



## 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:

- [Objectives, page i](#)
- [Document Revision History, page i](#)
- [Organization, page ii](#)
- [Related Documentation, page iii](#)
- [Document Conventions, page iv](#)
- [Obtaining Documentation and Submitting a Service Request, page vi](#)

## Objectives

This document describes the processes involved in configuring and troubleshooting the Cisco ASR 1000 Series Modular Ethernet Line Card that is supported on the Cisco ASR 1000 Series Aggregation Services Routers.



**Note**

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Unless otherwise noted in this document, the term Cisco ASR 1000 Series Modular Ethernet Line Card represent the ASR1000-MIP100 line card.

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## Document Revision History

The Document Revision History records the changes made to this document. The table shows the Cisco IOS XE software release number and document revision number pertaining to the change, the date of the change, and a brief summary of the change.

Release No.	Date	Change Summary
Cisco IOS XE Release 16.2.1	April 21, 2016	Added support for EPA-10X10GE.

Release No.	Date	Change Summary
Cisco IOS XE Release 3.16.2S	February 19, 2016	Added support for EPA-CPAK-2X40GE.
Cisco IOS XE Release 3.16.1S	July 31, 2015	First version of the document.

# Organization

This document contains the following chapters:

Chapter	Title	Description
Chapter 1	<a href="#">Using Cisco IOS XE Software</a>	Provides an introduction to accessing the command-line interface (CLI) and using the Cisco IOS software and related tools.
Chapter 2	<a href="#">Overview of the Cisco ASR 1000 Series Modular Ethernet Line Card</a>	Describes release history, feature and Management Information Base (MIB) support, and an introduction to the Cisco ASR 1000 Series Modular Ethernet Line Card architecture on the Cisco ASR 1000 Series Aggregation Services Routers.
Chapter 3	<a href="#">Configuring the Cisco ASR 1000 Series Modular Ethernet Line Card</a>	Describes the related configuration and verification information pertaining to the Cisco ASR 1000 Series Modular Ethernet Line Card on the Cisco ASR 1000 Series Aggregation Services Routers.
Chapter 2	<a href="#">Troubleshooting the Cisco ASR 1000 Series Modular Ethernet Line Card</a>	Describes the techniques that you can use to troubleshoot the operation of the Cisco ASR 1000 Series Modular Ethernet Line Card on the Cisco ASR 1000 Series Aggregation Services Routers.
Chapter 5	<a href="#">Upgrading Field-Programmable Devices</a>	Provides information about upgrading field-programmable devices on the Cisco ASR 1000 Series Aggregation Services Routers.

## Related Documentation

This section refers you to other documentation that might be useful when you configure your Cisco ASR 1000 Series Aggregation Services Routers.

### Cisco IOS XE Features and Software Configuration

- Information about supported features and their configuration on the Cisco ASR 1000 Series Aggregation Services Routers are available in the Cisco IOS XE software configuration guides at:

[http://www.cisco.com/en/US/products/ps9587/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps9587/products_installation_and_configuration_guides_list.html)

- A summary of the new features in a particular release can be found at:

[http://www.cisco.com/en/US/products/ps9587/products\\_feature\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps9587/products_feature_guides_list.html)

- Command documentation for the Cisco ASR 1000 Series Aggregation Services Routers is available at:

[http://www.cisco.com/en/US/products/ps9587/prod\\_command\\_reference\\_list.html](http://www.cisco.com/en/US/products/ps9587/prod_command_reference_list.html)

### Cisco ASR 1000 Series Aggregation Services Routers Documentation

Some of the following Cisco ASR 1000 Series Aggregation Services Router publications might be useful to you as you configure your Cisco ASR 1000 Series Aggregation Services Routers:

- Cisco ASR 1000 Series Aggregation Services Routers *Hardware Installation Guide* <http://www.cisco.com/en/US/partner/docs/routers/asr1000/install/guide/asr1routers/asr1higV8.html>
- Three Quick Start Guides:
  - *Cisco ASR 1004 Router Quick Start Guide* [http://www.cisco.com/en/US/partner/docs/routers/asr1000/quick/start/guide/asr1\\_qs4.html](http://www.cisco.com/en/US/partner/docs/routers/asr1000/quick/start/guide/asr1_qs4.html)
  - *Cisco ASR 1006 Router Quick Start Guide* [http://www.cisco.com/en/US/partner/docs/routers/asr1000/quick/start/guide/asr1\\_qs6.html](http://www.cisco.com/en/US/partner/docs/routers/asr1000/quick/start/guide/asr1_qs6.html)
  - *Cisco ASR 1013 Router Quick Start Guide* [http://www.cisco.com/en/US/partner/docs/routers/asr1000/quick/start/guide/asr1\\_qs13.html](http://www.cisco.com/en/US/partner/docs/routers/asr1000/quick/start/guide/asr1_qs13.html)
- Command Reference Guide:
  - *Cisco IOS Quality of Service Solutions Command Reference guide at the URL:* [http://www.cisco.com/en/US/docs/ios/qos/command/reference/qos\\_book.html](http://www.cisco.com/en/US/docs/ios/qos/command/reference/qos_book.html)
- *Regulatory Compliance and Safety Information for the Cisco ASR 1000 Series Aggregation Services Routers* <http://www.cisco.com/en/US/partner/docs/routers/asr1000/rcsi/asr1rcsi.html>
- *Cisco ASR 1000 Series Aggregation Services Routers Software Configuration Guide* <http://www.cisco.com/en/US/partner/docs/routers/asr1000/configuration/guide/chassis/asrswcfg.html>

