

Cisco 1000 Series Integrated Services Routers Datasheet

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Cisco 1000 Series Integrated Services Routers



Figure 1.
Cisco 1000 Series Integrated Services Routers

The Cisco® 1000 Series Integrated Services Routers (ISR 1000 Series) portfolio has been steadily expanding over the years to provide our customers with the flexibility they need. The ISR 1000 Series combines routing, switching, Wi-Fi, integrated security, and DSL and LTE uplink connectivity options in a single, lightweight, high-performance device. Choose between the traditional Cisco IOS® XE or controller-managed Cisco IOS XE SD-WAN software to deploy your network quickly and reliably on all Cisco ISR 1000 Series routers. With a simple and flexible pay-as-you-grow model, you purchase network capacity only when you need it.

Key features

- Industry-leading hardware coupled with feature-rich software combine to make high-performance small-office routers. Up to 800 Mbps IMIX encrypted throughput.
- Latest-generation LTE uplink technologies, including dual-carrier support and carrier aggregation, with 5G support coming soon.
- Flexible network management solutions, ranging from local WebUI support to cloud-hosted and on-premises SD-WAN controllers.
- Wi-Fi 6-capable wireless connectivity embedded into a small-form-factor, fanless, all-in-one device.
- Advanced security features available on-box, including Enterprise Firewall with Application Awareness, IPS/IDS, Advanced Malware Protection, URL filtering, and Cisco Umbrella® Secure Internet Gateway (SIG) (Secure Access Service Edge [SASE]).

Use cases

Small Office/Home Office (SOHO) device with enterprise features

Combines a router, a switch, and a high-speed wireless access point into one compact device, perfect for executives using VPNs in small offices, or for anywhere that performance is key with limited space.

Provide the same level of network services across multiple sites around the globe

Routers in university campuses, retail stores, medical clinics, remote offices, and small branches can be deployed in a plug-and-play manner and governed by a unified management solution.

Multiple WAN termination options

Whether for direct internet access, fiber or copper-based broadband, DSL access over telephone lines, or wireless cellular technology, the variety of termination types available within this product family helps ensure that you will find a WAN connection suited to your needs.

Voice over IP

Highly secure voice from the enterprise IP network to the service provider with the Cisco Unified Border Element (CUBE) server. Business resiliency and redundancy during WAN link failure with Cisco Unified Survivable Remote Site Telephony (SRST).

Network management solutions

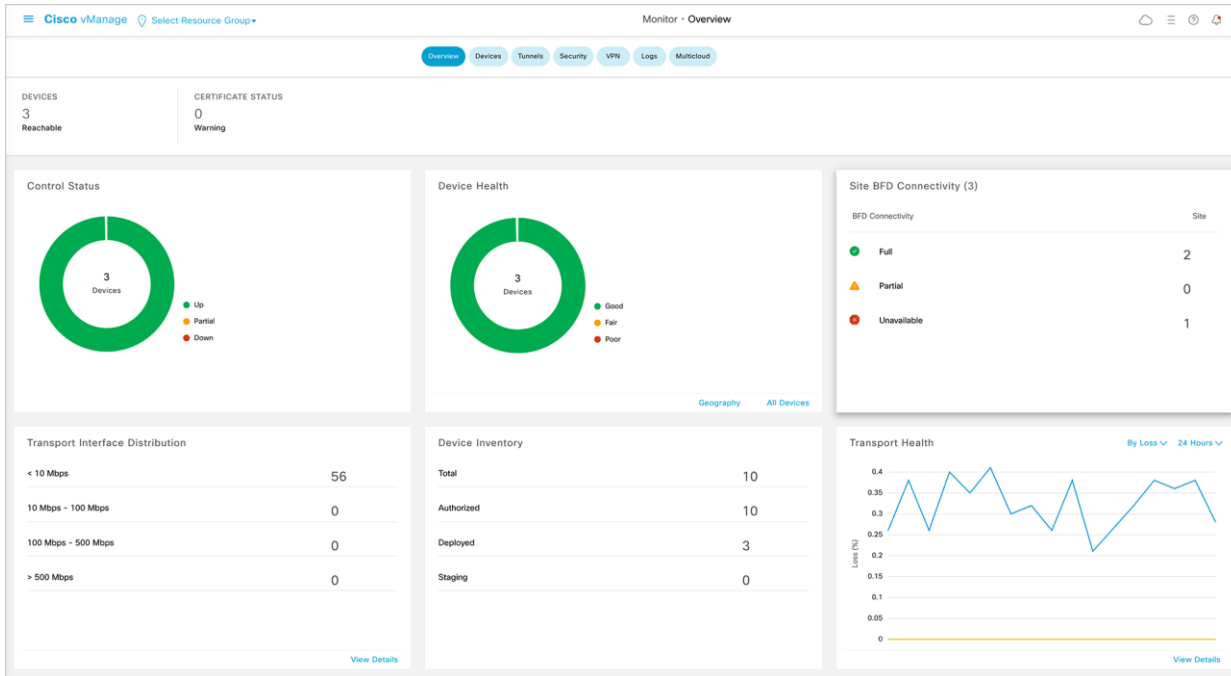
Network management systems typically use a centralized server to collect data from network elements. The server can be located on-premises, in a private data center, or in the cloud. Cisco offers a wide range of network management tools to choose from, depending on your requirements.

Cisco vManage (Controller Mode)

Cisco vManage is a Software-Defined WAN (SD-WAN) **management system** that lets you configure and manage the entire network of routers from a simple graphical dashboard.

vManage's **cloud-deployed solution** offloads resource management and speeds up the deployment and provisioning of edge devices across your network.

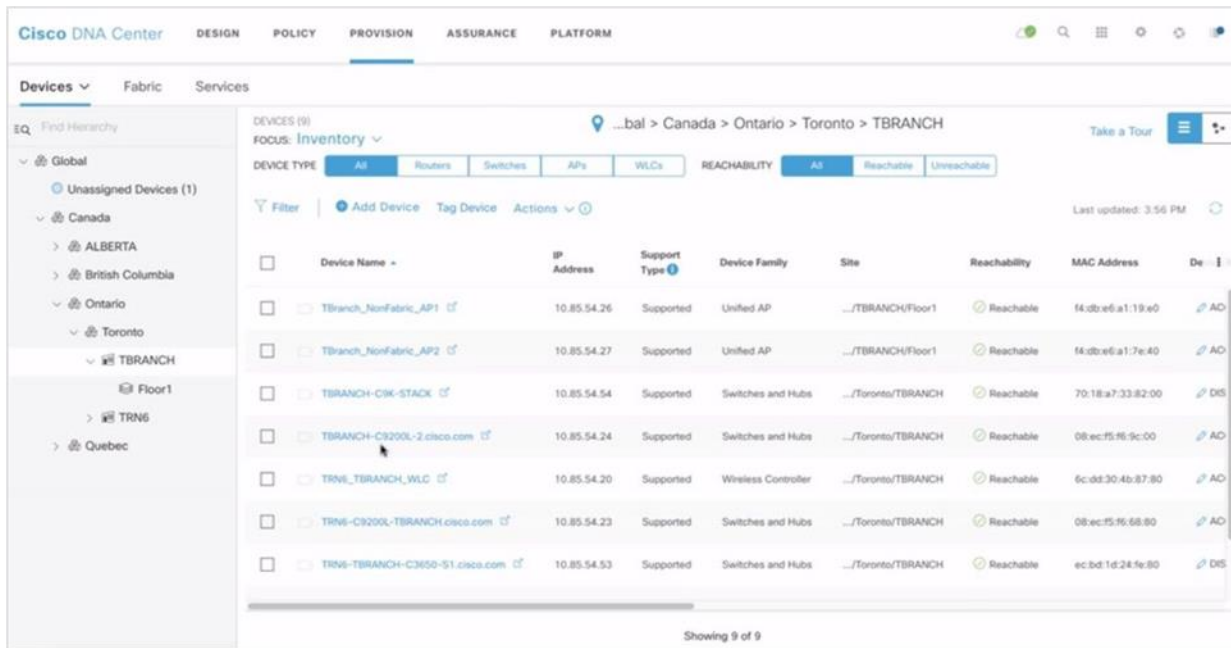
vManage's **on-premises solution** is well-suited for customers requiring strong regulation policies or isolated network deployments.



Cisco DNA Center (Autonomous Mode)

For **traditional Cisco IOS XE deployments** that require a centralized controller to manage the entire network, Cisco DNA Center serves as a solution.

Cisco DNA Center supports device provisioning via Command-Line Interface (CLI) templates, inventory management, and software image management for routing platforms.

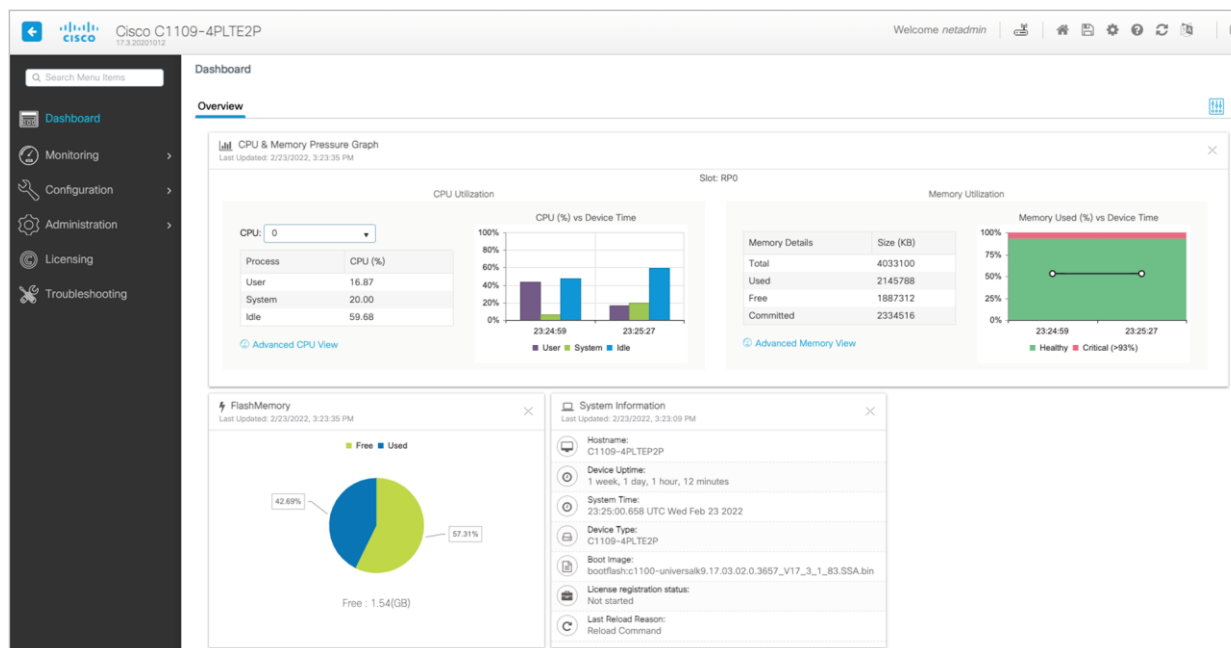


Web User Interface (WebUI)

WebUI is an **embedded GUI-based device-management tool** that provides the ability to provision the device, simplify device deployment and manageability, and enhance the user experience.

