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Preface

This preface describes this guide and provides information about the conventions used in this guide, and related documentation. It includes the following sections:

- About this Guide, on page v
- Conventions, on page v
- Related Documentation, on page vi
- Obtaining Documentation and Submitting a Service Request, on page vi

About this Guide

This guide is designed to help you, experienced network administrators, install and minimally configure Cisco 5520 Wireless Controller.

Conventions

This document uses the following conventions for notes, cautions, and safety warnings. Notes and cautions contain important information that you should know.

- **Note**
  
  Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the manual.

- **Caution**
  
  Means *reader be careful*. Cautions contain information about something you might do that could result in equipment damage or loss of data.

- **Warning**
  
  Safety warnings appear throughout this guide in procedures that, if performed incorrectly, can cause physical injuries. A warning symbol precedes each warning statement.
Related Documentation

- For information about Cisco Wireless Controller software, see:
- For information about the Cisco 5520 Wireless Controller, see:
- Cisco 5520 Wireless Controller Deployment Guide
- Regulatory Compliance and Safety Information

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see What's New in Cisco Product Documentation.

To receive new and revised Cisco technical content directly to your desktop, you can subscribe to the What's New in Cisco Product Documentation RSS feed. RSS feeds are a free service.
Overview of Cisco 5520 Wireless Controller

The Cisco 5520 Wireless Controller provides centralized control, management, and troubleshooting for high-scale deployments in service provider and large campus deployments. It offers flexibility to support multiple deployment modes in the same controller: for example, centralized mode for campus, Cisco FlexConnect mode for lean branches managed over the WAN, and mesh (bridge) mode for deployments where full Ethernet cabling is unavailable. As a component of the Cisco Unified Wireless Network, this controller provides real-time communications between Cisco Aironet access points, the Cisco Prime Infrastructure, and the Cisco Mobility Services Engine, and is interoperable with other Cisco controllers.

For more information about features and benefits, see the Cisco 5520 Wireless Controller Datasheet.

Summary of Cisco 5520 Wireless Controller Features

Table 1: Cisco 5520 Wireless Controller Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chassis Height</td>
<td>One rack-unit (1RU)</td>
</tr>
<tr>
<td>Throughput</td>
<td>20 Gbps</td>
</tr>
<tr>
<td>AP Support</td>
<td>1500</td>
</tr>
<tr>
<td>Client Support</td>
<td>20000</td>
</tr>
<tr>
<td>Data Ports</td>
<td>2x SFP+</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40 to 149°F (−40 to 65°C)</td>
</tr>
<tr>
<td>Feature</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>41 to 104°F (5 to 40°C)</td>
</tr>
<tr>
<td>Operating Humidity</td>
<td>10–90% (noncondensing)</td>
</tr>
<tr>
<td>Power Options</td>
<td>770W AC</td>
</tr>
</tbody>
</table>

## Platform Components

### Cisco 5520 Wireless Controller Front Panel View

Cisco 5520 Wireless Controller has several buttons, LED indicators, and a KVM connector on the front panel.

*Figure 2: Cisco 5520 Wireless Controller Front Panel View*

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Power button/power status LED</td>
</tr>
<tr>
<td>2</td>
<td>Locator (Unit identification) button LED</td>
</tr>
<tr>
<td>3</td>
<td>System status LED</td>
</tr>
<tr>
<td>4</td>
<td>Fan status LED</td>
</tr>
<tr>
<td>5</td>
<td>Temperature status LED</td>
</tr>
<tr>
<td>6</td>
<td>Power supply status LED</td>
</tr>
<tr>
<td>7</td>
<td>Network link activity LED (this indicates the network activity only on Service port, RP port, and CIMC port)</td>
</tr>
<tr>
<td>8</td>
<td>KVM connector (used with KVM cable that provides two USB 2.0, one VGA, and one serial connector)</td>
</tr>
</tbody>
</table>
The power supply, fan, and temperature status are periodically polled from the Cisco WLC software in the intervals of 600 seconds (10 minutes). Therefore, any change in the status of power supply, fan, or temperature can take up to 600 seconds to be reflected. However, the `show imm chassis` command can show the current status.

