Sun Fire™ E4900 and Sun Fire 6800/4800 Systems Power Supply and Fan Tray Upgrade Guide

Preparation for UltraSPARC® IV/IV+ Based Systems

Sun Microsystems, Inc.
www.sun.com

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CHAPTER 1

Upgrade Overview

This document provides procedures for preparing Sun Fire™ E4900 and Sun Fire 6800/4800 systems to accept the UltraSPARC® IV/IV+ CPU/Memory board configurations.

The system needs to be powered off for the EMI gasket kit installation portion of this upgrade. Arrange with the system administrator for a scheduled system shutdown.

This upgrade procedure involves installing:

- An EMI gasket kit (if one is not already installed)

  An EMI gasket kit must be installed to ensure Class A EMI compliance worldwide. This kit must be installed while the system is powered off, prior to the insertion of UltraSPARC IV/IV+ CPU/Memory boards.

- Power supplies of higher current ratings
- Fan trays of higher cooling capacity (Sun Fire E4900 and Sun Fire 4800 systems only)

Note – Install the UltraSPARC IV/IV+ CPU/Memory boards only after you have installed the other upgrade hardware.

Portions of this upgrade procedure (power supplies and/or fan trays) can be installed in a powered-on system. However, the EMI Gasket kit must have been previously installed.

1.1 Sun Fire 6800 System Upgrade Roadmap

Upgrade domains to a minimum supported version of firmware and Solaris Operating System. Refer to the applicable Sun Fire High-End and Midrange Systems CPU/Memory Board Upgrade Requirements document at `http://sun.com/documentation`.

Select one of the following upgrade options:

- For a powered-off Sun Fire 6800 system, go to Chapter 2, page 2-1.
- For a powered-on Sun Fire 6800 system, go to Chapter 2, page 2-4.

1.2 Sun Fire E4900 and Sun Fire 4800 System Upgrade Roadmap

Upgrade domains to a minimum supported version of firmware and Solaris Operating System. Refer to the applicable Sun Fire High-End and Midrange Systems CPU/Memory Board Upgrade Requirements document at `http://sun.com/documentation`.

Select one of the following upgrade options:

- For a powered-off Sun Fire E4900/4800 system, go to Chapter 3, page 3-1.
- For a powered-on Sun Fire E4900/4800 system, go to Chapter 3, page 3-6.

1.3 Tools Required

For the procedures in this document, you will need these tools:

- Screwdriver, Phillips No. 2 with six-inch shank
- Needlenose pliers
- ESD mat
- ESD grounding wrist strap or foot strap

CHAPTER 2

Upgrading a Sun Fire 6800 System

This kit contains the following:

- Sun Fire 6800 Power Supplies (6)
- Sun Fire 6800 EMI Gasket kit

This chapter contains information on the following topics:

- "Upgrading in a Powered-Off System" on page 2-1
- "Upgrading in a Powered-On System" on page 2-4

Note – Sun Fire E6900 and upgraded Sun Fire 6800 systems upgrading to UltraSPARC IV+ CPU/Memory boards do not require the Sun Fire 6800 UltraSPARC IV/IV+ Upgrade Kit.

2.1 Upgrading in a Powered-Off System

Upgrading the system requires:

1. Installing the EMI Gasket kit.
2. Upgrading the power supplies.

2.1.1 Configuration Requirements

- An EMI Gasket kit must be installed. For systems with gaskets already installed, a second gasket should not be installed.
- For hardware, firmware, and OS minimum upgrade requirements, refer to the applicable Sun Fire High-End and Midrange Systems CPU/Memory Board Upgrade Requirements document at `http://sun.com/documentation`.
- Upgrade power supplies before upgrading the UltraSPARC IV/IV+ CPU/Memory boards.

2.1.2 Powering Off

Note – Instructions for the removal and replacement of the power supplies can also be found in your Sun Fire 6800/4810/4800/3800 Systems Service Manual.

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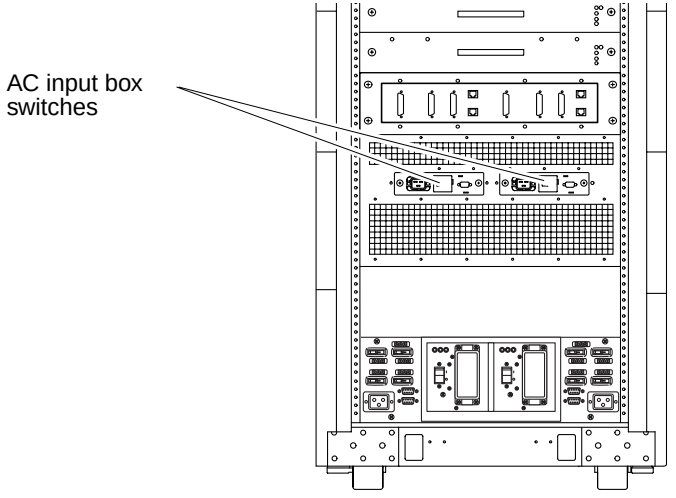
1. **Shut down the domains and power off the system.**

   Refer to the system administration manual for your product for complete step-by-step software commands.

2. **Press the switches that are located on the AC input boxes to the Off position**.



