Cisco Secure Network Server 3700 Series Appliance Overview

Cisco Secure Network Server 3700 Series Appliances

The Cisco Secure Network Server (SNS) 3700 series appliances are based on the Cisco Unified Computing System (Cisco UCS) C220 Rack Server and are configured specifically to support Cisco Identity Services Engine (ISE). Cisco SNS 3700 series appliances are designed to deliver high performance and efficiency for a wide range of workloads.

The Cisco SNS 3700 series appliances are available in the following models:

- Cisco SNS 3715 (SNS-3715-K9)
- Cisco SNS 3755 (SNS-3755-K9)
- Cisco SNS 3795 (SNS-3795-K9)

The Cisco SNS 3715 appliance is designed for small deployments, while Cisco SNS 3755 and Cisco SNS 3795 appliances have several redundant components such as hard disks and power supplies and are suitable for larger deployments that require highly reliable system configurations. Cisco SNS 3795 is recommended for PAN and MnT personas.

Cisco ISE Release 3.1 Patch 6 and above and Cisco ISE Release 3.2 Patch 2 and above versions support Cisco SNS 3700 series appliances.

Cisco SNS 3700 Series Appliance Hardware Specifications

The following table describes the hardware specifications of Cisco SNS 3700 series appliances.

Table 1: Cisco SNS 3700 Series Appliance Hardware Specifications

Cisco SNS 3700 Series Appliance	Hardware Specifications
Cisco SNS-3715-K9	• Cisco UCS C220 M6 • Intel Xeon Silver 4310 CPU 2.10 GHz • 12 CPU Cores, 24 Threads • 32-GB RAM • 1 x 600-GB HDD or 1 x 800-GB SSD or 1 x 960-GB SED • RAID-0 • 2 x 10Gbase-T 4 x 10GE SFP • For physical, environmental, and power specifications, see sns_3700_hardware_install_guide_chapter3.pdf#nameddest=unique_5
Cisco SNS-3755-K9	• Cisco UCS C220 M6 • Intel Xeon Silver 4316 CPU 2.30 GHz • 20 CPU Cores, 40 Threads • 96-GB RAM • 4 x 600-GB HDD or 4 x 800-GB SSD or 4 x 960-GB SED • RAID 10 • 2 x 10Gbase-T 4 x 10GE SFP • For physical, environmental, and power specifications, see sns_3700_hardware_install_guide_chapter3.pdf#nameddest=unique_5

Cisco SNS 3700 Series Appliance	Hardware Specifications
Cisco SNS-3795-K9	• Cisco UCS C220 M6 • Intel Xeon Silver 4316 CPU 2.30 GHz • 20 CPU Cores, 40 Threads • 256-GB RAM • 8 x 600-GB HDD or 8 x 800-GB SSD or 8 x 960-GB SED • RAID 10 • 2 x 10Gbase-T 4 x 10GE SFP • For physical, environmental, and power specifications, see sns_3700_hardware_install_guide_chapter3.pdf#nameddest=unique_5

Note

- You cannot add additional hardware resources such as memory, processor, or hard disk to a Cisco SNS 3700 series appliance.
- Mixing Serial Attached SCSI (SAS) and Serial Advanced Technology Attachment (SATA) hard drives or SAS and SATA solid-state drives (SSDs) is not supported. You must use either SAS or SATA hard drives or SAS or SATA SSDs.
- SSD offers improved performance in disk read/write operations and other ISE operations such as boot, installation, upgrade database-intensive tasks such as backup, reports generation, and so on.

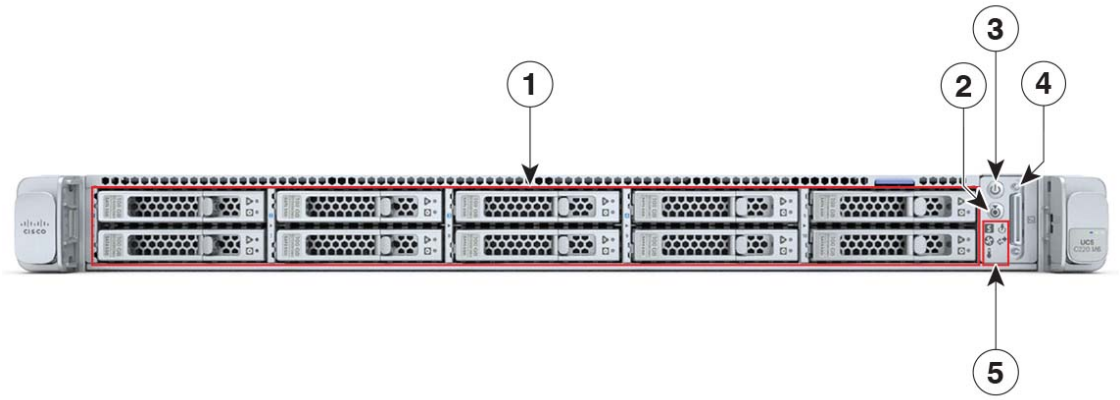
External Features

This section describes the external features of a Cisco SNS 3700 series appliance.

