Installation — Chassis
Avaya Ethernet Routing Switch 8800/8600

7.1.3
NN46205-303, 06.04
February 2012

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Contents

Chapter 1: 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 8000 Series 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 (8800/8600 Series 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 (8800/8600 Series 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 Avaya 8800/8600 Series 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 Avaya 8800/8600 Series 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 Ethernet Routing Switch 8800/8600 Series 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

The Ethernet Routing Switch 8800/8600 Series chassis conforms to the provisions of the R&TTE Directive 1999/5/EC.

European Union and European Free Trade Association (EFTA) Notice

CE

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.

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

For Class A:

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National Safety Statements of Compliance

CE Marking Statement (Europe only)

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This is to certify that the Avaya 8000 Series 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 8000 Series 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.

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The following information is provided on the devices described in this document in compliance with the safety requirements of the Norma Oficial Méxicana (NOM):

Exporter:	Avaya Inc. 4655 Great America Parkway Santa Clara CA 95054 USA
Importer:	Avaya Communication de México, S.A. de C.V. Av. Presidente Masarik 111 Piso 6 Col Chapultepec Morales Deleg. Miguel HIdalgo México D.F. 11570
Input:	Model 8004AC: 100-240 VAC, 50-60 Hz, 12-6 A maximum for each power supply Model 8005AC: 100-120 VAC, 50-60 Hz, 16 A maximum for each power supply 200-240 VAC, 50-60 Hz, 8.5 A maximum for each power supply Model 8005DI AC: 100-120 VAC, 50-60 Hz, 16 A maximum for each AC inlet 200-240 VAC, 50-60 Hz, 9.3 A maximum for each AC inlet Model 8005DI DC: 8005DIDC: 40 to 75 VDC, 48.75 to 32.5 A single supply, single supply + one redundant supply, two supplies, or two supplies + one redundant supply configurations Model 8004DC: 48-60 VDC, 29-23 A Model 8005DC: 48-60 VDC, 42-34 A

Información NOM (únicamente para México)

La información siguiente se proporciona en el dispositivo o en los dispositivos descritos en este documento, en cumplimiento con los requisitos de la Norma Oficial Mexicana (NOM):

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Importador:	Avaya Communication de México, S.A. de C.V.

	Av. Presidente Masarik 111 Piso 6 Col Chapultepec Morales Deleg. Miguel HIdalgo México D.F. 11570
Embarcar a:	Model 8004AC:
	100-240 VCA, 50-60 Hz, 12-6 A max. por fuente de poder
	Model 8005AC:
	100-120 VCA, 50-60 Hz, 16 A max. por fuente de poder
	200-240 VCA, 50-60 Hz, 9.5 A max. por fuente de poder
	Model 8005DI AC:
	100-120 VCA, 50-60 Hz, 16 A max para cada entrada de CA
	200-240 VCA, 50-60 Hz, 9.3 A max para cada entrada de CA
	Model 8005DI DC:
	8005DIDC: 40 to 75 VDC, 48.75 to 32.5 A
	una fuente, una fuente + configuraciones de una fuente redundante, dos
	fuentes o dos + configuraciones de una fuente redundante
	Model 8004DC:
	-48 VCD, 29 A
	Model 8005DC:
	-48 VCD, 42 A

Denan Statement (Japan/Nippon only)

警告

本製品を安全にご使用頂くため、以下のことにご注意ください。

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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 Ethernet Routing Switch 8800/8600.

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 "Translations of safety messages".

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 2: Purpose of this document

The Avaya Ethernet Routing Switch 8800/8600 chassis provides the physical framework for the Avaya Ethernet Routing Switch 8800/8600 modules.

This document provides the instructions to install the Ethernet Routing Switch 8800/8600 chassis in an equipment rack. This document also describes some of the routine tasks to operate the Ethernet Routing Switch 8800/8600 and includes technical specifications for the chassis and modules.

Prerequisites

- Before you install the Ethernet Routing Switch 8800/8600 chassis, ensure that you install all network wiring on the premises by using standard cable-system practices.

Chapter 3: New in this release

The following sections detail what's new in *Avaya Ethernet Routing Switch 8800/8600 Installation — Chassis, NN45205-303* for Release 7.1.3.

Features

See the following section for information about feature changes.

8812XL SFP+ I/O module

Release 7.1.3 introduces a new Ethernet Routing Switch 8800 interface module — the 8812XL SFP+ I/O module. This module supports 12 SFP+ ports at 10Gbps and provides the same functionality as its RS module equivalent, the 8612XLRS.

The 8812XL SFP+ I/O module, like all 8800 modules, uses the new enhanced network processor-the RSP 2.7. It requires minimum software release 7.1.3 to operate properly.

For information on the supported R, RS and 8800 modules in this release, and their installation, see *Avaya Ethernet Routing Switch 8800/8600 Installation — Modules, NN46205–304*.

For information on SFP+ transceivers, see *Avaya Ethernet Routing Switch 8800/8600 Installation — SFP, SFP+, XFP, and OADM Hardware Components, NN46205–320*.

Other changes

There are no other changes to this document.

Chapter 4: Chassis installation fundamentals

Each Avaya Ethernet Routing Switch 8800/8600 chassis consists of a sheet metal enclosure, a backplane, and a fan interface backplane. The number of bays for power supplies and the number of fan trays and cooling modules depends on the chassis type.

For information about the minimum software versions required to support the hardware, see *Avaya Ethernet Routing Switch 8800/8600 Administration, NN46205-605*.

The section includes information about the following chassis types:

- 8010co chassis
- 8010 chassis
- 8006 chassis
- 8003-R chassis

8010co chassis

The 8010co chassis has eight slots for interface modules and two slots for the 8692 Switch Fabric/Central Processor Unit (SF/CPU) or 8895 SF/CPU modules. For more information, see Figure 1: 8010co chassis and components on page 22. Slots are numbered from left to right. You can install Avaya Ethernet Routing Switch 8800/8600 interface modules in slots 1 through 4 and in slots 7 through 10. Slots 5 and 6 are reserved for Avaya Ethernet Routing Switch 8800/8600 SF/CPU modules.

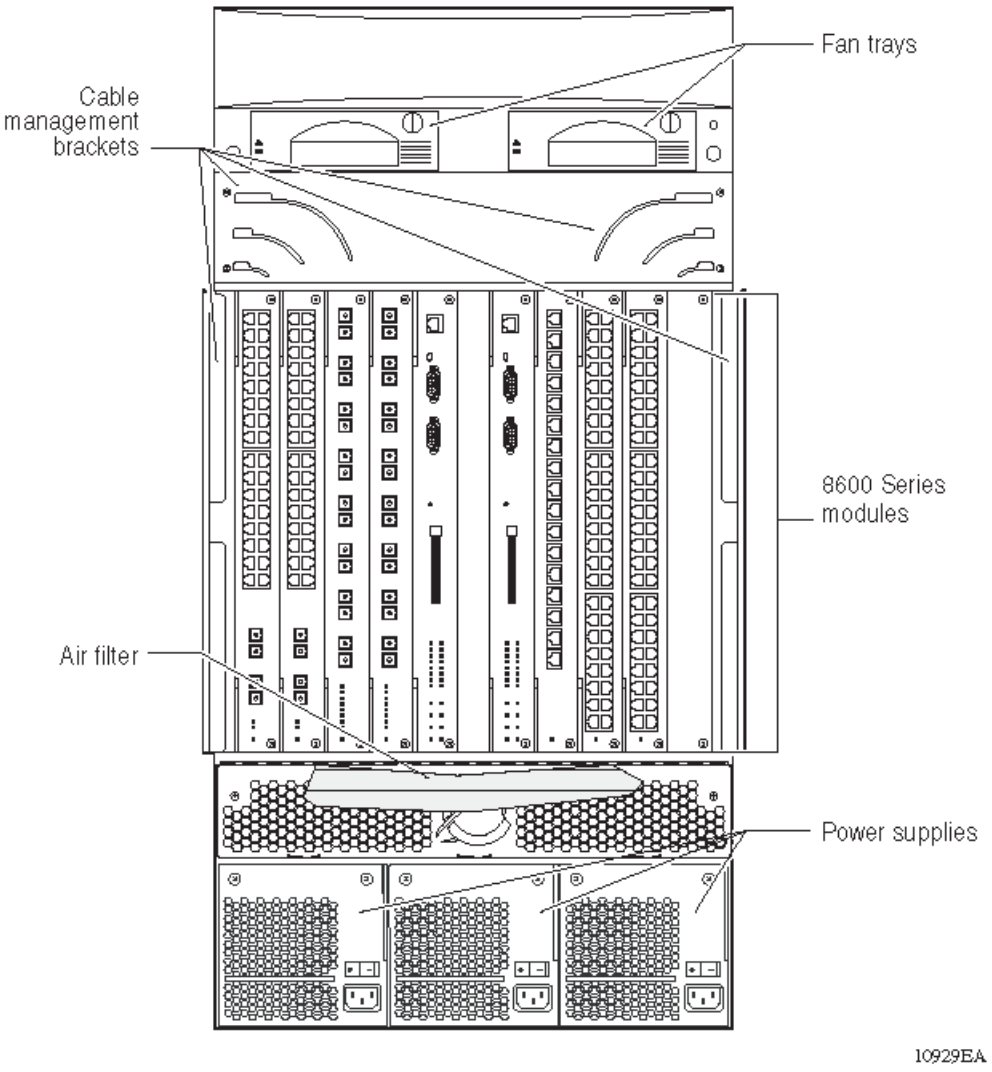


Figure 1: 8010co chassis and components

The 8010co chassis has three power supply bays. The Avaya Ethernet Routing Switch 8800/8600 can be configured for AC input or DC input applications or site installations. The 8010co chassis supports the following AC power supplies:

- 8004AC
- 8005AC
- 8005DI AC

The 8010co chassis supports the following DC power supplies:

- 8004DC
- 8005DC
- 8005DI DC

If your Ethernet Routing Switch 8800/8600 is operating in a redundant power configuration, you can upgrade the Ethernet Routing Switch 8800/8600 for additional power while the Ethernet Routing Switch 8800/8600 remains in operation.

Caution:

The output power ratings differ between power supply models. Avaya recommends that you do not operate the Ethernet Routing Switch 8800/8600 chassis with dissimilar power supply models with different output power ratings for an extended period of time.

Upgrade the power supplies before you upgrade the modules.

For information about power supply installation, see *Avaya Ethernet Routing Switch 8800/8600 Installation — AC Power Supply, NN46205-306* and *Avaya Ethernet Routing Switch 8800/8600 Installation — DC Power Supply, NN46205-307*.

The 8010co chassis uses two fan trays for cooling. For information about fan trays, see *Avaya Ethernet Routing Switch 8800/8600 Routine Maintenance, NN46205-312*.

8010 chassis

The 8010 chassis has eight slots for interface modules and two slots for the 8692 SF/CPU or 8895 SF/CPU modules. For more information, see Figure 2: 8010 chassis and components on page 24. Slots are numbered from the top down. You can install Avaya Ethernet Routing Switch 8800/8600 interface modules in slots 1 through 4 and in slots 7 through 10. Slots 5 and 6 are reserved for Ethernet Routing Switch 8800/8600 SF/CPU modules. For information about module installation, see *Avaya Ethernet Routing Switch 8800/8600 Installation — Modules, NN46205-304*.

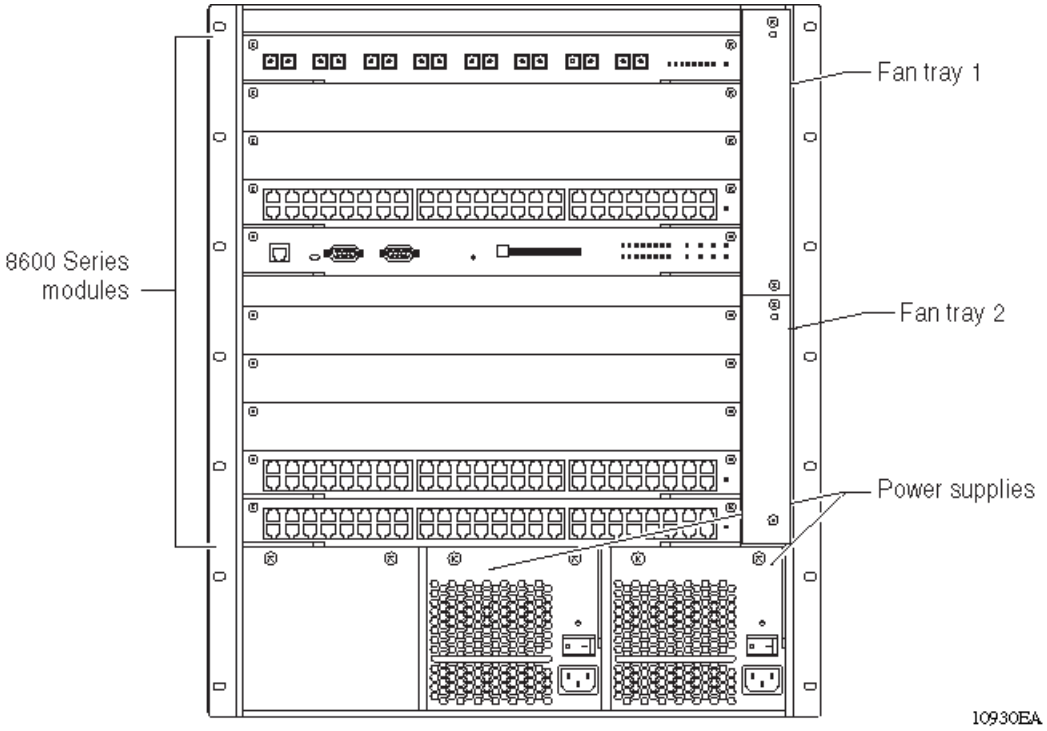


Figure 2: 8010 chassis and components

The 8010 chassis has three power supply bays. The Avaya Ethernet Routing Switch 8800/8600 can be configured for AC input or DC input applications or site installations. The 8010 chassis supports the following AC power supplies:

- 8004AC
- 8005AC
- 8005DI AC

The 8010 chassis supports the following DC power supplies:

- 8004DC
- 8005DC
- 8005DI DC

Important:

R, RS, or 8800 modules installed in the 8006, 8010, 8010co, or 8003-R chassis may require a minimum of one 8005AC, 8005DI AC, or 8005DC power supply. Use the power calculator tool (accessible from http://www.avaya.com/support) to determine the power supply requirements for your specific module and chassis configuration. If your module or chassis configuration changes, then reuse the tool to determine if a power supply change is also required. If an 8005 type power supply is required, then all power supplies must be 8005 type. You can mix different types of 8005 power supplies in the same chassis.

If your Avaya Ethernet Routing Switch 8800/8600 is operating in a redundant power configuration, you can upgrade the Avaya Ethernet Routing Switch 8800/8600 for additional power while the Ethernet Routing Switch 8800/8600 remains in operation.

Caution:

The output power ratings differ between power supply models. Avaya recommends that you do not operate the Ethernet Routing Switch 8800/8600 chassis with dissimilar power supply models with different output power ratings for an extended period of time.

Upgrade the power supplies before you upgrade the modules.

For information about power supply installation, see *Avaya Ethernet Routing Switch 8800/8600 Installation — AC Power Supply, NN46205-306* or *Avaya Ethernet Routing Switch 8800/8600 Installation — DC Power Supply, NN46205-307*.

The 8010 chassis uses two fan trays for cooling. For information about fan trays, see *Avaya Ethernet Routing Switch 8800/8600 Routine Maintenance, NN46205-312*.

8006 chassis

The 8006 chassis provides four slots for interface modules and two slots for 8692 SF/CPU with Super Mezz or 8895 SF/CPU modules. For more information, see Figure 3: 8006 chassis and components on page 26. The top four slots are for the installation of 8800/8600 interface modules. Slots 5 and 6 are reserved for Ethernet Routing Switch 8800/8600 SF/CPU modules. For information about module installation, see *Avaya Ethernet Routing Switch 8800/8600 Installation — Modules, NN46205-304*.

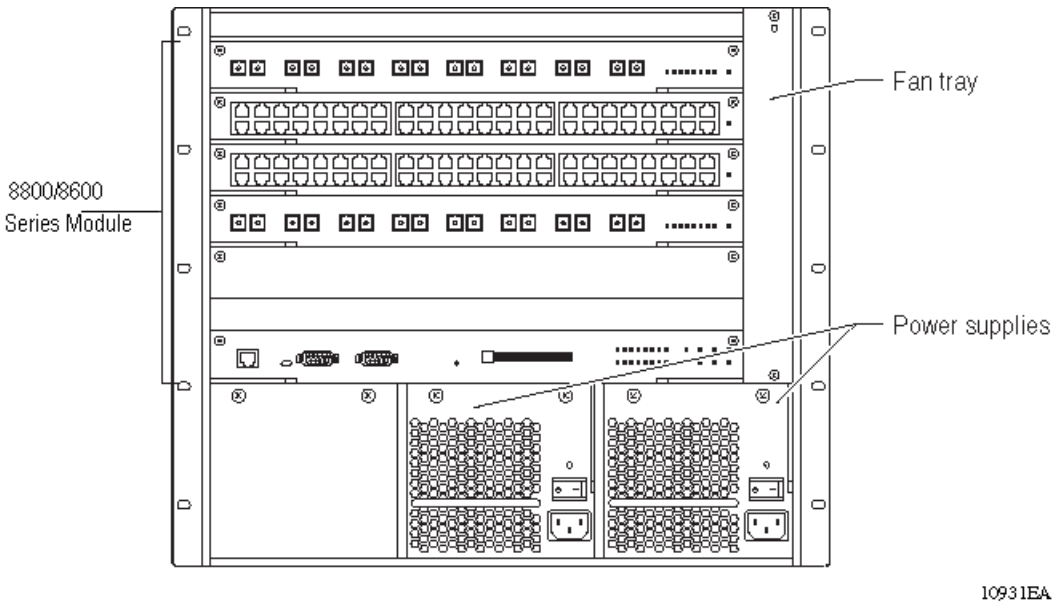


Figure 3: 8006 chassis and components

The 8006 chassis has three power supply bays. The Ethernet Routing Switch 8800/8600 can be configured for AC input or DC input applications or site installations. The 8006 chassis supports the following AC power supplies:

- 8004AC
- 8005AC
- 8005DI AC

The 8006 chassis supports the following DC power supplies:

- 8004DC
- 8005DC
- 8005DI DC

Important:

R, RS, or 8800 modules installed in the 8006, 8010, 8010co, or 8003-R chassis may require a minimum of one 8005AC, 8005DI AC, or 8005DC power supply. Use the power calculator tool (accessible from http://www.avaya.com/support) to determine the power supply requirements for your specific module and chassis configuration. If your module or chassis configuration changes, then reuse the tool to determine if a power supply change is also required. If an 8005 type power supply is required, then all power supplies must be 8005 type. You can mix different types of 8005 power supplies in the same chassis.

