



Installing the Server

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Preparing for Installation

This section contains the following topics:

Installation Warnings and Guidelines



Note Before you install, operate, or service a Cisco CSP 5400, review the [Regulatory Compliance and Safety Information for Cisco CSP 5400](#) for important safety information.



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



Warning To prevent the system from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of: 35° C (95° F).

Statement 1047



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

Statement 1019



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



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

Statement 1074



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



Caution To ensure proper airflow it is necessary to rack the Cisco CSP 5400s using rail kits. Physically placing the units on top of one another or “stacking” without the use of the rail kits blocks the air vents on top of the Cisco CSP 5400s, which could result in overheating, higher fan speeds, and higher power consumption. We recommend that you mount your Cisco CSP 5400s on rail kits when you are installing them into the rack because these rails provide the minimal spacing required between the Cisco CSP 5400. No additional spacing between the Cisco CSP 5400s is required when you mount the units using rail kits.



Caution Avoid uninterruptible power supply (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 Cisco CSP 5400, use the following guidelines:

- Plan your site configuration and prepare the site before installing the Cisco CSP 5400. See the [Cisco UCS Site Preparation Guide](#) for the recommended site planning tasks.

- Ensure that there is adequate space around the Cisco CSP 5400 to allow for accessing the Cisco CSP 5400 and for adequate airflow. The airflow in this Cisco CSP 5400 is from front to back.
- Ensure that the air-conditioning meets the thermal requirements listed in the [Environmental Specifications](#).
- Ensure that the cabinet or rack meets the requirements listed in the [Rack Requirements, on page 3](#).
- Ensure that the site power meets the power requirements listed in the [Power Specifications](#). If available, you can use an uninterruptible power supply (UPS) to protect against power failures.

Rack Requirements

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 Cisco-supplied slide rails.
- The minimum vertical rack space per Cisco CSP 5400 must be two rack units (RUs), equal to 3.5 in. (88.9 mm).

Supported Cisco Slide Rail Kits

The Cisco CSP 5400 supports the following rail kit:

The ball-bearing slide rail kit is included with server.

Rack Installation Tools Required

The included slide rails for this Cisco CSP 5400 do not require tools for installation.

Installing the Cisco CSP 5400 in a Rack



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

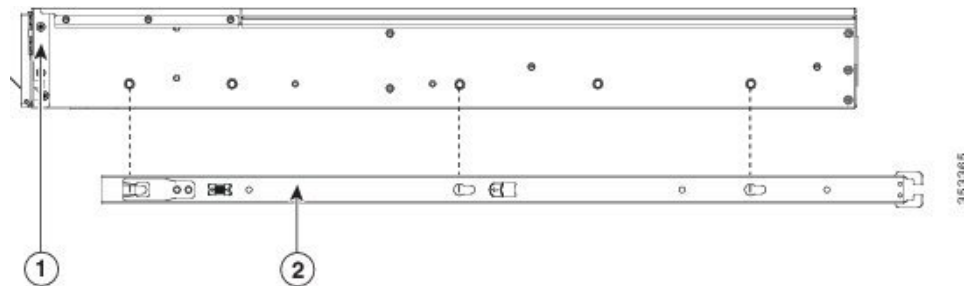
Procedure

Step 1

Attach the inner rails to the sides of the Cisco CSP 5400:

- Align an inner rail with one side of the Cisco CSP 5400 so that the three keyed slots in the rail align with the three pegs on the side of the Cisco CSP 5400.
- Set the keyed slots over the pegs, and then slide the rail toward the front to lock it in place on the pegs. The front slot has a metal clip that locks over the front peg.
- Install the second inner rail to the opposite side of the Cisco CSP 5400.

Figure 1: Attaching the Inner Rail to the Side of the Cisco CSP 5400



1	Front of Cisco CSP 5400	2	Inner rail
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Step 2

Open the front securing plate on both slide-rail assemblies. The front end of the slide-rail assembly has a spring-loaded securing plate that must be open before you can insert the mounting pegs into the rack-post holes.

On the *outside* of the assembly, push the green-arrow button toward the rear to open the securing plate.

