



vEdge 100m Router

The vEdge 100m router delivers highly secure site-to-site data connectivity to small business and home offices (SOHO). The vEdge 100m router is a fixed-port-configuration router with the following features:

- Built-in LTE modem with mini-SIM (or 2FF) card
- Two multiband swivel-mount dipole antennas
- Supports a 4G/3G/2G-capable modem to connect to cellular networks
- Five built-in 10/100/1000-Mbps Ethernet ports
- Power over Ethernet (PoE) source support on one Ethernet port
- Encryption and QoS support
- 50-Mbps of unidirectional Internet Mix (IMIX) forwarding traffic (inclusive of encryption)
- Secure identification chip for anticounterfeit and secure authentication
- Integrated power supply
- Kensington security lock slot to physically lock down the router
- Desktop mount or wall mount

Chassis Views

The following figures show the front and back panels of the vEdge 100m router, indicating the locations of the power interfaces, status indicators, and chassis identification labels.

Figure 1: Front Panel of the vEdge 100m Router

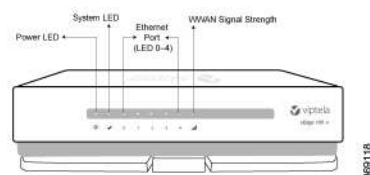
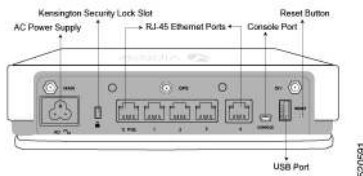


Figure 2: Back Panel of the vEdge 100m Router

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At a Glance

Declaration of Conformity

The Viptela products are controlled under the Commerce Control List (CCL) of the U.S. Export Administration Regulations (EAR) as networking equipment within the following U.S. Export Control Classification Numbers (ECCN): 5A002, 5D002, and 5E002.

The vEdge hardware and software products and the Viptela encryption technology can be delivered to most end users and destinations worldwide without a licensing requirement. The Viptela solution and products have undergone a one-time review by the Government of the United States of America and qualify for License Exception ENC. As such, they are eligible for export according to Section 740.17 of the EAR.

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Viptela manages technology subject to the U.S. Export Administration Regulations (EAR). These controlled technologies may include items under U.S. ECCN 5E002 encryption technology. The Viptela encryption technology is for the development, production, and use of Viptela products that implement or use encryption.

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Components and Specifications

Components and Specifications

This article provides specifications for the vEdge 100m chassis, wireless platforms, and multiband swivel-mount dipole antennas.

Chassis Specifications

The following table lists the specifications for the vEdge 100m router chassis.

Table 1:

Item	Specification
Services and Slot Density	
RJ45 Ports 10/100/1000 Mbps	5 ports, one of which has 802.3af PoE source capability
Embedded hardware-based cryptographic acceleration (IPSec)	Yes
Memory DDR3 ECC DRAM	2 GB
NAND storage (internal)	4 GB
USB host port	1
Mini USB connector console port (default baud rate 115.2 Kbps)	1
Power supply	AC input (C6 inlet connector)
Power Specifications	
AC input voltage	90-264 Vrms
AC input line frequency	47-63 Hz
Typical power consumption with PoE disabled on interface ge0/0	20 Watts
Typical power consumption with PoE enabled on interface ge0/0	35 Watts maximum
Physical Specifications (excluding the multiband antennas)	
Chassis height	1.8 in. (4.5 cm)
Chassis width	9.25 in. (23.5 cm)

Item	Specification
Chassis depth	5.75 in. (14.6 cm)
Chassis weight	1.45 lbs (0.67 kg)
Wall-mount plate accessory	Provided with the unit
Packaging Specifications	
Package height	5.375 in. (13.6 cm)
Package width	11.94 in. (30.3 cm)
Package depth	9.19 in. (23.3 cm)
Operating Condition	
Temperature	0 to 40°C (32 to 104°F) at sea level (temperature derating of 1.5°C per 1000 feet of altitude, up to a maximum of 10,000 ft, or 3000 m)
Altitude	Maximum 3000 m (10,000 ft)
Humidity	10 to 85% RH
Transportation/Storage Condition	
Temperature	-40 to 70°C (-40 to 158°F)
Humidity	5 to 95% RH
Altitude	4570 m (15,000 ft)
Reliability	
MTBF	104,000 hours
Regulatory Compliance	
Safety	AS/NZS 60950-1 CAN/CSA 60950-1 CB-IEC60950-1 CE Marking EN 60950-1 UL60950-1
EMC	AS/NZS CISPR22 Class B EN 300 386 EN 55022 Class B FCC Class B ICES Class B VCCI Class B
Environmental	ROHS 6/6

Wireless Platform Specifications

The following table lists the specifications for the vEdge 100m wireless platforms.

