



Installation — Cooling Modules

Avaya Virtual Services Platform 9000

3.2
NN46250-302, 02.01
February 2012

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Chapter 1: Purpose of this document

The Avaya Virtual Services Platform 9000 chassis includes IO and SF cooling modules to ensure proper cooling of installed interface, Central Processor (CP), and Switch Fabric (SF) modules.

Avaya Virtual Services Platform 9000 Installation — Chassis, NN46250-304 provides information about environmental specifications for the chassis.

Purpose of this document

Chapter 2: New in this release

There are no changes in *Avaya Virtual Services Platform 9000 Installation — Cooling Modules*, NN46250–302, for Release 3.2.

New in this release

Chapter 3: Cooling module fundamentals

This section illustrates the Avaya Virtual Services Platform 9000 cooling modules: Input Output (IO) cooling module and Switch Fabric (SF) cooling module.

9012FC IO cooling module

You must install two IO cooling modules in the front of the chassis. The IO cooling modules provide cooling for the interface modules and the Central Processor (CP) modules. Each IO cooling module includes 8 fans.

If a fault condition occurs in an IO module, the chassis shuts down all SF and CP modules with faults. It also gives an option to the user to shutdown the interface modules.

The IO cooling modules are hot swappable. You can replace them, one at a time, without turning off the Virtual Services Platform 9000.

The following figure shows the cooling module for the Virtual Services Platform 9000 chassis.

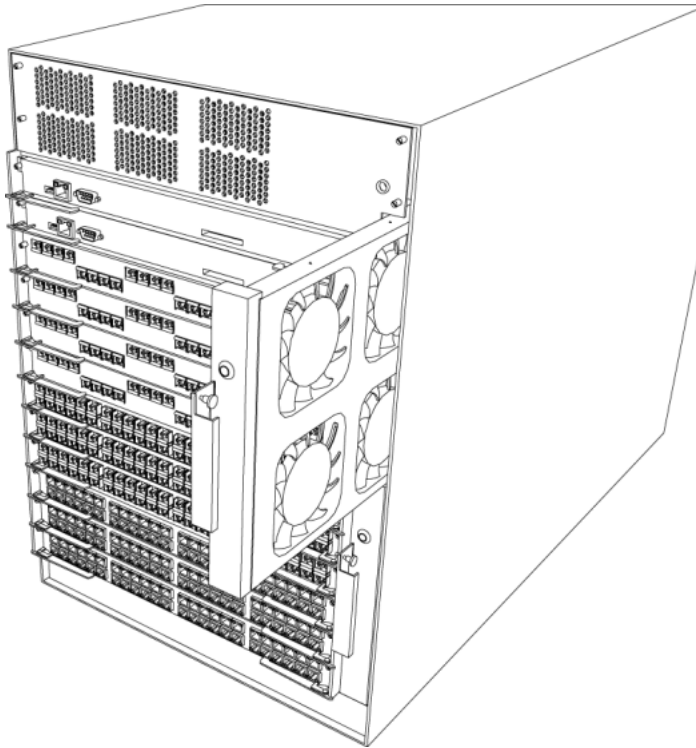


Figure 1: IO cooling module partially removed

The 9012FC IO cooling module measures 9.875 inches (in.) x 1.125 in. x 23.5 in. (250.8 millimeters [mm] x 28.6 mm x 596.9 mm) and weighs 9 pounds (4.08 kilograms).

Front Panel LED

The IO cooling module provides a bicolor LED on the front panel to indicate fan status. The following table explains the LED colors:

Table 1: Front panel LED status

LED Color	Status	Description
Green	Normal	All fans are functional and spinning above the program controlled FAN_FAULT_THRESHOLD register settings.
Amber (both red and green LED turned on)	Warning	One of the fans is not functioning properly. Either it is spinning below the FAULT threshold setting or does not spin at all. The fan tray can still provide enough cooling by increasing the fan speed of the remaining fans.
Red	Fail	Two or more fans are not working, either from spinning too slowly or not at all. The fan tray may not provide enough cooling.

