Cisco ASR 1000 Series Aggregation Services Routers

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Product overview

Cisco ASR 1000 Series Aggregation Services Routers provide a Software Defined WAN platform that aggregates multiple WAN connections and network services including encryption and traffic management, and forward them across WAN connections at line speeds from 2.5 to 200 Gbps. The routers contain both hardware and software redundancy in an industry-leading high-availability design.

The latest additions to the Cisco ASR 1000 Series are the Cisco ASR 1002-HX Router and the Cisco ASR 1001-HX Router. Both new routers support up to 100 Gbps in a 2-Rack-Unit (2RU) and 60 Gbps in a 1-Rack-Unit (1RU) form factor, respectively. The ASR 1002-HX has 8 built-in 10 Gigabit Ethernet (GE) ports and 8 1 GE ports, with the Ethernet Port Adapter (EPA) slot for expansion. The ASR 1001-HX has 4 built-in 10 GE ports, 8 1 GE ports, and 4 configurable 10 GE or 1 GE ports. The Cisco ASR 1000 Series Route Processor 3 is the newest addition to the modular control plane engines in the Cisco ASR 1000 Series. The Route Processor 3 adds more options for higher performance, memory, and storage to the ASR 1000 Series.

The Cisco ASR 1000 Series supports Cisco IOS XE Software, a modular operating system with modular packaging, feature velocity, and powerful resiliency. The Cisco ASR 1000 Series Embedded Services Processors (ESPs), which are based on Cisco Flow Processor technology, accelerate many advanced features such as crypto-based access security; Network Address Translation (NAT), thread defense with Cisco Zone-Based Firewall (ZBFW), Deep Packet Inspection (DPI), Cisco Unified Border Element (CUBE), and a diverse set of Data-Center-Interconnect (DCI) features. These services are implemented in Cisco IOS XE Software without the need for additional hardware support.

Cisco ASR 1000 Series routers sit at the edge of your enterprise data center or large office connecting to the WAN, as well as in service provider Points Of Presence (POPs). The Cisco ASR 1000 Series will benefit the following types of customers:

- Enterprises experiencing explosive network traffic as mobility, cloud networking, and video and collaboration usage increase: Cisco ASRs consolidate these various traffic streams and apply traffic management and redundancy properties to them to maintain consistent performance among enterprise sites and cloud locations.
- Network service providers needing to deliver high-performance services, such as DCI and branch-office server aggregation, to business customers: Service providers can also use the multiservice routers to deploy hosted and managed services to business and multimedia services to residential customers.
- Existing Cisco 7200 Series Router (end-of-sale) customers looking for simple migration to a new multiservice platform that delivers greater performance with the same design.

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Features and benefits

The Cisco ASR 1000 Series Routers carry a modular yet integrated design, so network operators can increase their network capacity and services without a hardware upgrade. With flexibility in the number of connections, speed maximums, and price, you don't have to under- or overprovision for any network location.

Alternatively, you also have the option to buy "-X" and "-HX" models, so you can increase throughput by simply purchasing upgrade licenses as you grow to increase your network speed dynamically.

Cisco Software-Defined WAN

Cisco SD-WAN can be enabled on the Cisco ASR 1000 series platforms with IOS-XE. Cisco SD-WAN offers an entirely new way to manage and operate your WAN infrastructure. Cisco SD-WAN is a cloud delivered architecture that offers secure, flexible and rich services with the following key benefits:

- **Better user experience:** The ability to deploy applications in minutes, on any platform, with a consistent user experience. Deliver predictable performance for applications residing in the data center or in the cloud.
- **Greater agility:** Faster, easier deployment and operation of your WAN, and get faster performance using less bandwidth. Add new revenue generating services in minutes not months.
- **Advanced threat protection:** Securely connect your users to applications in minutes and protect your data from the WAN edge to the cloud. Secure segmentation for critical assets and multi-layer, robust security that encrypts all data.

SD-WAN Integrated Security

In order to efficiently connect to multiple cloud infrastructures many enterprise customers want to build an SD-WAN infrastructure that uses Direct Internet Access (DIA). This can save costs and reduce complexity by reducing WAN traffic backhauled to your data centers; however connecting branches directly to the internet without the right security controls exposes your network to threats and vulnerabilities.

With Cisco SD-WAN and the ASR 1000 series platforms, you have integrated security built-right-in for branch DIA security with these integrated security capabilities:

- Application aware enterprise firewall
- DNS layer enforcement (Umbrella)

And with Cisco SD-WAN security integration you will reduce complexity by having a single management interface (vManage) for both the network and security.

For more info on Cisco SD-WAN and vManage see: https://www.cisco.com/go/sd-wan.

Application visibility

Applications and users are more distributed than ever, and the internet has effectively become the new enterprise WAN. As organizations continue to embrace internet, cloud, and SaaS, network and IT teams are challenged to deliver consistent and reliable connectivity and application performance over networks and services they don't own or directly control.

The ASR 1000 Series Routers are integrated with Cisco ThousandEyes internet and cloud intelligence. IT managers now have expanded visibility, including hop-by-hop analytics, into network underlay, proactive monitoring of SD-WAN overlay, and performance measurement of SaaS applications. This granular visibility ultimately lowers the Mean Time to Identification of Issues (MTTI) and accelerates resolution time.

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Unified access security and multi-factor authentication

The Zero trust security model allows secure connections to all applications (whether on premises or in the cloud) based on the trustworthiness of users and devices.

Table 1 summarizes the features and benefits of the Cisco ASR 1000 Series Routers.

Table 1. Features and benefits of Cisco ASR 1000 Series Routers

Feature	Benefit
High availability	
Redundant hardware components and power supplies	• These components provide system and business continuity. • The ASR 1006, ASR 1006-X, ASR 1009-X, and ASR 1013 have redundant route processors and ESPs. • The ASR 1001-X, ASR 1002-X, ASR 1001-HX, ASR 1002-HX, and ASR1004 have redundant instances of Cisco IOS XE Software.
Stateful intrachassis redundancy	• Redundant hardware combined with modular software contains faults to prevent system wide failure. • Redundancy across routers is enabled by pairing routers that act as backup for each other. The routers offer 99.999-percent ("five-nines") availability for consistent, high-performance user application experiences.
In-Service Software Upgrade (ISSU) support	• You don't need to schedule downtime windows; changes are made while the system keeps on working, with nonstop routing availability.
Cisco IOS XE Software Sub-package Mode	• You can upgrade individual software components in less time.
Scalable capacity and throughput	
Cisco Flow Processor-based platform	• Advanced services can operate at high speeds without the need for additional hardware or blades.
Hardware acceleration	• Features such as Quality of Service (QoS), cryptography, and Access Control Lists (ACLs) are processed in hardware.
Control- and forwarding-plane separation	• You can scale control and data planes independently of each other.
Investment protection	
Software modularity	• You can mix and match the services that best meet your business needs; you won't "waste" investments on capabilities you don't need.
Pay-as-you-grow licensing with "-X" models	• When you need greater throughput, you simply activate it with a change in software license, rather than having to expend capital for additional hardware.
Cisco Shared Port Adapters (SPAs)	• You can reuse your investment in network I/O across platforms.
Cisco Network Interface Modules (NIMs)	• You can reuse your investment in network I/O across platforms.

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Product portfolio

The Cisco ASR 1000 Series contains 8 models with varying types of I/O connectivity and slots and different maximum throughput rates (Figure 1). All models use the innovative and powerful Cisco Flow Processor and support the same feature set based on the Cisco IOS XE Operating System. All this commonality simplifies management and operations.

- Cisco ASR 1001-X Router (Figure 2)
- Cisco ASR 1002-X Router
- Cisco ASR 1001-HX Router (Figure 3)
- Cisco ASR 1002-HX Router (Figure 4)
- Cisco ASR 1004 Router
- Cisco ASR 1006 Router
- Cisco ASR 1006-X Router
- Cisco ASR 1009-X Router
- Cisco ASR 1013 Router



Figure 1.
Cisco ASR 1000 Series Aggregation Services Routers



Figure 2.
Cisco ASR 1001-X Router

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Figure 3.
Cisco ASR 1001-HX Router



Figure 4.
Cisco ASR 1002-HX Router

Software licensing

Software subscription through Cisco DNA Licensing

The ASR 1000 series supports software based subscription using Cisco DNA based licensing. Two Cisco DNA based software subscription licenses are available for the WAN portfolio: Cisco DNA Advantage and Cisco DNA Premier allowing customers to have a single unified solution that spans across the ASR 1000 series routers and its ISR 1000 and ISR 4000 counterparts.

The license tiers are structured to support the growth in business needs enabling the customer to move from basic functionality at branch to full-functionality with the Cisco DNA Advantage and expanding that to include WAN Optimization and Analytics on the Cisco DNA Premier. This provides complete flexibility to move the same license across end-points based on growing network and security requirements, growth in bandwidth based on user and application growth at the sites as also the ability to change the management of the platform from on-prem to cloud or vice-versa.

