Cisco 1000 Series Integrated Services Routers

Product overview

Q

What are the 1000 Series ISRs?

A

The Cisco® 1000 Series Integrated Services Routers (ISRs) are the latest addition to fixed ISR routing portfolio which combines WAN, comprehensive security, wired and wireless access in a single, high-performance platform.

Q

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

A

The ISR 1000 Series offers the following features:

- Cisco IOS XE operating system
- LTE Advanced
- G.FAST and 35b
- 802.11ac Wave2 with Mobility Express
- Cisco SDWAN [Roadmap]
- Cisco Umbrella™ Branch, ETA (Encrypted Traffic Analytics)
- Greater crypto throughput

Q

Can I continue to order the 800 Series routers after the ISR 1000 Series become available?

A

Yes, the Cisco 800 Series is not at end of sale or end of life. The ISR 1000 Series does not replace the ISR800 Series. You can continue to order the 800 Series after the ISR 1000 Series becomes orderable.

Q

What are the different models of the ISR 1000 Series?

A

The ISR 1000 Series 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.

Q

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

A

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.

https://www.cisco.com/c/en/us/products/collateral/routers/1000-series-integrated-services-routers-isr/datasheet-c78-739512.html

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

A

1. Prefix

"C" = Standard Product ID (PID) prefix

2. Product Number

The second portion of Product ID after the hyphen identifies the number of LAN ports:

- "-4P" = 4 LAN ports
- "-8P" = 8 LAN ports

The last digit on the first portion of Product ID identifies the onboard GE and DSL WAN interfaces:

- "1111" = Two GE WAN interfaces
- "1112" = One GE WAN Interface and One DSL Interface with G.FAST/VDSL2 35b/VDSL2 /ADSL2+ Annex B & J over ISDN
- "1113" = One GE WAN Interface and One DSL Interface with G.FAST/VDSL2 35b/VDSL2/ADSL2 + Annex A or M over POTS
- "1116" = One GE WAN Interface and One DSL Interface with VDSL/ADSL2+ Annex B & J over ISDN
- "1117" = One GE WAN Interface and One DSL with VDSL/ADSL2 + Annex A or M over POTS

3. Product Capabilities

Wireless LAN:

- "WE" = -E Wireless Domain
- "WB" = -B Wireless Domain
- "WA" = -A Wireless Domain
- "WZ" = -Z Wireless Domain
- "WN" = -N Wireless Domain
- "WQ" = -Q Wireless Domain
- "WH" = -H Wireless Domain
- "WR" = -R Wireless Domain
- "WF" = -F Wireless Domain
- "WD" = -D Wireless Domain

Wireless WAN:

- "LTEEA" = LTE for US, Europe, Canada and Middle East
- "LTELA" = LTE for APJ and some providers in LATAM

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 SKUs come with 4 GB of RAM and 4 GB of flash storage by default.

Q Can I upgrade the DRAM and Flash?

A No. Both DRAM and Flash are not upgradable.

Q Is the ISR 1000 Series fanless?

A Yes, the ISR 1000 Series is fanless.

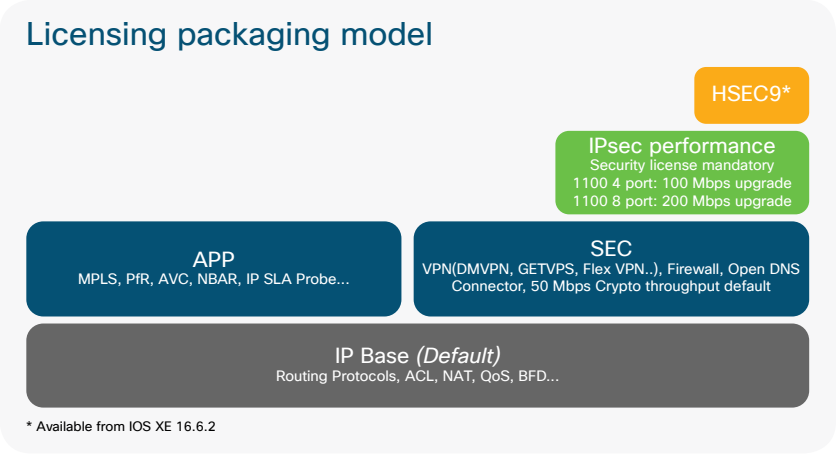
Q Which Cisco IOS Software version is supported on the ISR 1000 Series?

A The 1000 Series ISRs support IOS-XE 16.6.1 onwards.

