




# VEP4600

## Setup Guide

## Notes, cautions, and warnings

-  **NOTE:** A NOTE indicates important information that helps you make better use of your product.
-  **CAUTION:** A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.
-  **WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

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## About this guide

This guide provides site preparation recommendations, step-by-step procedures for rack mounting and desk mounting, inserting modules, and connecting to a power source.

**CAUTION:** To avoid electrostatic discharge (ESD) damage, wear grounding wrist straps when handling this equipment.

**WARNING:** Only trained and qualified personnel can install this equipment. Read this guide before you install and power up this equipment. This equipment contains two power cords. Disconnect both power cords before servicing.

**WARNING:** This equipment contains optical transceivers, which comply with the limits of Class 1 laser radiation.



Figure 1. Class 1 laser product tag

**WARNING:** When no cable is connected, visible and invisible laser radiation may be emitted from the aperture of the optical transceiver ports. Avoid exposure to laser radiation, and do not stare into open apertures.

Topics:

- [Related documents](#)
- [Information symbols](#)

## Related documents

For more information about the Virtual Edge Platform 4600 (VEP4600), see the following documents:

- *VEP4600 Installation Guide*
- *VEP4600 Release Notes*

 **NOTE:** For the most recent documentation, see the support site: [www.dell.com/support](http://www.dell.com/support).

## Information symbols

This book uses the following information symbols:

 **NOTE:** The Note icon signals important operational information.

 **CAUTION:** The Caution icon signals information about situations that could result in equipment damage or loss of data.

 **WARNING:** The Warning icon signals information about hardware handling that could result in injury.

 **WARNING:** The ESD Warning icon requires that you take electrostatic precautions when handling the device.

## Site preparations

VEP4600 is universal customer premise equipment (uCPE). To connect the service provider edge or enterprise branch to the cloud, use VEP4600 to host multiple virtual network functions (VNFs), such as SD-WAN, routing, firewall, and deep-packet inspection.

For more information about VEP4600 specifications, see [Chassis physical design](#).

**NOTE:** Install the platform into a rack or cabinet before installing any optional components.

Topics:

- [Site selection](#)
- [Cabinet placement](#)
- [Rack mounting](#)
- [System ground](#)
- [Fans and airflow](#)
- [Power](#)
- [Storing components](#)

### Site selection

Install your equipment in restricted access areas. A restricted access area is one where service personnel can only gain access using a special tool, lock, key, or other means of security. The authority responsible for the location controls access to the restricted area.

Ensure that the area where you install your platform meets the following safety requirements:

- Near an adequate power source. Connect the platform to the appropriate branch circuit protection according to your local electrical codes.
- Environmental—platform location—continuous temperature range is from 0°C to 45°C (32°F to 113°F).

- Operating humidity is from 5 to 90 percent non-condensing, continuous.
- In a dry, clean, well-ventilated, and temperature-controlled room, away from heat sources such as hot cooling vents or direct sunlight.
- Away from sources of severe electromagnetic noise.
- Positioned in a rack or cabinet, or on a desktop with adequate space in the front, back, and sides for proper ventilation and access.
- Install the platform in Information Technology Rooms in accordance with Article 645 of the National Electrical Code and NFPA 75.

For more information about platform storage and environmental temperatures, see [Specifications](#).

## Cabinet placement

Install VEP4600 only in indoor cabinets designed for use in a controlled environment.

Do not install the platform in outside cabinets. For cabinet placement requirements, see [Site selection](#).

The cabinet must meet minimum size requirements. Airflow must be in accordance with the Electronic Industries Alliance (EIA) standard. Ensure that there is a minimum of 5 inches (12.7 cm) between the intake and exhaust vents and the cabinet wall.

## Rack mounting

When you prepare your equipment rack, ensure that the rack is grounded. Ground the equipment rack to the same ground point the power service in your area uses. The ground path must be permanent.

## System ground

Dell recommends grounding your system. Use VEP4600 in a CBN.

