CHAPTER 1

Verifying Hardware Installation

After installing the Cisco ASR 1000 Series Aggregation Services Router or replacing any of its hardware components that are field-replaceable units (FRUs), verify the installation.

This chapter includes the following sections:

Checking the LEDs

Check the LEDs on the faceplates of the following FRUs:

Cisco ASR 1000 Series Route Processors

Route processor LEDs vary according to the chassis model, as described in the following sections.

Cisco ASR 1013 Router

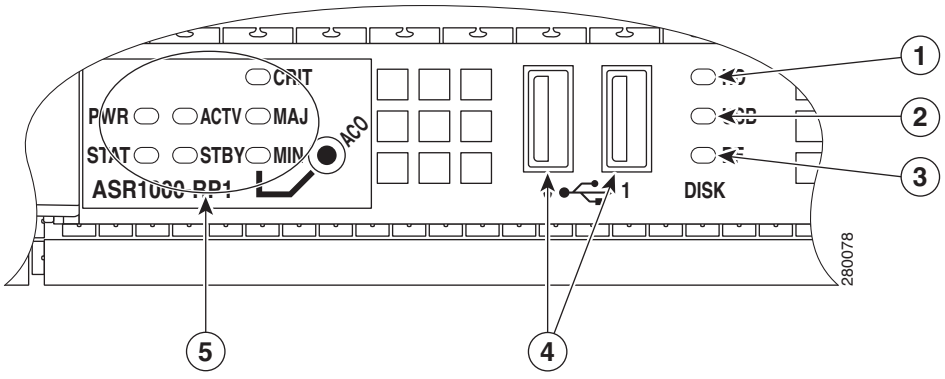
Table 1-1 shows the color or state of the LEDs in the Cisco ASR 1000 Series Route Processor-2 (RP-2) that indicate a successful installation. Figure 1-1 shows a view of the LEDs on the faceplate.

Note Only Route Processor-2 (RP-2) and ESP-40 (Embedded Service Processor) are supported for installation on the Cisco ASR 1013 Router.

Table 1-1 RP-2 Faceplate LEDs Indicating a Successful Installation (Cisco ASR 1013 Router)

LED Label	Color—State	Description
PWR	Solid green	All power requirements are within specification
	Off	Off indicates that the router is in standby mode.
STAT	Solid green	Cisco IOS has successfully booted.
	Yellow	BOOT ROM has successfully loaded.
	Red	System failure.
ACTV	Green	Lit when this is the active ASR 1000 Series route processor (Cisco ASR1000-RP1 or Cisco ASR1000-RP2).
STBY	Yellow	Lit when this is the standby ASR 1000 Series route processor.
CRIT	Solid red	Critical alarm indicator. This is on at power up, turned off by software.
MAJ	Solid red	Major alarm indicator.
MIN	Amber	Minor alarm indicator.
DISK HD	Flashing green	Active indicator.
	Off	No activity.
DISK USB	Flashing green	Active indicator.
	Off	No activity.
DISK BF	Flashing green	Active indicator.
	Off	No activity.

Figure 1-1 RP-2 Faceplate LEDs for an Active RP (Cisco ASR 1013 Router)



Cisco ASR 1001 Router

The Cisco ASR 1001 Router faceplate has common components for each type of ASR 1001 Router configuration. Figure 1-2 shows the Cisco ASR1000 front panel LEDs of the Cisco ASR 1001 Router. Table 1-2 shows the color or state of the LEDs in the Cisco ASR 1001 Series Router.

