

Cisco 4000 Series Integrated Services Routers

One device to meet your branch needs

For building out the digital capabilities in your enterprise branch offices, the Cisco® 4000 Series Integrated Services Routers (ISR 4000) has been the most obvious platform family choice since 2014. The ISR 4000 Series consolidates many must-have IT functions, including network, security, compute, storage, and unified communications. You get everything you need in a single platform. That means significant savings in capital, operational, and management expenses for lower total cost of ownership.

The platform is modular and upgradable, so you can add new services without changing equipment. It supports multiple

application-aware services concurrently while maintaining WAN performance of up to 7 Gbps (ISR4461), even during heavy traffic loads. The backplane architecture supports high-bandwidth, module-to-module communication at speeds up to 10 Gbps. The ISR 4000 Series includes Cisco Trust Anchor Technologies that help mitigate modern cyberattacks by verifying platform integrity and providing protection from counterfeit and unauthorized modification of hardware and software. The original 4000 Series contains nine platforms: ISR 4461, 4451, 4431, 4351, 4331, 4331-DC, 4321, 4221 and 4221X.



Benefits

ISR4000 Series platforms provide your branch offices with these industry-leading router capabilities:

- Ability to extend intent-based networking to the WAN and enable policy-based automation by deploying Cisco® Catalyst SD-WAN.
- Modularity, providing a range of WAN access connectivity options such as 4G/LTE and 5G (through Cellular Gateway), switching, compute (Cisco UCS® E-Series), unified communications, and storage integrated into a single form factor to provide the capabilities of a complete branch in one box.
- Enhanced full edge security with Cisco Umbrella® Secure Internet Gateway (SIG), trustworthy systems, and Cisco Secure Network Analytics, protecting against modern cyberattacks as well as counterfeit and unauthorized modification of hardware and software.
- Scale and performance using multicore processing, providing gigabit performance while multiple services run concurrently.
- Effective license management, allowing you to pay as you grow.
- Auto-configuration of Cisco Intelligent WAN features to help deliver Cisco Catalyst SD-WAN to enterprise networks.



Figure 1. Cisco 4000 Series Integrated Services Routers: meet all your branch needs in one device

All ISR4000 platforms except ISR4461 are End of Sale since November 7, 2023, and are HW supported until November 30, 2028. The ISR4461 is still orderable but scheduled to go End of Sale on January 20, 2025, and will be HW supported until January 31, 2030.

Intelligent services reduce bandwidth costs

The ISR 4000 Series runs Cisco Catalyst SD-WAN, a comprehensive set of traffic control and security features. With Cisco Catalyst SD-WAN, you get all the business-grade capabilities of a Multiprotocol Label Switching (MPLS) VPN using other types of less-expensive links. You get per-application traffic management, WAN optimization, and VPN tunneling, for example, which you can put to work across internet, cellular, and other lower-cost services as you add connections.

And you can activate new router services on demand through a simple licensing change.

The ability to install and manage applications remotely means you don't need local IT staff to deliver a fully comprehensive computing and networking experience in the branch. That comes in handy at new or smaller sites where you don't have IT personnel already. All this plus convergence and stable, high-speed performance means you can roll out your branch services at the speed of business.

Cisco Catalyst SD-WAN configuration

With the ISR 4000 Series, you can configure your Cisco Catalyst SD-WAN features in next to no time, thanks to Cisco's Software-Defined Networking (SDN) controller, the Cisco Catalyst SD-WAN Manager application. Cisco Catalyst SD-WAN Manager sits in the cloud and automates a number of tasks across the network.

You can implement a Cisco Catalyst SD-WAN on your Cisco WAN infrastructure without significant setup time and with zero-touch deployment; you just install the ISR 4000 Series router on your WAN infrastructure and it connects to Cisco Catalyst SD-WAN Manager through zero-touch provisioning. Cisco Catalyst SD-WAN Manager then translates business policy directly into network device-level policy for automatic compliance with your corporate and industry-mandated policies.

With this cloud-based management simplicity, customers can quickly and automatically bring

up the device. The operations team for the cloud automates the configuration of Cisco Catalyst SD-WAN features, such as Quality of Service (QoS), path management, and security, in Cisco branch and edge WAN routers. The cloud approach involves just a few mouse clicks per site, eliminating the need to issue multiple commands. It has never been easier to configure, deploy, and manage large numbers of branch offices.

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 Software as a Service (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.

Cisco ThousandEyes is natively integrated on eligible ISR 4000 Series models to expand visibility across the internet, cloud, and SaaS.

- Gain hop-by-hop visibility into network underlay, including detailed path and performance metrics.
- Monitor Catalyst SD-WAN overlay performance and routing policy validation.
- Measure the reachability and performance of SaaS and internally owned applications.
- Establish network and application performance baselines across global regions before, during, and after the deployment of Catalyst SD-WAN to mitigate risk and validate Key Performance Indicators (KPIs).
- Isolate fault domains and provide actionable network insights that drastically expedite troubleshooting and resolution before they impact users.

Providing support for a secure branch

With increasing needs to access cloud-based applications and the movement of applications to the cloud, most organizations today have local internet access at the branch. This leads to the need for WAN security at the branch. Cisco routers achieve this security through three critical technologies.

- **WAN MACSec:** Provides line-rate network encryption over Layer 2 Ethernet transport services, whether it be over Metro Ethernet transport, Data Center Interconnect (DCI) links, or WAN connections that are leveraging Ethernet as the link-layer media.
- **Cisco Secure Network Analytics:** Allows customers to do cryptographic assessments and identify malware communications in encrypted traffic through passive monitoring.
- **Intrusion Prevention and Cloud Security Services:** Provide lightweight intrusion prevention capabilities and a simple cloud-delivered security service through Cisco Umbrella branch services.

Software subscription through Cisco DNA licensing

The ISR 4000 Series supports software-based subscription using Cisco DNA based licensing. Two Cisco DNA software subscription licenses are available for the WAN portfolio: Cisco DNA Essentials and Cisco DNA Advantage. Cisco DNA licensing provides a single subscription license that allows customers to seamlessly manage their networks through either Cisco Catalyst Center or Cisco Catalyst SD-WAN Manager.

Cisco ThousandEyes

A valid ThousandEyes license is required to activate the ThousandEyes agent. Existing ThousandEyes subscriptions can be leveraged on eligible ISR 4000 Series routers.

For additional ThousandEyes subscription information, go to https://www.thousandeyes.com/signup/?utm_source=Cisco&utm_medium=referral&utm_campaign=Cisco SD-WAN.

Next steps

To learn more about the Cisco 4000 Series ISRs, contact your sales representative or visit: <https://www.cisco.com/go/isr4000>.

To compare models, visit: https://www.cisco.com/c/en_ca/products/routers/4000-series-integrated-servicesrouters-isr/models-comparison.html.

For ISR4000 End of Sale announcements, visit: <https://www.cisco.com/c/en/us/products/routers/4000-series-integrated-services-routers-isr/eos-eol-notice-listing.html>.