## Fans and airflow

Fan installation is done as part of the factory install based on stock keeping unit (SKU) type. VEP 4600 supports an AC normal fan unit with fan airflow from the I/O to the PSU.



For proper ventilation, position the platform in an equipment rack or cabinet with a minimum of 5 inches (12.7 cm) of clearance around the exhaust vents. The fan speed varies based on internal temperature monitoring. The platform never intentionally turns off the fans.

## Power

Connect the platform to the applicable power source using the appropriate power cable. An AC power cable is included with the platform.

When installing AC platforms, follow the requirements of the National Electrical Code ANSI/NFPA 70, where applicable.

The platform is powered-up when the power cable is connected between the platform and the power source.

**⚠ CAUTION:** Always disconnect the power cable before you service the power supply slots. The platform has multiple power cords. Before servicing, ensure that all power cords are disconnected.

**⚠ CAUTION:** Use the power supply cable as the main disconnect device. Ensure that the socket-outlet is located/installed near the equipment and is easily accessible.

## Storing components

If you do not install the VEP4600 and components immediately, properly store the platform and all optional components following these guidelines:

- Storage location temperature must remain constant. The storage range is from -40°C to 70°C (-40°F to 158°F).
- Store on a dry surface or floor, away from direct sunlight, heat, and air conditioning ducts.
- Store in a dust-free environment.

**i NOTE:** ESD damage can occur when components are mishandled. Always wear an ESD-preventive wrist or heel ground strap when handling the platform and its accessories. After you remove the original packaging, place the VEP4600 and its components on an anti-static surface.

## VEP4600 installation

To install VEP4600, complete the installation procedures in the order presented in this section.

Always handle the platform and its components with care. Avoid dropping the platform or any field replaceable units (FRUs).

**NOTE:** ESD damage can occur if components are mishandled. Always wear an ESD-preventive wrist or heel ground strap when handling the platform and its components. As with all electrical devices of this type, take all the necessary safety precautions to prevent injury when installing this platform.

Topics:

- [Unpack](#)
- [Ground cable](#)
- [Rack or cabinet installation](#)
- [Two-post installation](#)
- [Four-post installation](#)
- [Optics installation](#)
- [Platform power-up](#)

### Unpack

**NOTE:** Before unpacking the platform, inspect the container and immediately report any evidence of damage.

When unpacking VEP4600, make sure that the following items are included:

- One VEP4600
- One RJ-45 to DB-9 female cable

- Two-post rail kit, no tools required
  - One or two AC PSUs, depending on the configuration
  - Five AC normal fan units
  - One or two country- and region-specific AC power cords, depending on the configuration
  - Ground lug kit (included in the accessories box)
  - *VEP4600 Setup Guide*
  - *Safety and Regulatory Information*
  - *Warranty and Support Information*
- 1 Place the container on a clean, flat surface and cut all straps securing the container.
  - 2 Open the container.
  - 3 Carefully remove the platform from the container and place it on a secure and clean surface.
  - 4 Remove all packing material.
  - 5 Inspect the product and accessories for damage.

## Ground cable

To attach a ground cable to the switch, use the included two M3 ground lug bracket screws. The switch ships with the M3 ground lug bracket screws attached.

**NOTE:** For AC-powered platforms, although the third conductor of the AC power cord provides a ground path, Dell EMC recommends grounding your platform with a dedicated ground wire.

The ground cable is not included. To properly ground the platform, Dell EMC recommends a one- or two-hole lug, M3 hole size. The ground lug must be a UL-recognized, crimp-type lug.

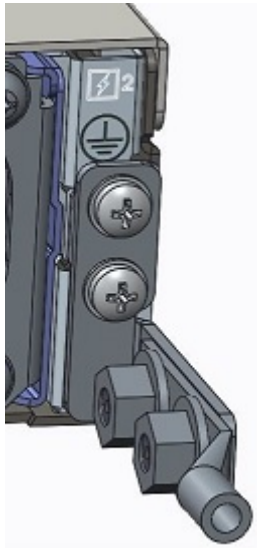
**CAUTION:** Grounding conductors *must* be made of copper. Do not use aluminum conductors.