Figure 1-2 Common LEDs for Cisco ASR 1001 Router

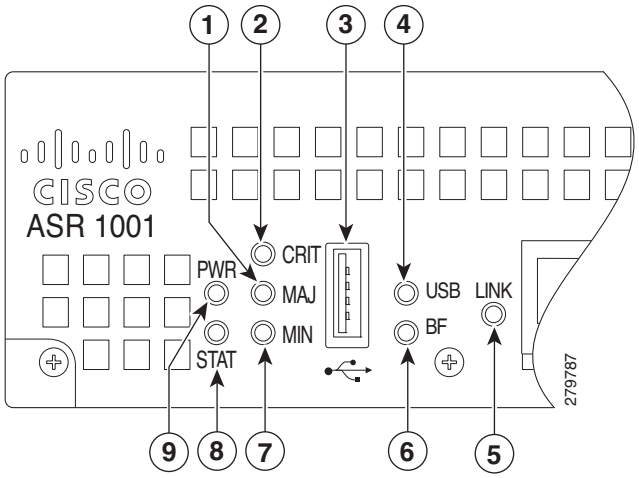


Table 1-2 Cisco ASR 1001 LED Color or State Details

LED Label	Color—State	Description
PWR	Solid green	Power requirements are within specification.
STAT	Solid green	Cisco IOS booted successfully.
MIN	Off	No minor alarms.
MAJ	Off	No major alarms.
CRIT	Off	No critical alarms.
BF	Green	Indicates activity of the EUSB device
Link	Green	Solid Green indicates Link, Flashing green indicates MGMT Ethernet port activity.
USB	Green	USB is green and flashes when accessed.

Cisco ASR 1004 Router, Cisco ASR 1006 Router

Table 1-3 shows the color or state of the LEDs in the Cisco ASR 1000 Series Route Processor (RP) that indicate a successful installation. Figure 1-3 shows a view of the LEDs on the faceplate.

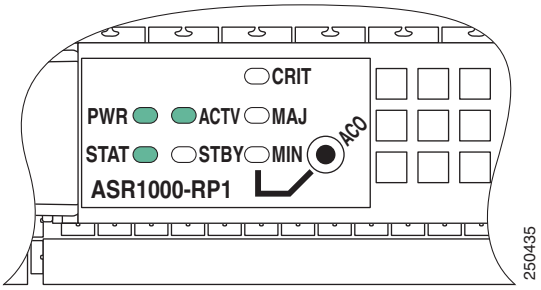
Table 1-3 RP LEDs Indicating a Successful Installation (Cisco ASR 1004 Router, Cisco ASR 1006 Router)

LED Label	Color—State	Description
PWR	Solid green	Power requirements are within specification.
STAT	Solid green	Cisco IOS booted successfully.
ACTV	Green	Active RP.
STBY	Yellow	Standby RP.
CRIT	Off	No critical alarms.

Table 1-3 RP LEDs Indicating a Successful Installation (Cisco ASR 1004 Router, Cisco ASR 1006 Router)

LED Label	Color—State	Description
MAJ	Off	No major alarms.
MIN	Off	No minor alarms.

Figure 1-3 RP Faceplate LEDs for an Active RP (Cisco ASR 1004 Router, Cisco ASR 1006 Router)



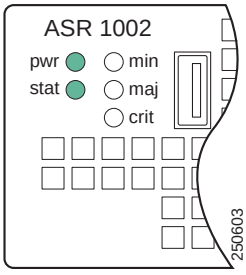
Cisco ASR 1002 Router

Table 1-4 shows the color or state of the LEDs in the Cisco ASR 1000 Series Route Processor (RP) that indicate a successful installation. Figure 1-4 shows a view of the LEDs on the faceplate.

Table 1-4 RP LEDs Indicating a Successful Installation (Cisco ASR 1002 Router)

LED Label	Color—State	Description
pwr	Solid green	Power requirements are within specification.
stat	Solid green	Cisco IOS booted successfully.
min	Off	No minor alarms.
maj	Off	No major alarms.
crit	Off	No critical alarms.

Figure 1-4 RP Faceplate LEDs for an Active RP (Cisco ASR 1002 Router)



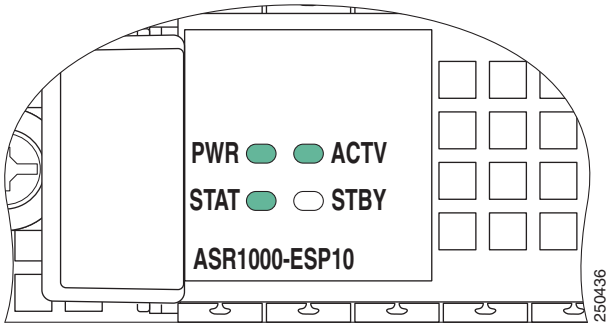
Cisco ASR 1000 Series Embedded Services Processors

Table 1-5 shows the color or state of the LEDs in the Cisco ASR 1000 Series Embedded Services Processor (ESP) that indicate a successful installation. Figure 1-5 shows a view of the LEDs on the faceplate.

