



## **Cisco SNS-3400 Series Appliance Hardware Installation Guide**

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### **Americas Headquarters**

Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
<http://www.cisco.com>  
Tel: 408 526-4000  
800 553-NETS (6387)  
Fax: 408 527-0883





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## CHAPTER 1

# Cisco SNS 3400 Series Appliance Overview

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- [Cisco SNS 3415 and Cisco SNS-3495 Appliances, on page 1](#)
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## Cisco SNS 3415 and Cisco SNS-3495 Appliances

The Cisco SNS 3415 or Cisco SNS 3495 server is designed for performance and density over a wide range of business workloads, from web serving to distributed databases.

Building on the success of the Cisco SNS 3415 or Cisco SNS 3495 server, the enterprise-class Cisco SNS 3415 or Cisco SNS 3495 server further extends the capabilities of the Cisco Unified Computing System portfolio in a 1U form factor. The Cisco SNS 3415 or Cisco SNS 3495 server does this with the addition of the Intel Xeon processor E5-2600 product family, which delivers significant performance and efficiency gains. In addition, the Cisco SNS 3415 Cisco SNS 3495 server offers up to 256 GB of RAM, 8 drives, and 2 x 1 GbE lights-out management (LOM) ports that deliver outstanding levels of density and performance in a compact package.

## Cisco SNS 3415 and SNS 3495 Appliances Hardware Specifications

The following table describes the hardware specifications of Cisco SNS 3415 and Cisco SNS 3495 appliances.

| Cisco Identity Services Engine Appliance | Hardware Specifications   | Diagrams   |
|--|---|--|
| Cisco SNS-3415-K9                        | <ul style="list-style-type: none"> <li>• Cisco UCS C220 M3</li> <li>• Single socket Intel E5-2609 2.4Ghz CPU 4 total cores, 4 total threads</li> <li>• 16 GB RAM</li> <li>• 1 x 600-GB disk</li> <li>• Embedded Software RAID 0</li> <li>• 4 GE network interfaces</li> <li>• For physical, environmental, and power specifications, see <a href="#">Server Specifications, on page 13</a></li> </ul> | <a href="#">Cisco SNS-3415 or 3495 Appliance Front Panel View, on page 3</a><br><a href="#">Cisco SNS 3415 or SNS 3495 Appliance Back Panel View , on page 5</a> |
| Cisco SNS-3495-K9                        | <ul style="list-style-type: none"> <li>• Cisco UCS C220 M3</li> <li>• Dual socket Intel Xeon E5-2609 2.4GHz CPU 8 total cores, 8 total threads</li> <li>32 GB RAM</li> <li>2 x 600-GB disks</li> <li>RAID 0+1</li> <li>4 GE network interfaces</li> <li>For physical, environmental, and power specifications, see <a href="#">Server Specifications, on page 13</a>.</li> </ul>                      |  |



**Note** You cannot add additional RAM to Cisco SNS 3400 series appliance.

## LED Indicators on Cisco SNS-3415 and 3495 Appliances

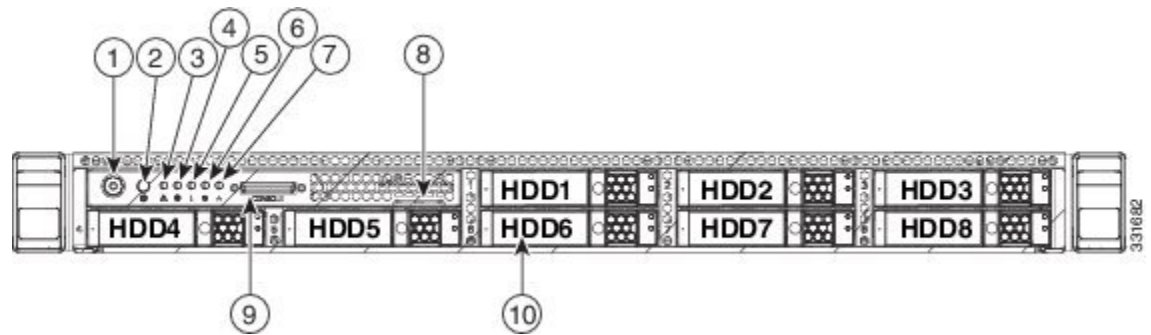
This section describes the front- and rear-panel controls, ports, and LED indicators on the Cisco SNS 3415 or Cisco SNS 3495 appliances.

- [Cisco SNS-3415 or 3495 Appliance Front Panel View, on page 3](#)
- [Cisco SNS 3415 or SNS 3495 Appliance Back Panel View , on page 5](#)

## Cisco SNS-3415 or 3495 Appliance Front Panel View

The following figure shows the components of the Cisco SNS-3415 or Cisco SNS-3495 appliance front panel view.

**Figure 1: Cisco SNS-3415/3495 Appliance Front View**



|   |                               |    |  |
|---|-------------------------------|----|--|
| 1 | Power button/Power status LED | 6  | Power supply status LED  |
| 2 | Identification button/LED     | 7  | Network link activity LED  |
| 3 | System status LED             | 8  | Asset tag (serial number)  |
| 4 | Fan status LED                | 9  | 9 KVM connector (used with KVM cable that provides two USB, one VGA, and one serial connector) |
| 5 | Temperature status LED        | 10 | Drives (up to eight hot-swappable 2.5-inch drives)   |

The following table describes the LEDs located on the front panel of the Cisco SNS-3415 or Cisco SNS-3495 appliance.

| Front Panel LED Names         | State  |
|-------------------------------|--|
| Power button/Power status LED | <ul style="list-style-type: none"> <li>Off—There is no AC power to the server.</li> <li>Amber—The server is in standby power mode. Power is supplied only to the Cisco IMC and some motherboard functions.</li> <li>Green—The server is in main power mode. Power is supplied to all server components.</li> </ul> |
| Identification                | <ul style="list-style-type: none"> <li>Off—The identification LED is not in use.</li> <li>Blue—The identification LED is activated.</li> </ul>   |

| Front Panel LED Names | State   |
|-----------------------|---|
| System status         | <ul style="list-style-type: none"> <li>• Green—The server is running in normal operating condition.</li> <li>• Green, blinking—The server is performing system initialization and memory check.</li> <li>• Amber, steady—The server is in a degraded operational state. For example:               <ul style="list-style-type: none"> <li>• Power supply redundancy is lost.</li> <li>• CPUs are mismatched.</li> <li>• At least one CPU is faulty.</li> <li>• At least one DIMM is faulty.</li> <li>• At least one drive in a RAID configuration failed.</li> </ul> </li> <li>• Amber, blinking—The server is in a critical fault state. For example:               <ul style="list-style-type: none"> <li>• Boot failed.</li> <li>• Fatal CPU and/or bus error is detected.</li> <li>• Server is in an over-temperature condition.</li> </ul> </li> </ul> |
| Fan status            | <ul style="list-style-type: none"> <li>• Green—All fan modules are operating properly.</li> <li>• Amber, steady—One or more fan modules breached the critical threshold.</li> <li>• Amber, blinking—One or more fan modules breached the non-recoverable threshold.</li> </ul>  |
| Temperature status    | <ul style="list-style-type: none"> <li>• Green—The server is operating at normal temperature.</li> <li>• Amber, steady—One or more temperature sensors breached the critical threshold.</li> <li>• Amber, blinking—One or more temperature sensors breached the non-recoverable threshold.</li> </ul>   |
| Power supply status   | <ul style="list-style-type: none"> <li>• Green—All power supplies are operating normally.</li> <li>• Amber, steady—One or more power supplies are in a degraded operational state.</li> <li>• Amber, blinking—One or more power supplies are in a critical fault state.</li> </ul>  |