Cisco DNA Licenses are supported for ASR 1000 platforms using the Cisco DNA Center, the controller and analytics platform at the heart of Cisco's intent-based network. For more information on the Cisco DNA Center and supported platforms, please refer to https://www.cisco.com/site/us/en/products/networking/dna-center-platform/index.html.

Cisco Smart Licensing

Cisco Smart Licensing is a flexible licensing model that provides you with an easier, faster, and more consistent way to purchase and manage software across the Cisco portfolio and across your organization. And it's secure – you control what users can access. With Smart Licensing you get:

- **Easy Activation:** Smart Licensing establishes a pool of software licenses that can be used across the entire organization—no more PAKs (Product Activation Keys).
- **Unified Management:** Cisco License Central (CLC) provides a complete view into all of your Cisco products and services in an easy-to-use portal, so you always know what you have and what you are using.
- **License Flexibility:** Your software is not node-locked to your hardware, so you can easily use and transfer licenses as needed.

To use Smart Licensing, you must first set up a Smart Account on Cisco License Central.

For a more detailed overview on Cisco Licensing, visit the Licensing Hub.

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Cisco ThousandEyes

A valid ThousandEyes agent license is required to activate the ThousandEyes agent. Existing ThousandEyes subscriptions can be leveraged on eligible ASR 1000 Series Routers. Additional ThousandEyes subscription information can be found here.

Cisco ONE Software

Cisco ONE™ Software offers a valuable and flexible way to buy software for the WAN, access, and data center domains. At each stage in the product lifecycle, Cisco ONE Software helps make buying, managing, and upgrading your network and infrastructure software easier. Cisco ONE Software provides:

- Flexible licensing models to smoothly distribute customers' software spending over time
- Investment protection for software purchases through software services–enabled license portability
- Access to updates, upgrades, and new technology from Cisco through Cisco Software Support Services (SWSS)

Cisco ONE for WAN gives organizations broad capabilities for branch offices and the enterprise edge. Cisco ONE Foundation for WAN connects and secures your branch office while optimizing for cost. Cisco ONE WAN Collaboration integrates voice and video into your branch office and network edge.

Software feature licenses are required to activate services on Cisco ASR 1000 Series Routers. Currently, two types of feature licenses are available. Certain services require only a Right-To-Use (RTU) license, whereas other services require both an RTU license and one or more number-of-sessions licenses. All the licenses on the Cisco ASR 1000 Series are honor-based, meaning that the licenses are not enforced through a product activation or license key.

For Cisco ASR 1000 Routers, one of the following five packages is required:

- Cisco ASR 1000 IOS XE UNIVERSAL – NO PAYLOAD ENCRYPTION
- Cisco ASR 1000 IOS XE UNIVERSAL
- Cisco ASR 1000 IOS XE UNIVERSAL WITHOUT Lawful Intercept
- Cisco ASR 1000 IOS XE UNIVERSAL – NO PAYLOAD ENCRYPTION WITHOUT Lawful Intercept

To enable a set of required features, one of the following three technology packages is required:

  - Cisco ASR 1000 IP Base License
  - Cisco ASR 1000 Advanced IP Services License
  - Cisco ASR 1000 Advanced Services License

Table 2. ThousandEyes requirements

Feature	Description
Cisco ThousandEyes	ThousandEyes is natively integrated with eligible ASR 1000 Series Aggregation Services Routers with a minimum 8 GB DRAM and 8 GB bootflash/storage. Additional memory and storage will be necessary for concurrently running the ThousandEyes agent with containerized SD-WAN security services.

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Cisco ASR 1000 Series use cases

Tables 3 and 4 describe enterprise and service provider application examples, respectively.

Table 3. Cisco ASR 1000 Series Enterprise Applications

Deployment scenario	Description	System characteristics
WAN edge: Guarantee high-priority applications by creating a virtual "glass ceiling" for lower-priority applications. Improve user experiences.	• Applies Modular QoS CLI (MQC) policies on VLANs or tunnels • Limits an arbitrary collection of low-priority traffic to a certain bandwidth • Classifies based on Differentiated Services Code Point (DSCP), Network-Based Application Recognition (NBAR), and Cisco IOS Cisco IOS FPM (FPM) into numerous hierarchies, one for high priority and one for low priority	• Implements flexible hierarchies • Supports 464,000 queues • Allows all queues to have a minimum, maximum, and excess bandwidth with priority propagation
Multiservice, scalable, and secure headend: **IP Security (IPsec) VPN aggregation scales to meet the new bandwidth demands of service provider IP VPNs.**	• Reduces Capital Expenditures (CapEx) and Operating Expenses (OpEx) by migrating and consolidating to fewer Cisco ASR 1000 Series Routers • Protects investment through easy transition to much higher encryption support, offering encryption support of up to 78 Gbps with the 200-Gbps Cisco ASR 1000 Series ESP (ASR1000-ESP200) • Offers easier management through embedded security services in the Cisco Flow Processor, with no additional service modules or blades required • Optimized for QoS and IP Multicast applications	• Supports thousands of sites • Supports 8,000 IPsec tunnels • Offers up to 78-Gbps encryption performance and up to 200-Gbps noncryptographic throughput support with the Cisco ASR 1000 Series 200-Gbps Embedded Services Processor (ASR1000-ESP200) engine
Embedded high-speed firewall: **With the Zone-Based Policy Firewall, the Cisco ASR 1000 Series acts as an implicit and complete barrier between any interfaces that are not members of the same zone. An explicit zone-pair policy must be specified (using Cisco Policy Language; that is, MQC) in each direction between each zone pair. The policy establishes within the router the kind of stateful inspection (Layer 4, Layer 7, or application) and session parameters to apply to each zone pairing.** **Example: An explicit policy allowing HTTP and Domain Name System (DNS) to traverse the Internet-demilitarized zone (DMZ) zone boundary would be required.**	• The firewall is embedded in the Cisco Flow Processor; no additional service blades or modules are required • Multiple gigabits of bandwidth are routed while at the same time the router performs Zone-Based Policy Firewall and other baseline features such as QoS, IPv4, IPv6, NetFlow, and others • The Cisco ASR 1000 Series provides logging of all firewall session states off to network management applications capable of accepting relatively huge amounts of flow data. Third-party applications can handle the session data	• Provides firewall performance of 2.5 to 200 Gbps, depending on the ESP used • Offers high-speed logging of 40,000 sessions per second with NetFlow Version 9

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Deployment scenario	Description	System characteristics
Managed CPE: This implementation of branch-office architecture offers powerful investment protection with services and scale.	• Managed Customer Premises Equipment (CPE) helps branch offices route correctly over various types of Ethernet to comply with Service-Level Agreements (SLAs) • This application encrypts multiple gigabits of bandwidth without any additional service blades or modules • Managed CPE optimizes the WAN to route around brownouts in the service provider network to further guarantee mission-critical applications • This application offers small form factors (1 Rack Unit [1RU] for the Cisco ASR 1001-X and ASR 1001-HX and 2RUs for the Cisco ASR 1002-HX and ASR 1002-X Routers) • Note: ISSU is not supported on Cisco ASR 1001-X, ASR 1001-HX, ASR 1002-HX, ASR 1002-X, or ASR 1004. Managed CPE offers accessibility even when the Cisco IOS Software is down	• Offers first-in-industry software redundancy support, without any additional hardware module, on Cisco ASR 1001-X, ASR 1001-HX, ASR 1002-HX, ASR 1002-X, and ASR 1004; hardware redundancy and ISSU are supported on the Cisco ASR 1006 and ASR 1013 • Offers powerful firewall and NAT performance of 2.5 to 200 Gbps and 1.8- to 78-Gbps encryption support in addition to WAN optimization and voice features
High Performance SD-WAN Aggregation Headend	• ASR 1006-X and ESP 200-X support Cisco SD-WAN from IOS-XE version 17.5.1 to offer high throughput headend aggregation • When ASR1006-X operates in SD-WAN mode, it supports 1 x ASR1000-RP3, 1 x ASR1000-ESP200-X without intra-chassis redundancy • Interface modules supported are EPA-10X10GE, EPA-2X40GE and EPA-QSFP-1X100GE, through 1 or 2 x ASR1000-MIP100 • Incorporate multilayer security on ASR 1000 with simplified Cisco DNA licensing for SD-WAN and Routing • ASR 1000 as an SD-WAN Aggregation Headend offers investment protection through common hardware across platforms	• Provides up to 8,000 IPSec SD-WAN overlay tunnels, high-speed multicloud access, an improved data plane and high-density 100/40/10Gig ports for enhanced WAN edge capabilities • When used as an SD-WAN headend, only modules with specified type and quantity are supported in each ASR1006-X chassis ◦ No support for RP or ESP intra-chassis redundancy, no ISSU (In-Service-Software-Upgrade), no OIR (Online Insertion and Removal) ◦ Other EPAs/LCs not supported

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Table 4. Cisco ASR 1000 Series service provider applications

