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4655 Great America Parkway
Santa Clara, CA 95054

Installing the 8660 Service Delivery Module (SDM) for the 8600 Series Switch

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명　칭 (모 델 명) : Switch (Passport 8600)
인　증　번　호 : E-E011-02-0015 (A)
인증받은자의상호 : Nortel Networks Ltd.
제　조　일 : 별도표기
제 조 자(제 조 국) : Nortel Networks Ltd.(미국)

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Preface

This guide provides instructions for installing the 8660 Service Delivery Module Firewall 1 (SDM FW1), FW2, and FW4 in the Nortel Networks Passport 8000 series chassis.

The term "8660 SDM" is used in this document when descriptions or procedures apply to any of the 8660 SDM models (SDM FW1, SDM FW2, and SDM FW4). When references are to specific 8660 SDM cards, the appropriate model is referenced.

For information on configuring the 8660 SDM, see *Firewall User's Guide and Command Reference* (part number 217315-A).

Before you begin

This guide is intended for qualified service personnel who need to install or replace an 8660 SDM in the chassis, or a firewall iSD in the 8660 SDM board. A qualified service person must have appropriate technical training and experience and be aware of the hazards involved in installing and replacing customer-replaceable units.

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Chapter 1
About the 8660 SDM

The 8660 Service Delivery Module Firewall 1 (SDM FW1), FW2, and FW4 operate with the 8600 series input/output (I/O) modules in an 8600 series switch to provide security within a modular configuration.

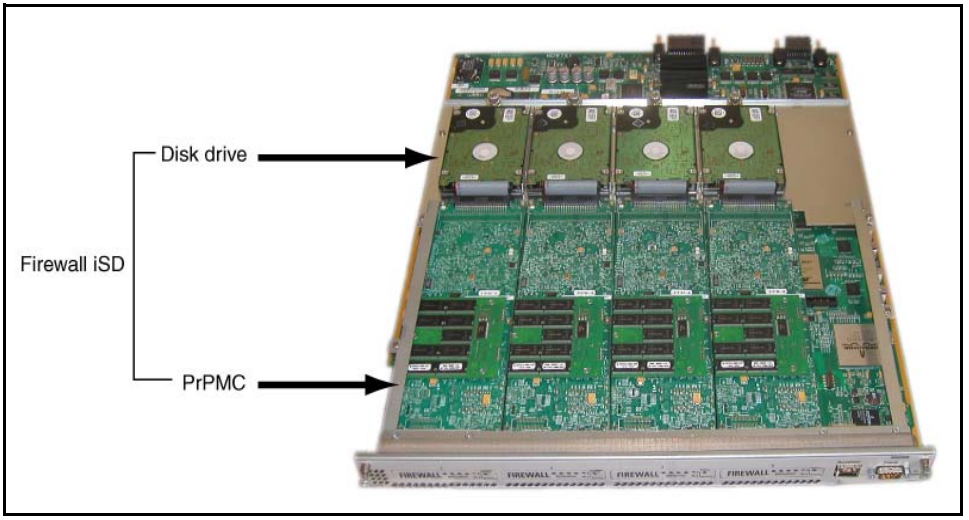
The 8660 SDM has the following components that can be installed and removed:

- Disk drive (see Chapter 3, “Replacing the disk drives,” on page 43)
- Processor PCI Mezzanine Card (PrPMC) (see Chapter 4, “Replacing a PrPMC,” on page 51)

Each firewall module consists of one PrPMC and one disk drive, and is referred to as a firewall integrated Service Director (iSD). The model name identifies the number of PrPMCs and disk drives that are included on the 8660 SDM board. For example, the SDM FW1 has one PrPMC and one disk drive; the SDM FW2 has two PrPMCs and two hard drives, and so on. Figure 1 on page 20 shows the SDM FW4.

Filler panels can also be added or removed to both the Passport 8600 series chassis and the 8660 SDM. Instructions are included for these procedures. See “Removing and installing a chassis filler panel” on page 28, and “Removing and installing a PrPMC filler panel” on page 65.

Figure 1 SDM FW4



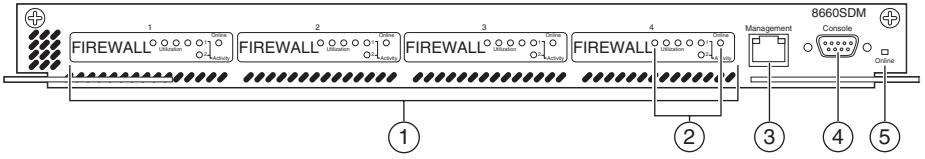
Note: Firewall iSDs are installed from right to left (that is, for a FW1, the iSD is in mini-slot 4 of the SDM FW1 board; for a FW2, the firewall iSDs are installed in mini-slots 3 and 4, and so on).

This chapter contains the following topics:

8660 SDM faceplate

Figure 2 shows the SDM FW4 faceplate.

Figure 2 SDM FW4 faceplate



1 = Mini-slots with firewall iSDs
2 = Firewall iSD LEDs
3 = Management port
4 = Console port
5 = Online LED

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Table 1 lists the maximum number of 8660 SDM boards that can be installed in each type of chassis.

Table 1 Maximum number of 8660 SDM cards

Chassis	Maximum number of SDM FW1	Maximum number of SDM FW2	Maximum number of SDM FW4
8003	1	1	1
8006	2	2	2
8010	2	2	2
8010c	2	2	2

See *Firewall User's Guide and Command Reference* (part number 217315-A) and *Upgrading to Passport 8000 Switch Series Software Release 3.7.6* (part number 318843-A) for instructions to configure the 8660 SDM.

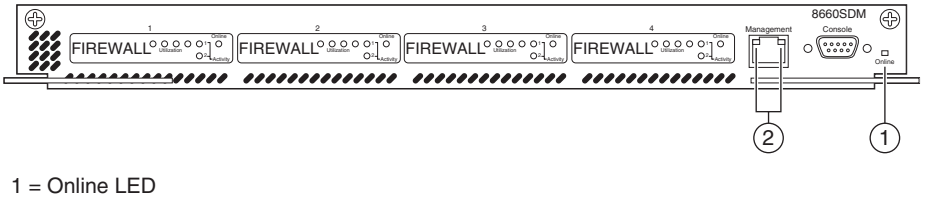
8660 SDM LEDs

The 8660 SDM has the following LEDs to indicate status:

- "Online" LED that indicates the overall status of the module
- Management port LEDs

Figure 3 shows the location of the LEDs on the SDM FW4. Table 2 describes the LED colors.

Figure 3 8660 SDM FW4 LEDs



1 = Online LED
2 = Management port LEDs

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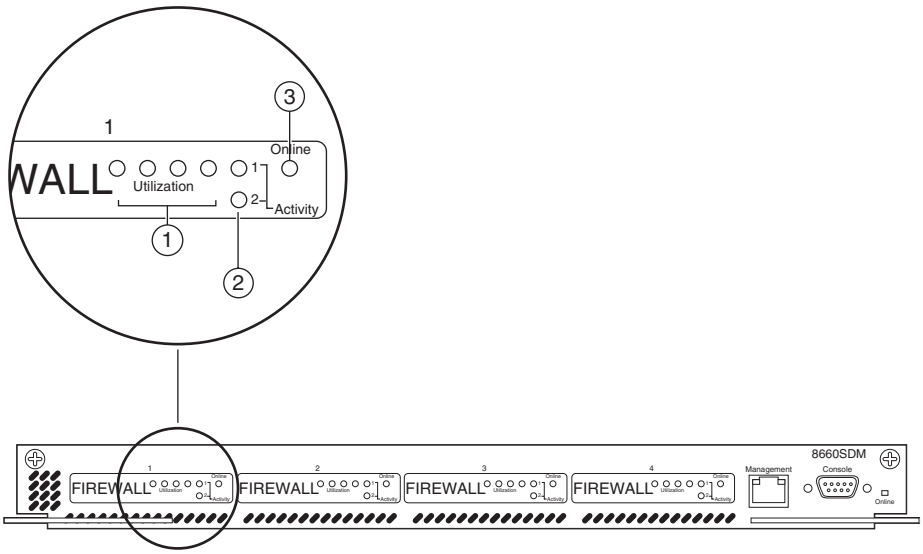
Table 2 8660 SDM LEDs

Label	Color/State	Meaning
Online	Green/steady	The module is receiving power, and is ready to receive and transmit traffic.
	Amber/steady	The module is reset or disabled.
	Off	The module is offline and not receiving power.
Management	Green/steady	The management port is connected, and the link is properly established.
	Green/flashing	The port is transmitting data.
	Off	The module is offline and not receiving power.

Firewall iSD LEDs

Figure 4 shows the location of the LEDs on each firewall iSD. Table 3 on page 24 describes the LED colors.

Figure 4 iSD LEDs



1 = Utilization LEDs
2 = Activity LEDs
3 = Online LED

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Table 3 iSD LEDs

Label	Color/State	Meaning
Utilization	Green/steady	The number of lit LEDs indicates the level of kernel CPU utilization as follows: 1 LED ≥ 25% 2 LEDs = 50% 3 LEDs = 75% 4 LEDs = 90%
	Green/single blinking LED	Kernel CPU utilization + user CPU utilization. The number of lit LEDs indicates the level of utilization as follows: 1 LED ≥ 25% 2 LEDs = 50% 3 LEDs = 75% 4 LEDs = 99%
	Green/all four LEDs blinking simultaneously	CPU 100% alarm
	Off	iSD is offline
Activity*	Green/steady	The firewall PrPMC has a link with the Passport 8600.
	Green/Flashing	The firewall PrPMC has a link with the Passport 8600, and there is network activity.
	Amber/steady	Either there is no link to the Passport 8600, or the link is disabled.
Online	Green/steady	The firewall PrPMC is online.
	Amber/steady	The firewall PrPMC is reset or disabled.
	Off	The firewall PrPMC is offline and not receiving power.
*The uppermost Activity LED indicates the status for Port 1. The bottom Activity LED indicates the status of Port 2.		

Maintenance port

The Ethernet management port on the 8660 SDM is an MDI 10/100/1000Base-T port.

Serial port

The 8660 SDM has one serial port for attaching console devices. The console port provides terminal access to the 8660 SDM for the Command Line Interface (CLI). For information about pin assignments for this port, see "Console serial port" on page 69.

Chapter 2
Installing the 8660 SDM

This chapter provides instructions for installing and connecting the 8660 SDM in an 8003, 8006, 8010, or 8010co chassis. This chapter includes the following topics:

Chassis configuration requirements

Slots in the 8003, 8006, and 8010 chassis are numbered from the top down, starting with slot 1. Slots in the 8010co chassis are numbered from left to right starting with slot 1.

In the 8006, 8010, and 8010co chassis, slots 5 and 6 are reserved for the 8690SF, 8691SF, or 8692SF Routing Switch Fabric Modules. In the 8003 chassis, slot 3 is reserved for the 8690SF, 8691SF, or 8692SF module.

You can install any of the supported 8600 modules in the remaining chassis slots. For information on the Passport 8600 series switch modules, see *Installing 8600 Switch Modules* (part number 312749-H).

