

# Cisco 900 Series Integrated Services Routers

## Product overview and positioning



### What are the 900 Series Integrated Services Routers (ISRs)?

**A** Cisco® 900 Series Integrated Services Routers (ISRs) combine Internet access, and integrated security in a single high-performance device that is easy to deploy and manage. They are well suited for deployment as Customer Premises Equipment (CPE) in enterprise small branch offices and in service provider managed-service environments.



### What is the difference between the new 900 Series ISRs and the 800 Series ISRs?

**A** The 900 Series routers provide three times higher performance with IPSEC (250 Mbps). The 900 series routers also have four GE LAN ports and dual GE-WAN ports, along with DSL and CAT4 LTE connectivity options.



### What is the difference between the 900 Series ISRs and the 1000 Series ISRs?

**A** The Cisco 1000 Series ISRs are IOS XE-based routers with Software-Defined WAN (SD-WAN) capabilities. They provide around 350 Mbps IPSEC performance. The 1000 Series ISRs also offer additional capabilities like wireless LAN (802.11ac WAVE2), advanced LTE WAN, Power over Ethernet (PoE), pluggable modules, and extended temperature support.



### Will the 900 Series ISRs support Cisco SD-WAN?

**A** No, the 900 Series will not support Cisco SD-WAN.

## Hardware features

**Q What are the hardware options for the 900 Series ISRs?**  
**A** The 900 Series ISRs are fixed-configuration, integrated services routers. These routers offer numerous variants for different WAN (Ethernet, DSL, LTE) and LAN (Ethernet) connectivity options. You must carefully consider your requirements to support a network deployment before you place an order. For details about hardware options for each model, refer to the 900 Series ISR [data sheets](#).

**Q Are there any hardware upgrade options?**  
**A** No. The 900 Series ISRs are fixed-configuration, integrated services routers that do not have hardware upgrade options.

**Q How many Gigabit Ethernet (GE) WAN ports does the 900 Series ISR have?**  
**A** The 900 Series ISRs have two GE WAN ports. The DSL variants have one GE WAN port.

**Q How many switch ports does the 900 Series have?**  
**A** The 900 Series has four Gigabit Ethernet switch ports.

**Q What is the Universal-Serial-Bus (USB) port used for?**  
**A** A Single **USB 2.0 port** is available on the 900 Series ISRs for flash storage.

**Q What is the purpose of the reset button?**  
**A** The reset button is used to restore the router to factory default settings if pressed within five seconds of router power up.

**Q Does the 900 Series have an auxiliary port?**  
**A** No, the 900 Series does not have an auxiliary port, It has a single RJ45 console port.

**Q Are fans installed in the 900 Series ISRs?**  
**A** No, The 900 Series is fanless. It is passively cooled and is noiseless.

**Q What are the platform power specifications for the ISR 900 Series?**  
**A** Table 1. outlines the platform power specifications.

Table 1. Platform power specifications

Platform	Type of power supply	Specifications
C921-4P	Internal PSU	
C931-4P	Internal PSU	
C926-4P	External PSU	12V DC, 30W, 110-220 V -Input AC, amperage
C927-4P	External PSU	12V DC, 30W
C927-4PM	External PSU	12V DC, 30W

**Q What are the FLASH/DRAM specifications on the 900 Series ISRs?**  
**A** All 900 Series routers have two GB of Flash and one GB of DRAM. They cannot be upgraded.

## Software features

**Q Which Cisco IOS® Software releases do the 900 Series ISRs support?**  
**A** The 900 Series ISRs support Cisco IOS Software Release 15.8(3) Mb. Check the [data sheets](#) for which Cisco IOS Software release is required for a specific part number.

**Q What Cisco IOS Software image and feature sets do you offer for the 900 Series ISRs?**

**A** The 900 Series ISRs support a single universal image. A universal image includes all features supported by a given platform.

**Q What software licenses are available on the 900 Series?**

**A** Three major technology licenses are available on the 900 Series. These licenses can be activated through the [Cisco software activation process](#). The following licenses are available:

- IP Base - this technology package is available as the default.
- Application Experience (APP) - this license includes data and application performance features.
- Security (SEC) or Security with No Payload Encryption (SEC-NPE) - this license includes features for securing network infrastructure.

**Q Can I boot a Cisco IOS Software image and Cisco IOS Software configuration file from the USB flash memory installed on a 900 Series ISR?**

**A** During the router reload process, the 900 Series ISR automatically searches for a bootable Cisco IOS Software image on the USB flash memory. If no bootable image is available on the onboard flash memory, a Cisco IOS Software configuration file can be booted from the USB flash memory only if the Cisco IOS Software command `boot config usbflash0:` is part of the router startup configuration stored in NVRAM.

**Q What web-based or GUI tool is available for the 900 Series ISRs?**

**A** You can configure and manage the 900 Series ISRs with Cisco Configuration Professional.

**Q What is the performance with services for 900 Series ISRs?**

**A** The performance with services for the 900 Series ISRs is 250 Mbps.

**Q Do the 900 Series ISRs support Cisco Virtual Office?**

**A** Yes, support is on the roadmap.

**Q Do 900 Series ISRs support Cisco Wide Area Application Service Express (Cisco WAAS Express)?**

**A** No.

**Q Do 900 Series ISRs support Cisco ScanSafe?**

**A** No.

## Security features

**Q Is hardware-based encryption available on the 900 Series ISRs?**

**A** Yes, hardware-assisted IP security (IPsec) Triple Data Encryption Standard (3DES) and Advanced Encryption Standard (AES) encryption is available on the 900 Series ISRs; 128-, 192-, and 256-bit keys are supported for AES.

