

Avid® MediaStream™

Version 3.32 Software Installation Guide

MediaStream Network Storage Systems
MediaStream Storage Independent Systems



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Chapter 1

Introduction

This guide provides instructions for upgrading the MediaStream Network Storage (NS) System and the MediaStream Storage Independent (Si) System to software version SAN 3.3x or the current software release. Software releases update all or any combination of the following components:

- The MediaStream Interface (MSi) computer
- The File System Controllers (FSC)
- The MediaStream Server (MSS)
- The Palladium Store (PS) 1000 Firmware
- The ConnectPlus/gateway

Read the release notes to identify current release revision numbers and to note any special instructions with the release. The MediaStream Server Software disc contains release notes for the main release and all patches in the :\\doc directory.

There are two Network Storage System upgrade CDs. One contains the MSS and MSi software upgrades. The FSC Program CD contains the FSC software upgrade.



As part of the system upgrade, you need to upgrade any gateways (FTP servers) when you upgrade the MediaStream Servers. If you have a ConnectPlus product, be sure that you have an upgrade CD for the gateway before you start the system upgrade.

Before You Begin

See the Release Notes on the upgrade CDs for the latest information on the changes, features, and issues regarding this software release.



All of the upgrades for your system must be performed at the same time. Otherwise, your system's integrity could be compromised.



Upgrade to SAN 3.3x requires your system to be running at least SAN version 3.01. If you are running an earlier revision, you must upgrade to version 3.01 first and perform its associated File Migration procedure before continuing. See the MediaStream Network Storage System 3.01 Installation Guide.

The upgrade must be completed in the following order.

1. Upgrade the MSi
2. Upgrade FSCs
3. Upgrade MSS and gateways (ConnectPlus products)
4. Upgrade Palladium Store 1000 firmware

Software Version Numbers

The numbering convention for MediaStream system software is as follows:

System Version Number

0X.YZ

For system releases **X** is the current major release number, **Y** is the minor release number and **Z** indicates a patch number. A complete upgrade on the system is necessary for any change in the revision number.

MSi Version Number

A.X.YZ

A indicates MSi software; **X** is the current major release number; **Y** is the minor release number; and **Z** indicates the patch number. A complete upgrade on the device is necessary for any change in the revision number.

FSC Version Number

G.0X.0Y.ZZ

G indicates FSC software; **X** is the current major release number; **Y** is the minor release number; and **Z** indicates the patch number. A complete upgrade on the device is necessary for any change in the revision number.

MSS Version Number

C.XX.YZ

The initial **C** indicates that this software is for use with the MediaStream Server System.

XX is the major revision of software. If you are installing software that has a different major number than the software you are currently running, you *must* check with your automation vendor before installing this software.

Y is the minor revision number. A change in the minor number indicates minor feature changes and bug fixes. A change of minor release does not include any changes that will affect control of the servers via automation.

Z is a patch level; the **Z** number indicates the number of patches installed on top of the minor release. Installing additional patches does not require a complete re-install of the software.

Long File Names

Versions later than C.15.00 provide for the use of longer (32-character) file names.



Do not enable the longer file names feature without approval from your automation vendor. Their software might not support its use or may need configuration changes to accommodate it. If desired, the MSi application can be then enabled to allow it to create and reference these longer file names. You can do so by selecting Setup/Configuration from the application's title bar and selecting the Long File Names option in the dialog box.

Chapter 2

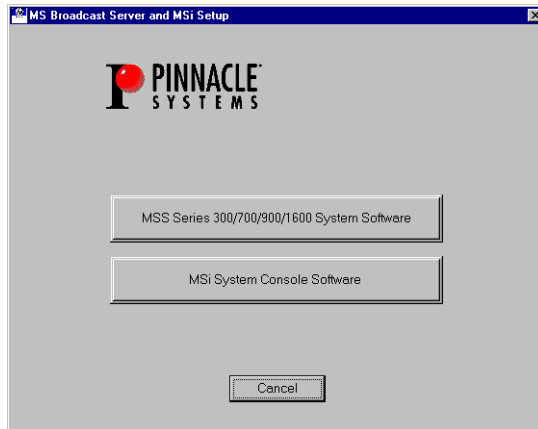
MSi Software Upgrade

MSi software updates take about three minutes to perform.

During an software installation of v3.3x on the MSI 2000, you must wait until the system has initialized all LAN adapters before starting to load the software. Be sure the system is idle, the Avid splash screen is displayed, and no programs are running.

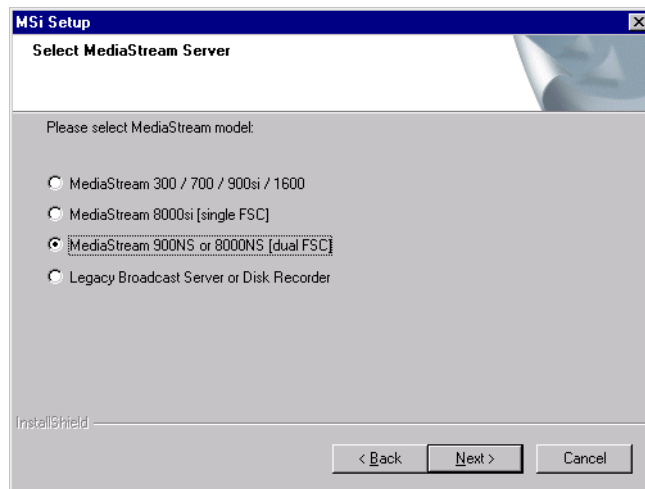
To update the MSi software:

1. Close all applications and exit from the MSi application.
2. Insert the MSi upgrade CD into the drive. The setup program starts automatically.



3. Click the MSi System Console Software button. The MSi Setup program runs.
4. A message might appear saying that a previous install is detected. Follow the instructions to back up your old configuration files before proceeding.

5. Choose the appropriate MS model from the list (8000si or 8000NS) and click Next.
 - MediaStream 8000si — choose MediaStream 8000si [single FSC]
 - MediaStream 8000NS — choose MediaStream 900NS or 8000NS [dual FSC]



6. Click Yes to display the Release Notes, otherwise click No.
7. Click Next to start the installation, which takes less than a minute to complete.
8. Click OK at the MSi Setup Complete pop-up window.
9. Click Yes, I want to restart my computer now.
10. After the MSi PC successfully restarts, double-click the MSi icon in the desktop window or select MSi from the Start Menu.

11. The first time that you start the MSi application, you might be prompted to set up the configuration. When asked if you want to Enter MSi configuration, click OK. From the main menu, select Setup > Configuration.

The screenshot shows the 'Configuration' window with the following sections:

- Global Configuration:**
 - MSi's Hostname:
 - FSC 1: FSC 2:
 - Disk Configuration:
 - Archive Management: ☒ None ☐ Local
 - Operation Mode: ☒ Peer ☐ Main ☐ Buffer
 - ☐ Play Before Xfer Complete
 - ☒ Auto Clean Video Files
 - ☐ Nipple Delete
- Play Window:**
 - ☒ Play Window icon
 - Name:
 - Decoder Port:
 - MSS Connection: ☒ Default LAN ☐ Other LAN
- Record Window:**
 - ☒ Record Window icon
 - Name:
 - Encoder Port:
 - Decoder Port:
 - ☐ Use Long File Names
 - MSS Connection: ☒ Default LAN ☐ Other LAN
- Console:**
 - Name: Serial:
 - Log: ☐ Enable
- Security:**
 - ☐ Protect by Password

Buttons:



For instructions on configuring MSi, see Chapter 6 of the MediaStream Server 8000 Site Preparation, Installation and Reference Guide or Chapter 3 of the MediaStream Server 8000Si Site Preparation, Installation and Reference Guide.

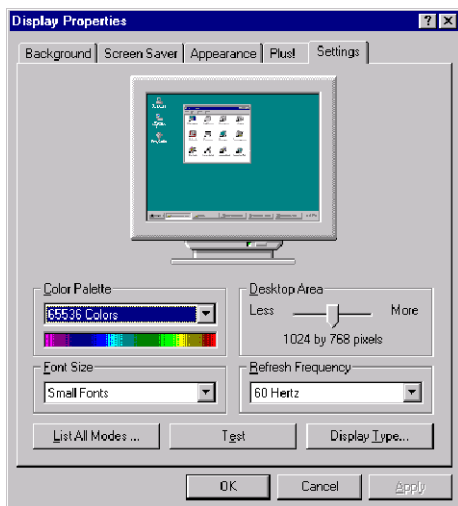
12. If you have any 15-in monitors running MSi, adjust them as described in the following section.

Adjust the MSi Computer's Monitor Resolution (15-inch Monitors)

If you are using a 15-inch monitor, adjust the screen resolution to 1024 by 768.

To adjust the screen resolution:

1. Place your mouse on an area of the Windows desktop that has only the background color and right-click. Select Properties from the menu.
2. Select the Settings tab in the Display Properties dialog box.



3. Move the resolution slider to 1024 by 768.
4. Click the Test button and click OK.
5. Click OK in the Testing Mode dialog box. Your desktop is temporarily set to the new resolution.
6. After the test, click Yes to retain the new display resolution.

Chapter 3

FSC, MSS, and Gateway Upgrade

This chapter describes upgrades for several components on your MediaStream System including:

- [File System Controller Upgrade](#)
- [MediaStream Server Upgrade](#)
- [PMON Upgrade](#)
- [ConnectPlus Gateway Upgrade](#)
- [Combination MSi/Gateway Upgrade](#)
- [Combination MSi/Gateway New Install](#)

File System Controller Upgrade

Later in the procedure you will need to upgrade any gateways (FTP servers) you have for this cluster. If you have a ConnectPlus product, before continuing the upgrade be sure that you have an upgrade CD for the gateway. Also, ensure that you have the MSi and MSS upgrade CDs ready for use.

- ▶ From a command window for each FSC run `fsc_revisions` to verify current software revision.
 - If your revision matches the current release proceed to [“MediaStream Server Upgrade” on page 34](#).
 - If your revision does not match the revision required for this release, proceed with the following procedure.



For 8000si systems there is only one FSC.

To open a command window on a computer,

1. Click Start > Run, enter **command** in the text box and click OK.
2. From a command window on either of the FSC computers, enter **fsc_status**.



These commands are case sensitive.

DATABASE		
TCP Port	1315	1325
Role	PRIMARY	SECONDARY
Connection	CONNECTED	CONNECTED
Remote DB	tcp 10.64.22.2 1325	tcp 10.64.22.1 1315
Operations	133852	138163
Date	3/02/2005	3/02/2005
Time	09:37a	09:37a
Size	39,354,368	39,354,368
SANSERVICE		
Status	Ready	Ready
WATCHDOG		
Status	ok	ok

- **8000si systems** — only one column will display showing a Primary FSC.
- **8000NS systems** — determine which FSC is the primary (usually FSC 1) and which is the secondary (usually FSC 2). The following instructions require that you know which FSC is the primary FSC and which FSC is secondary. FSC 1 in these instructions refers to the primary, and FSC 2 refers to the secondary FSC



For 8000NS systems, make sure both FSCs are running in a Ready state before beginning the upgrade procedure. In the `fsc_status` display, they should both have a Connection status of “Connected,” SANSERVICE Status of “Ready,” and WATCHDOG status of “ok.” If any of these is not displayed, contact Avid MediaStream Support before proceeding.

3. From a command window on FSC 1, stop the FSC by entering **fsc_stop**.
FSC 2 is now the only FSC running. It should be running as Primary Alone - Broken.
Use the `fsc_status` command to verify this.



For FSC 8000Si, running `fsc_stop` will bring the server off the air. This is normal. On-air upgrades are not supported for 8000si systems.

Upgrade FSCs on 8000 Network Storage

The FSC software upgrade is an InstallShield program.



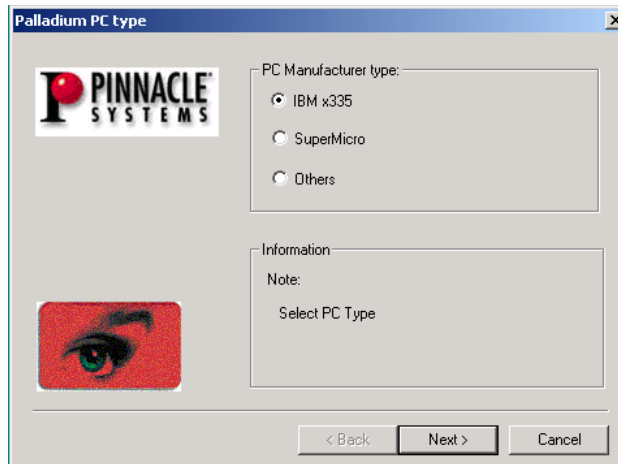
If you are upgrading your FSC on an 8000si system see “Upgrade FSC on 8000 Storage Independent” on page 24.



