



Installing the Controller

This chapter describes how to install the controller.



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

SAVE THESE INSTRUCTIONS

- [Unpacking and Inspecting the Controller, on page 1](#)
- [Preparing for Controller Installation, on page 2](#)
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- [Initial Controller Setup , on page 9](#)
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Unpacking and Inspecting the Controller



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



Tip Keep the shipping container in case the controller requires shipping in the future.



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.

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- Step 1** Remove the controller from its container and save all packaging material.
- Step 2** Compare the shipment to the equipment list provided by your customer service representative. 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
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Preparing for Controller Installation

This section provides information about preparing for controller installation.

Installation Guidelines



Warning Read the installation instructions before using, installing or connecting the system to the power source. **Statement 1004**



Warning This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 20A. **Statement 1005**



Warning The plug-socket combination must be accessible at all times, because it serves as the main disconnecting device. **Statement 1019**



Warning A readily accessible two-poled disconnect device must be incorporated in the fixed wiring. This is applicable to systems with DC power supply only. **Statement 1022**



Warning This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available. **Statement 1024**

**Warning**

This unit might have more than one power supply connection. All connections must be removed to de-energize the unit. **Statement 1028**

**Warning**

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

**Warning**

Ultimate disposal of this product should be handled according to all national laws and regulations. **Statement 1040**

**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**

**Warning**

Invisible Laser Radiation. Do not expose users of telescopic optics. Class 1/1M Laser Products. **Statement 1055**





Warning

Invisible laser radiation may be emitted from the end of the unterminated fiber cable or connector. Do not view directly with optical instruments. Viewing the laser output with certain optical instruments (for example, eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. **Statement 1056**

Fiber type and Core diameter (µm)	Wavelength (nm)	Max. Power (mW)
SM 11	1200 - 1400	39 - 50
MM 62.5	1200 - 1400	150
MM 50	1200 - 1400	135
SM 11	1400 - 1600	112 - 145



Warning

Installation of the equipment must comply with local and national electrical codes. **Statement 1074**



Warning

Pluggable optical modules comply with IEC 60825-1 Ed. 3 and 21 CFR 1040.10 and 1040.11 with or without exception for conformance with IEC 60825-1 Ed. 3 as described in Laser Notice No. 56, dated May 8, 2019. **Statement 1255**



Caution

To ensure proper airflow it is necessary to rack the controllers 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 controllers, which could result in overheating, higher fan speeds, and higher power consumption. We recommend that you mount your controllers on rail kits when you are installing them into the rack because these rails provide the minimal spacing required between the controllers. No additional spacing between the controllers is required when you mount the units using rail kits.



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.

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 controller must be two RUs, equal to 3.5 in. (88.9 mm).

Equipment Requirements

The slide rails supplied by Cisco Systems for this controller do not require tools for installation if you install them in a rack that has square 0.38-inch (9.6 mm), round 0.28-inch (7.1 mm), or #12-24 UNC threaded holes.

Slide Rail Adjustment Range

The slide rails for this controller have an adjustment range of 26 to 36 inches (660 to 914 mm).

Installing the Controller In a Rack

Installing the Slide Rails

This section describes how to install the controller in a rack using the rack kits that are sold by Cisco.

**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.

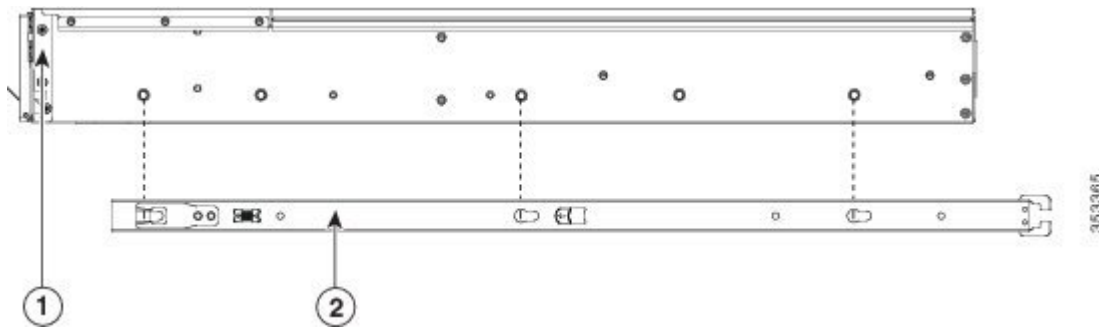
Statement 1006

Step 1

Attach the inner rails to the sides of the controller:

- a) Align an inner rail with one side of the controller so that the three keyed slots in the rail align with the three pegs on the side of the controller.
- b) 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.
- c) Install the second inner rail to the opposite side of the controller.

