

# Cisco ASR 1000 Series Aggregation Services Routers

PB447657

The Cisco® ASR 1000 Series Aggregation Services Routers are designed to optimize service provider edge and enterprise aggregation solutions. The innovative hardware and software design of these routers integrates powerful resiliency and intelligent services into a single router platform (Figure 1).

**Figure 1.** Cisco ASR 1000 Series Aggregation Services Routers



## Hardware

The system is composed of a chassis, a route processor (RP), embedded services processors (ESPs), and interface line cards. For interfaces, it supports common Cisco shared port adapters (SPAs) through the SPA interface processors (SIPs) and Ethernet port adapters (EPAs) through the modular interface processors (MIPs). Because of the modular design of the hardware, you can order many combinations to fit various price and performance requirements.

Six form-factor chassis are available: 1, 2, 4, 6, 9, and 13 rack units (RUs). All chassis come equipped with redundant power supplies. Most hardware components are interchangeable among different chassis; the exceptions are the 1RU and 2RU fixed models, which have a fixed SIP, ESP, and RP in the chassis because of their compact form factor. The modular route processors supported on the 4RU-, 6RU-, 9RU-, and 13RU chassis ship with default 8-GB DRAM (ASR1000-RP2 or ASR1000-RP3), which you can upgrade to 16 GB (ASR1000-RP2) or 64 GB (ASR1000-RP3).

