

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 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 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

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For More Information

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



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