Figure 2: Front Securing Mechanism, Inside of Front End

1	Front mounting pegs	3	Securing plate shown pulled back to the open position
2	Rack post between mounting pegs and opened securing plate	-	

Step 3

Install the outer slide rails into the rack:

- Align one slide-rail assembly front end with the front rack-post holes that you want to use.

The slide rail front-end wraps around the outside of the rack post and the mounting pegs enter the rack-post holes from the outside-front. See [#unique_111 unique_111_Connect_42_fig_utv_jcv_2z](#).

Note The rack post must be between the mounting pegs and the *open* securing plate.

- Push the mounting pegs into the rack-post holes from the outside-front.
- Press the securing plate release button, marked PUSH. The spring-loaded securing plate closes to lock the pegs in place.
- Adjust the slide-rail length, and then push the rear mounting pegs into the corresponding rear rack-post holes. The slide rail must be level front-to-rear.

The rear mounting pegs enter the rear rack-post holes from the *inside* of the rack post.

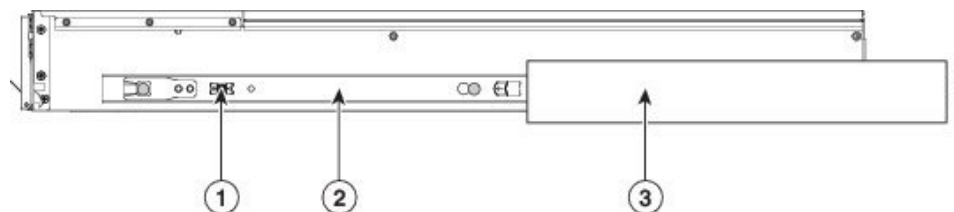
- e) Attach the second slide-rail assembly to the opposite side of the rack. Ensure that the two slide-rail assemblies are at the same height and are level front-to-back.
- f) Pull the inner slide rails on each assembly out toward the rack front until they hit the internal stops and lock in place.

Step 4 Insert the Cisco CSP 5400 into the slide rails:

Caution This Cisco CSP 5400 can weigh up to 64 pounds (29 kilograms) when fully loaded with components. We recommend that you use a minimum of two people or a mechanical lift when lifting the Cisco CSP 5400. Attempting this procedure alone could result in personal injury or equipment damage.

- a) Align the rear ends of the inner rails that are attached to the Cisco CSP 5400 sides with the front ends of the empty slide rails on the rack.
- b) Push inner rails into the slide rails on the rack until they stop at the internal stops.
- c) Slide the inner-rail release clip toward the rear on both inner rails, and then continue pushing the Cisco CSP 5400 into the rack until its front slam-latches engage with the rack posts.

Figure 3: Inner-Rail Release Clip



1	Inner-rail release clip	3	Outer slide rail attached to rack post
2	Inner rail attached to Cisco CSP 5400 and inserted into outer slide rail	-	

Step 5 (Optional) Secure the Cisco CSP 5400 in the rack more permanently by using the two screws that are provided with the slide rails. Perform this step if you plan to move the rack with Cisco CSP 5400s installed.

With the Cisco CSP 5400 fully pushed into the slide rails, open a hinged slam latch lever on the front of the Cisco CSP 5400 and insert a screw through the hole that is under the lever. The screw threads into the static part of the rail on the rack post and prevents the Cisco CSP 5400 from being pulled out. Repeat for the opposite slam latch.

Initial Cisco CSP 5400 Setup



Note This section describes how to power on the Cisco CSP 5400, assign an IP address, and connect to server management when using the Cisco CSP 5400 in standalone mode. To use the server in Cisco CSP 5400 Manager integration, specific cabling and settings are required. .

Cisco CSP 5400 Default Settings

The server is shipped with these default settings:

- The NIC mode is *Dedicated*.
- The NIC redundancy is *None*
- DHCP is enabled.
- IPv4 is enabled.

Connection Methods

There are two methods for connecting to the system for initial setup:

- Local setup—Use this procedure if you want to connect a keyboard and monitor directly to the system for setup. This procedure can use the included KVM cable or the ports on the rear of the Cisco CSP 5400.
- Remote setup—Use this procedure if you want to perform setup through your dedicated management LAN.



