Preface

This preface describes the objectives and organization of this document and explains how to find additional information on related products and services. This preface contains the following sections:

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Audience

The audience for this publication should be familiar with Cisco router hardware and cabling along with electronic circuitry and wiring practices. Experience as an electronic or electromechanical technician is recommended.

Warnings

⚠

Warning   **To prevent the system from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of: 24°C (75°F).**

⚠

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

⚠

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. To see translations of the warnings that appear in this publication, refer to the translated safety warnings that accompanied this device.

Note: SAVE THESE INSTRUCTIONS

Note: This documentation is to be used in conjunction with the specific product installation guide that shipped with the product. Please refer to the Installation Guide, Configuration Guide, or other enclosed additional documentation for further details.

Objectives

This document contains instructions and procedures for installing and configuring the Service Adapter VPN Acceleration Module 2 (SA-VAM2), a single-width acceleration module supported on the Cisco 7301 and the Cisco 7200 series routers with the network processing engine 225 (NPE-225), 400 (NPE-400), G1 (NPE-G1), and the Network Services Engine (NSE-1) services accelerator.

The part number for the SA-VAM2 is SA-VAM2(=).

✎

Note To ensure compliance with U.S. export laws and regulations, and to prevent future problems, see the "Compliance with U.S. Export Laws and Regulations Regarding Encryption" section on page 2-30 for specific, important information.

Organization

This document contains the following chapters:

Chapter	Title	Description
1	Overview	Describes the SA-VAM2 and SA-VAM2 LED displays.
2	Preparing for Installation	Describes safety considerations, tools required, and procedures you should perform before the actual installation.
3	Removing and Installing the SA-VAM2	Describes the procedures for installing and removing the SA-VAM2 from the supported platform.
4	Configuring the SA-VAM2	Describes procedures needed to configure the SA-VAM2 in the Cisco 7301 and Cisco 7200 series routers.

Related Documentation

This section lists documentation related to your router and its functionality. The documentation mentioned is available online, or on the Documentation CD-ROM.

- For hardware installation and maintenance information for the Cisco 7200 series routers, refer to the following documents:

    - For a complete list of Cisco series router hardware documentation, refer to the *Cisco 7200, Cisco 7300, Cisco 7400, Cisco 7500 and Cisco 7200uBR Series Routers Documentation* flyer
    http://www.cisco.com/en/US/products/hw/routers/ps341/products_product_index09186a0080 0d9d8a.html

    - *Cisco 7200VXR Installation and Configuration Guide*—DOC-785469=
    http://www.cisco.com/en/US/products/hw/routers/ps341/products_installation_guide_book09 186a008007daa6.html

    - *Cisco 7200VXR Quick Start Guide*—DOC-7812769=
    http://www.cisco.com/en/US/products/hw/routers/ps341/prod_quick_installation_guide09186 a00800a93b6.html

    - *Cisco 7206 Installation and Configuration Guide*—DOC-783229=
    http://www.cisco.com/en/US/products/hw/routers/ps341/products_installation_guide_book09 186a008007db27.html

    - *Cisco 7206 Quick Start Guide*—DOC-7812771=
    http://www.cisco.com/en/US/products/hw/routers/ps341/prod_quick_installation_guide09186 a00800a85fe.html

    - *Quick Reference for the Cisco 7206 Installation*—DOC-783230=
    http://www.cisco.com/en/US/products/hw/routers/ps341/prod_quick_installation_guide09186 a00800defba.html

    - *Cisco 7200 Regulatory Compliance and Safety Information*—DOC-783419=
    http://www.cisco.com/en/US/products/hw/routers/ps341/products_regulatory_approvals_and_ compliance09186a00800a94d7.html

    - *Cisco 7200 Rack Density System (RDS) Installation Instructions*—DOC-7811310=
    http://www.cisco.com/en/US/products/hw/routers/ps341/products_installation_guide_chapter 09186a008007cbe4.html

    - *Rack-Mount and Cable-Management Kit Installation Instructions*—DOC-783421=
    http://www.cisco.com/en/US/products/hw/routers/ps341/prod_installation_guide09186a00800 f267a.html

    - For Cisco 7200 series router troubleshooting information:
    http://www.cisco.com/en/US/products/hw/routers/ps341/prod_troubleshooting_guides_list.ht ml

