



## Preface

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This preface describes the purpose of the *Cisco uBR7100 Series and Cisco uBR7100E Series Universal Broadband Router Hardware Installation Guide*, its intended audience, its organization, and its document conventions. This preface also provides information on how to obtain related documentation and defines some technical terms you need to understand when using this guide.

## Purpose

This installation guide explains the initial hardware installation and basic configuration procedures for Cisco uBR7100 series routers. It contains procedures for installing the router hardware, starting up the router, and troubleshooting any problems that might occur during the installation. After completing the installation and basic configuration procedures covered in this guide, you will then use the appropriate companion publications to more completely configure your system. For a list of the companion publications, see the [“Related Documentation” section on page 8](#).



### Note

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Unless otherwise indicated, the term *Cisco uBR7100 series* refers to all models of the Cisco uBR7100 series universal broadband router, including the Cisco uBR7111, Cisco uBR7111E, Cisco uBR7114, and Cisco uBR7114E routers.

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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. Experience with RF cable plants is also highly desirable.



### Warning

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

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# Organization

The major sections of this guide are as follows:

Chapter	Description
<a href="#">Chapter 1, “Product Overview”</a>	Describes the Cisco uBR7100 series universal broadband router and its major features and interfaces.
<a href="#">Chapter 2, “Preparing for Installation”</a>	Describes the steps required to prepare a site before installing the Cisco uBR7100 series router.
<a href="#">Chapter 3, “Installing Cisco uBR7100 Series Universal Broadband Routers”</a>	Provides instructions to install the Cisco uBR7100 series router and to connect its network interface cables.
<a href="#">Chapter 4, “System Startup”</a>	Describes the procedure for the initial startup of the system.
<a href="#">Chapter 5, “Troubleshooting the Installation”</a>	Provides basic troubleshooting procedures for the hardware installation.
<a href="#">Chapter 6, “Maintenance”</a>	Describes recommended maintenance procedures.
<a href="#">Appendix A, “System Specifications”</a>	Contains the physical specifications and power requirements of the router.
<a href="#">Appendix B, “Manufacturers for Headend Provisioning Requirements”</a>	Lists vendors for the auxiliary equipment that is normally required for a headend installation.
<a href="#">Appendix C, “Cable Specifications”</a>	Provides cabling information and pinout information for the router.
<a href="#">Appendix D, “Frequency Allocation Tables”</a>	Provides the standard frequency allocation channel plans.
<a href="#">Appendix E, “Site Log”</a>	Provides a sample log sheet that can be used to track maintenance and other changes that are done to the equipment.

## Related Documentation

Your Cisco uBR7100 series router and the Cisco IOS software running on it contain extensive features and functionality, which are documented in the following resources:

- For international agency compliance, safety, and statutory information for WAN interfaces for Cisco uBR7100 series routers, refer to the regulatory compliance and safety information document that shipped with your router.
- For information on installing and replacing field-replaceable units (FRUs), refer to the individual document for each FRU.
- For information about replacing SDRAM see *Memory Replacement Instructions for the Network Processing Engine or Network Services Engine and Input/Output Controller* at the following URL:  
[http://www.cisco.com/en/US/docs/routers/7200/install\\_and\\_upgrade/npe-nse\\_memory\\_install/memory.html](http://www.cisco.com/en/US/docs/routers/7200/install_and_upgrade/npe-nse_memory_install/memory.html)
- For additional information on configuring Cisco uBR7100 series routers, refer to the *Cisco uBR7100 Series Software Configuration Guide* at the following URL:  
<http://www.cisco.com/en/US/docs/cable/cmts/ubr7100/configuration/guide/scg7100.html>

This guide contains configuration information and sample configuration files.

