




Dell Networking S4048T-ON

Getting Started Guide

Notes, cautions, and warnings

-  **NOTE:** A NOTE indicates important information that helps you make better use of your computer.
-  **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 document is intended as a Getting Started Guide to get new systems up and running and ready for configuration.

For more details about the S4048T-ON Open Networking systems, see the following information, available on the Dell Support website—www.dell.com/support:

- The *Dell Networking S4048T-ON Installation Guide* describes installation and replacement procedures.
- The *Dell Networking Configuration Guide for the S4048T-ON System* describes software configuration.
- The *Dell Networking Command Line Reference Guide for the S4048T-ON System* provides command line interface (CLI) information.
- The *Dell Networking Release Notes for the S4048T-ON System* provide information about upgrading the S4048T-ON system.

NEBS compliance

For your system to be network equipment building system (NEBS) compliant, you must follow the instructions detailed in this chapter.

To be NEBS compliant, orient your system in the rack so that the air inlet is from the front aisle and the air exhaust is from the rear aisle.

Important information

- ⚠ WARNING:** The quad form-factor pluggable (QSFP), BaseT, console, Ethernet management, and universal serial bus (USB) ports are suitable for connection to intra-building or unexposed wiring or cabling only. You *MUST NOT* metallicity connect the ports to interfaces that connect to the out side plant (OSP) or its wiring. Use these interfaces as intra-building interfaces only—Type 2 or Type 4 ports as described in GR-1089-CORE, Issue 6. Also, they require isolation from the exposed OSP cabling. Adding primary protectors is not sufficient protection to connect these interfaces metallicity to OSP wiring.
- ⚠ WARNING:** If you install and connect the S4048T-ON to a commercial AC power source, you must connect the system to an external special protection device (SPD).
- ⚠ WARNING:** Use shielded intra-building cabling that is grounded at both ends for the 1/10GbE BaseT intra-building ports.

To be NEBS compliant, follow these regulations:

- Locate your system in a restricted-access area where only trained personnel are allowed access.
- Install and connect your system to the common bonding network (CBN).
- You can also install and connect your system to the central office.
- Connect the battery returns of your system as DC-I.

- Ground your system using a copper ground conductor.
- Clean and coat all bare grounding connection points on your system with an anti-oxidant solution before making connections.
- Bring all unplated surfaces on your system to a bright finish and treat them with an anti-oxidant solution before making connections.
- Remove any non-conductive surfaces on your system from the threads and connection points to ensure electrical continuity.
- Use the two-hole, Listed, compression-type lug with an AWG 14 gauge wire that uses 4-in/lb to secure your system to the frame.

i **NOTE:** The S4048T-ON can operate at -40.5 to -60 VDC at a maximum current level of 24A or at 100–240 VAC at a maximum current level of 7.1A.

i **NOTE:** The S4048T-ON is Earthquake Z4-compliant when you attach the ReadyRails to the frame using threaded hardware. Do not use the tool-less or two-post installation methods.

Hardware installation

This information describes installation of the S4048T-ON system. Dell recommends completing the installation procedures in the order presented here.

Topics:

- [Operation and safety considerations](#)
- [Ground and bracket installation](#)
- [ReadyRails installation](#)
- [System installation](#)
- [Ground wire installation](#)
- [AC or DC power supply installation](#)
- [Installing a Fan Module](#)
- [Installing the SFP+ and QSFP+ Optics](#)
- [Supply Power and Power Up the System](#)
- [After Installing the S4048T-ON](#)

Operation and safety considerations

Before installing the switch, review these operation and safety guidelines.

Review these guidelines for switch installation:

- You have enough clearance to the front of the switch so you can read the light emitting diodes (LEDs).
- The AC power cord reaches from the power outlet to the power supply unit (PSU) side connector.
- The switch is rack-mounted before you power it up.
- Cabling is away from sources of electrical noise, such as radios, power lines, and fluorescent lighting. Ensure that the cabling is safely away from other devices that might damage the cables. If needed, allow one rack unit (RU) space between devices to provide room for cabling.

- Airflow around the switch and through the vents is unrestricted.
- Temperature around the unit does not exceed 113°F (45°C). If the switch is in a closed or multi-rack assembly, the temperature might be higher than normal room temperature.
- Humidity around the switch does not exceed 95 percent.
- Altitude at the installation site is below 10,000 feet.
- The switch is installed in an environment as free as possible from dust and foreign conductive material; for example, metal flakes from construction activities. Cooling mechanisms, such as fans and blowers in the switch, can draw dust and other particles causing contaminant buildup inside the chassis, which can result in system malfunction.

Review these guidelines for rack mounting:

- Rack mounting—You may either place the switch on a rack shelf or mount the switch directly into a 19" wide, EIA-310-E- compliant rack.
- Rack loading—Overloading or uneven loading of racks may result in shelf or rack failure that can cause damage to the equipment and possible 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 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 equipment in a closed rack assembly, the operating temperature of the rack environment may be greater than the room ambient temperature. The acceptable ambient temperature ranges are listed in [Technical Specifications](#) under Environmental Parameters.
- Reduced air flow—Install the equipment in the rack so that you do not compromise the amount of airflow required for safe operation of the switch. For proper ventilation, position the chassis in an equipment rack or cabinet with a minimum of 5 inches (12.7 cm) of clearance around exhaust vents.
- Reverse air flow—To ensure cool air intake and to avoid hot air blow out from the I/O side, ensure that you have the necessary clearance.
- 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 PSU side facing in a downward position.

i NOTE: Always handle the system and its components with care. Avoid dropping the chassis or their field replaceable units.

