

Cisco 1000 Series Integrated Services Routers

Product overview



What are the 1000 Series ISRs?



The Cisco® 1000 Series Integrated Services Routers (ISRs) are the latest high end fixed routing ISRs. They are based on Cisco IOS® XE Software, with great performance at a low price point, perfect for small and midsize businesses, for enterprise branches, and as Customer Premises Equipment (CPE) in managed services environments. They address increased mobility demands with LTE Advanced and 802.11ac (Wave 2) Wi-Fi.



What are the key difference between the 1000 Series ISRs and the 800 Series routers?



The 1000 Series ISRs offer the following features:

- Cisco IOS XE based
- Greater throughput performance
- 802.11ac Wi-Fi (with Mobility Express up to 50 access points)
- LTE Advanced
- Advanced security with trustworthy systems
- Cisco Umbrella™ security



Can I continue to order the 800 Series routers after the 1000 Series ISRs are orderable?



Yes, the 800 Series routers are not at end of sale or end of life. You can continue to order the 800 Series after the 1000 Series ISRs are orderable.



What are the different models of the 1000 Series ISRs?



The 1000 Series ISRs have two primary models, with 8 LAN ports (C1100-8P) and 4 LAN ports (C1100-4P). Both come with varied combinations of WAN interfaces, LTE, and Wi-Fi options.



What are the different SKUs/product IDs for the 1000 Series?



Multiple SKUs are available for the 8-port and 4-port models that offer a combination of WAN links (Gigabit Ethernet, DSL, and LTE) and wireless LAN capabilities. Please refer to the product ID table in the data sheet for the full list.

Q What kind of CPU is used in the 1000 Series ISRs?

A The naming convention for the 1000 Series ISR product IDs is given in the table below.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
C	1	1	1	1/6/7	-	4/8	P	M	L	T	E	L/E	A	W	E/B/A/Z/N/Q/H/R/F
				What WAN links do you need on the Router		Do you need 4 LAN ports or 8 LAN Ports?*		Are you using Annex M on your ADSL2/VDSL 2 POTS WAN link?	Do you need a LTE connection on the Router?			What is the region of the LTE?		Do you need wireless LAN on the Router?	What is the country for the Wireless LAN?
				Ethernet (1xGE and 1xGE/SFP Combo) - Value=1		4 LAN Port - Value=4		ADSL2/VDSL 2+ POTS Annex M - Value=M	If yes, then Value=LTE			Canada, European Union, United States, Belarus (BELLIS), Botswana, Bulgaria, Chile, Croatia, (KONCAR), Macedonia, Romania, Russia, Turkey, UAE, Ukraine - Value=EA			EU/Bulgaria/Croatia/Macedonia/Romania/South Africa(SABS)/Thailand/Turkey/UAE/Ukraine/Vietnam - Value=E
				DSL ISDN (ADSL2/VDSL L2+ISDN and 1xGE) Value=6		8 LAN Port - Value=8 (**No 8 LAN port option with DSL PIDs)		If not, then Value=BLANK	If no, then Value=BLANK(J-N)			Australia, Argentina, Brazil, China, Columbia, Ecuador, Hong Kong, India, Indonesia, Israel (SII), Japan, Korea, Malaysia, Mexico, Morocco, New Zealand, Peru, Philippines, Singapore, South Africa (SABS), Taiwan (BSMI/BCIQ), Thailand, Vietnam - Value=A			US - Value=B
				DSL POTS (ADSL2/VDSL L2+POTS and 1xGE) - Value=7											Canada/Argentina/Chile/Columbia/Ecuador/Peru/Phillippines - Value=A
															Australia/Brazil/New Zealand - Value=Z
															Hong Kong/India/Mexico - Value=N
															Japan - Value=Q
															China - Value=H
															Russia - Value=R
															Indonesia - Value=F

Example: C1111-8PLTEAWB: This has 8 LAN ports + 1 GE/SFP + 1 GE + LTE (US/Europe/Canada/Middle East) + WLAN (B-domain for US)

Q **What is the naming convention for the 1000 Series ISR product IDs?**

A

The CPU in the 1000 Series ISRs is a 4-core ARM processor with separate cores used for data plane, data plane scheduler, and control plane. The fourth core is currently not used. There is a different crypto engine for cryptographic operations.

Q **What is the size of the DRAM on the 1000 Series ISR models? How much flash is available on the device?**

A

Both the 4-LAN-port and 8-LAN-port 1000 Series ISRs come with 4 GB of RAM and 4 GB of flash storage by default.

