Cisco 890 Series Integrated Services Routers

Product Overview and Positioning

Q. What are the Cisco® 890 Series Integrated Services Routers?

A. Cisco® 890 Series Integrated Services Routers (ISRs) combine Internet access, comprehensive security, and wireless services onto a single, secure device that is easy to deploy and manage. The best-in-class Cisco 890 Series Integrated Services Router architecture is specifically designed to deliver high performance with concurrent services, business continuity, and investment protection for enterprise small branch offices and service provider-managed services applications.

Q. Why did Cisco introduce the Cisco 890 Series?

A. Cisco 890 Series Integrated Services Routers are fixed-configuration routers that are designed for secure broadband, Metro Ethernet, and wireless deployments. They offer comprehensive security and threat defense, advanced Cisco IOS® Software routing, Metro Ethernet, and network management. The routers provide business connectivity and high availability with integrated ISDN and v.92 WAN backup.

Q. Can I continue to order Cisco 1811 and 1812 Integrated Services Routers?

A. No. These routers have reached their end-of-sale dates. Please refer to the following links for the details: http://www.cisco.com/en/US/prod/collateral/routers/ps5853/eol_c51_598758.html; and http://www.cisco.com/en/US/prod/collateral/routers/ps5853/eol_c51_597946.html.

Q. Can I continue to order Cisco 1801, 1802, and 1803 Integrated Services Routers?

A. No, the Cisco 1800 DSL routers are end-of-sale (refer to the following links). The replacement products for these routers are the C896, C897, and C898 Integrated Services Routers.
http://www.cisco.com/en/US/prod/collateral/routers/ps5853/eol_c51_638144.html
http://www.cisco.com/en/US/prod/collateral/routers/ps5853/eol_c51_638245.html
http://www.cisco.com/en/US/prod/collateral/routers/ps5853/end_of_life_notice_c51-716749.html.

Q. What is the difference between C89x, CISCO89x, and CISCO892F?

A. The CISCO892F added an additional Small Form-Factor Pluggable (SFP) port on the router. This platform is based on the same platform as the standard CISCO890. The C890 Routers are a newer generation of the Cisco 890 Series ISRs, and they broaden the portfolio. These new C890 Routers also have a higher performance than the older CISCO890 Series Routers. Table 1 lists the most important hardware differences.

Table 1. Differences Between CISCO890, 890F, and New 890 Routers

	CISCO890	CISCO890F	New C890
Fans	1 or 2	1 or 2	0
USB ports	2* USB 2.0	2* USB 2.0	1* USB 2.0
Memory options	512 MB, upgrade to 768 MB	512 MB, upgrade to 1 GB	512 MB, upgrade to 1 GB
Memory upgrade	MEM8XX-512U768D	MEM8XX-512U1GBD	FL-8XX-512U1GB
Memory upgrade type	Physical memory insertion	Physical memory insertion	Feature license
Cisco IOS Software Image name	c890-universalk9-mz	c890-universalk9-mz	c800-universalk9-mz

Hardware Features

Q. How does the 1-port GE or 1-port SFP (combo-port) work?

A. A combo port means that it is one logical interface that can have one of two physical interfaces. You can use either the RJ-45 copper Ethernet port **or** the SFP port. Both of these physical ports are internally addressed as one interface (that is, GigabitEthernet8), and you have to configure the media type under the interface to select the one you want to use.

Q. What are the hardware options for the Cisco 890 Series?

A. The 4-port Power over Ethernet (PoE), 802.11n wireless access point, and memory are hardware options. You can select these options when ordering.

Q. Can the PoE be upgraded after ordering?

A. Yes, you can upgrade the PoE on all models except the C892FSP-K9, which does not support PoE at all. For all Cisco 890 Routers, the product ID (PID) for the PoE upgrade is 800-IL-PM-4=. This PID comes with two power supply options: 80 or 125 watts. The older CISCO890 requires the 80-watt option, whereas the newer C890 requires the 125-watt option.

Q. Why do some routers use 80 watts and others 125 watts for PoE?

A. The 80-watt power supply is used in addition to the standard 60-watt power supply, so you will have two power supplies connected to the router. For the newer routers we combined these two power supplies into the one 125-watt power supply (hence we have a 4-pin connector). Both models support the base router as well as 4 ports with standard PoE.

Q. Can I upgrade the wireless after ordering?

A. No, you cannot upgrade the wireless.

Q. Can I upgrade the memory after ordering?

A. Yes, we have memory upgrade kits for all Cisco 890 Routers. Please refer to Table 1 to see which memory upgrade kit is compatible with your model.

Q. Do Cisco 890 Series Routers support third-generation (3G) and voice ports?

A. No. Cisco 890 Series Routers do not support 3G and voice ports.

Q. Is it possible to add voice support to a Cisco 890 Series data model?

A. No. With the Cisco 890 Series, IP phones can be connected to the integrated switchports to register with a centrally located Cisco Unified Communications Manager.

