

# Cisco 4000 Series Integrated Services Routers

(Cisco 4400, 4300, and 4200 Series Integrated Services Routers)

Ordering Guide

September 2017

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## Cisco 4000 Series Integrated Services Routers

The Cisco® 4000 Series Integrated Services Router (ISR) platforms revolutionize WAN communications in the enterprise branch. With new levels of built-in WAN intelligence and convergence, it specifically addresses the growing need for application-aware networking in distributed enterprise sites.

You can order the platform as a base system or as a bundled system for security, unified communications, or application services. This ordering guide focuses on base system configurations and options, but most of the elements are applicable to bundle ordering as well. For a detailed list of advanced technology bundles, please refer to the section, "[Ordering Bundled Systems for Cisco 4000 Series ISRs](#)," of this ordering guide.

### Ordering the Cisco 4000 Series ISRs

The Cisco 4000 Series ISRs offer the highest performance within the ISR portfolio. The series contains the Cisco 4451-X, 4431, 4351, 4331, 4321, and 4221 routers, which differ primarily in performance capabilities and in the number of Network Interface Module (NIM) and enhanced Service Module (SM-X) slots supported.

Table 1 lists the part numbers for the Cisco 4000 Series ISRs.

**Table 1.** Cisco 4000 Series ISR Platforms and Part Numbers

Part number	Product description	Technical service part number (Cisco Smart Net Total Care™ 8x5xNBD)
<b>ISR4451-X/K9</b>	Cisco ISR 4451 (4 GE, 3 NIM, 2 SM, 8 GB FLASH, 2 GB DRAM (data plane), 4G DRAM (control plane))	CON-SNT-ISR45XK9
<b>ISR4431/K9</b>	Cisco ISR 4431 (4 GE, 3 NIM, 8 GB FLASH, 2 GB DRAM (data plane), 4 GB DRAM (control plane))	CON-SNT-ISR4431K
<b>ISR4351/K9</b>	Cisco ISR 4351 (3 GE, 3 NIM, 2 SM, 4 GB FLASH, 4 GB DRAM (default memory))	CON-SNT-ISR4351K
<b>ISR4331/K9</b>	Cisco ISR 4331 (3 GE, 2 NIM, 1 SM, 4 GB FLASH, 4 GB DRAM (default memory))	CON-SNT-ISR4331K
<b>ISR4321/K9</b>	Cisco ISR 4321 (2 GE, 2 NIM, 4 GB FLASH, 4 GB DRAM (default memory))	CON-SNT-ISR4321K
<b>ISR4221/K9</b>	Cisco ISR 4221 (2 GE, 2 NIM, 8 GB FLASH, 4 GB DRAM (default memory))	CON-SNT-ISR4221K

\* 8x5xNBD service is delivered 8 hours a day, 5 days a week (weekdays), by next business day.

You can order Cisco 4000 Series ISR platforms with dual power supplies that may be configured for power-supply redundancy or increased power for Power over Ethernet (PoE). The primary and secondary power supplies can be AC, PoE, DC, or any combination of the three. In order to power PoE ports on a switch module integrated into a router, you must order the router with a PoE power supply.

You can order the power supplies listed in Table 2 with the system or as spares. The PoE power supply on the Cisco 4000 Series ISRs requires a C15-rated power cable to accommodate the higher current rating of these power supplies.

**Table 2.** Cisco 4000 Series ISR Power Supply Options (offered with the system and as spares)

Platform	Part number	Description
<b>Cisco 4451 ISR</b>	<b>PWR-4450-AC(=)</b>	AC Power Supply for Cisco ISR 4450 and 4350 (Default)
	<b>PWR-4450-AC/2</b>	Secondary AC Power Supply for Cisco ISR 4450 Use PWR-4450-AC= as spare
	<b>PWR-4450-POE-AC(=)</b>	AC Power Supply with POE Module for Cisco ISR 4450 and 4350
	<b>PWR-4450-POE-AC/2</b>	Secondary AC Power Supply with POE Module for Cisco ISR 4450 Use PWR-4450-POE-AC= as spare
	<b>PWR-4450-DC(=)</b>	DC Power Supply for Cisco ISR 4450 and 4350