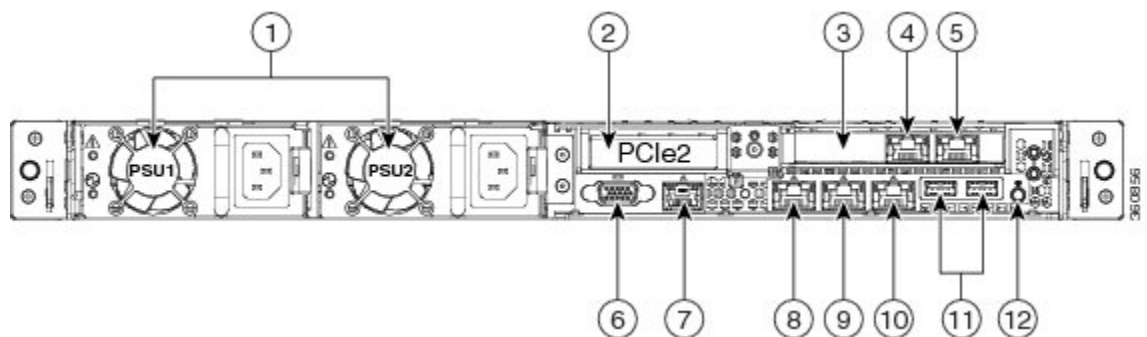


| Front Panel LED Names | State   |
|-----------------------|---|
| Network link activity | <ul style="list-style-type: none"> <li>• Off—The Ethernet link is idle.</li> <li>• Green—One or more Ethernet LOM ports are link-active, but there is no activity.</li> <li>• Green, blinking—One or more Ethernet LOM ports are link-active, with activity.</li> </ul> |
| Hard drive fault      | <ul style="list-style-type: none"> <li>• Off—The hard drive is operating properly.</li> <li>• Amber—Drive fault detected.</li> <li>• Amber, blinking—The device is rebuilding.</li> </ul>   |
| Hard drive activity   | <ul style="list-style-type: none"> <li>• Off—There is no hard drive in the hard drive tray (no access, no fault).</li> <li>• Green—The hard drive is ready.</li> <li>• Green, blinking—The hard drive is reading or writing data.</li> </ul>                            |

## Cisco SNS 3415 or SNS 3495 Appliance Back Panel View

The following figure shows the components of the Cisco SNS-3415 and Cisco 3495 appliance back panel view.

**Figure 2: Cisco SNS-3415/3495 Appliance Rear View**



**Table 1:**

|   |                            |   |                               |
|---|----------------------------|---|-------------------------------|
| 1 | Power supplies (up to two) | 7 | Serial port (RJ-45 connector) |
|---|----------------------------|---|-------------------------------|

|   |  |    |   |
|---|--|----|---|
| 2 | Slot 2: Low-profile Peripheral Component Interconnect Express (PCIe) slot on riser (half-height, half-length, x16 connector, x16 lane width) | 8  | 1-GB Ethernet dedicated management port used to access CIMC (labeled M) |
| 3 | Slot 1: PCIe1 card containing 1-GB Ethernet ports (GigE2 and GigE3)  | 9  | 1-GB Ethernet port 1 (GigE0) for Cisco ISE management communication     |
| 4 | 1-GB Ethernet port 3 (GigE2)   | 10 | 1-GB Ethernet port 2 (GigE1)  |
| 5 | 1-GB Ethernet port 4 (GigE3)   | 11 | USB Ports   |
| 6 | VGA video connector  | 12 | Rear identification button  |

The following table describes the LEDs located on the back panel of the Cisco SNS-3415 or Cisco SNS-3495 appliance.

| LED Name                                       | State  |
|--|--|
| Power supply fault                             | <ul style="list-style-type: none"> <li>• Off—The power supply is operating normally.</li> <li>• Amber, blinking—An event warning threshold has been reached, but the power supply continues to operate.</li> <li>• Amber, solid—A critical fault threshold has been reached, causing the power supply to shut down (for example, a fan failure or an over-temperature condition).</li> </ul> |
| Power supply AC OK                             | <ul style="list-style-type: none"> <li>• Off—There is no AC power to the power supply.</li> <li>• Green, blinking—AC power OK, DC output not enabled.</li> <li>• Green, solid—AC power OK, DC outputs OK.</li> </ul>   |
| 1-GbE Ethernet dedicated management link speed | <ul style="list-style-type: none"> <li>• Off—link speed is 10 Mbps.</li> <li>• Amber—link speed is 100 Mbps.</li> <li>• Green—link speed is 1 Gbps.</li> </ul>   |

| LED Name  | State  |
|---|--|
| 1-GbE Ethernet dedicated management link status | <ul style="list-style-type: none"> <li>• Off—No link is present.</li> <li>• Green—Link is active.</li> <li>• Green, blinking—Traffic is present on the active link.</li> </ul> |
| 1-GbE Ethernet link speed                       | <ul style="list-style-type: none"> <li>• Off—link speed is 10 Mbps.</li> <li>• Amber—link speed is 100 Mbps.</li> <li>• Green—link speed is 1 Gbps.</li> </ul>                 |
| 1-GbE Ethernet link status                      | <ul style="list-style-type: none"> <li>• Off—No link is present.</li> <li>• Green—Link is active.</li> <li>• Green, blinking—Traffic is present on the active link.</li> </ul> |
| Identification                                  | <ul style="list-style-type: none"> <li>• Off—The Identification LED is not in use.</li> <li>• Blue—The Identification LED is activated.</li> </ul>                             |

