Cisco 2900 Series Router Datasheet

CONTENT

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OVERVIEW

Cisco 2900 Series builds on the best-in-class offering of the existing Cisco 2800 Series Integrated Services Routers by offering four platforms (Figure 1): the 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 industries widest range of wired and wireless connectivity options such as T1/E1, T3/E3, xDSL, copper and fiber GE.

APPEARANCE

Figure 1. Cisco 2900 Integrated Services Router

KEY FEATURES AND BENEFITS

Service integration

• The Cisco 2900 Series ISRs offer increased levels of services integration with voice, video, security, wireless, mobility, and data services, enabling greater efficiencies and cost savings.

Services on demand

• A single Cisco IOS® Software Universal image is installed on each ISR G2. The Universal image containsall 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.

• The Cisco Services Ready Engine (SRE) enables a new operational model which allows you to reduce capital expenditures (CapEx) and deploy a variety of application services as needed on a single integrated compute services module.

High performance with integrated services

• The Cisco 2900 Series enables deployment in high speed WAN environments with concurrent services enabled up to 75 Mbps.

• A multigigabit fabric (MGF) enables high-bandwidth module-to-module communication without compromising routing performance.

Network agility

• Designed to address customer business requirements, the Cisco 2900 Series modular architecture offers increased capacity and performance as your network needs grow.

• Modular interfaces offer increased bandwidth, a diversity of connection options, and network resiliency.

Energy efficiency

• The Cisco 2900 Series architecture provides energy-saving features that include the following:

° The Cisco 2900 Series offers intelligent power management and allows the customer to control power to the modules based on the time of day. Cisco EnergyWise technology will be supported in the future.

° Services integration and modularity on a single platform performing multiple functions, optimizes raw materials consumption and energy usage.

° Platform flexibility and ongoing development of both hardware and software capabilities lead to a longer product lifecycle, lowering all aspects of the total cost of ownership, including materials and energy use.

° High efficiency power supplies are provided with each platform.

Investment protection
• The Cisco 2900 Series maximizes investment protection:

° Reuse of a broad array of existing modules supported on the original Integrated Services Routers provides a lower cost of ownership.

° A rich set of Cisco IOS Software features carried forward from the original Integrated Services Routers and delivered in a single universal image.

° Flexibility to adapt as your business needs evolve.

MODULARITY FEATURES AND BENEFITS

ISR Modules	Benefits
Cisco Service Module	• Each service module slot offers high-data-throughput capability: Up to 4 Gbps aggregate toward the route processor. Up to 2 Gbps aggregate to other module slots over MGF. • Service module (SM) slots are highly flexible with support for double-wide service modules (SM-Ds), which are Service Modules that require two SM slots. SM-Ds in the Cisco 2921 and 2951 provide flexibility for higher-density modules.

	• A service module slot replaces the network module and the extension module for voice/fax (EVM) slots and is offered on Cisco 2911, 2921, and 2951 ISRs. • An adapter module enables backward compatibility with existing network modules, enhanced network modules (NMEs), and EVMs. • Service module slots provide twice the power capabilities relative to the network-module slots, allowing for flexibility for higher-scale and better-performance modules. • Power to service module slots can be managed by extensions similar to the Cisco EnergyWise framework, so your organization can reduce energy consumption in your network infrastructure. Full EnergyWise support will be available in future software releases.
Cisco Enhanced High-Speed WAN Interface Card (EHWIC)	• The EHWIC slot provides enhancements to the prior generation's high-speed WAN interface card (HWIC) slots while provide maximum investment protection by natively supporting HWICs, WAN interface cards (WICs), voice interface cards (VICs), and voice/WAN interface cards (VWICs). • Four integrated EHWIC slots on the Cisco 2901, 2911, 2921, and 2951 allow for more flexible configurations. • Each HWIC slot offers high-data-throughput capability: Up to 1.6 Gbps aggregate toward the route processor. Up to 2 Gbps aggregate to other module slots over the MGF. • Flexibility to support double-wide modules is enabled by combining two EHWIC slots. Up to 2 doublewide HWIC (HWIC-D) modules are supported.
Cisco Internal Services Module (ISM)	• A single ISM slot provides flexibility to integrate intelligent service modules on an internal slot within the chassis