Table 2:

Platform	Specification
vEdge 100m-AT	
SKU	100m-AT
Carrier	AT&T
Modem	Sierra Wireless MC7354
4G LTE Bands	Band 2 (1900 MHz), Band 4 (AWS 1700/2100 MHz), Band 5 (850 MHz), Band 17 (700 MHz)
Region	United States
vEdge 100m-GB	
SKU	100m-GB
Certification	GCF
Modem	Sierra Wireless MC7304
4G LTE Bands	Band 1 (2100 MHz), Band 3 (1800 MHz), Band 7 (2600 MHz), Band 8 (900MHz), Band 20 (800 MHz)
Regions	Australia, Europe, Middle East, Latin America, Asia Pacific, Japan
vEdge 100m-NA	
SKU	100m-NA
Certification	PTCRB
Modem	Sierra Wireless MC7354
4G LTE Bands	Band 2 (1900 MHz), Band 4 (AWS 1700/2100 MHz), Band 5 (850 MHz), Band 13 (700 MHz), Band 17 (700 MHz), Band 25 (1900 MHz)
Region	North America
vEdge 100m-NT	
SKU	100m-NT
Carrier	NTT Docomo
Modem	Sierra Wireless MC7330
4G LTE Bands	Band 1 (2100 MHz), Band 19 (850 MHz), Band 21 (1500 MHz)
Region	Japan
vEdge 100m-SP	

Platform	Specification
SKU	100m-SP
Carrier	Sprint
Modem	Sierra Wireless MC7354
4G LTE Bands	Band 25 (1900 MHz)
Region	United States
vEdge 100m-VZ	
SKU	100m-VZ
Carrier	Verizon
Modem	Sierra Wireless MC7354
4G LTE Bands	Band 4 (AWS 1700/2100 MHz), Band 13 (700 MHz)
Region	United States

Multiband Antenna Specifications

The vEdge 100m router ships with two multiband swivel-mount dipole antennas. The articulating joint of the antenna provides 0 to 90 degrees pivot and 180-degree swivel movement, allowing vertical and horizontal orientation of the antenna.

The following table lists the electrical, mechanical, and frequency specifications for the antennas.

Table 3: vEdge 100m Multiband Antenna Specifications

Item	Specification
Antenna type	MIMO, dipole swivel
Input power	10 Watts
Connector	SMA male
Nominal impedance	50 Ohms
Radiation pattern	Omnidirectional
Frequency range	698MHz to 960MHz and 1710MHz to 2700Mhz
Temperature range	F (-40°C to 85°C)
Antenna dimensions	Length: 6.37 in. (16.19 cm) Width: 0.9 in. (2.38 cm) Depth: 0.63 in. (1.59 cm)

Item	Specification
Humidity	Noncondensing, 65°C, 95% RH

Front and Rear Panel Components

This article describes the components on the front and rear panels of the vEdge 100m router. See *At a Glance* for the exact location of these components on the router.

Front Panel LEDs

The vEdge 100m router has five chassis status LEDs located on the front panel. The following table describes the LEDs, their color and states, and the status they indicate.

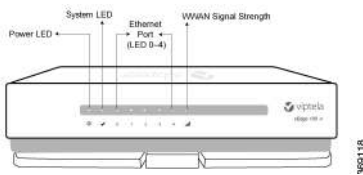
Table 4:

LED	Color	Status
Power	Green/Red	<ul style="list-style-type: none"> • Off: System is not on • Green: System is healthy and operational • Red: Power supply fault
System	Green/Yellow/Red	<ul style="list-style-type: none"> • Off: System is not on • Solid Green: System is fully functional • Blinking Green: System is booting up • Solid Yellow: No Internet connectivity or the system has detected a minor alarm • Red: System has detected a major system level fault or alarm
Ethernet Port (LED 0–4)	Green/Yellow	<ul style="list-style-type: none"> • Off: No link • Solid Green: 1000 Mbps link detected • Blinking Green: 1000 Mbps link detected and link activity • Solid yellow: 10/100 Mbps link detected • Blinking Yellow: 10/100 Mbps link detected and link activity

LED	Color	Status
WWAN Signal Strength	Green/Yellow/Red	<ul style="list-style-type: none"> • Off: LTE interface disabled/off • Solid Green: LTE enabled, excellent signal strength, dormant mode • Blinking Green: LTE enabled, excellent signal strength, active mode • Solid yellow: LTE enabled, good signal strength, dormant mode • Blinking Yellow: LTE enabled, good signal strength, active mode • Solid Orange: LTE enabled, poor signal strength, dormant mode • Blinking Orange: LTE enabled, poor signal strength, active mode • Solid Red: LTE enabled but faulty such as no connectivity with BTS, errors, or no signal

The following figure shows the location of the chassis status, LEDs on the front panel of the vEdge 100m router.

Figure 3: Chassis Status LEDs in a vEdge 100m Router



Rear Panel

The rear panel of the vEdge 100m router has two antenna terminals, a Kensington security lock slot, and a Reset button. See Chassis Views for the location of all components on the rear panel of the router.

Antenna Terminals

The rear panel of the vEdge 100m router has two SMA antenna terminals for attaching the two multiband swivel-mount dipole antennas that ship with the router. For antenna specifications, see Multiband Antenna Specifications .

Kensington Security Lock Slot

The rear panel of the vEdge 100m router has a small metal-enforced hole for attaching a Kensington lock to secure the router.

Reset Button

The Reset button on the rear panel of the vEdge 100m router is recessed, to avoid accidentally pressing it while the router is operational. To press the Reset button, use a sharp narrow tool. The following table describes the effects of pressing the Reset button.

Table 5:

Press Duration	Behavior
Short press	Press for 2 seconds to reset and reboot the router.
Long press	Press for 10 seconds to reset the router and reboot it with factory default configuration.