Preparing for installation

Before installing an 8660 SDM in a Passport 8600 series switch chassis:

1. Unpack the 8660 SDM from the box.
2. Install the 8660 SDM according to instructions in this chapter.
3. Ensure that the first module is fully initialized prior to inserting the second (if you are inserting an 8660 SDM in a chassis where another 8660 SDM is already installed). See *Firewall User's Guide and Command Reference* (part number 217315-A) for instructions to configure the 8660 SDM.

Removing and installing a chassis filler panel

Nortel Networks ships the 8003, 8006, 8010, and 8010co chassis with a filler panel covering each empty module slot.

Note: On an 8003, 8006, or 8010 chassis, each filler panel covers either one or three empty module slots. On the 8010co chassis, the filler panel resembles a module and is installed in any empty module slot.

Before you can install a new module, you must remove the appropriate filler panel. For instructions, see "Removing a chassis filler panel" on page 29.

If you plan to remove a module from the chassis without immediately replacing it, you must install a filler panel in the slot. For instructions, see "Installing a chassis filler panel" on page 30.

Estimated time to remove or install a chassis filler panel

The estimated time to remove a chassis filler panel is 10 minutes.

The estimated time to install a chassis filler panel is 10 minutes.

Required tools

You require the following tools to remove or install a chassis filler panel: Phillips #0 or #1 screwdriver.

Removing a chassis filler panel

To remove a chassis filler panel:

1 Use a Phillips screwdriver to loosen the two captive screws that fasten the filler panel to the chassis. Figure 5 shows the captive screws on the 8003, 8006, and 8010 chassis. Figure 6 on page 30 shows the captive screws on the 8010co chassis.

Figure 5 Removing a filler panel from an 8003, 8006, and 8010 chassis

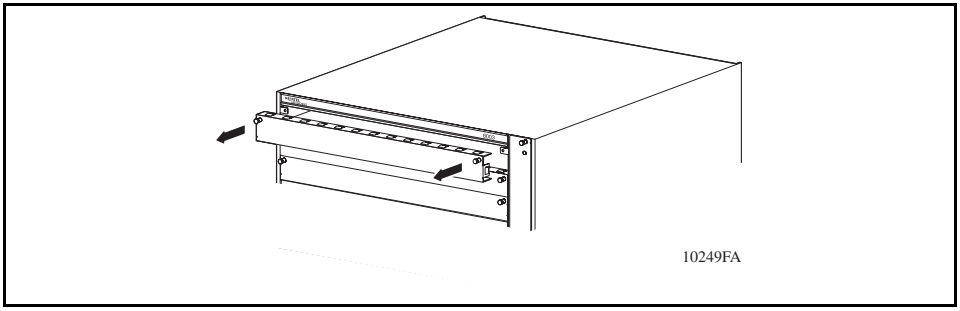
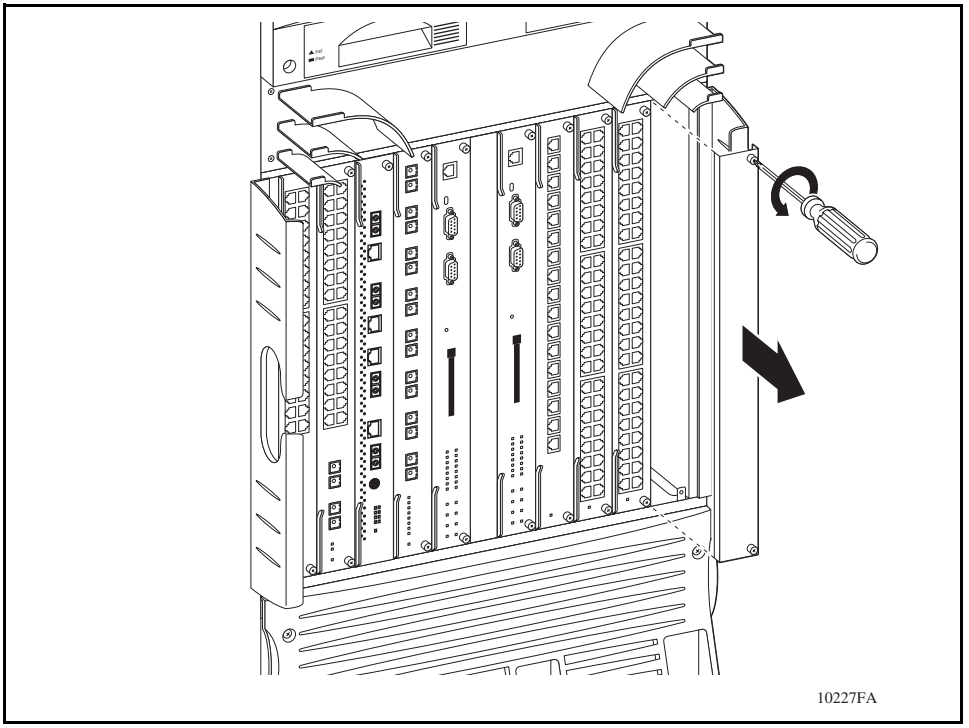


Figure 6 Removing a filler panel from an 8010co chassis



2 Pull the filler panel away from the slot.

Installing a chassis filler panel

To install a chassis filler panel:

1 Locate the slot where you want to install the filler panel.

2 Insert the filler panel into the slot (8010co chassis), or place the filler panel over the slot (8003, 8006, or 8010 chassis).

3 Use a Phillips screwdriver to tighten the two captive screws.

Installing and replacing an 8660 SDM

Caution: The 8660 SDM cards are sensitive to static electricity. Static discharge from your clothing or other fixtures around you, even at levels that do not create a spark, can damage hardware. Follow the procedures in this section to protect your equipment from damage.

To prevent static discharge damage when you work with 8600 modules, place each module on a grounded antistatic mat until you are ready to install it. If you do not have an antistatic mat, wear a discharge leash or wrist strap to free yourself of static before you touch a module. (An antistatic wrist strap is shipped with the 8010co chassis.) You can also free yourself of static by touching the metal chassis before you handle the module.

You can add or replace a module with the chassis power on or off.

To replace an 8660 SDM, start with the procedure described in "Removing an 8660 SDM" on page 32. To install an 8660 SDM, see "Installing an 8660 SDM" on page 37.

Estimated time to install or remove an 8660 SDM

The estimated time to remove an 8660 SDM is 15 minutes.

The estimated time to install an 8660 SDM is 15 minutes.

Required tools

You require the following tools to install or remove an 8660 SDM: Phillips #0 or #1 screwdriver.

Removing an 8660 SDM

You can remove an 8660 SDM from an operating switch chassis without turning off the chassis power.

Caution: Disk drives must be halted prior to removing an 8660 SDM from an operational chassis. Failure to do so can seriously damage the disk drive, and cause loss of data. Refer to "Replacing a disk drive on the 8660 SDM" on page 43 for instructions to halt the disk drives. Disk drives will become operational automatically when the 8660 SDM is re-inserted in the chassis slot. Refer to the *Firewall User's Guide and Command Reference* (part number 217315-A) for more detailed instructions on halting disk drives.

Firewall configurations are stored in the disk drives that reside on the 8660 SDM. Therefore, when you replace an 8660 SDM with another, you must configure the iSDs on the new 8660 SDM, unless all disk drives in the two SDM boards were previously identically programmed.

Caution: Do not operate the 8600 series switch with an empty module slot. If an 8660 SDM fails, and you do not yet have a replacement module, either leave the failed SDM installed, or install a filler panel.

To remove an 8660 SDM:

1 Disconnect any cables attached to the ports of the 8660 SDM. Use a Phillips screwdriver to loosen the two captive screws that secure the 8660 SDM to the chassis (see Figure 7 and Figure 8).

Figure 7 Loosening screws on the SDM FW4: 8003, 8006, and 8010 chassis

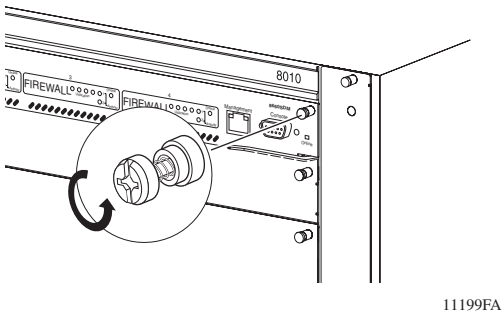
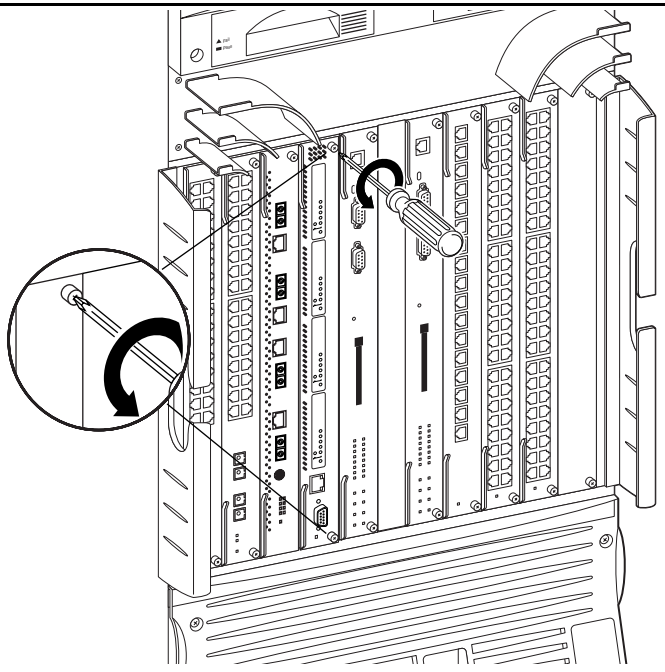


