Dell EMC PowerSwitch Z9264F-ON

Setup Guide

March 2021
Rev. A03

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.

Contents

1

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.

NOTE: 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.

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

Figure 1. Class 1 laser product tag

NOTE: 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.

Regulatory

Marketing model Z9264F-ON is represented by the regulatory model E23W and the regulatory type E23W002.

Topics:

Related documents

For more information about the Z9264F-ON switch, see the following documents:

- *Dell EMC SmartFabric OS10 Release Notes*
- *Dell EMC SmartFabric OS10 User Guide*
- *Dell EMC PowerSwitch Z9264F-ON Installation Guide*
- *Dell EMC PowerSwitch Z9264F-ON Release Notes*
- *Open Networking Hardware Diagnostic Guide*

NOTE: For the most recent documentation, visit the support site: 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.

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

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

2

Site preparations

The Z9264F-ON switch is suitable for installation as part of a common bond network (CBN).

You can install the switch in:

- Network telecommunication facilities
- Data centers
- Other locations where the National Electric Code (NEC) applies

For more information about the Z9264F-ON switch specifications, see Specifications.

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

Topics:

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 switch meets the following safety requirements:

- Near an adequate power source. Connect the switch to the appropriate branch circuit protection according to your local electrical codes.
- Environmental—switch 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 switch in Information Technology Rooms in accordance with Article 645 of the National Electrical Code and NFPA 75.

For more information about switch storage and environmental temperatures, see Specifications.

Cabinet placement

Install the Z9264F-ON switch only in indoor cabinets designed for use in a controlled environment.

Do not install the switch 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.

Switch ground

Dell EMC recommends grounding your switch. Use the Z9264F-ON switch in a CBN.

For more information, see Ground lug assembly.

Fans and airflow

Fan installation is done as part of the factory install based on stock keeping unit (SKU) type. The Z9264F-ON switch has SKUs that support the following configurations:

- AC PSU with fan airflow from the I/O to the PSU—normal
- AC PSU with fan airflow from the PSU to the I/O—reverse
- DC fan unit with airflow from the I/O to the PSU—normal
- DC fan unit with fan airflow from the PSU to the I/O—reverse

Be sure to order the fans suitable to support your site's ventilation. Use a single type of airflow fan in your switch. Do not mix reverse and normal airflows in a single switch.

For proper ventilation, position the switch 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 switch never intentionally turns off the fans.

Power

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

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

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

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

CAUTION: On the AC switch, 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.

NOTE: Module power is software controlled. You do not see module LEDs when the switch powers up in ONIE.

Storing components

If you do not install your Z9264F-ON switch and components immediately, properly store the switch and all optional components following these guidelines:

- Storage location temperature must remain constant. The storage range is from -40° to 70°C (-40° 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.

NOTE: ESD damage can occur when components are mishandled. Always wear an ESD-preventive wrist or heel ground strap when handling the switch and its accessories. After you remove the original packaging, place the Z9264F-ON switch and its components on an anti-static surface.

3

Z9264F-ON switch installation

To install the Z9264F-ON switch, complete the installation procedures in the order presented in this section.

Always handle the switch and its components with care. Avoid dropping the switch 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 switch and its components. As with all electrical devices of this type, take all the necessary safety precautions to prevent injury when installing this switch.

Topics:

Unpack

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

When unpacking the Z9264F-ON switch, make sure that the following items are included:

- One Z9264F-ON switch
- One RJ-45 to DB-9 female cable
- Two sets of rail kits, no tools required
- Two PSUs
- Four fan units
- Two AC power cables, country or region specific
- DC switches only: DC power ground lug kit
- *Z9264F-ON Set-up 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 or remove the container top.
3. Carefully remove the switch 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 lug assembly

Before you install the switch into a rack, install the ground (GND) lug assembly.

NOTE: For AC-powered switches, although the third conductor of the AC power cable provides a ground path, Dell EMC recommends grounding your switch with a dedicated ground wire. You can order an AC ground lug separately.

NOTE: For a DC-powered switch, the only way to safely ground your switch is to attach a dedicated ground wire. The ground lug kit ships in a plastic bag that is placed with the other accessories inside the shipping box. The ground lug bracket

screws ship attached to the switch. Before you install the DC switch in the dual-tray, attach the ground lug and bracket to the switch using the included screws and then attach the DC ground wire to the ground lug.

The switch includes two installed M4 screws on the lower-left side of your switch. The DC switch also includes an assembled UL-certified GND lug with bracket, which is packaged separately. The AC switch does not include the UL-certified GND lug. If any parts are missing, contact your Dell EMC sales representative.

The ground cable is not included. To properly ground the switch, Dell EMC recommends a one- or two-hole lug, M4 hole size. The grounding lugs must be a UL-recognized, crimp-type lug.