Ports and Connectors

The vEdge 100m router supports three types of ports:

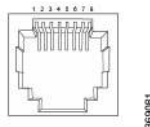
- RJ-45 Ethernet ports
- USB port
- USB serial console port.

RJ-45 Ethernet Ports

The vEdge 100m router has five built-in RJ-45 Ethernet ports. These ports support 10/100/1000 Mbps and are numbered 0 through 4. Port 0 supports PoE capability.

The following figure provides the pinout information for the RJ-45 ports. The RJ-45 ports comply with the 801 standards.

Figure 4: RJ-45 Ports Pinout Information



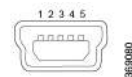
USB Port

The vEdge 100m router has one USB port with a type A connector. The USB port complies with USB 3.0 specification.

Console Port

The vEdge 100m console port is a serial port and is accessible via a USB Mini-B connector. See the following figure.

Figure 5: USB Mini-B Connector



A USB Type-A to Mini-B connector cable ships with the vEdge 100m router as standard accessory for console port connection.



Note When you connect a device such as a PC or a terminal server to the console serial port of a vEdge router, ensure that the PC or terminal serial port is configured to disable flow control.

Power Supply and Cooling in a Cisco vEdge 100m Router

The vEdge 100m router has an built-in AC-to-DC power supply unit. This article describes the AC power supply in the router and the cooling system and airflow through the router chassis.

AC Power Supply in vEdge 100m Router

The vEdge 100m router has an integrated AC power supply that exposes a C6 male AC inlet connector externally. The unit can be powered by connecting the supplied power cord to AC mains with the C5 female connector end of power cord plugged into the unit.

The following table describes the AC power supply specifications for the vEdge 100m router.

Table 6:

Item	Specification
AC input voltage	90-264 Vrms
AC input line frequency	47-63 Hz
Typical power consumption with PoE disabled on transport interface	20 Watts
Typical power consumption with PoE enabled on transport interface	32 Watts maximum

AC Power Cord Specifications

The vEdge 100m router ships with a detachable AC power cord. The power cord has a C5 female connector at one end, and the other end is specific to the country/locality to which the product is shipped.

Cooling System in a vEdge 100m Router

The cooling system in a vEdge 100m router consists of internal heat sinks and an internal fan with adjustable speed. The fan speed is algorithmically controlled, based on readings obtained from internal temperature sensors. The internal temperature is affected by factors such as the external ambient temperature and the traffic workload.

If the ambient temperature inside the chassis rises above the acceptable range, the router raises an alarm. If the temperature inside the chassis rises above the maximum threshold temperature, the router shuts down automatically.

Planning and Installation

Planning and Installation

This article provides general safety standards to adhere to when installing or connecting a vEdge 100m router or its components.

General Safety Standards

- Install your vEdge router in compliance with the following local, national, and international electrical codes:
 - United States—National Fire Protection Association (NFPA 70), United States National Electrical Code.
 - Other countries—International Electromechanical Commission (IEC) 60364, Part 1 through Part 7.
 - Evaluated to the TN power system.
 - Canada—Canadian Electrical Code, Part 1, CSA C22.1.
- Locate the emergency power-off switch in the room in which you are working. In case of an electrical accident, quickly turn off the power.
- Disconnect power before installing or removing the router.
- If an electrical accident occurs, use caution and immediately turn off power to the router.
- Make sure that grounding surfaces are thoroughly cleaned and well-finished before grounding connections are made.
- Do not work alone if hazardous conditions exist.
- Always check that power is disconnected from a circuit. Never assume that it is disconnected.
- Carefully inspect your work area for possible hazards, such as moist floors, worn-out power cords, ungrounded power extension cords, and missing safety grounds.
- Operate the device within marked electrical ratings and product usage instructions.
- To ensure that the router and the FRUs function safely and correctly, use the specified cables and connectors, and make certain they are in good condition.

Prepare for Router Installation

This article provide guidelines and requirements for preparing your site to install the vEdge 100m router.

Site Preparation Guidelines

Efficient operation of your vEdge 100m router requires proper site planning and proper layout of your equipment rack or wiring closet:

- Ensure that the area around the router is kept free of dust and conductive material.
- Follow appropriate airflow guidelines so that the cooling system functions normally.
- Follow ESD prevention procedures to avoid any damage to the router.
- Install the router in an enclosed, secure area allowing only authorized personnel to access the device.

Environmental Requirements

Install the vEdge 100m router in a dry, clean, temperature-controlled, and well-ventilated environment:

- Maintain ambient airflow for the router to operate normally. The ambient intake air temperature should be in the range 0°C to 40°C (32°F to 104°F). If the airflow is blocked or if the intake air is too warm, the router can become overheated.
- The airflow to the router is from the top surface near the Viptela logo. To ensure that the airflow to the router is not blocked, keep an air gap of 2-3 inches (5-8 cm) above the router and do not place anything directly on top of the router.
- Avoid temperature extremes. Ensure that the router is operating at an ambient temperature not more than 40°C (104°F) at sea level. For higher altitudes, a derating of 1.5°C per 1,000 feet applies.
- High humidity conditions can cause moisture to penetrate into the chassis. The device supports 10% to 85% humidity levels, noncondensing.