Figure 1: Attaching Inner Rail to Side of Controller



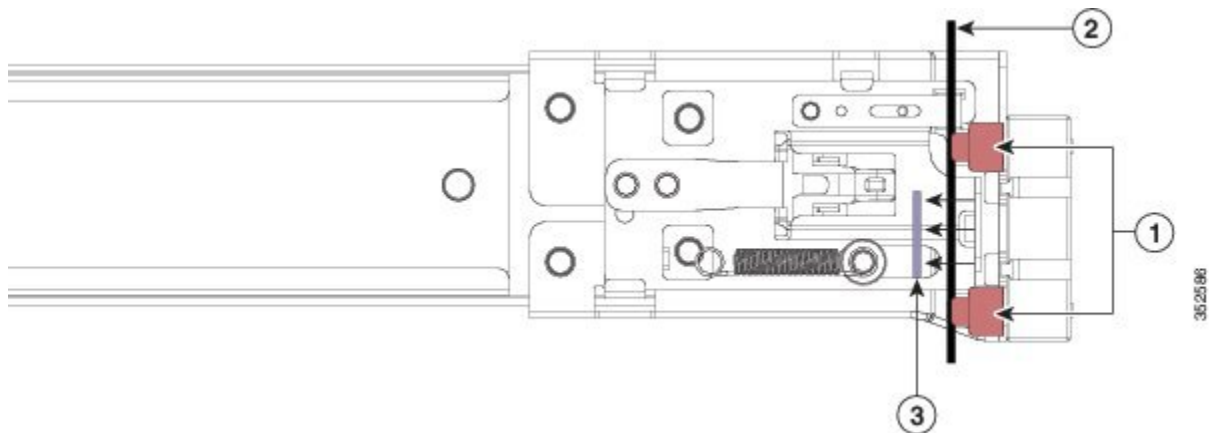
1	Front of controller	2	Locking clip on inner rail
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Step 2

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 open position
2	Rack post		

Step 3

Install the slide rails into the rack:

- a) 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 [Figure 2: Front Securing Mechanism, Inside of Front End, on page 6](#)).

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

- b) Push the mounting pegs into the rack-post holes from the outside-front.
 c) Press the securing plate release button, marked “PUSH.” The spring-loaded securing plate closes to lock the pegs in place.

- d) 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 with each other 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.

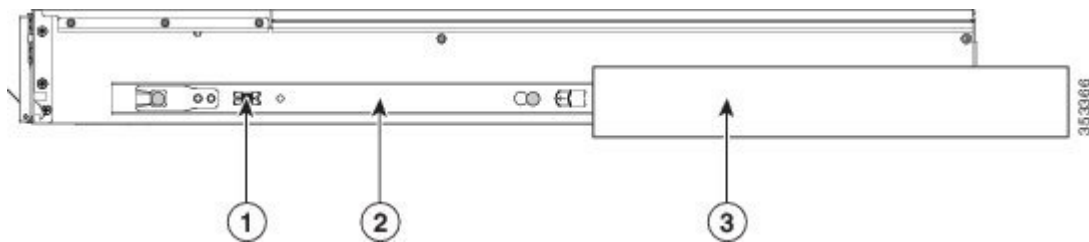
Step 4

Insert the controller into the slide rails:

Caution This controller can weigh up to 44 pounds (approximately 20 kilograms) when fully loaded with components. We recommend that you use a minimum of two people or a mechanical lift when lifting the controller. Attempting this procedure alone could result in personal injury or equipment damage.

- a) Align the rear of the inner rails that are attached to the controller sides with the front ends of the empty slide rails on the rack.
- b) Push the inner rails into the slide rails on the rack until they stop at the internal stops.
- c) Slide the release clip toward the rear on both inner rails ([Figure 3: Inner Rail Release Clip, on page 7](#)), and then continue pushing the controller 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 rail attached to rack post
2	Inner rail attached to controller		

Step 5

(Optional) Secure the controller 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 controllers installed.

With the controller fully pushed into the slide rails, open a hinged slam latch lever on the front of the controller and insert the 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 controller from being pulled out. Repeat for the opposite slam latch.

