Removing and Installing the SA-VAM2+

This chapter describes how to remove the Service Adapter VPN Acceleration Module 2+ (SA-VAM2+) from the supported platforms and how to install a new or replacement SA-VAM2+.

Before you begin installation, read Chapter 2, "Preparing for Installation" for a list of parts and tools required for installation.

This chapter contains the following sections:

- Handling the SA-VAM2+, page 3-1
- Online Insertion and Removal (OIR), page 3-2
- Warnings and Cautions, page 3-2
- SA-VAM2+ Removal and Installation, page 3-2

Note To ensure proper airflow in the router and compliance with EMI prevention standards, an empty port adapter slot must have a blank port adapter (part number 800-00455-01) installed in it.
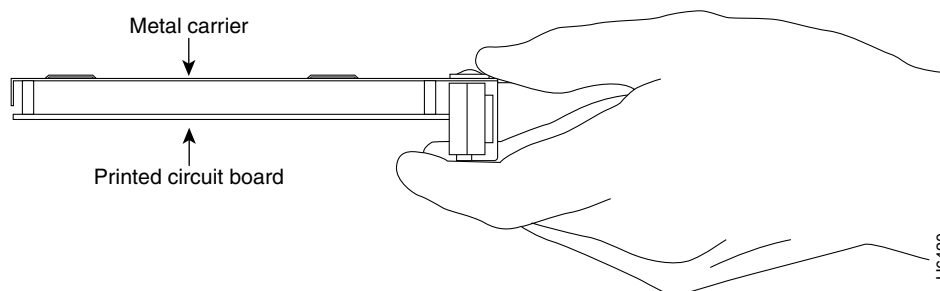
The SA-VAM2+ circuit board is sensitive to ESD damage.

Handling the SA-VAM2+

Caution Always handle the SA-VAM2+ by the carrier edges and handle; never touch the SA-VAM2+ components. (See Figure 3-1.)

Figure 3-1 *Handling the SA-VAM2+*

Online Insertion and Removal (OIR)

The Online Insertion and Removal (OIR) feature is described in this section.

SA-VAM2+

Online insertion and removal (OIR) is supported on the SA-VAM2+. Before removing the SA-VAM2+, we recommend that you shut down the interface so that there is no traffic running through the SA-VAM2+ when it is removed. Removing a SA-VAM2+ while traffic is flowing through the ports can cause system disruption.

Port Adapter Jacket Card

OIR on the Port Adapter Jacket Card is not supported; however, the SA-VAM2+ within the Port Adapter Jacket Card does support OIR. You must have the chassis powered off to install or remove the Port Adapter Jacket Card. See the Port Adapter Jacket Card Installation Guide for more information about the Port Adapter Jacket Card.

Warnings and Cautions

Observe the following warnings and cautions when installing or removing VPN acceleration modules.

⚠️ **Warning**   **Blank faceplates and cover panels serve three important functions: they prevent exposure to hazardous voltages and currents inside the chassis; they contain electromagnetic interference (EMI) that might disrupt other equipment; and they direct the flow of cooling air through the chassis. Do not operate the system unless all cards, faceplates, front covers, and rear covers are in place.**

The safety cover is an integral part of the product. Do not operate the unit without the safety cover installed. Operating the unit without the cover in place will invalidate the safety approvals and pose a risk of fire and electrical hazards.

⚠️ **Warning**   **Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals.**

Keep hands and fingers out of the power supply bays. High voltage is present on the power backplane when the system is running.

SA-VAM2+ Removal and Installation

This section describes how to remove and install the SA-VAM2+, and covers the following topics:

- Cisco 7200VXR Router Port Adapter Jacket Card, page 3-3
- Cisco 7200VXR Series Routers, page 3-4

Note   Online insertion and removal (OIR) is not supported on the Port Adapter Jacket Card; however, OIR is supported on the SA-VAM2+. You must have the chassis powered off for the installation or removal process for the Port Adapter Jacket Card.

After powering off the router, wait at least 30 seconds before powering it on again.