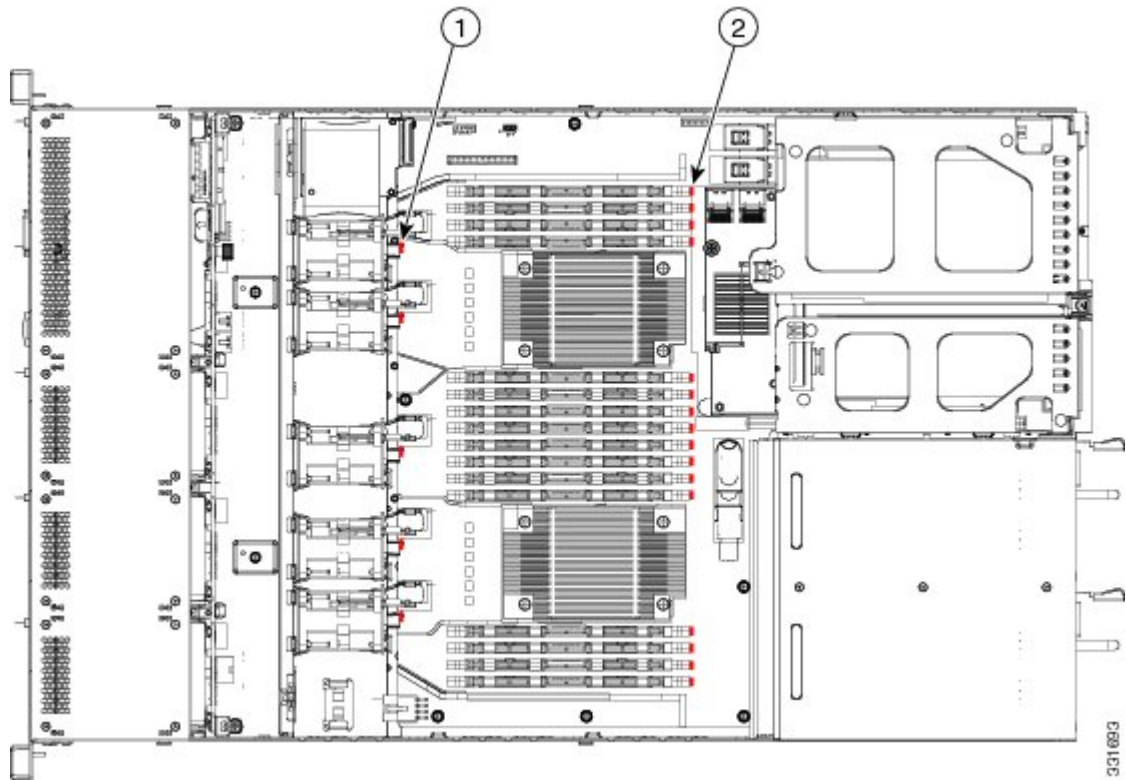
## Internal Diagnostic LEDs

The server has internal fault LEDs for fan modules and DIMMs. The LED lights amber to indicate a failed component.



**Note** Power must be connected to the server for these LEDs to be operational.

The following figure shows the locations of these internal LEDs in Cisco SNS-3415 or Cisco SNS-3495 appliance.



The following table describes the callouts in the above figure.

|   |   |   |   |
|---|---|---|---|
| 1 | Fan module fault LEDs (one next to each fan connector on the motherboard) | 2 | DIMM fault LEDs (one next to each DIMM socket on the motherboard) |
|---|---|---|---|

The following table describes the internal diagnostic LEDs located inside the Cisco SNS-3400 series appliance.

| LED Name                       | State   |
|--------------------------------|---|
| Internal diagnostic LEDs (all) | <ul style="list-style-type: none"> <li>• Off—Component is functioning normally.</li> <li>• Amber—Component has failed.</li> </ul> |

## Regulatory Compliance

For regulatory compliance and safety information, see [Regulatory Compliance and Safety Information for Cisco SNS-3415, Cisco SNS-3495, Cisco SNS-3515, and Cisco SNS-3595 Appliances](#).



## CHAPTER 2

# Before You Begin

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This section provides information on how you can prepare your site for safely installing the Cisco SNS-3415 or Cisco SNS-3495 appliance.

- [Safety Guidelines, on page 9](#)
- [Unpack and Inspect the Server, on page 10](#)
- [Prepare for Server Installation, on page 11](#)
- [Server Specifications, on page 13](#)

## Safety Guidelines



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**Note** Before you install, operate, or service a Cisco SNS-3415 or Cisco SNS-3495 appliance, review the [Regulatory Compliance and Safety Information for Cisco SNS-3415, Cisco SNS-3495, Cisco SNS-3515, and Cisco SNS-3595 Appliances](#) for important safety information.

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**Warning** **Warning: IMPORTANT SAFETY INSTRUCTIONS**

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device.

Statement 1071

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**Warning** Warning: To prevent the system from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of: 40° C (104° F).

Statement 1047

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**Warning** Warning: The plug-socket combination must be accessible at all times, because it serves as the main disconnecting device.

Statement 1019

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**Warning** This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 250 V, 15 A.

Statement 1005

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**Warning** Installation of the equipment must comply with local and national electrical codes.

Statement 1074

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When you are installing a server, use the following guidelines:

- Plan your site configuration and prepare the site before installing the server. See the [Cisco UCS Site Preparation Guide](#) for the recommended site planning tasks.
- Ensure that there is adequate space around the server to allow for servicing the server and for adequate airflow. The airflow in this server is from front to back.
- Ensure that the air-conditioning meets the thermal requirements listed in the [Server Specifications, on page 13](#).
- Ensure that the cabinet or rack meets the requirements listed in the [Rack Requirements, on page 12](#).
- Ensure that the site power meets the power requirements listed in the [Power Specifications, on page 14](#). If available, you can use an uninterruptible power supply (UPS) to protect against power failures.




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**Caution** Avoid UPS types that use ferroresonant technology. These UPS types can become unstable with systems such as the Cisco UCS, which can have substantial current draw fluctuations from fluctuating data traffic patterns.

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## Unpack and Inspect the Server




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**Caution** When handling internal server components, wear an ESD strap and handle modules by the carrier edges only.

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**Note** Keep the shipping container in case the server requires shipping in the future.

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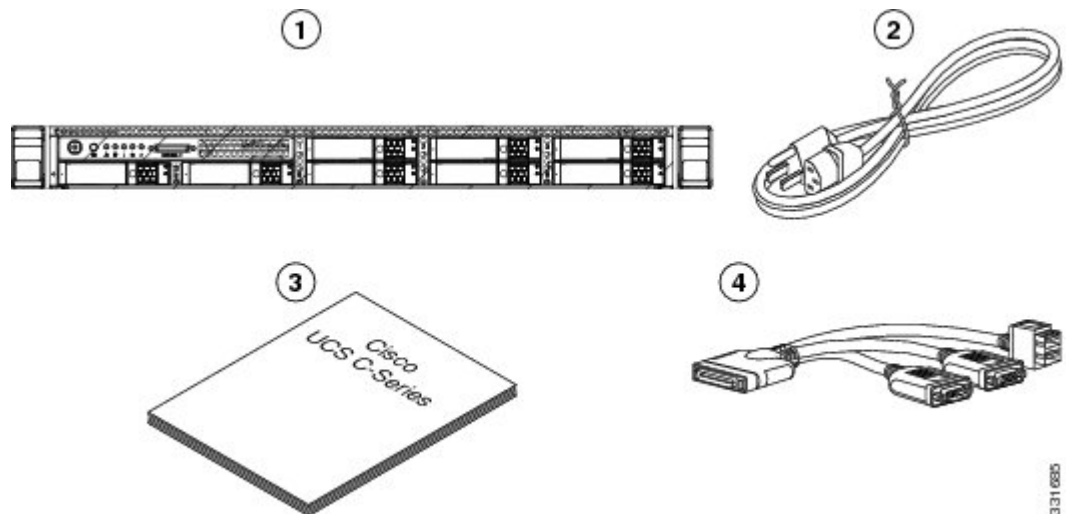


**Note** The chassis is thoroughly inspected before shipment. If any damage occurred during transportation or any items are missing, contact your customer service representative immediately.