	• Each ISM slot offers high-data-throughput capability: Up to 4 Gbps aggregate toward the route processor. Up to 2 Gbps aggregate to other module slots over the MGF. • The ISM replaces the AIM slot; existing AIM modules are not supported in the ISM slot. • Power to ISM slots can be managed by extensions similar to the Cisco EnergyWise framework, so your organization can reduce energy consumption in your network infrastructure. Full EnergyWise support will be available in future software releases.
Cisco High-Density Packet Voice Digital Signal Processor (DSP) Module (PVDM3) Slots on Motherboard	• PVDM3 slots natively support PVDM3 modules, providing support for richer density for rich-media voice and video. • Each PVDM3 slot connects back to the system architecture through a 2 Gbps aggregate link through the MGF. • Investment protection for PVDM2 modules is supported through an adapter module. • Power to the PVDM slots can be managed by extensions similar to the Cisco EnergyWise framework, so your organization can reduce energy consumption in your network infrastructure. Full EnergyWise support will be available in future software releases.
Compact Flash Slots	• Two external Compact Flash slots are available on the Cisco 2900 Series Integrated Services Routers. Each slot can support high-speed storage densities upgradeable to 4 GB in density.
USB 2.0 Ports	• Two high-speed USB 2.0 ports are supported. The USB ports enable secure token capabilities and storage.

CISCO 2900 INTEGRATED SERVICES ROUTER PRODUCT SPECIFICATIONS

Model	Cisco 2901	Cisco 2911	Cisco 2921	Cisco 2951
Services and Slot Density				
Embedded Hardware-Based Cryptography and Acceleration	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 Power with DC-PoE Power Supply (Platform Only) (Watts)	-	140	-	-
Maximum End-Point PoE Power Available from AC PoE Power Supply (Watts)	130	200	280	370
Maximum End-Point PoE Power Available from DC PoE Power Supply (Watts)	-	160	-	-
Maximum End-Point PoE Power Capacity with PoE Boost (Watts)	N/A	750	750	750
DC Input Voltage	N/A	24 to 60 Vdc, autoranging positive or negative	24 to 60 Vdc, autoranging positive or negative	24 to 60 Vdc, autoranging positive or negative
DC Input Current	N/A	(MAX) 8A (24V) 3.5A (60V)	(MAX) 12A (24V) 5A (60V)	(MAX) 12A (24V) 5A (60V)
Physical Specifications				
Dimensions (H x W x D)	1.75 x 17.25 x 17.3 in. (44.5 x	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)

	438.2 x 439.4 mm)			
Rack Height	1RU (rack unit)	2RU	2RU	2RU
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 (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	Back and Side to Front	Back and Side to Front
Optional Airflow Kit	N/A	Front to back	N/A	N/A
Environmental Specifications				
Operating Conditions				
Temperature: 5,906 feet (1,800m) Maximum Altitude	32 to 104ºF (0 to 40ºC)	32 to 104ºF (0 to 40ºC)	32 to 104ºF (0 to 40ºC)	32 to 104ºF (0 to 40ºC)
Temperature: 9,843 feet (3,000m) Maximum Altitude	32 to 77ºF (0 to 25ºC)	32 to 104ºF (0 to 40ºC)	32 to 104ºF (0 to 40ºC)	32 to 104ºF (0 to 40ºC)
Temperature: 13,123 feet (4,000m) Maximum Altitude	N/A	32 to 86ºF (0 to 30ºC)	32 to 86ºF (0 to 30ºC)	32 to 86ºF (0 to 30ºC)

