



Installing the Cisco ISE 3300 Series Hardware

This appendix describes how to install your Cisco Identity Services Engine (ISE) 3300 Series appliances and connect any of the three supported appliances (Cisco ISE 3315, Cisco ISE 3355, and Cisco ISE 3395) to the network. This information is contained in the following sections:

- Rack-Mounting Configuration Guidelines, page B-1
- Mounting a Cisco ISE 3300 Series Appliance in a Four-Post Rack, page B-2
- Connecting Cables, page B-8
- Powering Up the Cisco ISE 3300 Series Appliance, page B-14



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



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

Rack-Mounting Configuration Guidelines

Each Cisco ISE 3300 Series appliance has a set of rack handles (installed at the factory). You will use these handles when installing the appliance in a four-post rack. You can front (flush) mount or mid-mount the appliance in a 19-inch (48.3-cm) equipment rack that conforms to the four-post rack specification.

Note

The inside width of the rack must be 17.5 inches (44.45 cm).

The first task that you need to perform is to mount the appliance in the brackets. After the appliance is installed in the rack, it requires one EIA 1.75-inch (4.4-cm) vertical mounting space or 1 rack unit (RU) for mounting.



You must leave sufficient clearance in the front and rear of the Cisco ISE 3300 Series appliance to allow for cooling air to be drawn in through the front, circulated through the appliance, and exhausted out the rear of the appliance. For details, see Airflow Guidelines, page A-8.

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The Rack Installation Safety Guidelines, page A-7 and the following information will help you plan the equipment rack configuration:

- When mounting an appliance in an equipment rack, ensure that the rack is firmly bolted to the floor.
- Because you may install one or more appliances in the rack, ensure that the weight of all the installed appliances does not exceed the weight capacity of the rack or make the rack unstable.



Caution

Some equipment racks are also secured to ceiling brackets because of the weight of the equipment in the rack. For this type of installation, make sure that the rack that you are using to install the appliances is firmly secured to the building structure.

- As recommended in Airflow Guidelines, page A-8, maintain a 6-inch (15.2-cm) clearance at the front and rear of the appliance to ensure that it maintains an adequate space for air intake and exhaust.
- Avoid installing appliances in an overly congested rack. Air flowing to or from other appliances in the rack might potentially interfere with the normal flow of cooling air through the appliances, and thereby increasing the risk for causing the appliance(s) to overheat.
- Allow at least 24 inches (61 cm) of clearance at the front and rear of the rack for performing any appliance maintenance operations.

Caution

To prevent appliance overheating, never install an appliance in an enclosed rack or in a room that is not properly ventilated or supported by adequate air conditioning.

• Follow your local best practices for cable management. Ensure that cables running to and from appliances do not impede access needed for performing equipment maintenance or upgrades.



The rack-mount hardware kit does not include a two-post equipment rack.

Mounting a Cisco ISE 3300 Series Appliance in a Four-Post Rack



When the appliance is installed in a rack and is fully extended on its slide rail, it is possible for the rack to become unstable and tip over, which could cause serious injury. To eliminate the risk of rack instability from extending the rail or in the event of an earthquake, you should affix the rack to the floor.

This section contains information about the following topics:

- Using a Four-Post Rack-Mount Hardware Kit, page B-3
- Installing the Slide Rails in a Rack, page B-4
- Installing the Appliance into the Slide Rails, page B-6

Using a Four-Post Rack-Mount Hardware Kit

Figure B-1 displays the items that you need to install the Cisco ISE 3300 Series appliance in a four-post rack.

Figure B-1 Release Levers on the Slide Rail Hardware

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The following table describes the callouts in Figure B-1.

1	Cable straps	4	M6 screws
2	Slide rail	5	Shipping bracket
3	Front of rail	6	Rear of rail

Table B-1 lists the contents of the rack-mount hardware kit.