Warning   **When performing the following procedures, wear a grounding wrist strap to avoid ESD damage to the card. Some platforms have an ESD connector for attaching the wrist strap. Do not directly touch the midplane or backplane with your hand or any metal tool, or you could shock yourself.**
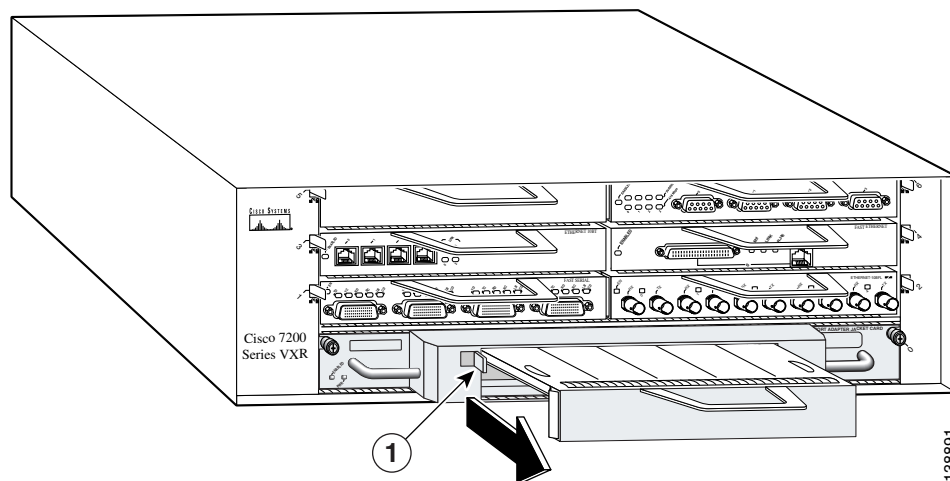
Cisco 7200VXR Router Port Adapter Jacket Card

The I/O controller slot of the Cisco 7200VXR router with an NPE-G1 or NPE-G2 processor supports the Port Adapter Jacket Card with a SA-VAM2+ installed in it. The NPE-G1 or NPE-G2, with a third dedicated peripheral component interconnect (PCI) bus, provides additional bandwidth to the chassis.

Use the following information to install a SA-VAM2+ into an installed Port Adapter Jacket Card. For information on installing the Port Adapter Jacket Card into a Cisco 7200VXR router, see the *Port Adapter Jacket Card Installation Guide*.

Step 1   Remove any port adapter blank panel that may be in place (see Figure 3-2).

   a. Move the lock lever on the top left corner of the Port Adapter Jacket Card until the port adapter blank panel releases.

   b. Pull the port adapter blank panel from the Port Adapter Jacket Card.
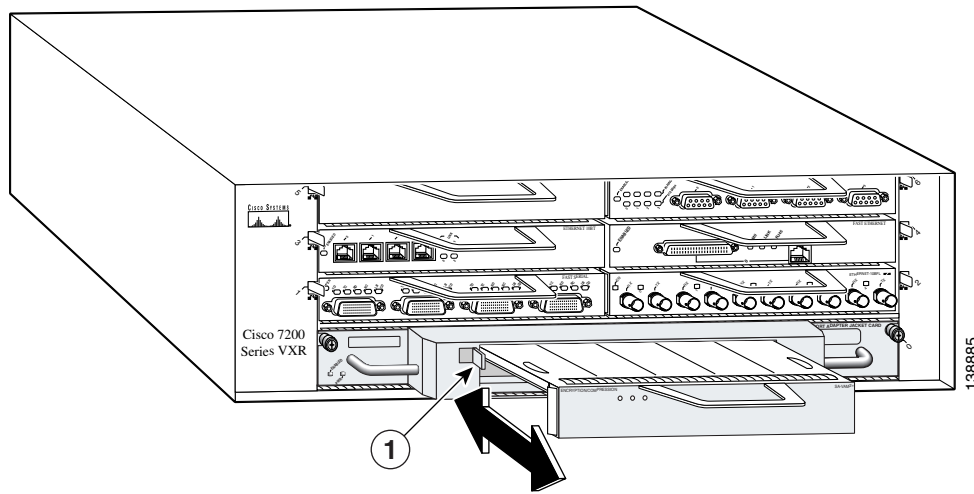
Figure 3-2   Removing the Port Adapter Blank Panel

1	Port adapter lock lever		

Step 2   Insert the SA-VAM2+ into the Port Adapter Jacket Card until it is fully seated (see Figure 3-3).

