

# Cisco SD-WAN Routers

## Product data sheet



### Introduction

**Cisco's SD-WAN Routers are the routing components of the overlay architecture that deliver the essential WAN, security and multi-cloud capability of the solution.**

**Cisco SD-WAN routers are delivered as hardware, software, cloud or virtualized components that sit at the perimeter of a site, such as remote office, branch office, campus, or a data center. They participate in establishing a secure virtual overlay network over a mix of any WAN transports.**

### Product portfolio

The SD-WAN routers are available in the following models:

1. **vEdge-100:** 100Mbps AES-256 throughput, with five fixed 10/100/1000 Mbps ports. Comes in three different flavors:
  - vEdge 100b: Ethernet only
  - vEdge 100m: Ethernet and integrated 2G/3G/4G modem
  - vEdge 100wm: Ethernet and integrated 2G/3G/4G modem + Wireless LAN
2. **vEdge-1000:** 1 Gbps AES-256 throughput, with 8 ports of fixed GE SFP
3. **vEdge-2000:** 10 Gbps AES-256 throughput, with 2 Pluggable Interface Modules
4. **vEdge-5000:** 20 Gbps AES-256 throughput, with 4 Network Interface Modules
5. **ISR & ASR Series:** With IOS XE SD-WAN software image, SD-WAN capability can be enabled on select ISR 1000 series, ISR 4000 series and ASR 1000 series routers. For more details, refer the respective data sheets
6. **ENCS:** With IOS XE SD-WAN software image, SD-WAN capability can be enabled on select ENCS 5000 series platforms. For more details, refer to the respective data sheets

**7. vEdge Cloud and CSR are the cloud elements of the SD-WAN solution.** For more details, refer to the respective data sheets

**vEdge Routers:** All of vEdge Routers offer the same software functionality. The key differences between the platforms are in respect to throughput, redundancy in hardware components and port density. Some models of vEdge-100 routers offer additional functionality in the form of Power over Ethernet-integrated GPS and integrated Wi-Fi. Key hardware specifications for vEdge Routers are listed in Table 1.

**Table 1.** Key hardware specifications of the vEdge routers

Item	vEdge-100	vEdge-1000	vEdge-2000	vEdge-5000
<b>Services and Slot Density</b>				
<b>Traffic ports</b>	5 x 10/100/1000 Mbps RJ-45 ports	8 x 1 Gbps SFP	4 x 1 Gbps SFP, 2 Pluggable Inter- face Module (PIM) slots. PIM Options: 2 x 10 Gbps SFP, 8 x 1 Gbps SFP	4 Network Interface Module (NIM) slots – NIM Options: 8 x 1Gbps Copper, 8 x 1Gbps SFP and 4 x 10Gbps
<b>Embedded hardware-based crypto acceleration (IPSec)</b>	Yes	Yes	Yes	Yes
<b>Memory DDR3 ECC</b>	2 GB	2 GB	8 GB	32GB DDR4
<b>SD card slot (external)</b>	N/A	Maximum capacity supported 32 GB	Maximum capacity supported 32 GB	N/A
<b>NAND storage (internal)</b>	4 GB	8 GB	8 GB	120GB
<b>External USB Host Port</b>	100b: N/A 100m & 100wm: 1 (USB 3.0 Type A)	2 (USB 3.0 Type A)	2 (USB 3.0 Type A)	2 (USB 2.0 Type A)
<b>Power-over-Ethernet (PoE)</b>	100b: N/A 100m & 100wm: 1 port, 15.4W (802.3af)	N/A	N/A	N/A
<b>4G LTE</b>	100b: N/A 100m & 100wm: 1 Integrated	N/A	N/A	N/A
<b>Global Positioning System (GPS)</b>	Integrated with external antenna	N/A	N/A	N/A
<b>Encryption Acceleration</b>	N/A	N/A	N/A	Intel QAT
<b>USB console port</b>	1, Mini Type B (115.2 Kbps)	1, Type B (115.2 Kbps)	1, Type B (115.2 Kbps)	N/A
<b>Serial console port</b>	N/A	1, RJ-45 (115.2 Kbps)	1, RJ-45 (115.2 Kbps)	1, RJ-45 (115.2 Kbps)
<b>Management Ethernet port (RJ-45 10/100/1000Mbps)</b>	N/A	1, RJ-45 10/100/1000	1, RJ-45 10/100/1000	1, RJ-45 10/100/1000
<b>Power supply option</b>	100b: External AC-DC power adapter 100m: Internal fixed AC power adapter	External AC-DC power adapter	Hot-swappable Power Supply Units (PSUs)	Hot-swappable Power Supply Units (PSUs)
<b>Redundant power supply support</b>	N/A	Yes	1+1 active-active redundancy	Yes
<b>Fans</b>	100b: N/A (fanless) 100m & 100wm: 1 fan, fixed	2	2, hot swappable	4, hot swappable