Platform	Part number	Description
	<b>PWR-4450-DC/2</b>	Redundant DC Power Supply for Cisco ISR 4450 Use PWR-4450-DC= as spare
<b>Cisco 4431 ISR</b>	<b>PWR-4430-AC(=)</b>	AC Power Supply for Cisco ISR 4430 (Default)
	<b>PWR-4430-AC/2</b>	Secondary AC Power Supply for Cisco ISR 4430 Use PWR-4430-AC= as spare
	<b>PWR-4430-POE-AC(=)</b>	AC Power Supply with POE Module for Cisco ISR 4430
	<b>PWR-4430-POE-AC/2</b>	Secondary AC Power Supply with POE Module for Cisco ISR 4430 Use PWR-4430-POE-AC= as spare
	<b>PWR-4430-DC(=)</b>	DC Power Supply for Cisco ISR 4430
	<b>PWR-4430-DC/2</b>	Redundant DC Power Supply for Cisco ISR 4430 Use PWR-4430-DC= as spare
<b>Cisco 4351 ISR</b>	<b>PWR-4450-AC(=)</b>	AC Power Supply for Cisco ISR 4450 and 4350 (Default)
	<b>PWR-4450-POE-AC(=)</b>	AC Power Supply with POE Module for Cisco ISR 4450 and 4350
	<b>PWR-4450-DC(=)</b>	DC Power Supply for Cisco ISR 4450 and 4350
<b>Cisco 4331 ISR</b>	<b>PWR-4330-AC(=)</b>	AC Power Supply for Cisco ISR 4330 (Default)
	<b>PWR-4330-POE-AC(=)</b>	AC Power Supply with POE Module for Cisco ISR 4330
<b>Cisco 4321 ISR</b>	<b>PWR-4320-AC(=)</b>	AC Power Supply for Cisco ISR 4320 (Default)
	<b>PWR-4320-POE-AC(=)</b>	AC Power Supply with POE Module for Cisco ISR 4320
<b>Cisco 4221 ISR</b>	<b>PWR-4220-AC(=)</b>	AC Power Supply for Cisco ISR 4220 (Default)

For the Cisco 4400 Series and 4351 ISRs, you can also enable PoE on two of the front-panel Gigabit Ethernet ports. Table 3 outlines the part required.

**Table 3.** Cisco 4000 Series ISR Power Supply Options (offered with the system and as spares)

Platform	Part number	Description
<b>Cisco 4451, 4431, and 4351 ISR</b>	<b>PWR-GE-POE-4400(=)</b>	POE Module for On Board GE for Cisco ISR 4400 & 4350.

Cisco 4400 Series ISRs (models 4451 and 4431) ship with a default memory of 2 GB of DRAM for the data plane, 4 GB of DRAM for the control plane, and 8 GB of flash memory. The 4 GB DRAM configuration for the control plane is derived by the installation of two symmetrical Dual In-line Memory Modules (DIMMs) of 2 GB in each of the memory slots.

The Cisco 4300 Series ISRs (4351, 4331, and 4321) ship with a default memory of 4 GB of DRAM for both the control plane and data plane and 4 GB of flash memory. In the 4351 and 4331, the 4-GB DRAM configuration is derived by the installation of two symmetrical DIMMs of 2 GB in each of the memory slots of the Cisco 4351 and 4331 ISR platforms. In the Cisco 4321 ISR, 4 GB of DRAM is soldered on to the motherboard and is not serviceable.

In the Cisco 4221 ISR, 4 GB of DRAM is soldered onto the motherboard and is not serviceable. Similarly, the 4221 comes with a default flash of 8 GB and is not upgradeable.

When upgrading memory to higher densities, both memory slots must be populated with DIMMs of the same type and density for high system performance. The Cisco 4000 Series platform does not support the use of different DRAM densities in the two available DIMM slots or the use of only one slot.

The memory type and part numbers are listed in Tables 4 and 5.

**Table 4.** Cisco 4000<sup>1</sup> Series ISR DRAM (factory upgrades)

Platform	Part number	Description
<b>Cisco 4400 Series Routers (4451 and 4431)</b>	MEM-4400-DP-2G	2G DRAM (1 DIMM) for Cisco ISR 4400 Data Plane (Default) Use MEM-4400-2G= as spare
	MEM-4400-4G	4G DRAM (2G+2G) for Cisco ISR 4400 (Default)
	MEM-4400-4GU8G	4G to 8G DRAM Upgrade (4G+4G) for Cisco ISR 4400
	MEM-4400-4GU16G	4G to 16G DRAM Upgrade (8G+8G) for Cisco ISR 4400
<b>Cisco 4350 and 4330 Series Routers (4351 and 4331)</b>	MEM-4300-4G	4G DRAM (2G+2G) for Cisco ISR 4330 and 4350 (Default)
	MEM-4300-4GU8G	4G to 8G DRAM Upgrade (4G+4G) for Cisco ISR 4330 and 4350
	MEM-4300-4GU16G	4G to 16G DRAM Upgrade (8G+8G) for Cisco ISR 4330 and 4350
<b>Cisco 4320 Series Routers (4321)</b>	MEM-4320-4G	4G DRAM for Cisco ISR 4320 (Soldered on motherboard)
	MEM-4320-4GU8G	4G to 8G DRAM Upgrade (Fixed 4G + additional 4G) for ISR 4320

**Table 5.** Cisco 4000 Series ISR DRAM (spares)

Platform	Part number	Description
<b>Cisco 4400 Series Routers (4451 and 4431)</b>	MEM-4400-2G=	2G DRAM (1 DIMM) for Cisco ISR 4400, Control Plane or Data Plane, Spare
	MEM-4400-4G=	4G DRAM (1 DIMM) for Cisco ISR 4400, Spare
	MEM-4400-8G=	8G DRAM (1 DIMM) for Cisco ISR 4400, Spare
<b>Cisco 4300 Series Routers (4351, 4331 and 4321)</b>	MEM-4300-2G=	2G DRAM (1 DIMM) for Cisco ISR 4330 and 4350, Spare
	MEM-4300-4G=	4G DRAM (1 DIMM) for Cisco ISR 4300, Spare
	MEM-4300-8G=	8G DRAM (1 DIMM) for Cisco ISR 4330 and 4350, Spare

