



CHAPTER 1

Product Overview

This chapter provides an overview of the features available for the Cisco 880 series Integrated Service Router (ISR), and contains the following sections:

- [General Description, page 1-1](#)
- [Cisco 880 Series ISR, page 1-1](#)
- [Licensing, page 1-4](#)
- [880 SKUs for next generation Cisco 880 Series ISR platforms, page 1-5](#)
- [Memory, page 1-7](#)
- [LED Overview, page 1-8](#)
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General Description

The Cisco 880 ISR provides Internet, VPN, data, and backup capability to corporate teleworkers and remote and small offices of fewer than 20 users. These routers are capable of bridging and multiprotocol routing between LAN and WAN ports and provide advanced features such as antivirus protection. In addition, the Cisco 880W series ISR incorporates an 802.11b/g/n wireless radio that allows the ISR to act as a wireless access point.

Cisco 880 Series ISR

The Cisco 880 series ISRs are a family of fixed-configuration data routers as described in the following sections:

- [Models of the Cisco 880 Series ISRs, page 1-2](#)
- [Common Features, page 1-2](#)

In addition, this family of fixed-configuration data routers utilizes a dual-core infrastructure. The host router software runs on the first core while the WLAN AP software runs on the second core.

Models of the Cisco 880 Series ISRs

The Cisco 880 series ISRs have data capabilities. Each router has one WAN port. Data backup ports are also available on most of the routers. The 802.11a/n or 802.11b/g/n option is available on all models.

[Table 1-1](#) gives the port configurations and supported WLAN radios of the Cisco 880 series data routers.

Table 1-1 Port Configurations and Supported WLAN Radios of the Cisco 880 Series Data ISRs

Model	WAN Port	Supported WLAN Radios
C886VA-W-E-K9	ADSL2+ UR2	2.4 GHz
C887VAM-W-E-K9	ADSL2+ Annex M	2.4 GHz
C887VA-W-A-K9	ADSL2+ Annex A	2.4 GHz
C887VA-W-E-K9	ADSL2+ Annex A	2.4 GHz
C887VAGW+7-A-K9	VDSL2/ADSL2	2.4 GHz and 5 GHz
C887VAGW+7-E-K9	VDSL2/ADSL2	2.4 GHz and 5 GHz
C887VA-WD-A-K9	VDSL2/ADSL2	2.4 GHz and 5 GHz
C887VA-WD-E-K9	VDSL2/ADSL2	2.4 GHz and 5 GHz
C881W-A-K9	FE	2.4 GHz
C881W-E-K9	FE	2.4 GHz
C881W-P-K9	FE	2.4 GHz
C881GW+7-A-K9	FE	2.4 GHz and 5 GHz
C881GW+7-E-K9	FE	2.4 GHz and 5 GHz
C881WD-A-K9	FE	2.4 GHz and 5 GHz
C881WD-E-K9	FE	2.4 GHz and 5 GHz
C881GW-S-A-K9	FE	2.4 GHz and 5 GHz
C881GW-V-A-K9	FE	2.4 GHz and 5 GHz

For 3G-related product descriptions, see [Configuring Cisco EHWIC and 880G for 3G \(EV-DO Rev A\)](#) and [Configuring Cisco EHWIC and 880G for 3.7G \(HSPA+\)/3.5G \(HSPA\)](#).

Common Features

Cisco 880 series ISRs support the following features:

- [4-port 10/100 FE LAN Switch, page 1-3](#)
- [802.11b/g/n Wireless LAN, page 1-3](#)
- [Battery-backed-up Real-Time Clock, page 1-3](#)
- [Cisco CleanAir Technology, page 1-3](#)
- [Dynamic Frequency Selection, page 1-3](#)
- [Dual-Radio Wireless LAN, page 1-4](#)
- [Security Features, page 1-4](#)

4-port 10/100 FE LAN Switch

This switch provides four ports for connecting to 10/100BASE-T FE LANs, access points, or IP phones. A factory-installed upgrade is available that gives Power over Ethernet (PoE) on two of the ports to provide power to access points or phones.

802.11b/g/n Wireless LAN

The Cisco 880W series ISRs have an integrated 802.11b/g/n radio module for wireless LAN connectivity. With this module, the router can act as an access point in the local infrastructure.

For more information on supported WLAN radio modules, see [Table 1-1](#).

Battery-backed-up Real-Time Clock

A battery-backed-up real-time clock (RTC) provides the date and time when the system is powered on. The RTC is used to verify the validity of the Certification Authority stored on the router.

Cisco CleanAir Technology

The Cisco CleanAir technology is a system-wide feature of the Cisco Unified Wireless Network that improves air quality by detecting RF interference that other systems cannot recognize, identifying the source, locating it on a map, and then making automatic adjustments to optimize wireless coverage.