Note To configure the system remotely, you must have a DHCP server on the same network as the system. Your DHCP server must be preconfigured with the range of MAC addresses for this Cisco CSP 5400 node. The MAC address is printed on a label that is on the pull-out asset tag on the front panel. This Cisco CSP 5400 node has a range of six MAC addresses assigned to the Cisco IMC. The MAC address printed on the label is the beginning of the range of six contiguous MAC addresses.

Connecting to the Cisco CSP 5400 Locally For Setup

This procedure requires the following equipment:

- VGA monitor
- USB keyboard
- Either the included Cisco KVM cable, or a USB cable and VGA DB-15 cable

Procedure

Step 1 Attach a power cord to each power supply in your Cisco CSP 5400, and then attach each power cord to a grounded AC power outlet.

If you are using DC power supplies, see [Installing DC Power Supplies \(First Time Installation\)](#).

Wait for approximately two minutes to let the Cisco CSP 5400 boot to standby power during the first bootup. You can verify system power status by looking at the system Power Status LED on the front panel. The system is in standby power mode when the LED is amber.

- Step 2** Connect a USB keyboard and VGA monitor to the Cisco CSP 5400 using one of the following methods:
- Connect the included KVM cable to the KVM connector on the front panel. Connect your USB keyboard and VGA monitor to the KVM cable.
 - Connect a USB keyboard and VGA monitor to the corresponding connectors on the rear panel.
- Step 3** Open the Cisco IMC Configuration Utility:
- a) Press and hold the front panel power button for four seconds to boot the Cisco CSP 5400.
 - b) During bootup, press **F8** when prompted to open the Cisco IMC Configuration Utility.
- Note** The first time that you enter the Cisco IMC Configuration Utility, you are prompted to change the default password. The default password is *password*. The Strong Password feature is enabled.
- The following are the requirements for Strong Password:
- The password can have minimum 8 characters; maximum 14 characters.
 - The password must not contain the user's name.
 - The password must contain characters from three of the following four categories:
 - English uppercase letters (A through Z)
 - English lowercase letters (a through z)
 - Base 10 digits (0 through 9)
 - Non-alphabetic characters !, @, #, \$, %, ^, &, *, -, _, =, “
- Step 4** Continue with [Setting Up the System With the Cisco IMC Configuration Utility, on page 9](#).
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Connecting to the Cisco CSP 5400 Remotely For Setup

This procedure requires the following equipment:

- One RJ-45 Ethernet cable that is connected to your management LAN.

Before you begin



- Note** To configure the system remotely, you must have a DHCP Cisco CSP 5400 on the same network as the system. Your DHCP Cisco CSP 5400 must be preconfigured with the range of MAC addresses for this Cisco CSP 5400 node. The MAC address is printed on a label that is on the pull-out asset tag on the front panel. This Cisco CSP 5400 node has a range of six MAC addresses assigned to the Cisco IMC. The MAC address printed on the label is the beginning of the range of six contiguous MAC addresses.
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Procedure

