



# **Installation**

## **Avaya Virtual Services Platform 4000**

Release 3.0.0.0  
NN46251-300  
Issue 01.01  
May 2013

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# Chapter 1: Avaya Virtual Services Platform 4000 regulatory information and safety precautions

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## International regulatory statements of conformity

The Avaya Virtual Services Platform 4000 series was evaluated and is certified to the international regulatory standards for electromagnetic compliance (EMC) and safety and were found to have met the requirements for the following international standards:

- EMC - Electromagnetic Emissions - CISPR 22, Class A
- EMC - Electromagnetic Immunity - CISPR 24
- Electrical Safety - IEC 60950, with CB member national deviations

The equipment has been certified as compliant with the national standards as detailed in the following sections.

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## National electromagnetic compliance (EMC) statements of compliance

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### FCC statement (USA only)

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the Federal Communications Commission (FCC) rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy. If it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users will be required to take whatever measures may be necessary to correct the interference at their own expense.

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## ICES statement (Canada only)

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### Canadian Department of Communications Radio Interference Regulations

This digital apparatus (Avaya Virtual Services Platform 4000 Series) does not exceed the Class A limits for radio-noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

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### Règlement sur le brouillage radioélectrique du ministère des Communications

Cet appareil numérique (Avaya Virtual Services Platform 4000 series) respecte les limites de bruits radioélectriques visant les appareils numériques de classe A prescrites dans le Règlement sur le brouillage radioélectrique du ministère des Communications du Canada.

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## CE marking statement (Europe only)

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### EN 55022 statement

This is to certify that the Avaya Virtual Services Platform 4000 series equipment is shielded against the generation of radio interference in accordance with the application of Council Directive 89/336/EEC. Conformity is declared by the application of EN 55022 Class A (CISPR 22).

**Caution:**

This device is a Class A product. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users are required to take appropriate measures necessary to correct the interference at their own expense.



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## EN 55024 statement

This is to certify that the Avaya Virtual Services Platform 4000 series equipment is shielded against the susceptibility to radio interference in accordance with the application of Council Directive 89/336/EEC. Conformity is declared by the application of EN 55024 (CISPR 24).

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## EN 300386 statement

The Avaya Virtual Services Platform 4000 series equipment complies with the requirements of EN 300386 V1.4.1 for emissions and for immunity for a Class A device intended for use in either Telecommunications centre or locations other than telecommunications centres given the performance criteria as specified by the manufacturer.

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## European Union and European Free Trade Association (EFTA) notice



All products labeled with the CE marking comply with R&TTE Directive (1995/5/EEC) which includes the Electromagnetic Compliance (EMC) Directive (89/336/EEC) and the Low Voltage Directive (73/336/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms (ENs). The equivalent international standards are listed in parenthesis.

- EN 55022 (CISPR 22)–Electromagnetic Interference
- EN 55024 (IEC 61000-4-2, -3, -4, -5, -6, -8, -11)–Electromagnetic Immunity
- EN 61000-3-2 (IEC 61000-3-2)–Power Line Harmonics
- EN 61000-3-3 (IEC 61000-3-3)–Power Line Flicker

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## VCCI statement (Japan/Nippon only)

This is a Class A product based on the standard of the Voluntary Control Council for Interference (VCCI) for information technology equipment. If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

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警告使用者：

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## MIC notice (Republic of Korea only)

This device has been approved for use in Business applications only per the Class A requirements of the Republic of Korea Ministry of Information and Communications (MIC). This device may not be sold for use in a non-business application.

Observe the Regulatory Marking label on the back or bottom of each switch for specific certification information pertaining to this model. Each Avaya Virtual Services Platform 4000 Series model is approved for shipment to/usage in Korea and is labeled as such, with all appropriate text and the appropriate MIC reference number.

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## National Safety Statements of Compliance

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### EN 60950 statement

This is to certify that the Avaya Virtual Services Platform 4000 series equipment is in compliance with the requirements of EN 60950 in accordance with the Low Voltage Directive. Additional national differences for all European Union countries have been evaluated for compliance.

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Input:	Avaya Virtual Services Platform 4000 Series: <ul style="list-style-type: none"><li>• 4850GTS 100–240 VAC 5 A MAX 50–60 Hz</li><li>• 4850GTS-PWR+ 100–240 VAC 12 A MAX 50–60 Hz</li></ul>

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Embarcar a:	Avaya Virtual Services Platform 4000 Series: <ul style="list-style-type: none"><li>• 4850GTS 100–240 VAC 5 A MAX 50–60 Hz</li><li>• 4850GTS-PWR+ 100–240 VAC 12 A MAX 50–60 Hz</li></ul>

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## Restriction on Hazardous Substances Directive Compliance Statement

The Restriction on Hazardous Substances Directive (RoHS) (2002/95/EC), which accompanies the WEEE Directive, bans the use of heavy metals and brominated flame-retardants in the manufacture of electrical and electronic equipment. Specifically, restricted materials under the RoHS Directive are Lead (including solder used in PCB's), Cadmium, Mercury, Hexavalent Chromium, and Bromine.

Avaya declares compliance with the European Union (EU) RoHS Directive (2002/95/EC) in that Lead, which is a restricted hazardous substance, is used only in accordance to the exemption(s) to Article 4(1), item 7 granted by the European Union (EU) RoHS Directive (2002/95/EC) in the Annex—"lead in solders for network infrastructure equipment for switching, signalling, transmission as well as network management for telecommunication".

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## WEEE Directive Compliance Statement



This product at end of life is subject to separate collection and treatment in the EU Member States, Norway, and Switzerland and therefore is marked with the symbol shown at the left. Treatment applied at end of life of these products in these countries shall comply with the applicable national laws implementing Directive 2002/96/EC on Waste of Electrical and Electronic Equipment (WEEE).

Avaya declares compliance with the European Union (EU) WEEE Directive (2002/96/EC).



# Chapter 2: Introduction

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## Purpose

This guide provides information and instructions to install a Virtual Services Platform 4000 (VSP 4000) system.

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## Related Resources

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## Documentation

See the *Avaya Virtual Services Platform 4000 Documentation Roadmap*, NN46251–100 for a list of the documentation for this product.

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## Training

Ongoing product training is available. For more information or to register, you can access the Web site at [www.Avaya-learning.com](http://www.Avaya-learning.com).

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# Chapter 3: New in this release

*Avaya Virtual Services Platform 4000 Installation, NN46251–300* is a new document for release 3.0.0.0, so all features are new in this release.

New in this release

# Chapter 4: Hardware compatibility

The following tables describe the Avaya Virtual Services Platform 4000 hardware.

