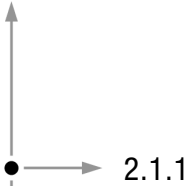




UIM

UNIVERSAL INTERFACE MODULE

Instruction Manual



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FEBRUARY 2008

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Finding Information

About this manual

This user manual describes the Universal Interface Module (UIM) and provides instructions for installing and operating the product in a variety of applications.

How this manual is organized

This manual is organized around the tasks required to install, configure, and operate the Universal Interface Module. The following describes the chapters included in this manual:

Chapter 1, *Version 2.1.1 Release Information* — Contains the latest information about the Universal Interface Module software Version 2.x.x. The information includes software upgrade instructions, software specifications and requirements, feature changes from previous releases, and any known problems.

Chapter 2, *Product Description* — Provides an introduction to the UIM product line. This chapter describes both the IP UIM and SCSI UIM functional descriptions.

Chapter 3, *UIM-DIS-GEIP Installation: Standalone Profile Storage* — Contains the procedure for connecting and configuring the UIM for operation with a Profile system using locally connected storage.

Chapter 4, *UIM-SAN-GEIP Installation: Grass Valley Open SAN System* — Contains the procedure for connecting and configuring the UIM for operation in a Grass Valley Open SAN Shared Storage system.

Chapter 5, *UIM-SAN-FCIP Installation: Grass Valley Open SAN System* — Contains the procedure for connecting and configuring the UIM for operation in a Grass Valley Open SAN Shared Storage system with an existing FC IP infrastructure.

Chapter 7, *Information for application developers* — Contains information that developers of third party applications can use to manage transfers through the UIM.

Chapter 6, *Service Information* — Contains information for maintaining and servicing the UIM. Included are service procedures for backing up and restoring the UIM system disk image.

Appendix A, *Upgrading Existing Profile Systems for Deployment with the UIM-DIS-GEIP* — Provides instructions for upgrading previously installed standalone Profile systems for redeployment with the IP UIM.

Using the Dell Server documentation

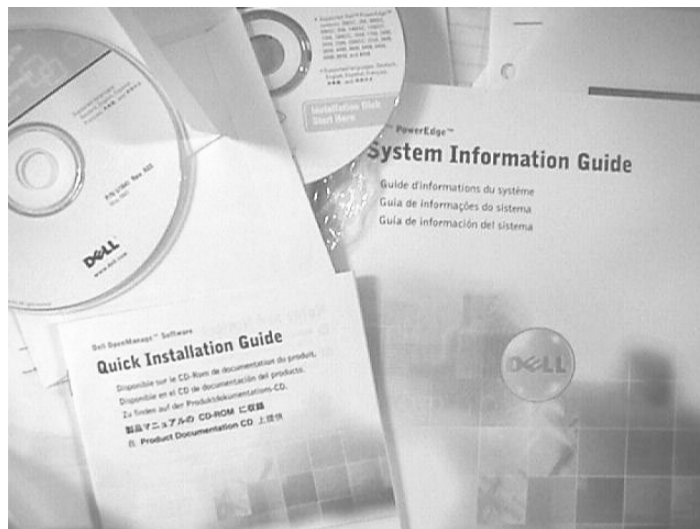
This manual contains all of the information you need to install the UIM, however, a full set of Dell server documentation has been provided on the *Dell Product Documentation* CD-ROM. Refer to the documents on this CD-ROM only as required by procedures in this manual.

Information referenced on the *Dell Product Documentation* CD-ROM includes, but is not limited to:

- Unpacking and rack-mounting the server
- Important safety and regulatory information
- Server Status indicators, messages, and error codes
- Troubleshooting help for the Dell server hardware.



CAUTION: Do not use the Dell Quick Installation Guide provided with the Dell CD-ROM package. This guide includes instructions for using the OpenManage software CD-ROM to install an operating system. The UIM comes fully configured and is ready for installation. To begin installation, refer to one of the installation chapters in this manual.



Getting more information

In addition to this manual, information is available in the following locations.

Thomson Grass Valley web site

www.thomsongrassvalley.com

The Thomson Grass Valley web site provides the following:

Online User Documentation

Current versions of product catalogs, brochures, data sheets, manuals, and release notes in *.pdf* format can be downloaded.

FAQ Database

Solutions to problems and troubleshooting efforts can be found by searching our Frequently Asked Questions (FAQ) database.

Dell web site

This public Web site contains all the latest manuals and documentation, and additional support information for the Dell Server used to implement the Universal Interface Module. Use the following URL.

<http://www.dell.com>

Grass Valley Product Support

To get technical assistance, check on the status of a question, or to report new issue, contact Grass Valley Product Support via e-mail, the Web, or by phone or fax.

Web Technical Support

To access support information on the Web, visit the product support Web page on the Grass Valley Web site. You can download software or find solutions to problems by searching our Frequently Asked Questions (FAQ) database.

World Wide Web: <http://www.thomsongrassvalley.com/support/>

Technical Support E-mail Address: gvgtechsupport@thomson.net.

Phone Support

Use the following information to contact product support by phone during business hours. Afterhours phone support is available for warranty and contract customers.

International (France)	+800 80 80 20 20 +33 1 48 25 20 20	Italy	+39 02 24 13 16 01 +39 06 87 20 35 42
International (United States, Canada)	+1 800 547 8949 +1 530 478 4148	Belarus, Russia, Tadzikistan, Ukraine, Uzbekistan	+7 095 258 09 20 +33 (0) 2 334 90 30
Hong Kong, Taiwan, Korea, Macau	+852 2531 3058	Indian Subcontinent	+91 11 515 282 502 +91 11 515 282 504
Australia, New Zealand	+61 1300 721 495	Germany, Austria, Eastern Europe	+49 6150 104 444
Central, South America	+55 11 5509 3440	Near East, Africa	+33 1 48 25 20 20
China	+861 066 0159 450	Netherlands	+31 (0) 35 62 38 421
Belgium	+32 (0) 2 334 90 30	Northern Europe	+45 45 96 88 70
Japan	+81 3 5484 6868	Singapore	+65 6379 1313
Malaysia	+603 7805 3884	Spain	+41 487 80 02
Middle East	+971 4 299 64 40	UK, Ireland, Israel	+44 118 923 0499

Authorized Support Representative

A local authorized support representative may be available in your country. To locate the support representative for your country, visit the product support Web page on the Grass Valley Web site.



END-OF-LIFE PRODUCT RECYCLING NOTICE

Grass Valley's innovation and excellence in product design also extends to the programs we've established to manage the recycling of our products. Grass Valley has developed a comprehensive end-of-life product take back program for recycle or disposal of end-of-life products. Our program meets the requirements of the European Union's WEEE Directive, the United States Environmental Protection Agency, and U.S. state and local agencies.

Grass Valley's end-of-life product take back program assures proper disposal by use of Best Available Technology. This program accepts any Grass Valley branded equipment. Upon request, a Certificate of Recycling or a Certificate of Destruction, depending on the ultimate disposition of the product, can be sent to the requester.

Grass Valley will be responsible for all costs associated with recycling and disposal, including freight. However, you are responsible for the removal of the equipment from your facility and packing the equipment to make it ready for pickup.



