Chapter 1: Routing

This chapter includes only a subset of Cisco products and part numbers. Also, you will see products listed multiple times because they have dual roles and are used differently in small, medium, and large networks.

Routing At-a-Glance

Product	Features	Page
BRANCH ROUTERS		
Integrated Services Routers—Generation 2		
Cisco 3900 Series Integrated Services Routers ***NEW PRODUCT***	· Delivers scalable rich-media services including TelePresence, highest density of service virtualization, and lowest total cost of ownership (TCO) with energy efficiency · Ideal for high-end deployments requiring business continuity, WAN flexibility, superior collaboration, WAN flexibility, superior collaboration capabilities, and investment protection · Offers field-upgradeable motherboard, circuit-speed WAN performance up to 350 Mbps with services such as security, mobility, WAN optimization, unified communications, video, and customized applications · Has three rack unit (3RU) modular form factor	1–4
Cisco 2900 Series Integrated Services Routers ***NEW PRODUCT***	· Provides rich-media services including TelePresence, service virtualization, and lower TCO with energy efficiency · Ideal for midrange deployments requiring business agility, WAN flexibility, and secure collaboration · Offers circuit-speed WAN performance up to 75 Mbps with services such as security, mobility, WAN optimization, unified communications, video, and customized applications · Has 1RU to 2 RU modular form factor	1–9
Cisco 1900 Series Integrated Services Routers ***NEW PRODUCT***	· Offers entry-level, highly secure solution for WAN deployments; offers service virtualization and low TCO · Ideal for small offices requiring modular flexibility for highly secure mobility and customizable applications · Offers circuit-speed performance up to 25 Mbps with concurrent services · Offers factory-selectable 802.11n access point and doublewide high-speed WAN interface card (HWIC) support; has desktop form factor	1–12
Cisco 800 Series Routers ***NEW UPDATES***	· Ideal for small offices and teleworkers, or to service providers to deploy as part of their managed network services · Delivers data, security, wireless, third-generation wireless, SRST	1–17
Integrated Services Routers—Generation 1		
Cisco 3800 Series Integrated Services Routers	· Ideal for medium-sized to large businesses and enterprise branch offices · Highly secure platform with concurrent T3/E3 wire-speed delivery · Deliver the performance, availability, and reliability required for scaling mission-critical business applications	1–19
Cisco 2800 Series Integrated Services Routers	· Ideal for small to medium-sized businesses and enterprise branch offices. · Accommodates multiple T1/E1 connections for services including data, security, voice, video, and wireless · Deliver the performance, availability, and reliability required for scaling mission-critical business applications	1–21
Cisco 1800 Series Integrated Services Routers	· Ideal for small to medium-sized businesses and enterprise branch offices. · Enables businesses to reduce costs by deploying a single, resilient system for fast, secure, delivery for data, security, unified communications, and wireless · Delivers secure Internet and Intranet access	1–25
WAN ROUTERS		
Cisco 7600 Series Routers	· Ideal for service providers that deliver consumer and business services over a single converged Carrier Ethernet network · Industry-leading carrier-class edge router offering integrated, high-density Ethernet switching, IP/MPLS routing, and 10-Gbps interfaces · Offers a choice of form factors purpose-built for high availability	1–29
Cisco 7300 Series Routers	· Ideal for both service providers and enterprise applications · Compact, high-performance one-rack-unit (1RU) router coupled with a broad set of interfaces and Cisco IOS® Software features	1–31
Cisco 7200 Series Routers	· Ideal for enterprise and service provider edge applications · Optimized for delivering integrated services for up to OC-3 bandwidth · Supports a wide range of density, performance, and service requirements · Delivers an exceptional price-to-performance ratio, versatility, and feature richness in a compact form factor	1–32

Cisco ASR 1000 Series Aggregation Services Routers ***NEW UPDATES***	· Ideal for medium-sized to large enterprises and service providers · Industry-leading performance, service capabilities, reliability, and efficiencies in a compact form factor supporting up to 40 Gbps · Highly secure, high-performance and integrated hardware-based services without the need for additional hardware modules · Extends network as a platform for cloud computing to help conserve resources and optimize performance	1–36
Cisco Catalyst 6500 Series Switches ***NEW UPDATES***	· Simplifies operations, reduces network costs, and increases resiliency through its Virtual Switch System 1440 technology · Automates network services, energy control and minimizes total cost of ownership with features such as GOLD, OBFL, SmartCallHome, Energywise · Delivers comprehensive features for operational management, integrated services, QoS, and high availability · Integrates services through its portfolio of service modules	See 2–4
SERVICE PROVIDER CORE/EDGE ROUTERS		
Cisco Carrier Routing System ***NEW UPDATES***	· NEW—CRS-3- powered by the Cisco QuantumFlow Array and more than triples the performance of the CRS-1 · Ideal for service providers across all market segments · Offers industry-leading performance, advanced services intelligence, environmentally aware design, and system longevity · Each model (CRS-1 and CRS-3) uses Cisco IOS XR Software, a unique self-healing, distributed operating system	1–34
Cisco XR 12000/ 12000 Series Routers	· Ideal for large enterprises and service providers · XR 12000 Series Routers- extend highly secure virtualization, integral service delivery, continuous system operation, and multiservice scale · 12000 Series Routers- feature Cisco I-Flex, a portfolio of shared port adapters (SPAs) and SPA interface processors (SIPs)	1–36
Cisco ASR 9000 Series Aggregation Services Routers	· Ideal for carriers offering residential and business services · Delivers nonstop video and enhanced scalability in a reduced carbon footprint, along with industry-leading levels of carrier transport · Provides carrier-class reliability for continuous service operation and high availability · Scales up to 6.4 Tbps per system and delivers comprehensive system redundancy	1–39
Cisco ASR 1000 Series Aggregation Services Routers ***NEW UPDATES***	· Ideal for medium-sized to large enterprises and service providers · Industry-leading performance, service capabilities, reliability, and efficiencies in a compact form factor supporting up to 40 Gbps · Highly secure, high-performance and integrated hardware-based services without the need for additional hardware modules · Extends network as a platform for cloud computing to help conserve resources and optimize performance	1–40
Cisco 7600 Series Routers	· Ideal for service providers that deliver consumer and business services over a single converged Carrier Ethernet network · Industry-leading carrier-class edge router offering integrated, high-density Ethernet switching, IP/MPLS routing, and 10-Gbps interfaces · Offers a choice of form factors purpose-built for high availability	1–29
Cisco 7300 Series Routers	· Ideal for both service providers and enterprise applications · Compact, high-performance one-rack-unit (1RU) router coupled with a broad set of interfaces and Cisco IOS® Software features	1–31
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CONNECTED GRID ROUTERS		
Cisco 2000 Series Connected Grid Router ***NEW PRODUCT***	· Rugged industrial design and substation compliance with IEC-61850-3 and IEEE 1613 for utility substation environments · Integrated security to help utilities address compliance with critical infrastructure protection mandates · High availability design for optimum network up time and redundancy · Network and device management tools for deployments, upgrades, and remote monitoring · Advanced quality of service (QoS) capabilities to support mission-critical substation communications such as SCADA (Supervisory Control and Data Acquisition) · Comprehensive network security features based on open standards	1–42
SMALL BUSINESS ROUTERS		
Cisco SRP 500 Series Services Ready Platforms ***NEW TO GUIDE***	· Help enable service providers to deliver differentiated, converged service offers that increase bandwidth usage and average revenue per user while reducing customer churn · Fixed-configuration customer premises equipment (CPE) to enable service providers to create, provision, and deploy premium revenue-generating services to small businesses · Support a variety of high-quality voice, data, security, wireless, and application services.	1–43

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SERVICES		
Cisco Routing Services Assess overall readiness with planning services and reduce the risk, delays, and total cost of deployment with an implementation-ready design that you can use to engineer your network.		1–44
FOR MORE INFORMATION		
Product Ordering To place an order, visit: http://www.cisco.com/en/US/ordering/index.shtml. **End-of-Life and End-of-Sale** Please visit the end-of-life and end-of-sale website for a complete and up-to-date listing of products that are no longer being sold or supported, what replacement products are available, and information about product support. http://www.cisco.com/en/US/products/prod_end_of_life.html NOTE: This chapter provides only a subset of Cisco products and part numbers. For the most up-to-date and comprehensive information, refer to the Cisco website at http://www.cisco.com, the Cisco ordering website at http://www.cisco.com/en/US/ordering/index.shtml, or reference the URL listed in the "For More Information" section of each product. For more Cisco routing platforms, refer to the Cisco Routing Guide at http://www.cisco.com/go/routerguide.		

What's New on Cisco ISR G2?

Feature	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 and 160 GB storage	Up to 7X with dual core and 1 TB storage
Onboard DSPs	Voice only	Voice and video-ready DSPs
Switch modules	Fast Ethernet with Power over Ethernet (PoE); based on Cisco Catalyst 3750	Fast Ethernet/Gigabit Ethernet with POE+ Based on Cisco Catalyst 3560E/2950
IOS image	Multiple images	Single universal IOS image
Services delivery	Hardware-coupled	Services on demand
Redundancy	Single motherboard	Field-upgradeable motherboard
Energy efficiency	EnergyWise	EnergyWise with slot-based controls Real-time power reporting

Cisco ISR G2 Model Comparison

	Cisco 3945E	Cisco 3925E	Cisco 3945	Cisco 3925	Cisco 2951	Cisco 2921	Cisco 2911	Cisco 2901	Cisco 1941/ 1941W	Cisco 1921
Form Factor	3 rack units (3RU)	3RU	3RU	3RU	2RU	2RU	2RU	1RU	2RU	1RU
Integrated WAN Ports	4 GE (2 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
Interface Slots (EHWIC)	3	3	4	4	4	4	4	4	2	2

Service Module Slots	4	2	4	2	2	1	1	0	0	0
ISM Slots	0	0	1	1	1	1	1	1	1	0
PVDM Slots	3	3	4	4	3	3	2	2	0	0
USB Ports (v2.0)	2	2	2	2	2	2	2	2	2	1
Default/Max Flash	256MB/ 4GB	256MB/ 4GB	256 MB/ 4GB	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
Default/Max SDRAM	1 GB/ 4 GB[1]	1 GB/ 4 GB[1]	1 GB/ 4 GB[1]	1 GB/ 4 GB[1]	512 MB/ 2.5 GB	512 MB/ 2.5 GB	512 MB/ 2.5 GB	512 MB/ 2.5 GB	512 MB/ 2.5 GB	512 MB/ 2.5 GB
Modular LAN Switchports (with optional PoE)	98[2]	74[2]	98[2]	74[2]	50[2]	50[2]	24[2]	16[2]	11[2]	9
Advanced Security	**Enabled via Security License for Universal IOS Image. IPS and Content Filtering need additional subscription licenses**									
Stateful Firewall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Onboard Hardware VPN Acceleration (DES, 3DES, AES)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intrusion prevention	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Content filtering	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Unified Communication	**Enabled via Unified Communications License for Universal IOS Image. CCME/SRST support through separate feature licenses**									
Local conferencing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	—	—
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	—	—
Survivable Remote Site Telephony (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	—	—
Cisco Unified Communications Manager Express	Up to 450	Up to 400	Up to 350[3]	Up to 250[3]	Up to 150	Up to 100	Up to 50	Up to 35	—	—
Cisco Unity™ Express (network module [NM], service module [SM], or ISM)	32 ports; 300 mail-boxes	32 ports; 300 mail-boxes	32 ports; 300 mail-boxes	32 ports; 300 mail-boxes	32 ports; 300 mail-boxes	32 ports; 300 mail-boxes	32 ports; 300 mail-boxes	10 ports; 100 mail-boxes	—	—
Session Initiation Protocol (SIP) sessions	2500	—	—	800	600	400	200	100	—	—
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	—	—
Maximum voice support for analog and Basic Rate Interface (BRI)	FXS: 108 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	—	—

1. Up to 2 GB available for use; upgrade to 4 GB available in future.
2. LAN Switching counts for the Cisco 2911 through Cisco 3945 and Cisco 3945E routers based on latest generation of switch service module.
3. Scales to documented phone support in 15.0.1 build.

Cisco 3900 Series Integrated Services Routers

Cisco 3900 Series Integrated Services Routers (ISRs) are designed to power the next phase of branch-office evolution, providing rich-media collaboration and virtualization to the branch office while reducing operating costs.

Cisco 3900 Series Integrated Services Routers build on 25 years of Cisco innovation and product leadership. The new Cisco Integrated

Services Routers Generation 2 (ISR G2) platforms are architected to enable the next phase of branch-office evolution, providing rich-media collaboration and virtualization to the branch office while maximizing operational cost savings. The new routers support new high-capacity digital signal processors (DSPs) for future enhanced video capabilities, high-powered service modules with improved availability, multicore CPUs, Gigabit Ethernet switching with Cisco Enhanced Power over Ethernet (ePoE), and new energy visibility and control capabilities while enhancing overall system performance.

Additionally, a new Cisco IOS Software Universal image and Cisco Services Ready Engine (SRE) module enable you to decouple the deployment of hardware and software, providing a flexible technology foundation that can quickly adapt to evolving network requirements. Overall, the Cisco 3900 Series offers exceptional total cost of ownership (TCO) savings and network agility through the intelligent integration of market-leading security, unified communications, wireless, and application services.

The routers include:

- Services on demand—The Cisco 3900 Series Integrated Services Routers reduce initial capital outlays by decoupling the delivery of software from hardware on optional service modules. In addition, you receive a Universal Cisco IOS Software image capable of enabling all of Cisco's rich Cisco IOS Software features and allowing you to quickly deploy new services.
- Investment protection—The Cisco 3900 Series reduces deployment costs and increases flexibility. The platform offers a modular, field-upgradable motherboard called the Services Performance Engine (SPE). SPEs allow you to invest in a Cisco 3900 Series ISR today and boost its performance later by upgrading to a higher-performance engine. Investment protection is also offered with support for most existing modules from previous-generation ISRs.
- Energy efficiency—The Cisco 3900 Series architecture includes higher-efficiency power supplies with intelligent power management, with full Cisco EnergyWise feature support in the future. Both Cisco 3925 and 3945 routers support dual power supplies for power-supply redundancy for branch-office or retail environments running mission-critical applications.
- High performance—The Cisco 3900 Series offers significant performance improvements over previous-generation ISRs.

Overall, the Cisco 3900 Series offers unparalleled total-cost-of-ownership (TCO) savings and network agility through the intelligent integration of security, wireless, and application services.

Ideal for Companies That Need These Features

Cisco 3945E	· Modular Services Performance Engine (SPE) 250, which can be upgraded for even higher performance as next-generation WAN environments evolve · Four integrated 10/100/1000 Ethernet ports with 2 ports capable of RJ-45 or Small Form-Factor Pluggable (SFP) connectivity · Four service-module slots · Three enhanced high-speed WAN interface card (HWIC) slots · Three onboard digital-signal-processor (DSP) slots · Dual integrated power supplies · Fully integrated power distribution to modules supporting 802.3af Power over Ethernet (PoE)
Cisco 3925E	· Modular Services Performance Engine (SPE) 200 for even higher performance as WAN environments evolve · Four integrated 10/100/1000 Ethernet ports with two Small Form-Factor Pluggable (SFP) ports · Two service-module slots · Three enhanced high-speed WAN interface card (EHWIC) slots · Three onboard digital-signal-processor (DSP) slots · Dual integrated power supplies · Fully integrated power distribution to modules supporting 802.3af Power over Ethernet (PoE)
Cisco 3945	· Modular Services Performance Engine (SPE) 150, which can be upgraded for even higher performance as next-generation WAN environments evolve · Four integrated 10/100/1000 Ethernet ports with two ports capable of RJ-45 or Small Form-Factor Pluggable (SFP) connectivity · Four service-module slots · Four enhanced high-speed WAN interface card (EHWIC) slots · Four onboard digital-signal-processor (DSP) slots · One integrated-services-module slot · Dual integrated power supplies · Fully integrated power distribution to modules supporting 802.3af Power over Ethernet (PoE)
Cisco 3925	· Modular Services Performance Engine (SPE) 100 for even higher performance as WAN environments evolve · Three integrated 10/100/1000 Ethernet ports with two SFP ports · Two service-module slots · Four enhanced high-speed WAN interface card (EHWIC) slots · Four onboard digital-signal-processor (DSP) slots · One integrated-services-module slot · Dual integrated power supplies · Fully integrated power distribution to modules supporting 802.3af Power over Ethernet (PoE)

Key Features and Benefits

- Modular platform
  - The Cisco 3900 Series routers are highly modular platforms with several types of module slots to add connectivity and services for varied branch-office network requirements.
  - The routers offer an industry-leading breadth of LAN and WAN connectivity options through modules to accommodate field upgrades to future technologies without requiring platform replacement.
  - The Cisco SPE on the Cisco 3900 offers the ability to increase the performance of the router with a field-upgradable motherboard as your network needs grow.
- Processors
  - The Cisco 3900 Series routers are powered by high-performance multicore processors that can support the growing demands of high-speed WAN connections to the branch office while also running multiple concurrent services.
- Advanced security with embedded IP Security with Secure Sockets Layer (IPSec/SSL) VPN hardware acceleration
  - Embedded hardware encryption acceleration is enhanced to provide higher scalability, which, combined with an optional Cisco IOS Software Security license, enables WAN link security and VPN services (both IPSec and SSL acceleration).
  - The onboard encryption hardware outperforms the advanced integration modules (AIMs) of previous generations.
  - The routers support Cisco Easy VPN (remote and server), Dynamic Multipoint VPN (DMVPN), Group Encrypted VPN (GET VPN), and Secure Socket Layer VPN (SSL VPN). The 3900 Series routers support Multiprotocol Label Switching (MPLS) VPNs. Specific provider-edge capabilities include Virtual Route Forwarding (VRF) firewall and VRF IP Security (IPsec).
  - More than 3700 intrusion-prevention-system (IPS) signatures are supported in Cisco IOS Software, with the ability to load and enable selected IPS signatures. More than 4500 IPS signatures are available with the optional high-performance intrusion-prevention-system (IPS) network module.
  - Content Filtering includes URL/keyword blocking and features category-based productivity and security ratings. This is a subscription-based hosted solution that leverages Trend Micro's global TrendLabs™ threat database, and is closely integrated with Cisco IOS Software.
  - Cisco Configuration Professional comes standard on all Cisco 3900 Series Integrated Services Routers.
- Multigigabit fabric (MGF)
  - The Cisco 3900 Series introduces an innovative MGF that allows for efficient module-to-module communication, enabling tighter services interactions across modules while reducing the overhead on the router processor.
- TDM interconnectivity fabric
  - Unified communications services in the branch office are significantly enhanced with the use of TDM interconnectivity fabric in the router architecture, allowing for scaling of DS-0 channel capacity.
- Integrated Gigabit Ethernet ports
  - The Cisco 3900 Series provides up to four 10/100/1000 Ethernet WAN ports.
  - Two of the 10/100/1000 Ethernet WAN ports on the Cisco 3900 Series can support Small Form-Factor Pluggable (SFP)-based connectivity in lieu of RJ-45 ports, enabling fiber connectivity.
- High-capacity, video-ready Packet Voice Video Digital Signal Processor Module (PVDM3)
  - Enhanced architecture delivers a new packet-processing engine optimized for video and rich-media applications, while concurrently supporting packet voice.
  - Enables scaling of high-definition (HD) voice capacity and is optimized for future enhanced video capabilities.
- Innovative universal-serial-bus (USB)-based console access
  - A new, innovative, mini-B USB console port supports management connectivity when traditional serial ports are not available.
  - Traditional console and auxiliary ports are also available.
- Optional integrated power supply for distribution of PoE and universal DC power supply
  - An optional upgrade to the internal power supply provides inline power (802.3af-compliant PoE, Cisco ePoE, and Cisco Inline Power) to optional integrated switch modules.
  - An optional DC power supply that extends possible deployment environments such as central offices and industrial environments will be available in the future.
- Optional integrated redundant power supply (RPS) and PoE boost
  - Power redundancy is available by installing an optional integrated RPS, thereby decreasing network downtime and protecting the network from power-supply failures.
  - When populated with dual integrated power supplies, the Cisco 3900 Series can operate in a configurable PoE boost mode in lieu of redundant power mode whereby the power capacity of the platform is increased to almost twice the normal power to support additional PoE ports.
- Designed for flexible deployments
  - The Cisco 3945 and 3925 are designed for Network Equipment Building Systems (NEBS) environments.