Q **Are the 1000 Series ISRs fanless routers?**

A

Yes, the 1000 Series ISRs are fanless, fixed branch routers with multiple WAN link options.

Q **What Cisco IOS Software version is supported on the 1000 Series ISRs?**

A

The 1000 Series ISRs are based on Cisco IOS XE Software and will support the Cisco IOS XE 16.6.1 Universal image.

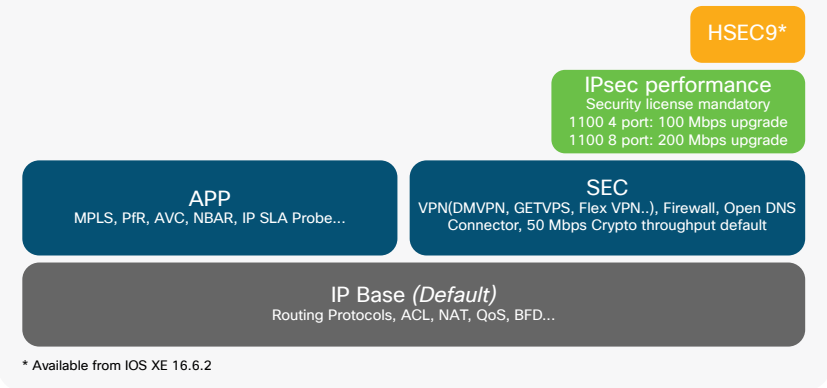
Licensing

Q **What is the license packaging model for the 1000 Series?**

A

The licensing model for the 1000 Series ISRs uses the IP Base, App, and Security licenses. The 1000 Series comes with the IP Base license by default. For additional security features and Application Experience features, the Security and App licenses, respectively, have to be purchased.

Licensing packaging model



* Available from IOS XE 16.6.2

Q **Is there a performance license for the 1000 Series ISRs?**

A

A performance license is needed only for encrypted traffic of over 50 Mbps. With the IP Base and Security licenses, you can get up to 50 Mbps of IPsec throughput. On the 4-LAN-port model, you can purchase an IPsec Performance license for a 100-Mbps upgrade, and on the 8-LAN-port model, you can purchase an IPsec Performance license for a 200-Mbps upgrade.

Q **What features are part of the IP Base, App and Security licenses?**

A

Please refer to the software licensing document for the 1000 Series ISRs, which will list all the features that are part of the different licenses available.

Q **Is the software license Right-to-Use (RTU)?**

A

Yes, all the software licenses on the 1000 Series are Right-to-Use and do not need a license file to be installed.

Q Will the 1000 Series support Cisco ONE™ licensing, and what license features will it cover?

A Yes, the 1000 Series ISRs support Cisco ONE licenses. The Cisco ONE license will include the IP Base, App, and Security licenses for the platform. The IPsec Performance license will have to be purchased separately.

Hardware features

Q Is the 1000 Series PoE and PoE+ capable?

A Yes, the 8-LAN-port model supports either 4 PoE ports or 2 PoE+ ports. The 4-LAN-port model supports either 2 PoE ports or 1 PoE+ port. When PoE or PoE+ is ordered, the default 66W power supply is replaced with a 125W power supply for the 8-port model and with a 115W power supply for the 4-port model.

Q Is the 1000 Series LTE Advanced capable?

A Yes, the 1000 Series has a Category 6 (CAT6) LTE Advanced modem, and theoretical speeds are 300 Mbps downlink and 50 Mbps uplink for CAT6 LTE Advanced. It supports dual Micro SIMs with carrier aggregation. The routers provide persistent, reliable LTE connectivity with fallback and transparent handoff to earlier technologies.

Q What LTE bands are supported in different regions?

A The 1000 Series ISRs support the following bands:

Cisco LTE Advanced 3.0 LTEEA

LTE bands 1-5, 7, 12, 13, 20, 25, 26, 29, 30, and 41

FDD LTE 700 MHz (band 12), 700 MHz (band 29), 800 MHz (band 20), 850 MHz (band 5 CLR), 850 MHz (band 26 Low), 900 MHz (band 8), 1800 MHz (band 3), 1900 MHz (band 2), 1900 MHz (PCS band 25), 1700 MHz and 2100 MHz (band 4 AWS), 2100 MHz (band 1), 2300 MHz (band 30), or 2600 MHz (band 7)

TDD LTE 2500 MHz (band 41)

Carrier aggregation band combinations:

1+8; 2+(2,5,12,13,29); 3+(7,20); 4+(4,5,12,13,29); 7+(7,20); 12+30, 5+30, and 41+41

Cisco LTE Advanced 3.0 LTEEA

LTE bands 1, 3, 5, 7, 8, 18, 19, 21, 28, 38, 39, 40, and 41

FDD LTE 700 MHz (band 28), 850 MHz (band 5 CLR), 850 MHz (bands 18 and 19 Low), 900 MHz (band 8), 1500 MHz (band 21), 1800 MHz (band 3), 2100 MHz (band 1), or 2600 MHz (band 7)
TDD LTE 1900 MHz (band 39), 2300 MHz (band 40), 2500 MHz (band 41), or 2600 MHz (band 38)

Carrier aggregation band combinations:

1+(8,18,19,21); 3+(5,7,19,28); 7+(5,7,28); 19+21, 38+38, 39+39,40+40, and 41+41

Q Is wireless 802.11ac supported on the 1000 Series?

A Yes, the 1000 Series Wi-Fi models support 802.11ac Wave 2 technology.

Q How many access points are supported on the wireless Mobility Express?

A The 1000 Series supports wireless Mobility Express, with which it can act as its own wireless controller and support up to 50 access points for a fully capable Wi-Fi network at the branch.

Q Do you need a controller for the access point on the 1000 Series to be used for a wireless network?

A The 1000 Series ISR can act as its own controller, and additional access points can be added to it if the branch needs more than one access point.

Q Does the 1000 Series have an active GPS?
A Both the 4-LAN-port and 8-LAN-port LTE models have an embedded active GPS in them and can be used for features such as geo-fencing, site survey, etc.

Q Is the 1000 Series capable of super vectoring for DSL?
A The 1000 Series ISRs are capable of super vectoring for VDSL2 and support higher speeds than VDSL2.

Q What is the product ID for the rack-mount kit of the 1000 Series? Will the Cisco 890 ISR rack mounts work for the 1000 Series?

A The rack-mount kit for all the 1000 Series ISRs is ACS-11100-RM-19(=). The rack mount is 1 Rack Unit (RU) and includes space for the power supply to be placed within the bracket. The 890 Series ISR rack mounts will not work for the ISR 1000 Series routers.

Q What power supply is used with the 1000 Series ISRs?

A The 1000 Series comes with a 66W power supply by default. If you choose PoE or PoE+, the default power supply is replaced with a 125W power supply for the 8-LAN-port model and with a 115W power supply for the 4-LAN-port model.

Q What Small Form-Factor Pluggable (SFP) interfaces can be used with the 1000 Series ISRs?

A Please refer to the list of supported SFPs in the 1000 Series data sheet.

Q What power cables are used with the 1000 Series platform?

A The power supplies are external AC-to-DC power bricks and do not need a separate power cable. These power supplies are replaceable.

Q Is the power supply on the 1000 Series ISRs replaceable?

A The external power adapter can be replaced by ordering spares.

Q Is there a DC power supply option for the 1000 Series ISRs?

A No, there is no DC power supply option for the 1000 Series. It needs an AC power supply.

Q How do the 1000 Series ISRs handle a fan failure?

A You can verify the fan status with the “show environment summary” command. If the fan has failed, the whole ISR will have to be replaced through the Return Materials Authorization (RMA) process.

Q What type of console port is available on the 1000 Series ISRs?

A A mini type B USB console port and an RJ-45 console port are available. Either one can be used for the console connection.

Software features

Q Is the 1000 Series SD-WAN capable?

A The 1000 Series ISRs can be used as SD-WANs branch routers with Cisco SD-WAN and the Cisco Application Policy Infrastructure Controller Enterprise Module (APIC-EM). The 1000 Series will also support Cisco DNA™ Center solutions.

Q Does the 1000 Series support Plug-and-Play functionality?

A The 1000 Series ISRs can be configured with day-0 and day-1 configurations using the Plug-and-Play (PnP) app on APIC-EM. The 1000 Series ISRs have Secure Unique Device Identifier (SUDI) authentication and can be onboarded via the PnP app using SUDI.

Q **How many VLANs can the 1000 Series ISRs support?**

A The 1000 Series supports configuration of 32 VLANs.

Q **Does the 1000 Series support OpenDNS and Cisco Umbrella architecture?**

A The 1000 Series ISRs support the full Cisco Umbrella and OpenDNS architecture. These features require the purchase of additional licensing.