Cisco SNS 3700 Series Appliance Front Panel Features

The following figure shows the front panel features of Cisco SNS 3700 series appliance.

Figure 1: Cisco SNS 3700 Series Appliance Front Panel

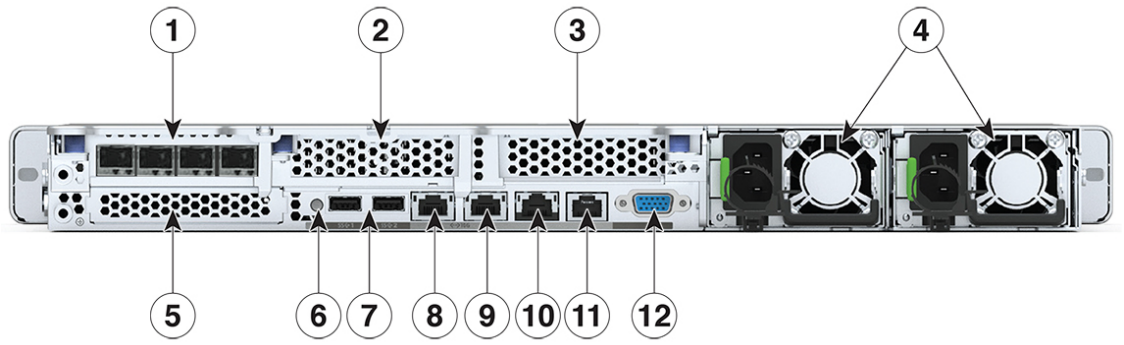


1	Drive bays 1 – 10 support Serial Attached SCSI (SAS) and Serial Advanced Technology Attachment (SATA) hard disk drives (HDDs), solid-state drives (SSDs), and self-encrypting drives (SEDs). As an option, drive bays 1 – 4 can contain up to four Non-Volatile Memory express (NVMe) drives. Drive bays 5 – 10 support SAS and SATA HDDs, SSDs, and SEDs. NVMe drives are supported only for dual CPU servers.	**2**	Unit identification button or LED
3	Power button or 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 For definitions of LED states, see Front Panel LEDs, on page 6.		—

Cisco SNS 3700 Series Appliance Rear Panel Features

The following figure shows the rear panel features of a Cisco SNS 3700 series appliance.

Figure 2: Cisco SNS 3700 Series Appliance Rear Panel



1	Riser 1 supports SFP NIC card Four Ethernet ports that are mapped to the following Cisco ISE GigabitEthernet interfaces: • GigabitEthernet 2 interface • GigabitEthernet 3 interface • GigabitEthernet 4 interface • GigabitEthernet 5 interface **Note** The interface labelling is from right to left.	**2**	Riser 2 blanking panel
3	Riser 3 blanking panel	**4**	Power supply units (PSUs)
5	Modular LAN on motherboard (mLOM)	**6**	System identification button or LED
7	USB 3.0 ports (two)	**8-9**	Dual 1-Gb or 10-Gb Ethernet ports (LAN1 and LAN2): • LAN1 (linked to Cisco ISE GigabitEthernet 0 interface) • LAN2 (linked to Cisco ISE GigabitEthernet 1 interface) **Note** The interface labelling is from left to right.
10	1-Gb Ethernet dedicated management port	**11**	COM port (RJ45 connector)
12	VGA video port (DB-15 connector)		—

Status LEDs and Buttons

This section contains information for interpreting LED states.

Front Panel LEDs

The following figure shows the front panel LEDs of a Cisco SNS 3700 series appliance.