**Table 1. Hardware Support Compatibility**

Chassis Part Number	Route Processor	ESP	I/O
<b>ASR1001</b>	<ul style="list-style-type: none"> <li>Integrated RP with 4-GB DRAM (memory is upgradable to 16 GB)</li> </ul>	<ul style="list-style-type: none"> <li>Integrated ESP with 2.5G throughput performance (upgradable to 5G with license)</li> </ul>	<ul style="list-style-type: none"> <li>Integrated SIP</li> <li>Built-in 4x1GE ports</li> <li>1x SPA slot</li> </ul>
<b>ASR1001-X</b>	<ul style="list-style-type: none"> <li>Integrated RP with 8-GB DRAM (memory is upgradable to 16 GB)</li> </ul>	<ul style="list-style-type: none"> <li>Integrated ESP with 2.5G throughput performance (upgradable to 5G, 10G, or 20G with license)</li> </ul>	<ul style="list-style-type: none"> <li>Integrated SIP</li> <li>Built-in 6x1GE ports</li> <li>Built-in 2x10GE ports</li> <li>1x SPA slot</li> <li>1x NIM slot</li> </ul>
<b>ASR1001-HX</b>	<ul style="list-style-type: none"> <li>Integrated RP with 8-GB DRAM (memory is upgradable to 16 GB)</li> </ul>	<ul style="list-style-type: none"> <li>Integrated ESP with up to 60G throughput performance</li> </ul>	<ul style="list-style-type: none"> <li>Integrated SIP</li> <li>Built-in 8x1GE ports</li> <li>Built-in 4x10GE ports</li> <li>Built in 4x configurable 1/10GE ports</li> </ul>
<b>ASR1002</b>	<ul style="list-style-type: none"> <li>Cisco ASR 1000 Series RP1 integrated in the chassis with 4-GB DRAM (memory is neither factory- nor field-upgradable)</li> <li>Four built-in Gigabit Ethernet ports with SFP support</li> <li>Integrated RP1 is not upgradable</li> </ul>	<ul style="list-style-type: none"> <li>5-, and 10-Gbps Cisco ASR 1000 Series ESPs (ASR1000-ESP5, ASR1000-ESP10, and ASR1000-ESP10-N))</li> </ul>	<ul style="list-style-type: none"> <li>Integrated SIP</li> <li>Built-in 4x1GE ports</li> <li>3x SPA slots</li> </ul>
<b>ASR1002-X</b>	<ul style="list-style-type: none"> <li>Integrated RP with 4-GB DRAM (memory is upgradable to 16 GB)</li> </ul>	<ul style="list-style-type: none"> <li>Integrated ESP with 5G throughput performance (upgradable to 10G, 20G, or 36G with license)</li> </ul>	<ul style="list-style-type: none"> <li>Integrated SIP</li> <li>Built-in 6x1GE ports</li> <li>3x SPA slot</li> </ul>
<b>ASR1002-HX</b>	<ul style="list-style-type: none"> <li>Integrated RP with 16-GB DRAM (memory is upgradable to 32 GB)</li> </ul>	<ul style="list-style-type: none"> <li>Integrated ESP with up to 100G throughput performance</li> </ul>	<ul style="list-style-type: none"> <li>Integrated SIP/MIP</li> <li>Built-in 8x1GE ports</li> <li>Built-in 8x10GE ports</li> <li>1x EPA slot</li> <li>1x NIM slot</li> </ul>
<b>ASR1004</b>	<ul style="list-style-type: none"> <li>1 RP slot</li> <li>Support for single RP per chassis</li> <li>Supports RP1 (4-GB DRAM) or RP2 (8-GB or 16-GB DRAM)</li> <li>Field upgradable</li> </ul>	<ul style="list-style-type: none"> <li>1 ESP slot</li> <li>Support for single ESP per chassis</li> <li>10-Gbps Cisco ASR 1000 Series ESP (ASR1000-ESP10)</li> <li>10-Gbps Cisco ASR 1000 Series ESP noncrypto (ASR1000-ESP10-N)</li> <li>20-Gbps Cisco ASR 1000 Series ESP (ASR1000-ESP20)</li> <li>40-Gbps Cisco ASR 1000 Series ESP (ASR1000-ESP40)</li> <li>Field upgradable</li> </ul>	<ul style="list-style-type: none"> <li>2x line card slots</li> <li>10-Gbps Cisco ASR 1000 Series SIP (ASR1000-SIP10)</li> <li>40-Gbps Cisco ASR 1000 Series SIP (ASR1000-SIP40)</li> <li>20x1GE + 2x10GE Cisco ASR 1000 Series Fixed Ethernet Line Card (ASR1000-2T+20X1GE)</li> <li>6x10GE Cisco ASR1000 Series Fixed Ethernet Line Card (ASR1000-6TGE)</li> <li>Field upgradable</li> </ul>
<b>ASR1006</b>	<ul style="list-style-type: none"> <li>2 RP slots</li> <li>Support for single or redundant RP per chassis (must match ESPs)</li> <li>Supports RP1 (4-GB DRAM) or RP2 (8-GB or 16GB DRAM)</li> <li>Field upgradable</li> </ul>	<ul style="list-style-type: none"> <li>2 ESP slots</li> <li>Support for single or redundant ESP per chassis (must match RPs)</li> <li>10-Gbps Cisco ASR 1000 Series ESP (ASR1000-ESP10)</li> <li>10-Gbps Cisco ASR 1000 Series ESP noncrypto (ASR1000-ESP10-N)</li> <li>20-Gbps Cisco ASR 1000 Series ESP (ASR1000-ESP20)</li> <li>40-Gbps Cisco ASR 1000 Series ESP (ASR1000-ESP40)</li> <li>100-Gbps Cisco ASR 1000 Series ESP (ASR1000-ESP100)</li> <li>Field upgradable</li> </ul>	<ul style="list-style-type: none"> <li>3x line card slots</li> <li>10-Gbps Cisco ASR 1000 Series SIP (ASR1000-SIP10)</li> <li>40-Gbps Cisco ASR 1000 Series SIP (ASR1000-SIP40)</li> <li>20x1GE + 2x10GE Cisco ASR 1000 Series Fixed Ethernet Line Card (ASR1000-2T+20X1GE)</li> <li>6x10GE Cisco ASR1000 Series Fixed Ethernet Line Card (ASR1000-6TGE)</li> <li>Field upgradable</li> </ul>

