



## Preface

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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:

- [Revision History, page vii](#)
- [Audience, page viii](#)
- [Warnings, page viii](#)
- [Objectives, page viii](#)
- [Organization, page viii](#)
- [Related Documentation, page ix](#)
- [Obtaining Documentation, page x](#)
- [Documentation Feedback, page xi](#)
- [Cisco Product Security Overview, page xi](#)
- [Obtaining Technical Assistance, page xii](#)
- [Obtaining Additional Publications and Information, page xiv](#)

## Revision History

Document Version	Date	Notes
OL-5979-01	December 2005	This version introduces the VPN Acceleration Module 2+ (VAM2+)
OL-5979-02	March, 2006	This version of the document adds Port Adapter Jacket Card information, and feature information for IPv6 IPsec and GDOI.
OL-5979-03	August 2006	This version of the document adds NPE-G2 support.

# 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

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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).

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

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Warning

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## 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.

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# Objectives

This document contains instructions and procedures for installing and configuring the VPN Acceleration Module 2+ (SA-VAM2+), a single-width acceleration module that installs in the Cisco 7204VXR and Cisco 7206VXR routers with the NPE-225, NPE-400, NPE-G1 or NPE-G2 processors, and the Cisco 7301, and the Port Adapter Jacket Card in the I/O controller slot of a Cisco 7200VXR router with an NPE-G1 or NPE-G2 installed, and allows a port adapter to be installed in it.

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



Note

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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 2-5 for specific, important information.

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# Organization

This document contains the following chapters:

Chapter	Title	Description
1	<a href="#">Overview</a>	Describes the SA-VAM2+ and SA-VAM2+ LED displays.
2	<a href="#">Preparing for Installation</a>	Describes safety considerations, tools required, and procedures you should perform before the actual installation.
3	<a href="#">Removing and Installing the SA-VAM2+</a>	Describes the procedures for installing and removing the SA-VAM2+ from the supported platform.
4	<a href="#">Configuring the SA-VAM2+</a>	Describes procedures needed to configure the SA-VAM2+ in the Cisco 7301 and Cisco 7200VXR 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 information on the Cisco 7200VXR Port Adapter Jacket Card, see the *Port Adapter Jacket Card Installation Guide*.
- For hardware installation and maintenance information for the Cisco 7200VXR series routers, refer to the following URL:  
[http://www.cisco.com/en/US/products/hw/routers/ps341/tsd\\_products\\_support\\_series\\_home.html](http://www.cisco.com/en/US/products/hw/routers/ps341/tsd_products_support_series_home.html)
- For Cisco 7301 router documentation, refer to the following URL:  
[http://www.cisco.com/en/US/products/hw/routers/ps352/prod\\_technical\\_documentation.html](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](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](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, refer to the following URL:  
[http://www.cisco.com/en/US/products/sw/iosswrel/tsd\\_products\\_support\\_category\\_home.html](http://www.cisco.com/en/US/products/sw/iosswrel/tsd_products_support_category_home.html)

- For FIPS 140 Security documents:  
[http://www.cisco.com/en/US/partner/products/hw/routers/ps341/products\\_regulatory\\_approvals\\_and\\_compliance09186a00800f009e.html](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](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:
  - Bug Toolkit:  
[http://www.cisco.com/en/US/partner/products/hw/routers/ps341/prod\\_bug\\_toolkit.html](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](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](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](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](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>

## Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain 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 at this URL:

<http://www.cisco.com/techsupport>

You can access the Cisco website at this URL:

<http://www.cisco.com>

You can access international Cisco websites at this URL:

[http://www.cisco.com/public/countries\\_languages.shtml](http://www.cisco.com/public/countries_languages.shtml)

## Product Documentation DVD

The Product Documentation DVD is a comprehensive library of technical product documentation on a portable medium. The DVD enables you to access multiple versions of installation, configuration, and command guides for Cisco hardware and software products. With the DVD, you have access to the same HTML documentation that is found on the Cisco website without being connected to the Internet. Certain products also have .PDF versions of the documentation available.

The Product Documentation DVD is available as a single unit or as a subscription. Registered Cisco.com users (Cisco direct customers) can order a Product Documentation DVD (product number DOC-DOCDVD= or DOC-DOCDVD=SUB) from Cisco Marketplace at this URL:

<http://www.cisco.com/go/marketplace/>

## Ordering Documentation

Registered Cisco.com users may order Cisco documentation at the Product Documentation Store in the Cisco Marketplace at this URL:

<http://www.cisco.com/go/marketplace/>

Nonregistered Cisco.com users can order technical documentation from 8:00 a.m. to 5:00 p.m. (0800 to 1700) PDT by calling 1 866 463-3487 in the United States and Canada, or elsewhere by calling 011 408 519-5055. You can also order documentation by e-mail at [tech-doc-store-mkpl@external.cisco.com](mailto:tech-doc-store-mkpl@external.cisco.com) or by fax at 1 408 519-5001 in the United States and Canada, or elsewhere at 011 408 519-5001.