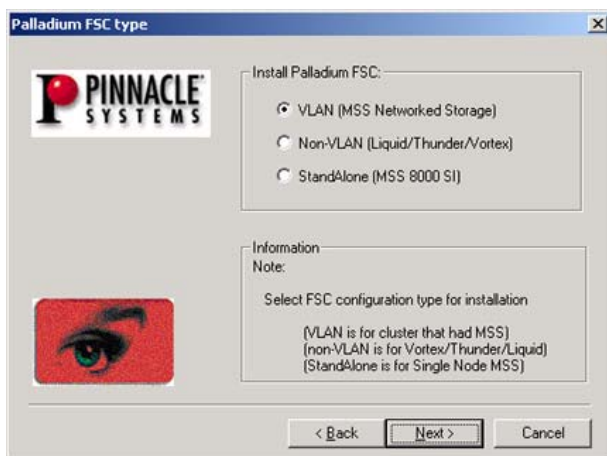
Do NOT reboot the FSC, even if prompted, until the end of the upgrade procedure. Follow the instructions for rebooting as given in the following steps.

To install or upgrade the FSC software on an 8000NS:

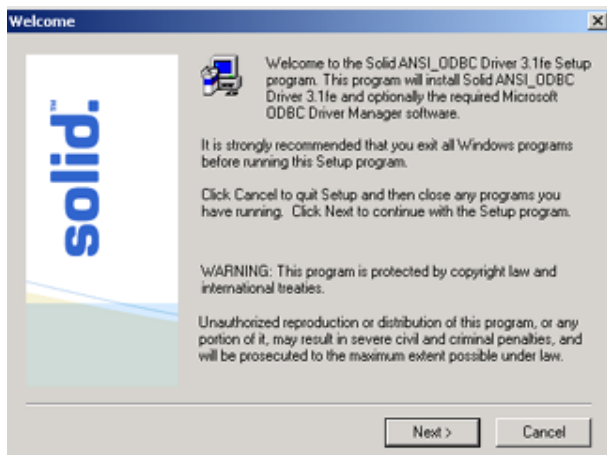
1. Insert the FSC upgrade CD into the CD-ROM drive of the FSC computer to be upgraded.
2. Click Yes to confirm the upgrade.
3. Click the Next button to advance through the screens. For the FSC manufacturer's type, look at the label on the computer. Select the appropriate manufacturer, or other if the computer is not an IBM x335 or SuperMicro.



4. Select Install Palladium FSC with VLAN (MSS Network Storage) and click Next.

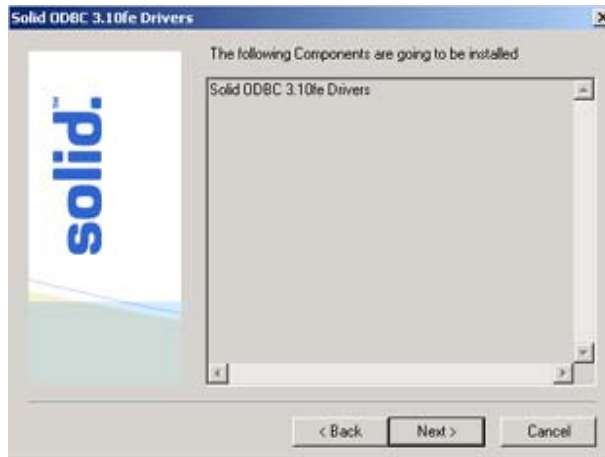


5. If the Welcome screen for installing the ODBC drivers is displayed, click Next.



Do NOT reboot the FSC, even if prompted, until the end of the upgrade procedure. Follow the instructions for rebooting as given in the following steps.

6. The components to be installed are shown on the display, click Next.



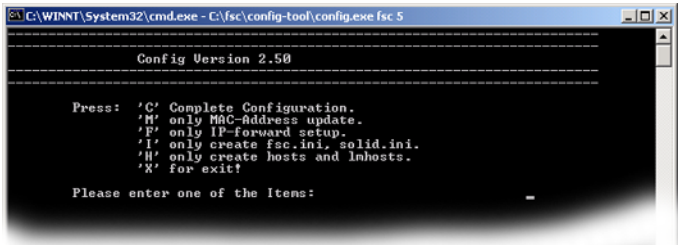
7. When the ODBC Setup Complete screen is displayed, click Finish.



8. The Configuration utility starts, click Yes to run Config tool or No to skip Config.



Performing a complete configuration is recommended after a software upgrade, but it will overwrite your previous fsc.ini file (after creating a time-stamped backup copy in the C:\fsc\cfg_files directory). If you had any custom settings in this file, you need to reapply them.



9. If running config (entered yes in previous step), enter **C** to select the complete configuration.
10. When asked if this is a standalone system (8000si) enter **N** for 8000NS system.
11. For NS Systems, enter the cluster number.
Please enter the Cluster number [1..16]: **1**
12. For NS Systems, Enter the FSC number: 1 for FSC 1 or 2 for FSC 2.
Please enter the FSC number [1 or 2]: **1**
13. Enter the number of MSS server nodes configured for the system.
14. Enter maximum disk system bandwidth. The value is in kilobytes per second, and depends on your system. The following table gives recommended values for a given number of RAID arrays.

Recommended Values for the Number of RAID Arrays

Number of RAIDs	Kilobytes per Second (KB/s)
1	60,000
2	100,000
3	130,000
4	180,000
5	200,000
6	240,000
7	280,000
8	320,000

Contact Avid MediaStream Support if you have any questions on the proper value for your system.

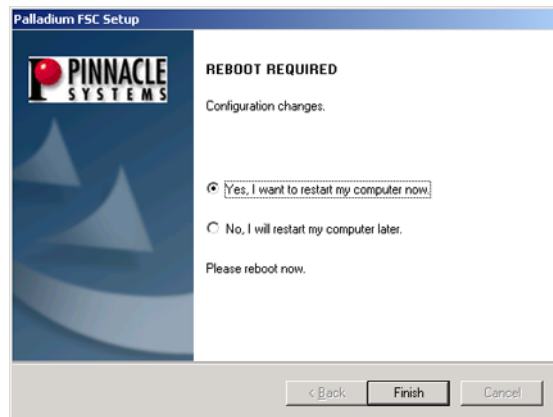
When the script finishes running, the following output is displayed:

```

C:\WINNT\System32\cmd.exe
-----
Updating the NTP Settings
NTP Settings created for: FSC1002
-----
Total of all changes: 366
Total of all errors: 0
NTP-Update is done.
-----
Creating hosts and lnhosts and saving the old ones.
Total of all changes: 368
Total of all errors: 0
Creating the hosts and lnhosts is done.
-----
Updating the registry done.
NOTE:
1) If run manually, please reboot.
2) If run with InstallShield, please close this window.
-----
FSC1002 D:\>

```

15. When the script has completed, make sure that the total of all errors is 0.
 - If there are any errors, after the FSC upgrade (InstallShield) program is complete, call Avid MediaStream Support.
 - If there are no errors, continue with the upgrade.
16. Close the Config tool window.
17. Select “Yes” and click Finish to reboot the FSC.



18. Remove the FSC upgrade CD from the computer.
19. After reboot, open a command window on the FSC and enter `fsc_revisions` to verify that the software has been upgraded. Check the current Revision number (listed in the software release notes on the Installation CD).
20. Enter `fsc_status` to verify that the upgraded FSC is running properly, then repeat the upgrade procedure on the other FSC.

21. Wait at least 5 minutes before upgrading the second FSC to allow the databases to update.
22. Run `fsc_stop` on the second FSC. On this second FSC repeat the entire process from step 1 of [“Upgrade FSCs on 8000 Network Storage” on page 19](#).

Upgrade FSC on 8000 Storage Independent

If you are upgrading your FSC on an 8000 Network Storage system see [“Upgrade FSCs on 8000 Network Storage” on page 19](#).



This procedure is outlined in Chapter 5 “File System Controller (FSC)” of Media Stream Server 8000si Site Preparation, Installation and Reference Guide.

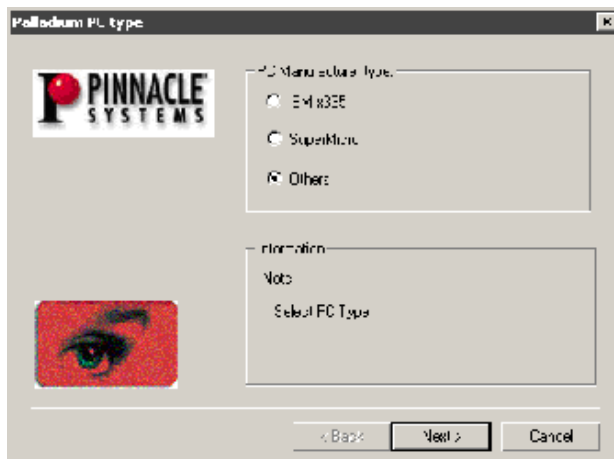
To install or upgrade the FSC software on an 8000Si:



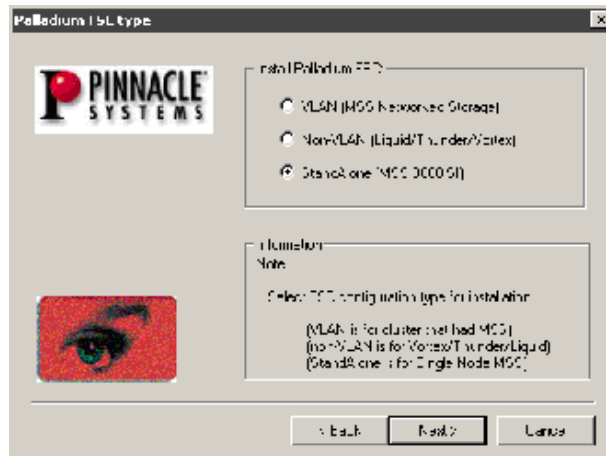
Do NOT reboot the FSC, even if prompted, until the end of the upgrade procedure. Follow the instructions for rebooting as given in the following steps.

1. Run `fsc_stop` to stop the FSC during upgrade.
2. Enter Yes when asked if you want to stop the FSC.
3. Enter Yes when you are warned you are about to take the server off air.
4. Back up the FSC sitefiles using the `fsc_backup` command.
5. Insert the upgrade CD, the installer on the CD auto launches.
6. Click the Next button to advance through the screens.

For the FSC manufacturer’s type on an MSS 8000si system, select “Others.”

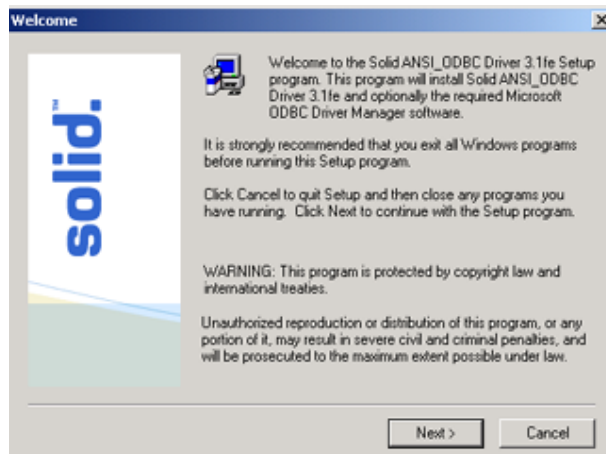


7. For FSC type, select “StandAlone (8000si)” and click Next to load the upgrade files.



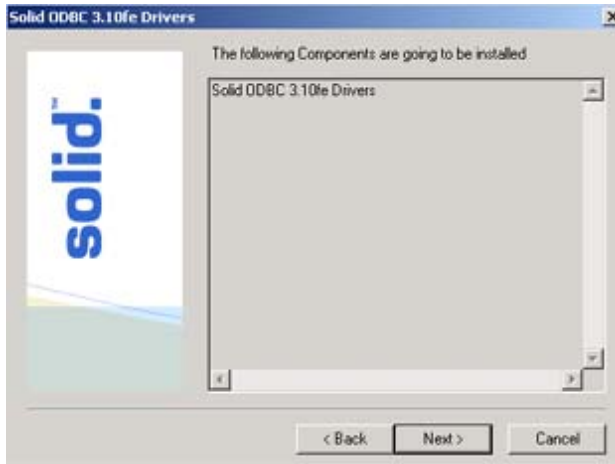
The next three steps will only appear if you are performing a clean install on a new or recovered FSC.

