



Connecting the Cisco Network Interface Module Adapter for SM-X Slot on the Cisco 4000 Series Integrated Services Routers

July 27, 2016

This document provides information that you should know before and during the installation of the Cisco Network Interface Module Adapter for SM-X Slot (SM-X-NIM-ADPTR) on the Cisco 4000 Series Integrated Services Routers (ISRs). This document contains the following sections:

- [Overview of the SM-X-NIM-ADPTR, page 1](#)
- [LED, page 2](#)
- [Recommended Practices for the SM-X-NIM-ADPTR, page 3](#)
- [Software Requirements for the SM-X-NIM-ADPTR, page 6](#)
- [Installing the SM-X-NIM-ADPTR, page 6](#)
- [Removing the SM-X-NIM-ADPTR from a Cisco 4000 Series ISR, page 8](#)
- [Related Documents, page 9](#)

Overview of the SM-X-NIM-ADPTR

The SM-X-NIM-ADPTR acts as a carrier card for the Cisco 4000 Series ISRs to carry one single-wide or double-wide network interface module (NIM) to be used in the ISRs SM slot.

The SM-X-NIM-ADPTR converts the SM slot on the ISR to a NIM slot and facilitates the use of NIMs such as the T1/E1 (Voice/Data), FXO/FXS, Switching, Serial, Storage Drives, Mobility (3G/4G), or G.HDSL.



Figure 1 shows the front panel of the SM-X-NIM-ADPTR.

Figure 1 Front Panel of the SM-X-NIM-ADPTR

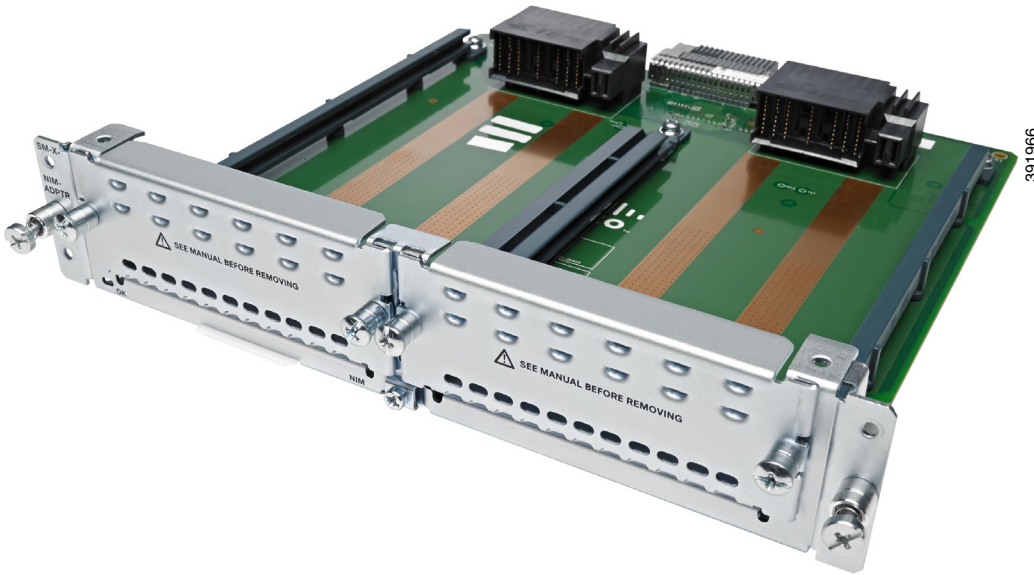


Table 1 lists the SM-X-NIM-ADPTR SKU.

Table 1 SM-X-NIM-ADPTR SKU

SKU	Description
SM-X-NIM-ADPTR	Adapter for the NIM in a SM-X slot on the Cisco 4400 or 4300 series ISR

LED

Table 2 shows the designed LED behavior.