- Step 1** Attach a power cord to each power supply in your Cisco CSP 5400, and then attach each power cord to a grounded AC power outlet.
- If you are using DC power supplies, see [Installing DC Power Supplies \(First Time Installation\)](#).
- Wait for approximately two minutes to let the Cisco CSP 5400 boot to standby power during the first bootup. You can verify system power status by looking at the system Power Status LED on the front panel. The system is in standby power mode when the LED is amber.
- Step 2** Plug your management Ethernet cable into the dedicated management port on the rear panel.
- Step 3** Allow your preconfigured DHCP Cisco CSP 5400 to assign an IP address to the Cisco CSP 5400 node.
- Step 4** Use the assigned IP address to access and log in to the Cisco IMC for the Cisco CSP 5400 node. Consult with your DHCP Cisco CSP 5400 administrator to determine the IP address.
- Note** The default user name for the Cisco CSP 5400 is *admin*. The default password is *password*.
- Step 5** From the Cisco IMC Cisco CSP 5400 Summary page, click **Launch KVM Console**. A separate KVM console window opens.
- Step 6** From the Cisco IMC Summary page, click **Power Cycle Cisco CSP 5400**. The system reboots.
- Step 7** Select the KVM console window.
- Note** The KVM console window must be the active window for the following keyboard actions to work.
- Step 8** When prompted, press **F8** to enter the Cisco IMC Configuration Utility. This utility opens in the KVM console window.
- Note** The first time that you enter the Cisco IMC Configuration Utility, you are prompted to change the default password. The default password is *password*. The Strong Password feature is enabled.
- The following are the requirements for Strong Password:
- The password can have minimum 8 characters; maximum 14 characters.
 - The password must not contain the user's name.
 - The password must contain characters from three of the following four categories:
 - English uppercase letters (A through Z)
 - English lowercase letters (a through z)
 - Base 10 digits (0 through 9)
 - Non-alphabetic characters !, @, #, \$, %, ^, &, *, -, _, =, “
- Step 9** Continue with [Setting Up the System With the Cisco IMC Configuration Utility, on page 9](#).
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Setting Up the System With the Cisco IMC Configuration Utility

Before you begin

The following procedure is performed after you connect to the system and open the Cisco IMC Configuration Utility.

Procedure

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- Step 1** Choose whether to enable DHCP for dynamic network settings, or to enter static network settings.
- Note** Before you enable DHCP, you must preconfigure your DHCP Cisco CSP 5400 with the range of MAC addresses for this Cisco CSP 5400. The MAC address is printed on a label on the rear of the Cisco CSP 5400. This Cisco CSP 5400 has a range of six MAC addresses assigned to Cisco IMC. The MAC address printed on the label is the beginning of the range of six contiguous MAC addresses.
- The *static* IPv4 and IPv6 settings include the following:
- The Cisco IMC IP address.
For IPv6, valid values are 1 - 127.
 - The gateway.
For IPv6, if you do not know the gateway, you can set it as none by entering :: (two colons).
 - The preferred DNS Cisco CSP 5400 address.
For IPv6, you can set this as none by entering :: (two colons).
- Step 2** (Optional) Make VLAN settings.
- Step 3** Press **F1** to go to the second settings window, then continue with the next step.
From the second window, you can press **F2** to switch back to the first window.
- Step 4** (Optional) Set a hostname for the Cisco CSP 5400.
- Step 5** (Optional) Enable dynamic DNS and set a dynamic DNS (DDNS) domain.
- Step 6** (Optional) If you check the Factory Default check box, the Cisco CSP 5400 reverts to the factory defaults.
- Step 7** (Optional) Set a default user password.
- Note** The factory default username for the Cisco CSP 5400 is *admin*. The default password is *password*.
- Step 8** (Optional) Enable auto-negotiation of port settings or set the port speed and duplex mode manually.
- Note** Auto-negotiation is applicable only when you use the Dedicated NIC mode. Auto-negotiation sets the port speed and duplex mode automatically based on the switch port to which the Cisco CSP 5400 is connected. If you disable auto-negotiation, you must set the port speed and duplex mode manually.
- Step 9** (Optional) Reset port profiles and the port name.
- Step 10** Press **F5** to refresh the settings that you made. You might have to wait about 45 seconds until the new settings appear and the message, “Network settings configured” is displayed before you reboot the Cisco CSP 5400 in the next step.

Step 11 Press **F10** to save your settings and reboot the Cisco CSP 5400.

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

What to do next

Use a browser and the IP address of the Cisco IMC to connect to the Cisco IMC management interface. The IP address is based upon the settings that you made (either a static address or the address assigned by your DHCP Cisco CSP 5400).



Note The factory default username for the Cisco CSP 5400 is *admin*. The default password is *password*.

To manage the Cisco CSP 5400, see the configuration guides in the [Cisco UCS C-Series Documentation Roadmap](#).

Updating the BIOS and Cisco IMC Firmware



Caution When you upgrade the BIOS firmware, you must also upgrade the Cisco IMC firmware to the same version or the Cisco CSP 5400 does not boot. Do not power off the Cisco CSP 5400 until the BIOS and Cisco IMC firmware are matching or the Cisco CSP 5400 does not boot.