8. When the Welcome screen for installing the ODBC drivers is displayed, click Next.



Do NOT reboot the FSC, even if prompted, until the end of the upgrade procedure. Follow the instructions for rebooting as given in the following steps.

9. The components to be installed are shown on the display. Click Next.



10. After the ODBC Setup Complete screen is displayed, click Finish.



If prompted to close any open windows after this point, close them.

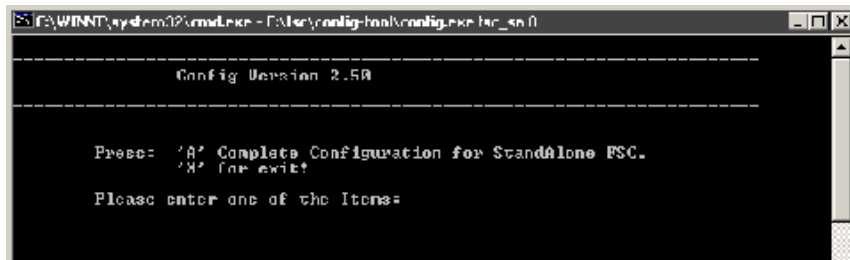


11. Select Yes to Run the Config Tool or No to skip step 18.



If this is a clean install choose Yes. If this is an upgrade choose no unless directed by support or release note instructions to choose yes. Choosing yes requires you to reset your network settings and other configuration settings for your FSC.

12. If you chose Yes, the Configuration utility runs.



13. Press **A** to select the complete configuration.
14. When asked if this is a Vortex System? Y/N, enter **N**.
15. Enter the system number for the FSC. For example, enter 1 for fsc0001 or 2 for fsc0002.
16. Enter maximum disk system bandwidth. The value is in kilobytes per second, and depends on your system. The recommended value for an MSS 8000si system is 50,000.

When the script finishes running, the following output is displayed:

```
-----
Updating the FSC_SA-Name
The current FSC-Name is:          FSC0001
-----

Total of all changes: 17
Total of all errors:  0
FSC_Name-Update is done.
-----

Updating the Solid TCP Setting
The Solid TCP Entry is:          tcp 1315
The Solid Driver DLL is:         c:\winnt\system32\sacw3231fe.dll
The Solid Setup DLL is:          c:\winnt\system32\sosw3231fe.dll
-----

Total of all changes: 27
Total of all errors:  0
Solid-Update is done.
-----

Removing all old Logfiles (\fsc\logs\fsc.log.*)
Total erased files:              0
Total not erasable files:        0
Total of all changes: 27
Total of all errors:  0
Logfile removing done.
-----

Creating FSC.ini file and saving the old one.
Total of all changes: 28
Total of all errors:  0
Creating the fsc.ini is done.
-----

Creating solid.ini file and saving the old one.
Total of all changes: 29
Total of all errors:  0
Creating the fsc.ini is done.
-----

Updating the NTP Settings
NTP Settings created for:        FSC0001
-----

Total of all changes: 35
Total of all errors:  0
NTP-Update is done.
-----

Creating hosts and lmhosts and saving the old ones.
Total of all changes: 37
Total of all errors:  0
Creating the hosts and lmhosts is done.
-----

Updating the registry done.

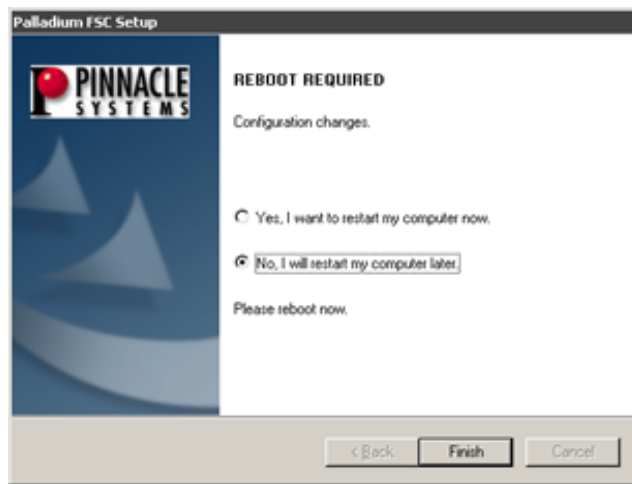
NOTE:
    1) If run manually, please reboot.
    2) If run with Installshield, please close this window.
-----
```

17. When the script has completed, make sure that the total of all errors is 0, and type **exit** to quit.

If there are any errors, after the FSC upgrade (InstallShield) program is complete, manually run it a second time. If errors still appear, call Avid MediaStream Support.

18. If you ran the Config tool, select No when asked if you want to restart the computer now, and Finish to complete the upgrade. DO NOT reboot the FSC yet.

If you did not run the config tool, choose yes to reboot the computer.



FSC Configuration (8000si only)

If you ran the configuration tool, you must manually configure the .ini settings and network settings for the FSC. These instructions describe the configuration using the recommended network configuration values.



If your system is to be configured in other than a default configuration, consult your system administrator for the appropriate values to enter in the following section.

FSC Networking Values

System No.	Host Name	IP Address
System 1	fsc0001	10.1.5.130
System 2	fsc0002	10.1.5.131
System 3	fsc0003	10.1.5.132

FSC Networking Values (Continued)

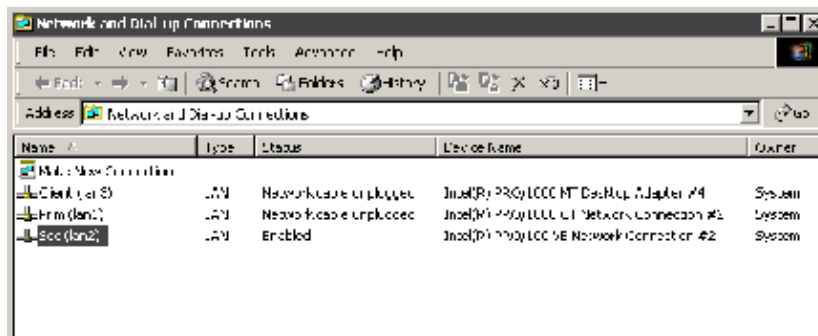
System No.	Host Name	IP Address
System 4	fsc0004	10.1.5.133
System 5	fsc0005	10.1.5.134
System 6	fsc0006	10.1.5.135
System 7	fsc0007	10.1.5.136
System 8	fsc0008	10.1.5.137
System 9	fsc0009	10.1.5.138
System 10	fsc00010	10.1.5.139

1. Modify the following parameters in the file `C:\fsc\cfg_files\fsc.ini`:
 - LocalHostname: the default “fsc0001” for System 1
 - DiskProxy0: the name of the MSS. Enter mss0001 for System 1. Sequence as appropriate for additional systems.
 - FtpBackupMachine: typically the name of the MSi PC; msi0001 for System 1

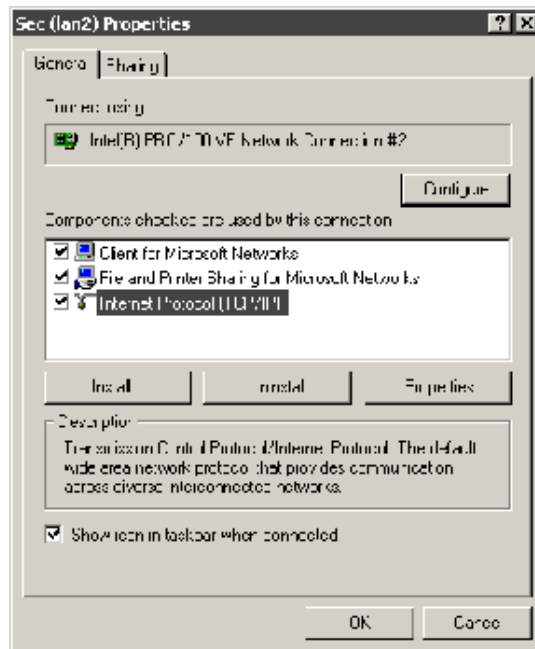


If you have only one MSS8000Si Server, use System 1. For a multiple server environment, sequence your servers from 1 to the last server in your system (up to 10). If you have more than 10 servers in your facility, consult with your system administrator or Avid MediaStream Support.

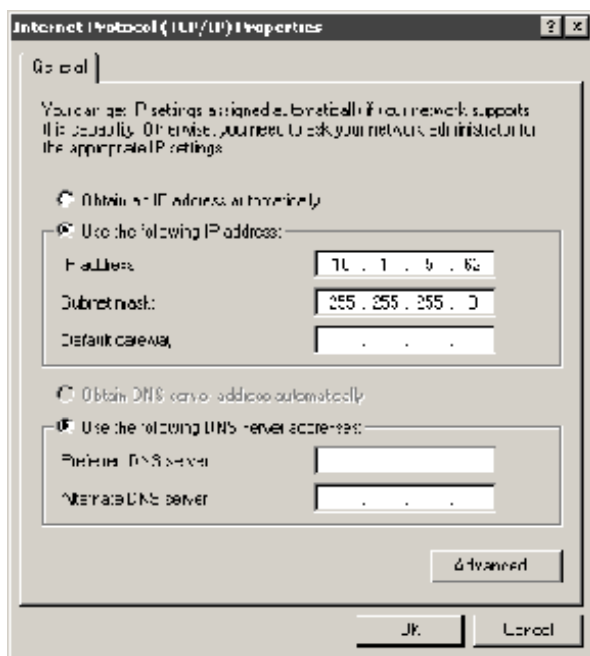
2. Select Network and Dial-up Connections under Settings on the Start menu.
3. Right-click on “Sec (lan2)” and choose Properties from the menu.



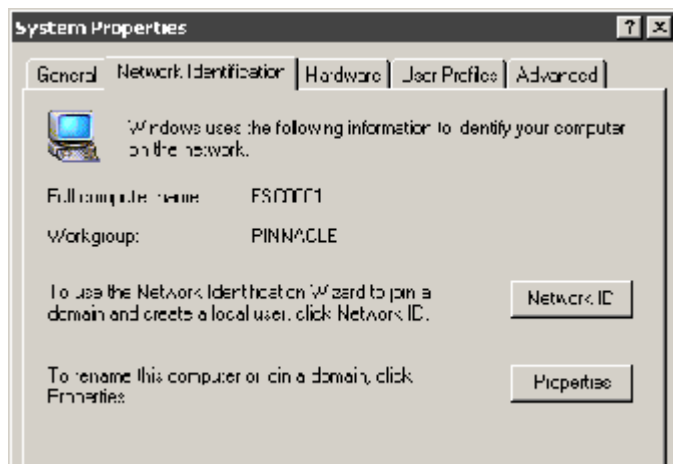
4. Select “Internet Protocol (TCP/IP)” from the list, and click Properties.



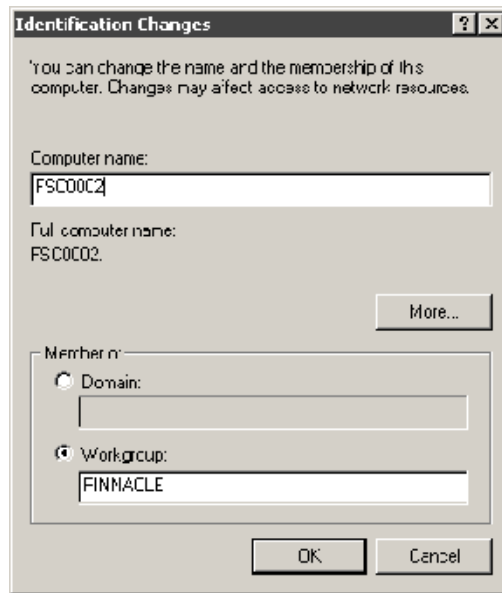
5. Enter the IP Address for the FSC (see [“FSC Networking Values” on page 29](#)) and click OK. You must enter some address here; it is not done automatically.



6. Close the network configuration dialog boxes, right-click on the FSC's icon in Windows Explorer, and select Properties from the menu.
7. Under the Network Identification tab, click Properties.



8. Change the value for Computer name: to the hostname of your machine (see “FSC Networking Values” on page 29), and click OK.



9. When asked whether you want to restart the PC now, click No.



If you are using non-default host names on your system, you must update the hostfile update the hosts file in C:\winnt\system32\drivers\etc to reflect your changes to network configuration. This must also be done on the MSi PC and any external gateways you are using. Consult you system administrator for details.