Table 2 LED

State	System Status
Off	The SM-X-NIM-ADPTR is powered off.
Solid Green	The SM-X-NIM-ADPTR is powered on and is functioning correctly. Note The LED turns green when the NIM is inserted into the SM-X-NIM-ADPTR. If the SM-X-NIM-ADPTR is empty, the LED does not display the green light.

Recommended Practices for the SM-X-NIM-ADPTR

This section describes recommended practices for safe and effective installation of the hardware described in this document.

- [Safety Recommendations, page 3](#)
- [Preventing Electrostatic Discharge Damage, page 4](#)
- [General Maintenance Guidelines, page 4](#)
- [Safety Warnings, page 4](#)

Safety warnings included in this section apply to the SM-X-NIM-ADPTRs that are used on the Cisco 4000 Series ISRs.

Safety Recommendations

To prevent hazardous conditions, follow these safety recommendations while working with this equipment:

- Keep tools away from walk areas where you or others could fall over them.
- Do not wear loose clothing around the router. Fasten your tie or scarf and roll up your sleeves to prevent clothing from being caught in the chassis.
- Wear safety glasses when working under any conditions that might be hazardous to your eyes.
- Locate the emergency power-off switch in the room before you start working. If an electrical accident occurs, shut the power off.
- Before working on the router, turn off the power and unplug the power cord.
- Disconnect all power sources before doing the following:
 - Installing or removing a router chassis
 - Working near power supplies
- Do not work alone if potentially hazardous conditions exist.
- Always check that power is disconnected from a circuit.
- Remove possible hazards from your work area, such as damp floors, ungrounded power extension cables, or missing safety grounds.
- If an electrical accident occurs, proceed as follows:
 - Use caution; do not become a victim yourself.
 - Turn off power to the room using the emergency power-off switch.
 - Determine the condition of the victim and send another person to get medical aid or call for help.
 - Determine if the person needs rescue breathing or external cardiac compressions; then take appropriate action.

Preventing Electrostatic Discharge Damage

Electrostatic discharge can damage equipment and electrical circuitry. Electrostatic discharge occurs when electronic printed circuit cards, such as those used in [Installing the SM-X-NIM-ADPTR](#), are improperly handled and can result in complete or intermittent equipment failure. Always observe the following electrostatic discharge damage (ESD) prevention procedures when installing, removing, or replacing any electronic printed circuit cards:

- Make sure that the router chassis is electrically connected to earth ground.
- Wear an ESD-preventive wrist strap, and make sure that it makes good contact with your skin.
- Connect the wrist strap clip to an unpainted portion of the chassis frame to channel unwanted ESD voltages to ground.



Caution The wrist strap and clip must be used correctly to ensure proper ESD protection. Periodically confirm that the resistance value of the ESD-preventive wrist strap is between 1 and 10 megohms (Mohm).

- If no wrist strap is available, ground yourself by touching the metal part of the router chassis.

General Maintenance Guidelines

The following maintenance guidelines apply to the Cisco Network Interface Module Adapter for SM-X Slot:

- Keep the router chassis area clear and dust-free during and after installation.
- If you remove the chassis cover for any reason, store it in a safe place.
- Do not perform any action that creates a hazard to people or makes equipment unsafe.
- Keep walk areas clear to prevent falls or damage to equipment.
- Follow installation and maintenance procedures as documented by Cisco Systems, Inc.

Safety Warnings

The following safety warning statements apply to all hardware procedures involving the SM-X-NIM-ADPTR for Cisco 4300 and 4400 series ISRs. Translations of these warnings are available in the *Cisco Network Modules and Interface Cards Regulatory Compliance and Safety Information* document, which ships with all individual NIM orders, and is also available on Cisco.com.