Chassis Part Number	Route Processor	ESP	I/O
<b>ASR1006-X</b>	<ul style="list-style-type: none"> <li>• 2 RP slots</li> <li>• Support for single or redundant RP per chassis (must match ESPs)</li> <li>• Supports RP2 (8-GB or 16-GB DRAM) or RP3 (8-GB, 16-GB, 32-GB, or 64-GB DRAM)</li> <li>• Field upgradable</li> </ul>	<ul style="list-style-type: none"> <li>• 2 ESP slots</li> <li>• Support for single or redundant ESP per chassis (must match RPs)</li> <li>• 40-Gbps Cisco ASR 1000 Series ESP (ASR1000-ESP40)</li> <li>• 100-Gbps Cisco ASR 1000 Series ESP (ASR1000-ESP100)</li> <li>• Field upgradable</li> </ul>	<ul style="list-style-type: none"> <li>• 2x line card slots</li> <li>• 40-Gbps Cisco ASR 1000 Series SIP (ASR1000-SIP40)</li> <li>• 20x1GE + 2x10GE Cisco ASR 1000 Series Fixed Ethernet Line Card (ASR1000-2T+20X1GE)</li> <li>• 6x10GE Cisco ASR1000 Series Fixed Ethernet Line Card (ASR1000-6TGE)</li> <li>• 100-Gbps Modular Interface Processor (ASR1000-MIP100)</li> <li>• GE, 10GE, 40GE, and 100GE EPAs</li> <li>• Field upgradable</li> </ul>
<b>ASR1009-X</b>	<ul style="list-style-type: none"> <li>• 2 RP slots</li> <li>• Support for single or redundant RP per chassis (must match ESPs)</li> <li>• Supports RP2 (8-GB or 16-GB DRAM) or RP3 (8-GB, 16-GB, 32-GB, or 64-GB DRAM)</li> <li>• Field upgradable</li> </ul>	<ul style="list-style-type: none"> <li>• 2 ESP slots</li> <li>• Support for single or redundant ESP per chassis (must match RPs)</li> <li>• 40-Gbps Cisco ASR 1000 Series ESP (ASR1000-ESP40)</li> <li>• 100-Gbps Cisco ASR 1000 Series ESP (ASR1000-ESP100)</li> <li>• 200-Gbps Cisco ASR 1000 Series ESP (ASR1000-ESP200)</li> <li>• Field upgradable</li> </ul>	<ul style="list-style-type: none"> <li>• 3x line card slots</li> <li>• 40-Gbps Cisco ASR 1000 Series SIP (ASR1000-SIP40)</li> <li>• 20x1GE + 2x10GE Cisco ASR 1000 Series Fixed Ethernet Line Card (ASR1000-2T+20X1GE)</li> <li>• 6x10GE Cisco ASR1000 Series Fixed Ethernet Line Card (ASR1000-6TGE)</li> <li>• 100-Gbps Modular Interface Processor (ASR1000-MIP100)</li> <li>• GE, 10GE, 40GE, and 100GE EPAs</li> <li>• Field upgradable</li> </ul>
<b>ASR1013</b>	<ul style="list-style-type: none"> <li>• 2 RP slots</li> <li>• Support for single or redundant RP per chassis (must match ESPs)</li> <li>• Supports RP2 (8-GB or 16-GB DRAM) or RP3 (8-GB, 16-GB, 32-GB, or 64-GB DRAM)</li> <li>• Field upgradable</li> </ul>	<ul style="list-style-type: none"> <li>• 2 ESP slots</li> <li>• Support for single or redundant ESP per chassis (must match RPs)</li> <li>• 40-Gbps Cisco ASR 1000 Series ESP (ASR1000-ESP40)</li> <li>• 100-Gbps Cisco ASR 1000 Series ESP (ASR1000-ESP100)</li> <li>• 200-Gbps Cisco ASR 1000 Series ESP (ASR1000-ESP200)</li> <li>• Field upgradable</li> </ul>	<ul style="list-style-type: none"> <li>• 6x line card slots</li> <li>• 40-Gbps Cisco ASR 1000 Series SIP (ASR1000-SIP40)</li> <li>• 20x1GE + 2x10GE Cisco ASR 1000 Series Fixed Ethernet Line Card (ASR1000-2T+20X1GE)</li> <li>• 6x10GE Cisco ASR1000 Series Fixed Ethernet Line Card (ASR1000-6TGE)</li> <li>• 100-Gbps Modular Interface Processor (ASR1000-MIP100)</li> <li>• GE, 10GE, 40GE, and 100GE EPAs</li> <li>• Field upgradable</li> </ul>