Figure 3: Front Panel LEDs

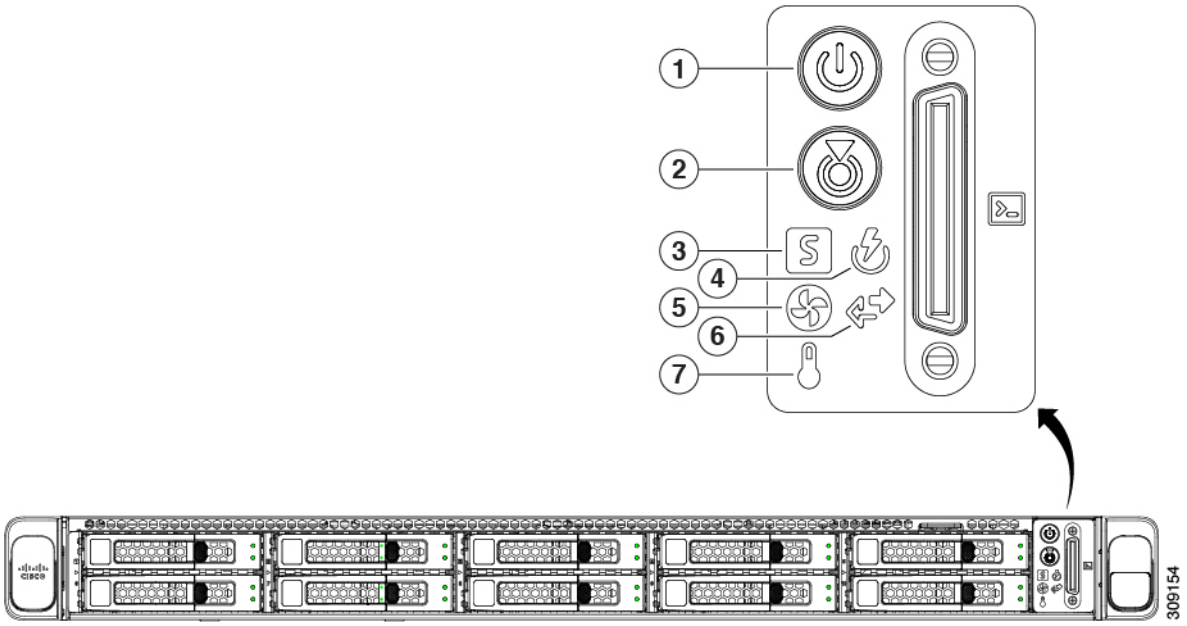


Table 2: Front Panel LEDs

	LED Name	States
1	Power button or LED ( )	• Off: There is no AC power to the server. • Amber: The server is in standby power mode. Power is supplied only to Cisco Integrated Management Controller (Cisco IMC) and some motherboard functions. • Green: The server is in main power mode. Power is supplied to all server components.
2	Unit identification	• Off: The unit identification function is not in use. • Blue, blinking: The unit identification function is activated.

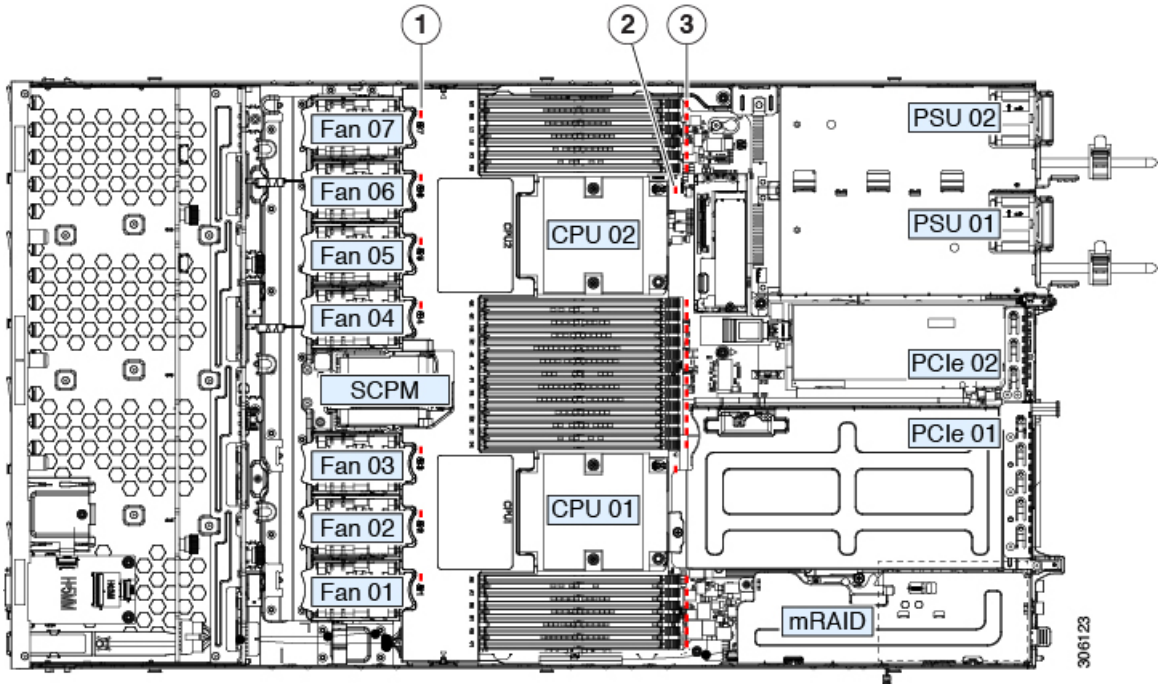
3	System health ()	• Green: The server is running in normal operating condition.
		• Green, blinking: The server is performing system initialization and memory check.
		• Amber, steady: The server is in a degraded operational state (minor fault). For example:
		  • Power supply redundancy is lost.
		  • CPUs are mismatched.
		  • At least one CPU is faulty.
		  • At least one DIMM is faulty.
		  • At least one drive in a RAID configuration failed.
		• 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.