Figure 3-3   Installing a Port Adapter in the Port Adapter Jacket Card

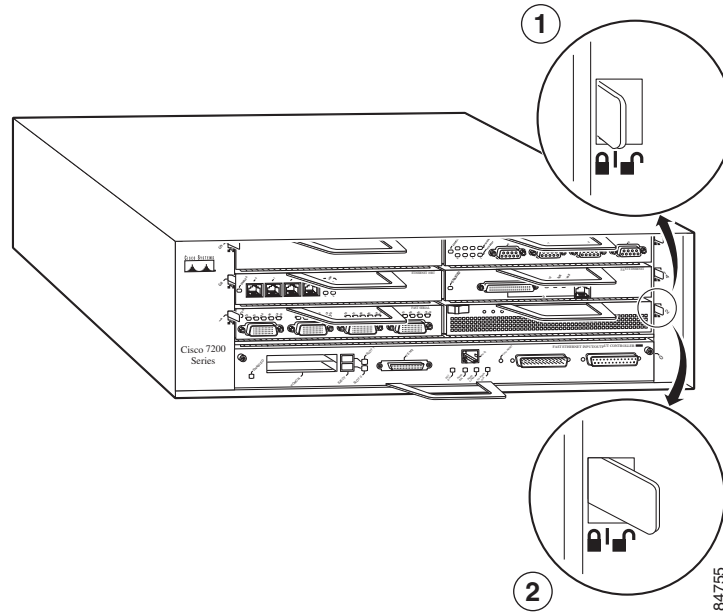| **1**	Port adapter lock lever		

Step 3   Move the port adapter lock lever to the locked position.

Step 4   If your removed the processing engine and port adapters, replace them in a bottom-to-top order.

Cisco 7200VXR Series Routers

Follow these steps to remove and insert the SA-VAM2+ in the Cisco 7200VXR series routers:

Step 1   Turn the power switch to the off position and then remove the power cable. (Optional on Cisco 7200VXR series routers; see Caution, above)

Step 2   Attach an ESD wrist strap between you and an unpainted chassis surface.

Step 3   Place the SA-VAM2+ retaining lever in the unlocked position. (See Figure 3-4.)

Figure 3-4   *Placing the Port Adapter Lever in the Unlocked/Locked Position - Cisco 7206VXR Shown*

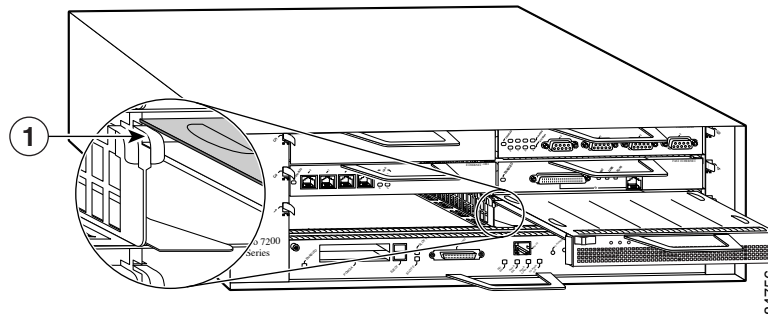| 1	Unlocked position	2	Locked position

Step 4   Grasp the handle of the SA-VAM2+ and pull the SA-VAM2+ from the router. If you are removing a blank port adapter, pull it completely out of the chassis slot.

Step 5   Carefully align the new SA-VAM2+ carrier between the upper and the lower edges of the port adapter slot. (See Figure 3-5.)

⚠

Caution   To prevent jamming the carrier between the upper and the lower edges of the port adapter slot, and to ensure that the edge connector at the rear of the SA-VAM2+ mates with the connection at the rear of the port adapter slot, make certain that the carrier is positioned correctly, as shown in the cutaway in Figure 3-5.