If your Ethernet Routing Switch 8800/8600 is operating in a redundant power configuration, you can upgrade the Ethernet Routing Switch 8800/8600 for additional power while the Ethernet Routing Switch 8800/8600 remains in operation.

Caution:

The output power ratings differ between power supply models. Avaya recommends that you do not operate the Ethernet Routing Switch 8800/8600 chassis with dissimilar power supply models with different output power ratings for an extended period of time.

Upgrade the power supplies before you upgrade the modules.

For information about power supply installation, see *Avaya Ethernet Routing Switch 8800/8600 Installation — AC Power Supply, NN46205-306* or *Avaya Ethernet Routing Switch 8800/8600 Installation — DC Power Supply, NN46205-307*.

The 8006 chassis uses a single fan tray for cooling. For information about fan trays, see *Avaya Ethernet Routing Switch 8800/8600 Routine Maintenance, NN46205-312*.

8003-R chassis

The 8003-R chassis provides two slots for interface modules and one slot for the Ethernet Routing Switch 8692 SF/CPU with Super Mezz or the 8895 SF/CPU modules. Only R, RS, and 8800 modules are supported in the interface slots.

Slots are numbered from the top down. Slot 3 is reserved for the Ethernet Routing Switch 8692 SF/CPU with Super Mezz or 8895 SF/CPU module. Install Ethernet Routing Switch 8800/8600 interface modules in slots 1 and 2.

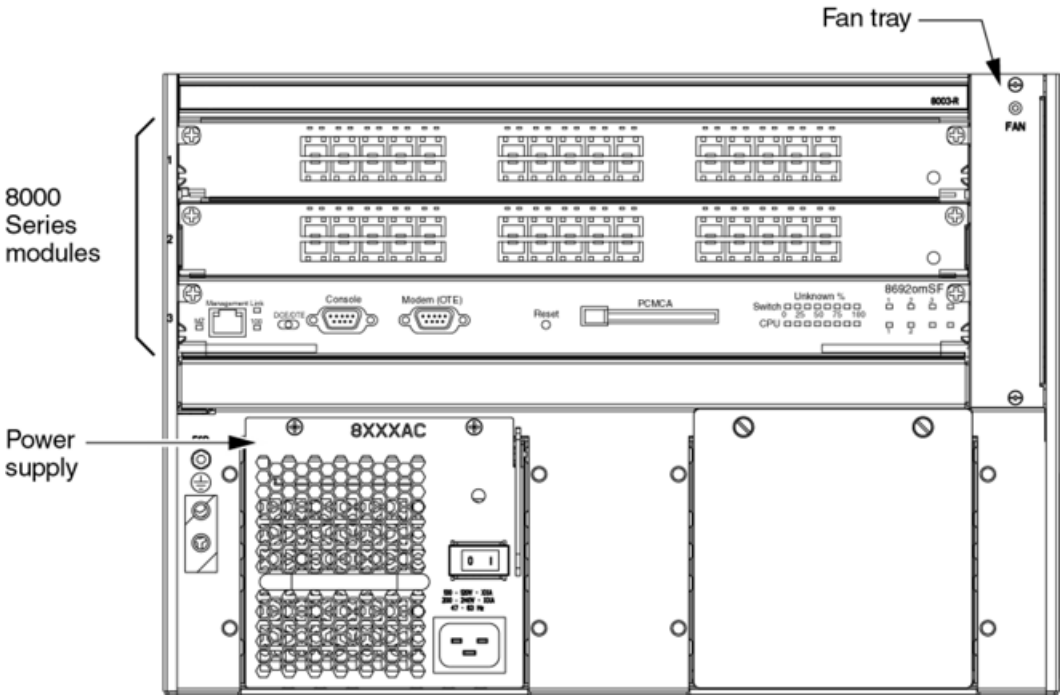


Figure 4: 8003-R chassis and components

For information about module installation, see *Avaya Ethernet Routing Switch 8800/8600 Installation — Modules, NN4205-304*.

The 8003-R chassis includes two bays for either AC or DC power supplies.

The 8003-R chassis supports the following AC power supplies:

- 8004AC
- 8005AC
- 8005DI AC

Important:

The 8003-R chassis supports the 8005DI-AC power supply, but it is unnecessary due to the 8003-R 1+1 power system redundancy design.

The 8003-R chassis supports the following DC power supplies:

- 8004DC
- 8005DC
- 8005DI DC

Caution:

The 8005 power supply has different power rating. Therefore, Avaya recommends that you do not operate the Avaya Ethernet Routing Switch 8000 Series chassis with a mix of power supply model.

Upgrade the power supplies before upgrading the modules.

For information about the Ethernet Routing Switch 8800/8600 power supplies and instructions for installing the chassis, see Power supplies on page 29 and 8010co chassis installation on page 53.

The 8003-R chassis includes a single fan tray for cooling. For more information about installing and replacing a fan tray, see *Avaya Ethernet Routing Switch 8800/8600 Routine Maintenance, NN46205-312*.

Figure 4: 8003-R chassis and components on page 28 also shows the location of customer-replaceable components in the 8003-R chassis.

Power supplies

The 8010, 8010co, and 8006 chassis provide three bays for power supply installation. The 8003-R chassis provides two bays to accommodate the power supplies.

The following power supplies are supported in chassis for Ethernet Routing Switch 8800/8600.

Table 1: Power supplies supported in chassis in Avaya Ethernet Routing Switch 8800/8600

Power Supply	Chassis			Notes (if applicable)
	8006 and 8010	8010co	8003-R	
8004AC	v	v	v	approximately 1500 W
8004DC	v	v	v	approximately 1500 W
8005AC	v	v	v	approximately 1500 W
8005DC	v	v	v	approximately 1500 W
8005DIAC	v	v	v	approximately 1500 W
8005DIDC	v	v	v	approximately 1500 W

The 8010co chassis requires a minimum of two power supplies. You can install an additional power supply for redundancy.

Note:

The 8001AC and 8002DC power supplies are discontinued for the 8010 and 8006 chassis.

The 8003-R chassis supports the 8005DI-AC power supply, but it is unnecessary due to the 8003-R 1+1 power system redundancy design.

Important:

R, RS, or 8800 modules installed in the 8006, 8010, 8010co, or 8300R chassis may require a minimum of one 8005AC, 8005DI AC, or 8005DC power supply. Use the power calculator tool (accessible from http://www.avaya.com/support) to determine the power supply requirements for your specific module and chassis configuration. If your module or chassis configuration changes, then reuse the tool to determine if a power supply change is also required. If an 8005 type power supply is required, then all power supplies must be 8005 type. You can mix different types of 8005 power supplies in the same chassis.

If your Avaya Ethernet Routing Switch 8800/8600 is operating in a redundant power configuration, you can upgrade the Avaya Ethernet Routing Switch 8800/8600 for additional power while the Avaya Ethernet Routing Switch 8800/8600 remains in operation.

Caution:

The output power ratings differ between power supply models. Avaya recommends that you do not operate the Avaya Ethernet Routing Switch 8800/8600 chassis with dissimilar power supply models with different output power ratings for an extended period of time.

Upgrade the power supplies before you upgrade the modules.

For power supply and system power technical specifications, see Technical specifications on page 81.

For information about power supply installation, see *Avaya Ethernet Routing Switch 8800/8600 Installation — AC Power Supply, NN46205-306* and *Avaya Ethernet Routing Switch 8800/8600 Installation — DC Power Supply, NN46205-307*.

Fan trays and cooling modules

The following table lists the number of fan trays and cooling modules required for each Avaya Ethernet Routing Switch 8800/8600 chassis.

If you install an RS or 8800 module in the chassis, you must install the high speed cooling modules. If you do not install the high speed cooling modules, the software will not operate on the RS or 8800 module. For information about installing high speed cooling modules, see *Avaya Ethernet Routing Switch 8800/8600 Installation — Cooling Module, NN46205-302*.

Table 2: Number of fan trays installed in each chassis

Chassis	Fan tray	High speed cooling module
8010co	Two—each fan tray uses two high-capacity fans	N/A
8010	Two—each fan tray uses fifteen high-capacity fans	Two
8006	One with twenty high-capacity fans	One

Chassis	Fan tray	High speed cooling module
8003-R	One with three high-capacity fans	N/A

For fan trays, a control or monitor circuit board in the fan tray reports temperature and the status of fan operation to the network management software. A green light emitting diode (LED) indicates correct fan operation. For information about installing fan trays, see *Avaya Ethernet Routing Switch 8800/8600 Routine Maintenance, NN46205-312*.

Site requirements

Ensure that the installation site meets the space requirements listed in this section. For environmental and electrical requirements, see Technical specifications on page 81.

Space requirements

The following section lists the space requirements for the 8010, 8010co, 8006, and 8003-R chassis.

The installation site must provide sufficient free space around the chassis to ensure proper ventilation and service access.

Use the following guidelines to plan front and rear access:

- The maintenance aisle in front of the frame requires a clearance of 76.2 cm (30 inches).
- The wiring aisle at the back of the frame requires a clearance of 61 cm (24 inches).

Hardware requirements

This section includes information about the hardware shipped with the 8010co, 8010, 8006, and 8003-R chassis.

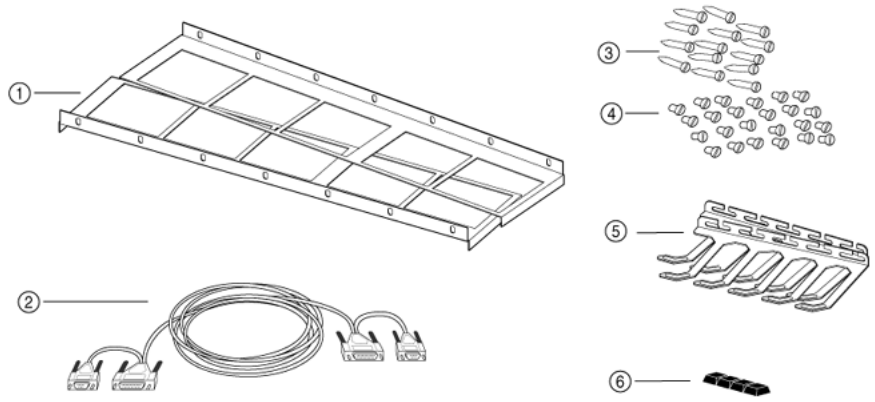
8010, 8006, and 8003-R chassis

The following table is a checklist of items included in the shipment container. For information about ordering replacement parts, see Part numbers on page 79.

Table 3: Accessories shipped with the 8010, 8006, and 8003-R chassis

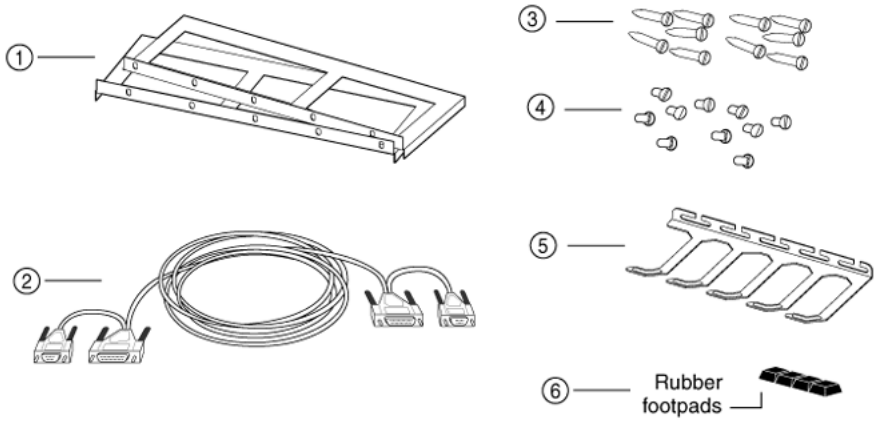
Check	Accessory	Usage
	Bracket kit with • Two rack-mounting brackets • Phillips-head screws	Prepare the chassis for installation in an equipment rack.
	Screw package	Mount the chassis in an equipment rack.
	Side cable management brackets • two brackets for the 8010 chassis • one bracket each for the 8006, and 8003-R chassis	Manage network interface cables.
	Rubber footpads	Keep the chassis from slipping when you mount it on a flat surface.
	Console cable	Connect an optional management console to the chassis. Each end of the console cable uses a DB-25 and a DB-9 connector.
	Cable adapter	Connect an optional management console to the DB-9 connector.

Figure 5: Items in the 8010 chassis shipping container on page 33 and Figure 6: Items in the 8006 chassis shipping container on page 33 illustrate the items in the chassis shipping container.



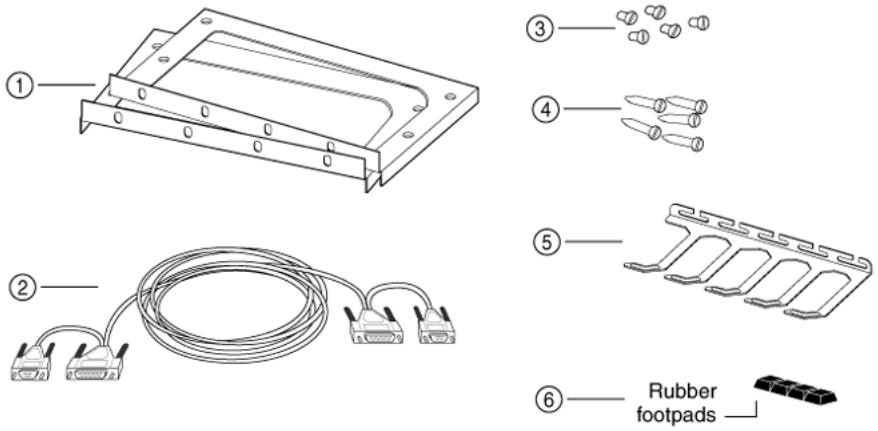
1 = Rack mounting brackets
2 = Console cable
3 = Screws (x14) for brackets
4 = Screws (x24) for equipment rack
5 = Cable guides
6 = Rubber footpads

Figure 5: Items in the 8010 chassis shipping container



1 = Rack mounting brackets
2 = Console cable
3 = Screws (x10) for brackets
4 = Screws (x10) for equipment rack
5 = Cable guide
6 = Rubber footpads

Figure 6: Items in the 8006 chassis shipping container



1 = Rack mounting brackets
2 = Console cable
3 = Screws for brackets
4 = Screws for equipment rack
5 = Cable guide
6 = Rubber footpads

Figure 7: Items in the 8003-R chassis shipping container

Other equipment

You need items not included in the 8010, 8006, and 8003-R chassis accessory package. The following sections describe these items. Before you install the hardware, ensure that you have all the cables, tools, and other equipment you need.

Management console

To configure startup options and to monitor the results of startup diagnostics, you can either attach an optional PC, laptop, video terminal (VT)-100 console or equivalent, such as a PC terminal emulator, or you can attach an AT-compatible modem to allow dial-in access to startup configuration and diagnostics.

Cables

Unless you specifically order them, Avaya does not include the cables required for your network configuration in the chassis accessory package. If you need the proper cables, contact your network administrator.

Mounting hardware for the 8010, 8006, and 8003-R chassis

To install the 8010, 8006, or 8003-R chassis in an equipment rack, you need a Phillips screwdriver and an equipment rack that meets the following specifications:

- Heavy-duty steel construction
- Electronic Industries Association (EIA) standard hole spacing
- Width of 19 in. (48.26 cm) and depth of 24 in. (60.96 cm)

8010co chassis

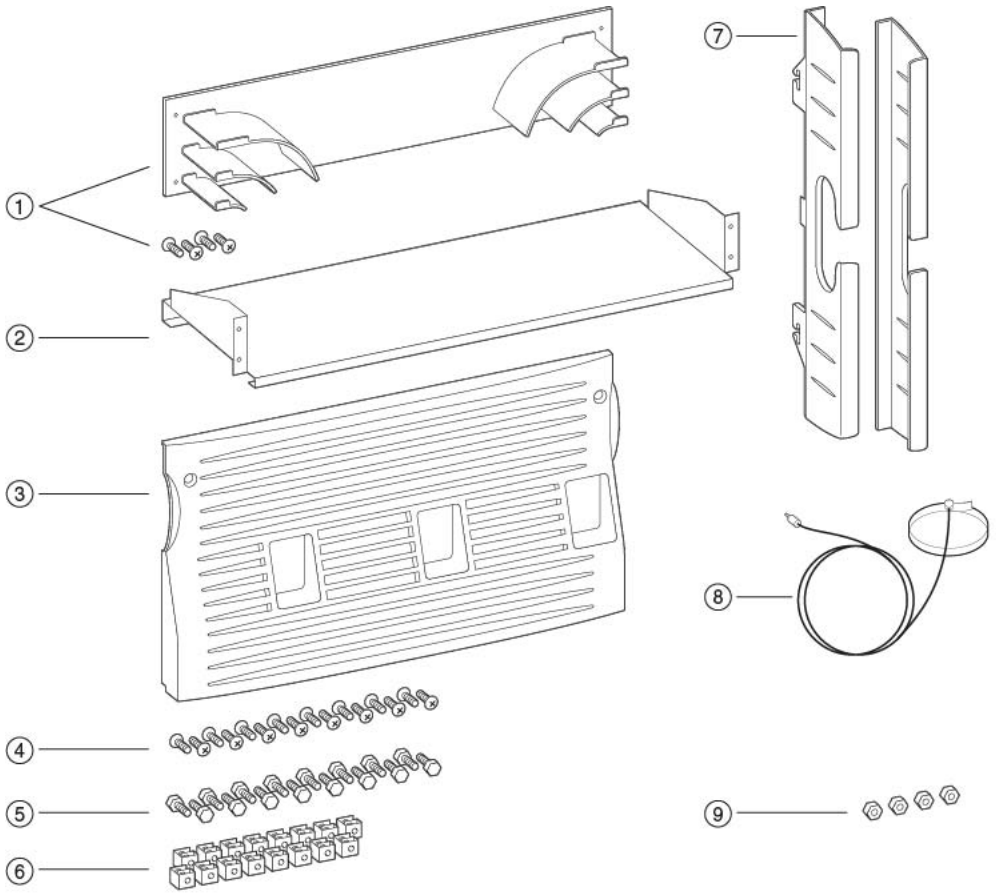
In addition to the 8010co chassis, your shipping container contains several hardware accessories. Verify that the items in the shipping container match those on the shipment packing list.