Install the vEdge 100m Router

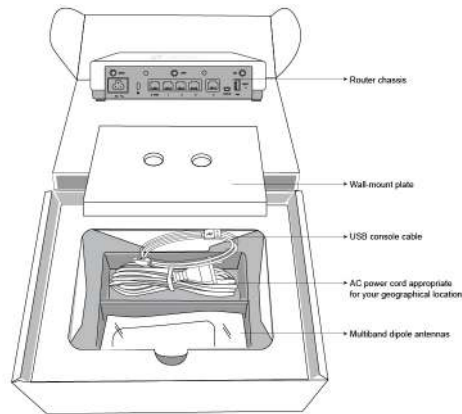
After you have prepared your site for router installation, unpack the vEdge 100m router and install the SIM card and the antennas before you mount the router on the wall.

Unpack the vEdge 100m Router

A vEdge 100m router is shipped in a cardboard carton and is secured firmly in place with foam packing material. The carton contains a packing list and Quick Start instructions. It is recommended that you not unpack the router until you are ready to install it.

To unpack the router:

1. Open the top flaps of the carton.
2. Gradually remove the packing foam holding the router and the accessories in place. See Figure 1.
3. Take out the router and each accessory.
4. Verify the router components against the packing list included in the box (see packing list below).

Figure 6: Unpacking the vEdge 100m Router

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Note It is recommended that you not discard the shipping carton and packing material when you unpack the router. Flatten and store the box in case you need to move or return the router in the future. See Return Hardware .

Packing List for a vEdge 100m Router

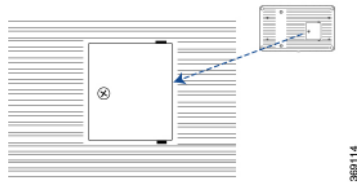
The cardboard carton in which the router is packed includes a packing list. Check the parts you receive with your router against the items on the packing list. The packing list specifies the part number, name, and quantity of each item in the carton.

The following table lists the parts shipped with the vEdge 100m router and their quantities.

Component	Quantity
Router chassis	1
Multiband dipole antenna	2
AC power cord appropriate for your geographical location (ferrite bead attached)	1
USB console cable	1
Wall-mount plate	1
Quick Start document	1

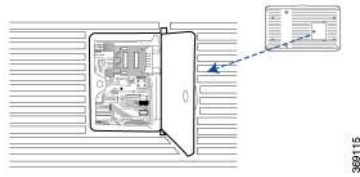
Install the SIM Card Into the vEdge 100m Router

Before you connect power to the vEdge 100m router, you must install the SIM card that you received from your carrier. The SIM card socket is located on the bottom of the vEdge 100m chassis. See Figure 2.

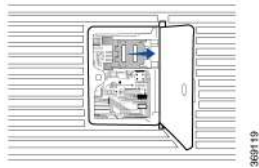
Figure 7: SIM Card Holder

To install the SIM card into the socket:

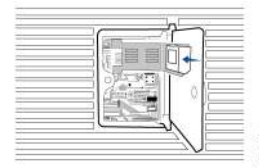
1. Unscrew the socket cover and open it.

Figure 8: Opening the Socket Cover

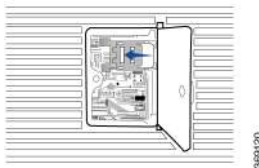
2. Slide the metallic SIM card holder cover towards the socket cover hinge and open it.

Figure 9: Opening the SIM Card Holder Cover

3. Insert the SIM card firmly into the metallic SIM card holder, with the SIM card correctly aligned and its contacts facing downward. Ensure that the SIM card is inserted fully.

Figure 10: Sliding the SIM Card into the Socket

4. Push down and slide the metallic SIM card holder until it clicks. Ensure that the SIM card is seated correctly.

Figure 11: Closing the SIM Card Holder Cover

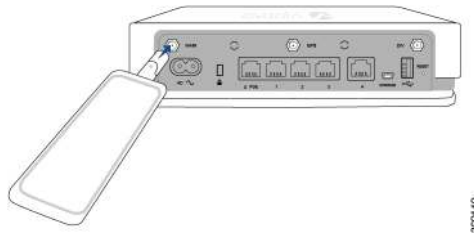
If you need to change the SIM card later, make sure you disconnect the router's power first, before installing the new card.

Attach the Antennas to the vEdge 100m Router

The rear panel of the vEdge 100m router has two antenna terminals. To attach the multiband antennas to the router:

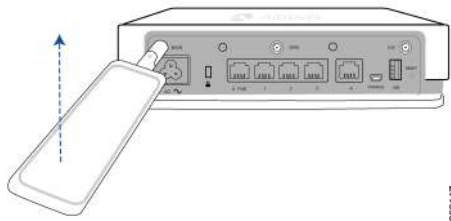
1. Screw one antenna into the terminal marked MAIN, and screw the other antenna into the terminal marked DIV.

