



# Intel<sup>®</sup> IP Network Server NSW1U Fan Set Upgrade Kit/Spare NSWFANSET01W

Installation Guide

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*July 2007*

Rev. 1.0

Order Number: E16056-001





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## Revision History

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| Date      | Revision | Description     |
|-----------|----------|-----------------|
| July 2007 | 001      | Initial release |



# 1 Introduction

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## 1.1 About this Fan Set Upgrade Kit/Spare

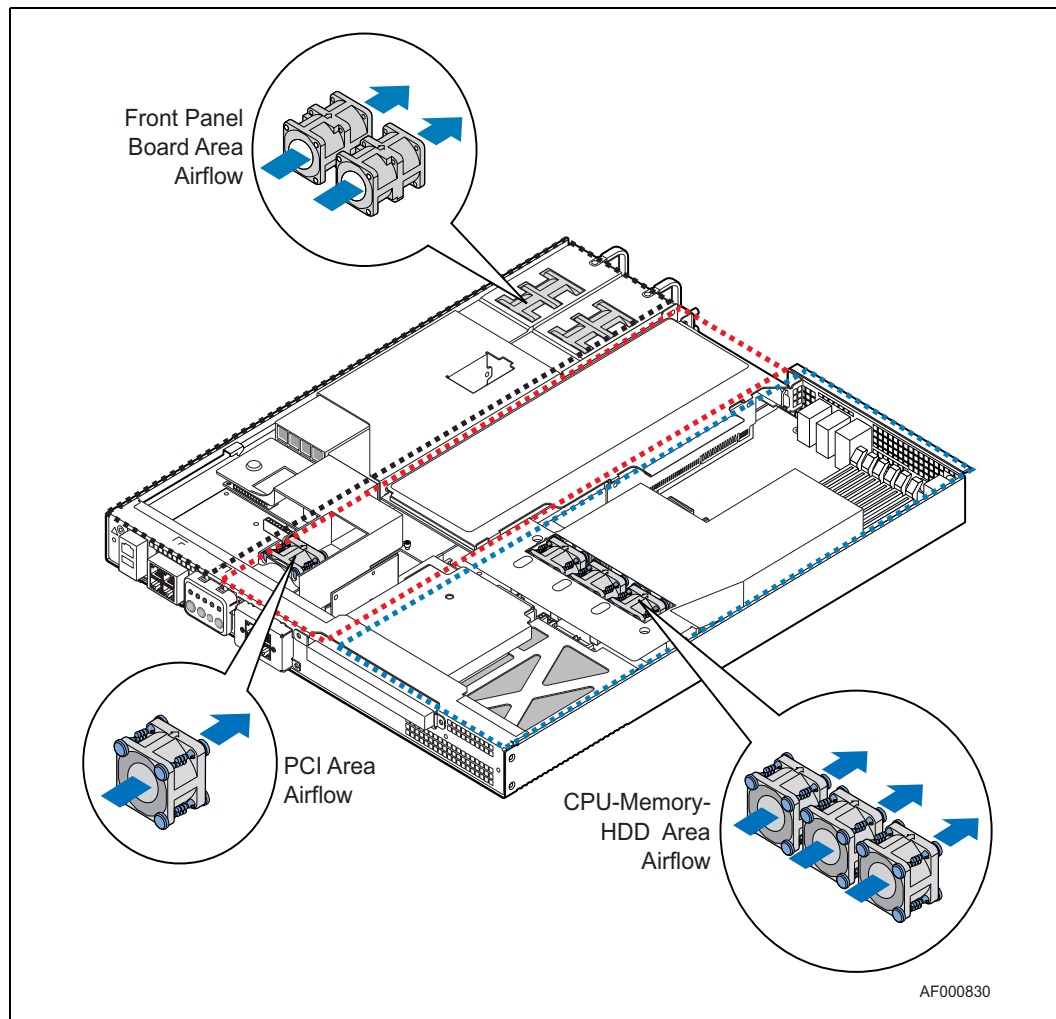
This Intel® Fan Set Upgrade Kit (Order Code NSWFANSET01W) contains the components needed to upgrade both the CPU and PCI fan assemblies. These new fan assemblies reduce rotational vibration in the system and enable the use of an expanded list of qualified Enterprise Grade 3.5-inch SATA drive models.

