Install the Cisco SNS 3415 and Cisco SNS 3495 Hardware Appliances

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:

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.

Warning

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

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

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 1: Front Securing Latch
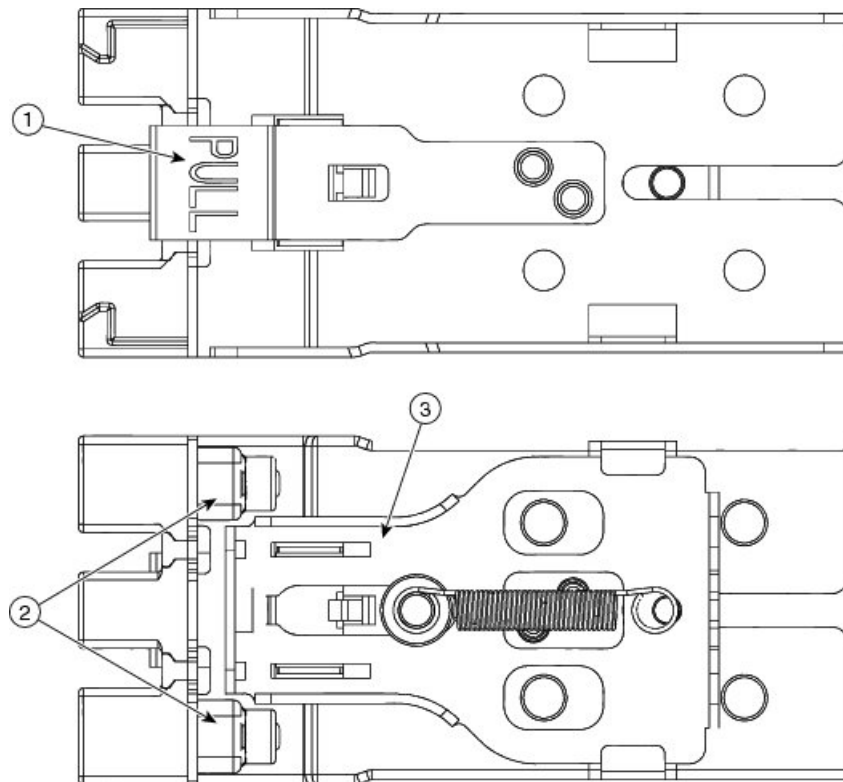
1	Clip marked "PULL" on rear of assembly	3	Spring-loaded securing latch on front of assembly
2	Front mounting pegs		

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 2: Attaching a Slide Rail Assembly
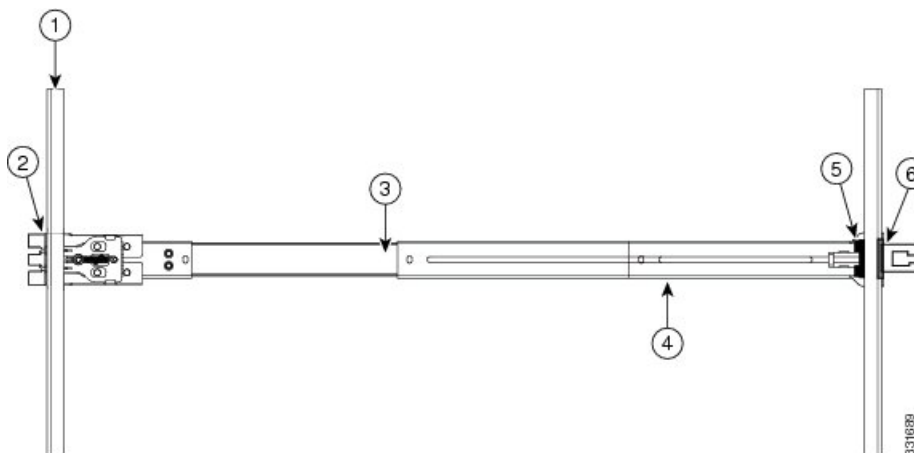
1	Front-left rack post	4	Length-adjustment bracket
2	Front mounting pegs	5	Rear mounting pegs
3	Slide-rail assembly	6	Rear securing latch

    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 4 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 3: Attaching the Cable Management Arm (Rear of Server Shown)
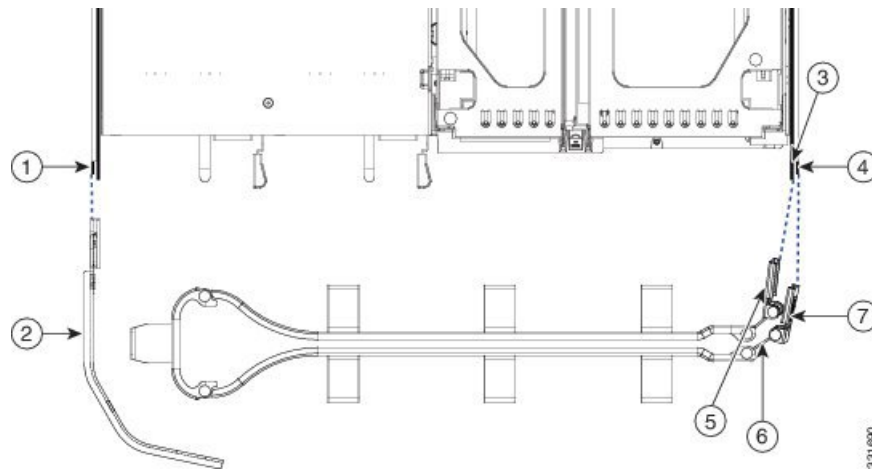
1	Flange on rear of outer left slide rail	5	Inner CMA arm attachment clip
2	CMA retaining bracket	6	"UP" orientation marking
3	Flange on rear of right mounting bracket	7	Outer CMA arm attachment clip
4	Flange on rear of outer right slide rail		

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 6
- Connect the Console, on page 6
- Connect the Keyboard and Video Monitor, on page 7
- Cable Management, on page 7

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 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)

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 for power specifications. Wait for approximately two minutesto 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):

- 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).

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 10 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 sl

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 slave. Incoming traffic is received by the current slave. If the receiving slave fails, another slave takes over the MAC address of the failed receiving slave.

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
```

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 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 buad 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 34*xx* 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

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-c-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.