**NOTE:** Coat the one-hole lug with an anti-oxidant compound before crimping. Also, bring any unplated mating surfaces to a shiny finish and coat with an anti-oxidant before mating. Plated mating surfaces must be clean and free from contamination.

**NOTE:** The rack installation ears are not suitable for grounding.

Before you install the switch into the dual-tray:

- 1 Cut the ground cable (not included) to the desired length. The cable length must facilitate proper operation of the fault interrupt circuits. Use the shortest cable route allowable.
- 2 Unscrew the two attached M3 screws and set aside.
- 3 Attach the ground lug and bracket to the switch using the M3 screws.



**Figure 2. VEP4600 ground lug attached**

- 4 Attach the other end of the ground cable to a suitable ground point such as the rack or cabinet.

## Rack or cabinet installation

You may either place the platform on a rack shelf or mount the platform directly into a 19" wide, EIA-310- E-compliant rack.

The platform includes two-post rail assemblies.

**⚠ WARNING:** This guide is a condensed reference. Read the safety instructions in your *Safety, Environmental, and Regulatory* information booklet before you begin.

**NOTE:** The illustrations in this section are not intended to represent a specific platform.

**NOTE:** Do not use the mounted two-post rails as a shelf or a workplace.

## Rack mount safety considerations

- Rack loading—Overloading or uneven loading of racks may result in shelf or rack failure, possibly damaging the equipment and causing personal injury. Stabilize racks in a permanent location before loading begins. Mount the components starting at the bottom of the rack, then work to the top. Do not exceed your rack's load rating.
- Power considerations—Connect only to the power source specified on the unit. When you install multiple electrical components in a rack, ensure that the total component power ratings do not exceed the circuit capabilities. Overloaded power sources and extension cords present fire and shock hazards.
- Elevated ambient temperature—If you install the platform in a closed rack assembly, the operating temperature of the rack environment may be greater than the room ambient temperature. Use care not to exceed the 45°C (113°F) maximum ambient temperature of the platform.
- Reduced air flow—Do not compromise the amount of airflow required for safe operation of the equipment. Install the equipment in the rack so that the equipment constantly has the correct amount of airflow surrounding it.
- Reliable earthing—Maintain reliable earthing of rack-mounted equipment. Pay particular attention to the supply connections other than the direct connections to the branch circuit, for example; use of power strips.
- Do not mount the equipment with the fan panel facing in the downward position.

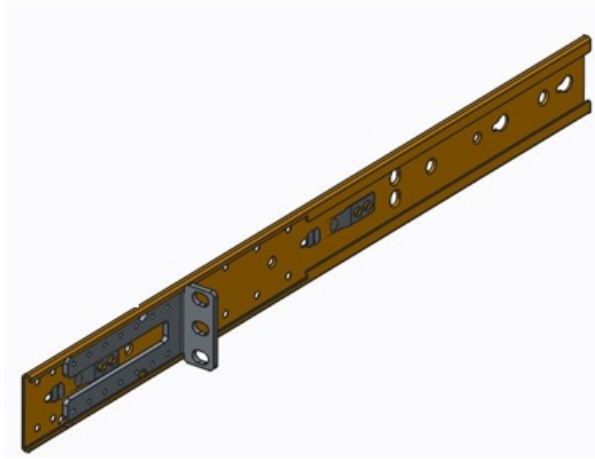
## Two-post installation

To easily configure your rack for installation of the VEP4600, use the two-post rack mounting system provided. To complete this installation, supply four rack-mounting screws.

**NOTE:** To be NEBS-compliant, you must install the VEP4600 in a four-post rack.

To begin installation, separate each rail assembly by sliding the inside rail out of the outside rail.