Specifications

Services and Slot Density	Cisco 3945E	Cisco 3925E	Cisco 3945	Cisco 3925
Embedded hardware-based cryptography acceleration (IPSec + Secure Sockets Layer [SSL])	Yes	Yes	Yes	Yes
Cisco Unified Communications Manager Express Sessions	450	400	350	250
Cisco Unified SRST sessions	1500	1350	1200	730

Total onboard WAN or LAN 10/100/1000 ports	4	4	3	3
RJ-45-based ports	4	4	3	3
SFP-based ports	2	2	2	2
Service-module slots	4	2	4	2
Doublewide service-module slots	1	1	1	1
EHWIC slots	3	3	4	4
Doublewide EHWIC slots	1	1	2	2
ISM slots	0	0	1	1
Online insertion and removal (OIR)	Services modules	Services modules	Services modules	Services modules
Onboard DSP (PVDM) slots	3	3	4	4
Memory DDR2 ECC DRAM: Default	1 GB	1 GB	1 GB	1 GB
Memory DDR2 ECC DRAM: Maximum	2 GB	2 GB	2 GB	2 GB
Compact Flash (external): Default	Slot 0: 256 MB Slot 1: None	Slot 0: 256 MB Slot 1: None	Slot 0: 256 MB Slot 1: None	Slot 0: 256 MB Slot 1: None
Compact Flash (external): Maximum	Slot 0: 4 GB Slot 1: 4 GB	Slot 0: 4 GB Slot 1: 4 GB	Slot 0: 4 GB Slot 1: 4 GB	Slot 0: 4 GB Slot 1: 4 GB
External USB 2.0 slots (Type A)	2	2	2	2
USB console port (Type B) (up to 115.2 kbps)	1	1	1	1
Serial console port (up to 115.2 kbps)	1	1	1	1
Serial auxiliary port (up to 115.2 kbps)	1	1	1	1
Power-supply options	Internal: AC, PoE, and DC	Internal: AC, PoE, and DC	Internal: AC, PoE, and DC	Internal: AC, PoE, and DC
Redundant power supply	Internal: AC, PoE, and DC	Internal: AC, PoE, and DC	Internal: AC, PoE, and DC	Internal: AC, PoE, and DC
Power Specifications				
AC input voltage	100 to 240 VAC autoranging	100 to 240 VAC autoranging	100 to 240 VAC autoranging	100 to 240 VAC autoranging
AC input frequency	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
AC input current range, AC power supply (maximum)	7.1 to 3.0A	7.1 to 3.0A	7.1 to 3.0A	7.1 to 3.0A
AC input surge current	<50A	<50A	<50A	<50A
Typical power (no modules) (watts)	105	100	105	100
Maximum power with AC power supply (watts)	540	420	540	420
Maximum power with PoE power supply (platform only) (watts)	540	420	540	420
Maximum endpoint PoE power available from PoE power supply (watts)	520	520	520	520
Maximum endpoint PoE power capacity with PoE boost (watts)	1040	1040	1040	1040
Dimensions (H x W x D)	5.25 x 17.25 x 18.75 in. (133.35 x 438.15 x 476.25 mm)	5.25 x 17.25 x 18.75 in. (133.35 x 438.15 x 476.25 mm)	5.25 x 17.25 x 18.75 in. (133.35 x 438.15 x 476.25 mm)	5.25 x 17.25 x 18.75 in. (133.35 x 438.15 x 476.25 mm)
Rack height	3 rack units (3RU)	3RU	3 RU	3RU
Rack-mount 19 in. (48.3 cm) EIA	Included	Included	Included	Included
Rack-mount 23 in. (58.4 cm) EIA	Optional	Optional	Optional	Optional
Wall-mount	No	No	No	No
Weight with AC power supply (no modules)	39 lb (17.7 kg)	39 lb (17.7 kg)	39 lb (17.7 kg)	39 lb (17.7 kg)
Weight with PoE power supply (no modules)	40 lb (18.1 kg)	40 lb (18.1 kg)	40 lb (18.1 kg)	40 lb (18.1 kg)

Typical weight (with modules)	60 lb (27.2 kg)	60 lb (27.2 kg)	60 lb (27.2 kg)	60 lb (27.2 kg)
Airflow	Back to front	Back to front	Back to front	Back to front
Optional airflow kit (includes filter)	None	None	Front to back	Front to back

The Cisco 3900 Series supports a wide range of modules that span industry-leading breadth of services at the branch office. For a list of modules supported on the Cisco 3900 Series, visit: http://www.cisco.com/en/US/products/ps10536/products_relevant_interfaces_and_modules.html.

Selected Part Numbers and Ordering Information

Cisco 3900 Series Integrated Services Routers	
CISCO3945E/K9	Cisco 3945 w/SPE250(4GE,3EHWIC,3DSP,4SM,256MBCF,1GBDRAM,IPB)
CISCO3925E/K9	Cisco 3925 w/SPE200(4GE,3EHWIC,3DSP,2SM,256MBCF,1GBDRAM,IPB)
CISCO3945/K9	Cisco 3925 w/SPE150(3GE,4EHWIC,4DSP,4SM,256MBCF,1GBDRAM,IPB)
CISCO3925/K9	Cisco 3945 w/SPE100(3GE,4EHWIC,4DSP,2SM,256MBCF,1GBDRAM,IPB)
C3900-SPE250/K9=	Cisco Services Performance Engine 250 for Cisco 3945E ISR (Spare)
C3900-SPE200/K9=	Cisco Services Performance Engine 200 for Cisco 3925E ISR (Spare)
C3900-SPE150/K9=	Cisco Services Performance Engine 150 for Cisco 3945 ISR (Spare)
C3900-SPE100/K9=	Cisco Services Performance Engine 100 for Cisco 3925 ISR (Spare)
C3900-SPE100/K9=	Cisco Services Performance Engine 100 for Cisco 3925 ISR (Spare)
Cisco 3900 Series Secure Voice Bundles[1]	
C3945E-VSEC/K9	Cisco 3945E Voice Sec. Bundle, PVDM3-64, UC and SEC License PAK
C3925E-VSEC/K9	Cisco 3925 EVoice Sec. Bundle, PVDM3-64, UC and SEC License PAK
C3945-VSEC/K9	Cisco 3945 Voice Sec. Bundle, PVDM3-64, UC and SEC License PAK
C3925-VSEC/K9	Cisco 3925 Voice Sec. Bundle, PVDM3-64, UC and SEC License PAK
Cisco 3900 Series Secure Voice and CUBE Bundles[1]	
C3925-VSEC-CUBE/K9	Cisco 3925 Voice Sec and CUBE Bundle, PVDM3-64, UC and SEC License P, FL-CUBEE-25
C3945-VSEC-CUBE/K9	Cisco 3945 Voice Sec and CUBE Bundle, PVDM3-64, UC and SEC License P, FL-CUBEE-25
C3925E-VSEC-CUBEK9	Cisco 3925E Voice Sec and CUBE Bundle, PVDM3-64, UC and SEC License P, FL-CUBEE-25
C3945E-VSEC-CUBEK9	Cisco 3945E Voice Sec and CUBE Bundle, PVDM3-64, UC and SEC License P, FL-CUBEE-25
Cisco 3900 Series Security Bundles[1]	
CISCO3945E-SEC/K9	Cisco 3945E Security Bundle w/SEC license PAK
CISCO3925E-SEC/K9	Cisco 3925E Security Bundle w/SEC license PAK
CISCO3945-SEC/K9	Cisco 3945 Security Bundle w/SEC license PAK
CISCO3925-SEC/K9	Cisco 3925 Security Bundle w/SEC license PAK
Cisco 3900 Series Voice Bundles	
CISCO3945E-V/K9	Cisco 3945E Voice Bundle, PVDM3-64, UC License PAK
CISCO3925E-V/K9	Cisco 3925E Voice Bundle, PVDM3-64, UC License PAK
CISCO3945-V/K9	Cisco 3945 Voice Bundle, PVDM3-64, UC License PAK
CISCO3925-V/K9	Cisco 3925 Voice Bundle, PVDM3-64, UC License PAK
C3945E-CME-SRST/K9	3945E Voice Bundle w/ PVDM3-64,FL-CME-SRST-25, UC License PAK
C3925E-CME-SRST/K9	3925E Voice Bundle w/ PVDM3-64,FL-CME-SRST-25, UC License PAK
C3945-CME-SRST/K9	3945 Voice Bundle w/ PVDM3-64,FL-CME-SRST-25, UC License PAK
C3925-CME-SRST/K9	3925 Voice Bundle w/ PVDM3-64,FL-CME-SRST-25, UC License PAK
Cisco 3900 Series Service Ready Engine Bundles[1]	
C3945E-VSEC-SRE/K9	Cisco 3945E SRE Bundle, SRE 900, PVDM3-64, UC and SEC License PAK
C3925E-VSEC-SRE/K9	Cisco 3925E SRE Bundle, SRE 900, PVDM3-64, UC and SEC License PAK
C3945-VSEC-SRE/K9	Cisco 3945 SRE Bundle, SRE 700, PVDM3-64, UC and SEC License PAK
C3925-VSEC-SRE/K9	Cisco 3925 SRE Bundle, SRE 700, PVDM3-64, UC and SEC License PAK

Cisco 3900 Series Export Restriction Compliance License (Required by U.S. Export regulations for more than 85Mbps throughput or 225 IPsec tunnels)	
FL-39-HSEC-K9	U.S. Export Restriction Compliance license for 3900 series

1. Additional HSEC license available for high perfomance/scale IPsec deployments

For More Information

http://www.cisco.com/go/3900

Cisco 2900 Series Integrated Services Routers

Cisco 2900 Series Integrated Services Routers (ISRs) are designed to power the next phase of branch-office evolution, providing rich-media collaboration and virtualization to the branch office while reducing operating costs.

Cisco 2900 Series Integrated Services Routers build on 25 years of Cisco innovation and product leadership. The Integrated Services Routers Generation 2 (ISR G2) platforms are protected for future generations with multicore CPUs, support for high-capacity digital signal processors (DSPs) for future enhanced video capabilities, high-powered service modules with improved availability, Gigabit Ethernet switching with enhanced Power over Ethernet (ePoE), and new energy monitoring and control capabilities while enhancing overall system performance.

Additionally, a new Cisco IOS Software Universal image and Services Ready Engine (SRE) module enable you to decouple the deployment of hardware and software, providing a flexible technology foundation that can quickly adapt to evolving network requirements. Overall, the Cisco 2900 Series offers unparalleled total-cost-of-ownership (TCO) savings and network agility through the intelligent integration of market-leading security, unified communications, wireless, and application services.

The routers include:

- Services on demand—The Cisco 2900 Series Integrated Services Routers reduce initial capital outlays by decoupling the delivery of software from hardware on optional service modules. In addition, you receive a Cisco IOS Software Universal image capable of enabling all of Cisco's rich Cisco IOS Software features and allowing you to quickly deploy new services.
- Investment protection—The Cisco 2900 Series reduces deployment costs and increases flexibility. The platform also offers investment protection with support for many existing ISR modules.
- Energy efficiency—The Cisco 2900 Series architecture incorporates higher-efficiency power supplies with intelligent power management, with full Cisco EnergyWise support in the future.
- High performance—The Cisco 2900 Series offers significant performance improvements over previous-generation ISRs.

Overall, the Cisco 2900 Series offers unparalleled TCO savings and network agility through the intelligent integration of security, wireless, unified communications, and application services.

Ideal for Companies That Need These Features

Cisco 2900 Series

- Delivers highly secure data, voice, video, and application services for small offices.
- Two or 3 integrated 10/100/1000 Ethernet ports with 1 port capable of RJ-45 or Small Form-Factor Pluggable (SFP) connectivity
- Two service-module slots
- Four enhanced high-speed WAN interface card (EHWIC) slots
- Two or 3 onboard digital-signal-processor (DSP) slots
- One internal service-module slot for application services
- Fully integrated power distribution to modules supporting 802.3af Power over Ethernet (PoE) and Cisco Enhanced PoE (ePoE)

Key Features and Benefits

The Cisco 2900 Series builds on the best-in-class offering of the existing Cisco 2800 Series Integrated Services Routers by offering four platforms: Cisco 2901, 2911, 2921, and 2951 Integrated Services Routers.

All Cisco 2900 Series Integrated Services Routers offer embedded hardware encryption acceleration, voice- and video-capable digital-signal-processor (DSP) slots, optional firewall, intrusion prevention, call processing, voicemail, and application services. In addition, the platforms support the industry's widest range of wired and wireless connectivity options such as T1/E1, T3/E3, xDSL, copper, and fiber Gigabit Ethernet.

Key architectural features of the Cisco 2900 Series include:

- Modular platform
  - The Cisco 2900 Series ISRs are highly modular platforms with several types of module slots to add connectivity and services for varied branch-office network requirements.
  - The ISRs offer an industry-leading breadth of LAN and WAN connectivity options through modules to accommodate field upgrades for future technologies without requiring a platform replacement.
- Processors
  - The Cisco 2900 Series are powered by high-performance multi-core processors that can support the growing demands of high-speed WAN connections to the branch-office while also running multiple concurrent services.
- Advanced security with embedded IP Security with Security Sockets Layer (IPSec/SSL) VPN hardware acceleration

  - Embedded hardware encryption acceleration is enhanced to provide higher scalability, which combined with an optional Cisco IOS Security license, enables WAN link security and VPN services (both IPSec and SSL acceleration). The onboard encryption hardware replaces and outperforms the advanced integration modules (AIMs) of previous generations.
  - The routers support Cisco Easy VPN (remote and server), Dynamic Multipoint VPN (DMVPN), Group Encrypted VPN (GET VPN), and Secure Socket Layer VPN (SSL VPN). The 3900 Series routers support Multiprotocol Label Switching (MPLS) VPNs. Specific provider-edge capabilities include Virtual Route Forwarding (VRF) firewall and VRF IP Security (IPsec).
  - More than 3700 intrusion-prevention-system (IPS) signatures are supported in Cisco IOS Software, with the ability to load and enable selected IPS signatures. More than 4500 IPS signatures are available with the optional high-performance intrusion-prevention-system (IPS) network module.
  - Content Filtering includes URL/keyword blocking and features category-based productivity and security ratings. This is a subscription-based hosted solution that leverages Trend Micro's global TrendLabs™ threat database, and is closely integrated with Cisco IOS Software.
  - Cisco Configuration Professional comes standard on all Cisco 2900 Series Integrated Services Routers.
- Multigigabit fabric (MGF)
  - The Cisco 2900 Series introduces an innovative multigigabit fabric (MGF) that allows for efficient module-to-module communication, enabling tighter services interactions across modules while reducing the overhead on the route processor.
- TDM interconnectivity fabric
  - Unified communications services in the branch office are significantly enhanced with the use of a TDM interconnectivity fabric in the system architecture, allowing for scaling of DS-0 channel capacity.
- High-capacity, video-ready Packet Voice Video Digital Signal Processor Module (PVDM3)
  - Enhanced architecture delivers a new packet-processing engine optimized for video and rich-media applications, while concurrently supporting packet voice.
  - Enables scaling of high-definition (HD) voice capacity and is optimized for future enhanced video capabilities.
- Integrated Gigabit Ethernet ports
  - All onboard WAN ports are 10/100/1000 Gigabit Ethernet WAN routed ports.
  - One of the three 10/100/1000 Ethernet WAN ports on the Cisco 2921 and 2951 supports Small Form-Factor Pluggable (SFP)-based connectivity in lieu of a RJ-45 port and enabling fiber connectivity.
- Innovative USB-based console access
  - A new, innovative USB console port offers management connectivity for devices without a serial port such as modern laptop computers.
  - Traditional console and auxiliary ports are also available.
- Optional integrated power supply for distribution of PoE and universal DC power supply
  - An optional upgrade to the internal power supply provides inline power (802.3af-compliant PoE and Cisco Inline Power) to integrated switch modules.
  - On the Cisco 2911, 2921, and 2951, an optional DC power supply will be available in the future that extends deployment into central offices and industrial environments.
- Optional external redundant power supply (RPS)
  - The Cisco 2911, 2921, and 2951 allow for power redundancy through the use of an external RPS device, thereby decreasing network downtime and protecting the network from power-supply failures.
  - Redundant power on the Cisco 2900 Series is supported through the Cisco RPS 2300 Redundant Power System. You can use the Cisco RPS 2300 to provide redundant power for Cisco 2900 Series ISRs as well as Cisco Catalyst switches.
  - To use the Cisco RPS 2300, an external RPS adapter is required (configurable option) to connect the platform to the external RPS.
- PoE boost
  - When connected to an external RPS device, the Cisco 2911, 2921, and 2951 can operate in a PoE boost configuration in lieu of redundant power mode, whereby the power capacity of the platform is increased to twice the normal level to power additional PoE ports.
- Designed for flexible deployments
  - The Cisco 2911 and 2951 are designed for NEBS environments
  - The 2911 is 12" deep and has an optional fan filter for deployments in a variety of environments. An assembly that provides front-to-back airflow is also available for 23" racks.

Specifications

Services and Slot Density	Cisco 2901	Cisco 2911	Cisco 2921	Cisco 2951
Embedded hardware-based cryptography acceleration (IPSec + SSL)	Yes	Yes	Yes	Yes
Cisco Unified SRST Sessions	35	50	100	250
Cisco Unified CCME Sessions	35	50	100	150
Total onboard WAN 10/100/1000 Ports	2	3	3	3
RJ-45-based ports	2	3	3	3
SFP-based ports (use of SFP port disables the corresponding RJ-45 port)	0	0	1	1
Service Module slots	0	1	1	2

Double-wide Service Module slots (use of a double-wide slot will occupy all single-wide service module slots in a 2900)	0	0	1	1
EHWIC slots	4	4	4	4
Double-wide EHWIC slots (use of a double-wide EHWIC slot will consume two EHWIC slots)	2	2	2	2
ISM slots	1	1	1	1
Onboard DSP (PVDM) slots	2	2	3	3
Memory DDR2 ECC DRAM - Default	512 MB	512 MB	512 MB	512 MB
Memory (DDR2 ECC DRAM) - Maximum	2 GB	2 GB	2 GB	2 GB
Compact Flash (external) - Default	slot 0: 256 MB slot 1: none	slot 0: 256 MB slot 1: none	slot 0: 256 MB slot 1: none	slot 0: 256 MB slot 1: none
Compact Flash (external) - Maximum	slot 0: 4 GB slot 1: 4 GB	slot 0: 4 GB slot 1: 4 GB	slot 0: 4 GB slot 1: 4 GB	slot 0: 4 GB slot 1: 4 GB
External USB 2.0 flash memory slots (Type A)	2	2	2	2
USB Console port (Type B) (up to 115.2 kbps)	1	1	1	1
Serial console port	1	1	1	1
Serial auxiliary port	1	1	1	1
Power-supply options	AC and PoE	AC, PoE, and DC	AC, PoE, and DC	AC, PoE, and DC
RPS support (External)	No	Cisco RPS 2300	Cisco RPS 2300	Cisco RPS 2300
Power Specifications				
AC input voltage	100 to 240 VAC auto ranging	100 to 240 VAC auto ranging	100 to 240 VAC auto ranging	100 to 240 VAC auto ranging
AC input frequency	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
AC input current range AC power supply (maximum)	1.5 to 0.6A	2.2 to 1.0A	3.4 to 1.4A	3.4 to 1.4A
AC input surge current	<50A	<50A	<50A	<50A
Typical Power (no modules) (Watts)	40	50	60	70
Maximum Power with AC power supply (Watts)	150	210	320	340
Maximum Power with PoE power supply (platform only) (Watts)	175	250	370	405
Maximum end-point PoE power available from PoE power supply (Watts)	130	200	280	370
Maximum end-point PoE power capacity with PoE Boost (Watts)	N/A	750	750	750
Physical Specifications				
Dimensions (H x W x D)	1.75 x 17.25 x 17.3 in. (44.5 x 438.2 x 439.4 mm)	3.5 x 17.25 x 12 in. (88.9 x 438.2 x 304.8 mm)	3.5 x 17.25 x 18.5 in. (88.9 x 438.2 x 469.9 mm)	3.5 x 17.25 x 18.5 in. (88.9 x 438.2 x 469.9 mm)
Rack height	1RU (rack unit)	2RU	2RU	2RU
Rack-mount 19in. (48.3 cm) EIA	included	included	included	included
Rack Mount 23in. (58.4 cm) EIA	optional	optional	optional	optional
Wall-mount (refer to installation guide for approved orientation)	Yes	Yes	No	No
Weight with AC power supply (no modules)	13.4 lb (6.1 kg)	18 lb (8.2 kg)	29 lb (13.2 kg.)	29 lb (13.2 kg)
Weight with AC PoE power supply (no modules)	14.3 lb (6.5 kg)	19 lb (8.6 kg)	30 lb (13.6 kg)	30 lb (13.6 kg)
Typical weight fully configured	16 lb (7.3 kg)	21 lb (9.5 kg)	34 lb (15.5 kg)	34 lb (15.5 kg)
Airflow	Front to side	Side to side	Front to back	Front to back
Optional Airflow Kit	N/A	Front to back	N/A	N/A

Selected Part Numbers and Ordering Information

Cisco 2900 Series Router	
CISCO2951/K9	Cisco 2951 w/3 GE,4 EHWIC,3 DSP,2 SM,256MB CF,512MB DRAM,IPB
CISCO2921/K9	Cisco 2921 w/3 GE,4 EHWIC,3 DSP,1 SM,256MB CF,512MB DRAM,IPB
CISCO2911/K9	Cisco 2911 w/3 GE,4 EHWIC,2 DSP,1 SM,256MB CF,512MB DRAM,IPB
CISCO2901/K9	Cisco 2901 w/2 GE,4 EHWIC,2 DSP,256MB CF,512MB DRAM,IPB
Cisco 2900 Series Security Bundles[1]	
CISCO2951-SEC/K9	Cisco 2951 Security Bundle w/SEC license PAK
CISCO2921-SEC/K9	Cisco 2921 Security Bundle w/SEC license PAK
CISCO2911-SEC/K9	Cisco 2911 Security Bundle w/SEC license PAK
CISCO2901-SEC/K9	Cisco 2901 Security Bundle w/SEC license PAK
Cisco 2900 Series Voice Bundles[1]	
CISCO2951-V/K9	Cisco 2951 Voice Bundle, PVDM3-32, UC License PAK
CISCO2921-V/K9	Cisco 2921 Voice Bundle, PVDM3-32, UC License PAK
CISCO2911-V/K9	Cisco 2911 Voice Bundle, PVDM3-16, UC License PAK
CISCO2901-V/K9	Cisco 2901 Voice Bundle, PVDM3-16, UC License PAK
C2951-CME-SRST/K9	2951 Voice Bundle w/ PVDM3-32,FL-CME-SRST-25, UC License PAK
C2921-CME-SRST/K9	2921 Voice Bundle w/ PVDM3-32,FL-CME-SRST-25, UC License PAK
C2911-CME-SRST/K9	2921 Voice Bundle w/ PVDM3-16,FL-CME-SRST-25, UC License PAK
C2901-CME-SRST/K9	2901 Voice Bundle w/ PVDM3-16,FL-CME-SRST-25, UC License PAK
Cisco 2900 Series Secure Voice Bundles[1]	
C2951-VSEC/K9	Cisco 2951 Voice Sec. Bundle, PVDM3-32, UC and SEC License PAK
C2921-VSEC/K9	Cisco 2921 Voice Sec. Bundle, PVDM3-32, UC and SEC License PAK
C2911-VSEC/K9	Cisco 2911 Voice Sec. Bundle, PVDM3-16, UC and SEC License PAK
C2901-VSEC/K9	Cisco 2901 Voice Sec. Bundle, PVDM3-16, UC and SEC License PAK
Cisco 2900 Series Secure Voice plus CUBE Bundles[1]	
C2901-VSEC-CUBE/K9	Cisco 2901 Voice Sec and CUBE Bundle, PVDM3-16, UC and SEC License P, FL-CUBEE-25
C2911-VSEC-CUBE/K9	Cisco 2911 Voice Sec and CUBE Bundle, PVDM3-16, UC and SEC License P, FL-CUBEE-25
C2921-VSEC-CUBE/K9	Cisco 2921 Voice Sec and CUBE Bundle, PVDM3-32, UC and SEC License P, FL-CUBEE-25
C2951-VSEC-CUBE/K9	Cisco 2951 Voice Sec and CUBE Bundle, PVDM3-32, UC and SEC License P, FL-CUBEE-25
Cisco 2900 Services Ready Engine Bundles[1]	
C2951-VSEC-SRE/K9	Cisco 2951 SRE Bundle, SRE 700, PVDM3-32, UC and SEC License PAK
C2921-VSEC-SRE/K9	Cisco 2921 SRE Bundle, SRE 700, PVDM3-32, UC and SEC License PAK
C2911-VSEC-SRE/K9	Cisco 2911 SRE Bundle, SRE 300, PVDM3-16, UC and SEC License PAK
C2901-VSEC-SRE/K9	Cisco 2901 SRE Bundle, SRE 300, PVDM3-16, UC and SEC License PAK
Cisco 2900 Series Export Restriction Compliance License (Required by U.S. Export regulations for more than 85Mbps throughput or 225 IPsec tunnels)	
FL-29-HSEC-K9	U.S. Export Restriction Compliance license for 2921/2951

1. Additional HSEC license available on 2921/2951 for high perfomance/scale IPsec deployments

For More Information

http://www.cisco.com/go/2900

Cisco 1900 Series Integrated Services Routers

The Cisco 1900 Series Integrated Services Router portfolio constitutes the entry-level, highly secure solution for WAN deployments, offering service virtualization and low total cost of ownership (TCO). The Cisco 1900 Series is ideal for small offices requiring modular flexibility for highly secure

mobility and customizable applications with circuit-speed performance up to 25 Mbps with concurrent services.