Table 1-5 ESP LEDs Indicating a Successful Installation

LED Label	Color—State	Description
PWR	Solid green	Power requirements are within specification.
STAT	Solid green	Cisco IOS booted successfully.
ACTV	Green	Active ESP.
STBY	Yellow	Standby ESP.

Figure 1-5 ESP Faceplate LEDs for an Active ESP



Cisco ASR 1013 Router

Table 1-6 shows the color or state of the LEDs in the Cisco ASR 1000 Series SPA Interface Processors (SIP) that indicate a successful installation. Figure 1-6 shows a view of the LEDs on the faceplate.

Table 1-6 SIP LEDs Indicating a Successful Installation (Cisco ASR 1013 Router)

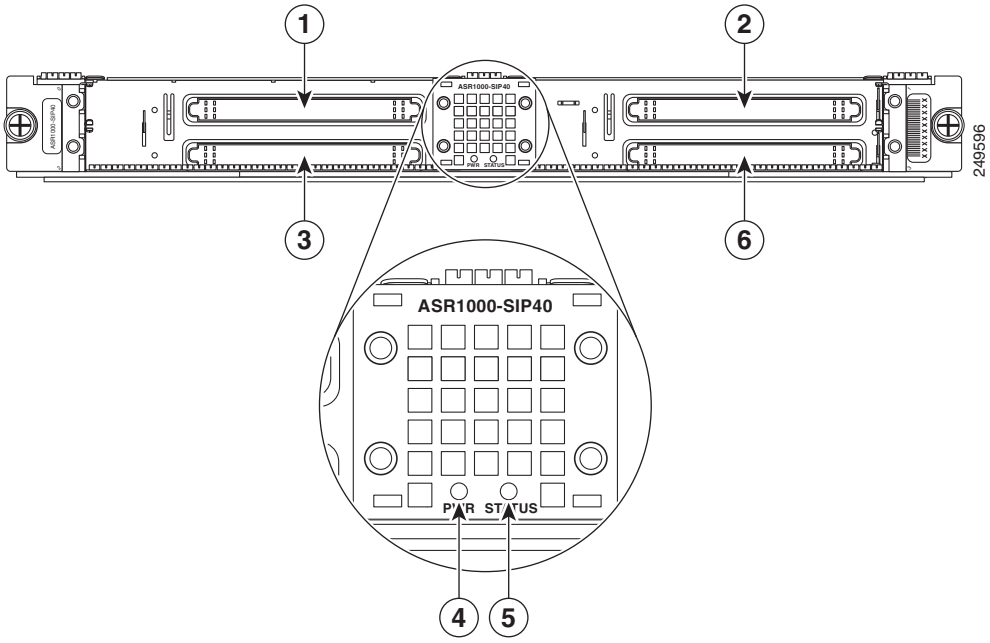
LED Label	Color—State	Description
PWR	Solid green	SIP is powered on.
STATUS	Solid green	SIP is online.

In the Cisco ASR 1013 Router, each Cisco ASR1000- SIP40 supports:

- Up to 6 ASR1000-SIP40G SIPs.
- Each SIP-40G supports:
  - Four half-height (¼ Rate or full rate or combination) SPAs with up to 24 ports per SPA
  - Two full-height (¼ Rate or full rate or combination) SPAs with up to 48 ports per SPA
  - Two half-height and 1 full-height combination that does not exceed 96 ports

Note If ASR-SIP10 is inserted in slot 0 to 5 of a Cisco ASR 1013 Router then you need to upgrade CPLD and ROMMON. If ASR-SIP40 is inserted in slot 4 or 5, it behaves like the ASR-SIP10.

Figure 1-6 SIP Faceplate LEDs (Cisco ASR 1013 Router)



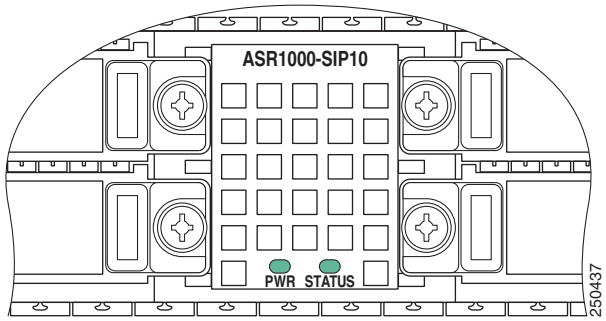
Cisco ASR 1004 Router, Cisco ASR 1006 Router

Table 1-7 shows the color or state of the LEDs in the Cisco ASR 1000 Series SPA Interface Processors (SIP) that indicate a successful installation. Figure 1-7 shows a view of the LEDs on the faceplate.