There is no need to install any license on the device to use WebUI.

You can build configurations and monitor and troubleshoot the device without having CLI expertise.

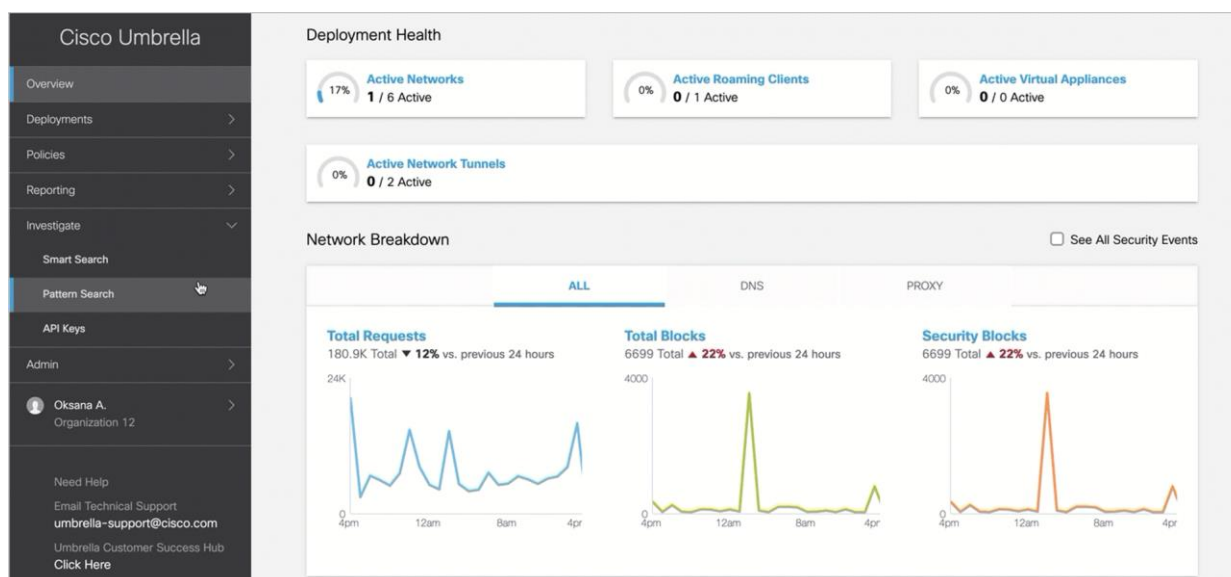


Cisco Umbrella security

Cisco Umbrella offers **flexible, cloud-delivered security functions** into one solution, so you can extend your data protection to devices, remote users, and distributed locations anywhere.

Umbrella is the easiest way to effectively **protect your users everywhere** in minutes

Cisco Umbrella's security functions include DNS-layer security, secure web gateway, firewall, cloud access security broker, interactive threat intelligence, and integration with Cisco SD-WAN.



Software functionality

New features are constantly being added with every Cisco IOS XE release cycle. For an up-to-date list of features, please visit the [Cisco ISR 1000 Series Configuration Guide hub](#). Below is an overview of the key features on the Cisco ISR 1000 Series routers:

- IP routing
- IP services
- IP multicast
- Quality of Service (QoS)
- LAN
- Cellular
- Security
- IPv6
- Management and authentication
- IPsec and tunneling
- xDSL

Cisco 116x ISRs – High performance, small form factor

There are four models in the Cisco 116x platform – with or without additional storage and with or without pluggable LTE. This group of routers provides the highest performance in the ISR 1000 Series for small branches and remote offices.

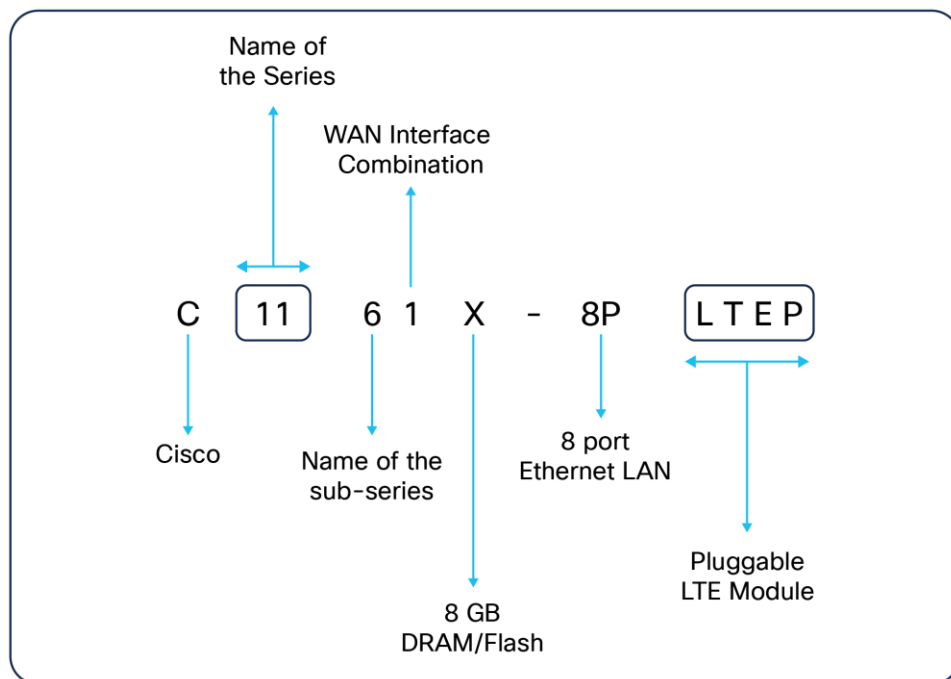


Figure 2.
Product ID breakdown – Cisco 116x ISRs

Table 1. WAN interface combinations for the Cisco 116x ISRs

WAN interface combination	Description
1	1 copper/SFP Ethernet port + 1 copper Ethernet port

Models and configurations



Figure 3.
C1161X-8PLTEP

The C1161X-8PLTEP platform has eight Gigabit Ethernet LAN ports, one Gigabit Ethernet WAN port, one Gigabit Ethernet WAN/SFP port, and one pluggable LTE module. “X” signifies 8-GB DRAM memory for app hosting.

Primary features and benefits - Cisco 116x ISRs

- Two DRAM options: 4-GB (with 4-GB flash) base model and 8-GB (with 8-GB flash) model with app-hosting capabilities
- Minimum supported version: Cisco IOS XE 16.11.1
- Maximum encrypted throughput (single tunnel, IMIX): 825 Mbps
- 8 integrated GE LAN ports (copper)
- 1 integrated GE WAN port (copper) and 1 GE combo port (copper/fiber)
- 1 integrated micro-USB console port
- Type A USB 3.0 port for convenient storage
- Optional PoE/PoE+ upgrades available (4 PoE/2 PoE+ on 8 GE LAN ports)
- Optional pluggable LTE USB dongle (CAT4)
- Optional pluggable LTE technology (CAT4, CAT6, CAT18)
- Optional pluggable 5G module (starting from Release 17.9.2)

Table 2. Mechanical specifications for the Cisco 116x ISRs

Feature	C1161(X)-8P	C1161(X)-8PLTEP
Dimensions (H x W x D)	1.65 x 10.80 x 7.85 in.	1.65 x 10.80 x 7.85 in.
Weight	3.48 lb. (1.58 kg)	3.74 lb. (1.70 kg)
Maximum power consumption (excluding external PS loss)	20.1W	24.8W

Feature	C1161(X)-8P	C1161(X)-8PLTEP
External power supply	<ul style="list-style-type: none"> AC input voltage: Universal 100 to 240 VAC, 50 to 60 Hz Output voltage: 12 VDC Maximum output power: 66W Requires 150W power supply for optional PoE and PoE+ PoE output voltage of -53.5 VDC 	
Operating conditions	<ul style="list-style-type: none"> Temperature: 0° to 40° C at sea level, 1° C/1000 ft derating from 40° C Altitude: 0 to 10,000 ft (0 to 3048 m) Humidity: 5% to 85% relative humidity (noncondensing) 	
Nonoperating conditions	<ul style="list-style-type: none"> Temperature: -40° to +70° C (-40° to +158° F) Altitude: 0 to 15,000 ft (0 to 4572 m) Humidity: 5% to 95% relative humidity (noncondensing) 	
Minimum supported version (XE SD-WAN)	17.2.1	17.2.1

Table 3. Cisco 116x ISR SKUs

Model	WAN				LAN	
	GE	DSL	5G	LTE	802.11ac/ax	GE
C1161(X)-8P	2	No	No	No	No	8
C1161(X)-8PLTEP	2	No	Yes	Yes	No	8

(X): 8 GB DRAM/8 GB flash for app-hosting capabilities.

Platform performance

Table 4. Cisco 116x ISR Controller Mode (SD-WAN) performance specifications - 17.9 Release

Feature	1161
SD-WAN IPsec throughput (1400 bytes)	1889 Mbps
SD-WAN IPsec throughput (IMIX)	595 Mbps
SD-WAN overlay tunnels	200

Table 5. Cisco 1161 ISR Autonomous Mode (non-SD-WAN) performance specifications - 17.9 Release

Feature	1161
IPv4 forwarding throughput (IMIX)	1765 Mbps
IPsec throughput (multi tunnel, IMIX)	518 Mbps
Number of IPsec IPv4 tunnels	100

Table 6. Cisco 116x ISR Autonomous Mode (non-SD-WAN) scalability

Feature	C1161-8P (LTEP)	C1161X-8P (LTEP)
DRAM/flash	4 GB/4 GB	8 GB/8 GB
Number of ACLs per system	1.6K	1.6K
Number of IPv4 ACEs per system	4K	4K
Number of IPv4 routes	800K	800K
Number of IPv6 routes	700K	700K
Number of NAT sessions	100K	100K
Number of VRFs	4K	4K

Cisco 113x ISRs – The pathway to Wi-Fi 6

The Cisco 113x ISR models introduced 802.11ax embedded access points to the Cisco ISR 1000 Series. These devices offer 4-GB DRAM/8-GB flash and 8-GB DRAM/16-GB flash options. There is only one WAN interface combination in the 1131 models, with the option for an LTE Pluggable Interface Module (PIM) slot.