**Table 1: Hardware**

VSP 4000 model	Description	Part number
VSP 4850GTS	<ul style="list-style-type: none"> <li>• 48 10/100/1000 BaseTX RJ-45 ports</li> <li>• two SFP ports</li> <li>• two SFP+ ports</li> <li>• Base Software License</li> <li>• one field replaceable 300W PSU</li> </ul>	EC4800A78-E6
	• Same content as EC4800A78-E6 with a EU power cord.	EC4800B78-E6
	• Same content as EC4800A78-E6 with a UK power cord.	EC4800C78-E6
	• Same content as EC4800A78-E6 with a JP power cord.	EC4800D78-E6
	• Same content as EC4800A78-E6 with a NA power cord.	EC4800E78-E6
	• Same content as EC4800A78-E6 with a EU power cord.	EC4800F78-E6
VSP 4850GTS-PWR+	<ul style="list-style-type: none"> <li>• 48 10/100/1000 802.3at PoE+</li> <li>• two SFP ports</li> <li>• two SFP+ ports</li> <li>• Base Software License</li> <li>• one field replaceable 1000W PSU</li> </ul>	EC4800A88-E6
	• Same content as EC4800A88-E6 with a EU power cord.	EC4800B88-E6
	• Same content as EC4800A88-E6 with a UK power cord.	EC4800C88-E6

VSP 4000 model	Description	Part number
	<ul style="list-style-type: none"> <li>• Same content as EC4800A88-E6 with a JP power cord.</li> </ul>	EC4800D88-E6
	<ul style="list-style-type: none"> <li>• Same content as EC4800A88-E6 with a NA power cord.</li> </ul>	EC4800E88-E6
	<ul style="list-style-type: none"> <li>• Same content a EC4800A88-E6 with a AU power cord.</li> </ul>	EC4800F88-E6
VSP 4850GTS DC	<ul style="list-style-type: none"> <li>• 48 10/100/1000 Base TX RJ-45 ports</li> <li>• two shared SFP ports</li> <li>• two 10GE SFP+ ports</li> <li>• one field replaceable 300W DC PSU</li> </ul>	EC4800078-E6
<b>Redundant power supplies</b>		
300W AC redundant power supply	For use in the ERS 4626GTS, 4850GTS, VSP 4850GTS and WL8180, WL8180-16L wireless controllers. [EUED RoHS 5/6 compliant].	AL1905?08-E5*
Stackable 1000W AC POE+ power supply.	For use in 4X00 PWR+,	AL1905?21-E6*
Redundant 300W DC power supply.	For use in the VSP 4850GTS-DC, ERS5698TFD, 5650TD, and 5632FD. (EUED RoHS 5/6 compliant). DC connector included	AL1905005-E5
<p><b>*Note:</b> The seventh character (?) of the switch order number must be replaced with the proper letter to indicate desired product nationalization. See the following for details:</p> <p>“A”: No power cord included.</p> <p>“B”: Includes European “Schuko” power cord common in Austria, Belgium, Finland, France, Germany, The Netherlands, Norway, and Sweden.</p> <p>“C”: Includes power cord commonly used in the United Kingdom and Ireland.</p> <p>“D”: Includes power cord commonly used in Japan.</p> <p>“E”: Includes North American power cord.</p> <p>“F”: Includes Australian power cord.</p>		

**Table 2: Compatible SFPs and SFP+s**

For more information about SFP and SFP+, see *Avaya Virtual Services Platform 4000 Installation — SFP and SPF + transceivers* (NN46251–301).

Hardware	Description	Part number
10GBASE-LR/LW SFP+	1310 nm SMF with a range up to 10 km	AA1403011-E6
10GBASE-ER/EW SFP+	1550 nm SMF with a range up to 40 km	AA1403013-E6
10GBASE-SR/SW SFP+	850nm with a range up to 300 m	AA1403015-E6

Hardware	Description	Part number
10GBASE ZR/ZW SFP+	1550 nm 70km SMF	AA1403016-E6
10GBASE-ER CWDM SFP+	1470 to 1610 nm with a range up to 40 km	AA1403153-E6 to AA1403160-E6
10GBASE-LRM SFP+	220 m, 1260 to 1355 nm; 1310 nm nominal MMF	AA1403017-E6
10GBase-CX	4-pair twinaxial copper cable that plugs into the SFP+ socket and connects two 10 Gb ports. The maximum range is 10m.	AA1403018-E6
10GBase-CX	4-pair twinaxial copper cable that plugs into the SFP+ socket and connects two 10 Gb ports. The maximum range is 3m.	AA1403019-E6
10GBase-CX	4-pair twinaxial copper cable that plugs into the SFP+ socket and connects two 10 Gb ports. The maximum range is 5m.	AA1403020-E6
1000BASE-T (RJ-45) SFP	Gigabit Ethernet, RJ-45 connector	AA1419043-E6
1000BASE-SX (LC) DDI	850 nm, Gigabit Ethernet, duplex LC connector	AA1419048-E6
1000BASE-LX (LC) DDI	1310 nm, Gigabit Ethernet, duplex LC connector	AA1419049-E6
1000BASE-XD DDI	1310 nm, Gigabit Ethernet, duplex LC connector	AA1419050-E6
	1550 nm, Gigabit Ethernet, duplex LC connector	AA1419051-E6
1000BASE-ZX DDI	1550 nm, Gigabit Ethernet, duplex LC connector	AA1419052-E6
1000BASE-XD CWDM (LC)	1470 nm to 1610 nm, up to 40 km	AA1419053-E6 to AA1419060-E6
1000BASE-ZX CWDM (LC)	1470 nm to 1610 nm, up to 70 km	AA1419061-E6 to AA1419068-E6
1000BASE-BX bidirectional SFP	1310 nm, single fiber LC, up to 10 km	AA1419069-E6
1000BASE-BX bidirectional SFP	1490 nm, single fiber LC, up to 10 km	AA1419070-E6
1000BASE-EX DDI SFP	1550 nm, up to 120 km	AA1419071-E6
1000BASE-BX bidirectional SFP	1310 nm, single fiber LC, up to 40 km	AA1419076-E6
1000BASE-BX bidirectional SFP	1490 nm, single fiber LC, up to 40 km	AA1419077-E6

Hardware	Description	Part number
100BASE-FX SFP	1310 nm, LC connector	AA1419074-E6

**Important:**

Avaya recommends the use of Avaya branded SFP and SFP+ transceivers as they have been through extensive qualification and testing. Avaya will not be responsible for issues related to non-Avaya branded SFP and SFP+ transceivers.

# Chapter 5: Installing the Avaya Virtual Services Platform 4000

This section provides the information and procedures to install the Avaya Virtual Services Platform 4000.

