Preface

This document describes the processes involved in configuring and troubleshooting the Cisco ASR 1000 Series Fixed Ethernet Line Cards that are supported on the Cisco ASR 1000 Series Aggregation Services Routers.

Note Unless otherwise noted in this document, the term Cisco ASR 1000 Series Fixed Ethernet Line Cards represent both the ASR1000-2T+20X1GE line card and the ASR1000-6TGE line card.

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.	Revision No.	Date	Change Summary
Cisco IOS XE Release 3.10S	OL-29860-01	July 30, 2013	First version of the document.

Release No.	Revision No.	Date	Change Summary
Cisco IOS XE Release 3.11S	OL-29860-02	November 15, 2013	Information about the support for the VLAN Unlimited, Fast Reroute (FRR), Configurable Pause Frame Thresholds, and Per Port Weight for Low Priority Traffic features was included.
Cisco IOS XE Release 3.12S	OL-29860-03	March 31, 2014	Information about the support for the ASR 1000-6x10GE line card was included.
Cisco IOS XE Release 3.13S	OL-29860-04	July 28, 2014	Information about modifying the minimum frame size to 68 bytes was included.
Cisco IOS XE Release 3.15	OL-29860-05	March 26, 2015	Added information pertaining to the support for the Cisco 1000BASET SFP Module (SFP-GLC-TE) on the ASR 1000 Series Routers.

Organization

This document contains the following chapters:

Chapter	Title	Description
Chapter 1	Using Cisco IOS XE Software	Provides an introduction to accessing the command-line interface (CLI) and using the Cisco IOS software and related tools.
Chapter 2	Overview of the Cisco ASR 1000 Series Fixed Ethernet Line Cards	Describes release history, feature and Management Information Base (MIB) support, and an introduction to the Cisco ASR 1000 Series Fixed Ethernet Line Card architecture on the Cisco ASR 1000 Series Aggregation Services Routers.

Chapter	Title	Description
Chapter 3	Configuring the Cisco ASR 1000 Series Fixed Ethernet Line Card	Describes the related configuration and verification information pertaining to the Cisco ASR 1000 Series Fixed Ethernet Line Card on the Cisco ASR 1000 Series Aggregation Services Routers.
Chapter 4	Troubleshooting the Cisco ASR 1000 Series Fixed Ethernet Line Card	Describes the techniques that you can use to troubleshoot the operation of the Cisco ASR 1000 Series Fixed Ethernet Line Card on the Cisco ASR 1000 Series Aggregation Services Routers.
Chapter 5	Upgrading Field-Programmable Devices	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 as 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

- 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

- 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

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

    ◦ *Cisco ASR 1006 Router Quick Start Guide* 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

- 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

- *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_rn_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

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 Fixed 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
^ or **Ctrl**	The ^ and **Ctrl** symbols represent the Control key. For example, the key combination ^**D** or **Ctrl-D** means hold down the **Control** key while you press the **D** key. Keys are indicated in capital letters but are not case sensitive.
string	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
bold	Bold text indicates commands and keywords that you enter exactly as shown.
italics	Italic text indicates arguments for which you supply values.
[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.
`bold screen`	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   Means *reader be careful* . In this situation, you might do something that could result in equipment damage or loss of data.

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

Tip   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.

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.