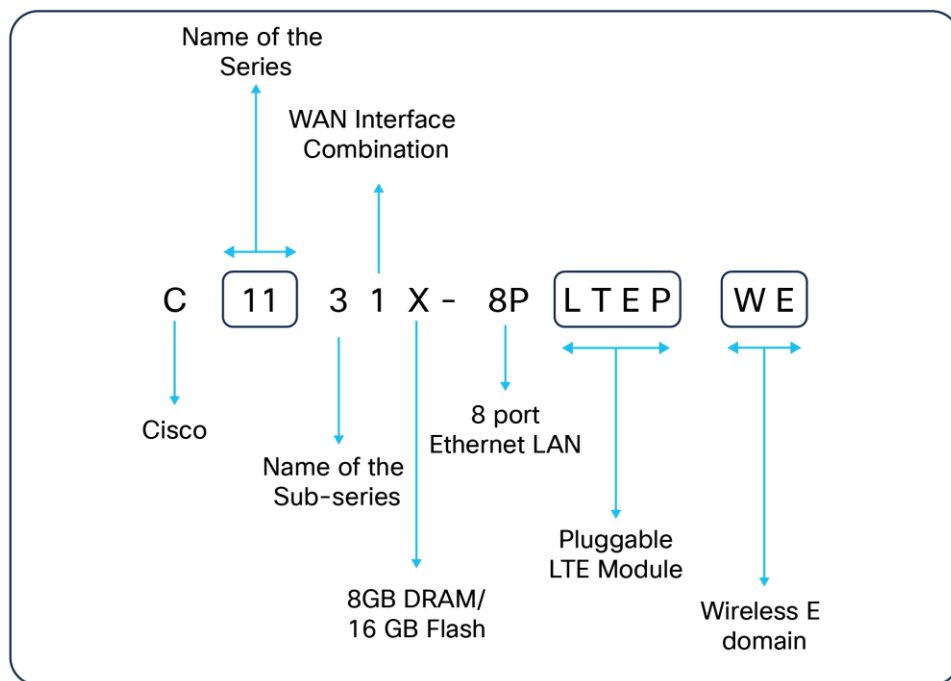


Figure 4. Product ID breakdown – Cisco 113x ISRs

Table 7. WAN interface combinations for the Cisco 113x ISRs

WAN interface combination	Description
1	2 copper/SFP Ethernet ports

Models and configurations



Figure 5.
C1131X-8PLTEPW

The C1131X-8PLTEPW platform has eight Gigabit Ethernet LAN ports, two Gigabit Ethernet WAN/SFP ports, one pluggable LTE module, and one embedded access point. “X” signifies 8-GB DRAM memory for app hosting.

Primary features and benefits - Cisco 113x ISRs

- Two DRAM options: 4-GB (with 8-GB flash) base model and 8-GB (with 16-GB flash) model with app-hosting capabilities
- Minimum supported version: Cisco IOS XE 17.7.1
- Maximum encrypted throughput (single tunnel, IMIX): 650 Mbps
- 8 integrated GE LAN ports (copper)
- 2 integrated GE WAN combo (copper/fiber) ports
- 1 integrated RJ-45 console port
- Type A USB 2.0 port for convenient storage
- Optional PoE/PoE+ upgrades available (4 PoE/2 PoE+ on 8 GE LAN ports)
- Optional pluggable LTE USB dongle (CAT4)
- Optional pluggable LTE technology (CAT 4, CAT6, CAT18)
- Optional pluggable 5G module (starting from Release 17.9.2)
- Embedded access point (802.11ax wireless LAN)

Table 8. Mechanical specifications for the Cisco 113x ISRs

Feature	C1131(X)-8PW	C1131(X)-8PLTEPW
Dimensions (H x W x D)	1.65 x 12.70 x 8.90 in.	1.65 x 12.70 x 8.90 in.
Weight	4.78 lb. (2.17 kg)	5.68 lb. (2.58 kg)
Maximum power consumption (excluding external PS loss)	25W	31W
External power supply	<ul style="list-style-type: none"> • AC input voltage: Universal 100 to 240 VAC, 50 to 60 Hz • Output voltage: 12 VDC • Maximum output power: 66W • Requires 150W power supply for optional PoE and PoE+ • PoE output voltage of -53.5 VDC 	
Operating conditions	<ul style="list-style-type: none"> • Temperature: 0° to 40° C at sea level, 1° C/1000 ft derating from 40° C • Altitude: 0 to 10,000 ft (0 to 3048 m) • Humidity: 10% to 85% relative humidity (noncondensing) 	
Nonoperating conditions	Temperature: -40° to +70° C (-40° to +158° F) Altitude: 0 to 15,000 ft (0 to 4572 m) Humidity: 5% to 95% relative humidity (noncondensing)	
Wi-Fi domains	A, B, E, Q, or Z	A, B, E, Q, or Z
Minimum supported version (XE SD-WAN)	17.7.1	17.7.1

Table 9. Cisco 113x ISR SKUs

Model	WAN				LAN	
	GE	DSL	5G	LTE	802.11ax	GE
C1131(X)-8PW*	2	No	No	No	Yes	8
C1131(X)-8PLTEPW*	2	No	Yes	Yes	Yes	8

(X): 8-GB DRAM/16-GB flash for app-hosting capabilities.

“*” Represents different Wi-Fi domains (See table 8)

Platform performance

Table 10. Cisco 113x ISR Controller Mode (SD-WAN) performance specifications – 17.9 Release

Feature	C1131
SD-WAN IPsec throughput (1400 bytes)	1889 Mbps
SD-WAN IPsec throughput (IMIX)	465 Mbps
SD-WAN overlay tunnels	200

Table 11. Cisco 113x ISR Autonomous Mode (non-SD-WAN) performance specifications – 17.9 Release

Feature	C1131
IPv4 forwarding throughput (IMIX)	1648 Mbps
IPsec throughput (multi tunnel, IMIX)	470 Mbps
Number of IPsec IPv4 tunnels	100

Table 12. Cisco 113x ISR Autonomous Mode (non-SD-WAN) scalability

Feature	C1131-8P(LTEP)W	C1131X-8P(LTEP)W
DRAM/flash	4 GB/8 GB	8 GB/16 GB
Number of ACLs per system	4K	4K
Number of IPv4 ACEs per system	10K	10K
Number of IPv4 routes	280K	280K
Number of IPv6 routes	260K	260K
Number of NAT sessions	100K	100K
Number of firewall sessions	20K	20K
Number of VRFs	1K	1K

Cisco 112x ISRs – Bringing modularity for cellular technology

The Cisco 112x ISR models offer multiple combinations of Wi-Fi, LTE, DSL, and 8-GB DRAM/flash memory on the same device. There are four WAN interface combinations in the C112x platform: 1121, 1126, 1127, and 1128.

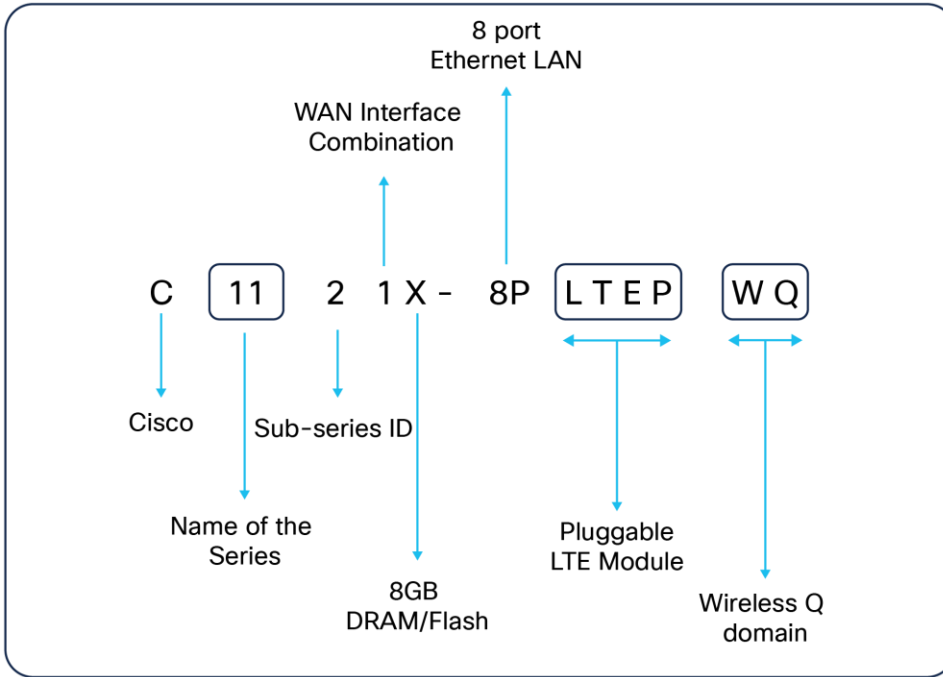


Figure 6.
Product ID breakdown – Cisco 112x ISRs

Table 13. WAN interface combinations for the Cisco 112x ISRs

WAN interface combination	Description
1	1 copper/SFP Ethernet port + 1 copper Ethernet port
6	1 copper/SFP Ethernet port + 1 ADSL2/VDSL2+ port (Annex B/J ISDN)
7	1 copper/SFP Ethernet port + 1 ADSL2/VDSL2+ port (Annex A POTS); M modifier indicates Annex M support
8	1 copper/SFP Ethernet port + 1 G. SHDSL port

Models and configurations



Figure 7.
C1121X-8PLTEPW

The C1121X-8PLTEPW platform has eight Gigabit Ethernet LAN ports, one Gigabit Ethernet WAN port, one Gigabit Ethernet WAN/SFP port, one pluggable LTE module, and one embedded access point. “X” signifies 8-GB DRAM memory for app hosting.



Figure 8.
C1127X-8PLTEP

The C1127X-8PLTEP platform has eight Gigabit Ethernet LAN ports, one Gigabit Ethernet WAN/SFP port, one pluggable LTE module, and one ADSL/VDSL2+ port (Annex A POTS).

Primary features and benefits Cisco 112x ISRs

- Two DRAM options: 4-GB (with 4-GB flash) base model and 8-GB (with 8-GB flash) model with app-hosting capabilities
- Minimum supported version: Cisco IOS XE 16.11.1
- Maximum encrypted throughput (single tunnel, IMIX): 650 Mbps
- 4 or 8 integrated GE LAN ports (copper)
- 1 integrated GE WAN port (copper) or GE combo port (copper/fiber)
- 1 integrated Micro-USB console port
- Type A USB 3.0 port for convenient storage
- Optional PoE/PoE+ upgrades available (4 PoE/2 PoE+ on 8 GE LAN ports and 2 PoE/1 PoE+ on 4 GE LAN ports)
- Optional pluggable LTE USB dongle (CAT4)
- Optional pluggable LTE technology (CAT4, CAT6, CAT18)
- Optional pluggable 5G module (starting from Release 17.9.2)
- Optional embedded access point (802.11ac wireless LAN)

Table 14. Mechanical specifications for the C112x-4P models

Feature	C1121-4P	C1121-4PLTEP
Dimensions (H x W x D)	1.65 x 12.70 x 8.90 in.	1.65 x 12.70 x 8.90 in.
Weight	3.43 lb (1.55 kg).	3.70 lb. (1.68 kg)
Maximum power consumption (excluding external PS loss)	18.8W	23.5W
External power supply	<ul style="list-style-type: none"> • AC input voltage: Universal 100 to 240 VAC, 50 to 60 Hz • Output voltage: 12 VDC • Maximum output power: 66W • Requires 115W power supply for optional PoE and PoE+ • PoE output voltage of -53.5 VDC 	
Operating conditions	<ul style="list-style-type: none"> • Temperature: 0° to 40°C at sea level, 1° C/1000 ft derating from 40°C • Altitude: 0 to 10,000 ft (0 to 3048 m) • Humidity: 10% to 85% relative humidity (noncondensing) 	
Nonoperating conditions	<ul style="list-style-type: none"> • Temperature: -40° to +70°C (-40° to +158°F) • Altitude: 0 to 15,000 ft (0 to 4572 m) • Humidity: 5% to 95% relative humidity (noncondensing) 	
Minimum supported version (XE SD-WAN)	17.2.1	17.2.1