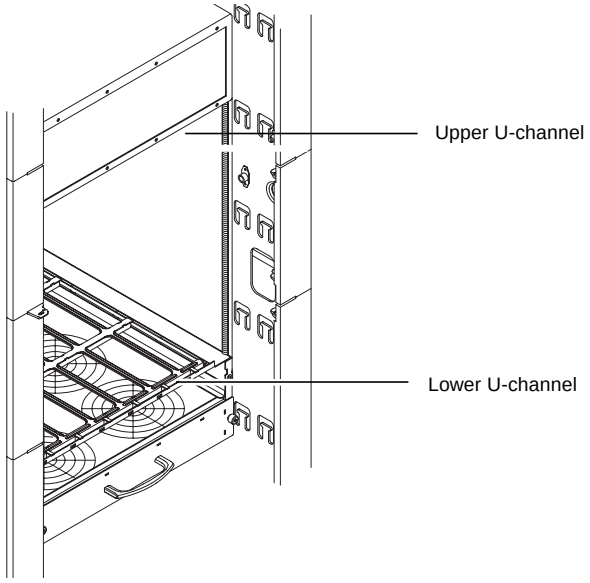
2.1.3 Installing the EMI Gasket Kit

This kit contains the following:

- Four 7.75-inch/200mm gaskets, plus a spare
- One 5-inch/130mm gasket, plus a spare
- Six ESD CPU/Memory board bags

Note – For systems with gaskets already installed, a second gasket should not be installed.

You will need a pair of needle-nosed pliers to guide the gaskets into the upper and lower U-channels.



1. **Remove all the CPU/Memory boards.**

   Refer to the *Sun Fire 6800/4810/4800/3800 Systems Service Manual* for the remove and install instructions.

Note – Place each CPU/Memory board on one enclosed ESD CPU/Memory board bag.

Caution – To avoid breakage, do not stack the CPU/Memory boards.

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2. **Remove the FT1 fan tray to access the area for the 5-inch gasket, located on the underside of the chassis guide rail SB5.**

   Refer to the *Sun Fire 6800/4810/4800/3800 Systems Service Manual* for the remove and install instructions.

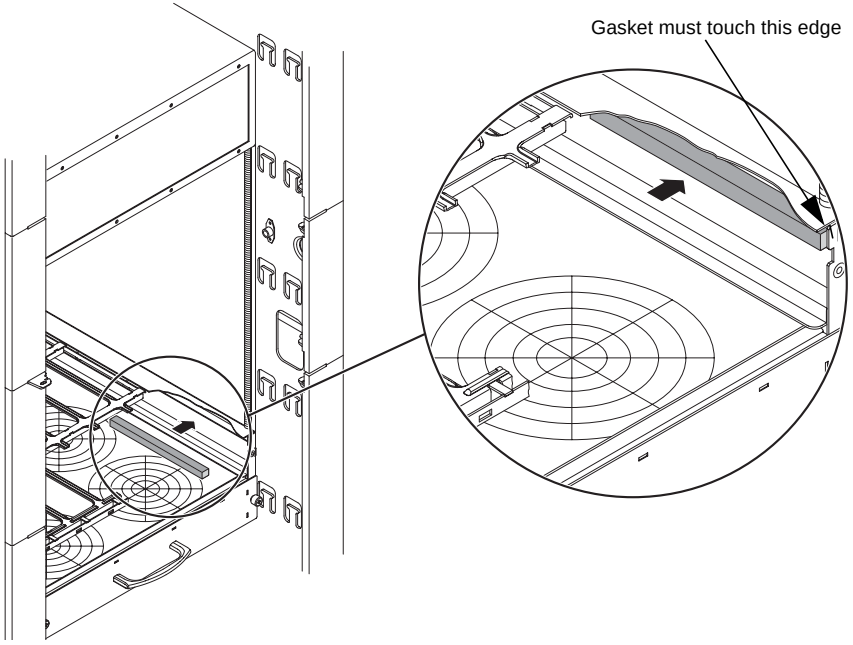
2.1.3.1 Installing the 5-inch/130mm Foam Gasket

Note – Do not apply the gasket to the chassis side wall.

A 5-inch foam gasket is required on the underside of the chassis guide rail SB5.

1. **Peel the entire tape off of the gasket.**
2. **Rotate the gasket so that the adhesive faces to the right.**
3. **Apply the gasket to the side of the guide rail frame, immediately below guide rail SB5 (see figure below).**

   When properly installed, there will be no gaps above or in front of the gasket.



2.1.3.2 Installing the Four 7.75-inch/200mm Foam Gaskets

Two 7.75-inch foam gaskets must be installed in each U-channel.

Note – Do not remove the gasket adhesive strip prior to inserting the gasket into the channel.

