

## Cisco ASR 1000 Series Embedded Services Processors

PB449981

The 5-, 10-, 10-N-, and 20-Gbps Cisco® ASR 1000 Series Embedded Services Processors (ESPs) (part numbers ASR1000-ESP5, ASR1000-ESP10, ASR1000-ESP10-N, and ASR1000-ESP20, respectively) provide four centralized forwarding-engine options for the Cisco ASR 1000 Series Aggregation Services Routers (Figure 1). The 5-Gbps ESP (ESP5) supports 5 Gbps of bandwidth. The 10-Gbps ESP (ESP10 and ESP10-N) support 10 Gbps of bandwidth and can be deployed in customer networks that require 1+1 redundancy. The 20-Gbps ESP (ESP20) supports 20 Gbps of bandwidth and can be deployed in customer networks that require 1+1 redundancy (refer to fault-tolerant configuration in Table 3).

Performance highlights of the ESP20 include hardware-assisted quality of service (QoS), encryption capability of 8 Gbps, and special jitter- and latency-minimizing multicast packet replication. Encryption capability of the ESP10 is rated for 4 Gbps whereas ESP5 is rated for 1.8 Gbps. The ASR1000-ESP10-N has the same performance characteristics as the ASR1000-ESP10 but does not support encryption services.

All three ESPs are based on the innovative Cisco Packet Processor for next-generation forwarding and queuing in silicon.

**Figure 1.** Cisco ASR 1000 Series Embedded Services Processor (10 Gbps shown)



### New Features

The 5-, 10-, 10-N-, and 20-Gbps ESPs offer the following new features:

- Integrate full range of industry-leading Cisco IOS® Software features and services
- Guarantee carrier-class High Availability through hardware and software redundancies
- Offer flexible number of queues per interface and hierarchical QoS support

- Optimized for IPv6 packet routing and multicast traffic broadcasting at line rate
- Process packet header and data segments to provide Deep Packet Inspection
- Ideal for next-generation and triple-play (data, voice, and video) broadband networks, including upcoming capabilities such as ad insertion
- Provide field-replaceable and hot-swappable module that helps ensure minimal service disruption
- Offer greatly improved price/performance ratio
- Provide unrivaled feature velocity through configurable multicore Cisco Packet Processor

### Upgrade Paths

Cisco ASR 1000 Series Routers are included in the standard Cisco Technology Migration Program (CTMP). Refer to [www.cisco.com/go/TMP](http://www.cisco.com/go/TMP) and contact your Cisco account representative for program details.

### Software Support

The 5- and 10-Gbps ESPs are supported in Release 2.1 of the Cisco IOS XE Software or higher. The 20-Gbps ESP is supported in Release 2.2 of the Cisco IOS XE Software or higher.

### Availability

The 5- and 10-Gbps ESPs are generally available. The target first customer shipment for the 20-Gbps ESP is September 2008.

### Ordering Information

To place an order, visit the Cisco Ordering Home Page at [www.cisco.com/en/US/ordering/index.shtml](http://www.cisco.com/en/US/ordering/index.shtml) and refer to Table 1. For further information, please refer to the Cisco ASR 1000 Series Aggregation Services Routers Orderability product bulletin.

Please refer to Tables 2, 3, and 4 for compatible hardware, and Table 5 for compatible software.

To download software, visit the Cisco Software Center at <http://www.cisco.com/kobayashi/sw-center>.

**Table 1.** Ordering Information

Product Name	Part Number
Cisco ASR 1000 Embedded Services Processor 5Gbps	ASR1000-ESP5
Cisco ASR 1000 Embedded Services Processor 10Gbps	ASR1000-ESP10
Cisco ASR 1000 Embedded Services Processor 10Gbps Non Crypto	ASR1000-ESP10-N
Cisco ASR 1000 Embedded Services Processor 20Gbps	ASR1000-ESP20

**Table 2.** Cisco ASR 1000 Series ESP5 Compatible Hardware

Product Name	Part Number
Cisco ASR 1002 Router Chassis	ASR1002

**Table 3.** Cisco ASR 1000 Series ESP10 Compatible Hardware

Product Name	Part Number
Cisco ASR 1002 Router Chassis	ASR1002
Cisco ASR 1004 Router Chassis	ASR1004
Cisco ASR 1006 Router Chassis*	ASR1006
Cisco ASR 1000 Route Processor 1, 2GB DRAM	ASR1000-RP1
Cisco ASR 1000 Route Processor 2, 8GB DRAM	ASR1000-RP2
Cisco ASR 1000 SPA Interface Processor 10	ASR1000-SIP10

\* Supports 1 + 1 redundancy when configured with two ESP10 modules.

**Table 4.** Cisco ASR 1000 Series ESP20 Compatible Hardware

Product Name	Part Number
Cisco ASR 1004 Router Chassis	ASR1004
Cisco ASR 1006 Router Chassis*	ASR1006
Cisco ASR 1000 Route Processor 1, 2GB DRAM	ASR1000-RP1
Cisco ASR 1000 Route Processor 2, 8GB DRAM	ASR1000-RP2
Cisco ASR 1000 SPA Interface Processor 10	ASR1000-SIP10

\* Supports 1 + 1 redundancy when configured with two ESP20 modules.

**Table 5.** Compatible Software

Product Name	Part Number
Cisco ASR 1000 Series RP1 IP BASE W/O CRYPTO	SASR1R1-IPB-21SR (for ESP5 and ESP10 only) and SASR1R1-IPB-22SR or higher
Cisco ASR 1000 Series RP1 IP BASE	SASR1R1-IPBK9-21SR (for ESP5 and ESP10 only) and SASR1R1-IPBK9-22SR or higher
Cisco ASR 1000 Series RP1 ADVANCED IP SERVICES	SASR1R1-AISK9-21SR (for ESP5 and ESP10 only) and SASR1R1-AISK9-22SR or higher
Cisco ASR 1000 Series RP1 ADVANCED IP SERVICES W/O CRYPTO	SASR1R1-AIS-22SR or higher
Cisco ASR 1000 Series RP1 ADVANCED ENTERPRISE SERVICES	SASR1R1-AESK9-21SR (for ESP5 and ESP10 only) and SASR1R1-AESK9-22SR or higher
Cisco ASR 1000 Series RP1 ADVANCED ENTERPRISE SERVICES W/O CRYPTO	SASR1R1-AES-22SR or higher
Cisco ASR 1000 Series RP2 IP BASE W/O CRYPTO	SASR1R2-IPB-23SR or higher
Cisco ASR 1000 Series RP2 IP BASE	SASR1R2-IPBK9-23SR or higher
Cisco ASR 1000 Series RP2 ADVANCED IP SERVICES	SASR1R2-AISK9-23SR or higher
Cisco ASR 1000 Series RP2 ADVANCED IP SERVICES W/O CRYPTO	SASR1R2-AIS-23SR or higher
Cisco ASR 1000 Series RP2 ADVANCED ENTERPRISE SERVICES	SASR1R2-AESK9-23SR or higher
Cisco ASR 1000 Series RP2 ADVANCED ENTERPRISE SERVICES W/O CRYPTO	SASR1R2-AES-23SR or higher

## Service and Support

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## For More Information

For more information about the Cisco ASR 1000 Series Routers, visit [www.cisco.com/go/asr1000](http://www.cisco.com/go/asr1000) or contact your local Cisco account representative.



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