



# Cisco ASR 1000 Series Aggregation Services Routers

Cisco® ASR 1000 Series routers are powerful WAN edge traffic aggregators. They combine traffic streams from branch and other sites and apply the intelligent services you need to control, filter, and secure them. You get consistent application performance among sites and cloud locations, all on a compact, universal hardware platform. Consistent software runs across the whole product family, so you can deploy and manage all your ASR 1000s in the same way.

ASR 1000 Series routers provide connectivity and traffic aggregation at the services edge of your network. Models in the series have a range of connection types and interface configurations, and support data forwarding from 2.5 to 200 Gbps. All models are compact and allow you to run multiple services concurrently with high performance. In the enterprise, the routers sit at the WAN edge of your data center or large office. In service provider networks, they run in your points of presence (POPs).

## Rev up the edge of your WAN

Your network traffic volumes are likely exploding because of mobility, cloud networking, video, and other applications. So in network locations where traffic converges, you might appreciate a power boost to avoid bottlenecks and keep performance humming.

## Features and benefits

- Network speeds to 200 Gbps
- High-performance support for multiple concurrent services
- Compliance with industry security mandates
- All-in-one compact router design for OpEx and CapEx savings
- In-service software upgrades and redundant power supply for high availability
- High-speed crypto
- SD-WAN support

**“By providing network connectivity that is very fast and always on, we’re enabling our scientists to collaborate in ways they never could have collaborated before.”**

– **Eric Hicks,**  
Director of Information  
Technology, Burnham Institute  
for Medical Research

ASR 1000 series routers deliver the extra oomph you need to data centers, large offices, and service provider networks. For instance, the Cisco QuantumFlow Processor™ delivers massive parallel processing so you can activate many enhanced routing services simultaneously while maintaining high performance. Another boost in performance comes from the routers’ split data/control plane architecture. The control plane is dedicated to control functions, and the data plane is dedicated to traffic forwarding, so you can program your data plane with predictable performance.

## How it works: Highlights

- **High-availability architecture:** A redundant design delivers five-nines (99.999 percent) availability. ASR 1006-X and ASR 1009-X chassis models support N+1 redundancy of the power supply for the flexibility to balance uptime, cost, and the size of your carbon footprint.
- **Enhanced, modular operating system:** Cisco IOS® XE Software is a modular operating system, allowing you to increase network capacity and services without a hardware upgrade.

Embedded services processors (ESPs) accelerate many advanced operating system features, such as:

- Crypto-based access security
- Network Address Translation (NAT)
- Threat defense with Cisco Zone-Based Firewall
- Deep packet inspection (DPI)
- Cisco Unified Border Element
- Data-center-interconnect (DCI) features
- In-Software Service Upgrade (ISSU) support
- **Flexible options.** A variety of routing models and licensing options help you meet the changing speed and budget requirements of your various locations. You can choose from router models that support speed ranges from 2.5 to 200 Gbps to get just the right price/ performance ratio for a particular site. With flexibility in the number of connections, speed maximums, and price, you don’t have to under- or overprovision for any network location.

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

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

A variety of models and licensing options help you meet the changing speed and budget requirements of your various locations. You can choose from router models that support speed ranges from 2.5 to 200 Gbps to get just the right price/performance ratio for a particular site. The modular ASR 1000 Series routers (ASR 1004 to ASR 1013) have field upgradable ESPs from 20 Gbps to 200 Gbps. You also have the option to buy fixed ASR 1000 Series routers that have a built-in ESP (ASR 1001-X to ASR 1002-HX). These fixed routers can have additional performance and/ or ports enabled via software licenses.

The ASR 1000 Series contains nine router models (see Table 1) in form factors ranging from a single rack unit (RU) to 13 RUs.

Table 1. ASR 1000 Series Router Models

ASR Model	1001-X	1002-X	1001-HX	1002-HX	1004
<b>Speed</b>	2.5 to 20 Gbps	5 to 36 Gbps	44 to 60 Gbps	44 to 100 Gbps	20 to 40 Gbps
<b>Typical uses</b>	<ul style="list-style-type: none"> <li>• High-end branch</li> <li>• Enterprise WAN or Internet edge</li> <li>• Route reflector</li> <li>• Data center edge</li> </ul>	<ul style="list-style-type: none"> <li>• Enterprise WAN or Internet edge</li> <li>• Service provider edge</li> <li>• Data center edge</li> </ul>	<ul style="list-style-type: none"> <li>• Enterprise WAN or Internet edge</li> <li>• Service provider edge</li> <li>• Data center edge</li> </ul>	<ul style="list-style-type: none"> <li>• Enterprise WAN or Internet edge</li> <li>• Service provider edge</li> <li>• Data center edge</li> </ul>	<ul style="list-style-type: none"> <li>• Enterprise WAN or Internet edge</li> <li>• Service provider edge</li> <li>• Data center edge</li> </ul>

  

ASR Model	1006	1006-X	1009-X	1013
<b>Speed</b>	20 to 100 Gbps	40 to 100 Gbps	40 to 200 Gbps	40 to 200 Gbps
<b>Typical uses</b>	<ul style="list-style-type: none"> <li>• Large enterprise Internet edge</li> <li>• Service provider edge</li> <li>• Data center edge</li> </ul>	<ul style="list-style-type: none"> <li>• Large enterprise Internet edge</li> <li>• Service provider edge</li> <li>• Data center edge</li> </ul>	<ul style="list-style-type: none"> <li>• Large enterprise Internet edge</li> <li>• Service provider edge</li> <li>• Data center edge</li> </ul>	<ul style="list-style-type: none"> <li>• Large enterprise Internet edge</li> <li>• Service provider edge</li> <li>• Data center edge</li> </ul>

## Next steps

For more information about the Cisco ASR 1000 Series Routers, visit <https://www.cisco.com/go/asr1000>. To further compare models, visit <https://www.cisco.com/c/en/us/products/routers/asr-1000-series-aggregation-services-routers/models-comparison.html>.

## Use cases

Who	Why
Enterprises experiencing explosive network traffic growth from mobility, cloud networking, and video and collaboration applications.	Cisco ASR 1000 Series routers consolidate these various traffic streams and apply traffic management and redundancy properties to them for consistent performance among enterprise sites and cloud locations.
Network service providers needing to deliver high-performance services to business customers or multimedia services to residential customers.	Unique processor design and split architecture deliver the power and predictability needed to support multiple concurrent traffic streams and services with five-nines reliability.
Existing Cisco 7200 and 7600 Series Router (end-of-sale) customers looking for simple migration.	The ASR 1000 Series multiservice platform delivers greater performance with the same design.

## Why Cisco?

ASR 1000 Series routers are industry-leading in their class, thanks to the Cisco QuantumFlow Processor technology and the split data/control plane architecture. Together, these technology advances enable the predictable, high-performance support of multiple intelligent routing services in parallel.

## Cisco Capital

### Financing to help you achieve your objectives

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

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