⚠ CAUTION: Always wear an electrostatic discharge (ESD)-preventive wrist or heel ground strap when handling a system and its components. As with all electrical devices of this type, take all necessary safety precautions to prevent injury when installing this system. ESD damage can occur if components are mishandled.

⚠ CAUTION: Only trained and qualified personnel should install this equipment. Read this guide before installing and powering up the system.

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

Ground and bracket installation

Install the ground (GND) lug and bracket assembly, with a ground wire attached, before you install the S4048T-ON switch in a rack.

Dell supplies a kit with the following:

- One two-hole UL-certified GND lug
- L-bracket
- Two flat head screws to attach the lug to the bracket
- Two pan head screws to attach the assembly to the chassis

You must supply:

- A wire that complies with your local electrical codes in size and color. Typically the wire is 14 AWG, colored green or green with a yellow stripe.
- An anti-oxidant compound—Dell recommends NOALOX 4 or equivalent.
- A crimping tool.
- A thread-locker compound—Dell recommends Threadlocker Blue 242 or equivalent.

- 1 Attach the end of the ground wire to the GND lug:
 - a Coat the bare end of the wire with an anti-oxidant compound.
 - b Insert the end of the wire into the lug.
 - c Crimp the lug end to secure the connection of wire to lug.

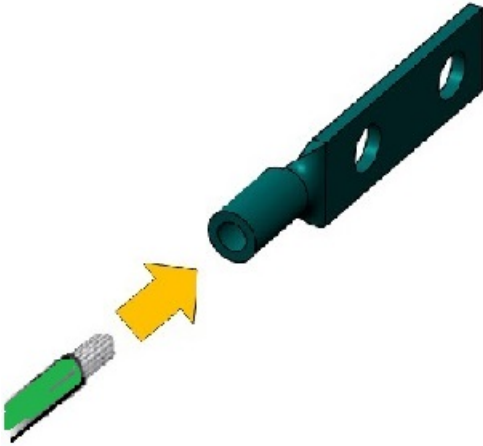


Figure 1. Ground wire end and GND lug opening

- 2 Apply the thread-locker compound to the two flat head screws, then attach the GND lug to the L-bracket.

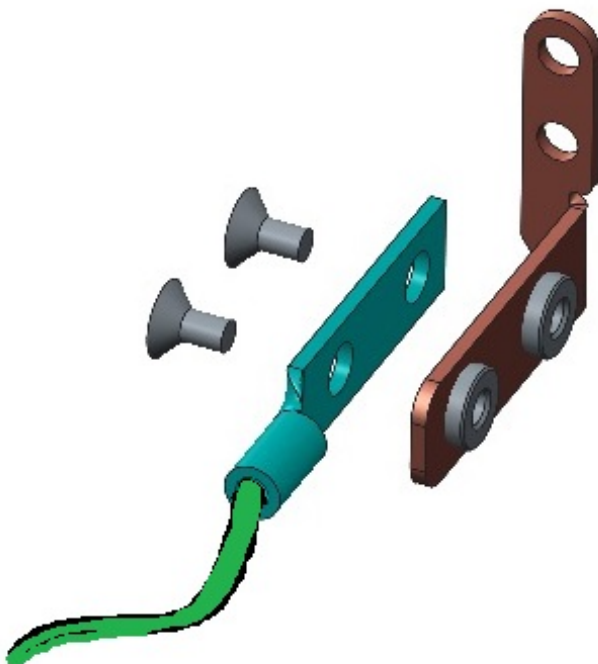


Figure 2. Screws, GND lug, and L-bracket

- 3 Attach the assembly to the S4048T-ON chassis:
 - a Apply the thread-locker compound to the two pan head screws.
 - b Attach the GND lug and bracket assembly to the two-hole chassis ground connector nuts on the S4048T-ON PSU side, tightening the screws to ensure torque from 3–5 inch/lbs.



Figure 3. Assembly to S4048T-ON PSU-side attachment

CAUTION: Take care not to damage the attached ground wire as you proceed to install the switch.

After the switch is installed in the rack, see [Ground wire installation](#).

ReadyRails installation

The ReadyRails rack mounting system is provided to easily configure your rack so that you can install your switch.

Use the Dell ReadyRails™ system in 1U front-rack and two-post installations. The ReadyRails system includes two separately packaged rail assemblies and two rails that are shipped attached to the sides of the switch. Install the ReadyRails system using the 1U tool-less method or one of three possible 1U tooled methods—two-post flush mount, two-post center mount, or four-post threaded.

CAUTION: Your system is not NEBS Earthquake Z4-compliant if you use the 1U tool-less square-hole or two-post installation methods.

CAUTION: Do not use the mounted ReadyRails as a shelf or a workplace.

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

1U tool-less configuration

NOTE: Your system is not NEBS Earthquake Z4-compliant if you use the 1U tool-less square-hole or two-post installation methods.

- 1 Face the ReadyRails flange ears outward then place the rail between the left and right vertical posts.
Align and seat the back flange rail pegs in the back vertical post flange. To see how the pegs appear in both the square and unthreaded round holes, see item 1.
- 2 Align and seat the front flange pegs in the holes on the front side of the vertical post.
- 3 Repeat this procedure for the second rail.
- 4 Pull on the latch release button on each flange ear to remove each rail then unseat each rail.