- *Cisco uBR7100 Series Software Features* at the following URL:  
<http://www.cisco.com/en/US/docs/cable/cmts/feature/guide/cmtsfg.html>
- *Cisco CMTS System Messages* at the following URL:  
<http://www.cisco.com/en/US/docs/cable/cmts/system/message/uberrchap1.html>
- *Cisco CMTS Feature Guide* at the following URL:  
<http://www.cisco.com/en/US/docs/cable/cmts/feature/guide/cmtsfg.html>
- *Cisco Broadband Cable Command Reference Guide* at the following URL:  
[http://www.cisco.com/en/US/docs/ios/cable/command/reference/cbl\\_book.html](http://www.cisco.com/en/US/docs/ios/cable/command/reference/cbl_book.html)
- Other sources of information:
  - Cisco IOS release notes for the version of software you are using on your router.
  - For information on setting up quality of service (QoS), refer to the *Quality of Service Solutions Configuration Guide* and *Quality of Service Solutions Command Reference* publications.
  - For information on encryption, refer to the *Security Configuration Guide* and the *Security Command Reference* publications.
  - For information on interfaces, refer to the *Cisco IOS Interface Configuration Guide* and the *Cisco IOS Interface Command Reference* publications.
  - For information on IP, refer to the *Network Protocols Configuration Guide, Part 1* and the *Network Protocols Command Reference, Part 1* publications.

## Conventions

**Note**

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

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**Tip**

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Means *the following information might help you solve a problem*.

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**Caution**

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Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

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# Safety Warning



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

Waarschuwing

## BELANGRIJKE VEILIGHEIDSINSTRUCTIES

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 de standaard praktijken om ongelukken te voorkomen. Gebruik het nummer van de verklaring onderaan de waarschuwing als u een vertaling van de waarschuwing die bij het apparaat wordt geleverd, wilt raadplegen.

## BEWAAR DEZE INSTRUCTIES

Varoitus

## TÄRKEITÄ TURVALLISUUSOHJEITA

Tämä varoitusmerkki merkitsee vaaraa. Tilanne voi aiheuttaa ruumiillisia vammoja. Ennen kuin käsittelet laitteistoa, huomioi sähköpiirien käsittelyyn liittyvät riskit ja tutustu onnettomuuksien yleisiin ehkäisytapoihin. Turvallisuusvaroitusten käännökset löytyvät laitteen mukana toimitettujen käännettyjen turvallisuusvaroitusten joukosta varoitusten lopussa näkyvien lausuntonumeroiden avulla.

## SÄILYTÄ NÄMÄ OHJEET

Attention

## IMPORTANTES INFORMATIONS DE SÉCURITÉ

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant entraîner des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers liés aux circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions des avertissements figurant dans les consignes de sécurité traduites qui accompagnent cet appareil, référez-vous au numéro de l'instruction situé à la fin de chaque avertissement.

## CONSERVEZ CES INFORMATIONS

**Warnung WICHTIGE SICHERHEITSHINWEISE**

Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu Verletzungen führen kann. Machen Sie sich vor der Arbeit mit Geräten mit den Gefahren elektrischer Schaltungen und den üblichen Verfahren zur Vorbeugung vor Unfällen vertraut. Suchen Sie mit der am Ende jeder Warnung angegebenen Anweisungsnummer nach der jeweiligen Übersetzung in den übersetzten Sicherheitshinweisen, die zusammen mit diesem Gerät ausgeliefert wurden.

**BEWAHREN SIE DIESE HINWEISE GUT AUF.**

**Avvertenza IMPORTANTI ISTRUZIONI SULLA SICUREZZA**

Questo simbolo di avvertenza indica un pericolo. La situazione potrebbe causare infortuni alle persone. Prima di intervenire su qualsiasi apparecchiatura, occorre essere al corrente dei pericoli relativi ai circuiti elettrici e conoscere le procedure standard per la prevenzione di incidenti. Utilizzare il numero di istruzione presente alla fine di ciascuna avvertenza per individuare le traduzioni delle avvertenze riportate in questo documento.

**CONSERVARE QUESTE ISTRUZIONI**

**Advarsel VIKTIGE SIKKERHETSINSTRUKSJONER**

Dette advarselssymbolet betyr fare. Du er i en situasjon som kan føre til skade på person. Før du begynner å arbeide med noe av utstyret, må du være oppmerksom på farene forbundet med elektriske kretser, og kjenne til standardprosedyrer for å forhindre ulykker. Bruk nummeret i slutten av hver advarsel for å finne oversettelsen i de oversatte sikkerhetsadvarslene som fulgte med denne enheten.

**TA VARE PÅ DISSE INSTRUKSJONENE**

**Aviso INSTRUÇÕES IMPORTANTES DE SEGURANÇA**

Este símbolo de aviso significa perigo. Você está em uma situação que poderá ser causadora de lesões corporais. Antes de iniciar a utilização de qualquer equipamento, tenha conhecimento dos perigos envolvidos no manuseio de circuitos elétricos e familiarize-se com as práticas habituais de prevenção de acidentes. Utilize o número da instrução fornecido ao final de cada aviso para localizar sua tradução nos avisos de segurança traduzidos que acompanham este dispositivo.