Figure 8 Loosening screws on the SDM FW4: 8010co chassis



2 Rotate the insert/extract levers to eject the 8660 SDM from the chassis (see Figure 9 and Figure 10).

Figure 9 Ejecting the SDM FW4: 8003, 8006, and 8010 chassis

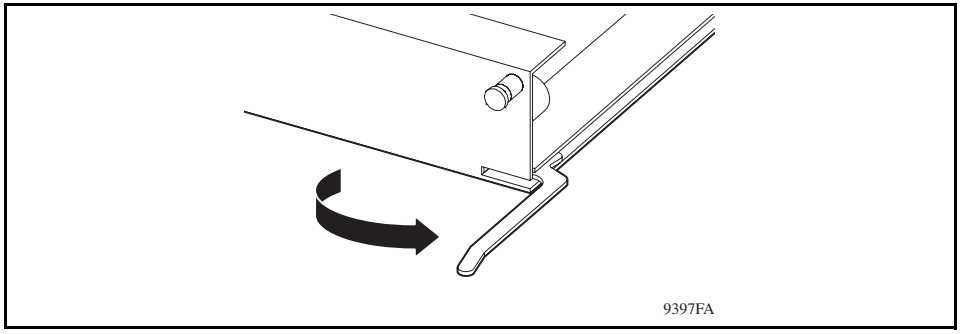
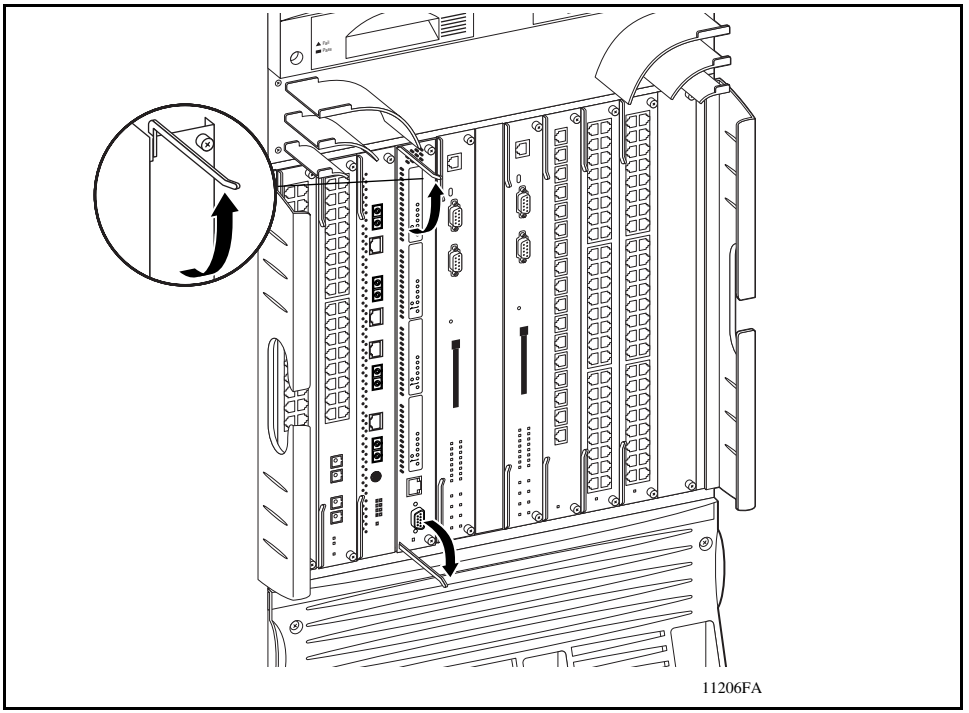


Figure 10 Ejecting the SDM FW4: 8010co chassis



3 Slide the 8660 SDM out of the chassis (see Figure 11 and Figure 12 on page 36).

Caution: Ensure that the IDE cable attached to the disk drive does not get caught in a module above or beside the 8660 SDM when removing the module from the chassis.

Figure 11 Removing an SDM FW4: 8003, 8006, and 8010 chassis

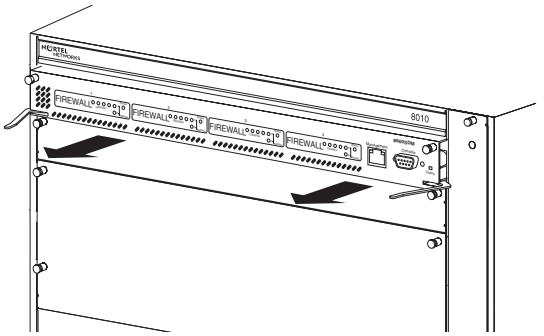
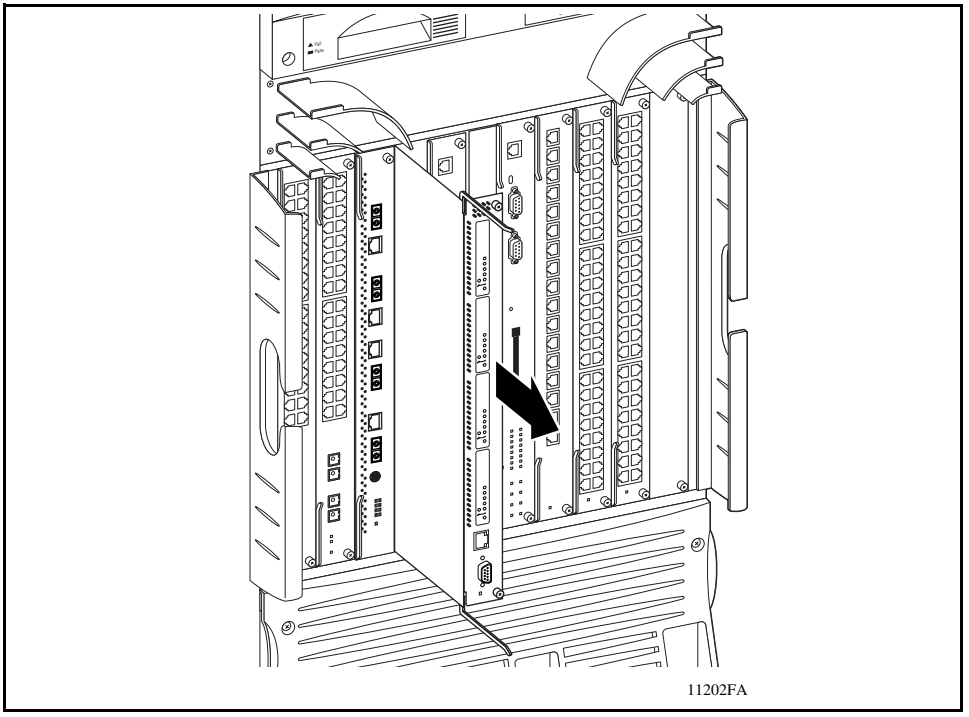


Figure 12 Removing an SDM FW4: 8010co chassis



If you are installing a replacement 8660 SDM, see "Installing an 8660 SDM" on page 37. Otherwise, install a filler panel (see "Installing a chassis filler panel" on page 30).

Installing an 8660 SDM

You can install an 8660 SDM with the chassis power on or off. In a new installation, Nortel Networks recommends that you install all the modules before turning on the chassis power. See"Turning on the chassis power" on page 42.

Caution: Electrostatic discharge can damage hardware. Review the antistatic precautions on page 31.

To install an 8660 SDM:

1. Locate the slot where you will install the 8660 SDM.
2. Remove the installed 8660 SDM, or the filler panel.

   For instructions, see "Removing an 8660 SDM" on page 32 or "Removing a chassis filler panel" on page 29.
3. Ensure the insert/extract levers are extended away from the front of the 8660 SDM (see Figure 9 on page 34 or Figure 10 on page 34).
4. Slide the 8660 SDM into the slot using the slot module guides (see Figure 13 on page 38 or Figure 14 on page 38).

Caution: Ensure that the IDE cable attached to the disk drive does not get caught in a module above or beside the 8660 SDM when sliding the module into the chassis.

Figure 13 Installing an SDM FW4: 8003, 8006, and 8010 chassis

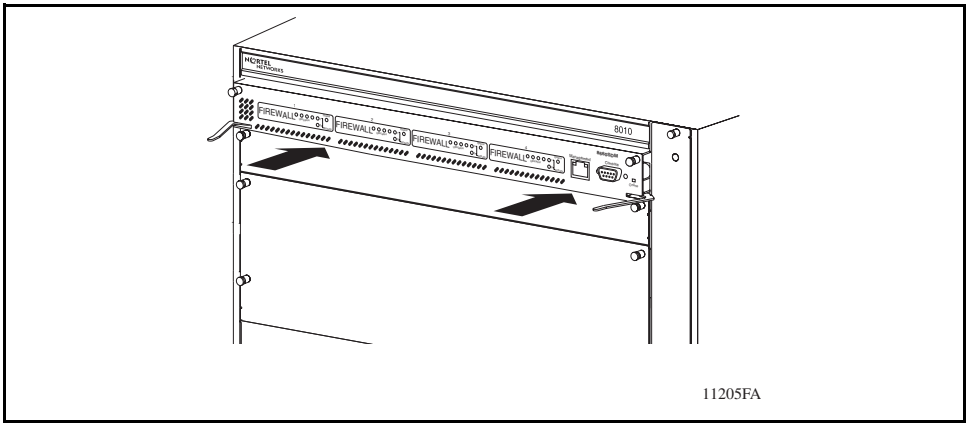
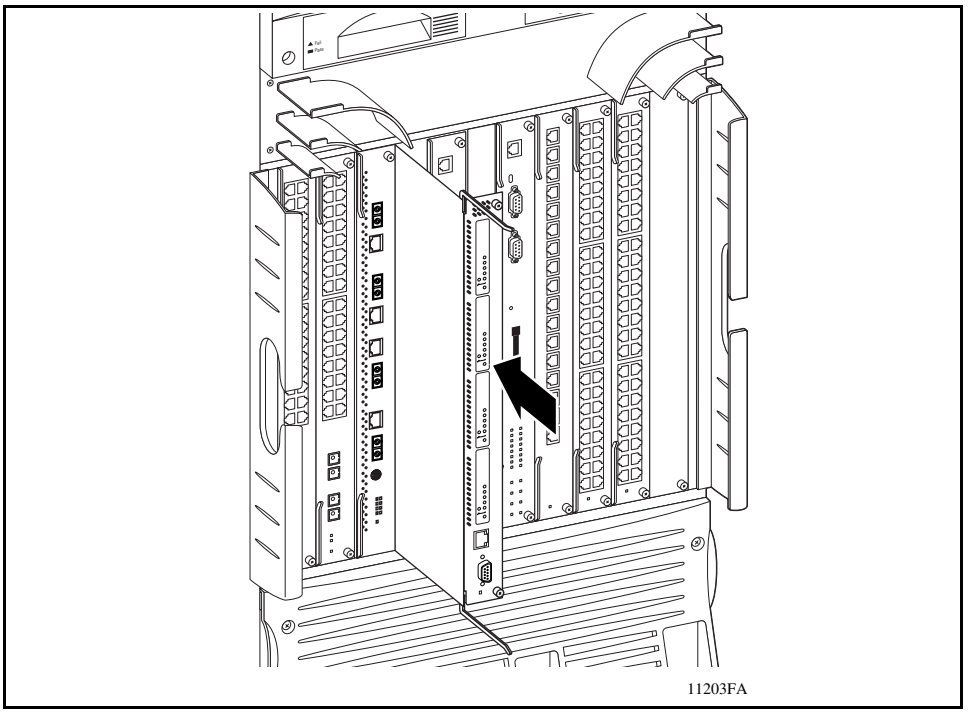


Figure 14 Installing an SDM FW4: 8010co chassis



5 Slide the 8660 SDM into the chassis until its connector panel touches the chassis back panel.

6 Rotate the insert/extract levers to seat the 8660 SDM backplane connectors (see Figure 15 or Figure 16).

Figure 15 Seating the backplane connectors: 8003, 8006, and 8010 chassis

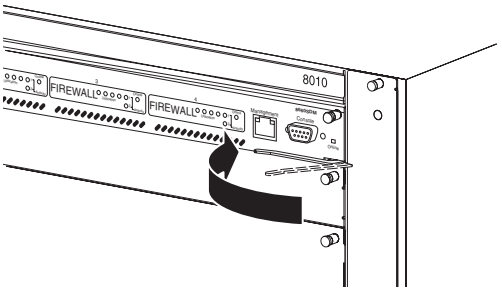
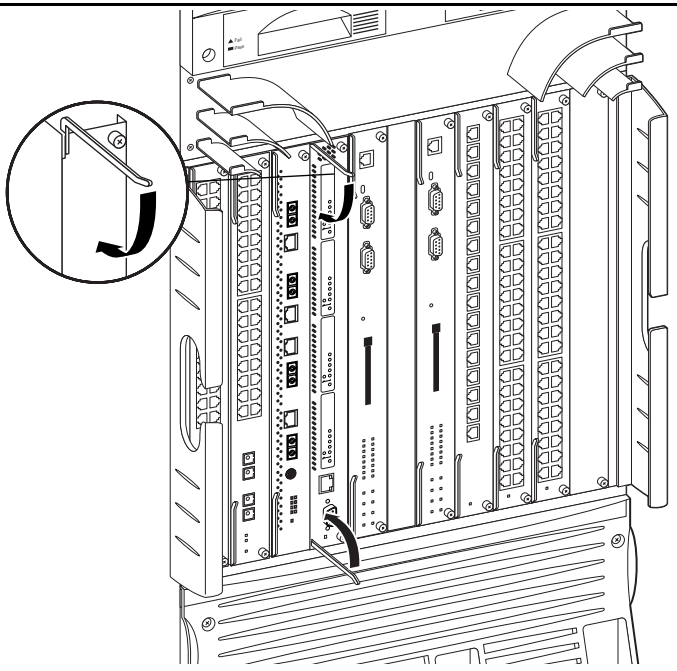


Figure 16 Seating the backplane connectors: 8010co chassis



7 Use a Phillips screwdriver to tighten the two captive screws that secure the 8660 SDM to the chassis (see Figure 17 or Figure 18 on page 41).