The Cisco 1900 Series offers a factory-selectable 802.11n access point and a doublewide high-speed WAN interface. Cisco 1900 Series Integrated Services Routers build on 25 years of Cisco innovation and product leadership. The new platforms are architected to enable the next phase of branch-office evolution, providing rich-media collaboration and virtualization to the branch office while maximizing operational cost savings. The Cisco Integrated Services Routers Generation 2 (ISR G2) platforms are protected for future versions with multicore CPUs, Gigabit Ethernet switching with enhanced Power over Ethernet (ePoE), and new energy monitoring and control capabilities while enhancing overall system performance.

Additionally, a new Cisco IOS Software Universal image and Services Ready Engine module enable you to decouple the deployment of hardware and software, providing a stable technology foundation that can quickly adapt to evolving network requirements. Overall, the Cisco 1900 Series offers unparalleled TCO savings and network agility through the intelligent integration of market-leading security, unified communications, wireless, and application services.

The Cisco 1900 Series builds on the best-in-class offering of the existing Cisco 1841 Integrated Services Routers by offering three models—the Cisco 1941, 1941W, and 1921. In addition to the support of a wide range of wireless and wired connectivity options supported on Cisco 1941 Series, the Cisco 1941W offers integration of a IEEE 802.11n access point that is backward-compatible with IEEE 802.11a/b/g access points.

All Cisco 1900 Series Integrated Services Routers offer embedded hardware encryption acceleration, optional firewall, intrusion prevention, and application services. In addition, the platforms support the industry's widest range of wired and wireless connectivity options such as T1/E1, xDSL, third generation (3G), and Gigabit Ethernet.

The routers offer:

- Services on demand—The Cisco 1900 Series Integrated Services Routers reduce initial capital outlays by decoupling the delivery of software from hardware on optional service modules. In addition, you receive a Cisco IOS Software Universal image capable of enabling all of Cisco's rich Cisco IOS Software features and allowing you to quickly deploy new services. The Cisco Services Ready Engine (SRE) on the Cisco 1941 enables a new operational model that allows you to reduce capital expenditures (CapEx) and deploy a variety of application services as needed on a single integrated compute services module.
- Investment protection—The Cisco 1900 Series reduces deployment costs and increases flexibility. The platform also offers investment protection with support for many existing ISR modules.
- Energy efficiency—The Cisco 1900 Series architecture includes higher-efficiency power supplies with intelligent power management, with full Cisco EnergyWise feature support in the future.
- High performance—The Cisco 1900 Series offers significant performance improvements over previous-generation ISRs.

Overall, the Cisco 1900 Series offers unparalleled TCO savings and network agility through the intelligent integration of security, wireless, and application services.

Ideal for Companies That Need These Features

Cisco 1900	• Delivers highly secure data and application services for small offices and branch offices • Two 10/100/1000 Ethernet ports • Two enhanced high-speed WAN interface card (EHWIC) slots • One internal service-module slot for application services (Cisco 1941) • Integrated 802.11a/b/n access point (Cisco 1941W) • Fully integrated power distribution to modules supporting 802.3af Power over Ethernet (PoE) and Cisco Enhanced PoE (ePoE)
Cisco 1921	• Two integrated 10/100/1000 Ethernet ports • Two enhanced High-Speed WAN Interface Card (EHWIC) slots that can host two single-wide or one double-wide EHWIC modules • Fully integrated power distribution to modules supporting 802.3af Power over Ethernet (PoE) and Cisco Enhanced PoE • Security
Cisco 1941W/1941	• Two integrated 10/100/1000 Ethernet ports • Two Enhanced High-Speed WAN Interface Card slots that can host two single-wide or one double-wide and one single-wide (e)HWIC • One integrated 802.11n Wireless Access Point/1 Internal Services Module slot • Fully integrated power distribution to modules supporting 802.3af Power over Ethernet (PoE) and Cisco Enhanced PoE

Key Features and Benefits

The Cisco 1900 Series is architected to meet the application demands of today's branch offices with design flexibility for future applications. The modular architecture is designed to support expanding customer requirements, increased bandwidth, and fully integrated power distribution to modules supporting 802.3af Power over Ethernet (PoE) and Cisco Enhanced PoE (ePoE).

Key architectural features include:

- Modular platform
  - The Cisco 1900 Series ISR are highly modular platforms with multiple module slots to provide connectivity and services for varied branch network requirements.
  - The ISRs offer an industry-leading breadth of LAN and WAN connectivity options through modules to accommodate field upgrades to future technologies without requiring replacement of the platform.
- Processors

- The Cisco 1900 Series is powered by high-performance multi-core processors that support growing demands of branch office networks by supporting high throughput WAN requirements.

- MultiGigabit fabric
  - The Cisco 1941 model in the Cisco 1900 Series introduces an innovative MultiGigabit Fabric (MGF) which allows for efficient module to module communication, enabling direct services interactions across modules while reducing the overhead on the router processor.
- Embedded IPSec/SSL VPN hardware acceleration
  - Embedded hardware encryption acceleration is enhanced to provide higher scalability, which, combined with an optional Cisco IOS Security license, enables WAN link security and VPN services (Both IPSec and SSL acceleration).
  - The onboard encryption hardware out-performs the Advanced Integration Modules of previous generations.
  - The routers support Cisco Easy VPN (remote and server), Dynamic Multipoint VPN (DMVPN), Group Encrypted VPN (GET VPN), and Secure Socket Layer VPN (SSL VPN).
  - More than 3700 intrusion-prevention-system (IPS) signatures are supported in Cisco IOS Software, with the ability to load and enable selected IPS signatures.
  - Content Filtering includes URL/keyword blocking and features category-based productivity and security ratings. This is a subscription-based hosted solution that leverages Trend Micro's global TrendLabs™ threat database, and is closely integrated with Cisco IOS Software.
  - Cisco Configuration Professional comes standard on all Cisco 1900 Series Integrated Services Routers.
- Integrated Gigabit Ethernet Ports
  - All onboard WAN ports are 10/100/1000 Gigabit Ethernet WAN routed ports.
  - Innovative universal-serial-bus (USB)-based console access
  - A new, innovative, mini-B USB console port supports management connectivity when traditional serial ports are not available.
  - The traditional console and auxiliary ports are also available. Either the USB-based console or the RJ-45-based console port can be used to configure the router.
- Optional power supply for distribution of power over Ethernet (PoE)
  - An optional power supply (internal in Cisco 1941 and external in Cisco 1921) provides in-line power (802.3af-compliant Power-over-Ethernet [PoE] and Cisco standard inline power) to optional integrated switch modules.
- Integrated wireless LAN
  - The Cisco 1941W offers a secure integrated access point in a single device.
  - Integrated access point is based on the IEEE 802.11n draft 2.0 standard that uses MIMO (Multi-Input, Multiple-output) to improve coverage for existing 802.11a/ b/g clients and new 802.11n clients.
  - The Cisco 1941W supports dual radios-802.11 b/g/n and 802.11a/n and is capable of operating in both autonomous and unified modes.

Specifications

Services and Slot Density	Cisco 1941, Cisco 1941W	Cisco 1921
Embedded hardware-based crypto acceleration (IPSec + SSL)	Yes	Yes
Total Onboard LAN 10/100/1000	2	2
RJ-45-Based Ports	2	2
EHWIC Slots	2	2
Double-Wide EHWIC slots (use of a double-wide EHWIC slot will consume two EHWIC slots)	1	1
ISM Slots	1 (0 on the Cisco 1941W)	0
Memory (DDR2 DRAM) - Default	512 MB	512 MB
Memory (DDR2 DRAM) - Maximum	2.0 GB	512 MB
Compact Flash—Default	External slot 0: 256 MB slot 1: none	Internal 256 MB
Compact Flash—Maximum	External slot 0: 4 GB slot 1: 4 GB	Internal 256 MB
External USB flash memory slots (Type A)	2	1
USB Console Port (Type B) (up to 115.2 kbps)	1	1
Serial Console Port (up to 115.2 kbps)	1	1

Serial Auxiliary Port (up to 115.2 kbps	1	1
Power Supply Options	AC, PoE (Internal)	AC, PoE
Redundant Power Supply Support	No	No
Power Specifications		
AC Input Voltage	100–240 V ~	100–240 V ~
AC Input Frequency	47–63 Hz	47–63 Hz
AC Input Current range AC Power Supply (Max) (Amps)	1.5–0.6	1.5–0.6
AC Input Surge Current	<50 A	<50 A
Typical Power (No Modules)	35 W	25W
Maximum Power capacity with AC power supply	110 W	60 W
Maximum Power capacity with PoE power supply (platform only)	110 W	70 W
Maximum PoE device power capacity with PoE power supply	80 W	80 W
Physical Specifications		
Dimensions (H x W x D)	3.5 in x 13.5 in x 11.5 in	1.75 in x 13.5 in x 11.5 in
Rack Height	2 RU	1 RU
Rack-mount 19in. (48.3 cm) EIA	Included	Optional
Wall-mount (refer to installation guide for approved orientation)	Yes	Yes
Weight-with AC power supply (no modules)	12 lbs	7 lb
Weight-with PoE power supply (no modules)	12.8 lbs	7 lbs (external PoE)
Maximum Weight-Fully Configured	14 lbs	8 lbs
Airflow	Front to Side	Back to side
CISCO1941W WLAN Specifications		
WLAN hardware	· IEEE 802.11n draft 2.0 standards-based access point with 802.11a/ b/g compatibility · Automatic rate selection for 802.11g/n · Dual radios for 802.11b/g/n and 802.11a/n modes. · RP-TNC connectors for field-replaceable external antennas · 2-dBi default antenna gain · 2 x 3 multiple input, multiple output (MIMO) radio operation · Wi-Fi 802.11n Draft v2.0 certified	
WLAN software features	· Autonomous or unified access point · Cisco WCS support for monitoring of autonomous-mode access points · Option to maximize throughput or maximize range · Software-configurable transmit power · Radio roles, including access point, root bridge, non-root bridge, and workgroup bridge · Wi-Fi Multimedia (WMM) certification · Traffic specifications (TSPEC) Call Admission Control (CAC) to ensure voice quality is maintained · Unscheduled Automatic Power Save Delivery (UPSD) to reduce latency	
Unified WLAN management	· Unified access point features: · Supported by wireless LAN controller and Cisco WCS · Configurable local or central switching for HREAP mode · Radio management through Cisco WCS · Transparent roaming with mobility groups	
Certifications		

Service Set Identifiers (SSIDs)	16
Wireless VLANs	16
WLAN security features	• Standard 802.11i • Wi-Fi Protected Access (WPA) and AES (WPA2) • EAP authentication: Cisco LEAP, PEAP, Extensible Authentication Protocol Transport Layer Security (EAP TLS), Extensible Authentication Protocol-Flexible Authentication via Secure Tunneling (EAP-FAST), Extensible Authentication Protocol-Subscriber Information Module (EAP-SIM), Extensible Authentication Protocol-Message Digest Algorithm 5 (EAP-MD5), and Extensible Authentication Protocol-Tunneled TLS (EAP-TTLS) • Static and dynamic Wired Equivalent Privacy (WEP) • Temporal Key Integrity Protocol/Simple Security Network (TKIP/SSN) encryption • MAC authentication and filter • User database for survivable local authentication using LEAP and EAP-FAST • Configurable limit to the number of wireless clients • Configurable RADIUS accounting for wireless clients • Pre-Shared Keys (PSKs) (WPA-small office or home office [WPA-SOHO])
Encrypted wireless VLANs	16
Multiple Broadcast Service Set Identifiers (MBSSIDs)	16

Supported Modules

Cisco 1900 Series supports a wide range of modules that span an industry-leading breadth of services at the branch office. Please refer to the following link for the list of modules supported on the Cisco 1900:
http://cisco.com/en/US/products/ps1900/products_relevant_interfaces_and_modules.html.

Selected Part Numbers and Ordering Information

Cisco 1900 Series Router	
CISCO1941/K9	Cisco 1941 w/2 GE,2 EHWIC slots,256MB CF,512MB DRAM,IP Base
CISCO1921/K9	CISCO 1921 Modular Router, 2 GE, 2 EHWIC slots, 256F/512D, IP Base
Cisco 1900 Series Wireless Bundles	
CISCO1941W-A-N-SEC/K9	Cisco 1941 Router w/ 802.11 a/b/g/n FCC Compliant WLAN ISM, SEC Lic
CISCO1941W-E-N-SEC/K9	Cisco 1941 Router w/ 802.11 a/b/g/n ETSI WLAN ISM, SEC Lic
CISCO1941W-A/K9	Cisco 1941 Router w/ 802.11 a/b/g/n FCC Compliant WLAN ISM
CISCO1941W-C/K9	Cisco 1941 Router w/802.11 a/b/g/n China Compliant WLAN ISM
CISCO1941W-E/K9	Cisco 1941 Router w/ 802.11 a/b/g/n ETSI Compliant WLAN ISM
CISCO1941W-P/K9	Cisco 1941 Router w/ 802.11 a/b/g/n Japan Compliant WLAN ISM
CISCO1941W-N/K9	Cisco 1941 Router w/802.11 a/b/g/n Aus, NZ Compliant WLAN ISM
CISCO1941/K9	Cisco 1941 w/2 GE,2 EHWIC slots,256MB CF,512MB DRAM,IP Base
CISCO1921/K9	CISCO 1921 Modular Router, 2 GE, 2 EHWIC slots, 256F/512D, IP Base Lic
Cisco 1900 Series Security Bundles	
CISCO1941-SEC/K9	Cisco 1941 Security Bundle w/SEC license PAK
Cisco1921-T1SEC/K9	Cisco 1921 SEC T1 Bundle incl. HWIC-1DSU-T1,256F/512D, SEC Lic
CISCO1921-SEC/K9	CISCO 1921 Modular Router, 2 GE, 2 EHWIC slots, 256F/512D, SEC Lic
Cisco 1900 Series DSL Bundles	
C1921-4SHDSL/K9	CISCO 1921 ADSL Annex M, 3G HSPA Bundle, 256F/512D, SEC Lic
C1921-ADSL2-M/K9	Cisco 1921 ADSL2 Annex M Bundle, HWIC-1ADSL-M, 256F/512D, IP Base Lic
CISCO1921-ADSL2/K9	Cisco 1921 ADSL2+ Bundle, HWIC-1ADSL, 256F/512D, IP Base Lic

For More Information

http://www.cisco.com/go/1900

Cisco 800 Series Integrated Services Routers

Cisco 880 Series Integrated Services Routers are fixed-configuration routers that provide collaborative business solutions for secure voice and data communication to small businesses and enterprise teleworkers. They offer concurrent broadband services over third-generation (3G), Metro Ethernet, and multiple DSL technologies to provide business continuity. Wireless 802.11n and 3G offer LAN and WAN mobility. The routers provide the performance required for concurrent services, including firewall, intrusion prevention, content filtering, and encryption for VPNs; optional 802.11g/n for mobility; and quality-of-service (QoS) features for optimizing voice and video applications. In addition, the web-based Cisco Configuration Professional configuration tool simplifies setup and deployment. Centralized management capabilities give network managers visibility and control of the network configurations at the remote site.

Ideal for Companies That Need These Features

Cisco 800

- Ethernet ports with VLAN support, Metro Ethernet support
- WAN connectivity, including 3G and ISDN Basic Rate Interface (BRI), ADSL, and G.SHDSL
- Advanced security including Firewall, Intrusion Prevention, Content Filtering, Encryption for VPN
- Wireless LAN (802.11 a/g/n) access points
- Quality of service (QoS) features for optimizing voice and video applications

Key Features and Benefits

Cisco 880 Series Integrated Services Routers offer:

- High performance for broadband access in small offices and small branch-office and teleworker sites
- Collaborative services with secure analog, digital voice, and data communication
- Business continuity and WAN diversity with redundant WAN links: Fast Ethernet, G.SHDSL, VDSL2, 3G, and ISDN
- Survivable Remote Site Telephony (SRST) voice continuity for enterprise small branch-office and teleworker sites
- Enhanced security, including:
  - Firewall with advance application and control for email, instant messaging (IM), and HTTP traffic
  - Site-to-site remote-access and dynamic VPN services—IP Security (IPsec) VPNs (Triple Data Encryption Standard [3DES] or Advanced Encryption Standard [AES]), Dynamic Multipoint VPN (DMVPN), Group Encrypted Transport VPN with onboard acceleration, and Secure Sockets Layer (SSL) VPN
  - Intrusion prevention system (IPS)—An inline, deep-packet inspection feature that effectively mitigates a wide range of network attacks
  - Content filtering—A subscription-based integrated security solution that offers category-based reputation rating; keyword blocking; and protection against adware, malware, spyware, and URL blocking
- Four-port 10/100 Fast Ethernet managed switch with VLAN support; two ports support Power over Ethernet (PoE) for powering IP phones or external access points
- Secure 802.11g/n access point option based on draft 802.11n standard with support for autonomous or Cisco Unified WLAN architectures
- CON/AUX port for console or external modem
- One USB 1.1 port for security eToken credentials, booting from USB, loading configuration
- Easy setup, deployment, and remote-management capabilities through web-based tools and Cisco IOS® Software

Cisco 890 Series Integrated Services Routers are fixed-configuration routers that provide collaborative business solutions for secure voice and data communications to enterprise small branch offices. They are designed to deliver secure broadband, Metro Ethernet, wireless LAN (WLAN) connectivity, and business continuity. The routers also come with powerful management tools, such as the web-based Cisco Configuration Professional configuration management tool, which simplifies setup and deployment. Centralized management capabilities give network managers visibility and control of the network configurations at the remote site.