**Q How many IPsec tunnels do the 900 Series ISRs support?**

**A** The 900 Series ISRs support 100 IPsec tunnels.

**Q What advanced security features do the 900 Series ISRs support?**

**A** The 900 Series ISRs support basic security features such as site-to-site VPN, Easy VPN, DMVPN, Group Encrypted Transport VPN, and application inspection and control with Cisco IOS Firewall.

**Q What is the maximum supported throughput of the 900 Series ISRs?**

**A** The 900 Series ISRs provide un-throttled performance for unencrypted traffic. Check Table 2 for the maximum crypto throughput.

Table 2. Platforms and throughput

Platform	Maximum crypto throughput (bit-rate policed)
C921	150 Mbps
C931	250 Mbps
C926	150 Mbps
C927	150 Mbps

## 900 Series ISR migration

### Q Which Cisco 800 Series ISRs have reached End-Of-Sale (EOS) status, and are being replaced with 900 Series ISRs?

A Refer to Table 3 for Cisco 800 Series ISRs that have reached end-of-sale status and their replacements.

Table 3. End of sale for 800 Series ISRs

EOS product part number	Product description	Replacement product part number	Replacement product description
C881-K9	Cisco 881 ISR with Fast Ethernet WAN	C921-4P	Cisco 921 Gigabit Ethernet security router with internal power supply
C887VA-K9	Cisco 887VA multimode ISR for VDSL/ADSL over POTS	C927-4P	Cisco 927 Gigabit Ethernet security router with VDSL/ADSL2+ Annex A

EOS product part number	Product description	Replacement product part number	Replacement product description
C887VAM-K9	Cisco 887VA multimode ISR for VDSL/ADSL over POTS extended upstream band	C927-4PM	Cisco 927 Gigabit Ethernet security router with VDSL/ADSL2+ Annex M
C886VAJ-K9	Cisco 886VA multimode ISR for VDSL/ADSL over all-digital ISDN	C926-4P	Cisco 926 Gigabit Ethernet security router with VDSL/ADSL2+ Annex B/J

## DSL features

### Q Which DSL technologies do the 900 Series ISRs support?

A The 900 Series ISR platforms support DSL technologies listed in Table 3.

Table 4. DSL Technologies supported by the 900 Series

Model	DSL technology	Minimum Cisco IOS software release requirement
C926	Multi-mode xDSL Annex B/J (ADSL1/2/2+ Annex B, less-optimized Annex2/2+ J[1], VDSL2 over ISDN band plans)	15.8(3)M1

Model	DSL technology	Minimum Cisco IOS software release requirement
<b>C927</b>	Multi-mode xDSL Annex A, (ADSL1/2/2+ Annex A, less-optimized ADSL2/2+ Annex M, VDSL2 over POTS band plans)	15.8(3)M1
<b>C927-4PM</b>	Multi-mode xDSL Annex M (ADSL2/2+ Annex M, less-optimized ADSL/ADSL2/2+ Annex A, VDSL2 over POTS band plans)	15.8(3)M1

**Q Does 900 Series ISRs support both ATM and Ethernet Packet Transport Mode (PTM)?**

**A** Yes.

**Q What is the maximum data rate that the 900 Series can support?**

**A** Maximum data rates are outlined in Tables 5 and 6. Table 5 outlines the profiles and throughput in VDSL. Table 6 outlines the profiles and throughput in ADSL.

Table 5. VDSL profiles and throughput

Profile	Maximum downstream throughput (Mbps)	Maximum upstream throughput (Mbps)
<b>8a</b>	50	16
<b>8b</b>	50	16
<b>8c</b>	50	16
<b>8d</b>	50	16
<b>12a</b>	68	22
<b>12b</b>	68	22
<b>17a</b>	100	60

Table 6. ADSL profiles and throughput

Version	Standard name	Common name	Downstream rate	Upstream rate
<b>ADSL</b>	ANSI T1.413-1998 Issue 2	ADSL	8.0 Mbps	1.0 Mbit/s
	ITU G.992.1 Annex A	ADSL over POTS	12.0 Mbps	1.3 Mbit/s
	ITU G.992.1 Annex B	ADSL over ISDN	12.0 Mbit/s	1.8 Mbit/s

Version	Standard name	Common name	Downstream rate	Upstream rate
<b>ADSL2</b>	ITU G.992.3 Annex L	RE-ADSL2	5.0 Mbit/s	0.8 Mbit/s
	ITU G.992.3	ADSL2	12.0 Mbit/s	1.3 Mbit/s
	ITU G.992.3 Annex J	ADSL2	12.0 Mbit/s	3.5 Mbit/s
<b>ADSL2+</b>	ITU G.992.5	ADSL2+	24.0 Mbit/s	1.4 Mbit/s
	ITU G.992.5 Annex M	ADSL2+M	24.0 Mbit/s	3.3 Mbit/s

**Q** Does the Cisco 927-4PM ISR support the Persistent Storage Device (PSD) mask required to comply with the Annex M standards in the United Kingdom?

**A** Yes.

**Q** Do the 900 Series ISRs support extended Impulse Noise Protection (INP) functions?

**A** Yes

**Q** Is Ethernet First Mile (EFM) bonding supported?

**A** No.

**Q** Does the 900 Series support both ATM and EFM?

**A** Yes.

**Q** Is dying gasp supported?

**A** Yes, the Customer Premises Equipment (CPE) can send a message to the central office equipment managed by an Internet service provider or Digital Subscriber Line Access Multiplexer (DSLAM) to indicate that the CPE has lost power.

**Q** Can DSL modem firmware be upgraded on the 900 Series?

**A** Yes, DSL modem firmware can be independently upgraded on the 900 Series ISRs. Instructions to upgrade modem firmware can be found in the software configuration guide.