---

**Front Panel LEDs: Definitions of States**

Table 2: Cisco 5520 Wireless Controller Front Panel LEDs: Definitions of States

<table>
<thead>
<tr>
<th>LED Name</th>
<th>Function</th>
<th>State</th>
</tr>
</thead>
</table>
| Power Button                           | Indicates the system power status | Off—System power is off  
                                           | Amber On—Soft off  
                                           | Green On—System power is on |
| Locator (Unit Identification) Button   | A Unit Identify push button with integrated LED is available on the front panel and rear panel. Each press on the button toggles between active and non-active states | Off—The unit identification function is not in use  
                                           | Blue—The unit identification function is activated |
| System Status                          | Indicates the overall system health | Green On—System is in normal operating condition  
                                           | Amber On—System is in a degraded operational state  
                                           | Amber Blinking—Critical Fault State |
| Fan Status                             | Indicates the fan health          | Green On—Fans are operating and no error condition has been detected  
                                           | Amber On—Fans are in a degraded operational state. One of N fans has a fault  
                                           | Amber Blinking—Critical fault state. Two or more fans have a fault |
| Temperature Status                     | Indicates whether or not the system is operating within acceptable temperature limits. | Green On—System is operating at normal temperature  
                                           | Amber On—One or more temperature sensors reaches UCR threshold  
                                           | Amber Blinking—One or more temperature sensors reaches UNR threshold |
### LED Name | Function | State
--- | --- | ---
Power Supply Status | Indicates the functioning of the power supply | Green On—AC power supplies are operating and no error condition has been detected  
Amber On—One or more power supplies are in a degraded operational state  
Amber Blinking—One or more power supplies are in a critical fault state

Network Link Activity | Indicates the network activity only on Service port, RP port, and CIMC port | Green On—Link on any of the ports, but no activity  
Green Blinking—Activity on any of the ports

---

**Front Panel KVM Breakout Connector**

A single female connector provides access to video, two USB ports for keyboard and mouse, and an RS-232C console serial port. An external breakout connector to industry standard interfaces is required. The following figure shows a sample cable.

*Figure 3: Front Panel KVM Breakout Connector*

The interfaces for the cable are as follows:
- Front panel KVM/Console connector
- DB9 serial port connector
- Dual Type-A USB 2.0 connectors
- DB15 Video connector (does not show anything once the Cisco WLC software starts except the initial BIOS parameters. All the prints from this point onwards are available on the serial console)
Cisco 5520 Wireless Controller Rear Panel View

Figure 4: Cisco 5520 Wireless Controller Rear Panel View

<table>
<thead>
<tr>
<th>1</th>
<th>Two Type A 3.0 USB ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>CIMC port 10/100/1000 Base-T</td>
</tr>
<tr>
<td>3</td>
<td>SerialCOM Connector—Standard RS-232 Serial COM port using RJ-45 connector</td>
</tr>
<tr>
<td>4</td>
<td>Ethernet Service Port (SP)—Management 10/100/1000 Base-T</td>
</tr>
<tr>
<td>5</td>
<td>Redundancy Port (RP)</td>
</tr>
<tr>
<td>6</td>
<td>VGA Connector—Rear panel has a standard VGA port using a female D-Sub-15 Connector (does not show anything once the Cisco WLC software starts except the initial BIOS parameters. All the prints from this point onwards are available on the serial console)</td>
</tr>
<tr>
<td>7</td>
<td>ID Switch and LED</td>
</tr>
</tbody>
</table>

Figure 5: Cisco 5520 Wireless Controller Rear Panel SFP Ports and LEDs

| 1 | 10 G |
| 2 | Pwr OK |
| 3 | Port-n Link Status |
| 4 | Port-n Link Activity |
| 5 | Two 1/10 G SFP/SFP+ Ports |
Rear Panel LEDs: Definitions of States