Table 15. Mechanical specifications for the C112x-8P models

Feature	C112x(X)-8P	C112x(X)-8PLTEP	C1121(X)-8PLTEPW*
Dimension (H x W x D)	1.65 x 10.80 x 7.85 in.	C1121: 1.65 x 10.80 x 7.85 in. C112x: 1.65 x 12.70 x 8.90 in.	1.65 x 12.70 x 8.90 in.
Weight	3.48 lb. (1.58 kg)	C1121: 3.74 lb. (1.70 kg) C1126/C1127: 4.53 lb. (2.05 kg) C1128: 4.62 lb. (2.10 kg)	4.62 lb. (2.10 kg)
Maximum power consumption (excluding external PS loss)	19.9W	24.6W	28.3W

Feature	C112x(X)-8P	C112x(X)-8PLTEP	C1121(X)-8PLTEPW*
External power supply	<ul style="list-style-type: none"> AC input voltage: Universal 100 to 240 VAC, 50 to 60 Hz Output voltage: 12 VDC Maximum output power: 66W Requires 150W power supply for optional PoE and PoE+ PoE output voltage of -53.5 VDC 		
Operating conditions	<ul style="list-style-type: none"> Temperature: 0° to 40°C at sea level, 1°C/1000 ft derating from 40°C Altitude: 0 to 10,000 ft (0 to 3048 m) Humidity: 10% to 85% relative humidity (noncondensing) 		
Nonoperating conditions	<ul style="list-style-type: none"> Temperature: -40° to +70°C (-40° to +158°F) Altitude: 0 to 15,000 ft (0 to 4572 m) Humidity: 5% to 95% relative humidity (noncondensing) 		
Wi-Fi domains	-	-	C1121-8PLTEPW: B, E, Q, Z C1121X-8PLTEPW: A, B, E, Z
Minimum supported version (XE SD-WAN)	17.2.1	17.2.1	17.2.1

Table 16. Cisco 112x ISR SKUs

Model	WAN				LAN	
	GE	DSL	5G	LTE	802.11ac	GE
C1121-4P	2	No	No	No	No	4
C1121-4PLTEP	2	No	Yes	Yes	No	4
C1121(X)-8P	2	No	No	No	No	8
C1121(X)-8PLTEP	2	No	Yes	Yes	No	8
C1121(X)-8PLTEPW*	2	No	Yes	Yes	Yes	8
C1126(X)-8PLTEP	1	Yes	Yes	Yes	No	8
C1127(X)-8P(M)LTEP	1	Yes	Yes	Yes	No	8
C1128-8PLTEP	1	Yes	Yes	Yes	No	8

(X): 8-GB DRAM/flash for app-hosting capabilities. Ex: C1121X-8PLTEP.

“*” Represents different Wi-Fi domains (See table 15)

Platform performance

Table 17. Cisco 112x ISR Controller Mode (SD-WAN) performance specifications – 17.9 Release

Feature	C112x(X)-8P	C112x-4P
SD-WAN IPsec throughput (1400 bytes)	1889 Mbps	1426 Mbps
SD-WAN IPsec throughput (IMIX)	465 Mbps	338 Mbps
SD-WAN overlay tunnels	200	200

Table 18. Cisco 112x ISR Autonomous Mode (non-SD-WAN) performance specifications – 17.9 Release

Feature	C112x(X)-8P	C112x-4P
IPv4 forwarding throughput (IMIX)	1673 Mbps	1372 Mbps
IPsec throughput (multi tunnel, IMIX)	468 Mbps	370 Mbps
Number of IPsec IPv4 tunnels	100	100

Table 19. C112x Autonomous Mode (non-SD-WAN) scalability

Feature	C112xX-8P	C112x-8P	C1121-4P
DRAM/flash	8 GB/8 GB	4 GB/4 GB	4 GB/4 GB
Number of ACLs per system	4K	4K	4K
Number of IPv4 ACEs per system	10K	10K	10K
Number of IPv4 routes	280K	280K	280K
Number of IPv6 routes	260K	260K	260K
Number of NAT sessions	100K	100K	100K
Number of VRFs	1K	1K	1K

Cisco 111x ISRs –Flexible WAN and LAN connectivity

The Cisco 111x models introduced DSL variants to the ISR 1000 Series portfolio and additional memory options for app-hosting capabilities. There are six WAN interface combinations in the Cisco 111x platform: 1111, 1112, 1113, 1116, 1117, and 1118.

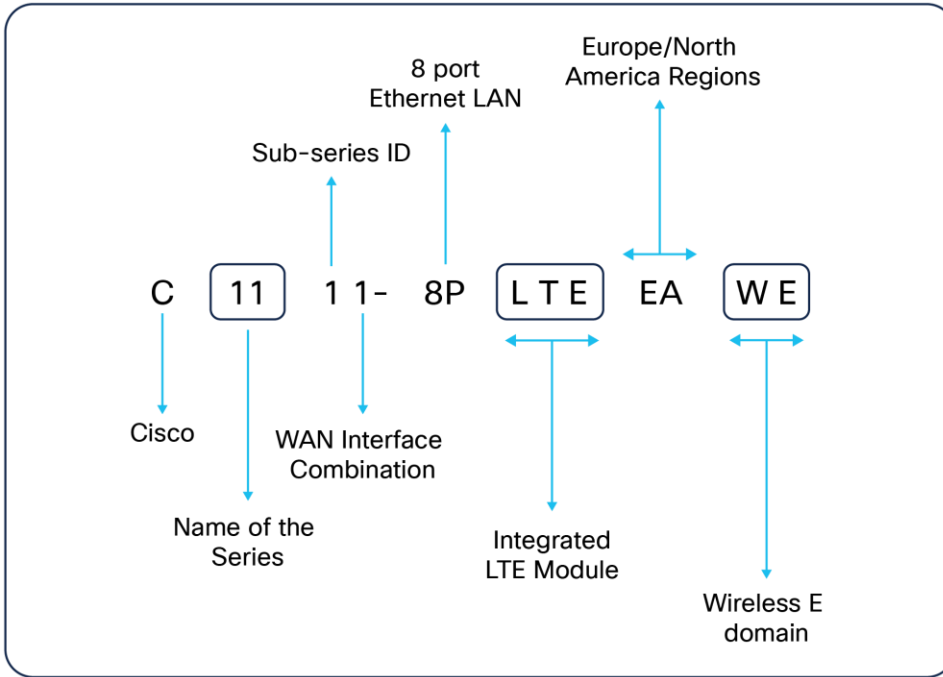


Figure 9.
Product ID breakdown – Cisco 111x ISRs

Table 20. WAN interface combinations for the Cisco 111x ISRs

WAN interface combination	Description
1	1 copper/SFP Ethernet port + 1 copper Ethernet port
2	1 copper/SFP Ethernet port + 1 G. FAST DSL port (Annex B)
3	1 copper/SFP Ethernet port + 1 G. FAST DSL port (Annex A); M modifier indicates Annex M
6	1 copper/SFP Ethernet port + 1 ADSL2/VDSL2+ port (Annex B/J ISDN)
7	1 copper/SFP Ethernet port + 1 ADSL2/VDSL2+ Port (Annex A POTS); M modifier indicates Annex M
8	1 copper/SFP Ethernet port + 1 G. SHDSL port

Models and configurations



Figure 10.
C1111X-8P

The C1111X-8P platform has eight Gigabit Ethernet LAN ports, one Gigabit Ethernet WAN port, and one Gigabit Ethernet WAN/SFP port. “X” signifies 8-GB DRAM memory for app hosting.



Figure 11.
C1117-4PLTE

The C1117-4PLTE platform has four Gigabit Ethernet LAN ports, one Gigabit Ethernet WAN/SFP port, one ADSL2/VDSL2+port, and one LTE module (embedded) with two LTE antennas.

Primary features and benefits - Cisco 111x ISRs

- Two DRAM options: 4-GB (with 4-GB flash) base model and 8-GB (with 8-GB flash) model with app-hosting capabilities
- Minimum supported version - 1112 and 1113: Cisco IOS XE 16.8.1
- Minimum supported version - 1118 and 111X-8P: Cisco IOS XE 16.9.1
- Minimum supported version - remaining 111x models: Cisco IOS XE 16.6.1
- Maximum encrypted throughput (single tunnel, IMIX): 679 Mbps
- 4 or 8 integrated GE LAN ports (copper)
- 1 integrated GE WAN port (copper) or GE combo port (copper/fiber)

- 1 integrated Micro-USB/RJ-45 console port
- Type A USB 3.0 port for convenient storage
- Optional PoE/PoE+ upgrades available (4 PoE/2 PoE+ on 8 GE LAN ports and 2 PoE/1 PoE+ on 4 GE LAN ports)
- Optional embedded LTE technology (CAT6)
- Optional embedded access point (802.11ac wireless LAN)

Table 21. Mechanical specifications for the C111x-4P models

Feature	C111x-4P	C111x-4PW*	C111x-4PLTE	C111x-4PLTEW*
Dimensions (H x W x D)	1.75 x 12.70 x 9.03 in. (4.45 x 32.26 x 22.94 cm)		1.75 x 12.70 x 9.60 in. (4.45 x 32.26 x 24.38 cm)	
Weight	4.37 lb. (1.98 kg)	4.76 lb. (2.16 kg)	4.50 lb. (2.04 kg)	4.89 lb. (2.22 kg)
Maximum power consumption (excluding external PS loss)	C1111: 18W C111x: 22W	C1111: 21.7W C111x: 25.8W	C1111: 22.7W C111x: 26.8W	24W
External power supply	<ul style="list-style-type: none"> • AC input voltage: Universal 100 to 240 VAC, 50 to 60 Hz • Output voltage: 12 VDC • Maximum output power: 66W • Requires 115W power supply for optional PoE and PoE+ • PoE output voltage of -53.5 VDC 			
Operating conditions	<ul style="list-style-type: none"> • Temperature: 0° to 40°C at sea level, 1°C/1000 ft derating from 40°C • Altitude: 0 to 10,000 ft (0 to 3048 m) • Humidity: 10% to 85% relative humidity (noncondensing) 			
Nonoperating conditions	<ul style="list-style-type: none"> • Temperature: -40° to +70°C (-40° to +158°F) • Altitude: 0 to 15,000 ft (0 to 4572 m) • Humidity: 5% to 95% relative humidity (noncondensing) 			
Wi-Fi domains	-	C1111: A, B, D, E, F, H, N, Q, R, Z C1116: E C1117: A, E, Z	-	C1116-4PLTEAW: E C1117-4PLTEAW: A, E C1117-4PLTEAW: Z
Minimum supported version (XE SD-WAN)	Varies for each device. Refer to the SD-WAN Compatibility Matrix			

Table 22. C111x-4P ISR SKUs

Model	WAN			LAN	
	GE	DSL	LTE (CAT 6)	802.11ac	GE
C1111-4P	2	–	No	–	4
C1111-4PLTEEA/LA	2	–	Yes	–	4
C1111-4PW*	2	–	No	Yes	4
C1116-4P	1	Yes	No	–	4
C1116-4PWE	1	Yes	No	Yes	4
C1116-4PLTEEA	1	Yes	Yes	–	4
C1116-4PLTEEAWE	1	Yes	Yes	Yes	4
C1117-4P(M)	1	Yes	No	–	4
C1117-4P(M)W*	1	Yes	No	Yes	4
C1117-4P(M)LTEEA/LA	1	Yes	Yes	–	4
C1117-4P(M)LTEEA/LAW*	1	Yes	Yes	Yes	4