Note: Ensure that both screws are tight for proper module operation.

Figure 17 Securing the SDM FW4 in the chassis: 8003, 8006, and 8010 chassis

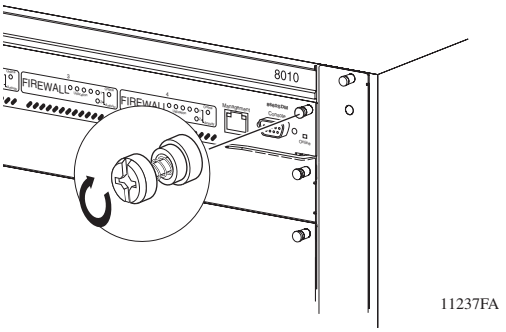
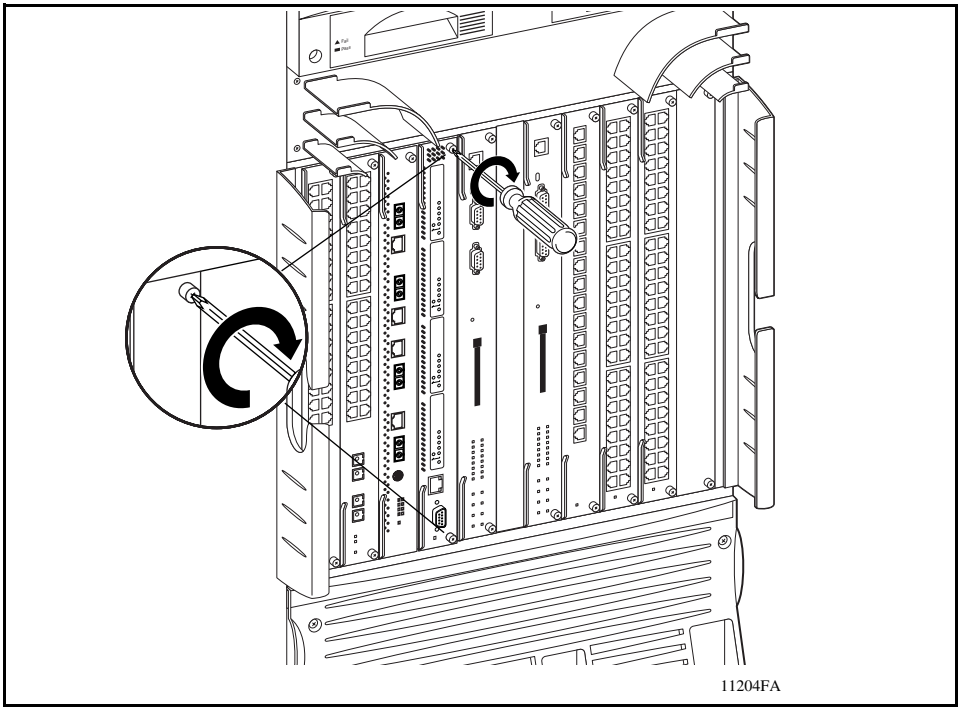


Figure 18 Securing the SDM FW4 in the chassis: 8010co chassis



Turning on the chassis power

To turn on the chassis power:

1. Verify that all power cords are connected properly, and as described in the installation instructions for the power supplies.
2. Turn all the power switches to the “On” position.

Note: In a chassis that has two power supplies in a non-redundant power configuration, you must turn on both power supply units within 2 seconds of each other. If you wait longer, both power supplies will shut down. To correct this condition, turn off both power supplies, wait at least 30 seconds, and then turn on both power supplies again within 2 seconds.

Chapter 3
Replacing the disk drives

This chapter provides instructions for replacing 8660 SDM disk drives. This chapter includes the following topic:

Replacing a disk drive on the 8660 SDM

To replace a disk, start with the procedure described in "Removing a disk drive" on page 45. To install a disk drive, see "Installing a disk drive" on page 47.

Caution: Disk drives must be halted prior to removing an 8660 SDM from the chassis or when power is removed. Failure to do so can seriously damage the disk drive, and cause loss of data. Disk drives will become operational automatically when the 8660 SDM is re-inserted in the chassis slot.

For detailed instructions on halting the disk drives, as well as enabling a halted firewall iSD, see the *Firewall User's Guide and Command Reference* (part number 217315-A).

To replace a disk drive on an installed 8660 SDM:

1. Put on an antistatic wrist strap.
2. Halt the disk drive on the SDM FW1 (halt the iSD).

   Nortel Networks recommends that you log in from the 8600 console to connect to the iSD, then go to the boot menu to halt the iSD.

a From the Passport console, select the iSD to halt:

Use the **`Set_console slot# mini slot#`** CLI command (for example: **`Set_console 3 1`**).

b From the SDM console, enter **`/boot/halt`**

Repeat Step 2 for each disk drive if you have an SDM FW2 or SDM FW4.

3 Remove the installed 8660 SDM.

For instructions, see "Removing an 8660 SDM" on page 32.

4 Place the 8660 SDM on an antistatic bag or set it on an antistatic mat.

5 Remove the damaged disk drive (see "Removing a disk drive" on page 45).

6 Install the replacement disk drive (see"Installing a disk drive" on page 47).

Estimated time to replace a disk drive

The estimated time to remove a disk drive is 15 minutes.

The estimated time to install a disk drive is 15 minutes.

Required tools

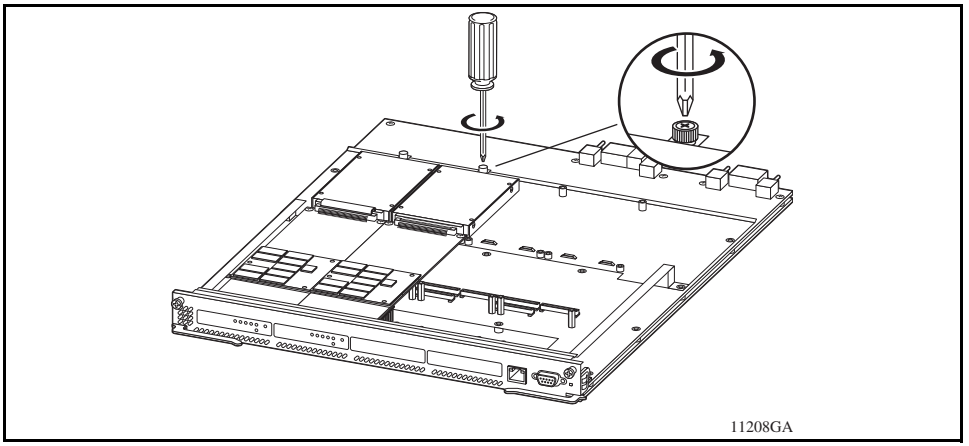
You require the following tools to replace a disk drive: Phillips #0 or #1 screwdriver.

Removing a disk drive

1 Loosen the captive screw that secures the disk drive (see Figure 19).

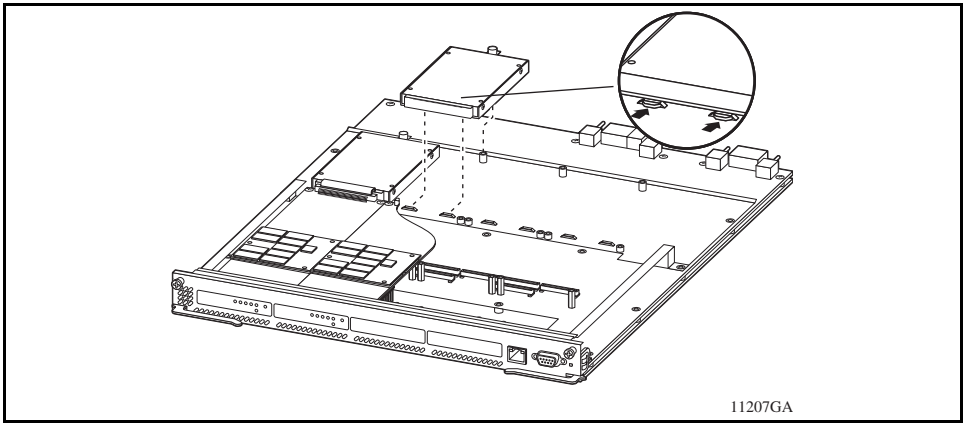
You can loosen this screw by hand, or use a #1 Phillips head screwdriver.

Figure 19 Loosening the disk drive captive screw



2 Slide the two disk drive tabs out of the two slots on the 8660 SDM tray (see Figure 20).

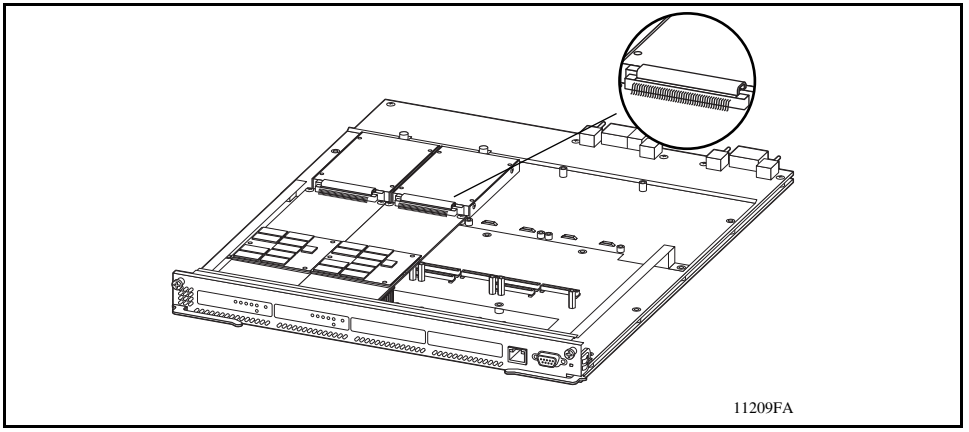
Figure 20 Sliding the disk drive tabs from the slots



3 Disconnect the 44-pin disk drive cable from either the connector on the disk drive, or from the connector on the PrPMC (see Figure 21).

