# StorageWorks™ Solutions

# Network Storage Array Server Processor Power Supply Installation Guide

Order Number: EK–NSAPW–IG. A01

This guide describes how to install the redundant power supply unit into the server processor of a StorageWorks Network Storage Array.

**Digital Equipment Corporation**
**Maynard, Massachusetts**

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Any changes or modifications made to this equipment may void the user's authority to operate the equipment.

Operation of this equipment in a residential area may cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

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# Preface

## Intended Audience

This manual is intended for use by Digital™ Multivendor Customer Services personnel or other qualified technicians who install and configure OpenVMS™ Alpha™ processors and related storage hardware.

This audience must know how to install and configure StorageWorks shelves, devices, and related components.

## Structure

This manual is organized as follows:

| | |
|---|---|
| Chapter 1 | Provides an overview of the power configuration for the server processor, describes preinstallation considerations and tasks, and describes how to install a redundant power supply. |

## Related Documents

Table 1 lists the StorageWorks-related user documents organized by use, system, or product.

**Table 1 StorageWorks Related Documentation**

| Document Title | Order Number |
|---|---|
| **Storageworks Network Storage Array Publications** | |
| *StorageWorks™ Solutions Getting Started with the StorageWorks Network Storage Array* | EK–SWXNA–IG |
| *StorageWorks™ Solutions StorageWorks Network Storage Array, Server Processor Component Manual* | EK–SWXNA–CM |

# Manufacturer's Declarations

Following are manufacturer's declarations applicable to the StorageWorks Network Storage Array:

**CAUTION**

This is a class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

**ACHTUNG !**

Dieses ist ein Gerät der Funkstörgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten, in welchen Fällen die Benutzer für entsprechende Gegenmaßnahmen verantwortlich sind.

**ATTENTION !**

Ceci est un produit de Classe A. Dans un environment domestique, ce produit risque de créer des interférences radiélectriques, il appartiendra alors à l´utilisateur de prendre les mesures spécifiques appropriées.

**Note**

The equipment described in this manual is listed by the Underwriters Laboratories Incorporated and bears the UL Listing mark. The StorageWorks Network Storage Array cabinets also are certified by the Canadian Standards Association and TUV Product Service GmbH and bear both the CSA certification and TUV GS marks.

# 1

# Installing the Redundant Power Supply

This chapter provides the following information:

- A brief overview of the power configuration for the server processor of the StorageWorks Network Storage Array
- Preinstallation tasks and considerations
- Instructions for installing a redundant power supply

## 1.1 Power Supply Modes of Operation

The server processor power supply supports the following two modes of operation:

1. Single power supply

   This mode of operation provides all the power your system needs.

2. Dual (redundant) power supply

   To increase reliability, you can add a redundant power supply. In redundant mode, the failure of one power supply does not cause the system to shut down. The current share cable (Figure 1–4) connects the two power supplies so that failover occurs immediately when power to the primary power supply is lost.

## 1.2 Power Supply Voltage Specifications

The current share signal, when connected to the same signal of the redundant power supply, allows the two power supplies to share load currents to within +/- 10%. Current share is provided for the +5.0 V, +3.3 V and +12.0 V outputs.

No jumper needs to be installed to activate redundant mode power.

Total combined power of all outputs per supply cannot exceed 400 watts, and the combination of +3.3 V power and +5.0 V power cannot exceed 335 watts.

- 36 A or less of 3.3 V power
- 52 A or less of 5.0 V power
- 11 A or less of +12.0 V power
- 0.2 A or less of -12.0 V power
- 0.2 A or less of -5.0 V power

## 1.3 Preparing to Install a Power Supply

Before you install a redundant power supply, you need to prepare the server processor to receive the power supply. You need to assemble the required equipment, familiarize yourself with antistatic precautions, and remove the front cover of the server processor.