Cisco 4400 ISRs ship with 8 GB of flash memory by default. Cisco 4300 Series ISRs ship with a default 4 GB of flash memory, which is soldered on the motherboard and is not serviceable. Similarly, the Cisco 4221 comes with 8 GB flash by default and is not upgradeable. On Cisco 4300 Series ISRs, installing an additional flash memory module will disable the onboard flash memory. The part numbers are listed in Table 6 and 7.

**Table 6.** Cisco 4000<sup>1</sup> Series ISR Flash Memory (factory upgrades)

Product series	Part number	Description
<b>Cisco 4450 Series Routers (4451)</b>	MEM-FLASH-8G	8G Compact Flash Memory for Cisco ISR 4450 (default)
	MEM-FLASH-8U16G	8G to 16G Compact Flash Memory Upgrade for Cisco ISR 4450
	MEM-FLASH-8U32G	8G to 32G Compact Flash Memory Upgrade for Cisco ISR 4450
<b>Cisco 4430 Series Routers (4431)</b>	MEM-FLSH-8G	8G eUSB Flash Memory for Cisco ISR 4430 (default)
	MEM-FLSH-8U16G	8G to 16G eUSB Flash Memory for Cisco ISR 4430
	MEM-FLSH-8U32G	8G to 32G eUSB Flash Memory for Cisco ISR 4430
<b>Cisco 4300 Series Routers (4351, 4331, and 4321)</b>	MEM-FLSH-4G	4G eUSB Flash Memory for Cisco ISR 4300 (Soldered on motherboard)
	MEM-FLSH-4U8G	4G to 8G eUSB Flash Memory Upgrade for Cisco ISR 4300
	MEM-FLSH-4U16G	4G to 16G eUSB Flash Memory Upgrade for Cisco ISR 4350 and 4330

<sup>1</sup> The ISR 4200 Series comes with fixed DRAM and flash.

**Table 7.** Cisco 4000<sup>1</sup> Series ISR Flash Memory (spares)

Product series	Part number	Description
Cisco 4450 Series Routers (4451)	MEM-FLASH-8G=	8G Compact Flash Memory for Cisco ISR 4450, Spare
	MEM-FLASH-16G=	16G Compact Flash Memory for Cisco ISR 4450, Spare
	MEM-FLASH-32G=	32G Compact Flash Memory for Cisco ISR 4450, Spare
Cisco 4430 and 4300 Series Routers (4431, 4351, 4331, and 4321)	MEM-FLSH-8G=	8G eUSB Flash Memory for Cisco ISR 4430 and 4300, Spare
	MEM-FLSH-16G=	16G eUSB Flash Memory for Cisco ISR 4430, 4350 and 4330, Spare
	MEM-FLSH-32G=	32G eUSB Flash Memory for Cisco ISR 4430, Spare

The 4000 Series ISRs ship with a default fan assembly that drives "business-to-bezel" airflow in the router chassis. The cover for the Redundant Power Supply (RPS) on the Cisco 4400 ISR can be ordered as a spare. Table 8 lists the part numbers for Cisco 4000 Series ISR fan-related products.

**Table 8.** Cisco 4000 Series ISR Fan-Related Products

Part number	Description
ACS-4450-FANASSY=	Cisco ISR 4450 and 4350 Fan Assembly, Spare
ACS-4430-FANASSY=	Cisco ISR 4430 Fan Assembly, Spare
ACS-4330-FANASSY=	Cisco ISR 4330 Fan Assembly, Spare
ACS-4320-FANASSY=	Cisco ISR 4320 Fan Assembly, Spare

### Ordering Optional Items for the Cisco 4000 Series ISR Platform

Each Cisco 4000 Series ISR ships with a default accessory kit consisting of:

- 19-inch rack-mount brackets
- Regulatory and Compliance Safety Information (RCSI) guide

The default accessory kit does not include any Category 5 RJ-45 Ethernet cables or cables for the router console or auxiliary port. You can order the console and auxiliary cables as an option during router configuration or as spares.

You may order the 23-inch rack-mount brackets, blank faceplates for module slots, and slot dividers as spares.

Opacity shields are not required for Cisco 4000 Series ISRs, as the routers ship with a solid cover and the router interior is not exposed. Table 9 lists the part numbers for cables, rack-mount brackets, blank faceplates, and storage drives.