10. Remove the upgrade CD and reboot the FSC.
11. Open a command window on the FSC, and enter `fsc_revisions` to verify that the software has been upgraded. To find the current revision, consult the Release Notes on the Software Installation CD.
12. Verify the IP address and hostname with the `ipconfig` command.
13. If you had other custom `fsc.ini` settings, verify that you still have them. The FSC installer also places a dated copy of the original `fsc.ini` in the C:\fsc\cfg_files directory.
14. When settings are complete, reboot the computer.

MediaStream Server Upgrade

Server Node software updates can take an hour or more to complete depending on how many patches are included with a particular software upgrade. Once completed, the Server Node can be brought back on-air and the upgrade process procedure can begin on the next Node in the System.



All Server Nodes in the System must be upgraded to the same operating software version to ensure optimum reliability and performance.

The upgrade process involves two primary steps:

- FTP Transfer Upgrade files from MSi PC to Server Node — Insert a CD ROM disk into the MSi PC and follow the instructions on the screen.
- Run the Upgrade process on the Server Node.

This procedure assumes that the MSi application has already been upgraded. If this has not been done, please do so before installing the server software.

Initial Checks

Open a Console port Telnet Session on the MSi PC and login as root.

To start a Console Telnet session:

1. From the MSi Control application, right-click on the icon of the Server Node you are upgrading and select Console.
2. A Console session opens. If there is no prompt, press Enter. If you get a login prompt, login as `root`, with a password of `".root"`. Otherwise, you should see a return prompt of the current directory on the Server Node this will most likely be `[root@xxyy /bvs]`

After you are logged in, determine the current software revision:

3. Enter: `revisions -a`
4. Note the software version here for future reference: _____.
5. Determine the Server Node's hostname.
 - Enter `hostname`
 - Note the displayed hostname here: _____.

Before starting this upgrade, arrange for the Server Node to be off-line for about an hour.

Back Up Site Files

Site files specify a server's configuration. These files include the bvsrsrc, hosts, rhosts, passwd, group and a number of audio and video configuration files. Backing up the site files ensures that in the event of a problem such as a Boot Disk (the server's hard disk) failure, you can quickly restore a server to its configured operating mode.

To back up a server's site files:

1. Enter the command `sitefiles2file`.

```
root@01 /bvs] sitefiles2file
Operator Name:
```

No operator name has been specified in the last 24 hours.

Please enter your name at the prompt below. Your name is used to keep track of who is doing system administration on your Broadcast Video Server. It will appear in the /bvs/syslog log file.

```
Please enter your name: ekl
```

```
This sitefiles save operation would overwrite the file /tmp/sfiles.cpio.
Is it ok to overwrite this file with the latest sitefiles? (y/n) (def=y): y
```

2. If requested to enter your name, enter your name or initials.
3. When prompted if it is OK to overwrite the file /tmp/sfiles.cpio, press Enter.
Wait for the process to complete, it could take a couple of minutes. When it is complete, the prompt displays:
--->> sitefiles copied to '/tmp/sfiles.cpio':
followed by the root prompt.
4. From the MSi main menu, select Setup > Site Files > Save Sitefiles from Server to Console PC.
5. In the Save As dialog box that appears, save the file to the following path:
`C:\Program Files\Pinnacle\Msi\data\servername.cpio`
where *servername* is your server's name.
6. Click OK if you are asked to confirm saving sitefiles to PC.
7. A message asking "Is 'sitefiles2file' done?" is displayed. Click Yes.
8. After the site files are saved successfully to the PC, a message is displayed. Click OK.

9. Drag and drop the *.cpio files in the directory C:\Program Files\Pinnacle\MSi\data onto the CD-recordable disk.
10. Remove the disk and label it Site Files <Server Hostname>. Date it and store it in a safe place.



If you have the most recent version of the MSi, you might use the USB port on the rear of the unit to save your files. Insert a USB drive or other USB compliant storage device in this port to save sitefiles off the MSi PC.

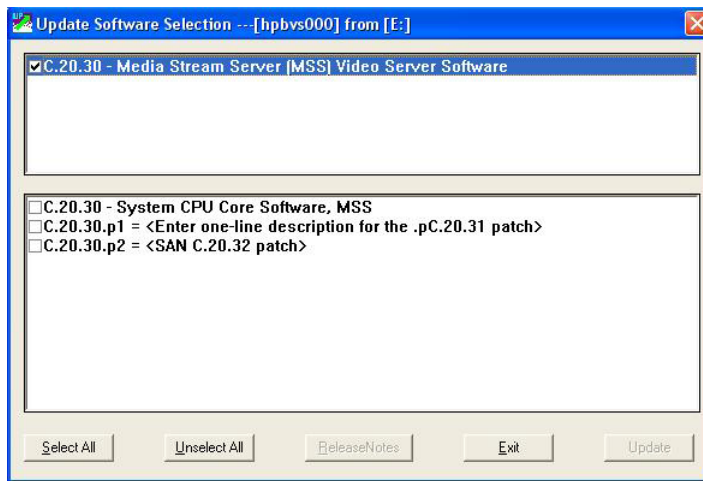
To copy the upgrade files to the server:

1. Insert the Upgrade CD into the CD-ROM drive. The setup program starts automatically.
2. Select MSS Series System Software.
3. When the Please Enter the MSS Name dialog box is displayed, enter the Server's hostname (recorded during initial checks) and click OK.
4. When the Update Source From dialog box is displayed, click OK, which displays the Update Software Selection dialog box shown in step 1 of [“Select the Required Software” on page 36](#).

Select the Required Software

The Update Software Selection dialog displays a list of the upgrade software on the CD.

1. In the top pane of the dialog box, select the current Main release in the MediaStream Server (MSS) Video Server Software check box.



- Options for the software appear in the lower pane. If you click Select All, all of the software update options listed in the lower pane of the dialog box are selected. Each program is installed/updated separately.



If you are upgrading from the previous patch release, it is only necessary to select the upgrade components you are adding. If you are unsure, click Select All.

- Click Update. The File Transfer window displays a list of the files being transferred. The file transfer takes about 10 minutes. The transfer is complete when the window changes to a display of follow-up text.
- Select File Transfer Details to check if any errors have occurred. If there are errors, contact Avid MediaStream Support.
- Click Next in the Update Software dialog box if another program is to be installed. Repeat the procedure described above.
- Click OK to return to the Update Software Selection dialog box.
- When all of the software has been transferred, click Exit from the Update Software Selection dialog box and remove the CD from the drive.



Use the Console Port Telnet session on the MSS Node for the upgrade.

- Reboot the MSS. When the console prompt reappears, enter the **stopams** command.
- When the message “Waiting to start the MSS storage controller?” is displayed, press **ESC** so that the server software will not start.

Start the Upgrade



Do not interrupt the upgrade process, which takes about 30 minutes. Periods of inactivity on the screen are normal. The upgrade process reboots the server twice.

To install the upgrade software:

- Open a Console port Telnet session on the MSS.
- Enter the command **upgrademss**.
- If you are prompted for an operator name, enter your initials.
- If asked if you want to overwrite any files, press **Y**.
- The upgrade process automatically detects which upgrades are needed. When asked if you want to install upgrades to your server, press **Y** and then press **Enter**.
- When prompted with the following, enter **y**:
Is it ok to reboot the OS off the new disk kernel? (y/n; def=y):
The system completes a reboot off the disk drive.

7. Allow the upgrade to complete. After the final reboot (dependent on number of patches in the upgrade) the AMS operating system is loaded.
8. After verifying that the server is working properly, back up the server's site files, See [“Back Up Site Files” on page 35](#).



If several servers need to be upgraded, upgrade all of them and upgrade RAID Firmware before saving SiteFiles. The Palladium Store 1000 might not display properly in System Status window until array firmware is upgraded.

The additional MSS computers can now be upgraded to the current software. Once you have upgraded MSS 01, the order that you upgrade the other servers does not matter, although upgrading in order is recommended.

PMON Upgrade

The PMON bootrom monitor of the system controller board may require field upgrade. If this procedure is required for a particular release, use the MSi TFTP server to accomplish it.

To perform PMON upgrade:

1. On the MSI, start the Pinnacle TFTP application by double clicking the Pinnacle TFTP Server icon (on the MSi desktop).
2. Enter the IP address or the hostname of the server node.



Skip this step for the 8000si.

3. Click the Options button. Under the Server tab, change settings to the following values if necessary:
 - Select Give all files and Take all files
 - Set TFTP filesystem root (download path) to D:\kdi
(Make sure the upgrade CD is in the D: drive of the MSi.)
 - Click OK to accept changes
4. Leave the TFTP application open on the desktop so that it can accept your TFTP download process.

5. Power on the server node, and press **ESC** when the following prompt appears:

```
Autoboot command: "diskboot -x -d /dev/sd0 -o100 -l5000 -a100000 --
a;g -e 1000"
```

Press <Enter> to execute or any other key to abort. Restore the server's site files as described below.

6. Verify that the four bootrom monitor variables are set as shown below:

- a. Enter **set bootaddr**

The boot address is the IP address for the TFTP server. This server runs on the MSi PC. On an 8000NS system, the correct address is the VLAN address for connection between the Server Node and the MSi PC. This command should return the following:

```
PMON> bootaddr = 10.xx.yy.z
```

This value is determined by your LAN configuration. The default value for an 8000NS is 10.64.1.5. The default value for an 8000si is 10.1.5.120.

If the value is incorrect, enter the correct value. For example `set bootaddr 10.1.5.120`

- b. Enter **set ipaddr**

The IP address is the LAN address for the server node. This command returns the following:

```
PMON> ipaddr = 10.xx.yy.z
```

This value is determined by your LAN configuration. The default value for an 8000NS is 10.64.1.3. The default value for an 8000si is 10.1.5.100.

- c. Enter **set gateway**

The Gateway is the IP address for the external router connection. This command returns the following:

```
PMON> gateway = 10.xx.yy.z
```

This value is determined by your LAN configuration. If the value is incorrect, enter the correct value.

- d. Enter **set netmask**

The netmask for MSS Network storage systems should always be set as follows:

```
PMON> netmask = 255.255.255.0
```

7. If any of the return variables are incorrect, enter the appropriate **set** command followed the correct value.

8. If variables have been changed, enter **reboot**, and press **ESC** when the following prompt appears:

```
Autoboot command: "diskboot -x -d /dev/sd0 -o100 -l5000 -a100000 -- a;g -e 1000"
```

```
Press <Enter> to execute or any other key to abort.
```

9. At the **PMON>** prompt, enter **set sbsexpert 1**.
10. Enter **netboot -f fff00000 -o 10000 pmon122vg4.elf**.
This will begin the TFTP transfer and flash of the PMON.
11. At the prompt, enter **unset sbsexpert**.
12. Enter **reboot**, which puts the changes into operation.
13. Start up the server and allow it to start normally.
14. If the system does not autoboot, at the **PMON>** prompt, enter:
diskboot -x -d/dev/sd0 -o100 -l5000 -a100000 --a;g -e 100020
15. When the system has completed reboot, press **ESC** at the following prompt:

```
Waiting 00:40 to start the MSS storage controller:
```

```
- Press <return> to start the MSS Server immediately.
```

```
- Press ESCAPE to end the timeout and bypass the MSS server startup.
```

```
{ 0:40} Waiting to start MSS Server. (<Enter>=StartNow or <ESC>=DoNotStart
```

16. At the prompt enter **installbvs -c**.
17. When the prompt returns, the process is complete. Restart the server by entering **stopams**.

ConnectPlus Gateway Upgrade

The procedure for ConnectPlus Gateway upgrade is different for 8000NS systems and 8000si systems. Verify which system you have before proceeding and see the appropriate section.

Upgrade the Gateway on an 8000NS System

The following version and system upgrades are included in this section:

- [SAN v3.20, v3.30, v3.31 and 3.32 Upgrade for a Gateway 200 on the 8000NS System](#)
- [SAN v3.19 Upgrade for a Gateway 200 on the 8000NS System](#)
- [SAN v3.20, v3.30, v3.31, 3.32 Upgrade for a Gateway 100 or IBM 335 Gateway on the 8000NS System](#)

To upgrade a gateway on an 8000Si system see “[Upgrade Gateway on an 8000Si \(Internal and/or External\)](#)” on page 52.

