



Cisco Integrated Services Routers Generation 2

Transforming the Next Generation Branch Office Experience—Any Service, Any Branch, Anywhere

At-A-Glance

Cisco Integrated Services Routers Generation 2 Overview

Transform your branch-office experience with the new Cisco® Integrated Services Routers Generation 2 (ISR G2) Family, Cisco's latest addition to the tremendously successful integrated services router portfolio. The Cisco ISR G2s are part of the Cisco Borderless Network Architecture that enables business innovation and growth across all remote sites. The next-generation architecture delivers a new workspace experience by meeting the performance requirements for the next generation of WAN and network services, enabling cost-effective delivery of high-definition collaboration at the branch office and providing secure transition to the next generation of cloud and virtualized network services. Designed for optimal service delivery on a single platform, the new Cisco ISR G2 routers give businesses greater power to deliver a superior customer experience and deploy services "on demand" as business needs dictate—while reducing overall operating costs.

What Problems Do Cisco ISR G2s Help Solve?

With the number of employees growing at the branch office, IT teams are challenged to securely and efficiently connect remote locations at minimal cost. The Cisco ISR G2 not only address critical branch-office challenges such as those of the first-generation routers, they also introduce revolutionary ways to make the remote office more productive, more collaborative, and more operationally efficient. These new innovations enable branch offices to:

- Deliver next-generation WAN and network service requirements
- Become more productive through increased video-based collaboration and rich-media services
- Securely transition to cloud and virtualized network services
- Minimize energy consumption and costs to support corporate sustainability
- Enable small IT teams to scale services worldwide

Cisco ISR G2 Positioning

The Cisco ISR G2 provide a highly secure and reliable platform for scalable multiservice integration at enterprise

and commercial branch offices of all sizes and small to medium-sized businesses (Figure 1). The excellent service delivery on a single platform, now up to 8x greater performance, offers the ultimate user experience with the architectural scalability and investment protection needed to minimize overall deployment costs.

Figure 1. Cisco Integrated Services Routers Generation 2



What's New on Cisco ISR G2?

Table 1 compares the features of the first and second generations of Cisco Integrated Services Routers.

	Cisco ISR	Cisco ISR G2
WAN performance	Up to 45 Mbps with services	Up to 350 Mbps with services
Network processor	Single	Multicore with future expandability
Service-module performance and capacity	1x with 160 GB	Up to 7x with dual core and 1-TB storage
Onboard digital signal processors (DSPs)	Voice only	Voice + Video-ready DSPs
Switch modules	Fast Ethernet with Power over Ethernet (PoE); based on Cisco Catalyst® 3750 Switch	Fast Ethernet or Gigabit Ethernet with PoE+; based on Cisco Catalyst 3560E and Catalyst 2950 Switches
Cisco IOS® Software image	Multiple images	Single Universal Cisco IOS Software image
Services delivery	Hardware-coupled	Services on demand
Redundancy	Single motherboard	Field-upgradable motherboard
Energy efficiency	Cisco EnergyWise	Cisco EnergyWise with slot-based controls

Why Upgrade Your Existing Access Router to a Cisco ISR G2 Router?

The Cisco ISR G2 portfolio builds upon the market success of the first generation of integrated services routers with new enhancements that deliver greater value to your business with new enhancements for service virtualization, video-ready capabilities, and operational excellence. Our exciting new innovations deliver:

- **Video-ready branch office for a superior user experience** with services that transform the branch-office workspace:
 - **Inherent medianet capabilities that help ensure the network is prepared for video traffic**
 - Media-aware: Can detect and optimize different media and application types (telepresence, video surveillance, desktop collaboration, and streaming media) to deliver the best experience
 - Endpoint-aware: Automatically detects and configures media endpoints
 - Network-aware: Can detect and respond to changes in device, connection, and service availability
 - Media engines that enable business-grade video applications based on high-density video-ready DSPs that deliver the medianet high-definition experience
 - Bandwidth-optimized and scalable video services, including media-rich video conferencing, video streaming, and digital signage
 - High-performance (up to 8x), nonstop branch-office experience to meet your future WAN and services requirements
 - Telepresence capability to your midsize branch offices with T1/E1 links
- **Service virtualization to deliver highly effective business innovation** that achieves superior service:
 - Cloud extensibility and services virtualization for mission-critical application survivability to remote sites



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- Broadest services offering to all branch-office sites, including security, unified communications, WAN optimization, application integration, and customizable virtual services
- A revolutionary “on-demand” services delivery model enabled by the innovative Cisco Services-Ready Engine (SRE)
- Operational excellence providing the lowest total cost of ownership (TCO) with scalability, operational flexibility, and simplicity based on best-in-class service integration, innovative pay-as-you-grow model, and optimized energy efficiency:
 - Superior business flexibility for on-demand service delivery with minimal system upgrades

- Increased branch-office uptime with enhanced availability features
- Greater energy efficiency with slot-based controls to decrease costs and support sustainability
- Simplified deployment with a single Cisco IOS Software image
- Investment protection with support for most of the prior generation of integrated services router interfaces

Cisco Services for the Branch Office

Services from Cisco and our certified partners can help you transform the branch-office experience and accelerate business innovation and growth with Borderless Networks. We have the depth and breadth of expertise to create a clear, replicable, optimized branch-office footprint across technologies that can help you:

- Increase the accuracy, speed, and efficiency of deployment
- Improve operational efficiency, save money, and mitigate risk
- Continuously improve performance

Why Cisco?