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

The Cisco CSP 5400 uses firmware obtained from and certified by Cisco. Cisco provides release notes with each firmware image. There are several possible methods for updating the firmware:

- **Recommended method for firmware update:** Use the Cisco Host Upgrade Utility to simultaneously upgrade the Cisco IMC, BIOS, and component firmware to compatible levels.
See the *Cisco Host Upgrade Utility Quick Reference Guide* for your firmware release at the documentation roadmap link below.
- You can upgrade the Cisco IMC and BIOS firmware by using the Cisco IMC GUI interface.
See the *Cisco UCS C-Series Rack-Mount Cisco CSP 5400 Configuration Guide*.
- You can upgrade the Cisco IMC and BIOS firmware by using the Cisco IMC CLI interface.
See the *Cisco UCS C-Series Rack-Mount Cisco CSP 5400 CLI Configuration Guide*.

For links to the documents listed above, see the [Cisco UCS C-Series Documentation Roadmap](#).

Older NAND Flash Not Detectable By Latest Cisco IMC



Caution If your system is running Cisco IMC 4.0(1b) or later, and you have the latest NAND flash chip MT29F4G08ABAFWP-IT:F (M70A), do not downgrade the Cisco IMC to an earlier version. Earlier versions of the BMC cannot detect this latest NAND Flash chip.

Accessing the System BIOS

Procedure

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- 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**.
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Smart Access Serial

This Cisco CSP 5400 supports the Smart Access Serial feature. This feature allows you to switch between host serial and Cisco IMC CLI.

- This feature has the following requirements:
 - A serial cable connection, which can use either the RJ-45 serial connector on the Cisco CSP 5400 rear panel, or a DB-9 connection when using the KVM cable (Cisco PID N20-BKVM) on the front-panel KVM console connector.
 - Console redirection must be enabled in the Cisco CSP 5400 BIOS.
 - Terminal type must be set to VT100+ or VTUFT8.
 - Serial-over-LAN (SOL) must be disabled (SOL is disabled by default).
- To switch from host serial to Cisco IMC CLI, press **Esc+9**.
You must enter your Cisco IMC credentials to authenticate the Cisco CSP 5400.
- To switch from Cisco IMC CLI to host serial, press **Esc+8**.



Note You cannot switch to Cisco IMC CLI if the serial-over-LAN (SOL) feature is enabled.

- After a session is created, it is shown in the CLI or web GUI by the name `serial`.

Smart Access USB

This Cisco CSP 5400 supports the Smart Access USB feature. The board management controller (BMC) in this Cisco CSP 5400 can accept a USB mass storage device and access the data on it. This feature allows you to use the front-panel USB device as a medium to transfer data between the BMC and the user without need for network connectivity. This can be useful, for example, when remote BMC interfaces are not yet available, or are not accessible due to network misconfiguration.

- This feature has the following requirements:
 - The included KVM cable connected to the front panel KVM console connector.
 - A USB storage device connected to one of the USB 2.0 connectors on the KVM cable. The USB device must draw less than 500 mA to avoid disconnect by the current-protection circuit.



Note Any mouse or keyboard that is connected to the KVM cable is disconnected when you enable Smart Access USB.

- You can use USB 3.0-based devices, but they will operate at USB 2.0 speed.
- We recommend that the USB device have only one partition.
- The file system formats supported are: FAT16, FAT32, MSDOS, EXT2, EXT3, and EXT4. NTFS is not supported.
- The front-panel KVM connector has been designed to switch the USB port between Host OS and BMC.
- Smart Access USB can be enabled or disabled using any of the BMC user interfaces. For example, you can use the Cisco IMC Configuration Utility that is accessed by pressing **F8** when prompted during bootup.
 - Enabled: the front-panel USB device is connected to the BMC.
 - Disabled: the front-panel USB device is connected to the host.
- In a case where no management network is available to connect remotely to Cisco IMC, a Device Firmware Update (DFU) shell over serial cable can be used to generate and download technical support files to the USB device that is attached to front panel USB port.