Item	vEdge-100	vEdge-1000	vEdge-2000	vEdge-5000
<b>Power Specifications</b>				
<b>AC input voltage</b>	90-264 Vrms (100-240V)	90-264 Vrms (100-240V)	90-264 Vrms (100-240V)	90-264 Vrms (100-240V)
<b>AC input line frequency</b>	47-63 Hz	47-63 Hz	47-63 Hz	47-63 Hz
<b>Typical power consumption</b>	100b: 15W 100m & 100wm: 35W with PoE, 20W without PoE	28W	125W	Max power consumption 285W
<b>Physical Specifications</b>				
<b>Rack height</b>	100b: 1 RU 100m & 100wm: 1RU Plus	1 RU	1 RU	1 RU
<b>Chassis height</b>	100b: 1.75 in. (4.4 cm) 100m & 100wm: 1.8 in. (4.6 cm)	1.75 in. (4.4 cm)	1.75 in. (4.4 cm)	1.75 in. (4.4 cm)
<b>Chassis width</b>	100b: 6.75 in. (17 cm) 100m & 100wm: 9.25 in. (23.5 cm)	7.5 in. (19 cm)	Chassis only: 17.25 in. (43.82 cm) Chassis with mounting brackets attached: 19 in. (48.2 cm)	Chassis only: 438mm Chassis with mounting brackets attached: 19 in. (482 mm)
<b>Chassis depth</b>	100b: 5.5 in. (14 cm) 100m & 100wm: 5.75 in. (14.6 cm)	10 in. (25.4 cm)	18.5 in. (47 cm)	580mm
<b>Chassis weight</b>	1.75 lb (0.79 kg)	3.55 lb (1.6 kg)	Chassis only: 11 lb (5 kg) Chassis with two power supplies installed: 15 lb (6.8 kg)	Chassis with Fans and Power supplies installed: 37 lbs
<b>Airflow</b>	100b: N/A (fanless) 100m & 100wm: Top	Front to back	Front to back	Front to back
<b>Rack-mount accessory kit 19 in (48.3 cm) EIA</b>	100b: Provided with the unit 100m & 100wm: Available and sold separately	Available and sold separately	Provided with the unit	Provided with the unit
<b>Packaging Specifications</b>				
<b>Package height</b>	3.58 in. (9.09 cm)	8.5 in. (21.6 cm)	8.5 in. (21.6 cm)	9 in. (22.86 cm)
<b>Package width</b>	100b: 7.75 in. (19.68 cm) 100m & 100wm: 10 in. (25.4 cm)	11.75 in. (29.84 cm)	22 in. (55.88 cm)	24 in. (60.96 cm)
<b>Package depth</b>	13 in. (33 cm)	16.5 in. (41.9 cm)	23.5 in. (59.7 cm)	31 in. (78.74 cm)
<b>Operating Condition</b>				
<b>Temperature</b>	0 to 40°C (32 to 104°F) at sea level (temperature de-rating of 1.5 deg C per 1000 feet of altitude applicable up to max of 10000 feet or 3000 m)	0 to 40°C (32 to 104°F) at sea level (temperature de-rating of 1.5 deg C per 1000 feet of altitude applicable up to max of 10000 feet or 3000 m)	0 to 40°C (32 to 104°F) at sea level (temperature de-rating of 1.5 deg C per 1000 feet of altitude applicable up to max of 10000 feet or 3000 m)	0 to 40°C (32 to 104°F) at sea level (temperature de-rating of 1.5 deg C per 1000 feet of altitude applicable up to max of 10000 feet or 3000 m)
<b>Altitude</b>	Max 3000 m (10000 ft)	Max 3000 m (10000 ft)	Max 3000 m (10000 ft)	Max 3000 m (10000 ft)
<b>Humidity</b>	10 to 85% RH	10 to 85% RH	10 to 85% RH	10 to 85% RH
<b>Transportation/Storage Condition</b>				
<b>Temperature</b>	-40 to 70°C (-40 to 158°F)	-40 to 70°C (-40 to 158°F)	-40 to 70°C (-40 to 158°F)	-40 to 70°C (-40 to 158°F)
<b>Humidity</b>	5 to 95%RH	5 to 95%RH	5 to 95%RH	5 to 95%RH
<b>Altitude</b>	4570 m (15000 ft.)	4570 m (15000 ft.)	4570 m (15000 ft.)	4570 m (15000 ft.)

