



Troubleshooting the Installation

This chapter describes how to troubleshoot the installation of SIPs and SPAs on the Cisco ASR 9000 Series Aggregation Services Router. This chapter contains the following sections:

- [Troubleshooting the SIP, on page 1](#)
- [Using **debug** Commands, on page 1](#)
- [Packing a SIP for Shipment, on page 2](#)
- [Packing a SPA for Shipment, on page 3](#)

Troubleshooting the SIP

If a SIP fails to operate or to power up upon installation:

- Make sure that the SIP is seated firmly in the line card chassis slot. One easy way to verify physical installation is to see whether the front faceplate of the SIP is even with the fronts of the other line cards installed in the card cage.
- Check whether the ejector levers are latched and that the captive screws are fastened properly. If you are uncertain, unlatch the levers, loosen the screws, and attempt to reseat the SIP.
- Determine whether there are any active alarms by looking at the alarm LEDs on the route processor.
- Examine the power distribution units (PDUs) to see whether the chassis, as a whole, is receiving power.
- Use the LED on the SIP to verify the correct installation and operation of the card. The STATUS LED indicates whether the card is properly seated and operating correctly:
 - Green—The card is properly installed and operating correctly.
 - Amber—The card is properly installed, is powered, and IOS XR is loading.
 - Off (dark)—Verify that the card is installed correctly. Also verify that there is power to the card by looking at the indicators on the power shelf (10-slot) or PDU (6-slot).

Using **debug** Commands

Along with the other **debug** commands supported on the Cisco ASR 9000 Series Router, you can obtain specific debug information for SPAs on the Cisco ASR 9000 Series Router using the **debug spa** privileged EXEC command.

The **debug spa** command is intended for use by Cisco Systems technical support personnel.



Caution Because debugging output is assigned high priority in the CPU process, it can render the system unusable. For this reason, use **debug** commands only to troubleshoot specific problems or during troubleshooting sessions with Cisco technical support personnel. Moreover, it is best to use **debug** commands during periods of lower network traffic and fewer users. Debugging during these periods decreases the likelihood that increased **debug** command processing overhead will affect system use.

Alternatively, you could use the **show hw-module trace** command to debug your SPA. The syntax is:

```
show hw-module trace pltfm driver level [detailed | error | summary] location <location>
```

where <location > is your SPA location in the rack/slot/subslot notation, like 0/4/cpu0

Refer to the Hardware Redundancy and Node Administration Commands on Cisco ASR 9000 Series Router chapter of the *Cisco ASR 9000 Series Aggregation Services Router System Management Command Reference, Release 4.0* for the **show hw-module trace** command syntax:

http://www.cisco.com/en/US/docs/routers/asr9000/software/asr9k_r4.0/system_management/command/reference/yr40asr9k_chapter7.html

Packing a SIP for Shipment

This section provides step-by-step instructions for packing a SIP for shipment. Before beginning this procedure, you should have the following original Cisco Systems packaging materials:

- Clipboard insert
- Smaller inner carton
- Larger exterior carton
- Two packing cushions



Caution The Cisco Systems original packaging is to be used for the shipment of all SIPs. Failure to properly use Cisco Systems packaging can result in damage or loss of product.



Warning During this procedure, wear grounding wrist straps to avoid ESD damage to the card. Do not directly touch the backplane with your hand or any metal tool, or you could shock yourself. Statement 94



Note These instructions assume that the SIP has been removed from the router according to the recommended procedures specified in this guide.

To pack a SIP for shipment, perform the following steps:

Step 1 Insert the SIP into the clipboard insert by carefully aligning the edges of the SIP between the upper and lower edges of the clipboard insert.

- Step 2** Slide the SIP all the way into the clipboard insert until it clicks into place. You might have to lift the clip assembly to ensure that it securely engages with the sheet-metal carrier.
- Step 3** Place the clipboard insert containing the SIP into the smaller inner carton.
- Step 4** Close the carton top, and tape the sides closed.
- Step 5** Apply the packing cushions to the sealed smaller inner carton.
- Step 6** Place the sealed smaller inner carton and packing cushions into the larger exterior carton, and seal the exterior carton with tape for shipment.
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Packing a SPA for Shipment

This section provides step-by-step instructions for packing a SPA and the cable-management brackets for shipment. Before beginning this procedure, you should have the following original Cisco Systems packaging materials:

- Thermoform container (transparent plastic-molded clamshell)
- Carton

**Caution**

The Cisco Systems original packaging is to be used for the shipment of all SPAs and cable-management brackets. Failure to properly use Cisco Systems packaging can result in damage or loss of product.

**Warning**

During this procedure, wear grounding wrist straps to avoid ESD damage to the card. Do not directly touch the backplane with your hand or any metal tool, or you could shock yourself.

**Note**

These instructions assume that the SPA and cable-management brackets have been removed from the router according to the recommended procedures specified in this guide.

To pack a SPA and the cable-management brackets for shipment, perform the following steps:

- Step 1** Open the Thermoform container and place the SPA and each of the cable-management brackets into the appropriate cavities.
- Caution** Always handle the SPA by the carrier edges and handle; never touch the SPA components or connector pins.
- Step 2** Close the Thermoform container. Be sure to lock the snaps securely.
- Step 3** Check that the Thermoform container is fully closed. Apply tape or a label closure over the opening to ensure the container stays closed during shipping.
- Step 4** Place the Thermoform container into the carton.
- Step 5** Close the carton.

Step 6 Apply tape over the carton flap to ensure the carton stays closed during shipping.
