Sun StorEdge™ N8400 Filer Storage Upgrade Guide

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Sun StorEdge N8400 Filer Storage Upgrade Guide

The *Sun StorEdge N8400 Filer Storage Upgrade Guide* describes how to install and configure additional partner groups of Sun StorEdge™ T3 arrays in the Sun StorEdge N8400 Filer.

Add-on partner groups, consisting of two Sun StorEdge T3 arrays and associated cabling, arrive with each array configured as one logical volume (disks 1 through 8), with RAID 5, and with disk 9 specified as a hot spare.

Note – Be sure to use the Sun StorEdge N8400 Filer's `vol` command to create logical volumes on your newly installed storage before you try to create shares with the filer's graphical user interface (GUI). Until you create these logical volumes, you will not be able to create shares with the GUI. See "Finishing and Verifying the Installation" on page 16 for more information.

The filer incorporates an internal Ethernet local area network (LAN) that only connects the Sun Enterprise™ 420R server with the Sun StorEdge T3 arrays contained within the filer. This internal network is secure and cannot be directly accessed from outside the filer. The filer can be attached to another LAN, such as a company-wide business network, but this network has no direct access to the filer's internal LAN.

During the initial installation of the new partner group, you set up the partner group's `syslog.conf` file to include the IP address of the filer's server. All warnings and other messages generated by the partner group are sent to the server, which then generates an email on the external, company-wide LAN to inform appropriate personnel.

Related Documentation

Document TItle	Part Number
Sun StorEdge T3 Disk Tray Cabinet Installation Guide	806-7979
Sun StorEdge T3 Disk Tray Administrator's Guide	806-1063
Sun StorEdge T3 Disk Tray Release Notes	806-1497
Sun StorEdge N8400 and N8600 Filer Administrator's Guide	806-6905

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Installing a Sun StorEdge T3 Array Partner Group

This section presents procedures for installing a partner group of Sun StorEdge T3 arrays in the filer.

Installing the Rackmount Kit

Follow procedures in the *Sun StorEdge T3 Disk Tray Cabinet Installation Guide*.

▼ To Install the Rackmount Kit

Perform this procedure for each partner group that you are adding to the Sun StorEdge N8400 Filer.

Caution – A single Sun StorEdge T3 array with its support plate can weigh over 85 pounds (187 kilograms). *Never try to install it by yourself.* Have another person assist you and follow all instructions carefully.

- **Follow the instructions in the** *Sun StorEdge T3 Disk Tray Cabinet Installation Guide* **to install the mounting brackets in the cabinet.**

Installing the Arrays

Instructions for installing the arrays are located in the *Sun StorEdge T3 Disk Tray Cabinet Installation Guide*.

The arrays in the Sun StorEdge N8400 filer are configured in partner groups. Each array partner group consists of a master controller unit (MCU) array and an alternate MCU array. The arrays are mounted one above the other in the cabinet. Both arrays are physically and electrically identical, however, the cabling configuration makes one of them the MCU and the other the alternate MCU. By convention, the lower of the two is called the MCU and the cabling diagrams in this procedure will make it so. You can install either one on top, but the cabling procedures will make the bottom one the MCU.

Note – There is no need to power off the filer in order to install additional partner groups.

Perform this procedure for each partner group that you are adding to the Sun StorEdge N8400 Filer.

▼ To Install the Arrays

1. **Unpack the arrays.**
2. **Rackmount the two arrays of the partner group in the Sun StorEdge Expansion Cabinet or other equipment rack using the instructions in the** *Sun StorEdge T3 Disk Tray Cabinet Installation Guide***.**

Connecting the Arrays

▼ To Interconnect the New Partner Group

Perform this procedure for each partner group that you are adding to the Sun StorEdge N8400 Filer.

- **Use the interconnect cables to interconnect the array partner group as shown in** FIGURE 1 **on page 6.**

  This wiring configuration causes the lower array to become the MCU and the upper array to become the alternate MCU.