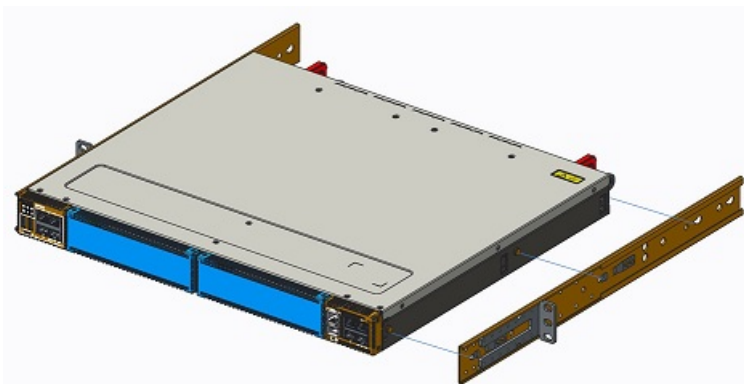
**NOTE:** For more installation instructions, see the installation labels attached to the rail assembly.



**Figure 3. Two-post rail**

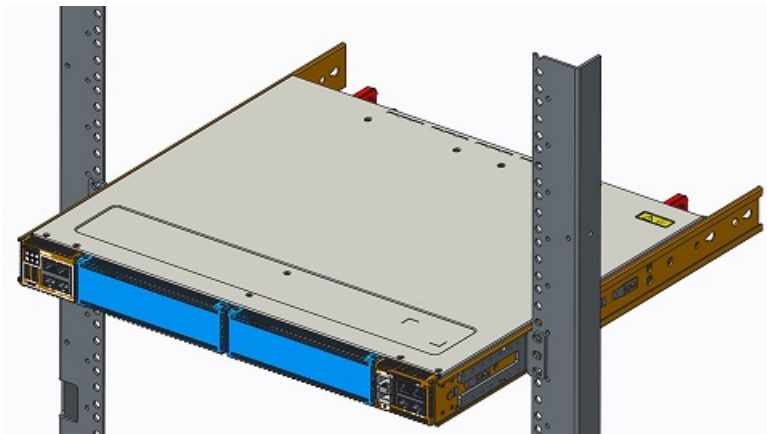
## **1U front-rack installation**

- 1 Attach the inner platform rails to the VEP4600.  
Line up the half-holes on the rail with the mounting heads on the platforms and attach the rail to the platform. Slide the rail back until it locks into place.



**Figure 4. Platform rail attachment**

- 2 Repeat on the other side of the platform.
- 3 Attach the outer platform rails to the two-post rack rails using two user-supplied screws on each side.
- 4 After you install both rails, line up the platform rails with the installed rack rails. Slide the platform in until it is flush with the front of rack.  
About three inches before you fully insert your platform, the rail locking feature engages to keep the platform from inadvertently sliding out and falling.



**Figure 5. Platform two-post installed**

**NOTE:** Do not use the mounted rails as a shelf or a workplace.

To remove the platform, unscrew the rack-mounting screws and slide the platform forward.

## Four-post installation

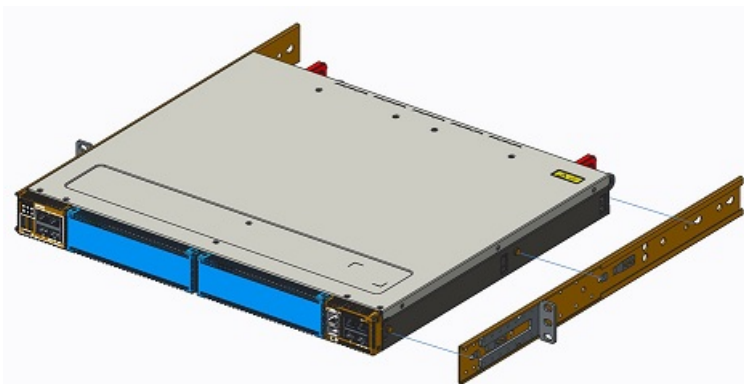
To complete this installation, supply eight rack mounting screws.