### 1.3.1 Required Equipment

You need the following equipment:

- Flat-blade screwdriver
- Phillips screwdriver
- Antistatic wrist strap

### 1.3.2 Proper ESD Protection

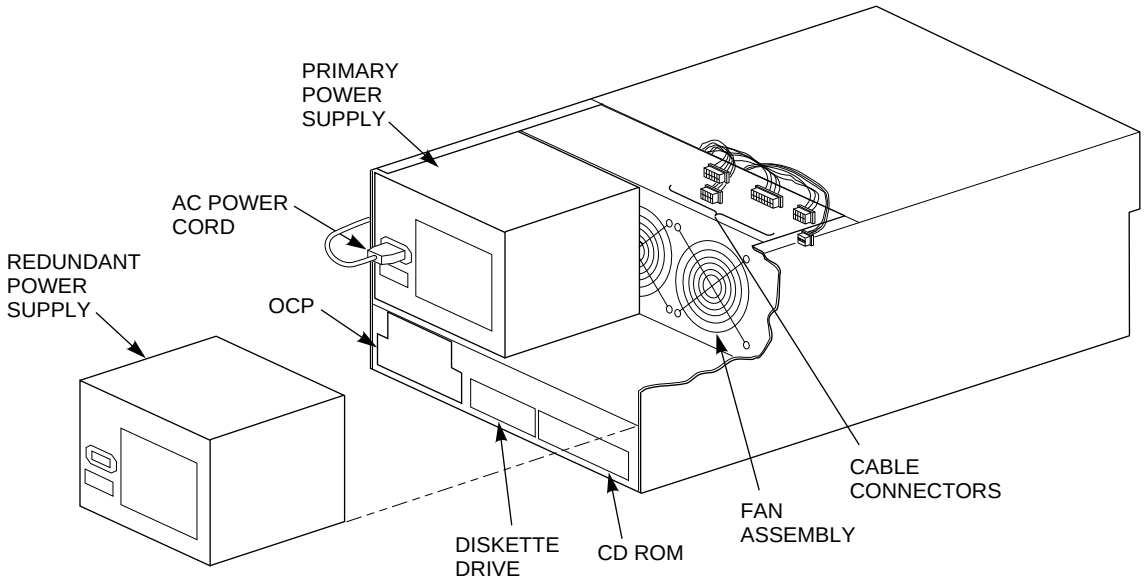
Static electricity can damage electronic components. Before you handle (remove or replace) internal system components, perform the following steps:

1. Obtain and attach an ESD wrist strap to your wrist.
2. Clip the other end of the ESD wrist strap to the chassis of the server processor.
3. Obtain an approved antistatic bag and/or a grounded antistatic mat.

## 1.4 Install the Power Supply

The following procedure describes how to install the redundant power supply. The primary power supply resides on the left front of the server processor and the redundant power supply resides directly to the right of the primary power supply as shown in Figure 1–1.

**Figure 1–1 Redundant Power Supply Location**

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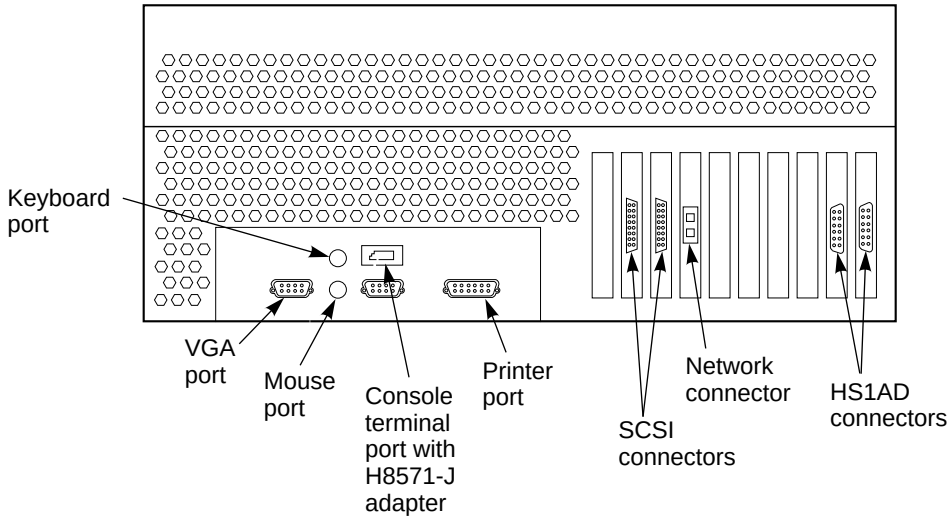
## 1.4.1 Connect the Terminal to the Server Processor

