



Preface

This installation guide explains the initial hardware installation and basic configuration procedures for the Cisco 7100 series VPN router.

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Audience

To use this publication, you should be familiar not only with Cisco router hardware and cabling but also with electronic circuitry and wiring practices. You should also have experience as an electronic or electromechanical technician.

Installation Warning



Warning

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

Waarschuwing

Deze apparatuur mag alleen worden geïnstalleerd, vervangen of hersteld door bevoegd geschoold personeel.

Varoitus	Tämän laitteen saa asentaa, vaihtaa tai huoltaa ainoastaan koulutettu ja laitteen tunteva henkilökunta.
Attention	Il est vivement recommandé de confier l'installation, le remplacement et la maintenance de ces équipements à des personnels qualifiés et expérimentés.
Warnung	Das Installieren, Ersetzen oder Bedienen dieser Ausrüstung sollte nur geschultem, qualifiziertem Personal gestattet werden.
Figyelem!	A berendezést csak szakképzett személyek helyezhetik üzembe, cserélhetik és tarthatják karban.
Avvertenza	Questo apparato può essere installato, sostituito o mantenuto unicamente da un personale competente.
Advarsel	Bare opplært og kvalifisert personell skal foreta installasjoner, utskiftninger eller service på dette utstyret.
Aviso	Apenas pessoal treinado e qualificado deve ser autorizado a instalar, substituir ou fazer a revisão deste equipamento.
¡Advertencia!	Solamente el personal calificado debe instalar, reemplazar o utilizar este equipo.
Varning!	Endast utbildad och kvalificerad personal bör få tillåtelse att installera, byta ut eller reparera denna utrustning.
Предупреждение	Установку, замену и обслуживание этого оборудования может осуществлять только специально обученный квалифицированный персонал.
警告	只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。
警告	この装置の設置、交換、保守は、訓練を受けた対応の資格のある人が行ってください。

Document Organization

The major sections of this guide are as follows:

Chapter	Title	Description
1	Overview	Physical properties and functional overview of Cisco 7100 series VPN routers.
2	Preparing for Installation	Safety considerations, tools required, an overview of the installation, and procedures you should perform <i>before</i> the actual installation.
3	Installing a Cisco 7100 VPN Series Router	Installing the hardware and connecting the external network interface cables.
4	Performing a Basic Startup Configuration	Procedures for completing a basic system configuration and for checking and saving this configuration to system memory.
5	Troubleshooting the Installation	Basic troubleshooting procedures for the hardware installation.
A	Modular Port Adapter Configuration Guidelines	Bandwidth specifications and guidelines for installing port adapters in Cisco 7100 series VPN routers.
B	System Specifications	Physical specifications and power requirements of the router.
C	Cable Specifications	Cabling information and pinout information for the router.

Related Documentation

This section lists documentation related to your router and its functionality. The documentation mentioned is available online at [Cisco.com](#), page xx, and on the [Documentation CD-ROM](#), page xix.



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.

- For hardware installation and maintenance information for the Cisco 7100 series VPN routers, refer to the following documents:
 - For a complete list of Cisco series router hardware documentation, refer to the *Cisco 7100 Series VPN Router Documentation* flyer—DOC-7814391=
http://www.cisco.com/en/US/products/hw/vpndevc/ps333/products_product_index09186a00800fa142.html
 - *Cisco 7100 Series VPN Quick Start Guide*—DOC-786343=
http://www.cisco.com/en/US/products/hw/vpndevc/ps333/products_quick_start09186a00800a8557.html
 - *Cisco 7100 Series VPN Router Installation and Configuration Guide*—DOC-786341=
http://www.cisco.com/en/US/products/hw/vpndevc/ps333/products_installation_and_configuration_guide_book09186a008007cbe6.html