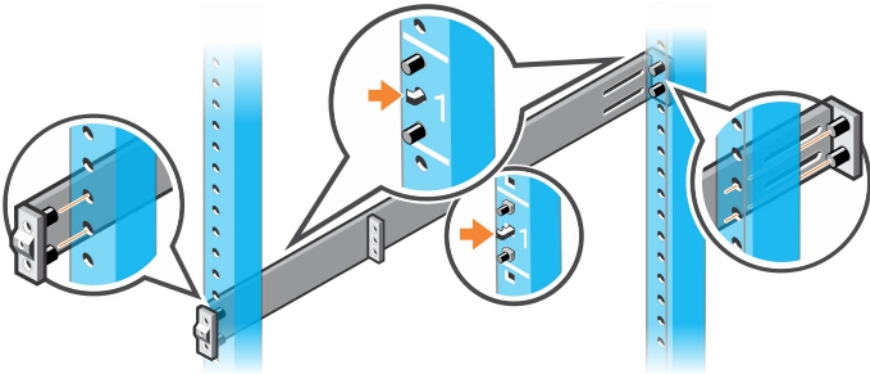


Figure 4. 1U tool-less configuration

Two-post flush-mount configuration

NOTE: Your system is not NEBS Earthquake Z4-compliant if you use this installation method.

- 1 For this configuration, remove the latch castings from the front side of each ReadyRails assembly, item 1.
To remove the two screws and latch casting from each front flange ear, on the switch side of the rail, use a Torx driver. Retain the castings for future rack requirements. It is not necessary to remove the rear flange castings.
- 2 Attach one rail to the front post flange with two user-supplied screws, item 2.
- 3 Slide the plunger bracket forward against the vertical post and secure the plunger bracket to the post flange with two user-supplied screws, item 3.
- 4 Repeat this procedure for the second rail.

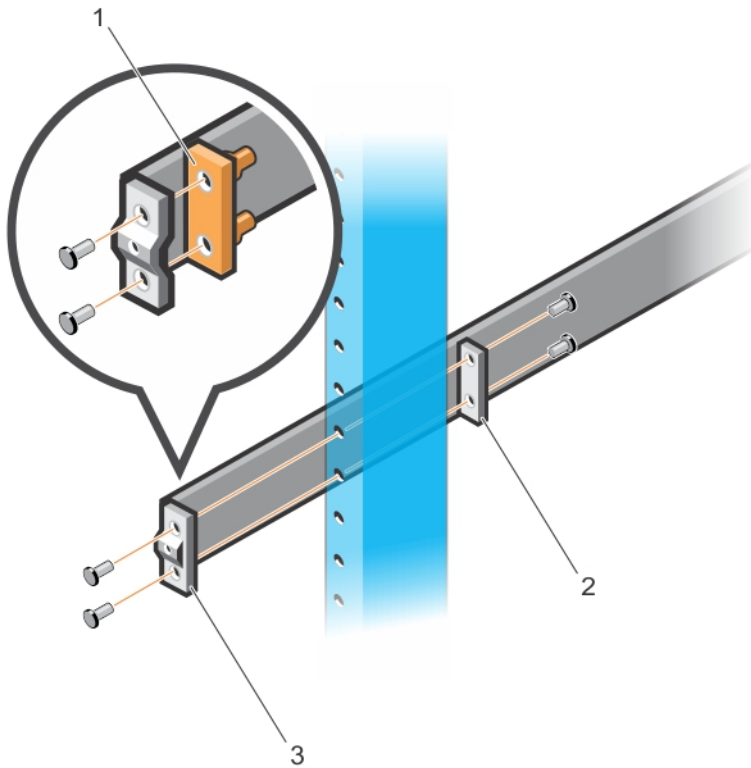


Figure 5. Two-post flush-mount configuration

Two-post center-mount configuration

NOTE: Your system is not NEBS Earthquake Z4-compliant if you use this installation method.

- 1 Slide the plunger bracket rearward until it clicks into place and secure the bracket to the front post flange with two user-supplied screws, item 1.
- 2 Slide the back bracket towards the post and secure it to the post flange with two user-supplied screws, item 2.

- 3 Repeat this procedure for the second rail.

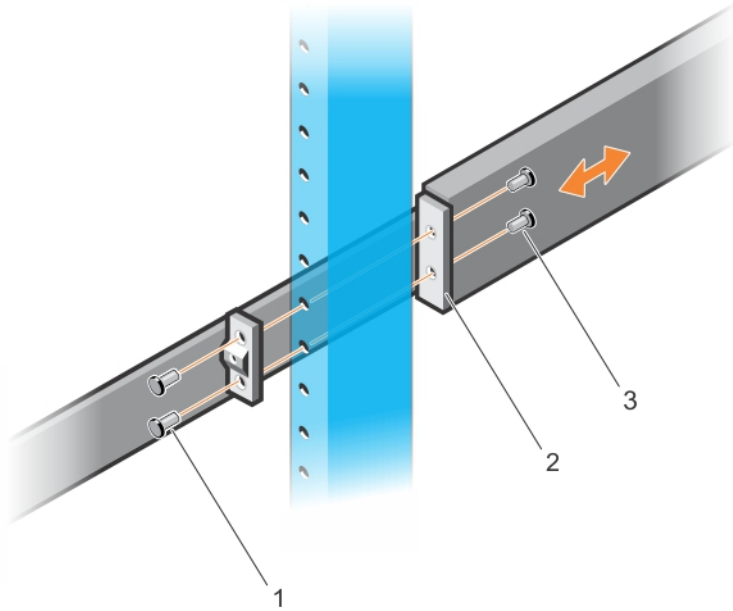


Figure 6. Two-post center-mount configuration

Four-post threaded configuration

NOTE: To be NEBS Earthquake Z4-compliant, you must remove the tool-less latch castings described in Step 1.