**Table 9.** Cables, Rack-Mount Brackets, and Blank Faceplates for Cisco 4000 Series ISRs

Part number	Description
ACS-4450-BEZEL=	Cisco ISR 4450 Series Front Bezel
ACS-4430-BEZEL=	Cisco ISR 4430 Series Front Bezel
ACS-4350-BEZEL=	Cisco ISR 4350 Series Front Bezel
ACS-4320-BEZEL=	Cisco ISR 4320 Series Front Bezel
ACS-4450-RM-19=	19-inch rack mount kit for Cisco ISR 4450 and 4350
ACS-4430-RM-19=	19-inch rack mount kit for Cisco ISR 4430
ACS-4330-RM-19=	19-inch rack mount kit for Cisco ISR 4330
ACS-4320-RM-19=	19-inch rack mount kit for Cisco ISR 4320

Part number	Description
ACS-4220-RM-19=	19-inch rack mount kit for Cisco ISR 4220
ACS-4450-RM-23=	23-inch rack mount kit for Cisco ISR 4450 and 4350
ACS-4430-RM-23=	23-inch rack mount kit for Cisco ISR 4430
ACS-4330-RM-23=	23-inch rack mount kit for Cisco ISR 4330
ACS-4430-WM=	Wall mount kit for Cisco ISR 4430
ACS-4330-WM=	Wall mount kit for Cisco ISR 4330
CAB-CONSOLE-RJ45	Console Cable 6ft with RJ45 and DB9F (both system and spare)
CAB-AUX-RJ45	Auxiliary Cable 8ft with RJ45 and DB25M (both system and spare)
CAB-CONSOLE-USB	Console Cable 6ft with USB Type A and mini-B connectors (both system and spare)
NIM-BLANK=	Blank faceplate for NIM slot on Cisco ISR 4000
NIM-SLOT-DIVIDER=	NIM Slot Divider (Guide) for Cisco ISR 4000
SM-S-BLANK=	Removable faceplate for SM slot on Cisco ISR 4000 (only as spare)
SM-BLANK-KIT=	Blank faceplate for SM slot with divider on Cisco 4000 (only as spare)
SM-SLOT-DIVIDER=	SM Slot Divider (Guide) for Cisco ISR 4400, 4300 (only as spare)
SM-X-NIM-ADPTR(=)	SM-X slot to NIM slot adapter
NIM-SSD(=)	NIM Carrier Card for SSD drives
SSD-SATA-200G(=)	200 GB, SATA Solid State Disk for NIM-SSD
SSD-MSATA-200G(=)	200 GB, mSATA Solid State Disk for ISR 4300 Motherboard

In addition to the accessories above, the Cisco 4000 Series ISR also supports numerous interface modules, which you can find at <https://www.cisco.com/c/en/us/products/routers/4000-series-integrated-services-routers-isr/relevant-interfaces-and-modules.html>

## Ordering Cisco IOS Software Images and Licenses

Cisco ISRs deliver innovative technologies running on the industry-leading Cisco IOS® Software network operating system.

The Cisco 4000 Series ISRs ship with a universal Cisco IOS Software image that contains all the features available for use on the router. A specific feature set is activated by using technology package licenses, such as Security, Unified Communications, and Application Experience licenses.

Cisco 4000 Series ISRs support two types of universal images:

- Universal images with **universalk9** in the image name: This universal image offers all the Cisco IOS Software features, including strong payload cryptography features such as IP Security VPN (IPsec VPN) and Secure Unified Communications.
- Universal images with **universalk9\_npe** in the image name: The strong control of encryption capabilities by Cisco Software Activation helps meet U.S. export control requirements for cryptography. However, some countries have import requirements that require that the platform **not** support any strong payload cryptography. To satisfy the import requirements of those countries, Cisco allows you to order the router with an Non-Payload Encryption ("NPE") universal image. The NPE image does support security features such as zone-based firewall and intrusion prevention through the SECNPE-K9 license.

Tables 10 and 11 list part numbers for universal Cisco IOS Software images for the Cisco 4000 Series ISRs.

**Table 10.** Part Numbers for Universal Cisco IOS Software Images for the Cisco 4000 Series ISRs (for Cisco IOS XE Software Release 3.13)

Platform	Part number	Description
ISR 4451 and 4431	SISR4400UK9-313S	Cisco IOS universal Image for 4451 and 4431
ISR 4451 and 4431	SISR4400NPEK9-313S	Cisco IOS univ. Image (No Payload Encryption) for 4451 and 4431
ISR 4351, 4331 and 4321	SISR4300UK9-313S	Cisco IOS universal Image for 4351, 4331 and 4321
ISR 4351, 4331 and 4321	SISR4300NPEK9-313S	Cisco IOS univ. Image (No Payload Encryption) for 4351, 4331 and 4321

**Table 11.** Part Numbers for Universal Cisco IOS Software images for the Cisco 4000 Series ISRs (for Cisco IOS XE Software Release 16.3)

Platform	Part number	Description
ISR 4451 and 4431	SISR4400UK9-163	Cisco IOS universal Image for 4451 and 4431
ISR 4451 and 4431	SISR4400NPEK9-163	Cisco IOS univ. Image (No Payload Encryption) for 4451 and 4431
ISR 4351, 4331 and 4321	SISR4300UK9-163	Cisco IOS universal Image for 4351, 4331 and 4321
ISR 4351, 4331 and 4321	SISR4300NPEK9-163	Cisco IOS univ. Image (No Payload Encryption) for 4351, 4331 and 4321
ISR 4221	SISR4200UK9-164	Cisco IOS universal Image for 4221
ISR 4221	SISR4200NPEK9-164	Cisco IOS univ. Image (No Payload Encryption) for 4221

By default, all platform bundles include the IP Base license. You can order the routers from the factory with technology licenses preinstalled, using the paper license part numbers (those that start with the keyword **SL**). Alternately, if you plan to deploy the advanced technology features later, you may order the required licenses as spares. You may order spares for technology licenses as paper licenses or e-delivery licenses (those that start with keyword **SL**).