Deployment scenario	Description	System characteristics
Broadband L2TP Access Concentrator (LAC) or L2TP Network Server (LNS): **The solution offers Layer 2 Tunneling Protocol (L2TP) endpoint-to-tunnel Point-to-Point Protocol (PPPoX) or IP sessions with bandwidth demands in the STM-1 ATM, Fast Ethernet, Gigabit Ethernet, and 10 Gigabit Ethernet range.**	• The application is ideal for triple-play (data, voice, and video) wholesale deployments • It offers integral service delivery • Per-user firewall, Session Border Controller (SBC), etc. are supported	• Provides very high scalability of up to 64,000 subscribers and up to 16,000 tunnels
Service provider edge: Layer 3 VPN (L3VPN) provider edge: **Example: You can deploy the solution at the distributed provider edge or provider edge in global VPN networks for bandwidth demands such as Asymmetric DSL (ADSL), T1/E1, STM-1, STM-4, Fast Ethernet, Gigabit Ethernet, etc.**	• The application provides integral services in the Cisco Flow Processor • It provides encryption, FPM, NBAR, SBC, IP Multicast, etc.	• Offers excellent multicast performance • Scales to 8,000 Virtual Route Forwarding (VRF) instances, 1 million Label Distribution Protocol (LDP) labels, and 4,000 Access Control Lists (ACLs) • Supports up to 4 million IPv4 routes • Supports up to 4 million IPv6 routes
Service provider edge: High-end route reflector: **You can use the solution as a route reflector for bandwidth support of 40 Gbps.**	• The application provides high scalability • It offers a modular design of the route processor and ESP with hardware and software redundancy	• Scales up to 29 million IPv4 routes • Supports 64,000 Layer 3 adjacencies
Next-generation voice and multimedia example: Cisco Unified Border Element Enterprise Edition (ENT Edition): **The SBC application (named Cisco Unified Border Element [ENT Edition]) performs the voice and video gateway functions simultaneously with regular IP data services. No appliance or additional service blade is required. The control protocols and media protocols work transparently within a complex voice architecture. For more information, refer to the CUBE data sheet at** https://www.cisco.com/go/cube**.**	• Secure and authenticated Session Initiation Protocol (SIP) trunk connections enable service providers to offer real-time voice and video services • The WAN edge is simpler to manage because there is only one egress and one ingress point for access to Internet or service provider services • The control plane is separated from the data-forwarding plane, so the signaling and control processes are separate from media processing • The CUBE SBC application can be used for SIP trunk video and/or audio services provided by service providers or for Internet-accessible SIP line-side services to Cisco Unified Communications Manager	• Facilitates SBC with security, QoS, IPv4, and IPv6 (IP Unicast and IP Multicast simultaneously) • Supports 16,000 simultaneous voice calls and multimedia data of up to 200 Gbps with accounting, firewall, and call quality enabled • Integrated with inbox high-availability infrastructure and Dynamic Host Configuration Protocol (DHCP) Relay

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Product specifications

Table 5 compares the different Cisco ASR 1000 Series Routers, and Table 6 compares the different processor module specifications. For comparisons of Cisco ASR ESPs, refer to the ESP datasheet. For comparisons of the ASR route processors, refer to the RP datasheet. For comparisons of the SPAs and SPA interface processors, refer to the SPA/SIP datasheet.

Table 5. Cisco ASR 1000 Series: Chassis comparison and specifications

Model	Cisco ASR 1001-X	Cisco ASR 1002-X	Cisco ASR 1001-HX	Cisco ASR 1002-HX	Cisco ASR 1004	Cisco ASR 1006	Cisco ASR 1006-X	Cisco ASR 1009-X	Cisco ASR 1013
Physical specifications **Note:** Depth applies to chassis edge-to-edge dimension and does not include protrusions such as card handles, power-supply handles, and cable management brackets. Refer to the applicable hardware installation guide for additional details.	Height: 1.71 in. (43.43 mm) Width: 17.3 in. (439.42 mm) Depth: 18.17 in. (461.5 mm) Weight: • 25 lb (11.35 kg) fully loaded **Note:** The Cisco ASR 1001-X Router has the route processor, ESP, and SIP integrated.	Height: 3.5 in. (88.9 mm) Width: 17.2 in. (437.4 mm) Depth: 18.15 in. (461.0 mm) Weight: • 38.25 lb (17.36 kg) (with dual AC power supply and SPA blank covers) • 39.05 lb (17.72 kg) (with dual DC power supply and blank covers) • No SPAs included **Note:** The Cisco ASR 1002-X has the route processor, ESP, and SIP integrated.	Height: 1.71 in. (43.43 mm) Width: 17.3 in. (439.42 mm) Depth: 18.38 in. (466.85 mm) Weight: • 23 lb (10.44 kg) with dual AC power supplies • 22.5 lb (10.21 kg) with dual DC power supplies	Height: 3.5 in. (88.9 mm) Width: 17.3 in. (439.4 mm) Depth: 19.25 in. (489.0 mm) Weight: • 34 lb (15.45 kg) (with dual AC power supplies) • 34 lb (15.45 kg) (with dual DC power supplies)	Height: 7 in. (177.8 mm) Width: 17.2 in. (437.4 mm) Depth: 18.15 in. (461.0 mm) Weight: • 68.7 lb (31.16 kg) (with dual AC power supply, SPA blank covers, Cisco ASR 1000 Series 10-Gbps ESP [ASR1000-ESP10] or ASR 1000 Series 40-Gbps ESP [ASR1000-ESP-40], Cisco ASR 1000 Series Route Processor 1 [RP1] [ASR1000-RP1], two Cisco ASR 1000 Series 10-Gbps SIPs [ASR1000-SIP10] or ASR1000 Series 40-Gbps SIPs [ASR1000-SIP-40], and no SPAs)	Height: 10.5 in. (266.7 mm) Width: 17.2 in. (437.4 mm) Depth: 18.15 in. (461.0 mm) Weight: • 98.70 lb (44.77 kg) (with dual AC power supply, SPA, route processor, two Cisco ASR 1000 Series 10-Gbps ESPs [ASR1000-ESP10] or ASR 1000 Series 40-Gbps ESPs [ASR1000-ESP-40] or ASR1000 Series 100-Gbps ESPs [ASR1000-ESP100], two Cisco ASR 1000 Series RP1s [ASR1000-RP1], three Cisco ASR 1000 Series 10-Gbps SIPs [ASR1000-SIP10] or ASR1000 Series 40-Gbps SIPs [ASR1000-SIP-40], and no SPAs)	Height: 10.47 in. (265.9 mm) Width: 17.2 in. (437.4 mm) Depth: 18.15 in. (461.0 mm) Weight: • 36.5 lb empty • 112 lb (50.91 kg) (with two fan modules, three AC power supplies, three power bay blanks, two Cisco ASR1000 Series 100-Gbps ESPs [ASR1000-ESP100] or two Cisco ASR1000 Series 100-Gbps ESPs [ASR1000-ESP100-X] or two Cisco ASR1000 Series 200-Gbps ESPs [ASR1000-ESP200-X], two Cisco ASR 1000 Series RP2s [ASR1000-RP2], two Cisco ASR 1000 Series 100-Gbps	• Height: 15.72 in. (399.3 mm) • Width: 17.2 in. (437.4 mm) • Depth: 18.15 in. (461.0 mm) • Weight: • 50 lb empty • 154 lb (70 kg) (with three fan modules, four AC power supplies, two power bay blanks, two Cisco ASR1000 Series 100-Gbps ESPs [ASR1000-ESP100] or two Cisco ASR1000 Series 100-Gbps ESPs [ASR1000-ESP100-X] or two Cisco ASR1000 Series 200-Gbps ESPs [ASR1000-ESP200] or two Cisco ASR1000 Series 200-Gbps ESPs [ASR1000-ESP200-X], two Cisco ASR	• Height: 22.8 in. (579.1 mm) • Width: 17.2 in. (437.4 mm) • Depth: 18.15 in. (461.0 mm) • Weight: • 184.0 lb (83.46 kg) (with redundant AC power supply, SPA, route processor, SIP blank covers, two Cisco ASR 1000 Series 40-Gbps ESPs [ASR1000-ESP40] or ASR1000 Series 100-Gbps ESPs [ASR1000-ESP100] or ASR1000 Series 100-Gbps ESPs [ASR1000-ESP100-X] or ASR1000 Series 200-Gbps ESPs [ASR1000-ESP200], two Cisco ASR 1000 Series RP2s [ASR1000-RP2], six Cisco ASR