Item	vEdge-100	vEdge-1000	vEdge-2000	vEdge-5000
<b>Reliability</b>				
<b>MTBF</b>	104K hours	80K hours	420K hours	178K hours
<b>Regulatory Compliance</b>				
<b>Safety</b>	AS/NZS 60950-1	AS/NZS 60950-1	AS/NZS 60950-1	AS/NZS 60950-1
	CAN/CSA 60950-1	CAN/CSA 60950-1	CAN/CSA 60950-1	CAN/CSA 60950-1
	CB-IEC60950-1	CB-IEC60950-1	CB-IEC60950-1	CB-IEC60950-1
	CE Marking	CE Marking	CE Marking	CE Marking
	EN 60950-1	EN 60950-1	EN 60950-1	EN 60950-1
	UL60950-1	UL60950-1	UL60950-1	UL60950-1
<b>EMC</b>	100b: AS/NZS CISPR22 Class A 100m: AS/NZS CISPR22 Class B	AS/NZS CISPR22 Class A	AS/NZS CISPR22 Class A	EN 550332: 2012+AC: 2013 Class A AS/NZS CISPR 32: 2015 CISPR32: 2015 EN55024: 2010 +A1: 2015 EN 61000-3-2: 2014 CLASS A EN 61000-3-3: 2013
	EN 300 386	EN 300 386	EN 300 386	
	100b: EN 55022 Class A 100m: EN 55022 Class B	EN 55022 Class A	EN 55022 Class A	FCC PART 15, SUBPART B ANSI C63, 4-2014 ICES-003 ISSUE 6: 2016 CISPR 22: 2008 CAN/CSA-CISPR 22-10
	100b: FCC Class A 100m: FCC Class B	FCC Class A	FCC Class A	FCC Class A
	100b: ICES Class A 100m: ICES Class B	ICES Class A	ICES Class A	ICES Class A
	100b: VCCI Class A 100m: VCCI Class B	VCCI Class A	VCCI Class A	VCCI Class A
<b>Environmental</b>	ROHS 6/6	ROHS	ROHS	ROHS

Table 2 below depicts key specifications for the 4G/LTE functionality on vEdge-100m.

**Table 2.** 4G/LTE specifications of the vEdge-100m

ITEM	vEdge-100m
<b>Hardware Components</b>	
<b>LTE modem</b>	Internal PCIe module
<b>SIM card</b>	1, Mini SIM (2FF)
<b>Antenna type</b>	MIMO, Dipole swivel
<b>Antenna connectors</b>	2, type F
<b>Specifications and Features</b>	
<b>User equipment implementation</b>	3GPP, release 9 compliant
<b>User equipment category</b>	UE category 3
<b>Maximum data transfer rates</b>	Downlink: 100 Mbps Uplink: 50 Mbps
<b>Voice and SMS</b>	No
<b>Certifications</b>	PTCRB, GCF

Table 3 below depicts key specifications for Wireless LAN functionality on vEdge-100wm.

**Table 3.** WLAN features

Item	vEdge-100wm
<b>Specifications and Features</b>	
<b>Frequency</b>	2.4GHz or 5GHz
<b>Protocols</b>	IEEE 802.11a/b/g/n/ac
<b>Channel bandwidth</b>	20Mhz, 40Mhz or 80Mhz
<b>SSIDs</b>	Up to 4
<b>Concurrent clients</b>	50
<b>Wireless Security and Authentication</b>	WPA/WPA2 personal or enterprise, 802.11i
<b>Wireless Encryption</b>	AES/CCMP, TKIP encryption
<b>WLAN antennas</b>	Internal

Table 4 below depicts 4G/LTE bands supported on vEdge-100 platforms.