Built on 25 years of innovation and product leadership along with broad market acceptance, the new generation of access routers continues to optimize service integration to transform the branch-office experience with the speed, scale, and flexibility to deliver tomorrow's services transparently at a low cost of ownership. For more information, please visit: <http://www.cisco.com/go/isrg2>.

Table 2 compares the models of the Cisco ISR G2 portfolio.

Table 2. Cisco ISR G2 Model Comparison

	Cisco 3945E	Cisco 3925E	Cisco 3945	Cisco 3925	Cisco 2951	Cisco 2921	Cisco 2911	Cisco 2901	Cisco 1941 and 1941W	Cisco 1921	Cisco 890	Cisco 880	Cisco 860
Form factor	3 rack units (3RU)	3RU	3RU	3RU	2RU	2RU	2RU	1RU	2RU	1RU	Desktop	Desktop	Desktop
Integrated WAN ports	4 GE (2 Small Form-Factor Pluggable [SFP])	4 GE (2 SFP)	3 GE (2 SFP)	3 GE (2 SFP)	3 GE (1 SFP)	3 GE (1 SFP)	3 GE	2 GE	2 GE	2 GE	1 GE, 1 FE	10/100 Mbps FE	10/100 Mbps FE
Interface slots (enhanced high-speed WAN interface card [EHWIC])	3	3	4	4	4	4	4	4	2	2	0	0	0
Service-module slots	4	2	4	2	2	1	1	0	0	0	0	0	0
Integration-service-module (ISM) slots	0	0	1	1	1	1	1	1	1	0	0	0	0
Packet voice DSP module (PVDM) slots	3	3	4	4	3	3	2	2	0	0	0	1 (SRST models only)	0
USB ports (v2.0)	2	2	2	2	2	2	2	2	2	1	2	1 (USB1.1)	0
Default/maximum Flash	256 MB/4 GB	256 MB/4 GB	256 MB/4 GB	256 MB/4 GB	256 MB/4 GB	256 MB/4 GB	256 MB/4 GB			256 MB/256 MB	256 MB/256 MB	128 MB/128 MB or 256 MB/256 MB (SRST models only)	128 MB/128 MB
Default/maximum synchronous dynamic RAM (SDRAM)	1 GB/4 GB**	1 GB/4 GB**	1 GB/4 GB**	1 GB/4 GB**	512 MB/2.5 GB	512 MB/2.5 GB	512 MB/2.5 GB			512 MB/512 MB	512 MB/768 MB	256 MB/768 MB or 512 MB/768 MB (SRST models only)	256 MB/256 MB
Maximum Ethernet LAN ports with PoE	112	112	88	88	64	64	40	16*	12	9*	4	2	0



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Advanced security	Enabled through Security License for Universal Cisco IOS Software Image. IPS and Content Filtering needs additional subscription licenses												
Stateful firewall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Onboard hardware VPN acceleration (Digital Encryption Standard [DES], Triple DES [3DES], and Advanced Encryption Standard [AES])	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intrusion prevention	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A
Content filtering		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A
Unified communications	Enabled through Unified Communications License for Universal Cisco IOS Software Image; Cisco Unified Communications Manager Express/Survivable Remote Site Telephony (SRST) support through separate feature licenses												
Local conferencing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	–	–	–	Yes	N/A
Voice and video DSP support	PVDM3 and PVDM2	PVDM3 and PVDM2	PVDM3 and PVDM2	PVDM3 and PVDM2	PVDM3 and PVDM2	PVDM3 and PVDM2	PVDM3 and PVDM2	PVDM3 and PVDM2	–	–	–	Yes, on SRST models	N/A
SRST	Up to 1500	Up to 1350	Up to 1200	Up to 730	Up to 250	Up to 100	Up to 50	Up to 35	–	–	–	Up to 4 on SRST models	N/A
Cisco Unified Communications Manager Express	Up to 450	Up to 400	Up to 350***	Up to 250***	Up to 150	Up to 100	Up to 50	Up to 35	–	–	–	N/A	N/A
Cisco Unity™ Express (network module [NM], service module [SM], or ISM)	32 ports; 500 mailboxes	32 ports; 500 mailboxes	32 ports; 500 mailboxes	32 ports; 500 mailboxes	32 ports; 500 mailboxes	32 ports; 500 mailboxes	32 ports; 500 mailboxes	10 ports; 100 mailboxes	–	–	–	N/A	N/A
Session Initiation Protocol (SIP) sessions	2500	2000	1000	800	600	400	200	100	–	–	–	Up to 4	N/A
Digital voice support	Up to 660	Up to 420	Up to 720	Up to 480	Up to 400	Up to 240	Up to 150	Up to 100	–	–	–	N/A	N/A
Maximum voice support for analog and Basic Rate Interface (BRI)	Foreign exchange station (FXS): 108 Foreign exchange office (FXO): 60 BRI: 38	FXS: 60 FXO: 36 BRI: 22	FXS: 112 FXO: 64 BRI: 40	FXS: 64 FXO: 40 BRI: 24	FXS: 40 FXO: 28 BRI: 16	FXS: 40 FXO: 28 BRI: 16	FXS: 40 FXO: 28 BRI: 16	FXS: 16 FXO: 16 BRI: 8	–	–	–	FXS 4, FXO 1, BRI 1 on SRST models	N/A

*LAN Switching counts for the Cisco 2911 through Cisco 3945 and Cisco 3945E routers based on latest generation of switch service modules

** Up to 2 GB available for use; upgrade to 4 GB available in future

*** Scales to documented phone support in 15.0.1 rebuild