Use Figure 7: Items in the 8003-R chassis shipping container on page 34 link and as a checklist when you verify the contents of the shipping container. For information about ordering replacement parts, see Part numbers on page 79.

Table 4: 8010co chassis shipping accessories

Check	Accessory	Usage
	Antistatic wrist strap	Direct the discharge of static electricity from your body to the chassis and avoid discharge to, and possible damage of, sensitive electronic components.
	One 10-ft console serial cable	Connect an optional management console.
	Screws and hardware:	The hardware required to mount the chassis in a rack depends on your rack type.
	12 Phillips-head screws 12 clip nuts	Mount the chassis to a rack rail. Use the clip nuts if necessary.
		The hardware required to mount the installation shelf in a rack depends on your rack type.
	4 Phillips-head screws 4 hex nuts	Mount the installation shelf to a rack rail. Mount the installation shelf to a rack rail.
	4 pan-head screws	Install the cable management bracket.
	Installation shelf	Mount the 8010co chassis in an equipment rack.
	One upper cable management bracket	Manage network interface cables.
	Two side cable management brackets	Manage network interface cables.

Figure 8: Accessories in the 8010co chassis shipping container on page 36 illustrates the accessories in the 8010co chassis shipping container.



1 = Upper cable management bracket and screws (x 4)
2 = Installation shelf
3 = Bottom bezel
4 = Phillips head screws for mounting chassis and installation shelf in a standard 19-inch rack (x 16)
5 = Hex head screws for mounting chassis and installation shelf in a Hendry rack (x 16)
6 = Clipnuts, use as required for rack type (x 16)
7 = Side cable management brackets (x 2)
8 = Antistatic wrist strap
9 = Hex nuts for mounting installation shelf in a standard 19-inch rack (x4)

Figure 8: Accessories in the 8010co chassis shipping container

Other equipment

You can require items not included in the 8010co chassis accessory package. The following sections describe these items. Before you install the 8010co hardware, ensure that you obtain all the cables, tools, and other equipment you need.

Management console

To configure startup options and to monitor the results of startup diagnostics, you can attach a PC, laptop, VT100 console or equivalent, such as a PC terminal emulator, or you can attach

a configured AT-compatible modem to allow dial-in access to startup configuration and diagnostics.

Hardware for mounting the chassis in an equipment rack

The hardware required to mount the 8010co chassis in an equipment rack depends on your equipment rack type.

You need a Phillips screwdriver to install the 8010co chassis in a standard rail-type equipment rack.

The racks must meet the following specifications:

- Heavy-duty steel construction
- Electronic Industries Association (EIA) standard hole spacing
- Two-post rack with a width of 19 in. (48.26 cm) and a depth of 24 in. (60.96 cm)
- Two-post rack with a width of 23 in. (58.42 cm) and a depth of 24 in. (60.96 cm) (Requires an EIA 19 to 23-in. adapter. Contact your rack manufacturer to order the adapter.)

If the rack does not use threaded rail holes, you must use the supplied clip nuts with the clip nut screws.

Cables

Unless you specifically order them, Avaya does not include the cables required for your network configuration in the 8010co chassis accessory package. If you require the proper cables, contact your network administrator.

Successful installation verification

In a normal power-up sequence, the LEDs light as follows:

- After you apply power to the switch, the green LED on each power supply and fan tray lights, and the Online LED for each module lights amber.
- Each module initiates a self-test, during which the port and module LEDs display various patterns to indicate the progress of the self-test.
- Upon successful completion of the self-test (within 2 or 3 minutes after you apply power for a fully-loaded chassis), the module Online LED transitions from amber to green.
- After 1 minute of operation, the fan tray Pass LED lights steady green.

If the LEDs on the modules light in this sequence, your installation is successful. Contact your network administrator to verify that the Avaya Ethernet Routing Switch 8800/8600 is now connected to the network.

If the LEDs do not light in this sequence, contact your local Avaya Technical Solutions Center.

Chapter 5: 8010, 8006, and 8003-R chassis installation

This section describes how to install the 8010, 8006, and 8003-R chassis.

Prerequisites to chassis installation

- Inspect all items for shipping damage. If you find items that are damaged, do not install the chassis. Call the Avaya Technical Solutions Center in your area.
- Verify that the items in the shipping container match those on the shipment packing list. Use Table 3: Accessories shipped with the 8010, 8006, and 8003-R chassis on page 32 as a checklist when you verify the contents of the shipping container.
- Verify that you have all other required hardware.

Chassis installation procedures

This task flow shows you the sequence of procedures you perform to install the chassis.

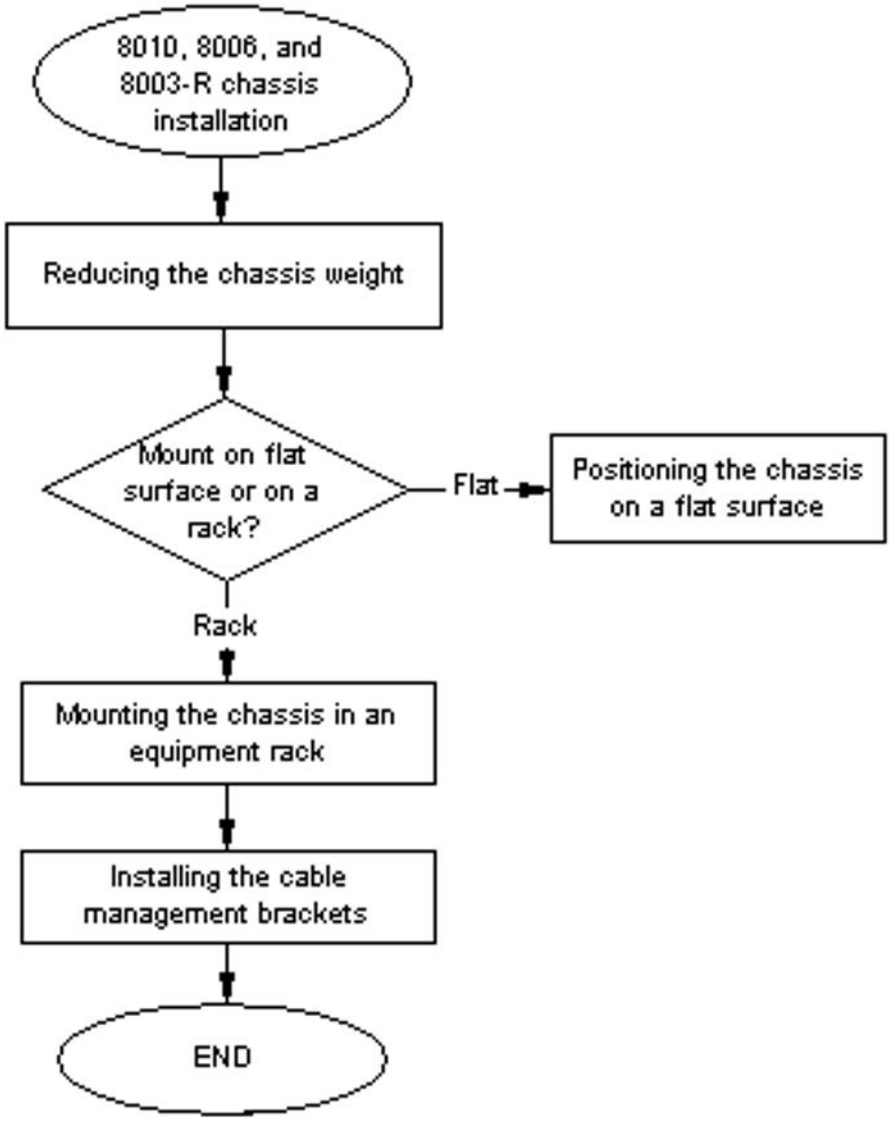


Figure 9: 8010, 8006, and 8003-R chassis installation procedures

Chassis installation time requirements

The following table lists procedures you must use to install the Avaya Ethernet Routing Switch 8800/8600 chassis and the estimated time you need to complete each procedure. Not all procedures are required for every Avaya Ethernet Routing Switch 8800/8600 system.

Table 5: Installation procedures and time requirements

Procedure	Time requirement
Positioning the chassis on a flat surface	5 minutes
Mounting the chassis in an equipment rack	12–30 minutes depending on the chassis
Installing the cable management brackets	5 minutes

Positioning the chassis on a flat surface

As long as you provide adequate space around the unit for access to cable connectors, you can mount the chassis onto an appropriate flat, level surface that can safely support the weight of the chassis, the components, and the attached cables.

Procedure steps

1. Place the switch on the flat surface and check for proper ventilation.

   Allow at least 2 in. (5.1 cm) on each side for proper ventilation and 5 in. (12.7 cm) at the front for power cord clearance.

2. Attach rubber feet to each marked location on the bottom of the chassis.

   The rubber feet are optional but Avaya recommends that you use them to help keep the unit from moving.

Mounting the chassis in an equipment rack

Mount the chassis in a standard 19 in. equipment rack. If you mount the chassis in a 23 in. equipment rack, see the rack adapter installation instructions provided by the rack manufacturer.

Prerequisites

- You need the following items:
  - Standard 19-in. (48.2 cm) equipment rack
  - 10 screws and washers (extra screws ship with the 8010 chassis)

- Phillips screwdriver

Procedure steps

1. Hold each rack-mounting bracket against one side of the chassis. Ensure the attachment holes in the bracket match the holes in the chassis.

   Each bracket fits only one side of the chassis. The brackets are labeled R (right) and L (left). If the mounting holes do not line up between a bracket and the chassis, try that bracket on the other side of the chassis.

   For more information about positioning the rack-mounting brackets, see Figure 10: Positioning the rack-mounting brackets: 8010 chassis on page 42, Figure 11: Positioning the rack-mounting brackets: 8006 chassis on page 42, and Figure 12: Positioning the rack-mounting brackets: 8003-R chassis on page 43.

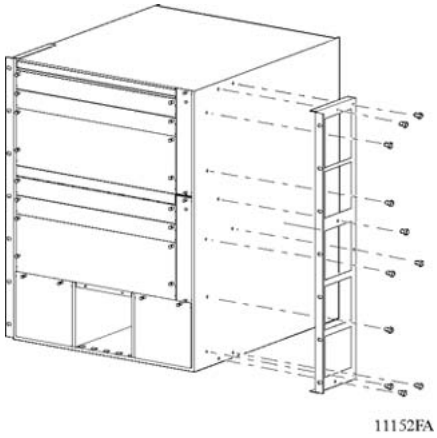


Figure 10: Positioning the rack-mounting brackets: 8010 chassis

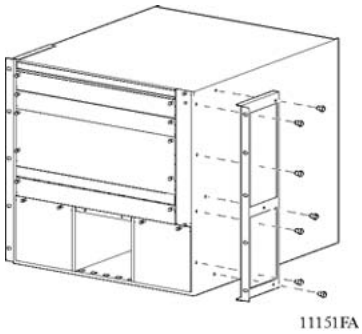


Figure 11: Positioning the rack-mounting brackets: 8006 chassis

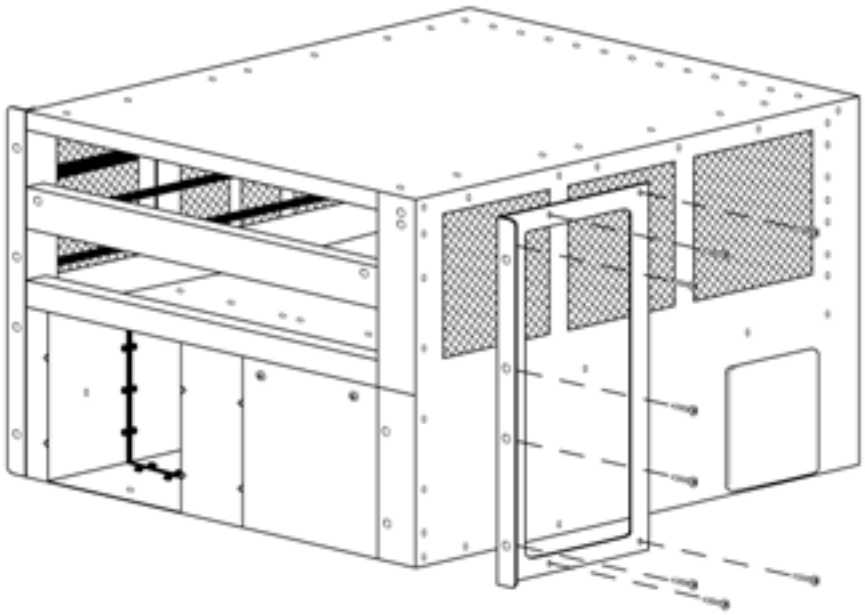


Figure 12: Positioning the rack-mounting brackets: 8003-R chassis

2. Insert and tighten the supplied Phillips-head screws to fasten each bracket to the chassis.

   For more information about attaching the rack-mounting brackets, see Figure 13: Attaching the rack-mounting brackets to the 8010 chassis on page 43, Figure 14: Attaching the rack-mounting brackets to the 8006 chassis on page 44, and Figure 15: Attaching the rack-mounting brackets to the 8003-R chassis on page 44.

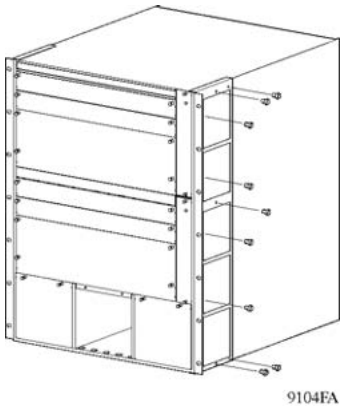


Figure 13: Attaching the rack-mounting brackets to the 8010 chassis

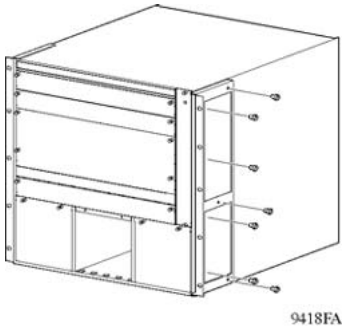


Figure 14: Attaching the rack-mounting brackets to the 8006 chassis

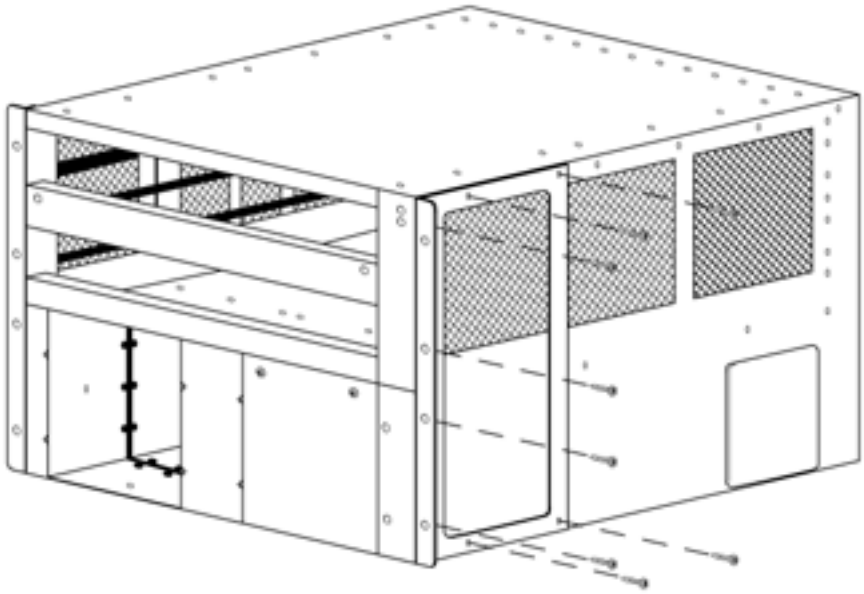


Figure 15: Attaching the rack-mounting brackets to the 8003-R chassis

3. Measure the appropriate number of rack units of free vertical space inside the rack and mark the spot.

   For more information about the number of rack units to allocate for each chassis, see Procedure job aid on page 47.

4. Hold the chassis in position and align the flanged end of each mounting rail with the two holes on each side of the vertical rack support.