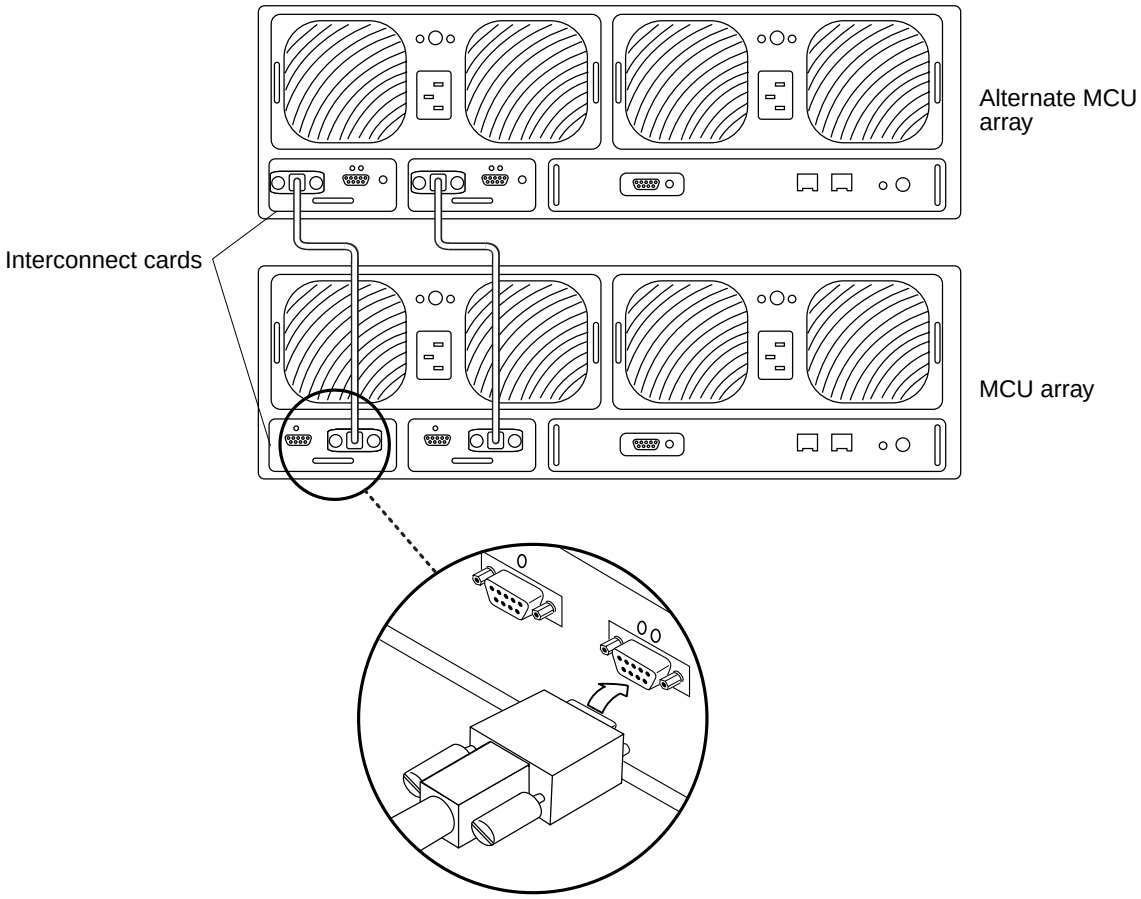

FIGURE 1 Connecting the Interconnect Cables

▼ To Connect the Data Network Fiber-Optic Cables

Perform this procedure for each partner group that you are adding to the Sun StorEdge N8400 Filer.

1. **Connect a fiber-optic cable to the MCU array of a partner group.**

   Use a Media Interface Adapter (MIA) to connect the fiber-optic cable as shown in FIGURE 2 on page 7.