For further information on the Grass Valley product take back system please contact Grass Valley at + 800 80 80 20 20 or +33 1 48 25 20 20 from most other countries. In the U.S. and Canada please call 800-547-8949 or 530-478-4148, and ask to be connected to the EH&S Department. Additional information concerning the program can be found at: www.thomsongrassvalley.com/environment



Safety Summaries

General Safety Summary

Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it.

Only qualified personnel should perform service procedures.

While using this product, you may need to access other parts of the system. Read the *General Safety summary* in other system manuals for warnings and cautions related to operating the system.

Injury Precautions

Use Proper Power Cord

To avoid fire hazard, use only the power cord specified for this product.

Ground the Product

This product is grounded through the grounding conductor of the power cord. To avoid electric shock, the grounding conductor must be connected to earth ground. Before making connections to the input or output terminals of the product, ensure that the product is properly grounded.

Do Not Operate Without Covers

To avoid electric shock or fire hazard, do not operate this product with covers or panels removed.

Do Not operate in Wet/Damp Conditions

To avoid electric shock, do not operate this product in wet or damp conditions.

Do Not Operate in an Explosive Atmosphere

To avoid injury or fire hazard, do not operate this product in an explosive atmosphere.

Avoid Exposed Circuitry

To avoid injury, remove jewelry such as rings, watches, and other metallic objects. Do not touch exposed connections and components when power is present.

Product Damage Precautions

Use Proper Power Source

Do not operate this product from a power source that applies more than the voltage specified.

Provide Proper Ventilation

To prevent product overheating, provide proper ventilation.

Do Not Operate With Suspected Failures

If you suspect there is damage to this product, have it inspected by qualified service personnel.

Battery Replacement

To avoid damage, replace only with the same or equivalent type. Dispose of used battery according to the circuit board manufacturer's instructions.

Safety Terms and Symbols

Terms in This Manual

These terms may appear in this manual:



WARNING: *Warning statements identify conditions or practices that can result in personal injury or loss of life.*



CAUTION: *Caution statements identify conditions or practices that may result in damage to equipment or other property, or which may cause equipment crucial to your business environment to become temporarily non-operational.*

Service Safety Summary



WARNING: *The service instructions in this manual are intended for use by qualified service personnel only. To avoid personal injury, do not perform any servicing unless you are qualified to do so. Refer to all safety summaries before performing service.*

Do Not Service Alone

Do not perform internal service or adjustment of this product unless another person capable of rendering first aid and resuscitation is present.

Disconnect Power

To avoid electric shock, disconnect the main power by means of the power cord or, if provided, the power switch.

Use Care When Servicing With Power On

Dangerous voltages or currents may exist in this product. Disconnect power and remove battery (if applicable) before removing protective panels, soldering, or replacing components.

To avoid electric shock, do not touch exposed connections

Certifications and Compliances

Refer to the vendor's *System Information* document provided with the server for important safety and regulatory information.

Chapter **1**

Version 2.1.1 Release Information

Information in the chapter includes:

- “What’s new”
- “Operational considerations”
- “Software requirements”
- “Installing UIM System Software”
- “Virus software support”
- “Performing critical Windows updates”
- “Known problems”

What's new

This release supports the following improvements to the UIM:

- **Dell 1950.** UIMs are supported on the Dell 1950 PowerEdge server. Later sections of this manual illustrate connections for this type of system. If you must replace your UIM server as part of a service procedure, be sure to use the appropriate CD-ROM to restore the system drive image. On the Dell 1950, do not use a CD-ROM labeled for a previous Dell PowerEdge server, such as a 2650 or a 2850.
- **MXF enhancement.** MXF now supports D10 user data.
- **Windows operating system update.** Windows Server 2003 is supported on the Dell 1950.

Operational considerations

Use the following information in planning the operation and installation of the UIM.

Profile system and UIM-DIS-GEIP power-on sequence

When a point to point (private) connection is used between the Profile XP Media Platform and the UIM-DIS-GEIP, you must always power-on the UIM before the Profile XP platform. The Profile Fibre Channel adapter must detect a valid Fibre Channel signal at boot time, otherwise, streaming will be disabled and attempts to transfer files will fail. These errors will be reported to the *profile.log* file.

Enable Fibre Channel network TCP checksums

When configuring Profile XP Media Platform or Profile PDR Series Video Servers, you must enable TCP checksums on the Fibre Channel Network adapter. For instructions, refer to the Fibre Channel Networking chapter in the *Profile XP Media Platform System Guide* or *Profile Family User Manual*.

1000BT Ethernet port settings

The four port 1000BT Ethernet adapter provides the option of redundant Ethernet connections. The four ports are configured as two fault tolerant teams for failover, two ports per team. One team named Control Team is used to connect to the LAN used by Profile storage for command and control. The other team, named Streaming Team is used to connect to the 1000BT Ethernet infrastructure for streaming media to other devices.

The following table describes some of the key settings for the ports that make up the fault tolerance teams.

Settings for each port in the team	Intel Port A and Port B	Intel Port C and Port D
Link Speed and Duplex	100Mbps/Full Duplex	Auto Detect
Offload Receive IP Checksum	Off	On
Offload Receive TCP Checksum	Off	On
Offload Transmit IP Checksum	Off	On

Settings for each port in the team	Intel Port A and Port B	Intel Port C and Port D
Offload Transmit TCP Checksum	Off	On

Redundant Ethernet network requirements

The UIM supports automatic redundancy for the Ethernet connections by providing two adapter fault tolerance (AFT) teams for failover. Two Ethernet adapters comprise each AFT team. If the primary Ethernet port in a team loses network connectivity, the secondary port connected to the redundant network is used.

When redundant Ethernet network topologies are used, you must ensure each adapter in the team is connected to a different switch. Also, the Ethernet switches must support Spanning Tree Protocol (STP). Check with your network administrator to verify the following STP requirements are met to support teaming for failover.

Ethernet switch Spanning Tree Protocol (STP) setup:

- Enable **STP** on all inter-switch links, that is, the ports connecting the primary and redundant switch fabric. This prevents unwanted network loops while maintaining path redundancy.
- Enable **FAST Port STP**, on all switch ports connected to teamed ports, e.g. the teamed ports on UIMs or Profile systems. In some switches, this may be called **Rapid STP**. This prevents application time-outs during a failover event.

NOTE: *The adapter fault tolerance software supplied with the UIM network adapters includes a switch diagnostic to test STP setup on the Ethernet switch. Refer to “[Step 7: Check Ethernet switch status](#)” on page 114 to run the test.*

Profile XP Platform 100BT network option

Read the following considerations regarding the Profile XP Media Platform 100BT Video Network option:

- The optional 100BT video network adapter must be removed from the Profile XP Media Platform before deployment with an IP UIM-DIS-GEIP or UIM-SAN-GEIP. Refer to the *Profile XP Service Manual* for instructions on removing the adapter.
- If the facility has standalone Profile XP Platforms with the real-time 100BT video network board installed, and that are not connected to a UIM, the 100BT adapter IP addresses (the Profile XP “_le0” ports) should belong to a different subnet in the facility than the UIM 1000BT LAN (“_he0” ports).

UIM Windows user accounts

The following user accounts are setup on the UIM.

