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:

- Document Revision History, on page i
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Document Revision History

The Document Revision History table below records technical changes to this document.

Date	Change Summary
July 2013	Added information about Cisco ASR1000-ESP200.
July 2012	Added information about Cisco ASR 1002-X Router, Cisco ASR1000-ESP100, and support for Cisco ASR1000-SIP40 on all routers that support Cisco ASR1000-SIP10. Information about these new features has been added in various sections in this guide.
March 2011	Added information about: • IDC-HD80G, IDC-4XGE, and IDC-CHT1/E1 integrated daughter cards on the Cisco ASR 1001 Router—See the Cisco ASR 1001 Router Description for detailed information. • MIBs for the new IDCs—See the MIBs for the Cisco ASR 1001 Router appendix for the list of MIBs. • Cisco ASR 1013 Router power supplies on the Cisco ASR 1006 Router—Information about this new feature has been added in various sections in this guide.

Date	Change Summary
November 2010	Added information about: • New Cisco ASR 1001 Router at Cisco ASR 1001 Router Description • Cisco ASR1000-SIP40 and Cisco ASR1000-ESP40 products on the Cisco ASR 1004 Router
July 2010	Added information about Cisco ASR 1000 Series Routers 40G products: • Cisco ASR 1013 Router Overview and Installation • Cisco ASR 1000-ESP40 • Supported ASR 1000 Hardware Components
November 2009	Added information about the Cisco +24 VDC power supply in the Cisco ASR 1002 Router. See the following sections: • Cisco ASR 1002 Router +24 VDC Power Supply • Removing and Replacing the Cisco ASR 1002 Router Power Supplies •
June 2009	Added information about the Cisco ASR 1002-F Router. **Note** Unless otherwise noted, the Cisco ASR 1002-F Router supports all the general-purpose routing and security features of the Cisco ASR 1002 Router and uses the same internal control and data-plane architecture as Cisco ASR 1002 Router and the Cisco ASR 1002-F Router is supported only by Cisco software release four code.
February 2009	Added information about Cisco ASR1000-RP2 and how alarms work with the power supply DB-25 connector. In addition, added safety information and updated the chapter on field-replaceable units (FRUs).
November 2008	Added information about the improved window of time allotted to replace a power supply. You now have up to 5 minutes to replace the power supply.
October 2008	Added information about Cisco ASR1000-ESP20 and Cisco ASR1000-ESP10-N support. Updated eUSB device graphics and replacement information.
May 2008	Released the first version of this document for the Cisco ASR 1000 Series Routers.

Document Objectives

This publication describes the installation of the Cisco ASR 1000 Series Aggregation Services Routers, replacement or upgrading of field-replaceable units (FRUs), and troubleshooting of the Cisco ASR 1000 Series Routers hardware. The purpose of this guide is to enable the safe and efficient installation of the Cisco ASR 1000 Series Aggregation Services Routers.

Note For information on installation of the Cisco ASR 1001-X Router, and replacement or upgrading of its field-replaceable units (FRUs), see the *Cisco ASR 1001-X Router Hardware Installation Guide* at the following URL: http://www.cisco.com/c/en/us/td/docs/routers/asr1000/install/guide/1001-x/asr1hig.html.

Audience

This publication is primarily designed for the person responsible for installing, maintaining, and troubleshooting the Cisco ASR 1000 Series Aggregation Services Routers. The users of this guide should:

- Be familiar with electronic circuitry and wiring practices.
- Have experience as electronic or electromechanical technicians.
- Have experience in installing high-end networking equipment. Certain procedures described in this guide require a certified electrician.

Document Organization

The following table describes the chapters and appendixes in this installation guide:

Chapter and Appendix	Description
Preface	The preface provides objectives, audience and organization of this manual.
Chapter 1, “Cisco ASR 1000 Series Routers Hardware Overview”	This chapter provides an overview of the Cisco ASR 1000 Series Aggregation Services Routers.
Chapter 2, “Cisco ASR 1000 Series Routers Component Overview”	This chapter provides an overview of the hardware components for the Cisco ASR 1000 Series Aggregation Services Routers.
Chapter 3, “Cisco ASR 1000 Series Routers Embedded Services Processors”	This chapter describes the Cisco ESPs for the ASR 1000 platform routers.
Chapter 4, “Cisco ASR 1000 Series Router SPA Interface Processors (SIPs)”	This chapter describes the Cisco SIPs for the ASR 1000 platform routers.
Chapter 5, “Preparing Your Site for Installation”	This chapter provides site preparation guidelines for installing the ASR 1000 Series Routers.
Chapter 6, “Cisco ASR 1006 Router Overview and Installation”	This chapter describes the Cisco ASR 1006 router and how to install it.
Chapter 7, “Cisco ASR 1004 Router Overview and Installation”	This chapter describes the Cisco ASR 1004 router and how to install it.