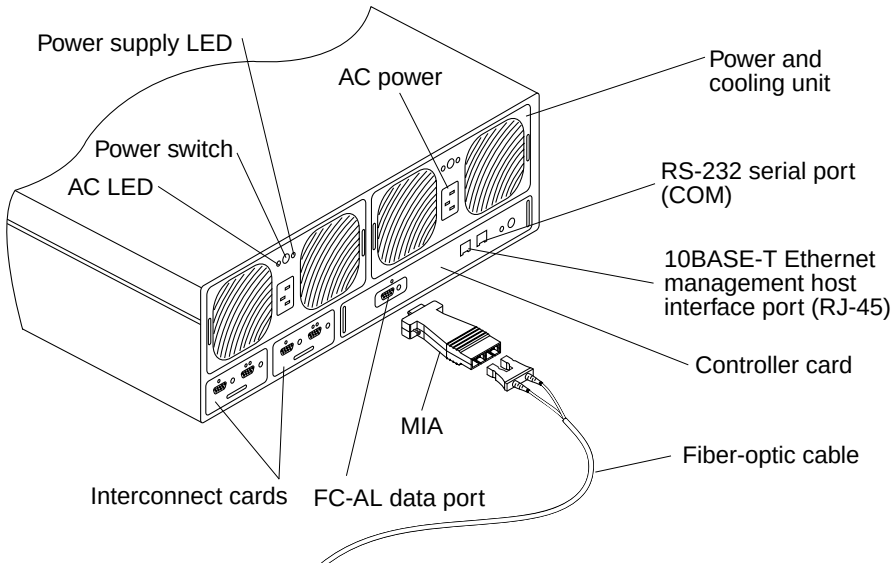

FIGURE 2 Array Back Panel Details

2. **Connect the other end of the fiber-optic cable to the next available port of the MCU Fibre Channel Arbitrated Loop (FC-AL) hub as shown in** FIGURE 3 **on page 9.**

3. **Connect a fiber-optic cable to the alternate MCU array of a partner group.**

   Use a Media Interface Adapter (MIA) to connect the fiber-optic cable as shown in FIGURE 2 on page 7.

4. **Connect the other end of the fiber-optic cable to the next available port of the alternate MCU FC-AL hub as shown in** FIGURE 3 **on page 9.**

▼ To Connect the Management LAN Ethernet Cables

Perform this procedure for each partner group that you are adding that you are adding to the Sun StorEdge N8400 Filer.

1. **Connect a 10/100BASE-T Ethernet cable to the Ethernet port on the back of the MCU array (the lower array of the partner group).**
2. **Connect the other end of the Ethernet cable to the next available port of the 10/100BASE-T Ethernet hub as shown in** FIGURE 3 **on page 9.**

Note – If you choose to use port #12, set the MDI/MDIX switch to MDIX.

---

3. **Connect a 10/100BASE-T Ethernet cable to the Ethernet port on the back of the alternate MCU array (the upper array of the partner group).**
4. **Connect the other end of the Ethernet cable to the next available port of the 10/100BASE-T Ethernet hub as shown in** FIGURE 3 **on page 9.**

▼ To Connect AC Power

Perform this procedure for each partner group that you are adding to the Sun StorEdge N8400 Filer.

1. **Connect the left-side rack power cable to the left power and cooling unit AC power socket of the MCU.**
2. **Connect the right-side rack power cable to the right power and cooling unit AC power socket of the MCU.**
3. **Connect the left-side rack power cable to the left power and cooling unit AC power socket of the alternate MCU.**
4. **Connect the right-side rack power cable to the right power and cooling unit AC power socket of the alternate MCU.**

Inspecting the Physical Installation

- **Verify all cable connections as shown in** FIGURE 3 **on page 9.**

Powering On the Arrays

- **Power on the arrays by pressing the two power switches on the back of each array.**

  Wait, powering on takes several minutes.