Warning

IMPORTANT SAFETY INSTRUCTIONS

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device.
Statement 1071

SAVE THESE INSTRUCTIONS


Warning

Read the installation instructions before connecting the system to the power source. Statement 1004


Warning

This unit might have more than one power supply connection. All connections must be removed to de-energize the unit. Statement 1028


Warning

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


Warning

Do not use this product near water; for example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool. Statement 1035


Warning

Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations. Statement 1036


Warning

Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface. Statement 1037


Warning

Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning. Statement 1038


Warning

To report a gas leak, do not use a telephone in the vicinity of the leak. Statement 1039


Warning

Ultimate disposal of this product should be handled according to all national laws and regulations. Statement 1040


Warning

When installing or replacing the unit, the ground connection must always be made first and disconnected last. Statement 1046

The following warnings apply in Australia:


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. Statement 43

**Warning**

Because invisible laser radiation may be emitted from the aperture of the port when no fiber cable is connected, avoid exposure to laser radiation and do not stare into open apertures. Statement 125

**Warning**

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

**Warning**

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. Both LAN and WAN ports may use RJ-45 connectors. Use caution when connecting cables. Statement 1021

**Warning**

Hazardous network voltages are present in WAN ports regardless of whether power to the router is OFF or ON. To avoid electric shock, use caution when working near WAN ports. When detaching cables, detach the end away from the router first. Statement 1026

**Warning**

Before opening the chassis, disconnect the telephone-network cables to avoid contact with telephone-network voltages. Statement 1041

**Warning**

The telecommunications lines must be disconnected 1) before unplugging the main power connector and/or 2) while the housing is open. Statement 1043

Software Requirements for the SM-X-NIM-ADPTR

Cisco IOS XE Release 3.14 or later release is required to operate the SM-X-NIM-ADPTR on a Cisco ISR. To determine the version of Cisco IOS software that is running on your ISR, log in to the ISR, and enter the **show version** command:

```
Router> show version
```

```
Cisco IOS XE Software, Version 2014-07-08_20.33_ciscouser
Cisco IOS Software, ISR Software (X86_64_LINUX_IOSD-UNIVERSALK9-M),
Version 15.4(20140709:015327) [v154_3_s_xe313_throttle-ciscouser-xe313_0708 101]
Copyright (c) 1986-2014 by Cisco Systems, Inc.
Compiled Tue 08-Jul-14 18:54 by ciscouser
```

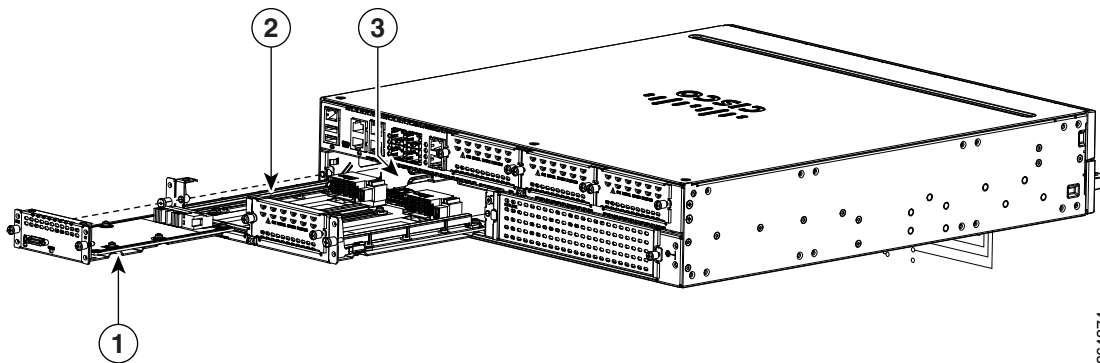
Installing the SM-X-NIM-ADPTR

- [Installing the SM-X-NIM-ADPTR into a Cisco 4000 Series ISR, page 7](#)
- [Verifying the SM-X-NIM-ADPTR Installation in a Cisco 4000 Series ISR, page 8](#)

Installing the SM-X-NIM-ADPTR into a Cisco 4000 Series ISR

To install the SM-X-NIM-ADPTR into a Cisco 4000 Series ISR, see the following figure and the procedure that follows:

Figure 2 Installing the SM-X-NIM-ADPTR into an ISR



1	NIM
2	SM-X-NIM-ADPTR
3	SM slot

Procedure

- Step 1** Read the “[Safety Warnings](#)” section on [page 4](#) before you perform any module replacement.
- Step 2** Remove the blank faceplate installed over the SM slot of the ISR.
- Step 3** Remove the blank faceplate installed over the left slot of the SM-X-NIM-ADPTR.
- Step 4** Insert a single-wide NIM into the left slot of the SM-X-NIM-ADPTR. (See [Figure 2](#).)
- Step 5** Push the SM-X-NIM-ADPTR into place until you feel the edge connector seat securely into the connector on the router backplane. The module faceplate should contact the chassis rear panel.
- Step 6** Using a number 1 Phillips or flat-blade screwdriver, tighten the captive mounting screws on the module faceplate.
- Step 7** Check LEDs and confirm proper operation.



Note A solid green LED indicates that the SM-X-NIM-ADPTR is correctly inserted. See [LED](#), [page 2](#).



Note With the FXS NIM, Service-Engine (x/x/x) interface is created. Do not use the crypto map (name) CLI on the Service-Engine (x/x/x) interface module.

Verifying the SM-X-NIM-ADPTR Installation in a Cisco 4000 Series ISR

Use the **show diag** command to verify that the SM-X-NIM-ADPTR is correctly installed into the ISR as shown in the following example:

```
Router# show diag slot 2 eeprom
Slot 2 EEPROM data:

    Product Identifier (PID) : SM-X-NIM-ADPTR
    Version Identifier (VID) : V01
    PCB Serial Number       : FOC18372FP5
    Hardware Revision       : 1.0
    CLEI Code               : IPU3BA6CAA

Router# show diag slot 2 eeprom detail
Slot 2 EEPROM data:

    EEPROM version          : 4
    Compatible Type         : 0xFF
    Controller Type         : 3205
    Hardware Revision       : 1.0
    PCB Part Number         : 73-16509-01
    Top Assy. Part Number   : 800-42856-01
    Board Revision          : 11
    Deviation Number        : 0
    Fab Version             : 01
    PCB Serial Number       : FOC18372FP5
    RMA Test History        : 00
    RMA Number              : 0-0-0-0
    RMA History             : 00
    Product Identifier (PID) : SM-X-NIM-ADPTR
    Version Identifier (VID) : V01
    CLEI Code               : IPU3BA6CAA
    Base MAC Address        : 50 87 89 C3 CF 15
    MAC Address block size  : 2
    Environment Monitor Data : 40 01 6D 43 00 01
    Platform features       : 02 06 01 00 00 00 00 00
                           : 00 05 00
    Fab Part Number         : 28-11899-01
    Manufacturing Test Data : 00 00 00 00 00 00 00 00
    Asset ID                :
```

Removing the SM-X-NIM-ADPTR from a Cisco 4000 Series ISR

Procedure

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- Step 1** Read the [“Safety Warnings” section on page 4](#) before you perform any module replacement.
 - Step 2** Locate the SM-X-NIM-ADPTR to be removed.
 - Step 3** Using a number 1 Phillips or flat-blade screwdriver, unscrew the captive mounting screws on the module faceplate.

- Step 4** Pull the SM-X-NIM-ADPTR out of the chassis.
 - Step 5** Place the NIM and the SM-X-NIM-ADPTR in an antistatic bag to protect it from electrostatic discharge (ESD) damage.
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Modules Supported

For information about the interfaces and modules supported on the Cisco 4000 Series Integrated Services Routers (ISRs), see

<http://www.cisco.com/c/en/us/products/routers/4000-series-integrated-services-routers-isr/relevant-interfaces-and-modules.html>.

Related Documents

For information about the Cisco ISR 4000 Series ISRs, see the *Documentation Roadmap for the Cisco 4000 Series Integrated Services Routers* at:

<http://www.cisco.com/en/US/docs/routers/access/4400/roadmap/isr4400roadmap.html>.

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