   Complete this step with two people. Ensure that the hole pairs on either side of the vertical support match horizontally. For more information about aligning the rack-mounting brackets, see Figure 16: Aligning the rack-mounting brackets with the equipment rack: 8010 chassis on page 45, Figure 17: Aligning the rack-mounting brackets with the equipment rack: 8006 chassis on page 45, and Figure 18:

Aligning the rack-mounting brackets with the equipment rack: 8003-R chassis on page 46.

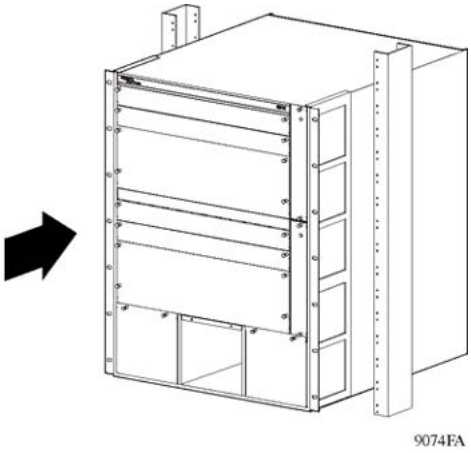


Figure 16: Aligning the rack-mounting brackets with the equipment rack: 8010 chassis

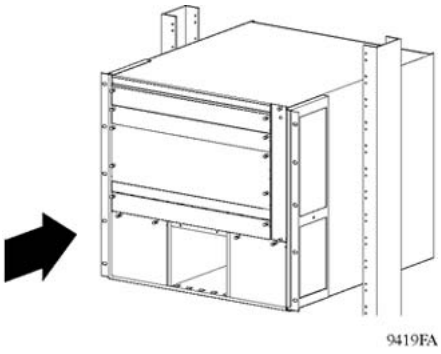


Figure 17: Aligning the rack-mounting brackets with the equipment rack: 8006 chassis

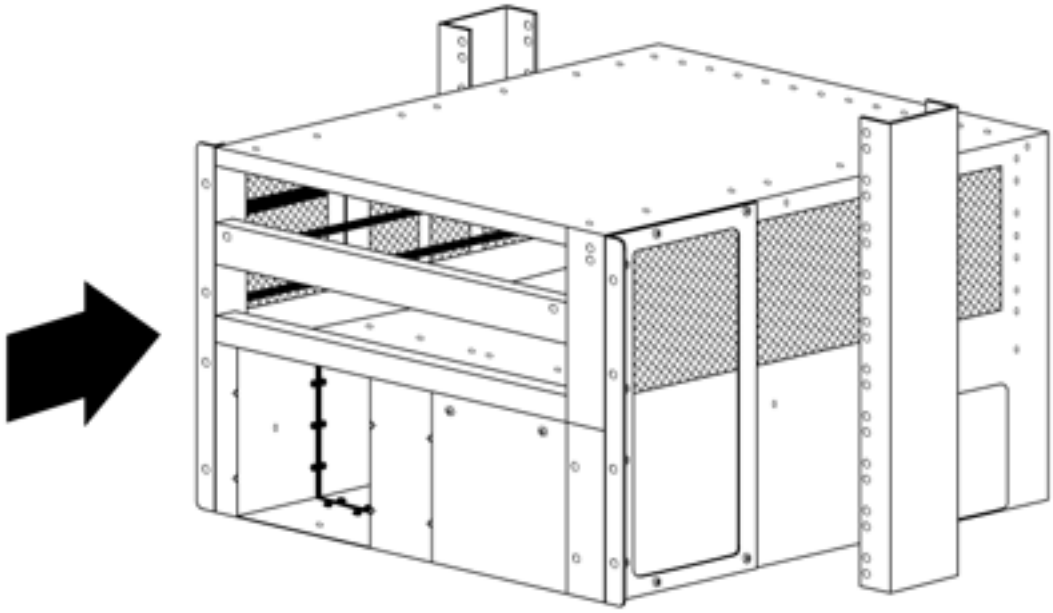


Figure 18: Aligning the rack-mounting brackets with the equipment rack: 8003-R chassis

5. Insert and tighten the rack-mounting screws with a Phillips screwdriver.

   For more information about rack installation, see Figure 19: Installing the 8010 chassis in an equipment rack on page 46, Figure 20: Installing the 8006 chassis in an equipment rack on page 47, and Figure 21: Installing the 8003-R chassis in an equipment rack on page 47.

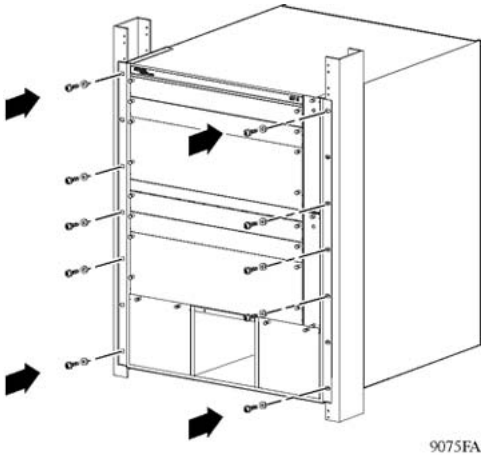


Figure 19: Installing the 8010 chassis in an equipment rack

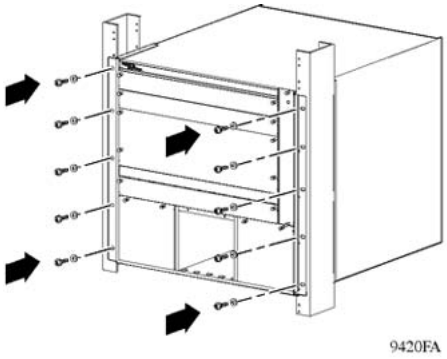


Figure 20: Installing the 8006 chassis in an equipment rack

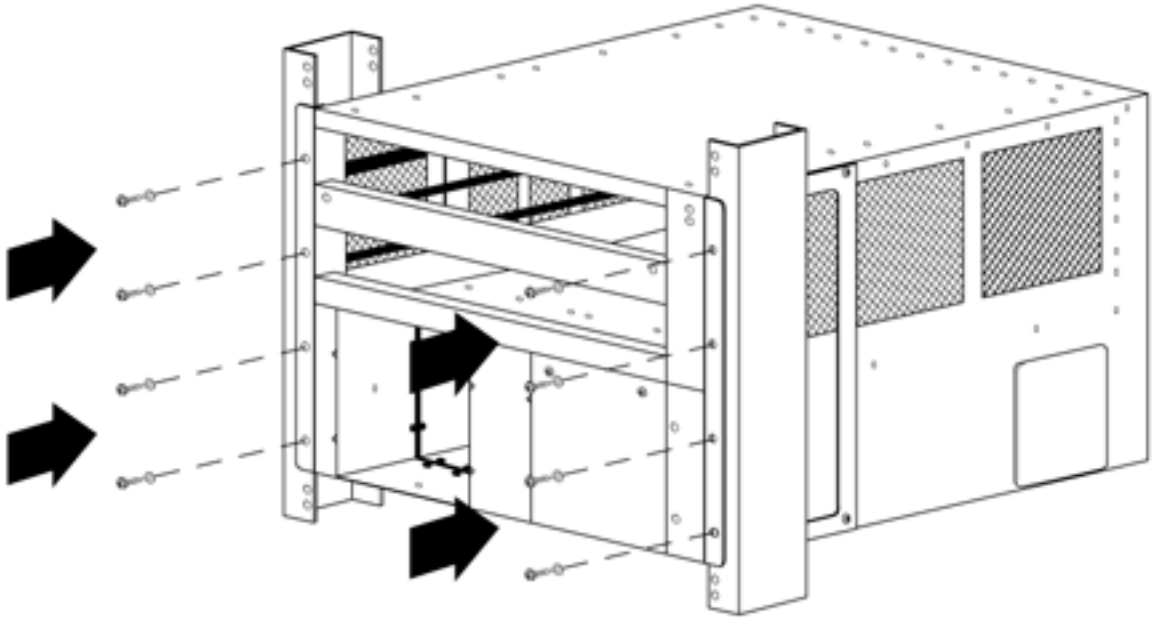


Figure 21: Installing the 8003-R chassis in an equipment rack

Procedure job aid

Table 6: Number of rack units to allocate for chassis on page 47 lists the number of rack units to allocate for each chassis.

Table 6: Number of rack units to allocate for chassis

Chassis	Rack units	Inches
8010	13.2	23.1

Chassis	Rack units	Inches
8006	9.7	16.9
8003-R	7	12.25

Installing the cable management brackets

Install the cable management brackets to keep cable clusters fastened and out of the way but still accessible for maintenance.

Procedure steps

1. Loosen, but do not remove, the rack-mounting screws needed to install one cable management brackets.

   For more information about loosening the rack-mounting screws, see Figure 22: Loosening the rack-mounting screws: 8010 chassis on page 48, Figure 23: Loosening the rack-mounting screws: 8006 chassis on page 49, and Figure 24: Loosening the rack-mounting screws: 8003-R chassis on page 49.

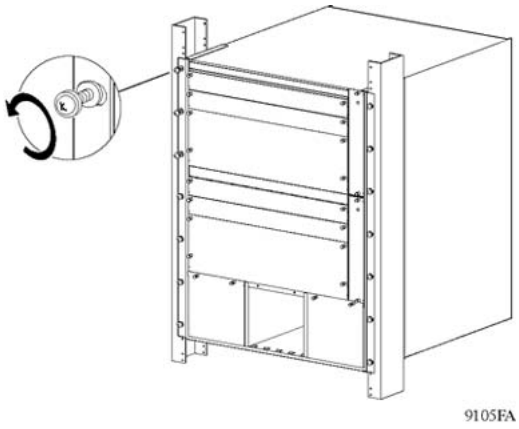


Figure 22: Loosening the rack-mounting screws: 8010 chassis

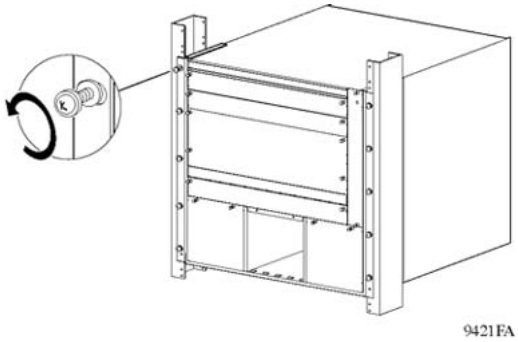


Figure 23: Loosening the rack-mounting screws: 8006 chassis

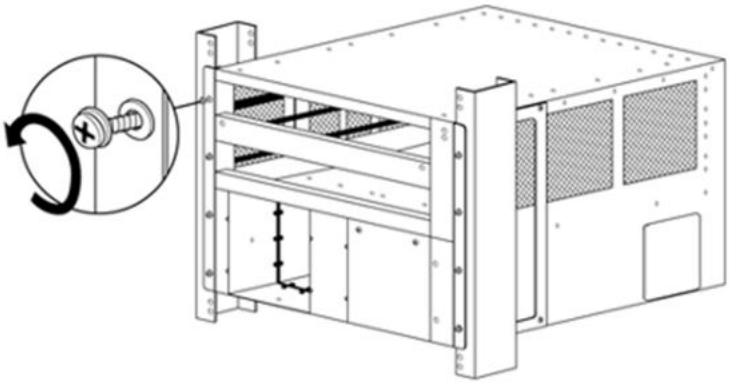


Figure 24: Loosening the rack-mounting screws: 8003-R chassis

2. Slide the bracket onto the loosened screws.

   For more information about sliding the bracket onto the screws, see Figure 25: Sliding the bracket onto the screws: 8010, 8006, and 8003-R chassis on page 49.

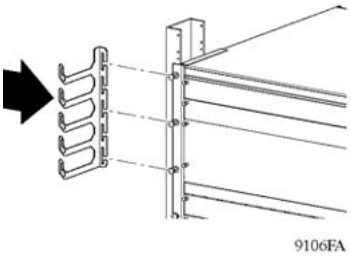


Figure 25: Sliding the bracket onto the screws: 8010, 8006, and 8003-R chassis

3. Tighten the screws to secure the bracket to the chassis.

   For more information about tightening the screws, see Figure 26: Securing the bracket to the chassis: 8010 chassis on page 50, Figure 27: Securing the bracket

to the chassis: 8006 chassis on page 50, and Figure 28: Securing the bracket to the chassis: 8003-R chassis on page 51.

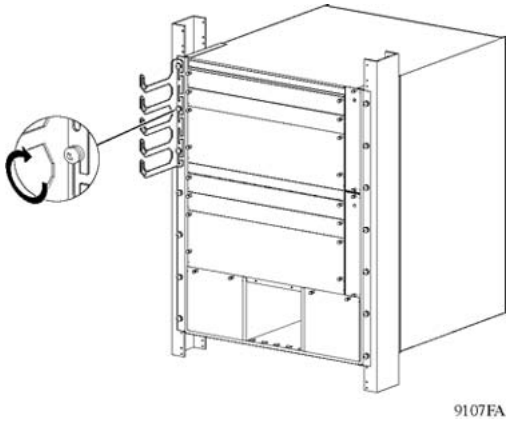


Figure 26: Securing the bracket to the chassis: 8010 chassis

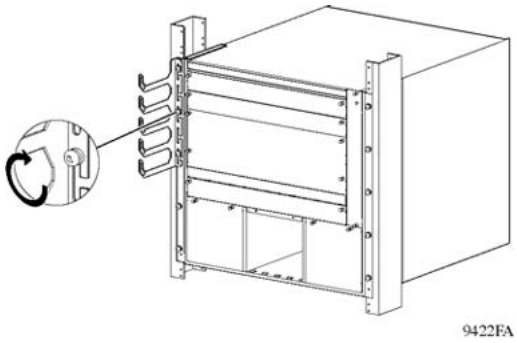


Figure 27: Securing the bracket to the chassis: 8006 chassis

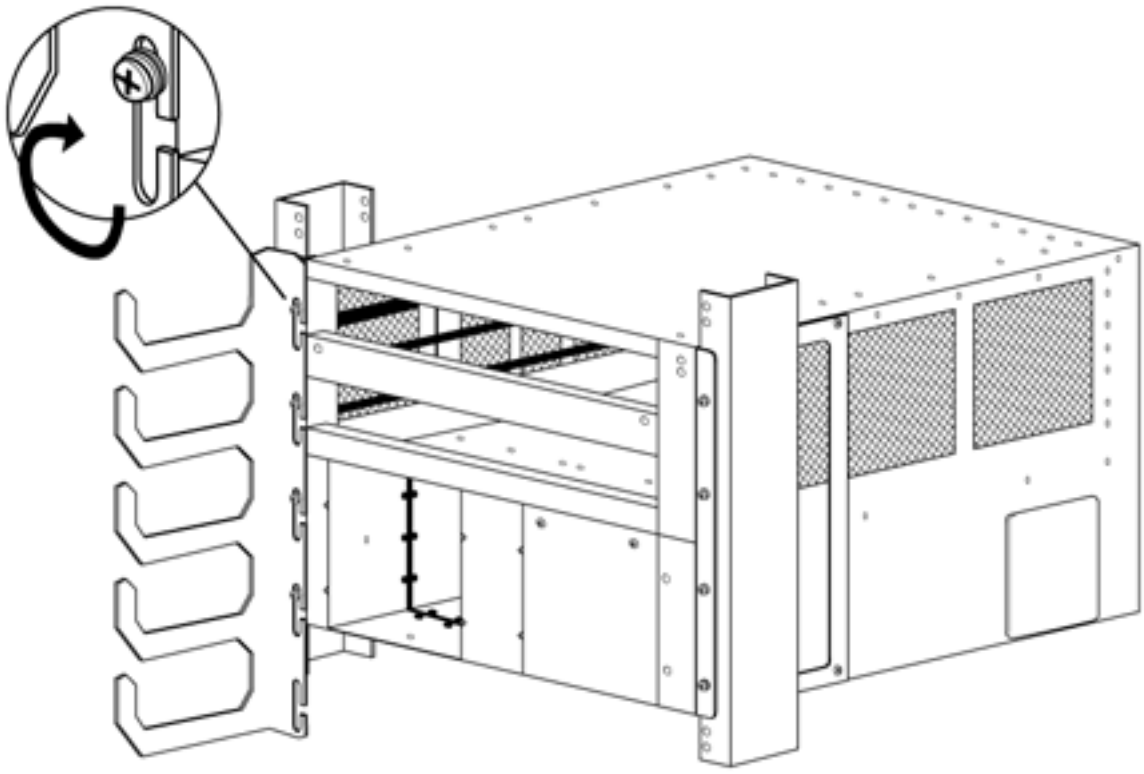


Figure 28: Securing the bracket to the chassis: 8003-R chassis

Chapter 6: 8010co chassis installation

This section describes how to install the 8010co chassis.

Prerequisites to chassis installation

- Inspect all items for shipping damage. If you find items that are damaged, do not install the chassis. Call the Avaya Technical Solutions Center in your area.
- Verify that the items in the shipping container match those on the shipment packing list. Use Table 3: Accessories shipped with the 8010, 8006, and 8003-R chassis on page 32 as a checklist when you verify the contents of the shipping container.
- Verify that you have all other required hardware.

Chassis installation procedures

This task flow shows you the sequence of procedures you perform to install the chassis.