To inspect the shipment:

- Step 1** Remove the server from its cardboard container and save all packaging material.
- Step 2** Compare the shipment to the equipment list provided by your customer service representative and the list given below. Verify that you have all items.
- Step 3** Check for damage and report any discrepancies or damage to your customer service representative. Have the following information ready:
- Invoice number of shipper (see the packing slip)
  - Model and serial number of the damaged unit
  - Description of damage
  - Effect of damage on the installation

**Figure 3: Shipping Box Contents**



## Prepare for Server Installation

- [Installation Guidelines](#), on page 12
- [Rack Requirements](#), on page 12
- [Equipment Requirements](#), on page 13
- [Slide Rail Adjustment Range](#), on page 13

## Installation Guidelines



**Warning** Warning: To prevent the system from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of: 40° C (104° F).

Statement 1047



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Statement 1019



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Statement 1005



**Warning** Installation of the equipment must comply with local and national electrical codes.

Statement 1074



**Caution** Avoid UPS types that use ferroresonant technology. These UPS types can become unstable with systems such as the Cisco UCS, which can have substantial current draw fluctuations from fluctuating data traffic patterns.

When you are installing a server, use the following guidelines

- Plan your site configuration and prepare the site before installing the server. See the [Cisco UCS Site Preparation Guide](#) for the recommended site planning tasks.
- Ensure that there is adequate space around the server to allow for servicing the server and for adequate airflow. The airflow in this server is from front to back.
- Ensure that the air-conditioning meets the thermal requirements listed in the [Server Specifications, on page 13](#).
- Ensure that the cabinet or rack meets the requirements listed in the [Rack Requirements, on page 12](#).
- Ensure that the site power meets the power requirements listed in the [Power Specifications, on page 14](#). If available, you can use an uninterruptible power supply (UPS) to protect against power failures.

## Rack Requirements

This section provides the requirements for the standard open racks.



The rack must be of the following type:

- A standard 19-in. (48.3-cm) wide, four-post EIA rack, with mounting posts that conform to English universal hole spacing, per section 1 of ANSI/EIA-310-D-1992.
- The rack post holes can be square 0.38-inch (9.6 mm), round 0.28-inch (7.1 mm), #12-24 UNC, or #10-32 UNC when you use the supplied slide rails.
- The minimum vertical rack space per server must be one RU, equal to 1.75 in. (44.45 mm).

## Equipment Requirements

The slide rails supplied by Cisco Systems for this server do not require tools for installation. The inner rails (mounting brackets) are pre-attached to the sides of the server.

## Slide Rail Adjustment Range

The slide rails for this server have an adjustment range of 24 to 36 inches (610 to 914 mm).

## Server Specifications

This section lists the technical specifications for the server:

### Physical Specifications

The following table lists the physical specifications of the server.

**Table 2: Physical Specifications**

| Description                   | Specification      |
|-------------------------------|--------------------|
| Height                        | 1.7 in. (4.3 cm)   |
| Width                         | 16.9 in. (42.9 cm) |
| Depth                         | 28.5 in. (72.4 cm) |
| Weight (fully loaded chassis) | 35.6 lb. (16.1 Kg) |

### Environmental Specifications

The following table lists the environmental specifications of the server.

Table 3: Environmental Specifications

| Description   | Specification  |
|---|--|
| Temperature, operating  | 41 to 104°F (5 to 40°C)<br>Derate the maximum temperature by 1°C per every 305 meters of altitude above sea level. |
| Temperature, non-operating  | -40 to 149°F (-40 to 65°C)   |
| Humidity (RH), noncondensing  | 10 to 90%  |
| Altitude, operating   | 0 to 10,000 feet   |
| Altitude, non-operating   | 0 to 40,000 feet   |
| Sound power level<br>Measure A-weighted per ISO7779 LwAd (Bels)<br>Operation at 73°F (23°C)   | 5.4  |
| Sound pressure level<br>Measure A-weighted per ISO7779 LpAm (dBA)<br>Operation at 73°F (23°C) | 37   |

## Power Specifications

The power specifications are listed in the following section:

### 650-Watt Power Supply



**Note** You can get more specific power information for your exact server configuration by using the [Cisco UCS Power Calculator](#).



**Note** Do not mix power supply types in the server. Both power supplies must be either 650W.

Table 4: Cisco SNS-3400 Series Server 650-Watt Power Supply Specifications

| Description            | Specification   |
|------------------------|---|
| AC input voltage range | 90 to 264 VAC (self-ranging, 180 to 264 VAC nominal)  |
| AC input frequency     | Range: 47 to 63 Hz (single phase, 50 to 60Hz nominal) |

| Description                                | Specification                                |
|--|--|
| AC line input current (steady state)       | 7.6 A peak at 100 VAC 3.65 A peak at 208 VAC |
| Maximum output power for each power supply | 650 Watts                                    |
| Power supply output voltage                | Main power: 12 VDC<br>Standby power: 12 VDC  |





## CHAPTER 3

# Install the Cisco SNS 3415 and Cisco SNS 3495 Hardware Appliances

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- [Install the Cisco SNS 3415 and Cisco SNS 3495 Hardware Appliances, on page 17](#)
- [Install the Cisco SNS 3415 or 3495 Appliance in a Rack, on page 18](#)
- [Connect Cables, on page 21](#)
- [Connect and Power On the Cisco SNS 3415 or 3495 Appliance, on page 24](#)
- [Cisco Integrated Management Controller, on page 30](#)

## Install the Cisco SNS 3415 and Cisco SNS 3495 Hardware Appliances

This section describes how to install your Cisco SNS 3415 or 3495 appliance and connect it to the network. It contains:

- [Install the Cisco SNS 3415 or 3495 Appliance in a Rack, on page 18](#)
- [Cisco Integrated Management Controller, on page 30](#)
- [Connect Cables, on page 21](#)
- [Cable Management, on page 23](#)

Before you begin the installation, read the [Regulatory Compliance and Safety Information for Cisco SNS-3415, Cisco SNS-3495, Cisco SNS-3515, and Cisco SNS-3595 Appliances](#).