Cisco 890 Series Integrated Services Routers offer:

- High performance for secure broadband and Metro Ethernet access with concurrent services for enterprise small branch offices
- Business continuity and WAN diversity with redundant WAN links: Fast Ethernet, V.92, and ISDN Basic Rate Interface (BRI)
- Integrated secure 802.11a/g/n access point (optional) based on the draft 802.11n standard; dual-band radios for mobility and support for autonomous or Cisco Unified WLAN architectures
- Enhanced security including:
  - Firewall with advance application and control for email, instant messaging (IM), and HTTP traffic
  - Site-to-site remote-access and dynamic VPN services: IP Security (IPsec) VPNs (Triple Data Encryption Standard [3DES] or Advanced Encryption Standard [AES]), Dynamic Multipoint VPN [DMVPN], Group Encrypted Transport VPN [GET VPN] with onboard acceleration, and Secure Sockets Layer [SSL] VPN
  - Intrusion prevention system (IPS): An inline, deep-packet-inspection feature that mitigates a wide range of network attacks
  - Content filtering: A subscription-based integrated security solution that offers category-based reputation rating, keyword blocking, and protection against adware, malware, spyware, and URL blocking

- An 8-port 10/100 Fast Ethernet managed switch with VLAN support and 4-port support for Power over Ethernet (PoE) (optional) to power IP phones or external access points
- Metro Ethernet features include:
  - One 1000 BASE-T Gigabit Ethernet WAN port
  - One 10/100 BASE-T Fast Ethernet WAN port
  - Intelligent hierarchical quality of service (HQoS): Supports hierarchical queuing and shaping
  - Connectivity Fault Management (CFM), based on 802.1ag
  - 802.3ah standard based Link operational administration and maintenance (OAM)
  - Ethernet Local Management Interface (E-LMI) for the Customer Edge
  - CFM Interworking and backwards compatibility
  - Performance Management based on IP service-level agreement (SLA) for Ethernet
- Dedicated console and auxiliary ports for configuration and management
- Two USB 2.0 ports for security eToken credentials, booting, and loading configuration from USB
- Easy setup, deployment, and centralized and remote-management capabilities through web-based tools and Cisco IOS Software

Specifications

Feature	Cisco 861	Cisco 881	Cisco 887V	Cisco 888/ 888E	Cisco 891	Cisco 892
Fixed LAN Port Connections	4-port 10/100 Ethernet switch	4-port 10/100 Ethernet switch	4-port 10/100 Ethernet switch	4-port 10/100 Ethernet switch	8-port 10/100 Ethernet switch	8-port 10/100 Ethernet switch
PoE	No	Optional 2-port	Optional 2-port	Optional 2-port	Optional 4-port	Optional 4-port
Fixed WAN Port Connections	1-port 10/100 Ethernet	1-port 10/100 Ethernet	1-port VDSL2	888: 1-port G.SHDSL (ATM mode) 888E: 1-port G.SHDSL (EFM mode)	1-port 10/100 Ethernet, 1-port GE	1-port 10/100 Ethernet, 1-port GE
Wireless LAN	IEEE 802.11 b/g/n ("W" model)	IEEE 802.11 b/g/n ("W" model)	No	IEEE 802.11 b/g/n ("W" model)	IEEE 802.11 a/b/g/n ("W" model)	IEEE 802.11 a/b/g/n ("W" model)
3G	No	Yes ("G" model)	Yes ("G" model)	Yes ("G" model)	No	No
ISDN BRI	No	No	Yes	Yes	No	Yes
V.92 modem	No	No	No	No	Yes	No
4-port FXS	No	Yes ("SRST" model)	No	Yes ("SRST" model)	No	No
FXO	No	Yes ("SRST" model)	No	No	No	No
Voice BRI	No	No	No	Yes ("SRST" model)	No	No
Maximum VPN Tunnels	5	20	20	20	50	50
Content Filtering	No	Yes	Yes	Yes	Yes	Yes
Stateful Firewall	Yes	Yes	Yes	Yes	Yes	Yes
Inline IPS	No	Yes	Yes	Yes	Yes	Yes

Selected Part Numbers and Ordering Information

CISCO861W-GN-A-K9, E-K9, P-K9	Cisco 861 Ethernet Security Router 802.11n (Americas-A, Europe-E. Japan-P)
CISCO881-SEC-K9	Cisco 881 Ethernet Sec Router w/ Adv IP Services
CISCO881W-GN-A-K9, E-K9, P-K9	Cisco 881 Ethernet Security Router 802.11n (Americas-A, Europe-E. Japan-P)
CISCO881GW-GN-A-K9, E-K9	Cisco 881 Ethernet Security Router with 3G, 802.11n (Americas-A, Europe-E)
CISCO881G-A-K9	Cisco 881G FE Sec Router with Adv IP Serv, 3G N. America GSM/HSPA
CISCO881G-G-K9	Cisco 881G FE Sec Router with Adv IP Serv, 3G N. Global GSM/HSPA
CISCO881G-S-K9	Cisco 881G FE Sec Router bundle with Adv IP Serv, 3G Sprint
CISCO881G-V-K9	Cisco 881G FE Sec Router bundle with Adv IP Serv, 3G Verizon
CISCO887V-SEC-K9	Cisco 887 VDSL2 over POTS Sec Router w/ ISDN B/U, Adv IP Services

CISCO888GW-G-AN-K9, EN-K9	Cisco 888 G.SHDSL Wireless Router with 3G; 802.11n (Americas-A, Europe-E)
CISCO888EW-GN-E-K9	Cisco 888E G.SHDSL Router with 802.11n ETSI Compliant and 802.3ah EFM Support
C881SRSTW-GN-A-K9, E-K9	Cisco 881 SRST Ethernet Security Router with FXS, FXO; 802.11n (Americas-A, Europe-E)
C888SRSTW-GN-A-K9, E-K9	Cisco 881 SRST Ethernet Security Router with FXS, BRI; 802.11n (Americas-A, Europe-E)
CISCO891W-AGN-A-K9, N-K9	Cisco 891W Gigabit Ethernet Security Router w/ 802.11n (Americas-A, Australia-N)
CISCO892W-AGN-E-K9	Cisco 892W Gigabit Ethernet Security Router w/ 802.11n ETSI Comp

For More Information

http://www.cisco.com/go/800

Cisco 3800 Series Integrated Services Routers

The Cisco 3800 Series Integrated Services Routers constitute the flagship platform in a portfolio of next-generation routers that integrate advanced technologies, adaptive services, wireless support, and secure enterprise communications.

These new routers offer the performance and reliable packet delivery necessary to efficiently deliver mission-critical network capabilities, including real-time applications such as voice over IP (VoIP), business video, and collaborative communications. Architectural enhancements include embedded security processing, significant platform performance and memory improvements, and new high-density interface types.

Ideal for Companies That Need These Features

Cisco 3825

- Low density (up to 88 ports), integrated 10/100 switching
- Up to 360W Cisco Inline Power, or PoE
- Integrated onboard security acceleration for IPsec for improved IPsec performance and an integral part of Cisco Self-Defending Network
- Medium- to large-sized branch offices and businesses that can support concurrent data, security, voice, and advanced services at wire speed up to one-half T3/E3 rates.

Cisco 3845

- Same features as above plus higher availability and resiliency (such as redundant system and inline power, online-insertion-and-removable (OIR) components, and field-replaceable components such as the CPU motherboard and fan assembly).
- Medium- to large-sized branch offices and businesses, providing very high performance and densities for concurrent data, security, voice, and advanced services with the ability to run at wire speed up to T3/E3 rates.

Key Features and Benefits

- Cisco IOS Firewall provides stateful, application-based filtering (context-based access control); per-user authentication and authorization; real-time alerts; a transparent firewall; and an IPv6 firewall.
- The Cisco 3845 Integrated Services Routers offer VPN services, including Data Encryption Standard (DES), Triple DES (3DES), and Advanced Encryption Standard (AES) 128, 192, and 256 cryptology support. They support embedded hardware-based VPN acceleration on the motherboard, and (optional) higher-performance AIM-based security acceleration with Layer 3 compression. The routers support up to 1800 tunnels with the VPN module, Cisco Easy VPN (remote and server), Dynamic Multipoint VPN (DMVPN), Group Encrypted VPN (GET VPN), and Secure Socket Layer VPN (SSL VPN).
- The 3800 Series routers support Multiprotocol Label Switching (MPLS) VPNs. Specific provider-edge capabilities include Virtual Route Forwarding (VRF) firewall and VRF IP Security (IPsec).
- Onboard universal-serial-bus (USB) 1.1 port(s) offer future support for secure token and flash memory.
- More than 3700 intrusion-prevention-system (IPS) signatures are supported in Cisco IOS Software, with the ability to load and enable selected IPS signatures. More than 4500 IPS signatures are available with the optional high-performance intrusion-prevention-system (IPS) network module. IPS AIM is also supported.
- Content Filtering includes URL/keyword blocking and features category-based productivity and security ratings. This is a subscription-based hosted solution that leverages Trend Micro's global TrendLabs™ threat database, and is closely integrated with Cisco IOS Software.
- Cisco Network Admission Control (NAC), a Cisco Self-Defending Network initiative, seeks to dramatically improve the ability of networks to identify, prevent, and adapt to threats by allowing network access only to compliant and trusted endpoint devices.
- Cisco Configuration Professional comes standard on all Cisco 3800 Series Integrated Services Routers.
- Integrated IEEE 802.11 a/b/g standalone access-point high-speed WAN interface cards (HWICs) provide wireless support.
- Wireless LAN (WLAN) controller modules are a component of the Cisco Unified Wireless Network.
- The routers support IP phones through an optional integrated power supply with inline power. Standard 802.3af support derives from 360W of inline power.
- The routers offer analog voice support for up to 88 foreign-exchange-station (FXS) and 56 foreign-exchange-office (FXO) ports and digital voice support for up to 720 calls. The motherboard has 4 packet-voice-DSP-module (PVDM) slots. Finally, the routers support local conferencing and transcoding.

- Cisco Communications Manager Express software on these routers supports up to 240 phones; Cisco Survivable Remote Site Telephony (SRST) supports up to 720 phones.
- The routers have up to 120 mailboxes using a Cisco Unity Express network module.
- Voice interfaces support FXS, FXO, Direct Inward Dial (DID), Ear & Mouth (E&M), Centralized Automated Message Accounting (CAMA), Basic Rate Interface (BRI), T1, E1, J1, Primary Rate Interface (PRI), Q.SIG, and channel associated signaling (CAS).

Specifications

Feature	Cisco 3825	Cisco 3845
Network Module Slots	2	4
Advanced Integration Module (AIM) Slots	2	Same As Cisco 3825
High speed WAN Interface Card (HWIC) Slots	4	Same As Cisco 3825
10/100/1000 GE Ports	2	Same As Cisco 3825
Small Form Pluggable (SFP) ports	1	Same As Cisco 3825
Onboard PVDM slots	4	Same As Cisco 3825
WAN Network Modules	Yes	Same As Cisco 3825
ATM AIM Modules	Yes	Same As Cisco 3825
Voice/Fax Network Modules	Yes	Same As Cisco 3825
WAN Interface Card (WIC) Modules	Yes	Same As Cisco 3825
Multiflex Voice/WAN Interface Cards	Yes	Same As Cisco 3825
Voice Interface Card (VIC) Modules	Yes	Same As Cisco 3825
Modem Modules	Yes	Same As Cisco 3825
EtherSwitch Modules	Yes, HWIC and Network Modules	Same As Cisco 3825
Performance with Services	Up to 14 T1/E1's	Up to T3
VPN/Security Advanced Integration Modules (AIM)	Yes, AIM-VPN/EPII-PLUS	Yes, AIM-VPN/EPII-PLUS
Flash Memory (External)	64 MB (default) -256 MB (optional)	Same As Cisco 3825
DRAM Memory	256 MB (default) - 1024 MB (max)	Same As Cisco 3825
Power Supply	AC, AC +POE, DC, external redundant AC	AC, DC, internal redundant AC + POE
Dimensions (H x W x D)	3.5 x 17.1 x 14.7 in.	5.25 x 17.25 x 16 in.

Selected Part Numbers and Ordering Information

Cisco 3800 Series Integrated Services Routers	
CISCO3825	Cisco 3825 Integrated Services Router with 2 Gigabit Ethernet, 1 SFP, 2 NME, 4 HWIC, 2 AIM, Cisco IOS IP Base software, and AC power
CISCO3825-AC-IP	Cisco 3825 Integrated Services Router with 2 Gigabit Ethernet, 1 SFP, 2 NME, 4 HWIC, 2 AIM, Cisco IOS IP Base software, AC Power, and PoE
CISCO3825-DC	Cisco 3825 Integrated Services Router with 2 Gigabit Ethernet, 1 SFP, 2 NME, 4 HWIC, 2 AIM, Cisco IOS IP Base software, and DC power
CISCO3845	Cisco 3845 Integrated Services Router with 2 Gigabit Ethernet, 1 SFP, 4 NME, 4 HWIC, 2 AIM, Cisco IOS IP Base software, and AC power
CISCO3845-AC-IP	Cisco 3845 Integrated Services Router with 2 Gigabit Ethernet, 1 SFP, 4 NME, 4 HWIC, 2 AIM, Cisco IOS IP Base software, AC Power, and PoE
CISCO3845-DC	Cisco 3845 Integrated Services Router with 2 Gigabit Ethernet, 1 SFP, 2 NME, 4 HWIC, 2 AIM, Cisco IOS IP Base software, and DC power
Cisco 3800 Series Secure Voice Bundles	
CISCO3845-H-VSEC/K9	Cisco 3845 High Performance VSEC:AIM-VPN3/SSL, PVDM2, CCME/SRST, AIS, 512F/1024D
CISCO3825-H-VSEC/K9	Cisco 3825 High Performance VSEC:AIM-VPN3/SSL, PVDM2, CCME/SRST, AIS, 512F/1024D
C3845-VSEC/K9	Cisco 3845 Voice Security Bundle, PVDM2-64,Adv IP Services, 128MB Flash/512MB DRAM
C3825-VSEC/K9	Cisco 3825 Voice Security Bundle, PVDM2-64,Adv IP Services, 128MB Flash/512MB DRAM

C3845-VSEC-CCME/K9	Cisco 3845 VSEC Bundle, PVDM2-64, FL-CCME-240, Adv IP Services, 128MB Flash/512MB DRAM
C3825-VSEC-CCME/K9	Cisco 3825 VSEC Bundle, PVDM2-64, FL-CCME-168, Adv IP Services, 128MB Flash/512MB DRAM
C3845-VSEC-SRST/K9	Cisco 3845 VSEC Bundle, PVDM2-64, FL-SRST-240, Adv IP Services,128MB Flash/512MB DRAM
C3825-VSEC-SRST/K9	Cisco 3825 VSEC Bundle, PVDM2-64, FL-SRST-168, Adv IP Services, 128MB Flash/512MB DRAM
C3845-VSEC-CUBE/K9	Cisco 3845 VSEC Bundle w/ PVDM2-64, FL-CUBE-400, AVS,128F/512D
C3825-VSEC-CUBE/K9	Cisco 3825 VSEC Bundle w/ PVDM2-64, FL-CUBE-300, AVS,128F/512D
Cisco 3800 Series Security Bundles	
CISCO3845-SEC/K9	Cisco 3845 Security Bundle with IOS Advanced Security, 64MB Flash/256 MB DRAM
CISCO3845-HSEC/K9	Cisco 3845 Security Bundle with IOS Advanced IP Services, AIM-VPN/HPII Plus, 128MB Flash/512 MB DRAM
CISCO3825-SEC/K9	Cisco 3825 Security Bundle with IOS Advanced Security, 64MB Flash/256MB DRAM
CISCO3825-HSEC/K9	Cisco 3825 Security Bundle with IOS Advanced IP Services, AIM-VPN/EPII Plus, 128MB Flash/512 MB DRAM
Cisco 3800 Series Voice Bundles	
CISCO3845-V/K9	Cisco 3845 Voice Bundle with IOS SP Services, PVDM2-64, 64 MB Flash/256 MB DRAM
CISCO3845-SRST/K9	Cisco 3845 Voice Bundle with IOS SP Services, PVDM2-64, FL-SRST (240 users), 64 MB Flash/256 MB DRAM
CISCO3845-CCME/K9	Cisco 3845 Voice Bundle with IOS SP Services, PVDM2-64, FL-CCME (240 users), 64 MB Flash/256 MB DRAM
CISCO3825-V/K9	Cisco 3825 Voice Bundle with IOS SP Services, PVDM2-64, 64 MB Flash/256 MB DRAM
CISCO3825-SRST/K9	Cisco 3825 Voice Bundle with IOS SP Services, PVDM2-64, FL-SRST (168 users), 64 MB Flash/256 MB DRAM
CISCO3825-CCME/K9	Cisco 3825 Voice Bundle with IOS SP Services, PVDM2-64, FL-CCME (168 users), 64 MB Flash/256 MB DRAM
Cisco 3800 Series WAAS Optimization Bundles	
CISCO3825-WAE/K9	Cisco 3825, NME-WAE-502/K9,WAAS Trans,IPBase,128F/512D
CISCO3845-WAE/K9	Cisco 3845, NME-WAE-502/K9,WAAS Trans,IPBase,128F/512D

For More Information

http://www.cisco.com/go/3800

Cisco 2800 Series Integrated Services Routers

The Cisco 2800 Series Integrated Services Routers offer performance improvements, increased security and voice performance, wireless support new embedded service options, and increased slot performance and density. These routers maintain support for most existing interface cards and modules available for the Cisco 1700 and 2600 Series Routers. Comprising four platforms (the Cisco 2801, Cisco 2811, Cisco 2821, and Cisco 2851 Integrated Services Routers), the Cisco 2800 Series features the ability to deliver multiple, high-quality, simultaneous services at wire speed at up to multiple T1, E1, and xDSL connections.

Ideal for Companies That Need These Features

Cisco 2800

- Performance and densities for concurrent data, security, voice, and advanced services up to multiple T1, E1, and xDSL connections
- VPN connections (or plan to migrate to them over time)
- Integrated security services that enable network device protection, threat defense, secure connectivity, and endpoint protection and control
- Secure integrated call processing, voicemail, flexible telephony interfaces, redundancy for centralized call processing, or robust digital-signal-processor (DSP) support, including local conferencing and transcoding
- Wireless support through integrated IEEE 802.11 a/b/g standalone access-point high-speed WAN interface cards (HWICs)
- Wireless LAN controller modules (components of the Cisco Unified Wireless Network)
- Integrated Layer 2 switching capability in densities from 4 to 48 ports and the ability to use Cisco StackWise connectivity

Key Features and Benefits

- Cisco 2800 Integrated Services Routers offer a modular architecture; a wide variety of LAN and WAN options are available. Network interfaces can be upgraded in the field to accommodate future technologies. Several types of slots are available to add connectivity and services in the future on an "integrate-as-you-grow" basis.
- Cisco IOS Firewall provides stateful, application-based filtering (context-based access control); per-user authentication and authorization; real-time alerts; a transparent firewall; and an IPv6 firewall.
- The Cisco 2800 Integrated Services Routers offer VPN services, including Data Encryption Standard (DES), Triple DES (3DES), and Advanced Encryption Standard (AES) 128, 192, and 256 cryptology support. They support embedded hardware-based VPN acceleration on the motherboard, and (optional) higher-performance AIM-based security acceleration with Layer 3 compression. The routers support, Cisco Easy VPN (remote and server), Dynamic Multipoint VPN (DMVPN), Group Encrypted VPN (GET VPN), and Secure Socket Layer VPN (SSL VPN).
- The 2800 Series routers support Multiprotocol Label Switching (MPLS) VPNs. Specific provider-edge capabilities include Virtual Route Forwarding (VRF) firewall and VRF IP Security (IPsec).
- Onboard universal-serial-bus (USB) 1.1 port(s) offer future support for secure token and flash memory.
- More than 3700 intrusion-prevention-system (IPS) signatures are supported in Cisco IOS Software, with the ability to load and enable selected IPS signatures. More than 4500 IPS signatures are available with the optional high-performance intrusion-prevention-system (IPS) network module. IPS AIM is also supported.
- URL filtering features provided. Local URL filtering occurs in Cisco IOS Software based on the external server.
- Integrated dual Fast Ethernet or Gigabit Ethernet ports provide two 10/100 Ethernet ports on the Cisco 2801 and 2811 models and two 10/100/1000 Ethernet ports on the Cisco 2821 and 2851 models.
- The routers offer high-speed WAN interface card (HWIC) slots with enhanced functions, including wireless LAN (WLAN) access points, dual advanced-integration-module (AIM) slots, and packet-voice-DSP-module (PVDM) slots on the motherboard.
- IP telephony solutions facilitate an all-in-one voice-over-IP (VoIP) solution with Cisco Unified Communications Manager Express, telephony interfaces, and Cisco Unity Express for voicemail and Automated-Attendant functions.
- Digital-signal-processor (DSP) modules deliver support for analog and digital voice, conferencing, transcoding, and secure Real-Time Transport Protocol (RTP) applications.
- Cisco Network Admission Control (NAC), a Cisco Self-Defending Network initiative, seeks to dramatically improve the ability of networks to identify, prevent, and adapt to threats by allowing network access only to compliant and trusted endpoint devices.
- The routers offer an optional integrated power supply for distribution of Power over Ethernet (PoE).
- The routers provide real-time clock support.