- *Cisco 7100 Series VPN Router Regulatory Compliance and Safety Information*—DOC-786345=
http://www.cisco.com/en/US/products/hw/vpndevc/ps333/products_regulatory_approvals_and_compliance09186a0080119622.html
- *Installing Field-Replaceable Units*—DOC-786344=
http://www.cisco.com/en/US/products/hw/vpndevc/ps333/prod_installation_guide09186a00807db0a.html
- *Installing and Removing the Boot ROM in Cisco 7100 Series Routers*—DOC-7810156=
http://www.cisco.com/en/US/products/hw/vpndevc/ps333/prod_installation_guide09186a00809b16e.html
- *Installing and Removing the Power Supply in Cisco 7100 Series Routers*—DOC-7810417=
http://www.cisco.com/en/US/products/hw/vpndevc/ps333/prod_installation_guide09186a00807db0b.html
- *Integrated Service Adapter and Integrated Service Module Installation and Configuration*
http://www.cisco.com/en/US/products/hw/modules/ps2957/products_module_installation_guide_book09186a008007dc9d.html
- *VPN Acceleration Module (VAM) Installation and Configuration Guide*
http://www.cisco.com/en/US/products/hw/routers/ps341/products_module_installation_guide_book09186a008010dfeb.html
- Cisco 7100 series VPN router troubleshooting information:
http://www.cisco.com/en/US/products/hw/vpndevc/ps333/prod_troubleshooting_technique09186a008014db1c.html
- Cisco 7100 Tech Notes:
http://www.cisco.com/en/US/products/hw/vpndevc/ps333/prod_tech_notes_list.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

**Note**

For specific port and service adapters for the Cisco 7100 series VPN routers, see the *Cisco 7100 Series VPN Router Documentation* flyer—DOC-7814391=
http://www.cisco.com/en/US/products/hw/vpndevc/ps333/products_product_index09186a00800fa142.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 Enterprise VPN Configuration Guide—DOC-786342=*
http://www.cisco.com/en/US/products/hw/vpndevc/ps333/products_configuration_guide_book09186a008007dcb2.html
 - *Cisco IOS Interface Configuration Guide, Release 12.1*
http://www.cisco.com/en/US/products/sw/iosswrel/ps1831/products_configuration_guide_book09186a0080088071.html
 - *Cisco IOS Interface Command Reference, Release 12.1*
http://www.cisco.com/en/US/products/sw/iosswrel/ps1831/products_command_reference_book09186a00800880d1.html
 - *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 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 Release 12.0 Security Command Reference*
http://www.cisco.com/en/US/partner/products/sw/iosswrel/ps1828/products_command_references_books_list.html
 - *Cisco IOS Quality of Service Solutions Configuration Guide, Release 12.2*
http://www.cisco.com/en/US/products/sw/iosswrel/ps1835/products_configuration_guide_book09186a00800c5e31.html
 - *Cisco IOS Quality of Service Solutions Configuration Guide, Release 12.1*
http://www.cisco.com/en/US/products/sw/iosswrel/ps1831/products_configuration_guide_book09186a008007ff1d.html
 - *Cisco IOS Release 12.0 Quality of Service Solutions Configuration Guide*
http://www.cisco.com/en/US/products/sw/iosswrel/ps1828/products_configuration_guide_book09186a0080087c70.html
 - *Cisco IOS Interface Configuration Guide, Release 12.1*
http://www.cisco.com/en/US/products/sw/iosswrel/ps1831/products_configuration_guide_book09186a0080088071.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
 - Software Advisor
<http://www.cisco.com/en/US/partner/support/index.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>

Document Conventions

Command descriptions use the following conventions:

boldface font	Commands and keywords are in boldface .
<i>italic font</i>	Arguments for which you supply values are in <i>italics</i> .
[]	Elements in square brackets are optional.
{ x y z }	Alternative keywords are grouped in braces and separated by vertical bars.
[x y z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string, or the string will include the quotation marks.

Screen examples use the following conventions:

screen font	Terminal sessions and information the system displays are in <i>screen font</i> .
boldface screen font	Information you must enter is in boldface screen font .
<i>italic screen font</i>	Arguments for which you supply values are in <i>italic screen font</i> .
^	The symbol ^ represents the key labeled Control —for example, the key combination ^D in a screen display means hold down the Control key while you press the D key.
< >	Nonprinting characters, such as passwords, are in angle brackets.
[]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

Notes, cautionary statements, and safety warnings use these conventions:



Note

Means *reader take note*. Notes contain helpful suggestions or references to materials not contained in this manual.



Caution

Means *reader be careful*. You are capable of doing something that might result in equipment damage or loss of data.

**Warning**

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 *Regulatory Compliance and Safety Information* document that accompanied this device.