- For Cisco 7301 router documentation, refer to the following URL:
http://www.cisco.com/en/US/products/hw/routers/ps352/prod_technical_documentation.html

- Port Adapter Installation and Configuration guides, available online at:
http://www.cisco.com/en/US/products/hw/modules/ps2033/prod_module_installation_guides_list. html
and
http://www.cisco.com/en/US/products/hw/modules/ps2033/products_module_installation_guides_ books_list.html

- For configuration information and support, refer to the modular configuration and modular command reference publications in the Cisco IOS software configuration documentation set that corresponds to the software release installed on your Cisco hardware. Access these documents at: http://www.cisco.com/en/US/products/sw/iosswrel/index.html

> **Note** Select translated documentation is available at http://www.cisco.com/ by selecting the topic 'Select a Location / Language' at the top of the page.

  - To determine the minimum Cisco IOS software requirements for your router, Cisco maintains the Software Advisor tool on Cisco.com. This tool does not verify whether modules within a system are compatible, but it does provide the minimum IOS requirements for individual hardware modules or components. Registered Cisco Direct users can access the Software Advisor at: http://www.cisco.com/cgi-bin/Support/CompNav/Index.pl

- For IP security and encryption:

  - *Cisco IOS Security Configuration Guide, Release 12.2*
    http://www.cisco.com/en/US/partner/products/sw/iosswrel/ps1835/products_configuration_guide_book09186a0080087df1.html

  - *Cisco IOS Security Command Reference, Release 12.2*
    http://www.cisco.com/en/US/partner/products/sw/iosswrel/ps1835/products_command_references_books_list.html

  - *Cisco IOS Security Configuration Guide, Release 12.1*
    http://www.cisco.com/en/US/partner/products/sw/iosswrel/ps1831/products_configuration_guide_book09186a0080088254.html

  - *Cisco IOS Security Command Reference, Release 12.1*
    http://www.cisco.com/en/US/partner/products/sw/iosswrel/ps1831/products_command_references_books_list.html

  - *Cisco IOS Software Release 12.0 Security Configuration Guide*
    http://www.cisco.com/en/US/partner/products/sw/iosswrel/ps1828/products_configuration_guides_books_list.html

  - *Cisco IOS Software Release 12.0 Security Command Reference*
    http://www.cisco.com/en/US/partner/products/sw/iosswrel/ps1828/products_command_references_books_list.html

  - For FIPS 140 Security documents:
    http://www.cisco.com/en/US/partner/products/hw/routers/ps341/products_regulatory_approvals_and_compliance09186a00800f009e.html

  - For the VPN Device Manager documents:
    http://www.cisco.com/en/US/partner/products/sw/cscowork/ps2322/products_release_and_installation_notes_list.html

- If you are a registered Cisco Direct Customer, you can access the following tools:

  - Tools, Maintenance, and Troubleshooting Tips for Cisco IOS Software for Cisco IOS Release 12.0
    http://www.cisco.com/en/US/products/sw/iosswrel/ps1828/prod_troubleshooting_technique09186a008010929b.html

  - Tools, Maintenance, and Troubleshooting Tips for Cisco IOS Software for Cisco IOS Release 12.1
    http://www.cisco.com/en/US/products/sw/iosswrel/ps1831/prod_troubleshooting_technique09186a0080107cc7.html

- Tools, Maintenance, and Troubleshooting Tips for Cisco IOS Software for Cisco IOS Release 12.2
  http://www.cisco.com/en/US/products/sw/iosswrel/ps1835/prod_troubleshooting_technique09186a00800f9050.html

- Bug Toolkit:
  http://www.cisco.com/en/US/partner/products/hw/routers/ps341/prod_bug_toolkit.html

- Bug Navigator:
  http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl

- Feature Navigator:
  http://www.cisco.com/en/US/partner/products/prod_feature_navigator_for_cisco_IOS_tool_launch.html

- Output Interpreter:
  https://www.cisco.com/cgi-bin/Support/OutputInterpreter/home.pl

- Cisco IOS Error Message Decoder:
  http://www.cisco.com/cgi-bin/Support/Errordecoder/home.pl

- Cisco Dynamic Configuration Tool:
  http://www.cisco.com/en/US/ordering/or13/or8/ordering_ordering_help_dynamic_configuration_tool_launch.html

- MIB Locator:
  http://tools.cisco.com/ITDIT/MIBS/servlet/index

- Additional tools include:

  - Tools Index:
    http://www.cisco.com/en/US/partner/products/prod_tools_index.html

  - Cisco IOS Software Selector Tool:
    http://tools.cisco.com/ITDIT/ISTMAIN/servlet/index

Note We no longer ship the entire router documentation set automatically with each system. You must specifically order the documentation as part of the sales order. If you ordered documentation and did not receive it, we will ship the documents to you within 24 hours. To order documents, contact a customer service representative.