**Note**

You must have a console terminal connected to the network array's server processor to complete the installation procedures described in this chapter. If you have a terminal already connected, proceed to Section 1.4.2. If you do not have a terminal connected, follow the procedure below. Any terminal that supports ANSI control sequences can be used, including graphics displays that provide emulation of an ANSI-compatible video terminal.

1. Make sure the power switch on the back of the terminal is OFF.
2. Connect one end of the terminal cable to the back of the terminal.
3. Using a 5/32-inch hex wrench, open the rear door of the network array cabinet.
4. Connect the other end of the terminal cable to the EIA terminal port on the rear of the server processor using the female MMJ adapter (part number H8571–J) as shown in Figure 1–2.

**Figure 1–2 Connecting to the Terminal Port of the Server Processor**




5. Turn the terminal power switch to ON.
6. Set the terminal at 9600 baud, with 8 data bits, 1 stop bit, and no parity. Refer to your terminal documentation for terminal setup instructions.

### 1.4.2 Shut Down the System

1. Stop all work on the server processor in which the redundant power supply is to be installed.
2. Perform an orderly shutdown of the operating system in the server processor by typing the following command at the DCL $ prompt on the terminal connected to the server processor:

```
$ @SYS$SYSTEM:SHUTDOWN
```

**Note**

When issuing a SHUTDOWN command on one server processor, the other server processor may lock up. If the systems locks for 1 minute, enter the INIT or BOOT command on the console for the server processor that was just shut down.

3. When shutdown is complete, open the front door on the network array cabinet and depress the power button on the server processor Operator Control Panel (OCP) to turn off power.

### 1.4.3 Slide the Server Processor Out of the Network Array Cabinet

1. Unplug the ac power cord on the server processor.
2. Using a 5/32-inch hex wrench, open the back door of your network array cabinet.
3. Remove the red shipping brackets that hold the server processor in place.

4. Slide the server processor forward out of the front of the cabinet on its slides to enable you to access the front cover.

### 1.4.4 Install the Redundant Power Supply

1. Remove all the screws that attach the front cover to the chassis using a Phillips screwdriver (see Figure 1–3).
2. Pull off the front cover.
3. Remove the cover plate over the redundant power supply slot and discard the plate. Keep the screws for remounting the front cover on the redundant power supply.
4. Slide the redundant power supply into the chassis of the server processor to the right of the primary power supply (see Figure 1–1).
5. Connect all internal and external cables to the connectors on the back of the power supply. Connectors are shown in Figure 1–4.

**Note**

If you cannot access the redundant power supply, then remove the top rear cover.

6. Use the screws you retained to attach the front cover to the chassis and to the installed power supplies. (See Figure 1–3.)