Table B-1 **Rack-Mount Hardware Kit**

ltem	Quantity
Slide rails	2
Cable straps	6
M6 screws	6



Installing the Slide Rails in a Rack

To install the Cisco ISE 3300 Series appliance in a rack, complete the following steps:

- **Step 1** Press on the rail-adjustment bracket on the rear of the slide rail (see Figure B-2) to prevent the bracket from moving.
- **Step 2** Press the adjustment tabs 1 and 2 (see Figure B-2) and slide the rail-locking carrier toward the front of the slide rail until it snaps into place.
- **Step 3** Press the adjustment Tabs 1 and 2 and slide the rail-locking carrier toward the rear of the slide until it snaps into place.

Figure B-2 Installing the Slide Rail into the Rack



The following table describes the callouts in Figure B-2.

1	Adjustment tab 1	3	Rail-adjustment bracket
2	Adjustment tab 2		

If you need to adjust the slide-rail length, lift the release tab (see Figure B-3) and fully extend the rail-adjustment bracket from the rear of the slide rail until it snaps into place.

Step 4 Align the pins on the rear rail-locking carrier with the holes on the rear mounting flange.

Step 5 Press the adjustment tab (see Figure B-3) to secure the rear of the slide rail to the rear mounting flange.

Note Ensure that the pins are fully extended through the mounting flange and slide rail.



Figure B-3 Adjusting the Slide-rail Length

The following table describes the callouts in Figure B-3.

1	Adjustment tab	3	Pins (not extended through the mounting flange and slide rail)
2	Release tab	4	Pins (extending through the mounting flange and slide rail)

Step 6 Align the pins (see Figure B-4) on the front rail-locking carrier to the front mounting flange.

If you have adjusted the rail length, push the rail-locking carrier back toward the rear of the slide rail to align the slide rail with the mounting flange.

Step 7 Press the adjustment tab to secure the front of the slide rail to the front mounting flange.



Ensure that the pins are fully extended through the mounting flange and the slide rail.

Step 8 Repeat these steps for the other slide rail.



Figure B-4 Aligning the Slide Rail with the Mounting Flange

The following table describes the callouts in Figure B-4.

1	Adjustment tab	4	Pins (extending through the mounting flange and slide rail)
2	Mounting flange	5	Pins (not extending through the mounting flange and slide rail)
3	Pins		

Installing the Appliance into the Slide Rails

To install the Cisco ISE 3300 Series appliance into the slide rails, complete the following steps:

Step 1 Align the server on the slide rails and push it fully into the rack cabinet.

Step 2 Secure the server to the front mounting flanges with the captive thumbscrews (see Figure B-5).

You must leave the shipping brackets attached to the slide rails unless the shipping brackets impede the server from sliding fully into the rack cabinet. If you need to remove the shipping brackets, see Step 3.

Note



Figure B-5 Aligning the Server on the Slide Rails

The following table describes the callouts in Figure B-5.

1	Shipping brackets	3	Thumbscrews
2	Cisco ISE 3300 Series appliance		

- **Step 3** Press the release tab (see Figure B-6) as indicated on the shipping bracket, and remove the shipping bracket from the slide rail.
- **Step 4** Repeat step 3 for the other shipping bracket. Store the shipping brackets for future use.

Note

You must reinstall the shipping brackets on the slide rails before you transport the rack cabinet with the server installed. To reinstall the shipping brackets, reverse the steps.



The following table describes the callout in Figure B-6.

1 Release tab

Connecting Cables

This section describes how to connect your Cisco ISE 3300 Series appliance to the network and the appliance console. In the following example, Figure B-7 shows the Cisco ISE 3315 appliance. For the specific locations of the rear-panel features for the other Cisco ISE 3300 Series appliances, see the following topics:

- Cisco ISE 3355 Rear-Panel Features, page 2-10
- Cisco ISE 3395 Rear-Panel Features, page 2-14

The following topics describe how to connect and manage cabling:

- Connecting the Network Interface, page B-10
- Connecting the Console, page B-11
- Connecting the Keyboard and Video Monitor, page B-13
- Cable Management, page B-14



The following table describes the callouts in Figure B-7.

1	AC Power supply cable socket	6	NIC 2 (eth1) Gigabit Ethernet interface
2	NIC 3 (eth2) add-on card	7	NIC 1 (eth0) Gigabit Ethernet interface
3	NIC 4 (eth3) add-on card	8	Rear USB port 4
4	Serial port	9	Rear USB port 3
5	Video port		

Attach your cables (such as keyboard, monitor cables, if required) to the rear of the server. Route the cables to the left corner of the server (from a rear-panel perspective as shown in Figure B-8), and use the cable straps to secure the cables to the slide rails.