Figure 12: Attaching the Antennas to the Rear of the Router



2. Turn each antenna so that it is vertical. See Figure 8.

Figure 13: Turning the Antenna to a Vertical Position



Mount the vEdge 100m Router on the Wall

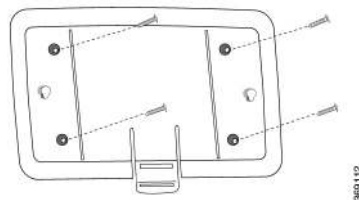
In addition to the accessory box, you need the following tools to mount a vEdge 100m router:

- Number 2 Phillips (+) screwdriver
- Tape measure or level

To mount the vEdge 100m router on the wall:

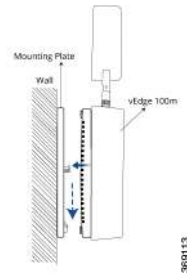
1. Secure the mounting plate to the wall using four screws appropriate for your wall type (screws not included).

Figure 14: Securing the Mounting Plate to the Wall



- Mount the router on the mounting plate by aligning the two slots on the underside of the router chassis to the notches in the mounting plate. Then gently slide the router chassis down onto the notches.

Figure 15: Mounting the vEdge 100m Router on the Mounting Plate



- Secure the router with a Kensington security lock using the slot in the rear of the chassis.

Figure 16: Securing the Router with a Kensington Security Lock



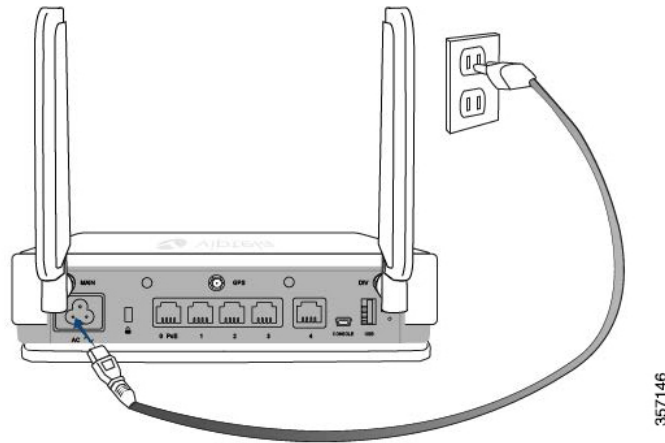
Connect the vEdge 100m Router

This article describes how to connect the vEdge 100m router to an AC power source and to a management console.

Connect AC Power to the Router

To connect the vEdge 100m router to an AC power source, plug one end of the AC power cord into the back of the router, and plug the other end into an AC power outlet as shown in the following figure.

Figure 17: Connecting AC Power Supply to a vEdge 100m Router



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Note It is strongly recommended that you use the power cord supplied with the router.



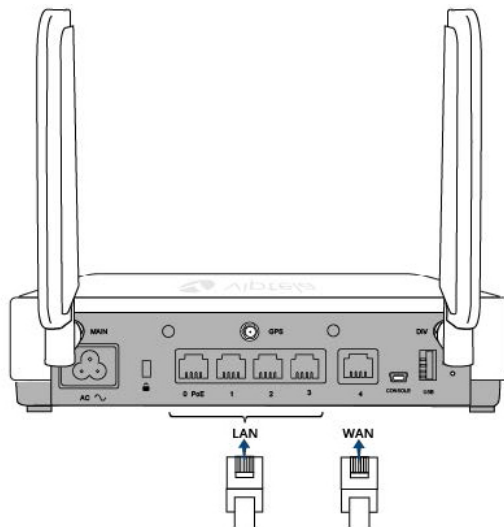
Caution If you are connecting AC power to the router, it is recommended that the building have an external surge protective device installed.

Connect the Router to LAN and WAN Interfaces

To connect the vEdge 100m router to the LAN, plug the appropriate cable into any port except Port 4 on the front of the router.

To connect the vEdge 100m router to a WAN, plug the appropriate cable into Port 4 on the front of the router.

Figure 18: Connecting a vEdge 100m Router to LAN and WAN Interfaces



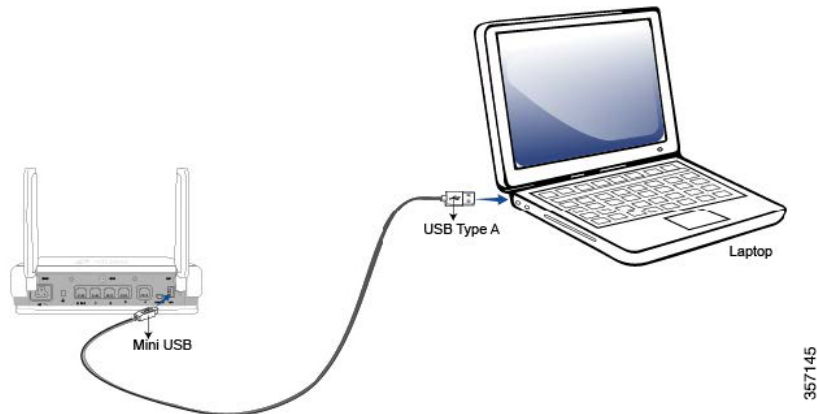
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Connect the Router to a Management Console

To connect the vEdge 100m router to a management console:

1. Connect one end of the USB Type-A to Mini-B connector cable into the console port, labeled CONSOLE, on the vEdge router.
2. Connect the other end of the console cable into a management console.