The IP Base license part numbers are listed in Table 12.

**Table 12.** IP Base Licenses for Cisco 4000 Series ISRs (maps to both types of universal Images)

Part number	Description
SL-44-IPB-K9	IP Base License (Paper) for Cisco 4451 and 4431
SL-4350-IPB-K9	IP Base License (Paper) for Cisco 4351
SL-4330-IPB-K9	IP Base License (Paper) for Cisco 4331
SL-4320-IPB-K9	IP Base License (Paper) for Cisco 4321
SL-4220-IPB-K9	IP Base License (Paper) for Cisco 4221

You can use the security licenses in Table 13 to activate the advanced security features offered on the Cisco 4000 Series ISR platform. You may order these part numbers only for the universal image that supports payload cryptography. The HSEC license is required for a feature to have full crypto functionality. Without the HSEC license, only 225 secure tunnels and 85 Mbps of crypto bandwidth would be available.

**Table 13.** Security Licenses for Cisco 4000 Series ISRs (maps to universalk9 image)

Part number	Description
SL-44-SEC-K9(=)	Security License (E-Delivery/ Paper) for Cisco 4451 and 4431 (System & Spare)
FL-44-HSEC-K9(=)	U.S. Export Compliance Security PAK (E-Delivery/Paper) for Cisco 4451 and 4431 (System & Spare)
SL-4350-SEC-K9(=)	Security License (Paper) for Cisco 4351 (System & Spare)
FL-4350-HSEC-K9(=)	U.S. Export Compliance Security PAK (E-Delivery/Paper) for Cisco 4351 (System & Spare)



Part number	Description
SL-4330-SEC-K9(=)	Security License (Paper) for Cisco 4331 (System & Spare)
FL-4330-HSEC-K9(=)	U.S. Export Compliance Security PAK (E-Delivery/Paper) for Cisco 4331 (System & Spare)
SL-4320-SEC-K9(=)	Security License (Paper) for Cisco 4321 (System & Spare)
FL-4320-HSEC-K9(=)	U.S. Export Compliance Security PAK (E-Delivery/Paper) for Cisco 4321 (System & Spare)

For activating security features on the universal image with no payload encryption, the security license part numbers are unique, as listed in Table 14.

**Table 14.** Security Licenses (no payload encryption) for the Cisco 4000 Series ISRs (maps to **universalk9\_npe** image)

Part number	Description
SL-44-SECNPE-K9	Security No Payload Encryption License (Paper) for Cisco 4451 and 4431 (System)
SL-44-SECNPE-K9=	Security No Payload Encryption (E-Delivery/Paper) License for Cisco 4451 and 4431 (only as Spare)
SL-4350-SECNPE-K9	Security No Payload Encryption License (Paper) for Cisco 4351 (System)
SL-4350-SECNPE-K9=	Security No Payload Encryption (E-Delivery/Paper) License for Cisco 4351 (only as Spare)
SL-4330-SECNPE-K9	Security No Payload Encryption License (Paper) for Cisco 4331 (System)
SL-4330-SECNPE-K9=	Security No Payload Encryption (E-Delivery/Paper) License for Cisco 4331 (only as Spare)
SL-4320-SECNPE-K9	Security No Payload Encryption License (Paper) for Cisco 4321 (System)
SL-4320-SECNPE-K9=	Security No Payload Encryption (E-Delivery/Paper) License for Cisco 4321 (only as Spare)
SL-4220-SECNPE-K9	Security No Payload Encryption License (Paper) for Cisco 4221 (System)
SL-4220-SECNPE-K9=	Security No Payload Encryption (E-Delivery/Paper) License for Cisco 4221 (only as Spare)

The Unified Communications license is used to activate unified communications features on the Cisco 4000 Series platforms. Table 15 lists the part numbers.

**Table 15.** Unified Communications License for the Cisco 4000 Series ISRs (maps to both images)

Part number	Description
SL-44-UC-K9	Unified Comm. License (Paper) for Cisco 4451 and 4431 (System)
SL-44-UC-K9=	Unified Commn. License (E-Delivery/Paper) for Cisco 4451 and 4431 (Spare)
SL-4350-UC-K9	Unified Commn. License (Paper) for Cisco 4351 (System)
SL-4350-UC-K9=	Unified Commn. License (E-Delivery/Paper) for Cisco 4351 (Spare)
SL-4330-UC-K9	Unified Commn. License (Paper) for Cisco 4331 (System)
SL-4330-UC-K9=	Unified Commn. License (E-Delivery/Paper) for Cisco 4331 (Spare)
SL-4320-UC-K9	Unified Commn. License (Paper) for Cisco 4321 (System)
SL-4320-UC-K9=	Unified Commn. License (E-Delivery/Paper) for Cisco 4321 (Spare)

You can use the Application Experience licenses in Table 16 to activate the Cisco Application Experience features offered on the Cisco 4000 Series ISRs.