Chapter and Appendix	Description
Chapter 8, “Cisco ASR 1002 Router Overview and Installation"	This chapter describes the Cisco ASR 1002 router and how to install it.
Chapter 9, “Cisco ASR 1002-F Router Overview and Installation"	This chapter describes the Cisco ASR 1002-F router and how to install it.
Chapter 10, “Cisco ASR 1002-X Router Overview and Installation"	This chapter describes the Cisco ASR 1002-X router and how to install it.
Chapter 11, “Cisco ASR 1013 Router Overview and Installation"	This chapter describes the Cisco ASR 1013 router and how to install it.
Chapter 12, “Cisco ASR 1001 Router Overview and Installation"	This chapter describes the Cisco ASR 1001 router and how to install it.
Chapter 13, “Cisco ASR 1000 Series Routers Power Up and Initial Configuration"	This chapter provides basic system startup and initial configuration information.
Chapter 14, “Removing and Replacing FRUs from the Cisco ASR 1000 Series Routers"	This chapter provides instructions for removing and replacing shared port adapters, ASR 1000 RP1 internal hard drive, AC and DC power supplies, the Cisco ASR 1000 ESP forwarding processors, the Cisco DIMM memory cards, the Cisco memory stick, and the Cisco ASR 1000 Series Route Processors.
Appendix A, “Cisco ASR 1000 Series Router Specifications"	This appendix provides system specifications and pinouts.
Appendix B, “Cisco ASR 1000 Series Router Route Processor and Embedded Services Processor Signals and Pinouts"	This appendix lists pinout specifications for the Cisco ASR1000-RP1 and the Cisco ASR1000-RP2.
Appendix C, "Troubleshooting Initial Startup Problems"	This appendix provides basic system startup troubleshooting information.
Appendix D, "MIBs for the Cisco ASR 1001 Router"	This appendix lists the MIBs that can be used to manage the Cisco ASR 1001 Router.
Glossary	The glossary lists Cisco ASR 1000 Series Routers terms with definitions.

Conventions

This document uses the following conventions:

Convention	Indication
bold font	Commands and keywords and user-entered text appear in **bold** font.
italic font	Document titles, new or emphasized terms, and arguments for which you supply values are in *italic* font.
[ ]	Elements in square brackets are optional.
{x | y | z }	Required 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.
courier font	Terminal sessions and information the system displays appear in courier font.
< >	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.

Note Means *reader take note* .

Tip Means *the following information will help you solve a problem* .

Caution Means *reader be careful* . In this situation, you might perform an action that could result in equipment damage or loss of data.

Timesaver Means *the described action saves time* . You can save time by performing the action described in the paragraph.

Safety Warnings and Cautions

Most safety warnings for the Cisco ASR 1000 Series Routers are placed in relevant sections throughout the document. For translated safety warnings, see the Regulatory Compliance and Safety Information for the Cisco 1000 Series Aggregation Services Routers. Statement 1071, the Warning Definition statement, complete with translated warnings is provided in this section.

Warning Definition

Warning	IMPORTANT SAFETY This warning symbol m on any equipment, be a practices for preventing its translation in the tra SAVE THESE INSTRU
Waarschuwing	BELANGRIJKE VEIL Dit waarschuwingssym Voordat u aan enige app betrokken risico's en di Gebruik het nummer va die bij het apparaat wor BEWAAR DEZE INST
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Attention	IMPORTANTES INFO Ce symbole d'avertisse blessures ou des domm liés aux circuits électri accidents. Pour prendre sécurité traduites qui ac chaque avertissement. CONSERVEZ CES IN
Warnung	WICHTIGE SICHERH Dieses Warnsymbol be Machen Sie sich vor de Verfahren zur Vorbeugu Anweisungsnummer na mit diesem Gerät ausge BEWAHREN SIE DIE

Preface

Avvertenza	IMPORTANTI IST Questo simbolo di a Prima di intervenire elettrici e conoscere presente alla fine di documento. CONSERVARE QU
Advarsel	VIKTIGE SIKKER Dette advarselssym å arbeide med noe a til standardprosedyr oversettelsen i de o TA VARE PÅ DISS
Aviso	INSTRUÇÕES IM Este símbolo de avi corporais. Antes de no manuseio de circ Utilize o número da segurança traduzido GUARDE ESTAS
¡Advertencia!	INSTRUCCIONES Este símbolo de avi equipo, considere lo prevención de accid texto traducido en e GUARDE ESTAS
Varning!	VIKTIGA SÄKER Denna varningssign utför arbete på någo förfaranden för att f dess översättning i SPARA DESSA AN
Figyelem	**FONTOS BIZTONS** **Ez a figyelmezeto** **bármely berendez** **okozta kockázato** **A kiadványban sz** **figyelmeztetések** **szám alapján kere** **ORIZZE MEG EZE**