**NOTE:** The following installation instructions are for NEBS-compliant platforms.

**NOTE:** For more installation instructions, see the installation labels attached to the rail assembly.

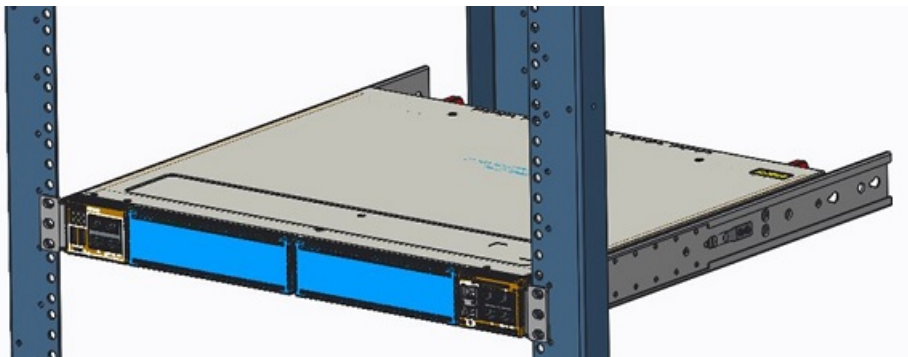
- 1 Separate each rail assembly by sliding the inside rail out of the outside rail.
- 2 Attach the inner platform rails to the VEP4600.  
Line up the half-holes on the rail with the mounting heads on the platforms and attach the rail to the platform. Slide the rail back until it locks into place.





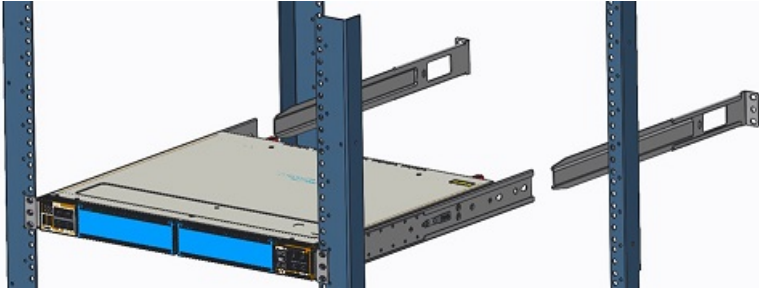
**Figure 6. Platform rail attachment**

- 3 Repeat on the other side of the platform.
- 4 Attach the platform rails to the four-post rack rails using two user-supplied screws on each side.



**Figure 7. Platform four-post front installed**

- 5 Slide the rear platform rail from the back to the front bracket. Secure with two user-supplied screws on each side.



**Figure 8. Platform four-post rear installed**

About three inches before you fully insert your platform, the rail locking feature engages to keep the platform from inadvertently sliding out and falling.

To remove the platform, unscrew the rack-mounting screws and slide the platform forward.

## Optics installation

**⚠ WARNING:** When working with optical fibers, follow all warning labels and always wear eye protection. Never look directly into the end of a terminated or unterminated fiber or connector as it may cause eye damage.

- 1 Position the optic so it is in the correct position.  
The optic has a key that prevents it from being inserted incorrectly.
- 2 Insert the optic into the port until it gently snaps into place.

**📌 NOTE:** When you cable the ports, be sure not to interfere with the airflow from the small vent holes above and below the ports.

## Optics removal

Remove an optic by pushing the tab on the optic and sliding the optic from the port.

When removing optics with direct attach cables (DACs) from the port, pull the release tab firmly and steadily. Before pulling the release tab, you may need to gently push the optic into the port to ensure that it is seated properly. Do not jerk or tug repeatedly on the tab.

## Platform power-up


Supply power to the VEP4600 after you mount it in a rack or cabinet.

Reinspect your platform before power-up. Verify the following:

- The equipment is properly secured to the rack. Dell EMC recommends properly grounding the platform.
- The ambient temperature around the unit, which may be higher than the room temperature, is within the limits specified for the VEP4600, see [Specifications](#).
- There is sufficient airflow around the unit.
- The input circuits are correctly sized for the loads and that you use sufficient overcurrent protection devices.
- All protective covers are in place.
- Blank panels are installed if you do not install optional modules.

 **CAUTION:** Do not power up the platform if you did not install a fan module.

 **NOTE:** A US AC power cable is included for powering up an AC power supply. You must order all other power cables separately.