Table 2 lists the available hardware components. For the list of the product numbers of the supported SPAs, including the Cisco WebEx<sup>®</sup> node on the Cisco ASR 1000 Series, please check the [Cisco ASR 1000 Series SPA Data Sheet](#).

**Table 2.** Cisco ASR 1000 Series Hardware Components

Product Number	Product Description
<b>Cisco ASR 1000 Series Chassis</b>	
<b>ASR1001</b>	Cisco ASR1001 Chassis, 4 built-in GE, Dual P/S, 4-GB DRAM
<b>ASR1001=</b>	Cisco ASR1001 Chassis, 4 built-in GE, Dual P/S, 4-GB DRAM, Spare
<b>ASR1001-X</b>	Cisco ASR1001-X Chassis, 6 built-in GE, Dual P/S, 8-GB DRAM
<b>ASR1001-X=</b>	Cisco ASR1001-X Chassis, 6 built-in GE, Dual P/S, 8-GB DRAM, Spare
<b>ASR1001-HX</b>	Cisco ASR1001-HX Chassis, 4x10GE + 4x1GE, Dual P/S, optional crypto
<b>ASR1001-HX=</b>	Cisco ASR1001-HX Chassis, 4x10GE + 4x1GE, Dual P/S, optional crypto, Spare
<b>ASR1002</b>	Cisco ASR1002 Chassis, 4 built-in GE, Dual P/S, 4-GB DRAM