Licensing

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

A The 1000 Series ships with the IP Base license by default. One can then add the SEC and App licenses. Additionally, there are two performance licenses; HSEC and IP Sec performance. These are explained more in detail in the next section.



Q

What are the performance licenses for the ISR 1000 Series?

A

With the IP Base and SEC license, encrypted traffic is shaped at 50 Mbps. A performance license is needed only for encrypted traffic of over 50 Mbps. There are currently two types of performance license; HSEC and IPsec Performance. The HSEC will disable the shaper completely, whereas the IPsec Performance will only lift up the bar on the shaper to 250 Mbps for the 8 LAN port SKUs, and to 150 Mbps for the 4 LAN port SKUs.

Q

What features are part of the IP Base, APP and SEC licenses?

A

A sampling of the capabilities in each license is per table below.

Q

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

A

All licenses are Right-to-Use except the HSEC. The HSEC is an enforced license.

Q

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

A

Yes, the ISR 1000 Series supports Cisco ONE licenses. The Cisco ONE license will include the IP Base, App, SEC and Prime Infrastructure license.

Q

Is any performance license part of Cisco ONE?

A

No performance license is included in Cisco ONE.

Hardware features

Q

Is the 1000 Series PoE and PoE+ capable?

A

Yes, the 8 LAN port SKUs support either 4 PoE ports or 2 PoE+ ports. The 4 LAN port SKUs support either 2 PoE ports or 1 PoE+ port. When PoE or PoE+ is ordered, the default 66W power supply is replaced with a higher wattage power supply.

Q

Is the onboard 4GB DRAM shared with WLAN and DSL?

A

The wireless and DSL modems have their own memory space and do not use the onboard 4GB RAM.

Q

Do all SKUs in the ISR 1000 Series offer two GE WAN ports?

A

No, only the SKUs without DSL offer two GE WAN ports. The SKUs with DSL come with only one GE WAN port.

Q

Is there an option for a rack mount on the 1000 Series?

A

The rack-mount kit for the ISR 1000 Series is ACS-1100-RM-19(=). The rack mount is 1 rack unit (RU) and includes space for the power supply to be placed within the bracket.

Q

What power supply is used with the ISR 1000 Series?

A

The 1000 Series comes with a 66W power supply by default.

Q

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

A

Please refer to Table 14 in the 1000 Series data sheet for the list of supported SFPs.
https://www.cisco.com/c/en/us/products/collateral/routers/1000-series-integrated-services-routers-isr/datasheet-c78-739512.html

Q **Does the 1000 Series support an external power supply?**

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

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

A A micro USB 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 ISR 1000 Series will be supporting Cisco SDWAN. [Cisco SD-WAN Roadmap: July 2018]

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

A The 1000 Series supports configuration of 32 VLANs.

Q **Does the ISR 1000 Series have feature parity with the ISR 4000 Series?**

A Yes, the ISR 1000 Series has software feature parity with the ISR 4000 Series except voice features.

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

A The ISR 1000 Series supports the full Cisco Umbrella and OpenDNS architecture from IOS-XE 16.6.3 and 16.7.2. These features require the purchase of additional licensing.

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

A The ISR 1000 Series supports LISP.

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

A It is on the roadmap.

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

A No, the ISR 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 ISR 1000 Series. 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 **Is the ISR 1000 Series FIPS certified?**

A Yes, it has been certified. For FIPS.

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 **Is Cisco Unified Border Element (CUBE) functionality available on the ISR 1000 Series?**

A It is on the roadmap.

Q **Does the ISR 1000 Series support Precision Time Protocol (PTP)?**

A No, the 1000 Series does not support PTP.

Q **Does the 1000 Series ISRs support Dynamic DNS?**

A Yes, Cisco IOS XE does support Dynamic DNS.

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 **Is MPLS supported on the ISR 1000 Series?**

A Yes, MPLS is supported with the APP license.

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 **Does the ISR 1100 Series have a separate hardware to accelerate VPN operations?**

A Yes, there is a separate crypto engine for ciphering and hashing operations.

Q **What VPN technologies are supported on the ISR 1000 Series?**

A The 1000 Series supports the following VPN technologies: FlexVPN, Dynamic Multipoint VPN (DMVPN), Group Encrypted Transport VPN (GETVPN).

Q **Is ETA(Encrypted Traffic Analysis) available on the ISR 1000 Series?**

A Yes, the ISR 1000 Series supports Encrypted Traffic Analysis.

3G, 4G, and LTE features

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.