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## Installation fundamentals

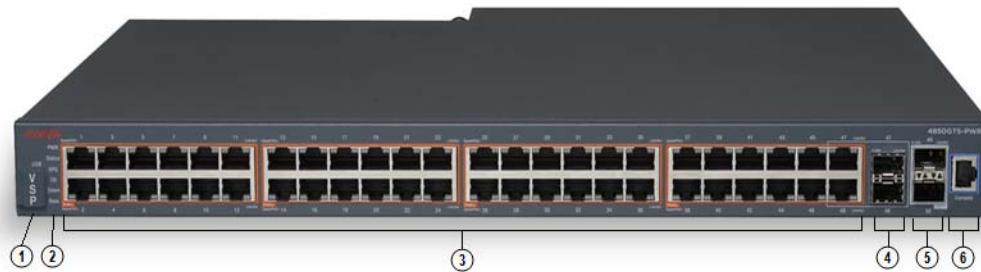
The VSP 4000 consists of:

- 48 10/100/1000 Base TX ports
  - RJ-45 for the VSP 4850GTS and VSP 4850GTS DC models
  - 802.3at PoE+ for the VSP 4850GTS-PWR+ model
- two combo SFP ports
  - These ports support copper and fiber on the same switch port. Only one medium type can be active at any time.
  - There is an RJ-45 connector and an SFP slot for each combo port. A cable can be inserted into either or both medium types.
  - Fiber connections take precedence over copper.
  - Configuration for the port is applicable to both medium types. For example, auto-negotiation configuration applies to both the copper and fiber ports.
- two SFP + ports



**Figure 1: VSP 4850GTS**

1. VSP 4000 USB cover
2. Switch LEDs
3. 10/100/1000 ports (LEDs above ports)
4. Combo port SFP slots. Supports Avaya 1G SFPs and 100Base low speed SFPs.
5. SFP+ slots. Supports Avaya's 1G SFPs and 10G SFP+s.
6. Console Port



**Figure 2: VSP 4850GTS-PWR+**

1. VSP 4000 USB cover
2. Switch LEDs
3. 10/100/1000 PoE+ ports (LEDs above ports)
4. Combo port SFP slots. Supports Avaya 1G SFPs and 100Base low speed SFPs.
5. SFP+ slots. Supports Avaya's 1G SFPs and 10G SFP+s.
6. Console Port



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## Electrostatic discharge

This section provides information and procedures to prevent electrostatic discharge during installation.

---

### Preventing electrostatic discharge damage

Electrostatic discharge (ESD) is a discharge of stored static electricity that can damage equipment and impair electrical circuitry. Electrostatic voltages can result from friction including, pulling cabling through conduits, walking across carpeted areas, and building static charge in clothing. When you improperly handle electronic components, ESD damage occurs and can result in complete or intermittent failures. While networking equipment is commonly designed and tested to withstand common mode ESD events, voltage can sometimes discharge to some connector pins, which can potentially damage the networking equipment.

**Caution:**

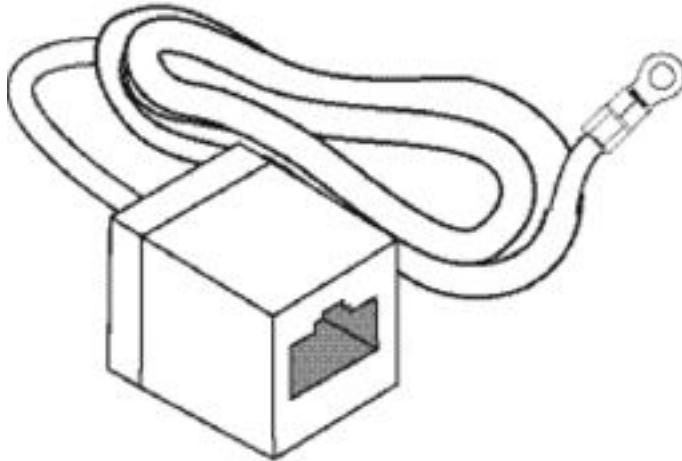
To protect the Avaya VSP 4000 against ESD damage, take the following measures before you connect data cables to the device:

- Always use antistatic wrist straps. Make sure you adjust the strap to provide good skin contact.
- Ensure that you properly ground work surfaces and equipment racks for protection against electrostatic discharge. You must connect the common point to the building ground wire. In a properly wired building, the nearest reliable ground is typically at the electrical outlet.
- Avoid contact between equipment and clothing. The wrist or ankle strap protects only the equipment from ESD voltages on the body; ESD voltages on clothing can still cause damage.
- Avoid touching any connector pins.
- Do not remove the wrist or ankle strap until the installation is complete.

---

### Preventing electrostatic damage in new cable installations

With new cable installations, Avaya recommends that you use an ESD discharge cable to reduce the potential for damage from static, that can build up in cables. The following figure illustrates an ESD cable.



**Figure 3: Job aid**

To install the ESD discharge cable, perform this procedure.

1. Connect the ground lug on the ESD discharge cable to a safe and suitable earth ground.
2. Connect all RJ-45 cable connectors to the female RJ-45 connector of the ESD discharge cable for at least 5 seconds, and then connect each RJ-45 cable connector to the switch.
3. Leave cables connected to the networking equipment. After you connect cables to networking equipment, the cables do not build up charge.

---

## Environmental requirements

The following table provides the environmental requirements for the individual switches in this series. Ensure that the area where you install the switch and where it operates meets these requirements.

**Table 3: Avaya Virtual Services Platform 4000 environmental requirements**

Environmental requirement	Avaya Virtual Services Platform 4000 models
Ambient Temperature	0°C to 50°C (32°F to 104°F), continuous operation
Operating Temperature	0°C to 50°C (32°F to 104°F)
Storage Temperature	-40°C to 85°C (-13°F to 158°F)
Operating Humidity	0 to 95 percent noncondensing
Operating Relative Humidity	10 to 90 percent noncondensing

Environmental requirement	Avaya Virtual Services Platform 4000 models
Storage Relative Humidity	10 to 90 percent noncondensing
Maximum Operating Altitude	3,048m (10 000 feet) above sea level
Altitude	0 to 3,048m (0 to 10,000ft) above sea level
Storage Altitude	0 to 12,192m (0 to 40,000ft) above sea level
Acoustic Noise	Less than or equal to 45 db at 35°C and less than or equal to 57 db at 50°C. The temperature is allowed to have $\pm 3.5^\circ\text{C}$ deviation around the threshold of 35C, (measurement methods based on ISO 7779).
Miscellaneous Operating Considerations	<ul style="list-style-type: none"> <li>• No heat sources such as hot air vents or direct sunlight near the switch.</li> <li>• No sources of severe electromagnetic interference near the switch.</li> <li>• No excessive dust in the environment.</li> <li>• An adequate power source is within 6 feet (1.83 meters) of the switch. One 15-amp circuit is required for each power supply.</li> <li>• At least 2 inches (5.08 centimeters) of clearance on each side of the switch unit for ventilation.</li> <li>• Adequate clearance at the front and rear of the switch for access to cables.</li> </ul>

**Warning:**

To avoid bodily injury from hazardous electrical shock and current, never remove the top of the device. No user-serviceable components are inside. For a translation of this statement, see [Translations of safety messages](#) on page 45.