Q **How many users are recommended for a 1000 Series ISR at a branch office?**

A Up to 100 users are recommended for the 1000 Series at a branch office.

Q **Is the memory used for the wireless and DSL separate from the 4-GB DRAM?**

A The wireless and DSL modems have their own memory space and do not use the 4-GB RAM of the platform.

Q **What management platforms support the 1000 Series ISRs?**

A The 1000 Series platform comes with a Cisco IOS XE based on-device web UI for management. Cisco Prime® Infrastructure and Cisco DNA Center will also support the 1000 Series ISRs.

Q **Is Locator/ID Separation Protocol (LISP) supported on the 1000 Series ISRs?**

A The 1000 Series ISRs support LISP.

Q **Is the Cisco Stealthwatch® Learning Network available on the 1000 Series ISRs?**

A No, Cisco Stealthwatch Learning Network is not available on the 1000 Series.

Q **Do the 1000 Series ISRs support Cisco Snort® Intrusion Prevention System (IPS)?**

A No, the 1000 Series does not support Cisco Snort IPS, as it needs a container-based architecture that is not available on the 1000 Series ISRs.

Q **Is Cisco Firepower® Threat Defense available on the 1000 Series?**

A No, Cisco Firepower Threat Defense is not supported on the 1000 Series platform.

Q **Is Cisco Wide Area Application Services (WAAS) supported on the 1000 Series ISRs?**

A No, the 1000 Series does not support WAAS.

Q **Is content filtering supported on the 1000 Series ISRs?**

A Yes, Cisco Umbrella security features are supported on the 1000 Series ISRs. This includes visibility and enforcement at the DNS layer by blocking requests to malicious domains and IP addresses. It protects from malware and phishing attacks and also does static and reputation-based URL filtering.

Q **Are the 1000 Series ISRs Network Equipment Building System (NEBS) certified?**

A Yes, the 1000 Series is NEBS certified.

Q **Is WAAS performance or WAAS Express available on the 1000 Series ISRs?**

A No, WAAS and WAAS Express are not supported on the 1000 Series.

Q **What license is required for Application Visibility and Control (AVC) features?**

A You will need an App license for AVC functionality for the 1000 Series.

- Q** **Are Survivable Remote Site Telephony (SRST) or Cisco Unified Border Element (CUBE) functionality available on the 1000 Series ISRs?**
- A** Voice features such as SRST or CUBE are currently not supported on the 1000 Series platform.
- Q** **Is Cisco Unified Communications Manager Express supported on the 1000 Series ISRs?**
- A** No, Cisco Unified Communications Manager Express is not supported on the 1000 Series.
- Q** **Are there any product IDs in the 1000 Series with voice ports such as FXO or FXS ports?**
- A** No, there is not an option for voice ports on the 1000 Series.
- Q** **Do the 1000 Series ISRs support Precision Time Protocol (PTP)?**
- A** No, the 1000 Series does not support PTP.
- Q** **Do the 1000 Series ISRs support Dynamic DNS?**
- A** Cisco IOS XE does not currently support Dynamic DNS, but we are looking to add that feature in future releases.
- Q** **Are IPv6 over IPv4 tunnels supported on the 1000 Series ISRs? What about IPv4 over IPv6 tunnels?**
- A** Yes, Cisco IOS XE running on the 1000 Series will support both IPv6 over IPv4 tunnels and IPv4 over IPv6 tunnels.
- Q** **Do the 1000 Series ISRs support Port Control Protocol (PCP), used by service providers for Network Address Translation (NAT)?**
- A** No, the 1000 Series does not support PCP.

Security

- Q** **What advanced security features do trustworthy systems have to offer?**
- A** The security features of trustworthy systems include the following:
- Secure boot with signed images and hardware anchoring with SUDI
 - Secure storage
 - Run-time defenses
 - Authentication and integrity verification
 - Recovery mechanisms
 - Management plane protections
- Q** **Is hardware-based SSL VPN available on the 1000 Series ISRs?**
- A** No, SSL VPN is not currently supported on the 1000 Series ISRs.
- Q** **Is hardware-based encryption available on the 1000 Series ISRs?**
- A** Yes, we have a separate crypto engine for ciphering and hashing operations.
- Q** **What VPN technologies are supported on the 1000 Series ISRs?**
- A** The 1000 Series supports the following VPN technologies: FlexVPN, Easy VPN, Dynamic Multipoint VPN (DMVPN), Group Encrypted Transport VPN (GETVPN), and Multiprotocol Label Switching (MPLS) VPN.
- Q** **Is ETA(Encrypted Traffic Analysis) available on the 1000 Series ISRs?**
- A** Yes, the ISR 1000 Series routers support Encrypted Traffic Analysis.