**Table 4.** 4G/LTE bands supported on vEdge-100m

Region	100m-VZ	100m-AT	100m-NA	100m-GB	100m-NT
<b>LTE Bands</b>	4 (AWS 1700MHz/2100Hz), 13 (700MHz)	2 (1900MHz), 4 (AWS 1700Hz/2100Hz), 5 (850MHz), 17 (700MHz)	2 (1900MHz), 4 (AWS 1700MHz/2100MHz), 5 (850MHz), 13 (700MHz), 17 (700MHz), 25 (1900MHz)	1 (2100MHz), 3 (1800MHz), 7 (2600MHz), 8 (900MHz), 20 (800MHz)	1 (2100MHz), 19 (800MHz), 21 (1500MHz)
<b>Australia</b>	No	No	No	Yes	No
<b>Europe</b>	No	No	No	Yes	No
<b>Middle East</b>	No	No	No	Yes	No
<b>Latin America and Asia Pacific</b>	No	No	No	Yes	No
<b>United States</b>	Verizon	AT&T	Yes	No	No
<b>Canada</b>	No	No	No	No	No
<b>Japan</b>	No	No	No	Yes	NTT DoCoMo

Table 5 depicts 2G and 3G bands supported on vEdge-100 platforms.

**Table 5.** 2G and 3G bands on vEdge-100m

Technology	100m-VZ	100m-AT	100m-NA	100m-GB	100m-NT
<b>UMTS/HSPA+</b>	No	2 (1900MHz), 4 (AWS1700/2100M- Hz), 5 (850MHz)	A1 (2100MHz), 2 (1900MHz), 4 (AWS 1700/2100MHz), 5 (850MHz), 8 (900MHz)	1 (2100MHz), 2 (1900MHz), 5 (850MHz), 8 (900MHz)	1(2100MHz), 5 (850MHz), 6 (800MHz), 19 (850MHz)
<b>GPRS/Edge</b>	No	GSM 850 (850MHz), EGSM 900 (900MHz), DCS 1800 (1800MHz), PCS 1900 (1900MHz)	GSM 850 (850MHz), EGSM 900 (900MHz), DCS 1800 (1800MHz), PCS 1900 (1900MHz)	GSM 850 (850MHz), EGSM 900 (900MHz), DCS 1800 (1800MHz), PCS 1900 (1900MHz)	GSM 850 (850MHz), EGSM 900 (900MHz), DCS 1800 (1800MHz), PCS 1900 (1900MHz)

Technology	100m-VZ	100m-AT	100m-NA	100m-GB	100m-NT
<b>CDMA EVDO Release 0, EVDO Release A</b>	BC0 (Cellular 800 MHz), BC1 (PCS 1900 MHz), BC10 (Secondary 800 MHz)	No	No	No	No

## Software capabilities

The vEdge routers take advantage of standards-based features for the LAN (service) and WAN (transport) side of the network. Key software capabilities of the vEdge Routers are listed in Table 5.

Category	Features
<b>AAA</b>	TACACS+, RADIUS, local, role-based access control
<b>Routing</b>	OSPF, eBGP, iBGP, static, connected, OMP
<b>Bridging</b>	802.1Q, native VLAN, bridge domains, IRB, host-mode bridging
<b>Security</b>	Zero-trust, whitelisting, tamper-proof module, DTLS/TLS, IPSec, ESP-256-CBC, Authentication Header, HMAC-SHA1, DDOS protection, control plane protection, NAT traversal
<b>Forwarding and Quality of Service (QoS)</b>	Classification, prioritization, low latency queuing, remarking, shaping, scheduling, policing, mirroring, NAT/PAT
<b>Multicast</b>	IGMP v1/v2, PIM, Auto-RP, scale-out traffic replication
<b>Policy</b>	Route policies, app-aware routing, control policy, data policy, ACL policy, VPN member-ship policy, service advertisement and insertion policy
<b>Location Services</b>	Geo-location (vEdge-100m)
<b>Cellular</b>	Integrated 4G/LTE modem (vEdge 100m), circuit of last resort
<b>Mobility</b>	WiFi 802.11 a/b/g/n/ac, WPA2- Enterprise, WPA2-Personal, MAC Filtering, 8 SSIDs per-radio, 802.11i security enhancement and 802.11e QoS, wireless intrusion detection and protection
<b>System and network services</b>	IPv4, SNMP, NTP, DNS client, DHCP client, DHCP server, DHCP relay, config archival, Syslog, SSH, SCP, NAT/PAT, Cflowd v10 IPFIX export
<b>Configuration and monitoring</b>	Netconf over SSH, CLI, REST (vManage), Linux shell
<b>Out-of-band management</b>	Management port (vEdge-1000, vEdge-2000, vEdge-5000), serial console port (vEdge-1000, vEdge-2000, vEdge-5000), USB console port

## Ordering information

Ordering information for vEdge Routers is listed in Table 6.