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## Package contents

The following describes the components that are provided with each switch. If any components are missing, contact the switch vendor.

1. Avaya Virtual Services Platform 4000
2. Rack-mounting hardware that includes:
  - Rack-mount brackets
  - Screws to attach brackets to the switch

- Screws to attach the switch to the equipment rack
3. Rubber footpads
  4. AC power cord
  5. Documentation

**Note:**

Cable trays can be provided as an option.

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## Installing the Avaya Virtual Services Platform 4000 on a table or shelf

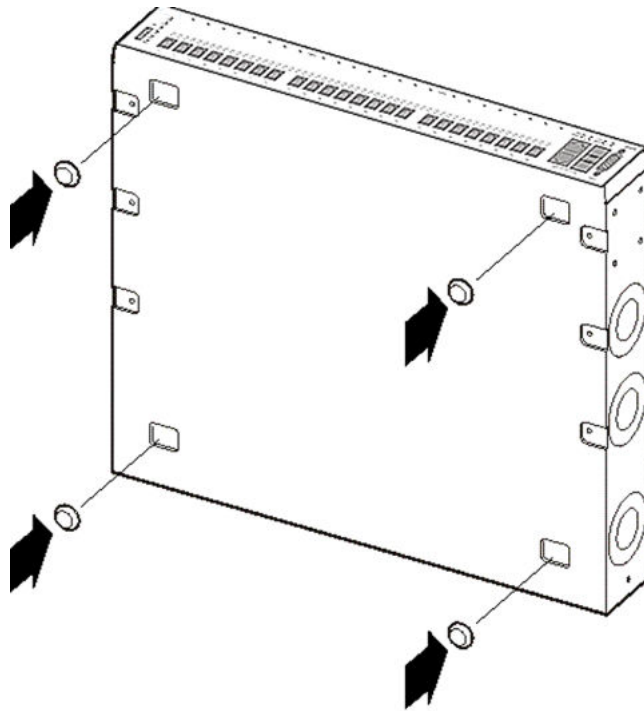
You can install a single Avaya VSP 4000 switch on any flat surface. The surface must support the combined weight of the switch and attached cables (from 15 and 20 pounds [7 to 9 kilograms]).

To install an Avaya VSP 4000 on a table or shelf, perform this procedure.

**Caution:**

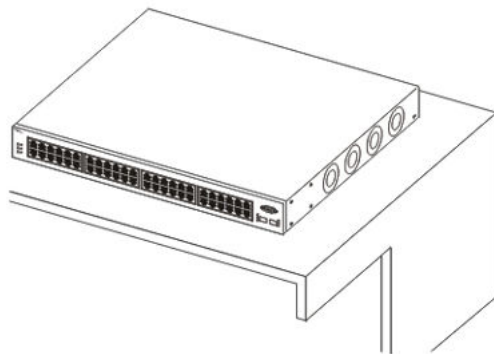
Do not place an Avaya Ethernet Power Supply Unit or Avaya Ethernet Redundant Power Supply on top of an Avaya VSP 4000. The switch housing of an Avaya VSP 4000 cannot support the weight of these units. For a translation of this statement, see [Translations of safety messages](#) on page 45.

1. Attach the included rubber footpads on the bottom of the switch at the locations.



10753FC

2. Set the switch on a table or shelf as illustrated below. Allow at least 2 inches (5.1 centimeters) on each side for proper ventilation and at least 5 inches (12.7 centimeters) at the back for power cord clearance.



10754FC

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## Installing the Avaya Virtual Services Platform 4000 in an equipment rack

To install an Avaya VSP 4000 switch in an equipment rack, perform this procedure.

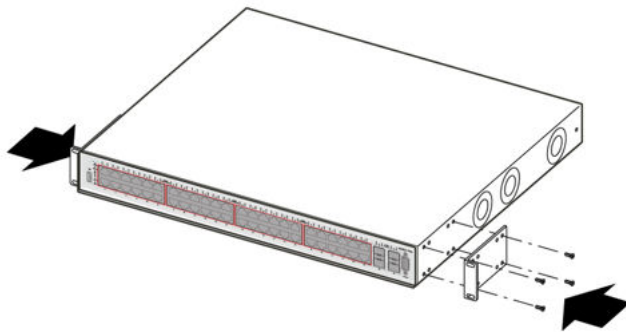
Prerequisites for installing the Avaya Virtual Services Platform 4000 in an equipment rack:

- Ensure that you have a space of 1.75 inches (4.45 centimeters) in height for each switch in an EIA or IEC-standard 19-inch (48.2-centimeter) equipment rack.
- The rack is bolted to the floor and braced if necessary.
- The rack is grounded to the same grounding electrode used by the power service in the area. The ground path must be permanent and must not exceed 1 Ohm of resistance from the rack to the grounding electrode.

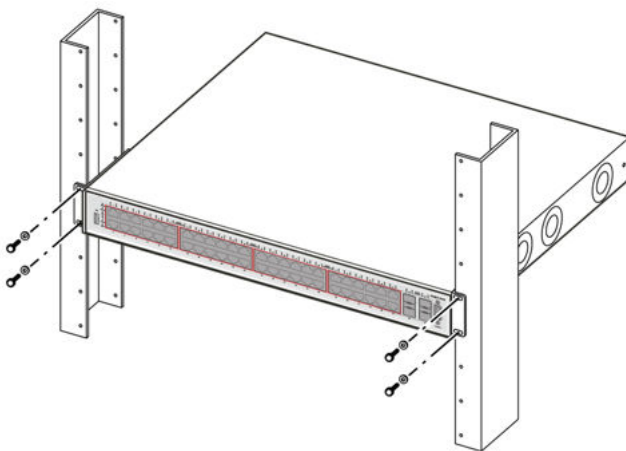
**Caution:**

When you mount the device in a rack, do not stack units directly on top of one another. You must secure each unit to the rack with the appropriate mounting brackets. Mounting brackets cannot support multiple units. For a translation of this statement, see [Translations of safety messages](#) on page 45.

1. Remove the screws that hold the USB cover, but do not remove the USB cover.
2. Attach a bracket to each side of the switch using a #2 Phillips screwdriver as illustrated below. The bracket goes over the USB cover.



3. Slide the switch into the rack as illustrated.



4. Insert and tighten the rack-mount screws.

---

## Cable requirements for the Avaya Virtual Services Platform 4000

The following table describes the cables required for a an Avaya Virtual Services Platform 4000 switch.