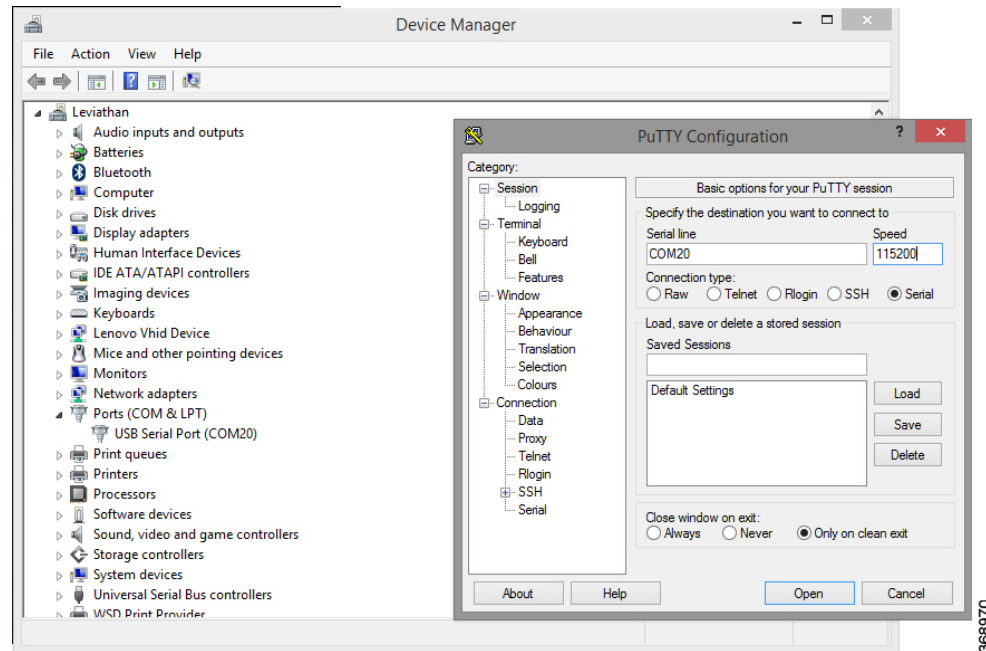
Figure 19: Connecting a vEdge 100m Router to a Management Console



To use the USB console from a Windows device:

1. In the Device Manager, determine which COM port is being used for the USB serial port.
2. In the PuTTY SSH/Telnet client, in **Connection Type**, select **Serial**. Specify the COM port and a speed of 115200.

Figure 20: PuTTY Configuration



To use the USB console from a Macintosh device:

1. Install the necessary USB serial driver to enable you to connect the Macintosh to the console port of the router.
2. Launch the Terminal utility.
3. From a terminal shell, access the console port with this command:

```
$ screen /dev/tty.usbserial* 115200,cs8
```

vEdge 100m Router Default Configuration

Default Configuration for Software Releases 16.3 and Later

For Releases 16.3 and later, the default configuration file looks like this:

```
vEdge100m# show running-config
system
host-name vedge
vbond ztp.viptela.com
aaa
auth-order local radius tacacs
usergroup basic
task system read write
task interface read write
!
usergroup netadmin
!
usergroup operator
task system read
task interface read
task policy read
```

```

    task routing read
    task security read
    !
    user admin
    password
    $6$KmsMYJ084t8bH5e$Vz1mCDB76u74UPJ29cFo7vK5JjNBtutv1T9WhH/EHgUCHwMwoWU9XzfQ4eqUtgwEMdFzWcskcAtb97GxLArXX1

    !
    !
    logging
    disk
    enable
    !
    !
    !
    omp
    no shutdown
    graceful-restart
    advertise connected
    advertise static
    !
    security
    ipsec
    authentication-type ah-sha1-hmac sha1-hmac
    !
    !
    vpn 0
    interface cellular0
    ip dhcp-client
    tunnel-interface
    encapsulation ipsec
    color lte
    no allow-service bgp
    allow-service dhcp
    allow-service dns
    allow-service icmp
    no allow-service sshd
    no allow-service netconf
    no allow-service ntp
    no allow-service ospf
    no allow-service stun
    !
    mtu 1428
    profile 0
    technology auto (in Releases 16.3.2 and later)
    no shutdown
    !
    interface ge0/4
    ip dhcp-client
    ipv6 dhcp-client
    tunnel-interface
    encapsulation ipsec
    no allow-service bgp
    allow-service dhcp
    allow-service dns
    allow-service icmp
    no allow-service sshd
    no allow-service netconf
    no allow-service ntp
    no allow-service ospf
    no allow-service stun
    !
    no shutdown
    !

```

```

!
vpn 512
 interface ge0/0
   ip address 192.168.1.1/24
   no shutdown
!
!