Product Number	Product Description
<b>ASR1002=</b>	Cisco ASR1002 Chassis, 4 built-in GE, Dual P/S, 4-GB DRAM, Spare
<b>ASR1002-X</b>	Cisco ASR1002-X Chassis, 6 built-in GE, Dual P/S, 4-GB DRAM
<b>ASR1002-X=</b>	Cisco ASR1002-X Chassis, 6 built-in GE, Dual P/S, 4-GB DRAM, Spare
<b>ASR1002-HX</b>	Cisco ASR1002-HX Chassis, 4x10GE + 4x1GE, Dual P/S, optional crypto
<b>ASR1002-HX=</b>	Cisco ASR1002-HX Chassis, 4x10GE + 4x1GE, Dual P/S, optional crypto, Spare
<b>ASR1004</b>	Cisco ASR1004 Chassis, Dual P/S
<b>ASR1004=</b>	Cisco ASR1004 Chassis, Dual P/S, Spare
<b>ASR1006</b>	Cisco ASR1006 Chassis, Dual P/S
<b>ASR1006=</b>	Cisco ASR1006 Chassis, Dual P/S, Spare
<b>ASR1006-X</b>	Cisco ASR1006-X Chassis
<b>ASR1006-X=</b>	Cisco ASR1006-X Chassis, Spare
<b>ASR1009-X</b>	Cisco ASR1009-X Chassis
<b>ASR1009-X=</b>	Cisco ASR1009-X Chassis, Spare
<b>ASR1013</b>	Cisco ASR1013 Chassis, Redundant P/S
<b>ASR1013=</b>	Cisco ASR1013 Chassis, Redundant P/S, Spare
<b>Cisco ASR 1000 Series Embedded Services Processor</b>	
<b>ASR1000-ESP5</b>	ASR1000 Embedded Services Processor, 5G, ASR1002 only
<b>ASR1000-ESP5=</b>	ASR1000 Embedded Services Processor, 5G, ASR1002 only, Spare
<b>ASR1000-ESP10</b>	Cisco ASR1000 Embedded Services Processor, 10G
<b>ASR1000-ESP10=</b>	Cisco ASR1000 Embedded Services Processor, 10G, Spare
<b>ASR1000-ESP10-N</b>	Cisco ASR1000 Embedded Services Processor, 10G, Non Crypto
<b>ASR1000-ESP10-N=</b>	Cisco ASR1000 Embedded Services Processor, 10G, Non Crypto, Spare
<b>ASR1000-ESP20</b>	Cisco ASR1000 Embedded Services Processor, 20G
<b>ASR1000-ESP20=</b>	Cisco ASR1000 Embedded Services Processor, 20G, Spare
<b>ASR1000-ESP40</b>	Cisco ASR1000 Embedded Services Processor, 40G
<b>ASR1000-ESP40=</b>	Cisco ASR1000 Embedded Services Processor, 40G Spare
<b>ASR1000-ESP100</b>	Cisco ASR1000 Embedded Services Processor, 100G
<b>ASR1000-ESP100=</b>	Cisco ASR1000 Embedded Services Processor, 100G Spare
<b>ASR1000-ESP200</b>	Cisco ASR1000 Embedded Services Processor, 200G
<b>ASR1000-ESP200=</b>	Cisco ASR1000 Embedded Services Processor, 200G Spare
<b>Cisco ASR 1000 Series Route Processor</b>	
<b>ASR1000-RP1</b>	Cisco ASR1000 Route Processor 1
<b>ASR1000-RP1=</b>	Cisco ASR1000 Route Processor 1, Spare
<b>ASR1000-RP2</b>	Cisco ASR1000 Route Processor 2
<b>ASR1000-RP2=</b>	Cisco ASR1000 Route Processor 2, Spare
<b>ASR1000-RP3</b>	Cisco ASR1000 Route Processor 3
<b>ASR1000-RP3=</b>	Cisco ASR1000 Route Processor 3, Spare
<b>ASR1000-RP3-32G-2P</b>	Cisco ASR1000 RP3 w/ 32 GB, 2 Pack
<b>ASR1000-RP3-64G-2P</b>	Cisco ASR1000 RP3 w/ 64 GB, 2 Pack
<b>Cisco ASR 1000 Series SPA Interface Processor</b>	
<b>ASR1000-SIP10</b>	Cisco ASR1000 SPA Interface Processor 10
<b>ASR1000-SIP10=</b>	Cisco ASR1000 SPA Interface Processor 10, spare
<b>ASR1000-SIP40</b>	Cisco ASR1000 SPA Interface Processor 40
<b>ASR1000-SIP40=</b>	Cisco ASR1000 SPA Interface Processor 40, Spare