Q. What is the Universal Serial Bus (USB) port being used for?

A. USB 2.0 ports are available on the Cisco 890 Series. These ports enable important security and provisioning capabilities, including secure device authentication, storage of removable credentials for establishing secure VPN connections, secure distribution of configuration files, bulk flash memory storage for files and configuration, and booting from the USB. The Cisco 890 Series supports two types of USB devices: USB flash and USB eToken. For a list of supported USB flash and eToken devices, refer to: http://www.cisco.com/en/US/prod/collateral/modules/ps6247/product_data_sheet0900aecd80232473.html.

Q. What is the purpose of the Reset button?

A. The Reset button is used to restore the router to the default factory settings if pressed within 5 seconds of router bootup. Here is how it works:

- The router will not react to the Reset button if the button is pressed after the 5 seconds of bootup.

- When the Reset button is pressed within 5 seconds of bootup and there is no valid xxx.cfg file in the flash memory, the router boots up with the factory defaults stored in nonvolatile RAM (NVRAM).

- When the Reset button is pressed within 5 seconds of bootup and there is a valid xxx.cfg file in the flash memory, the router boots up with the xxx.cfg file and avoids the startup-config file in NVRAM.

Q. What is the function of the auxiliary port?

A. On the Cisco 890 Series, an external modem can be connected to the auxiliary port for any asynchronous dialup connection. You can use this interface for out-of-band remote management of the router or as a backup WAN interface. An optional RJ-45-to-DB-25 male straight-through cable is available as an orderable option to connect modems to this port. A limited set of modems and terminal adapters has been tested, but you can use any Hayes-compatible modem or terminal adapter to connect to this port.

Software Features

Q. What Cisco IOS Software image and feature sets do you offer for the Cisco 890 Series?

A. The Cisco 890 Series supports universal images and one feature set. A universal image includes all features supported by a given platform. The active feature set is enabled using the Cisco software activation feature.

- The **Advanced IP Services** feature set is supported by the Cisco 890 Series using the Cisco software activation feature.

Q. What is the Cisco software activation feature?

A. Software activation authorizes and enables the use of a Cisco software feature or feature sets. A special file contained in the device, called a license file, is examined by Cisco software when the device is powered on. Based on the license file installed, Cisco software enables the appropriate feature set(s).

Q. What features require a software license and activation on the Cisco 890 Series?

A. The default and only feature set for the Cisco 890 Series is **Advanced IP Services**. The appropriate license file is installed on the platform by Cisco manufacturing to support the default feature set. In addition, feature licenses exist for memory, Cisco Wide Area Application Services Express (WAASx), and Secure Sockets Layer (SSL). These feature licenses are listed at the bottom of the data sheet. http://www.cisco.com/en/US/prod/collateral/routers/ps380/data_sheet_c78-519930.html.

Q. Can I boot a Cisco IOS Software image and Cisco IOS Software configuration file from the USB flash memory installed on a Cisco 890 Series Router?

A. During the router reload process, the Cisco 890 Series Router 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. You can boot a Cisco IOS Software configuration file 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. How are factory default configurations restored on the Cisco 890 Series?

A. You can restore Cisco 890 Series factory default configurations by using the Cisco Configuration Professional application or by using the Reset button on the platform. Refer to the question "What is the purpose of the Reset button?" in the "Hardware Features" section to learn more about restoring factory default configurations using the Reset button.

Q. Does the Cisco 890 Series support any out-of-band management capabilities?

A. The Cisco 890 Series supports out-of-band management capabilities using the auxiliary port with an external modem connected to it or using the standard RJ-45 console port.

Q. Are the auxiliary port and the console port different ports?

A. On the older CISCO890 these two ports were separate RJ-45 ports, but on the newer C890 Routers these two ports are combined in one physical RJ-45 port.

Q. Can I use the ISDN or V.92 interfaces on the Cisco 890 Series as a primary interface?

A. Yes.

Security Features

Q. Is hardware-based encryption available on the Cisco 890 Series?

A. Yes. Hardware-assisted IP Security (IPsec), Triple Data Encryption Standard (3DES), and Advanced Encryption Standard (AES) encryption are available on all Cisco 890 Series models; 128-, 192-, and 256-bit keys are supported for AES.

Q. Is hardware-based SSL VPN available on the Cisco 890 Series?

A. No. Only software-based SSL VPN is supported on the Cisco 890 Series.

Q. How many IPsec tunnels does the Cisco 890 Series support?

A. The Cisco 890 Series supports 50 IPsec tunnels.

Q. What advanced security features does the Cisco 890 Series support?

A. Cisco 890 Series Routers support advanced security features such as Dynamic Multipoint VPN (DMVPN), Group Encrypted Transport VPN, SSL VPN, intrusion prevention system (IPS), and Cisco Cloud Web Security (formerly Cisco ScanSafe Connector).

Q. Which next-generation encryption (Suite B) protocols are supported?

A. As of Cisco IOS Software Release 15.1(2)T, we support the following control-plane hash functions: Secure Hash Algorithm (SHA-2, SHA-256, SHA-384, and SHA-512) for Internet Key Exchange Versions 1 and 2 (IKEv1 and v2).