**Table 16.** Application Experience (AppX) Licenses for the Cisco 4000 Series ISRs (maps to both universal images)

Part number	Description
SL-44-APP-K9	AppX License (Paper) for Cisco 4451 and 4431 (System)
SL-44-APP-K9=	AppX License (Paper) for Cisco 4451 and 4431 (Spare)
SL-4350-APP-K9	AppX License (Paper) for Cisco 4351 (System)
SL-4350-APP-K9=	AppX License (Paper) for Cisco 4351 (Spare)
SL-4330-APP-K9	AppX License (Paper) for Cisco 4331 (System)

Part number	Description
SL-4330-APP-K9=	AppX License (Paper) for Cisco 4331 (Spare)
SL-4320-APP-K9	AppX License (Paper) for Cisco 4321 (System)
SL-4320-APP-K9=	AppX License (Paper) for Cisco 4321 (Spare)
SL-4220-APP-K9	AppX License (Paper) for Cisco 4221 (System)
SL-4220-APP-K9=	AppX License (Paper) for Cisco 4221 (Spare)

The Cisco 4000 Series ISRs also support a performance license that can be used to increase the platform's routing throughput. Table 17 lists the part numbers.

**Table 17.** Application Experience (AppX) Licenses for the Cisco 4000 Series ISRs (maps to both universal images)

Part number	Description
FL-44-PERF-K9(=)	Performance License (E-Delivery/Paper) for Cisco 4451 and 4431 (System & Spare)
FL-4350-PERF-K9(=)	Performance License (E-Delivery/Paper) for Cisco 4351 (System & Spare)
FL-4330-PERF-K9(=)	Performance License (E-Delivery/Paper) for Cisco 4331 (System & Spare)
FL-4320-PERF-K9(=)	Performance License (E-Delivery/Paper) for Cisco 4321 (System & Spare)
FL-4220-PERF-K9(=)	Performance License (E-Delivery/Paper) for Cisco 4221 (System & Spare)

The Cisco 4000 Series ISRs also offer a wide variety of feature licenses for unified communications functions, such as Cisco Unified Communications Manager Express (Unified CME), Survivable Remote Site Telephony (SRST), and Cisco Unified Border Element (CUBE). You will need these licenses, in addition to the technology license, for a given solution deployment.

## Ordering Bundled Systems for Cisco 4000 Series ISRs

You can also order the Cisco 4000 Series ISRs as prepackaged bundled systems for deploying advanced technologies, such as security, unified communications, and application services in the branch office.

## Security Bundles

Cisco router security bundles deliver powerful security features, such as Cisco IOS Software Zone-Based Firewall, VPN, and infrastructure security services over numerous WAN access technologies, providing high levels of performance, scalability, and availability to meet today's growing business requirements. Table 18 lists the security bundle for the Cisco 4000 Series ISRs that ship with the security technology license activated and the advanced security features available for use. By default, this bundle ships with the universal Cisco IOS Software image that supports payload cryptography.

**Table 18.** Security Bundle for Cisco 4000 Series ISRs (includes **universalk9** image and security license)

Part number	Description	Technical service part number (Smart Net Total Care 8x5xNBD)
ISR4451-X-SEC/K9	Cisco ISR 4451 Security Bundle w/SEC license	CON-SNT-ISX451-X
ISR4431-SEC/K9	Cisco ISR 4431 Security Bundle w/SEC license	CON-SNT-CISCO 4431 ISRCISCO 4431 ISRS
ISR4351-SEC/K9	Cisco ISR 4351 Security Bundle w/SEC license	CON-SNT-ISR4351S
ISR4331-SEC/K9	Cisco ISR 4331 Security Bundle w/SEC license	CON-SNT-ISR4331S
ISR4321-SEC/K9	Cisco ISR 4321 Security Bundle w/SEC license	CON-SNT-ISR4321S
ISR4221-SEC/K9	Cisco ISR 4221 Security Bundle w/SEC license	CON-SNT-ISR4221S

\* 8x5xNBD service is delivered 8 hours a day, 5 days a week (weekdays), by next business day.

## MACsec, Snort, Cisco Umbrella Branch, and Encrypted Threat Analytics Security

MACsec may be enabled on Cisco 4000 Series ISRs using the NIM-2GE-CU-SFP module. Encrypted Threat Analytics (ETA) is a functionality that allows customers to do cryptographic assessments and identify malware communications in encrypted traffic through passive monitoring. Snort<sup>®</sup> as an Intrusion Prevention System (IPS) and Cisco Umbrella<sup>™</sup> Branch as a cloud-based security service are also supported on the router.