9012RC SF cooling module

You must install two 9012RC SF cooling modules in the back of the chassis. The SF cooling modules provide cooling based on the demand of the SF modules. Each cooling module includes two fans.

The SF cooling modules are hot swappable. You can replace them, one at a time, without turning off the Virtual Services Platform 9000.

The following figure shows the SF cooling module for the chassis.

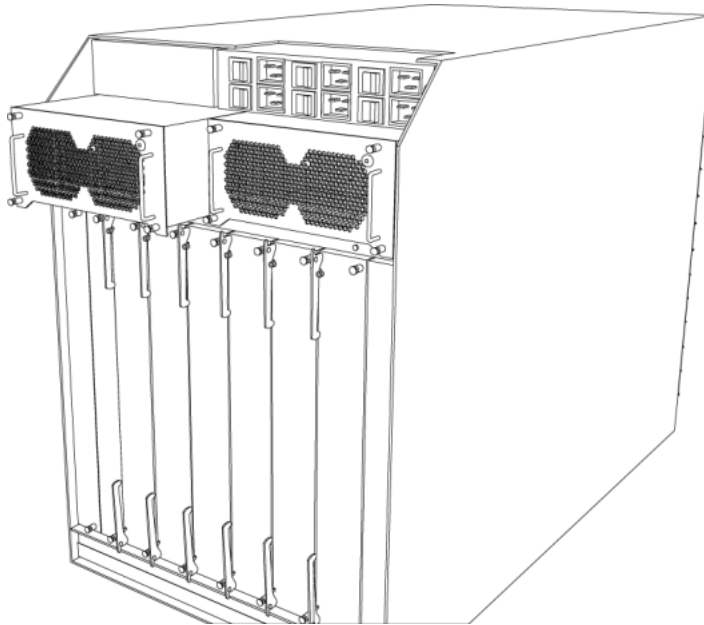


Figure 2: SF cooling module

The 9012RC SF cooling module measures 4.625 inches (in.) x 8.75 in. x 3.5 in. (117.5 millimeters [mm] x 222.3 mm x 88.9 mm) and weighs 2 pounds (0.91 kilograms).

Front Panel LED

The SF cooling module provides a bicolor LED on the front panel to indicate fan status. The following table explains the LED colors.

Table 2: Front panel LED status

LED Color	Status	Description
Green	Normal	Both fans are functional and spinning above the program controlled FAN_FAULT_THRESHOLD register settings.

LED Color	Status	Description
Red	Fail	One or both fans are not working, either from spinning too slowly or not at all. The fan tray may not provide enough cooling.

Chapter 4: Cooling module installation and removal

This section describes how to install the cooling modules in the Avaya Virtual Services Platform 9000.

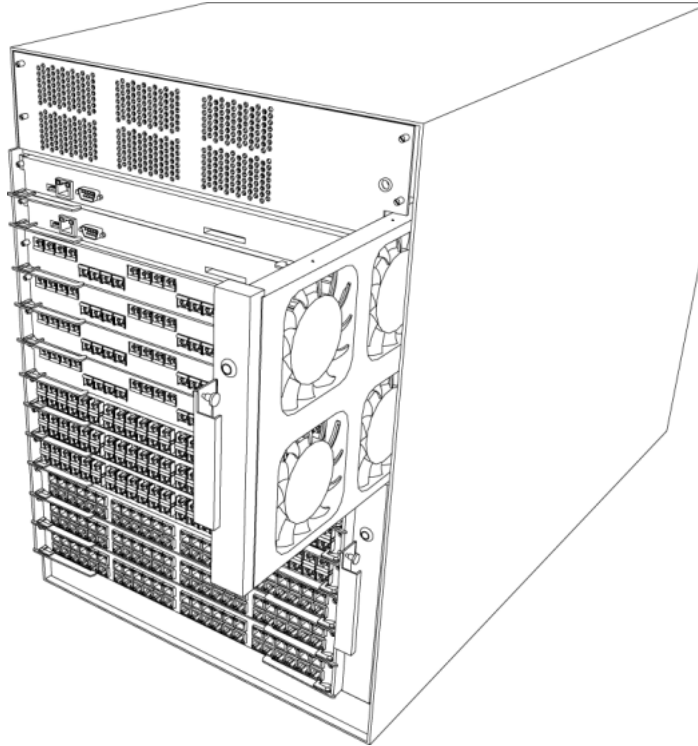
Install a cooling module to provide cooling to the interface, Switch Fabric (SF), and Central Processor (CP) modules. Installation takes 2 to 5 minutes.