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**Warning**

Warning: Only trained and qualified personnel should be allowed to install, replace, or service this equipment.  
Statement 1030

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**Warning**

Warning: This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security.

Statement 1017

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# Install the Cisco SNS 3415 or 3495 Appliance in a Rack

This section describes how to install the Cisco SNS 3415 or Cisco SNS 3495 appliance in a rack.

## Install the Side Rails

**Warning**

To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

This unit should be mounted at the bottom of the rack if it is the only unit in the rack.

When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.

If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

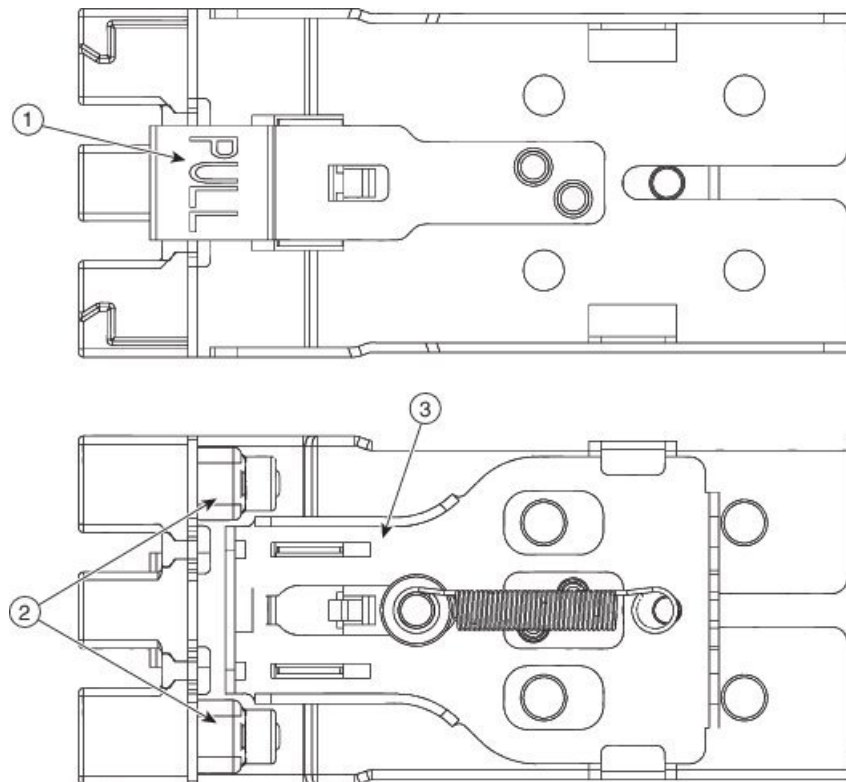
Statement 1006

**Step 1**

Open the front securing latch (see the following figure). The end of the slide-rail assembly marked “FRONT” has a spring-loaded securing latch that must be open before you can insert the mounting pegs into the rack-post holes.

- a) On the rear side of the securing-latch assembly, hold open the clip marked “PULL.”
- b) Slide the spring-loaded securing latch away from the mounting pegs.
- c) Release the clip marked “PULL” to lock the securing latch in the open position.

Figure 4: Front Securing Latch



|   |  |   |   |
|---|--|---|---|
| 1 | Clip marked “PULL” on rear of assembly | 3 | Spring-loaded securing latch on front of assembly |
| 2 | Front mounting pegs                    |   |   |

**Step 2**

Install the slide rails onto the rack:

- a) Position a slide-rail assembly inside the two left-side rack posts (see the following figure).

Use the “FRONT” and “REAR” markings on the slide-rail assembly to orient the assembly correctly with the front and rear rack posts.

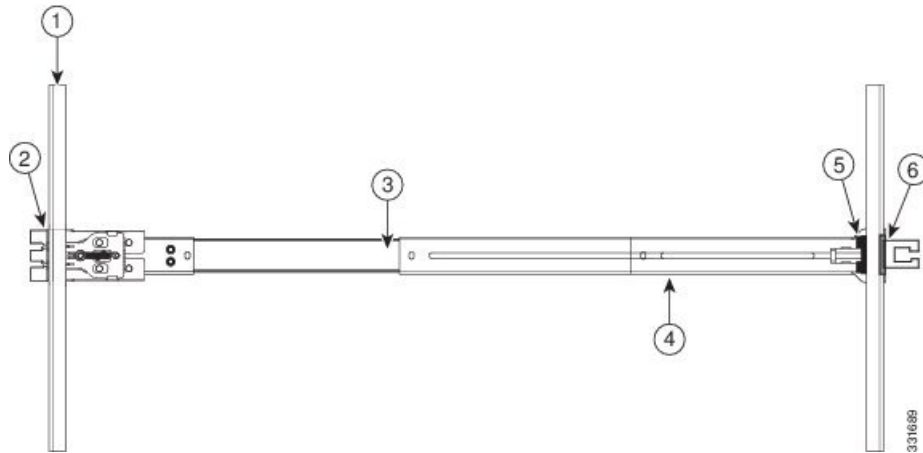
- b) Position the front mounting pegs so that they enter the desired front rack-post holes from the front.

**Note** The mounting pegs that protrude through the rack-post holes are designed to fit round or square holes, or smaller #10-32 round holes when the mounting peg is compressed. If your rack has #10-32 rack-post holes, align the mounting pegs with the holes and then compress the spring-loaded pegs to expose the #10-32 inner peg.

- c) Expand the length-adjustment bracket until the rear mounting pegs protrude through the desired holes in the rear rack post.

Use your finger to hold the rear securing latch open when you insert the rear mounting pegs to their holes. When you release the latch, it wraps around the rack post and secures the slide-rail assembly.

Figure 5: Attaching a Slide Rail Assembly



|   |                      |   |                           |
|---|----------------------|---|---------------------------|
| 1 | Front-left rack post | 4 | Length-adjustment bracket |
| 2 | Front mounting pegs  | 5 | Rear mounting pegs        |
| 3 | Slide-rail assembly  | 6 | Rear securing latch       |

- d) Attach the second slide-rail assembly to the opposite side of the rack. Ensure that the two slide-rail assemblies are level and at the same height with each other.
- e) Pull the inner slide rails on each assembly out toward the rack front until they hit the internal stops and lock in place.

**Step 3** Insert the server into the slide rails:

**Note** The inner rails are pre-attached to the sides of the server at the factory. You can order replacement inner rails if these are damaged or lost (Cisco PID UCSC-RAIL1-I).

- a) Align the inner rails that are pre-attached to the server sides with the front ends of the empty slide rails.
- b) Push the server into the slide rails until it stops at the internal stops.
- c) Push in the plastic release clip on each inner rail (labelled PUSH), and then continue pushing the server into the rack until its front latches engage the rack posts.

