

# Cisco 1000 Series Integrated Services Routers

## Product overview

### Q What are the ISR 1000 Series Routers?

A The ISR 1000 Series Routers are the latest addition to the branch routing portfolio which combine WAN, comprehensive security, wired and wireless access in a single, high-performance platform.

### Q What are the key differences between the ISR 1000 Series and the ISR 800 Series?

A The ISR 1000 Series offers the following features:

- Cisco IOS XE operating system
- LTE Advanced Pro
- VDSL/ADSL2+
- G.FAST
- 802.11ac Wave2 with Mobility Express
- Cisco SD-WAN Cisco Umbrella™, ETA (Encrypted Traffic Analytics)
- Greater crypto throughput
- Pluggable LTE modules
- Extended temperature support
- 8G DRAM/FLASH
- Perpetual and Subscription based Licensing

### Q What are the different models of the ISR 1000 Series?

A The 1000 Series ISRs have the following models: C1161X-8P, C112x-8P, C112xX-8P, C1121-4P, C1111X-8P, C111x-8P, C111x-4P, C1101-4P, C1109-4P and C1109-2P. They all come with varied combinations of WAN interfaces, LTE, and Wi-Fi options.

### Q What are the different SKUs/product IDs for the ISR 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 ISR 1000 Series 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:
- “1101” = One GE WAN interface
- “1109” = One GE WAN interface with dual pluggable modems or integrated modem
- “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
- “1118” = One GE WAN Interface and One DSL with G.SHDSL
- “1121” = Two GE WAN interfaces
- “1126” = One GE WAN Interface and One DSL Interface with VDSL/ ADSL2+ Annex B & J over ISDN

- “1127” = One GE WAN Interface and One DSL with VDSL/ADSL2 + Annex A or M over POTS
- “1128” = One GE WAN Interface and One DSL with G.SHDSL
- “1161” = Two GE WAN interfaces
- “X” = 8G DRAM and 8G FLASH

### 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
- “LTEP” = Pluggable LTE module

## Q What is the size of the DRAM and Flash on the ISR 1000 Series?

A Both the 4 LAN port and 8 LAN port 1000 SKUs come with 4 GB of DRAM and 4 GB of Flash by default. The C1111X, C1121X, C1126X, C1127X, C1161X come with 8G DRAM and 8G FLASH.

## Q Can I upgrade the DRAM and Flash?

A No. Both DRAM and Flash are not upgradeable.

## 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.

Platform series	Minimum recommended IOS XE version
C111x	16.6.2
C1101	16.8.1
C1109	16.9.1
C1111X	16.9.1
C1121, C1121X, C1161, C1161X	16.11.1
* C1126, C1126X, C1127, C1127X, C1128	16.12.1

\* These versions support Pluggable LTE modules which require minimum IOS XE version 16.12.1

## Licensing

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

A The ISR 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 VPERF. These are explained in more detail in the following 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 VPERF. The HSEC will disable the shaper completely, whereas the VPERF 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 Is the VPERF prerequisite to the HSEC license?**

A No. The SEC license is the only prerequisite to both VPERF and HSEC. Customers can buy a combination of either SEC + VPERF or SEC + HSEC.

**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 ISR 1000 Series support Cisco ONE licensing, and what licenses will it include?**

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.

**Q What is smart licensing?**

A 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. And it's 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 (MCE) provides a complete view into all of 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 ([software.cisco.com](https://software.cisco.com)).

For a more detailed overview on Cisco Licensing, go to [cisco.com/go/licensingguide](https://cisco.com/go/licensingguide).

## Hardware features

- Q** **Is the 1000 Series PoE and PoE+ capable?**
- A** Yes, the C1161-8P, C112x-8P, C112xX-8P, C111x-8P and the C1111X-8P support either 4 PoE ports or 2 PoE+ ports. The C1121-4P and C111x-4P supports either 2 PoE ports or 1 PoE+ port. When PoE or PoE+ is selected, the default 66W power supply is replaced with 150W for 8P models and 115W for 4P models.
- Q** **Is the onboard DRAM shared with WLAN and DSL?**
- A** The wireless and DSL modules have their own memory space and do not use the onboard RAM.
- Q** **Do all SKUs in the ISR 1000 Series offer two GE WAN ports?**
- A** No, the C1101 and C1109 series come with one GE WAN port only. The C112x and C111x series with DSL comes with only one GE WAN port.

**Q** **What are the different mounting options for the ISR 1000 series?**

**A**

Platform series	Mounting option
C1160, C1120, C111x, C1111X	Desktop, Wall mount using key-hole slots, Wall mount using DIN Rail
C1101	Desktop, wall mount using key-hole slots
C1109	Desktop, Wall, Ceiling

**Q** **What is the product ID for the rack-mount kit of the C111x Series?**

**A**

The rack-mount kit for the C111x and C1111X series is ACS- 1100-RM-19(=). The rack-mount kit for the C1160 and C1120 series is ACS-1100-RM2-19(=). 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 ISR 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**

SFP WAN interface is supported only on the C1160, C1120, C111x and the C1111X series. Please refer to the list of supported SFPs in the ISR 1000 Series datasheet from the following link. <https://www.cisco.com/c/en/us/products/collateral/routers/1000-series-integrated-services-routers-isr/datasheet-c78-739512.html>.

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

A All power supplies are external.

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

A The C111x series and C1111X series have a micro USB and an RJ-45 console port. Either one can be used for the console connection. The C1160, C1120, C1101 and C1109 series have a micro USB console port only.