<table>
<thead>
<tr>
<th>LED Name</th>
<th>Function</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pwr OK</td>
<td>—</td>
<td>Amber On—Power is good</td>
</tr>
<tr>
<td>10 G</td>
<td>—</td>
<td>Amber On—10 G mode</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Amber Off—1 G mode</td>
</tr>
<tr>
<td>Port-n Link Status</td>
<td>—</td>
<td>Green On—Link is up in 10 GbE mode</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Amber On—Link is up in 1 GbE mode</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Off—Link status is down</td>
</tr>
<tr>
<td>Port-n Link Activity</td>
<td>—</td>
<td>Green blinking—Link activity</td>
</tr>
<tr>
<td>Service Port and Redundancy Port LED (present on the port)</td>
<td>Interface Port Speed (the left LED on the port)</td>
<td>Off—Link Speed = 10 Mbps</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Amber On—Link Speed = 100 Mbps</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green On—Link Speed = 1 Gbps</td>
</tr>
<tr>
<td>Interface Port Status (the right LED on the port)</td>
<td>Off—No link</td>
<td>Green On—Link</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Blinking—Traffic present</td>
</tr>
</tbody>
</table>

Setting Up the CIMC Interface

Perform these tasks to set up the CIMC interface:

**Step 1**
Connect the CIMC cable to the CIMC management port.

The CIMC management port is shown in Figure 1-3 on page 1-4.

**Step 2**
Press the Power On button in front of the unit, and wait until you see the login prompt.

**Step 3**
Enter the username as admin and password as either password or Cisco1234 respectively to get to the Cisco WLC CLI prompt, and follow the CIMC setup step.

**Example:**

(Cisco Controller)
Enter User Name (or 'Recover-Config' this one-time only to reset configuration to factory defaults)

User: admin
Password:********

**Note**
You can also set up CIMC via console during bootup from power reset. You can use the F8 key to configure the CIMC.

**Step 4**
Enable DHCP to set the IP by entering the **imm dhcp enable** command.

**Step 5**
If DHCP is not available, use the **imm address ip-addr net-mask gateway-ip-addr** command.
Step 6

View the IP and details by entering the **imm summary** command.

**Example:**

(Cisco Controller) >imm ?
address   IMM Static IP Configuration
dhcp      Enable | Disable | Fallback DHCP
restart   Saves settings and Restarts IMM Module
summary   Displays IMM Parameters
username  Configures Login Username for IMM

(Cisco Controller) >show imm chassis ?
bios      Fetch Chassis BIOS information
current   Fetch Chassis Current information
fan       Fetch Chassis Fan information
mac       Fetch Chassis MAC information
memory    Fetch Chassis Memory information
power-s   Fetch Chassis Power Supply information
sol-info  Fetch Chassis Serial Over LAN information
temperature Fetch Chassis Temperature information

**Note**

CIMC web interface is for advanced debugging for TAC and escalation use only. Changing of settings in the CIMC by customers can cause adverse impact on controller software and functionality.

---

**Switching Between 10 G and 1 G**

- The SFP installed in port 1 determines the modes for port 2 at power-up; the mode cannot be changed after power-up. The default modes for both the ports is 10G when no SFP is installed in port 1.
- Conversely, if an SFP module is installed and the user wants to switch to 2x 10G mode, then an SFP+ module must be installed in port 1 and the WLC rebooted.
- Thus, Online Insertion and Removal (OIR) of SFP and SFP+ between 10G and 1G is not possible.
- OIR of 10G to 10G and 1G and 1G is possible.

**Note**

We do not recommend a mix of 1G and 10G SFPs. In case they are different, port 1 SFP determines the mode of operation and functionality on the other SFPs may not work. The SFP/SFP+ must be MSA-compliant for the units to configure the 1G/10G modes correctly.

