

Cisco vEdge Routers

Product data sheet



Introduction

Cisco's vEdge Routers deliver comprehensive WAN gateway and network services function for both traditional routing and SDWAN deployments.

Cisco vEdge routers are hardware appliances 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, Secure Extensible Network, over a mix of any WAN transports.

vEdge routers provide essential features of routing, forwarding, security, encryption, Quality of Service (QoS), policy, and management.

Product portfolio

The vEdge 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

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 |
|--|---|----------------------------------|--|--|
| Services and Slot Density | | | | |
| Traffic ports | 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 |
| Embedded hardware-based crypto acceleration (IPSec) | Yes | Yes | Yes | Yes |
| Memory DDR3 ECC | 2 GB | 2 GB | 8 GB | 32GB DDR4 |
| SD card slot (external) | N/A | Maximum capacity supported 32 GB | Maximum capacity supported 32 GB | N/A |
| NAND storage (internal) | 4 GB | 8 GB | 8 GB | 120GB |
| External USB Host Port | 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) |
| Power-over-Ethernet (PoE) | 100b: N/A 100m & 100wm: 1 port, 15.4W (802.3af) | N/A | N/A | N/A |
| 4G LTE | 100b: N/A 100m & 100wm: 1 Integrated | N/A | N/A | N/A |
| Global Positioning System (GPS) | Integrated with external antenna | N/A | N/A | N/A |
| Encryption Acceleration | N/A | N/A | N/A | Intel QAT |
| USB console port | 1, Mini Type B (115.2 Kbps) | 1, Type B (115.2 Kbps) | 1, Type B (115.2 Kbps) | N/A |
| Serial console port | N/A | 1, RJ-45 (115.2 Kbps) | 1, RJ-45 (115.2 Kbps) | 1, RJ-45 (115.2 Kbps) |
| Management Ethernet port (RJ-45 10/100/1000Mbps) | N/A | 1, RJ-45 10/100/1000 | 1, RJ-45 10/100/1000 | 1, RJ-45 10/100/1000 |
| Power supply option | 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) |
| Redundant power supply support | N/A | Yes | 1+1 active-active redundancy | Yes |
| Fans | 100b: N/A (fanless) 100m & 100wm: 1 fan, fixed | 2 | 2, hot swappable | 4, hot swappable |
| Power Specifications | | | | |
| AC input voltage | 90-264 Vrms (100-240V) | 90-264 Vrms (100-240V) | 90-264 Vrms (100-240V) | 90-264 Vrms (100-240V) |
| AC input line frequency | 47-63 Hz | 47-63 Hz | 47-63 Hz | 47-63 Hz |

| Item | vEdge-100 | vEdge-1000 | vEdge-2000 | vEdge-5000 |
|---|--|--|--|--|
| Typical power consumption | 100b: 15W 100m & 100wm: 35W with PoE, 20W without PoE | 28W | 125W | Max power consumption 285W |
| Physical Specifications | | | | |
| Rack height | 100b: 1 RU 100m & 100wm: 1RU Plus | 1 RU | 1 RU | 1 RU |
| Chassis height | 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) |
| Chassis width | 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) |
| Chassis depth | 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 |
| Chassis weight | 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 |
| Airflow | 100b: N/A (fanless) 100m & 100wm: Top | Front to back | Front to back | Front to back |
| Rack-mount accessory kit 19 in (48.3 cm) EIA | 100b: Provided with the unit 100m & 100wm: Available and sold separately | Available and sold separately | Provided with the unit | Provided with the unit |
| Packaging Specifications | | | | |
| Package height | 3.58 in. (9.09 cm) | 8.5 in. (21.6 cm) | 8.5 in. (21.6 cm) | 9 in. (22.86 cm) |
| Package width | 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) |
| Package depth | 13 in. (33 cm) | 16.5 in. (41.9 cm) | 23.5 in. (59.7 cm) | 31 in. (78.74 cm) |
| Operating Condition | | | | |
| Temperature | 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) |
| Altitude | Max 3000 m (10000 ft) | Max 3000 m (10000 ft) | Max 3000 m (10000 ft) | Max 3000 m (10000 ft) |
| Humidity | 10 to 85% RH | 10 to 85% RH | 10 to 85% RH | 10 to 85% RH |
| Transportation/Storage Condition | | | | |
| Temperature | -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) |
| Humidity | 5 to 95%RH | 5 to 95%RH | 5 to 95%RH | 5 to 95%RH |
| Altitude | 4570 m (15000 ft.) | 4570 m (15000 ft.) | 4570 m (15000 ft.) | 4570 m (15000 ft.) |
| Reliability | | | | |
| MTBF | 104K hours | 80K hours | 420K hours | 178K hours |
| Regulatory Compliance | | | | |
| Safety | 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 |