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Model	Cisco ASR 1001-X	Cisco ASR 1002-X	Cisco ASR 1001-HX	Cisco ASR 1002-HX	Cisco ASR 1004	Cisco ASR 1006	Cisco ASR 1006-X	Cisco ASR 1009-X	Cisco ASR 1013
							MIPs [ASR1000-MIP100], four EPA blanks, and no EPAs)	1000 Series RP2s [ASR1000-RP2], three Cisco ASR 1000 Series 100-Gbps MIPs [ASR1000-MIP100], six EPA blanks, and no EPAs)	1000 Series 40-Gbps SIPs [ASR1000-SIP40], and no SPAs)
Default memory	8-GB DRAM shared across route processor, ESP, and SIP	4-GB DRAM shared across route processor, ESP, and SIP	8-GB DRAM shared across route processor, ESP, and MIP	16-GB DRAM shared across route processor, ESP, and MIP	4-GB DRAM RP1 8-GB DRAM RP2	4-GB DRAM RP1 8-GB DRAM RP2	8-GB DRAM RP2 8-GB DRAM RP3	8-GB DRAM RP2 8-GB DRAM RP3	8-GB DRAM RP2 8-GB DRAM RP3
Number of SIPs or Ethernet line cards supported	Integrated in chassis	Integrated in chassis	Integrated in chassis	Integrated in chassis	2	3	2	3	6
Shared port adapters	1 single-height SPA slot	3 SPA slots	N/A	N/A	8 SPA slots	12 SPA slots	8 SPA slots	12 SPA slots	24 SPA slots
Ethernet port adapters	N/A	N/A	N/A	1 EPA slot	N/A	N/A	4 EPA slots	6 EPA slots	12 EPA slots
Cisco ASR 1000 Series ESP	Integrated in chassis	Integrated in chassis	Integrated in chassis	Integrated in chassis	1 ESP slot	2 ESP slots	2 ESP slots	2 ESP slots	2 ESP slots
Route processor	Integrated in the chassis: Cisco ASR 1001-X Series Route Processor with Quad Core Processor	Integrated in the chassis: Cisco ASR 1002-X Series Route Processor with Quad Core Processor	Integrated in the chassis: Cisco ASR 1001-HX Series Route Processor	Integrated in the chassis: Cisco ASR 1002-HX Series Route Processor	1 route-processor slot	2 route-processor slots	2 route-processor slots	2 route-processor slots	2 route-processor slots
Redundancy	Software: Yes	Software: Yes	Software: Yes	Software: Yes	Software: Yes	Hardware: Yes	Hardware: Yes	Hardware: Yes	Hardware: Yes

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Model	Cisco ASR 1001-X	Cisco ASR 1002-X	Cisco ASR 1001-HX	Cisco ASR 1002-HX	Cisco ASR 1004	Cisco ASR 1006	Cisco ASR 1006-X	Cisco ASR 1009-X	Cisco ASR 1013
Built-in Gigabit Ethernet ports	Yes: 6 Gigabit Ethernet Small Form-Factor Pluggable (SFP) ports	Yes: 6 Gigabit Ethernet SFP ports	Yes: 8 Gigabit Ethernet SFP ports, plus optional 4 configurable 1GE/10GE ports	Yes: 8 Gigabit Ethernet SFP ports	0	0	0	0	0
Built-in 10 Gigabit Ethernet port	Yes: Two 10 Gigabit Ethernet Small Form-Factor Plus Pluggable (SFP+) ports Note: Built-in 10-GB ports cannot be reduced to 1-GB speed.	No	Yes, Four 10 Gigabit Ethernet Small Form-Factor Plus Pluggable (SFP+) ports, plus optional 4 configurable 1GE/10GE ports	Yes: Eight 10 Gigabit Ethernet Small Form-Factor Plus Pluggable (SFP+) ports Note: Built-in 10-GB ports cannot be reduced to 1-GB speed.	No	No	No	No	No
Network interface module	Yes	No	No	Yes	No	No	No	No	No

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Model	Cisco ASR 1001-X	Cisco ASR 1002-X	Cisco ASR 1001-HX	Cisco ASR 1002-HX	Cisco ASR 1004	Cisco ASR 1006	Cisco ASR 1006-X	Cisco ASR 1009-X	Cisco ASR 1013
Physical specifications **Note:** Depth applies to chassis edge-to-edge dimension and does not include protrusions such as card handles, power-supply handles, and cable management brackets. Refer to the applicable hardware installation guide for additional details.	Height: 1.71 in. (43.43 mm) Width: 17.3 in. (439.42 mm) Depth: 18.17 in. (461.5 mm) Weight: • 25 lb (11.35 kg) fully loaded **Note:** The Cisco ASR 1001-X Router has the route processor, ESP, and SIP integrated.	Height: 3.5 in. (88.9 mm) Width: 17.2 in. (437.4 mm) Depth: 18.15 in. (461.0 mm) Weight: • 38.25 lb (17.36 kg) (with dual AC power supply and SPA blank covers) • 39.05 lb (17.72 kg) (with dual DC power supply and blank covers) • No SPAs included **Note:** The Cisco ASR 1002-X has the route processor, ESP, and SIP integrated.	Height: 1.71 in. (43.43 mm) Width: 17.3 in. (439.42 mm) Depth: 18.38 in. (466.85 mm) Weight: • 23 lb (10.44 kg) with dual AC power supplies • 22.5 lb (10.21 kg) with dual DC power supplies	Height: 3.5 in. (88.9 mm) Width: 17.3 in. (439.4 mm) Depth: 19.25 in. (489.0 mm) Weight: • 34 lb (15.45 kg) (with dual AC power supplies) • 34 lb (15.45 kg) (with dual DC power supplies)	Height: 7 in. (177.8 mm) Width: 17.2 in. (437.4 mm) Depth: 18.15 in. (461.0 mm) Weight: • 68.7 lb (31.16 kg) (with dual AC power supply, SPA blank covers, Cisco ASR 1000 Series 10-Gbps ESP [ASR1000-ESP10] or ASR 1000 Series 40-Gbps ESP [ASR1000-ESP-40], Cisco ASR 1000 Series Route Processor 1 [RP1] [ASR1000-RP1], two Cisco ASR 1000 Series 10-Gbps SIPs [ASR1000-SIP10] or ASR1000 Series 40-Gbps SIPs [ASR1000-SIP-40], and no SPAs)	Height: 10.5 in. (266.7 mm) Width: 17.2 in. (437.4 mm) Depth: 18.15 in. (461.0 mm) Weight: • 98.70 lb (44.77 kg) (with dual AC power supply, SPA, route processor, two Cisco ASR 1000 Series 10-Gbps ESPs [ASR1000-ESP10] or ASR 1000 Series 40-Gbps ESPs [ASR1000-ESP-40] or ASR1000 Series 100-Gbps ESPs [ASR1000-ESP100], two Cisco ASR 1000 Series RP1s [ASR1000-RP1], three Cisco ASR 1000 Series 10-Gbps SIPs [ASR1000-SIP10] or ASR1000 Series 40-Gbps SIPs [ASR1000-SIP-40], and no SPAs)	Height: 10.47 in. (265.9 mm) Width: 17.2 in. (437.4 mm) Depth: 18.15 in. (461.0 mm) Weight: • 36.5 lb empty • 112 lb (50.91 kg) (with two fan modules, three AC power supplies, three power bay blanks, two Cisco ASR1000 Series 100-Gbps ESPs [ASR1000-ESP100] or two Cisco ASR1000 Series 100-Gbps ESPs [ASR1000-ESP100-X] or two Cisco ASR1000 Series 200-Gbps ESPs [ASR1000-ESP200-X], two Cisco ASR 1000 Series RP2s [ASR1000-RP2], two Cisco ASR 1000 Series 100-Gbps MIPs [ASR1000-MIP100], four EPA blanks, and no EPAs)	• Height: 15.72 in. (399.3 mm) • Width: 17.2 in. (437.4 mm) • Depth: 18.15 in. (461.0 mm) • Weight: • 50 lb empty • 154 lb (70 kg) (with three fan modules, four AC power supplies, two power bay blanks, two Cisco ASR1000 Series 100-Gbps ESPs [ASR1000-ESP100] or two Cisco ASR1000 Series 100-Gbps ESPs [ASR1000-ESP100-X] or two Cisco ASR1000 Series 200-Gbps ESPs [ASR1000-ESP200] or two Cisco ASR1000 Series 200-Gbps ESPs [ASR1000-ESP200-X], two Cisco ASR 1000 Series RP2s [ASR1000-RP2], three Cisco ASR 1000 Series 100-Gbps MIPs [ASR1000-MIP100],	• Height: 22.8 in. (579.1 mm) • Width: 17.2 in. (437.4 mm) • Depth: 18.15 in. (461.0 mm) • Weight: • 184.0 lb (83.46 kg) (with redundant AC power supply, SPA, route processor, SIP blank covers, two Cisco ASR 1000 Series 40-Gbps ESPs [ASR1000-ESP40] or ASR1000 Series 100-Gbps ESPs [ASR1000-ESP100] or ASR1000 Series 100-Gbps ESPs [ASR1000-ESP100-X] or ASR1000 Series 200-Gbps ESPs [ASR1000-ESP200], two Cisco ASR 1000 Series RP2s [ASR1000-RP2], six Cisco ASR 1000 Series 40-Gbps SIPs [ASR1000-SIP40], and no SPAs)

