

Cisco ASR 1000 Series Ethernet Line Cards

Product Overview

The Cisco® ASR 1000 Series Fixed Ethernet Line Cards (ASR1000-2T+20X1GE and ASR1000-6TGE) are fixed-port Ethernet line cards for the Cisco ASR 1000 Series Aggregation Services Routers. The line cards are capable of 40-Gbps full-duplex traffic forwarding using a fixed-port interface design. The ASR1000-2T+20X1GE has twenty 1 Gigabit Ethernet ports and two 10 Gigabit Ethernet ports (Figure 1). The ASR1000-6TGE has six 10 Gigabit Ethernet ports (Figure 2).

The Small Form-Factor Pluggable (SFP) and 10-Gbps SFP (XFP) modules allow you to configure the line card for different media types (copper or fiber) and different optical requirements (single- or multimode fiber), as available. The line cards have one power LED, one line-card status LED, and 22 port or link-status LEDs.

Figure 1. Cisco ASR 1000 Series Fixed Ethernet Line Card (ASR1000-2T+20X1GE)

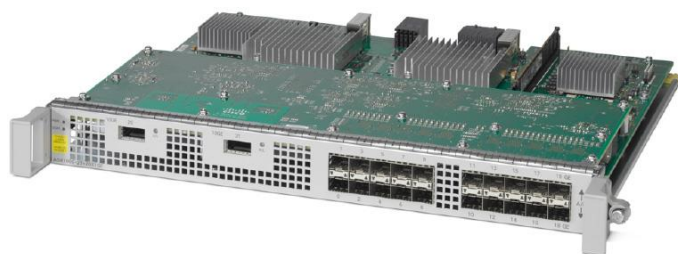


Figure 2. Cisco ASR 1000 Series Fixed Ethernet Line Card (ASR1000-6TGE)



The ASR1000-2T+20X1GE has twenty 1 Gigabit Ethernet and two 10 Gigabit Ethernet ports built in; the ASR1000-6TGE has six 10 Gigabit Ethernet ports built in, allowing the ASR 1000 Series Routers to achieve greater Ethernet density and a lower price per port. However, this fixed configuration means that the Ethernet line cards are not compatible with the shared port adapters (SPAs) that are currently used with the SPA interface processors (SIP). Instead, the Ethernet line cards take the slot of the SPA interface processor with the twenty 1 Gigabit Ethernet and two 10 Gigabit Ethernet ports built in, or six 10 Gigabit Ethernet ports built in. Table 1 lists the differences between the fixed Ethernet line cards and the SPA interface processors.

The Cisco ASR 1000 Series Modular Interface Processor (ASR1000-MIP100) (Figure 3) is a full-duplex 100-Gbps modular Ethernet line card that is capable of hosting up to two Cisco ASR 1000 Series Ethernet Port Adapters (EPAs) (Figure 4). EPAs are new interface cards that introduce 40 Gigabit Ethernet and 100 Gigabit Ethernet connectivity to the Cisco ASR 1000 Series. Much like the fixed Ethernet line cards, the modular interface processors with EPAs offer the same feature parity and functionality as the SPA interface processor and SPA combination. Table 1 shows the features of the three types of interface cards.

Figure 3. Cisco ASR 1000 Series Modular Interface Processor (ASR1000-MIP100)



Figure 4. Cisco ASR 1000 Series 1-port 100 Gigabit Ethernet Port Adapter



Figure 5. Cisco ASR 1000 Series 10-port 10 Gigabit Ethernet Port Adapter



Other aspects of the fixed Ethernet line cards (ASR1000-2T+20X1GE and ASR1000-6TGE) and the modular interface processors include:

- Rich Ethernet Layer 2, Layer 3, IP, IPv6, and Multiprotocol Label Switching (MPLS) packet-processing capabilities, as previously provided on Cisco ASR 1000 Series platforms
- Rich quality-of-service (QoS) functions:
 - Ingress and egress QoS, as previously provided on Cisco ASR 1000 Series platforms
 - Egress queuing capability as previously provided on Cisco ASR 1000 Series platforms
 - High- and low-priority lanes to Cisco ASR 1000 Series Embedded Services Processors for high-priority, low-latency forwarding

Table 1. SPA and EPA Compatibility on Cisco ASR 1000 Series Line Cards

Feature	Cisco ASR 1000 SPA Interface Processor	Cisco ASR 1000 Fixed Ethernet Line Card	Cisco ASR 1000 Modular Interface Processor
Shared port adapters (SPAs)	Yes	No	No
Ethernet port adapters (EPAs)	No	No	Yes
Built-in Ethernet ports	No	Yes	No

Ordering Information

Tables 2, 3, and 4 give ordering information for the line cards and hardware, respectively, and Tables 5 and 6 give the minimum Cisco IOS® XE Software version required.

Table 2. Ordering Information

Product Name	Part Number
Cisco ASR 1000 Fixed Ethernet Line Card, 6x10GE	ASR1000-6TGE
Cisco ASR 1000 Fixed Ethernet Line Card, 2x10GE + 20x1GE	ASR1000-2T+20X1GE
Cisco ASR 1000 Ethernet Line Card, 100G Modular Interface Processor	ASR1000-MIP100
Cisco ASR 1000 1x100GE Ethernet Port Adapter	EPA-1X100GE
Cisco ASR 1000 2x40GE Ethernet Port Adapter (breakout cable)	EPA-CPAK-2X40GE
Cisco ASR 1000 10x10GE Ethernet Port Adapter	EPA-10X10GE
Cisco ASR 1000 18x1GE Ethernet Port Adapter	EPA-18X1GE (for ASR1002-HX)