**Step 4** (Optional) Attach the cable management arm (CMA) to the rear of the slide rails. See [Install the Cable Management Arm \(Optional\)](#), on page 20 for information.

**Step 5** Continue with the “Connecting and Powering on Cisco SNS-3415/3495 Appliance”.

## Install the Cable Management Arm (Optional)

You can attach the cable management arm (CMA) to the rear of the slide rails.

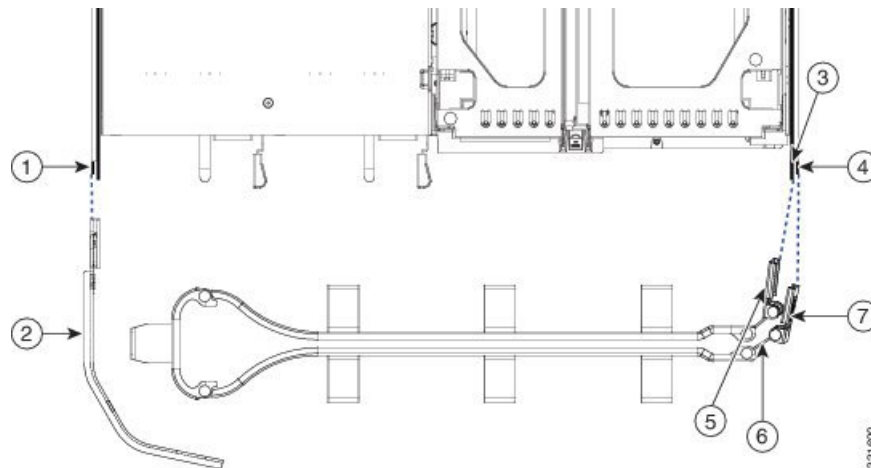


**Note** The CMA is designed for mounting on either the right or left slide rails. These instructions describe an installation to the rear of the right slide rails, as viewed from the rear of server.



- Step 1** With the server pushed fully into the rack, slide the plastic clip on the inner CMA arm over the flange on the mounting bracket that attached to the side of the server. See the following figure.
- Note** Note: Whether you are mounting the CMA to the left or right slide rails, be sure to orient the engraved marking, “UP” so that it is always on the upper side of the CMA. See the following figure.
- Step 2** Slide the plastic clip on the outer CMA arm over the flange on the slide rail. See the following figure.
- Step 3** Attach the CMA retaining bracket to the left slide rail. Slide the plastic clip on the bracket over the flange on the end of the left slide.

**Figure 6: Attaching the Cable Management Arm (Rear of Server Shown)**



|   |  |   |                               |
|---|--|---|-------------------------------|
| 1 | Flange on rear of outer left slide rail  | 5 | Inner CMA arm attachment clip |
| 2 | CMA retaining bracket                    | 6 | “UP” orientation marking      |
| 3 | Flange on rear of right mounting bracket | 7 | Outer CMA arm attachment clip |
| 4 | Flange on rear of outer right slide rail |   |                               |

## Connect Cables

This section describes how to connect your Cisco SNS-3415 or Cisco SNS-3495 appliance to the network and the appliance console.

- [Connect the Network Interface, on page 22](#)
- [Connect the Console, on page 22](#)
- [Connect the Keyboard and Video Monitor, on page 23](#)
- [Cable Management, on page 23](#)

Attach cables (such as keyboard, monitor cables, if required) to the rear of the server. Route the cables properly and use the cable straps to secure the cables to the slide rails. See the [Cisco SNS 3415 or SNS 3495 Appliance Back Panel View](#), on page 5 for reference on the rear view of the appliance.

## Connect the Network Interface



**Warning** Warning: Do not work on the system or connect or disconnect cables during periods of lightning activity.  
Statement 1001

This section describes how to connect the Cisco SNS-3415 or Cisco SNS-3495 appliance Ethernet port.

The Ethernet connector supports Serial over LAN (SOL) cables. The RJ-45 port supports standard straight-through and crossover Category 5 unshielded twisted-pair (UTP) cables. Cisco does not supply Category 5 UTP cables; these cables are available commercially.

To connect the cable to the appliance Ethernet port:

- 
- Step 1** Verify that the appliance is turned off.
  - Step 2** Connect one end of the cable to the GigabitEthernet 0 port on the appliance.
  - Step 3** Connect the other end to a switch in your network.
- 

## Connect the Console



**Warning** Warning: Do not work on the system or connect or disconnect cables during periods of lightning activity.  
Statement 1001

Your Cisco SNS-3415 or Cisco SNS-3495 appliance has a DCE-mode console port for connecting a console terminal to your appliance. The appliance uses a DB-9 serial connector for the console port.

The console port on the Cisco SNS-3415 or Cisco SNS-3495 appliance includes an EIA/TIA-232 asynchronous serial (DB-9) connector. This serial console connector (port) allows you to access the appliance locally by connecting a terminal—either a PC running terminal-emulation software or an ASCII terminal—to the console port.

To connect a PC running terminal-emulation software to the console port, use a DB-9 female to DB-9 female straight-through cable.

To connect an ASCII terminal to the console port, use a DB-9 female to DB-25 male straight-through cable with a DB-25 female to DB-25 female gender changer.

To connect a terminal or a PC running terminal-emulation software to the console port on the Cisco SNS-3415 or Cisco SNS-3495 appliance:

- 
- Step 1** Connect the terminal using a straight-through cable to the console port.

- Step 2** Configure your terminal or terminal-emulation software for 9600 baud, 8 data bits, no parity, 1 stop bit, and no hardware flow control.
- 

## Connect the Keyboard and Video Monitor



**Warning** Do not work on the system or connect or disconnect cables during periods of lightning activity.  
Statement 1001

---

This section describes how to connect a keyboard and video monitor to the Cisco SNS-3415 or Cisco SNS-3495 appliance.

You can connect the keyboard and video monitor to the Cisco SNS-3415 or Cisco SNS-3495 appliance using the KVM connector available in the front panel of the Cisco SNS-3415 or Cisco SNS-3495 appliance. A KVM cable is shipped along with the appliance that provides two USB, one VGA, and one serial connector.

The Cisco SNS-3415 or Cisco SNS-3495 appliance does not provide support for a mouse.

The Cisco SNS-3415 or Cisco SNS-3495 provides USB ports on the rear of the appliance that can be used to connect a keyboard and video monitor.

To connect a keyboard and video monitor to the appliance:

---

- Step 1** Verify that the appliance is turned off.
- Step 2** Connect the end of the keyboard cable to the PS/2 (keyboard) port which is located on the back panel of the appliance.
- Step 3** Connect the end of the video monitor cable to the PS/2 (video monitor) port which is located on the back panel of the appliance.
- Step 4** Power on the appliance.
- 

## Cable Management

Cable management is the most visual aspect of your appliance setup. However, cable management is often overlooked because it can be time consuming.