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Model	Cisco ASR 1001-X	Cisco ASR 1002-X	Cisco ASR 1001-HX	Cisco ASR 1002-HX	Cisco ASR 1004	Cisco ASR 1006	Cisco ASR 1006-X	Cisco ASR 1009-X	Cisco ASR 1013
								six EPA blanks, and no EPAs)	
Default memory	8-GB DRAM shared across route processor, ESP, and SIP	4-GB DRAM shared across route processor, ESP, and SIP	8-GB DRAM shared across route processor, ESP, and MIP	16-GB DRAM shared across route processor, ESP, and MIP	4-GB DRAM RP1 8-GB DRAM RP2	4-GB DRAM RP1 8-GB DRAM RP2	8-GB DRAM RP2 8-GB DRAM RP3	8-GB DRAM RP2 8-GB DRAM RP3	8-GB DRAM RP2 8-GB DRAM RP3
Number of SIPs or Ethernet line cards supported	Integrated in chassis	Integrated in chassis	Integrated in chassis	Integrated in chassis	2	3	2	3	6
Shared port adapters	1 single-height SPA slot	3 SPA slots	N/A	N/A	8 SPA slots	12 SPA slots	8 SPA slots	12 SPA slots	24 SPA slots
Ethernet port adapters	N/A	N/A	N/A	1 EPA slot	N/A	N/A	4 EPA slots	6 EPA slots	12 EPA slots
Cisco ASR 1000 Series ESP	Integrated in chassis	Integrated in chassis	Integrated in chassis	Integrated in chassis	1 ESP slot	2 ESP slots	2 ESP slots	2 ESP slots	2 ESP slots
Route processor	Integrated in the chassis: Cisco ASR 1001-X Series Route Processor with Quad Core Processor	Integrated in the chassis: Cisco ASR 1002-X Series Route Processor with Quad Core Processor	Integrated in the chassis: Cisco ASR 1001-HX Series Route Processor	Integrated in the chassis: Cisco ASR 1002-HX Series Route Processor	1 route-processor slot	2 route-processor slots	2 route-processor slots	2 route-processor slots	2 route-processor slots
Redundancy	Software: Yes	Software: Yes	Software: Yes	Software: Yes	Software: Yes	Hardware: Yes	Hardware: Yes	Hardware: Yes	Hardware: Yes

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Model	Cisco ASR 1001-X	Cisco ASR 1002-X	Cisco ASR 1001-HX	Cisco ASR 1002-HX	Cisco ASR 1004	Cisco ASR 1006	Cisco ASR 1006-X	Cisco ASR 1009-X	Cisco ASR 1013
Built-in Gigabit Ethernet ports	Yes: 6 Gigabit Ethernet Small Form-Factor Pluggable (SFP) ports	Yes: 6 Gigabit Ethernet SFP ports	Yes: 8 Gigabit Ethernet SFP ports, plus optional 4 configurable 1GE/10GE ports	Yes: 8 Gigabit Ethernet SFP ports	0	0	0	0	0
Built-in 10 Gigabit Ethernet port	Yes: Two 10 Gigabit Ethernet Small Form-Factor Plus Pluggable (SFP+) ports Note: Built-in 10-GB ports cannot be reduced to 1-GB speed.	No	Yes, Four 10 Gigabit Ethernet Small Form-Factor Plus Pluggable (SFP+) ports, plus optional 4 configurable 1GE/10GE ports	Yes: Eight 10 Gigabit Ethernet Small Form-Factor Plus Pluggable (SFP+) ports Note: Built-in 10-GB ports cannot be reduced to 1-GB speed.	No	No	No	No	No
Network interface module	Yes	No	No	Yes	No	No	No	No	No

Table 6.

Cisco ASR 1000 Series processor module comparison and specifications

Cisco ASR 1000 Series	Cisco ASR 1001-X	Cisco ASR 1002-X	Cisco ASR 1001-HX	Cisco ASR 1002-HX	Cisco ASR 1004	Cisco ASR 1006	Cisco ASR 1006-X	Cisco ASR 1009-X	Cisco ASR 1013
ESP support	Cisco ASR 1000 Series 2.5-Gbps ESP (default) Upgradable through a software-activated feature license to 5, 10, or 20 Gbps	Cisco ASR 1002-X ESP with 5-Gbps (default) Upgradable through software-activated feature license to 10, 20, or 36 Gbps	Integrated ESP up to 60 Gbps throughput	Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100) equivalent	Cisco ASR 1000 Series 10-Gbps ESP (ASR1000-ESP10), noncrypto Cisco ASR 1000 Series 10-Gbps ESP (ASR1000-ESP10-N), Cisco ASR 1000 Series 20-Gbps ESP (ASR1000-ESP20), and Cisco ASR 1000 Series 40-Gbps ESP (ASR1000-ESP40)	Cisco ASR 1000 Series 10-Gbps ESP (ASR1000-ESP10), noncrypto Cisco ASR 1000 Series 10-Gbps ESP (ASR1000-ESP10-N), Cisco ASR 1000 Series 20-Gbps ESP (ASR1000-ESP20), Cisco ASR 1000 Series 40-Gbps ESP (ASR1000-ESP40), and Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100)	Cisco ASR 1000 Series 40-Gbps ESP (ASR1000-ESP40), Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100), Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100-X) and ASR 1000 Series 200-Gbps ESP (ASR1000-ESP200-X)	Cisco ASR 1000 Series 40-Gbps ESP (ASR1000-ESP40), Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100), Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100-X), and Cisco ASR 1000 Series 200-Gbps ESP (ASR1000-ESP200) and Cisco ASR 1000 Series 200-Gbps	Cisco ASR 1000 Series 40-Gbps ESP (ASR1000-ESP40), Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100), Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100-X),and Cisco ASR 1000 Series 200-Gbps ESP (ASR1000-ESP200)

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Cisco ASR 1000 Series	Cisco ASR 1001-X	Cisco ASR 1002-X	Cisco ASR 1001-HX	Cisco ASR 1002-HX	Cisco ASR 1004	Cisco ASR 1006	Cisco ASR 1006-X	Cisco ASR 1009-X	Cisco ASR 1013
								ESP (ASR1000-ESP200-X)	

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Cisco ASR 1000 Series	Cisco ASR 1001-X	Cisco ASR 1002-X	Cisco ASR 1001-HX	Cisco ASR 1002-HX	Cisco ASR 1004	Cisco ASR 1006	Cisco ASR 1006-X	Cisco ASR 1009-X	Cisco ASR 1013
ESP bandwidth	2.5 to 20 Gbps	5 to 36 Gbps	60 Gbps	100 Gbps	10 to 40 Gbps	10 to 100 Gbps	40 to 200 Gbps	40 to 200 Gbps	40 to 200 Gbps
ESP memory	Share the same control memory on route processor	Share the same control memory on route processor	Share the same control memory on route processor	Share the same control memory on route processor	Cisco ASR 1000 Series 10-Gbps ESP (ASR1000-ESP10) and ASR 1000 Series 10-Gbps ESP (ASR1000-ESP10): 2-GB DRAM default; 2-GB DRAM maximum Cisco ASR 1000 Series 20-Gbps ESP (ASR1000-ESP20): 4-GB DRAM default; 4-GB DRAM maximum	Cisco ASR 1000 Series 10-Gbps ESP (ASR1000-ESP10) and ASR 1000 Series 10-Gbps ESP (ASR1000-ESP10): 2-GB DRAM default; 2-GB DRAM maximum Cisco ASR 1000 Series 20-Gbps ESP (ASR1000-ESP20): 4-GB DRAM default; 4-GB DRAM maximum Cisco ASR 1000 Series 40-Gbps ESP (ASR1000-ESP40): 8-GB DRAM Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100): 16-GB DRAM	Cisco ASR 1000 Series 40-Gbps ESP (ASR1000-ESP40): 8-GB DRAM Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100): 16-GB DRAM Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100-X): 32-GB DRAM Cisco ASR 1000 Series 200-Gbps ESP (ASR1000-ESP200-X): 64-GB DRAM	Cisco ASR 1000 Series 40-Gbps ESP (ASR1000-ESP40): 8-GB DRAM Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100): 16-GB DRAM Cisco ASR 1000 Series 200-Gbps ESP (ASR1000-ESP200): 32-GB DRAM Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100-X): 32-GB DRAM Cisco ASR 1000 Series 200-Gbps ESP (ASR1000-ESP200-X): 64-GB DRAM	Cisco ASR 1000 Series 40-Gbps ESP (ASR1000-ESP40): 8-GB DRAM Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100): 16-GB DRAM Cisco ASR 1000 Series 200-Gbps ESP (ASR1000-ESP200): 32-GB DRAM Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100-X): 32-GB DRAM
SIPs and Ethernet line cards	Integrated in chassis; not upgradable	Integrated in chassis: not upgradable	Integrated in chassis; not upgradable	Integrated in chassis: not upgradable	Supports Cisco ASR 1000 Series 10-Gbps SIP Carrier Card (ASR1000-SIP10), Cisco ASR 1000 Series 40-Gbps SIP Carrier Card (ASR1000-SIP40), and ASR 1000 Fixed Ethernet Line Cards; two 10 GE + twenty 1 GE line cards (ASR1000-	Supports Cisco ASR 1000 Series 10-Gbps SIP Carrier Card (ASR1000-SIP10), Cisco ASR 1000 Series 40-Gbps SIP Carrier Card (ASR1000-SIP40), and ASR 1000 Fixed Ethernet Line Card; two 10 GE + twenty 1 GE line cards (ASR1000-2T+20X1GE); and six 10 GE line cards	Supports Cisco ASR 1000 Series 40-Gbps SIP Carrier Card (ASR1000-SIP40), Cisco ASR1000 Series MIP 100-Gbps Carrier Card (ASR1000-MIP100), and ASR 1000 Fixed Ethernet Line Card; two 10 GE + twenty 1 GE line cards (ASR1000-2T+20X1GE); and six 10 GE line cards	Supports Cisco ASR 1000 Series 40-Gbps SIP Carrier Card (ASR1000-SIP40), Cisco ASR1000 Series MIP 100-Gbps Carrier Card (ASR1000-MIP100), and ASR 1000 Fixed Ethernet Line Card; two 10 GE + twenty 1 GE (ASR1000-2T+20X1GE)	Supports Cisco ASR 1000 Series 40-Gbps SIP Carrier Card (ASR1000-SIP40), Cisco ASR1000 Series MIP 100-Gbps Carrier Card (ASR1000-MIP100), and ASR 1000 Fixed Ethernet Line Card; two 10 GE + twenty 1 GE (ASR1000-2T+20X1GE) line cards; and six 10 GE line cards