Waarschuwing

Dit waarschuwingssymbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij elektrische schakelingen betrokken risico's en dient u op de hoogte te zijn van standaard maatregelen om ongelukken te voorkomen. Voor vertalingen van de waarschuwingen die in deze publicatie verschijnen, kunt u het document *Regulatory Compliance and Safety Information* (Informatie over naleving van veiligheids- en andere voorschriften) raadplegen dat bij dit toestel is ingesloten.

Varoitus

Tämä varoitusmerkki merkitsee vaaraa. Olet tilanteessa, joka voi johtaa ruumiinvammaan. Ennen kuin työskentelet minkään laitteiston parissa, ota selvää sähkökytkentöihin liittyvistä vaaroista ja tavanomaisista onnettomuuksien ehkäisykeinoista. Tässä julkaisussa esiintyvien varoitusten käännökset löydät laitteen mukana olevasta *Regulatory Compliance and Safety Information* -kirjasesta (määräysten noudattaminen ja tietoa turvallisuudesta).

Attention

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant causer des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers posés par les circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions d'avertissements figurant dans cette publication, consultez le document *Regulatory Compliance and Safety Information* (Conformité aux règlements et consignes de sécurité) qui accompagne cet appareil.

Warnung

Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu einer Körperverletzung führen könnte. Bevor Sie mit der Arbeit an irgendeinem Gerät beginnen, seien Sie sich der mit elektrischen Stromkreisen verbundenen Gefahren und der Standardpraktiken zur Vermeidung von Unfällen bewusst. Übersetzungen der in dieser Veröffentlichung enthaltenen Warnhinweise finden Sie im Dokument *Regulatory Compliance and Safety Information* (Informationen zu behördlichen Vorschriften und Sicherheit), das zusammen mit diesem Gerät geliefert wurde.

Avvertenza

Questo simbolo di avvertenza indica un pericolo. La situazione potrebbe causare infortuni alle persone. Prima di lavorare su qualsiasi apparecchiatura, occorre conoscere i pericoli relativi ai circuiti elettrici ed essere al corrente delle pratiche standard per la prevenzione di incidenti. La traduzione delle avvertenze riportate in questa pubblicazione si trova nel documento *Regulatory Compliance and Safety Information* (Conformità alle norme e informazioni sulla sicurezza) che accompagna questo dispositivo.

Advarsel

Dette varselsymbolet betyr fare. Du befinner deg i en situasjon som kan føre til personskade. Før du utfører arbeid på utstyr, må du være oppmerksom på de faremomentene som elektriske kretser innebærer, samt gjøre deg kjent med vanlig praksis når det gjelder å unngå ulykker. Hvis du vil se oversettelser av de advarelsene som finnes i denne publikasjonen, kan du se i dokumentet *Regulatory Compliance and Safety Information* (Overholdelse av forskrifter og sikkerhetsinformasjon) som ble levert med denne enheten.

Aviso	Este símbolo de aviso indica perigo. Encontra-se numa situação que lhe poderá causar danos físicos. Antes de começar a trabalhar com qualquer equipamento, familiarize-se com os perigos relacionados com circuitos eléctricos, e com quaisquer práticas comuns que possam prevenir possíveis acidentes. Para ver as traduções dos avisos que constam desta publicação, consulte o documento <i>Regulatory Compliance and Safety Information</i> (Informação de Segurança e Disposições Reguladoras) que acompanha este dispositivo.
¡Advertencia!	Este símbolo de aviso significa peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considerar los riesgos que entraña la corriente eléctrica y familiarizarse con los procedimientos estándar de prevención de accidentes. Para ver una traducción de las advertencias que aparecen en esta publicación, consultar el documento titulado <i>Regulatory Compliance and Safety Information</i> (Información sobre seguridad y conformidad con las disposiciones reglamentarias) que se acompaña con este dispositivo.

Terms and Acronyms

To fully understand the content of this guide, you should be familiar with the following terms and acronyms:

- ABR—Available bit rate
- AAL5—ATM adaptation layer 5
- ATM-DXI—Asynchronous Transfer Mode-Data Exchange Interface
- AWG—American wire gauge
- CoS—Class of service
- CPE—Customer premises equipment
- CRC—Cyclic redundancy check
- CSU—Channel service unit
- CTS—Clear To Send
- DCD—Data Carrier Detect
- DCE—Data communications equipment
- DIMM—Dual in-line memory module
- DSR—Data set ready
- DSU—Data service unit
- DTE—Data terminal equipment
- DTR—Data terminal ready
- EMC—Electromagnetic compliance
- EMI—Electromagnetic interference
- ESD—Electrostatic discharge
- FRU—Field-replaceable unit (router components that do not require replacement by a Cisco-certified service provider)
- FTP—Foil twisted-pair
- HDLC—High-Level Data Link Control