**Figure 1–3 Position of Cabinet Screws**

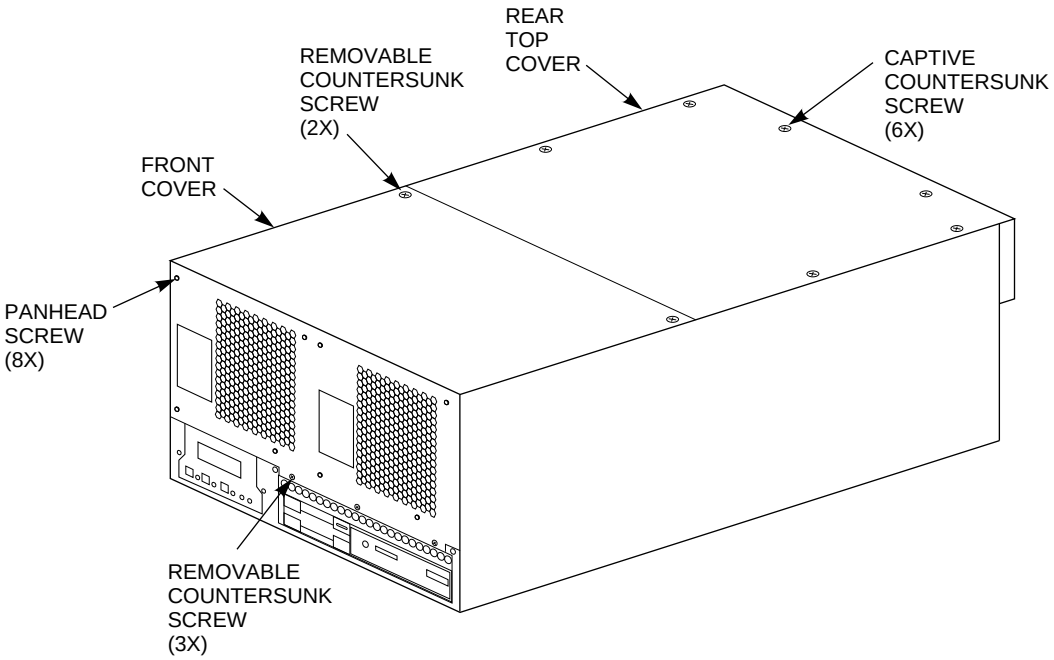
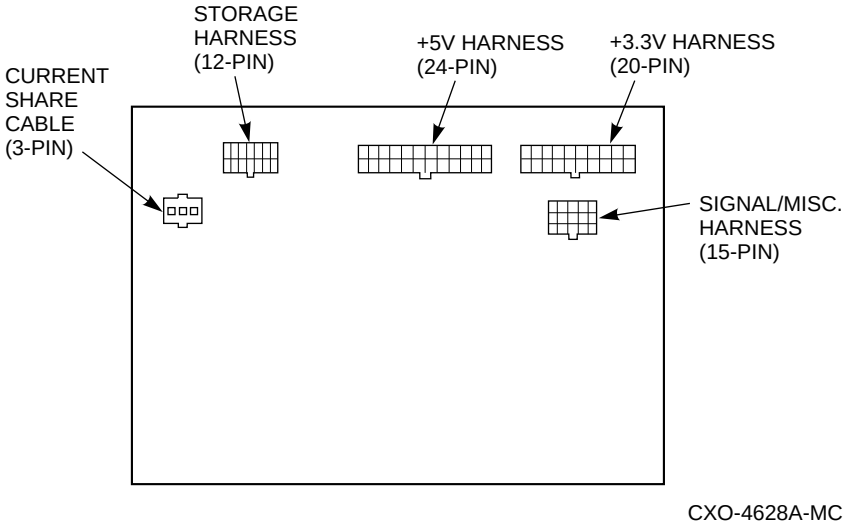



**Figure 1–4 Power Supply Cable Connections**



### 1.4.5 Replace the Server Processor in the Network Array

1. Replace the top rear cover if it was removed.
2. Slide server processor back into the network array cabinet.
3. Reinstall the red shipping brackets.
4. Using a 5/32-inch hex wrench, close the back door of your network array.
5. Plug in the ac power cord.

### 1.4.6 Power Up the Server Processor

1. Depress the power button on the OCP of the server processor to power up the server processor.
2. Shut the front door of the network array.
3. Press the Return key on the terminal connected to the server processor.
4. Enter BOOT at the >>> prompt.

You have now completed the installation of the redundant power supply.

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