- 1 Remove the latch castings from each end of the ReadyRails assemblies.
To remove the two screws from each flange ear and remove the latch castings, use a Torx driver, item 1. Retain the castings for future rack requirements.
- 2 Attach the front and rear flanges of each railing to the post flanges with two user-supplied screws at each end, item 2.

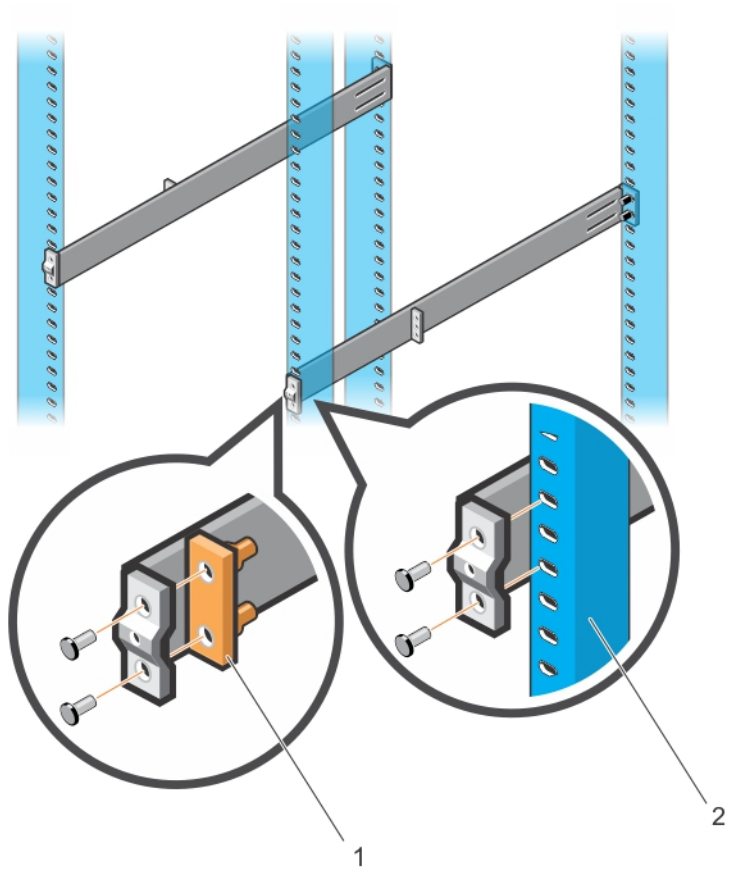


Figure 7. Four-post threaded configuration

System installation

You can mount the system in the 1U front-rack or 1U two-post flush or center configurations. For the 1U two-post flush or center configurations, slide the system into the rails in the same manner as the four-post configurations.

The following is an example of a 1U front-rack configuration:

1U front-rack installation

Configure the rails that are attached to the system.

- 1 Attach the inner-chassis member switch rails to the switch, items 1 and 2. Item 3 shows the detail for the front standoff with the locking tab.

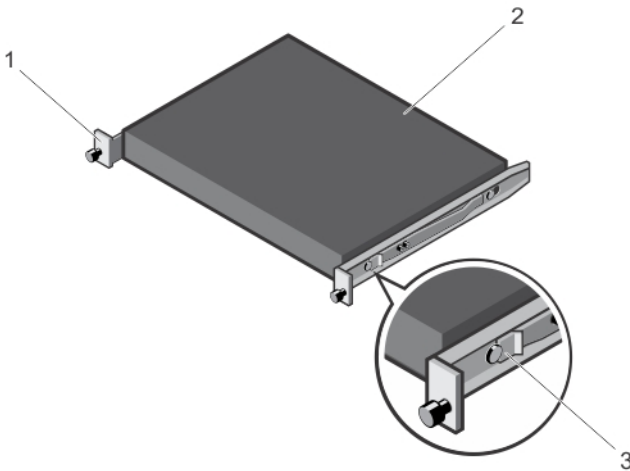


Figure 8. Switch rail attachment

- | | | | |
|---|---------------------------------|---|---------|
| 1 | Locking feature | 2 | Chassis |
| 3 | Front standoff with locking tab | | |
- 2 Line up the installed rails on the mounted ReadyRails. Slide the switch in the rack until it is flush with front of rack, item 1.
About 3 inches before you fully insert your system, the rail locking feature engages. This feature keeps the switch from inadvertently sliding out of the rack and falling, items 2 and 3.