 **NOTE:** ESD damage can occur if components are mishandled. Always wear an ESD-preventive wrist or heel ground strap when handling the platform and its components.

## Power up sequence

When the platform powers up, the fans immediately come on at high speed. The fan speed slows as the platform continues to boot up.

# Specifications

This section lists the VEP4600 specifications.

**CAUTION:** Operate the product at an ambient temperature not higher than 0°C to 45°C (32°F to 113°F).

**CAUTION:** Lithium Battery Caution: There is a danger of explosion if the battery is incorrectly replaced. Replace only with same or equivalent type of battery. Dispose of the batteries according to the manufacturer's instructions.

**NOTE:** For RoHS information, see [Restricted Material Compliance](#).

## Chassis physical design

**Table 1. Chassis physical design**

Parameter	Specifications
Height	1.75 inches (44 mm)
Width	17.1 inches (434 mm)
Depth	15 inches (381 mm)
	PSU/fan tray handle: 1.57 inches (40 mm)
Chassis weight with factory-installed components	<ul style="list-style-type: none"><li>• 13.75 lbs (6.24 kg) (1 PSU and 4 fans)</li><li>• 13.90 lbs (6.30 kg) (1 PSUs and 5 fans)</li><li>• 15.75 lbs (7.14 kg) (2 PSUs and 5 fans)</li></ul>
Rack clearance required	Front: 5 inches (12.7 cm)

Parameter	Specifications
	Back: 5 inches (12.7 cm)

**Table 2. Environmental parameters**

Parameter	Specifications
Operating temperature	<p>0°C to 45°C (23°F to 113°F) continuously -5°C to 45°C (23°F to 113°F) short term</p> <p>Short term is &lt;= 1% of operational hours per year.</p> <p><b>NOTE:</b> Reduce maximum temperature by 1°C/125 meters (1°F/228 feet) above 950 meters (3,117 feet).</p>
Operating humidity	5% to 90% (RH), non-condensing
Storage temperature	-40° to 70°C (-40° to 158°F )
Storage humidity	5% to 90%, non-condensing
Maximum thermal output	500 W = 1706 BTU/Hr
Maximum operational altitude	10,000 feet (3,048 meters)
Maximum non-operational altitude	35,000 feet (10,668 meters)
Shock	Dell EMC Spec SV0115

**Table 3. AC power requirements**

Parameter	Specifications
Power supply	100–240 VAC 50/60 Hz
Maximum current draw per system	5A/4.17A at 100/120V AC 2.5A/2.1A at 200/240V AC
Maximum power consumption*	<ul style="list-style-type: none"> <li>5-fan 16-core CPU: 300W</li> <li>4-fan 8-core CPU: 230W</li> </ul>

Parameter	Specifications
	<ul style="list-style-type: none"> <li>4-fan 4-core CPU: 220W</li> </ul>
Typical power consumption*	240W

\*For the most current power consumption specifications, see the Installation Guide at [www.Dell.com/support](http://www.Dell.com/support).

## Support

The support site provides documents and tools to help you effectively use your equipment and mitigate network outages. Through the support site you can obtain technical information, access software upgrades and patches, download available management software, and manage your open cases. The support site provides integrated, secure access to these services.

To access the support site, go to [www.dell.com/support/](http://www.dell.com/support/). To display information in your language, scroll down to the bottom of the web page and select your country from the drop-down menu.

- To obtain product-specific information, enter the 7-character service tag, known as a luggage tag, or 11-digit express service code of your platform and click **Submit**.  
To view the chassis service tag or express service code, pull out the tag on the upper-right side of the platform.
- To receive more technical support, click **Contact Us**. On the **Contact Information** web page, click **Technical Support**.

To access platform documentation, go to [www.dell.com/manuals/](http://www.dell.com/manuals/).

To search for drivers and downloads, go to [www.dell.com/drivers/](http://www.dell.com/drivers/).

To participate in community blogs and forums, go to [www.dell.com/community](http://www.dell.com/community).