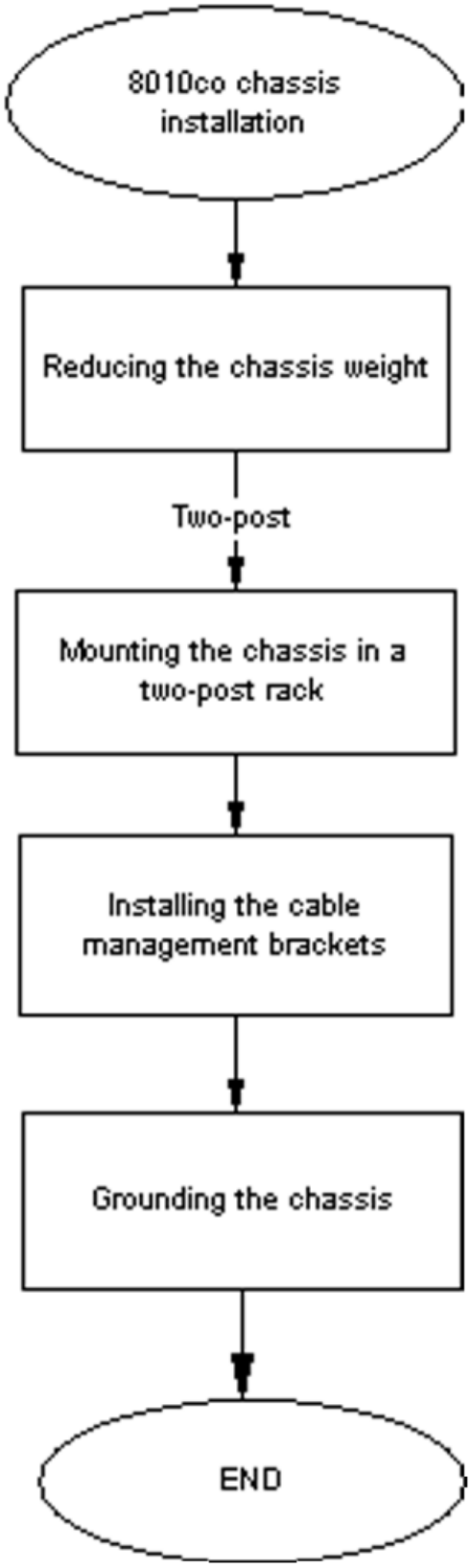


Figure 29: 8010co chassis installation procedures

Chassis installation time requirements

The following table lists procedures you use to install the Avaya Ethernet Routing Switch 8800/8600 chassis and the estimated time you need to complete each procedure. Not all procedures are required for every Avaya Ethernet Routing Switch 8800/8600 system.

Table 7: Installation procedures and time requirements

Procedure	Time requirement
Mounting the chassis in a two-post rack	12–30 minutes
Installing the cable management brackets	5 minutes
Grounding the chassis	5 minutes

Mounting the chassis in a two-post rack

Mount the 8010co chassis in a standard two-post equipment rack. To install the 8010co chassis in a 23-in. equipment rack, see the adapter installation instructions provided by the rack manufacturer.

Prerequisites

- To mount the 8010co chassis in a two-post rack, you need the following equipment:
  - Installation shelf (shipped with the 8010co chassis)
  - A standard 19-in. or 23-in. equipment rack

    Attach the clip nuts shipped with the 8010co chassis, if necessary.
  - 12 Phillips screws and a Phillips screwdriver

Procedure steps

1. Place the installation shelf at the bottom of the rack inside the rails.
2. Hold the installation shelf in position and align the mounting rail with the two holes on each side of the vertical rack support.

3. Insert a Phillips screw through each installation shelf mounting hole and into the corresponding hole in the rack.

   For more information about installing the shelf, see Figure 30: Installing the installation shelf in a 19-in. equipment rack on page 56.

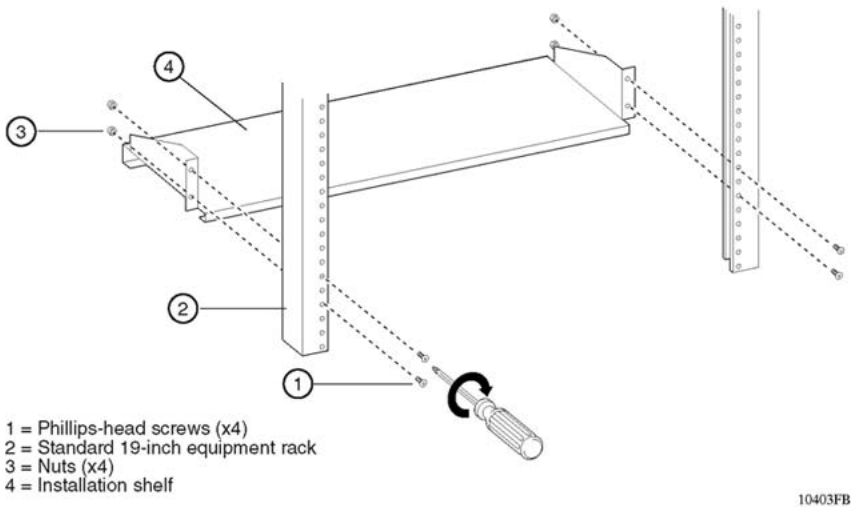


Figure 30: Installing the installation shelf in a 19-in. equipment rack

4. Add a hex nut to each screw and tighten by using a hex wrench.
5. Tighten each screw with a Phillips screwdriver.
6. If the holes in the vertical supports require clip nuts, insert a clip nut in each of the 12 locations.

   Warning:
   Risk of personal injury

   It requires three people to lift the 8010co chassis. To make the chassis lighter, remove the modules and power supplies before you lift it.

7. Lift the 8010co chassis onto the installation shelf.
8. Hold the 8010co chassis in position and align the flanged end of the chassis mounting rail with the six holes on either side of the vertical rack support.

   For more information about installing the chassis, see Figure 31: Installing the 8010co chassis in a 19-in. two-post rack on page 57.

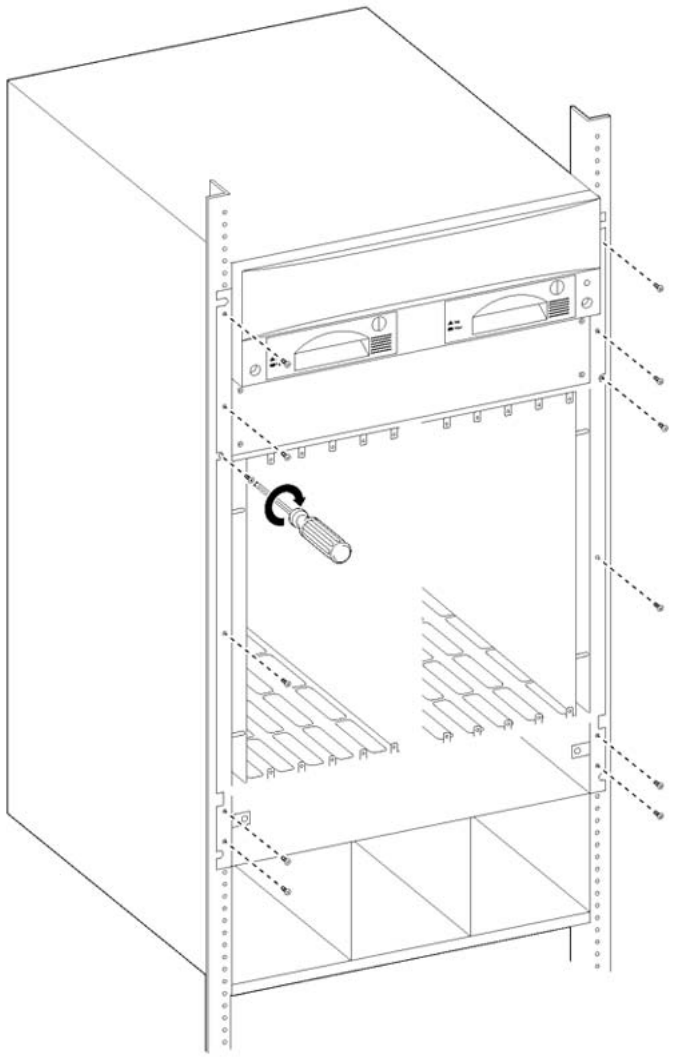


Figure 31: Installing the 8010co chassis in a 19-in. two-post rack

9. Make sure that the hole pairs on either side of the vertical support match horizontally.
10. Tighten each screw with a Phillips screwdriver.

Installing the cable management brackets

Install the cable management brackets to keep cable clusters fastened and out of the way but still accessible for maintenance. With the 8010co chassis, you must install a top cable management bracket and two side cable management brackets.

Procedure steps

1. To attach the upper cable management bracket, align the holes in the management bracket with corresponding holes on the chassis panel located above the card cage.
2. Insert eight screws through the cable management bracket and tighten into chassis.

   For more information, see the following figure.

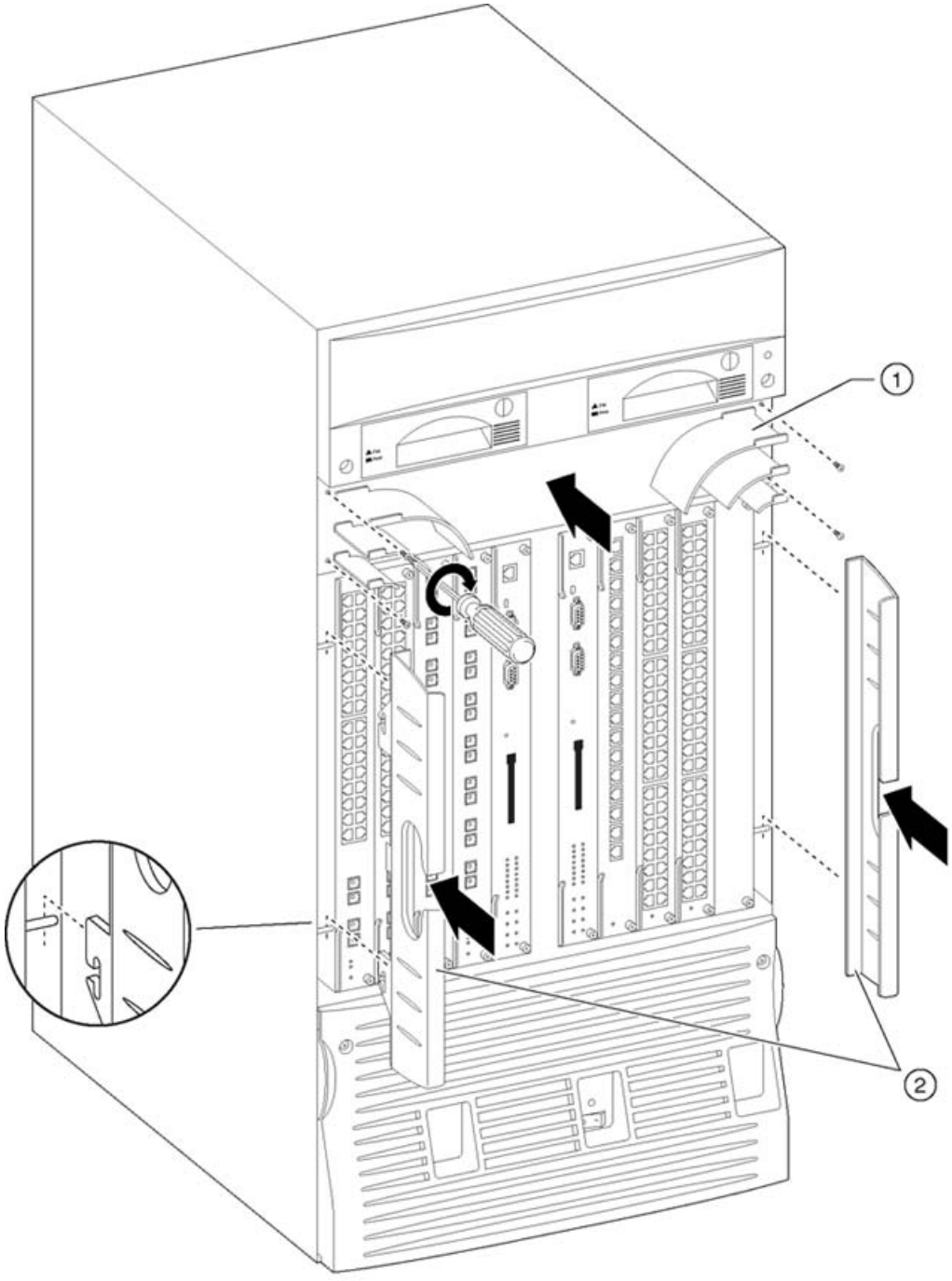


Figure 32: Installing cable management brackets

3. To install side cable management brackets, slide the keyed attachments into slots on either side of the card cage.

See Figure 32: Installing cable management brackets on page 59.

4. Insert fully into slot. Use the keyed attachments to lower the bracket and secure into place.

Grounding the chassis

Avaya recommends that you ground the 8010co chassis before you connect power cables or network cables to the switch.

Prerequisites

- To attach a ground to one of the chassis grounding studs, you need the following:
  - one single-hole cable lug that fits over one of the grounding studs
  - a nut and a locking washer for the grounding stud
  - a 6-AWG grounding wire long enough to connect to the ground point
  - 7/16-in. hex wrench to fasten the hardware

Procedure steps

1. Locate the shelf grounding point on the rack. This grounding point can be a grounding strip at the back base, top, or side of the rack.

   Figure 33: Rack grounding strip example on page 61 shows an example of a rack grounding strip. Your rack grounding strip can look different than the one shown in this example.

2. Attach the lug ends of the chassis ground cables to the rack grounding strip.

   Use a 7/16-in. hex wrench to fasten the hardware in the correct order. For more information about attaching the lug ends, see Figure 33: Rack grounding strip example on page 61.

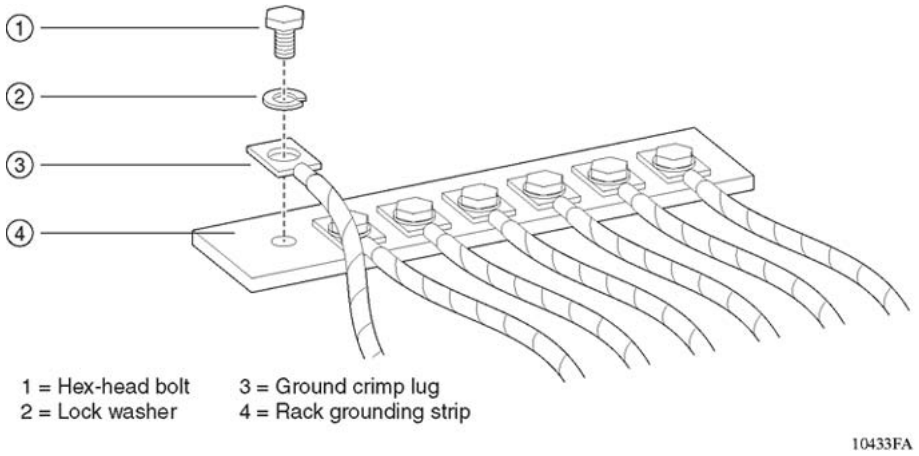


Figure 33: Rack grounding strip example

Job aid

The following figure shows the location of the ground studs on the 8010co chassis rear panel.

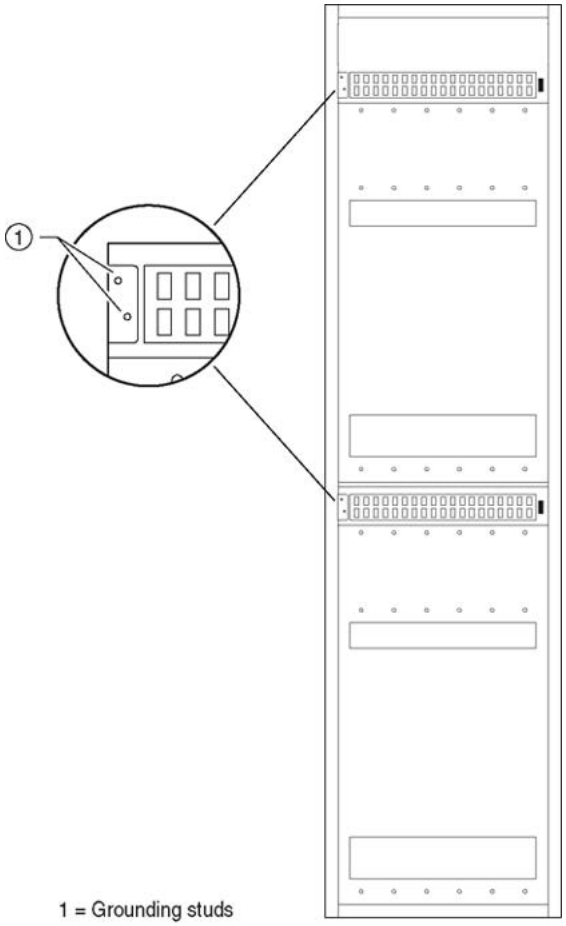


Figure 34: Location of 8010co chassis ground studs

The following figure shows an example of how to ground two 8010co chassis. In this example, each chassis uses three 8004DC power supplies. Your rack-grounding strip can look different or can be in a different location than the one shown in the example.