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

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

1. Remove the two installed M4 screws from the lower-left side of your switch.

   NOTE: Keep these screws.

2. Remove the bracket assembly from the shipping bag.

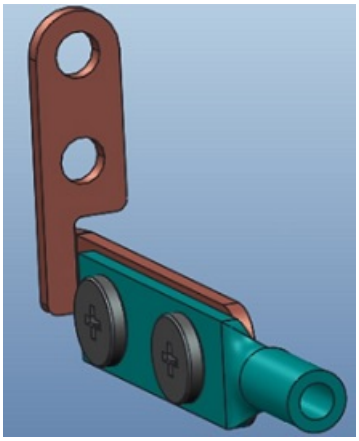

Figure 2. Ground lug assembly

3. Measure and cut a length of ground wire sufficient to reach between the system-installed ground lug assembly and your rack ground point.
4. Crimp the ground cable to the ground lug assembly.
   a. Coat the bare end of the wire with an anti-oxidant compound.
   b. Insert the end of the wire into the ground lug.
   c. Crimp the ground lug end.
5. Clean the bracket and lug surfaces thoroughly, and apply an anti-oxidant solution to the mating surfaces.
6. Attach the switch ground lug assembly to the switch.

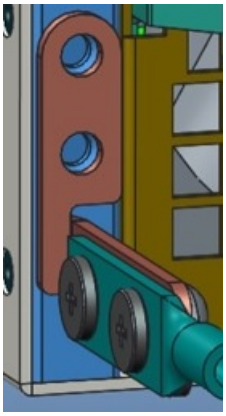

Figure 3. Ground lug assembly attached

7. Attach the GND lug bracket assembly to your switch using the two removed screws, as shown.
   Torque the M4 screws to ±8–10 in-lbs.

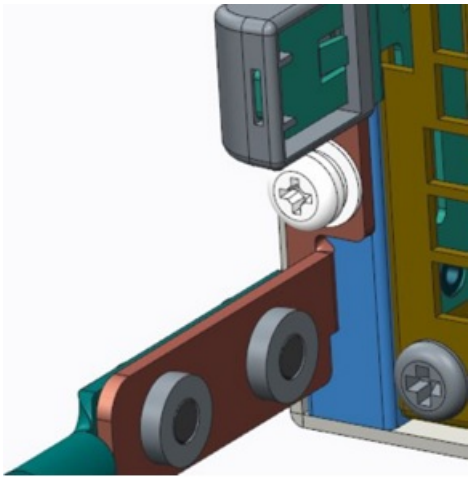

Figure 4. Ground lug assembly attached

8. Attach the other end of the ground wire to your rack ground point.
9. Install your switch into your rack using the Z9264F-ON installation instructions.

Four-post rack assembly

Due to the chassis weight, the Z9264F-ON switch does not support a two-post rack installation; you must install the switch in a four-post rack.

To install in a four-post rack, follow the instructions in your rack frame kit. In a four-post rack, the maximum distance between the front and back vertical posts is 36 inches (91.44 cm); the minimum distance is 24 inches (60.96 cm).

Four-post rack mount

Rack mounting safety considerations

NOTE: To prevent bodily injury when mounting or servicing this unit in a rack, take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- If your chassis is the only unit in the rack, mount it at the bottom of the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack comes with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.
- If the chassis ships with blanks, remove the blanks from each slot before lifting the chassis.

NOTE: These instructions are a condensed reference. Read the safety instructions in your *Safety, Environmental, and Regulatory* information booklet before you begin.

NOTE: The illustrations in this document are not intended to represent a specific switch.

- 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 switch 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 switch.
- 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.

Switch installation and removal

1. Align the system with the rails and slide the system into the rack.
2. Tighten the screws on each side of the systems's front panel, items 1 and 2.
3. To remove the system from the rack, loosen the screws and slide the system out of the rack.