Installing the I/O cooling module

Install the I/O cooling module in the front of the chassis to provide cooling to the interface and CP modules. You must install two I/O cooling modules in the chassis. You can hot swap the cooling modules.

Procedure

1. Locate the bay where you want to install the cooling module.
2. Slide the cooling module into the chassis.



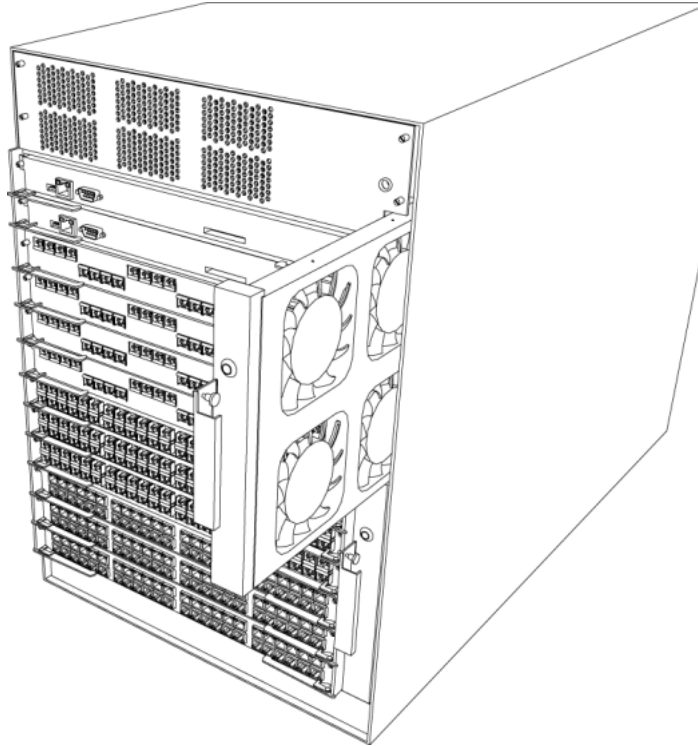
3. With one hand, pull the pin on the cooling module to the right, and then hold it in place.
 4. Slide the cooling module into the chassis until the connector at the rear of the cooling module connects to the midplane.
 5. Release the pin on the cooling module.
 6. Verify that the cooling module LED light is green.
-

Removing the I/O cooling module

Remove the I/O cooling module from the slot at the front of the chassis to replace it. You can hot swap the cooling modules.

Procedure

1. With one hand, pull the pin on the cooling module to the right and hold it in place.
2. Pull the cooling module partially from the chassis until the connector at the rear releases from the midplane.



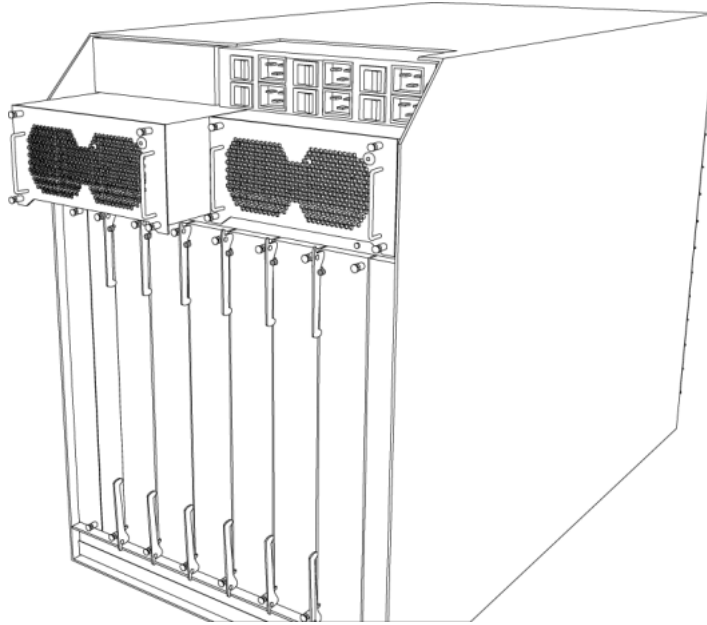
3. Slide the cooling module out of the chassis.