**Table 4: Functionality of Cisco 5520 WLC when OIR Occurs**

<table>
<thead>
<tr>
<th>Hot Swap of SFP/SFP+</th>
<th>Port1</th>
<th>Port2</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1G to 1G</td>
<td>No</td>
<td>Yes</td>
<td>Cisco 5520 WLC requires reboot for Port1 OIR in 1G</td>
</tr>
<tr>
<td>1G to 10G</td>
<td>No</td>
<td>No</td>
<td>Cisco 5520 WLC requires reboot between 1G and 10G</td>
</tr>
<tr>
<td>10G to 1G</td>
<td>No</td>
<td>No</td>
<td>Cisco 5520 WLC requires reboot between 10G and 1G</td>
</tr>
<tr>
<td>10G to 10G</td>
<td>Yes</td>
<td>Yes</td>
<td>No reboot required</td>
</tr>
</tbody>
</table>

**SFP Support**

Network ports for Cisco 5520 Wireless Controllers support the following Cisco SFP/SFP+ modules:
• GLC-T
• SFP-10G-SR
• SFP-10G-LR
• SFP-10G-LRM
• SFP-H10GB-CU1M
• SFP-H10GB-CU2M
• SFP-H10GB-CU2-5M
• SFP-H10GB-CU3M
• SFP-H10GB-CU5M
• SFP-H10GB-ACU7M
• SFP-H10GB-ACU10M
• SFP-10G-AOC7M
• SFP-H10GB-CU1-5M
• SFP-10G-AOC3M
• SFP-10G-AOC1M
• SFP-10G-AOC2M
• SFP-10G-AOC5M
• SFP-10G-AOC10M
• GLC-LH *
• GLC-EX-SMD *
• GLC-SX-MMD *
• SFP-10G-SR-S
• SFP-10G-LR-S

Note
* Needs GLC-T on Port 1.

Customer Replaceable Units

Cisco 5520 Wireless Controller has a minimal amount of separate orderable items, including all of the following:

• Power supply (AIR-PSU1-770W=)
• SSD Hard Disk Drive (HDD) (AIR-SD240G0KS2-EV=)
• Option to add a redundant power supply on the Cisco 5520 WLC (AIR-PSU1-770W=)

References

• For instructions about how to replace the power supplies, see the "Replacing Power Supplies" section at:
• For instructions about how to replace the SSD Hard Disk Drive (HDD), see the "Replacing Hard Drives or Solid State Drives" section at:

Note
Only the HDD01 drive on the 8-drive version is applicable to the Cisco 5520 Wireless Controller.
CHAPTER 2

Installing the Cisco 5520 Wireless Controller

This chapter describes how to install the Cisco 5520 Wireless Controller.

**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 9
- Preparing for Controller Installation, on page 10
- Installing the Controller in a Rack, on page 12
- Initial Controller Setup, on page 17
- System BIOS and Cisco Integrated Management Controller Firmware, on page 17

**Unpacking and Inspecting the Controller**

**Caution**

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

**Tip**

Retain 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.
Step 1  Remove the controller from its container and save all the packaging material.
Step 2  Compare the shipment to the equipment list provided by your Cisco customer service representative. Verify that you have all the items.
Step 3  Check for damage and report discrepancies or damage, if any, to your Cisco customer service representative. Before speaking to the 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

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**  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

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


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

<table>
<thead>
<tr>
<th>Fiber type and Core diameter (µm)</th>
<th>Wavelength (nm)</th>
<th>Max. Power (mW)</th>
<th>Beam divergence (rad)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM 11</td>
<td>1200 - 1400</td>
<td>39 - 50</td>
<td>0.1 - 0.11</td>
</tr>
<tr>
<td>MM 62.5</td>
<td>1200 - 1400</td>
<td>150</td>
<td>0.18 NA</td>
</tr>
<tr>
<td>MM 50</td>
<td>1200 - 1400</td>
<td>135</td>
<td>0.17 NA</td>
</tr>
<tr>
<td>SM 11</td>
<td>1400 - 1600</td>
<td>112 - 145</td>
<td>0.11 - 0.13</td>
</tr>
</tbody>
</table>

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
Rack Requirements

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 models that use ferroresonant technology. These UPS models 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 one RU, equal to 1.75 in. (44.45 mm).