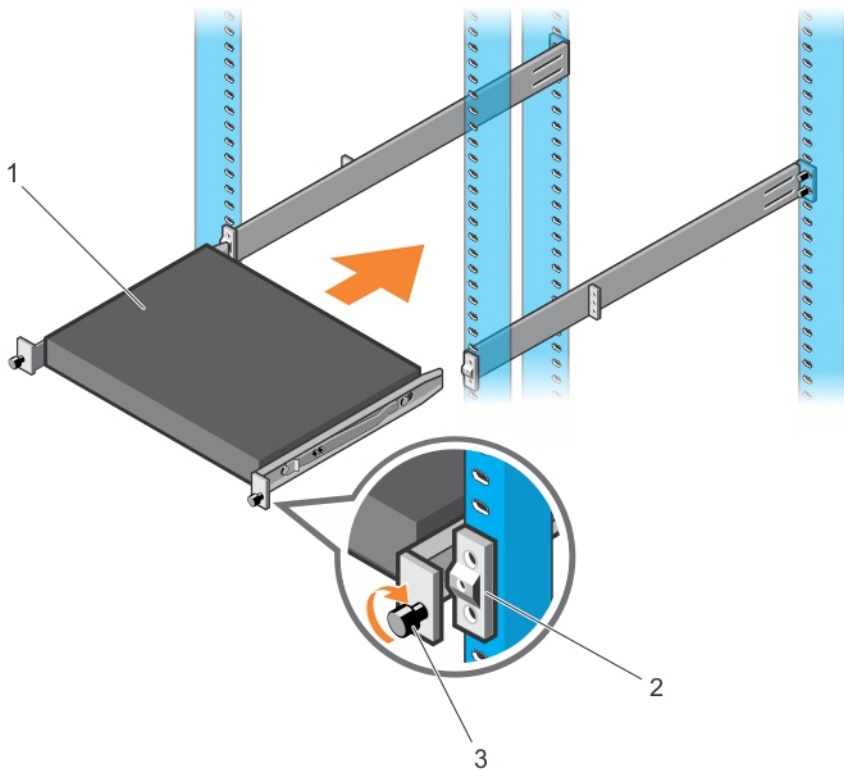


Figure 9. S4048T-ON front-rack configuration installation

- | | | | |
|---|----------------------|---|----------|
| 1 | Chassis | 2 | Rail end |
| 3 | Rail locking feature | | |

Ground wire installation

After you have installed the S4048T-ON switch in a rack, complete the installation of the ground wire.

You previously installed the GND lug and bracket assembly, with ground wire attached, to the S4048T-ON chassis, see [Ground lug and bracket installation](#).

You must supply:

- One two-hole UL-certified GND lug to attach the ground wire to the rack
 - Two National Electric Code (NEC)-compliant screws to attach the GND lug to the rack
 - Anti-oxidant compound
 - Crimping tool
- 1 Measure and cut a length of wire sufficient to reach between the system-installed GND lug and the rack-end GND lug.
 - 2 Attach the end of the wire to the rack-end GND lug.
 - a Coat the bare end of the wire with an anti-oxidant compound.
 - b Insert the end of the wire into the lug.
 - c Crimp the lug end to secure the connection.

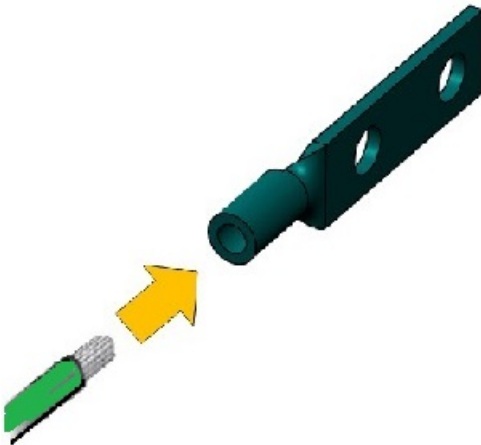


Figure 10. Ground wire and GND lug

- 3 Install the second GND lug in compliance with NEC guidelines on your rack. Use this assembly to ground the switch.
 - a Ensure that the rack mating surface is clean.
 - b Bring any bare metal to a bright finish.
 - c Apply the anti-oxidant compound to the mating surfaces before mating.

AC or DC power supply installation

The S4048T-ON supports two hot-swappable power supplies with integrated fans that provide cooling for the chassis. The system supports AC power supplies with two air-flow directions—I/O to Utility and Utility to I/O.

- 1 Remove the PSU from the electrostatic bag.
- 2 Remove the PSU slot cover from the switch.
- 3 Use the grab handle to slide the PSU into the switch PSU slot.
The PSU slot is keyed such that the PSU can only be fully inserted in one orientation.

The PSU slides into the slot smoothly. Do not force the PSU into a slot as this action may damage the PSU or the chassis.

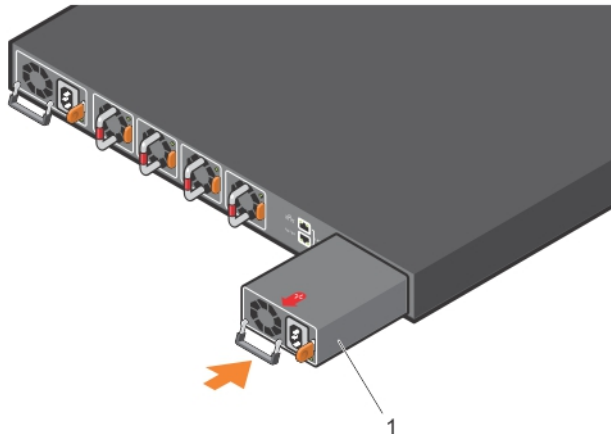


Figure 11. AC or DC PSU installation

- 4 Repeat steps 1 through 3 for the second PSU.