Specifications

Feature	Cisco 2801	Cisco 2811	Cisco 2821	Cisco 2851
Fixed USB 1.1 ports	1	2	Same As Cisco 2811	Same As Cisco 2811
Onboard LAN ports	2 - 10/100	Same As Cisco 2811	2 - 10/100/1000	Same As Cisco 2821
Onboard AIM (internal) slot	2	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801
Interface card slots	4 slots; 2 slots support HWIC, WIC, VIC, or VWIC type modules 1 slot supports WIC, VIC, or VWIC type modules 1 slot supports VIC or VWIC type modules	4 slots, each slot can support HWIC, WIC, VIC, or VWIC type modules		
Network-module slot	No	1 slot, supports NM and NME type modules	1 slot, supports NM, NME and NME-X type modules	1 slot, supports NM, NME, NME-X, and NME-XD type modules
Extension Voice Module Slot	0	Same As Cisco 2801	1	Same As Cisco 2821
PVDM (DSP) slots on motherboard	2	Same As Cisco 2801	3	Same As Cisco 2821
Integrated hardware-based encryption	Yes	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801
Optional PoE	Yes, requires AC-IP system power supply	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801
Console port (up to 115.2 kbps)	1	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801
Auxiliary port (up to 115.2 kbps)	1	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801
Minimum Cisco IOS Software release	12.3(8)T4	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801

Rack mounting	Yes, 19-inch	Yes, 19- and 23-in. options	Same As Cisco 2811	Same As Cisco 2811
Wall mounting	No	Yes	Same As Cisco 2801	Same As Cisco 2801
AC input voltage	100 to 240 VAC	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801
AC input frequency	47-63 Hz	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801
AC input current	2A (110V); 1A (230V)	Same As Cisco 2801	3A (110V); 2A (230V)	Same As Cisco 2821
AC input surge current	50A maximum, one cycle (-48V power included)	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801
AC-IP max in-line power distribution	120W	160W	240W	360W
AC-IP input current	4A (110V); 2A (230V)	Same As Cisco 2801	8A (110V); 4A (230V)	Same As Cisco 2821
AC-IP input surge current	50A maximum, one cycle (–48V power included)	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801
DC input voltage	No DC Power Option available	24 to 60 VDC, autorunning positive or negative	Same As Cisco 2811	Same As Cisco 2811
DC input current	No DC Power Option available	8A (24V) 3A (60V) Startup current 5A<10 ms	12A (24V) 5A (60V) Startup current 50A<10 ms	Same As Cisco 2821
Power dissipation— AC without PoE support	150W (511 BTU/hr.)	170W (580 BTU/hr.)	280W (955 BTU/hr.)	Same As Cisco 2821
Power dissipation— AC with PoE-IP phones	180W (612 BTU/hr.)	160W (546 BTU/hr.)	240W (819 BTU/hr.)	Same As Cisco 2821
Power dissipation— DC	Not applicable	180W (614 BTU/hr.)	300W (1024 BTU/hr.)	Same As Cisco 2821
Redundant Power Support (RPS)	No	External only, connector for RPS provided by default	Same As Cisco 2811	Same As Cisco 2811
Recommended RPS unit	No RPS option	Cisco RPS-675 Redundant Power System	Same As Cisco 2811	Same As Cisco 2811
Operating temp	32 to 104ºF; (0 to 40ºC)	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801
Operating humidity	10 to 85% non condensing	5 to 95%, non condensing	Same As Cisco 2811	Same As Cisco 2811
Non operating temp	N/A	–4 to 149žF (–20 to 65žC)	Same As Cisco 2811	Same As Cisco 2811
Dimensions (H x W x D)	1.72 x 17.5 x 16.5 in. (43.7 x 445 x 419 mm.)	1.75 x 17.25 x 16.4 in. (44.5 x 438.2 x 416.6 mm.)	3.5 x 17.25 x 16.4 in. (88.9 x 438.2 x 416.6 mm.)	Same As Cisco 2821
Rack height	1 rack unit (1RU)	1 rack unit (1RU)	2RU	Same As Cisco 2821
Weight (configured)	13.7 lb. (6.2 kg)	14 lb. (6.4 kg)	25 lb. (11.4 kg)	Same As Cisco 2821

Selected Part Numbers and Ordering Information

Cisco 2800 Series Router	
CISCO2801	Integrated services router with AC power, 2FE, 4 Interface Card Slots, 2 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software
CISCO2801-AC-IP	Integrated services router with AC power including Inline power distribution capability, 2FE, 4 Interface Card Slots, 2 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software
CISCO2811	Integrated services router with AC power, 2FE, 1 NME, 4 HWICs, 2 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software
CISCO2811-AC-IP	Integrated services router with AC power including Inline power distribution capability, 2FE, 1 NME, 4 HWICs, 2 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software
CISCO2811-DC	Integrated services router with DC power, 2FE, 1 NME, 4 HWICs, 2 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software

CISCO2821	Integrated services router with AC power, 2GE, 1 NME-X, 1 EVM, 4 HWICs, 2 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software
CISCO2821-AC-IP	Integrated services router with AC power including inline power distribution capability, 2GE, 1 NME-X, 1 EVM, 4 HWICs, 3 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software
CISCO2821-DC	Integrated services router with DC power, 2GE, 1 NME-X, 1 EVM, 4 HWICs, 3 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software
CISCO2851	Dual Gigabit Ethernet integrated services router with AC power, 2GE, 1 NME-XD, 1 EVM, 4 HWICs, 3 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software
CISCO2851-AC-IP	Integrated services router with AC power including inline power distribution capability, 2GE, 1 NME-XD, 1 EVM, 4 HWICs, 3 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software
CISCO2851-DC	Integrated services router with DC power, 2GE, 1 NME-XD, 1 EVM, 4 HWICs, 3 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software
Cisco 2800 Series Security Bundles	
CISCO2801-SEC/K9	Cisco 2801 Security Bundle,Adv Security,64F/256D
CISCO2801-HSEC/K9	Cisco 2801 Bundle w/AIM-VPN/SSL-2,Adv. IP Serv,10 SSL lic,64F/256D
CISCO2811-SEC/K9	Cisco 2811 Security Bundle,Adv Security,64F/256D
CISCO2811-HSEC/K9	Cisco 2811 Bundle w/AIM-VPN/SSL-2,Adv. IP Serv,10 SSL lic,64F/256D
CISCO2821-SEC/K9	Cisco 2821 Security Bundle,Adv Security,64F/256D
CISCO2821-HSEC/K9	Cisco 2821 Bundle w/AIM-VPN/SSL-2,Adv. IP Serv,10 SSL lic,64F/256D
CISCO2851-SEC/K9	Cisco 2851 Security Bundle,Adv Security,64F/256D
CISCO2851-HSEC/K9	Cisco 2851 Bundle w/AIM-VPN/SSL-2,Adv. IP Serv,10 SSL lic,64F/256D
Cisco 2800 Series Voice Bundles	
CISCO2801-V/K9	Cisco 2801 Voice Bundle,PVDM2-8,SP Serv,64F/256D
CISCO2801-CCME/K9	Cisco 2801 Voice Bundle w/ PVDM2-8,FL-CCME-24, SP Serv,64F/256D
CISCO2801-SRST/K9	Cisco 2801 Voice Bundle w/ PVDM2-8,FL-SRST-24,SP Serv,64F/256D
CISCO2811-V/K9	Cisco 2811 Voice Bundle,PVDM2-16,SP Serv,64F/256D
CISCO2811-CCME/K9	Cisco 2811 Voice Bundle w/ PVDM2-16,FL-CCME-36,SP Serv,64F/256D
CISCO2811-SRST/K9	Cisco 2811 Voice Bundle w/ PVDM2-16,FL-SRST-36,SP Serv,64F/256D
CISCO2821-V/K9	Cisco 2821 Voice Bundle,PVDM2-32,SP Serv,64F/256D
CISCO2821-CCME/K9	Cisco 2821 Voice Bundle w/ PVDM2-32,FL-CCME-48,SP Serv,64F/256D
CISCO2821-SRST/K9	Cisco 2821 Voice Bundle w/ PVDM2-32,FL-SRST-48,SP Serv,64F/256D
CISCO2851-V/K9	Cisco 2851 Voice Bundle,PVDM2-48,SP Serv,64F/256D
CISCO2851-CCME/K9	Cisco 2851 Voice Bundle w/ PVDM2-48,FL-CCME-96,SP Serv,64F/256D
CISCO2851-SRST/K9	Cisco 2851 Voice Bundle w/ PVDM2-48,FL-SRST-96,SP Serv,64F/256D
Cisco 2800 Series Unified Communications Bundles	
C2801-10UC/K9	Cisco 2801 w/ PVDM2-32,AIM-CUE,10 CME/CUE/Ph lic,SP Serv,128F/256D
C2801-10UC-VSEC/K9	Cisco 2801 w/ PVDM2-32,AIM-CUE,10 CME/CUE/Ph lic,Adv IP,128F/256D
C2811-15UC/K9	Cisco 2811 w/ PVDM2-32,AIM-CUE,15 CME/CUE/Ph lic,SP Serv,128F/256D
C2811-15UC-VSEC/K9	Cisco 2811 w/ PVDM2-32,AIM-CUE,15 CME/CUE/Ph lic,Adv IP,128F/256D
C2821-25UC/K9	Cisco 2821 w/ PVDM2-32,AIM-CUE,25 CME/CUE/Ph lic,SP Serv,128F/256D
C2821-25UC-VSEC/K9	Cisco 2821 w/ PVDM2-32,AIM-CUE,25 CME/CUE/Ph lic,Adv IP,128F/256D
C2851-35UC/K9	Cisco 2851 w/ PVDM2-48,NME-CUE,35 CME/CUE/Ph lic,SP Serv,128F/256D
C2851-35UC-VSEC/K9	Cisco 2851 w/ PVDM2-48,NME-CUE,35 CME/CUE/Ph lic,Adv IP,128F/256D
Cisco 2800 Series Secure Voice Bundles	
C2801-VSEC-CCME/K9	Cisco 2801 VSEC Bundle w/PVDM2-8,FL-CCME-24,Adv IP Serv,64F/256D
C2801-VSEC-SRST/K9	Cisco 2801 VSEC Bundle w/PVDM2-8,FL-SRST-24,Adv IP Serv,64F/256D
C2811-VSEC-CCME/K9	Cisco 2811 VSEC Bundle w/PVDM2-16,FL-CCME-36,Adv IP Serv,64F/256D
C2811-VSEC-SRST/K9	Cisco 2811 VSEC Bundle w/PVDM2-16,FL-SRST-36,Adv IP Serv,64F/256D

C2821-VSEC-CCME/K9	Cisco 2821 VSEC Bundle w/PVDM2-32,FL-CCME-48,Adv IP Serv,64F/256D
C2821-VSEC-SRST/K9	Cisco 2821 VSEC Bundle w/PVDM2-32,FL-SRST-48,Adv IP Serv,64F/256D
C2851-VSEC-CCME/K9	Cisco 2851 VSEC Bundle w/PVDM2-48,FL-CCME-96,Adv IP Serv,64F/256D
C2851-VSEC-SRST/K9	Cisco 2851 VSEC Bundle w/PVDM2-48,FL-SRST-96,Adv IP Serv,64F/256D
C2801-VSEC/K9	Cisco 2801 Voice Security Bundle,PVDM2-8,Adv IP Serv,64F/256D
C2811-VSEC/K9	Cisco 2811 Voice Security Bundle,PVDM2-16,Adv IP Serv,64F/256D
C2821-VSEC/K9	Cisco 2821 Voice Security Bundle,PVDM2-32,Adv IP Serv,64F/256D
C2851-VSEC/K9	Cisco 2851 Voice Security Bundle,PVDM2-48,Adv IP Serv,64F/256D
C2801-H-VSEC/K9	Cisco 2801 HighPerf.VSEC; AIM-VPN2/SSL,PVDM2,CCME/SRST,AIS,128F/384D
C2811-H-VSEC/K9	Cisco 2811 High Perf.VSEC; AIM-VPN2/SSL,PVDM2,CCME/SRST,AIS,256F/512D
C2821-H-VSEC/K9	Cisco 2821 High Perf.VSEC; AIM-VPN2/SSL,PVDM2,CCME/SRST,AIS,256F/512D
C2851-H-VSEC/K9	Cisco 2851 High Perf.VSEC; AIM-VPN2/SSL,PVDM2,CCME/SRST,AIS,256F/512D
Cisco 2800 WAN Optimization Bundles	
C2811-WAE-302/K9	Cisco 2811, NME-WAE-302-K9,WAAS Trans,ASK9 ASK9,64F/256D
CISCO2811-WAE/K9	Cisco 2811, NME-WAE-502-K9,WAAS Trans,ASK9 ASK9,64F/256D
CISCO2821-WAE/K9	Cisco 2821, NME-WAE-502/K9,WAAS Trans,ASK9 ASK9,128F/256D
CISCO2851-WAE/K9	Cisco 2851, NME-WAE-502-K9,WAAS Trans,ASK9,128F/256D
Cisco 2800 Series Broadband Bundles	
CISCO2801-ADSL2/K9	Cisco 2801 bundle, HWIC-1ADSL, SP Svcs, 64F/192DR
CISCO2811-ADSL2/K9	Cisco 2811 bundle, HWIC-1ADSL, SP Svcs, 64FL/256DR
CISCO2801-ADSL/K9	Cisco 2801 DSL Bundle,WIC-1ADSL(ADSLoPOTS),SP Serv,64F/192D
CISCO2811-ADSL/K9	Cisco 2811 with WIC-1ADSL (ADSLoPOTs), SP Ser IOS, 64F/256D
C2801-SHDSL-V3/K9	Cisco 2801 bundle, WIC-1SHDSL-V3,SP Svcs, 64F/192D
C2811-SHDSL-V3/K9	Cisco 2811 DSL bundle, WIC-1SHDSL-V3 (4-wire), SP Svcs, 64F/256D
C2801-2SHDSL/K9	Cisco 2801 2-pair G.SHDSL bundle, HWIC-2SHDSL,SP Svcs, 64F/192D
C2801-4SHDSL/K9	Cisco 2801 4-pair G.SHDSL bundle, HWIC-4SHDSL, SP Svcs, 64F/192D
C2811-2SHDSL/K9	Cisco 2811 2-pair G.SHDSL bundle, HWIC-2SHDSL, SP Svcs, 64FL/256DR
C2811-4SHDSL/K9	Cisco 2811 4-pair G.SHDSL bundle, HWIC-4SHDSL, SP Svcs, 64F/256D
C2801-ADSL2-M/K9	Cisco 2801 bundle, HWIC-1ADSL-M, SP Svcs, 64MB CF/192MB DR
C2811-ADSL2-M/K9	Cisco 2811 bundle, HWIC-1ADSL-M, SP Svcs, 64MB CF/256MB DR
C2821-4SHDSL/K9	Cisco 2821 4pair G.SHDSL bundle, HWIC-4SHDSL, SP Svcs, 64F/256D

For More Information

http://www.cisco.com/go/2800

Cisco 1800 Series Integrated Services Routers

Cisco 1800 Series offers three classes of routers to meet the diverse needs of small enterprise branch offices and small and medium-sized businesses (SMBs).

The Cisco 1861 Integrated Services Router is a unified communications solution that provides voice, data, voicemail, Automated-Attendant, video, and security capabilities while integrating with existing desktop applications such as calendar, e-mail, and customer relationship management (CRM) programs.

Both the Cisco 1800 Fixed and Modular Routers are designed for secure data connectivity through Frame Relay, leased-line, or broadband access, and wireless LANs. The routers feature secure, fast, and high-quality delivery of multiple, concurrent services. Cisco 1841 offers flexible WAN connectivity options where Cisco 1801, 1802, and 1803 offer secure data connectivity in a small, fixed form factor.

Ideal for Companies That Need These Features

Cisco 1801, 1802, and 1803	· Secure data access through broadband DSL · Primary WAN access through asymmetric DSL (ADSL) over basic telephone service (Cisco 1801), ADSL over ISDN (Cisco 1802), or G.SHDSL (Cisco 1803) · ADSL 2/2+ capability on Cisco 1801 and 1802 routers · Backup WAN interface using ISDN BRI · Integrated 8-port managed 10/100 Ethernet switch · Integrated IEEE 802.11 a/b/g wireless LAN ("W" models)
Cisco 1841	· Secure data access solution for customer environments up to T1, E1, or xDSL WAN rates with services turned on · Modularity for flexibility in WAN configurations · Support for a broad array of WAN services · Comprehensive security features
Cisco 1861	· Integrated Cisco Unified Communications Manager Express or Cisco Unified Survivable Remote Site Telephony for call processing · Cisco Unity Express for voice messaging and automated attendant · Integrated LAN switching with PoE expandable through Cisco Catalyst switches · Support for a range of HWICs · Built-in hardware encryption enabled through optional security image · Comprehensive security features

Key Features and Benefits

- Cisco 1800 Series Integrated Services Routers are available with an IEEE 802.11 a/b/g standalone wireless access point for "W" models of Cisco 1801 through Cisco 1812 models, and for a high-speed WAN interface card access point (HWIC-AP) for the Cisco 1841.
- The modular Cisco 1841 provides flexibility with an internal advanced-integration-module (AIM) slot designated for higher-speed VPNs and future applications. Several slot types are available to add future connectivity and services on an "integrate-as-you-grow" basis.
- An optional 4-port switch HWIC is available for the Cisco 1841.
- These routers support the latest Cisco IOS Software-based QoS bandwidth management features.
- The routers offer advanced device management using Cisco Configuration Professional.
- A high-performance processor supports concurrent deployment of high-performance, secure data services with headroom for future applications.
- Integrated hardware-based encryption acceleration offers a cryptography accelerator as standard integrated hardware that can be enabled with optional Cisco IOS Software for Triple Digital Encryption Standard (3DES) and Advanced Encryption Standard (AES) encryption support.
- A security performance-enhanced feature set offers an intrusion prevention system (IPS), Cisco Network Admission Control (NAC), and firewall functions.
- These routers allow LAN segmentation using VLANs.
- An integrated standard power supply offers easier router platform installation and management.

Specifications

Feature	Cisco 1861	Cisco 1841	Cisco 1800 Series (FC)
Form factor	Desktop, 1.5 rack unit (RU)	Desktop, 1-rack-unit (1RU) height (4.75 cm high with rubber feet)	Desktop, 1-rack-unit (1-RU) high (4.75-cm high with rubber feet)
Target Applications	Small Office Unified Communications, Data and Security	Secure data with frame relay or leased line access (T1/E1)	Secure data with broadband access and backup WAN
Chassis	Metal	Metal	Metal
Wall-mountable	Yes	Yes	Yes
Rack-mountable	Yes (optional rackmount kit is required)	Yes (optional 19-in rackmount kit is required)	Yes (optional 19-in. rack-mount kit required)
Dimensions (W x D)	2.625 x 10.5 x 11.05 in. (6.67 x 26.67 x 28.07 cm)	13.5 x 10.8 in. (34.3 x 27.4 cm); Height without rubber feet: 1.73 in. (4.39 cm); Height with rubber feet: 1.87 in. (4.75 cm)	12.74 x 9.7 in. (32.36 x 24.64 cm); Height without rubber feet: 1.75 in. (4.45 cm); Height with rubber feet: 1.89 in. (4.80 cm)
Weight	8 lb (3.63 kg)	Maximum: 6.2 lb. (2.8 kg); with interface cards and modules; Minimum: 6.0 lb. (2.7 kg) (no interface cards and modules)	Maximum: 6.1 lb. (2.8 kg)
DRAM	· Cisco IOS Software: 256 MB · Voice messaging: 512 MB	Synchronous dual in-line memory module (DIMM) DRAM	Synchronous dual in-line memory module (DIMM) SDRAM (1 DIMM slot)

DRAM capacity	Default: 256 MB Maximum: 256 MB	Default: 128 MB; Maximum: 384 MB	Default: 256 MB; Maximum: 384 MB
Flash memory	• Cisco IOS Software: 128 MB • Voice messaging: 1 GB; Compact Flash	External removable compact Flash	External removable Compact Flash
Integrated H/W-based encryption on motherboard	Yes	Yes	Yes
IPSec Tunnels	100 with on-board encryption	100 with on-board encryption, 800 with VPN AIM	50
IPSec VPN Performance	40 Mbps 3DES @ 1400 byte packets	40 Mbps 3DES @ 1400 byte packets	40 Mbps 3DES @ 1400 byte packets
Encryption support in software and hardware by default	IPsec DES; 3DES; and AES 128, 192, and 256 cryptology by using an optional security image	DES, 3DES, AES 128, AES 192, AES 256	DES, 3DES, AES 128, AES 192, AES 256
Cisco IOS Firewall Performance	100 Mbps @ 1400 byte packets	100 Mbps @ 1400 byte packets	100 Mbps @ 1400 byte packets
Wireless LAN Hardware	Optional 802.11b/g models	Optional IEEE 802.11 a/b/g or IEEE 802.11 b/g via HWIC	IEEE 802.11 a/b/g on wireless models
Wireless LAN features	IEEE 802.11a/b/g; Automatic rate selection for 802.11b/g; RP-TNC connectors for field-replaceable external antennas (antenna options for extended coverage); Antenna diversity; Indoor range: 1 Mbps at 320 ft. (97.54m); Wireless Ethernet Compatibility Alliance (WECA) interoperability; Default antenna gain—2.2 dBi	IEEE 802.11a/b/g; Automatic rate selection for 802.11a/11b/11g; Field-replaceable antennae; External antenna; Antenna diversity; Wi-Fi Certified for WPA-Personal and WPA-Enterprise; Default antenna gain—2.2 dBi	IEEE 802.11a/b/g; Automatic rate selection for 802.11a/11b/11g; Field-replaceable antennae; External antenna; Antenna diversity; Wi-Fi Certified for WPA-Personal and WPA-Enterprise; Default antenna gain—2.2 dBi
Data Rates Supported	The integrated 802.11b/g access point in the Cisco 1861 supports up to 54-Mbps connections.	802.11a: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps; 802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps	802.11a: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps; 802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps
Range	None		Range—Indoor 1 Mbps at 320 ft.
Wireless LAN Software Features	• Cisco 1861 Series—802.1X; 802.11e: WPA and AES (WPA2); EAP authentication: Cisco LEAP, PEAP, and Extensible Authentication Protocol-Flexible Authentication via Secure Tunneling (EAP-FAST); Static and dynamic WEP; Temporal Key Integrity Protocol Simple Security Network (TKIP/SSN) encryption; MAC authentication and filter; User database for survivable local authentication using LEAP and EAP-FAST; Configurable limit to the number of wireless clients; Configurable RADIUS accounting for wireless clients; Preshared keys (PSKs); Workgroup Bridge Association • Cisco 1841 Series—N/A • Cisco 1800 Series Fixed-Configuration Routers—Maximize throughput or maximize range option; Software-configurable transmit power; Support for Wi-Fi Multimedia (WMM); Quality of Service (QoS) for WLANs		
SSIDs	8	8	8
Wireless LAN		Supported by CiscoWorks 2000, CiscoView and Router, and Security Device Management (SDM)	Supported by CiscoWorks 2000, CiscoView and Router, and Security Device Management (SDM)
Management Features	GUI-based network management	GUI-based network management for wireless interface is provided	GUI-based network management for wireless interface is provided
User Support	Up to 15 UC users	Up to 50 users (recommended)	Up to 50 users (recommended)
Internal system power supply	Yes	Yes	Yes
Power over Ethernet (PoE) power supply	Internal	None	External
Redundant power supply	No	No	No
DC power support	No	No	No
AC input voltage	100 to 240 VAC	100 to 240 VAC	100 to 240 VAC
Frequency	50 to 60 Hz	50 to 60 Hz	50 to 60 Hz

AC input current	4 to 2A (100 to 240V)	1.5A maximum	1.5A maximum
Output power	80W	50W (maximum)	50W (maximum)