Equipment Requirements

The slide rails sold by Cisco Systems for this controller do not require tools for installation.

Slide Rail Adjustment Range

The slide rails for this controller have an adjustment range of 24 to 36 inches (610 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 Systems.
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 (see Attaching Inner Rail to Side of 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 6: Attaching Inner Rail to Side of Controller

---

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 (see Front Securing Mechanism, Inside of Front End).

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

Figure 7: Front Securing Mechanism, Inside of Front End
Step 3  Install the outer 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 Front Securing Mechanism, Inside of Front End).

   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 30 pounds (13.6 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, and then continue pushing the controller into the rack until its front slam latches engage with the rack posts.

   **Figure 8: Inner Rail Release Clip**

<table>
<thead>
<tr>
<th>1</th>
<th>Inner rail release clip</th>
<th>3</th>
<th>Outer rail attached to rack post</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Inner rail attached to controller and inserted into outer rail</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 controller 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)**

**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 *Attaching the Cable Management Arm to the Rear of the Slide Rails*). Slide the tab over the end of the rail until it clicks and locks.

*Note*  
The CMA is reversible left to right. To reverse the CMA, see *Reversing the Cable Management Arm (Optional)* before installation.

**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 *Attaching the Cable Management Arm to the Rear of the Slide Rails*). 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 *Attaching the Cable Management Arm to the Rear of the Slide Rails*).

**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 *Attaching the Cable Management Arm to the Rear of the Slide Rails*). 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 required.
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.
Initial Controller Setup

For instructions on performing initial setup of controller, see the Cisco 5520 Wireless Controller Deployment Guide.

System BIOS and Cisco Integrated Management Controller Firmware

Updating the BIOS and Cisco Integrated Management Controller 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 System BIOS

**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**.
Controller Specifications

This appendix lists the technical specifications for the controller.

- Physical Specifications, on page 19
- Environmental Specifications, on page 19
- Power Specifications, on page 20

Physical Specifications

Table 5: Physical Specifications

<table>
<thead>
<tr>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>1.7 in. (4.3 cm)</td>
</tr>
<tr>
<td>Width</td>
<td>16.9 in. (42.9 cm)</td>
</tr>
<tr>
<td>Depth</td>
<td>29.8 in. (75.8 cm)</td>
</tr>
<tr>
<td>Maximum weight (fully loaded chassis)</td>
<td>SFF 8-drive: 37.9 lb. (17.2 kg)</td>
</tr>
</tbody>
</table>

Environmental Specifications

Table 6: Environmental Specifications

<table>
<thead>
<tr>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature, operating</td>
<td>41 to 104°F (5 to 40°C)</td>
</tr>
<tr>
<td></td>
<td>Derate the maximum temperature by 1°C per every 305 meters (1000 ft) of altitude above sea level.</td>
</tr>
<tr>
<td>Temperature, non-operating (when the controller is stored or transported)</td>
<td>-40 to 149°F (−40 to 65°C)</td>
</tr>
<tr>
<td>Humidity (RH), noncondensing</td>
<td>10 to 90%</td>
</tr>
</tbody>
</table>
### Power Specifications

**Note**

Do not mix power supply types in the controller. Both power supplies must be identical.

### 770 W AC Power Supply

Table 7: Power Supply Specifications, on page 20 lists the specifications for each 770 W AC power supply (Cisco part number UCSC-PSU1-770W).

#### Table 7: Power Supply Specifications

<table>
<thead>
<tr>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC input voltage range</td>
<td>90 to 264 VAC (Self-ranging, 100 to 264 VAC nominal)</td>
</tr>
<tr>
<td>AC input frequency</td>
<td>Range: 47 to 63 Hz (Single phase, 50 to 60Hz nominal)</td>
</tr>
<tr>
<td>AC line input current (steady state)</td>
<td>9.5 A peak at 100 VAC 4.5 A peak at 208 VAC</td>
</tr>
<tr>
<td>Maximum output power for each power supply</td>
<td>770 W</td>
</tr>
<tr>
<td>Power supply output voltage</td>
<td>Main power: 12 VDC Standby power: 12 VDC</td>
</tr>
</tbody>
</table>
Power Cord Specifications

This appendix provides supported power cable specifications.