The data plane supports the following encryption standards: AES-Galois Counter Mode (AES-GCM), AES-Galois Message Authentication Code (AES-GMAC), and Hashed Message Authentication Code-SHA (HMAC-SHA2, HMAC-SHA-256, HMAC-SHA-384, and HMAC-SHA-512) for IPsec.

Q. Are these next-generation encryption protocols supported in software or hardware?

A. On all C890 models these features are supported in hardware in every release available. The CISCO890 models support these features in hardware from Cisco IOS Software Release 15.2(4)M3 onward. In previous releases these features are supported only in software.

DSL Features

Q. Are the DSL technologies supported on the C890 Series DSL models different from those supported on the Cisco 880 Series DSL models?

A. No, the C896VA and C897VA DSL chipsets are based on the Cisco 886VA and Cisco 887VA DSL chipsets. The G.SHDSL model C898EA is based on the same chipset as that on the Cisco 888EA. Therefore the C890 DSL models have feature parity with the Cisco 880 DSL models.

Q. Which DSL firmware is integrated in the Cisco IOS Software images?

A. Table 2 lists the DSL firmware that is integrated into the Cisco IOS Software.

Table 2.   DSL Firmware Integrated into Cisco IOS Software

Router Model	Cisco IOS Software Release	DSL Firmware
C896VA	15.2(4)M onward	A2pv6C035j.d23j
C897VA	15.2(4)M onward	A2pv6C035j.d23j
C898EA	15.2(4)M onward	IDC firmware version: 1.7.2.0 DFE firmware version: FW_BETA_120111A

Q. Can the DSL firmware be upgraded separately from the Cisco IOS Software?

A. This upgrade is possible on the very-high-bitrate DSL (VDSL) and asymmetric DSL (ADSL) models (C896 and C897 Routers). The G.SHDSL model (C898) xDSL firmware is not yet available as an independent image.

Wireless LAN Features

Q. Which wireless LAN (WLAN) standard and integrated access points does the Cisco 890 Series support?

A. The Cisco 890 Series supports 2.4- and 5-GHz 802.11a/g/n. The integrated access point on the Cisco 890 Series is Wi-Fi 802.11n certified. The Cisco 890 Series offers both the autonomous and unified options, so you can deploy it as a standalone access point or as part of a Cisco Unified Wireless Network.

Q. Is there a difference between the CISCO890 and C890 wireless models?

A. Yes. The CISCO890 wireless is based on the Cisco Aironet® 1250 Series Access Point, and the C890 wireless is based on the Cisco Aironet 3500 Series Access Point. The C890 wireless models added support for Cisco CleanAir® technology and 802.11 dynamic frequency selection (DFS).

Q. Can a wireless LAN controller manage the integrated access point on the Cisco 890 Series?

A. A wireless LAN controller can manage the Cisco 890 Series when running in the unified mode. For more information about Cisco 890 Series Integrated Services Routers, refer to the Cisco 860 and 880 Series Integrated Services Routers Q&A.

Metro Ethernet Features

Q. What are the supported Metro Ethernet features?

A. Cisco 890 Series Routers are focused on Ethernet access and are designed to be offered as customer premises equipment (CPE) in Metro Ethernet deployments. The Cisco 890 Series supports the following features:

- Metro Ethernet operations, administration, and maintenance (OAM):
  - Debugging hierarchy of Ethernet networks
  - Layer 2 service performance monitoring
  - 802.11a/g: Connectivity fault management:
  - Uses domains to contain OAM flows and bound OAM responsibilities
  - Provides per-Ethernet virtual circuit (EVC) connectivity management and fault isolation
- E-LMI: Automated configuration of customer edge based on EVCs and bandwidth profiles:
  - Layer 2 connectivity management
  - Ethernet LMI customer edge

- 802.3ah: Ethernet in the first mile (EFM)
  - Three types of packets: Continuity check, Layer 2 ping, and Layer 2 trace route
- 802.3ah to Connectivity Fault Management (CFM) interworking
- CFM to E-LMI interworking
- IP Service-Level Agreement (IP SLA) for Metro Ethernet

Q. Is 2BASE-TL or 10Pass-TS supported on the Cisco 890 Series?

A. No. EFM support is primarily for Ethernet OAM features; 2BASE-TL and 10Pass-TS are not supported on the Cisco 890 Series.

Switch Features

Q. What are the differences between the Cisco 880 and 890 Series with regard to integrated switches?

A. The Cisco 890 Series offers feature parity with the Cisco 880 Series except that the Cisco 890 Series supports 14 VLANs. Refer to the Cisco 890 Series data sheet for the list of supported features.

Q. Does the Cisco 890 Series support Cisco Enhanced PoE?

A. No. Cisco Enhanced PoE is an extension of the 802.3af standard, delivering between 15.4 and 20W per port. The Cisco 890 Series does not support Cisco Enhanced PoE.

Q. What 802.1x features are supported by the Cisco 890 Series integrated switchports?

A. The Cisco 890 Series supports 802.1x for the integrated switchports. For the complete list of supported features, please refer to the Cisco 880 Q&A documentation at: http://www.cisco.com/en/US/prod/collateral/routers/ps380/qa_c67_458826.html.

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