When enabling MACsec, you will need to procure the Security and HSEC licenses to stay within the limits of federal export control regulations. When customers wish to enable ETA, the Security (SEC) license needs to be enabled. Enabling Snort needs a Security (SEC) license and a signature subscription license. Enabling Cisco Umbrella Branch needs an Umbrella Branch license and a subscription license. The ordering guide is available at <https://www.cisco.com/c/en/us/products/security/router-security/sales-resources-listing.html>

**Note:** ETA needs Cisco Stealthwatch<sup>®</sup> and NetFlow.

## Unified Communications Bundles

The Cisco 4000 Series ISR voice bundles enable unified communications through a comprehensive signaling and media-processing infrastructure. It includes a variety of protocols, media interworking, signal and media security, transcoding, conferencing, and Quality-of-Service (QoS) capabilities. You can order these bundles with optional licenses for SRST.

The Unified Communications bundles (except ISR 4321) include the new Cisco Packet Voice DSP Module 4 (PVDM4), which has been optimized for concurrent voice support. The PVDM4 modules support all voice gateway functions of earlier generations of PVDMs.

Table 19 lists the voice bundle for Cisco 4000 Series routers that comes with PVDM4, UC technology license, and the unified communications features available for use. By default, this bundle ships with the universal Cisco IOS Software image that supports payload cryptography.

**Table 19.** Unified Communications (UC) bundles for Cisco 4000 Series ISRs (includes universalk9 image, Unified Communications license, and Cisco PVDM4)

Part number	Description	Technical service part number (Smart Net Total Care 8x5xNBD)
ISR4451-X-V/K9	Cisco ISR 4451 UC Bundle, PVDM4-64 w/UC License	CON-SNT-ISR4451-X
ISR4431-V/K9	Cisco ISR 4431 UC Bundle, PVDM4-64, UC License	CON-SNT-ISR4431V
ISR4351-V/K9	Cisco ISR 4351 UC Bundle, PVDM4-64, UC License	CON-SNT-ISR4351V
ISR4331-V/K9	Cisco ISR 4331 UC Bundle, PVDM4-32, UC License	CON-SNT-ISR4331V
ISR4321-V/K9	Cisco ISR 4321 UC Bundle, UC License	CON-SNT-ISR4321V

\* 8x5xNBD service is delivered 8 hours a day, 5 days a week (weekdays), by next business day.

Table 20 lists the voice security bundles for the Cisco 4000 Series routers. The bundles ship with a UC and Security (SEC) technology license and unified communications features available for use. By default, the bundles ship with the universal Cisco IOS Software image that supports payload cryptography.

**Table 20.** Voice Security Bundles for Cisco 4000 Series ISRs  
(include **universalk9** image, UC and SEC license, and Cisco PVD4M4)

Part number	Description	Technical service part number (Smart Net Total Care 8x5xNBD <sup>*</sup> )
<b>ISR4451-X-VSEC/K9</b>	Cisco ISR 4451 Voice Sec. Bundle, PVD4M4-64 w/UC and SEC License PAK	CON-SNT-ISR41-X
<b>ISR4431-VSEC/K9</b>	Cisco ISR 4431 Voice Sec. Bundle, PVD4M4-64 w/UC and SEC License PAK	CON-SNT-ISR44SEC
<b>ISR4351-VSEC/K9</b>	Cisco ISR 4351 VSEC Bundle, PVD4M4-64 w/UC, SEC Lic, CUBE-25	CON-SNT-ISR4351VS
<b>ISR4331-VSEC/K9</b>	Cisco ISR 4331 VSEC Bundle, PVD4M4-32 w/UC, SEC Lic, CUBE-10	CON-SNT-ISR4331VS
<b>ISR4321-VSEC/K9</b>	Cisco ISR 4321 VSEC Bundle, w/UC, SEC Lic, CUBE-10	CON-SNT-ISR4321VS

<sup>\*</sup> 8x5xNBD service is delivered 8 hours a day, 5 days a week (weekdays), by next business day.

Information about the Cisco 4000 Series ISR Application Experience bundle is available in the [Cisco Application Experience \(AX\) ordering guide](#).

## AX Bundles

Cisco router AX bundles deliver a combination of security features along with Cisco Wide Area Application Services (WAAS) features. The security features include the Cisco IOS Software Zone-Based Firewall, VPN, and infrastructure security services over numerous WAN access technologies. The WAAS features include Application Visibility and Control (AVC), Cisco Performance Routing (PFRv3), and application optimization. Table 21 lists the AX bundle for Cisco 4000 Series ISRs that comes with the security technology and the WAAS license activated. By default, this bundle ships with the universal Cisco IOS Software image that supports payload cryptography.