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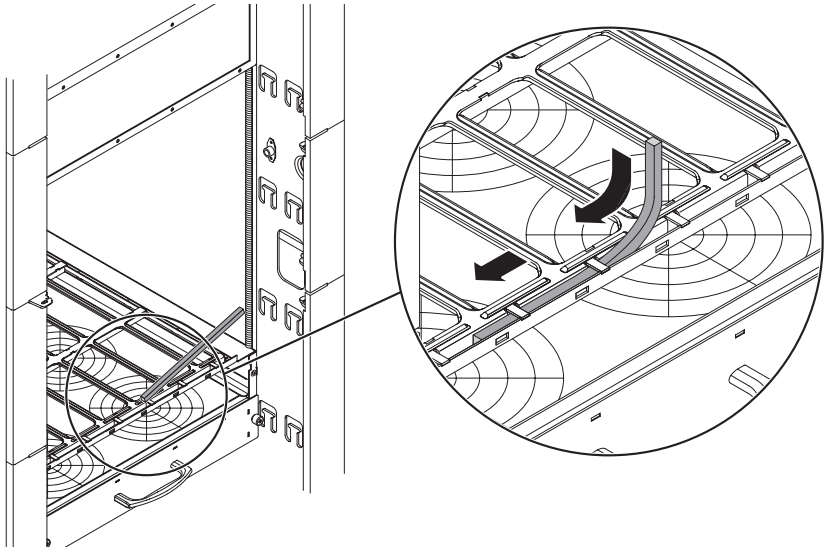
1. **Insert a 7.75-inch gasket (adhesive side down) into the center of the lower U-channel.**

   The gasket will be snug in the channel.



2. **Using needle-nose pliers, carefully pull the gasket through the channel until it reaches the end.**

Caution – Be careful that the gasket does not snag in the channel. Excess force could tear the gasket.

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3. **Repeat this procedure for the other half of the U-channel.**

Note – There should be no visible gap between gaskets.

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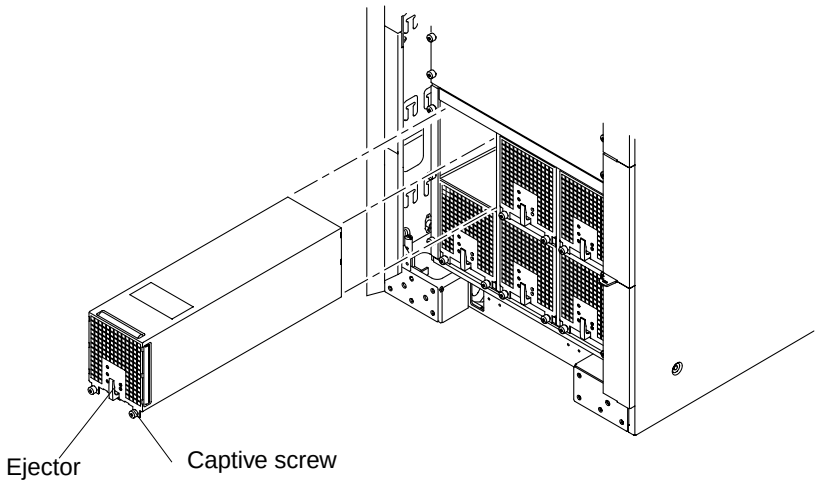
4. **Once the gaskets are in place, lift the ends of each gasket and peel off 1/2 inch of the tape and then firmly adhere the gasket into the channel.**

5. **Repeat steps 1-4 for the upper U-channel.**
6. **Reinstall the FT1 fan tray.**

   Refer to the *Sun Fire 6800/4810/4800/3800 Systems Service Manual* for the remove and install instructions.
7. **Reinstall all the CPU/Memory boards back into the system.**

2.1.4 Replacing Power Supplies



1. **Attach a wrist or foot strap and connect the ESD strap to the system.**
2. **Loosen the two captive screws.**
3. **Unlock the ejector by pulling the ejector lever down.**
4. **Remove the power supply and set it aside.**
5. **Remove the protective cover from the new power supply connector, if applicable.**

Note – Check the connector for any bent pins or damage. Also check the connector on the system chassis backplane.

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6. **Pull the ejector lever down on the new power supply.**
7. **Insert the power supply into the slot and firmly seat it.**
8. **Push the ejector lever up to lock it into place.**

9. **Tighten the two captive screws of the power supply.**
10. **Repeat Steps 2-9 for the remaining power supplies.**

Caution – Do not mix old and new power supplies.

2.1.5 Powering On the System

1. **Press the switches that are located on the AC input boxes to the On position.**
2. **Power on the system.**

   Refer to the system administration manual for your product for complete step-by-step software commands.

2.2 Upgrading in a Powered-On System

Caution – A Sun Fire 6800 system EMI Gasket kit must be installed prior to upgrading the UltraSPARC IV/IV+ CPU/Memory boards. The gasket kit cannot be installed while the system is powered on. If the EMI gasket kit is not installed, see section 2.1 Upgrading in a Powered-Off System.

2.2.1 Configuration Requirements

- An EMI gasket kit must be installed. For systems with gaskets already installed, a second gasket should not be installed.
- For hardware, firmware, and OS minimum upgrade requirements, refer to the applicable Sun Fire High-End and Midrange Systems CPU/Memory Board Upgrade Requirements document at `http://sun.com/documentation`.
- Upgrade power supplies before upgrading the UltraSPARC IV/IV+ CPU/Memory boards.

2.2.2 Replacing the Power Supplies

There are six power supplies in a Sun Fire 6800 System. Upgrade all power supplies individually before installing the new UltraSPARC IV/IV+ CPU/Memory boards.

Note – Instructions for the removal and replacement of the power supplies can also be found in your *Sun Fire 6800/4810/4800/3800 Systems Service Manual*.

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1. **Attach a wrist or foot strap and connect the ESD strap to the system.**
2. **Power off the appropriate power supply.**

   Refer to the platform administration manual for your system for complete procedures to power off a power supply.