Equipment racks and enclosures house more equipment today than ever before. This growth has increased the need for organized cable management both inside and outside the rack. Poor cable management not only leads to damaged cables or increased time for adding or changing cables, but also blocks critical airflow or access. These problems can lead to inefficiencies in the performance of your equipment or even downtime.

There are many solutions to address cable management. They can range from simple cable management rings, to vertical or horizontal organizers, to troughs and ladders.

All Cisco SNS-3415 or Cisco SNS-3495 appliance cables should be properly dressed so as not to interfere with each other or other pieces of equipment. Use local practices to ensure that the cables attached to your appliance are properly dressed.

Proceed to the next section, [Connect and Power On the Cisco SNS 3415 or 3495 Appliance](#), to continue the installation process.

# Connect and Power On the Cisco SNS 3415 or 3495 Appliance

- [Connect and Power On the Server \(Standalone Mode\)](#), on page 24
- [NIC Modes and NIC Redundancy Settings](#), on page 25
- [System BIOS and CIMC Firmware](#), on page 26

## Connect and Power On the Server (Standalone Mode)



**Note** This section describes how to power on the server, assign an IP address, and connect to server management when using the server in standalone mode. To use the server in UCS integration, specific cabling and settings are required. See [Cisco UCS C Series Server Integration with Cisco UCS Manager](#).



**Note** The server is shipped with a default NIC mode called Shared LOM, default NIC redundancy is active-active, and DHCP is enabled. Shared LOM mode enables the two 1-Gb Ethernet ports to access the Cisco Integrated Management Interface (CIMC). If you want to use the 1-Gb Ethernet dedicated management port, or a port on a Cisco UCS P81E Virtual Interface Card (VIC) to access the CIMC, you must first connect to the server and change the NIC mode as described in Step 3 of the following procedure. In that step, you can also change the NIC redundancy and set static IP settings.

**Step 1** Attach a power cord to each power supply unit in your server, and then attach each power cord to a grounded AC power outlet. See [Power Specifications](#), on page 14 for power specifications. Wait for approximately two minutes to let the server boot in standby power during the first bootup.

You can verify power status by looking at the Power Status LED (see [LED Indicators on Cisco SNS-3415 and 3495 Appliances](#), on page 2):

- Of—There is no AC power present in the server.
- Amber—The server is in standby power mode. Power is supplied only to the CIMC and some motherboard functions.
- Green—The server is in main power mode. Power is supplied to all server components.

**Note** During bootup, the server beeps once for each USB device that is attached to the server. Even if there are no external USB devices attached, there is a short beep for each virtual USB device such as a virtual floppy drive, CD/DVD drive, keyboard, or mouse. A beep is also emitted if a USB device is hot-plugged or hot-unplugged during BIOS power-on self test (POST), or while you are accessing the BIOS Setup utility or the EFI shell.

**Step 2** Connect a USB keyboard and VGA monitor by using the supplied KVM cable connected to the KVM connector on the front panel (see [Cisco SNS-3415 or 3495 Appliance Front Panel View](#), on page 3).

**Note** Alternatively, you can use the VGA and USB ports on the rear panel. However, you cannot use the front panel VGA and the rear panel VGA at the same time. If you are connected to one VGA connector and you then connect a video device to the other connector, the first VGA connector is disabled.

- Step 3** See [Setup CIMC Configuration Utility, on page 26](#) to enter in to the BIOS CIMC Configuration Utility. Use this utility to set NIC mode, NIC redundancy, and choose whether to enable DHCP or set static network settings.
- Step 4** Connect to the CIMC for server management. Connect Ethernet cables from your LAN to the server, using the ports that you selected in Step 3. The Active-active and Active-passive NIC redundancy settings require you to connect to two ports.
- Step 5** Enter the IP address of the CIMC in your browser to connect to the CIMC Setup Utility. The CIMC IP address is configured in Step 3 (either a static address or the address assigned by your DHCP server).

---

To manage the server, see the Cisco UCS C-Series Rack-Mount Server Configuration Guide or the Cisco UCS C-Series Rack-Mount Server CLI Configuration Guide for instructions on using those interfaces. The links to these documents are in the C-Series documentation roadmap:

<http://www.cisco.com/go/unifiedcomputing/c-series-doc>

## NIC Modes and NIC Redundancy Settings

### NIC Modes

This server has the following NIC mode settings that you can choose from:

- Shared LOM EXT (default)—This is the Shared LOM extended mode, the factory-default setting. With this mode, the shared LOM and Cisco Card interfaces are both enabled.

In this mode, DHCP replies are returned to both the shared LOM ports and the Cisco card ports. If the system determines that the Cisco card connection is not getting its IP address from a Cisco UCS Manager system because the server is in standalone mode, further DHCP requests from the Cisco card are disabled. If the system determines that the Cisco card connection is getting its IP address from a Cisco UCS Manager system, the reply has parameters that automatically move the server to UCSM mode.

- Dedicated—The dedicated management port is used to access Cisco IMC. You must select a NIC redundancy and IP setting.
- Shared LOM—The 1-Gb Ethernet ports are used to access Cisco IMC. You must select a NIC redundancy and IP setting.
- Cisco Card—The ports on an installed Cisco UCS virtual interface card (VIC) are used to access Cisco IMC. You must select a NIC redundancy and IP setting.

See also the required VIC Slot setting below.

- VIC Slot—If you use the Cisco Card NIC mode, you select this setting to match where your VIC is installed. The choices are Riser1, Riser2, or Flex-LOM (the mLOM slot).
  - If you select Riser1, slot 1 is used.
  - If you select Riser2, slot 2 is used.
  - If you select Flex-LOM, you must use an mLOM-style VIC in the mLOM slot

### NIC Redundancy

This server has the following NIC redundancy settings that you can choose from:

- None—The Ethernet ports operate independently and do not fail over if there is a problem. This setting can be used only with the Dedicated NIC mode.
- Active-standby—If an active Ethernet port fails, traffic fails over to a standby port.
- Active-active—All Ethernet ports are utilized simultaneously. Shared LOM EXT mode can have only this NIC redundancy setting. Shared LOM and Cisco Card modes can have both Active-standby and Active-active settings.

The active/active setting uses Mode 5 or Balance-TLB (adaptive transmit load balancing). This is channel bonding that does not require any special switch support. The outgoing traffic is distributed according to the current load (computed relative to the speed) on each standby. Incoming traffic is received by the current standby. If the receiving standby fails, another standby takes over the MAC address of the failed receiving standby.

## System BIOS and CIMC Firmware

This section includes information about the system BIOS 1.4.7b.0.

### Setup CIMC Configuration Utility

You can perform all operations on the Cisco SNS-3415 or Cisco SNS-3495 appliance through the CIMC. To do this, you must first configure an IP address and IP gateway to access the CIMC from a web-based browser.