**Table 4: Switch cable requirements**

Required Cable	Description
10/100/1000Base TX Ports	The interconnect cabling must conform to the Cat5e, Cat6, or Cat6e specification of the Commercial Building Telecommunications Cabling Standard, ANSI/TIA/EIA 568-B fitted with an RJ-45 Module jack.
10/100Base TX Ports	The interconnect cabling for 10BaseT Ethernet must conform to Cat3, Cat4, Cat5 (or better) UTP cabling for distances up to 100 meters. The interconnect cabling for 100BaseTX Fast Ethernet must conform to Cat5 (or better) UTP cabling for distances up to 100 meters.
100BaseFX Ports	The interconnect cabling must conform to 50/125 or 62.5/125 micron multimode fiber-optic cabling for distances up to 3 kilometers.
Console Port	Varies depending on the user device. The VSP 4000 has an RJ-45 female connector, so a serial cable with RJ-45 connectors, or a serial cable with a DB-9 female connector on one end and an RJ-45 on the other is appropriate. The maximum length for the console port cable is 25 feet (8.3 meters).
SFP Transceiver Ports	Varies with the installed SFP transceiver. See the documentation shipped with the SFP transceiver for specifications.
USB Port	The USB port is not user accessible on the VSP 4000.

---

## Installation and removal of Small Form-factor Pluggable (SFP) transceivers

The following section describes how to install and remove Small Form-factor Pluggable (SFP) transceivers in the Avaya Virtual Services Platform 4000 switch. For more information about

SFP transceiver use and designation, see *Installation — SFP and SFP+ transceivers, Avaya Virtual Services Platform 4000, NN46251–301* .

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## Installing SFP transceivers

Install SFP transceivers by performing this procedure.

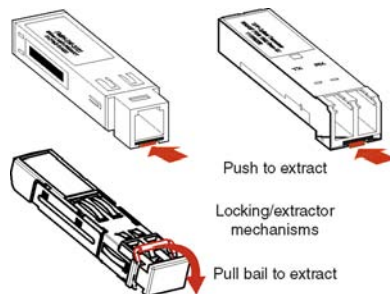
1. Remove the transceiver from the protective packaging.
2. Verify that the transceiver is the correct model for the network configuration.
3. Grasp the transceiver between your thumb and forefinger.
4. Insert the transceiver into the proper module on the switch. Apply a light pressure to the transceiver until it clicks and locks into position in the module.
5. Remove the dust cover from the transceiver optical bores.

---

## Removing of SFP transceivers

Remove SFP transceivers by performing this procedure.

1. Disconnect the network fiber cable from the transceiver.
2. Use the locking mechanism on the transceiver to release it. The locking mechanism varies from model to model as illustrated below.



3. Slide the transceiver from the module slot.
4. If the transceiver does not slide easily from the module slot, use a gentle side-to-side rocking motion while firmly pulling the transceiver from the slot.
5. Attach a dust cover over the fiber-optic bores and store the transceiver in a safe place until you need it.

### Important:

Discard transceivers in accordance with the proper laws and regulations.



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## RJ-45 connector pin assignments


The following section describes the connector pin assignments for the RJ-45 connectors in the Avaya Virtual Services Platform 4000.

---

### Avaya Virtual Services Platform 4000 Switch 4850GTS-PWR+

The following table describes the Power over Ethernet Plus RJ-45 connector pin assignments in the Avaya VSP 4000 4850GTS-PWR+.

**Table 5: PWR+ RJ-45 connector pin assignments**

Connector	Pin Number	Signal	Description
	1	RX+/power-	Recieve Data+/power-
	2	RX-/power-	Receive Data-/power-
	3	TX+/power+	Transmit Data+/power+
	4	Not applicable	Not applicable
	5	Not applicable	Not applicable
	6	TX-/power+	Transmit Data-/power+
	7	Not applicable	Not applicable
	8	Not applicable	Not applicable

**Important:**

The Avaya VSP 4000 PWR+ models use pins 1, 2, 3, and 6 for PoE+, and is compliant with Type 2 (MDI-X) in IEEE802.3at.

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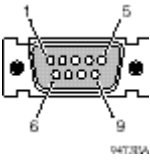
## Console port pin assignments

The following table describes the console port pin assignments in the Avaya VSP 4000.


**Important:**

Avaya VSP 4000 supports only CLI Quickstart use on the console port.

**Table 6: DB-9 Console port pin assignments**

Connector	Pin Number	Signal
	1	Carrier detect (not used)
	2	Transmit Data (TXD)
	3	Receive Data (RXD)
	4	Data terminal ready (not used)
	5	Signal ground (GND)
	6	Not used
	7	Request to send (not used)
	8	Not used
	9	Ring indicator (not used)

**Table 7: RJ-45 Console port pin assignments**

Connector	Pin Number	Signal
	1	Ready to send (RTS) — optional
	2	Data terminal ready (DTR) — optional, can swap or link with pin 8
	3	Transmit data (TXD) — mandatory
	4	Carrier detect (DCD) — optional
	5	Ground (GND) — mandatory
	6	Receive data (RXD) — mandatory
	7	Data set ready (DSR) — optional
	8	Clear to send (CTS) — optional, can swap or link with pin 1

## Power specifications for the Avaya Virtual Services Platform 4000

This section describes power specifications for the Avaya VSP 4000 switches.

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## Avaya Virtual Services Platform 4000 Switch 4850GTS and 4850GTS-PWR+

The following table describes the regulatory AC power specifications for the Avaya Virtual Services Platform 4000 4850GTS and 4850GTS-PWR+ switches. It should be noted that regulatory power specifications are based on the maximum rated capacity of the power supplies and are not based on typical power consumption which is typically lower.

**Table 8: AC power specifications**

	<b>4850GTS</b>	<b>4850GTS-PWR+</b>
Input Current:	5A/2.5A	12A/6A
Input Voltage (rms):	100 to 240VAC at 50 to 60 Hz	100 to 240VAC at 50 to 60 Hz
Power Consumption:	94.6W maximum	248W maximum
Thermal Rating:	323 BTU/Hr maximum	508 BTU/Hr maximum
Inrush Current:	40A maximum	70A maximum
Turn on Condition:	1 second maximum after application of AC power	1 second maximum after application of AC power
<p><b>Important:</b> 12 V output rise time, from 10 to 90 percent, must be the maximum of 50 ms and monotonic under all defined input and output conditions.</p>		
Efficiency:	70 percent minimum	70 percent minimum

---

## Avaya Virtual Services Platform power supply power specification

VSP 4850GTS-PWR+ supports two external field replaceable power supplies. You can install a secondary power supply to provide redundancy, load sharing, and add Power over Ethernet Plus (PoE+) power budget on PWR+ models.

VSP 4850GTS-PWR+ supports dual 54V 1000W Power over Ethernet Plus (PoE+) AC power supplies.