Note – When the green Activated LED on the power supply is off (not lit) and the amber or blue OK to remove LED is on (lit), it is safe to continue. You DO NOT have to power off the power grids, AC input box, or RTS module(s).

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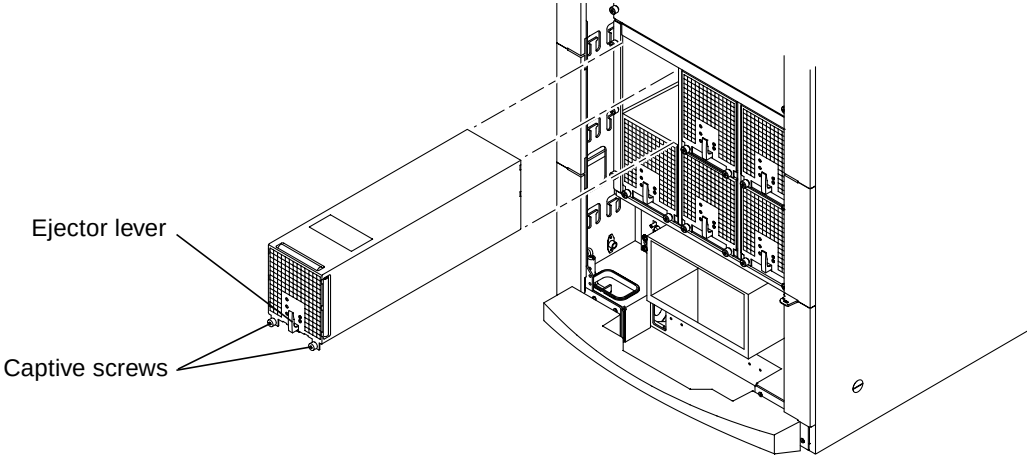
3. **Loosen the two captive screws.**



4. **Unlock the ejector lever by pulling the ejector down.**
5. **Remove the power supply and set it aside.**
6. **Remove the protective cover from the new power supply connector, if applicable.**

Note – Check the connector for any bent pins or damage. Also check the connector on the system chassis backplane.

7. **Pull the ejector down on the new power supply.**
8. **Insert the power supply into the slot and firmly seat it.**
9. **Push the ejector up to lock it into place.**
10. **Tighten the two captive screws of the power supply.**
11. **Wait for the power supply to automatically power-on within 10 seconds.**

Note – Make sure the green Activated LED is on (lit). If the green Activated LED is not on, check to see if the power supply is seated properly.

12. **Repeat Steps 2-11 for each of the remaining power supplies.**
13. **Reboot the system controller after all the new power supplies are installed.**

    Refer to the system administration manual for your product for complete step-by-step software commands.

CHAPTER 3

Upgrading a Sun Fire E4900 or Sun Fire 4800 System

This kit contains the following:

- Sun Fire E4900 Power supplies (3)
- Sun Fire E4900 Fan trays (3)
- Sun Fire 4800 EMI Gasket Kit

This chapter contains information on the following topics:

- Section 3.1, “Upgrading in a Powered-Off System” on page 3-1
- Section 3.2, “Upgrading in a Powered-On System” on page 3-9

3.1 Upgrading in a Powered-Off System

Upgrading the system requires:

1. Installing the EMI Gasket kit.
2. Upgrading the power supplies.
3. Upgrading the fan trays.

3.1.1 Configuration Requirements

- An EMI gasket kit must be installed. For systems with gaskets already installed, a second gasket should not be installed.
- Upgrade domains to a minimum supported version of firmware and Solaris Operating System.

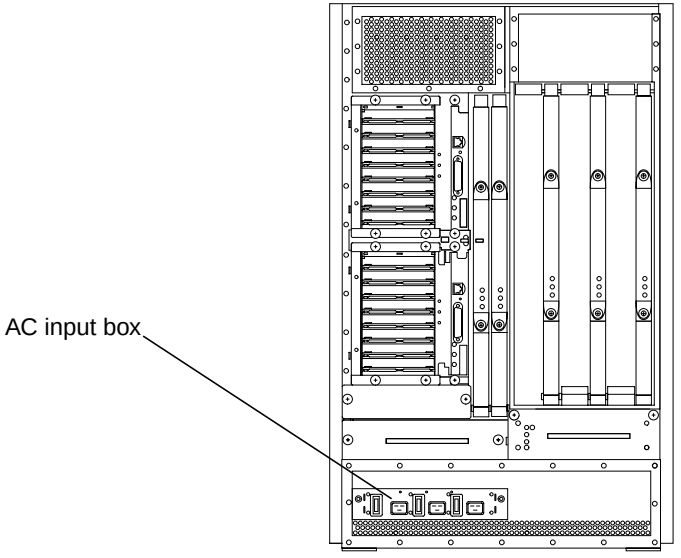
  Refer to the applicable Sun Fire High-End and Midrange Systems CPU/Memory Board Upgrade Requirements document at `http://sun.com/documentation`.
- Upgrade power supplies and fan trays before upgrading the UltraSPARC IV/IV+ CPU/Memory boards.

3.1.2 Powering Off

1. **Shut down the domains and power off the system.**

   Refer to the system administration manual for your product for complete step-by-step software commands.

2. **Press the three switches that are located on the AC input box to the Off position**.