**Table 21.** AX bundle for Cisco 4000 Series ISRs (includes **universalk9** image, WAAS, and Security license)

Part number	Description	Technical service part number (Smart Net Total Care 8x5xNBD <sup>*</sup> )
<b>ISR4451-X-AX/K9</b>	Cisco ISR 4451 AX Bundle w/APP, SEC license	CON-SNT-ISR4X51-X
<b>ISR4431-AX/K9</b>	Cisco ISR 4431 AX Bundle w/APP, SEC license	CON-SNT-ISR4431A
<b>ISR4351-AX/K9</b>	Cisco ISR 4351 AX Bundle w/APP, SEC license	CON-SNT-ISR4351AX
<b>ISR4331-AX/K9</b>	Cisco ISR 4331 AX Bundle w/APP, SEC license	CON-SNT-ISR4331AX
<b>ISR4321-AX/K9</b>	Cisco ISR 4321 AX Bundle w/APP, SEC license	CON-SNT-ISR4321AX
<b>ISR4221-AX/K9</b>	Cisco ISR 4221 AX Bundle w/APP, SEC license	CON-SNT-ISR4221AX

<sup>\*</sup> 8x5xNBD service is delivered 8 hours a day, 5 days a week (weekdays), by next business day.

## AXV Bundles

Cisco router AXV bundles deliver a combination of security features along with Cisco Unified Communications (UC) and Cisco WAAS. The security features include the Cisco IOS Software Zone-Based Firewall, VPN, and infrastructure security services over numerous WAN access technologies, offering high levels of performance, scalability, and availability to meet today's growing business requirements. The WAAS features include Application Visibility and Control (AVC), Cisco Performance Routing (PFRv3) and application optimization. The bundles also ship with a UC technology license, and unified communications features available for use.

Table 22 lists the AXV bundle for the Cisco 4000 Series routers that come with the security, UC, and WAAS licenses activated. By default, this bundle ships with the universal Cisco IOS Software image that supports payload cryptography.

**Table 22.** AXV Bundle for Cisco 4000 Series ISRs (includes universalk9 image, WAAS, and SEC license)

Part number	Description	Technical service part number (Smart Net Total Care 8x5xNBD)
<b>ISR4451-X-AXV/K9</b>	Cisco ISR 4451 AXV Bundle w/APP, UC, PVD4-64, SEC license	CON-SNT-ISR4451
<b>ISR4431-AXV/K9</b>	Cisco ISR 4431 AXV Bundle w/APP, UC, PVD4-64, SEC license	CON-SNT-ISR4431AX
<b>ISR4351-AXV/K9</b>	Cisco ISR 4351 AXV Bundle w/APP, UC, PVD4-64, SEC license	CON-SNT-ISR4351XV
<b>ISR4331-AXV/K9</b>	Cisco ISR 4331 AXV Bundle w/APP, UC, PVD4-32, SEC license	CON-SNT-ISR4331XV
<b>ISR4321-AXV/K9</b>	Cisco ISR 4321 AXV Bundle w/APP, UC, SEC license	CON-SNT-ISR4321XV

\* 8x5xNBD service is delivered 8 hours a day, 5 days a week (weekdays), by next business day.

## Cisco and Partner Services for the Branch Office

Transform the branch-office experience and accelerate business innovation and growth using intelligent, personalized services from Cisco and our partners. We have the depth and breadth of expertise to create a clear, replicable, optimized branch-office footprint across technologies. Planning and design services align technology with business goals and can increase the accuracy, speed, and efficiency of deployment. Technical services help improve operational efficiency, save money, and mitigate risk. Optimization services are designed to continuously improve performance and help your team succeed with new technologies.

### Technical Services Available for Cisco 4000 Series ISRs

- **Cisco Smart Net Total Care Service** provides comprehensive technical support services for the Cisco 4000 Series ISRs (both base systems and bundled systems), Cisco IOS Software and feature licenses, and modules that include the Cisco Unified Computing System™ (Cisco UCS®) E-Series Module. Cisco Smart Net Total Care Service includes advance hardware replacement, OS updates, online tools and resources, and Cisco Technical Assistance Center (TAC) support.
- **Cisco Application Support plus Upgrades (SASU)** provides technical support services, including updates and upgrades for any Cisco software application running on the Cisco UCS E-Series Module.

Table 23 lists the Cisco technical services use cases that match the system you buy.

**Table 23.** Technical Services Use Cases

If you buy a Cisco 4000 base or bundled system with:	You need:
Any Cisco IOS Software, including technology or feature licenses for Cisco IOS Software	Cisco Smart Net Total Care Service
Any modules, including Cisco UCS E-Series Modules	Cisco Smart Net Total Care Service
An application running on a Cisco UCS E-Series Module	Cisco Smart Net Total Care Service + SASU
A security feature set and you do not require Intrusion-Prevention-System (IPS) signature updates	Cisco Smart Net Total Care Service

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## Additional Information and Contacts

To obtain current information about prices for products in the Cisco 4000 Series ISR portfolio, please refer to the Cisco price list at: <https://www.cisco.com/en/US/ordering/index.shtml>.

For more information about Cisco 4000 Series ISRs, visit <https://www.cisco.com/go/ISR4000>.

For Cisco 4000 Series ISR modules, visit <https://www.cisco.com/c/en/us/products/routers/4000-series-integrated-services-routers-isr/relevant-interfaces-and-modules.html>.

For more information about Cisco Technical Services, visit <https://www.cisco.com/go/ts>.




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