- Supported Power Cords and Plugs, on page 21
- AC Power Cord Illustrations, on page 23

Supported Power Cords and Plugs

Each power supply has a separate power cord. Standard power cords or jumper power cords are available for connection to the controller. The jumper power cords, for use in racks, are available as an optional alternative to the standard power cords.

Only the approved power cords or jumper power cords provided with the controller are supported.

<table>
<thead>
<tr>
<th>Description</th>
<th>Feet</th>
<th>Meters</th>
<th>Power Cord Reference Illustration</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFS-250V-10A-AR Power Cord, 250 VAC 10 A IRAM 2073 Plug Argentina</td>
<td>8.2</td>
<td>2.5</td>
<td>Figure SFS-250V-10A-AR</td>
</tr>
<tr>
<td>CAB-9K10A-AU 250 VAC 10 A 3112 Plug Australia</td>
<td>8.2</td>
<td>2.5</td>
<td>Figure CAB-9K10A-AU</td>
</tr>
<tr>
<td>SFS-250V-10A-CN Power Cord, 250 VAC 10 A GB 2009 Plug China</td>
<td>8.2</td>
<td>2.5</td>
<td>Figure SFS-250V-10A-CN</td>
</tr>
<tr>
<td>Description</td>
<td>Feet</td>
<td>Meters</td>
<td>Power Cord Reference Illustration</td>
</tr>
<tr>
<td>------------------------------</td>
<td>------</td>
<td>--------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>CAB-9K10A-EU Power Cord, 250 VAC 10 A M 2511 Plug Europe</td>
<td>8.2</td>
<td>2.5</td>
<td>Figure CAB-9K10A-EU</td>
</tr>
<tr>
<td>SFS-250V-10A-ID Power Cord, 250 VAC 16A EL-208 Plug South Africa, United Arab Emirates, India</td>
<td>8.2</td>
<td>2.5</td>
<td>Figure SFS-250V-10A-ID</td>
</tr>
<tr>
<td>SFS-250V-10A-IS Power Cord, 250 VAC 10 A SI32 Plug Israel</td>
<td>8.2</td>
<td>2.5</td>
<td>Figure SFS-250V-10A-IS</td>
</tr>
<tr>
<td>CAB-9K10A-IT Power Cord, 250 VAC 10 A CEI 23-16 Plug Italy</td>
<td>8.2</td>
<td>2.5</td>
<td>Figure CAB-9K10A-IT</td>
</tr>
<tr>
<td>CAB-9K10A-SW Power Cord, 250 VAC 10 A MP232 Plug Switzerland</td>
<td>8.2</td>
<td>2.5</td>
<td>Figure CAB-9K10A-SW</td>
</tr>
<tr>
<td>CAB-9K10A-UK Power Cord, 250 VAC 10 A BS1363 Plug (13 A fuse) United Kingdom</td>
<td>8.2</td>
<td>2.5</td>
<td>Figure CAB-9K10A-UK</td>
</tr>
<tr>
<td>CAB-AC-250V/13A Power Cord, 250 VAC 13 A IEC60320 Plug North America</td>
<td>6.6</td>
<td>2.0</td>
<td>Figure CAB-AC-250V/13A</td>
</tr>
<tr>
<td>CAB-N5K6A-NA Power Cord, 250 VAC 13 A NEMA 6-15 Plug, North America</td>
<td>8.2</td>
<td>2.5</td>
<td>Figure CAB-N5K6A-NA</td>
</tr>
<tr>
<td>CAB-9K12A-NA Power cord, 125 VAC, 13 A, NEMA 5-15 Plug North America</td>
<td>8.2</td>
<td>2.5</td>
<td>Figure CAB-9K12A-NA</td>
</tr>
<tr>
<td>Description</td>
<td>Feet</td>
<td>Meters</td>
<td>Power Cord Reference Illustration</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>------</td>
<td>--------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CAB-C13-CBN</td>
<td>2.2</td>
<td>0.68</td>
<td>Figure CAB-C13-CBN, Jumper Power Cord (0.68 m)</td>
</tr>
<tr>
<td>Cabinet Jumper Power Cord, 250 VAC 10 A, C13-C14 Connectors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAB-C13-C14-2M</td>
<td>6.6</td>
<td>2.0</td>
<td>Figure CAB-C13-C14-2M, Jumper Power Cord (2 m)</td>
</tr>
<tr>
<td>Cabinet Jumper Power Cord, 250 VAC 10 A, C13-C14 Connectors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAB-C13-C14-AC</td>
<td>9.8</td>
<td>3.0</td>
<td>Figure CAB-C13-C14-AC, Jumper Power Cord (3 m)</td>
</tr>
<tr>
<td>Cabinet Jumper Power Cord, 250 VAC 10 A, C13-C14 Connectors</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**AC Power Cord Illustrations**