**Figure 4: 1000W power supply**

The Avaya VSP 4850GTS supports 300W AC power supplies.



**Figure 5: 300W power supply**

The 300W and 1000W AC power supplies use an IEC 60320 C16 AC power cord connector. The AC power cord is in close proximity to the hot air exhaust, and supports high operating temperatures



**Figure 6: IEC 60320 C16 connector**

## Power over Ethernet Plus specifications

Model	Maximum PoE+ W	Average PoE+ W on 50 port models
Avaya VSP 4850GTS— PWR+ models	855W with one power supply 1855W with two power supplies	15.4W (802.3af) 17.8W (802.3at) — 1 power supply 32.4W (802.3at) — 2 power supplies

- VSP 4850GTS-PWR+ can support 802.3af 15.4W on each port with one power supply installed. You can add a second power supply for redundancy.
- VSP 4850GTS-PWR+ can support 802.3at 32.4W on each port with two power supplies installed. PoE+ power reduces to an average of 17.8W on each port with one power supply.

---

## Avaya DC power supply

The following table describes the DC power supply specifications for the Avaya Virtual Services Platform 4000.

**Table 9: DC power supply specifications**

Order Number	AL1905005-E5
Description	DC-DC-12V-300W
Output power	300W
Input voltage	48V DC
Input current	10A
Output voltage	12V DC
Output current	25A

---

## Installing the Avaya Virtual Services Platform 4000 power supply

You must install at least one power supply before using the switch. Avaya VSP 4000 PWR+ models. Avaya VSP 4000 models support two field replaceable external power supplies. If supported, you can install an optional second power supply for redundancy, load sharing, or to provide additional PoE+ power budget.

Perform the following procedure to install an external power supply into your switch.

**Note:**

Avaya VSP 4000 hardware can vary. This procedure only applies to hardware models with field replaceable power supplies.

1. If a blanking plate covers the required power supply slot, remove the blanking plate before attempting to insert the power supply.
2. Insert each power supply into a rear power supply slot.
3. Verify that each power supply is fully seated in the slot. Secure the power supply with the two thumb screws.

**Note:**

The switch chassis can prevent an incorrect installation of a power supply. If you insert a power supply upside down, it will not fully insert and the thumb screws will not engage.

4. Once you install a power supply, you can proceed with connecting AC power.

**Important:**

You can hot swap power supplies while the switch is operational. One power supply is required for continued switch operation. PoE+ load reductions can occur if you remove one power supply while the switch is operating with dual power supplies.

---

## Connect AC power


This section explains power cord specifications and how to connect AC power.




---

### Power cord specifications

To connect AC power to the switch, you need an appropriate AC power cord as described in the following table, also see the following table for plug specifications.

**Table 10: International power cord specifications**

Country and Plug Specification	Specifications	Typical Plug
Continental Europe:	<ul style="list-style-type: none"><li>• 220 or 230VAC</li><li>• 50 Hz</li><li>• Single phase</li></ul>	

Country and Plug Specification	Specifications	Typical Plug
<ul style="list-style-type: none"> <li>• CEE7 standard VII male plug</li> <li>• Harmonized cord (HAR marking on the outside of the cord jacket to comply with the CENELEC Harmonized Document HD-21)</li> </ul>		
United States of America, Canada, and Japan: <ul style="list-style-type: none"> <li>• NEMA5-15P male plug</li> <li>• UL-recognized (UL stamped on cord jacket)</li> <li>• CSA-certified (CSA label secured to the cord)</li> </ul>	<ul style="list-style-type: none"> <li>• 100 or 120VAC</li> <li>• 50–60 Hz</li> <li>• Single phase</li> </ul>	 <small>12701A</small>
United Kingdom: <ul style="list-style-type: none"> <li>• BS1363 male plug with fuse</li> <li>• Harmonized cord</li> </ul>	<ul style="list-style-type: none"> <li>• 240VAC</li> <li>• 50 Hz</li> <li>• Single phase</li> </ul>	 <small>12501A</small>
Australia: <ul style="list-style-type: none"> <li>• AS3112-1981 male plug</li> </ul>	<ul style="list-style-type: none"> <li>• 240VAC</li> <li>• 50 Hz</li> <li>• Single phase</li> </ul>	 <small>12501A</small>

**Danger:****Using power cords with a proper grounding path**

Use only power cords that have a grounding path. Without a proper ground, a person who touches the switch is in danger of receiving an electrical shock. Lack of a grounding path to the switch can result in excessive emissions. For a translation of this statement, see [Translations of safety messages](#) on page 45.

---

## Connect power to the back panel

Connect the AC power cord to the back of the switch, and then connect the cord to an AC power outlet. The following figure shows how to connect the AC power cord to the switch back panel.

**Important:**

The Avaya VSP 4000 series has no AC power switch. When you connect the power cord to a suitable, energized AC power outlet, the switch powers up immediately.

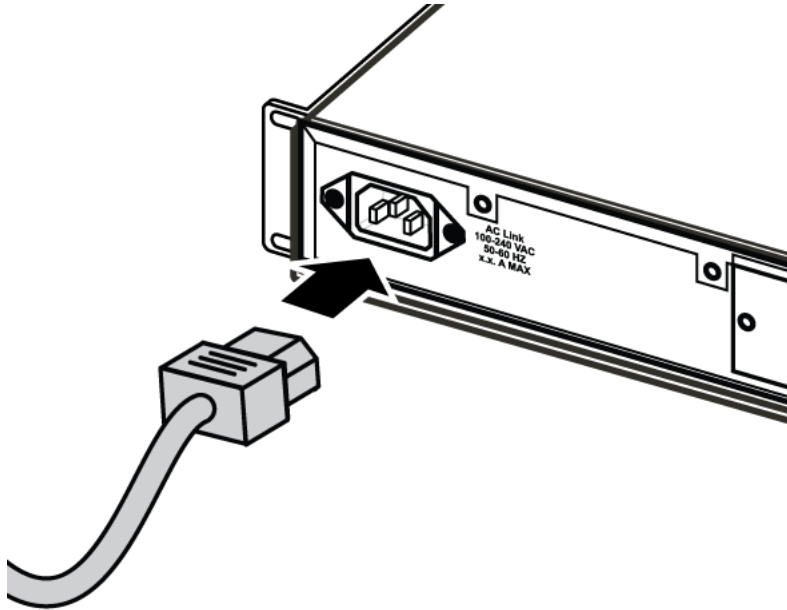


Figure 7: Connecting AC power to the back panel

**Warning:**

Disconnecting the AC power cord is the only way to turn off AC power to the Avaya VSP 4000. Always connect the AC power cord in a quickly and safely accessible location in case of an emergency. For a translation of this statement, see [Translations of safety messages](#) on page 45.