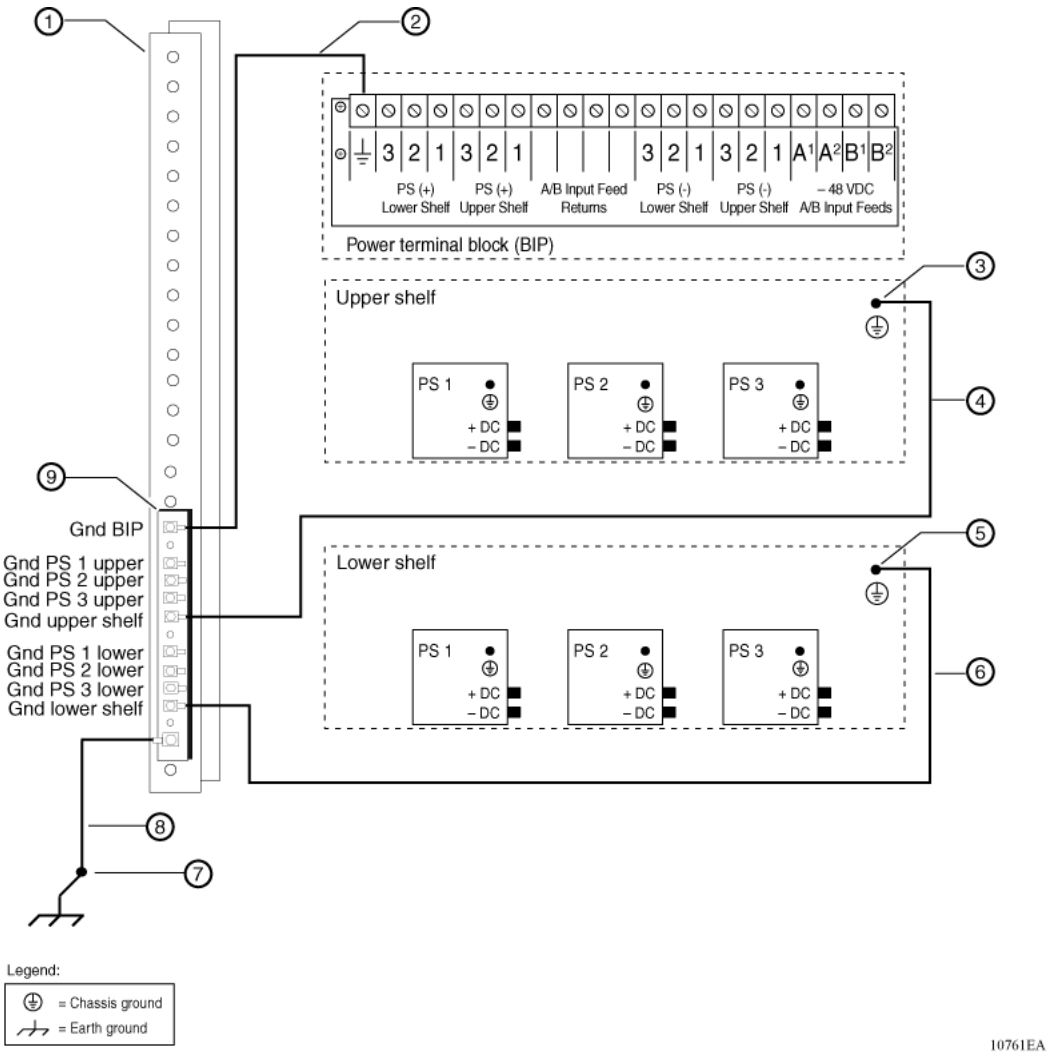


Figure 35: Chassis and 8004DC power supply grounding example

The following table describes the reference items shown in Figure 35: Chassis and 8004DC power supply grounding example on page 63.

Table 8: Item description for chassis and 8004DC power supply grounding

Item	Description
1	Cabinet frame or equipment rack
2	AWG 6 ground lead (provided with BIP)
3	Upper shelf chassis ground stud
4	Upper shelf ground lead (not provided)
5	Lower shelf chassis ground stud
6	Lower shelf ground lead (not provided)

Item	Description
7	Single point ground system
8	AWG 6 ground lead (not provided)
9	Rack ground strip (example only)

The following figure shows an example of how to ground two 8010co chassis. In this example, each chassis uses three AC power supplies.

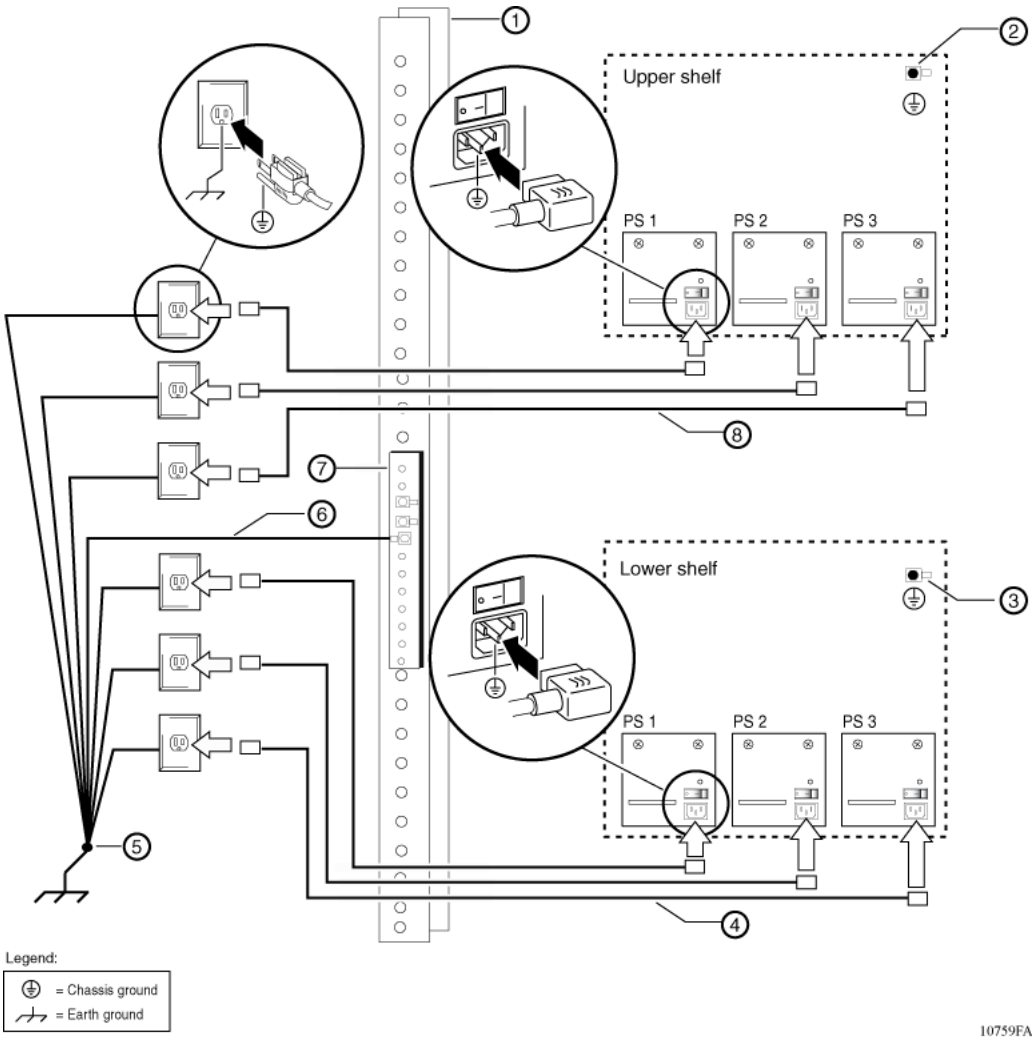


Figure 36: Chassis and AC power supply grounding example

The following table describes the reference items shown in Figure 36: Chassis and AC power supply grounding example on page 64

Table 9: Item description for chassis and AC power supply grounding

Item	Description
1	Cabinet frame or equipment rack
2	Upper shelf chassis ground stud
3	Upper shelf ground leads (not provided)
4	AC equipment ground (ACEG) leads within individual lower shelf cords (x 3)
5	Single-point ground system
6	AWG 6 ground lead (not provided)
7	Rack ground strip (example only)
8	AC equipment ground (ACEG) leads within individual upper shelf cords (x 3)

Chapter 7: Switch operations

This section describes some of the routine tasks you perform to operate the Avaya Ethernet Routing Switch 8800/8600.

Powering on DC power supplies

Power on the direct current (DC) power supplies to provide power to the switch.

Procedure steps

1. On each DC power supply, turn the power switch to the on position.

   If your chassis contains two or three power supplies, turn on the power supplies simultaneously. If you wait longer to turn on the second power supply, one of the power supplies can shut off within 7 seconds. To correct this condition, turn off the power supplies for a short period of time, and then turn on the power supplies again simultaneously.

   It is not necessary to remove the bezel to turn the power switch on. Do not operate the 8010co chassis with only one power supply. For information about the power switch location, see Figure 37: DC power supply power switch on page 68.

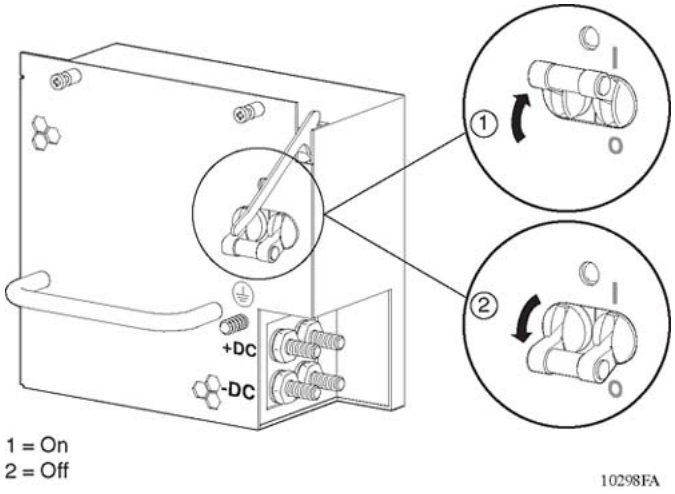


Figure 37: DC power supply power switch

2. Verify that the power output LED for each power supply lights green.
3. Verify that the power supply status LEDs and the fan LED on the 8692 Switch Fabric/ Central Processor Unit (SF/CPU) or 8895 SF/CPU modules light green.
4. Verify that air flows from the cooling fans out through the back of the 8010co chassis.

   The fan tray red fail LED can light briefly while the fans power to operational speed.

   After you turn on the switch, each module automatically initiates a diagnostic test to verify proper module function.
5. If the power supply LED remains off or if you cannot feel air flow from the 8010co chassis vents,on each power supply, turn the power switch to the off position.
6. Wait 1 minute.
7. On each power supply, turn the power switch to the on position.

   If the problem persists, contact the Avaya Technical Solutions Center.

Powering on AC power supplies

Power on the AC power supplies to provide power to the switch.

Procedure steps

1. Verify that the AC power cords connect to AC power outlets.
2. On each power supply, turn the power switch to the on position.

   If your chassis contains two or three power supplies, turn on the power supplies simultaneously. If you wait longer to turn on the second power supply, one of the power supplies can shut off within 7 seconds. To correct this condition, turn off the power supplies for a short period of time, and then turn on the power supplies again simultaneously.

   Do not operate the 8010co chassis with only one power supply.
3. Verify the power LED on each power supply lights green.
4. Verify the power supply status LEDs and the fan LED on the 8692 SF/CPU or 8895 SF/CPU modules light green.
5. Verify air flows from the cooling fans out through the vents of the chassis.

   The fan tray red fail LED can light briefly while the fans power to operational speed.
6. If the power supply LED remains off or if you cannot feel air flow from the chassis vents, on each power supply, turn the power switch to the off position.
7. Wait 1 minute.
8. On each power supply, turn the power switch to the on position.

   If the problem persists, contact the Avaya Technical Solutions Center.

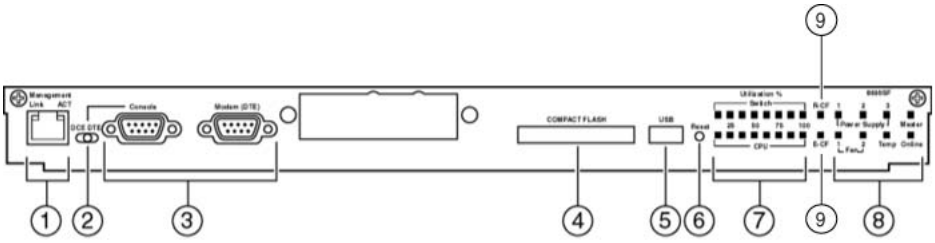
Resetting the switch

Reset the switch to reboot the switch hardware without cycling power.

Procedure steps

On the 8692 SF/CPU or the 8895 SF/CPU, press Reset.

Figure 38: Reset button on page 70 shows the location of the Reset button.



1 = Management port and LEDs
2 = DCE/DTE switch
3 = Console and Modem ports
4 = Compact Flash
5 = USB
6 = Reset button
7 = Utilization LEDs
8 = Module status LEDs
9 = Compact Flash card LEDs

Figure 38: Reset button

Installing removable flash memory cards in an 8895 SF/CPU

Install a removable flash memory card in an 8895 SF/CPU module to provide alternative storage media.

Procedure steps

1. Position the card with the label facing to the left and the insert arrow pointing toward the card receptacle.

   For more information about inserting a card, see Figure 39: Inserting a removable flash memory card: 8010co chassis on page 71 and Figure 40: Inserting a removable flash memory card: 8010, 8006, and 8003-R chassis on page 71.

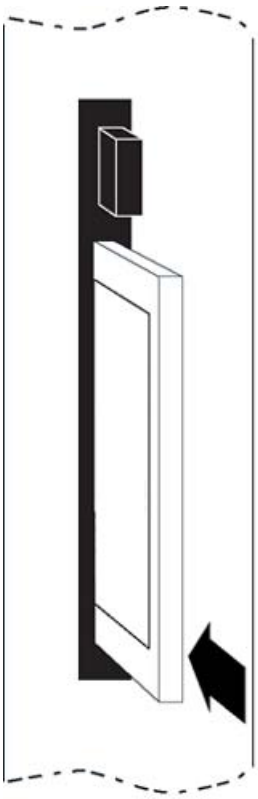


Figure 39: Inserting a removable flash memory card: 8010co chassis

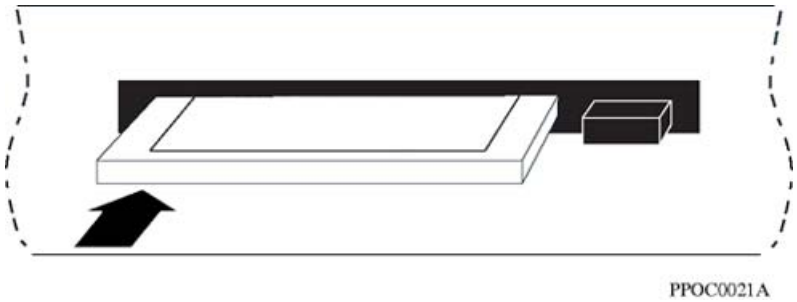


Figure 40: Inserting a removable flash memory card: 8010, 8006, and 8003-R chassis

2. Insert the card into the card receptacle.
3. Gently push in the card until it fits tightly in place.

Removing removable flash memory cards in an 8692 SF/CPU

Remove a flash memory card from the 8692 SF/CPU module to stop using it as a storage medium.

Procedure steps

1. Press the eject button above the memory card receptacle on the 8692 SF/CPU module.

   The card pops out slightly.

   For information about removing a card, see Figure 41: Removing a flash memory card: 8010co chassis on page 73 and Figure 42: Removing a flash memory card: 8010, 8006, 8003-R chassis on page 73.

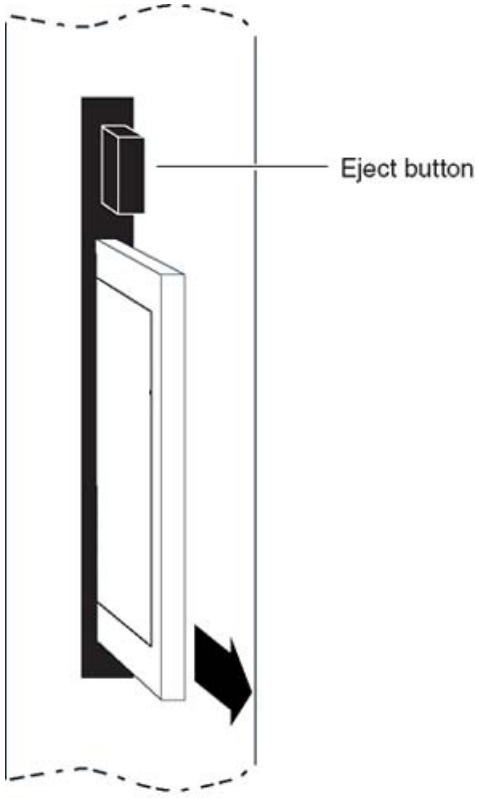


Figure 41: Removing a flash memory card: 8010co chassis

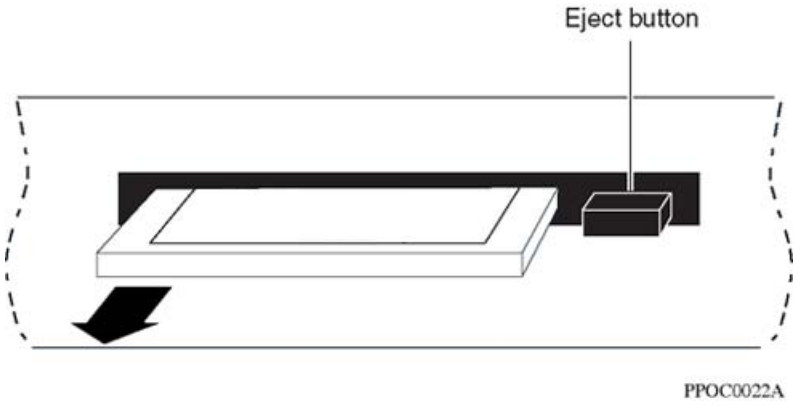


Figure 42: Removing a flash memory card: 8010, 8006, 8003-R chassis

2. Pull the flash memory card out of the card receptacle.

Installing removable flash memory cards in an 8692 SF/CPU

Install a removable flash memory card in an 8692 SF/CPU module to provide alternative storage media.

Procedure steps

1. Position the card with the label facing to the left and the insert arrow pointing toward the card receptacle.

   For more information about inserting a card Figure 43: Inserting a removable flash memory card: 8010, 8006, and 8003-R chassis on page 74.