4	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.
5	Fan status ()	• Green: All fan modules are operating properly. • Amber, blinking: One or more fan modules have breached the nonrecoverable threshold.
6	Network link activity ()	• Off: The Ethernet LAN on motherboard (LOM) port link is idle. • Green: One or more Ethernet LOM ports are link-active, but there is no activity. • Green, blinking: One or more Ethernet LOM ports are link-active, with activity.
7	Temperature status ()	• Green: The server is operating at normal temperature. • Amber, steady: One or more temperature sensors have breached the critical threshold. • Amber, blinking: One or more temperature sensors have breached the nonrecoverable threshold.

Internal Diagnostic LEDs

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

Figure 4: Internal Diagnostic LED Locations

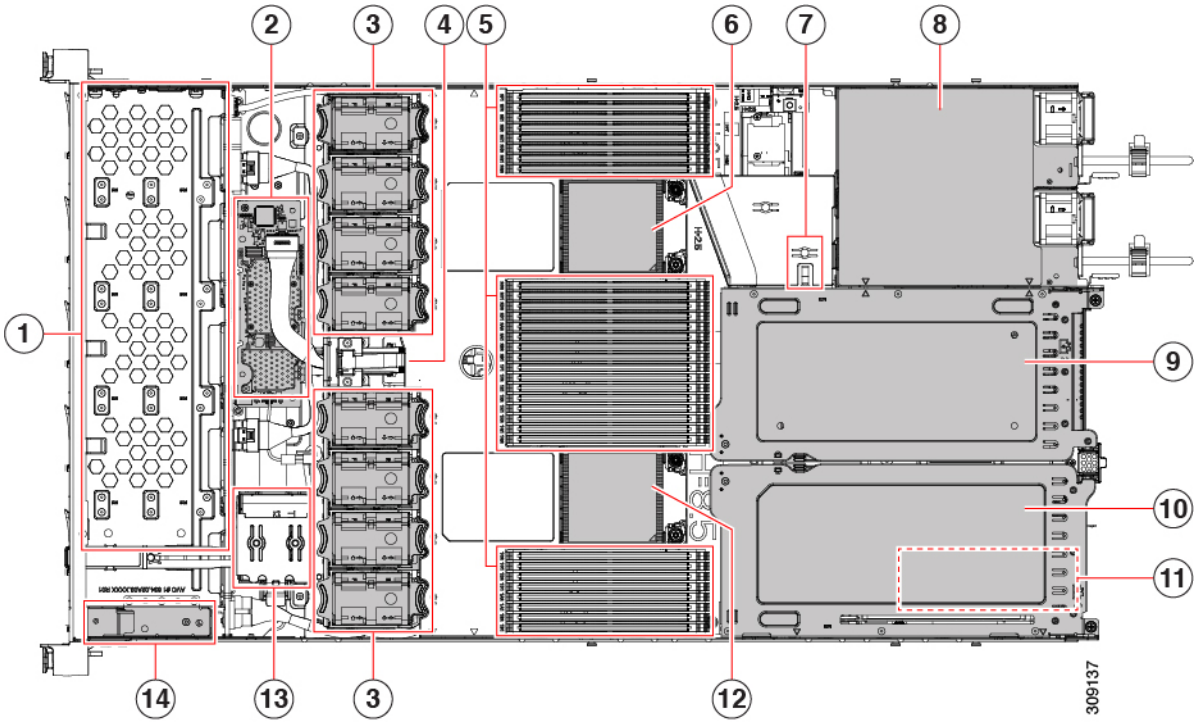


1	Fan module fault LEDs (one behind each fan connector on the motherboard) • Amber: Fan has a fault or is not fully seated. • Green: Fan is OK.	**3**	DIMM fault LEDs (one behind each DIMM socket on the motherboard) These LEDs operate only when the server is in standby power mode. • Amber: DIMM has a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

Serviceable Component Locations

This section describes the field-replaceable components and service-related items. The following figure shows an appliance with the top cover removed.