⚠ WARNING: The PSU side includes two slots, PSU1 and PSU2. Although the switch can run on one PSU, Dell highly recommends using two PSUs for full redundancy and more cooling. To avoid overheating when the switch is running with only a single PSU, use PSU1, on the left when facing the PSU side. Cover the second PSU, PSU2, with a blank plate.

- ⚠ **WARNING:** ESD damage can occur if components are mishandled. Always wear an ESD-preventive wrist or heel ground strap when handling the system and its components.
- ⚠ **WARNING:** To prevent electrical shock, ensure that the system is grounded properly. If you ground your equipment incorrectly, excessive emissions may result. To ensure that the power cables meet your local electrical requirements, use a qualified electrician.
- ⚠ **CAUTION:** *DO NOT* mix airflow directions. Both power supplies must use the same airflow direction. The airflow direction of the power supply integrated fans must also match the airflow direction of the fan modules.
- ℹ **NOTE:** Ensure that the PSU is correctly installed. When you correctly install the PSU, the power connector is on the right side of the PSU.
- ℹ **NOTE:** Supply power from the switch PSU to the external power source only after the chassis is mounted in a rack or cabinet.
- ⚠ **CAUTION:** The S4048T-ON contains two power cords. Disconnect both power cords before servicing.

DC power supply to power source connection

Each DC PSU comes with a connector cable. One cable is provided for each DC PSU.

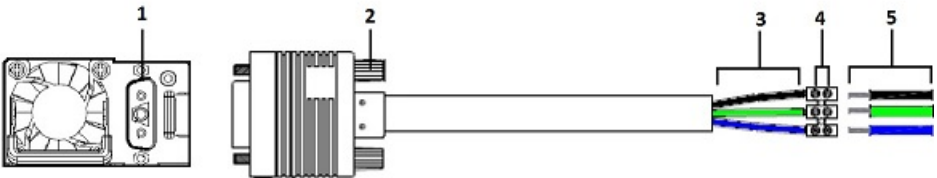


Figure 12. DC power supply and connector cable

- 1 DC PSU power socket
- 2 Cable connector thumb screw
- 3 Cable connector wires—black, green, blue
- 4 Wiring block and screws

- 5 DC power source wires—black, green, blue
- 1 Strip 1/2 inches of insulation from each of the site's DC power source wires, item 5.
- 2 Insert each of the site's DC power source's bare wire lengths into the wiring block, matching wire colors, items 3 and 4.

⚠ WARNING: Do not cross the wires—In the wiring block, blue aligns with blue, green aligns with green, and black aligns with black.

- 3 Use a flat-blade screwdriver to tighten the screws that secure the bare wires into the wiring block.
- 4 Insert the DC power connector cable end into the power socket of the DC PSU and tighten the thumb screws, items 1 and 2.

⚠ WARNING: Never try to force the power connector into or out of the DC PSU power socket.

ⓘ NOTE: To remove the power connector from a DC PSU, unscrew the thumb screws and pull the power connector from the DC PSU socket.

Installing a Fan Module

The four fan modules and the power supplies are hot-swappable if you install a second (redundant) power supply.

ⓘ NOTE: To run the system, the four fan slots must have operating fan units. If you do not install a module in each slot, the system shuts down in one minute.

ⓘ NOTE: The system supports two airflow direction options. You can only use a single direction in a chassis.

- Normal is airflow from the I/O side to the power supply.
- Reversed is airflow from the power supply to the I/O side.

There are environmental factors that could decrease the amount of time required between fan replacements. Check these environmental factors regularly. Any unusual environmental circumstance at the site that causes an increase in temperature and/or particulate matter in the air might affect performance (for example, new equipment installation).

- 1 Remove the fan module from the shipping box.
- 2 Use the grab handle to slide the module into the switch fan slot.

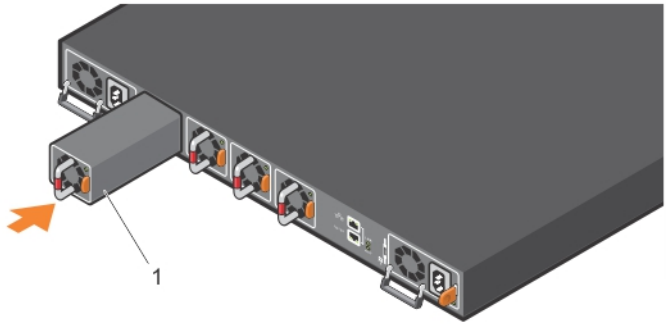


Figure 13. Install the Fan Module

- ⚠ CAUTION: DO NOT mix airflow directions. All fans must use the same airflow direction (I/O to PSU side or PSU to I/O side).**
- ⚠ CAUTION: Check the fans at six-month intervals and replace them as necessary. To accurately determine replacement intervals, regularly monitor the speeds of the cooling fans.**

Installing the SFP+ and QSFP+ Optics

The S4048T-ON system has 48 RJ-45 ports and six quad small form-factor pluggable plus (QSFP+) optical ports.

For a list of supported optics, see the S4048T-ON Specification Sheet at <https://www.dell.com/support/> or contact your Dell Networking representative.

- ⚠ CAUTION: ESD damage can occur if the components are mishandled. Always wear an ESD-preventive wrist or heel ground strap when handling the system and its components.**
- ⚠ WARNING: When working with optical fibers, follow all the 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: Both rows of QSFP+ ports require that you install the 40 GbE optics with the tabs facing up.