LTEEA: EMEAR and North America

LTELA: LATAM and APAC

(M): Annex M support

“*” Represents different Wi-Fi domains (See table 21)

Table 23. Mechanical specifications for the C111x-8P models

Feature	C111x-8P	C111x-8PW*	C111x-8PLTE	C111x-8PLTEW*
Dimensions (H x W x D)	1.75 x 12.70 x 9.015 in.	1.75 x 12.70 x 9.015 in.	1.75 x 12.70 x 9.6 in.	1.75 x 12.70 x 9.6 in.
Weight	4.37 lb. (1.98 kg)	4.76 lb. (2.16 kg)	4.50 lb. (2.04 kg)	4.89 lb. (2.22 kg)
Maximum power consumption (excluding external PS loss)	C1111: 19.2W C111x: 35.3W	C1111: 22.9W C111x: 38.2W	C1111: 23.9W C111x: 38.1W	C1111: 27.6W C111x: 40.9W
External power supply	<ul style="list-style-type: none"> • AC input voltage: Universal 100 to 240 VAC, 50 to 60 Hz • Output voltage: 12 VDC • Maximum output power: 66W • Requires 150W power supply for optional PoE and PoE+ • PoE output voltage of -53.5 VDC 			

Feature	C111x-8P	C111x-8PW*	C111x-8PLTE	C111x-8PLTEW*
Operating conditions	<ul style="list-style-type: none"> Temperature: 0° to 40° C at sea level, 1° C/1000 ft derating from 40° C Altitude: 0 to 10,000 ft (0 to 3048 m) Humidity: 10% to 85% relative humidity (noncondensing) 			
Nonoperating conditions	<ul style="list-style-type: none"> Temperature: -40° to +70° C (-40° to +158° F) Altitude: 0 to 15,000 ft (0 to 4572 m) Humidity: 5% to 95% relative humidity (noncondensing) 			
Wi-Fi domains	-	C1111: A, B, E, F, H, N, Q, R, S, Z C1112: E C1113: A, B, E, Z	-	C1111-8PLTEEA: A, B, E, R C1111-8PLTELA: A, D, E, F, H, N, Q, S, Z C1112-8PLTEEA: E C1113-8PLTEEA: A, B, E C1113-8PLTELA: Z
Minimum supported version (XE SD-WAN)	Varies for each device. Refer to the SD-WAN Compatibility Matrix			

Table 24. C111x-8P ISR SKUs

Model	WAN			LAN	
	GE	DSL	LTE (CAT 6)	802.11ac	GE
C1111(X)-8P	2	No	No	No	8
C1111-8PW*	2	No	No	Yes	8
C1111-8PLTEEA/LA	2	No	Yes	No	8
C1111-8PLTEEA/LAW*	2	No	Yes	Yes	8
C1112-8P	1	Yes	No	No	8
C1112-8PWE	1	Yes	No	Yes	8
C1112-8PLTEEA	1	Yes	Yes	No	8
C1112-8PLTEEA*	1	Yes	Yes	Yes	8
C1113-8P(M)	1	Yes	No	No	8
C1113-8P(M)W*	1	Yes	No	Yes	8
C1113-8P(M)LTEEA/LA	1	Yes	Yes	No	8

Model	WAN			LAN	
	GE	DSL	LTE (CAT 6)	802.11ac	GE
C1113-8PLTEEA/LAW*	1	Yes	Yes	Yes	8
C1118-8P	1	Yes	No	No	8

LTEEA: EMEAR and North America.

LTELA: LATAM and APAC.

(M): Annex M support.

(X): 8-GB DRAM/flash for app-hosting capabilities.

“*” Represents different Wi-Fi domains (See table 23)

Platform performance

Table 25. Cisco 111x ISR Controller Mode (SD-WAN) performance specifications – 17.9 Release

Feature	C111x-8P	C111x-4P
SD-WAN IPsec throughput (1400 bytes)	1889 Mbps	1889 Mbps
SD-WAN IPsec throughput (IMIX)	465 Mbps	338 Mbps
SD-WAN overlay tunnels	200	200

Table 26. Cisco 111x ISR Autonomous Mode (non-SD-WAN) performance specifications – 17.9 Release

Feature	C111x-8P	C111x-4P
IPv4 forwarding throughput (IMIX)	1673 Mbps	1372 Mbps
IPsec throughput (multi tunnel, IMIX)	468 Mbps	370 Mbps
Number of IPsec IPv4 tunnels	100	100

Table 27. Cisco 111x ISR Autonomous Mode (non-SD-WAN) scalability

Feature	C1111X-8P	C111x-8P	C111x-4P
Flash/DRAM	8 GB	4 GB	4 GB
Number of ACLs per system	4K	4K	4K
Number of IPv4 ACEs per system	10K	10K	10K
Number of IPv4 routes	800K	280K	280K

Feature	C1111X-8P	C111x-8P	C111x-4P
Number of IPv6 routes	700K	260K	260K
Number of NAT sessions	100K	100K	100K
Number of VRFs	1K	1K	1K

Cisco 110x ISRs – Routing fundamentals, perfected

There are two WAN interface combinations in the Cisco 110x models: the 1101 and 1109.

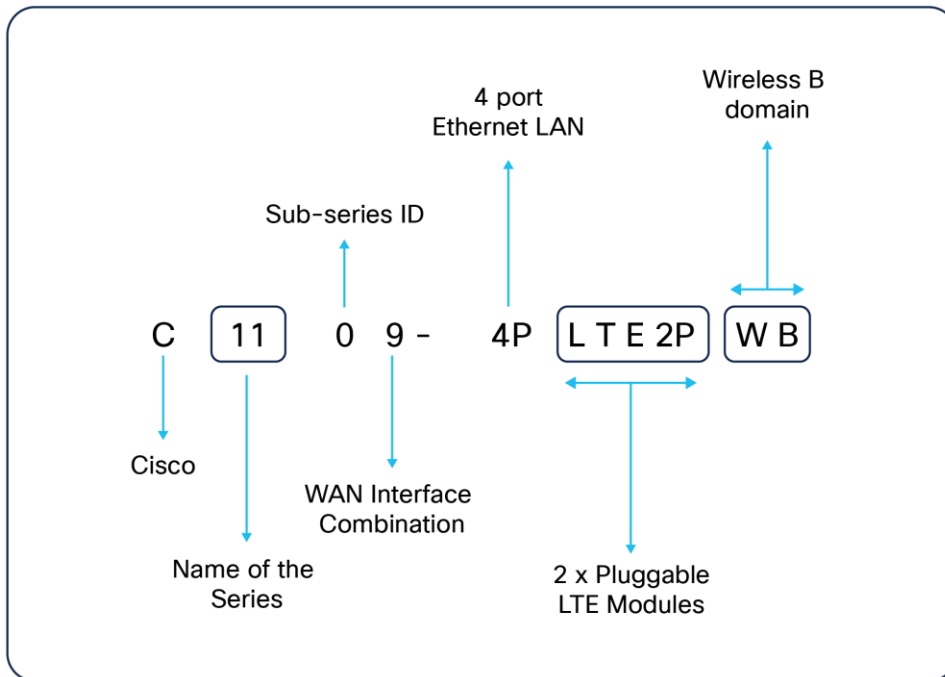


Figure 12.
Product ID breakdown – Cisco 110x ISRs

Table 28. WAN interface combinations for the C110x ISRs

WAN interface combination	Description
1	1 copper Ethernet port
9	1 copper Ethernet port + hardened platform built for wider temperature range

Models and configurations - Cisco 1101 ISRs



Figure 13.
C1101-4P

The C1101-4P platform has four Gigabit-Ethernet LAN ports and one Gigabit Ethernet WAN port.



Figure 14.
C1101-4PLTEP

The C1101-4PLTEP platform has four Gigabit Ethernet LAN ports, one Gigabit Ethernet WAN port, and one PIM slot.

Primary features and benefits - Cisco 1101 ISRs

- Smallest form factor
- Minimum supported version: Cisco IOS XE 16.8.1
- Maximum encrypted throughput (single tunnel, IMIX): 475 Mbps
- Fixed 4-GB flash memory
- 4 integrated GE LAN ports (copper)
- 1 integrated GE WAN port (copper)
- 1 integrated Micro-USB console port

- Type A USB 3.0 port for convenient storage
- Optional pluggable LTE USB dongle (CAT4)
- Optional pluggable LTE technology (CAT4, CAT6, CAT 18)
- Optional pluggable 5G module (starting from Release 17.9.2)
- Optional pluggable high-speed serial interface module (P-1T)
- Optional embedded access point (802.11ac wireless LAN)

Table 29. Mechanical specifications for the Cisco 1101 models

Feature	C1101-4P	C1101-4PLTEP	C1101-4PLTEPW
Dimensions (H x W x D)	1.10 x 7.50 x 6.00 in.	1.73 x 9.75 x 6.6 in.	1.73 x 9.75 x 6.6 in.
Weight	1.89 lb. (0.86 kg)	3.34 lb. (1.52 kg)	3.78 lb. (1.71 kg)
Maximum power consumption (excluding external PS loss)	17.3W	21.8W	28W
External power supply	<ul style="list-style-type: none"> • AC input voltage: Universal 100 to 240 VAC, 50 to 60 Hz • Output voltage: 12 VDC 		
	Maximum output power: 30W		Maximum output power: 66W
Operating conditions	<ul style="list-style-type: none"> • Temperature: 0° to 45° C at sea level, 1° C/1000 ft derating from 45° C • Altitude: 0 to 10,000 ft (0 to 3048 m) • Humidity: 10% to 85% relative humidity (noncondensing) 		
Nonoperating conditions	<ul style="list-style-type: none"> • Temperature: -40° to +70° C (-40° to +158° F) • Altitude: 0 to 15,000 ft (0 to 4572 m) • Humidity: 5% to 95% relative humidity (noncondensing) 		
Wi-Fi domains	-	-	A, B, D, E, Q, or Z
Minimum supported version (XE SD-WAN)	16.10.1	17.5.1	16.12.1

Table 30. Cisco 1101 ISR SKUs

Model	WAN				LAN	
	GE	DSL	5G	LTE	802.11ac	GE
C1101-4P	1	-	No	No	No	4
C1101-4PLTEP	1	-	Yes	Yes	No	4
C1101-4PLTEPW*	1	-	Yes	Yes	Yes	4

“*” Represents different Wi-Fi domains (See table 29)

Models and configurations - Cisco 1109 ISRs

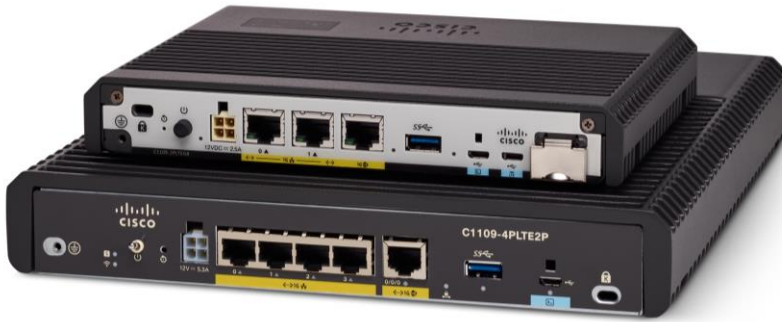


Figure 15.
(Top) C1109-2PLTEGB; (bottom) C1109-4PLTE2P

The C1109-2PLTEGB platform has two Gigabit Ethernet LAN ports, one Gigabit Ethernet WAN port, and one PIM slot (front panel).