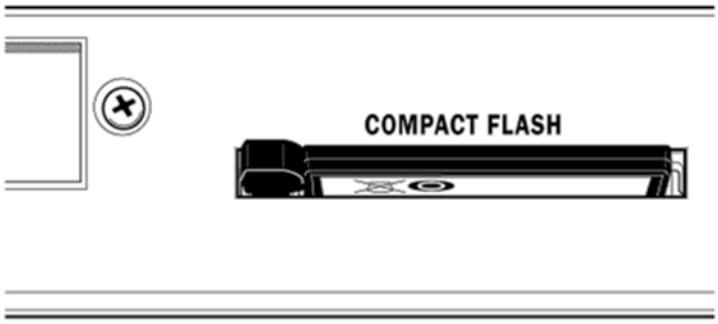


Figure 43: Inserting a removable flash memory card: 8010, 8006, and 8003-R chassis

2. Insert the card into the card receptacle.
3. Gently push in the card until it fits tightly in place.

Removing removable flash memory cards in an 8692 SF/CPU

Remove a flash memory card from the 8692 SF/CPU module to stop using it as a storage medium.

Procedure steps

1. Press the eject button above the memory card receptacle on the 8692 SF/CPU module or the 8895 SF/CPU module .

   The card pops out slightly.

   For information about removing a card, see Figure 44: Removing a flash memory card: 8010, 8006, 8003-R chassis on page 75.

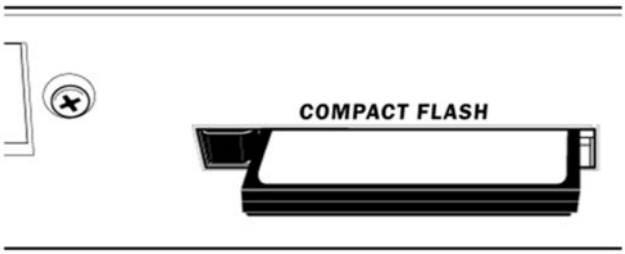


Figure 44: Removing a flash memory card: 8010, 8006, 8003-R chassis

2. Pull the flash memory card out of the card receptacle.

Protecting memory card files (for 8692 SF/CPU only)

Avaya ships each 8692 SF/CPU PCMCIA memory card with the read-write protect switch in the unprotected position. After you successfully load the configuration file and save your configuration, you can write-protect the memory card for backup purposes.

The 8895 SF/CPU compact flash card is not equipped with a read-write protect switch.

Typically, you do not operate an Avaya Ethernet Routing Switch 8800/8600 with a write-protected memory card. Make a copy of your configuration on another memory card, write-protect the second card, and store it in a safe place. If you do not use a second memory card, you can copy your configuration to a File Transfer Protocol (FTP) or Trivial FTP (TFTP) server.

Procedure steps

1. To remove the card, press the eject button next to the memory card receptacle.
2. Pull the card out of the card receptacle.

Caution:

Risk of data loss

You must remove the card from the 8692 SF/CPU module before you change the read-write protection. Failure to remove the card can result in improper write protection.

3. Locate the read-write protect switch on the edge opposite the arrow on the memory card.

   For information about the location of the read-write protect switch, see Figure 45: Memory card read-write protect switch on page 76.

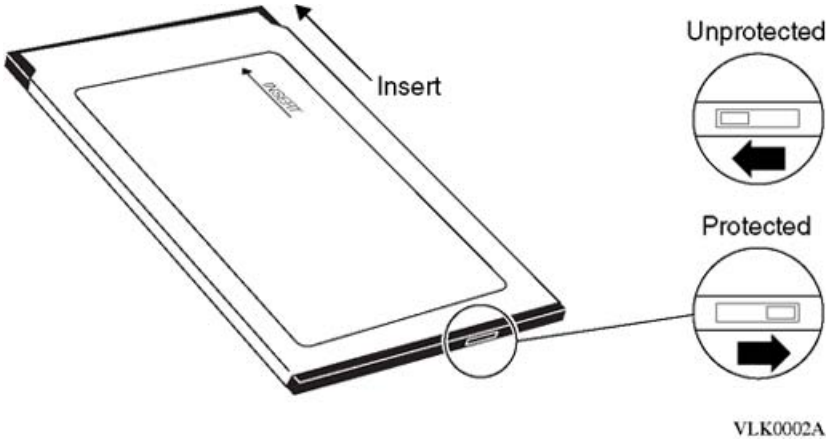


Figure 45: Memory card read-write protect switch

4. Adjust the read-write protect switch.
5. To reinsert the card, position the card with the label facing to the left and the insert arrow pointing toward the card receptacle.
6. Insert the card into the card receptacle.
7. Gently push in the card until it fits tightly in place.

Chapter 8: Common procedures

This section describes common procedures when you install the chassis.

Reducing the chassis weight

Reduce the chassis weight to make the chassis easier to lift and thus reduce the risk of personal injury or equipment damage. This procedure requires approximately 5 minutes to complete.

Procedure steps

1. Remove the power supply filler panels.

   For more information, see *Avaya Ethernet Routing Switch 8800/8600 Installation — AC Power Supply, NN46205-306* or *Avaya Ethernet Routing Switch 8800/8600 Installation — DC Power Supply, NN46205-307*.

2. Remove the module filler panels.

   For more information, see *Avaya Ethernet Routing Switch 8800/8600 Installation — Modules, NN46205-304*.

3. Remove the fan trays.

   For more information, see *Avaya Ethernet Routing Switch 8800/8600 Routine Maintenance, NN46205-312*.

Chapter 9: Part numbers

The following table lists Avaya Ethernet Routing Switch 8800/8600 hardware and part numbers.

Part number	Item	Additional details
DS1402001	8010 10-slot chassis	Includes chassis, dual backplane, two fan trays, RS232 cable for management console, rack-mount kit, and cable management bracket kit.
DS1402002	8006 6-slot chassis	Includes chassis, dual backplane, fan tray, RS232 cable for management console, rack-mount kit, and cable management bracket kit.
DS1402004	8010co 10-slot NEBS chassis	Includes chassis, fan trays, RS232 cable for management console, rack-mount kit and cable management bracket.
DS1405007	8004DC 850 W power supply	
DS1405016-E6	8005DI AC 1500W dual input AC power supply	
DS1405A08	8004AC 100-240 V AC power supply	Does not include power cord.
DS1405B08	8004AC 100-240 V AC power supply	Includes European Schuko power cord.
DS1405C08	8004AC 100-240 V AC power supply	Includes power cord used in the UK and Ireland.
DS1405D08	8004AC 100-240 V AC power supply	Includes power cord used in Japan.
DS1405E08	8004AC 100-240 V AC power supply	Includes North American power cord.
DS1405F08	8004AC 100-240 V AC power supply	Includes Australian power cord, also used in New Zealand and the PRC.
DS1405011	8005DC 1462 W DC power supply	
DS1405012	8005AC 1462 W AC power supply	
DS1411001	Spare fan tray for 8010 10-slot chassis	
DS1411002	Spare fan tray for 8006 6-slot chassis	
DS1411006	Spare fan tray for 8010co 10-slot NEBS chassis	
DS1411010	Replacement air filter for 8010co 10-slot NEBS chassis	

Part number	Item	Additional details
DS1411004	8006 6-slot chassis rack-mount replacement kit	
DS1411005	8010 10-slot chassis rack-mount replacement kit	
DS1411011	8000 series chassis filler panel/blank faceplates	
DS1411012	8800/8600 series console cable	
DS1411013	8000 series cable management bracket	
DS1411017-E6	8010CMHS high speed cooling module for the 8010 chassis	
DS1411018-E6	8006CMHS high speed cooling module for the 8006 chassis	
DS1405017-E6	8005DI DC 40-70 V DC Power Supply. At least one power supply is required for each 83xx chassis.	

Chapter 10: Technical specifications

This section details the specifications for the Avaya Ethernet Routing Switch 8800/8600.

Chassis weight

The following table provides the chassis weight including components and cables.

Table 10: Chassis weight including components and cables

Chassis	Weight (chassis, components, cables)
8010	225 lb (101 kg)
8006	170 lb (77 kg)
8003-R	76 lbs (34.5 kilograms)

Chassis mean time between failure (MTBF)

The following table lists the mean time between failure (MTBF) for the different chassis models.

Table 11: Chassis MTBF

Model	Component	MTBF (hours)
8010co	Chassis and fans	653 732
	Fan tray	730 000
8010	Chassis and fans	653 732
	Fan tray	584 000
	AC power supply	1 200 000
	AC power supplies	1 800 720 (2/3)
8006	Chassis and backplane	1 341 171
8003-R	Chassis and backplane	653 732
	Fan tray	730 000

Rack-mount

The following table lists the maximum number of chassis you can install in a 7-ft rack.

Table 12: Maximum number of chassis in 7-ft rack

Chassis	Maximum number of chassis installed in 7-ft rack
8010	3
8006	5
8003-R	6

Model 8004AC power supply

This section provides power ratings for the 8004AC power supply.

The following table lists the AC input power specifications.

Table 13: AC input power specifications

Parameter	Specifications (100-240 VAC input voltage)
Input current:	12–6 A
Frequency:	50–60 Hz
Input VA:	1320 VA
Input power consumption:	1308 W
Heat dissipation (thermal/output):	1564 Btu/hr
Hold-up time:	20 ms

The following table lists the DC output power specifications.

Table 14: DC output power specifications

Parameter	Specifications
Output power (maximum):	780 W (690 W + 90 W fans) at 100-120 VAC input voltage 850 W (760 W + 90 W fans) at 200-240 VAC input voltage
Individual power ratings:	3.3 VDC @ 150 A

Parameter	Specifications
(12V power includes fan power)	12 VDC @ 50 A
MTBF:	246 647 hr (MIL-std 217 standard)

Model 8005AC power supply

This section provides power ratings for the 8005AC power supply.

The following table lists the AC input power specifications.

Table 15: AC input power specifications

Parameter	Specifications (100–120 VAC input voltage)	Specifications (200–240 VAC input voltage)
Input current	16 A	9.5 A
Frequency range	50–60 Hz	50–60 Hz
Input VA	1600 VA	1846 VA
Input power consumption	1584 W	1828 W
Heat dissipation (thermal/output)	1515 BTU/hour	1250 BTU/hour
Hold-up time	20 ms	20 ms

The following table lists the DC output power specifications.

Table 16: DC output power specifications

Parameter	Specifications (100–120 VAC input voltage)	Specifications (200–240 VAC input voltage)
Output power (maximum)	1140 W (1050 W + 90 W fans)	1462 W (1372 W + 90 W fans)
Modules	3.3 VDC @ 150 A 12 VDC @ 72 A	3.3 VDC @ 150 A 12 VDC @ 72 A
Fans	12 VDC @ 7.5 A/24 A peak	12 VDC @ 7.5 A/24 A peak
MTBF	282 805 hours (Telcordia TR-332 standard)	

Model 8005DI AC power supply

This section provides power ratings for the 8005DI AC power supply.

The following table lists the AC input power specifications.

Table 17: AC input power specifications

Parameter	Specifications per IEC inlet (100–120 VAC input voltage)	Specifications per IEC inlet (200–240 VAC input voltage)
Input current	16 A	9.3 A
Frequency range	50–60 Hz	50–60 Hz
Input VA	1556 VA	1753 VA
Input power consumption	1540 W	1735 W
Heat dissipation (thermal/output)	1263 BTU/hour	829 BTU/hour
Hold-up time	20 ms	20 ms

The following table lists the DC output power specifications.

Table 18: DC output power specifications

Parameter	Specifications (100–120 VAC input voltage)	Specifications (200–240 VAC input voltage)
Output power (maximum)	1170 W (1050 W + 120 W fans)	1492 W (1372 W + 120 W fans)
Modules	3.3 VDC @ 150 A 12 VDC @ 72 A	3.3 VDC @ 150 A 12 VDC @ 72 A
Fans	12 VDC @ 10 A, 24 A peak	12 VDC @ 10 A, 24 A peak
MTBF	269 000 hours (Telcordia SR-332 standard)	

Model 8004DC power supply

This section provides power ratings for the 8004DC power supply.

The following table lists the DC input power specifications.

Table 19: DC input power specifications

Parameter	Specifications
Input voltage	– 48 VDC
Input current	29 A
Input VA	1.4 kVA
Input power consumption	1392 W
Heat dissipation (thermal/output)	1850 BTU/hour

The following table lists the DC output power specifications.

Table 20: DC output power specifications

Parameter	Specifications
Output power (maximum)	850 W (760 W + 90 W fans)
Individual power ratings (12V power includes fan power)	3.3 VDC @ 150 A 12 VDC @ 65 A
MTBF	39 169 hours (MIL-std 217 standard)

Model 8005DC power supply

This section provides power ratings for the 8005DC power supply.

The following table lists the DC input power specifications.

Table 21: DC input power specifications

Parameter	Specifications
Input voltage	– 48 VDC/– 60 VDC
Input current (nominal)	42 A/34 A
Input VA	1.95 kVA
Input power consumption	1950 W
Heat dissipation (thermal/output)	1666 BTU/hour

The following table lists the DC output power specifications.

Table 22: DC output power specifications

Parameter	Specifications
Output power (maximum)	1462 W (1372 W + 90 W fans)
Modules	3.3 VDC @ 150 A 12 VDC @ 72 A
Fans	12 VDC @ 7.5 A/24 A peak
MTBF	108 803 hours (Telcordia TR-332 standard)

Model 8005DI DC power supply

This section provides power ratings for the 8005DI DC power supply.

The following table lists the DC input power specifications.

Table 23: AC input power specifications

Parameter	Specifications
Input voltage	–40Vdc/–75Vdc
Input current	48.75A /32.5A
Input VA (maximum)	1.95 kVA
Input power consumption	1950 W
Heat dissipation (thermal/output)	1666 Btu/hr

The following table lists the DC output power specifications.

Table 24: DC output power specifications

Parameter	Specifications
Output power (maximum)	1462 W (1372 W + 90 W fans)
Modules	3.3 V @ 150 A
	12 V @ 72 A
Fans	12 VDC @ 7.5 A/ 24 A peak
Mean time before failure (MTBF)	108 803 hr (Bellcore TR–332 standard)

Component input power

The following table shows the input power specifications for Avaya Ethernet Routing Switch 8800/8600 components. The power specifications for R, RS, and 8800 modules show the power for modules with slots containing short-range SFPs, SFP+s, or XFPs.

Table 25: Component input power

Component	3.3 V power (watts)	12 V power (watts)	Total input power (watts)
8612XLRS	80.3	177.6	257.9
8630GBR	60.1	120.0	180.1
8634XGRS	91.7	167.4	259.1
8648GBRS	110.8	160.8	271.6
8648GTR	73.9	90.0	163.9
8648GTRS	71.6	136.8	208.4
8812XL	80.3	177.6	257.9
8834XG	91.7	167.4	259.1
8848GB	110.8	160.8	271.6
8848GT	71.6	136.8	208.4
8692 SF/CPU with SuperMezz	82.5	60.0	142.5
8895 SF/CPU	16.08	52.48	68.56 – nominal 90 – maximum

Important:

The fans, cooling modules, and card cage are powered from a separate power source within the power supplies. Therefore, the fan and cooling module power does not need to be deducted from the power available to the line cards.

Power consumption calculation for Ethernet modules

To calculate the power consumption of Ethernet modules (R/RS/8800 modules) with installed medium or long-range optical devices, you can use the power specifications for the module with short-range devices, along with the following data:

Caution:

For instances where you install a significant number of long-range SFPs, SFP+s and XFPs, you must ensure that you have sufficient power available to power these optical devices.

- 1000BASE-LX, 1000BASE-BX, 1000BASE-XD CWDM, 1000BASE-ZD CWDM, 1000BASE-EX SFPs

  Short-range (SR) SFPs consume 0.85 W for each transceiver.

  For 1000BASE-LX, 1000BASE-BX, 1000BASE-XD CWDM, 1000BASE-ZD CWDM: add 0.15 W for each SFP

  For 1000BASE-EX: add 0.40 W for each SFP

- 10GBASE-LR, 10GBASE-LRM and 10GBASE-ER enhanced SFPs (SFP+)

  All SFP+ transceivers have a power consumption of 2.5 W (1 W for each port and an additional 1.5 W for each installed transceiver). There is no difference in power consumption between short and medium/long/extended range SFP+s.

- 10GBASE-LR, 10GBASE-LRM, and 10GBASE-ER XFPs

  Short range XFPs consume 2.5 W for each transceiver.

  For 10GBASE-LR/LRM; add 1 W for each installed XFP

  For 10GBASE-ER; add 2 W for each installed XFP

For example, if you use two 10GBASE-ER XFPs in a 8612XLRS module that otherwise has two 10BASE-SR XFPs, add 2*2 W to 257.9 W for a total of 261.9 W.

You can also calculate chassis and module power consumption using the Power Management Calculator *Avaya ERS 8800/8600 Power Management Calculator*, (NN48500-519), available on the Avaya Technical Support Web site. You can find the calculator at www.avaya.com/support with the rest of the ERS 8800/8600 documentation.

Power supply selection

The following table lists the power available from each power supply supported with the Avaya Ethernet Routing Switch 8800/8600.

Power management identifies the available power in the chassis, called the power budget, and determines if enough power is available to operate the installed components. For a complete description of the power management feature and configuration instructions, see *Avaya Ethernet Routing Switch 8800/8600 Administration, NN46205-605*.

Table 26: Maximum power available for each power supply

Power supply model	Card cage power (watts)	3.3V maximum (amps)	12V maximum (amps)	12V fan maximum (amps)
8004DC	760	150	57.5	7.5
8004AC @ 110VAC	690	150	42.5	7.5
8004AC @ 220VAC	760	150	42.5	7.5
8005DC	1372	150	72	7.5
8005AC @ 110VAC	1050	150	72	7.5
8005AC @ 220VAC	1372	150	72	7.5
8005DI-AC @ 110VAC	1050	150	72	7.5
8005DI-AC @ 220VAC	1372	150	72	7.5
8005DI-DC	1372	150	72	7.5

8010co chassis

This section provides physical, environmental, and electrical specifications for the 8010co chassis and includes the following topics:

Physical specifications

The following physical specifications apply to the 8010co chassis.