This upgrade kit/spare is for use with the following Intel® IP Network Servers:

- Production NSW1U Server - Rear NIC (AC Supply) - Product Code NSWA0201W
- Production NSW1U Server - Rear NIC (DC Supply) - Product Code NSWD0201W
- Production NSW1U Server - Front NIC (AC Supply) - Product Code NSWA0301W
- Production NSW1U Server - Front NIC with Bypass (AC Supply) - Product Code NSWA0401W

Figure 1 shows the cooling areas in the NSW1U Network Server where the new fan assemblies are used. The upgrade kit provides the components for both the PCI fan and the CPU-Memory-HDD fan array.

Figure 1. NSW1U Server Cooling Areas



## 1.2 What the Fan Set Upgrade Kit/Spare Includes

The fan set upgrade kit contains the following parts:

- One processor air duct
- One CPU-Memory-HDD fan array bracket and fastening screw
- One PCI fan bracket
- Four fans with isolation bumpers  
(The bumpers are used to isolate fan vibration from the rest of the system.)
  - Three fans for the CPU fan assembly
  - One fan for the PCI fan assembly



### 1.3 Using this Upgrade Kit as a Spare for Fan Replacement

While this upgrade kit contains new fan brackets and a new processor air duct, if your system already has the new versions installed and you are using this kit as a replacement/spare fan set to replace fans only, you do not need to perform all the tasks outlined in [Chapter 2, “Upgrading the NSW1U Server Fan Assemblies”](#). You will only need the fans in this kit; one PCI fan and three CPU fans, plus enough resilient fan bumpers for all four fans (if they are not already attached to the fans). For complete information about replacing fans in your NSW1U Network Server, see the *Intel® IP Network Server NSW1U Product Guide* at <http://support.intel.com/support/telecom/computeboards/nsw1u/>. (This document is also provided on the enablement CD-ROM that comes with your server.)

### 1.4 Important Safety Information

Read all caution and safety statements in this document and the *Intel® IP Network Server NSW1U Product Guide*, Appendix A, “Safety Information” before performing any of the instructions. Also see Intel Server Boards and Server Chassis Safety Information at <http://support.intel.com/support/motherboards/server/sb/CS-010770.htm>.

#### Wichtige Sicherheitshinweise

Lesen Sie zunächst sämtliche Warn- und Sicherheitshinweise in diesem Dokument, bevor Sie eine der Anweisungen ausführen. Beachten Sie hierzu auch die Sicherheitshinweise zu Intel-Serverplatinen und -Servergehäusen auf der Ressourcen-CD oder unter <http://support.intel.com/support/motherboards/server/sb/CS-010770.htm>.

#### 重要安全指导

在执行任何指令之前，请阅读本文档中的所有注意事项及安全声明。和/或<http://support.intel.com/support/motherboards/server/sb/cs-010770.htm> 上的 *Intel Server Boards and Server Chassis Safety Information* (《Intel 服务器主板与服务器机箱安全信息》)。

#### Consignes de sécurité

Lisez attention toutes les consignes de sécurité et les mises en garde indiquées dans ce document avant de suivre toute instruction. Consultez Intel Server Boards and Server Chassis Safety Information sur le CD Resource CD ou bien rendez-vous sur le site <http://support.intel.com/support/motherboards/server/sb/CS-010770.htm>.

#### Instrucciones de seguridad importantes

Lea todas las declaraciones de seguridad y precaución de este documento antes de realizar cualquiera de las instrucciones. Vea Intel Server Boards and Server Chassis Safety Information en el CD Resource y/o en <http://support.intel.com/support/motherboards/server/sb/CS-010770.htm>.

### 1.5 Additional Information

- For information about the accessories, memory, processors, and third-party hardware that has been tested and can be used with your system, and for ordering



information for Intel products, see the accessories and spares list on <http://support.intel.com/support/telecom/computeboards/nsw1u/>

- If you need more technical information about this product, see the Technical Product Specifications (for both system and server board) and the test reports at <http://support.intel.com/support/telecom/computeboards/nsw1u/>.
- For more information about replacing fans in your NSW1U Network Server, see the Intel IP Network Server NSW1U Product Guide at <http://support.intel.com/support/telecom/computeboards/nsw1u/>.





