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Overview

ISR4451-X-VSEC/K9 is the Cisco 4451 Integrated Services Router, with voice and security features Bundle. It supports 2 Enhanced service-module (SM-X) slots, delivers 1 Gbps to 2Gbps aggregate throughput. This router also supports two kinds of DDRM, data plane and control/services plane, which make administrator easy to manage the router.

Quick Specification

Figure 1 shows the appearance of Cisco ISR4451-X-VSEC/K9.



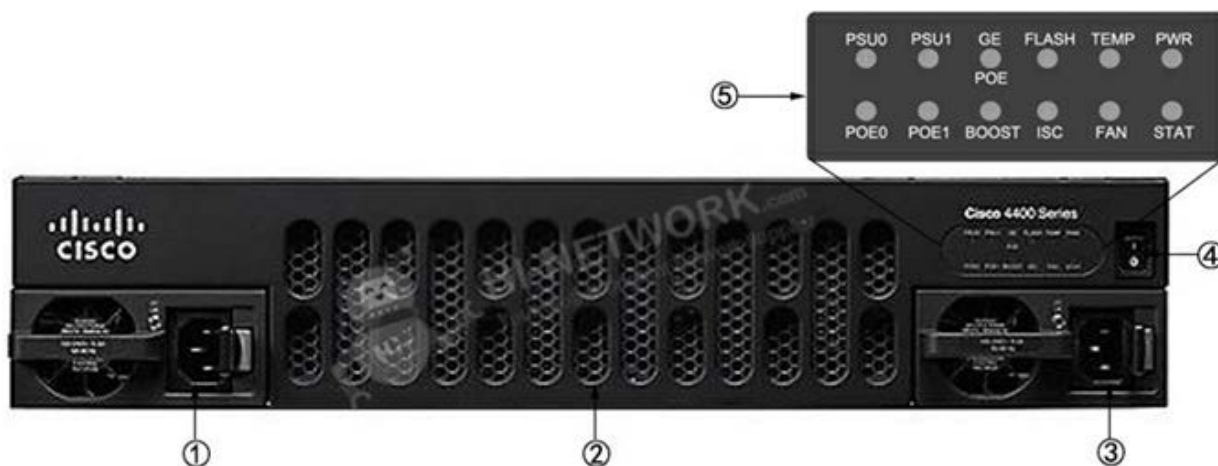
Table 1 shows the Quick Specification.

Product Code	ISR4451-X-VSEC/K9
Bundle	w/SEC and voice licenses
Aggregate Throughput	1 Gbps to 2Gbps
Total onboard WAN or LAN 10/100/1000 ports	4
RJ-45-based ports	4
SFP-based ports	4
Enhanced service-module (SM-X) slot	2
NIM (Network Interface Modules) slots	3
Onboard ISC slot	1

DDRM (data plane)	2 GB (default) / 2 GB (maximum)
DDRM (control/services plane)	4 GB (default) / 16 GB (maximum)
Flash Memory	8 GB (default) / 32 GB (maximum)
Power-supply options	Internal: AC, DC (roadmap) and PoE
Rack height	2 RU
Dimensions (H x W x D)	88.9 x 438.15 x 469.9 mm

Product Details

Figure 2 shows the front panel of Cisco ISR4451-X-VSEC/K9.