---

## Check Light Emitting Diode (LED) on the Avaya Virtual Services Platform 4000

The figures and tables in the following sections describe the LEDs on the Avaya Virtual Services Platform 4000 switches. The tables describe LED operation for a switch that finishes the power-on self-test.

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### Front panel LEDs

The following diagrams illustrate the components on the front panels of the Avaya VSP 4000 switches.

- [Figure 8: VSP 4850GTS](#) on page 41
- [Figure 9: VSP 4850GTS-PWR+](#) on page 41



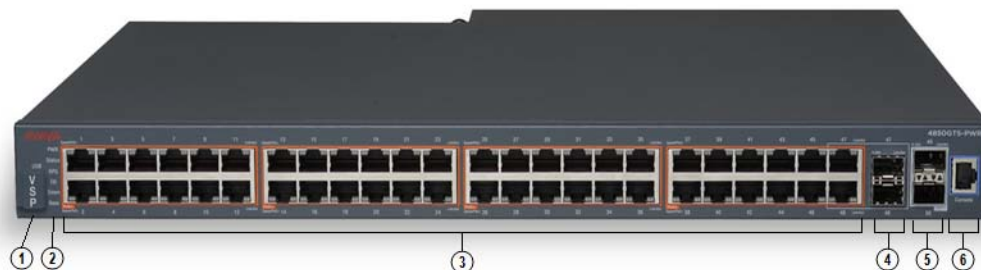
For detailed explanations of the states indicated by each front panel LED type, see the following sections:

- [Port LED state indicators](#) on page 43
- [Switch LED state indicators](#) on page 42



**Figure 8: VSP 4850GTS**

1. VSP 4000 USB cover
2. Switch LEDs
3. 10/100/1000 ports (LEDs above ports)
4. Combo port SFP slots. Supports Avaya 1G SFPs and 100Base low speed SFPs.
5. SFP+ slots. Supports Avaya's 1G SFPs and 10G SFP+s.
6. Console Port



**Figure 9: VSP 4850GTS-PWR+**

1. VSP 4000 USB cover
2. Switch LEDs
3. 10/100/1000 PoE+ ports (LEDs above ports)
4. Combo port SFP slots. Supports Avaya 1G SFPs and 100Base low speed SFPs.
5. SFP+ slots. Supports Avaya's 1G SFPs and 10G SFP+s.

## 6. Console Port

**Warning:**

Fiber optic equipment can emit laser or infrared light that can injure your eyes. Never look into an optical fiber or connector port. Always assume that fiber-optic cables are connected to a light source. For a translation of this statement, see [Translations of safety messages](#) on page 45.

---

## Switch LED state indicators

The following figure describes the main switch LED state indications provided by LED color and fluctuation cues.

**Table 11: Switch LED state indicators**

Label	Color and Status	Description
PWR	Green (solid)	The switch is receiving power either from the primary or secondary power supply.
	Off	The switch is not receiving power and not operating.
Status	Green (solid)	<ul style="list-style-type: none"> <li>• <b>During start-up:</b> The power-on self-test (POST) is complete and the switch is operating normally.</li> <li>• <b>After start-up:</b> The switch is running the agent code successfully.</li> </ul>
	Green (blinking)	The switch is loading the agent software code.
	Amber (solid)	The switch encountered an error when running the diagnostic software.
	Amber (blinking)	The switch is booting and running diagnostic software. Normal activity during boot process.
	Off	The switch failed the power-on self-test (POST) or failed to load the agent code.
RPS	Green (solid)	The switch is connected to a redundant power supply unit (RPS) or a secondary external power supply, and is operating normally.
	Green (blinking)	The switch is connected to a secondary power supply, but the power input is disconnected.
	Amber (solid)	The power supply in slot 1 or slot 2 was removed after operating.
	Amber (blinking)	The power supply in slot 1 or slot 2 is present, but not supplying power to the switch.

Label	Color and Status	Description
	Off	No power to secondary power supply. The switch is not connected to an RPS or secondary power supply. The RPS is not supplying power, or the DC/DC module is not supplying power..

## Port LED state indicators

This section describes the port LED state indicators by color and fluctuation cues.

The following list describes the three port LEDs:

- Activity indicates the level of activity on the link.
- Link indicates the presence of an Ethernet link.
- Speed indicates the port speed (for example, 10 Mb/s, 100 Mb/s, 1000 Mb/s).

**Table 12: RJ-45 Port LED state indicators**

Label	Color and Status	Description
Speed/PoE +	Green, Blink	The port is set to operate at 1000 Mb/s with PoE.
	Green, Steady	The port is set to operate at 1000 Mb/s without PoE +.
	Amber, Blink	The port is set to operate at 100 Mb/s with PoE+.
	Amber, Steady	The port is set to operate at 100 Mb/s without PoE+.
	Amber, Green Pulse	The port is experiencing a PoE+ error.
	Off	When the Link/Activity LED is green and the Speed LED is off, the port is set to operate at 10 Mb/s for all models.
Link / Activity	Green, Steady	The link established but no data activity exists.
	Green, Blink	The link is established and data activity exists (the blink rate indicates the level of activity).
	Green, Slow Blink	The software disabled the port.
	Amber, Steady	Port disabled.
	Amber, Blink	Port not used.

**Table 13: SFP transceiver Port LED state indicators**

Label	Color and Status	Description
In Use	Green, Blink	Not applicable.

Label	Color and Status	Description
	Green, Steady	The SFP port and the transmit port are active.
	Amber, Blink	Not applicable.
	Amber, Steady	SFP Installed—TX Port Inactive
	Off	No SFP transceiver is present.
Link / Activity	Green, Blink	Activity exists on the port.
	Green, Slow Blink	Software disabled this port.
	Green, Steady	The link is operating normally.
	Off	No link exists.

**Table 14: SFP+ Port LED state indicators**

Label	Color and Status	Description
TX / RX	Green, Steady	SFP+ detected and link established
	Green, Flashing	SFP+ established and transmit/receive activity detected.
	Amber, Steady	SFP detected and link established
	Amber, Flashing	SFP established and transmit/receive activity detected.
	Amber, Blinking	TX and RX blink together slowly to indicate a disabled port.
	Off	No SFP or SFP+ connection detected.

**Note:**

If you connect two ports explicitly set for different speeds (for example one configured as 10BaseT and the other as 100BaseTX) the port link LED may indicate a link, but the switch does not establish a link. Connect ports using the same set speed or use auto-negotiation on each switch.

# Chapter 6: Translations of safety messages

## Caution:

When you mount this device in a rack, do not stack units directly on top of one another. You must secure each unit to the rack with appropriate mounting brackets. Mounting brackets cannot support multiple units.