Connecting the Network Interface

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 ISE 3300 Series appliance Ethernet port. The RJ-45 port supports standard straight-through and crossover Category 5 UTP cables.



We do not supply Category 5 UTP cables; these cables are available commercially.

To connect the cable to the Cisco ISE 3300 Series appliance Ethernet port, complete the following steps:

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

Ethernet Port Connector

Each supported Cisco ISE 3300 Series appliance comes with two integrated dual-port Ethernet controllers. These Ethernet controllers provide an interface for connecting to 10-, 100-, or 1000-Mb/s networks, and they provide full-duplex (FDX) capability that enables simultaneous transmission and reception of data on the Ethernet LAN. For the exact location of the Ethernet port connector on each appliance, see the following:

- Cisco ISE 3315 Rear-Panel Features, page 2-7
- Cisco ISE 3355 Rear-Panel Features, page 2-10
- Cisco ISE 3395 Rear-Panel Features, page 2-14

To access the Ethernet port, connect at a minimum Category 5 or 5E (we recommend that you use Category 6) UTP cable to the RJ-45 connector on the back of the appliance. Table B-2 describes the UTP cable categories.

Туре	Description
10BASE-T	EIA Categories 5 or 5E or higher UTP (2 or 4 pair) up to 328 ft (100 m)
100BASE-TX	EIA Category 5 or 5E or higher UTP (2 pair) up to 328 ft (100 m)
1000BASE-T	EIA Category 6 UTP (recommended), Category 5 or 5E UTP (2 pair) up to 328 ft (100 m)

Table B-2 Ethernet to UTP Cabling Category Guidelines

Figure B-9 shows the Ethernet RJ-45 port and plug.





Table B-3 lists and describes the RJ-45 pin signals used on the Ethernet connector.



To avoid electric shock, do not connect safety extra-low voltage (SELV) circuits to telephone-network voltage (TNV) circuits. LAN ports contain SELV circuits, and WAN ports contain TNV circuits. Some LAN and WAN ports both use RJ-45 connectors. Use caution when connecting cables. Statement 1021

Ethernet Port Pin	Signal	Description
1	TxD+	Send data +
2	TxD-	Send data –
3	RxD+	Receive data +
4	Termination network	No connection
5	Termination network	No connection
6	RxD-	Receive data –
7	Termination network	No connection
8	Termination network	No connection

Table B-3 Ethernet Port (RJ-45) Pinout

Connecting the Console



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



To help prevent a potential network security threat, Cisco strongly recommends physically disconnecting from the Cisco ISE console management port when you are not using it. For more details, see http://seclists.org/fulldisclosure/2011/Apr/55, which applies to the Cisco ISE, Cisco NAC Appliance, and Cisco Secure ACS hardware platforms.

Each Cisco ISE 3300 Series appliance has a data circuit-terminating equipment mode console port that allows you to connect a console terminal directly to your appliance. The appliance uses a DB-9 serial connector for the console port.

The console port on each Cisco ISE 3300 Series 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 that runs terminal-emulation software or an ASCII terminal—to the console port, and this can be performed by using one of the following methods:

- Connecting a PC that is running terminal-emulation software to the console port by using a DB-9 female to DB-9 female straight-through cable.
- Connecting an ASCII terminal to the console port by using a DB-9 female to DB-25 male straight-through cable with a DB-25 female to DB-25 female gender changer.
- Connecting a terminal or a PC running terminal-emulation software to the console port on the Cisco ISE 3300 Series appliance.