SAN v3.20, v3.30, v3.31 and 3.32 Upgrade for a Gateway 200 on the 8000NS System

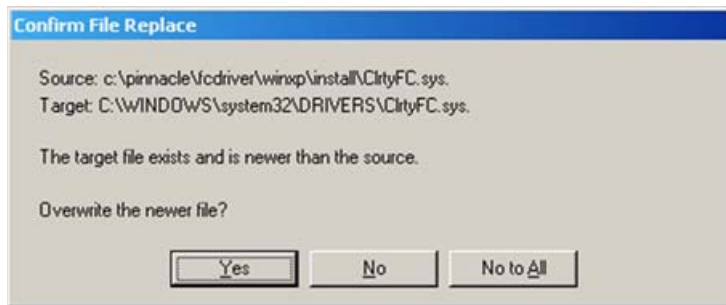
To upgrade the gateways 200 on your 8000NS system:

1. Insert the upgrade CD into the drive. The installer program should run automatically.
2. Click Next when the Welcome dialog appears.
3. Click Yes to accept the License Agreement.
4. When the Setup Type dialog appears, choose the correct PC model for your Gateway. Click Next.
5. Choose the correct system type, either 8000/900ns or 8000si. Click Next.
6. Choose the Fibre Channel Switch type for your system (choose no switch for 8000si systems). Click Next.
7. Click Install.

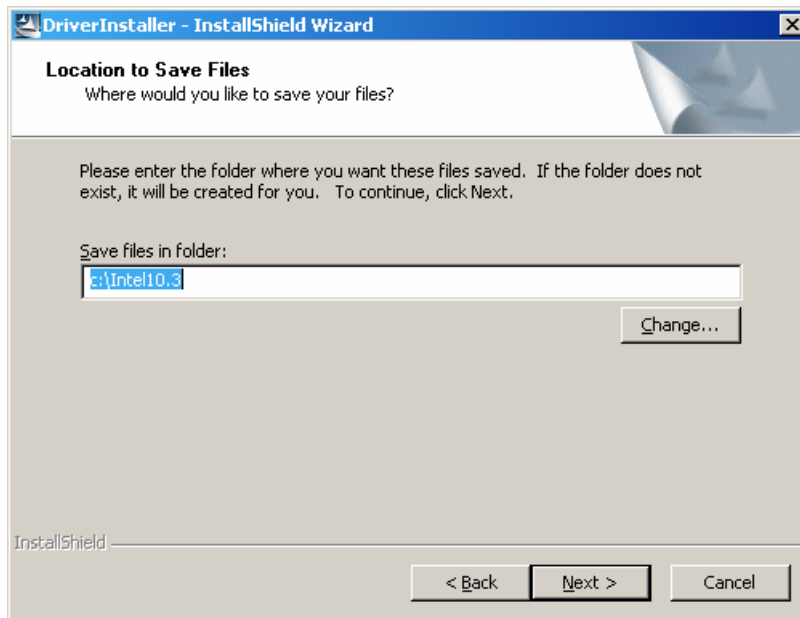


8. When the ATTO Setup dialog box appears asking you to wait for the installation to complete, click OK.
9. Click Continue Anyway when the Hardware Installation dialog box appears.

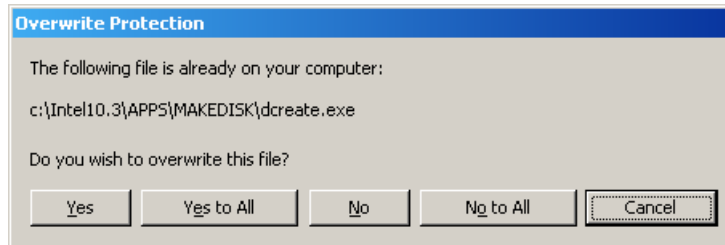
10. Click Yes to confirm that you want to replace the file.



11. When asked to reboot, click No.
12. Read the license agreement, select "I accept," and click Next.
13. Accept the default location for the "Save files in folder" and click Next.



14. When asked to overwrite the existing file, click Yes to All.



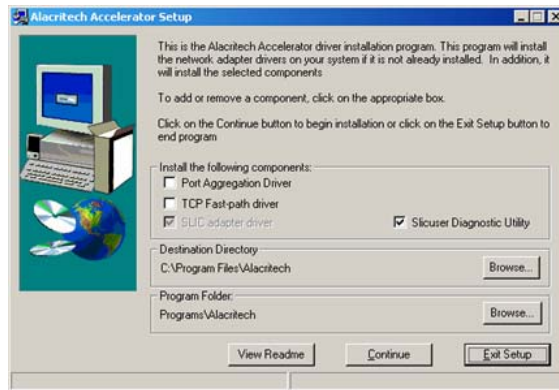
15. Click Install Drivers to start the Intel Pro Network driver installation.



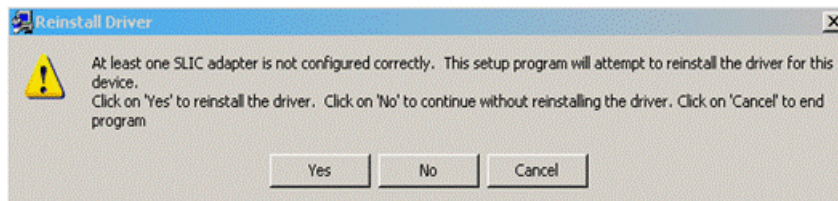
16. Click OK when the Intel Pro Network Connections Setup has completed successfully.
17. Click Exit to close the Intel Pro Network Connections screen.
18. Read the Alacritech Accelerator Setup Software License Agreement and click Yes.

19. When the Alacritech Accelerator Setup dialog box appears, click Continue to install the drivers.

If you have already installed the Alacritech Accelerator drivers this window does not appear, in this case continue with step 21.



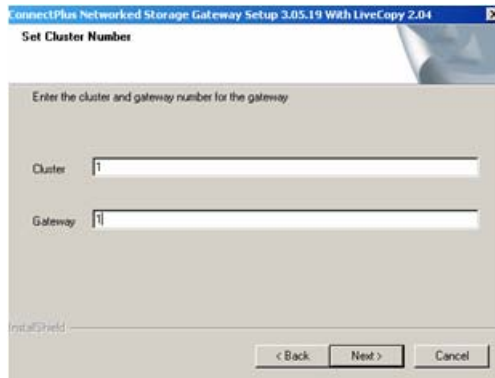
20. At the “At least one SLIC adaptec is not configured correctly” message, click Yes.



21. When the Alacritech Accelerator Setup dialog box reappears, click Exit Setup.



22. Verify the cluster number and gateway number are correct and click Next.

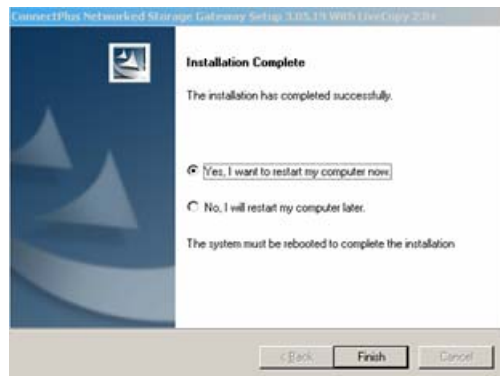


23. When prompted whether you want to run the configuration tool, click No.



It is not necessary to run the configuration tool on an upgrade. If this is a clean install, you might want to click Yes. If so, choose C when the dialog appears and enter the correct values when prompted. Call Avid MediaStream Support if you have any questions.

24. The installation finishes, and you are asked to restart the system. Select Yes and click Finish to complete the upgrade.



SAN v3.19 Upgrade for a Gateway 200 on the 8000NS System

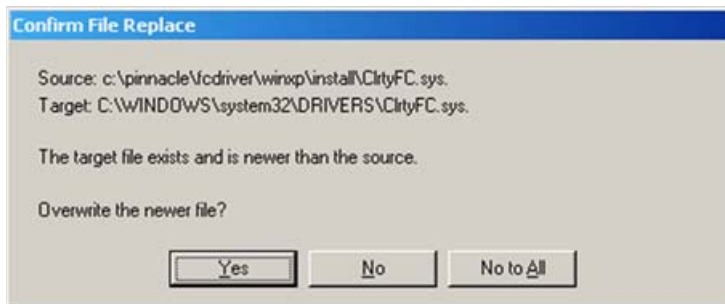
To upgrade the gateways 200 on your 8000NS system:

1. Insert the upgrade CD into the drive. The installer program should run automatically.
2. Click Next when the Welcome dialog appears.

3. Click Yes to accept the License Agreement.
4. When the Setup Type dialog appears, choose the correct PC model for your Gateway. Click Next.
5. Choose the correct system type, either 8000/900ns or 8000si. Click Next.
6. Choose the Fibre Channel Switch type for your system (choose no switch for 8000si systems). Click Next.
7. Click Install to start the ATTO driver installation.

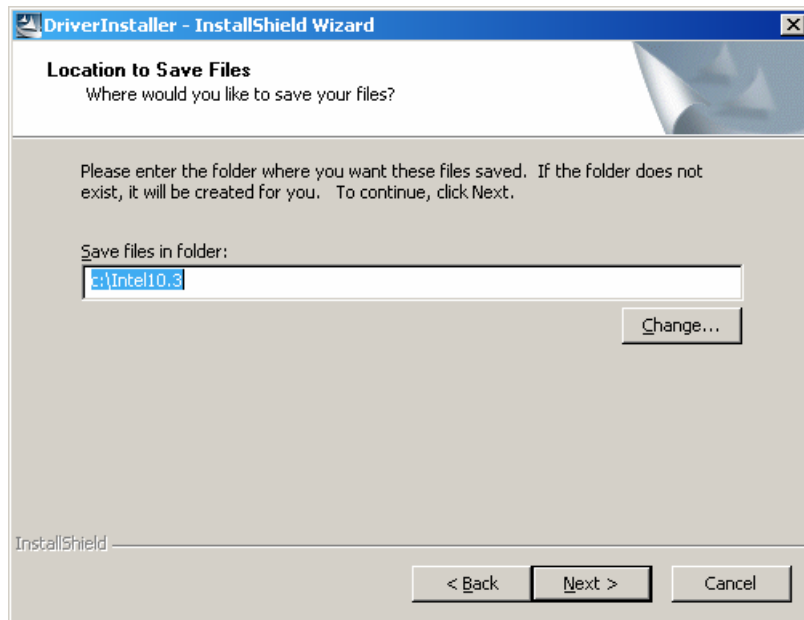


8. When the ATTO Setup dialog box appears asking you to wait for the installation to complete, click OK.
9. Click Continue Anyway when the Hardware Installation dialog box appears.
10. Click Yes to confirm that you want to replace the file.



11. When asked to reboot, click No.

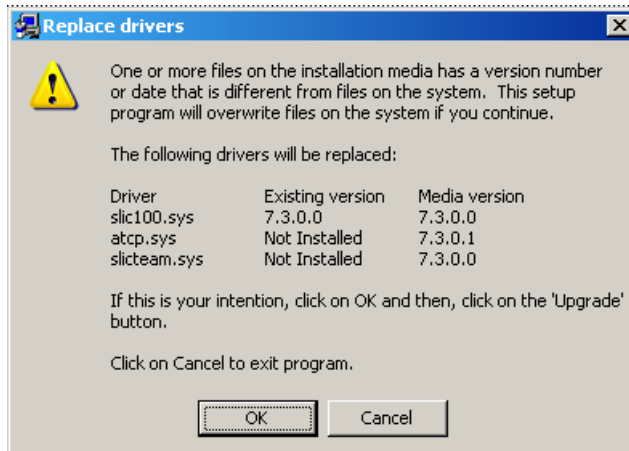
12. Read the license agreement, select “I accept,” and click Next.
13. Accept the default location for the “Save files in folder” and click Next.



14. Click Install Drivers to start the Intel Pro Network driver installation.

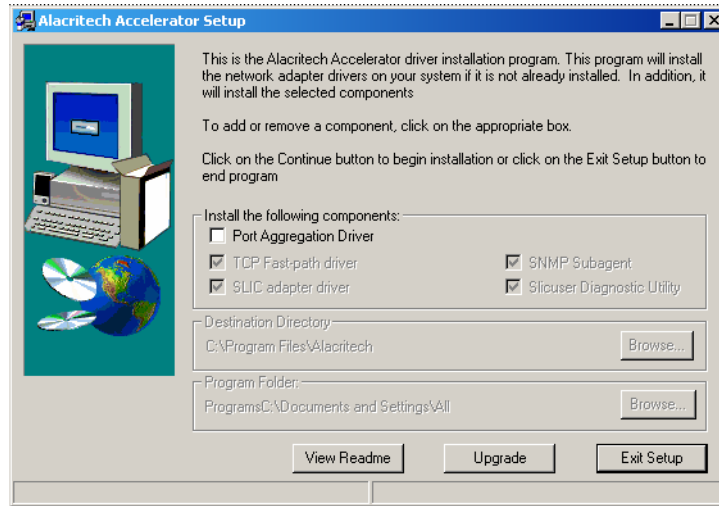


15. Click OK when the Intel Pro Network Connections Setup has completed successfully.
16. Click Exit to close the Intel Pro Network Connections screen.
17. Read the Alacritech Accelerator Setup Software License Agreement and click Yes.
18. Confirm that you want to replace the file, click OK.