3.1.3 Installing the EMI Gasket Kit

The gasket kit contains:

- Two large (7.7 in./195 mm) EMI gaskets, plus a spare
- Two small (2.6 in./66mm) EMI gaskets, plus a spare
- Three ESD-safe CPU/Memory board bags

Note – For systems with gaskets already installed, a second gasket should not be installed.

3.1.3.1 Installing the Large EMI Gaskets

Install the large (7.7 in./195 mm) gaskets in the upper and lower U-channels of the cardcage.

1. **Place a padded ESD-safe mat close to the system.**
2. **Wear an ESD strap and connect it to the system.**
3. **Remove all CPU/Memory boards and/or CPU/Memory filler panels.**

   Refer to the *Sun Fire 6800/4810/4800/3800 Systems Service Manual* or the *Sun Fire E6900/E4900 Systems Service Manual* for the removal and installation instructions.

Note – Place each CPU/Memory board on one enclosed ESD-safe CPU/Memory board bag.

Caution – To avoid breakage, do not stack the CPU/Memory boards.

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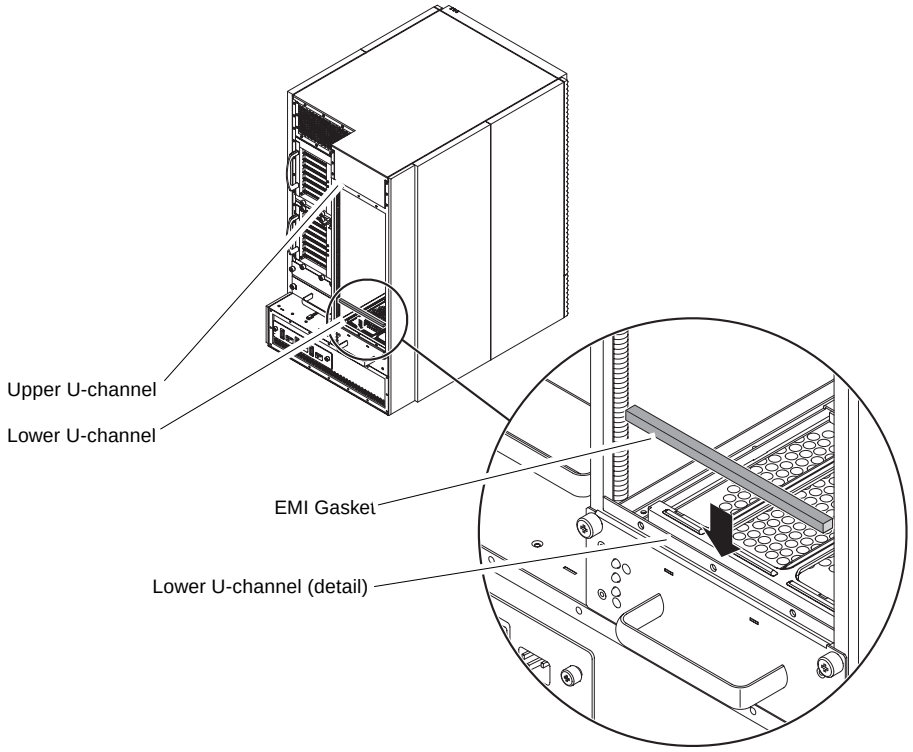
4. **Install one of the large gaskets in the lower U-channel.**

   a. **Remove the protective tape from the gasket.**

   b. **Insert the gasket (adhesive side down) into the lower U-channel.**



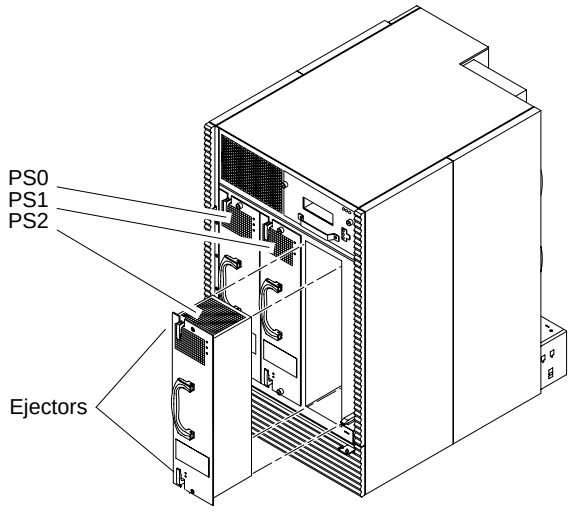
5. **Install the other large gasket in the upper U-channel:**

   a. **Remove the protective tape from the gasket.**

   b. **Insert the gasket (adhesive side up) into the upper U-channel.**

3.1.4 Replacing Power Supplies

The Sun Fire E4900 and Sun Fire 4800 systems have three power supplies located in the front—PS0, PS1, and PS2.



1. **Attach a wrist or foot strap and connect the ESD strap to the system.**
2. **Loosen the two captive screws, located at the top and bottom of the power supply.**
3. **Unlock the ejectors by pulling the ejector levers outward.**
4. **Remove the power supply and set it aside.**
5. **Remove the protective cover from the new power supply connector, if applicable.**

Note – Check the connector for any bent pins or damage. Also check the connector on the system chassis backplane.