Product Number	Product Description
<b>Cisco ASR 1000 Series Ethernet Line Cards</b>	
<b>ASR1000-2T+20X1GE</b>	Cisco ASR 1000 Fixed Ethernet Line Card, 2X10GE + 20X1GE
<b>ASR1000-2T+20X1GE=</b>	Cisco ASR 1000 Fixed Ethernet Line Card, 2X10GE + 20X1GE, Spare
<b>ASR1000-6TGE</b>	Cisco ASR 1000 Fixed Ethernet Line Card, 6X10GE
<b>ASR1000-6TGE=</b>	Cisco ASR 1000 Fixed Ethernet Line Card, 6X10GE, Spare
<b>ASR1000-MIP100</b>	Cisco ASR 1000 Ethernet Line Card, 100 Gbps Modular Interface Processor
<b>ASR1000-MIP100=</b>	Cisco ASR 1000 Ethernet Line Card, 100 Gbps Modular Interface Processor, Spare
<b>Cisco ASR 1000 Series Ethernet Port Adapters</b>	
<b>EPA-18X1GE</b>	Cisco ASR 1000 18X1GE Ethernet Port Adapter
<b>EPA-18X1GE=</b>	Cisco ASR 1000 18X1GE Ethernet Port Adapter, Spare
<b>EPA-10X10GE</b>	Cisco ASR 1000 10X10GE Ethernet Port Adapter
<b>EPA-10X10GE=</b>	Cisco ASR 1000 10X10GE Ethernet Port Adapter, Spare
<b>EPA-CPAK-2X40GE</b>	Cisco ASR 1000 2X40GE Ethernet Port Adapter (breakout cable)
<b>EPA-CPAK-2X40GE=</b>	Cisco ASR 1000 2X40GE Ethernet Port Adapter (breakout cable), Spare
<b>EPA-1X100GE</b>	Cisco ASR 1000 1X100GE Ethernet Port Adapter
<b>EPA-1X100GE=</b>	Cisco ASR 1000 1X100GE Ethernet Port Adapter, Spare
<b>Cisco ASR 1000 Series USB Memory Options</b>	
<b>MEMUSB-1024FT</b>	1GB USB Flash Token for Cisco ASR 1000 Series
<b>MEMUSB-1024FT=</b>	1GB USB Flash Token for Cisco ASR 1000 Series, spare

## Software

Cisco ASR 1000 Series Routers introduce the Cisco IOS<sup>®</sup> XE Software as their software architecture. Based on Cisco IOS Software, the Cisco IOS XE Operating System is designed to provide modular packaging, feature velocity, and powerful resiliency. Because of the extreme flexibility and robust performance of ESPs based on Cisco Flow Processor technology, network security, deep packet inspection, firewall, and many other advanced features are implemented in the Cisco IOS XE Operating System without the need of a service blade. One of the most innovative features is support for dual Cisco IOS Software consolidated packages in a single route processor for software redundancy in the 1RU-, 2RU-, and 4RU chassis systems. Information about compatibility of supported dual software consolidated packages is available in the release notes. Note that with the redundant hardware route processor and ESP configuration in the 6RU-, 9RU-, and 13RU models, Cisco IOS Software redundancy in a single route processor in a redundant 6RU-, 9RU-, or 13RU system is not supported.

A Cisco IOS XE consolidated package is composed of different software subpackages that you can download from Cisco.com as one consolidated package. You can upgrade the whole package or each of the subpackages individually. Information about the compatibility of various subpackages is outlined in each release note.

Following are the seven subpackages:

- Route processor
  - RPBBase: Route-processor operating system
  - RPControl: Control-plane processes that interface between Cisco IOS Software and the rest of the platform
  - RPIOS

- RPAccess: Software required for router access; two versions are available: One that contains open Secure Shell (SSH) Protocol and Secure Sockets Layer (SSL) and one without (RPAccess-K9 and RPAccess, respectively)
- SIPBase: SIP operating system + Control processes
- SIPSPA: SPA drivers and field-programmable device (FPD) (SPA FPGA image)
- ESP
  - ESPBase: ESP operating system + Control processes + Cisco Packet Processor client, driver, and ucode

Table 3 lists the software subpackages that each consolidated package consists of, and Table 4 gives ordering information for the software consolidated package spares. Table 5 lists the Cisco IOS XE universal software packages, and Table 6 lists the Cisco IOS XE technology package licenses for the universal software packages. Table 7 lists the Cisco IOS XE Software consolidated package spares.