User Name	Password	Group membership	Notes
Administrator	triton	Administrators	Used for software updates, maintenance, and installation tasks.
Profile	profile	Power Users	Used for day to day operation and monitoring.

Operating the UIM in unattended mode

UIM software does not require a Windows user account to run. Once you have configured network settings using the administrator account, you can log off the Windows operating system and run the UIM in an unattended mode.

High definition video transfers

High definition video transfers have been qualified on the UIM-SAN-GEIP for this release. HD clips and their associated Ancillary Data can be transferred with all versions of the UIM product (UIM-SAN-GEIP, UIM-SAN-FCIP, and UIM-Gigabit-IP). However, HD or ancillary data transfers are not supported in the MXF format.

Transfers with K2 systems

The rules for K2 host name aliases in the *hosts* file are similar to those for Profile XP systems. The primary difference is that for a K2 Storage System (SAN), transfers go to/from the K2 Media Server, rather than the K2 Media Clients. This results in the following rules:

- For stand-alone (internal storage) K2 Media Clients, add the “_he0” suffix to the hostname and associate that hostname with the K2 Media Client’s FTP/streaming network IP address.
- For K2 Media Servers, add the “_he0” suffix to the hostname and associate that hostname with the K2 Media Server’s FTP/streaming network IP address.
- For each SAN (external storage) K2 Media Client, add the “_he0” suffix to the hostname but then associate that hostname with the K2 Media *Server’s* FTP/streaming network IP address, *not* the K2 Media *Client’s* IP address.

Aliasing K2 Media Client hostnames in this way would not be required if the transfer source/destination was always correctly specified as the K2 Media Server. However, a common mistake is to attempt a transfer in which the source/destination is incorrectly specified as the K2 Media Client. The host file aliasing corrects this mistake and redirects to the K2 Media Server, which is the correct transfer source/destination.

- Do not put a SAN K2 Media Client directly on the FTP/streaming network. A SAN K2 Media Client does not send or receive transfers directly.

Refer to the following examples of host file entries:

```
#Open SAN entries
192.168.100.151 SAN1_XP1
192.168.100.152 SAN1_XP2
192.168.100.153 SAN1_XP3
192.168.100.154 SAN1_XP4
192.168.100.155 SAN1_FSM1
192.168.100.156 SAN1_FSM2
192.168.100.157 SAN1_UIM1 SAN1_XP1_UIM SAN1_XP2_UIM
192.168.100.158 SAN1_UIM2 SAN1_XP3_UIM SAN1_XP4_UIM
192.168.200.157 SAN1_UIM1_he0 SAN1_XP1_he0 SAN1_XP2_he0
192.168.200.158 SAN1_UIM2_he0 SAN1_XP3_he0 SAN1_XP4_he0

#Stand-alone Profile XP entries
192.168.100.105 XP5
192.168.205.105 XP5_fc0
192.168.100.115 XP5_UIM
192.168.205.115 XP5_UIM_fc0
192.168.200.115 XP5_he0 XP5_UIM_he0 #Streaming NIC of XP5_UIM

#Control connection for Stand-alone K2 Media Client
192.168.100.211 K2StandAlone1

#FTP connection for Stand-alone K2 Media Client
192.168.200.211 K2StandAlone1_he0

#Control connections for SAN K2 Media Clients
192.168.100.111 K2client1
192.168.100.121 K2client2
192.168.100.131 K2client3
192.168.100.141 K2client4

#FTP connection for K2 Media Server (with K2 Media Client aliasing)
192.168.200.11 K2Server1_he0 K2client1_he0 K2client2_he0 K2client3_he0 K2client4_he0
```

In addition, on both stand-alone and SAN K2 Media Clients, you must open Configuration Manager and add Profile XPs as Remote Hosts. Enter the Profile XP actual hostname, without any added suffixes. Also, if you are using remote protocols to perform transfers, add a unique Controller ID for each Remote Host.

Refer to the *K2 Media Client System Guide* for complete explanations of FTP/streaming transfers on K2 systems.

Software requirements

The following table describes the software requirements for devices deployed with UIM software version 2.x.x. Check the software version on your device, and upgrade the software if needed. Refer to the software release notes for your device for upgrade instructions.

Product	Model	Software Versions Required ^a
Profile XP Media Platform	PVS 1000, PVS 1100, PVS 2000, PVS 3000	Profile System Software 5.4.8 or higher
Profile Video Server	PDR300	Profile System Software 2.5.25 or higher
	PDR400	Profile System Software 3.2.10 or higher
Open SAN Shared Storage	NA	Open SAN Software 5.4.8 or higher

^a. Refer to the *Profile System Software Release Notes* or *Open SAN Software Release Notes* for software upgrade instructions on these systems.

Installing UIM System Software

System Software 2.x.x is installed on all UIMs at the factory. In normal operation, you should not need to install UIM System Software 2.x.x. If your UIM is operating with an earlier version of system software, you should update to the current version.

NOTE: *If you are upgrading your UIM from a System Software version earlier than 1.0.0.3, please contact your Grass Valley representative for instructions specific to that upgrade.*

This software installation procedure includes:

- “Part 1: Install UIM system software version 2.x.x”
- “Part 2: Create a system disk image file”

NOTE: *Make sure you have your Microsoft Windows CD on hand. If not already installed, the UIM system software upgrade prompts you to install Management and Monitoring components, which are on the Microsoft Windows CD.*

Part 1: Install UIM system software version 2.x.x

To install UIM system software version 2.x.x:

1. Power on the UIM and log on to the Windows operating system as administrator (default password: *triton*).
2. Remove the previous version of UIM software using **Control Panel | Add/Remove Programs**, then restart the system.
3. Insert the *UIM System Software* CD-ROM in the CD-ROM reader or connect to a network drive containing the downloaded software.
The software installation will start automatically. (You may choose to run the *setup.exe* program by choosing **Start | Run** and specifying the appropriate drive.).
4. Click **Next** in the Welcome screen, and accept the terms of the license agreement.
5. On the UIM Configuration page, select **IP Installation** or **SCSI (Open SAN) Installation** option, then click **Next** and follow onscreen instructions.
Refer to “[Install UIM-SAN-GEIP System Software for Open SAN](#)” on page 54 for instructions on the remaining screens for the Open SAN installation option.



6. When the UIM System Software installation process is complete, click **Finish**.
7. Proceed to [“Part 2: Create a system disk image file”](#) of this procedure.

Part 2: Create a system disk image file

After updating UIM System Software, create a system disk image as described in [“Creating a system disk image” on page 126](#). This backup image can be used to restore the system disk in the event of a severe software problem. The procedure requires the *Restore Program* CD-ROM that you received with your UIM.

This completes the UIM system software installation procedure.

Virus software support

Thomson Grass Valley does not recommend installing third party software on your UIM. If you must install virus scanning software, configure it for manual virus scan only. Automatic virus scanning could disrupt UIM operation and should not be used.

Performing critical Windows updates

From the factory, Automatic Windows Updates are disabled. This prevents updates from being performed in a manner that could harm the operation of networked UIMs. Do not modify the Automatic Update setting.

If your UIM has internet access, you can use the Windows operating system Update feature to scan your UIM to determine if any critical updates are required. Afterward, you can download and install those updates manually.