## 2 Upgrading the NSW1U Server Fan Assemblies

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### 2.1 Before You Begin

Before working with your server product, pay close attention to the safety instructions provided in the *Intel® IP Network Server NSW1U Product Guide*, Appendix A, "Safety Information" and also the server safety information on the website at <http://support.intel.com/support/motherboards/server/sb/CS-010770.htm>.

#### 2.1.1 Tools and Supplies Needed

- #2 Phillips\* (cross-point) screwdriver
- Anti-static wrist strap and conductive foam pad

#### 2.1.2 System References

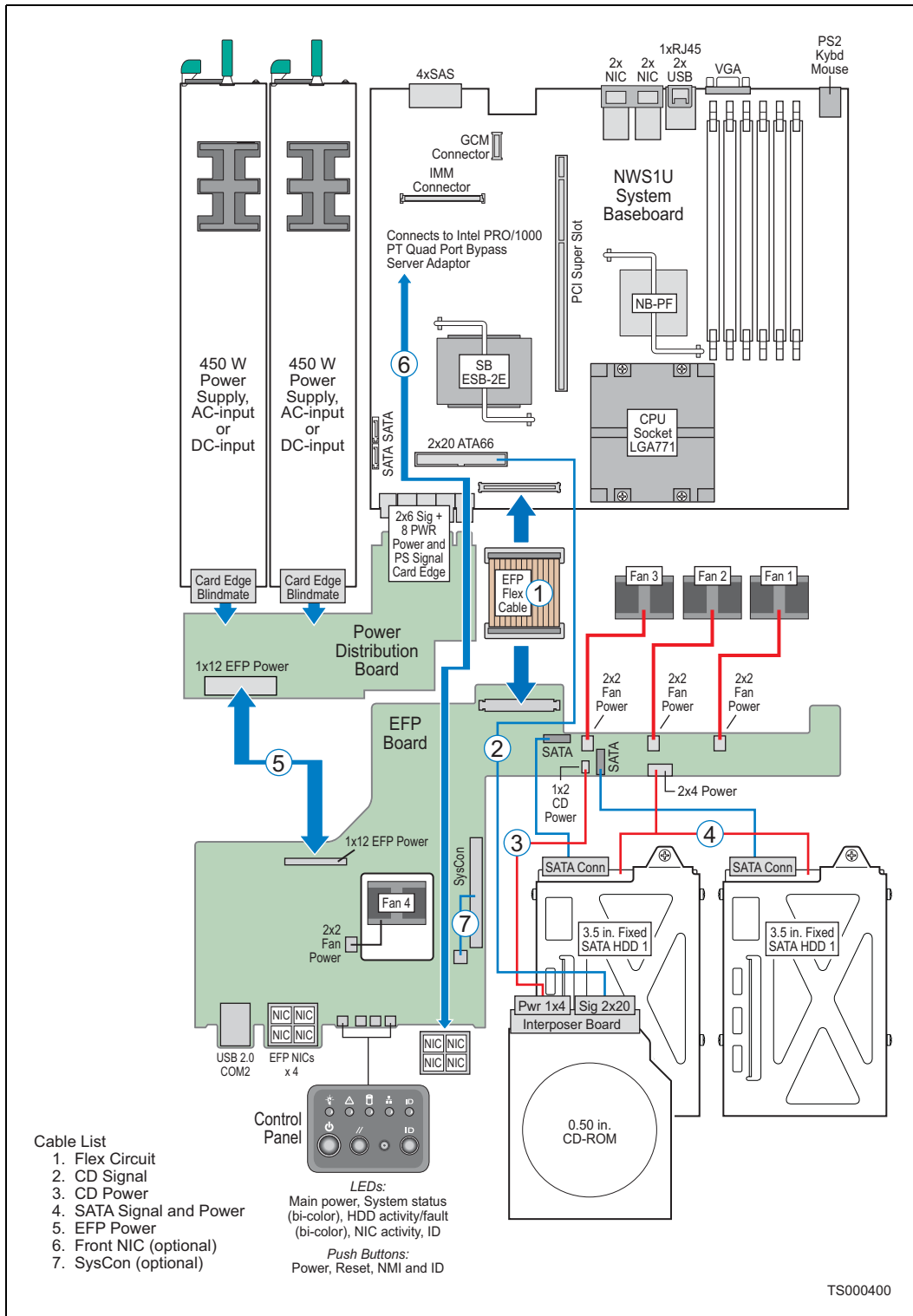
All references to left, right, front, top, and bottom assume that you are facing the front of the server, as it would be positioned for normal operation.