3G, 4G, and LTE features

Q What are the 4G LTE performance and latency?

A Cisco 4G LTE 2.5 supports LTE Category 4 (LTE CAT4) with peak uplink and downlink speeds of 150 Mbps and 300 Mbps on Category 6. Compared to 3G, in the real world, the bandwidth is 20 times greater and improvement of 80 percent in latency.

Note: These performance numbers are theoretical limits and may not be seen in production networks; contact your preferred wireless carrier for expected performance rates.

Q Do the 1000 Series ISRs support Layer 2 Tunneling Protocol (L2TP) v3 on LTE?

A Yes, L2TPv3 is supported on the 1000 Series, including on LTE.

Q Is DMVPN supported over LTE connections?

A Yes, DMVPN is supported over the LTE Advanced interface.

Wireless LAN

Q What WLAN standards do the 1000 Series ISRs support? Do they support 802.11ac Wave 2 technology?

A Yes, the 1000 Series ISRs have an integrated access point that supports 802.11ac Wave 2 along with 802.11a/b/g/n.

Q What is the access point that is integrated into the 1000 Series ISRs?

A It is the Cisco Aironet® 1815i access point that supports Mobility Express. This allows flexible deployment of additional access points at locations without a wireless controller to expand the Wi-Fi network. The access point in the 1000 Series acts as the master access point, which functions and operates as a wireless LAN controller to manage and control the subordinate access points.

Q How many access points can be added to the 1000 Series?

A The Mobility Express feature of the access point in the 1000 Series ISR supports the addition of up to 50 access points.

Q Does the Mobility Express feature on the 1000 Series ISRs need additional licenses?

A You do not need any additional licenses to use the Mobility Express feature. You can use the web UI for Mobility Express for both configuration and monitoring of the Mobility Express network. You can monitor both application and client information with wireless AVC data.

Q Does the free 1-year Cisco Connected Mobile Experiences (CMX) license promotion apply to the 1000 Series ISRs as well?

A Yes, you get a free 1-year CMX license with the 1815i access point, and the same applies to the access point integrated into the 1000 Series ISRs.

Q What are the different regions for which wireless is available and their wireless domains?

A We have 11 wireless domains covering different countries and regions. They are listed below.

- “-E” EMEA, Middle East, some Africa, some Southeast Asia
- “-B” United States
- “-A” Most Latin America, Canada, Philippines
- “-Z” Australia, New Zealand, Brazil
- “-N” India, Mexico, Panama, Hong Kong, Fiji
- “-Q” Japan
- “-C” China, Pakistan, Indonesia, Malaysia
- “-H” China
- “-F” Indonesia
- “-D” India
- “-R” Russia

Q Can the access point on the 1000 Series ISRs be run as an autonomous or standalone access point?

A Yes, the access point on the 1000 Series ISRs can be run as a standalone access point without connecting to another wireless controller. Since it supports Mobility Express, it can act as a master access point and be its own controller.

Voice features

Q Can the 1000 Series ISRs serve as a Cisco Virtual Office?

A Yes, the 1000 Series will support Cisco Virtual Office functionality.

DSL features

Q What DSL technologies are supported on the 1000 Series ISRs?

A The 1000 Series ISRs will support ADSL2 and VDSL2+ with bonding. ADSL2 and VDSL2+ are supported over both ISDN and POTS. We have separate options for both Annex A and Annex M.

Q Do the 1000 Series ISRs support VDSL2+ bonding? And VDSL2 in Packet Transfer Mode (PTM)?

A Yes, VDSL2+ with bonding and also PTM are supported.

Management

Q What version of Cisco Configuration Professional is supported on the 1000 Series ISRs?

A Cisco Configuration Professional 2.7 is supported.

Q What version of Cisco Prime Infrastructure is supported on the 1000 Series ISRs?

A Cisco Prime Infrastructure 3.1 Device Pack 16 will support the 1000 Series platforms.

Q What version of APIC-EM and Cisco Intelligent WAN (IWAN) will support the 1000 Series ISRs?

A APIC-EM 2.1 and IWAN App 2.1 will support the 1000 Series ISRs.

Q Does the Cisco Configuration Engine support the 1000 Series ISRs?

A Yes, the Cisco Configuration Engine version 3.5.x will support the 1000 Series.