Preface

FONTOS BIZTONSÁGI ELOÍRÁSOK **Ez a figyelmezeto jel veszélyre utal. Sérülésveszélyt rejto helyzetben van. Mielott bármely berendezésen munkát végezte, legyen figyelemmel az elektromos áramkörök okozta kockázatokra, és ismerkedjen meg a szokásos balesetvédelmi eljárásokkal. A kiadványban szereplo figyelmeztetések fordítása a készülékhez mellékelt biztonsági figyelmeztetések között található; a fordítás az egyes figyelmeztetések végén látható szám alapján keresheto meg.** **ORIZZE MEG EZEKET AZ UTASÍTÁSOKAT!**	**ВАЖНЫЕ ИНСТРУК** **Этот символ предуп которой следует оп выясните, каким оп электрических цепе предотвращения во приведенным в кон в переводе предупр** **СОХРАНИТЕ ЭТИ ИН**
警告	重要的安全性说明 此警告符号代表危险。您 识到触电的危险，并熟练 设备的安全性警告说明的 请保存这些安全性说明
警告	**安全上の重要な注意事** **「危険」の意味です。人** **行うときは、電気回路の** **各注意事項の番号を基に** **これらの注意事項を保管**
주의	중요 안전 지침 이 경고 기호는 위험을 장비에 작업을 수행하 를 방지하십시오. 각 경 번역된 안전 경고문에 이 지시 사항을 보관하
Aviso	INSTRUÇÕES IMPOR Este símbolo de aviso si Antes de trabalhar com e familiarize-se com as ao final de cada aviso p dispositivo. GUARDE ESTAS INS
Advarsel	VIGTIGE SIKKERHE Dette advarselssymbol du begynder arbejde på kredsløb, og du skal sæ efter hver advarsel for a GEM DISSE ANVISN

Preface

تحذير	**صابات. قبل بدء العمل،** **وقوع أي حوادث. استخدم** **تي تأتي مع الجهاز.**
Upozorenje	**VAŽNE SIGURNO** **Ovaj simbol upoz** **tjelesne ozljede.** **električne sklopo** **prevedenim sigur** **nalazi uz pojedin** **SAČUVAJTE OVE**
Upozornění	**DŮLEŽITÉ BEZPE** **Tento upozorňujíc** **nebezpečí úrazu.** **s elektrickými ob** **Podle čísla na ko** **bezpečnostních u** **USCHOVEJTE TY**
Προειδοποίηση	ΣΗΜΑΝΤΙΚΕΣ ΟΔ Αυτό το προειδοπο προκαλέσει τραυμ κινδύνους που σχε πρακτικές για την τέλος κάθε προειδ προειδοποιήσεις α ΦΥΛΑΞΤΕ ΑΥΤΕΣ
אזהרה	שתעבוד עם ציוד נהלים המקובלים אתר את התרגום'
Opomena	ВАЖНИ БЕЗБЕДН Симболот за пред предизвика телес постои кај електр несреќни случаи. предупредување предупредувања ЧУВАЈТЕ ГИ ОВИ

Ostrzeżenie	**WAŻNE INSTRUKCJ** **Ten symbol ostrzeże powodować obrażen zapoznać się z zagro środkami zapobiega podstawie którego m urządzenia dokumen** **NINIEJSZE INSTRUK**
Upozornenie	**DÔLEŽITÉ BEZPEČN** **Tento varovný symb situácii s nebezpeče si uvedomte nebezp oboznámte sa so šta Podľa čísla na konci preložených bezpečn zariadeniu.** **USCHOVAJTE SI TEN**

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

Warning This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security. Use when a product has an accessible HAZ/V circuits or a DC supply that is not provided with a field wiring cover. Statement 1017

Related Documentation

Your Cisco ASR 1000 Series Routers and the Cisco IOS software running on it contain extensive features and functionality, which are documented in the following resources:

- All documentation related to the Cisco ASR 1000 Series Routers is listed in the online Cisco ASR 1000 Series Aggregation Services Routers Documentation Roadmap . Information in this master index includes troubleshooting tools and documentation, regulatory compliance and safety information, and installation and replacement information. Also see the Cisco ASR 1000 Series Port Adapter Documentation Roadmap for specific shared port adapters supported on the Cisco ASR 1000 Series Routers.

Some of the Cisco ASR 1000 Series Routers documentation that is listed on the Cisco ASR 1000 Series Aggregation Services Routers Documentation Roadmap includes:

-
  - Quick Start Guides for the Cisco ASR 1000 Series Routers. These guides provide quick reference information about chassis or parts installation procedures.
  - The Cisco ASR 1000 Series Aggregation Services Routers Troubleshooting document contains information to help you troubleshoot problems with the Cisco ASR 1000 Series Routers.
  - The Regulatory Compliance and Safety Information for Cisco ASR 1000 Series Aggregation Services Routers document provides international agency compliance, safety, and statutory information for wide-area network (WAN) interfaces for the Cisco ASR 1000 Series Routers.
  - Cisco ASR 1000 Series shared port adapter documentation.

- Cisco IOS software documentation contains Cisco IOS software configuration information and support. See the modular configuration and modular command reference publications in the set that corresponds to the software release installed on your Cisco hardware.
- To check the minimum software requirements of Cisco IOS software with the hardware installed on 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.

Note Access to this tool is limited to users with Cisco.com login accounts.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation* , which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.