Obtaining Documentation

Cisco provides several ways to obtain documentation, technical assistance, and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation on the World Wide Web at this URL:

http://www.cisco.com/univercd/home/home.htm

You can access the Cisco website at this URL:

http://www.cisco.com

International Cisco websites can be accessed from this URL:

http://www.cisco.com/public/countries_languages.shtml

Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which may have shipped with your product. The Documentation CD-ROM is updated regularly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual or quarterly subscription.

Registered Cisco.com users can order a single Documentation CD-ROM (product number DOC-CONDOCCD=) through the Cisco Ordering tool:

http://www.cisco.com/en/US/partner/ordering/ordering_place_order_ordering_tool_launch.html

All users can order annual or quarterly subscriptions through the online Subscription Store:

http://www.cisco.com/go/subscription

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpck/pdi.htm

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products MarketPlace:

  http://www.cisco.com/en/US/partner/ordering/index.shtml

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA.) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

Documentation Feedback

You can submit comments electronically on Cisco.com. On the Cisco Documentation home page, click **Feedback** at the top of the page.

You can send your comments in e-mail to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, the Cisco Technical Assistance Center (TAC) provides 24-hour, award-winning technical support services, online and over the phone. Cisco.com features the Cisco TAC website as an online starting point for technical assistance.

Cisco TAC Website

The Cisco TAC website (http://www.cisco.com/tac) provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The Cisco TAC website is available 24 hours a day, 365 days a year.

Accessing all the tools on the Cisco TAC website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a login ID or password, register at this URL:

http://tools.cisco.com/RPF/register/register.do

Opening a TAC Case

The online TAC Case Open Tool (http://www.cisco.com/tac/caseopen) is the fastest way to open P3 and P4 cases. (Your network is minimally impaired or you require product information). After you describe your situation, the TAC Case Open Tool automatically recommends resources for an immediate solution. If your issue is not resolved using these recommendations, your case will be assigned to a Cisco TAC engineer.

For P1 or P2 cases (your production network is down or severely degraded) or if you do not have Internet access, contact Cisco TAC by telephone. Cisco TAC engineers are assigned immediately to P1 and P2 cases to help keep your business operations running smoothly.

To open a case by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553-2447

For a complete listing of Cisco TAC contacts, go to this URL:

http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml

TAC Case Priority Definitions

To ensure that all cases are reported in a standard format, Cisco has established case priority definitions.

Priority 1 (P1)—Your network is "down" or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Priority 2 (P2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Priority 3 (P3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Priority 4 (P4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- The *Cisco Product Catalog* describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the *Cisco Product Catalog* at this URL:

  http://www.cisco.com/en/US/products/products_catalog_links_launch.html

- Cisco Press publishes a wide range of networking publications. Cisco suggests these titles for new and experienced users: Internetworking Terms and Acronyms Dictionary, Internetworking Technology Handbook, Internetworking Troubleshooting Guide, and the Internetworking Design Guide. For current Cisco Press titles and other information, go to Cisco Press online at this URL:

  http://www.ciscopress.com

- Packet magazine is the Cisco quarterly publication that provides the latest networking trends, technology breakthroughs, and Cisco products and solutions to help industry professionals get the most from their networking investment. Included are networking deployment and troubleshooting tips, configuration examples, customer case studies, tutorials and training, certification information, and links to numerous in-depth online resources. You can access Packet magazine at this URL:

  http://www.cisco.com/go/packet

- iQ Magazine is the Cisco bimonthly publication that delivers the latest information about Internet business strategies for executives. You can access iQ Magazine at this URL:

  http://www.cisco.com/go/iqmagazine

- Internet Protocol Journal is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

  http://www.cisco.com/en/US/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html

- Training—Cisco offers world-class networking training. Current offerings in network training are listed at this URL:

  http://www.cisco.com/en/US/learning/index.html