CAUTION: Only critical Windows updates should be installed. Do not install other Windows operating system or driver updates on your UIM unless instructed by procedures in these release notes. “Critical” updates must be installed manually using the Windows Update program.

To scan and install critical updates:

1. In the Windows taskbar, click **Start**, then **Windows Update**.
Internet Explorer opens and connects to the Windows update web site.
2. Click **Scan for updates**. Wait for the scan to complete.
3. If there are critical updates required for your UIM, follow the instructions on the web page to install them.

Known problems

The following limitations are present in this UIM System Software version 2.x.x. If you wish to obtain more information about these limitations, please mention the reference numbers that follow the description of each limitation. These known problems will be resolved in future releases.

Installation

- Problem** UIM software does not install, even though the previous versions of UIM software was removed.
- Workaround** Delete the contents of the *c:\profile* directory. The UIM installation program tests for the presence of specified files in that directory.

UIM-Gigabit-IP Only

No known problems.

UIM-SAN-GEIP or UIM-SAN-FCIP Only

- Problem** Clips recorded with odd-numbered offsets are not correctly transferred. (CR49254)
- Workaround** Clips must be recorded with frame-based offsets with even values only.
- Problem** Drop-frame clips transferred from NewsEdit systems report an incorrect length on the Open SAN because the drop-frame attribute is changed to non-drop frame. (CR50021)
- Workaround** The clip transfers in its entirety, and the duration of the material on the Open SAN is correct, although it is incorrectly displayed.
- Problem** In the event of an FSM failover, clips that were queued to transfer in Media Manager may not transfer after the failover. (CR42772)
- Workaround** Remove the transfer requests from Media Manager, then add them again. Correct transfer operations resume about one minute after the FSM failover event.
- Problem** Running Windows Disk Administrator while the UIM-SAN-GEIP or UIM-SAN-FCIP is connected to the Open SAN Fibre Channel (SCSI) switch fabric may cause the Open SAN to fail. Windows Disk Administrator may inadvertently relabel the disks in the Open SAN.
- Workaround** Do not run Windows Disk Administrate, or disconnect the UIM-SAN-GEIP or UIM-SAN-FCIP from the Fibre Channel Switch while Windows Disk Administrator is in use.

Problem UIM fails to transfer some long GOP clips. (CR67074)
Workaround None. The problem occurs only for clips with an MPEG frame of less than 512 bytes. Clips of this nature are rejected on import.

Chapter **2**

Product Description

This chapter includes:

- “Product overview”
- “Hardware platform configuration”
- “Software configurations available”
- “Ethernet redundancy”

Product overview

The Grass Valley Universal Interface Module (UIM) provides a 1000BaseT Ethernet network interface for streaming media files in Profile storage environments including standalone storage and Open SAN shared storage. UIM transfers are compatible with other devices that support importing and exporting files using the General Exchange Format (GXF) as described in SMPTE 360M. The UIM system software design makes the UIM transparent to the streaming devices.

The UIM can also provide additional Fibre Channel IP bandwidth in and out of an existing Open SAN, allowing expansion of legacy Fibre Channel IP infrastructures without the cost of converting to a different technology.

The UIM also supports MXF streaming formats based on the SMPTE 377M standard. This allows the exchange of data between a variety of Grass Valley products and other third party MXF-based production, editing, and storage tools.

Hardware platform configuration

The UIM is implemented using a Dell Server running a Windows operating system and UIM system software pre-installed by Grass Valley. Your Dell Server model may be different than the one shown in the diagrams in this manual.

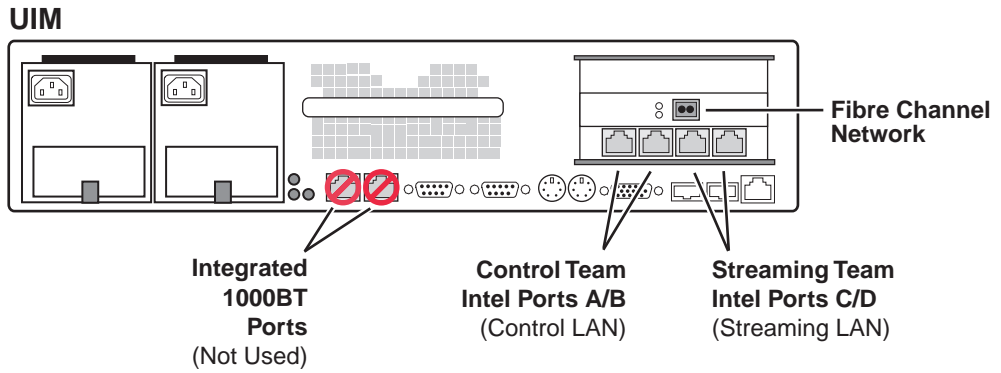
UIM hardware configuration

- Dell Server PC, dual power supply, mirrored system drive
- Four Ethernet NICs and a single Fibre Channel port; or
- Two Ethernet NICs and two Fibre Channel ports
- VGA monitor, mouse, and keyboard

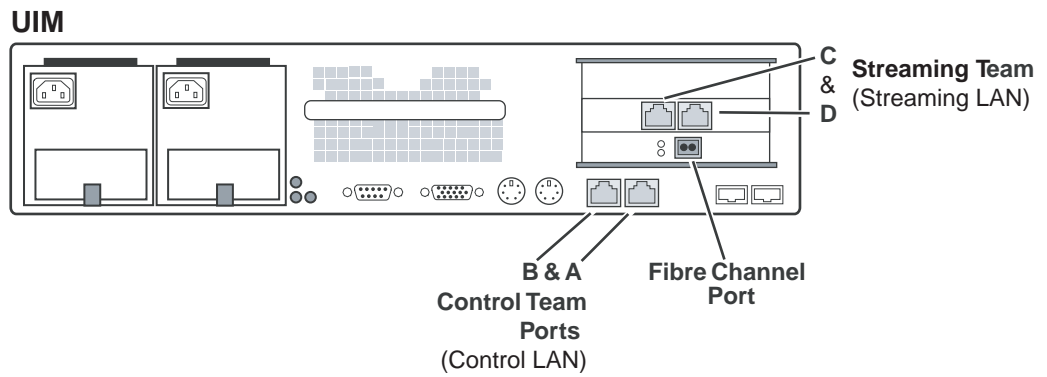
The Ethernet NICs provide the redundant Ethernet connections. Ports are configured as two fault tolerant teams for failover, two ports per team. One team named Control Team is used to connect to the LAN used by Profile storage for command and control. The other team, named Streaming Team, is used to connect to the 1000BT Ethernet infrastructure for the streaming of media to other devices.

Some models of UIM replace the Gigabit Ethernet streaming team with an additional Fibre Channel port that is used for strange transfers over a Fibre Channel IP network. This configuration is only supported when connected to an Open SAN.