Cisco access points with the CleanAir technology provide the highest-performance 802.11n connectivity for mission-critical mobility. By intelligently avoiding interference, the access points offer performance protection for 802.11n networks to help ensure reliable application delivery.



Note

The Cisco CleanAir technology is supported on dual-radio access points only.

For more information, see [Cisco CleanAir Technology](#).

Dynamic Frequency Selection

Access points with 5-GHz radios configured at the factory for use in the United States and Europe comply with regulations that require radio devices to use Dynamic Frequency Selection (DFS) to detect radar signals and avoid interfering with them. When an access point detects a radar on a certain channel, it avoids using that channel for 30 minutes.

The DFS functionality is disabled on Cisco 880 series ISRs with pending Federal Communications Commission (FCC) certification.



Note

The DFS functionality is supported on dual-radio access points only.

For more information, see [Dynamic Frequency Selection and IEEE 802.11h Transmit Power Control](#).

Dual-Radio Wireless LAN

With the dual-radio/dual-band IEEE 802.11n access point, the Cisco 880 Series ISRs offer a secure, integrated access point in a single device. The ISRs support both autonomous and unified modes and are backward-compatible with 802.11a/b/g.

The routers support IEEE 802.11n draft 2.0 and use multiple-input, multiple-output (MIMO) technology that provides increased throughput, reliability, and predictability.

For information on configuring the Cisco 880 series ISRs, see the [“Basic Router Configuration” section on page 3-1](#).

Security Features

The Cisco 880 platforms provide the following security features:

- Intrusion Prevention System (IPS)
- Dynamic Multipoint VPN (DMVPN)
- IP security (IPsec)
- Quality of service (QoS)
- Firewall
- URL filtering

Licensing

The Cisco 880 ISR is shipped with licensed software installed. Software features may be upgraded and the software licenses may be managed through the *Cisco License Manager*. See [Software Activation on Cisco Integrated Services Routers and Cisco Integrated Service Routers G2](#) for details.

When you order a new router, you can specify the software image and feature set. The image and feature set are installed on your router before you receive it, so you do not need to purchase a software license. The router stores the software license file on the flash memory.

Selecting Feature Sets

Some feature sets are bundled and offered with a software license that is installed on the hardware platforms. For a list of features available with a software license on the Cisco 880, see [Cisco 880 Series Integrated Services Routers Data Sheet](#). See [Software Activation Configuration Guide](#) on Cisco.com for details about how to activate and manage the software licenses.

880 SKUs for next generation Cisco 880 Series ISR platforms

The following lists the SKUs particular for Next generation Cisco 880 Series ISR platforms.

C881W and C881WD

- 512 MB memory
- 256 MB Flash
- 4-port 10/100 Switch
- 2-port PoE is a factory-configurable option
- 10/100 FE WAN
- 1-port console/aux
- 1-port external USB 2.0
- Real-time clock
- Embedded WLAN antenna on wireless models

C886VA-W

- 512 MB memory
- 256 MB Flash
- 4-port 10/100 Switch
- 2-port PoE is a factory-configurable option
- 1-port console/aux
- 1-port external USB 2.0
- ADSL2+ Annex B
- ISDN backup WAN
- Real-time clock
- Embedded WLAN antenna on wireless models

C887VAM-W

- 512 MB memory
- 256 MB Flash
- 4-port 10/100 Switch
- 2-port PoE is a factory-configurable option
- 1-port console/aux
- 1-port external USB 2.0

- ADSL2+ Annex M
- Real-time clock
- Embedded WLAN antenna on wireless model

C887VA-W and C887VA-WD

- 512 MB memory
- 256 MB Flash
- 4-port 10/100 Switch
- 2 port PoE is a factory-configurable option
- 1-port console/aux
- 1-port external USB 2.0
- ADSL2+ Annex A
- Real-time clock
- Embedded WLAN antenna on wireless model

C887VAGW

- 512 MB memory
- 256 MB Flash
- 4-port 10/100 Switch
- 2-port PoE is a factory-configurable option
- 1-port console/aux
- 1-port external USB 2.0
- ADSL2+ Annex A
- Real-time clock
- Embedded WLAN antenna on wireless model
- 3G modem with dual SIM card slots

C881GW

- 512 MB memory
- 256 MB Flash
- 4-port 10/100 Switch
- 2-port PoE is a factory-configurable option
- 10/100 FE WAN
- 3G modem with Dual SIMM card slots
- 1-port console/aux

- 1-port external USB 2.0
- Real-time clock
- Embedded WLAN antenna on wireless models

C887GW

- 512 MB memory
- 256 MB Flash
- 4-port 10/100 Switch
- 2-port PoE is a factory-configurable option
- 1-port console/aux
- 1-port external USB 2.0
- ADSL2+ Annex A
- 3G modem with Dual SIMM card slots
- Real-time clock
- Embedded WLAN antenna on wireless models

For more 3G-related product descriptions, see [Configuring Cisco EHWIC and 880G for 3G \(EV-DO Rev A\)](#) and [Configuring Cisco EHWIC and 880G for 3.7G \(HSPA+\)/3.5G \(HSPA\)](#).

