



# Cisco 3900 Series Router Datasheet



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## OVERVIEW

The Cisco 3900 Series builds on the best-in-class offering of the existing Cisco 3800 Series Integrated Services Routers by now offering four platforms (Figure 1): Cisco 3945E, Cisco 3925E, Cisco 3945, and Cisco 3925 Integrated Services Routers.

The Cisco 3900 Series offers embedded hardware encryption acceleration, voice- and video-capable 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.

The Cisco 3900 Series offers superior performance and flexibility for flexible network deployments from small business offices to large enterprise offices - all while providing industry-leading investment protection.

## APPEARANCE

**Figure 1.** Cisco 3900 Integrated Services Router



## KEY FEATURES AND BENEFITS

### Services integration

- The Cisco 3900 Series routers offer increased levels of services integration with voice, video, security, mobility, and data services.
- The Cisco 3900 Series provides the highest performance and slot densities among the routers in the Cisco ISR G2 portfolio, enabling you to maximize services integration and reducing overall capital expenditures (CapEx) and operating expenses (OpEx).

### Services on demand

- A single Cisco IOS Software Universal image is installed on each Cisco ISR G2. The Universal image contains all of the Cisco IOS Software technology sets, which you can activate with a software license. With the Universal image your business can quickly deploy advanced features without downloading a new Cisco IOS Software image. Additionally, larger default memory is included to support the new capabilities.
- The Cisco SRE enables a new operational model that allows you to reduce CapEx and deploy a variety of application services as needed on a single integrated compute services module.

### High performance with integrated services

- The Cisco 3900 Series enables deployment in high-speed WAN environments with concurrent services enabled up to 350 Mbps.
- A multigigabit fabric (MGF) enables high-bandwidth module-to-module communication without compromising router performance.

### Network agility

- Designed to address customer business requirements, the Cisco 3900 Series with the modular architecture offers increased capacity and performance as your network needs grow.
- The Cisco Services Performance Engine (SPE) modular motherboard enables upgrades to processing capability in the future.
- Dual integrated power supplies provide power redundancy; you can also configure them to provide additional Cisco ePoE power to endpoints.
- Modular interfaces offer increased bandwidth, a diversity of connection options, and network resiliency.

## **Energy efficiency**

- The Cisco 3900 Series architecture provides energy-savings features that include the following:
  - The Cisco 3900 Series offers intelligent power management and allows you 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 allows you to perform multiple functions, optimizing consumption of raw materials 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 TCO - including materials and energy use.
  - High-efficiency power supplies and scalable power consumption are based on your network needs.

## **Investment protection**

- The Cisco 3900 Series maximizes investment protection by supporting:
  - Reuse of a broad array of existing modules supported on the original Cisco Integrated Services Routers to provide a lower TCO.
  - A rich set of Cisco IOS Software features carried forward from the original Cisco Integrated Services Routers and delivered in a single universal image.
- The Cisco 3900 Series offers extensive growth possibilities as your network expands:
  - The SPE modular motherboard enables flexibility for future upgrades.
  - The highest scale for module density provides flexibility to add services as your business needs expand.
  - A 1-Gb default memory provides headroom to minimize field upgrades.

## MODULARITY FEATURES AND BENEFITS

Architectural Features	Benefits
<b>Cisco Services Performance Engine (SPE)</b>	<ul style="list-style-type: none"> <li>• The Cisco 3900 Series offers field-replaceable SPEs.</li> <li>• These SPEs allow you to protect your initial investment in the Cisco 3900 platform for a longer time period and scale router performance as your network and branch-office needs grow.</li> </ul>
<b>Cisco Services Module</b>	<ul style="list-style-type: none"> <li>• A service-module slot replaces the network module and the extension module for voice and fax (EVM) slots and is offered on Cisco 3900 Integrated Services Routers.</li> <li>• Each service-module slot offers high data-throughput capability: <ul style="list-style-type: none"> <li>Up to 4-Gbps aggregate toward the router processor.</li> <li>Up to 2-Gbps aggregate to other module slots over the MGF.</li> </ul> </li> <li>• Service-module slots are highly flexible, with support for doublewide service modules, which are service modules that require two service-module slots. Doublewide service modules provide flexibility for higher-density modules.</li> <li>• Service-module slots provide twice the power capabilities relative to the network-module slots, allowing flexibility for higher-scale and better-performance modules.</li> <li>• An adapter module enables backward compatibility with existing network modules, enhanced network modules (NMEs), and EVMs.</li> <li>• You can manage power to service-module slots by extensions similar to the Cisco EnergyWise framework, so your organization can reduce energy consumption in your network infrastructure. Full Cisco EnergyWise support will be available in future software releases.</li> </ul>
<b>Cisco Enhanced High Speed WAN Interface Card (EHWIC)</b>	<ul style="list-style-type: none"> <li>• The EHWIC slot replaces the high-speed WAN interface card (HWIC) slot and can natively support HWICs, WAN interface cards (WICs), voice interface cards (VICs), and voice/WAN interface cards (VWICs).</li> </ul>