**GUARDE ESTAS INSTRUÇÕES**

**¡Advertencia! INSTRUCCIONES IMPORTANTES DE SEGURIDAD**

Este símbolo de aviso indica peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considere los riesgos de la corriente eléctrica y familiarícese con los procedimientos estándar de prevención de accidentes. Al final de cada advertencia encontrará el número que le ayudará a encontrar el texto traducido en el apartado de traducciones que acompaña a este dispositivo.

**GUARDE ESTAS INSTRUCCIONES**

**Varning! VIKTIGA SÄKERHETSANVISNINGAR**

Denna varningssignal signalerar fara. Du befinner dig i en situation som kan leda till personskada. Innan du utför arbete på någon utrustning måste du vara medveten om farorna med elkretsar och känna till vanliga förfaranden för att förebygga olyckor. Använd det nummer som finns i slutet av varje varning för att hitta dess översättning i de översatta säkerhetsvarningar som medföljer denna anordning.

**SPARA DESSA ANVISNINGAR****FONTOS BIZTONSÁGI ELOÍRÁSOK**

Ez a figyelmeztető jel veszélyre utal. Sérülésveszélyt rejtő helyzetben van. Mielőtt bármely berendezésen munkát végezte, legyen figyelemmel az elektromos áramkörök okozta kockázatokra, és ismerkedjen meg a szokásos balesetvédelmi eljárásokkal. A kiadványban szereplő figyelmeztetések fordítása a készülékhez mellékelt biztonsági figyelmeztetések között található; a fordítás az egyes figyelmeztetések végén látható szám alapján kereshető meg.

**ORIZZE MEG EZEKET AZ UTASÍTÁSOKAT!****Предупреждение ВАЖНЫЕ ИНСТРУКЦИИ ПО СОБЛЮДЕНИЮ ТЕХНИКИ БЕЗОПАСНОСТИ**

Этот символ предупреждения обозначает опасность. То есть имеет место ситуация, в которой следует опасаться телесных повреждений. Перед эксплуатацией оборудования выясните, каким опасностям может подвергаться пользователь при использовании электрических цепей, и ознакомьтесь с правилами техники безопасности для предотвращения возможных несчастных случаев. Воспользуйтесь номером заявления, приведенным в конце каждого предупреждения, чтобы найти его переведенный вариант в переводе предупреждений по безопасности, прилагаемом к данному устройству.

**СОХРАНИТЕ ЭТИ ИНСТРУКЦИИ****警告 重要的安全性说明**

此警告符号代表危险。您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾提供的声明号码来找到此设备的安全性警告说明的翻译文本。

请保存这些安全性说明

**警告 安全上の重要な注意事項**

「危険」の意味です。人身事故を予防するための注意事項が記述されています。装置の取り扱い作業を行うときは、電気回路の危険性に注意し、一般的な事故防止策に留意してください。警告の各国語版は、各注意事項の番号を基に、装置に付属の「Translated Safety Warnings」を参照してください。

これらの注意事項を保管しておいてください。

**주의**    **중요 안전 지침**

이 경고 기호는 위험을 나타냅니다. 작업자가 신체 부상을 일으킬 수 있는 위험한 환경에 있습니다. 장비에 작업을 수행하기 전에 전기 회로와 관련된 위험을 숙지하고 표준 작업 관례를 숙지하여 사고를 방지하십시오. 각 경고의 마지막 부분에 있는 경고문 번호를 참조하여 이 장치와 함께 제공되는 번역된 안전 경고문에서 해당 번역문을 찾으십시오.

이 지시 사항을 보관하십시오.