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

Supply Power and Power Up the System

Dell Networking recommends reinspecting your system prior to powering up. Connecting the power cable powers up the switch.

Verify that:

- The equipment is properly secured to the rack.
- 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 specified for the system.
- 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: ESD damage can occur if the components are mishandled. Always wear an ESD-preventive wrist or heel ground strap when handling the system and its components.

Supply power to the system:

- Plug in the appropriate cord (AC 3 prong or DC wiring) from the switch PSU to the external power source (either AC wall outlet or DC rack bus bar). Make sure that the power cord is secure. When the cable is connected between the system and the power source, the switch is powered up; there is no on/off switch.
- When the system powers up, the fans come on at high speed. The fan speed slows as the system boots up. The power status LED blinks until the boot-up sequence is complete. When the boot up is complete, the power status LED is steadily lit.

After Installing the S4048T-ON

After you have securely installed and powered on the S4048T-ON, to configure your system, see your ONIE-compatible operating system documentation.

Software configuration

- NOTE:** This section applies **ONLY** if you already have Dell Networking OS 9.x installed on your system from the factory. If you are installing a third-party OS, see your third-party OS documentation.
- NOTE:** For further information on the S4048T-ON system, see the documents listed in [About this guide](#).

Topics:

- [Initial configuration information](#)
- [Navigating CLI modes](#)
- [Console access](#)
- [RJ-45 console port access](#)
- [Default configuration](#)
- [Layer 2 data link configuration](#)
- [Host name configuration](#)
- [Remote access](#)
- [Enable password configuration](#)
- [Port-based VLAN creation](#)
- [System connection](#)

Initial configuration information

To set up the switch, assign an IP address and other configuration information necessary for the switch to communicate with the local routers and the Internet. The minimal configuration provided here does not cover most of the features. This information simply allows you to perform other configuration tasks using a Telnet connection from your management network.

IP settings

To set up the switch, get the following information from your network administrator:

- Switch IP address
- Subnet mask—IP netmask
- Default gateway—router
- Enable secret password
- Enable password
- Telnet password

Navigating CLI modes

The Dell OS prompt changes to indicate the CLI mode.

You move linearly through the command modes, except for the `end` command which takes you directly to EXEC Privilege mode. The `exit` command moves you up one command mode level.

Console access

The RS-232 console port is on the right-hand side of the S4048T-ON system as you face the PSU side of the chassis, as shown.

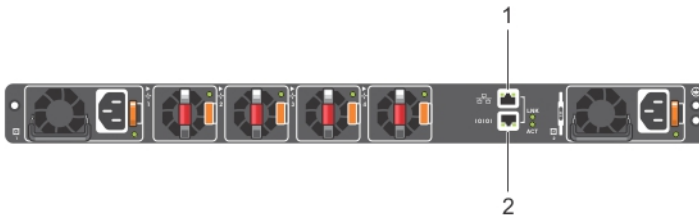


Figure 14. S4048T-ON RS-232 management and console ports

- 1 RS-232 console port

2 RJ-45 management port

NOTE: You must have a password configured on a virtual terminal line before you can Telnet into the S4048T-ON system. Therefore, use a console connection when connecting to the system for the first time. Before starting this procedure, be sure that you have a terminal emulation program already installed on your PC.

- 1 Install an RJ-45 copper cable into the console port.
Use a rollover cable to connect the S4048T-ON console port to a terminal server.
- 2 Connect the other end of the cable to the DTE terminal server.
- 3 Set the default terminal settings as follows:
 - 115200-baud rate—set the Micro USB console port to the same rate
 - No parity
 - Eight data bits
 - One stop bit
 - No flow control

RJ-45 console port access

You can connect to the console using an RJ-45 to RJ-45 rollover cable and an RJ-45 to DB-9 female DTE adapter to a terminal server; for example, a PC.

The pin assignments between the console and a DTE terminal server are as follows:

Table 1. Pin assignments between the console and a DTE terminal server

S4048T-ON console port	RJ-45 to RJ-45 rollover cable	RJ-45 to RJ-45 rollover cable	RJ-45 to DB-9 adapter	Terminal server device
Signal	RJ-45 Pinout	RJ-45 Pinout	DB-9 Pin	Signal
NC	1	8	8	CTS
NC	2	7	6	DSR
TxD	3	6	2	RxD
GND	4	5	5	GND
GND	5	4	5	GND
RxD	6	3	3	TxD

S4048T-ON console port	RJ-45 to RJ-45 rollover cable	RJ-45 to RJ-45 rollover cable	RJ-45 to DB-9 adapter	Terminal server device
Signal	RJ-45 Pinout	RJ-45 Pinout	DB-9 Pin	Signal
NC	7	2	4	DTR
NC	8	1	7	RTS

Default configuration

When you install the Dell OS onto your system, it is not configured when you power up for the first time, except for the default host name, which is `Dell`.

Configure the system using the CLI.

Layer 2 data link configuration

To enable Layer 2 data transmissions through an individual interface, use the `switchport` command in `INTERFACE` mode.

NOTE: For detailed information about configuring Layer 2, see the *Dell Networking Configuration Guide for the S4048T-ON System*.

You cannot configure switching or Layer 2 protocols such as spanning tree protocol (STP) on an interface unless the interface is set to Layer 2 mode.