Installing the SF cooling module

Install the SF cooling module in the back of the chassis to provide cooling to the SF modules. You must install two SF cooling modules in the chassis. You can hot swap the cooling modules.

Procedure

1. Locate the bay where you want to install the cooling module.
2. Using the handles on the cooling module, slide the module into the chassis until the connector at the back of the cooling module connects with the midplane.



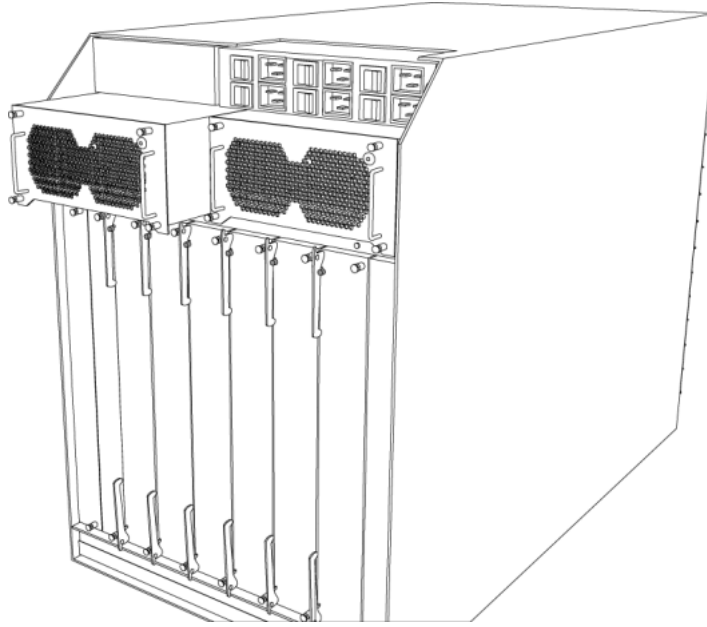
3. Tighten the captive screws on the bottom of the cooling module to fasten the cooling module to the chassis.
 4. Verify that the cooling module LED light is green.
-

Removing the SF cooling module

Remove the SF cooling module from the slot to remove it. You can hot swap the cooling modules.

Procedure

1. Loosen the captive screws that secure the cooling module to the midplane.
2. Using the handles on the cooling module, slide the module out of the chassis.



Chapter 5: Regulatory Information and Safety Precautions

Read the information in this section to learn about regulatory conformities and compliances.

International Regulatory Statements of Conformity

This is to certify that the Avaya Virtual Services Platform 9000 chassis and components installed within the chassis were evaluated 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

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

National Electromagnetic Compliance (EMC) Statements of Compliance

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.

ICES Statement (Canada only)

Canadian Department of Communications Radio Interference Regulations

This digital apparatus (Virtual Services Platform 9000 chassis and installed components) 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.

Règlement sur le brouillage radioélectrique du ministère des Communications

Cet appareil numérique (Virtual Services Platform 9000 chassis) 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.

CE Marking Statement (Europe only)

EN 55 022 Statements

This is to certify that the Virtual Services Platform 9000 chassis and components installed within the chassis are shielded against the generation of radio interference in accordance with the application of Council Directive 2004/108/EC. Conformity is declared by the application of EN 55 022 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.