| Item | vEdge-100 | vEdge-1000 | vEdge-2000 | vEdge-5000 |
|----------------------|--|------------------------|------------------------|--|
| | 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 |
| EMC | 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 |
| Environmental | 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 |
|--------------------------------------|---------------------------------------|
| Hardware Components | |
| LTE modem | Internal PCIe module |
| SIM card | 1, Mini SIM (2FF) |
| Antenna type | MIMO, Dipole swivel |
| Antenna connectors | 2, type F |
| Specifications and Features | |
| User equipment implementation | 3GPP, release 9 compliant |
| User equipment category | UE category 3 |
| Maximum data transfer rates | Downlink: 100 Mbps Uplink: 50 Mbps |
| Voice and SMS | No |
| Certifications | PTCRB, GCF |

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

Table 3. WLAN features

| Item | vEdge-100wm |
|------------------------------------|-----------------------|
| Specifications and Features | |
| Frequency | 2.4GHz or 5GHz |
| Protocols | IEEE 802.11a/b/g/n/ac |

| Item | vEdge-100wm |
|--------------------------------------|--|
| Channel bandwidth | 20Mhz, 40Mhz or 80Mhz |
| SSIDs | Up to 4 |
| Concurrent clients | 50 |
| Wireless Security and Authentication | WPA/WPA2 personal or enterprise, 802.11i |
| Wireless Encryption | AES/CCMP, TKIP encryption |
| WLAN antennas | 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 |
|---------------------------------------|--|--|---|--|--|
| LTE Bands | 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) |
| Australia | No | No | No | Yes | No |
| Europe | No | No | No | Yes | No |
| Middle East | No | No | No | Yes | No |
| Latin America and Asia Pacific | No | No | No | Yes | No |
| United States | Verizon | AT&T | Yes | No | No |
| Canada | No | No | No | No | No |
| Japan | 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 |
|--|--|--|--|--|--|
| UMTS/HSPA+ | 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) |
| GPRS/Edge | 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) |
| CDMA EVDO Release 0, EVDO Release A | 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 |
|--|--|
| AAA | TACACS+, RADIUS, local, role-based access control |
| Routing | OSPF, eBGP, iBGP, static, connected, OMP |
| Bridging | 802.1Q, native VLAN, bridge domains, IRB, host-mode bridging |
| Security | Zero-trust, whitelisting, tamper-proof module, DTLS/TLS, IPSec, ESP-256-CBC, Authentication Header, HMAC-SHA1, DDOS protection, control plane protection, NAT traversal |
| Forwarding and Quality of Service (QoS) | Classification, prioritization, low latency queuing, remarking, shaping, scheduling, policing, mirroring, NAT/PAT |
| Multicast | IGMP v1/v2, PIM, Auto-RP, scale-out traffic replication |
| Policy | Route policies, app-aware routing, control policy, data policy, ACL policy, VPN membership policy, service advertisement and insertion policy |
| Location Services | Geo-location (vEdge-100m) |
| Cellular | Integrated 4G/LTE modem (vEdge 100m), circuit of last resort |
| Mobility | 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 |
| System and network services | IPv4, SNMP, NTP, DNS client, DHCP client, DHCP server, DHCP relay, config archival, Syslog, SSH, SCP, NAT/PAT, Cflowd v10 IPFIX export |
| Configuration and monitoring | Netconf over SSH, CLI, REST (vManage), Linux shell |
| Out-of-band management | 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 |
|------------------------|--|
| vEdge-100b-AC | vEdge-100 AC chassis with 5 Ethernet ports, rack mount kit, and cables |
| vEdge-100m-AC | vEdge-100 AC chassis with single 4G/LTE SIM, integrated power supply, 5 Ethernet ports and cables |
| vEdge-1000-AC | vEdge-1000 AC base chassis with 8x1 GE fixed ports, dual AC power adapters and cables |
| vEdge-2000-AC | vEdge-2000 AC base chassis with 4x1 GE fixed ports and dual Pluggable Interface Module slots, dual AC power supplies, rack mount kit, and cables |
| vEdge-5000-AC | vEdge-5000 AC router base chassis with 4x10G, 8x1G copper, 8x1G fiber modular Nims, dual AC power adapters, cables and mounting kit |
| PIM-8x1GE-SFP | 8x 1 GE SFP interface module for vEdge-2000 |
| PIM-2x10GE-SFP+ | 2x 10 GE SFP interface module for vEdge-2000 |
| NIM-8-1GE-RJ45 | vEdge 5000 AC router with 8 NIM 1GE Copper Slot |
| NIM-8-1GE-SFP | vEdge 5000 AC router with 8 NIM 1GE fiber Slot |
| NIM-4-10GE-SFP+ | vEdge 5000 AC router with 4 NIM 10GE SFP+ Slot |

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