**Aviso**    **INSTRUÇÕES IMPORTANTES DE SEGURANÇA**

**Este símbolo de aviso significa perigo. Você se encontra em uma situação em que há risco de lesões corporais. Antes de trabalhar com qualquer equipamento, esteja ciente dos riscos que envolvem os circuitos elétricos e familiarize-se com as práticas padrão de prevenção de acidentes. Use o número da declaração fornecido ao final de cada aviso para localizar sua tradução nos avisos de segurança traduzidos que acompanham o dispositivo.**

**GUARDE ESTAS INSTRUÇÕES****Advarsel**    **VIGTIGE SIKKERHEDSANVISNINGER**

**Dette advarselssymbol betyder fare. Du befinder dig i en situation med risiko for legemeskade. Før du begynder arbejde på udstyr, skal du være opmærksom på de involverede risici, der er ved elektriske kredsløb, og du skal sætte dig ind i standardprocedurer til undgåelse af ulykker. Brug erklæringsnummeret efter hver advarsel for at finde oversættelsen i de oversatte advarsler, der fulgte med denne enhed.**

**GEM DISSE ANVISNINGER****تحذير****إرشادات الأمان الهامة**

يوضح رمز التحذير هذا وجود خطر. وهذا يعني أنك متواجد في مكان قد ينتج عنه التعرض للإصابات. قبل بدء العمل، احذر مخاطر التعرض للصدمات الكهربائية وكن على علم بالإجراءات القياسية للحيولة دون وقوع أي حوادث. استخدم رقم البيان الموجود في آخر كل تحذير لتحديد مكان ترجمته داخل تحذيرات الأمان المترجمة التي تأتي مع الجهاز. قم بحفظ هذه الإرشادات

**Upozorenje**    **VAŽNE SIGURNOSNE NAPOMENE**

Ovaj simbol upozorenja predstavlja opasnost. Nalazite se u situaciji koja može prouzročiti tjelesne ozljede. Prije rada s bilo kojim uređajem, morate razumjeti opasnosti vezane uz električne sklopove, te biti upoznati sa standardnim načinima izbjegavanja nesreća. U prevedenim sigurnosnim upozorenjima, priloženima uz uređaj, možete prema broju koji se nalazi uz pojedino upozorenje pronaći i njegov prijevod.

**SAČUVAJTE OVE UPUTE**

**Upozornění DŮLEŽITÉ BEZPEČNOSTNÍ POKYNY**

**Tento upozorňující symbol označuje nebezpečí. Jste v situaci, která by mohla způsobit nebezpečí úrazu. Před prací na jakémkoliv vybavení si uvědomte nebezpečí související s elektrickými obvody a seznamte se se standardními opatřeními pro předcházení úrazům. Podle čísla na konci každého upozornění vyhledejte jeho překlad v přeložených bezpečnostních upozorněních, která jsou přiložena k zařízení.**

**USCHOVEJTE TYTO POKYNY****Προειδοποίηση ΣΗΜΑΝΤΙΚΕΣ ΟΔΗΓΙΕΣ ΑΣΦΑΛΕΙΑΣ**

Αυτό το προειδοποιητικό σύμβολο σημαίνει κίνδυνο. Βρίσκεστε σε κατάσταση που μπορεί να προκαλέσει τραυματισμό. Πριν εργαστείτε σε οποιοδήποτε εξοπλισμό, να έχετε υπόψη σας τους κινδύνους που σχετίζονται με τα ηλεκτρικά κυκλώματα και να έχετε εξοικειωθεί με τις συνήθειες πρακτικές για την αποφυγή ατυχημάτων. Χρησιμοποιήστε τον αριθμό δήλωσης που παρέχεται στο τέλος κάθε προειδοποίησης, για να εντοπίσετε τη μετάφρασή της στις μεταφρασμένες προειδοποιήσεις ασφαλείας που συνοδεύουν τη συσκευή.

**ΦΥΛΑΞΤΕ ΑΥΤΕΣ ΤΙΣ ΟΔΗΓΙΕΣ****אזהרה****הוראות בטיחות חשובות**

סימן אזהרה זה מסמל סכנה. אתה נמצא במצב העלול לגרום לפציעה. לפני שתעבוד עם ציוד כלשהו, עליך להיות מודע לסכנות הכרוכות במעגלים חשמליים ולהכיר את הנהלים המקובלים למניעת תאונות. השתמש במספר ההוראה המסופק בסופה של כל אזהרה כדי לאתר את התרגום באזהרות הבטיחות המתורגמות שמצורפות להתקן.