```

Default Configuration for Software Releases 16.2 and Earlier

For Release 16.2, the default configuration file looks like this:

```

vEdge100m# show running-config
system
 host-name vedge
 vbond ztp.viptela.com
aaa
 auth-order local radius tacacs
 usergroup basic
   task system read write
   task interface read write
!
 usergroup netadmin
!
 usergroup operator
   task system read
   task interface read
   task policy read
   task routing read
   task security read
!
 user admin
 password
$5$FTBc4hF0oL9Rn$<br/>Tx3voGhKPNtSjRsQ4AVd3dvS3R.<br/>A0DsOcBaNjZgXJiIU60ldFVpckKBP<br/>1CafW56nMDIi2PNEvWeBSKmf1RL0
!
!
logging
 disk
  enable
!
!
!
omp
 no shutdown
 graceful-restart
 advertise connected
 advertise static
!
security
 ipsec
  authentication-type ah-shal-hmac sha1-hmac
!
!
vpn 0
 interface ge0/4
  ip dhcp-client
  tunnel-interface
  encapsulation ipsec
  no allow-service bgp
  allow-service dhcp
  allow-service dns
  allow-service icmp
  no allow-service sshd

```

```

    no allow-service netconf
    no allow-service ntp
    no allow-service ospf
    no allow-service stun
    !
    no shutdown
    !
    !
    vpn 512
    interface ge0/0
    ip address 192.168.1.1/24
    no shutdown
    !
    !

```

For Releases 16.2.10 and later, after you install the software and issue the **request software reset** command, the default configuration file looks like this:

```

vEdge100m# show running-config
system
 host-name vedge
 vbond ztp.viptela.com
 aaa
  auth-order local radius tacacs
  usergroup basic
   task system read write
   task interface read write
  !
  usergroup netadmin
  !
  usergroup operator
   task system read
   task interface read
   task policy read
   task routing read
   task security read
  !
  user admin
   password
  $6$gKmsMYJ084t8bH5e$vz1mCDB76u74UPJ29cFo7vK5JjNBtutv1T9WhH/EHgUCHwMwoWU9XzfQ4eqUtgwEMdFzWcskcAtb97GxLArXX1
  !
  !
 logging
  disk
  enable
  !
  !
 omp
  no shutdown
  graceful-restart
  advertise connected
  advertise static
  !
 security
  ipsec
   authentication-type ah-sha1-hmac sha1-hmac
  !
  !
 vpn 0
  interface cellular0
  ip dhcp-client
  tunnel-interface
  encapsulation ipsec

```

```
color lte
no allow-service bgp
allow-service dhcp
allow-service dns
allow-service icmp
no allow-service sshd
no allow-service netconf
no allow-service ntp
no allow-service ospf
no allow-service stun
!
mtu      1428
profile  0
technology auto
no shutdown
!
interface ge0/4
ip dhcp-client
ipv6 dhcp-client
tunnel-interface
encapsulation ipsec
no allow-service bgp
allow-service dhcp
allow-service dns
allow-service icmp
no allow-service sshd
no allow-service netconf
no allow-service ntp
no allow-service ospf
no allow-service stun
!
no shutdown
!
!
vpn 512
interface ge0/0
ip address 192.168.1.1/24
no shutdown
!
!
```

Maintenance and Troubleshooting

Maintenance and Troubleshooting

You can monitor and troubleshoot the vEdge 100m router using the various LEDs and system alarms on the router.

Alarm Severity Levels

The system alarms on the vEdge 100m router have two severity levels:

- Major (red)—Indicates a critical situation on the router resulting from one of two conditions:
 - One or more hardware components on the router has failed.
 - One or more hardware components on the router has exceeded the temperature threshold.

A major alarm condition requires immediate attention. If a temperature related major alarm persists for more than five minutes, the router will shut down.

- **Minor (yellow)**—Indicates a warning on the router that, if left unattended, might result in an interruption in router operation or degradation in router performance. A yellow alarm condition requires further monitoring and/or maintenance.

Hardware Alarms

Hardware alarms on the vEdge 100m router are predefined and are triggered by a physical condition on the router such as a power supply failure, excessive component temperature, or fan failure. The vEdge 100m router triggers the following types of hardware alarms:

- **Main board temperature alarm**—The main board of the router has one temperature sensing point (board sensor 0). If the temperature of the sensor location crosses the predefined threshold level, the system triggers an alarm.
- **CPU temperature alarm**—If the temperature of the system CPU crosses the predefined threshold level, the system triggers an alarm.
- **Fan alarm**—The router has a fixed built-in fan for system cooling which runs at a variable speed. The Viptela software maintains the fan at an optimal fan speed, raising the speed as the ambient temperature increases and decreasing the speed as the temperature decreases, to keep the router operating at the lowest possible temperature in the green temperature threshold. If the fan stops running, the system triggers an alarm. Also if the fan starts to run below a predefined RPM threshold, the system triggers an alarm.

The following table lists the yellow and red alarm threshold for the temperature sensing points in the system—one board sensor on the board and one CPU junction temperature sensor. The lower threshold value (Bad Fan) applies if a fan failure condition is also detected; otherwise, the higher threshold value (normal) applies.

Table 7:

Item	Yellow Alarm (°C)	Red Alarm (°C)		
	Normal	Bad Fan	Normal	Bad Fan
Board sensor 0	75	70	90	85
CPU junction temperature	80	75	95	90

Checking Alarms and Notifications

To view the current chassis environment condition, enter the **show hardware environment** command at the system prompt. The system displays the power supply status, temperature sensor readings, fan speed, and related alarm status if any exists.

To view the severity of active alarms, enter the **show hardware alarms** command at the system prompt. The system displays the alarm severity and a brief description of the cause of each active alarm.

To view temperature thresholds at which green, yellow, and red alarms are generated, enter the **show hardware temperature-thresholds** command at the system prompt. The system displays the alarm temperature threshold information for a specific board or all boards in the router and for the router's CPU.