#### 2.1.3 Cable Routing Reference

It is important for cables to be routed correctly. Refer to [Figure 2](#) for the location of the four fan power connectors on the Ethernet Front Panel (EFP) board.



Figure 2. System Cable Routing





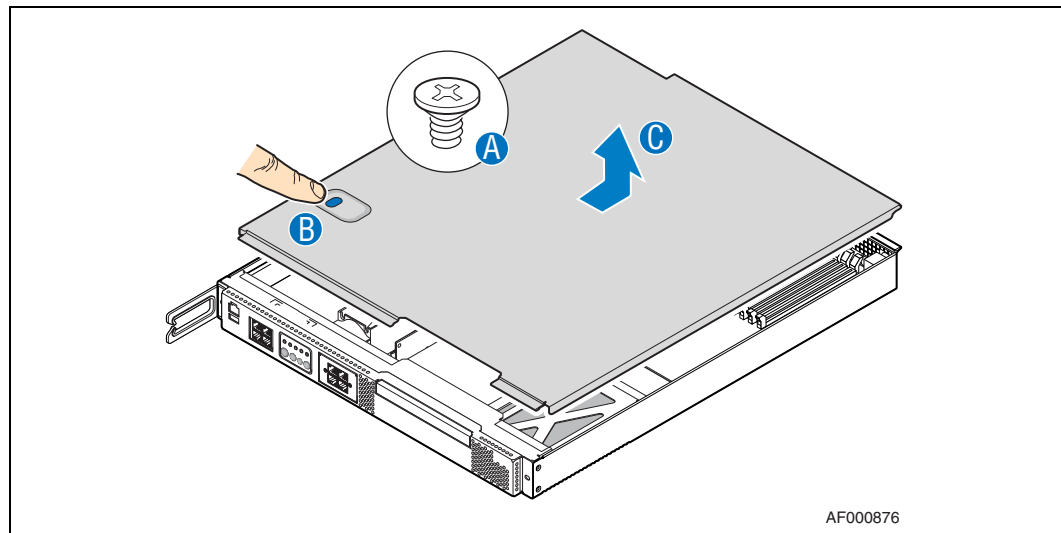
## 2.2 Removing the Chassis Cover

The IP network server must be operated with the top cover in place to ensure proper cooling. You will need to remove the top cover to add or replace components inside of the server. Before removing the top cover, power down the server system and unplug all peripheral devices and the power cable. None of the components inside the server are hot-swappable.

**Note:** A non-skid surface or a stop behind the server may be needed to prevent the server from sliding on your work surface.

1. Observe the safety and ESD precautions in the *Intel® IP Network Server NSW1U Product Guide, Appendix A, "Safety Information"*.
2. Turn off all peripheral devices connected to the server.
3. Turn off the server.
4. Disconnect the power cord.
5. Remove the shipping screw from the front left of the chassis. ("A")
6. While holding the blue button at the top of the chassis in ("B"), slide the top cover back until it stops ("C").
7. Lift the cover straight up to remove it from the server.