**שמור הוראות אלה****Opomena VAŽNI BEZBEDNOSNI NAPATSTVIJA**

Симболот за предупредување значи опасност. Се наоѓате во ситуација што може да предизвика телесни повреди. Пред да работите со опремата, бидете свесни за ризикот што постои кај електричните кола и треба да ги познавате стандардните постапки за спречување на несреќни случаи. Искористете го бројот на изјавата што се наоѓа на крајот на секое предупредување за да го најдете неговиот период во преведените безбедносни предупредувања што се испорачани со уредот.

**ЧУВАЈТЕ ГИ ОБИЕ НАПАТСТВИЈА****Ostrzeżenie WAŻNE INSTRUKCJE DOTYCZĄCE BEZPIECZEŃSTWA**

**Ten symbol ostrzeżenia oznacza niebezpieczeństwo. Zachodzi sytuacja, która może powodować obrażenia ciała. Przed przystąpieniem do prac przy urządzeniach należy zapoznać się z zagrożeniami związanymi z układami elektrycznymi oraz ze standardowymi środkami zapobiegania wypadkom. Na końcu każdego ostrzeżenia podano numer, na podstawie którego można odszukać tłumaczenie tego ostrzeżenia w dołączonym do urządzenia dokumencie z tłumaczeniami ostrzeżeń.**

**NINIEJSZE INSTRUKCJE NALEŻY ZACHOWAĆ**

**Upozornenie DÔLEŽITÉ BEZPEČNOSTNÉ POKYNY**

Tento varovný symbol označuje nebezpečenstvo. Nachádzate sa v situácii s nebezpečenstvom úrazu. Pred prácou na akomkoľvek vybavení si uvedomte nebezpečenstvo súvisiace s elektrickými obvodmi a oboznámte sa so štandardnými opatreniami na predchádzanie úrazom. Podľa čísla na konci každého upozornenia vyhľadajte jeho preklad v preložených bezpečnostných upozorneniach, ktoré sú priložené k zariadeniu.

USCHOVAJTE SI TENTO NÁVOD

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## Terms and Acronyms

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

**Note**

A complete list of terms and acronyms is available in the *Internetworking Terms and Acronyms* guide, at the following URL:

[http://www.cisco.com/en/US/docs/internetworking/terms\\_acronyms/ita.html](http://www.cisco.com/en/US/docs/internetworking/terms_acronyms/ita.html)

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- 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 service provider certified by Cisco)
- 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 Protocol and Layer 2 Tunneling Protocol
- LANE—LAN Emulation
- MAC—Media Access Control
- MB—megabyte
- MM—multimode
- nrt-VBR—nonreal-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 Computer
- 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 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/en/US/products/index.html>

You can access the Cisco website at this URL:

<http://www.cisco.com>

### Ordering Documentation

You can find instructions for ordering documentation at this URL:

[http://www.cisco.com/en/US/docs/general/illus\\_process/PDI/pdi.htm](http://www.cisco.com/en/US/docs/general/illus_process/PDI/pdi.htm)

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Ordering tool:  
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## Documentation Feedback

You can send comments about technical documentation to [bug-doc@cisco.com](mailto: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, Cisco Technical Support provides 24-hour-a-day, award-winning technical assistance. The Cisco Technical Support Website on Cisco.com features extensive online support resources. In addition, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not hold a valid Cisco service contract, contact your reseller.

## Cisco Technical Support Website

The Cisco Technical Support 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, 365 days a year at this URL:

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

Access to all tools on the Cisco Technical Support 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>

## 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 automatically provides recommended solutions. If your issue is not resolved using the recommended resources, your service request will be assigned to a Cisco TAC engineer. The TAC Service Request Tool is located at this URL:

<http://tools.cisco.com/ServiceRequestTool/create/launch.do>

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 TAC 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/en/US/support/tsd\\_contact\\_technical\\_support.html](http://www.cisco.com/en/US/support/tsd_contact_technical_support.html)

## 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)—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.

Severity 2 (S2)—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.

Severity 3 (S3)—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.

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.

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

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

- 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/index.html>

- *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/web/about/ac123/ac114/about\\_cisco\\_packet\\_magazine.html](http://www.cisco.com/web/about/ac123/ac114/about_cisco_packet_magazine.html)

- *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/web/about/ac123/ac147/about\\_cisco\\_the\\_internet\\_protocol\\_journal.html](http://www.cisco.com/web/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html)

- World-class networking training is available from Cisco. You can view current offerings at this URL:

<http://www.cisco.com/web/learning/index.html>