To connect a console terminal to your appliance, complete the following steps:

- **Step 1** Connect the terminal by using a straight-through cable to the console port.
- **Step 2** Configure your terminal or terminal-emulation software to use the following settings:
 - 9600 baud
 - 8 data bits
 - No parity
 - 1 stop bit
 - No hardware flow control

Serial (Console) Port Connector

Cisco ISE 3300 Series appliances have one serial port connector that is located on the rear panel of each appliance. For the exact location of each serial port connector on each appliance, see the following:

- Cisco ISE 3315 Rear-Panel Features, page 2-7
- Cisco ISE 3355 Rear-Panel Features, page 2-10
- Cisco ISE 3395 Rear-Panel Features, page 2-14

Figure B-10 shows the pin number assignments for the 9-pin, male, D-shell serial port connector that is located on the rear panel of each Cisco ISE 3300 Series appliance. The defined pin number assignments are those that conform to industry standards for the RS-232-C.





Table B-4 lists and describes the serial (console) port pinout.

Serial Port Pin	Signal	Description
1	DCD	Data carrier detect
2	RXD	Receive data
3	TXD	Send/transmit data
4	DTR	Data terminal ready
5	GND	Signal ground
6	DSR	Data set ready
7	RTS	Request to send
8	CTS	Clear to send
9	RI	Ring indicator

Table B-4	DB-9 Serial (Console	e) Port Pinout
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Connecting the Keyboard and Video Monitor



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

This section describes how you can connect a keyboard and video monitor to a Cisco ISE 3300 Series appliance. As an alternative to connecting a keyboard or video monitor, you can make a serial console connection to a Cisco ISE 3300 Series appliance. Note the following guidelines:

- Cisco ISE 3300 Series appliances do not support the use of a mouse device.
- Cisco ISE 3300 Series appliances provide USB ports on both the front and rear panel on each appliance that can be used for making a keyboard (USB port) or video monitor (video port) connection.

For the specific location of the USB and video ports on each appliance, see the following:

- Cisco ISE 3315 Rear-Panel Features, page 2-7
- Cisco ISE 3355 Rear-Panel Features, page 2-10
- Cisco ISE 3395 Rear-Panel Features, page 2-14

To connect a keyboard and video monitor to your appliance, complete the following steps:

- **Step 1** Verify that the appliance is turned off.
- **Step 2** Connect the end of the keyboard cable for the PS/2 (keyboard) to the supplied USB to the PS/2 dongle adapter that is located on the rear panel of the appliance.
- **Step 3** Connect the end of the video monitor cable to the PS/2 VGA port that is located on the appliance. In the Cisco ISE 3315, there is one video port on the rear panel; on the Cisco ISE 3355 and Cisco ISE 3395, there is one video port on the front panel and one video port on the rear panel.
- **Step 4** Turn on the appliance.

Cable Management

Cable management can be the most visual element that is part of setting up your appliance. However, the issue of cable management is often overlooked because the time spent is not considered a high-priority task. Because racks and enclosures typically house more equipment today than ever before, the increase in equipment installations per rack means you must better organize, route, and manage your cabling inside and outside the equipment rack.

Poor cable management can lead not only to damaged cables or added time spent rerouting or changing cabling, but it also can impair critical airflow that cools your appliance or blocks access to it. These types of problems can lead to inefficiencies in performance or potentially even some downtime. However, solutions that address cable management issues range from simple cable management rings, to vertical or horizontal organizers, to the use of cable troughs and ladders.

All Cisco ISE 3300 Series appliance cables should be properly dressed so as not to interfere with each other or with any other equipment in the rack. Use the best local or electrical practices to ensure that the cables that are attached to your appliance are properly dressed. You can now proceed to the next section, Powering Up the Cisco ISE 3300 Series Appliance, page B-14, to continue the installation process.

Powering Up the Cisco ISE 3300 Series Appliance



Do not touch the power supply when the power cord is connected. For systems with a power switch, line voltages are present within the power supply even when the power switch is off and the power cord is connected. For systems without a power switch, line voltages are present within the power supply when the power cord is connected. Statement 4



This equipment is intended to be grounded. Ensure that the host is connected to earth ground during normal use. Statement 39

This section contains the following topics:

- Power-Up Checklist, page B-14
- Power-Up Procedure, page B-15
- Checking the LEDs, page B-16

Power-Up Checklist

You can proceed to power up the Cisco ISE 3300 Series appliance if you have met the following conditions:

- The appliance is securely mounted.
- The appliance is properly grounded.
- All power, network, and interface cables have been properly connected.