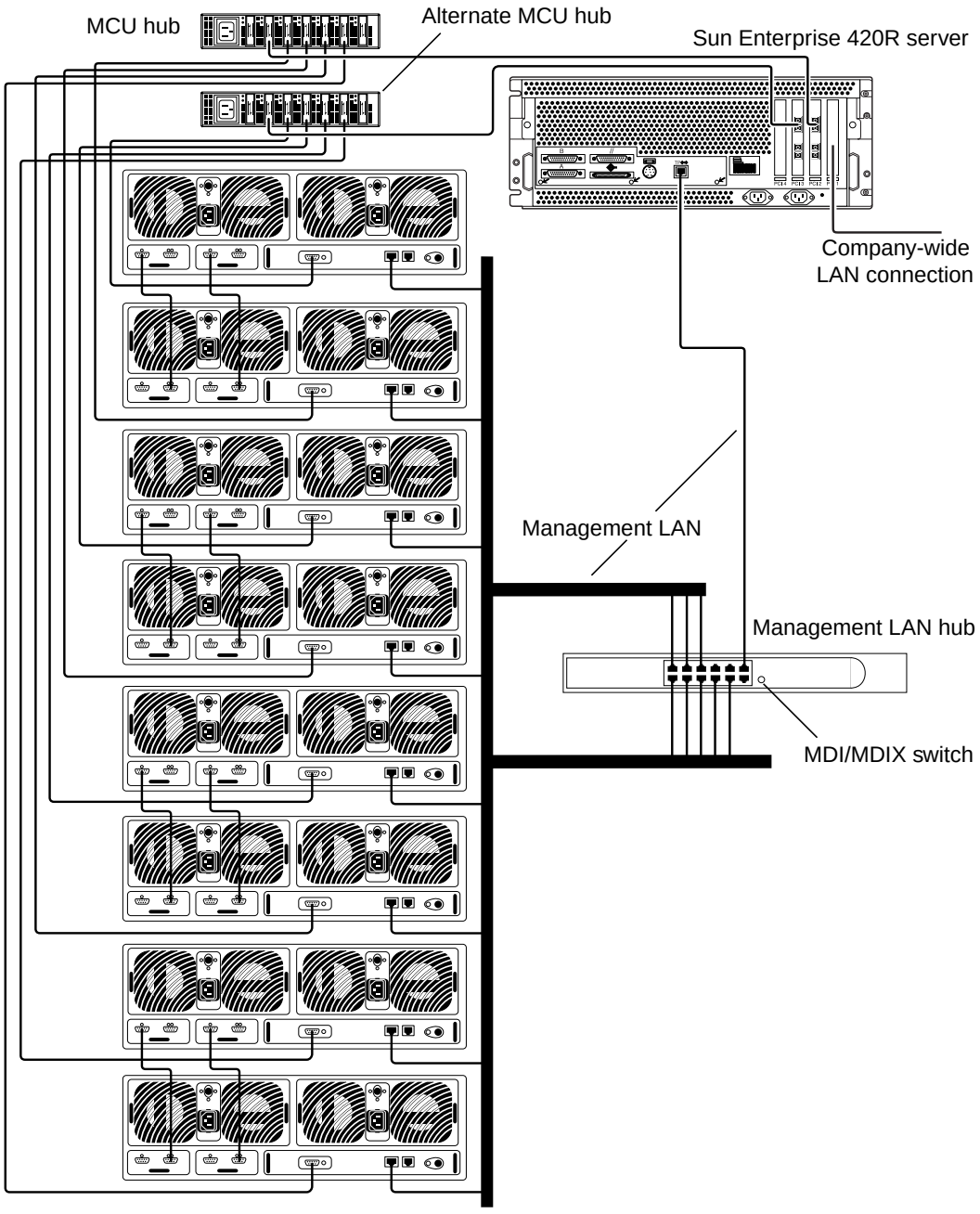

FIGURE 3 Connections for Sun StorEdge N8400 Filer Partner Groups

Configuring the Partner Group

A partner group provides redundant management communications for its two arrays. If one array controller fails, the other controller assumes control of all management reporting as well as, if possible, data access to the failed array's disk drives. To enable this redundant management reporting, you must configure the partner group.

Configuring a partner group is a two-step process. First, through a serial connection, you configure the partner group's IP connectivity so that you can connect to it through the Ethernet. Second, through the Ethernet, add the server's IP address into the partner group's `syslog.conf` files so that messages and warnings generated by the partner group can be reported to a system administrator.

Adding the Partner Group's IP Settings

Repeat this entire procedure for the MCU of each partner group installed, but not for its alternate MCU.