This section includes the AC power cord illustrations. See SFS-250V-10A-AR to CAB-C13-C14-AC, Jumper Power Cord (3 m).

*Figure 11: SFS-250V-10A-AR*

![AC Power Cord Illustration](image1)

*Figure 12: CAB-9K10A-AU*

![AC Power Cord Illustration](image2)
Power Cord Specifications

Figure 13: SFS-250V-10A-CN

Cordset rating 10A, 250V (2500 mm)

Plug: EL 218
(CCEE GB2009)

Connector: EL 701
(IEC60320/C13)

Figure 14: CAB-9K10A-EU

Cordset rating: 10A/16A, 250 V
Length: 8 ft 2 in. (2.5 m)

Plug: M2511

Connector: VSCC15

Figure 15: SFS-250V-10A-ID

Cordset rating 16A, 250V (2500mm)

Plug: EL 208

Connector: EL 701
Power Cord Specifications

**Figure 16: SFS-250V-10A-IS**

- **Plug:** EL 212 (SI-32)
- **Cordset rating:** 10A, 250V/500V MAX (2500 mm)
- **Connector:** EL 701B (IEC60320/C13)

**Figure 17: CAB-9K10A-IT**

- **Plug:** I/3G (CEI 23-16)
- **Cordset rating:** 10 A, 250 V
- **Length:** 8 ft 2 in. (2.5 m)
- **Connector:** C15M (EN60320/C15)

**Figure 18: CAB-9K10A-SW**

- **Plug:** MP232-R
- **Cordset rating:** 10 A, 250 V
- **Length:** 8 ft 2 in. (2.5 m)
- **Connector:** IEC 60320 C15
Figure 19: CAB-9K10A-UK

Cordset rating: 10 A, 250 V/500 V MAX
Length: 2500mm

Plug: EL 210 (BS 1363A) 13 AMP fuse
Connector: EL 701C (EN 60320/C15)

Figure 20: CAB-AC-250V/13A

Cordset rating 13A, 250V (6.6 feet) (79±2m)

Plug: EL312Molded Twistlock (NEMA L6-20)
Connector: EL 701 (IEC60320/C13)

Figure 21: CAB-N5K6A-NA

Cordset rating: 10 A, 250 V
Length: 8.2 ft

Plug: NEMA 6-15P
Connector: IEC60320/C13
Power Cord Specifications

Figure 22: CAB-9K12A-NA

Figure 23: CAB-C13-CBN, Jumper Power Cord (0.68 m)

Figure 24: CAB-C13-C14-2M, Jumper Power Cord (2 m)
Figure 25: CAB-C13-C14-AC, Jumper Power Cord (3 m)

Cordset rating 10A, 250V (3.0 m)

Plug: SS10A

Connector: HS10S
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