Q **Can the ISR 1000 Series support dual-SIM?**

A Yes, but they can only work in active-standby mode.

Q **Can the ISR 1000 Series fall back to 3G?**

A Yes, the ISR 1000 Series support 3G as well, and is able to fall back from LTE to 3G.

Q A What LTE bands are supported in different regions?

The ISR 1000 Series support the following bands:

SKU	xLTEEA	xLTELA
FDD Bands	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)	FDD LTE 700 MHz (band 28), 850 MHz (band 5 CLR), 850 MHz (band 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)
TTD Bands	TTD LTE 2500 MHz (band 41)	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, 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	1+(8, 18, 19, 21); 3+(5, 7, 19, 28); 19+21, 38+38, 39+39, 40+40, and 41+41
Backward compatibility	UMTS and HSPA+: 850 MHz (band 5), 900 MHz (band 8), 1800 MHz (band 3), 1900 MHz (band 2), 1700 MHz and 2100-MHz (band 4 AWS), and 2100 MHz (band 1)	UMTS and HSPA+: 800 MHz (band 19), 850 MHz (band 5), 850 MHz (band 6), 900 MHz (band 8), 1800 MHz (band 9), and 2100 MHz (band 1)
	HSPA+speed download up to Category 20 (42.2 Mbps) and upload up to Category 6 (5.76 Mbps)	HSPA+speed download up to Category 20 (42.2 Mbps) and upload up to Category 6 (5.76 Mbps)
	DC-HSPA+speed download with Category 26 (62 Mbps) and upload up to Category 8 (11.5 Mbps)	DC-HSPA+speed download with Category 26 (62 Mbps) and upload up to Category 8 (11.5 Mbps)
Category 6 DL/UL speed	300 Mbps/50 Mbps	300 Mbps/50 Mbps
Regions	United States, Europe, Canada, Middle East	Australia, Japan, China, India, Southeast Asia, LATAM, South Korea

Q A Does the support Layer 2 Tunneling Protocol (L2TP) v3 on LTE?

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

Is DMVPN supported over LTE connections?

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

Does the 1000 Series have active GPS?

A Both the 4 LAN port and 8 LAN port SKUs with LTE have an embedded active GPS in them and can be used for features such as geo-fencing, site survey, etc.

Wireless LAN

Is wireless 802.11ac supported on the 1000 Series?

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

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.

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.

Can the 1000 Series connect to an external WLAN controller?

A Yes, it can work in unified mode.

What is the access point that is integrated into the ISR 1000 Series?

A It is the Cisco Aironet® 1815i access point that supports Mobility Express.

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

A You do not need any additional licenses to use the Mobility Express.

Does the Mobility Express have a WebGUI?

A There is a separate WebGUI for Mobility Express for both configuring and monitoring WLAN.

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

A We have 10 wireless domains covering different countries and regions. They are listed below.

- “-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

DSL features

Q **What DSL technologies are supported on the ISR 1000 Series?**

A The ISR 1000 Series will support ADSL2 and VDSL2+ . ADSL2 and VDSL2+ are supported over both ISDN and POTS. We will be launching new SKUs to support G.FAST and VDSL2 35b in 2018.

Q **Is the 1000 Series capable of vectoring for DSL?**

A The ISR 1000 Series is capable of vectoring for VDSL2.

Q **Is the 1000 Series capable of bonding for VDSL?**

A No, the ISR 1000 Series does not support bonding. If VDSL bonding is a requirement, please consider using C897VAB.

Q **Can Annex A SKUs support Annex M?**

A Yes, but the data rate will be not optimized to provide the maximum performance.

Q **Can G.FAST and VDSL2 35b be supported on the same router?**

A Yes, both will be supported on the same router.

Q **Can the SKUs with G.FAST and VDSL2 35b support VDSL2 and ADSL2+?**

A Yes, the ISR 1000 Series with G.FAST and VDSL2 35b can support ADSL2+, VDSL2 8a/8b/8c/8d/12a/12b/17a.

Q **Is Profile 106a and 106b supported for G.FAST?**

A Yes, the ISR 1000 Series with G.FAST and Profile 35b can support both 106a and 106b.

Management

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 1.6/IWAN App 1.6 and IWAN Solution 2.2.1(16.6.2) will support the ISR 1000 Series.

Q **Does ISR 1000 Series have a Device Manager?**

A The IOS XE WebUI is supported on the ISR 1000 Series.

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

A It is on the roadmap for IOS XE 16.9.1.

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

A The ISR 1000 Series 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 provisioned via the PnP app using SUDI.

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

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.

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