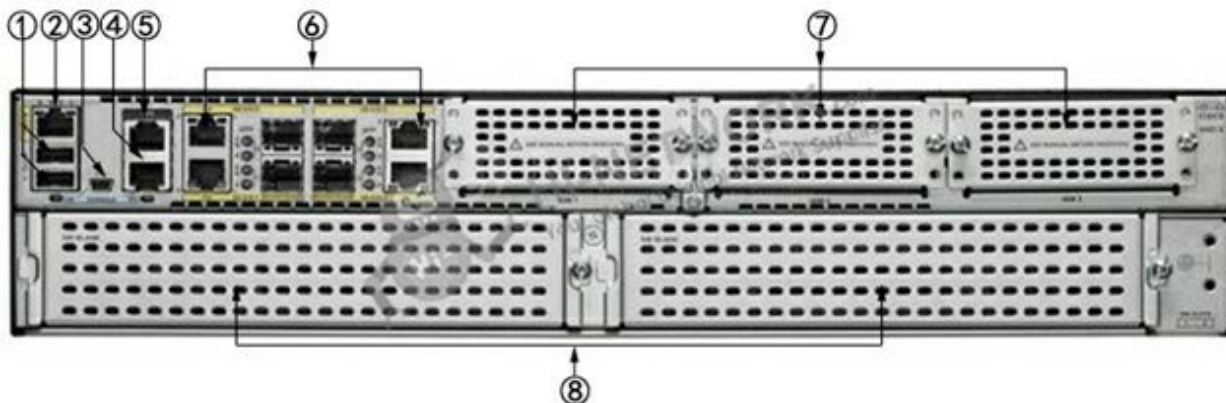


Note:

(1)	AC power supply unit (PSU0)	(4)	Router power On/Off switch
(2)	Router fan tray	(5)	LEDs
(3)	AC power supply unit (PSU1)		

- Router fan tray is hidden behind removable bezel.
- LEDs include 12 indicators.

Figure 3 shows the back panel of Cisco ISR4451-X-VSEC/K9.



Note:

(1)	USB Type A port	(5)	Auxiliary port
(2)	GE management port	(6)	GE Ports
(3)	USB Type B mini port	(7)	NIM Slots
(4)	Console port	(8)	SM-X Slot

- The NIMs support 2 single-wide or 1 double-wide.
- The GE Ports include 4 RJ45 ports and 4 SFP ports.

Table 2. Voice Security Bundle Features Table

Authentication and Encryption Features	<ul style="list-style-type: none"> • Media encryption of voice RTP streams using SRTP • Exchange of RTP Control Protocol (RTCP) information using secure RTCP • SRTP to RTP fallback for calls between secure and insecure endpoints • Secure calls supported in Cisco Unified Survivable Remote Site Telephony (SRST) mode during WAN failover • Compressed RTP (CRTP) supported with media encrypted calls using SRTP
Authentication and Encryption Algorithm	<ul style="list-style-type: none"> • Supports AES-128 encryption algorithm • Supports the HMAC secure hash authentication algorithm (SHA 1)
Signaling Authentication and Encryption Features	<ul style="list-style-type: none"> • Gateway to Cisco Unified Communications Manager signaling and encryption uses IPsec for Media Gateway Control Protocol (MGCP), H.323 and SIP gateways • IP phone to Cisco Unified Survivable Remote Site Telephony router signaling and encryption uses TLS (Transport Layer Security)
Protocol Support	<ul style="list-style-type: none"> • MGCP 0.1 (supports MGCP gateways with Cisco Unified Communications Manager) • H.323 (supported on H.323 gateways and CUBE; Cisco Unified Communications Manager interoperability is optional) • Session Initiation Protocol (SIP) • SCCP (Cisco Unified IP Phone) in SRST mode
Module Support	<ul style="list-style-type: none"> • Any module that has PVD2, PVD3 and/or built-in DSP
Codec Support	<ul style="list-style-type: none"> • G.711, G.729A, and G.729

The Modules, Cards, Licenses & Accessories

Table 3 shows some recommended modules, cards, licenses and several cables.

Items	Models	Descriptions
Console and Auxillary Cables	CAB-AUX-RJ45	Cisco CAB-AUX-RJ45 Auxiliary Cable 8ft with RJ45 and DB25M
	CAB-ETH-S-RJ45	Cisco Router Cable CAB-ETH-S-RJ45
	CAB-CONSOLE-RJ45	Cisco CAB-CONSOLE-RJ45 Console Cable 6ft with RJ45 and DB9F
	CAB-CONSOLE-USB	Cisco CAB-CONSOLE-USB Console Cable 6 ft with USB Type A and mini-B
Licenses	L-SL-44-APP-K9=	Cisco ISR 4431/4451 AppX license L-SL-44-APP-K9= with WAAS/vWAAS 1300/2500 conns RTU
	FL-44-PERF-K9	Increases the performance from base performance 1 Gbps to 2 Gbps
Voice Network Interface Modules	NIM-1MFT-T1/E1	Cisco Fourth-Generation Multiflex Trunk Voice and WAN network interface module
	NIM-2CE1T1-PRI	Cisco Multiflex Trunk Voice and WAN network interface module