Memory

[Table 1-2](#) illustrates the onboard memory and flash size for the first and second core. The total memory installed is 512 MB + 256 MB flash, and they are partitioned as shown in the following table.

Table 1-2 **Memory Specifications**

Onboard Memory	1st core	2nd core
512 MB	384 MB	128 MB
Flash size		
256	192	64

LED Overview

Table 1-3 shows all LEDs that are visible on the front of the chassis (bezel side). No LEDs are mounted on the I/O side.

Table 1-3 LED Definition Summary by Interface

LED	Color	Description	Indication
PWR Ok	Green	Power On OK, Router Operational	Off=no power Steady on=normal operation Blink=boot up phase in ROM Monitor mode
Ethernet Switch and FE/GE LAN/WAN ports	Green	Ethernet Switch	Off= No link Steady on= link Blink= TXD/RXD data
PoE	Green/Amber	PoE Status	Off= no device powered, PoE administratively disabled Steady on green= PD connected and powered Steady on amber= PD denied power, power delivery fault
xDSL	Green	CD	Steady on= connected Blink= training
	Green	Data	Blink= TXD/RXD data
ISDN data	Green	Link	Off= no connection Steady on= BRI S/T connection established
	Green	B1 channel data	Off= No data Blin= TXD/RXD data
	Green	B2 channel data	Off= No data Blink= TXD/RXD data

Table 1-3 LED Definition Summary by Interface (continued)

LED	Color	Description	Indication
Wireless/LAN	Green	2.4 GHz Radio	Off= Radio is down (no SSID configured)
	Green	If 5 GHz radio is supported	Steady on= Radio is up, SSID configured, beacons being send, client is associated, no data traffic being sent/received Slow blink= Radio is up (SSID configured and sending beacon) Fast Blink= Radio is up, client is associated, radio is sending/receiving data traffic
	Green	Autonomous Mode	Off= Ethernet link down On= Ethernet link up, no traffic Blink= Ethernet link up with data traffic
		Unified Mode	Off= Ethernet link down On= Ethernet link up, connected to controller Blink= AP not communicating with controller
VPN_OK			Off= no tunnel Steady on= at least one tunnel is up
PPP_OK			Off=no PPP session Steady on= at least one PPP established

Power Supply

The following power supplies are used across Next-generation Cisco 880 ISR platforms depending on SKU:

- [External 12 VDC Power Supply Adapter, page 1-10](#)
- [Onboard 12 VDC Power supply, page 1-10](#)
- [Power over Ethernet Inline Power Option, page 1-10](#)

External 12 VDC Power Supply Adapter

A new and grounded 12 VDC 30 W external desktop adapter is available for all 86x and 88x models. Connection to the chassis is through a single barrel connector..

Onboard 12 VDC Power supply

PoE ports are powered from 12 VDC on the motherboard.

Power over Ethernet Inline Power Option

Inline power is a configurable option. PoE-configured boxes are supplied with a 12 VDC 60 W adapter in lieu of the 30 W.

Images Supported

c800-universalk9-mz

This image offers all IOS features supported by c8xx platforms.

c800-universalk9_npe-mz

This image does not support VPN payload and secure voice functionality and satisfies import considerations for CIS countries.

Licenses for Each Image:

For universalk9 image:

Technology Package licenses:

- Advipservices
- advsecurityk9

Feature licenses:

- ios-ips-update
- SSL_VPN

For universalk9_npe image:

Technology Package licenses:

- advipservices_npe
- advsecurity_npe

Feature licenses:

- ios-ips-ipdate

Images Supported for AP802

Table 1-4 *Images Supported for AP802*

Mode	Image
Autonomous	ap802-k9w7-tar
Unified	ap802-k9w8-tar
Recovery	a802-rcvk9w8-tar

Minimum Software Version Needed to Support AP802

Table 1-5 lists the minimum software version needed to support AP802.

Table 1-5 *Minimum Software Version Needed for AP802*

Software	AP802 Single Radio	AP802 Dual Radio
Router IOS	15.1(4) M1	15.2(4)M1
AP IOS (Autonomous mode)	12.4(25d)JAX	12.4(25d)JAX1
AP IOS (Unified mode)	12.4(23c)JA2	15.2(2)JA
AP IOS (Recovery mode)	12.4(23c)JA2	15.2(2)JA
WLC	7.0.116.0	7.3.101.0
WCS	7.0.172.0	—
NCS	—	1.2.0.103