Table 1-7 SIP LEDs Indicating a Successful Installation (Cisco ASR 1004 Router, Cisco ASR 1006 Router)

LED Label	Color—State	Description
PWR	Solid green	SIP is powered on.
STATUS	Solid green	SIP is online.

Figure 1-7 SIP Faceplate LEDs (Cisco ASR 1004 Router, Cisco ASR 1006 Router)



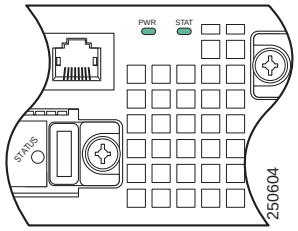
Cisco ASR 1002 Router

Table 1-8 shows the color or state of the LEDs in the Cisco ASR 1000 Series SPA Interface Processors (SIP) that indicate a successful installation. Figure 1-8 shows a view of the LEDs on the faceplate.

Table 1-8 SIP LEDs Indicating a Successful Installation (Cisco ASR 1002 Router)

LED Label	Color—State	Description
PWR	Solid green	SIP is powered on.
STAT	Solid green	SIP is online.

Figure 1-8 SIP Faceplate LEDs (Cisco ASR 1002 Router)



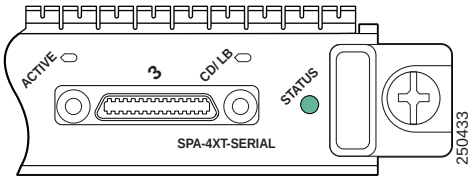
Shared Port Adapters

Table 1-9 shows the color or state of the LED the shared port adapter (SPA) that indicates a successful installation. Figure 1-9 shows a view of the LED on the faceplate.

Table 1-9 SPA LED Indicating a Successful Installation

LED Label	Color—State	Description
STATUS	Solid green	SPA is powered on and is operational.

Figure 1-9 SPA Faceplate LED



Cisco ASR 1001 Built-in Gigabit Ethernet SPA LEDs

The Cisco ASR 1001 Router has a Built-in Gigabit Ethernet SPA, which is installed. Table 1-10 shows the Built-in SPA LEDs details.

Table 1-10 Cisco ASR 1001 Router Built-in Gigabit Ethernet SPA Successful Installation

LED Label	Color—State	Description
GE SFP STATUS	Amber or Green	Off indicates port is not enabled by software. Amber indicates the port is enabled by software, but Ethernet Link is not yet established. Green indicates the port is enabled by software and that an Ethernet Link has been established.

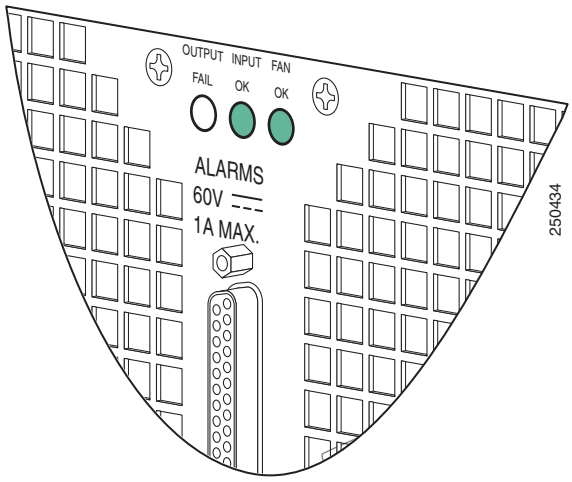
AC and DC Power Supplies

Table 1-11 shows the color or state of the LEDs that indicate a successful installation. Figure 1-10 shows a view of the LEDs on the faceplate.

Table 1-11 AC and DC Power Supply LEDs Indicating a Successful Installation

LED Label	Color—State	Description
INPUT OK	Green	Input voltage is within normal operating range.
FAN OK	Green	All fans are operational.
OUTPUT FAIL	Off	Output voltage is within normal operating range.

Figure 1-10 AC and DC Power Supply Faceplate LEDs



Checking Status Using show Commands

Use the **show platform** and **show environment all** commands to check the online and environmental status of each FRU after installation.