EN 55 024 Statement

This is to certify that the Virtual Services Platform 9000 chassis is shielded against the susceptibility to radio interference in accordance with the application of Council Directive 2004/108/EC. Conformity is declared by the application of EN 55 024 (CISPR 24).

EN 300386 Statement

The Virtual Services Platform 9000 chassis complies with the requirements of EN 300386 V1.3.3 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.

EC Declaration of Conformity

This product conforms to the provisions of the R&TTE Directive 1999/5/EC.

European Union and European Free Trade Association (EFTA) Notice



All products labeled with the CE marking comply with R&TTE Directive (1999/5/EEC) which includes the Electromagnetic Compliance (EMC) Directive (2004/108/EC) and the Low Voltage Directive (2006/95/EC) 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 610000-3-2)–Power Line Harmonics
- EN 61000-3-3 (IEC 610000-3-3)–Power Line Flicker

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.

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

National Safety Statements of Compliance

CE Marking Statement (Europe only)

EN 60 950 Statement

This is to certify that the Virtual Services Platform 9000 chassis and components installed within the chassis are in compliance with the requirements of EN 60 950 in accordance with the Low Voltage Directive. Additional national differences for all European Union countries have been evaluated for compliance. Some components installed within the Virtual Services Platform 9000 chassis may use a nickel-metal hydride (NiMH) and/or lithium-ion battery. The NiMH and lithium-ion batteries are long-life batteries, and it is very possible that you will never need to replace them. However, should you need to replace them, refer to the individual component manual for directions on replacement and disposal of the battery.

Denan Statement (Japan/Nippon only)



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Safety Messages

This section describes the different precautionary notices used in this document. This section also contains precautionary notices that you must read for safe operation of the Avaya Virtual Services Platform 9000.

Notices

Notice paragraphs alert you about issues that require your attention. The following sections describe the types of notices. For a list of safety messages used in this guide and their translations, see the Translations of safety messages chapter.

Attention Notice



Important:

An attention notice provides important information regarding the installation and operation of Avaya products.

Caution ESD Notice



Electrostatic alert:

ESD

ESD notices provide information about how to avoid discharge of static electricity and subsequent damage to Avaya products.



Electrostatic alert:

ESD (décharge électrostatique)

La mention ESD fournit des informations sur les moyens de prévenir une décharge électrostatique et d'éviter d'endommager les produits Avaya.

 **Electrostatic alert:**
ACHTUNG ESD

ESD-Hinweise bieten Information dazu, wie man die Entladung von statischer Elektrizität und Folgeschäden an Avaya-Produkten verhindert.

 **Electrostatic alert:**
PRECAUCIÓN ESD (Descarga electrostática)

El aviso de ESD brinda información acerca de cómo evitar una descarga de electricidad estática y el daño posterior a los productos Avaya.

 **Electrostatic alert:**
CUIDADO ESD

Os avisos do ESD oferecem informações sobre como evitar descarga de eletricidade estática e os conseqüentes danos aos produtos da Avaya.

 **Electrostatic alert:**
ATTENZIONE ESD

Le indicazioni ESD forniscono informazioni per evitare scariche di elettricità statica e i danni correlati per i prodotti Avaya.

Caution Notice

 **Caution:**

Caution notices provide information about how to avoid possible service disruption or damage to Avaya products.

 **Caution:**
ATTENTION

La mention Attention fournit des informations sur les moyens de prévenir une perturbation possible du service et d'éviter d'endommager les produits Avaya.

 **Caution:**
ACHTUNG

Achtungshinweise bieten Informationen dazu, wie man mögliche Dienstunterbrechungen oder Schäden an Avaya-Produkten verhindert.

 **Caution:**
PRECAUCIÓN

Los avisos de Precaución brindan información acerca de cómo evitar posibles interrupciones del servicio o el daño a los productos Avaya.

 **Caution:**
CUIDADO

Os avisos de cuidado oferecem informações sobre como evitar possíveis interrupções do serviço ou danos aos produtos da Avaya.

