooling.
PCIe I/O	Horizontal PCIe expansion slots are supported by PCIe riser assemblies. The server supports either of the following configurations: • One half-height riser card in PCIe Riser 1 • Three half-height riser cards in PCIe Riser 1, 2, 3 • Two full-height riser cards
InfiniBand	The PCIe bus slots in this server support the InfiniBand architecture.

Feature	Description
Expansion Slots	Three half-height riser slots • Riser 1 (controlled by CPU 1): One x16 PCIe Gen4 Slot, (Cisco VIC), half-height, 3/4 length • Riser 2 (controlled by CPU 1): One x16 PCIe Gen4 Slot, electrical x8, half-height, 3/4 length • Riser 3 (controlled by CPU 1): One x16 PCIe Gen4 Slot, (Cisco VIC), half-height, 3/4 length Two full-height riser slots • Riser 1 (controlled by CPU 1): One x16 PCIe Gen4 Slot, (Cisco VIC), full-height, 3/4 length • Riser 3 (controlled by CPU 1): One x16 PCIe Gen4 Slot, (Cisco VIC), full-height, 3/4 length
Interfaces	Rear panel: • One 1Gbase-T RJ-45 management port • One RS-232 serial port (RJ45 connector) • One DB15 VGA connector • Two USB 3.0 port connectors • One flexible modular LAN on motherboard (mLOM) slot that can accommodate various interface cards Front panel: • One KVM console connector (supplies two USB 2.0 connectors, one • VGA DB15 video connector, and one serial port (RS232) RJ45 connector)

Storage, internal	The server has these internal storage options:
	• One USB port on the motherboard.
	• Mini-storage module socket, optionally with either:
	  • SD card module. Supports up to two SD cards.
	  • M.2 SSD module. Supports either two U.3 M.2 SSDs or two NVMe M.2 SSDs.
	• One micro-SD card socket on PCIe riser 1.
	• Mixing different capacity U.3 M.2 SSDs is not supported.
	• It also supports USB 3.0 TypeA connector.

Feature	Description
Integrated Management Processor	Baseboard Management Controller (BMC) running Cisco Integrated Management Controller (CIMC) firmware. Depending on your CIMC settings, the CIMC can be accessed through the 1GE dedicated management port, the 1GE/10GE mLOM ports, or a Cisco virtual interface card (VIC). CIMC manages certain components within the server, such as the Cisco 12G U.3 host bust adapter (HBA).
Storage Controllers	The Cisco 12G U.3 NVMe SSD storage plugs into a dedicated slot. Only one of these can be used at a time. • Cisco 12G U.3 NVMe SSD • No RAID support JBOD/Pass-through Mode support Supports up to 10 U.3 internal drives Plugs into drive backplane
Integrated video	Integrated VGA video.
Intersight	Intersight provides server management capabilities