Selected Part Numbers and Ordering Information

Cisco 1861	
C1861-SRST-F/K9	Cisco 1861, 8-User SRST license, 4 PSTN trunks (FXO), 4 Analog ports (FXS), 8 PoE ports, 1 HWIC slot for WAN
C1861-SRST-B/K9	Cisco 1861, 8-User /SRST license, 2 BRI trunks (BRI), 4 Analog ports (FXS), 8 PoE ports, 1 HWIC slot for WAN
C1861-SRST-C-F/K9	Cisco 1861, 8-User SRST & CUE license, 4 PSTN trunks (FXO), 4 Analog ports (FXS), 8 PoE ports, 1 HWIC slot for WAN
C1861-SRST-C-B/K9	Cisco 1861, 8-User SRST & CUE license, 2 BRI trunks (BRI), 4 Analog ports (FXS), 8 PoE ports, 1 HWIC slot for WAN
C1861-UC-4FXO-K9	Cisco 1861, 8-user CME, CUE, Phone Licenses, 4 PSTN trunks (FXO), 4 Analog ports (FXS), 8 PoE ports, 1 HWIC slot for WAN
C1861-UC-2BRI-K9	Cisco 1861, 8-user CME, CUE, Phone Licenses, 2 BRI trunks (BRI), 4 Analog ports (FXS), 8 PoE ports, 1 HWIC slot for WAN
C1861-2B-VSEC/K9	Cisco 1861, 8-user CME, CUE, Ph Lic, 4FXS, 2BRI, 8xPOE, HWIC slot, Adv IP
C1861-4F-VSEC/K9	Cisco 1861, 8-user CME, CUE, Ph Lic, 4FXS, 4FXO, 8xPOE, HWIC slot, Adv IP
C1861W-SRST-F/K9	Cisco 1861, WLAN, 8xPOE, 4FXS, 4FXO, SRST, 8-user License, SP Svcs
C1861W-SRST-B/K9	Cisco 1861, WLAN, 8xPOE, 4FXS, 2BRI, SRST 8-user License, SP Svcs
C1861W-SRST-C-F/K9	Cisco 1861, WLAN, 8xPOE, 4FXS, 4FXO, SRST 8-user License, CUE, SP
C1861W-SRST-C-B/K9	Cisco 1861, WLAN, 8xPOE, 4FXS, 2BRI, SRST 8-user License, CUE, SP
C1861W-UC-4FXO-K9	Cisco 1861, WLAN, 8xPOE, 4FXS, 4FXO, CME 8-user License, CUE, Ph.
C1861W-UC-2BRI-K9	Cisco 1861, WLAN, 8xPOE, 4FXS, 2BRI, CME 8-user License, CUE, Ph.
Cisco 1800 Series (Modular) Integrated Services Routers	
CISCO1841	Cisco 1841 Modular Router w/2xFE, 2 WAN slots, 32 FL/128 DR
CISCO1841-T1	Cisco 1841 bundle w/WIC-1DSU-T1-V2, IP Base, 32FL/128DR
Cisco 1800 Series (Fixed) Integrated Services Routers	
CISCO1801	ADSL/POTS router w/IOS IP Broadband
CISCO1801/K9	ADSL/POTS Router with Firewall/IPS and IPSEC 3DES
CISCO1801-M	ADSL over POTS Annex M Router w/IOS IP Broadband
CISCO1801-M/K9	ADSL over POTS Annex M Router
CISCO1802	ADSL/POTS router w/IOS IP Broadband
CISCO1802/K9	ADSL/ISDN Router with Firewall/IPS and IPSEC 3DES
CISCO1803/K9	G.SHDSL Router with Firewall/IPS and IPSEC
CISCO1811/K9	Dual Ethernet Security Router with V.92 Modem Backup
CISCO1812/K9	Dual Ethernet Security Router with ISDN S/T Backup
Cisco 1800 Series (Fixed Wireless) Integrated Services Router	
CISCO1801W-AG-P/K9, B/K9, C/K9, N/K9	ADSL/POTS Router with 802.11a+g (FCC-B, China-C, Australia/NZ-N) Compliant and Security
CISCO1803W-AG-P/K9,B/K9	G.SHDSL Router with 802.11a+g (FCC-B) Compliant and Security
Cisco 1800 Series (Modular) Security bundles	
CISCO1841-SEC/K9	Cisco 1841 Security Bundle,Adv.Security,64FL/256DR
CISCO1841-HSEC/K9	Cisco 1841 Security bundle w/AIM-VPN,Adv.IP Svcs,64FL/256DR
CISCO1841-T1SEC/K9	Cisco 1841 Security Bundle w/ WIC-1DSU-T1-V2, Adv.Sec.,64FL,256DR
Cisco 1800 Series (Modular) Broadband bundles	
CISCO1841-ADSL	Cisco 1841 ADSLoPOTS Bdle, IP Broadband,32FL/128DR
CISCO1841-ADSL-DG	Cisco 1841 ADSLoPOTS w/dying gasp Bundle, IP Broadband, 32FL/128DR

CISCO1841-ADSLI	Cisco 1841 ADSLoISDN Bundle, IP Broadband, 32FL/128DR
CISCO1841-SHDSL-V3	Cisco 1841 G.shdsl 4-wire Bundle, includes WIC-1SHDSL-V3,IP Broadband, 32 MB flash/128 MB DRAM
CISCO1841-ADSL2	Cisco 1841 bundle, HWIC-1ADSL, IP BB, 32F/128D
CISCO1841-ADSL2-B	Cisco 1841 bundle, HWIC-ADSL-B/ST,IP BB,32F/128D

For More Information

http://www.cisco.com/go/1800

Cisco 7600 Series Routers

The Cisco 7600 Series Routers combine optical WAN and metropolitan-area network (MAN) networking and high-volume Ethernet aggregation with a focus on the delivery of high-touch services for the IP and Multiprotocol Label Switching (MPLS) edge. These routers combine Layer 2 and Layer 3 networking capabilities with a high-bandwidth, high-performance architecture, including hardware-based forwarding of Multiprotocol Label Switching (MPLS), IPv4, and IPv6. Cisco 7600 Series form factors include the Cisco 7603-S, 7604, 7606-S, 7609-S, and 7613 models. Each router can deliver DS-0 to OC-192 WAN and n x 10-Mbps Ethernet to n x 10-Gigabit Ethernet connectivity into service provider edge, MAN, and enterprise networks for a variety of quad-play (data, voice, video, and mobile) and aggregation solutions. All Cisco 7600 Series Routers comply with Network Equipment Building Standards (NEBS) and have a 30-Mpps forwarding rate.

Ideal for Companies That Need These Features

Cisco 7603	· Three-slot (horizontal) chassis; 320-Gbps backplane bandwidth
Cisco 7604	· Four-slot (horizontal) chassis; 320-Gbps backplane bandwidth
Cisco 7606	· Six-slot (horizontal) chassis; 480-Gbps backplane bandwidth
Cisco 7609	· Nine-slot (vertical) chassis; 720-Gbps backplane bandwidth
Cisco 7613	· Thirteen-slot (horizontal) chassis; 720-Gbps backplane bandwidth

Key Features and Benefits

- Cisco 7600 Series Routers provide up to 30-Mpps central or up to 400-Mpps distributed forwarding with hardware-accelerated IPv4, IPv6, and Multiprotocol Label Switching (MPLS).
- The modular routers are scalable from 32- to 720-Gbps switch fabric.
- These routers represent one of the widest, most complete ranges of WAN interfaces in the industry, with DS-0 to OC-192 connectivity.
- Using the Cisco 7600 Series/Catalyst 6500 Series Enhanced FlexWAN Module, Cisco 7000 Series port adapters are shared with the Cisco 7200, 7300, 7400, and 7500 models, simplifying sparing and protecting customer investment in interfaces.
- Cisco 7600 Series Routers support many Cisco Catalyst 6500 LAN interfaces, offering n x 10-Mbps Ethernet to 10 Gbps.

Specifications

Feature	Cisco 7603	Cisco 7604	Cisco 7606	Cisco 7609	Cisco 7613
Fixed Ports	SFP & 10/100/1000 (Sup720)	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603
Expansion Slots	3 (horizontal)	4 (horizontal)	6 (horizontal)	9 (vertical)	13 (horizontal)
WAN Interface Range	DS0 to OC-192	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603
Processor	Supervisor720-3B Supervisor720-3BXL Supervisor 32 RSP720-3C RSP720-3CXL RSP720-10G-3C RSP720-10G-3CXL	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603
Forwarding Rate	Up to 30 Mpps	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603
Backplane Capacity	240 Gbps	320 Gbps	480 Gbps	720 Gbps	720 Gbps

Flash PCMCIA Memory	up to 512MB	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603
System DRAM Memory	512MB on Sup720-3B 1G on Sup720-3BXL 1G on RSP720-3C 2G on RSP720-3CXL	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603
Internal Power Supply	AC or DC	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603
RPS Support	Yes	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603
Chassis Height	4 RU	5 RU	7 RU	20 RU	18 RU
Rack Mountable	Yes, up to 11 per rack	Yes, up to 10 per rack	Yes, up to 6 per rack	Yes, up to 2 per rack	Yes, up to 2 per rack
Dimensions (H x W x D)	7 x 17.37 x 20.3 in.	7 x 17.37 x 21.75 in.	12.25 x 17.37 x 21.75 in.	36.75 x 17.2 x 20.7 in.	33.3 x 17.2 x 18.1 in.

Selected Part Numbers and Ordering Information

Cisco 7613 Systems	
7613-RSP720C-P	Cisco 7613 Chassis,13-slot,RSP720-3C,PS
7613-RSP720CXL-P	Cisco 7613 Chassis,13-slot,RSP720-3CXL,PS
CISCO7613	Cisco 7613 Chassis
CISCO7613/EHA1	Bundle: Cisco Enhanced Home Agent R1 for 7613 (600k Sessions)
7613-S323B-8G-P	Cisco 7613 Chassis, 13-slot, SUP32-8GE-3B, PS
7613-S323B-10G-P	Cisco 7613 Chassis, 13-slot, SUP32-2X10GE-3B, PS
7613-SUP720XL-PS	Cisco 7613 13-slot, SUP720-3BXL and PS
7613-SUP7203B-PS	Cisco 7613 Chassis, 13-slot, SUP7203B, Power Supply
7613-2SUP7203B-2PS	Cisco 7613 Chassis, 13-slot, 2 SUP7203B, 2 Power Supply
Cisco 7609 Systems	
7609-RSP720C-P	Cisco 7609 Chassis,9-slot,RSP720-3C,PS
7609-RSP720CXL-P	Cisco 7609 Chassis,9-slot,RSP720-3CXL,PS
7609S-RSP720C-P	Cisco 7609-S Chassis,9-slot,RSP720-3C,PS
7609S-RSP720CXL-P	Cisco 7609-S Chassis,9-slot,RSP720-3CXL,PS
7609S-S32-10G-B-P	Cisco 7609-S Chassis,9-slot,SUP32-2X10GE-3B,PS
7609S-S32-8G-B-P	Cisco 7609-S Chassis,9-slot,SUP32-8GE-3B,PS
7609S-SUP720B-P	Cisco 7609-S Chassis,9-slot,SUP720-3B,PS
7609S-SUP720BXL-P	Cisco 7609-S Chassis,9-slot,SUP720-3BXL,PS
CISCO7609	Cisco 7609 Chassis
CISCO7609-S	Cisco 7609-S Chassis
CISCO7609/EHA1	Bundle: Cisco Enhanced Home Agent R1 for 7609 (300k Sessions)
7609-S323B-8G-P	Cisco 7609 Chassis, 9-slot, SUP32-8GE-3B, PS
7609-S323B-10G-P	Cisco 7609 Chassis, 9-slot, SUP32-2X10GE-3BB, PS
7609-SUP720XL-PS	Cisco 7609 9-slot, SUP720-3BXL and PS
7609-SUP7203B-PS	Cisco 7609 Chassis, 9-slot, SUP7203B, Power Supply
7609-2SUP7203B-2PS	Cisco 7609 Chassis, 9-slot, 2 SUP7203B, 2 Power Supply
Cisco 7606 Systems	
7606-RSP720C-P	Cisco 7606 Chassis,6-slot,RSP720-3C,PS
7606-RSP720CXL-P	Cisco 7606 Chassis,6-slot,RSP720-3CXL,PS
CISCO7606	Cisco 7606 Chassis

CISCO7606-S	Cisco 7606-S Chassis
7606-S323B-8G-P	Cisco 7606 Chassis, 6-slot, SUP32-8GE-3B, PS
7606-S323B-10G-P	Cisco 7606 Chassis, 6-slot, SUP32-2X10GE-3B, PS
7606-SUP720XL-PS	Cisco 7606 6-slot, SUP720-3BXL and PS
7606-SUP7203B-PS	Cisco 7606 Chassis, 6-slot, SUP7203B, Power Supply
7606-2SUP7203B-2PS	Cisco 7606 Chassis, 6-slot, 2 SUP7203B, 2 Power Supply
CISCO7606-CHASS	Cisco 7606 Chassis
7606S-RSP720C-P	Cisco 7606-S Chassis,6-slot,RSP720-3C,PS
7606S-RSP720CXL-P	Cisco 7606-S Chassis,6-slot,RSP720-3CXL,PS
7606S-S32-8G-B-P	Cisco 7606-S Chassis,6-slot,SUP32-8GE-3B,PS
7606S-S32-10G-B-P	Cisco 7606-S Chassis,6-slot,SUP32-2X10GE-3B,PS
7606S-SUP720B-P	Cisco 7606-S Chassis,6-slot,SUP720-3B,PS
7606S-SUP720BXL-P	Cisco 7606-S Chassis,6-slot,SUP720-3BXL,PS
Cisco 7604 Systems	
CISCO7604	Cisco 7604 Chassis
7604-RSP720C-P	Cisco 7604 Chassis,4-slot,RSP720-3C,PS
7604-RSP720CXL-P	Cisco 7604 Chassis,4-slot,RSP720-3CXL,PS
7604-S323B-8G-P	Cisco 7604 Chassis, 4-slot, SUP32-8GE-3B, PS
7604-S323B-10G-P	Cisco 7604 Chassis, 4-slot, SUP32-2X10GE-3B, PS
7604-SUP7203B-PS	Cisco 7604 Chassis, 4-slot, SUP720-3B, PS
7604-2SUP7203B-2PS	Cisco 7604 Chassis, 4-slot, 2 SUP720-3B, 2 PS
7604-SUP720XL-PS	Cisco 7604 chassis, 4-slot, SUP720-3BXL, PS
7604-2SUP720XL-2PS	Cisco 7604 Chassis, 4-slot, 2SUP720-3BXL, 2 PS
Cisco 7603 Systems	
7603S-RSP720C-P	Cisco 7603-S Chassis,3-slot,RSP720-3C,PS
7603S-RSP720CXL-P	Cisco 7603-S Chassis,3-slot,RSP720-3CXL,PS
7603S-S32-10G-B-P	Cisco 7603-S Chassis,3-slot,SUP32-2X10GE-3B,PS
7603S-S32-8G-B-P	Cisco 7603-S Chassis,3-slot,SUP32-8GE-3B,PS
7603S-SUP720B-P	Cisco 7603-S Chassis,3-slot,SUP720-3B,PS
7603S-SUP720BXL-P	Cisco 7603-S Chassis,3-slot,SUP720-3BXL,PS
CISCO7603-S	Cisco 7603-S Chassis

For More Information

http://www.cisco.com/go/7600

Cisco 7300 Series Routers

The Cisco 7301 is targeted at principal application areas within a service provider network in a compact, single-rack form factor coupled with a broad set of interfaces and Cisco IOS Software features. It packs high performance of up to 1 Mpps in a space- and power-efficient form factor that includes a single Cisco 7000 Series port adapter slot and 3 onboard Gigabit Ethernet (copper or optical) or Fast Ethernet ports.

Ideal for Companies That Need These Features

Cisco 7301

- Compact, power-efficient 1RU form factor
- Single Cisco 7000 Series port adapter slot

Key Features and Benefits

- This router offers up to 1 Mpps processing performance; Pluggable Gigabit Ethernet optics (Small Form-Factor Pluggables [SFPs]); 3 fixed 10-/100-/1000-Mbps ports (RJ-45 or SFP optics) directly on the

processor; Full Cisco IOS Software feature support; Up to 1 GB of available DRAM; up to 256 MB of removable Compact Flash memory; Front-to-back airflow and single-sided management

Specifications

Feature	Cisco 7301
Fixed Ports	Three Gigabit Ethernet ports
Expansion Slots	1
WAN Interface Range	DS-1 to OC-3
Forwarding Rate	Up to 1 Mpps
Backplane Capacity	1.2 Gbps
Flash PCMCIA Memory	64 MB (expandable to 256 MB)
System DRAM Memory	512 MB (expandable to 1 GB)
Min Cisco IOS Release	12.2(11)YZ
Internal Power Supply	AC or DC
RPS Support	Yes, for AC or DC
Chassis Height	1 RU
Rack Mountable	Yes, up to 40 per rack
Dimensions (H x W x D)	1.73 x 17.3 x 13.87 in. (4.39 x 43.94 x 35.23 cm.)

Selected Part Numbers and Ordering Information

Cisco 7301 System	
CISCO7301=	Cisco 7301 chassis, 512 MB memory, A/C power,64MB Flash
CISCO7301-BB	Cisco7301,512MB Mem,16K license,64MB Flash, A/C power, IP/IOS
CISCO7301-BB-8K	Cisco 7301, 512M SDRAM, 8K Sub Broadband Feature License
CISCO7301BB-1G	Cisco 7301, 1 G Mem,64MB FI, AC Pwr, IP IOS, up to 16k sub BBA lic
CISCO7301BB-8K-1G	Cisco 7301,1 G Mem, 64MB FI, AC Pwr, IP IOS, up to 8k sub BBA lic
CISCO7301/ITP/BUN	Cisco ITP Signaling Gateway Bundle
CISCO7301/2+VPNK9	Cisco 7301, VAM2+, AC pwr, 512 sys mem, SDM

For More Information

http://www.cisco.com/go/7300

Cisco 7200 Series Routers

The Cisco 7200 Series Routers (Cisco 7201, Cisco 7204VXR, and Cisco 7206VXR) deliver an exceptional price-to-performance ratio, versatility, and feature richness in a compact form factor. The Cisco 7200 is an optimized integrated services aggregation OC-3/Gigabit Ethernet edge router that is ideal as a WAN aggregator for the service provider (small point of presence [POP]) or enterprise edge, as an enterprise WAN gateway, as high-end managed customer premises equipment (CPE), for IBM data center connectivity, or as a small core router. With the hardware-supported IP Security (IPSec) encryption module as well as robust firewall and Virtual Route Forwarding (VRF)-aware IPSec with Network Address Translation (NAT) support, the Cisco 7200 Series is ideal for integrated security services. The Cisco 7200 also supports gatekeeper and IP-to-IP gateway functions. Modularity combined with a low initial price point helps guarantee both investment protection and maximum return on investment, allowing customers to upgrade or redeploy their Cisco 7200 Series Router as their network needs change.

Ideal for Companies That Need These Features

Cisco 7201

- 1-slot chassis
- Built-in NPE-G2 Network Processing Engine with up to 2 Mpps
- WAN services aggregation (for example, Multiprotocol Label Switching [MPLS] provider edge traffic segmentation)
- Integrated edge services (for example, integrated security)
- Multiservice Interchange (MIX)-enabled bus for data, voice, and video applications

Cisco 7204VXR

- 4-slot chassis
- Modular processor, 1 Mpps, or 2 Mpps (Cisco NPE-G1, and Cisco NPE-G2 Network Processing Engines)
- 1.8-Gbps backplane
- WAN services aggregation (for example, MPLS provider edge traffic segmentation)
- Integrated edge services (for example, integrated security)
- MIX-enabled bus for data, voice, and video applications

Cisco 7206VXR

- All the features of the Cisco 7204VXR Router in a 6-slot chassis

Key Features and Benefits

- Compact form factor—The router offers up to six port adapters in a fully modular 3RU form factor; seven port adapters with a port adapter jacket card; choice of a 1-slot, and a 1RU chassis with built-in Cisco NPE-G2.
- Modularity—The router has choices of 1-, 4-, and 6-slot chassis, a selection of processors providing up to 2 Mpps, an extensive range of LAN and WAN interfaces with up to 48 ports per chassis, and single or dual power supplies. Chassis are expandable to an additional slot by using an I/O slot as a port or service adapter slot by using the port adapter jacket card.
- Exceptional value—The router offers superior price-to-performance ratio supporting high-speed media and high-density configurations with up to 2 million packets per second processing at a competitive price point.
- Feature richness—The router supports Cisco IOS Software and enhancements for high-performance network services. It offers industry-leading network services, including MPLS; route reflectors; broadband aggregation; the Cisco IOS Intelligent Services Gateway; QoS; service management; IBM data center; storage-area-network application; security; voice, video, and data support; and gatekeeper and IP-to-IP gateway (session border controller) support.
- Connectivity and flexibility—The router provides high port density and an extensive range of LAN and WAN media.
- Common port adapters—Port adapters are shared with the Cisco 7300 and 7600 Series (with the Cisco FlexWAN Module), simplifying sparing and protecting customer investment in interfaces.
- IP-to-IP gateway—Highest capacity of call support in Cisco router portfolio

Specifications

Feature	Cisco 7201	Cisco 7204VXR	Cisco 7206VXR
Fixed Ports	4 GEs	0	0
Expansion Slots	1	4 (5 with port adapter jacket card[1] utilizing the I/O slot)	6 (7 with port adapter jacket card utilizing the I/O slot)
WAN Port Adapters	DS0 to OC-3	DS0 to OC-3	Same as 7204VXR
Forwarding Rate	Up to 2 Mpps	Up to 2 Mpps	Up to 2 Mpps
Backplane Capacity	N/A	1.8 Gbps (with NPE-G2)	Same as 7204VXR
Flash (Compact) Memory	256 MB (default and max.)	For NPE-G2: 256 MB (default and max.) For NPE-G1: 64 MB (expandable to 256 MB)	Same as 7204VXR
System DRAM Memory	1 GB (default); 2 GB (max.)	NPE-G2: 1 GB (default); 2 GB (max.) NPE-G1: 512 MB (default); 1 GB (max.)	Same as 7204VXR
Minimum Cisco IOS Release	• Cisco 7201: 12.4(4)XD7; 12.2(31)SB4; 12.4(15)T • Cisco 7204VXR: NPE-G2: 12.4(4)XD; 12.4(15)T; 12.2(31)SB4 (and later),: NPE-G1: 12.2(4)BW, 12.2(15)B, 12.2(14)S, 12.2(14)SU, 12.2(15)T, 12.1(14)E, 12.3(1), 12.3(2)T, 12.0(28)S, 12.3(1a)B (and later); Cisco 7206VXR: Same as 7204VXR		
Internal Power Supply	Dual AC or Dual DC – By default	AC or DC, dual option	Same as 7204VXR
Redundant Power Supply	Yes, Dual AC or DC by default	Yes, for AC or DC	Same as 7204VXR
Chassis Height	1 RU	4 RU	6 RU
Rack Mountable	Yes	Yes, up to 16 per rack	Same as 7204VXR
Dimensions (H x W x D)	1.75 x 19 x 16.9 in.	5.25 x 16.8 x 17 in.	10.5 x 16.8 x 17 in.