The **show platform** command displays the online status information for router FRUs. The State column in **show platform** command output should display “ok” for SIPs, SPAs, power supplies, and fans. For RPs (shown as R0, R1) and ESPs (shown as F0, F1), the State column should display “ok, active” or “ok, standby.”

Note There is only one LED for each Power Supply on Cisco ASR 1001 Router and it is green when powered-up.

```
Router# show platform
Chassis type: ASR1001

Slot      Type                State                 Insert time (ago)
--------- ------------------- --------------------- -----------------
0         ASR1001             ok                    23:28:16
 0/0      4XGE-BUILT-IN       ok                    23:27:23
 0/1      SPA-2XOC12-POS      ok                    23:27:21
 0/2      ASR1001-IDC-4XGE    ok                    23:27:23
R0        ASR1001             ok                    23:28:16
 R0/0                         ok, active            23:28:16
F0        ASR1001             ok, active            23:28:16
P0        Unknown             ps, fail              never
P1        ASR1001-PWR-AC      ok                    23:27:50
P2        ASR1001-FANTRAY     ok                    23:27:51

Slot      CPLD Version        Firmware Version
--------- ------------------- ------------------------------------
0         0902010A            12.2(20090526:143323) [gschnorr-mcp_...
R0        09020110            12.2(20090526:143323) [gschnorr-mcp_...
F0        0902010A            12.2(20090526:143323) [gschnorr-mcp_...

Router# show platform
Chassis type: ASR1013
Slot      Type                State                 Insert time (ago)
--------- ------------------- --------------------- -----------------
0         ASR1000-SIP10       ok                    1w0d
1         ASR1000-SIP40       ok                    1w0d
 1/1      SPA-5X1GE-V2        ok                    1w0d
2         ASR1000-SIP40       ok                    1w0d
 2/1      SPA-1X10GE-L-V2     ok                    1w0d
 2/3      SPA-1X10GE-L-V2     ok                    1w0d
3         ASR1000-SIP40       ok                    1w0d
 3/3      SPA-4XT3/E3         ok                    1w0d
4         ASR1000-SIP40       ok                    1w0d
 4/2      SPA-5X1GE-V2        ok                    1w0d
 4/3      SPA-4XCT3/DS0       ok                    1w0d
5         ASR1000-SIP40       ok                    1w0d
R0        ASR1000-RP2         ok, active            1w0d
R1        ASR1000-RP2         ok, standby           1w0d
F0        ASR1000-ESP40       ok, active            1w0d
F1        ASR1000-ESP40       ok, standby           1w0d
P0        ASR1013-PWR-AC      ok                    1w0d
P1        ASR1013-PWR-AC      ps, fail              1w0d
P2        ASR1013-PWR-AC      ok                    1w0d
P3        ASR1013-PWR-AC      ps, fail              1w0d
Slot      CPLD Version        Firmware Version
--------- ------------------- ------------------------------------
0         00200800            15.0(1r)S
1         00200800            15.0(1r)S
2         00200800            15.0(1r)S
3         00200800            15.0(1r)S
4         00200800            15.0(1r)S
5         00200800            15.0(1r)S
R0        10021901            15.0(1r)S
R1        10021901            15.0(1r)S
F0        1001270D            15.0(1r)S
F1        1001271D            15.0(1r)S

Router# show platform
Chassis type: ASR1006

Slot      Type                State                 Insert time (ago)
--------- ------------------- --------------------- -----------------
```

```
0          ASR1000-SIP10       ok                    18:23:58
 0/0       SPA-5X1GE-V2        ok                    18:22:38
 0/1       SPA-8X1FE-TX-V2     ok                    18:22:33
 0/2       SPA-2XCT3/DS0       ok                    18:22:38
1          ASR1000-SIP10       ok                    18:23:58
 1/0       SPA-2XOC3-POS       ok                    18:22:38
 1/1       SPA-8XCHT1/E1       ok                    18:22:38
 1/2       SPA-2XT3/E3         ok                    18:22:38
R0         ASR1000-RP1         ok, active            18:23:58
F0         ASR1000-ESP10       ok, active            18:23:58
P0         ASR1006-PWR-AC      ok                    18:23:09
P1         ASR1006-FAN         ok                    18:23:09

Slot       CPLD Version        Firmware Version
---------- ------------------- ----------------------------------------
0          06120701            12.2(33r)XN2
1          06120701            12.2(33r)XN2
R0         07082312            12.2(33r)XN2
F0         07051680            12.2(33r)XN2
```