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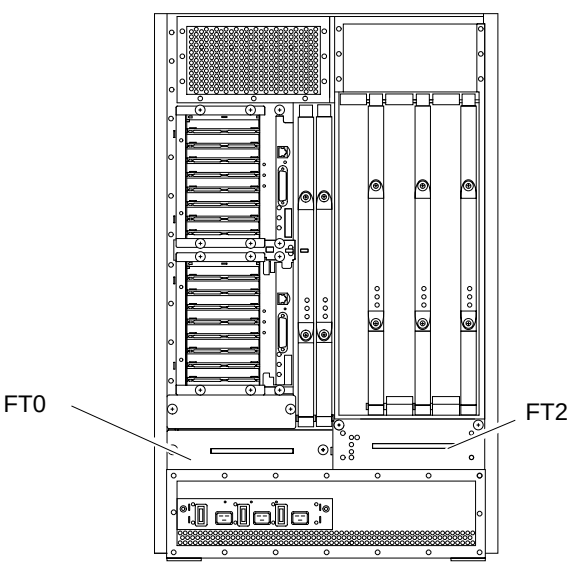
6. **Pull the ejector levers outward on the new power supply.**
7. **Insert the power supply into the slot and firmly seat it.**
8. **Push both the levers inward to lock the power supply into place.**
9. **Tighten the two captive screws.**
10. **Repeat Steps 2-9 for each of the remaining power supplies.**

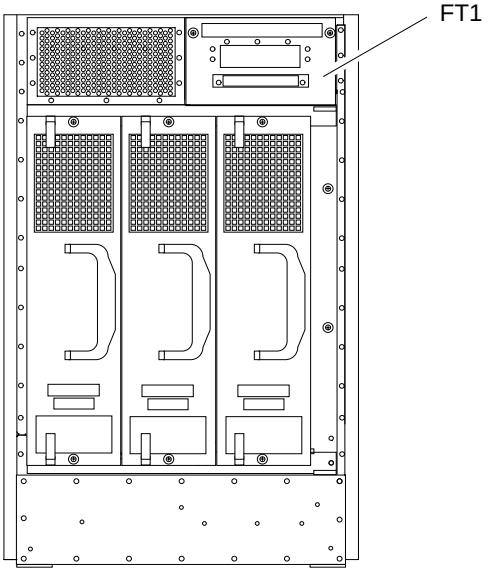
Caution – Do not mix old and new power supplies.

3.1.5 Replacing Fan Trays

The FT0 and FT2 fan trays are located in the rear of the system. FT1 is located in the front.



Sun Fire E4900/4800 System–rear



Sun Fire E4900/4800 System–front

1. **Attach a wrist or foot strap and connect the ESD strap to the system.**
2. **Remove the front bezel on the FT1 fan tray by snapping it off.**
   FT0 and FT2 do not have bezels.
3. **Loosen the captive screws on the fan tray.**
4. **Lift the fan tray out and set it aside.**
5. **Remove the protective cover from the fan tray connector, if applicable.**

Note – Check the connector for any bent pins or damage. Also check the connector on the system chassis backplane.

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6. **Slide the new fan tray into the slot.**
7. **Tighten the captive screws.**
8. **Replace the FT1 front bezel.**

9. **Repeat Steps 3-7 for the remaining fan trays.**

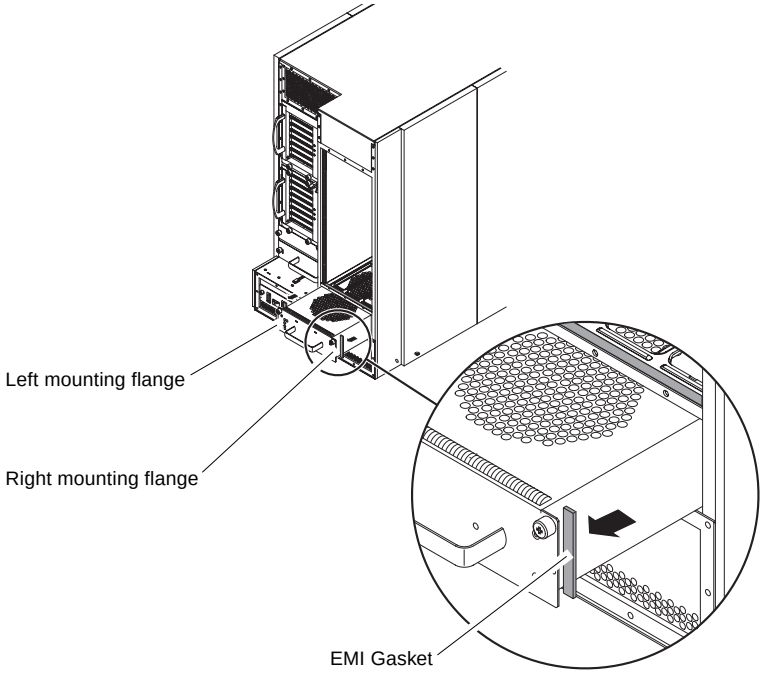
Caution – Do not mix old and new fan trays.

3.1.5.1 Installing the Small EMI Gaskets

Check the new fan tray 2 (FT2) to see if EMI gaskets are already installed. If EMI gaskets are installed, skip to section 3.1.6. If EMI gaskets are not installed on the fan tray's left and right flanges, install them now as shown below.