- 
- Step 1** Plug in the power cord.
  - Step 2** Press the **Power** button to boot the server.



**Step 3** During bootup, press F8 when prompted to open the BIOS CIMC Configuration Utility. The following screen appears.

```

CIMC Configuration Utility  Version 1.6  Cisco Systems, Inc.
*****
NIC Properties
NIC mode                               NIC redundancy
Dedicated:      [ ]                   None:           [ ]
Shared LOM:     [X]                   Active-standby:[ ]
Cisco Card:     [ ]                   Active-active:  [X]
Shared LOM Ext: [ ]

IPV4 (Basic)                            Factory Defaults
DHCP enabled:   [ ]                   CIMC Factory Default:[ ]
CIMC IP:        192.168.118.30         Default User (Basic)
Subnetmask:     255.255.255.0         Default password:
Gateway:        192.168.118.1         Reenter password:

VLAN (Advanced)                          Port Profile
VLAN enabled:   [ ]                   Name:
VLAN ID:        1
Priority:        0

*****
<Up/Down arrow> Select items    <F10> Save    <Space bar> Enable/Disable
<F5> Refresh                    <ESC> Exit

```

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**Step 4** Set the NIC mode to your choice for which ports to use to access the CIMC for server management (see [Cisco SNS-3415 or 3495 Appliance Front Panel View, on page 3](#) for identification of the ports):

- **Dedicated**—The 1-Gb Ethernet management port is used to access the CIMC. You must select NIC redundancy None and select IP settings.
- **Shared LOM (default)**—The two 1-Gb Ethernet ports are used to access the CIMC. This is the factory default setting, along with Active-active NIC redundancy and DHCP enabled.
- **Cisco Card**—The ports on an installed Cisco UCS P81E VIC are used to access the CIMC. You must select a NIC redundancy and IP setting.

**Note** The Cisco Card NIC mode is currently supported only with a Cisco UCS P81E VIC (N2XX-ACPCI01) that is installed in PCIe slot 1.

**Step 5** Use this utility to change the NIC redundancy to your preference. This server has three possible NIC redundancy settings:

- **None**—The Ethernet ports operate independently and do not fail over if there is a problem.
- **Active-standby**—If an active Ethernet port fails, traffic fails over to a standby port.
- **Active-active**—All Ethernet ports are utilized simultaneously.



**Step 6** Choose whether to enable DHCP for dynamic network settings, or to enter static network settings.

**Note** Note: Before you enable DHCP, your DHCP server must be preconfigured with the range of MAC addresses for this server. The MAC address is printed on a label on the rear of the server. This server has a range of six MAC addresses assigned to the CIMC. The MAC address printed on the label is the beginning of the range of six contiguous MAC addresses.

**Step 7** (Optional) Use this utility to make VLAN settings.

**Step 8** Use this utility to set a default CIMC user password.

**Note** Changes to the settings take effect after approximately 45 seconds. Refresh with **F5** and wait until the new settings appear before you reboot the server in the next step.

**Step 9** Press **F10** to save your settings and reboot the server.

**Note** Note: If you chose to enable DHCP, the dynamically assigned IP and MAC addresses are displayed on the console screen during bootup.



**Note** By default, the baud rate of the serial port is set to 115200. After you configure CIMC, log in to the CIMC user interface and change the serial port baud rate to 9600.

---

## Update the BIOS and Cisco IMC Firmware



**Caution** When you upgrade the BIOS firmware, you must also upgrade the CIMC firmware to the same version or the server will not boot. Do not power off the server until the BIOS and CIMC firmware are matching or the server will not boot.

Cisco provides the Cisco Host Upgrade Utility to assist with simultaneously upgrading the BIOS, CIMC, and other firmware to compatible levels.

The server uses firmware obtained from and certified by Cisco. Cisco provides release notes with each firmware image. There are several methods for updating the firmware:

**Recommended method for systems running firmware level 1.2 or later:** Use the Cisco Host Upgrade Utility to simultaneously upgrade the CIMC, BIOS, LOM, LSI storage controller, and Cisco UCS P81E VIC firmware to compatible levels.



**Note** It is not recommended to upgrade the CIMC/BIOS/Firmware on Cisco SNS 34xx appliances as it may cause server stability issues. Hence retain the factory version for the same. Please reach out to Cisco Technical Assistance Centre (TAC) if you see any issues with the current firmware version.

---

See the *Cisco Host Upgrade Utility Quick Reference Guide* for your firmware level at the documentation roadmap link below.




---

**Note** Your system firmware must be at minimum level 1.2 to use the Cisco Host Upgrade Utility. If your firmware is prior to level 1.2, you must use the methods below to update the BIOS and CIMC firmware individually.

---

You can upgrade the BIOS using the EFI interface, or upgrade from a Windows or Linux platform. See the *Cisco UCS C-Series Rack-Mount Server BIOS Upgrade Guide*.

You can upgrade the CIMC and BIOS firmware by using the CIMC GUI interface. See the *Cisco UCS C-Series Rack-Mount Server Configuration Guide*.

You can upgrade the CIMC and BIOS firmware by using the CIMC CLI interface. See the *Cisco UCS C-Series Rack-Mount Server CLI Configuration Guide*.

For links to the documents listed above, see the documentation roadmap at the following URL:

[https://www.cisco.com/c/en/us/td/docs/unified\\_computing/ucs/overview/guide/UCS\\_roadmap.html](https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/overview/guide/UCS_roadmap.html)

## Access the System BIOS

To change the BIOS settings for your server, follow these steps. Detailed instructions are also printed on the BIOS screens.

---

**Step 1** Enter the BIOS setup utility by pressing the **F2** key when prompted during bootup.

**Note** The version and build of the current BIOS are displayed on the Main page of the utility.

**Step 2** Use the arrow keys to select the BIOS menu page.

**Step 3** Highlight the field to be modified by using the arrow keys.

**Step 4** Press **Enter** to select the field that you want to change, and then modify the value in the field.

**Step 5** Press the right arrow key until the Exit menu screen is displayed.

**Step 6** Follow the instructions on the Exit menu screen to save your changes and exit the setup utility (or Press **F10**). You can exit without saving changes by pressing **Esc**.

---

## Cisco Integrated Management Controller

You can monitor the server inventory, health, and system event logs by using the built-in Cisco Integrated Management Controller (CIMC) GUI or CLI interfaces. See the user documentation for your firmware release at the following URL:

<http://www.cisco.com/c/en/us/support/servers/unified-computing/ucs-series-integrated-management-controller/products-installation-and-configuration-guides-list.html>




---

**Note** If you are using SNS-3415-K9 and SNS-3495-K9, do not upgrade the BIOS and matching CIMC to a later than 2.0(4c). See <https://www.cisco.com/c/en/us/support/docs/field-notices/702/fn70227.html> for more information.

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