The **show environment all** command displays system temperature, voltage, fan, and power supply conditions. (It does not display environmental information for SPAs.) The State column in **show environment all** output should show "Normal," except for fans where it indicates fan speed. A fan speed of 65% is normal.

```
Router# show environment all
Sensor List:  Environmental Monitoring
 Sensor            Location          State             Reading
 V1: VMA           F0                Normal            1801 mV
 V1: VMB           F0                Normal            1206 mV
 V1: VMC           F0                Normal            1206 mV
 V1: VMD           F0                Normal            1103 mV
 V1: VME           F0                Normal            1005 mV
 V1: 12v           F0                Normal            11967 mV
 V1: VDD           F0                Normal            3295 mV
 V1: GP1           F0                Normal            905 mV
 V2: VMA           F0                Normal            3295 mV
 V2: VMB           F0                Normal            2495 mV
 V2: VMC           F0                Normal            1499 mV
 V2: VMD           F0                Normal            1098 mV
 V2: VME           F0                Normal            1000 mV
 V2: VMF           F0                Normal            1000 mV
 V2: 12v           F0                Normal            11923 mV
 V2: VDD           F0                Normal            3295 mV
 V2: GP1           F0                Normal            751 mV
 Temp: Inlet       F0                Normal            27 Celsius
 Temp: Asic1       F0                Normal            44 Celsius
 Temp: Exhaust1    F0                Normal            36 Celsius
 Temp: Exhaust2    F0                Normal            34 Celsius
 Temp: Asic2       F0                Normal            40 Celsius
 V1: VMA           0                 Normal            1103 mV
 V1: VMB           0                 Normal            1201 mV
 V1: VMC           0                 Normal            1503 mV
 V1: VMD           0                 Normal            1801 mV
 V1: VME           0                 Normal            2495 mV
 V1: VMF           0                 Normal            3295 mV
 V1: 12v           0                 Normal            11967 mV
 V1: VDD           0                 Normal            3295 mV
 V1: GP1           0                 Normal            751 mV
 V1: GP2           0                 Normal            903 mV
 V2: VMB           0                 Normal            1201 mV
 V2: 12v           0                 Normal            11967 mV
```

```
 V2: VDD          0                Normal           3291 mV
 V2: GP2          0                Normal           903 mV
 Temp: Left       0                Normal           28 Celsius
 Temp: Center     0                Normal           29 Celsius
 Temp: Asic1      0                Normal           42 Celsius
 Temp: Right      0                Normal           27 Celsius
 V1: VMA          1                Normal           1103 mV
 V1: VMB          1                Normal           1201 mV
 V1: VMC          1                Normal           1503 mV
 V1: VMD          1                Normal           1801 mV
 V1: VME          1                Normal           2495 mV
 V1: VMF          1                Normal           3295 mV
 V1: 12v          1                Normal           11953 mV
 V1: VDD          1                Normal           3291 mV
 V1: GP1          1                Normal           754 mV
 V1: GP2          1                Normal           903 mV
 V2: VMB          1                Normal           1206 mV
 V2: 12v          1                Normal           11967 mV
 V2: VDD          1                Normal           3291 mV
 V2: GP2          1                Normal           905 mV
 Temp: Left       1                Normal           28 Celsius
 Temp: Center     1                Normal           30 Celsius
 Temp: Asic1      1                Normal           44 Celsius
 Temp: Right      1                Normal           28 Celsius
 PEM Iout         P0               Normal           37 A
 PEM Vout         P0               Normal           12 V AC
 PEM Vin          P0               Normal           116 V AC
 Temp: PEM        P0               Normal           28 Celsius
 Temp: FC         P0               Fan Speed 65%    25 Celsius
 Temp: FM         P1               Normal           1 Celsius
Temp: FC         P1               Fan Speed 65%    25 Celsius
 V1: VMA          R0               Normal           1118 mV
 V1: VMB          R0               Normal           3315 mV
 V1: VMC          R0               Normal           2519 mV
 V1: VMD          R0               Normal           1811 mV
 V1: VME          R0               Normal           1513 mV
 V1: VMF          R0               Normal           1220 mV
 V1: 12v          R0               Normal           12011 mV
 V1: VDD          R0               Normal           3300 mV
 V1: GP1          R0               Normal           913 mV
 V1: GP2          R0               Normal           1247 mV
 Temp: CPU        R0               Normal           29 Celsius
 Temp: Outlet     R0               Normal           30 Celsius
 Temp: Inlet      R0               Normal           25 Celsius
 Temp: Asic1      R0               Normal           30 Celsius
```