19. When the Alacritech Accelerator Setup dialog box appears, click Upgrade.

If you have already installed the Alacritech Accelerator drivers this window does not appear, in this case continue with step 21.



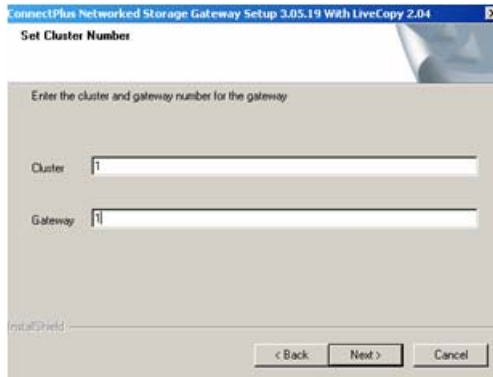
20. When asked to reboot, click No.

21. When the Alacritech Accelerator Setup dialog box reappears, click Exit Setup.



22. When asked to reboot, click No.

23. Verify the cluster number and gateway number are correct and click Next.

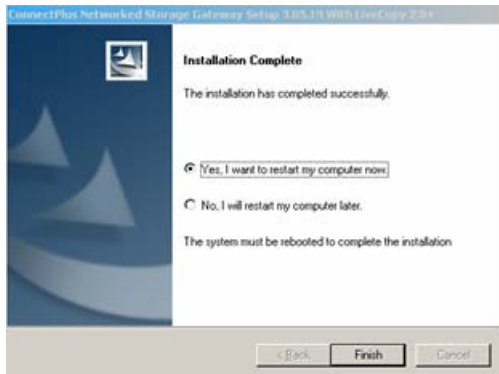


24. When prompted whether you want to run the configuration tool, click No.



It is not necessary to run the configuration tool on an upgrade. If this is a clean install, you might wish to click Yes. If so, choose C when the dialog appears and enter the correct values when prompted. Call MediaStream Support if you have any questions.

25. The installation finishes, and you are asked to restart the system. Select Yes and click Finish to complete the upgrade.

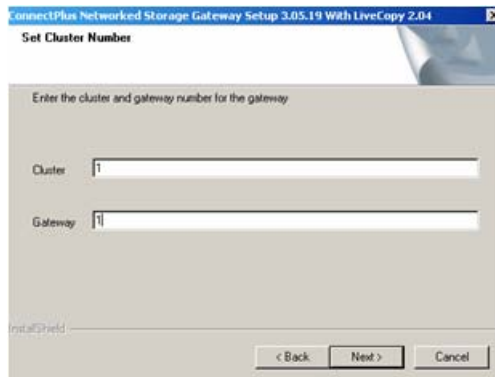


SAN v3.20, v3.30, v3.31, 3.32 Upgrade for a Gateway 100 or IBM 335 Gateway on the 8000NS System

To upgrade the gateways 100 or IBM 335 on your 8000NS system:

1. Insert the upgrade CD into the drive. The installer program should run automatically.
2. Click Next when the Welcome dialog appears.

3. Click Yes to accept the License Agreement.
4. When the Setup Type dialog appears, choose the correct PC model for your Gateway. Click Next.
5. Choose the correct system type, either 8000/900ns or 8000si. Click Next.
6. Choose the Fibre Channel Switch type for your system (choose no switch for 8000si systems). Click Next.
7. If the Digital Signature Not Found dialog appears, Click Yes.
8. Verify the cluster number and gateway number are correct and click Next.

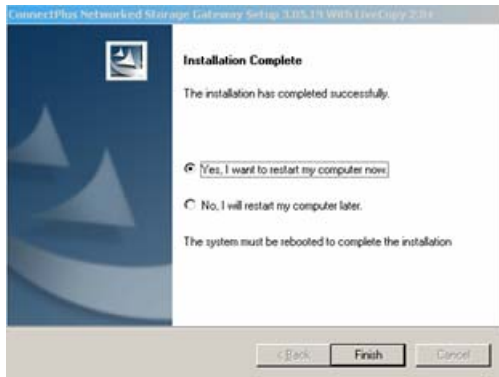


9. When prompted whether you want to run the configuration tool, click No.



It is not necessary to run the configuration tool on an upgrade. If this is a clean install, you might wish to click Yes. If so, choose C when the dialog appears and enter the correct values when prompted. Call Avid MediaStream Support if you have any questions.

10. The installation finishes, and you are asked to restart the system. Select Yes and click Finish to complete the upgrade.



Upgrade Gateway on an 8000Si (Internal and/or External)

To upgrade a gateway on an 8000NS system see [“Upgrade the Gateway on an 8000NS System”](#) on page 41.



This procedure describes installation of the gateway. Your system might have an internal gateway and/or an external gateway. The procedure for installation is essentially the same.

To upgrade any ConnectPlus Gateways on your 8000Si system:

1. Insert the upgrade CD into the drive. The installer program should run automatically.
2. Click Next when the Welcome screen appears.
3. When the License Agreement appears, read the agreement carefully. If you agree to accept it, click Yes.
4. When the Setup Type dialog appears asking you to “Choose the model of gateway PC you are installing;” select MSi for an internal Gateway; select Intel Xenon 2.8GHz (Gateway 100) for an external gateway. Click Next.

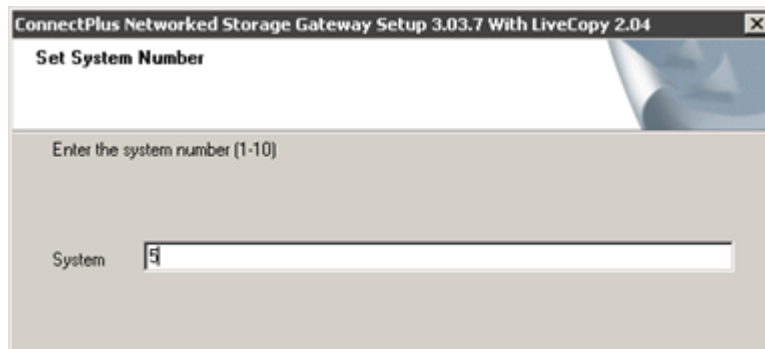


If you have an older IBM style PC gateway, select IBM 335 or IBM 330. If you are unsure, call Avid MediaStream Support.

5. When the Setup Type dialog appears asking you to “Choose the system type:” select 8000si, then click Next.
6. Select No Switch at the Setup Type Dialog.
7. If the Digital Signature Not Found dialog appears, choose yes and click Next.

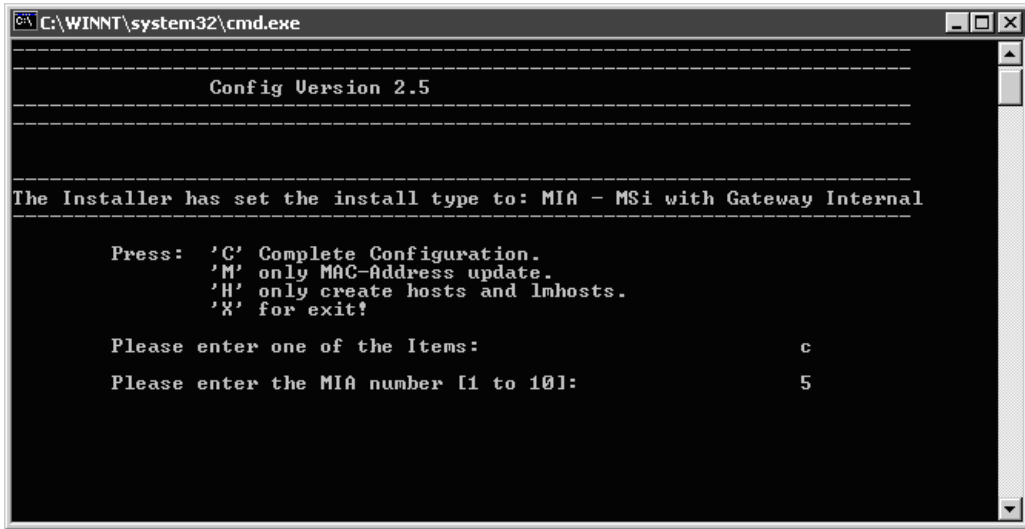
8. The installation begins. When the Welcome to the Microsoft XML Parser Setup wizard screen appears, click Next.
9. Read the License Agreement that appears for Microsoft XML Parser. If you agree to the terms, click Yes.
10. Enter your username and organization name. Click Next.
11. Click Install to install the XML Parser.
12. Click Finish to finish installation of Microsoft XML Parser.
13. If this is your first installation of the gateway, click Yes to accept the start of the configuration tool. If you are updating software and do not want to change your configuration settings, click No to decline the start of the tool.
14. If the Set System Number dialog appears on the System text entry line, enter the system number (between 1 and 10). Click Next.

This dialog only appears on a fresh install.



This is the number of the 8000si system in your facility. This number must match the system number you chose when you configured your FSC (see “[FSC Networking Values](#)” on [page 29](#)). The System number will determine host names for the gateway(s) connected to the 8000si server. If you are unsure of the value to enter here, consult with Avid MediaStream Support.

15. The Configuration Tool begins (if you clicked Yes in the preceding step). When prompted enter **c** for complete configuration.



```
C:\WINNT\system32\cmd.exe

Config Version 2.5

The Installer has set the install type to: MIA - MSi with Gateway Internal

Press: 'C' Complete Configuration.
      'M' only MAC-Address update.
      'H' only create hosts and lnhosts.
      'X' for exit!

Please enter one of the Items:                c
Please enter the MIA number [1 to 10]:        5
```

16. At the next prompt for system number, enter the number you previously entered in step 14.



For internal gateways the prompt will ask for the MIA number; for external gateways the prompt will ask for the GWS number. In both cases, this number refers to the system number entered in step 14.

17. The configuration tool completes its changes. Verify that the total of all errors is 0 at the end of the script.



The configuration tool assumes you are setting your system up in a default configuration. If this is not the case, consult with your system administrator or Avid MediaStream Support for assistance.

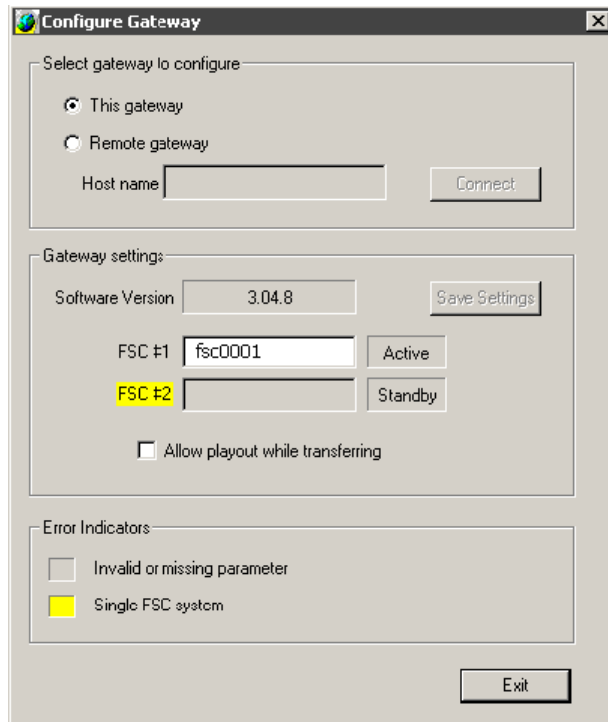
18. Reboot the PC to complete installation.

Gateway Configuration (8000si)

To upgrade a Gateway on an 8000si system see [“Upgrade Gateway on an 8000Si \(Internal and/or External\)”](#) on page 52.

To set or verify configuration parameters for the gateway on an 8000Si system:

- Double-click on the ConnectConfig shortcut on the desktop.



On an MSS 8000si system, the dialog will only have an entry for one FSC (fsc0001).