**Table 3.** Software Subpackages for Each Cisco IOS XE Software Consolidated Package

Consolidated Package	Subpackages
<b>Cisco ASR 1000 Series RP1 OR RP2 IP Base without Crypto</b>	Consists of RPBase, RPControl, RPAccess, RPIOS-ipbase, ESPBase, SIPSPA, and SIPBase
<b>Cisco ASR 1000 Series RP1 OR RP2 IP Base</b>	Consists of RPBase, RPControl, RPAccess-K9, RPIOS- ipbasek9, ESPBase, SIPSPA, and SIPBase
<b>Cisco ASR 1000 Series RP1 OR RP2 Advanced IP Services K9</b>	Consists of RPBase, RPControl, RPAccess-K9, RPIOS-advipservicesk9, ESPBase, SIPSPA, and SIPBase
<b>Cisco ASR 1000 Series RP1 OR RP2 Advanced IP Services without Crypto</b>	Consists of RPBase, RPControl, RPAccess, RPIOS-advipservices, ESPBase, SIPSPA, and SIPBase
<b>Cisco ASR 1000 Series RP1 OR RP2 Advanced Enterprise Services K9</b>	Consists of RPBase, RPControl, RPAccess-K9, RPIOS-adventservicesk9, ESPBase, SIPSPA, and SIPBase
<b>Cisco ASR 1000 Series RP1 OR RP2 Advanced Enterprise Services non crypto</b>	Consists of RPBase, RPControl, RPAccess-nonK9, RPIOS-adventservices, ESPBase, SIPSPA, and SIPBase

**Table 4.** Cisco IOS XE Software Consolidated Package (Legacy)

Product Number	Product Description
<b>Cisco ASR 1000 Series Consolidated Packages</b>	
<b>SASR1R1-IPB</b>	Cisco ASR 1000 Series RP1 IP Base without Crypto
<b>SASR1R1-IPBK9</b>	Cisco ASR 1000 Series RP1 IP Base
<b>SASR1R1-AISK9</b>	Cisco ASR 1000 Series RP1 Advanced IP Services
<b>SASR1R1-AIS</b>	Cisco ASR 1000 Series RP1 Advanced IP Services without Crypto
<b>SASR1R1-AESK9</b>	Cisco ASR 1000 Series RP1 Advanced Enterprise Services
<b>SASR1R1-AES</b>	Cisco ASR 1000 Series RP1 Advanced Enterprise Services Non-Crypto
<b>SASR1R2-IPB</b>	Cisco ASR 1000 Series RP2 IP Base without Crypto
<b>SASR1R2-IPBK9</b>	Cisco ASR 1000 Series RP2 IP Base
<b>SASR1R2-AISK9</b>	Cisco ASR 1000 Series RP2 Advanced IP Services
<b>SASR1R2-AIS</b>	Cisco ASR 1000 Series RP2 Advanced IP Services without Crypto
<b>SASR1R2-AESK9</b>	Cisco ASR 1000 Series RP2 Advanced Enterprise Services
<b>SASR1R2-AES</b>	Cisco ASR 1000 Series RP2 Advanced Enterprise Services Non-Crypto