The **show environment all** command output shows an example of one power supply in the Cisco ASR 1001 Router:

```
Router# show environment all
Sensor List:  Environmental Monitoring
 Sensor           Location         State            Reading
 PEM Iout         P1               Normal           13 A
 PEM Vout         P1               Normal           12 V AC
 PEM Vin          P1               Normal           231 V AC
 Temp: Inlet      P1               Normal           27 Celsius
 Temp: Internal   P1               Normal           35 Celsius
 V1: VMA          R0               Normal           3295 mV
 V1: VMB          R0               Normal           1000 mV
 V1: VMC          R0               Normal           2495 mV
 V1: VMD          R0               Normal           2460 mV
 V1: VME          R0               Normal           1201 mV
 V1: VMF          R0               Normal           1796 mV
 V1: 12v          R0               Normal           11967 mV
```

```
 V1: VDD          R0                Normal            4970 mV
 V1: GP1          R0                Normal            1201 mV
 V1: GP2          R0                Normal            903 mV
 V2: VMA          R0                Normal            1098 mV
 V2: VMB          R0                Normal            1000 mV
 V2: VMC          R0                Normal            1499 mV
 V2: VMD          R0                5% high           1206 mV
 V2: VME          R0                Normal            1098 mV
 V2: VMF          R0                Normal            1054 mV
 V2: 12v          R0                Normal            11953 mV
 V2: VDD          R0                Normal            4985 mV
 V2: GP1          R0                5% high           812 mV
 V2: GP2          R0                20% low           2497 mV
 Temp: Middle     R0                Normal            54 Celsius
 Temp: CPU Die    R0                Normal            46 Celsius
 Temp: Top Left   R0                Normal            44 Celsius
 Temp: Asic1      R0                Normal            67 Celsius
 Temp: Inlet      R0                Normal            35 Celsius
 Temp: Asic3      R0                Normal            65 Celsius
 Temp: Rear       R0                Minor             60 Celsius
 Temp: Asic2      R0                Normal            60 Celsius
 Temp: Mid Frnt   R0                Normal            50 Celsius
 Temp: MCH Die    R0                Normal            70 Celsius
 Temp: FC         R0                Fan Speed 65%     35 Celsius
```

To display the Field Programmable Devices (FPD) on Cisco ASR 1001 Router, use the **show hw-module all fpd** command:

```
Router# show hw-module all fpd

==== ====================== ====== ============================================
                            H/W   Field Programmable   Current   Min. Required
Slot Card Type              Ver.  Device: "ID-Name"    Version      Version
==== ====================== ====== ================== =========== ==============
 0/0 4XGE-BUILT-IN          1.0   1-GE I/O FPGA          1.10         1.10
---- ---------------------- ------ ------------------ ----------- --------------
 0/1 SPA-2XOC12-POS         1.0   1-I/O FPGA             1.1          1.1
---- ---------------------- ------ ------------------ ----------- --------------
 0/2 ASR1001-IDC-4XGE       1.1   1-GE I/O FPGA          1.10         1.10
==== ====================== ====== ============================================
```

To display the Field Programmable Devices (FPD) on Cisco ASR 1013 Router, use the **show hw-module all fpd** command:

```
Router# show hw-module all fpd

==== ====================== ====== ============================================
                            H/W   Field Programmable   Current   Min. Required
Slot Card Type              Ver.  Device: "ID-Name"    Version      Version
==== ====================== ====== ================== =========== ==============
 4/2 SPA-2CHT3-CE-ATM       1.0   3-SPAMON               1.4          1.4
                                  6-IOFPGA               2.25         2.25
                                  9-UFE                  1.10         1.10
---- ---------------------- ------ ------------------ ----------- --------------
 5/0 SPA-5X1GE-V2           1.2   1-GE I/O FPGA          1.10         1.10
---- ---------------------- ------ ------------------ ----------- --------------
 5/1 SPA-8X1GE-V2           1.1   1-GE I/O FPGA          1.10         1.10
---- ---------------------- ------ ------------------ ----------- --------------
 5/2 SPA-4XT3/E3            1.1   1-ROMMON               2.12         2.12
                                  2-I/O FPGA             1.1          1.1
                                  3-E3 FPGA              1.4          1.4
                                  4-T3 FPGA              1.4          1.4
==== ====================== ====== ============================================
```