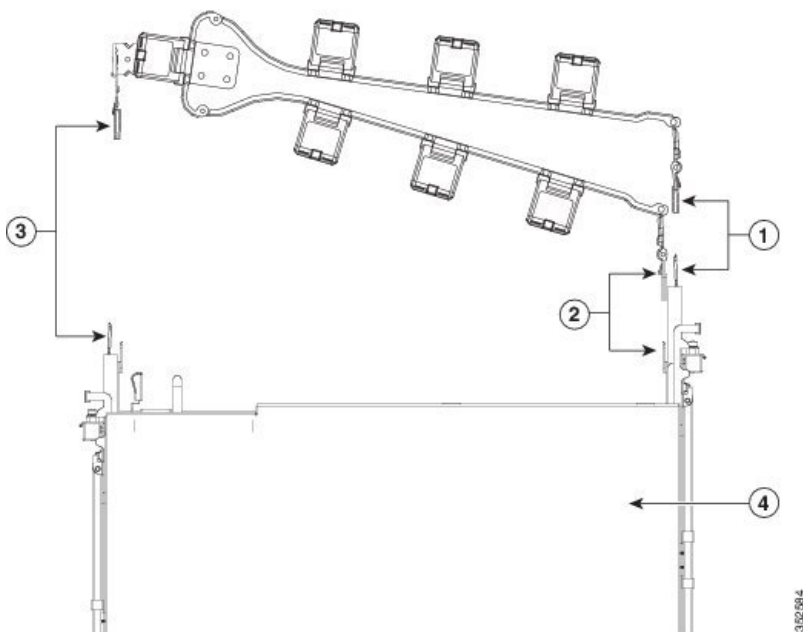
Installing the Cable Management Arm (Optional)



Note The CMA is reversible left to right. To reverse the CMA, see [Reversing the Cable Management Arm \(Optional\), on page 8](#) before installation.

- Step 1** With the controller pushed fully into the rack, slide the CMA tab of the CMA arm that is farthest from the controller onto the end of the stationary slide rail that is attached to the rack post (see [Figure 4: Attaching the Cable Management Arm to the Rear of the Slide Rails, on page 8](#)). Slide the tab over the end of the rail until it clicks and locks.
- Step 2** Slide the CMA tab that is closest to the controller over the end of the inner rail that is attached to the controller (see [Figure 4: Attaching the Cable Management Arm to the Rear of the Slide Rails, on page 8](#)). Slide the tab over the end of the rail until it clicks and locks.
- Step 3** Pull out the width-adjustment slider that is at the opposite end of the CMA assembly until it matches the width of your rack (see [Figure 4: Attaching the Cable Management Arm to the Rear of the Slide Rails, on page 8](#)).
- Step 4** Slide the CMA tab that is at the end of the width-adjustment slider onto the end of the stationary slide rail that is attached to the rack post (see [Figure 4: Attaching the Cable Management Arm to the Rear of the Slide Rails, on page 8](#)). Slide the tab over the end of the rail until it clicks and locks.
- Step 5** Open the hinged flap at the top of each plastic cable guide and route your cables through the cable guides as desired.

Figure 4: Attaching the Cable Management Arm to the Rear of the Slide Rails



1	CMA tab on arm farthest from controller and end of stationary outer slide rail	3	CMA tab on width-adjustment slider and end of stationary outer slide rail
2	CMA tab on arm closest to the controller and end of inner slide rail attached to controller	4	Rear of controller

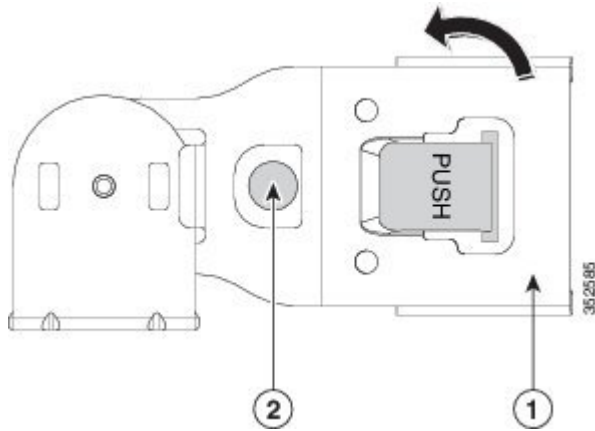
Reversing the Cable Management Arm (Optional)

- Step 1** Rotate the entire CMA assembly 180 degrees. The plastic cable guides must remain pointing upward.

Step 2 Flip the tabs at the end of each CMA arm so that they point toward the rear of the controller.

Step 3 Pivot the tab that is at the end of the width-adjustment slider. Depress and hold the metal button on the outside of the tab and pivot the tab 180 degrees so that it points toward the rear of the controller.

Figure 5: Reversing the CMA



1	CMA tab on end of width-adjustment slider	2	Metal button for rotating
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Initial Controller Setup

For instructions on performing initial setup of controller, see the [Cisco 8540 Wireless Controller Deployment Guide](#).

System BIOS and Cisco IMC Firmware

Updating the BIOS and Cisco IMC Firmware



Caution

The BIOS and Cisco IMC firmware need not be upgraded when you first bring up the unit.

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



Warning

After the firmware is upgraded, do not reset the system to factory default. Doing so will delete the initial BIOS setup and boot orders.

The controller uses firmware obtained from and certified by Cisco. Cisco provides release notes with each firmware image.

The only supported method to update the firmware is using the Cisco Host Upgrade Utility.

Accessing the System BIOS

You can change the BIOS settings for your controller. 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**.