	<ul style="list-style-type: none"> <li>• Three integrated EHWIC slots on the Cisco 3945E and Cisco 3925E or four integrated EHWIC slots on the Cisco 3945 and Cisco 3925 allow for flexible configurations.</li> <li>• Each HWIC slot offers high-data-throughput capability: <ul style="list-style-type: none"> <li>Up to 1.6-Gbps aggregate toward the router processor.</li> <li>Up to 2-Gbps aggregate to other module slots over the MGF.</li> </ul> </li> <li>• Flexibility to support doublewide modules is enabled by combining two EHWIC slots. Up to 2 doublewide HWIC (HWIC-D) modules are supported.</li> </ul>
<p><b>Cisco Internal Services Module (ISM)</b></p>	<ul style="list-style-type: none"> <li>• A single ISM slot provides flexibility to integrate intelligent services modules that do not require interface connections in the Cisco 3945 and Cisco 3925.</li> <li>• Each ISM slot offers high-data-throughput capability: <ul style="list-style-type: none"> <li>Up to 4-Gbps aggregate toward the route processor.</li> <li>Up to 2-Gbps aggregate to other module slots over the MGF.</li> </ul> </li> <li>• The ISM replaces the AIM slot; existing AIM modules are not supported in the ISM slot.</li> <li>• You can manage power to ISM slots by extensions similar to the Cisco EnergyWise framework, so your organization can reduce energy consumption in your network infrastructure. Full Cisco EnergyWise support will be available in future software releases.</li> </ul>
<p><b>Cisco High-Density Packet Voice Digital Signal Processor (PVDM3) Slots on Motherboard</b></p>	<ul style="list-style-type: none"> <li>• PVDM3 slots natively support PVDM3 modules, providing support for richer density for rich-media voice and video.</li> <li>• Each PVDM3 slot connects back to the system architecture through a 2-Gbps aggregate link through the MGF.</li> <li>• Investment protection for PVDM2 modules is supported through an adapter module.</li> <li>• You can manage power to the PVDM slots by extensions similar to the Cisco EnergyWise framework, so your organization can reduce energy consumption in your</li> </ul>

	network infrastructure. Full Cisco EnergyWise support will be available in future software releases.
<b>Compact Flash Slots</b>	<ul style="list-style-type: none"> <li>Two external Compact Flash slots are available on the Cisco 3900 Series Integrated Services Routers. Each slot can support high-speed storage densities upgradable to 4 GB in density.</li> </ul>
<b>USB 2.0 Ports</b>	<ul style="list-style-type: none"> <li>Two high-speed USB 2.0 ports are supported; they provide secure token capabilities and storage.</li> </ul>

## CISCO 3900 INTEGRATED SERVICES ROUTER PRODUCT 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*
<b>Power Specifications</b>				
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

<b>DC Operating Input Voltage</b>	24Vdc - 60Vdc	24Vdc - 60Vdc	24Vdc - 60Vdc	24Vdc - 60Vdc
<b>Max Input Current range, DC power supply (A)</b>	33.2 - 12.4	33.2 - 12.4	33.2 - 12.4	33.2 - 12.4
<b>DC Input Surge Current</b>	<50A	<50A	<50A	<50A
<b>Typical power (no modules) (watts)</b>	158	150	105	100
<b>Maximum power with AC power supply (watts)</b>	540	420	540	420
<b>Maximum power with PoE power supply (platform only) (watts)</b>	540	420	540	420
<b>Maximum endpoint PoE power available from PoE power supply (watts)</b>	520	520	520	520
<b>Max power with DC input (W)</b>	574	446	574	446
<b>Maximum endpoint PoE power capacity with PoE boost (watts)</b>	1040	1040	1040	1040
<b>Dimensions (H x W x D)</b>	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)
<b>Rack height</b>	3 rack units (3RU)	3RU	3 RU	3RU
<b>Rack-mount 19in. (48.3 cm) EIA</b>	Included	Included	Included	Included
<b>Rack-mount 23in. (58.4 cm) EIA</b>	Optional	Optional	Optional	Optional
<b>Wall-mount</b>	No	No	No	No
<b>Weight with AC power supply (no modules)</b>	39 lb (17.7 kg)	39 lb (17.7 kg)	39 lb (17.7 kg)	39 lb (17.7 kg)