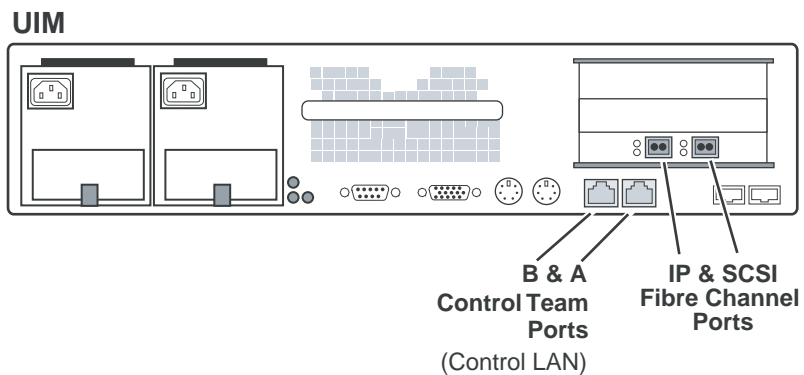
Rear panel view, Dell 2650



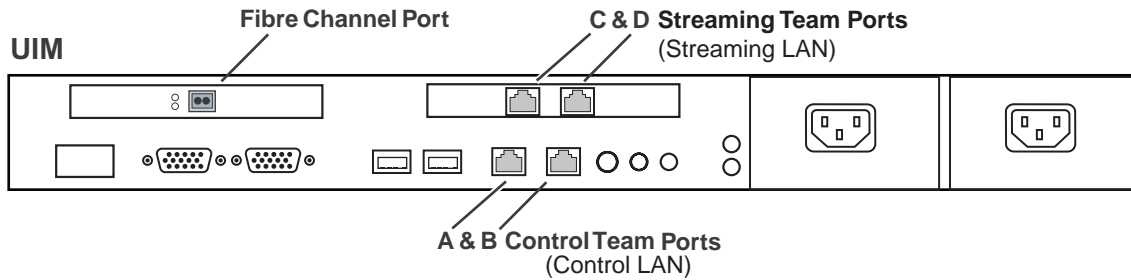
Rear panel view, Dell 2850, 1000 BaseT



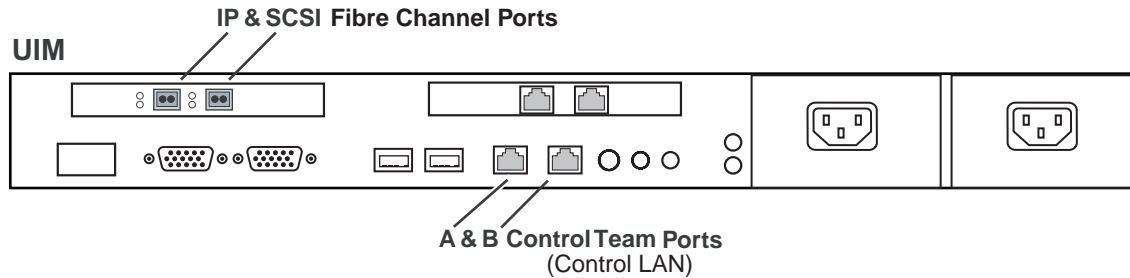
Rear panel view, Dell 2850, Fibre Channel IP



Rear panel view, Dell 1950, 1000 BaseT



Rear panel view, Dell 1950, Fibre Channel IP



Software configurations available

There are three UIM configurations which share a common platform, but vary in the installed cards and software:

- UIM-DIS-GEIP — configured for operation with standalone Profile storage
- UIM-SAN-GEIP — configured for integration into a Grass Valley Open SAN shared storage system and provides Gigabit Ethernet streaming
- UIM-SAN-FCIP — configured for integration into a Grass Valley Open SAN shared storage system and provides Fibre Channel IP streaming

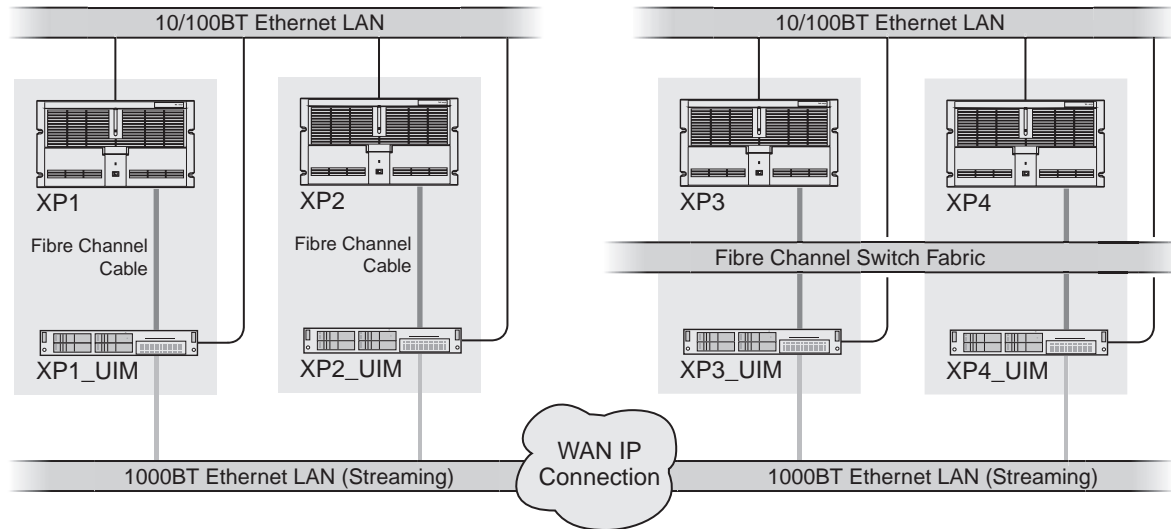
A UIM-SAN-GEIP is built as a UIM-SAN-GEIP, but requires additional software installs and setup for integration in a Grass Valley Open SAN system. This is done onsite or at the factory where the Open SAN shared storage system is assembled.

A UIM-SAN-FCIP is similar to a UIM-SAN-GEIP, with a extra Fibre Channel port added, and the streaming Gigabit Ethernet ports removed.

The following sections describe each UIM product in more detail.

UIM-DIS-GEIP description

The UIM-DIS-GEIP provides a 1000BT network interface for standalone Profile storage. One UIM-DIS-GEIP is required for each standalone Profile system. Connections are made via the Profile system Fibre Channel Network Adapter (IP) and the Ethernet network interface. The UIM should be viewed as a 2RU extension to the standalone Profile system. Transfers over the UIM appear seamless to applications. The UIM-DIS-GEIP supports up to four concurrent transfers.