**Figure 3. Removing the Chassis Cover**



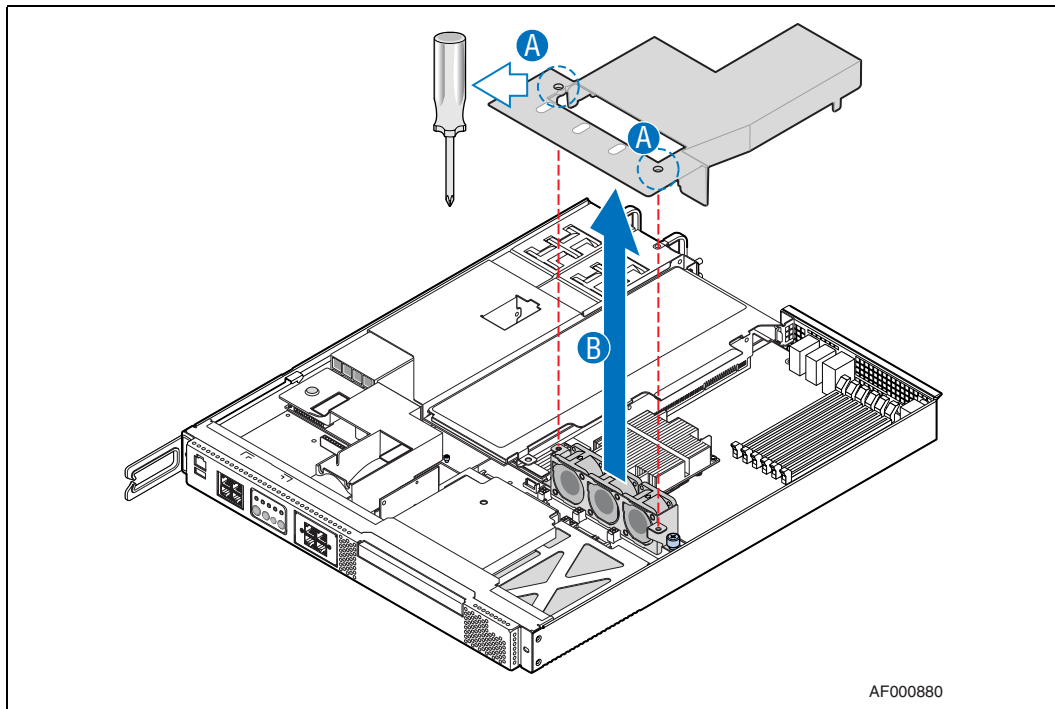
## 2.3 Removing the Old Processor Air Duct

**Note:** The processor air duct is required for proper airflow within the chassis. Be sure the new air duct supplied in this upgrade kit is in place before re-installing the chassis cover

The air duct must be removed to access the CPU fan assembly.

1. Remove the screws at the top of the air duct ("A"). Loosen the captive fastener.
2. Lift the air duct from the server platform ("B").

Figure 4. Removing the Old Air Duct



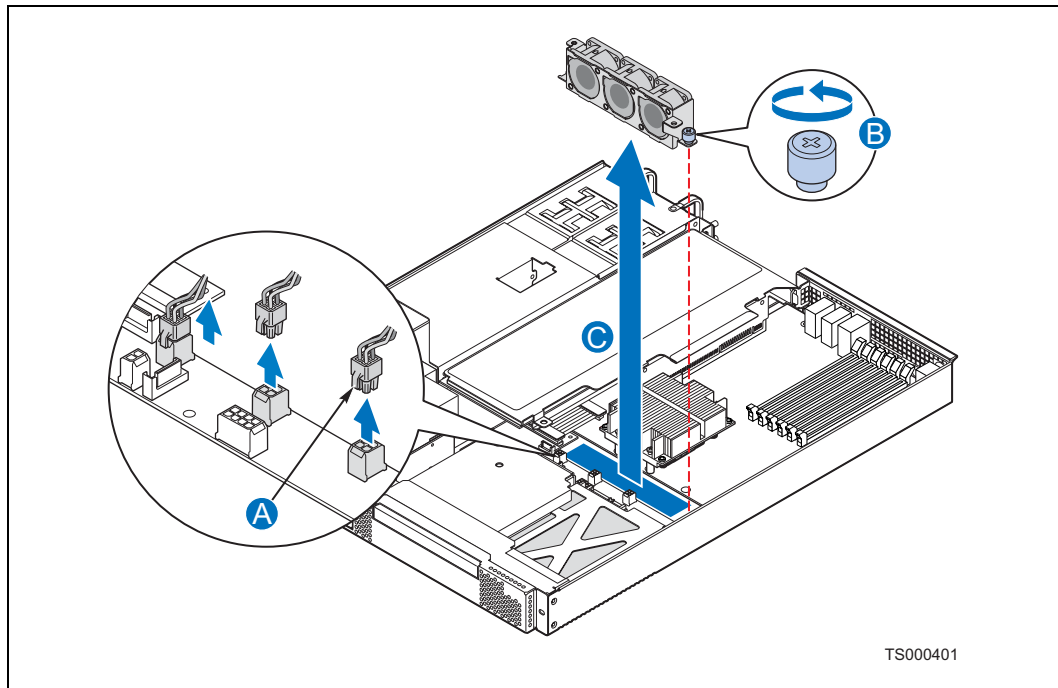
## 2.4 Removing the Old CPU Fan Assembly