 **Caution:**
ATTENZIONE

Le indicazioni di attenzione forniscono informazioni per evitare possibili interruzioni del servizio o danni ai prodotti Avaya.

Warning Notice

 **Warning:**

Warning notices provide information about how to avoid personal injury when working with Avaya products.

 **Warning:**
AVERTISSEMENT

La mention Avertissement fournit des informations sur les moyens de prévenir les risques de blessure lors de la manipulation de produits Avaya.

 **Warning:**
WARNUNG

Warnhinweise bieten Informationen dazu, wie man Personenschäden bei der Arbeit mit Avaya-Produkten verhindert.

 **Warning:**
ADVERTENCIA

Los avisos de Advertencia brindan información acerca de cómo prevenir las lesiones a personas al trabajar con productos Avaya.

 **Warning:**
AVISO

Os avisos oferecem informações sobre como evitar ferimentos ao trabalhar com os produtos da Avaya.

 **Warning:**
AVVISO

Le indicazioni di avviso forniscono informazioni per evitare danni alle persone durante l'utilizzo dei prodotti Avaya.

Danger High Voltage Notice

Voltage:

Danger—High Voltage notices provide information about how to avoid a situation or condition that can cause serious personal injury or death from high voltage or electric shock.

Voltage:

La mention Danger—Tension élevée fournit des informations sur les moyens de prévenir une situation ou une condition qui pourrait entraîner un risque de blessure grave ou mortelle à la suite d'une tension élevée ou d'un choc électrique.

Voltage:

GEFAHR

Hinweise mit „Vorsicht – Hochspannung“ bieten Informationen dazu, wie man Situationen oder Umstände verhindert, die zu schweren Personenschäden oder Tod durch Hochspannung oder Stromschlag führen können.

Voltage:

PELIGRO

Los avisos de Peligro-Alto voltaje brindan información acerca de cómo evitar una situación o condición que cause graves lesiones a personas o la muerte, a causa de una electrocución o de una descarga de alto voltaje.

Voltage:

PERIGO

Avisos de Perigo—Alta Tensão oferecem informações sobre como evitar uma situação ou condição que possa causar graves ferimentos ou morte devido a alta tensão ou choques elétricos.

Voltage:

PERICOLO

Le indicazioni Pericolo—Alta tensione forniscono informazioni per evitare situazioni o condizioni che potrebbero causare gravi danni alle persone o il decesso a causa dell'alta tensione o di scosse elettriche.

Danger Notice

Danger:

Danger notices provide information about how to avoid a situation or condition that can cause serious personal injury or death.

 **Danger:**

La mention Danger fournit des informations sur les moyens de prévenir une situation ou une condition qui pourrait entraîner un risque de blessure grave ou mortelle.

 **Danger:**

GEFAHR

Gefahrenhinweise stellen Informationen darüber bereit, wie man Situationen oder Umständen verhindert, die zu schweren Personenschäden oder Tod führen können.

 **Danger:**

PELIGRO

Los avisos de Peligro brindan información acerca de cómo evitar una situación o condición que pueda causar lesiones personales graves o la muerte.

 **Danger:**

PERIGO

Avisos de perigo oferecem informações sobre como evitar uma situação ou condição que possa causar graves ferimentos ou morte.

 **Danger:**

PERICOLO

Le indicazioni di pericolo forniscono informazioni per evitare situazioni o condizioni che potrebbero causare gravi danni alle persone o il decesso.

Chapter 6: Customer service

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Getting technical documentation

To download and print selected technical publications and release notes directly from the Internet, go to www.avaya.com/support.

Getting product training

Ongoing product training is available. For more information or to register, you can access the Web site at www.avaya.com/support. From this Web site, you can locate the Training contacts link on the left-hand navigation pane.

Getting help from a distributor or reseller

If you purchased a service contract for your Avaya product from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller for assistance.

Getting technical support from the Avaya Web site

The easiest and most effective way to get technical support for Avaya products is from the Avaya Technical Support Web site at www.avaya.com/support.