Hold the disk drive firmly while disconnecting the cable.

Figure 21 Disk drive connector

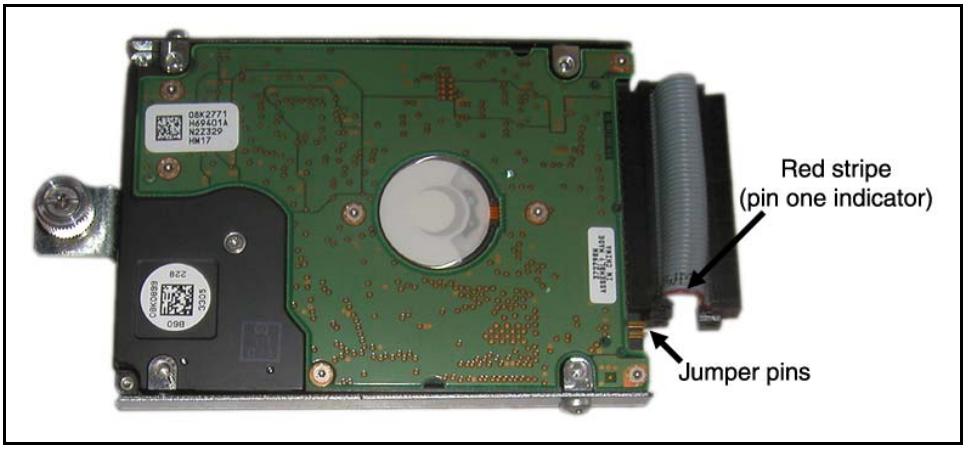


Installing a disk drive

1 Connect the 44-pin disk drive cable to the disk drive connector (see Figure 22).

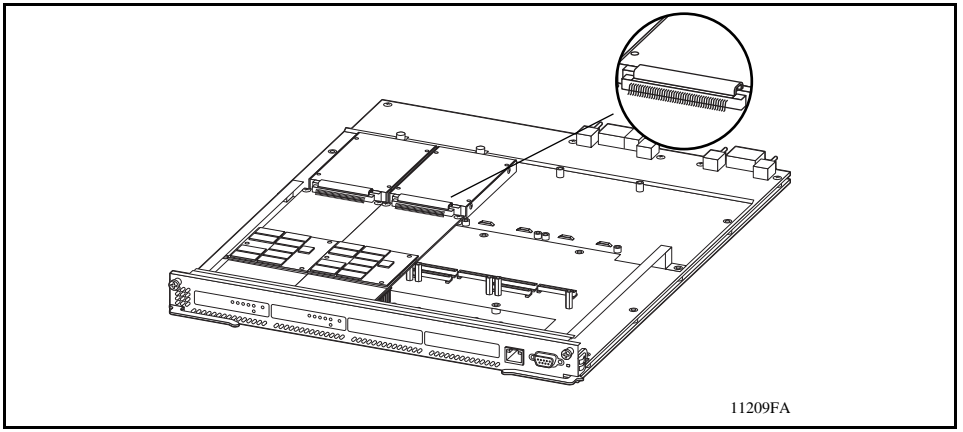
Note: The red stripe on the edge of the 44-pin disk drive cable is the pin one indicator. Disk drives include a separate group of 4 pins that are used as jumpers. Ensure you connect the disk drive cable to the 44-pin cluster; do not overlap the 4 jumper pins.

Figure 22 Connecting the disk drive cable to the disk connector



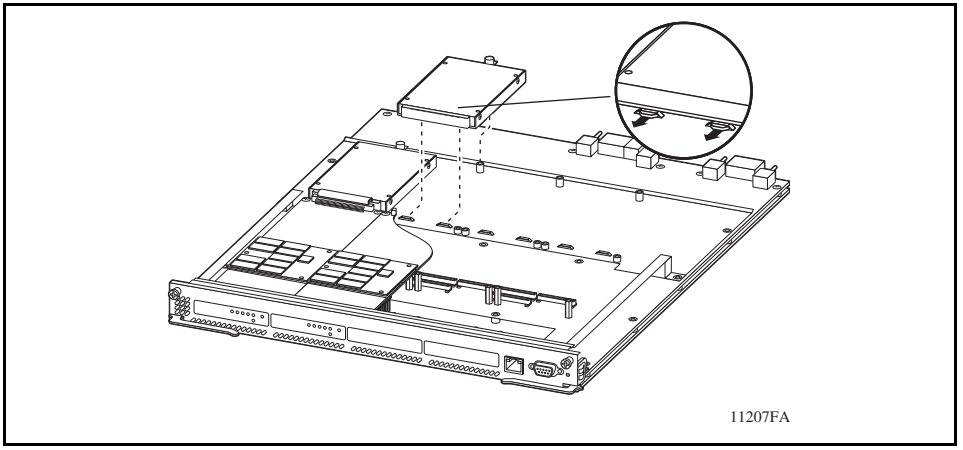
2 Connect the 44-pin disk drive cable to the PrPMC connector (see Figure 23).

Figure 23 Connecting the disk drive cable to the PrPMC connector



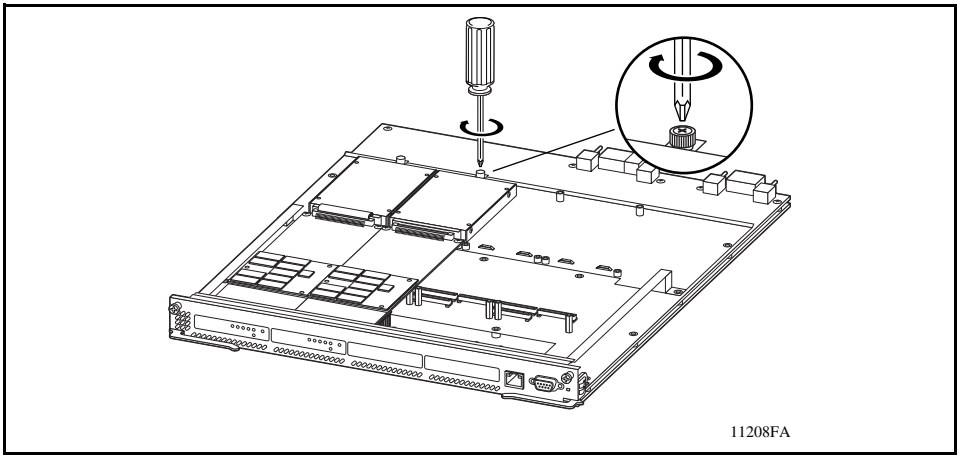
3 Slide the two disk drive tabs into the two slots on the 8660 SDM tray (see Figure 24).

Figure 24 Sliding the disk drive tabs into the slots on the SDM FW2 tray



4 Tighten the captive screw that fastens the disk drive to the 8660 SDM tray (see Figure 25). Tighten this screw by hand, or use a Phillips screwdriver.

Figure 25 Fastening the disk drive



Chapter 4
Replacing a PrPMC

This chapter describes the following topics:

Replacing a PrPMC on the 8660 SDM

Caution: Electrostatic discharge can damage hardware. Follow the procedures in this section to protect your equipment from damage.

The 8660 SDM and PrPMC are sensitive to static electricity. Static discharge from your clothing or other fixtures around you, even at levels that do not create a spark, can cause damage.

To prevent static discharge damage when you work with the 8660 SDM or the PrPMC, place each module on a grounded antistatic mat until you are ready to install it, or leave the module in the sealed Electrostatic Discharge (ESD) bag. Wear a discharge leash or wrist strap to free yourself of static before you touch a module. You can add or replace a module with the power on or off.

To replace a PrPMC, start with the procedure described in "Removing a PrPMC" on page 52. To install a PrPMC, see "Installing a PrPMC" on page 59.

Estimated time to replace a PrPMC

The estimated time to remove a PrPMC is 35 minutes.

The estimated time to install a PrPMC is 35 minutes.

Required tools

You require the following tools to replace a PrPMC:

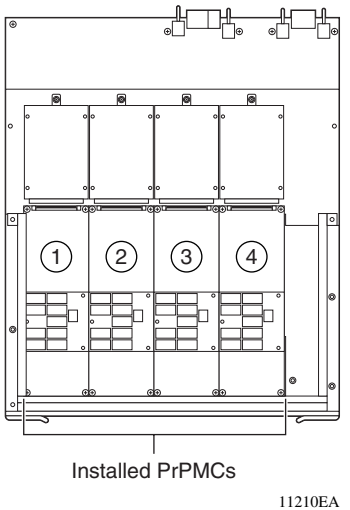
- Phillips #0 or #1 screwdriver
- 3/16-inch nutdriver

Removing a PrPMC

Caution: Disk drives must be halted prior to removing an 8660 SDM from the chassis. Failure to do so can seriously damage the disk drive, and cause loss of data. Refer to "Replacing a disk drive on the 8660 SDM" on page 43 for instructions to halt the disk drives. Disk drives will become operational automatically when the 8660 SDM is re-inserted in the chassis slot. Refer to the *Firewall User's Guide and Command Reference* (part number 217315-A) for more detailed instructions on halting disk drives.

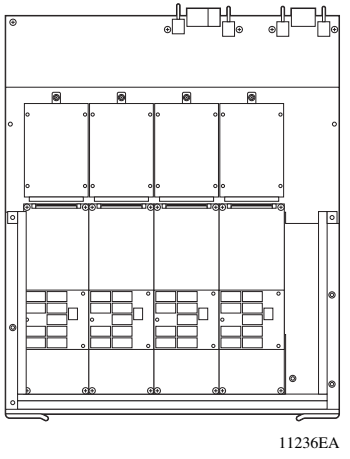
1. Remove the 8660 SDM from the 8600 series chassis. See "Removing an 8660 SDM" on page 32.
2. Locate the installed PrPMC (indicated by the numbers 1, 2, 3, and 4 in Figure 26) on the 8660 SDM.