Install two small (2.6 in./66mm) EMI gaskets on fan tray FT2. (The FT1 and FT3 fan trays do not require EMI gaskets.)

1. **Loosen the captive screws on the front of fan tray FT2.**
2. **Pull the fan tray out partway.**



3. **Remove the protective tape from one of the small EMI gaskets.**
4. **Attach the gasket to the right mounting flange as follows:**

   Note that the gasket is to go on the *back* side of the flange. When the fan tray is in place, the gasket should be between the fan tray flange and the cabinet chassis.

a. **Align the outer edge of the gasket with the edge of the flange.**

   The gasket should be between the edge of the flange and the captive screw.

b. **Center the gasket vertically between the top and bottom of the flange, then press into place.**

5. **Repeat Step 3 and Step 4 for the left mounting flange of the fan tray.**

   Slide the fan tray back into the system and tighten the captive screws.

3.1.6 Powering On

3.1.6.1 Deskside System

1. **Press the three switches that are located on the AC input box to the On position.**
2. **Power on the system.**

   Refer to the system administration manual for your product for complete step-by-step software commands.

3.1.6.2 Sun Cabinet-Mounted System

1. **Press the three switches that are located on the AC input box to the On position.**
2. **Make sure that the rack fan trays are switched on.**

   This switch is located in the back of the cabinet, below the power cord socket on each rack fan tray.

3. **Power on the system.**

   Refer to the system administration manual for your product for complete step-by-step software commands.

3.2 Upgrading in a Powered-On System

Caution – A Sun Fire 4800 EMI Gasket kit must be installed prior to upgrading the UltraSPARC IV/IV+ CPU/Memory boards. The gasket kit cannot be installed while the system is powered on. If the EMI gasket kit is not installed, see section 3.1 Upgrading in a Powered-Off System.

Upgrading the system requires:

1. Upgrading the power supplies.
2. Upgrading the fan trays.

3.2.1 Configuration Requirements

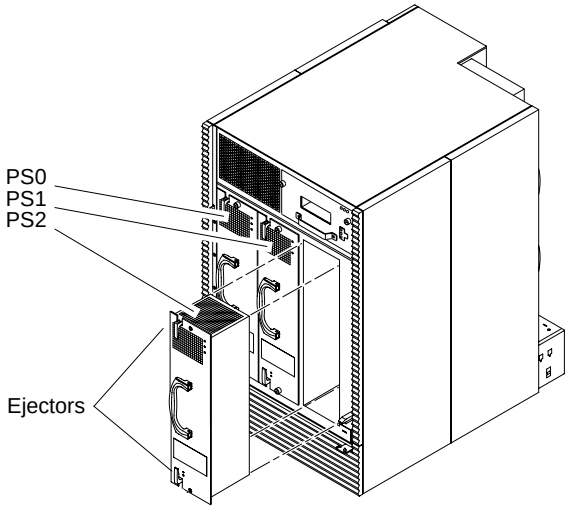
- An EMI gasket kit must be installed. For systems with gaskets already installed, a second gasket should not be installed.
- Upgrade domains to a minimum supported version of firmware and Solaris Operating System.

  Refer to the applicable Sun Fire High-End and Midrange Systems CPU/Memory Board Upgrade Requirements document at `http://sun.com/documentation`.
- Upgrade power supplies and fan trays before upgrading the UltraSPARC IV/IV+ CPU/Memory boards.

3.2.2 Replacing the Power Supplies

The Sun Fire E4900 System and the Sun Fire 4800 systems have three power supplies located in the front. These power supplies are labeled PS0, PS1, and PS2. Individually upgrade all power supplies and fan trays before installing the new UltraSPARC IV/IV+ CPU/Memory boards.

Note – Instructions for the removal and replacement of the power supplies can also be found in the *Sun Fire E6900/E4900 Systems Service Manual* or the *Sun Fire 6800/4810/4800/3800 Systems Service Manual*.



1. **Attach a wrist or foot strap and connect the ESD strap to the system.**
2. **Power off the appropriate power supply.**

   Refer to the platform administration manual for your system for complete procedures to power off a power supply.

Note – When the green Activated LED on the power supply is off (not lit) and the amber or blue OK to remove LED is on (lit), it is safe to continue. If your system is mounted in a Sun Fire cabinet, you DO NOT have to power off the Redundant Transfer Switch (RTS) module(s).

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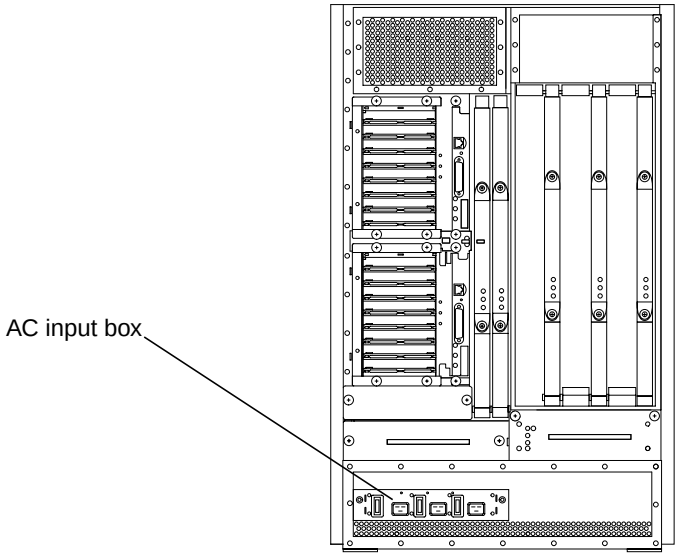
3. **Loosen the two captive screws, located at the top and bottom of the power supply.**
4. **Unlock the ejectors by pulling the ejectors outward.**
5. **Remove the power supply and set it aside.**
6. **If your system is mounted in a Sun Fire cabinet, skip to Step 9.**