- Cisco ASR 1000 Series Aggregation Services Routers *MIB Specifications Guide* <http://www.cisco.com/en/US/partner/docs/routers/asr1000/mib/guide/asr1kmib.html>
- *Release Notes for Cisco ASR 1000 Series Aggregation Services Routers* [http://www.cisco.com/en/US/docs/routers/asr1000/release/notes/asr1k\\_m\\_rel\\_notes.html](http://www.cisco.com/en/US/docs/routers/asr1000/release/notes/asr1k_m_rel_notes.html)
- Several other publications are also related to the Cisco ASR 1000 Series Aggregation Services Routers. For a complete reference of related documentation, see the *Cisco ASR 1000 Series Aggregation Services Routers Documentation Roadmap* located at the following URL: [http://www.cisco.com/en/US/products/ps9343/products\\_documentation\\_roadmaps\\_list.html](http://www.cisco.com/en/US/products/ps9343/products_documentation_roadmaps_list.html)

Your router and the Cisco IOS software running on it contain extensive features. You can find documentation about Cisco products at the following URL:

<http://www.cisco.com/cisco/web/psa/default.html?mode=prod>

## Document Conventions

Within the *Cisco ASR 1000 Series Modular Ethernet Line Card Software Configuration Guide*, the term *router* is generally used to refer to a variety of Cisco products (for example, routers, access servers, and switches). Routers, access servers, and other networking devices that support Cisco IOS software are shown interchangeably within examples. These products are used only for illustrative purposes, that is, an example that shows one product does not necessarily indicate that other products are not supported.

This documentation uses the following conventions:

Convention	Description
<b>^</b> or <b>Ctrl</b>	The <b>^</b> and <b>Ctrl</b> symbols represent the Control key. For example, the key combination <b>^D</b> or <b>Ctrl-D</b> means hold down the <b>Control</b> key while you press the <b>D</b> key. Keys are indicated in capital letters but are not case sensitive.
<i>string</i>	A string is a nonquoted set of characters shown in italics. For example, when setting an SNMP community string to public, do not use quotation marks around the string. If you do, the string will include the quotation marks.

Command syntax descriptions use the following conventions:

Convention	Description
<b>bold</b>	Bold text indicates commands and keywords that you enter exactly as shown.
<i>italics</i>	Italic text indicates arguments for which you supply values.

Convention	Description
[x]	Square brackets enclose an optional element (keyword or argument).
	A vertical line indicates a choice within an optional or required set of keywords or arguments.
[x   y]	Square brackets enclosing keywords or arguments separated by a vertical line indicate an optional choice.
{x   y}	Braces enclosing keywords or arguments separated by a vertical line indicate a required choice.

Nested sets of square brackets or braces indicate optional or required choices within optional or required elements. For example:

Convention	Description
[x {y   z}]	Braces and a vertical line within square brackets indicate a required choice within an optional element.

Examples use the following conventions:

Convention	Description
screen	Examples of information displayed on the screen are set in Courier font.
<b>bold screen</b>	Examples of text that you must enter are set in Courier bold font.
<>	Angle brackets enclose text that is not printed to the screen, such as passwords.
!	An exclamation point at the beginning of a line indicates a comment line. (Exclamation points are also displayed by the Cisco IOS software for certain processes.)
[ ]	Square brackets enclose default responses to system prompts.

The following conventions are used to attract the attention of the reader:

**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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**Note**

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

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**Tip**

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Means *the following information will help you solve a problem* . The tips information might not be troubleshooting or even an action, but could be useful information, similar to a Timesaver.

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## Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see [What's New in Cisco Product Documentation](#).

To receive new and revised Cisco technical content directly to your desktop, you can subscribe to the [What's New in Cisco Product Documentation RSS feed](#). RSS feeds are a free service.