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Cisco ASR 1000 Series	Cisco ASR 1001-X	Cisco ASR 1002-X	Cisco ASR 1001-HX	Cisco ASR 1002-HX	Cisco ASR 1004	Cisco ASR 1006	Cisco ASR 1006-X	Cisco ASR 1009-X	Cisco ASR 1013
					2T+20X1GE); and six 10 GE line cards (ASR1000-6TGE)	(ASR1000-6TGE)	(ASR1000-6TGE)	line cards; and six 10 GE line cards (ASR1000-6TGE)	(ASR1000-6TGE)
Embedded hardware-based encryption (highest throughput numbers are for 1400B packets)	Yes: Up to 8-Gbps crypto support throughput	Yes: Up to 4-Gbps crypto support throughput	Yes: Up to 16-Gbps crypto support throughput	Yes: Up to 25-Gbps crypto support throughput	Yes: On Cisco ASR 1000 Series 10-Gbps ESP (ASR1000-ESP10) with up to 4 Gbps and on Cisco ASR 1000 Series 20-Gbps ESP (ASR1000-ESP20) with up to 8-Gbps crypto support throughput **Note:** No support on noncrypto Cisco ASR 1000 Series 10-Gbps ESP (ASR1000-ESP10-N)	Yes: On Cisco ASR 1000 Series 10-Gbps ESP (ASR1000-ESP10) with up to 4-Gbps crypto support throughput, Cisco ASR 1000 Series 20-Gbps ESP (ASR1000-ESP20) with up to 8-Gbps crypto support throughput, Cisco ASR 1000 Series 40-Gbps ESP (ASR1000-ESP40) with up to 11-Gbps crypto support throughput, and Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100) with up to 29-Gbps crypto support throughput **Note:** No support on noncrypto Cisco ASR 1000 Series 10-Gbps ESP (ASR1000-ESP10-N)	Yes: On Cisco ASR 1000 Series 40-Gbps ESP (ASR1000-ESP40) with up to 11-Gbps crypto support throughput, Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100) with up to 29-Gbps crypto support throughput, Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100-X) with up to 142-Gbps crypto support throughput and Cisco ASR 1000 Series 200-Gbps ESP (ASR1000-ESP200-X) with up to 197-Gbps crypto support throughput	Yes: On Cisco ASR 1000 Series 40-Gbps ESP (ASR1000-ESP40) with up to 11-Gbps crypto support throughput, Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100) with up to 29-Gbps crypto support throughput, Cisco ASR 1000 Series 200-Gbps ESP (ASR1000-ESP200) with up to 78-Gbps crypto support throughput, Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100-X) with up to 142-Gbps crypto support throughput and Cisco ASR 2000 Series 100-Gbps ESP (ASR1000-ESP200-X) with up to 197-Gbps crypto support throughput	Yes: On Cisco ASR 1000 Series 40-Gbps ESP (ASR1000-ESP40) with up to 11-Gbps crypto support throughput, Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100) with up to 29-Gbps crypto support throughput, and Cisco ASR 1000 Series 200-Gbps ESP (ASR1000-ESP200) with up to 78-Gbps crypto support throughput, Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100-X) with up to 142-Gbps crypto support throughput

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Cisco ASR 1000 Series	Cisco ASR 1001-X	Cisco ASR 1002-X	Cisco ASR 1001-HX	Cisco ASR 1002-HX	Cisco ASR 1004	Cisco ASR 1006	Cisco ASR 1006-X	Cisco ASR 1009-X	Cisco ASR 1013
Minimum Cisco IOS XE Software release	Cisco IOS XE Software Release 3.12.0	Cisco IOS XE Software Release 3.7.0S	Cisco IOS XE Software Release 16.3.1S	Cisco IOS XE Software Release 16.2.1S	Cisco IOS XE Software Release 2.1	Same as for Cisco ASR 1002 except Cisco ASR 1000 Series 40-Gbps ESP (ASR1000-ESP40) requires Cisco IOS XE Software Release 3.1.0S **Note:** Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100) requires Cisco IOS XE Software Release 3.7.0S.	Cisco IOS XE Software Release 3.16.0 **Note:** Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100-X) and Cisco ASR 1000 Series 200-Gbps ESP (ASR1000-ESP200-X) requires Cisco IOS XE Software Release 17.2	Cisco IOS XE Software Release 3.16.0 **Note:** Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100-X) and Cisco ASR 1000 Series 200-Gbps ESP (ASR1000-ESP200-X) requires Cisco IOS XE Software Release 17.2	Cisco ASR 1000 Series 40-Gbps ESP (ASR1000-ESP40) requires Cisco IOS XE Software Release 3.1.0S, ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100) requires Cisco IOS XE Software Release 3.7.0S, and ASR 1000 Series 200-Gbps ESP (ASR1000-ESP200) requires Cisco IOS XE Software Release 3.10.0S **Note:** Cisco ASR 1000 Series 100-Gbps ESP (ASR1000-ESP100-X) requires Cisco IOS XE Software Release 17.2
Rack-mounting	Yes: 19-inch	Yes: 19-inch	Yes: 19-inch	Yes: 19-inch	Yes: 19-inch	Yes: 19-inch	Yes: 19-inch	Yes: 19-inch	Yes: 19-inch
Wall-mounting	No	No	No	No	No	No	No	No	No
External USB flash memory	1-GB USB flash-memory support	1-GB USB flash-memory support	1-GB USB flash-memory support	1-GB USB flash-memory support	1-GB USB flash-memory support	1-GB USB flash-memory support	1-GB USB flash-memory support	1-GB USB flash-memory support	1-GB USB flash-memory support

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Cisco ASR 1000 Series	Cisco ASR 1001-X	Cisco ASR 1002-X	Cisco ASR 1001-HX	Cisco ASR 1002-HX	Cisco ASR 1004	Cisco ASR 1006	Cisco ASR 1006-X	Cisco ASR 1009-X	Cisco ASR 1013
Redundant power supply	Yes: Dual power supplies by default; option of either AC or DC power supply **Note:** A mix of one AC and one DC power supply is not supported.	Same as for Cisco ASR 1002	Yes: Dual power supplies by default; option of either AC or DC power supply **Note:** A mix of one AC and one DC power supply is not supported.	Yes: Dual power supplies by default; option of either AC or DC power supply **Note:** A mix of one AC and one DC power supply is not supported.	Same as for Cisco ASR 1002	Same as for Cisco ASR 1002	Yes: Dual power supplies by default, expandable up to a total of six, depending on configuration and redundancy preferences; option of either 1100W AC or 950W DC **Note:** A mix of AC and DC power supplies is not supported.	Yes: Dual power supplies by default, expandable up to a total of six, depending on configuration and redundancy preferences; option of either 1100W AC or 950W DC **Note:** A mix of AC and DC power supplies is not supported.	Yes: Quad power supplies (redundant pairs) by default; option of either AC or DC power supplies **Note:** A mix of AC and DC power supplies is not supported.
Power input	Worldwide ranging AC input range (85 to 264 VAC) Worldwide ranging DC (-40 to -72V; 48V nominal)	Same as for Cisco ASR 1002	Worldwide ranging AC input range (85 to 264 VAC) Worldwide ranging DC (-40 to -72; -48V nominal)	Worldwide ranging AC input range (85 to 264 VAC) Worldwide ranging DC (-40 to -72; -48V nominal)	Same as for Cisco ASR 1002	Same as for Cisco ASR 1002	Worldwide ranging AC input range (85 to 264 VAC) Worldwide ranging DC (-40 to -72; -48V nominal)	Worldwide ranging AC input range (85 to 264 VAC) Worldwide ranging DC (-40 to -72; -48V nominal)	Worldwide ranging AC (180 to 264V; 240V; 60 or 50 Hz nominal) Worldwide ranging DC (-40.5 to -72; -48V nominal)
Power consumption	• Maximum (DC): 242W • Maximum (AC): 250W • Maximum (out): 250W	• Maximum (DC): 590W • Maximum (AC): 560W • Maximum (out): 470W	• Maximum (DC): 360W • Maximum (AC): 360W • Maximum (out): 360W	• Maximum (DC): 500W • Maximum (AC): 500W • Maximum (out): 500W	• Maximum (DC): 1020W • Maximum (AC): 960W • Maximum (out): 765W	• Maximum (DC): 1700W • Maximum (AC): 1600W • Maximum (out): 1275W • Or • Maximum (DC): 2100W • Maximum (AC-high line): 2000W • Maximum (out): 1695W	• Maximum (DC): 4600W • Maximum (AC): 4500W • Maximum (out): 4030W	• Maximum (DC): 5200W • Maximum (AC): 5100W • Maximum (out): 4575W	• Maximum (DC): 4200W • Maximum (AC-high line): 4000W • Maximum (out): 3390W