1. Jacket Card par t number: C7200-JC-PA

Selected Part Numbers and Ordering Information

Cisco 7200 Series Chassis	
CISCO7201	Cisco 7201 router, with built-in dual power supplies, NPE-G2, and IP Software
Cisco 7200 NPE Bundles	
7206VXR/NPE-G2	Cisco 7206VXR with NPE-G2 includes 3GigE/FE/E Ports and IP SW

7206VXR/NPE-G1	Cisco 7206VXR with NPE-G1 includes 3GigE/FE/E Ports and IP SW
Cisco 7200 MPLS/IPv6 Bundles	
7206-IPV6/ADSVC/K9	Cisco 7206VXR IPv6/Adv. Ent. Services with NPE-G2
Cisco 7200 Security Bundles	
7206VXRG2/VSAVPNK9	Cisco 7206VXR chassis, NPE-G2, C7200-VSA Security Module, 256 MB Flash, 1GB DRAM, IOS ADVANCED SECURITY, SDM
7206VXRG2/2+VPNK9	Cisco 7206VXR NPE-G2 Bundle with Advanced Security IOS, 3 FE/GE, 64 MB Flash/1 GB DRAM, VAM2+
7206VXRG1/2+VPNK9	Cisco 7206VXR, NPE-G1, SA-VAM2+, AC pwr, 512 sys mem, SDM
Cisco 7200 Broadband Bundles	
CISCO7206-BB	Cisco 7206 Broadband Bundle NPE-G1 includes 3GigE/FE/E Ports
Cisco 7200 Channel Bundles	
CISCO7204VXR-CH	Cisco 7204VXR, 4-slot chassis, 1 AC Supply w/ IP Software
CISCO7206VXR-CH	Cisco 7206VXR, 6-slot chassis, 1 AC Supply w/IP Software
Cisco 7200 MPLS/IPv6 Bundles	
7206-IPV6/ADSVC/K9	Cisco 7206VXR IPv6/Adv. Ent. Services with NPE-G2

For More Information

http://www.cisco.com/go/7200

Cisco Carrier Routing System (CRS)

The Cisco Carrier Routing System (CRS) provides industry-leading performance, advanced services intelligence, environmentally aware design, and system longevity. Each model uses Cisco IOS XR Software, a unique self-healing, distributed operating system.

Models include:

- Cisco CRS-3, powered by Cisco QuantumFlow Array, a chipset architecture engineered in multiple dimensions of scale, services, and savings
- Cisco CRS-1, built on the Cisco Silicon Packet Processor (SPP)

Packet-based data communications are being replaced by video and rich media crossing the IP Next-Generation Network (NGN) in multiple directions. As part of a medianet, a media-aware Cisco IP NGN, Cisco CRS eases this strain on networks. It efficiently handles the multidirectional traffic of network and data center cloud interactions.

The Cisco CRS:

- Delivers continuous operations, with high performance single-flow line-rate forwarding
- Scales easily from numerous single-chassis form factors to a massive multichassis system, up to 322 Tbps
- Provides industry-leading efficiency, requiring low power, cooling, and rack-space use for intelligent, service-rich bandwidth capacity

Cisco CRS-3 models build on the CRS-1 models' backward and forward compatibility, protecting your existing and future investments for decades to come.

The Cisco CRS includes two major elements, line card shelves and fabric shelves, combinations of which allow the system to scale from four 40-Gbps or 140-Gbps slots to as many as 1152 40-Gbps or 140-Gbps slots in 72 line card shelves interconnected using eight fabric shelves, all operating as a single system.

- Cisco CRS 16-Slot Single-Shelf System—A single, 16-slot line card shelf with total switching capacity of 1.2 Tbps (40-Gbps/slot) or 4.48 Tbps (140-Gbps/slot); built from a 16-slot line card chassis featuring a midplane design
- Cisco CRS 8-Slot Single-Shelf System—A single, 8-slot line card shelf with total switching capacity of 640 Gbps (40-Gbps/slot) or 2.24 Tbps (140-Gbps/slot); built from an 8-slot line card chassis featuring a midplane design
- Cisco CRS 4-Slot Single-Shelf System—A single, 4-slot line-card shelf with total switching capacity of 320 Gbps (40-Gbps/slot) or 1.12 Tbps (140-Gbps/slot); built from a 4-slot line card chassis featuring a midplane design
- Cisco CRS-1 Multishelf System—Two to 72 line card shelves and 1 to 8 fabric shelves with a total switching capacity of up to 92 Tbps (40-Gbps/slot) or 322 Tbps (140-Gbps/slot); shelves are connected only to the fabric-card shelves where stage 2 of the three-stage switching is performed

Key Features and Benefits

- Delivery of differentiated voice, video, and data with mobility and business services with better quality of service (QoS) and performance
- Multicast traffic replicated in the fabric for efficient broadcast video applications
- Optical Transport (ITU G.709) integration with IP-over-DWDM (IPoDWDM) technology
- Intelligence for Data-Center Cloud interaction with Network Positioning System (NPS) technology

- Rich IPv6 support including dual-stack, translation/tunneling techniques with Carrier-Grade IPv6 (CGv6)
- Wire-rate line card integrated application performance monitoring, including for video
- Hardware-accelerated Operations, Administration and Performance (OAM)
- Consolidation of multiple networks into a single platform using secure domain routers (SDRs) while maintaining hardware and software isolation
- Dedicated 8-KB ingress and egress queues on the line cards for superior performance
- Isolation of different classes of services to deliver high-quality voice, video, and premium traffic
- Granular process-level In Service Software Upgrades (ISSUs)
- Non-service affecting online insertion and removal (OIR) of all components to reduce downtime
- Cisco Nonstop Forwarding (NSF) and Stateful Switchover (SSO) to eliminate single points of failure without service interruption, forwarding continues before, during, and after a route-processor switchover
- In-service, non-disruptive scaling from a single chassis to multiple chassis
- Shared port adapters (SPAs) and SPA interface processors (SIPs) to preserve hardware investment across Cisco platforms, including the Cisco 12000, 7600, and 7300 Series Routers
- Interchangeable interfaces between Cisco CRS and a range of other Cisco platforms

Specifications

Feature	16 slot Single-Shelf System	8 slot Single-Shelf System	4 slot Single-Shelf System	Fabric Card Chassis
Design	Midplane design	Midplane design	Midplane design	Midplane design
Slots	Line card: 16 x 40-Gbps/140-Gbps slots Switch Fabric Card: 8 dedicated slots Route Processor: 2 dedicated slots Fan Controller: 2 dedicated slots	Line card: Eight 40-Gbps/ 140-Gbps slots Switch-fabric card: 4 dedicated slots Route processor: 2 dedicated slots Fan tray: 2 fan trays	Line card: 40-Gbps/ 140-Gbps slots Switch fabric card: 4 dedicated slots Route processor: 2 dedicated slots Fans: 4 fans, 1 fan tray	Switch Fabric Card: 24 slots Shelf Controller: 2 dedicated slots
Full-Duplex Throughput	1280 Gbps (40-Gbps/ slot) 4480 Gbps (140-Gbps/slot)	640 Gbps(40-Gbps/ slot) 2240 Gbps (140-Gbps/slot)	320 Gbps (40-Gbps/ slot) 1120 Gbps (140-Gbps/slot)	
Power	Maximum DC power needed when chassis is fully configured with line cards with traffic running: 10.92kW Chassis power supply maximum DC output: 13.2kW	Maximum DC power needed when chassis is fully configured with line cards with traffic running: 5992W Chassis power supply maximum DC output: 7.7kW	AC input = 4270VA @ 16000 BTU/HR DC input = 4326W @16200 BTU/HR	Maximum DC = 9.1kW @ 31,050 BTU/hr Maximum AC = 10.4kW @ 32,668 BTU/hr
Dimensions (H x W x D)	84 x 23.6 x 36 in (213.36 x 59.94 x 91.44 cm); With cable management and front cover—84 x 23.6 x 39.71 in (213.36 x 59.94 x 100.84 cm)	38.5 x 17.5 x 36.6 in (97.79 x 44.45 x 92.964 cm) with base cosmetics; With cable management and front cover—38.5 x 17.5 x 40.5 in (97.79 x 44.45 x 102.87 cm)	30 x 17.643 x 30.28 in (76.2 x 44.813 x 76.91 cm) without doors and cosmetics	Without cable management and front cover—84 x 23.6 x 35 in (213.36 x 59.94 x 88.9 cm); With cable management and front cover—84 x 23.6 x 41 in (213.36 x 59.94 x 104.2 cm)
Weight	939 lbs (425 kg) as shipped, chassis only with build in rack and fan trays installed 1008 lbs (457 kg) chassis only as shipped, including power shelves, without power modules, and with build in rack 1595 lbs (723 kg) chassis fully configured, using all card slots, power shelves, cosmetics, and with build in rack	330.8 lb (148.86 kg) chassis with fan, PDU and blanks (as shipped) 650lb (292.5 kg) chassis as shipped, including power shelves, and all line cards and route processors	260 lb (117.93 kg) chassis with fan, power modules and blanks (as shipped) 380 lb (172.37 kg) chassis as shipped, including power shelf, fabric cards, and all line cards and route processors	644 lbs (292 kg) as shipped, chassis only with fan trays installed 712.8 lbs (323 kg) chassis only as shipped, including power shelves, without power modules 1559 lbs (707 kg) chassis fully configured
IP Features	Control-plane packet handling, IPv4, IPv6, (X)ACLs, QoS/class of service (CoS) using Modular QoS CLI (MQC), IP packet classification and marking, Queuing (both ingress and egress), Policing (both ingress and egress), Diagnostic and network management support			

Software Components	Cisco IOS XR
IP over DWDM (IPoDWDM) Features	· GFEC: standard G.975 Reed-Salomon algorithm · EFEC: standard G.975.1 two orthogonally concatenated BCH super FEC code · Full C-band tunable laser with 50-GHz spacing · Router-to-router SONET/SDH-like operations, administration, maintenance, and provisioning (OAM&P)
Routing Features	Multiprotocol BGP Version 4 (MP-BGPv4), Open Shortest Path First Version 2 (OSPFv2), OSPFv3, IS-IS, Static routes, RPL, Multicast, MPLS, High availability, Security, Manageability

Selected Part Numbers and Ordering Information

CRS-16/S	Cisco CRS-1 Series 16 Slots Carrier Routing System/Single
CRS-8/S	Cisco CRS-1 Series 8 Slots Carrier Routing System/Single
CRS-4/S	Cisco CRS-1 Series 4 Slots Carrier Routing System
CRS-MC-FC2	Cisco CRS-1 Multichassis System with 24-Slot Fabric Chassis
CRS-FC24=	Cisco CRS-1 Fabric Chassis 24-Slot System (complete FCC)
CRS-FCC=	Cisco CRS-1 FCC, spare (Chassis Only)
CRS3-16/S	Cisco CRS-3 16-Slot Carrier Routing System/Single
CRS3-8/S	Cisco CRS-3 8-Slot Single-Shelf System
CRS3-4/S	Cisco CRS-3 4-Slot Single-Shelf System
CRS3-MC-FC24	Cisco CRS-3 Multichassis System with 24-Slot Fabric Chassis
CRS3-FC24=	Cisco CRS-3 Fabric Chassis 24-Slot System (complete FCC)
CRS3-FCC=	Cisco CRS-3 FCC, spare (chassis only)

NOTE: Ordering information for the CRS-3 will be available in the September, 2010 timeframe.

For More Information

http://www.cisco.com/go/crs

Cisco XR 12000 and 12000 Series Routers

The Cisco XR 12000 and 12000 Series Routers compose a portfolio of intelligent routing solutions that scale from 2.5 to n x 10Gpbs capacity per slot, facilitating carrier-class IP/Multiprotocol Label Switching (MPLS) networks and accelerating the evolution to IP next-generation networks.

Key Features and Benefits

- The Cisco XR 12000 and 12000 Series Routers deliver up to 1.28-Tbps switching capacity with wire-speed feature performance, scalability, and graceful hardware and software upgrade paths.
- These routers offer full forward compatibility for all line cards and the portfolio of shared port adapters (SPAs) and SPA interface processors (SIPs).
- The routers scale to the edge, supporting backbone- or edge-optimized line cards in the same chassis.
- The routers maximize the value of line-rate edge applications with 10-G uplinks.
- IP quality of service (QoS) and congestion-control implementation facilitates real-time services such as voice over IP (VoIP) and video. The distributed architecture and class-of-service features of the routers, such as priority-based congestion control (Weighted Random Early Detection [WRED]) and dedicated Low Latency Queuing (Modified Deficit Round Robin [MDRR]), along with virtual output queuing (Virtual Output Queuing [VOQ]), eliminate head-of-line blocking (HOL) and maintain packet sequence integrity under all conditions.
- Non-service-affecting online insertion and removal (OIR) of components (including switch fabric cards) and front accessibility reduce downtime and simplify maintenance.
- Cisco Nonstop Forwarding (NSF) and Cisco Stateful Switchover (SSO) eliminate single points of failure, help maintain system performance, and prevent service interruption; packet forwarding remains uninterrupted before, during, and after a route-processor switchover.
- Performance Route Processor-3 (PRP-3)—PRP-3 is the premium route processor for the Cisco XR 12000 Series Router. This latest generation of Performance Route Processors (PRPs) vastly expands the processing power for control plane and management plane applications, providing up to 300% improvement over PRP-2 performance for such applications. The premium PRP-3 route processor greatly extends the lifetime of the Cisco XR 12000 Series platform.

Specifications

Feature	Cisco XR 12000/ 12000 16-slot Chassis	Cisco XR 12000/ 12000 Series 10-Slot Chassis	Cisco XR 12000/ 12000 Series 6-Slot Chassis	Cisco XR 12000/ 12000 Series 4-Slot Chassis
Slot Capacity	16 slots	10 slots	6 slots	4 slots
Aggregate Switching Capacity	12016: 80 Gbps; 12416: 320 Gbps; 12816: 1280 Gbps	12010: 50 Gbps; 12410: 200 Gbps; 12810: 800 Gbps	12006: 30 Gbps; 12406: 120 Gbps	12404: 80 Gbps
Full-Duplex Throughput Per	12016: 2.5 Gbps/slot 12416: 10 Gbps/slot 12816: 40 Gbps/slot	12010: 2.5 Gbps/slot 12410: 10 Gbps/slot 12810: 40 Gbps/slot	12006: 2.5 Gbps/slot 12406: 10 Gbps/slot	12404: 10 Gbps/slot
Dimensions (H x W x D)	71.5 x 17.25 x 22.0 in (181.6 x 184.2[1] x 55.9 cm); 72.5 x 18.75 x 24.0 in. [2]; (43.8 x 47.6 x 61.0 cm)[3]	37.5 x 19 x 22.0 in. (95.25 x 48.26 x 55.9 cm); 24.0 in. (61.0 cm)	18.5 in. (47.0 cm) chassis width; 17.3 in. (43.9 cm); 18.9 in. (48.0 cm); chassis depth 28.0 in. (71.1 cm)	8.75 in. (22.23 cm) chassis width 17.38 in. (44.15 cm) 18.9 in. (48.01 cm) chassis depth 27.5 in. (69.85 cm)
Weight	140 lb. (64 kg)[4]; 390 lb. (177 kg)[5]	125 lb. (57 kg)[4]; 275 lb. (125 kg)[5]	18.5 in. (47.0 cm); chassis width: 17.3 in (43.9 cm) 18.9 in. (48.0 cm) chassis depth: 28.0 in. (71.1 cm)	8.75 in. (22.23 cm); chassis width: 17.38 in (44.15 cm) 18.9 in. (48.01 cm) chassis depth: 27.5 in. (69.85 cm)
Chassis Per Rack	One	Two	Four	Eight
Software Components (Per Base System)	Cisco IOS XR or Cisco IOS Software Operating System; Cisco Express Forwarding for distributed packet forwarding			
Compatibility	12800—Line cards that support 2.5-, 5-, 10-, or 20-Gbps capability; 12400—Line cards that support 2.5-, 5- or 10-Gbps capability; 12000—Line cards that support 2.5-Gbps capability			
Protocols	IPv4/v6, MPLS, BGPv4/v6, IS-IS, OSPFv2.0, RIPv2, IGMP, DVMRP, and PIM DX/SX			
Connectivity	Packet over SONET/SDH (POS), Ethernet, ATM, copper (DS-3/E3), Channelized (CT3, ChOC-3/CHSTM1, ChOC-12/CHSTM4, ChOC-48/CHSTM16); see Cisco IOS XR Software release notes for specific connectivity support on the Cisco XR 12000 Series			

1. With AC input power shelf or DC input power shelf, front covers installed
2. Including chassis rack-mount flanges
3. Including cable-management system and front cover
4. Chassis only, including power shelf for 16-slot chassis
5. Chassis fully configured, using all card slots, AC or DC power shelf for 16-slot chassis, & AC or DC input power supplies

Selected Part Numbers and Ordering Information

Cisco XR 12000 16-Slot Systems	
XR-12416/320-AC	Cisco XR 12000 16-slot chassis w/ 3 AC power supplies, 320-Gbps fabric (2 CSC & 3 SFC cards), 2
XR-12416/320-AC4	Cisco XR 12000 16-slot chassis w/ 4 AC power supplies, 320-Gbps fabric (2 CSC & 3 SFC cards), 2
XR-12416/320-DC	Cisco XR 12000 16-slot chassis w/ 4 DC power supplies, 320-Gbps fabric (2 CSC & 3 SFC cards), 2
Cisco 12000 16-Slot Systems	
GSR16/80-AC-8R	Cisco 12000 16-slot chassis w/ 3 AC power supplies, 80-Gbps fabric (2 CSC & 3 SFC cards), 2 blowers, 2
GSR16/320-AC	Cisco 12000 16-slot chassis w/ 3 AC power supplies, 320-Gbps fabric (2 CSC & 3 SFC cards), 2 blowers, 2
12816/1280-AC3	Cisco 12000 16-slot chassis w/ 3 AC power supplies, 1280-Gbps fabric (2 CSC & 3 SFC cards), 2 blowers, 2 alarms, and 1 PRP-1
GSR16/80-AC4-8R	Cisco 12000 16-slot chassis w/ 4 AC power supplies, 80-Gbps fabric (2 CSC & 3 SFC cards), 2 blowers, 2
GSR16/320-AC4	Cisco 12000 16-slot chassis w/ 4 AC power supplies, 320-Gbps fabric (2 CSC & 3 SFC cards), 2 blowers, 2
12816/1280-AC4	Cisco 12000 16-slot chassis w/ 4 AC power supplies, 1280-Gbps fabric (2 CSC & 3 SFC cards), 2 blowers, 2 alarms, & 1 PRP-1

GSR16/80-DC-8R	Cisco 12000 16-slot chassis w/ 4 DC power supplies, 80-Gbps fabric (2 CSC & 3 SFC cards), 2 blowers, 2
GSR16/320-DC	Cisco 12000 16-slot chassis w/ 4 DC power supplies, 320-Gbps fabric (2 CSC & 3 SFC cards), 2 blowers, 2
12816/1280-DC	Cisco 12000 16-slot chassis w/ 4 DC power supplies, 1280-Gbps fabric (2 CSC & 3 SFC cards), 2 blowers, 2 alarms, & 1 PRP-1
Cisco XR 12000 10-Slot Systems	
XR-12410/200-AC	Cisco XR 12000 10-slot chassis w/ 2 AC power supplies, 200-Gbps fabric (2 CSC & 5 SFC cards), 1
XR-12410/200-DC	Cisco XR 12000 10-slot chassis w/ 2 DC power supplies, 200-Gbps fabric (2 CSC & 5 SFC cards), 1
Cisco 12000 10-Slot Systems	
12010-AC	Cisco 12000 10-slot chassis w/ 2 AC power supplies, 50-Gbps fabric (2 CSC & 5 SFC cards), 1 blower, 2
12010-DC	Cisco 12000 10-slot chassis w/ 2 DC power supplies, 50-Gbps fabric (2 CSC & 5 SFC cards), 1 blower, 2
GSR10/200-AC	Cisco 12000 10-slot chassis w/ 2 AC power supplies, 200-Gbps fabric (2 CSC & 5 SFC cards), 1 blower, 2
GSR10/200-DC	Cisco 12000 10-slot chassis w/ 2 DC power supplies, 200-Gbps fabric (2 CSC & 5 SFC cards), 1 blower, 2
12810/800-AC	Cisco 12000 10-slot chassis w/ 2 AC power supplies, 800-Gbps fabric (2 CSC & 5 SFC cards), 1 blower, 2
12810/800-DC	Cisco 12000 10-slot chassis w/ 2 DC power supplies, 800-Gbps fabric (2 CSC & 5 SFC cards), 1 blower, 2
Cisco XR 12000 6-Slot Systems	
XR-12406/120-AC	Cisco XR 12000 6-slot chassis w/ 1 AC power supply, 120-Gbps fabric (1 CSC & 3 SFC cards), 1 blower, 2
XR-12406/120-DC	Cisco XR 12000 6-slot chassis w/ 1 DC power supply, 120-Gbps fabric (1 CSC & 3 SFC cards), 1 blower, 2
Cisco 12000 6-Slot Systems	
12006-AC	Cisco 12000 6-slot chassis w/ 2 AC power supplies, 30-Gbps fabric (2 CSC & 3 SFC cards), 1 blower, 2
12006-DC	Cisco 12000 6-slot chassis w/ 2 DC power supplies, 30-Gbps fabric (2 CSC & 3 SFC cards), 1 blower, 2
GSR6/120-AC	Cisco 12000 6-slot chassis w/ 1 AC power supply, 120-Gbps fabric (1 CSC & 3 SFC cards), 1 blower, 2
GSR6/120-DC	Cisco 12000 6-slot chassis w/ 1 DC power supply, 120-Gbps fabric (1 CSC & 3 SFC cards), 1 blower, 2
Cisco XR 12000 4-Slot Systems	
XR-12404/80-AC	Cisco XR 12000 4-slot chassis w/ 2 AC power supply, 80-Gbps fabric (consolidated switch fabric, clock scheduler, & alarm card), 1 blower, & 1 PRP-2
XR-12404/80-DC	Cisco XR 12000 4-slot chassis w/ 2 DC power supply, 80-Gbps fabric (consolidated switch fabric, clock scheduler, & alarm card), 1 blower, & 1 PRP-2
Cisco 12000 4-Slot Systems	
GSR4/80-AC	Cisco 12000 4-slot chassis w/ 2 AC power supply, 80-Gbps fabric (consolidated switch fabric, clock scheduler, & alarm card), 1 blower, & 1 PRP-1
GSR4/80-DC	Cisco 12000 4-slot chassis w/ 2 DC power supply, 80-Gbps fabric (consolidated switch fabric, clock scheduler, & alarm card), 1 blower, & 1 PRP-1

For More Information

http://www.cisco.com/go/12000

Cisco ASR 9000 Series Aggregation Services Routers

The Cisco ASR 9000 Series represents an exciting new paradigm in the world of Carrier Ethernet transport with exceptional scalability, carrier-class reliability, environmentally conscious design, incredible flexibility, and an enticing new price-to-performance benchmark.