▼ To Add the IP Settings

The partner groups are connected to a local area network (LAN) as shown in FIGURE 3 on page 9. To set up the connectivity for a partner group, see your network administrator to get the IP addresses you need and perform the following steps.

1. **Connect a terminal to the COM port (see FIGURE 2 on page 7) on the back of the MCU array.**

   A Tip kit was supplied with your Sun StorEdge N8400 filer that includes a 9-pin to 25-pin adapter, a 9 pin Tip adapter, and an interconnect cable.

   - If you are using a Sun workstation, connect either TTYA or TTYB to the array's COM port using the Tip kit.
   - If you are using a PC, connect either of the serial ports of the PC to the array's COM port using the Tip kit.

2. **From your terminal, open a session with the array:**

   - If your terminal is a PC, open a hyperterminal session with these communications settings: 8 bit, no parity, 1 stop bit, 9600 baud, Xon/Xoff.
   - If your terminal is a Sun workstation, open a Tip session with these communications settings: 8 bit, no parity, 1 stop bit, 9600 baud, Xon/Xoff.

3. **Give the array a name. For example, name the array “disk4.”**

```
:/:<n> set hostname disk4
```

Note – <*n*> = the system-generated command count for each individual session.

4. **Set the IP address using the** `set ip` **command and the IP address you get from your network administrator.**

   This enables the basic Ethernet connectivity to the arrays. For example:

```
disk4:/:<n> set ip 129.150.47.86
```

5. **Set the gateway address using the** `set gateway` **command.**

   This enables you to access an array outside of the subnet. For example:

```
disk4:/:<n> set gateway 129.150.47.1
```

6. **Set the netmask using the** `set netmask` **command.**

   The netmask specifies the mask used to implement IP subnetting. For example:

```
disk4:/:<n> set netmask 255.255.255.0
```

   This establishes connectivity for the array.

7. **Reboot the MCU array by typing the following**:

```
disk4:/:<n> reset
Reset the system, are you sure? [N]: Y
```

   You can now terminate the Tip session.

8. **Repeat Step 1 through Step 7, using a different name for the MCU of each partner group that you are configuring.**

Adding the Server's IP Address

You configured the IP connectivity of each MCU of each partner group through your Tip terminal. Now, through this newly configured Ethernet management LAN, you must add the filer server's IP address to the `syslog.conf` file of both the MCU and the alternate MCU of each new partner group. The partner group uses this IP address to report its status and errors.

This is an outline of the steps in this procedure:

- Set the password of the array.
- Open an FTP session to the array.
- Use FTP to bring the array's `/etc/syslog.conf` file to your server for editing.
- Edit the `/etc/syslog.conf` file.
- Use FTP to return the array's `/etc/syslog.conf` file after editing it.

▼ To Transfer the `syslog.conf` File to the Server

1. **Open a Telnet session with the partner group at the IP address you just set.**

2. **Set the array's root password, if you haven't already, using the `passwd` command (as an example: `disk7` with IP address `192.148.226.11`).**

```
# telnet 192.148.226.11
disk7:/:<n> passwd
OLD password: [old] password
NEW password: [new] password
NEW password (confirm): [new] password
disk7:/:<n> exit
#
```

Note – You *must* set the password in order to continue with an FTP session.

---

3. **Enable an FTP session to the MCU array:**

```
# ftp 192.148.226.11
Connected to 192.148.226.11.
220 server-name FTP server (SunOS 5.8) ready.
disk7(192.148.226.11:root):
```

4. **Log on to the array by typing** `root` **and then your password at the prompts.**

```
disk7 (192.148.226.11:root): root

331 Password required for root.
Password: password
230 User root logged in.
ftp>
```

5. **Access the** `/etc` **directory of the array using the** `cd` **command.**

```
ftp> cd /etc
250 CWD command successful.
ftp>
```

6. **Access your working directory on the server using the** `lcd` **command.**

```
ftp> lcd /tmp
Local directory now /tmp
ftp>
```