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Cisco ASR 1000 Series	Cisco ASR 1001-X	Cisco ASR 1002-X	Cisco ASR 1001-HX	Cisco ASR 1002-HX	Cisco ASR 1004	Cisco ASR 1006	Cisco ASR 1006-X	Cisco ASR 1009-X	Cisco ASR 1013
Airflow	Front-to-back	Front-to-back	Front-to-back	Front-to-back	Front-to-back	Front-to-back	Front-to-back	Front-to-back	Front-to-back
Operating temperature (nominal)	32 to 104°F (0 to 40°C)	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X
Operating temperature (short-term)	32 to 122°F (0 to 50°C)	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X
Operating humidity (nominal) (relative humidity)	10 to 85%	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X
Operating humidity (short-term)	5 to 90%	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1002
Storage temperature	-40 to 150°F (-40 to 70°C)	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X
Storage humidity (relative humidity)	5 to 95%	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X
Operating altitude	-500 to 10,000 feet (-152 to 3048 meters)	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X
Network Equipment Building Standards (NEBS)	GR-1089 and GR-63	GR-1089 and GR-63	GR-1089 and GR-63	GR-1089 and GR-63	GR-1089 and GR-63	GR-1089 and GR-63	GR-1089 and GR-63	GR-1089 and GR-63	GR-1089 and GR-63

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Cisco ASR 1000 Series	Cisco ASR 1001-X	Cisco ASR 1002-X	Cisco ASR 1001-HX	Cisco ASR 1002-HX	Cisco ASR 1004	Cisco ASR 1006	Cisco ASR 1006-X	Cisco ASR 1009-X	Cisco ASR 1013
EMC standards	• FCC 47 CFR Part 15 Class A • VCCI Class A • AS/NSZ Class A • ICES-003 Class A • EN55022/CISPR 22 Information Technology Equipment (Emissions) • EN55024/CISPR 24 Information Technology Equipment (Immunity) • EN300 386 Telecommunications Network Equipment (EMC) • EN50082-1/EN61000-6-1 Generic Immunity Standard	Same as for Cisco ASR 1001-X	**Emissions** • FCC 47CFR15 Class A • AS/NZS CISPR 22 • CISPR 22 Class A • EN55022 Class A • ICES-003 Class A • VCCI Class A • CNS-13438 Class A • EN61000-3-2 • EN61000-3-3 **Immunity** • IEC/EN61000-4-2 Electrostatic Discharge Immunity • IEC/EN61000-4-3 Radiated Immunity • IEC/EN61000-4-4 EFT-B Immunity • IEC/EN61000-4-5 Surge • IEC/EN61000-4-6 Immunity to Conducted Disturbances • IEC/EN61000-4-8 Power Frequency Magnetic Field Immunity • IEC/EN61000-4-11 Voltage Dips, Short Interruptions, and Voltage Variations **ETSI/EN** • EN55022/CISPR 22 Information Technology Equipment (Emissions) • EN55024/CISPR 24 Information Technology	**Emissions** • FCC 47CFR15 Class A • AS/NZS CISPR 22 • CISPR 22 Class A • EN55022 Class A • ICES-003 Class A • VCCI Class A • CNS-13438 Class A • EN61000-3-2 • EN61000-3-3 **Immunity** • IEC/EN61000-4-2 Electrostatic Discharge Immunity • IEC/EN61000-4-3 Radiated Immunity • IEC/EN61000-4-4 EFT-B Immunity • IEC/EN61000-4-5 Surge • IEC/EN61000-4-6 Immunity to Conducted Disturbances • IEC/EN61000-4-8 Power Frequency Magnetic Field Immunity • IEC/EN61000-4-11 Voltage Dips, Short Interruptions, and Voltage Variations **ETSI/EN** • EN55022/CISPR 22 Information Technology Equipment (Emissions) • EN55024/CISPR 24 Information Technology	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X	Same as for Cisco ASR 1001-X

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Cisco ASR 1000 Series	Cisco ASR 1001-X	Cisco ASR 1002-X	Cisco ASR 1001-HX	Cisco ASR 1002-HX	Cisco ASR 1004	Cisco ASR 1006	Cisco ASR 1006-X	Cisco ASR 1009-X	Cisco ASR 1013
			Equipment (Immunity) • EN300 386 Telecommunications Network Equipment • EN50082-1/EN61000-6-1 Generic Immunity Standard	Equipment (Immunity) • EN300 386 Telecommunications Network Equipment • EN50082-1/EN61000-6-1 Generic Immunity Standard					
Safety Standard	UL60950-1 CSA C22.2 No. 60950-1-03 EN 60950-1 IEC 60950-1 AS/NZS 60950.1	UL60950-1 CSA C22.2 No. 60950-1-03 EN 60950-1 IEC 60950-1 AS/NZS 60950.1	UL60950-1 CSA C22.2 No. 60950-1-03 EN 60950-1 IEC 60950-1 AS/NZS 60950.1	UL60950-1 CSA C22.2 No. 60950-1-03 EN 60950-1 IEC 60950-1 AS/NZS 60950.1	UL60950-1 CSA C22.2 No. 60950-1-03 EN 60950-1 IEC 60950-1 AS/NZS 60950.1	UL60950-1 CSA C22.2 No. 60950-1-03 EN 60950-1 IEC 60950-1 AS/NZS 60950.1	UL60950-1 CSA C22.2 No. 60950-1-03 EN 60950-1 IEC 60950-1 AS/NZS 60950.1	UL60950-1 CSA C22.2 No. 60950-1-03 EN 60950-1 IEC 60950-1 AS/NZS 60950.1	UL60950-1 CSA C22.2 No. 60950-1-03 EN 60950-1 IEC 60950-1 AS/NZS 60950.1

Ordering information

Cisco ONE Software for WAN is available for the ASR 1000 Series.

Cisco ONE Software offers a complete solution that delivers an optimal experience over any connection while helping you get the most from your WAN investment with secure, fault-tolerant connectivity.

Benefits:

- Connect branch offices and your campus securely at an optimal cost by improving application performance through application protocol acceleration and optimization techniques that offload the WAN.
- Integrate voice and video across branch offices and your campus to increase productivity.

For ordering information for Cisco ONE Software for the ASR 1000 Series, go to https://www.cisco.com/c/en/us/products/software/one-wan/wan-part-numbers.html.

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Product sustainability

Information about Cisco's Environmental, Social and Governance (ESG) initiatives and performance is provided in Cisco's CSR and sustainability reporting

Table 7. Cisco environmental sustainability information

Sustainability Topic		Reference
General	Information on product-material-content laws and regulations	Materials
	Information on electronic waste laws and regulations, including our products, batteries and packaging	WEEE Compliance
	Information on product takeback and resuse program	Cisco Takeback and Reuse Program
	Sustainability Inquiries	Contact: csr_inquiries@cisco.com

Support for Cisco Software-Defined WAN

The ASR 1000 series is optimized for Cisco Software Defined WAN (SD-WAN). For enterprises, this means that business critical applications run faster, with more reliability and reduced Operational Expenditure (OpEx). Cisco SD-WAN achieves this by making all branches and Data Centers have the ability to monitor, control, move and report on streams of application data such as specific web (HTTP) traffic for example. The ASR 1000 series has deep packet inspection capability and can accurately identify and control thousands of different applications including custom in-house enterprise applications.

The entire SD-WAN implementation on the ASR 1000 is implemented by managing the end device either from the Cloud or On-Premise through ascending levels of throughput based licenses. All licenses that support Cisco SD-WAN, whether On-Premise or on Cloud are all enabled using Subscription Licenses. These subscription licenses enable all customers to seamlessly transition between On-Premise and Cloud management as needed. The license tiers are structured to support the growth in business needs through simple subscriptions that help simplify the journey to intent-based networking for the WAN.

Cisco SD-WAN subscriptions are aligned across three subscription licenses of **Cisco DNA Essentials, Cisco DNA Advantage and Cisco DNA Premier,** each expanding functionally**.** The **Cisco DNA Essentials on ISR 1000 and ISR 4000** covers all types of connectivity and router life cycle management, support for Network and application visibility coupled with basic premise and transport security. ASR 1000 series support two Cisco DNA tiers, Cisco DNA Advantage and Cisco DNA Premier. The **Cisco DNA Advantage** provides for Advanced WAN topologies, Application aware policies supported by enhanced network security. The **Cisco DNA Premier** provides for Cloud connectivity with unlimited segmentation, Advanced Application optimization and Network Analytics, secured by advanced threat protection.