## Documentation Feedback

You can rate and provide feedback about Cisco technical documents by completing the online feedback form that appears with the technical documents on Cisco.com.

You can submit comments about Cisco documentation 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.

## Cisco Product Security Overview

Cisco provides a free online Security Vulnerability Policy portal at this URL:

[http://www.cisco.com/en/US/products/products\\_security\\_vulnerability\\_policy.html](http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html)

From this site, you will find information about how to:

- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
- Register to receive security information from Cisco.

A current list of security advisories, security notices, and security responses for Cisco products is available at this URL:

<http://www.cisco.com/go/psirt>

To see security advisories, security notices, and security responses as they are updated in real time, you can subscribe to the Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed. Information about how to subscribe to the PSIRT RSS feed is found at this URL:

[http://www.cisco.com/en/US/products/products\\_psirt\\_rss\\_feed.html](http://www.cisco.com/en/US/products/products_psirt_rss_feed.html)

## Reporting Security Problems in Cisco Products

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you have identified a vulnerability in a Cisco product, contact PSIRT:

- For Emergencies only—[security-alert@cisco.com](mailto:security-alert@cisco.com)

An emergency is either a condition in which a system is under active attack or a condition for which a severe and urgent security vulnerability should be reported. All other conditions are considered nonemergencies.

- For Nonemergencies—[psirt@cisco.com](mailto:psirt@cisco.com)

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532



Tip

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We encourage you to use Pretty Good Privacy (PGP) or a compatible product (for example, GnuPG) to encrypt any sensitive information that you send to Cisco. PSIRT can work with information that has been encrypted with PGP versions 2.x through 9.x.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one linked in the Contact Summary section of the Security Vulnerability Policy page at this URL:

[http://www.cisco.com/en/US/products/products\\_security\\_vulnerability\\_policy.html](http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html)

The link on this page has the current PGP key ID in use.

If you do not have or use PGP, contact PSIRT at the aforementioned e-mail addresses or phone numbers before sending any sensitive material to find other means of encrypting the data.

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## Obtaining Technical Assistance

Cisco Technical Support provides 24-hour-a-day award-winning technical assistance. The Cisco Technical Support & Documentation website on Cisco.com features extensive online support resources. In addition, if you have a valid Cisco service contract, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not have a valid Cisco service contract, contact your reseller.

## Cisco Technical Support & Documentation Website

The Cisco Technical Support & Documentation website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, at this URL:

<http://www.cisco.com/techsupport>

Access to all tools on the Cisco Technical Support & Documentation website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

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



### Note

Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support & Documentation website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

## Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco engineer. The TAC Service Request Tool is located at this URL:

<http://www.cisco.com/techsupport/servicerequest>

For S1 or S2 service requests, or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request 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 list of Cisco TAC contacts, go to this URL:

<http://www.cisco.com/techsupport/contacts>

## Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—An existing 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.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operations 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.

Severity 3 (S3)—Operational performance of the network is impaired, while most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—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 Quick Reference Guide* is a handy, compact reference tool that includes brief product overviews, key features, sample part numbers, and abbreviated technical specifications for many Cisco products that are sold through channel partners. It is updated twice a year and includes the latest Cisco offerings. To order and find out more about the Cisco Product Quick Reference Guide, go to this URL:

<http://www.cisco.com/go/guide>

- Cisco Marketplace provides a variety of Cisco books, reference guides, documentation, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

<http://www.cisco.com/go/marketplace/>

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

<http://www.ciscopress.com>

- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

<http://www.cisco.com/packet>

- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

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

or view the digital edition at this URL:

<http://ciscoiq.texterity.com/ciscoiq/sample/>



- *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/ipj>
- Networking products offered by Cisco Systems, as well as customer support services, can be obtained at this URL:  
<http://www.cisco.com/en/US/products/index.html>
- Networking Professionals Connection is an interactive website for networking professionals to share questions, suggestions, and information about networking products and technologies with Cisco experts and other networking professionals. Join a discussion at this URL:  
<http://www.cisco.com/discuss/networking>
- World-class networking training is available from Cisco. You can view current offerings at this URL:  
<http://www.cisco.com/en/US/learning/index.html>