7. **Type** `binary` **to set the transfer mode.**

8. **Copy the** `syslog.conf` **file from the** `/etc` **directory on the array to your working directory using the** `get` **command.**

```
ftp> get syslog.conf
200 PORT command successful.
150 ASCII data connection for syslog.conf (192.148.226.11.34511)
226 ASCII transfer complete.
local: syslog.conf remote: syslog.conf
20 bytes received in 0.0021 seconds (94.81 Kbytes/s)
ftp>
```

9. **Exit the FTP session using the** `bye` **command.**

```
ftp> bye
221 Goodbye.
#
```

▼ To Edit the `syslog.conf` File

1. **With the editor of your choice, open the `syslog.conf` file.**
2. **Edit the `syslog.conf` file to allow system messages to be forwarded to the appropriate log files on the server.**

```
*.info      @192.148.226.1
```

Either add the above line, if it does not exist in `syslog.conf`, or modify the existing line to show your server IP address. In this example, `192.148.226.1` is the IP address assigned to the server during its initial configuration.

Note – Use tabs to separate field entries when editing the `syslog.conf` file. If tabs are not used, any edits will not be recognized by the array.

---

3. **Save the `syslog.conf` file and exit the editor.**

This change enables the array to send Info, Notice, Warning, and Error messages to the server.

▼ To Transfer the `/etc/syslog.conf` File Back to the Array

1. **Start an FTP session from the server to the array.**

For example:

```
# ftp 192.148.226.11
Connected to 192.148.226.11
220 server-name FTP server (SunOS 5.8) ready.
disk7 (192.148.226.11:root):
```

2. **Log on to the array by typing `root` and then your password at the prompts.**

```
Name (192.148.226.11:root): root

331 Password required for root.
Password: password
230 User root logged in.
ftp>
```

3. **Access the `/etc` directory of the array using the `cd` command.**

```
ftp> cd /etc
250 CWD command successful.
ftp>
```

4. **Access your working directory on the server where the newly created `syslog.conf` file exists using the `lcd` command.**

```
ftp> lcd /tmp
Local directory now /tmp
ftp>
```

5. **Type `binary` to set the transfer mode.**

6. **Copy the `syslog.conf` file from your working directory of the server to the `/etc` directory on the array using the `put` command.**

```
ftp> put syslog.conf
200 PORT command successful.
150 ASCII data connection for syslog.conf (192.148.226.11.34511)
226 ASCII transfer complete.
local: syslog.conf remote: syslog.conf
20 bytes received in 0.0021 seconds (94.81 Kbytes/s)
ftp>
```

7. **Exit the FTP session using the `bye` command.**

```
ftp> bye
221 Goodbye.
#
```

8. **Access the array by either a Telnet session or a serial connection.**

9. **Reboot the array by typing the following:**

```
disk7:/: /etc:<n> reset
Reset the system, are you sure? [N]: Y
```

10. **Repeat "Adding the Server's IP Address" on page 12 for each MCU and for each alternate MCU array of all partner groups that you installed.**

Finishing and Verifying the Installation

▼ To Create Logical Volumes

Note – You *must* use the `vol` command to create logical volumes on your newly installed storage before you try to create shares with the filer's graphical user interface (GUI).

- **Create one or more logical volumes with the `vol` command as described in the *Sun StorEdge T3 Disk Tray Administrator's Guide*, 806-1063.**

  If this step is unsuccessful, check all the connections and be sure that you performed all the steps in configuring the arrays.

▼ To Verify the Installation

1. **Start the Filer Administration Tool.**

   Refer to "To Start the Filer Administration Tool" in the *Sun StorEdge N8400 and N8600 Filer Administrator's Guide*.

2. **Create a new share.**

   Refer to "To Add a New Share" in the *Sun StorEdge N8400 and N8600 Filer Administrator's Guide*.

3. **Mount the newly created share from another host using both the NFS and CIFS protocols.**

   If you can create and mount a share under both NFS and CIFS, your installation is complete.

   If you cannot create and mount a share, check all the connections and be sure that you performed all the steps in configuring the arrays.