Figure 26 Locating the installed PrPMC on an SDM FW4



3. Hold the 8660 SDM with the components facing up (see Figure 27).

Figure 27 SDM FW4 with components facing up

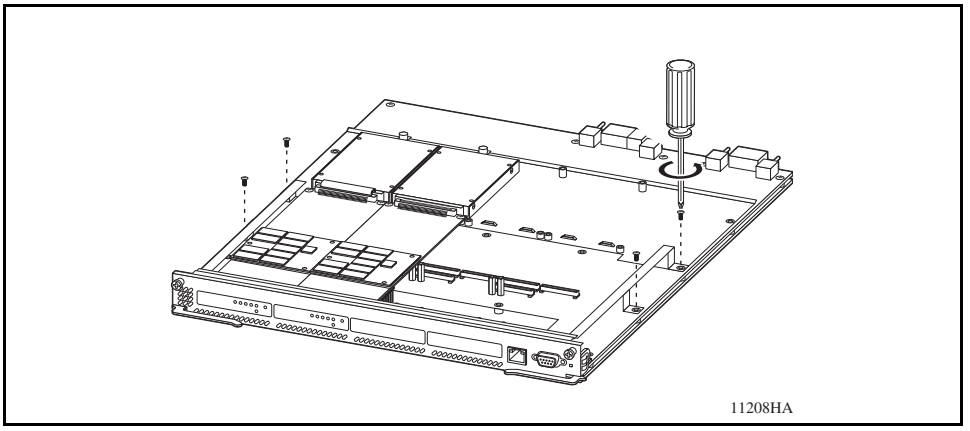


4 Place the 8660 SDM on an antistatic bag, or set it on an antistatic mat.

5 Remove the disk drive that sits behind the PrPMC that you will remove. See "Removing a disk drive" on page 45.

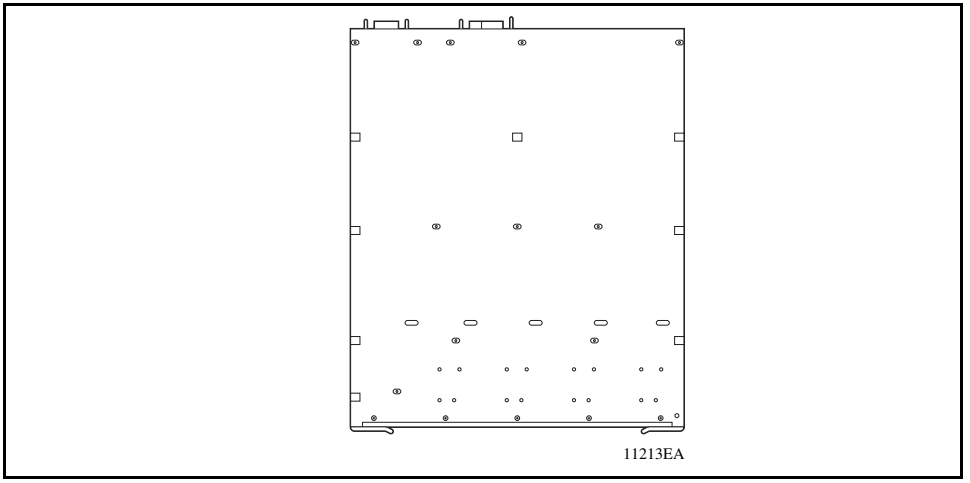
6 Remove the four screws that secure the stiffeners to the board (see Figure 28).

Figure 28 Removing the stiffener screws



7 Turn the 8660 SDM over so that the components are facing down (see Figure 29).

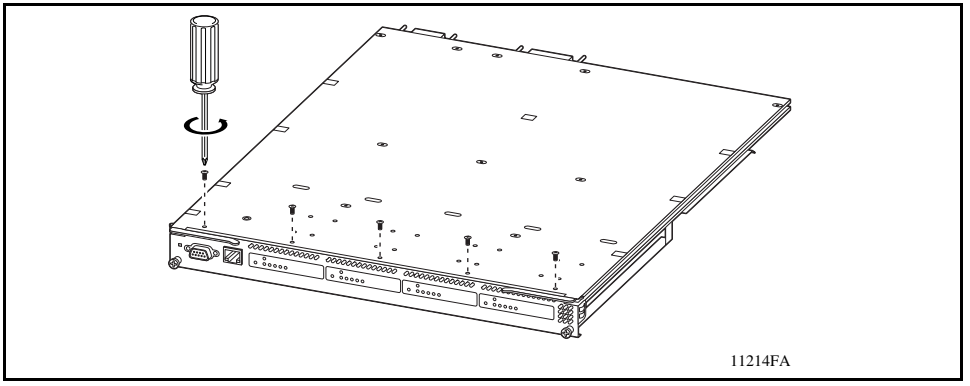
Figure 29 SDM FW4 with components facing down



8 Use a Phillips screwdriver to remove the five screws that secure the front faceplate to the 8660 SDM (see Figure 30).

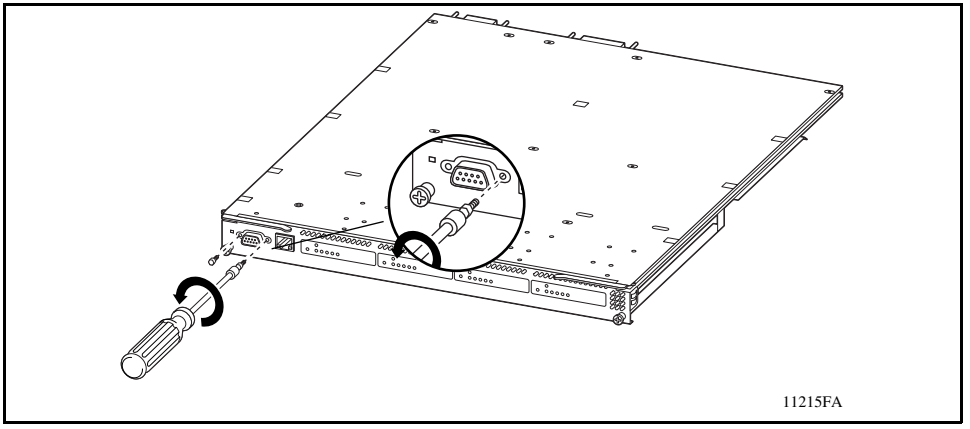
Note: There are both fine-pitch and medium-pitch screws located along the bottom edge of the 8660 SDM faceplate. Remove the five medium-pitch screws only. These five screws secure the faceplate. Nortel Networks recommends using a Phillips #0 to remove these screws.

Figure 30 Removing the faceplate screws



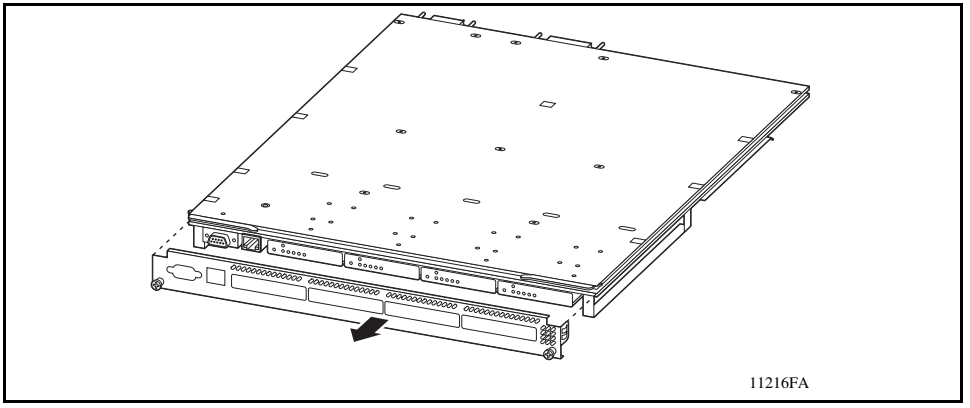
9 Use a 3/16-inch nutdriver to remove the two console port standoffs (see Figure 31).

Figure 31 Removing the console port standoffs



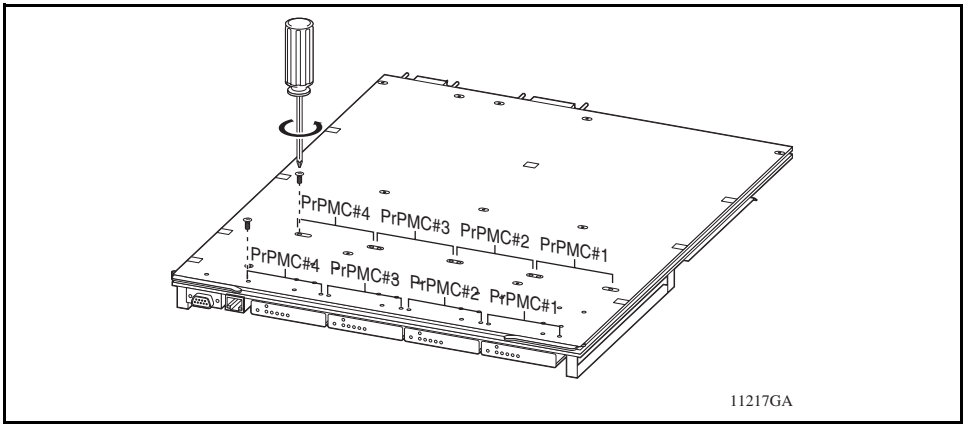
10 Remove the faceplate from the 8660 SDM (see Figure 32).

Figure 32 Removing the faceplate from the SDM FW4



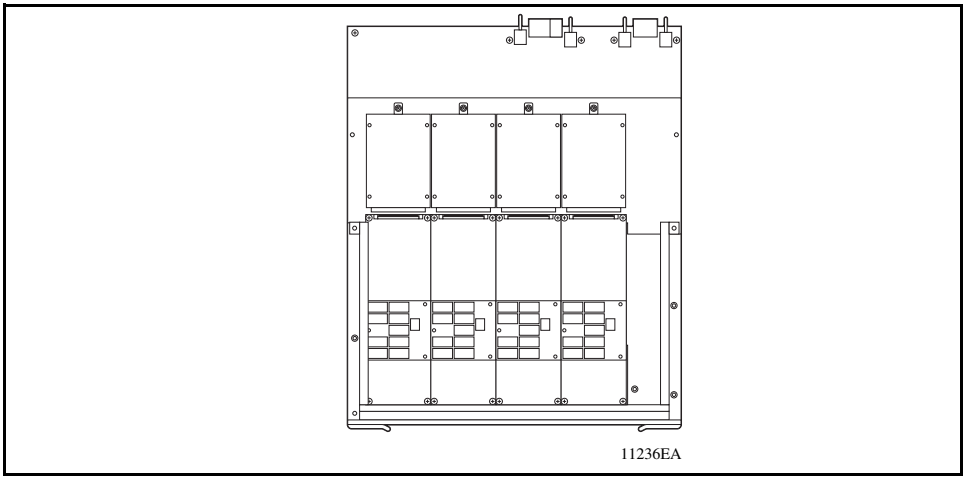
11 Use a Phillips screwdriver to remove the four bottom screws that secure each PrPMC to the 8660 SDM (see Figure 33).

Figure 33 Removing the bottom screws from the PrPMC



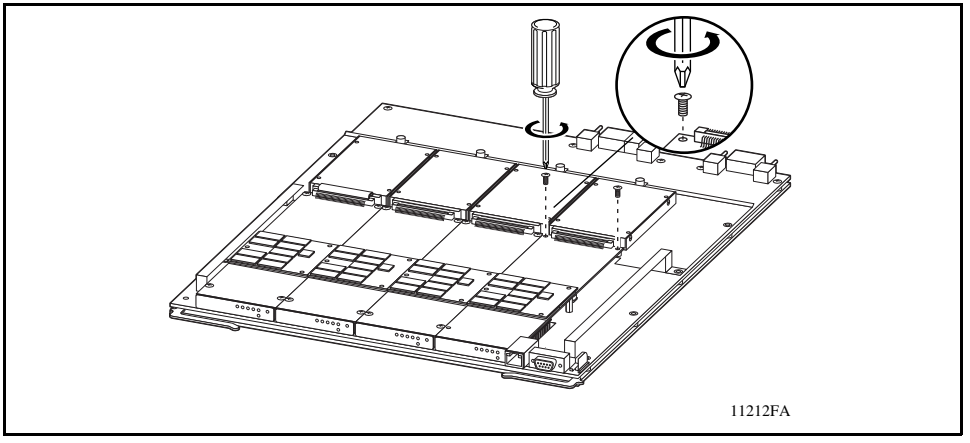
12 Turn the 8660 SDM over so that the components are facing up (see Figure 34).