**Table 6.** Ordering information for vEdge routers

SKU	SKU Description
<b>VEDGE-100B-AC-K9</b>	vEdge-100b AC router chassis with external power supply, 5 Ethernet ports, cables and mounting kit
<b>VEDGE-100M-AT-K9</b>	VEdge-100 AC router 4G/LTE SIM slot US. AT&T
<b>VEDGE-100M-GB-K9</b>	VEdge-100 AC router 4G/LTE SIM slot - World Wide
<b>VEDGE-100M-NA-K9</b>	VEdge-100 AC router 4G/LTE SIM slot NA PTCRB certified
<b>VEDGE-100M-NT-K9</b>	VEdge-100 AC router 4G/LTE SIM slot Japan ATT Docomo
<b>VEDGE-100M-SP-K9</b>	VEdge-100 AC router 4G/LTE SIM slot US Sprint
<b>VEDGE-100M-VZ-K9</b>	VEdge-100 AC router 4G/LTE SIM US Verizon
<b>VEDGE-100WM-AT-K9</b>	VEdge-100 AC router 802.11 ATT
<b>VEDGE-100WM-GB-K9</b>	VEdge-100 AC router chassis with one 802.11 World Wide
<b>VEDGE-100WM-NA-K9</b>	VEdge-100 AC router 802.11 North America
<b>VEDGE-100WM-NT-K9</b>	VEdge-100 AC router 802.11 Japan
<b>VEDGE-100WM-SP-K9</b>	VEdge-100 AC router 802.11 Sprint

SKU	SKU Description
<b>VEDGE-100WM-VZ-K9</b>	VEdge-100 AC router 802.11 Verizon
<b>VEDGE-1000-AC-K9</b>	VEdge-1000 AC router base chassis with 8x1GE fixed ports
<b>VEDGE-2000-AC-K9</b>	Cisco VEDGE-2000 AC Router Base Chassis
<b>VEDGE-5000-AC-K9</b>	VEdge 5000 AC router with 4 NIM slots
<b>NIM-8-1GE-RJ45</b>	VEdge 5000 AC router with 8 NIM 1GE Copper Slot
<b>NIM-8-1GE-SFP</b>	VEdge 5000 AC router with 8 NIM 1GE fiber Slot
<b>NIM-4-10GE-SFP</b>	VEdge 5000 AC router with 4 NIM 10GE SFP+ Slot
<b>PIM-2X10GE-SFP+</b>	Cisco VEDGE-2000 2x 10GE SFP+ PIM
<b>PIM-8X1GE-SFP</b>	Cisco VEDGE-2000 8x 1GE SFP PIM
<b>VIP-SFP-1GE-BASET</b>	Small form-factor pluggable transceiver - 1GE BaseT 10/100/1000
<b>VIP-SFP-1GE-LX</b>	Small form-factor pluggable transceiver - 1GE LX
<b>VIP-SFP-1GE-SX</b>	Small form-factor pluggable transceiver - 1GE SX
<b>VIP-SFP+-10GE-LR</b>	Small form-factor pluggable plus transceiver - 10GE LR
<b>VIP-SFP+-10GE-SR</b>	Small form-factor pluggable plus transceiver - 10GE SR

For ordering details of SD-WAN capability on ISR 1000 series, ISR 4000 series, ASR 1000 series, and ENCS refer the respective data sheets.

## Cisco Capital

### Flexible payment solutions to help you achieve your objectives

Cisco Capital makes it easier to get the right technology to achieve your objectives, enable business transformation and help you stay competitive. We can help you reduce the total cost of ownership, conserve capital, and accelerate growth. In more than 100 countries, our flexible payment solutions can help you acquire hardware, software, services and complementary third-party equipment in easy, predictable payments. [Learn more.](#)

### For more information

See how Cisco SD-WAN helps you move faster, lower costs, and reduce risk: <https://cisco.com/go/sdwan>.



**Americas Headquarters**  
Cisco Systems, Inc.  
San Jose, CA

**Asia Pacific Headquarters**  
Cisco Systems (USA) Pte. Ltd.  
Singapore

**Europe Headquarters**  
Cisco Systems International BV Amsterdam,  
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at <https://www.cisco.com/go/offices>.

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: <https://www.cisco.com/go/trademarks>. Third-party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)