- 1 Enable the interface.
`INTERFACE` mode

`no shutdown`
- 2 Place the interface in Layer 2 switching mode.
`INTERFACE` mode

`switchport`

To view the interfaces in Layer 2 mode, use the `show interfaces switchport` command in `EXEC` mode.

Host name configuration

The host name appears in the prompt. The default host name is `De11`.

Host names must start with a letter, end with a letter or digit, and must have characters, letters, digits, and hyphens in the string.

- Create a host name.
CONFIGURATION mode

```
hostname name
```

Remote access

You can configure the S4048T-ON system for Telnet remote access.

The system has a dedicated management port and a management routing table that is separate from the IP routing table.

Configure as described in the following sections:

- *Management port configuration*
- *Management port configuration*
- *Username and password configuration*

Management port configuration

- 1 Enter INTERFACE mode for the Management port.
To access the system remotely, assign IP addresses to the management ports.

```
CONFIGURATION mode
```

```
interface ManagementEthernet slot/port
```

- 2 Assign an IP address to the interface.
INTERFACE mode

```
ip address ip-address/mask
```

- 3 Enable the interface.

```
INTERFACE mode
```

```
no shutdown
```

Management route configuration

Define a path from the S4048T-ON to the network from which you are accessing the S4048T-ON remotely.

Management routes are separate from IP routes and are used to manage the S4048T-ON through the management port.

- Configure a management route to the network from which you are accessing the system.

```
CONFIGURATION mode
```

```
management route ip-address/mask gateway
```

Username and password configuration

To access the system remotely, configure a system username and password.

- To access the system remotely, configure a username and password.

```
CONFIGURATION mode
```

```
username username password [encryption-type]
```

Enable password configuration

Access EXEC Privilege mode using the `enable` command. EXEC Privilege mode is unrestricted by default. As a basic security measure, configure a password.

There are two types of enable passwords:

- Enable password—stores the password in the running/startup configuration using a data encryption standard (DES)-encryption method.
- Enable secret—stores the password in the running/startup configuration using a stronger, MD5-encryption method.

Dell Networking recommends using the `enable secret` password.

- To access EXEC Privilege mode, create a password.

CONFIGURATION mode

```
enable [password | secret] [level level] [encryption-type]
password
```

Port-based VLAN creation

The default VLAN, *VLAN 1*, is part of the system startup configuration and does not require configuration.

To configure a port-based VLAN, create the VLAN and then add physical interfaces or port channel (LAG) interfaces to the VLAN.

- Configure a port-based VLAN if the *vlan-id* is different from the Default VLAN ID. Enter INTERFACE VLAN mode.

CONFIGURATION mode

```
interface vlan vlan-id
```

After you create a VLAN, assign interfaces in Layer 2 mode to the VLAN as needed.

To view the configured VLANs, use the `show vlan` command in EXEC Privilege mode.

System connection

After you have completed the hardware installation and software configuration for the system, connect to your company network by following your company's cabling requirements.

Technical specifications

NOTE: Operate the system at an ambient temperature not higher than 113°F (45°C).

CAUTION: Lithium Battery Caution: To avoid the possibility of an explosion, always replace the battery correctly.

NOTE: Replace the battery only with the same or an equivalent type. Dispose of the batteries according to the manufacturer's instructions.

Table 2. S4048T-ON chassis physical design

Parameter	Specifications
Height	1.71 inches (43.5 mm).
Width	17.09 inches (434 mm).
Depth	Chassis: 18.11 inches (460 mm). PSU latch: 1.12 inches (28 mm).
Chassis weight with factory-installed components	23 lbs (10.43 kg) (2*PSUs).
Rack clearance required	I/O side: 5 inches (12.7 cm). PSU side: 5 inches (12.7 cm).

Table 3. Environmental parameters

Parameter	Specifications
Operating temperature	32° to 113°F (0° to 45°C).
Operating humidity	5 to 90 percent (RH), noncondensing.

Parameter	Specifications
Storage temperature	-40° to 158°F (-40° to 70°C).
Storage and nonoperating humidity	5 to 95 percent (RH), noncondensing.
Maximum thermal output	1568 BTH/hr.
Maximum operational altitude	10,000 feet (3,048 meters).
Maximum nonoperational altitude	No performance degradation to 35,000 feet (10,668 meters).
Shock	Meets Bellcore Zone 4 earthquake requirements (MIL-STD-810).

Table 4. AC power requirements

Parameter	Specifications
Power Supply	100–240 VAC 50/60 Hz.
Maximum current draw per system	4.6 A @ 460 watts/100vac. 2.3 A @ 460 watts/200vac.
Maximum Power Consumption	460 Watts.
Typical Power Consumption	338 Watts.

Table 5. DC power requirements

Parameter	Specifications
Minimum/maximum input voltage range	-40.5V/ -48V/ -60V
Input power at full load	-40.5V/970W -48V/930W -60V/ 950W (without fan). -40.5V/980W -48V/940W -60V/ 960W (with fan).
Input current at full load	-40.5V/23.8A -48V/19.0A -60V/ 15.6A (without fan).

Parameter	Specifications
	-40.5V/24.0A -48V/19.2A -60V/ 16.0A (with fan).
Start up VDC (voltage when the system is powered on)	39.0+/-1.5V.
Start off VDC (voltage during the boot up process)	37.5+/-1.5V.