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Power-Up Procedure

To power up a Cisco ISE 3300 Series appliance and verify its initialization and self-test, perform the following procedure. When the following procedure is completed, the appliance is ready to be configured. Figure B-12 shows the Cisco ISE 3315 appliance. For specific front- and rear-panel views and control descriptions for the other Cisco ISE 3300 Series appliances, see:

- Cisco ISE 3355 Appliance:
 - Cisco ISE 3355 Front-Panel Features, page 2-8
 - Cisco ISE 3355 Rear-Panel Features, page 2-10
- Cisco ISE 3395 Appliance:
 - Cisco ISE 3395 Front-Panel Features, page 2-12
 - Cisco ISE 3395 Rear-Panel Features, page 2-14

To power up a Cisco ISE 3300 Series appliance, complete the following steps:

- **Step 1** Review the information in Safety Guidelines, page A-1.
- Step 2 Plug the AC power cord into the AC power socket in the rear panel of the appliance. (Location 1 in Figure B-11 shows the Cisco ISE 3315 appliance.)

Figure B-11 Cisco ISE 3315 Appliance Rear-Panel View



For the location of the AC power socket in the other Cisco ISE 3300 Series appliances, see:

- Cisco ISE 3355 Rear-Panel Features, page 2-10
- Cisco ISE 3395 Rear-Panel Features, page 2-14
- Step 3 Connect the other end of the AC power cord to an approved AC power source at your installation site.
- Step 4 In the front panel of the appliance, press the AC power button On to begin the booting process. Location 2 in Figure B-12 shows the Cisco ISE 3315 appliance. For the location of the AC power button in the other Cisco ISE 3300 Series appliances, see:
 - Cisco ISE 3355 Front-Panel Features, page 2-8
 - Cisco ISE 3395 Front-Panel Features, page 2-12
- Step 5 Observe the front-panel LEDs for the Cisco ISE 3300 Series appliances. For example, the Cisco ISE 3315 appliance is shown in Figure B-12. Checking the LEDs, page B-16 lists the status of the LEDs for all three Cisco ISE 3300 Series appliances.



Figure B-12 Cisco ISE 3315 Appliance Front-Panel View

The following table defines the front-panel features and LEDS shown in Figure B-12.

1	Appliance power LED	6	System-error LED
2	AC power control button	7	USB 1 connector
3	Reset button	8	USB 2 connector
4	HDD activity LED	9	CD-eject button
5	Locator LED	10	CD drive activity LED
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Checking the LEDs

When the Cisco ISE 3300 Series appliances have been started up and are running, observe the state of the front-panel LEDs. Table B-5 describes the LED color, its power status, activity, and other important status indicators that are displayed for each of the Cisco ISE 3300 Series appliances.

 Table B-5
 Cisco ISE 3300 Series Appliance LEDs

LED Type	LED Color	Description	
Cisco ISE 3315 Appliance Front-Panel LEDs			
Power status	Green	• Lit when appliance has AC power and is powered on.	
		• Unlit when appliance is turned off, AC power is disconnected, or an error condition has been detected in the operating voltages.	

LED Type	LED Color	Description
HDD activity	Green	• Flashing green when there is ongoing HDD activity.
		• Unlit when there is no activity, the appliance has not yet booted, or an error condition has been detected in the boot process.
Locator (LED button)	Blue	• Flashing blue when the locator button has been pressed.
System health	Amber	• Unlit when the system is operating normally.
		• Lit indicates a prefailure system threshold condition, such as:
		 At least one fan failure (system or processor fan).
		 At least one of the temperature sensors reached critical level (system or processor thermal sensor).
		- At least one memory module failed.
		 A power supply unit error has occurred.
Cisco ISE 3355 Appliance From	t-Panel LEDs	1
HDD activity	Green	• Lit when there is continuous HDD activity.
		• Flashing green when there is ongoing HDD activity.
		• Unlit when there is no activity, the HDD is idle, or the HDD has been disabled.
HDD status	Amber	• Lit when HDD is in an error state.
		• Unlit when HDD is functioning properly or when system is disconnected from AC power.
Ethernet (icon)	Green	• Lit when Ethernet interfaces are configured and up.
		• Unlit when no Ethernet interfaces are currently configured or when Ethernet interfaces are all down.
Ethernet interface activity (NIC 1 and NIC 2)	Green	• Lit when activity exists on NIC 1 or NIC 2.
		• Flashing green when there is ongoing activity on NIC 1 or NIC 2.
		• Unlit when there is no activity on NIC 1 or NIC 2.