The C1109-4PLTE2P platform has four Gigabit Ethernet LAN ports, one Gigabit Ethernet WAN port, and two PIM slots (front panel).



Figure 16.
C1109-4PLTE2P front panel with two PIM slots

Primary features and benefits – Cisco 1109 ISRs

- Hardened platform built for a wider temperature range
- Minimum supported version: Cisco IOS XE 16.9.1
- Maximum encrypted throughput: 350 Mbps
- Fixed 4-GB flash memory
- 2 or 4 integrated GE LAN ports (copper)
- 1 integrated GE WAN port (copper)
- 1 integrated Micro-USB console port
- Type A USB 3.0 port for convenient storage
- Optional dual active pluggable LTE technology (CAT4, CAT6, CAT18)
- Optional pluggable 5G module (starting from Release 17.9.2)
- Optional pluggable high-speed serial interface module (P1-T)
- Optional embedded access point (802.11ac wireless LAN)

Table 31. Mechanical specifications for the Cisco 1109 models

Feature	C1109-2PLTE	C1109-4PLTE2P	C1109-4PLTE2PW*
Dimensions (H x W x D)	1.27 x 8.40 x 6.00 in.	1.71 x 11.16 x 9.8 in.	1.71 x 11.16 x 9.8 in.
Weight	2.25 lb. (1.02 kg)	5.93 lb. (2.69 kg)	6.23 lb. (2.83 kg)
Maximum power consumption (excluding external PS loss)	13W	32W	38W
External power supply	<ul style="list-style-type: none">• AC input voltage: Universal 100 to 240 VAC, 50 to 60 Hz• Output voltage: 12 VDC		
	Maximum output power: 30W		Maximum output power: 66W
Operating conditions	<ul style="list-style-type: none">• Altitude: 0 to 10,000 ft (0 to 3048 m)• Humidity: 10% to 85% relative humidity (noncondensing)		
	Temperature: 0° to 50° C at sea level, 1° C/1000 ft derating from 50° C	Temperature: -20° to +55° C at sea level, 1° C/1000 ft derating from 55° C	
Nonoperating conditions	<ul style="list-style-type: none">• Temperature: -40° to +70° C (-40° to +158° F)• Altitude: 0 to 15,000 ft (0 to 3048 m)• Humidity: 5% to 95% relative humidity (noncondensing)		
Wi-Fi domains	-	-	A, B, D, E, Q, R, or Z
Minimum supported version (XE SD-WAN)	17.2.1	16.12.1	16.12.1

Table 32. Cisco 1109 ISR SKUs

Model	WAN				LAN	
	GE	DSL	5G	LTE	802.11ac	GE
C1109-2PLTEVZ	1	–	Yes	Yes	No	2
C1109-2PLTEUS	1	–	Yes	Yes	No	2
C1109-2PLTEGB	1	–	Yes	Yes	No	2
C1109-4PLTE2P	1	–	Yes	Yes	No	4
C1109-4PLTE2PW*	1	–	Yes	Yes	Yes	4

“*” Represents different Wi-Fi domains (See table 31)

Platform performance

Table 33. Cisco 1101 and 1109 ISR Controller Mode (SD-WAN) performance specifications – 17.9 Release

Feature	C1101	C1109
SD-WAN IPsec throughput (1400 Bytes)	1426 Mbps	1169 Mbps
SD-WAN IPsec throughput (IMIX)	338 Mbps	299 Mbps
SD-WAN overlay tunnels	200	200

Table 34. Cisco 1101 and 1109 ISR Autonomous Mode (non-SD-WAN) performance specifications – 17.9 Release

Feature	C1101	C1109
IPv4 forwarding throughput (IMIX)	1372 Mbps	1160 Mbps
IPsec throughput (multi tunnel, IMIX)	370 Mbps	307 Mbps
Number of IPsec IPv4 tunnels	100	100

Table 35. Cisco 1101 and 1109 Autonomous Mode (non-SD-WAN) scalability

Feature	C1101-4P	C1109
Number of ACLs per system	4K	4K
Number of IPv4 ACEs per system	10K	10K
Number of IPv4 routes	280K	280K

Feature	C1101-4P	C1109
Number of IPv6 routes	260K	260K
Number of NAT sessions	100K	100K
Number of VRFs	1K	1K

Cisco cellular technologies product portfolio

Primary benefits and features - CAT4 USB dongle

- Automatic switch failover between primary WAN and backup LTE link and vice versa
- Multiple profile configurations
- Remote firmware upgrade over LTE

Primary benefits and features - CAT4, CAT6, CAT18 PIM modules

- Automatic switch failover between primary and backup link
- Multichannel Interface Processor (MIP) profile configuration
- Remotely initiated data callback using voice or Short Message Service (SMS)
- Remote firmware upgrade over LTE
- SIM lock and unlock capabilities
- Dying gasp available on pluggable LTE modules
- High reliability and cellular multihoming support for dual micro (3FF) SIMs card socket
- Compliant with ISO-7816-2 (SIM mechanical)
- Auto SIM carrier capability with correct firmware selection (Fast SIM failover)
- Micro-USB port to support remote LTE diagnostics and monitoring tools
- Time division duplex (TDD) and frequency division duplex (FDD) supported as appropriate per band
- FirstNet certified ISRs with CAT 18 PIM (P-LTEAP18-GL):
 - C1101-4PLTEP, C1109-4PLTE2P, C1121-8PLTEP, C1126-8PLTEP, C1161-8PLTEP, C1161X-8PLTEP

Table 36. Cisco LTE pluggable specifications

Model	Interface	Modem	Theoretical UL/DL speeds (Mbps)	Antennas
D-LTE-NA	CAT 4 USB	SWI WP7610	75/50	SubMiniature Version A
D-LTE-GB	CAT 4 USB	SWI WP7607	75/50	SubMiniature Version A
D-LTE-AS	CAT 4 USB	SWI WP7608	75/50	SubMiniature Version A
P-LTE-VZ	CAT 4 PIM	SWI WP7601	150/50	LTE-ANTM-SMA-D
P-LTE-US	CAT 4 PIM	SWI WP7603	150/50	LTE-ANTM-SMA-D
P-LTE-GB	CAT 4 PIM	SWI WP7607	150/50	LTE-ANTM-SMA-D
P-LTE-EA	CAT 6 PIM	SWI EM7455	300/50	LTE-ANTM-SMA-D
P-LTE-LA	CAT 6 PIM	SWI EM7430	300/50	LTE-ANTM-SMA-D
P-LTEAP18-GL	CAT 18 PIM	Telit LM960	1200/200	LTE-ANTM2-SMA-D
P-5GS6-GL	5G Sub-6 GHz PIM 4G CAT 20	Telit FN980	3300/400	5G-ANTM-SMA-D

SWI: Sierra Wireless

Table 37. Cisco LTE pluggable supported bands and regions

Model	Supported LTE bands	Supported regions
D-LTE-NA	2, 4, 5, 12, 13, 14, 17	US (all carriers)
D-LTE-GB	1, 3, 7, 8, 20, 28	Europe
D-LTE-AS	1, 3, 5, 8, 40, 41	IN, CN, ID, MY, PH, ZA
P-LTE-VZ	4, 13	US (AT&T, T-Mobile)
P-LTE-US	2, 4, 5, 12	US (Verizon)
P-LTE-GB	1, 3, 7, 8, 20, 28	Europe
P-LTE-EA	1-5, 7, 12, 13, 20, 25, 26, 29, 30, 41	US, EU, CA, Middle East*
P-LTE-LA	1, 3, 5, 7, 8, 18, 19, 21, 28, 38-41	AU, NZ, JP, CN, IN, KR, Southeast Asia, Latin America*
P-LTEAP18-GL	1-5, 7, 8, 12-14, 17-20, 25, 26, 28-30, 32, 38-43, 46, 48, 66, 71	US, CA, AU, NZ, JP, Europe

Model	Supported LTE bands	Supported regions
P-5GS6-GL	5G bands: n1-n3, n5, n7, n8, n12, n20, n25, n28, n38, n40, n41, n48, n66, n71, n77-n79 4G Bands: 1-5, 7,8, 12-14, 17-20, 25,26,28-30, 32,34,38-43, 46, 48, 66,71	US, CA, AU, NZ, JP, Europe

*Dependent upon specific operators supporting the LTE bands listed.

Band 14: FirstNet capable.

Band 48: CBRS.

Cisco ISR 1000 Series wireless LAN (Wi-Fi) specifications

Primary features and benefits – Cisco 110x, 111x, 112x

- 802.11ac Wave 2 with 2x2:2 MIMO technology uses two spatial streams when operating in SU-MIMO or MU-MIMO (multiuser, multiple-input, multiple-output) mode, offering 867-Mbps rates to multiple 802.11ac Wave 2-capable clients simultaneously.
- Flexible deployment through the [Mobility Express solution](#) is ideal for small to medium-sized deployments. Easy setup allows the ISR 1000 Series (similar to the Cisco Aironet® 1815i Access Point) to be deployed on networks without a physical controller.
- Authentication and security: Advanced Encryption Standard (AES) for Wi-Fi Protected Access 2 (WPA2); 802.11i, 802.11r standards support; 802.1X, RADIUS, authentication, authorization, and accounting (AAA) support.
- Default 8.8 AP autonomous or Mobility Express release. Option to select 8.8 Control and Provisioning of Wireless Access Points (CAPWAP) WLC image.

Primary features and benefits – Cisco 1131 only (Wi-Fi 6)

- 2x2 uplink/downlink MU-MIMO with two spatial streams to multiple 802.11ax-capable clients simultaneously.
- Flexible deployment through the [Embedded Wireless Controller solution](#) is ideal for small to medium-sized deployments. Easy setup allows the ISR 1000 Series (similar to the Cisco Catalyst 9105AXI Access Point) to be deployed on networks without a physical controller.
- Authentication and security: AES for WPA2; 802.11r standards support; 802.1X, RADIUS, AAA support.
- Default Cisco IOS XE Software Release 17.7.1. Option to select 17.7.1 CAPWAP WLC image.
- Uplink/downlink orthogonal frequency-division multiple access (OFDMA) splits the bandwidth into smaller frequency allocations called resource units (RUs), which can be assigned to individual clients in both the downlink and uplink directions to reduce overhead and latency.
- TWT (Target Wake Time) allows the client to stay asleep and to wake up only at prescheduled (target) times to exchange data with the access point. This offers significant energy savings for battery-operated devices, up to 3x to 4x the savings achieved by 802.11n and 802.11ac.

- Spatial Reuse, or BSS (Basic Service Set) Coloring allows the access points and their clients to differentiate between BSSs, thus permitting more simultaneous transmissions.
- The embedded Wi-Fi 6 access point can be configured by scanning the QR code on the bottom panel of the router. Configuration steps are detailed in this [guide](#).
- Before the access point can be configured, the router must be configured for communication between the access point and the ISR 1000 Series. Find [step-by-step instructions for day-0 configuration here](#).