Table 27: 8010co physical specifications

Parameter	Specification
Height	35 in. (88.9 cm)
Rack units (RUs)	20

Parameter		Specification
Width		19 in (48.26 cm)
Depth		23.7 in. (60.19 cm)
Weight	Empty	127 lbs (57.6kg)
	Including the following components: cable management brackets, power supply filler panels, front bezel, fan trays, module filler panels	191 lbs (86.63kg)
	Fully loaded	315 lbs (142.88 kg)

Network Equipment Building Standard

The 8010co chassis complies with Network Equipment Building Standard (NEBS) Level 3 as specified in SR3580.

Environmental specifications

The following environmental specifications apply to the 8010co chassis.

Table 28: 8010co environmental specifications

Parameter	Specification
Operating temperature	– 5° to 55° C (23° to 131° F) short-term exceptional operating temperature: 55C for a maximum of 96 hours
Storage temperature	– 40° to 70° C (– 40° to 158° F)
Operating humidity	90% short-term exceptional operating humidity: 93% relative humidity at 40C for a maximum of 96 hours
Storage humidity	92.5%
Operating altitude	13 123 ft. at 35°C and 45°C 6000 ft. at 55°C – 200 ft. at 55°C
Storage altitude	40 000 ft

Maximum airflow

The maximum airflow specification for the 8010co chassis is 330 linear ft/min.

International regulatory requirements

The 8010co chassis conforms to the following international regulatory requirements:

Electromagnetic emissions

The 8010co chassis conforms to the following electromagnetic emissions standards.

Table 29: 8010co electromagnetic emissions

Parameter	Specification
Global basis for certification	CISPR 22-1997 Class A
US	FCC CFR47 Part 15, Subpart B, Class A
Canada	ICES-003, Issue-2, Class A
Europe	EN 55022-1998 Class A; EN 61000-3-2/A14, EN 61000-3-3 (CE Marking)
Australia/New Zealand	AS/NZS 3548:1995, Class A
Japan	VCCI-V3/97.04, Class A

Electromagnetic immunity

The 8010co chassis conforms to the following electromagnetic immunity standards.

Table 30: 8010co electromagnetic immunity

Parameter	Specification
Global basis for certification	CISPR 24:1997
Europe	EN 55024:1998

Safety agency certification

The 8010co chassis conforms to the following safety agency standards.

Table 31: 8010co safety agency certification

Parameter	Specification
Global basis for certification	IEC 60950 current edition with all CB member deviations
US	UL60950
Canada	CSA 22.2 No. 60950
Europe	EN60950 (CE Marking)
Australia/New Zealand	AS/NZS 3260

8010 chassis

This section provides physical, environmental, and electrical specifications for the 8010 chassis and includes the following topics:

Physical specifications

The following physical specifications apply to the 8010 chassis.

Table 32: 8010 physical specifications

Parameter	Specification
Height	22.9 in. (58.2 cm)
Width	17.5 in. (44.5 cm)
Depth	19.9 in. (50.5 cm)
Weight (empty)	85 lb (39 kg)
Weight (fully loaded)	225 lb (102 kg)
Cooling system	
Fan trays	2 for each chassis
Fans	8 for each fan tray
Thermal sensors	1 for each fan tray

Parameter	Specification
High speed cooling modules	2 for each chassis
Fans	15 for each fan tray
Thermal sensors	1 for each fan tray

Environmental specifications

The following environmental specifications apply to the 8010 chassis.

Table 33: 8010 environmental specifications

Parameter	Specification
Operating temperature	0°C to 40°C (32°F to 104°F) short-term exceptional operating temperature: 55C for a maximum of 96 hours
Storage temperature	– 25°C to 70°C (– 13°F to 158°F)
Operating humidity	85% maximum relative humidity, noncondensing short-term exceptional operating humidity: 93% relative humidity at 40C for a maximum of 96 hours
Storage humidity	95% maximum relative humidity, noncondensing
Operating altitude	3048 m (10,000 ft) maximum
Storage altitude	3048 m (10,000 ft) maximum
Free fall/drop	ISO 4180-s, NSTA 1A
Vibration	IEC 68-2-6/34
Shock/bump	IEC 68-2-27-29

International regulatory requirements

The 8010 chassis conforms to the following international regulatory requirements:

- Electromagnetic emissions on page 94
- Electromagnetic immunity on page 94
- Safety agency certification on page 94

Electromagnetic emissions

The 8010 chassis conforms to the following electromagnetic emissions standards.

Table 34: 8010 electromagnetic emissions

Parameter	Specification
Global basis for certification	CISPR 22-1997 Class A
US	FCC CFR47 Part 15, Subpart B, Class A
Canada	ICES-003, Issue-2, Class A
Europe	EN 55022-1998 Class A; EN 61000-3-2/A14,

Electromagnetic immunity

The 8010 chassis conforms to the following electromagnetic immunity standards.

Table 35: 8010 electromagnetic immunity

Parameter	Specification
Global basis for certification	CISPR 24:1997
Europe	EN 55024:1998

Safety agency certification

The 8010 chassis conforms to the following safety agency standards.

Table 36: 8010 safety agency certification

Parameter	Specification
Global basis for certification	IEC 60950 current edition with all CB member deviations
US	UL60950
Canada	CSA 22.2 No. 60950
Europe	EN60950 (CE Marking)
Australia/New Zealand	AS/NZS 3260
Mexico	NOM-019-SCFI-1998

8006 chassis

This section provides physical, environmental, and electrical specifications for the 8006 chassis and includes the following topics:

Physical specifications

The following physical specifications apply to the 8006 chassis.

Table 37: 8006 physical specifications

Parameter	Specification
Height	15.8 in. (40.1 cm)
Width	17.5 in. (44.5 cm)
Depth	19.9 in. (50.5 cm)
Weight (empty)	49 lb (22 kg)
Weight (fully loaded)	140 lb (63 kg)
Cooling system	
Fan trays	1 for each chassis
Fans	6 for each fan tray
Thermal sensors	1 for each fan tray
High speed cooling modules	1 for each chassis
Fans	20 for each fan tray
Thermal sensors	1 for each fan tray

Environmental specifications

The following environmental specifications apply to the 8006 chassis.

Table 38: 8006 environmental specifications

Parameter	Specification
Operating temperature	0°C to 40°C (32°F to 104°F) short-term exceptional operating temperature: 55C for a maximum of 96 hours
Storage temperature	– 25°C to 70°C (– 13°F to 158°F)
Operating humidity	85% maximum relative humidity, noncondensing short-term exceptional operating humidity: 93% relative humidity at 40C for a maximum of 96 hours
Storage humidity	95% maximum relative humidity, noncondensing
Operating altitude	3048 m (10 000 ft) maximum
Storage altitude	3048 m (10 000 ft) maximum
Free fall/drop	ISO 4180-s, NSTA 1A
Vibration	IEC 68-2-6/34
Shock/bump	IEC 68-2-27-29

International regulatory requirements

The 8006 chassis conforms to the following international regulatory requirements:

- Electromagnetic emissions on page 96
- Electromagnetic immunity on page 97
- Safety agency certification on page 97

Electromagnetic emissions

The 8006 chassis conforms to the following electromagnetic emissions standards.

Table 39: 8006 electromagnetic emissions

Parameter	Specification
Global basis for certification	CISPR 22-1997 Class A
US	FCC CFR47 Part 15, Subpart B, Class A
Canada	ICES-003, Issue-2, Class A
Europe	EN 55022-1998 Class A; EN 61000-3-2/A14, EN 61000-3-3 (CE Marking)
Australia/New Zealand	AS/NZS 3548:1995, Class A

Parameter	Specification
Japan	VCCI-V3/97.04, Class A
Taiwan	CNS 13438, Class A

Electromagnetic immunity

The 8006 chassis conforms to the following electromagnetic immunity standards.

Table 40: 8006 electromagnetic immunity

Parameter	Specification
Global basis for certification	CISPR 24:1997
Europe	EN 55024:1998

Safety agency certification

The 8006 chassis conforms to the following safety agency standards.

Table 41: 8006 safety agency certification

Parameter	Specification
Global basis for certification	IEC 60950 current edition with all CB member deviations
US	UL60950
Canada	CSA 22.2 No. 60950
Europe	EN60950 (CE Marking)
Australia/New Zealand	AS/NZS 3260
Mexico	NOM-019-SCFI-1998

8003-R chassis

This section provides physical, environmental, and electrical specifications for the 8003-R chassis and includes the following topics:

Physical specifications

The following physical specifications apply to the 8003-R chassis.

Table 42: 8003-R physical specifications

Parameter	Specification
Height	12.25 in. (31.1 cm)
Width	19 in. (48.3 cm)
Depth	21 in. (53.3 cm)
Weight (empty)	46.5 lb. (21.1 kg)
Weight (fully loaded)	76 lb. (34.5 kg) with fan tray and power supplies; no logic modules
Cooling system	
Fan trays	1 for each chassis
Fans	3 for each tray
Thermal sensors	0
Noise	

Network Equipment Building Standard

The 8003-R chassis complies with Network Equipment Building Standard (NEBS) Level 3 as specified in SR3580.

Environmental specifications

The following environmental specifications apply to the 8003-R chassi.

Table 43: Environmental specifications for the 8003-R chassis

Parameter	Specification
Operating temperature:	0C to 40C (32F to 104F)
Storage temperature:	–25C to 70C (–13F to 158F)
Operating humidity:	85% maximum relative humidity, noncondensing
Storage humidity:	95% maximum relative humidity, noncondensing

Parameter	Specification
Operating altitude:	3 048 m (10 000 ft) maximum
Storage altitude:	3 048 m (10 000 ft) maximum
Free fall/drop:	ISO 4180-s, NSTA 1A
Vibration:	IEC 68-2-6/34
Shock/bump:	Shock/bump:

International regulatory requirements

The 8003-R chassis conforms to the following international regulatory requirements:

- Electromagnetic emissions on page 99
- Electromagnetic immunity on page 99
- Safety agency certification on page 100

Electromagnetic emissions

The 8003-R chassis conforms to the following electromagnetic emissions standards:

Parameter	Specification
Global basis for certification:	CISPR 22-1997 Class A
US:	FCC CFR47 Part 15, Subpart B, Class A
Canada:	ICES-003, Issue-2, Class A
Europe:	EN 55022-1998 Class A; EN 61000-3-2/A14, EN 61000-3-3 (CE Marking)
Australia/New Zealand:	AS/NZS CISPR 22, Class A
Japan:	VCCI-V3/97.04, Class A
Taiwan:	CNS 13438, Class A

Electromagnetic immunity

The 8003-R chassis conforms to the following electromagnetic immunity standards.

Table 44: Electromagnetic immunity standards

Parameter	Specification
Global basis for certification:	CISPR 24:1997
Europe:	EN 55024:1998

Safety agency certification

The 8003-R chassis conforms to the following safety agency standards.

Table 45: Safety agency standards

Parameter	Specification
Global basis for certification (CE Marking):	IEC 60950 current edition with all CB member deviations
U.S.	UL60950
Canada:	CSA 22.2 No. 60950
Europe:	EN60950
Australia/New Zealand:	AS/NZS 60950-1
Mexico:	NOM-019-SCFI-1998

Chapter 11: Translations of safety messages

Class A device caution statement

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.

Caution:

ATTENTION

Le périphérique est un produit de Classe A. Le fonctionnement de cet équipement dans une zone résidentielle risque de causer des interférences nuisibles, auquel cas l'utilisateur devra y remédier à ses propres frais.

Caution:

ACHTUNG

Dies ist ein Gerät der Klasse A. Bei Einsatz des Geräts in Wohngebieten kann es Störungen des Radio- und Fernsehempfangs verursachen. In diesem Fall muss der Benutzer alle notwendigen Maßnahmen ergreifen, die möglicherweise nötig sind, um die Störungen auf eigene Rechnung zu beheben.

Caution:

PRECAUCIÓN

Este es un producto clase A. El uso de este equipo en áreas residenciales puede causar interferencias nocivas, en cuyo caso, se requerirá que los usuarios tomen cualquier medida necesaria para corregir la interferencia por cuenta propia.

Caution:

CUIDADO

Este dispositivo é um produto Classe A. Operar este equipamento em uma área residencial provavelmente causará interferência prejudicial; neste caso, espera-se que os usuários tomem as medidas necessárias para corrigir a interferência por sua própria conta.

Caution:

ATTENZIONE

Questo dispositivo è un prodotto di Classe A. Il funzionamento di questo apparecchio in aree residenziali potrebbe causare interferenze dannose, nel cui caso agli utenti verrà richiesto di adottare tutte le misure necessarie per porre rimedio alle interferenze a proprie spese.

Electrostatic discharge caution statement

Electrostatic alert:

ESD

To prevent damage from electrostatic discharge, always wear an antistatic wrist strap connected to an electrostatic discharge (ESD) jack when performing maintenance on this product. Ensure that the wrist strap makes contact with your skin.

Electrostatic alert:

ATTENTION ESD (décharge électrostatique)

Pour prévenir tout dommage dû à une décharge électrostatique, vous devez toujours porter un un bracelet antistatique connecté à une prise pour décharge électrostatique (ESD) lors de l'exécution d'opérations de maintenance sur ce produit. Assurez-vous que le bracelet antistatique est en contact avec votre peau.

Electrostatic alert:

ACHTUNG ESD

Um Schäden durch elektrostatische Entladung zu verhindern, tragen Sie bei der Instandhaltung dieses Produkts immer ein antistatisches Band am Handgelenk, das mit einer ESD-Buchse verbunden ist. Stellen Sie sicher, dass das Band am Handgelenk Kontakt zur Haut hat.

Electrostatic alert:

PRECAUCIÓN ESD (Descarga electrostática)

Para prevenir el daño producido por una descarga electrostática, use siempre una pulsera antiestática conectada a un enchufe de descarga electrostática (ESD) al realizar el mantenimiento de este producto. Asegúrese de que la pulsera antiestática haga contacto con su piel.

Electrostatic alert:

CUIDADO ESD

Para evitar danos com descarga eletrostática, sempre use uma pulseira antiestática que esteja conectada a uma tomada de descarga eletrostática (ESD) quando estiver realizando a manutenção deste produto. Certifique-se de que a pulseira esteja em contato com sua pele.

Electrostatic alert:

ATTENZIONE ESD

Per evitare danni derivanti da scariche elettrostatiche, indossare sempre un polsino antistatico collegato a una presa di scarico elettrostatico (ESD) durante la manutenzione del prodotto. Accertarsi che il polsino sia a contatto con la pelle.

Laser fiber optic warning statement

Warning:

Risk of eye injury by laser

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.

Warning:

AVERTISSEMENT

Risques de blessure oculaire par lumière laser

L'équipement de fibres optiques peut émettre une lumière laser ou infrarouge nuisible à vos yeux. Ne regardez jamais en direction de fibres optiques ou d'un port connecteur. Supposez toujours que les câbles de fibres optiques sont connectés à une source de lumière.

Warning:

WARNUNG

Risiko einer Augenverletzung durch Laser

Glasfasergeräte können Laserstrahlen oder ultraviolettes Licht aussenden, das Ihre Augen verletzen kann. Schauen Sie nie direkt in einen Glasfaserleiter oder Verbindungsanschluss. Gehen Sie immer davon aus, dass Glasfaserkabel mit einer Lichtquelle verbunden sind.

Warning:

ADVERTENCIA

Riesgo de lesión en los ojos por láser

El equipo de fibra óptica puede emitir una luz láser o infrarroja que dañe sus ojos. Nunca mire un puerto de fibra óptica o conector. Siempre asuma que los cables de fibra óptica están conectados a una fuente de luz.

Warning:

AVISO

O laser pode causar ferimentos no olho

O equipamento de fibra ótica pode emitir laser ou luz infravermelha que pode causar danos a sua vista. Nunca olhe para dentro da fibra ótica ou da porta do conector. Tenha sempre em mente que os cabos de fibra ótica estão ligados a uma fonte de luz.

Warning:

AVVISO

Rischio di ustioni agli occhi dovute al laser

Le apparecchiature con fibre ottiche possono emettere raggi laser o infrarossi in grado di provocare ferite agli occhi. Non guardare mai all'interno di una porta di connessione o una fibra ottica. Tenere sempre presente che i cavi a fibra ottica sono collegati a una sorgente luminosa.

Lifting 8010co chassis warning statement

Warning:

Risk of personal injury

It requires three people to lift the 8010co chassis. To make the chassis lighter, remove the modules and power supplies before you lift it.

Warning:

AVERTISSEMENT

Risques de blessure corporelle

Trois personnes sont nécessaires pour soulever le châssis 8010co. Pour alléger le châssis, retirez les modules et les alimentations avant de le soulever.

Warning:

WARNUNG

Verletzungsrisiko

Es sind 3 Personen notwendig, um das Chassis des 8010co anzuheben. Entfernen Sie vor dem Anheben die Module und die Netzteile, um so das Gewicht des Chassis zu reduzieren.

Warning:

ADVERTENCIA

Riesgo de lesiones

Se necesitan tres personas para levantar el chasis de 8010co. Para alivianar el peso, retire los módulos y las fuentes de alimentación antes de levantarlo.

Warning:

AVISO

Risco de ferimento

Para erguer o chassi 8010co, são necessárias três pessoas. Para erguer o chassi, remova os módulos e as fontes de alimentação antes de erguê-lo.

Warning:

AVVISO

Rischio di lesioni personali

Per sollevare lo chassis 8010co, sono necessarie tre persone. Per alleggerire lo chassis, rimuovere i moduli e gli alimentatori prima di sollevarlo.

Chapter 12: Customer service

Visit the Avaya Web site to access the complete range of services and support that Avaya provides. Go to www.avaya.com or go to one of the pages listed in the following sections.

Navigation

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.