## Important:

### Achtung:

Wenn diese Einheit in einem Rack montiert wird, muß ein gewisser Abstand zur nächsten Einheit gelassen werden. Jede Einheit muß mit geeignetem Befestigungsmaterial gesichert werden. Das Befestigungsmaterial ist nicht für die gleichzeitige Befestigung mehrerer Einheiten geeignet.

## Important:

Si vous installez le module dans une baie, ne l'empilez pas directement sur un autre. Chaque module doit être fixé à sa propre baie à l'aide des supports de montage appropriés. Ces supports ne sont pas conçus pour résister à plusieurs modules.

## Important:

### Precaución:

Cuando monte este dispositivo en un bastidor, no apile las unidades directamente una encima de otra. Cada unidad debe fijarse en el bastidor con las abrazaderas de montaje adecuadas. Las abrazaderas de montaje no están diseñadas para sostener varias unidades.

## Important:

Se il dispositivo viene installato in un rack, non impilare le unità direttamente una sull'altra. Ogni unità deve essere fissata al rack con le staffe di montaggio appropriate. Le staffe di montaggio non sono state progettate per supportare più unità.



**警告:** 在机架中安装此设备时, 请勿将多个部件叠放在机架中。必须用合适的安装托架将各个部件固定在机架中。安装托架无法支撑多个部件。

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**注意:** この装置をラックに設置する場合は、ラック内のコネクタを直接積み重ねないようにしてください。各ユニットは専用の取り付けブラケットでラックに固定する必要があります。取り付けブラケットは複数のユニットを支えるようには設計されていません。



**注意：**在機箱中掛載此裝置時，請不要直接在機箱中的另一個裝置上直接堆放裝置，每一裝置都必須使用適當的掛載托架以固定在機架中。掛載托架不能用來支撐多個裝置。

**Caution:**

If you are not installing a module in the slot, be sure to keep the metal cover plate in place over the slot. Removing the cover plate impedes airflow and proper cooling of the unit.

**Important:**

**Achtung:**

Wenn Sie kein Modul im Schacht verwenden, muß die Metallabdeckung über dem Schacht montiert sein. Eine Entfernung der Abdeckung führt zu einer Verschlechterung der Luftzirkulation und damit zu einer nicht ausreichenden Kühlung der Einheit.

**Important:**

Si vous n'installez pas le module dans une baie, veillez à laisser la plaque métallique sur la baie. Si vous la retirez, l'aération du module ne peut pas s'effectuer correctement.

**Important:**

**Precaution:**

Si no instala ningún módulo en la ranura, asegúrese de mantener la placa de la cubierta de metal en la misma. Si la retira, impedirá que el aire circule y la unidad se refrigere adecuadamente.

**Important:**

**Attenzione:**

Se nello slot non vengono installati moduli, assicurarsi di mantenere la piastra di copertura metallica in sede sopra lo slot. La rimozione della piastra impedisce la ventilazione e il corretto raffreddamento dell'unità.



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**注意：**スロットにモジュールを取り付けない場合は、スロットにある金属製のカバープレートが外れないように注意してください。カバープレートを動かすと airflow が妨げられ、適切なユニット冷却が行われなくなります。



**注意：**如果您未在插槽中安裝模組，請確定金屬殼板正確地蓋在插槽上。移除殼板會阻礙空氣流通以及裝置的適當冷卻度。



**警告：**如果您不打算在该插槽中安装任何模块，请务必使金属盖板正确地盖住该插槽。如果取下盖板，将妨碍通风及部件散热。



**警告：**この装置の電源は、電源コードを抜かない限り切断できません。緊急の場合にすばやく安全に切断できる場所に電源コードを接続してください。



**警告：**若要關閉此裝置的電源，拔掉插頭是唯一的方法。爲了因應緊急狀況，請將電源線連接到可以快速插拔的地方。

### **Warning:**

Disconnecting the AC power cord is the only way to turn off AC power to this device. Always connect the AC power cord in a quickly and safely accessible location in case of an emergency.

### **Important:**

#### **Warnung:**

Das Gerät kann nur durch Ziehen des Netzsteckers ausgeschaltet werden. Schließen Sie das Netzkabel an einer Steckdose an, die in Notfällen schnell und sicher zugänglich ist.

### **Important:**

#### **Avertissement:**

Pour mettre le module hors tension, vous devez impérativement déconnecter le cordon d'alimentation. En outre, vous devez dégager un espace minimal dans la zone de câblage pour pouvoir y accéder facilement en cas d'urgence.



**警告：**断开交流电源线是切断本设备的交流电源的唯一方法。交流电源线一定要连接到在紧急时刻可以快速安全地接触到的位置。

### **Important:**

#### **Advertencia:**

Para apagar el dispositivo debe desenchufar el cable. Conecte siempre el cable de alimentación a una toma segura y de fácil acceso por si se produjera alguna situación de emergencia.

**Important:**

**Avviso:**

L'unico modo per disattivare questo dispositivo consiste nello scollegare il cavo di alimentazione. Collegare sempre il cavo di alimentazione ad una presa che sia facilmente e rapidamente accessibile in caso di emergenza.

**Danger:**

Use only power cords that have a grounding path. Without a proper ground, a person who touches the switch is in danger of receiving an electrical shock. Lack of a grounding path to the switch can result in excessive emissions.

**Important:**

**Vorsicht:**

Verwenden Sie nur Netzkabel mit Schutzerdung. Ohne ordnungsgemäße Schutzerdung besteht für Personen, die den Switch berühren, die Gefahr eines elektrischen Schlags. Eine nichtvorhandene Schutzerdung kann zu sehr starken Abstrahlungen führen.

**Danger:**

N'utilisez que des cordons d'alimentation équipés de trajet de mise à la terre. Sans mise à la terre adaptée, vous risquez de recevoir une décharge électrique en touchant le commutateur. Par ailleurs, l'absence de trajet de mise à la terre peut générer des émissions excessives.

**Important:**

**Peligro:**

Utilice únicamente cables de alimentación con toma de tierra. De lo contrario, al tocar el interruptor puede recibir una descarga eléctrica. Si no hay un circuito de toma de tierra en el enchufe, puede producirse un exceso de emisiones.

**Important:**

**Pericolo:**

Utilizzare esclusivamente cavi di alimentazione dotati di un percorso per la messa a terra. Senza un'adeguata messa a terra, chiunque tocchi lo switch corre il rischio di ricevere una scossa elettrica. L'assenza di un percorso per la messa a terra verso lo switch può comportare un eccesso di emissioni.



**危険:** 接地経路を持つ電源コードを必ず使用するようになしてください。適切な接地がない状態でスイッチに触ると、感電する危険性があります。また、スイッチへの接地経路がないと、過度な放電を引き起こす可能性があります。



**危险:** 请仅使用接地的电源线。如果电源线不接地或接地不当,接触交换机的人员可能会受到电击。如果交换机不接地,则可能导致放电过量。

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