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.

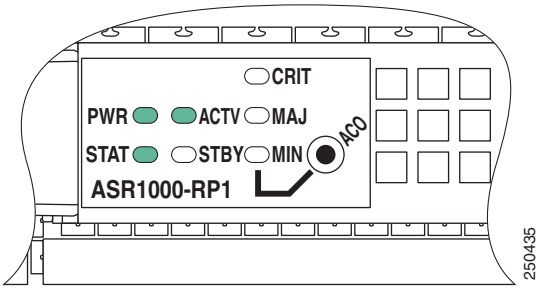
Cisco ASR 1004 Router, Cisco ASR 1006 Router

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

Table 1-1 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.
MAJ	Off	No major alarms.
MIN	Off	No minor alarms.

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



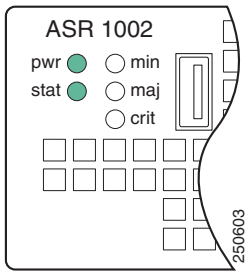
Cisco ASR 1002 Router

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

Table 1-2 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 1-2 RP Faceplate LEDs for an Active RP (Cisco ASR 1002 Router)



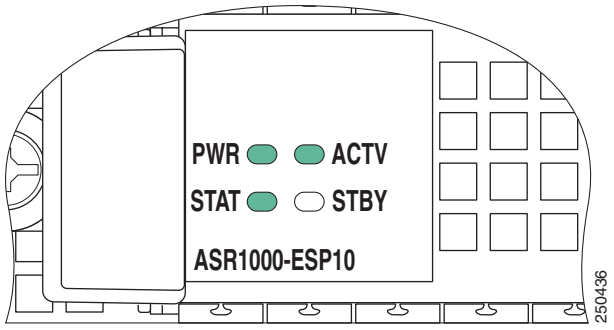
Cisco ASR 1000 Series Embedded Services Processors

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

Table 1-3 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 1-3 ESP Faceplate LEDs for an Active ESP



Cisco ASR 1000 Series SPA Interface Processors

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

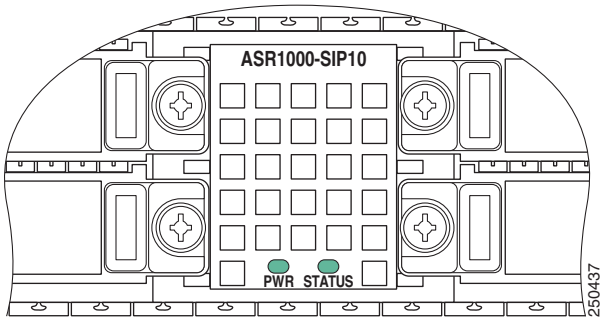
Cisco ASR 1004 Router, Cisco ASR 1006 Router

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

Table 1-4 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 1-4 SIP Faceplate LEDs (Cisco ASR 1004 Router, Cisco ASR 1006 Router)



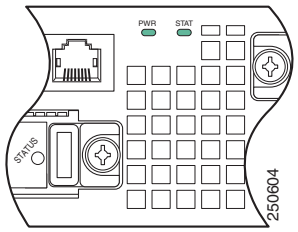
Cisco ASR 1002 Router

Table 1-5 shows the color or state of the LEDs in the Cisco ASR 1000 Series SPA Interface Processors (SIP) that indicate a successful installation. Figure 1-5 shows a view of the LEDs on the faceplate.

Table 1-5 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 1-5 SIP Faceplate LEDs (Cisco ASR 1002 Router)



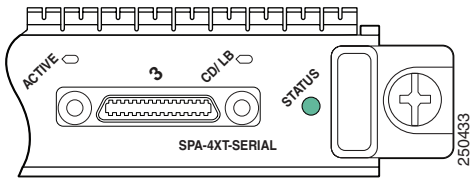
Shared Port Adapters

Table 1-6 shows the color or state of the LED the shared port adapter (SPA) that indicates a successful installation. Figure 1-6 shows a view of the LED on the faceplate.

Table 1-6 SPA LED Indicating a Successful Installation

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

Figure 1-6 SPA Faceplate LED



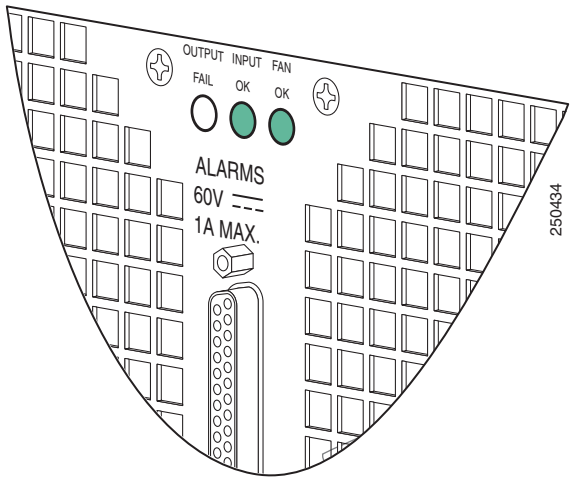
AC and DC Power Supplies

Table 1-7 shows the color or state of the LEDs that indicate a successful installation. Figure 1-7 shows a view of the LEDs on the faceplate.

Table 1-7 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 1-7 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** 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."

```
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
```

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 was generated because an active SPA was removed without a graceful deactivation of the SPA:

```
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]
```

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-17665-03*
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*
LEDs for the RP, ESP, SIP, and AC and DC power supplies	"Cisco ASR 1000 Series Routers Components" chapter in the *Cisco ASR 1000 Series Aggregation Services Routers Hardware Installation and Initial Configuration Guide*
LEDs for the SIP and SPA	*Cisco ASR 1000 Series Aggregation Services Routers SIP and SPA Hardware Installation Guide*