Figure 3-5   *Sliding the SA-VAM2+ into the Port Adapter Slot - Cisco 7206VXR Shown*

1	Upper edge of the port adapter slot		

Step 6   Slide the new SA-VAM2+ into the port adapter slot until it is seated in the router midplane.

⚠

Caution   Do not allow the SA-VAM2+ components to come in contact with the system board or the SA-VAM2+ could be damaged.

Step 7   After the SA-VAM2+ is properly seated, lock the SA-VAM2+ in place, as shown in Figure 3-4.

✎

Note   If a retaining lever does not move to the locked position, the SA-VAM2+ is not completely seated in the midplane. Carefully pull the SA-VAM2+ out of the slot, reinsert it, and move the retaining lever or other mechanism to the locked position. See Figure 3-4.

⚠

Caution   To ensure the proper flow of cooling air across the internal components, make sure a blank service adapter filler is installed in any unoccupied port adapter slots (part number 800-20675-01).

Step 8   If you powered off the router:

a.   Reattach the power cable, and place the cable through any cable support brackets.

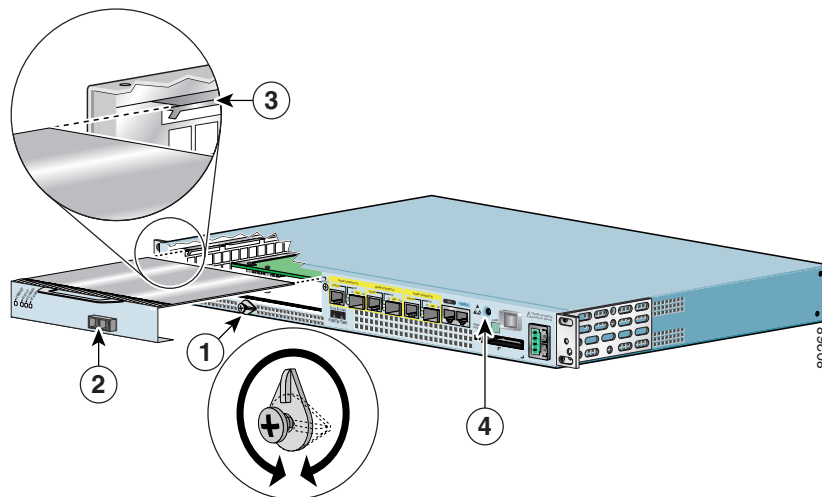**b.**   Power on the router by turning the power switch to the on position.

Cisco 7301 Router

Use Figure 3-6 and follow the steps below to remove and insert an SA-VAM2+ in the Cisco 7301 router:

✎

Note   The Cisco 7301 supports a single SA-VAM2+ or port adapter.

Figure 3-6   *Cisco 7301 Port Adapter/SA-VAM2+ Slot*

1	Latch	**3**	Slot guides
2	SA-VAM2+ partially removed	**4**	Ground for ESD wrist strap banana jack

Step 1   Use an ESD wrist strap to ground yourself to the router. A banana jack ground is to the left of the power switch.

Step 2   To remove a SA-VAM2+, use a Phillips screwdriver to turn the screw holding the latch. The screw should be loose enough to allow the latch to rotate to an unlocked position (1). The latch can rotate 360º.

Step 3   Grasp the handle and pull the SA-VAM2+ (2) from the router, about halfway out of its slot. If you are removing a blank port adapter, pull the blank port adapter completely out of the chassis slot.

⚠️

Caution   The SA-VAM2+ must slide into the slot guides (3) close to the chassis lid. Do not allow the SA-VAM2+ components to come in contact with the system board or the SA-VAM2+ could be damaged.

Step 4   To insert the SA-VAM2+, carefully align the SA-VAM2+ carrier in the slot guides (3), then carefully slide the SA-VAM2+ all the way into the slot until the SA-VAM2+ is seated.

Step 5   After the SA-VAM2+ is properly seated, turn and secure the latch in the upright, locked position (1). Tighten the screw to ensure the SA-VAM2+ remains firmly in place.

Step 6   Reconnect the power cables.

Step 7   Press the power switch to the ON position to power on the router.