**Table 5.** Cisco IOS XE Universal Software Packages

Product Number	Product Description
<b>Cisco ASR 1000 Series Universal Software Packages</b>	
SASR1K1XUK9	Cisco ASR1001-X IOS XE Universal
SASR1K1XUK9NLI	Cisco ASR1001-X IOS XE Universal – No LI
SASR1K1XU	Cisco ASR1001-X IOS XE Universal – No Encryption
SASR1K1XUNPNLK9	Cisco ASR1001-X IOS XE Universal – No Payload Encryption
SASR1K1XNP9NLI	Cisco ASR1001-X IOS XE Universal – No Payload Encryption, No LI
SASR1K2XUK9	Cisco ASR1002-X IOS XE Universal
SASR1K2XUK9NLI	Cisco ASR1002-X IOS XE Universal – No LI
SASR1K2XU	Cisco ASR1002-X IOS XE Universal – No Encryption
SASR1K2XUNPNLK9	Cisco ASR1002-X IOS XE Universal – No Payload Encryption
SASR1K2XNP9NLI	Cisco ASR1002-X IOS XE Universal – No Payload Encryption, No LI
SASR1K2XUK9	Cisco ASR1002-X IOS XE Universal
SASR1KHXX9	Cisco ASR1001-HX or ASR1002-HX IOS XE Universal
SASR1KHXXNLIK9	Cisco ASR1001-HX or ASR1002-HX IOS XE Universal – No LI
SASR1KHXXNPEK9	Cisco ASR1001-HX or ASR1002-HX IOS XE Universal – No Payload Encryption
SASR1KHXXNPNLK9	Cisco ASR1001-HX or ASR1002-HX IOS XE Universal – No Payload Encryption, No LI
SASR1KRPUK9	Cisco ASR1000 RP2 or RP3 IOS XE Universal
SASR1KRPUK9NLI	Cisco ASR1000 RP2 or RP3 IOS XE Universal – No LI
SASR1KRPUK9NPEK9	Cisco ASR1000 RP2 or RP3 IOS XE Universal – No Payload Encryption
SASR1KRPUK9NPNLK9	Cisco ASR1000 RP2 or RP3 IOS XE Universal – No Payload Encryption, No LI

**Table 6.** Cisco IOS XE Technology Package Licenses for Universal Software Packages

Product Number	Product Description
<b>Cisco ASR 1000 Series Technology Package Licenses</b>	
SLASR1-IPB	Cisco ASR 1000 Series IP Base License
SLASR1-AIS	Cisco ASR 1000 Series Advanced IP Services License
SLASR1-AES	Cisco ASR 1000 Series Advanced Enterprise Services License

**Table 7.** Cisco IOS XE Software Consolidated Package Spares

Product Number	Product Description
ASR1000-SW-SPARECD	Cisco ASR 1000 Series Software Spare CD
CDASR1000R1-IPB=	Cisco ASR 1000 RP1 IP Base without Crypto, spare
CDASR1000R1-IPBK9=	Cisco ASR 1000 RP1 IP Base, spare
CDASR1000R1-AISK9=	Cisco ASR 1000 RP1 Advanced IP Services with Crypto, spare
CDASR1000R1-AIS=	Cisco ASR 1000 RP1 Advanced IP Services without Crypto, spare
CDASR1000R1-AESK9=	Cisco ASR 1000 RP1 Advanced Enterprise Services with Crypto, spare
CDASR1000R1-AES=	Cisco ASR 1000 RP1 Advanced Enterprise Services without Crypto, spare
CDASR1000R2-IPB=	Cisco ASR 1000 RP2 IP Base without crypto, spare
CDASR1000R2-IPBK9=	Cisco ASR 1000 RP2 IP Base, spare
CDASR1000R2-AISK9=	Cisco ASR 1000 RP2 Advanced IP Services with Crypto, spare



Product Number	Product Description
<b>CDASR1000R2-AIS=</b>	Cisco ASR 1000 RP2 Advanced IP Services without Crypto, spare
<b>CDASR1000R2-AESK9=</b>	Cisco ASR 1000 RP2 Advanced Enterprise Services with Crypto, spare
<b>CDASR1000R2-AES=</b>	Cisco ASR 1000 RP2 Advanced Enterprise Services without Crypto, spare

## Software License

If you are planning to deploy advanced features, you should purchase a license along with a consolidated package. Currently, the following features are licensed separately: IP Security (IPsec) encryption, firewall, Flexible Packet Inspection (including Network Based Application Recognition [NBAR] and Flexible Packet Matching), Broadband Aggregation, and Cisco Unified Border Element (SP Edition) (also known as session border control [SBC]).

## Ordering Information

To place an order, visit the Cisco Ordering Home Page at <http://www.cisco.com/en/US/ordering/index.shtml>.

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## For More Information

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