For more information on Cisco SD-WAN please refer to https://www.cisco.com/c/en/us/products/software/one-wan-subscription/index.html.

To place an order, visit the Cisco Commerce Workspace.

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To get started with the Cisco ASR 1000 Series, refer to the detailed product part numbers and descriptions in the following tables:

- Table 8: Chassis
- Table 9: Processor Modules
- Table 10: Interfaces and Modules

For software image, feature and upgrade license, and more details about the Cisco ASR 1000 Series bundles and how to order the Cisco ASR 1000 Series, refer to the Cisco ASR 1000 Ordering Guide.

Table 8. Ordering Information for Cisco ASR 1000 Series Chassis

Product number	Product description
Cisco ASR 1000 Series Chassis	
ASR1001-X	Cisco ASR 1001-X System, Crypto, 6 built-in GE, Dual P/S
ASR1001-X=	Cisco ASR 1001-X System, Crypto, 6 built-in GE, Dual P/S, Spare
ASR 1001-HX	Cisco ASR1001-HX System, 8x10GE+8x1GE, 2xP/S, optional crypto
ASR 1001-HX=	Cisco ASR1001-HX System, 8x10GE+8x1GE, 2xP/S, optional crypto, spare
ASR1002-HX	Cisco ASR 1002-HX System, 4x10GE+4x1GE built-in, Dual P/S, optional crypto
ASR1002-HX=	Cisco ASR 1002-HX System, 4x10GE+4x1GE built-in, Dual P/S, optional crypto, spare
ASR1002-X	Cisco ASR 1002-X System, Crypto, 6 Built-In GE, Dual P/S
ASR1002-X=	Cisco ASR 1002-X System, Crypto, 6 Built-In GE, Dual P/S, Spare
ASR1004	Cisco ASR 1004 Chassis, Dual P/S
ASR1004=	Cisco ASR 1004 Chassis, Dual P/S, Spare
ASR1006	Cisco ASR 1006 Chassis, Dual P/S
ASR1006=	Cisco ASR 1006 Chassis, Dual P/S, Spare
ASR1006-X	Cisco ASR 1006-X Chassis
ASR1006-X=	Cisco ASR 1006-X Chassis, Spare
ASR1009-X	Cisco ASR 1009-X Chassis
ASR1009-X=	Cisco ASR 1009-X Chassis, Spare
ASR1013	Cisco ASR 1013 Chassis, Redundant P/S
ASR1013=	Cisco ASR 1013 Chassis, Redundant P/S, Spare

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Product number	Product description
Cisco ASR 1000 Series USB Memory Options	
MEMUSB-1024FT	1 GB USB Flash Token for Cisco ASR 1000 Series
MEMUSB-1024FT=	1 GB USB Flash Token for Cisco ASR 1000 Series, Spare

Table 9. Ordering information for processor modules

Product number	Product description
Cisco ASR 1000 Series Embedded Services Processor	
ASR1000-ESP20	Cisco ASR 1000 Embedded Services Processor, 20 Gb
ASR1000-ESP20=	Cisco ASR 1000 Embedded Services Processor, 20 Gb, Spare
ASR1000-ESP40	Cisco ASR 1000 Embedded Services Processor, 40 Gb
ASR1000-ESP40=	Cisco ASR 1000 Embedded Services Processor, 40 Gb Spare
ASR1000-ESP100	Cisco ASR 1000 Embedded Services Processor, 100 Gb
ASR1000-ESP100=	Cisco ASR 1000 Embedded Services Processor, 100 Gb Spare
ASR1000-ESP200	Cisco ASR 1000 Embedded Services Processor, 200 Gb
ASR1000-ESP200=	Cisco ASR 1000 Embedded Services Processor, 200 Gb Spare
ASR1000-ESP100-X	Cisco ASR 1000 Embedded Services Processor, 100 Gb
ASR1000-ESP100-X=	Cisco ASR 1000 Embedded Services Processor, 100 Gb Spare
ASR1000-ESP200-X	Cisco ASR 1000 Embedded Services Processor, 200 Gb
ASR1000-ESP200-X=	Cisco ASR 1000 Embedded Services Processor, 200 Gb Spare
Cisco ASR 1000 Series route processor	
ASR1000-RP2	Cisco ASR 1000 Route Processor 2
ASR1000-RP2=	Cisco ASR 1000 Route Processor 2, Spare
ASR1000-RP3	Cisco ASR 1000 Route Processor 3
ASR1000-RP3=	Cisco ASR 1000 Route Processor 3, Spare
ASR1000-RP3-32G-2P	Cisco ASR1000 RP3 w/ 32 GB, 2 Pack
ASR1000-RP3-64G-2P	Cisco ASR1000 RP3 w/ 64 GB, 2 Pack

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Table 10. Ordering information for interfaces and modules

Product number	Product description
Cisco ASR 1000 Series SPA Interface Processor and Ethernet Line Cards	
ASR1000-SIP40	Cisco ASR 1000 SPA Interface Processor 40
ASR1000-SIP40=	Cisco ASR 1000 SPA Interface Processor 40, SPARE
ASR1000-6TGE	Cisco ASR 1000 Fixed Ethernet Line Card, 6X10GE
ASR1000-6TGE=	Cisco ASR 1000 Fixed Ethernet Line Card, 6X10GE, Spare
ASR1000-2T+20X1GE	Cisco ASR 1000 Fixed Ethernet Line Card, 2X10GE + 20X1GE
ASR1000-2T+20X1GE=	Cisco ASR 1000 Fixed Ethernet Line Card, 2X10GE + 20X1GE, Spare
ASR1000-MIP100	Cisco ASR 1000 Ethernet Line Card, 100 Gb Modular Interface Processor
ASR1000-MIP100=	Cisco ASR 1000 Ethernet Line Card, 100 Gb Modular Interface Processor, spare
EPA-1X100GE	Cisco ASR 1000 1x100GE Ethernet Port Adapter
EPA-1X100GE=	Cisco ASR 1000 1x100GE Ethernet Port Adapter, spare
EPA-2X40GE	Cisco ASR 1000 2x40GE Ethernet Port Adapter (Native QSFP)
EPA-2X40GE=	Cisco ASR 1000 2x40GE Ethernet Port Adapter (Native QSFP), spare
EPA-1X40GE	Cisco ASR 1000 1x40GE Ethernet Port Adapter (2 physical QSFP ports – optional license to enable 2nd port)
EPA-1X40GE=	Cisco ASR 1000 1x40GE Ethernet Port Adapter (2 physical QSFP ports – optional license to enable 2nd port), spare
L-FLA1-EPA-1X40GE	Cisco ASR 1000 1x40GE e-Delivery Port License for EPA-1X40GE
EPA-QSFP-1X100GE	Cisco ASR 1000 1x100GE QSFP Ethernet Port Adapter
EPA-QSFP-1X100GE=	Cisco ASR 1000 1x100GE QSFP Ethernet Port Adapter, spare
EPA-CPAK-2X40GE	Cisco ASR 1000 2x40GE Ethernet Port Adapter (breakout cable)
EPA-CPAK-2X40GE=	Cisco ASR 1000 2x40GE Ethernet Port Adapter (breakout cable), spare
EPA-10X10GE	Cisco ASR 1000 10x10GE Ethernet Port Adapter
EPA-10X10GE=	Cisco ASR 1000 10x10GE Ethernet Port Adapter, spare
EPA-18X1GE	Cisco ASR 1000 18x1GE Ethernet Port Adapter
EPA-18X1GE=	Cisco ASR 1000 18x1GE Ethernet Port Adapter, spare

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Upgrade paths

Cisco ASR 1000 Series Routers are included in the standard Cisco Technology Migration Program. Refer to https://www.cisco.com/go/tmp and contact your local Cisco account representative for program details. Cisco Services.

Cisco Services make networks, applications, and the people who use them work better together.

Cisco and our certified partners can 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 security and Cisco Unified Communications technologies with bandwidth to support video, collaboration, branch-office solutions, and growth in alignment with your business goals.

The Cisco Lifecycle approach to services defines the requisite activities at each phase of the solution lifecycle. Planning and design services expedite solution adoption. Award-winning technical support increases operational efficiency. Optimization services improve performance, resiliency, stability, and predictability and prepare your network and teams for change. For more information, please visit https://www.cisco.com/go/services.

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For more information

For more information about the Cisco ASR 1000 Series, visit https://www.cisco.com/go/asr1000 or contact your local Cisco account representative. For information about the Cisco ASR 1000 Series bundles, refer to the Cisco ASR 1000 Ordering Guide.

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Document history

Table 11. Document history

New or Revised Topic	Described In	Date
Updated bandwidth information in Table 5	Table 6. Cisco ASR 1000 Series processor module comparison and specifications	September 20, 2021
Added new high-performance SD-WAN use case with ASR1006-X	Table 3	March 16, 2021
Added reference for ThousandEyes agent hosting support	Features and benefits, Software Licensing	April 12, 2022

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