3. Disconnect the three fan power cables from the Ethernet front panel (EFP) board by squeezing the latch on each of the three fan cable connectors. (Figure 3, "A").
4. Loosen the single blue captive screw that attaches the fan bracket to the chassis. ("B")
5. Slide the fan bracket to the right to disengage the tab from the chassis and lift the fan assembly straight up to remove it. ("C")
6. Remove the blue vinyl mat used for vibration isolation from the fan assembly location on the chassis base. This mat is no longer needed and does not fit with the new bracket.  
Also rub off any adhesive remaining on the chassis base once the blue mat is removed.

**Note:** You can discard all of these parts that were removed because none will be re-installed.



Figure 5. Removing the Old CPU Three-Fan Assembly

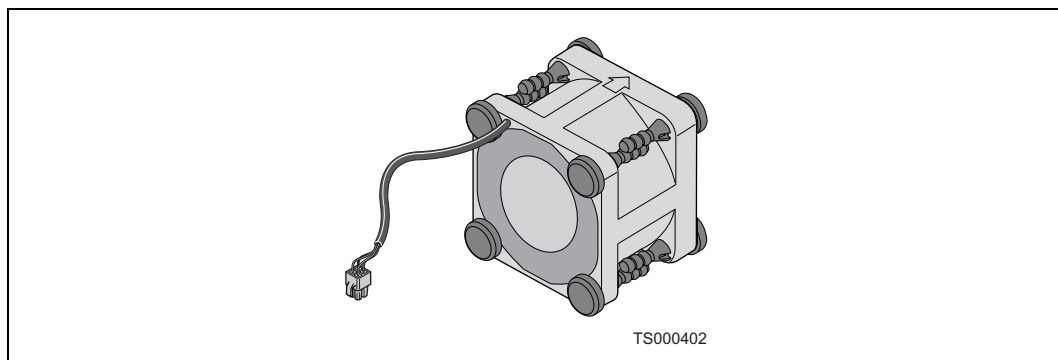


## 2.5 Installing the New CPU Three-Fan Assembly into the Chassis

### 2.5.1 Installing the Isolation Bumpers on the Fans

*Note:* The four fans supplied in the kit should already have the bumpers added and the power cable positioned correctly, so you can skip these steps in most cases.

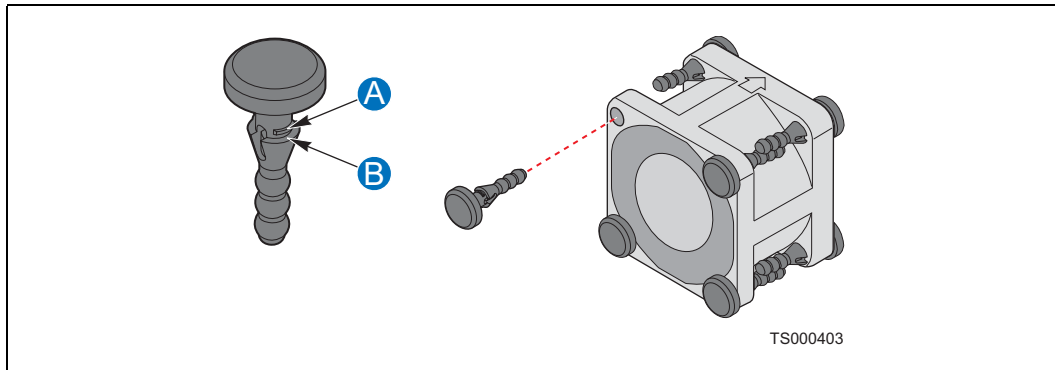
Figure 6. NSW1U Fan with Isolation Bumpers Installed



If you need to install the bumpers that isolate the fan vibration, do the following:

1. There are 32 bumpers in kit. Take out 24 to use for this fan assembly and reserve the rest for the PCI fan.
2. Insert one of the black flexible fan bumpers into each of the eight mounting holes on all three fans.  
Pull the bumper from inside the flange until the locking shoulder catches on the flange to fasten the bumper to the fan. ("A" in [Figure 7](#))