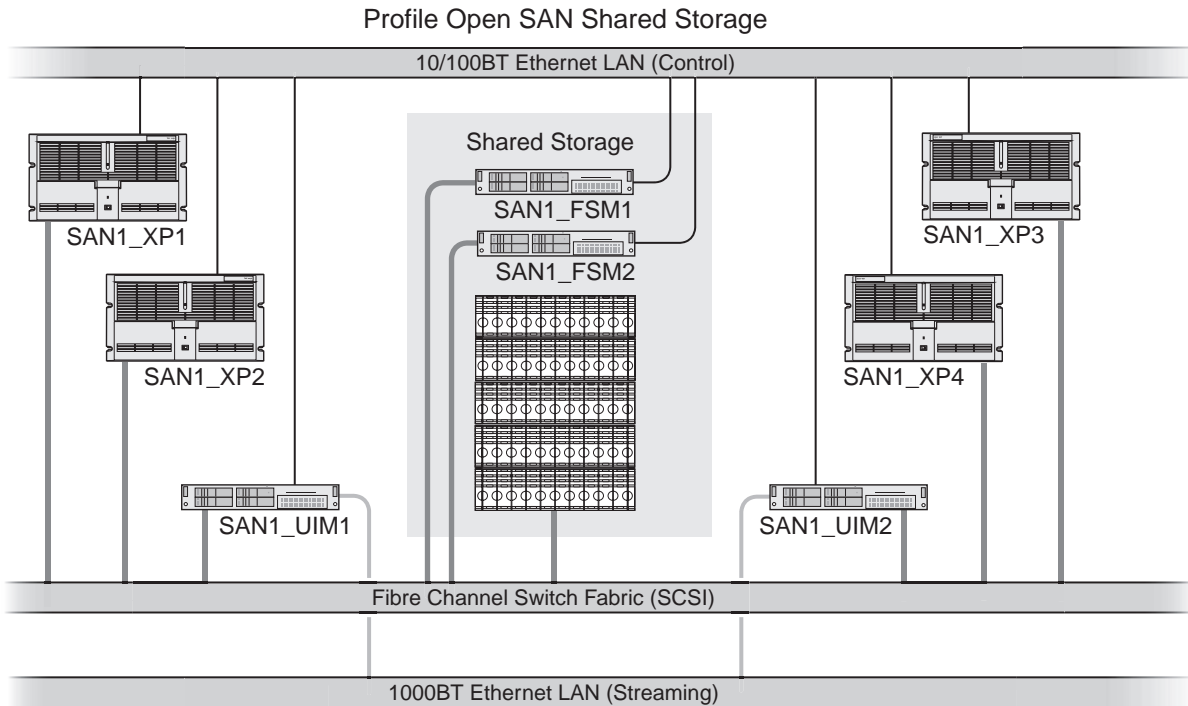
The Fibre Channel connection to the Profile can be made using a single cable (left side of the previous diagram), or through a Fibre Channel switch (right side of the previous diagram). Using a switch to make the connection retains Fibre Channel network transfer capability to other standalone Profile systems.

NOTE: The Profile Video Servers (PDR series) do not support the point to point Fibre Channel connection.

UIM-SAN-GEIP description

The UIM-SAN-GEIP includes the additional software required to operate in an Open SAN shared storage environment. The UIM-SAN-GEIP is connected as a client in the Open SAN system and functions to provide a 1000BT network interface to shared storage. One or more UIM-SAN-GEIPs are connected via the Fibre Channel (SCSI) switch fabric and the command and control Ethernet switch fabric. Any number of UIMs can be used depending on the number of simultaneous transfer streams required. Each UIM-SAN-GEIP supports up to six concurrent transfers.

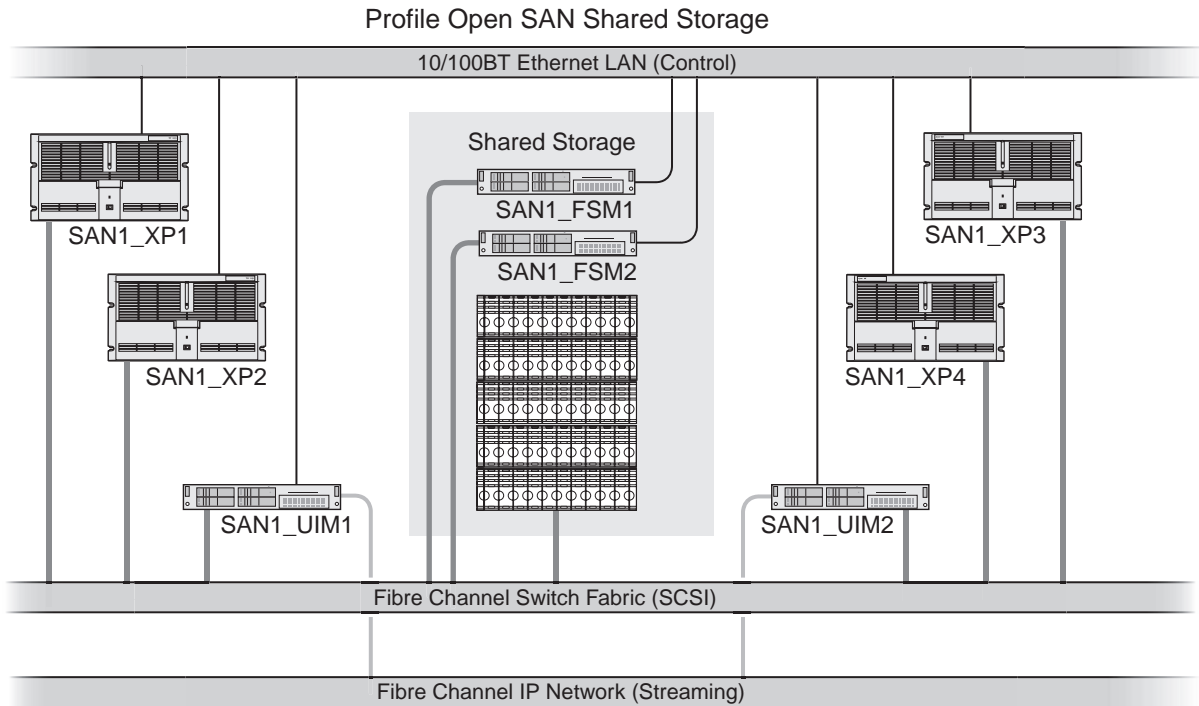
Each Profile XP Platform in the Open SAN is configured using host tables to proxy to one fixed UIM. Automatic load balancing is not supported. Also, there is no failover mechanism. If a UIM fails, meaning, if UIM1 fails, all Profiles that proxy to UIM1 lose their 1000BT connection.



UIM-SAN-FCIP description

The UIM-SAN-FCIP includes the additional software required to operate in an Open SAN shared storage environment. The UIM-SAN-FCIP is connected as a client in the Open SAN system and functions to provide a Fibre Channel IP network interface to shared storage. One or more UIM-SAN-FCIPs are connected via the Fibre Channel (SCSI) switch fabric, the Fibre Channel IP switch fabric, and the command and control Ethernet switch fabric. Any number of UIMs can be used depending on the number of simultaneous transfer streams required. Both UIM-SAN-FCIPs and UIM-SAN-GEIPs can be connected to the same Open SAN to provide both Gigabit Ethernet and Fibre Channel IP streaming capability. Each UIM-SAN-FCIP supports up to six concurrent transfers.

Each Profile XP Platform in the Open SAN is configured using host tables to proxy to one fixed UIM. Automatic load balancing is not supported. Also, there is no failover mechanism. If a UIM fails, meaning, if UIM1 fails, all Profiles that proxy to UIM1 lose their Fibre Channel IP connection.