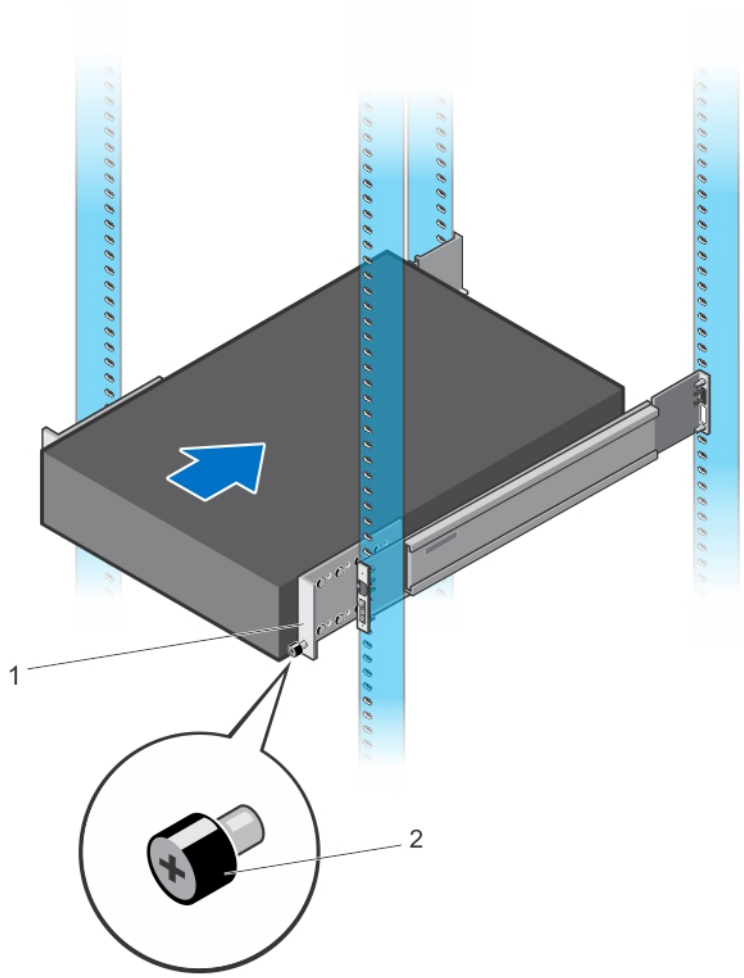

Figure 5. Z9264F-ON installation

1. Extra screws to restrict front-back movement of the switch.
2. Main screw.

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.

Switch startup

Supply power to the Z9264F-ON switch after you mount it in a rack or cabinet.

Reinspect your switch before power on. Verify the following:

- Optional: The equipment is secured to the rack and properly grounded.
- Optional: The equipment rack is properly mounted and grounded.
- The ambient temperature around the unit, which may be higher than the room temperature, is within the limits that are specified for the Z9264F-ON switch, 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.

CAUTION: Do not power on the switch 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 switch and its components.

Power up sequence

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

After switch installation

After you have securely installed and powered on the Z9264F-ON switch:

- If you are using Dell EMC software, see switch documentation at www.dell.com/support/.
- If you need ONIE information, see ONIE documentation at www.onie.org.
- If you are using third-party software, see your third-party documentation.

4

Specifications

This section lists the Z9264F-ON switch specifications.

CAUTION: Operate the product at an ambient temperature not higher than 45°C (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.

Topics:

Chassis physical design

Table 1. Chassis physical design

Parameter	Specifications
Height	3.37 inches (85.6 mm)
Width	17.4 inches (442 mm)
Depth	20.0 inches (510 mm) PSU/fan tray handle: 1.38 inches (35 mm)
Chassis weight with factory-installed components	34.6 lbs (2 PSUs and 4 fans) 15.7 kg (2 PSUs and 4 fans)
Rack clearance required	Front: 5 inches (12.7 cm) Back: 5 inches (12.7 cm)

Table 2. Environmental parameters

Parameter	Specifications
Operating temperature	0°C to 45°C (32°F to 113°F) continuously -5°C to 45°C (23°F to 113°F) short term Short term is </= 1% of operational hours per year. **NOTE:** Reduce maximum temperature by 1°C/125 meters (1°F/228 feet) above 950 meters (3,117 feet).
Operating humidity	5% to 90% (RH), non-condensing
Storage temperature	-40°C to 70°C (-40°F to 158°F)
Storage humidity	5% to 90%, non-condensing
Maximum thermal output	470 W = 1603.7 BTU/Hr
Maximum operational altitude	5,000 feet (1,524 meters)

Table 2. Environmental parameters

Parameter	Specifications
Maximum non-operational altitude	39,370 feet (12,000 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	4.7A/3.9A at 100/120V AC 2.35A/1.95A at 200/240V AC
Maximum power consumption	1104.37W (based on 4.5W QSFP28)
Typical power consumption	900W

Table 4. DC power requirements

Parameter	Specifications
Minimum and maximum input voltage range	–48V, –60V DC
Input power at full load	-48V/930, -60V/950A, without fan -48V/940, -60V/960A, with fan
Input current at full load	-48V/190, -60V/15.6A, without fan -48V/190, -60V/16.0A, with fan

5

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/. 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 switch and click **Submit**.

  To view the chassis service tag or express service code, pull out the tag or enter the `show chassis` command from the CLI.

- To receive more technical support, click **Contact Us**. On the Contact Information web page, click **Technical Support**.

To access switch documentation, go to www.dell.com/manuals/.

To search for drivers and downloads, go to www.dell.com/drivers/.

To participate in community blogs and forums, go to www.dell.com/community.