- IGRP—Interior Gateway Routing Protocol
- ILMI—Integrated Local Management Interface
- IPSec—IP Security Protocol
- ISM—Integrated Service Module
- L2F/L2TP—Layer 2 Forwarding and Layer 2 Tunneling Protocol
- LANE—LAN emulation
- MAC—Media Access Control
- MB—Megabyte
- MM—Multimode
- nrt-VBR—Non-real time variable bit rate
- NVRAM—Nonvolatile random-access memory
- OAM AIS—Operation, Administration, and Maintenance alarm indication signal
- OIR—Online insertion and removal
- PCI—Peripheral Component Interconnect
- PCMCIA—Personal Computer Memory Card International Association
- PPP—Point-to-Point Protocol
- QoS—Quality of service
- rcp—remote copy protocol
- RFI—Radio frequency interference
- RIP—Routing Information Protocol
- RISC—Reduced Instruction Set Computing
- RTS—Request To Send
- SAR—Segmentation and reassembly
- SDRAM—Synchronous dynamic random-access memory
- SIMM—Single in-line memory module
- SMDS—Switched Multimegabit Data Service
- SMI—Single-mode intermediate reach
- SNMP—Simple Network Management Protocol
- TCP/IP—Transmission Control Protocol/Internet Protocol
- TDM—Time-division multiplexing
- TFTP—Trivial File Transfer Protocol
- UBR—Unspecified bit rate
- UDP—User Datagram Protocol
- UNI—User-Network Interface
- UTP—Unshielded twisted-pair
- VC—Virtual circuit
- VPN—Virtual Private Network

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 web sites 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 monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual subscription.

Registered Cisco.com users can order the Documentation CD-ROM (product number DOC-CONDOCCD=) 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>
- Registered Cisco.com users can order the Documentation CD-ROM (Customer Order Number DOC-CONDOCCD=) through the online Subscription Store:
<http://www.cisco.com/go/subscription>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, U.S.A.) 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 e-mail your comments to bug-doc@cisco.com.

You can submit your comments by mail by using the response card 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

Cisco provides Cisco.com, which includes the Cisco Technical Assistance Center (TAC) Website, as a starting point for all technical assistance. Customers and partners can obtain online documentation, troubleshooting tips, and sample configurations from the Cisco TAC website. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC website, including TAC tools and utilities.

Cisco.com

Cisco.com offers a suite of interactive, networked services that let you access Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

Cisco.com provides a broad range of features and services to help you with these tasks:

- Streamline business processes and improve productivity
- Resolve technical issues with online support
- Download and test software packages
- Order Cisco learning materials and merchandise
- Register for online skill assessment, training, and certification programs

To obtain customized information and service, you can self-register on Cisco.com at this URL:

<http://www.cisco.com>

Technical Assistance Center

The Cisco TAC is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two levels of support are available: the Cisco TAC website and the Cisco TAC Escalation Center. The avenue of support that you choose depends on the priority of the problem and the conditions stated in service contracts, when applicable.

We categorize Cisco TAC inquiries according to urgency:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.

- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

Cisco TAC Website

You can use the Cisco TAC website to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC website, go to this URL:

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

All customers, partners, and resellers who have a valid Cisco service contract have complete access to the technical support resources on the Cisco TAC website. Some services on the Cisco TAC website require a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to this URL to register:

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

If you are a Cisco.com registered user, and you cannot resolve your technical issues by using the Cisco TAC website, you can open a case online at this URL:

<http://www.cisco.com/en/US/support/index.html>

If you have Internet access, we recommend that you open P3 and P4 cases through the Cisco TAC website so that you can describe the situation in your own words and attach any necessary files.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses priority level 1 or priority level 2 issues. These classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer automatically opens a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this URL:

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

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled: for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). When you call the center, please have available your service agreement number and your product serial number.

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 monthly periodical that provides industry professionals with the latest information about the field of networking. You can access *Packet* magazine at this URL:
http://www.cisco.com/en/US/about/ac123/ac114/about_cisco_packet_magazine.html
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