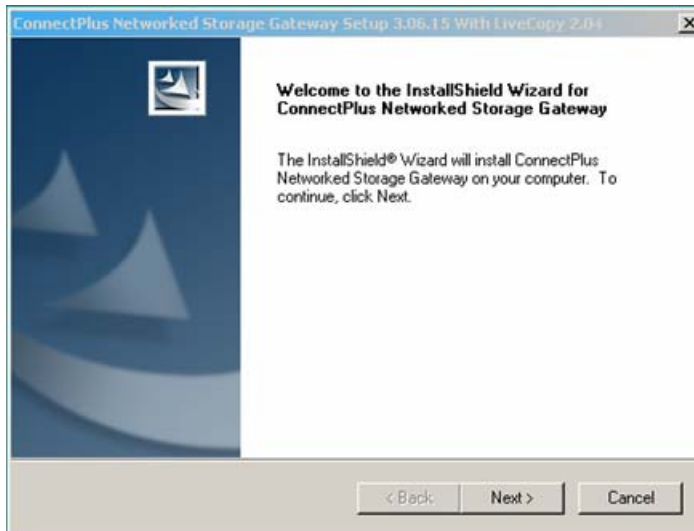
The Configure Utility automatically configures all machine specific settings for networking, communication and application initialization. This application is especially important to run since each gateway requires specific network settings.

The Configure application automatically performs the settings required to make each gateway unique within the overall system architecture. It is a good idea to run this application after any system upgrades.

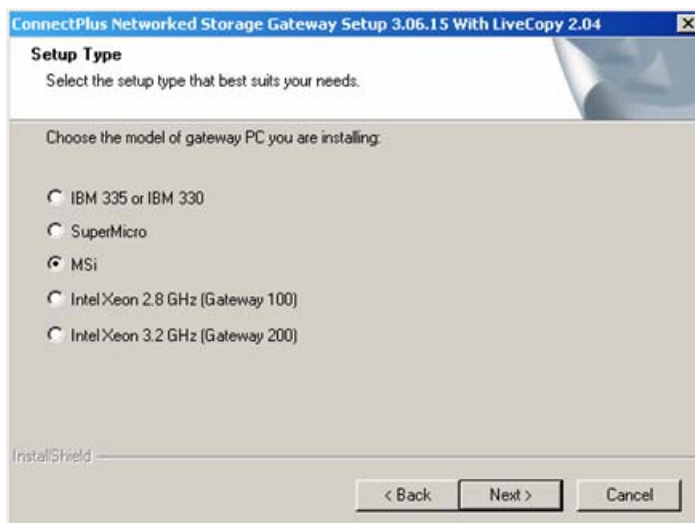
Combination MSi/Gateway Upgrade

To upgrade the MSi/gateway combination system:

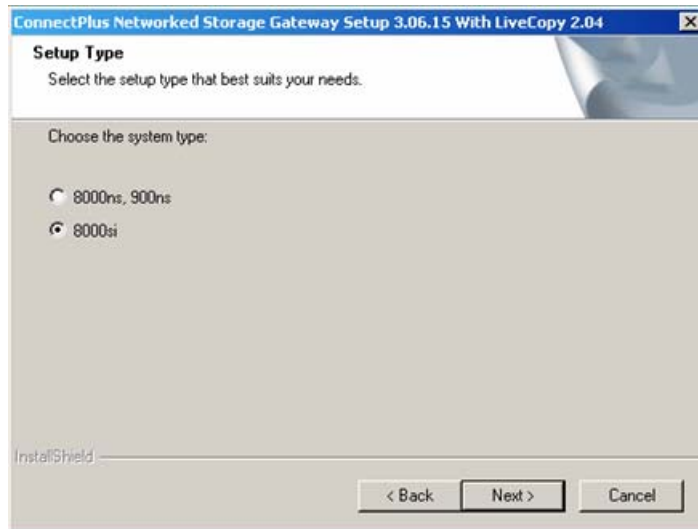
1. Insert the upgrade CD.
2. Click Next when the Welcome screen appears.



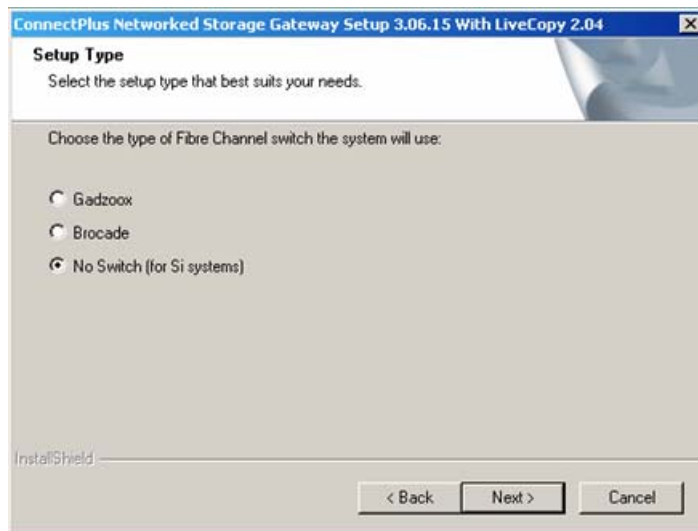
3. Read the license agreement and click Yes.
4. When the first Setup Type dialog appears, select the MSi and click Next.



5. When the second Setup Type dialog appears, select the 8000si and click Next.



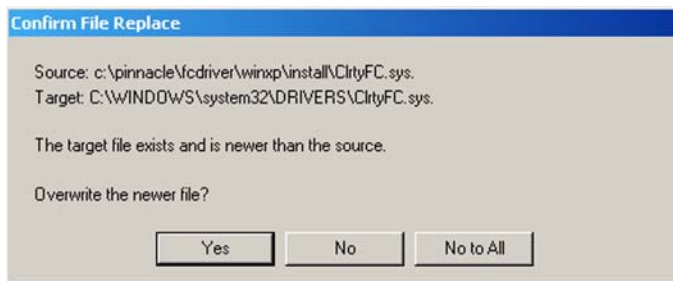
6. When the third Setup Type dialog appears, select the No Switch and click Next.



7. Click Install at the ATTO Driver Installer screen.

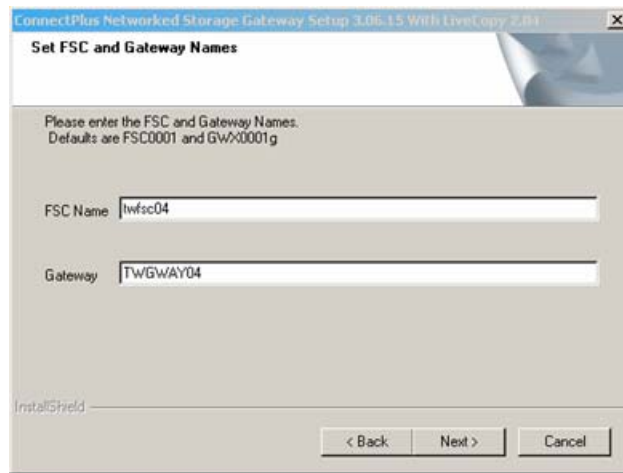


8. When the ATTO Setup dialog box appears asking you to wait for the installation to complete, click OK.
9. Click Continue Anyway when the ATTO Hardware Installation screen appears.
10. Confirm that you want to replace the file, click Yes.



11. Click Yes to restart the system.

12. When the Set FSC and Gateway Names screen appears, type in the FSC name and gateway name and click Next.

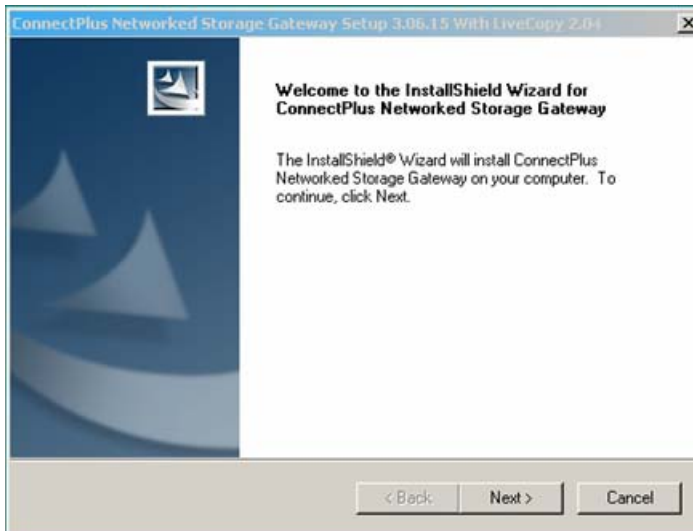


13. When asked if you want to run the Configuration Tool, click No.
14. Click Finish to restart the computer when the Installation Complete screen appears.

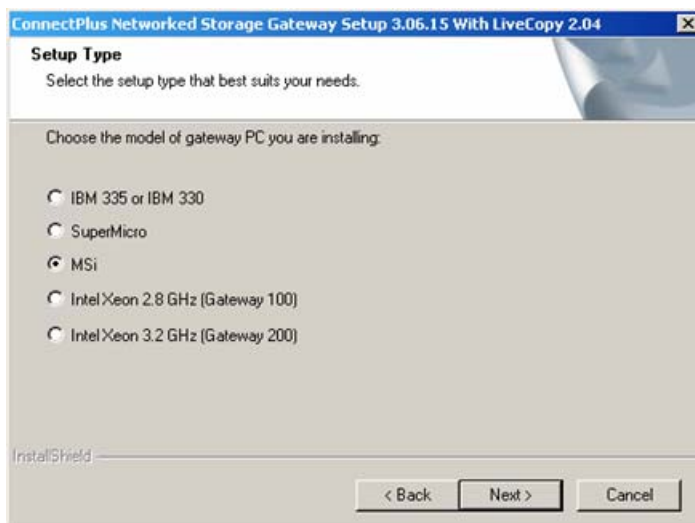
Combination MSi/Gateway New Install

To install the software on the MSi/gateway combination system:

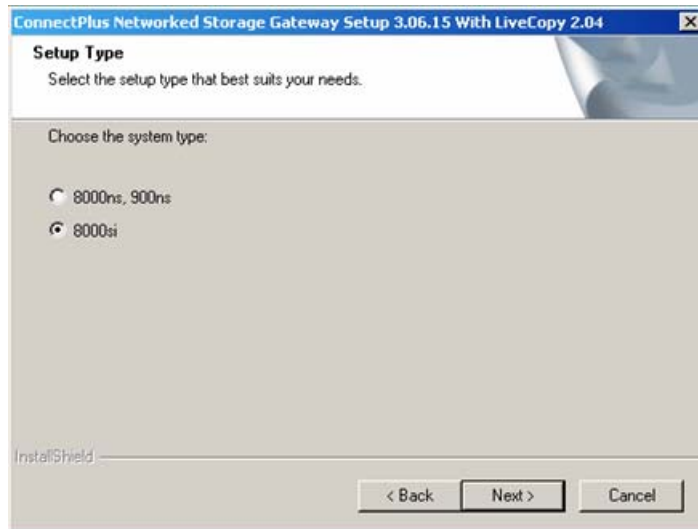
1. Insert the software CD into the MSi/gateway system.
2. Click Next when the Welcome screen appears.



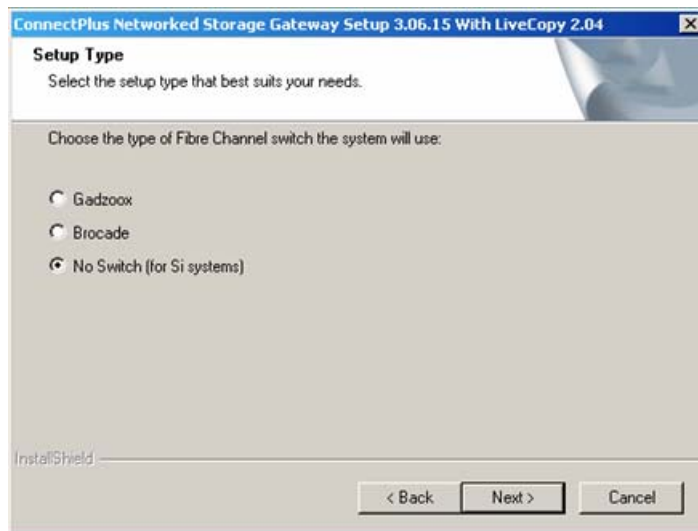
3. Read the license agreement and click Yes.
4. When the first Setup Type dialog appears, select the MSi and click Next.