Figure 34 SDM FW4 components facing up



13 Use a Phillips screwdriver to remove the two screws that secure the back of the PrPMC to the 8660 SDM (see Figure 35).

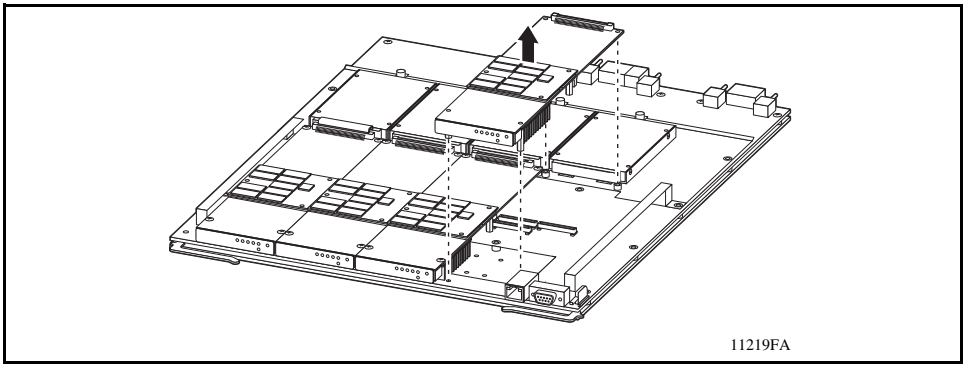
Figure 35 Removing the two back screws from the PrPMC



14 Grasp the edges of the PrPMC.

15 Pull it straight up, and lift it out (see Figure 36).

Figure 36 Removing the PrPMC



16 Place the PrPMC in an antistatic bag, or set it on an antistatic mat.

17 Continue with "Installing a PrPMC" on page 59 if you are replacing the PrPMC.

If you are not immediately replacing the PrPMC, install a filler panel in the empty slot. See "Installing a PrPMC filler panel" on page 66.

Installing a PrPMC

Remove the filler panel from the firewall iSD mini-slot, if necessary, before beginning this procedure. See "Removing a PrPMC filler panel" on page 66.

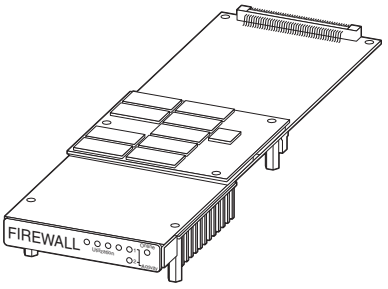
Note: Nortel Networks recommends that you remove the disk drive (if present) located behind the PrPMC that you are installing before beginning this procedure. See "Removing a disk drive" on page 45.

Note: Ensure that iSDs are installed from right to left (that is, for a FW1, the iSD is in slot 4 of the SDM FW1 tray; for a FW2, the iSDs are installed in slots 3 and 4, and so on).

1 Place the 8660 SDM on an antistatic bag, or set it on an antistatic mat.

2 Hold the PrPMC with the components facing up (see Figure 37).

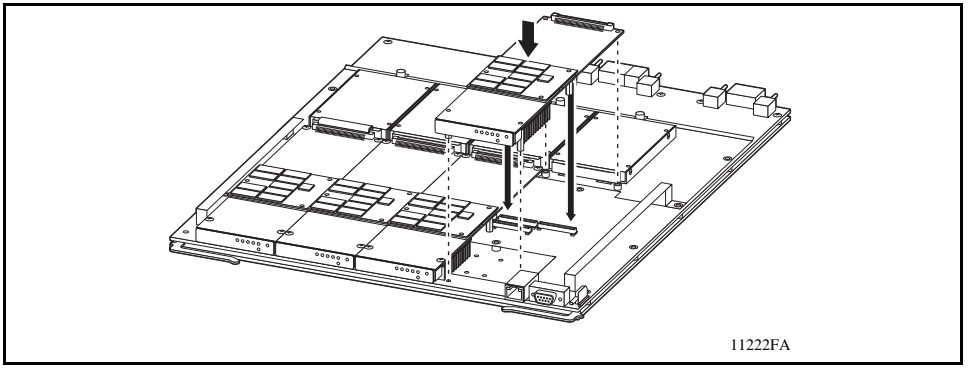
Figure 37 PrPMC with components facing up.



3 Place the PrPMC on an empty slot on the 8660 SDM.

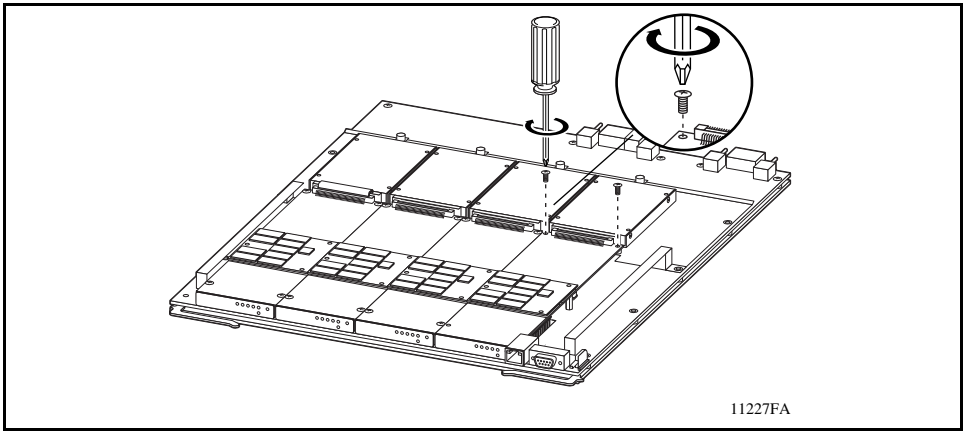
4 Press down on the PrPMC to seat it in the connector (see Figure 38).

Figure 38 Seating the PrPMC in the connector



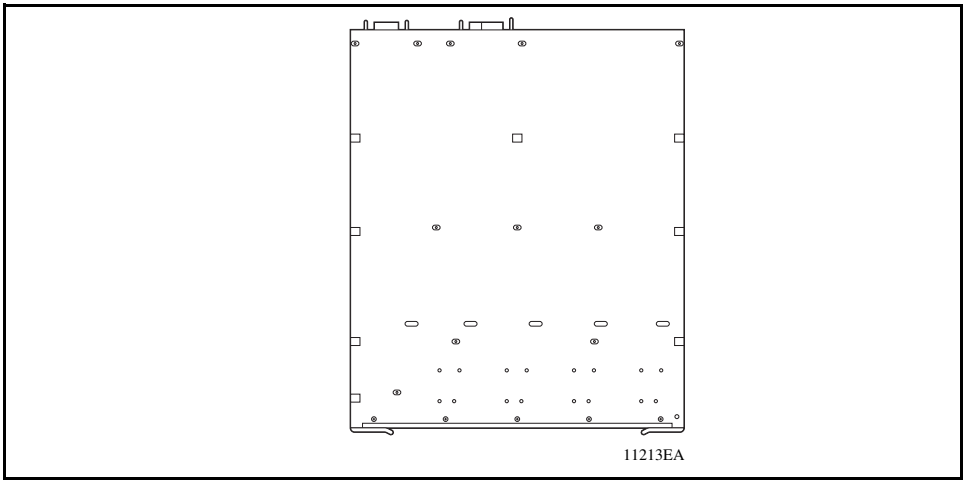
5 Use a Phillips screwdriver to insert and tighten the two screws that secure the back of the PrPMC to the 8660 SDM (see Figure 39).

Figure 39 Securing the back of the PrPMC



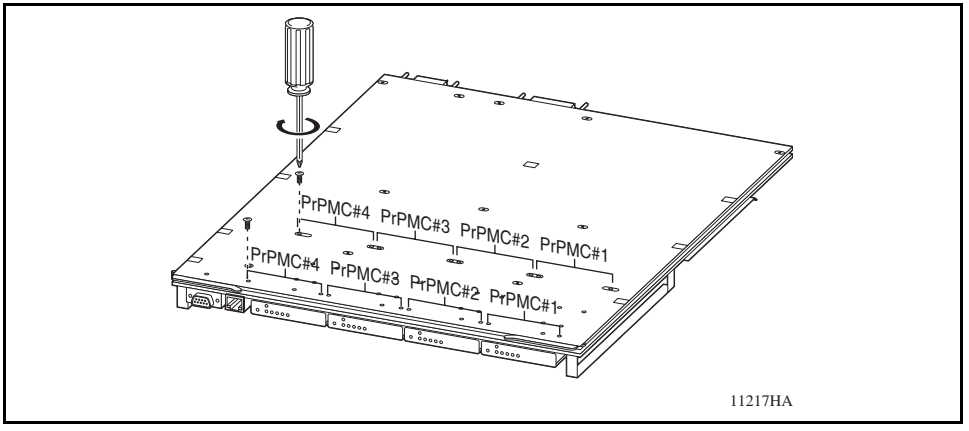
6 Turn the 8660 SDM over so that the components are facing down (see Figure 40).

Figure 40 SDM FW4 with components facing down



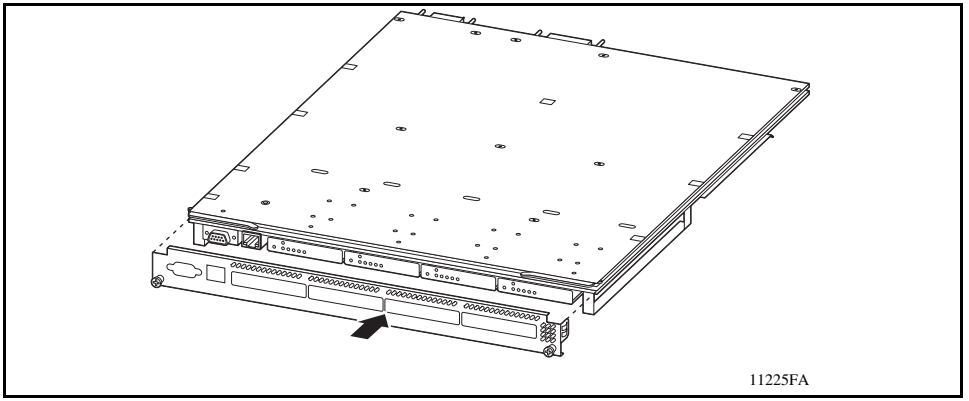
7 Use a Phillips screwdriver to insert and tighten the four bottom screws that secure each PrPMC to the 8660 SDM (see Figure 41).