## Software features

**Q Is the 1000 Series Cisco SD-WAN capable?**

A The ISR 1000 Series will support Cisco SD-WAN starting with the Cisco SD-WAN Software Release 18.3.0/IOS XE SD-WAN Software Release 16.9.1. The following SKUs from the ISR 1000 Series are supported: C1111-8P, C1111-8PLTEEA, C1111-8PLTELA, C1117-4PLTEEA, and C1117-4PLTELA. Starting software release 16.11.1, C1160 and C1120 SKUs are supported as well. Please contact Cisco for the list of supported SKUs on as more SKUs are on the roadmap to support Cisco SD-WAN.

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

A The ISR 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 Cisco Umbrella?**

A The ISR 1000 Series supports Cisco Umbrella from IOS XE 16.6.3 and 16.7.2. This feature requires additional licensing.

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

A The ISR 1000 Series supports LISP.

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

A No, the 1000 Series does not support WAAS.

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

A It is on the roadmap.

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

A Yes, MPLS is supported with App license.

## Security

**Q** **What features from the Trustworthy Systems are offered on the ISR 1000 Series?**

**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 1000 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), and Group Encrypted Transport VPN (GETVPN).

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

**A** Yes, the ISR 1000 Series supports Encrypted Traffic Analytics.

## 3G, 4G, and LTE features

**Q** **Does the 1000 Series support LTE Advanced?**

**A**

Yes, the C111x series has an integrated Category 6 (CAT6) LTE Advanced modem, and the theoretical speeds are 300 Mbps downlink and 50 Mbps uplink. The C1101 and C1109 series have a pluggable CAT6/18 LTE Advanced/Advanced Pro modem option.

**Q** **Does the 1000 Series support LTE Advanced Pro?**

**A**

Yes, the C1160 and C1120 series supports a pluggable Category 18 (CAT18) LTE Advanced Pro modem, and the theoretical speeds are 1200 Mbps downlink and 150 Mbps uplink. The C111x series has an integrated Category 6 (CAT6) LTE Advanced modem, and the theoretical speeds are 300 Mbps downlink and 50 Mbps uplink. The C1101 and C1109 series have a pluggable CAT6 LTE Advanced modem option.

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

**A**

Yes, but they can only work in active-standby mode. The CAT4 Verizon Pluggable has a single SIM slot.

**Q** **Can the ISR1000 series support dual radio?**

**A**

Yes, the C1109 series support dual pluggable LTE modules.

**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** **What LTE bands are supported in different regions?**

**A**

Please view the ISR 1000 data sheet for a breakdown of supported regions: <https://www.cisco.com/c/en/us/products/collateral/routers/1000-series-integrated-services-routers-isr/datasheet-c78-739512.html>.

- Q** Does the ISR 1000 series support L2TPv3 on LTE?
- A Yes, L2TPv3 is supported on the ISR 1000 Series, including on LTE.
- Q** Is DMVPN supported over LTE connections?
- A Yes, DMVPN is supported over the LTE interfaces.
- Q** Does the ISR 1000 Series have an active GPS?
- A Yes, the ISR 1000 Series has an active GPS and can be used for features such as geo-fencing, and site survey.

## Wireless LAN

- Q** Is wireless 802.11ac supported on the ISR 1000 Series?
- A Yes, the ISR 1000 Series supports 802.11ac Wave 2.
- Q** How many access points are supported via Mobility Express?
- A The ISR 1000 Series supports Mobility Express, supporting up to 50 access points.
- Q** Do you need a controller for the access point on the 1000 Series to be used for a wireless network?
- A Through Mobility Express, the ISR 1000 Series can behave as a wireless controller.
- Q** Can the 1000 Series connect to an external WLAN controller?
- A Yes, it can work in unified mode.

- Q** What type of Cisco access point is integrated on the ISR 1000 Series?
- A The ISR 1000 Series has an integrated Cisco 1815i access point.
- Q** Is there any other additional license needed to enable Mo-bility Express on the ISR 1000 Series?
- A There is no additional license needed to enable the Mobility Express.
- Q** Does the Mobility Express have a WebGUI?
- A There is a separate WebGUI for Mobility Express for both configuring and monitoring WLAN.
- Q** What are the different wireless domains supported on the ISR 1000 Series?
- A The C1120 series supports the following the wireless domains:
- “-B” United States
  - “-E” EMEA, Middle East, some Africa, some Southeast Asia
  - “-Z” Australia, New Zealand, Brazil
- We have 10 wireless domains for the C111x series, covering different countries and regions. They are listed below.
- “-A” Most Latin America, Canada, Philippines
  - “-B” United States
  - “-D” India
  - “-E” EMEA, Middle East, some Africa, some Southeast Asia
  - “-H” China
  - “-F” Indonesia
  - “-N” India, Mexico, Panama, Hong Kong, Fiji

- “-Q” Japan
- “-R” Russia
- “-Z” Australia, New Zealand, Brazil

For the C1101 and C1109 series, we support the following the wireless domains:

- “-A” Most Latin America, Canada, Philippines
- “-B” United States
- “-D” India
- “-E” EMEA, Middle East, some Africa, some Southeast Asia
- “-Q” Japan
- “-Z” Australia, New Zealand, Brazil

## DSL features

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

A The ISR 1000 Series will support ADSL2, VDSL2, G.SHDSL and G.Fast, which are all supported over both ISDN and POTS.

### Q Is the ISR 1000 Series capable of vectoring for DSL?

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

### Q Is the ISR 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 ISR 1000 Series with G.FAST and VDSL2 35b support VDSL2 and ADSL2+ as well?

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

### 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 Which version of Cisco Prime Infrastructure will support the ISR 1000 Series?

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

### Q Does the ISR 1000 Series have local management capability?

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.

### Q Does Cisco DNA Center support the ISR 1000 Series?

A Yes, Cisco DNA Center supports the ISR 1000 Series.