To view all other events on a Viptela device, enter the **show notification stream** command. The system displays notifications about events that have occurred on the Viptela device.

LEDs

The chassis LEDs located on the front panel of the vEdge 100m router indicate the status of the router.

If one or more major alarms are active in the router, the Status LED is lit red. If one or more minor alarms are active in the router, the Status LED is lit solid yellow. See Front and Rear Panel Components for details of the LEDs and the status they indicate.

Restore a vEdge Router

This article explains how to revert the configuration for a vEdge router to the factory-default values. It also explains how to do a soft and hard reset of the router.

Reverting to the vEdge Router Factory-Default Configuration

After you set up and start the virtual machines (VMs) for the vEdge Cloud routers and set up and start the hardware vEdge routers in your overlay network, they come up with a factory-default configuration. When you make and commit changes to the default configuration, a new configuration file is created. This new configuration file then becomes the active configuration.

If desired, you can revert to the default factory configuration:

```
vEdge# request software reset
```

Reset the Router

You can reset the vEdge router by doing either a hard press or a soft press. To perform either type of press, locate the Reset button on the front panel of the router. The Reset button is recessed to avoid accidentally pressing it while the router is operational. To press the Reset button, use a sharp narrow tool.

Perform a Long Press Reset

A long press reset of the vEdge router erases passwords, keys, and most other configuration parameters, restoring the router to its factory-default configuration.

To perform a long press reset, press the Reset button for more than 10 seconds. After you release the Reset button, the router will reboot and resume normal operation.

Perform a Short Press Reset

A short press reset of the Edge router is equivalent to a graceful software reboot and is the same as entering the **reboot** command at the CLI prompt.

To perform a short press reset, press the Reset button for two seconds. The short press reset takes effect almost instantaneously and reboots the router.

Return Hardware

This article describes how to return a vEdge router or a hardware component to Viptela for repair or replacement.

Locate Serial and Model Number

To return a vEdge router or a hardware component to Viptela, you need the serial and model number of the router or the component being returned.

You can locate the serial and model number of a vEdge router in one of the following ways:

- In vManage NMS, select the Configuration ► Devices screen. The device table lists the serial and model numbers of the routers in the network.
- Enter the **show hardware inventory** command at the CLI prompt.
- The serial number is printed on a label on the right side of the router; the model number is printed on a label on the back of the router.

Figure 21: Sample Serial Number Label for a vEdge Router



Obtain an RMA Number

If you are returning a vEdge router or a hardware component to Viptela for repair or replacement, contact the Viptela Customer Support team to open a support case and obtain a Return Materials Authorization (RMA) number.

Before you open a case and request an RMA number, keep the following information ready:

- Your existing service contract number, if you have one
- Serial number of the router or component
- Model number of the router or component
- Physical location of the router
- Your name, organization name, telephone number, fax number, and shipping address
- Failure or problem description with details
- Type of activity being performed on the router when the problem occurred
- Configuration data displayed by one or more show commands

To obtain an RMA number:

1. Open a support case with Viptela in one of the following ways:
 - Log in to www.viptela.com/support
 - Send email to support@viptela.com

- Call toll-free 800-525-5033
2. A Viptela Customer Support representative validates your request and issues an RMA number for returning the router or a hardware component.



Note Do not return the router or any component to Viptela before first obtaining an RMA number. Viptela reserves the right to refuse to take any shipment that does not have an RMA number.

Repack the Router

If you need to move or return the vEdge router, repack the router in its original packing. Before you repack the router follow these steps:

1. Shut down the vEdge router by issuing the **poweroff** command at the CLI prompt.
2. Disconnect power to the router.
3. Remove the cables and transceivers.

You will need the following tools to repack the router:

- Phillips Number 2 (+) screwdriver
- Cardboard carton and original packing in which you received the router

To repack the router in its original packing:

1. If you do not have a vEdge 1000 router, skip this step. Otherwise:
 - a. If the router is installed in a rack using the rack-mount kit from Viptela, remove the front stopper screwed along the front side of the rack-mount tray.
 - b. Then remove the rack-mount tray from the rack by having one person support the weight of the rack-mount tray while a second person unscrews the rack-mount screws.
 - c. Place the rack-mount tray on a firm, flat surface.
 - d. Slide out the vEdge 1000 router from the rack-mount tray.
2. Place the router chassis in the plastic packing bag.
3. Place the side packing foam on both sides of the router chassis.
4. Secure the chassis in the cardboard carton.
5. Secure the top of the chassis by placing the top packing foam over the top of the chassis.
6. Close the cardboard shipping box and seal it with packing tape.
7. Write the RMA number on top of the box for purposes of tracking.

If you are returning any field-replaceable units with the router, repack them as described in Repack Router Components below.

Repack Router Components

If you need to return any router components, follow these steps:

1. Ensure that you have the antistatic bag for each component and an ESD grounding strap.
2. Place each component in its antistatic bag.
3. Pack each component in its original packing material. If you do not have the original packing material, ensure that the component is packed adequately with packing material to prevent any damage in transit.
4. Place the component in the original cardboard box or another cardboard box if the original is not available.
5. Secure the box with tape.
6. Write the RMA number on top of the box for purposes of tracking.