Figure 41 Securing the bottom screws from the PrPMC



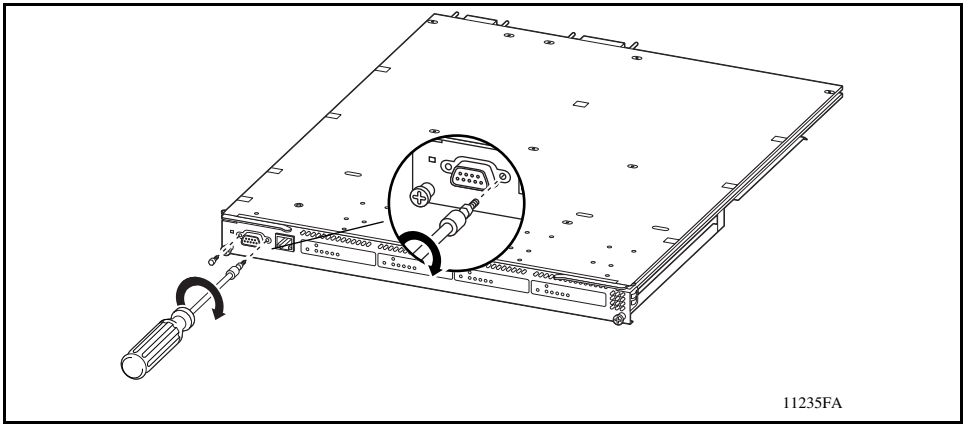
8 Place the faceplate against the front of the 8660 SDM tray (see Figure 42).

Figure 42 Placing the faceplate against the SDM FW4 tray



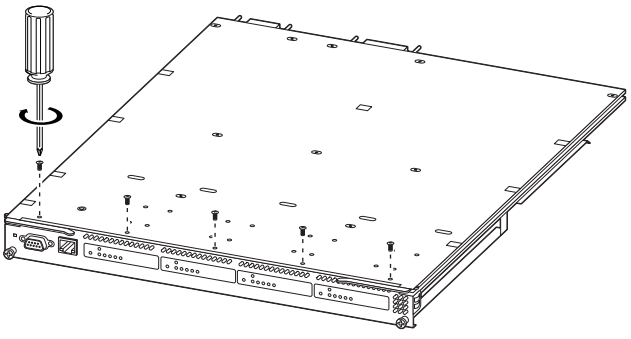
9 Use a 3/16-inch nutdriver to install the two console port standoffs (see Figure 43).

Figure 43 Installing the console port standoffs



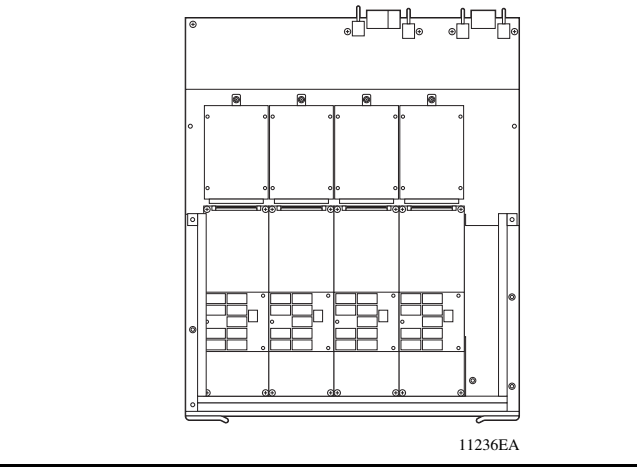
10 Use a Phillips screwdriver to insert and tighten the five screws that secure the faceplate to the 8660 SDM (see Figure 44).

Figure 44 Securing the faceplate



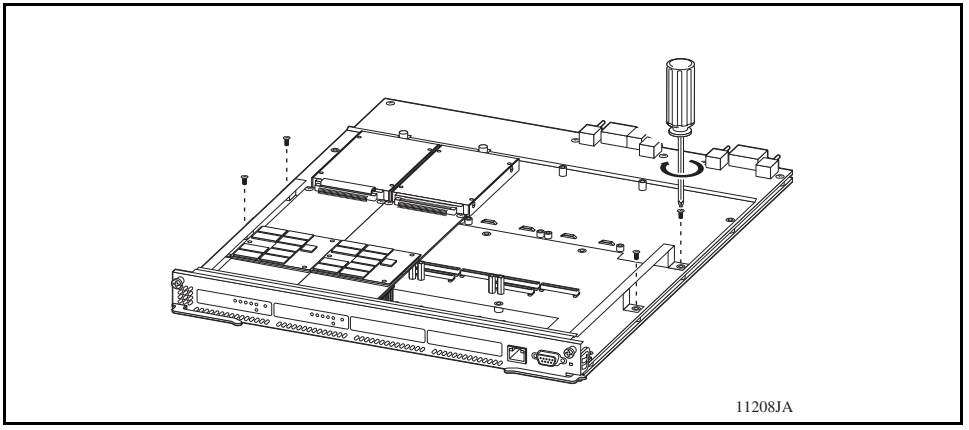
11 Turn the 8660 SDM over so the components are facing up (see Figure 45).

Figure 45 SDM FW4 components facing up



12 Insert and tighten the four screws that secure the stiffeners to the board (see Figure 46).

Figure 46 Securing the stiffener screws



13 Install the disk drive for the firewall iSD. See "Installing a disk drive" on page 47.

Removing and installing a PrPMC filler panel

Nortel Networks ships the SDM FW1 and FW2 with a filler panel covering each empty module slot.

Before you install a new PrPMC, you must remove the appropriate filler panel. For instructions, see "Removing a PrPMC filler panel" on page 66.

To install a filler panel, see "Installing a PrPMC filler panel" on page 66.

Estimated time to remove or install a PrPMC filler panel

The estimated time to remove a PrPMC filler panel is 10 minutes.

The estimated time to install a PrPMC filler panel is 10 minutes.

Required tools

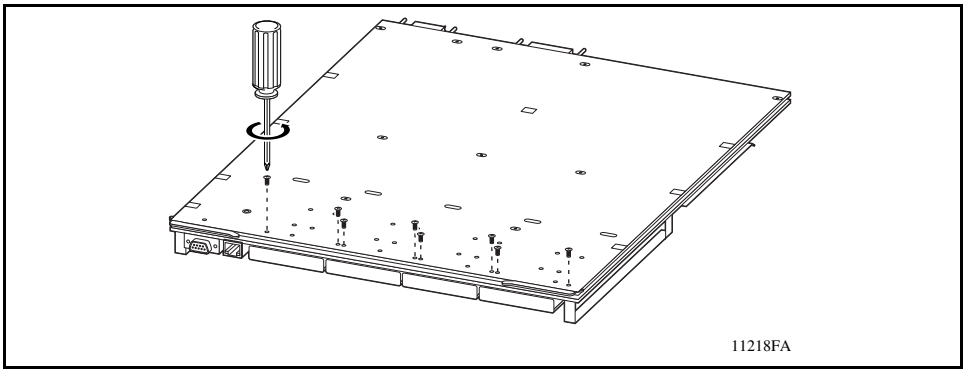
You require the following tools to replace a PrPMC filler panel: #1 Phillips screwdriver.

Removing a PrPMC filler panel

To remove a PrPMC filler panel:

1 Use a Phillips screwdriver to remove the two screws that secure the filler panel to the SDM FW1 or FW2 board (see Figure 47).

Figure 47 Removing the PrPMC filler panel screws



2 Pull the filler panel out of the slot.

Installing a PrPMC filler panel

If you plan to remove a PrPMC without immediately replacing it, you must install a filler panel in the slot.

To install a PrPMC filler panel:

1 Locate the slot where you must install the filler panel.

2 Place the filler panel over the slot

3 Use a Phillips screwdriver to insert and tighten the two screws that secure the filler panel to the 8660 SDM faceplate.

Appendix A
8660 SDM specifications

This appendix includes the following topics:

Specifications

Table 4 lists the specifications for the SDM FW1, FW2, and FW4.

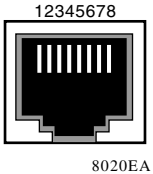
Table 4 Specifications for the SDM FW1, FW2, and FW4

Item	SDM FW1	SDM FW2	SDM FW4
Height:	1.5 in. (3.8 cm)	1.5 in. (3.8 cm)	1.5 in. (3.8 cm)
Width:	15.4 in. (39.1 cm)	15.4 in. (39.1 cm)	15.4 in. (39.1 cm)
Depth:	18 in. (45.8 cm)	18 in. (45.8 cm)	18 in. (45.8 cm)
Weight:	11 lb (5 kg)	12 lb (5.5 kg)	12 lb (5.5 kg)
Electrical Specifications			
MTBF Rating:	322 059 hours @ 25° C	322 059 hours @ 25° C	322 059 hours @ 25° C
Input Power:	80 W maximum	80 W maximum	80 W maximum
Operating Temperature:	5° to 50° C	5° to 50° C	5° to 50° C
Storage Temperature:	-20° to 60° C	-20° to 60° C	-20° to 60° C
Connector types			
Ethernet Management port:	RJ-45 connector wired as MDI (see Table 5 on page 69)	RJ-45 connector wired as MDI (see Table 5 on page 69)	RJ-45 connector wired as MDI (see Table 5 on page 69)
Console port:	DB-9 connector (see Table 6 on page 70)	DB-9 connector (see Table 6 on page 70)	DB-9 connector (see Table 6 on page 70)
Cable specifications			
Ethernet Management port:	Category 3, 4, or 5 UTP cable (10 Mbit/s operation) Category 5 UTP cable (100/1000 Mbit/s operation)	Category 3, 4, or 5 UTP cable (10 Mbit/s operation) Category 5 UTP cable (100/1000 Mbit/s operation)	Category 3, 4, or 5 UTP cable (10 Mbit/s operation) Category 5 UTP cable (100/1000 Mbit/s operation)
Console port:	RS-232 cable	RS-232 cable	RS-232 cable

Management port

The management port is a 10/100/1000Base-T Ethernet port implemented on an RJ-45 connector wired as an MDI connection. Table 5 shows the pin assignments for this connector.

Table 5 Pin assignments: 8660 SDM management port

Connector	Pin number	Signal
	1	Output transmit data + (TX+)
	2	Output transmit data - (TX-)
	3	Input receive data + (RX+)
	6	Input receive data - (RX-)
	4, 5, 7, 8	Not used

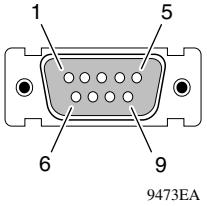
Console serial port

The console serial port is implemented as a DB-9 connector. This port operates as a Data Communication Equipment (DCE) device. Default settings for this port are 9600 bits/s, 8 data bits, no parity, and one stop bit.

Connection to TXD and RXD signals and GND is sufficient for the console serial port to fully function. The console port does not support any inbound flow control (that is, the port does not toggle control lines to indicate an input buffer full condition).

Table 6 lists the pin assignments for the console port for both the Data Terminal Equipment (DTE) and DCE settings.

Table 6 Pin assignments: 8660 SDM console port

Connector	Pin number	Switch position	
		DCE (left)	**DTE (right)**
	2	TXD (Output)	RXD (Input)
	3	RXD (Input)	TXD (Output)
	4	DSR (Input)	DTR (Output)
	5	GND	GND
	6	DTR (Output)	DSR (Input)
	7	CTS (Input)	RTS (Output)
	8	RTS (Output)	CTS (Input)

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