The Cisco ASR 9000 Series is available in two form factors: the Cisco ASR 9010 Router and the Cisco ASR 9006 Router. Cisco ASR 9000 Series Routers are designed to provide true carrier-class reliability using the Cisco IOS XR operating system, comprehensive system redundancy, and a full complement of network resiliency schemes.

The Cisco ASR 9000 Series also offers service and application-level intelligence focused on optimized video delivery and mobile aggregation. Finally, the Cisco ASR 9000 Series is designed to simplify and enhance the operational and deployment aspects of service-delivery networks.

Key Features and Benefits

- Cisco IOS XR modular operating system—The Cisco ASR 9000 Series leverages the Cisco IOS XR operating system made famous by the highly successful Cisco CRS Carrier Routing System platform in core deployments. The Cisco IOS XR operating system is purpose-built for distributed systems such as the Cisco ASR 9000 Series, and uses a microkernel architecture to achieve true modularity. This modularity provides the path to nonstop operations during software image upgrades or module changes, without affecting normal platform operations.
- Fully distributed system—The Cisco ASR 9000 Series operates in a fully distributed fashion; that is, all packet-forwarding decisions and actions take place on the individual line cards. These high-density Ethernet line cards are equipped with a specialized network processor that provides a flexible programming infrastructure with high-density hierarchical quality-of-service (H-QoS) services, security, and integrated synchronous Ethernet. The distributed nature of the Cisco ASR 9000 Series improves resiliency by adding a new dimension in scale for features such as bidirectional forwarding detection (BFD) and Ethernet operations, administration, and maintenance (E-OAM).
- Operationally efficient and redundant hardware—The Cisco ASR 9000 Series provides an infrastructure where all common components, route switch processors (RSPs), switching fabric, fans, and power supplies, are completely redundant. In addition, the platform is designed such that power is used on an as-needed basis depending on system requirements. Power has been modularized for a true pay-as-you-grow approach, reducing capital expenditures (CapEx) and again providing an operationally efficient deployment. The Cisco ASR 9000 also provides a space-optimized small-platform option that uses the Series' common components and retains a central office deployment-ready capability using a patent-pending side-to-back airflow design.
- Environmentally conscious design—In today's world of increasing awareness of the human impact on the environment and the resultant fiscal implications, Cisco ASR 9000 Series Routers bring a fresh new "conscious" approach to product development. From optimal thermal design to the architecture of the power infrastructure, from the placement of line card components to the pitch of each slot, every design aspect had one goal in mind: reduced environmental impact through lowered power consumption and decreased cooling requirements. Even the product packaging process was evaluated to minimize the use of packaging material and thereby reduce waste at customer locations. The Cisco ASR 9000 Series is an example of the continued Cisco commitment to efficient and future-friendly product design.

Specifications

Model	Cisco ASR 9010	Cisco ASR 9006
Dimensions	Height—36.75 in. (933.5 mm) Width—17.5 in. (444.5 mm) Depth: · With doors—31.45 in. (798.8 mm) · Without doors—28.65 in (727.2 mm) Weight: · 191 lbs (86.8 kg) (Unloaded) · 375 lb (170.5 kg) (maximum)	Height—17.5 in. (444.5 mm) Width—17.5 in. (444.5 mm) Depth: · With doors—31.45 in. (798.8 mm) · Without doors—28.65 in (727.2 mm) Weight: · 110 lbs (50 kg) (Unloaded) · 230 lbs (106.8 kg) (Fully Loaded)
Slot Orientation	Vertical	Horizontal
Cisco ASR 9000 Series RSP	Dual redundant RSPs in 2 slots	Same as Cisco ASR 9010
Cisco ASR 9000 Series LCs	Eight line card slots	Four line card slots
"Commons" Components	Two RSPs Two fan trays Two PEMs (either DC or AC) One fan filter	Two RSPs Two fan trays One PEM (either DC or AC) One fan filter
Reliability and Availability	Fabric redundancy Fan redundancy Feed redundancy Power-supply redundancy RSP redundancy Software redundancy	Same as Cisco ASR 9010

Rack Mounting	Yes · 19-inch · 21 and 23 inch adapters available	Same as Cisco ASR 9010 Note: Minimum 17.75-in. opening between posts is needed for proper operation.
Airflow	Front-to-back	Side-to-back
Chassis Switching	Up to 6.4 Tbps	Up to 3.2 Tbps
Capacity		
Fabric	One per RSP · Active /Active non-blocking operation mode in dual RSP redundant configuration. · Fully redundant in dual RSP redundant configuration · Built-in service-intelligence and traffic-prioritization capability	Same as Cisco ASR 9010
Thermal	Two fan trays · Twelve high-efficiency fans per tray · Variable-speed fans for optimal thermal performance · No single point of failure	Two fan trays · Six high-efficiency fans per tray · Variable-speed fans for optimal thermal performance · No single point of failure
Power		
Modularity	· Up to 6 power modules (AC or DC) for future scalability Multiple power module types · 3-kW AC power module · 2.1 and 1.5-kW DC power modules Note: Mixing of AC and DC modules is not supported. DC modules can be mixed and matched.	· Up to 3 power modules (AC or DC) for future scalability Multiple power module types · Same as Cisco ASR 9010 Note: Mixing of AC and DC modules is not supported. DC modules can be mixed and matched.
Redundancy	· Module redundancy: 1:N-1:1 · Feed redundancy · PEM redundancy	· Module redundancy: 1:N-1:1 · Feed redundancy

Selected Part Numbers and Ordering Information

Cisco ASR 9000 Series Chassis	
ASR-9010-AC/ASR-9010-DC	Cisco ASR 9010 chassis
ASR-9006-AC/ASR-9010-DC	Cisco ASR 9006 chassis

For More Information

http://www.cisco.com/en/US/products/ps9853/index.html

Cisco ASR 1000 Series Aggregation Services Routers

The Cisco ASR 1000 Series Aggregation Services Routers include five versions: the Cisco ASR 1002-Fixed Router, the Cisco ASR 1002 Router, the Cisco ASR 1004 Router, the Cisco ASR 1006 Router, and the Cisco ASR1013 Router. All five models use the new, innovative, and powerful Cisco QuantumFlow Processor and are optimized for both service provider, managed services and enterprise deployments.

The Cisco ASR 1000 Series delivers multiple services embedded in the Cisco QuantumFlow Processor at wire speeds of up to 40 Gbps. The services supported on the Cisco Packet QuantumFlow Processor include security services (for example, encryption and firewall), Performance Routing, quality of service (QoS), Network-Based Application Recognition (NBAR), Cisco IOS Flexible Packet Matching (FPM), broadband aggregation, and Cisco Unified Border Element (also known as session border controller), among others.

With the separation of the control and data planes in the Cisco ASR 1000 Series Router architecture, software redundancy (on the Cisco ASR 1002-F, 1002, and 1004 models) and hardware redundancy (on the Cisco ASR 1006 and ASR1013 Router) are provided. Additionally, the modular Cisco IOS XE Software that is introduced with the Cisco ASR 1000 Series facilitates In Service Software Upgrade (ISSU). I/O connectivity is provided through shared port adapters (SPAs), which are housed in the SPA Interface Processor (SIP) card.

From a price-to-performance perspective, the Cisco ASR 1000 Series Router solution fits well between the Cisco 7200 and Cisco 7301 Series and the Cisco 7600 and Cisco Catalyst 6000 Series Switches, thus dramatically enhancing the Cisco midrange routing portfolio.

All the following Cisco ASR 1000 Series Aggregation Services Routers offer L3VPN, route reflector, WAN services aggregation, managed customer premises equipment (CPE), and Layer 2 Tunneling Protocol access concentrator (LAC) or Layer 2 Tunneling Protocol network server (LNS).

Ideal for Companies That Need These Features

Cisco ASR 1002-Fixed	· Support for one SPA · Support for one integrated 10-Gigabit SIP (ASR1000-SIP10) · Support for one integrated route processor (ASR1000-RP1) · Support for one integrated embedded services processor engine (ASR1000-ESP2.5) · Built-in four 1-Gigabit Ethernet ports · Support of Software Redundancy
Cisco ASR 1002	· Support for three SPAs · Support for one integrated 10-Gigabit Ethernet SIP (ASR1000-SIP10) · Support for one integrated route processor (Cisco ASR 1000 Series RP1) · Support for one embedded services processor (Cisco ASR 1000-ESP5 or ASR1000-ESP10) · Built-in four 1-Gigabit Ethernet ports · Support of Software Redundancy
Cisco ASR 1004	· Support for eight SPAs · Support for two SIP cards (ASR1000-SIP10), each with 4 SPA slots · Support for one route processor (ASR 1000-RP1 or ASR1000-RP2) · Support for one embedded services processor (ASR 1000-ESP10, ASR1000-ESP20, or ASR1000-ESP40) · Support of Software Redundancy
Cisco ASR 1006	· Support for twelve SPAs · Support for three SIP cards (ASR1000-SIP10 and/or ASR1000-SIP40), each with 4 SPA slots · Support for up to two route processors (ASR 1000-RP1 or ASR1000-RP2) · Support for up to three embedded services processors (ASR1000-ESP10, ASR1000-ESP20 or ASR1000-ESP40) · In-box hardware redundancy (dual ESP and dual route processor) - optional
Cisco ASR 1013	· Support for twenty-four SPAs · Support for six SIP cards (ASR1000-SIP10 and/or ASR1000-SIP40), each with 4 SPA slots · Support for up to two route processors (ASR1000-RP2) · Support for up to two embedded services processors (ASR1000-ES40) · In-box hardware redundancy (dual ESP and dual route processor) - optional

Key Features and Benefits

- Compact form factor—The Cisco ASR 1000 Series offers 2.5-Gigabit throughput in a compact 2-rack unit chassis with fixed components, up to 10-Gigabit Ethernet throughput in compact modular 2-rack unit (2RU) form factor, up to 40 Gigabit throughput in a modular 4-rack unit (4RU), on the modular 6-rack unit (6RU) and modular 13-rack unit (13 RU) form factors.
- Modularity—Cisco offers a choice of four chasses that support 1, 3, 8, 12 or 24 SPAs, a selection of embedded services processors (forwarding processors) providing up to 40-Gigabit throughput, and a growing range of LAN and WAN interfaces. SIPs, SPAs, route processors, and embedded services processors are all modular and fully upgradable as future generations are released (with the exception of SIP carrier card and route processor on the Cisco ASR 1002 and the SIP carrier card, route processor, and embedded services processor on the Cisco ASR 1002-Fixed chassis, which are integrated).
- Integrated services—Services can be enabled either at the time of ordering or after the router is already deployed. Encryption, Cisco IOS Software redundancy, firewall, Session Border Controller Functionality (also known as Cisco Unified Border Element [CUBE]), and Flexible Packet Inspection (FPI, including Network Based Application Recognition (NBAR) and Flexible Packet Matching (FPM)) can all be enabled by purchasing feature licenses with no need for hardware upgrades.
- High availability—Cisco offers in-box engine redundancy on the Cisco ASR 1006 and Cisco ASR 1013 and Cisco IOS Software redundancy on the Cisco ASR 1002-F, 1002 and 1004 models.
- Common SPAs—SPAs are shared with the Cisco Catalyst 6500 and Catalyst 7600 Series, simplifying sparing and protecting customer investment in interfaces.
- WebEx Node SPA – double-height SPA supported currently only on the ASR1002, ASR1004, ASR1006, and ASR1013 chassis maximizes bandwidth efficiency and user experience for WebEx users in the Enterprise.

Specifications

Feature	Cisco ASR1002-F	Cisco ASR1002	Cisco ASR1004	Cisco ASR1006	Cisco ASR 1013
Fixed Ports	4 built-in GE ports	4 built-in GE ports	0	0	0
Embedded Service Processor Slots	Integrated	1	1	2	2
Route Processor Slots	Integrated	1	1	2	2
SIP Card Slots	Integrated	Integrated	2	3	6
Shared Port Adapter Slots	1	3	8	12	24
Forwarding Rate	Up to 4 Mpps	Up to 8 Mpps	Up to 17 Mpps	Up to 25 Mpps	Up to 25 Mpps
System DRAM Memory	4 GB (default); 4 GB (max.)	4 GB (default); 4 GB (max.)	2 GB (default); 4 GB (max.)	2 GB (default); 4 GB (max.)	8 GB (default); 8 GB (max.)

Minimum Cisco IOS Release	IOS XE 2.4.0	IOS XE 2.1.0	IOS XE 2.1.0	IOS XE 2.1.0	IOS XE 3.1.0S
Redundant Power Supply	Yes, Dual AC or DC by default	Yes, Dual AC or DC by default	Yes, Dual AC or DC by default	Yes, Dual AC or DC by default	Yes, Dual AC or DC by default
Chassis Height	2 RU	2 RU	4 RU	6 RU	13 RU
Rack Mountable	Yes	Yes	Yes	Yes	Yes
Dimensions (H x W x D)	3.5 x 17.2 x 22 in.	3.5 x 17.2 x 22 in.	7.0 x 17.2 x 22 in.	10.5 x 17.2 x 22 in.	22.8 x 17.2 x 22 in
Airflow	Front-to-back	Front-to-back	Front-to-back	Front-to-back	Front-to-back

Selected Part Numbers and Ordering Information

ASR1002-F	Cisco ASR1002 System, fixed ESP, Crypto, 4 built-in GE, Dual P/S,4GB DRAM
ASR1002	Cisco ASR1002 chassis,4 built-in GE, Dual P/S,4GB DRAM
ASR1004	Cisco ASR1004 chassis, Dual P/S
ASR1006	Cisco ASR1006 chassis, Dual P/S
ASR1013	Cisco ASR1013 chassis, Dual P/S

Additional part numbers including Cisco ASR 1000 bundle part numbers can be found on the Price List or please contact your Cisco account representative.

For More Information

http://www.cisco.com/go/asr1000

Cisco 2000 Series Connected Grid Router

The Cisco Connected Grid portfolio of products and solutions are designed specifically for a Smart Grid network. These solutions include the Cisco 2010 Connected Grid Router (CGR 2010) optimized for use in power substations and meet substation compliance standards including IEEE 1613 and IEC 61850-3.

The CGR 2010 provides the substation operator with the benefits of improved security, manageability, and network reliability. The CGR 2010 uses Cisco IOS software which is the operating system powering millions of Cisco routers deployed worldwide. Cisco IOS software delivers the benefits of integrated security for NERC/CIP compliance, quality of service, and network management to ensure integrity and priority of operational data communications.

Ideal for Utilities That Need These Features

Cisco 2010

- Rugged industrial design and substation compliance with IEC-61850-3 and IEEE 1613 for utility substation environments
- Modular architecture facilitates upgrades without fork lift upgrades
- Integrated security to help utilities address compliance with critical infrastructure protection mandates
- High availability design for maximum network up time and redundancy
- Network and device management tools for deployments, upgrades, and remote monitoring
- Advanced quality of service (QoS) capabilities to support mission-critical substation communications such as SCADA (Supervisory Control and Data Acquisition
- Comprehensive network security features based on open standards

Key Features and Benefits

- Rugged design for substation compliance—In addition to IEC 61850-3 and IEEE 1613 compliance, convection cooled with no moving parts or fans for maximum reliability and reduced network outages.
- Services integration—The CGR 2010 offers integrated services including advanced data routing, firewall, traffic shaping, quality of service, and network segmentation
- Service on demand—A single Cisco IOS Universal Software image is installed on each CGR 2010. The Universal image contains all of the Cisco IOS technology sets which can be activated with a software license. This allows your business to quickly deploy advanced features without downloading a new IOS image. Additionally, larger default memory is included to support the new capabilities.
- Network agility—Modular interfaces and power supplies offer increased bandwidth, a diversity of connection options, and network resiliency.
- Network management—CiscoWorks LMS and Cisco Configuration Profession (CCP) network management tools to help utilities provision and diagnose network issues.

Specifications

Feature	Cisco CGR 2010
Grid Router WAN Interface Card (GRWIC) Slots	4

Gigabit Ethernet density	2 (dual-purpose ports: 100/1000 fiber SFP and/or 10/100/1000 Gigabit copper)
T1/E1 WAN Module	Yes – 1 or 2 port T1/E1 CSU/DSU module
Serial RS-232 Module	Yes – Up to 8 ports on a single module. 32 ports maximum with all 4 slots populated
Flash Memory (External)	256 MB (default) – second compact flash slot can be populated with additional flash memory
DRAM Memory	1024 MB (default)
Power Supply	External high AC/DC and low DC power supply options available for redundant power supply support
Dimensions (H x W x D)	3.5 x 17.25 x 15 in. (88.9 x 438.2 x 381 mm)

Selected Part Numbers and Ordering Information

Cisco 2010 Connected Grid Router	
CGR-2010/K9	Cisco CGR2010 w/2GE, 4 GRWIC slots, 256MB CF, 1GB DRAM, IPB
CGR-2010-SEC/K9	Cisco CGR2010 security bundle w/SEC license PAK

For More Information

http://www.cisco.com/go/cgr2000

Cisco SRP 500 Series Services Ready Platforms

The Cisco SRP 500 Series Services Ready Platforms are flexible, cost-effective fixed-configuration customer premises equipment (CPE) with embedded intelligence to enable service providers to create, provision, and deploy premium revenue-generating services--a variety of high-quality IP voice, data, security, wireless, and application services--to small businesses on an as-needed basis. These platforms will help enable service providers to deliver differentiated, converged service offers that increase bandwidth usage and average revenue per user while reducing customer churn.

Key Features and Benefits

- Embedded intelligence to support a variety of high-quality voice, data, security, wireless, and application services.
- Integrated voice ports powered by an industry-leading voice Session Initiation Protocol (SIP) stack to deliver clear, high-quality voice service.
- Integrated stateful packet inspection (SPI) firewall and high-speed IP Security (IPsec) VPN capabilities with support for Triple Data Encryption Standard (3DES) to help keep small business data safe.
- 4-port managed Ethernet switch to connect devices in the office. One port can be designated as the network edge, while VLAN support allows for highly secure segmentation of network resources.
- Integrated 802.11n wireless access point to enable employees to connect to the network while away from their desks.
- Third-generation (3G) wireless data readiness with built-in USB modem drivers.
- Interoperability with industry-leading DSL access multiplexers (DSLAMs), soft switches, and voice gateways to enable scalable, end-to-end multiservice network deployments.
- Support for industry-standard TR-069 and XML-based provisioning for zero-touch deployments.
- Easy integration with other Cisco Small Business Series products to enable adaptability as customer needs change.

Specifications

Feature	Cisco SRP 521W	Cisco SRP 526W	Cisco SRP 527W
WAN	10/100 Mbps Fast Ethernet	Asymmetric DSL (ADSL) 2+ Annex B	ADSL 2+ Annex A
Backup WAN	Wireless data using supported 3G USB modem	Wireless data using supported 3G USB modem	Wireless data using supported 3G USB modem
LAN	4 ports 10/100 Mbps Fast Ethernet	4 ports 10/100 Mbps Fast Ethernet	4 ports 10/100 Mbps Fast Ethernet
Voice Ports	2 FXS, 1 FXO (relay	2 FXS, 1 FXO (relay	2 FXS, 1 FXO (relay
USB 2.0 Ports	1	1	1

Selected Part Numbers and Ordering Information

Ethernet	
SRP521W-K9-G1	Cisco SRP 521W, FE WAN, 802.11n FCC, 2FXS/1FXO, US power
SRP521W-K9-G5	Cisco SRP 521W, FE WAN, 802.11n ETSI, 2FXS/1FXO, EU/UK power
SRP521W-K9-G4	Cisco SRP 521W, FE WAN, 802.11n non-FCC, 2FXS/1FXO, ANZ power
ADSL2/2+	
SRP526W-K9-G5	Cisco SRP 526W, ADSL2+ Annex B, 802.11n ETSI, 2FXS/1FXO, EU/UK power
SRP527W-K9-G1	Cisco SRP 527W, ADSL2+ Annex A, 802.11n FCC, 2FXS/1FXO, US power
SRP527W-K9-G4	Cisco SRP 527W, ADSL2+ Annex A, 802.11n non-FCC, 2FXS/1FXO, ANZ power
SRP527W-K9-G5	Cisco SRP 527W, ADSL2+ Annex A, 802.11n ETSI, 2FXS/1FXO, EU/UK power

For More Information

http://www.cisco.com/go/srp500

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