When Installation Is Not Successful

This section discusses the following items to check or troubleshoot when installation is not successful:

Physical Connections

Rule out an easily-fixed physical connection problem by verifying that:

- Power supplies are plugged in and switched on.
- Cables are connected.
- All FRUs are seated correctly.

Mechanical Damage

Examples of mechanical damage are a bent flange on a power supply or bent pins on a connector. If you detect mechanical damage:

- Do *not* attempt to straighten pins or repair mechanical damage.
- If you can see damaged pins, do *not* attempt to insert an assembly (SPA, SIP, ESP, or RP) into any slot. Doing so can damage the assembly or the chassis.
- Return the damaged equipment.

Alarm LED Is Illuminated

If the CRIT, MAJ, or MIN alarm LED is illuminated, determine the cause of the alarm by doing *one* of the following:

- Review the alarm message. The **logging alarm** command must be enabled for the system to send alarm messages to the console. The following is an example of an alarm message that was generated when a SPA was removed without a graceful deactivation of the SPA:

  *Aug 22 13:27:33.774: %ASR1000_OIR-6-REMSPA: SPA removed from subslot 1/1, interfaces disabled

  *Aug 22 13:27:33.775: %SPA_OIR-6-OFFLINECARD: SPA (SPA-4XT-SERIAL) offline in subslot 1/1

- Enter the **show facility-alarm status** command. The following example shows a critical alarm that is generated when a SPA is removed fr om the system:

```
Router# show facility-alarm status
System Totals  Critical: 1  Major: 0  Minor: 0

Source              Severity      Description [Index]
------              --------      -------------------
subslot 1/1         CRITICAL      Active Card Removed OIR Alarm [0]
```

Note A critical alarm "Active Card Removed OIR Alarm" is generated even if a SPA is removed after performing graceful deactivation.

Status LED Remains Amber

As Cisco IOS boots on a FRU, the status LED is amber or yellow. When Cisco IOS has successfully booted, the status LED becomes solid green.

If the status LED remains amber or yellow, check the console for alarm messages. The **logging alarm** command must be enabled for the system to send alarm messages to the console.

If there is no information on the console, some setting or error is not allowing Cisco IOS to boot. Contact Cisco Support; it is possible you might need to replace the FRU.

LEDS Are Not Illuminated on a Power Supply

DC Power Supply

If LEDs are not illuminated on the DC power supply, many times the problem is reversed polarity. Check the DC input power supply to see if the positive and negative lead wires are swapped.

AC Power Supply

If LEDs are not illuminated on the AC power supply, there is no input power or the power cord is not fully seated. If the power cord is fully seated, check the input power.

For More Information

For more information about the topics discussed in this chapter, see the following documents:

Topic	Document
Command descriptions	Cisco IOS Master Command List, All Releases Command Lookup Tool (Requires Cisco.com user ID and password)*OL-17665-04*
Graceful Deactivation of a SIP or SPA: Online insertion and removal (OIR)	“Installing and Removing a SIP” chapter in the *Cisco ASR 1000 Series Aggregation Services Routers SIP and SPA Hardware Installation Guide*

Topic	Document
LEDs for the RP, ESP, SIP, and AC and DC power supplies	"Cisco ASR 1000 Series Routers Components Overview" chapter in the *Cisco ASR 1000 Series Router Hardware Installation Guide*
LEDs for the SIP and SPA	*Cisco ASR 1000 Series Aggregation Services Routers SIP and SPA Hardware Installation Guide*
Cisco ASR 1001 Router Quick-Start	*Cisco ASR 1001 Router Quick Start Guide*
Overview, Installation, and Detailed information of Cisco ASR 1001 Router	*Cisco ASR 1000 Series Router Hardware Installation Guide*
Cisco ASR 1013 Router Quick-Start	*Cisco ASR 1013 Router Quick Start Guide*