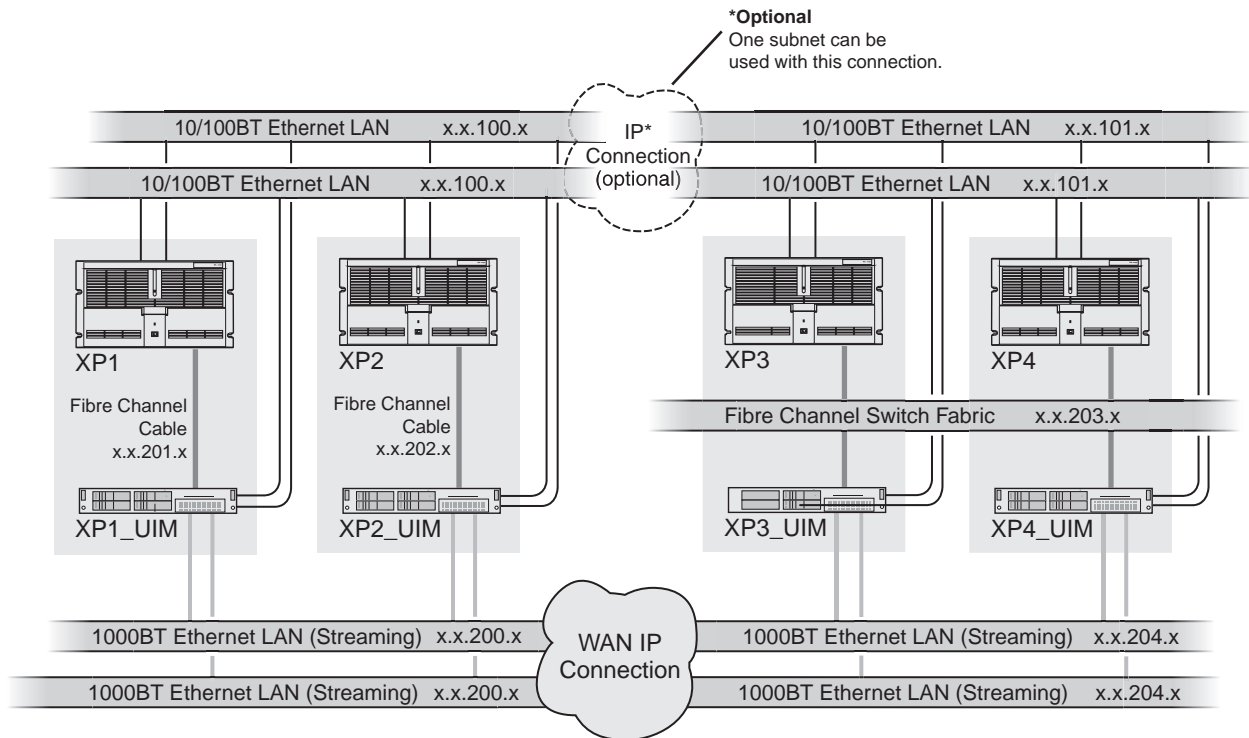
Enable Fibre Channel network TCP checksums

When configuring Profile XP Media Platform or Profile PDR Series Video Servers, you must enable TCP checksums on the Fibre Channel Network adapter. For instructions, refer to the Fibre Channel Networking chapter in the *Profile XP Media Platform System Guide* or *Profile Family User Manual*.

Ethernet redundancy

From the factory, the ports on the four port Ethernet adapter are teamed using Adapter Fault Tolerance (AFT) software provided by the network adapter vendor, such as Intel. This provides automatic redundancy for the Ethernet connections. One AFT team is dedicated to the command and control network connection in Profile storage systems. The other is dedicated to streaming media transfers.

Adapter Fault Tolerance (AFT) is achieved by a team of two or more adapters configured to provide a backup network connection. AFT teams have a primary adapter and a backup, or secondary, adapter. During normal operation, only the primary adapter transmits traffic. If the primary adapter or the link to the primary adapter fails due to switch, port, cable, or remote adapter failure the secondary adapter automatically takes over. For more information on fault tolerance, refer to the online documentation provided with the teaming software configuration tool.



NOTE: If you are using redundant network connections, ensure that the Ethernet switches used support Spanning Tree Protocol (STP), and that the protocol is configured as described in [“Redundant Ethernet network requirements” on page 17.](#)

UIM-DIS-GEIP Installation: Standalone Profile Storage

Information in the chapter includes:

- “Are you redeploying Profile systems?”
- “Rack-mount the UIM-DIS-GEIP”
- “Specify host names for each UIM-DIS-GEIP”
- “Specify the subnets required”
- “Setup the master hosts file”
- “Connect network cables – Dell 2650”
- “Configure UIM-DIS-GEIP hostname and IP addresses”
- “Configure Profile host names & IP addresses”
- “Test the UIM-DIS-GEIP”
- “Create UIM-DIS-GEIP system disk image”
- “Solving common setup problems”

Are you redeploying Profile systems?

Profile XP Media Platforms ordered from the factory for deployment with the UIM-DIS-GEIP are ready to install and configure. However, if you are redeploying existing Profile systems for operation with the UIM-DIS-GEIP, you must perform the procedures in [Appendix A, Upgrading Existing Profile Systems for Deployment with the UIM-DIS-GEIP on page 151](#). Afterward, return to this procedure and continue with the following step, “[Rack-mount the UIM-DIS-GEIP](#)”.

Rack-mount the UIM-DIS-GEIP

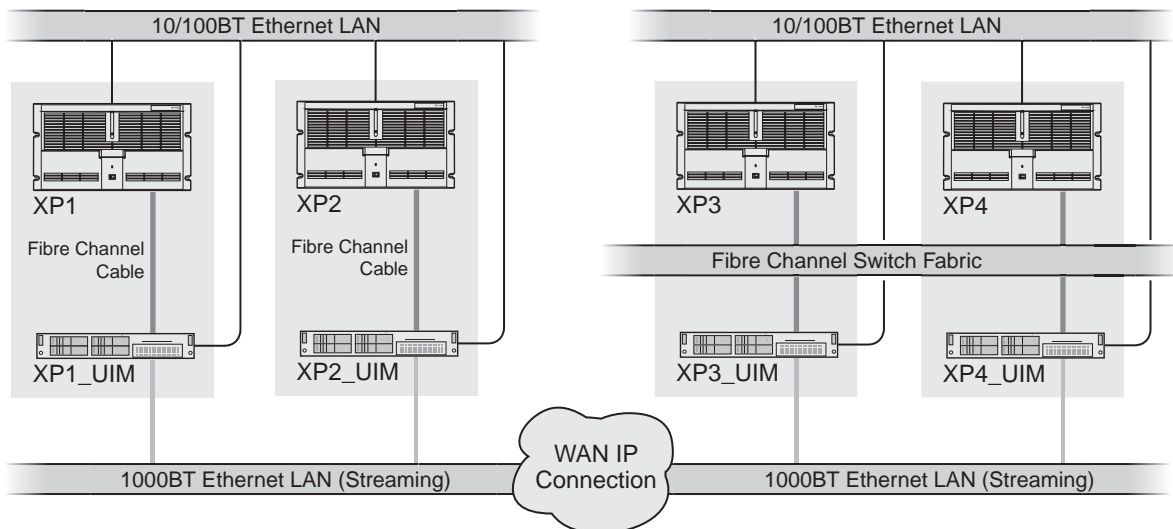
Use the instructions in the *Rack Installation Guide* provided with the Dell Server documentation set to mount the UIM-DIS-GEIP in a standard 19 inch equipment rack. You can also refer to the Dell Server *Installation and Troubleshooting Guide* to make power cord, mouse, keyboard, and monitor connections at this time.