<b>Weight with PoE power supply (no modules)</b>	40 lb (18.1 kg)	40 lb (18.1 kg)	40 lb (18.1 kg)	40 lb (18.1 kg)
<b>Typical weight (with modules)</b>	60 lb (27.2 kg)	60 lb (27.2 kg)	60 lb (27.2 kg)	60 lb (27.2 kg)
<b>Airflow</b>	Back and sides to front	Back and sides to front	Back and sides to front	Back and sides to front
<b>Optional airflow kit (includes filter)</b>	None	None	Front to back and sides	Front to back and sides
<b>Environmental specifications</b>				
<b>Operating conditions</b>				
<b>Temperature: 5906 ft (1800m) maximum altitude</b>	32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C)
<b>Temperature: 9843 ft (3000m) maximum altitude</b>	32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C)
<b>Temperature: 13123 ft (4000m) maximum altitude</b>	32 to 86°F (0 to 30°C)	32 to 86°F (0 to 30°C)	32 to 86°F (0 to 30°C)	32 to 86°F (0 to 30°C)
<b>Temperature: Short-term per NEBS/5906 ft (1800m) maximum altitude</b>	23 to 122°F (-5 to 50°C)	23 to 122°F (-5 to 50°C)	23 to 122°F (-5 to 50°C)	23 to 122°F (-5 to 50°C)
<b>Altitude</b>	4,000m (13,000 ft)	4,000m (13,000 ft)	4,000m (13,000 ft)	4,000m (13,000 ft)
<b>Relative humidity</b>	5 to 85%	5 to 85%	5 to 85%	5 to 85%
<b>Short-term (per NEBS) humidity</b>	5% to 90%, not to exceed 0.024 kg water/kg of dry air	5% to 90%, not to exceed 0.024 kg water/kg of dry air	5% to 90%, not to exceed 0.024 kg water/kg of dry air	5% to 90%, not to exceed 0.024 kg water/kg of dry air
<b>Acoustic: Sound pressure (typical/maximum)</b>	57.6/77.6	57.6/77.6	57.6/77.6	57.6/77.6

<b>Acoustic: Sound power (typical/maximum)</b>	67.8/84.7	67.8/84.7	67.8/84.7	67.8/84.7
<b>Nonoperating conditions</b>			2	
<b>Temperature</b>	-40 to 158°F (-40 to 70°C)	-40 to 158°F (-40 to 70°C)	-40 to 158°F (-40 to 70°C)	-40 to 158°F (-40 to 70°C)
<b>Relative humidity</b>	5 to 95%	5 to 95%	5 to 95%	5 to 95%
<b>Altitude</b>	15,584 ft (4750m)	15,584 ft (4750m)	15,584 ft (4750m)	15,584 ft (4750m)
<b>Regulatory and Compliance</b>				
<b>Safety</b>	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	UL 60950-1 CAN/CSA C22.2 No. 60950-1 EN 60950-1 AS/NZS 60950-1 IEC 60950-1
<b>EMC</b>	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
<b>Telecom</b>	TIA/EIA/IS- 968 CS-03 ANSI T1.101	TIA/EIA/IS- 968 CS-03 ANSI T1.101	TIA/EIA/IS- 968 CS-03 ANSI T1.101	TIA/EIA/IS-968 CS-03 ANSI T1.101

	ITU-T G.823, G.824 IEEE 802.3 RTTE Directive	ITU-T G.823, G.824 IEEE 802.3 RTTE Directive	ITU-T G.823, G.824 IEEE 802.3 RTTE Directive	ITU-T G.823, G.824 IEEE 802.3 RTTE Directive
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## CISCO 3900 SERIES BASIC ORDERING INFORMATION

Product Name	Product Description
<a href="#"><u>CISCO3945E/K9</u></a>	• Cisco 3945 with 4 onboard GE, C3900-SPE250/K9, 3 EHWIC slots, 3 DSP slots, 4 SM slots, 256MB CF default, 1 GB DRAM default, IP Base
<a href="#"><u>CISCO3925E/K9</u></a>	• Cisco 3925 with 4 onboard GE, C3900-SPE200/K9, 3 EHWIC slots, 3 DSP slots, 2 SM slots, 256MB CF default, 1 GB DRAM default, IP Base
<a href="#"><u>CISCO3945/K9</u></a>	• Cisco 3945 with 3 onboard GE, C3900-SPE150/K9, 4 EHWIC slots, 4 DSP slots, 1 ISM slot, 4 SM slots, 256MB CF default, 1 GB DRAM default, IP Base
<a href="#"><u>CISCO3925/K9</u></a>	• Cisco 3925 with 3 onboard GE, C3900-SPE100/K9, 4 EHWIC slots, 4 DSP slots, 1 ISM slot, 2 SM slots, 256MB CF default, 1 GB DRAM default, IP Base

## SOURCES

[https://www.cisco.com/c/en/us/products/collateral/routers/3900-series-integrated-services-routers-isr/data\\_sheet\\_c78\\_553924.html](https://www.cisco.com/c/en/us/products/collateral/routers/3900-series-integrated-services-routers-isr/data_sheet_c78_553924.html)