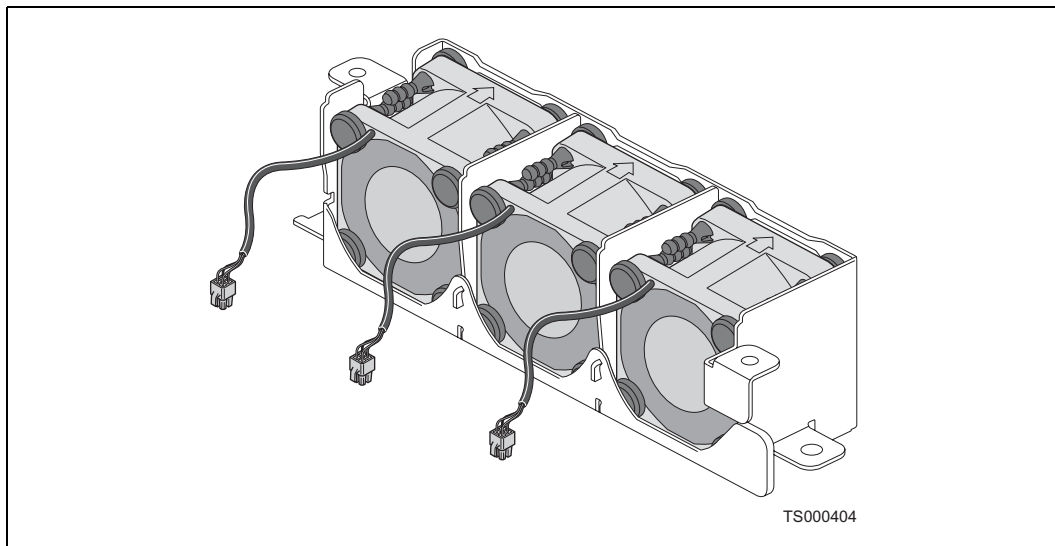
**Figure 7. Installing the Fan Bumpers**



### 2.5.2 Inserting the New CPU Fans into the Bracket

3. Align each fan with the air flow arrow facing the rear of the chassis and the power cable facing the front and routed away from the fan blades.
4. Push each of the three fans into one of the pockets in the fan assembly bracket.  
The power cables should exit the bracket as shown in [Figure 8](#).

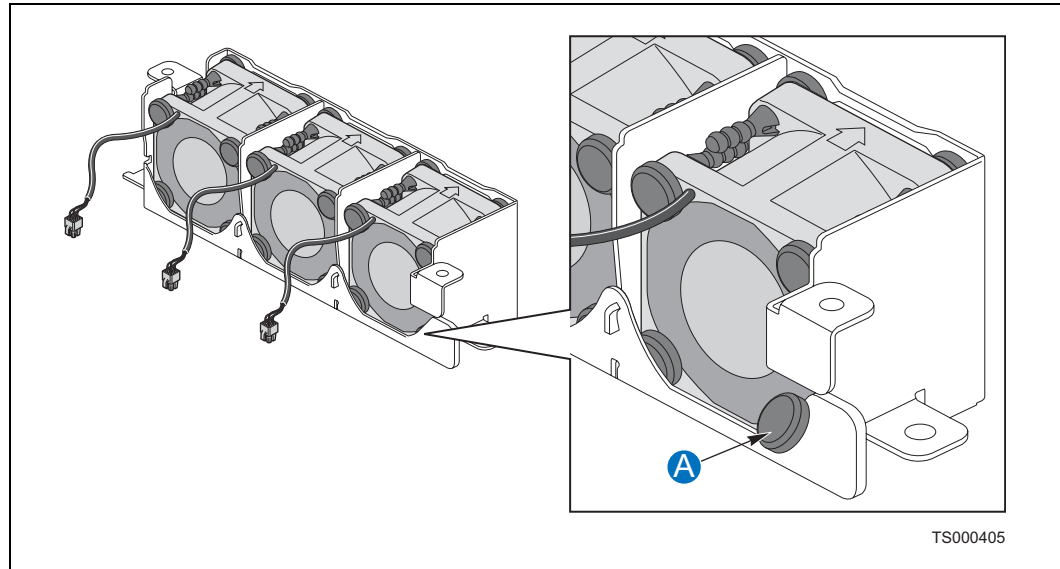
**Figure 8. Fans Properly Installed in the Bracket**





5. Check to be sure that none of the bumpers are caught on the bracket. (Figure 9, "A")

**Figure 9. Fan Improperly Installed**



### 2.5.3 Installing the CPU Fan Assembly in the Chassis

1. Lower the fan assembly into place and slide it to the left. Make sure the bracket tab slides under the notch on the chassis floor to hold down the fan assembly.
2. Use the screw from the kit to fasten the right side of the bracket to the chassis floor.
3. Connect the fan power cables to the correct fan connectors on the Ethernet front panel board. The fan connectors are labeled on the EFP board.