Table 38. Wi-Fi 5 and Wi-Fi 6 feature parity and differences

802.11ac	802.11ax
Maximum 200 clients per Wi-Fi radio; 400 clients per access point	Maximum 200 clients per Wi-Fi radio; 400 clients per access point
Maximal Ratio Combining (MRC)	Maximal Ratio Combining (MRC)
20-, 40-, and 80-MHz channels	20-, 40-, and 80-MHz channels
PHY data rates up to 866.7 Mbps (80 MHz on 5 GHz)	PHY data rates up to 1.488 Gbps (80 MHz on 5 GHz and 20 MHz on 2.4 GHz)
Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Rx)	Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Rx)
802.11 Dynamic Frequency Selection (DFS)	802.11 Dynamic Frequency Selection (DFS)
Cyclic Shift Diversity (CSD) support	Cyclic Shift Diversity (CSD) support
-	802.11ax beamforming
For more information, view the Cisco Aironet 1815i Access Point Data Sheet	For more information, view the Cisco Catalyst 9105 Series Access Points Data Sheet

Table 39. Wi-Fi domains and regions

Domains	Regions
-A	Argentina, Bahrain, Canada, Colombia, Mexico, Oman, Philippines
-B	Azerbaijan, Bahrain, Oman, United States
-E	All CE Countries, Bahrain, Botswana, Ghana, Israel, Kazakhstan, Kenya, Myanmar, Oman, Saudi Arabia, South Africa, Thailand, Uganda, United Arab Emirates
-Q	Azerbaijan, Bahrain, Japan, Oman
-Z	Australia, Azerbaijan, Bahrain

Cisco ISR 1000 Series serial WAN interface (DSL) specifications

- Support for both synchronous and bisync modes
- Synchronous maximum speed of up to 8 Mbps
- Support for network clock synchronization
- EIA-232, EIA-449, EIA-530, EIA-530A, V.35, and X.21

Cisco 1112 and 1113 ISRs

- G. FAST (spectrum up to 106 MHz) Annex A, Annex B, Annex M and compatible with ADSL2/2+ and VDSL2
- ITU G.993.2 (VDSL2) and supported profiles: 8a, 8b, 8c, 8d, 12a, 12b, 17a, and 35b
- ITU G.9700/9701/997.2 G. FAST and supported profiles: 106a and 106b

Cisco 1116, 1117, 1126, and 1127 ISRs

- Dying gasp
- ITU G.993.2 (VDSL2) and supported profiles: 8a, 8b, 8c, 8d, 12a, 12b, and 17a
- VDSL2 vectoring
- ADSL Annex A and Annex B ITU G. 992.1 (ADSL), G.992.3 (ADSL2), and G.992.5 (ADSL2+)
- ADSL Annex M G.992.3 (ADSL2) and G.992.5 (ADSL2+)

Cisco 1118 and 1128 ISRs

- G. SHDSL

Cisco ISR 1000 safety and compliance information

Table 40. Safety and compliance

Feature	Specification
Inline PoE	802.3af-compliant PoE, 802.3at-compliant PoE+.
Standard safety certifications	UL 60950-, CSA 60950-1, EN 60950-1, IEC 60950-1, UL 62368-1, CSA 62368-1, EN 62368-1, IEC 62368-1
EMC emissions	EN55022/CISPR22, CFR 47 Part 15, ICES003, VCCI-V-3, AS/NZS CISPR22, CNS13438, EN300-386, EN61000-3-2, EN61000-3-3, EN61000-6-1
EMC immunity	EN55024/CISPR24, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11, EN300-386
Radio immunity	EN 301 489-1, EN 301 489-7, EN 301 489-24
Cellular radio	EN 301 908-1, EN 301 908-2, EN 301 511, 47 CFR Part 22, 47 CFR Part 24, EN 301 908-13

Cisco IOS Software licensing and packaging

Technology packages and feature licenses

A single Cisco IOS XE Universal image encompassing all functions is delivered with the platform. Advanced features can be enabled simply by activating a software license on the Universal image. Technology packages and feature licenses, enabled through right-to-use licenses, simplify software delivery and decrease the operational costs of deploying new features.

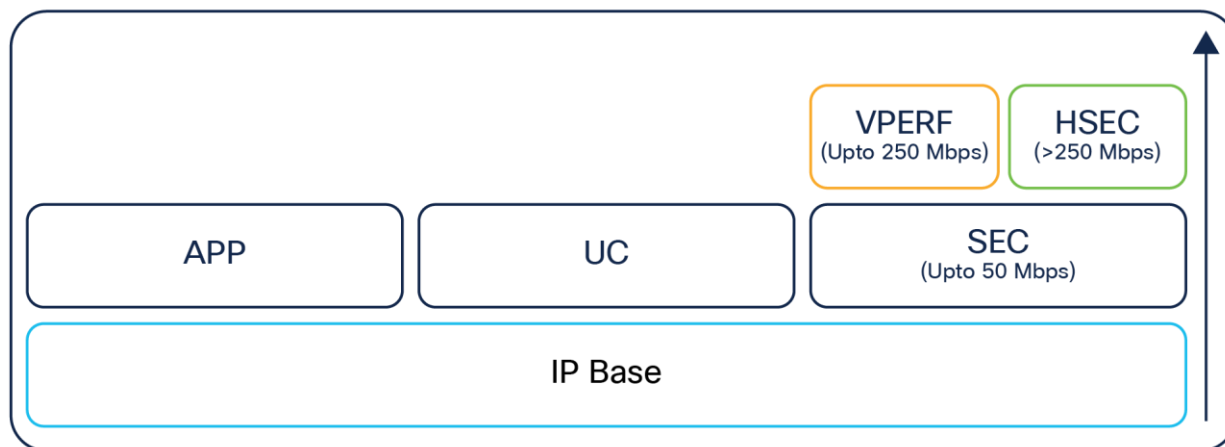


Figure 17.
Technology licenses

Four major technology licenses are available on the Cisco ISR 1000 Series; these licenses can be activated through the Cisco software activation process identified at the [Cisco Software Activation homepage](https://www.cisco.com/go/activation). 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.
- Unified Communications (UC): This license supports basic voice communication features.
- Security (SEC) or Security with No Payload Encryption (SEC-NPE): This license includes features for securing network infrastructure. Cisco Virtual Office is now supported on the 1100-8P and 1100-4P models with a SEC license.
 - Performance (VPERF): This license includes features that improve IP security performance multifold.
 - IP Security (HSEC): Further improves device performance to maximum potential.

Cisco DNA and Routing licenses

The Cisco SD-WAN subscriptions are aligned across three subscription licenses, each expanding functionally.

Cisco DNA stack:

- Cisco DNA Essentials
- Cisco DNA Advantage
- Cisco DNA Premier

Network stack:

- Network Essentials
- Network Advantage

Cisco DNA Essentials covers all types of connectivity and router lifecycle management, with support for network and application visibility coupled with basic on-premises and transport security. **Cisco DNA Advantage** provides advanced WAN topologies, as well as application-aware policies supported by enhanced network security. **Cisco DNA Premier** provides cloud connectivity with unlimited segmentation, advanced application optimization, and network analytics, secured by advanced threat protection.

Smart Licensing

Cisco Smart Licensing is a flexible licensing model that provides you with an easier, faster, and more consistent way to purchase and manage software across the Cisco portfolio and across your organization. It is secure – you control what users can access. With Smart Licensing you get:

- **Easy activation:** Smart Licensing establishes a pool of software licenses that can be used across the entire organization—no more PAKs (product activation keys).
- **Unified management:** My Cisco Entitlements provides a complete view into all your Cisco products and services in an easy-to-use portal, so you always know what you have and what you are using.
- **License flexibility:** Your software is not node-locked to your hardware, so you can easily use and transfer licenses as needed.

To use Smart Licensing, you must first set up a Smart Account on [Cisco Software Central](#).

For a more detailed overview of Cisco licensing, refer to the [Cisco Smart Licensing Guide](#).

For more information on Cisco SD-WAN and Routing licensing features, refer to the [Cisco DNA Software Licensing Tiers](#).

For a detailed overview of the overall licensing model, refer to the [Cisco DNA Software: SD-WAN and Routing Matrices](#).

Table 41. Cisco ISR 1000 Series licenses

Part number	Features
IP Base (default)	
SL-1K-8P-IPB SL-1K-4P-IPB SL-1100-2P-IPB	Routing protocols, ACL, NAT, QoS, BFD, VRF Lite, IPSLA Responder, IPSLA Initiator.
Application Experience (APP)	
SL-1100-8P-APP(=)	IP Base + advanced networking protocols: L2TPv3, MPLS.
SL-1100-4P-APP(=)	Application Experience: PfRv3, NBAR2, AVC.
SL-1100-2P-APP(=)	Hybrid Cloud Connectivity: LISP, Virtual Private LAN Services (VPLS), Ethernet over MPLS.
SL-1K-8P-APP-SV(=) SL-1K-4P-APP-SV(=)	Smart Licensing SKU for APP
Unified Communications (UC)	
SL-118-UC SL-114-UC SL-112-UC	Smart Licensing SKU for UC Base License without CME and SRST.
Security (SEC)	
<p>This image offers all the Cisco IOS features including strong payload cryptography features such as IPsec VPN, and Dynamic Multipoint VPN (DMVPN).</p> <p>Provides up to 50 Mbps IPsec performance.</p>	
SL-1100-8P-SEC(=) SL-1100-4P-SEC(=) SL-1100-2P-SEC(=)	IP Base + Advanced Security: Zone-based firewall, IPsec VPN, DMVPN, FlexVPN, GETVPN. SEC license needed for Cisco Virtual Office deployment option.
SL-1K-8P-SEC-SV(=) SL-1K-4P-SEC-SV(=)	Smart Licensing SKU for SEC
<p>To satisfy the import requirements of some countries, the 'NPE' image does not support any strong payload encryption.</p> <p>This image supports security features such as zone-based firewall and intrusion prevention through the SECNPE-K9 license.</p> <p>Provides up to 50 Mbps IPsec performance.</p>	
SL-1100-8P-SECNPE(=) SL-1100-4P-SECNPE(=) SL-1100-2P-SECNPE(=)	IP Base + advanced security: Zone-based firewall, IPsec VPN, DMVPN, FlexVPN, GETVPN. SEC license needed for Cisco Virtual Office deployment option.
SL-1K-8P-SECN-SV(=) SL-1K-4P-SECN-SV(=)	Smart Licensing SKU for SEC with No Payload Encryption.