	NIM-4E/M	Analog voice network interface card (ear and mouth)
	NIM-2FXS	Cisco Analog voice network interface card NIM-2FXS
	NIM-2FXS/4FXO	Cisco Analog voice network interface card NIM-2FXS/4FXO
	NIM-8MFT-T1/E1	Cisco Fourth-Generation Multiflex Trunk Voice and WAN network interface module
SFPs for On-Board GE Ports	GLC-SX-MMD	Cisco GLC-SX-MMD 1000BASE-SX SFP transceiver module, MMF, 850nm, DOM
	GLC-LH-SMD	Cisco GLC-LH-SMD 1000BASE-LX/LH SFP transceiver module, MMF/SMF, 1310nm, DOM
	GLC-ZX-SMD	Cisco GLC-ZX-SMD 1000BASE-ZX SFP transceiver module, SMF, 1550nm, DOM

Compare to Similar Items

Table 4 shows the comparison.

Models	ISR4451-X/K9	ISR4451-X-VSEC/K9
Bundle	None	Cisco ISR 4451 VSEC Bundle, PVDM4-64 w/ UC, SEC License CUBE- 25
Aggregate Throughput	1 Gbps to 2 Gbps	1 Gbps to 2 Gbps
Total onboard WAN or LAN 10/100/1000 ports	4	4
RJ-45-based ports	4	4
SFP-based ports	4	4
Enhanced service-module slots	2	2
NIM slots	3	3
Onboard ISC slot	1	1
Rack height	2	2

Get more information

Do you have any question about the Cisco ISR4451-X-VSEC/K9?

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Specification

ISR4451-X-VSEC/K9 Specification	
Description	Cisco ISR 4451 VSEC Bundle, PVDM4-64 w/ UC, SEC License CUBE- 25
Aggregate Throughput	1 Gbps to 2Gbps
Total onboard WAN or LAN 10/100/1000 ports	4

RJ-45-based ports	4
SFP-based ports	4
Enhanced service-module slots	2
Doublewide service-module slots	1 (assumes no singlewide SM-X modules installed)
NIM slots	3
OIR (all I/O modules)	Yes
Onboard ISC slot	1
Default memory double-data-rate 3 (DDR3) error-correction-code (ECC) DRAM (Combined control/services/data planes)	NA
Maximum memory DDR3 ECC DRAM (Combined control/services/data planes)	NA
Default memory DDR3 ECC DRAM (data plane)	2 GB
Maximum memory DDR3 ECC DRAM (data plane)	2 GB
Default memory DDR3 ECC DRAM (control/services plane)	4 GB
Maximum memory DDR3 ECC DRAM (control/services plane)	16 GB
Default flash memory	8 GB
Maximum flash memory	32 GB
External USB 2.0 slots (type A)	2
USB console port -type B mini (up to 115.2 kbps)	1
Serial console port - RJ45 (up to 115.2 kbps)	1
Serial auxiliary port - RJ45 (up to 115.2 kbps)	1
Power-supply options	Internal: AC, DC and PoE
Redundant power supply	Internal: AC, DC and PoE
AC input voltage	100 to 240 VAC auto-ranging
AC input frequency	47 to 63 Hz
AC input current range, AC power supply (maximum)	7.1 to 3.0A
AC input surge current	<50 A
Typical power (no modules) (watts)	158
Maximum power with AC power supply (watts)	450 (no PoE)
Maximum power with PoE power supply (platform only) (watts)	1000 with PoE redundant 1450 with PoE boost no redundancy
Maximum endpoint PoE power available from PoE power supply (watts)	500 W with optional redundancy
Maximum endpoint PoE power capacity with PoE boost (watts)	950 W no redundancy

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