## 2.6 Installing the New Processor Air Duct

1. Place the processor air duct over the processor socket and three-fan assembly, using caution to make sure you do not pinch any wires beneath the edges of the air duct.
2. Fasten the air duct to the three-fan assembly using the two screws. The top of the installed air duct should be flush with the top surface of PCI riser card assembly.

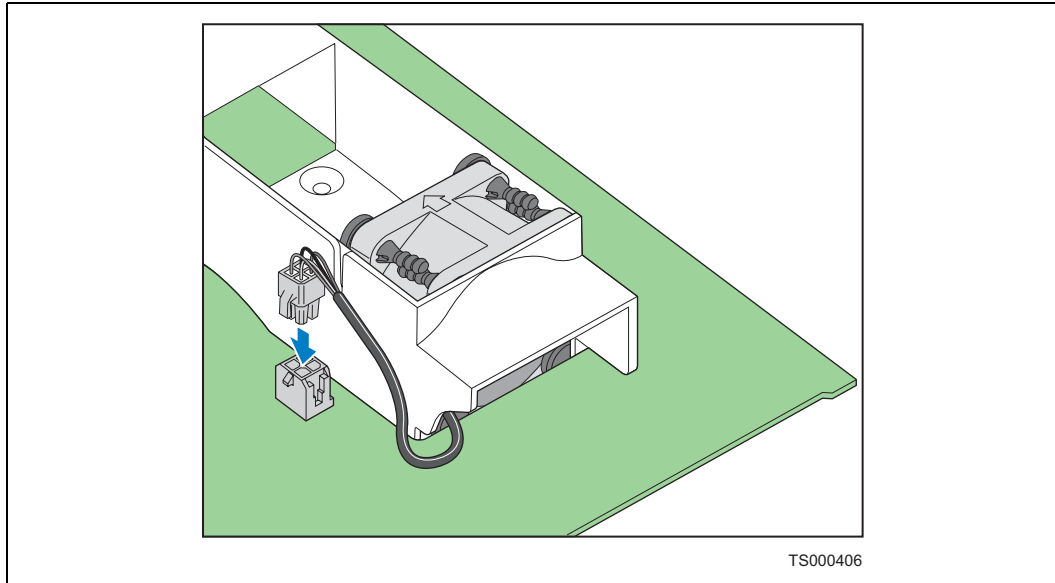
## 2.7 Removing the Old PCI Fan Assembly

1. Unplug the PCI fan power cable from the EFP board.
2. Remove the old plastic PCI fan bracket/duct. See [Figure 1](#) for the PCI fan location. Save the two screws for installing the new bracket.
3. If the fans in the upgrade kit do not have the isolation bumpers installed, follow the steps in [Section 2.5.1, "Installing the Isolation Bumpers on the Fans" on page 13.](#)

## 2.8 Installing the New PCI Fan Assembly into the Chassis

1. Route the power cable to the front of the bracket before seating the fan in it. Be sure the air flow is toward the rear of the chassis.
2. Install the new plastic bracket using the two screws from the old one.
3. Plug the power cable into the connector as shown in [Figure 10](#).

**Figure 10.** New PCI Fan Installed



## 2.9 Installing the Chassis Cover

1. Place the cover over the chassis so that the side edges of the cover sit just inside the chassis sidewalls, with the front of the cover showing an approximate 1/8-inch (3 mm) gap between the chassis cover and the sheet-metal at the front of the chassis.
2. Press down slightly on the chassis cover behind the drive bays and slide the cover forward until it clicks into place.
3. Install the shipping screw if desired.
4. Reconnect all peripheral devices and the power cord.

**Caution:** This unit must always be operated with the top cover installed to ensure proper cooling.