LED Type	LED Color	Description
Informational	Amber	• Lit when a noncritical system even has occurred.
		• Unlit when system is functioning normally.
System health	Amber	• Unlit when the system is operating normally.
		• Lit indicates a prefailure system threshold condition, such as:
		 At least one fan failure (system or processor fan).
		 At least one of the temperature sensors reached critical level (system or processor thermal sensor).
		- At least one memory module failed.
		 A power supply unit error has occurred.
Locator (button)	Blue	• Flashing blue when locator button has been pressed.
Ethernet interface activity (NIC 3 and NIC 42)	Green	• Lit when activity exists on NIC 3 or NIC 4.
		• Flashing green when there is ongoing activity on NIC 3 or NIC 4.
		• Unlit when there is no activity on NIC 3 or NIC 4.
Power (button)	Green	• Lit when the appliance has AC power and is turned on.
		• Rapidly flashing green indicates that the appliance is turned off and is not yet ready to be turned on. The appliance typically only remains in this state for 1 to 3 minutes.
		• Slowly flashing green indicates that the appliance is currently turned off and is ready to be turned on.
		• Slowly fading on or off indicates that the appliance is in power-save mode (and is ready to be turned on).
		• Unlit when the appliance is turned off (AC power is disconnected).

LED Type	LED Color	Description
Cisco ISE 3395 Appliance From	t-Panel LEDs	
HDD activity	Green	• Lit when there is continuous HDD activity.
		• Flashing green when there is ongoing HDD activity.
		• Off when there is no activity, the HDD is idle, or the HDD has been disabled.
HDD status	Amber	• Lit when HDD is in error state.
		• Unlit when HDD is functioning properly or when system is disconnected from AC power.
Ethernet (icon)	Green	• Lit when Ethernet interfaces are configured and up.
		• Unlit when no Ethernet interfaces are currently configured or when Ethernet interfaces are all down.
Ethernet interface activity (NIC 1 and NIC 2)	Green	• Lit when activity exists on NIC 1 or NIC 2.
		• Flashing green when there is ongoing activity on NIC 1 or NIC 2.
		• Unlit when there is no activity on NIC 1 or NIC 2.
Informational	Amber	• Lit when a noncritical system even has occurred.
		• Unlit when system is functioning normally.
System health	Amber	• Unlit when the system is operating normally.
		• Lit indicates a prefailure system threshold condition, such as:
		 At least one fan failure (system or processor fan).
		 At least one of the temperature sensors reached critical level (system or processor thermal sensor).
		- At least one memory module failed.
		 A power supply unit error has occurred.
Locator (button)	Blue	• Flashing blue when locator button has been pressed.

LED Type	LED Color	Description
Ethernet interface activity (NIC 3 and NIC 42)	Green	• Lit when activity exists on NIC 3 or NIC 4.
		• Flashing green when there is ongoing activity on NIC 3 or NIC 4.
		• Unlit when there is no activity on NIC 3 or NIC 4.
Power (button)	Green	• Lit when the appliance has AC power and is turned on.
		• Rapidly flashing green indicates that the appliance is turned off and is not yet ready to be turned on. The appliance typically only remains in this state for 1 to 3 minutes.
		• Slowly flashing green indicates that the appliance is currently turned off and is ready to be turned on.
		• Slowly fading on or off indicates that the appliance is in power-save mode (and is ready to be turned on).
		• Unlit when the appliance is turned off (AC power is disconnected).

For more detailed information about the Cisco ISE 3300 Series LEDs, see Troubleshooting the Cisco ISE 3300 Series Appliance, page C-1. After the operating system boots, you are ready to initialize the basic software configuration. For configuration procedures, see Configuring the Cisco ISE 3300 Series Appliance, page 3-1.