Temperature: Short-Term (per NEBS) 5906 feet (1,800m) Maximum Altitude	N/A	23°F to 122°F (-5 to 50°C)	N/A	23°F to 122°F (-5 to 50°C)
Altitude	10,000 ft (3,000m)	13,000 ft (4,000m)	10,000 ft (3,000m)	13,000 ft (4,000m)
Relative Humidity	10 to 85%	5 to 85%	10 to 85%	5 to 85%
Short-Term (per NEBS) Humidity	N/A	5% to 90%, but not to exceed 0.024 kg water/kg of dry air	N/A	N/A
Acoustic: Sound Pressure (Typical/Maximum)	41/53 dBA	51.8/62.9 dBA	54.4/67.4 dBA	54.4/67.4 dBA
Acoustic: Sound Power (Typical/Maximum)	49/61 dBA	58.5/70.3 dBA	62.6/74.5 dBA	62.6/74.5 dBA
Non-Operating Conditions				
Temperature	-40 to 158ºF (-40 to 70ºC)	-40 to 176ºF (-40 to 80ºC)	-40 to 158ºF (-40 to 70ºC)	-40 to 158ºF (-40 to 70ºC)
Relative Humidity	5 to 95%	5 to 95%	5 to 95%	5 to 95%
Altitude	15,000 ft (4,570m)	15,000 ft (4,570m)	15,000 ft (4,570m)	15,000 ft (4,570m)
Regulatory Compliance				
Safety	UL 60950-1 CAN/CSA C22.2 No. 60950-1 EN 60950-1 AS/NZS 60950-1	UL 60950-1 CAN/CSA C22.2 No. 60950-1 EN 60950-1 AS/NZS 60950-1 IEC 60950-1	UL 60950-1 CAN/CSA C22.2 No. 60950-1 EN 60950-1 AS/NZS 60950-1 IEC 60950-1	UL 60950-1 CAN/CSA C22.2 No. 60950-1 EN 60950-1 AS/NZS 60950-1 IEC 60950-1

	IEC 60950-1			
EMC	47 CFR, Part 15 ICES-003 Class A EN55022 Class A CISPR22 Class A AS/NZS 3548 Class A VCCI V-3 CNS 13438 EN 300-386 EN 61000 (Immunity) EN 55024, CISPR 24 EN50082-1	47 CFR, Part 15 ICES-003 Class A EN55022 Class A CISPR22 Class A AS/NZS 3548 Class A VCCI V-3 CNS 13438 EN 300-386 EN 61000 (Immunity) EN 55024, CISPR 24 EN50082-1	47 CFR, Part 15 ICES-003 Class A EN55022 Class A CISPR22 Class A AS/NZS 3548 Class A VCCI V-3 CNS 13438 EN 300-386 EN 61000 (Immunity) EN 55024, CISPR 24 EN50082-1	47 CFR, Part 15 ICES-003 Class A EN55022 Class A CISPR22 Class A AS/NZS 3548 Class A VCCI V-3 CNS 13438 EN 300-386 EN 61000 (Immunity) EN 55024, CISPR 24 EN50082-1
Telecom	TIA/EIA/IS-968 CS-03 ANSI T1.101 ITU-T G.823, G.824 IEEE 802.3 RTTE Directive	TIA/EIA/IS-968 CS-03 ANSI T1.101 ITU-T G.823, G.824 IEEE 802.3 RTTE Directive	TIA/EIA/IS-968 CS-03 ANSI T1.101 ITU-T G.823, G.824 IEEE 802.3 RTTE Directive	TIA/EIA/IS-968 CS-03 ANSI T1.101 ITU-T G.823, G.824 IEEE 802.3 RTTE Directive

CISCO 2900 SERIES BASIC ORDERING INFORMATION

Product Name	Product Description
CISCO2901/K9	Cisco 2901 with 2 onboard GE, 4 EHWIC slots, 2 DSP slots, 1 ISM slot, 256MB CF default, 512MB DRAM default, IP Base
CISCO2911/K9	Cisco 2911 with 3 onboard GE, 4 EHWIC slots, 2 DSP slots, 1 ISM slot, 256MB CF default, 512MB DRAM default, IP Base
CISCO2921/K9	Cisco 2921 with 3 onboard GE, 4 EHWIC slots, 3 DSP slots, 1 ISM slot, 256MB CF default, 512MB DRAM default, IP Base
CISCO2951/K9	Cisco 2951 with 3 onboard GE, 4 EHWIC slots, 3 DSP slots, 1 ISM slot, 256MB CF default, 512MB DRAM default, IP Base
L-SL-29-DATA-K9=	Data License for Cisco 2901-2951
L-SL-29-UC-K9=	Unified Communications License for Cisco 2901-2951
L-SL-29-SEC-K9=	Security License for Cisco 2901-2951

SOURCES

https://www.cisco.com/c/en/us/products/collateral/routers/2900-series-integrated-services-routers-isr/data_sheet_c78_553896.html