Figure 5: Serviceable Component Locations



1	Front-loading drive bays 1–10 support SAS or SATA drives	**2**	M6 modular RAID card or SATA Interposer card
3	Cooling fan modules (eight) Each fan is hot-swappable	**4**	SuperCap module mounting bracket The SuperCap module that mounts into this location provides RAID write-cache backup.
5	DIMM sockets on motherboard (32 total, 16 per CPU) Eight DIMM sockets are placed between the CPUs and the server sidewall, and 16 DIMM sockets are placed between the two CPUs.	**6**	Motherboard CPU socket (CPU2)
7	M.2 module connector Supports a boot-optimized RAID controller with connectors for up to two SATA M.2 SSDs	**8**	Power Supply Units (PSUs)

9	Riser 2 blanking panel **Note** Riser 3 blanking panel is not shown in this figure.	**10**	Riser 1 supports SFP NIC card
11	Modular LOM (mLOM) card bay on chassis floor (x16 PCIe lane) The mLOM card bay is below PCIe riser slot 1.	**12**	Motherboard CPU socket (CPU1)
13	Front Panel Controller board		—

Summary of Server Features

The following table lists a summary of server features.

Feature	Description
Chassis	One rack-unit (1RU) chassis
Central Processor	Up to two 3rd Generation Intel Xeon processors
Memory	32 slots for registered DIMMs (RDIMMs), DDR4 DIMMs, 3DS DIMMs, and load-reduced DIMMs (LR DIMMs) up to 3200 MHz. Also supports Intel Optane Persistent Memory Modules (PMEMs)
Multi-bit error protection	Supports multi-bit error protection
Video	The Cisco Integrated Management Controller (Cisco IMC) provides video using the Matrox G200e video or graphics controller: • Integrated 2D graphics core with hardware acceleration • DDR3 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 at 60Hz • High-speed integrated 24-bit RAMDAC • Single-lane PCI-Express host interface running at Gen 2 speed
Baseboard management	BMC, running 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.

Feature	Description
Network and management I/O	Rear panel: • One 1-Gb Ethernet dedicated management port (RJ-45 connector) • Two 1-Gb or 10-Gb BASE-T Ethernet LAN ports (RJ-45 connectors) The dual LAN ports can support 10 Gbps, 1 Gbps, 100 Mbps, or 10 Mbps. The LAN ports autonegotiate to the correct link speed based on the link partner capability. • One RS-232 serial port (RJ-45 connector) • One VGA video connector port (DB-15 connector) • Two USB 3.0 ports Front panel: • One front-panel keyboard/video/mouse (KVM) connector that is used with the KVM breakout cable. The breakout cable provides two USB 2.0, one VGA, and one DB-9 serial connector.
Modular LOM	One dedicated socket (x16 PCIe lane) that can be used to add an mLOM card for additional rear-panel connectivity. As an optional hardware configuration, the Cisco CNIC mLOM module supports two 100G QSFP+ ports or four 25 Gbps Ethernet ports.
Power	• 1050 W (AC) • 1050 W (DC)
ACPI	Supports advanced configuration and power interface (ACPI) 4.0 standard
Front Panel	The front panel provides status indications and control buttons
Cooling	Eight hot-swappable fan modules for front-to-rear cooling
InfiniBand	In addition to Fibre Channel, Ethernet, and other industry-standards, the PCI slots in this server support the InfiniBand architecture.

Feature	Description

Interfaces	Rear panel:
	• One 1G base-T RJ-45 ? management port
	• Two 10G base-T LOM ports
	• 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, which supplies the pins for a KVM breakout cable that supports the following:
	  • Two USB 2.0 connectors
	  • One VGA DB15 video connector
	  • One serial port (RS232) RJ45 connector

Integrated Management Processor	Baseboard Management Controller running Cisco IMC firmware. Depending on your Cisco IMC settings, Cisco IMC can be accessed through the 1-GE dedicated management port, the 1GE/10GE LOM ports, or a Cisco virtual interface card (VIC).
Storage Controllers	The appliance has a dedicated internal mRAID riser that supports a PCIe-style Cisco modular RAID controller card (SAS/SATA).
Modular LAN over Motherboard (mLOM) slot	The dedicated mLOM slot on the motherboard can accommodate the following cards: • Cisco Virtual Interface Cards (VICs) • Quad Port Intel i350 1GbE RJ45 Network Interface Card (NIC)