Table 3. Cisco ASR 1000 Series Fixed Ethernet Line Cards Compatible Hardware (6x10GE and 2x10GE + 20x1GE)

Product Name	Part Number
Cisco ASR 1004 Router Chassis	ASR1004
Cisco ASR 1006 Router Chassis	ASR1006
Cisco ASR 1006-X Router Chassis	ASR1006-X
Cisco ASR 1009-X Router Chassis	ASR1009-X
Cisco ASR 1013 Router Chassis	ASR1013
Cisco ASR 1000 Route Processor 2	ASR1000-RP2
Cisco ASR 1000 Embedded Services Processor, 40G	ASR1000-ESP40 (Up to 4 ASR1000-2T+20X1GE on ASR1013 with ESP40)
Cisco ASR 1000 Embedded Services Processor, 100G	ASR1000-ESP100
Cisco ASR 1000 Embedded Services Processor, 200G	ASR1000-ESP200
Cisco ASR 1004 Power supply	ASR1004-PWR-AC ASR1004-PWR-DC
Cisco ASR 1000 1600W Power Supply (for Cisco ASR 1006 and ASR 1013 chassis)	ASR1013/06-PWR-AC ASR1013/06-PWR-DC
Cisco ASR 1000X Power Supply	ASR1000X-AC-1100W ASR1000X-DC-950W

Refer to the [Cisco ASR 1000 Series Fixed Ethernet Line Card Hardware Installation Guide](#) for the latest compatibility details.

Table 4. Cisco ASR 1000 100G Modular Interface Processor Compatible Hardware (ASR1000-MIP100)

Product Name	Part Number
Cisco ASR 1000 1x100GE Ethernet Port Adapter	EPA-1X100GE
Cisco ASR 1000 2x40GE Ethernet Port Adapter (breakout cable)	EPA-CPAK-2X40GE
Cisco ASR 1000 10x10GE Ethernet Port Adapter	EPA-10X10GE
Cisco ASR 1006-X Router Chassis	ASR1006-X
Cisco ASR 1009-X Router Chassis	ASR1009-X
Cisco ASR 1013 Router Chassis	ASR1013
Cisco ASR 1000 Route Processor 2	ASR1000-RP2
Cisco ASR 1000 Embedded Services Processor, 100G	ASR1000-ESP100
Cisco ASR 1000 Embedded Services Processor, 200G	ASR1000-ESP200
Cisco ASR 1000 1600W Power Supply	ASR1013/06-PWR-AC ASR1013/06-PWR-DC
Cisco ASR 1000X Power Supply	ASR1000X-AC-1100W ASR1000X-DC-950W

Table 5. Minimum Cisco IOS XE Software Version for Ethernet Line Cards

Product Name	Product Number	Minimum Cisco IOS XE Software Release
Cisco ASR 1000 Fixed Ethernet Line Card (6x10GE)	ASR1000-6TGE	Cisco IOS XE 3.12
Cisco ASR 1000 Fixed Ethernet Line Card (20x1GE + 2x10GE)	ASR1000-2T+20X1GE	Cisco IOS XE 3.10
Cisco ASR 1000 Ethernet Line Card, 100G Modular Interface Processor	ASR1000-MIP100	Cisco IOS XE 3.16.1 Cisco IOS XE 16.2.1

Table 6. Minimum Cisco IOS XE Software Version for Ethernet Port Adapters

Product Number	ASR1002-HX	ASR1006-X with ASR1000-MIP100	ASR1009-X with ASR1000-MIP100	ASR1013 with ASR1000-MIP100
EPA-1X100GE	Future	XE 3.16.1 XE 16.2.1	XE 3.16.1 XE 16.2.1	XE 3.16.1 XE 16.2.1
EPA-CPAK-2X40GE	Future	XE 3.16.2 (no XE 3.17) XE 16.3.1	XE 3.16.2 (no XE 3.17) XE 16.3.1	XE 3.16.2 (no XE 3.17) XE 16.3.1
EPA-10X10GE	XE 16.3.1	XE 16.2.1	XE 16.2.1	XE 16.2.1
EPA-18X1GE	XE 16.2.1	XE 16.3.1	XE 16.3.1	XE 16.3.1

Cisco Services for the Enterprise WAN Edge

Cisco and our partners help make your enterprise WAN edge deployment a success with a broad portfolio of services based on proven methodologies. We can help you establish a secure, resilient WAN architecture and successfully integrate Cisco Unified Communications, Cisco TelePresence[®], security, and mobility technologies with bandwidth to support video, collaboration, branch-office solutions, and growth in alignment with your business goals. Planning and design services align technology with business goals and can increase the accuracy, speed, and efficiency of deployment. Technical services help maintain operational health, strengthen software application functions, solve performance concerns, and lower expenses. Optimization services are designed to continually improve performance and help your team succeed with new technologies. For more information, please visit:

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

Cisco Capital

Financing to Help You Achieve Your Objectives

Cisco Capital can help you acquire the technology you need to achieve your objectives and stay competitive. We can help you reduce CapEx. Accelerate your growth. Optimize your investment dollars and ROI. Cisco Capital financing gives you flexibility in acquiring hardware, software, services, and complementary third-party equipment. And there's just one predictable payment. Cisco Capital is available in more than 100 countries. [Learn more.](#)

For More Information

For more information about the Cisco ASR 1000 Series Fixed Ethernet Line Card, visit

http://www.cisco.com/en/US/docs/interfaces_modules/shared_port_adapters/configuration/ASR1000/fixed_ethernet_linecard/ASRoveth.html or contact your local Cisco account representative.



Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: www.cisco.com/go/trademarks. Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)