5. When the second Setup Type dialog appears, select the 8000si and click Next.



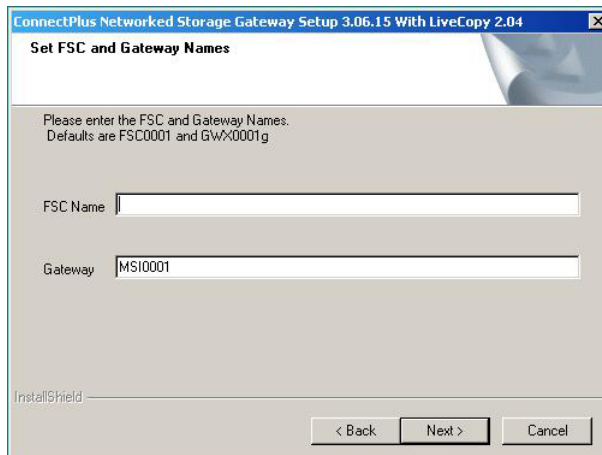
6. When the third Setup Type dialog appears, select the No Switch and click Next.



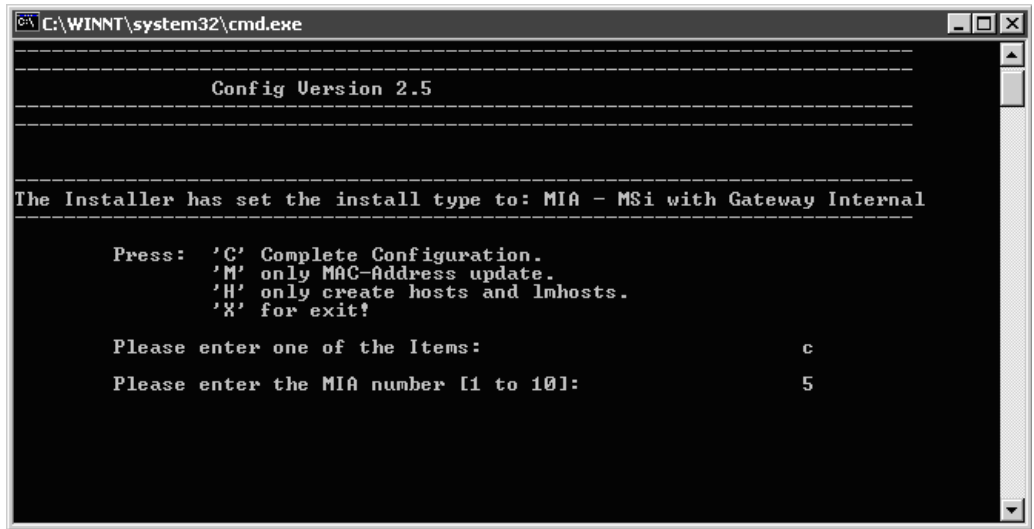
7. Click Install at the ATTO Driver Installer screen.



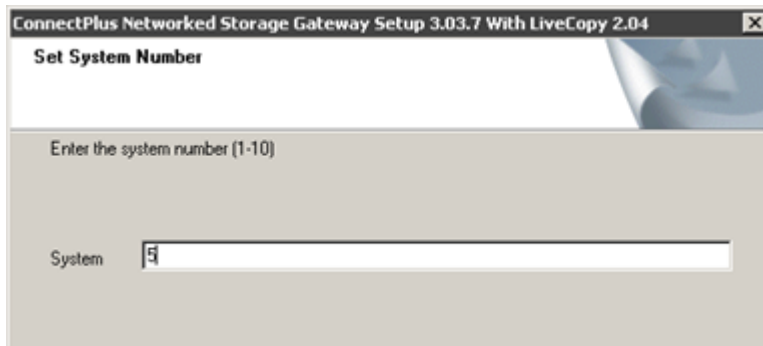
8. When the ATTO Setup dialog box appears asking you to wait for the installation to complete, click OK.
9. Click Continue Anyway when the ATTO Hardware Installation screen appears.
10. Click OK when the ATTO Windows driver installation has completed successfully.
11. Click Install to install the Microsoft XML Parser.
12. Click Next to continue with the setup wizard.
13. Read the License Agreement and select “I accept the terms in the License Agreement” and click Next.
14. Type **Pinnacle** in both the User Name and Organization text boxes and click Next.
15. Click Install.
16. Click Finish to complete the Microsoft XML Parser setup.
17. When the Set FSC and Gateway Names screen appears, type **FSC0001** in the FSC Name text box and type **MSIC0001** for the Gateway text box and click Next.



18. When prompted whether you want to run the configuration tool, click Yes.
19. The Configuration Tool begins, when prompted enter **C** for complete configuration.

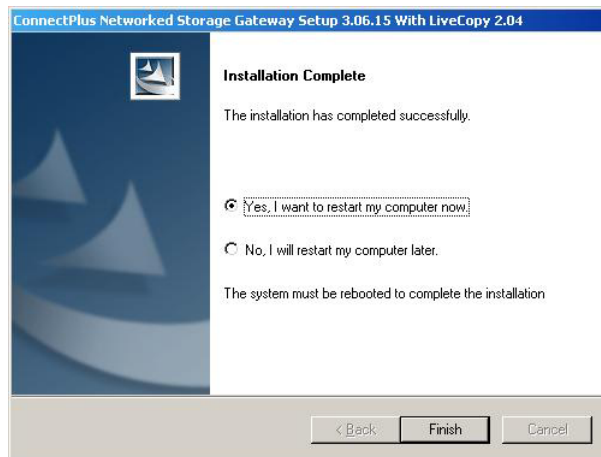


20. The Set System Number dialog appears on the System text entry line, enter the system number (between 1 and 10). Click Next.



This is the number of the 8000si system in your facility. This number must match the system number you chose when you configured your FSC (see “FSC Networking Values” on page 29). The System number will determine host names for the gateway(s) connected to the 8000si server. If you are unsure of the value to enter here, consult with Avid MediaStream Support.

21. When the Installation Complete screen appears, remove the software CD from the CD-ROM drive and click Finish to restart the MSi/gateway system.



Chapter 4

Palladium Store 1000 Firmware Upgrade

The Palladium Store 1000 storage system is the last component to upgrade in the MediaStream Systems. The SAN software must have already been upgraded to release the current release. Check your release notes or [“Introduction” on page 9](#). Use the `revisions -a` command to verify the revision number.

To upgrade the Palladium Store 1000 storage system:

1. Verify that the MSi application is off. (Performing the upgrade with the MSi running will cause a system crash.) Also, shut down all Connect Plus 1000s attached to the cluster.
2. Enter the following command:

```
sand_state -s
```

Verify that the entry for Fibre Channel Driver State returns; `0x0000000F [FCSA_READY]`. This indicates that the Fibre Channel paths are up and logged into the arrays on all nodes, there is a command entry for each controller.

The output should be similar to the following:

```
[root@1001 /bvs] sand_state -s
items 0x1e fcsa_rmgr.numBlocks 0xa fcsa_rmgr.blockSize 0x180000
```

```
-----
Driver Build Information:
```

```
-----
Driver Revision: 1.7
Build Date: Fri Oct 19 14:35:25 PDT 2001
Built By: dlow@vidux066
Build Directory: /users/steam/SANrelease
-----
```

```
Driver State Information:
```

```
-----
Fibre Channel Driver State: 0x0000000F [FCSA_READY]
Tachyon Configuration Register: 0x40000A00
Tachyon Status Register: 0x00001016
Tachyon ee_cr_0_tmr: 0x00000000
Tachyon bb_cr_0_tmr: 0x000001E7
Frame Manager Config Register: 0x72000200
Frame Manager Status Register: 0x98000000
Frame Manager TOV Register: 0x00000000
Frame Manager Link Err Stat 1: 0x00000000
Frame Manager Link Err Stat 2: 0x00000000
Frame Manager WWNHI: 0x00010800
Frame Manager WWNLO: 0x09D40E40
items 0x1e fcsa_rmgr.numBlocks 0xa fcsa_rmgr.blockSize 0x180000
-----
```

```
Driver Build Information:
```

```
-----
Driver Revision: 1.7
Build Date: Fri Oct 19 14:35:25 PDT 2001
Built By: dlow@vidux066
Build Directory: /users/steam/SANrelease
-----
```

```
Driver State Information:
```

```
-----
Fibre Channel Driver State: 0x0000000F [FCSA_READY]
Tachyon Configuration Register: 0x40000A00
Tachyon Status Register: 0x00001016
Tachyon ee_cr_0_tmr: 0x00000000
Tachyon bb_cr_0_tmr: 0x0000003E
Frame Manager Config Register: 0x71000200
Frame Manager Status Register: 0x98000000
Frame Manager TOV Register: 0x00000000
Frame Manager Link Err Stat 1: 0x00000000
Frame Manager Link Err Stat 2: 0x00000000
Frame Manager WWNHI: 0x00010800
Frame Manager WWNLO: 0x09D40E41
```

3. Enter the following command:

```
ps1000fwdownload array0x /bvs/firmware/SR12.MOT
```

where *array0x* is the ID for the array, such as *array02*. Examine the output for errors; if any are found, contact Avid MediaStream Support before proceeding.



Arrays always begin numbering with array02 on an 8000NS or 8000Si system.

4. If the PS 1000 beeps during the download, press the middle button on its front panel to silence the beep. The lower LCD window might display IDs. As the procedure continues, Controller 2 download will begin following success on Controller 1. Press the middle button on the front panel to silence the beep when it occurs again.
5. When download is finished (approximately 15 minutes), remove the PS 1000 front panel to verify that no LEDs are red.



If any LEDs are red, contact Avid MediaStream Support.

For information on the PS 1000 front panel and other hardware features, consult the *MediaStream Server 8000 Site Preparation, Installation and Reference Guide* or *MediaStream Server 8000Si Site Preparation, Installation and Reference Guide*.

6. Enter the **check_mode_pages array0x -s** command to verify the upgrade, where *array0x* is the ID for the array, such as *array02*.



The -s command flag is not used for 8000si upgrade.

If the upgrade has been successful, output similar to the following is displayed:

```
Checking mode pages on device /dev/fcdss0102: Medea Medea.

*****
# Controller 1 PASSED !!! #
*****

*****
# Controller 2 PASSED !!! #
*****
```



If you have an 8000si with a single controller, only one controller will be identified.

If you do not receive similar output for both controllers in response to the `check_mode_pages` command, enter the following command for the controller(s) that had errors:

```
scsi_set_mode array0x -I y -d
```

where *array0x* is the ID for the array, such as *array02*, and *y* is the number of the controller. Check the output for errors; if any are found, contact Avid MediaStream Support.

7. Repeat steps 2 to step 6 for each additional array.
8. Verify that the drive log pages are cleared on the first controller by entering the following commands:

```
array_services -I1 -l11 array0x
```

```
array_services -I1 -l12 array0x
```

where *array0x* is the ID for the array, such as *array02*. Note that the first option, specifying controller 1, begins with a capital letter I, while the second option begins with a lower-case letter L.

9. If either command displays contents showing dropouts and timeouts not equal to 0, on the log page, clear the page with the following command:

```
array_services -I1 -cyy array0x
```

where *array0x* is the ID for the array, and *yy* is the number of the page you want to clear.

10. Repeat the above commands for the second controller as follows:

```
array_services -I2 -l11 array0x
```

```
array_services -I2 -l12 array0x
```

where *array0x* is the ID for the array, such as *array02*.



Do not run this command for firmware upgrade on an 8000si.

11. If either command displays contents showing dropouts and timeouts not equal to zero on a log page, clear the page with the following command:

```
array_services -I2 -cyy array0x
```

where *array0x* is the ID for the array, and *yy* is the number of the page you want to clear.

12. Repeat step 8 to step 11 for each additional array.

The upgrade procedure is now complete.

Run RAID Patrol Utility

Run the RAID Patrol utility to check your array for problems after a firmware upgrade. RAID Patrol requires that the system be off-air, and can take several hours to complete.

To RAID Patrol utility:

1. Set the reconstruct DMA timeout to 1000 on each controller with these commands:

```
scsi_set_mode array0x -I1 -j1000
```

```
scsi_set_mode array0x -I2 -j1000
```

where *array0x* is the name of the array, such as “array02.”

2. Enter this command to start RAID Patrol:

```
array_services -K array0x
```

where *array0x* is the name of the array, such as “array02.”

The RAID Patrol should run for up to three hours on a set of 120GB drives, or five hours for 250GB drives. To check the status, enter `array_services array0x` and check for lines like the following:

```
Rebuild Bank A: Active (0% done) Drive: 1
```

```
Rebuild Bank B: Not Active
```

3. When the RAID Patrol finishes, enter these commands to set the DMA timeout back to the default on each controller:

```
scsi_set_mode array0x -I1 -j550
```

```
scsi_set_mode array0x -I2 -j550
```

If you have more than one array, repeat the procedure on each one, substituting the correct array number for “array 0x” in the commands.