7. **Press the corresponding switch located on the AC input box to the off position.**



8. **Make sure that the corresponding switch on the AC input box for the new power supply is turned on.**
9. **Remove the protective cover from the new power supply connector, if applicable.**

Note – Check the connector for any bent pins or damage. Also check the connector on the system chassis backplane.

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10. **Pull the ejector levers outward on the new power supply.**
11. **Insert the power supply into the slot and firmly seat it.**
12. **Push both the levers inward to lock the power supply into place.**
13. **Tighten the two captive screws.**
14. **Wait for the power supply to automatically power-on within 10 seconds.**

Note – Make sure the green Activated LED is on (lit). If the green Activated LED is not on, check to see if the power supply is seated properly.

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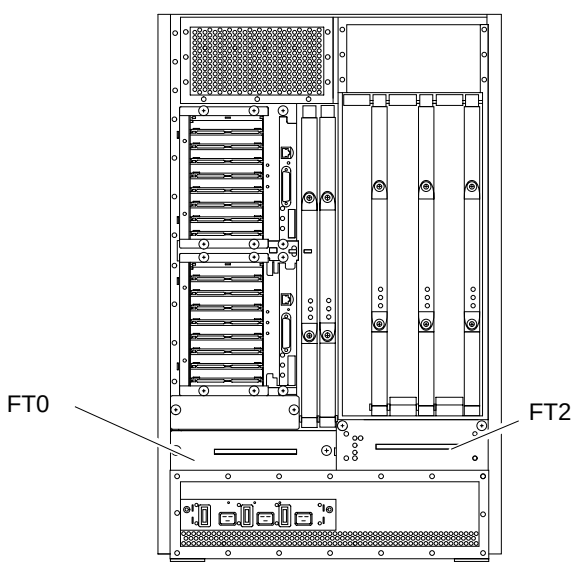
15. **Repeat 2-14 for each of the remaining power supplies.**

16. **Reboot the system controller after all the new power supplies are installed.**

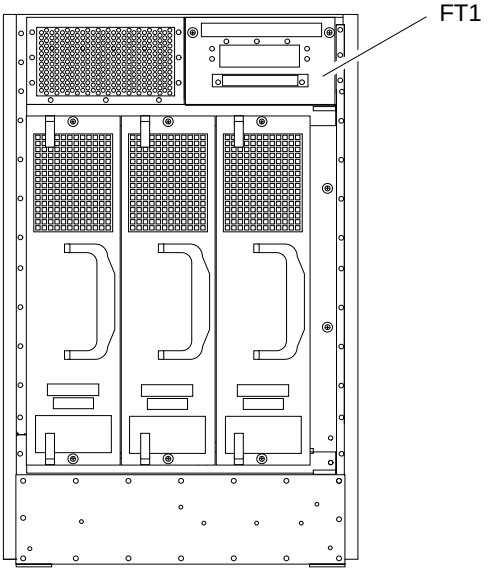
    Refer to the system administration manual for your product for complete step-by-step software commands.

3.2.3 Replacing the Fan Trays

The FT0 and FT2 fan trays are located in the rear of the system. FT1 is located in the front.



Sun Fire E4900/4800 System–rear



Sun Fire E4900/4800 System–front

Caution – Within one minute of removing the fan tray, install the replacement fan tray to prevent the system from overheating.

1. **Attach a wrist or foot strap and connect the ESD strap to the system.**
2. **Power off the fan tray.**

   Refer to the *Sun Fire Midrange Systems Platform Administration Manual* for complete procedures for powering off/on the fan tray.

Note – When the green Activated LED on the fan tray is off (not lit) and the amber or blue OK to remove LED is on (lit), it is safe to continue.

3. **When you replace the top fan tray, FT1, remove the front bezel by snapping it off.**
4. **Loosen the captive screws on the fan tray.**
5. **Slide the fan tray out and set it aside.**
6. **Remove the protective cover from the new fan tray connector, if applicable.**

Note – Check the connector for any bent pins or damage. Also check the connector on the system chassis backplane.

7. **Slide the new fan tray into the slot.**
8. **Tighten the captive screws.**
9. **When you have installed the top fan tray, FT1, snap the front bezel back on.**
10. **Repeat Steps 2-8 for each of the remaining fan trays.**

Caution – A Sun Fire 4800 EMI Gasket kit must be installed prior to upgrading the UltraSPARC IV/IV+ CPU/Memory boards. The gasket kit cannot be installed while the system is powered on. If the EMI gasket kit is not installed, see section 3.1 Upgrading in a Powered-Off System.

Documentation, Support, and Training

Sun Function	URL
Documentation	`http://www.sun.com/documentation/`
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Sun Fire E4900 and Sun Fire 6800/4800 Systems Power Supply and Fan Tray Upgrade Guide, part number 817-4818-14(v2)