Part number	Features
IPsec performance (VPERF)	
FL-VPERF-8P-200(=)	IPsec performance: Additional 100 Mbps for ISR 1100-8P.
FL-VPERF-4P-100(=)	IPsec performance: Additional 200 Mbps for ISR 1100-4P. Not applicable on C1109-2PLTE models.
IPsec HSEC (HSEC)	
VPERF license limits IPsec performance to 250 Mbps on 8 LAN port devices and 150 Mbps on 4 LAN port devices. HSEC licenses remove any limitations on encrypted performance, allowing the router to perform at its maximum potential.	
FL-1100-8P-HSEC(=)	IPSEC HSEC license for Cisco ISR 1100 8P, 1100 4P, and 1100 2P.
FL-1100-4P-HSEC(=)	Support with Cisco IOS XE 16.8.1 or later releases.
FL-1100-2P-HSEC(=)	

Table 42. Product part numbers and software images

Product part number	Description		
Access point software images			
AIR-AP1815-K9-ME-8-8-110-0.tar	Cisco 110x, 111x, and 1121 models. Access point delivers industry-leading wireless performance with support for IEEE 802.11ac Wave 2 and Mobility Express.		
C9800-AP-universalk9.17.07.01.zip	Cisco 1131 model. Access point supports Embedded Wireless Controller on Catalyst 9105AX access points.		
DSL firmware options			
A2pvbF039t.d26d	Annex A and M.		
B2pv6F039g1.d26d	Annex B and J.		
A2pvfbH043j	G. FAST Annex A and M.		
B2pvfbH043j	G. FAST Annex B.		
Cisco smart serial cabling			
Product number	Cable type	Length	Connector type
CAB-SS-V35MT	V.35 DTE	10 ft (3 m)	Male
CAB-SS-V35FC	V.35 DCE	10 ft (3 m)	Female
CAB-SS-232MT	EIA/TIA-232 DTE	10 ft (3 m)	Male
CAB-SS-232FC	EIA/TIA-232 DCE	10 ft (3 m)	Female
CAB-SS-449MT	EIA/TIA-449 DTE	10 ft (3 m)	Male
CAB-SS-449FC	EIA/TIA-449 DCE	10 ft (3 m)	Female

Product part number	Description		
CAB-SS-X21MT	X.21 DTE	10 ft (3 m)	Male
CAB-SS-X21FC	X.21 DCE	10 ft (3 m)	Female
CAB-SS-530MT	EIA/TIA-530 DTE	10 ft (3 m)	Male
CAB-SS-530AMT	EIA/TIA-530A DTE	10 ft (3 m)	Male
Power over Ethernet options			
Optional internal adapter for inline PoE/PoE+ on switch ports. Can be purchased initially or as a field-replaceable unit.			
ISR-1100-POE2(=)	1100-4P with 115W PSU (2 PoE or 1 PoE+).		
ISR-1100-POE4(=)	1100-8P with 150W PSU (4 PoE or 2 PoE+).		
Rack-mount kit and RJ console adapter			
ACS-1100-RM-19(=)	Rack-mount kit for all 111X ISRs.		
ACS-1100-RM2-19(=)	Rack-mount kit for 112X and 116X ISRs.		
CAB-CON-USBRJ45(=)	Micro USB to RJ-45 console adapter (only for 110x, 112x, and 1161 models).		
Pluggable			
P-LTEAP18-GL(=)	System and spare CAT18 LTE advanced pro pluggable for North America, Europe, and APJC.		
P-LTEA-EA(=)	System and spare CAT6 LTE advanced pluggable for North America and Europe.		
P-LTEA-LA(=)	System and spare CAT6 LTE advanced pluggable for APAC, ANZ, and LATAM.		
P-LTE-VZ(=)	System and spare CAT4 LTE pluggable for Verizon. Single SIM slot. Spare needs antenna selection option.		
P-LTE-US(=)	System and spare CAT4 LTE pluggable for ATT & T-Mobile. Spare needs antenna selection option.		
P-LTE-GB(=)	System and spare CAT4 LTE pluggable for Europe. Spare needs antenna selection option.		
D-LTE-GB(=)	System and spare USB-based CAT4 LTE pluggable for EMEAR.		
D-LTE-AS(=)	System and spare USB-based CAT4 LTE pluggable for India, China, Hong Kong, Indonesia, Malaysia, Philippines, and South Africa.		
D-LTE-NA(=)	System and spare USB-based CAT4 LTE pluggable for North America.		
D-MHLD(=)	System and spare magnetic holder for USB-based CAT4 LTE dongle.		
P-1T(=)	System and spare Cisco 12:1 high-speed serial WAN interface (sync and bisync).		
P-BLANK(=)	System and spare blank pluggable.		

Table 43. Compatible SFPs

Small-Form-Factor Pluggable	Description
GLC-EX-SMD	1000BASE-EX SFP transceiver module, SMF, 1310nm, DOM.
GLC-LH-SM	GE SFP, LC connector LX/LH transceiver.
GLC-LH-SMD	GE SFP, LC connector LX/LH transceiver; with DOM.
GLC-SX-MM	GE SFP, LC connector SX transceiver.
GLC-SX-MMD	GE SFP, LC connector SX transceiver; with DOM.
GLC-ZX-SM	1000BASE-ZX SFP.
GLC-ZX-SMD	1000BASE-ZX SFP; with DOM.
GLC-FE-100FX	100BASE-FX SFP for FE port.
GLC-FE-100LX	100BASE-LX SFP for FE port.
GLC-FE-100ZX	100BASE-ZX SFP (80km).
GLC-FE-100EX	100BASE-EX SFP (40km).
GLC-FE-100BX-D	100BASE-BX10-D SFP.
GLC-FE-100BX-U	100BASE-BX10-U SFP.
GLC-GE-100FX	100FX SFP on GE ports.
GLC-BX80-D-I	1000BASE-BX80 SFP, 1570NM.
GLC-BX80-U-I	1000BASE-BX80 SFP, 1490NM.
GLC-BX40-D-I	1000BASE-BX40 SFP, 1550NM.
GLC-BX40-U-I	1000BASE-BX40 SFP, 1310NM.
GLC-BX-D	1000BASE-BX SFP, 1490NM.
GLC-BX-U	1000BASE-BX SFP, 1310NM.
GLC-TE	10/100/1000BASE-T.
GLC-T	10/100/1000BASE-T.
SFP-GE-S	1000BASE-SX SFP transceiver module for MMF, 850-nm wavelength, extended operating temperature range and DOM support, dual LC/PC connector.
SFP-GE-T	10/100/1000BASE-T SFP (NEBS 3 ESD).
CWDM-SFP-1470	CWDM 1470 NM SFP Gigabit Ethernet & 1G/2G FC.

Small-Form-Factor Pluggable	Description
CWDM-SFP-1490	CWDM 1490 NM SFP Gigabit Ethernet & 1G/2G FC.
CWDM-SFP-1510	CWDM 1510 NM SFP Gigabit Ethernet & 1G/2G FC.
CWDM-SFP-1530	CWDM 1530 NM SFP Gigabit Ethernet & 1G/2G FC.
CWDM-SFP-1550	CWDM 1550 NM SFP Gigabit Ethernet & 1G/2G FC.
CWDM-SFP-1570	CWDM 1570 NM SFP Gigabit Ethernet & 1G/2G FC.
CWDM-SFP-1590	CWDM 1590 NM SFP Gigabit Ethernet & 1G/2G FC.
CWDM-SFP-1610	CWDM 1610 NM SFP Gigabit Ethernet & 1G/2G FC.
DWDM-SFP-3033	DWDM SFP 1530.33 nm SFP (100 GHz ITU grid).
DWDM-SFP-3112	DWDM SFP 1531.12 nm SFP (100 GHz ITU grid).
DWDM-SFP-3190	DWDM SFP 1531.90 nm SFP (100 GHz ITU grid).
DWDM-SFP-3268	DWDM SFP 1532.68 nm SFP (100 GHz ITU grid).
DWDM-SFP-3425	DWDM SFP 1534.25 nm SFP (100 GHz ITU grid).
DWDM-SFP-3504	DWDM SFP 1535.04 nm SFP (100 GHz ITU grid).
DWDM-SFP-3582	DWDM SFP 1535.82 nm SFP (100 GHz ITU grid).
DWDM-SFP-3661	DWDM SFP 1536.61 nm SFP (100 GHz ITU grid).
DWDM-SFP-3819	DWDM SFP 1538.19 nm SFP (100 GHz ITU grid).
DWDM-SFP-3898	DWDM SFP 1538.98 nm SFP (100 GHz ITU grid).
DWDM-SFP-3977	DWDM SFP 1539.77 nm SFP (100 GHz ITU grid).
DWDM-SFP-4056	DWDM SFP 1540.56 nm SFP (100 GHz ITU grid).
DWDM-SFP-4214	DWDM SFP 1542.14 nm SFP (100 GHz ITU grid).
DWDM-SFP-4294	DWDM SFP 1542.94 nm SFP (100 GHz ITU grid).
DWDM-SFP-4373	DWDM SFP 1543.73 nm SFP (100 GHz ITU grid).
DWDM-SFP-4453	DWDM SFP 1544.53 nm SFP (100 GHz ITU grid).
DWDM-SFP-4612	DWDM SFP 1546.12 nm SFP (100 GHz ITU grid).
DWDM-SFP-4692	DWDM SFP 1546.92 nm SFP (100 GHz ITU grid).
DWDM-SFP-4772	DWDM SFP 1547.72 nm SFP (100 GHz ITU grid).
DWDM-SFP-4851	DWDM SFP 1548.51 nm SFP (100 GHz ITU grid).

Small-Form-Factor Pluggable	Description
DWDM-SFP-5012	DWDM SFP 1550.12 nm SFP (100 GHz ITU grid).
DWDM-SFP-5092	DWDM SFP 1550.92 nm SFP (100 GHz ITU grid).
DWDM-SFP-5172	DWDM SFP 1551.72 nm SFP (100 GHz ITU grid).
DWDM-SFP-5252	DWDM SFP 1552.52 nm SFP (100 GHz ITU grid).
DWDM-SFP-5413	DWDM SFP 1554.13 nm SFP (100 GHz ITU grid).
DWDM-SFP-5494	DWDM SFP 1554.94 nm SFP (100 GHz ITU grid).
DWDM-SFP-5575	DWDM SFP 1555.75 nm SFP (100 GHz ITU grid).
DWDM-SFP-5655	DWDM SFP 1556.55 nm SFP (100 GHz ITU grid).
DWDM-SFP-5817	DWDM SFP 1558.17 nm SFP (100 GHz ITU grid).
DWDM-SFP-5898	DWDM SFP 1558.98 nm SFP (100 GHz ITU grid).
DWDM-SFP-5979	DWDM SFP 1559.79 nm SFP (100 GHz ITU grid).
DWDM-SFP-6061	DWDM SFP 1560.61 nm SFP (100 GHz ITU grid).

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Sustainability topic	Reference
Information on product material content laws and regulations	Materials
Information on electronic waste laws and regulations, including products, batteries, and packaging	WEEE compliance
Information on product takeback and reuse program	Cisco Takeback & Reuse Program

Product packaging weight and materials	
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Visit the [Cisco 1000 Series Software Configuration Guide here](#).

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Document history

New or revised topic	Described in	Date
Reviewed comments, addressed common requests - performance, licensing, etc.	Overall restructuring of the document	September 23, 2022
Added support for CAT18 pluggable and USB LTE dongle	Table 11, 13, 14, 15, 16 and 18	September 24, 2019
Added support for additional SFPs	Table 16	August 2, 2019
Added support for P-1T high-speed serial pluggable module and updated some corrections	Updated throughout document	April 18, 2019
Added support for C1109-4PLTE2P models, LIC-DNA-ADD option, SD-WAN promotional PIDs, and C1-ISR-ADD option	Updated throughout document	January 11, 2019
Added support for new platforms, added available date	C1118-8P, C1111X-8P, C1109-2PLTEXX	October 5, 2018

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