Specify host names for each UIM-DIS-GEIP

When the UIM-DIS-GEIP is connected to a Profile system, the hostname for each UIM-DIS-GEIP must follow a strict naming convention as shown:

`<ProfileXP hostname>_UIM`

As shown in the following diagram, if the UIM-DIS-GEIP is connected to a Profile XP platform with hostname `XP1`, the UIM-DIS-GEIP hostname must be set to `XP1_UIM`. Host names are not case sensitive.



NOTE: The optional 10/100BT Ethernet connection is required for Pronet connections between Profile media platforms only. This connection is used for Profile API communication, such as that used by Media Manager.

Specify the subnets required

Use the following rules to determine the subnets required for your network.

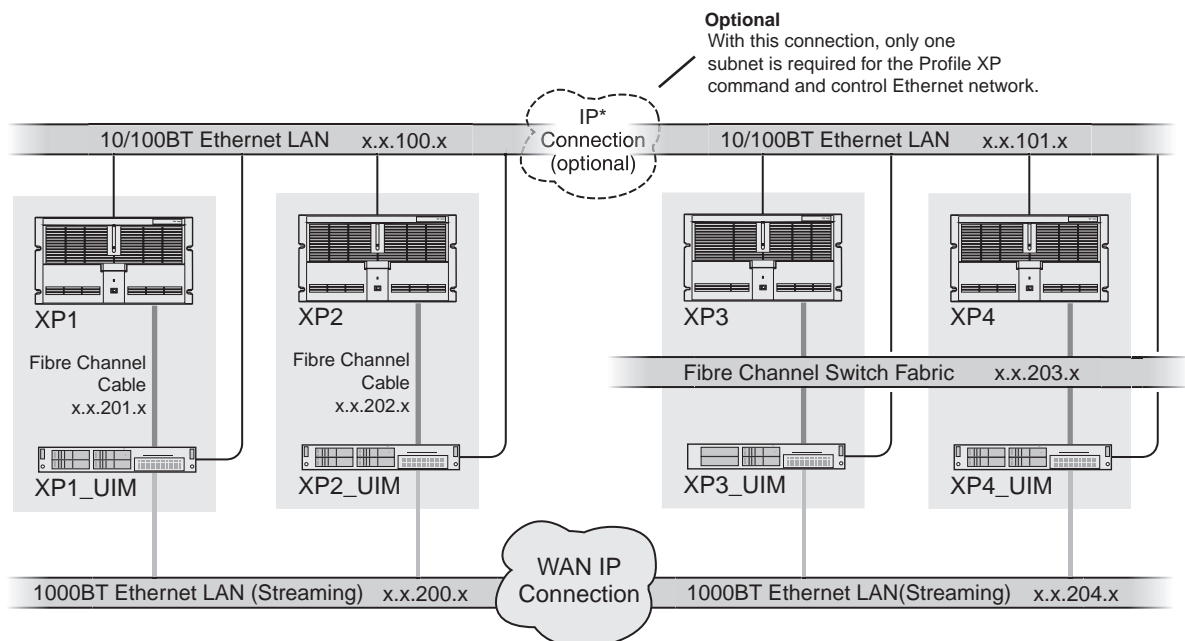
- Specify a unique subnet for the Fibre Channel network as follows:
 - Specify a subnet for each Profile XP to UIM-DIS-GEIP point-to-point connection, that is, when a single cable is used as shown on the left side of the diagram below.
 - Specify a subnet for the Fibre Channel switch fabric when switches are used to connect the Profile system to the UIM-DIS-GEIP as shown on the right side of the diagram below.

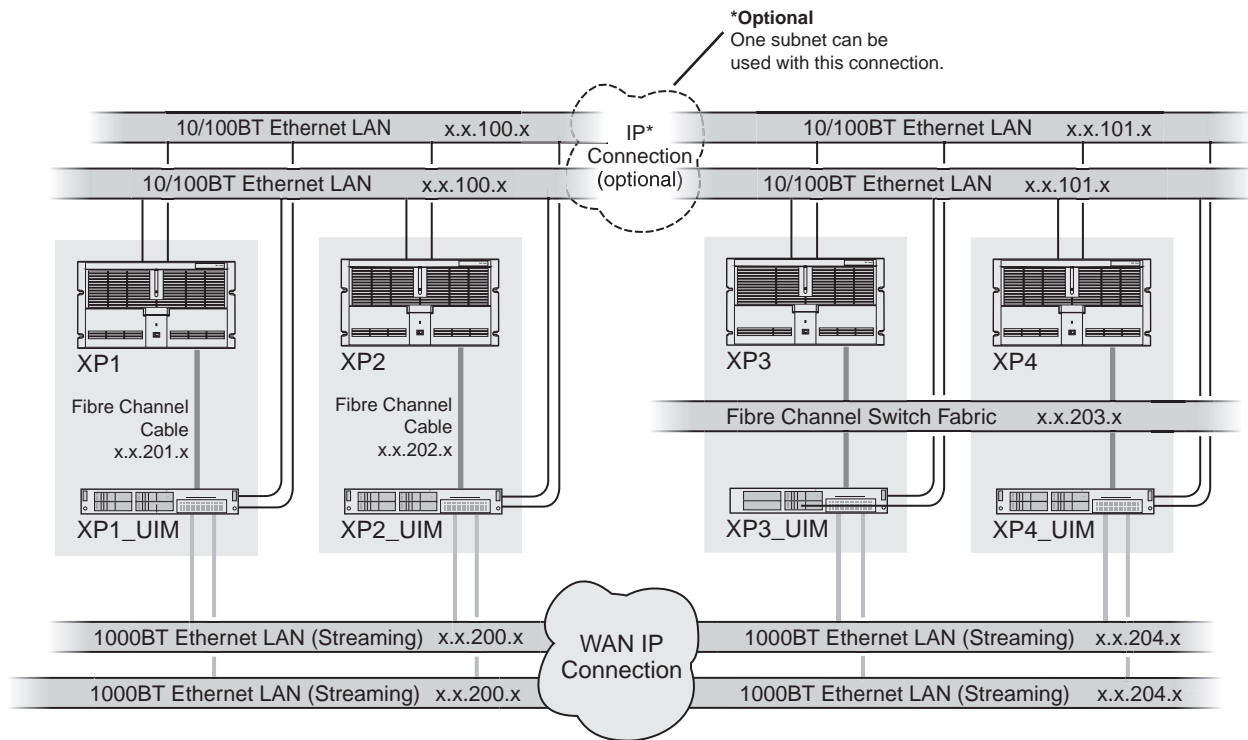
NOTE: Profile PDR series products do not support the point-to-point connection.

- Specify a subnet for the 1000BaseT Ethernet LAN (for streaming).
- Specify a subnet for the Profile command and control Ethernet LAN.

The following diagrams illustrate these subnet requirements. Use these examples as a models for specifying the subnets required for your system.

The following diagram illustrates the subnets required. The diagrams also show two ways of making the Profile to UIM-DIS-GEIP connection using either a point to point connection (single cable), or a Fibre Channel switch. Note that Profile systems and their UIMs have unique subnets for their point to point Fibre Channel connections. As shown, XP1 and XP2 and their corresponding UIMs have unique Fibre Channel IP subnets, 192.168.201.xx and 192.168.202.xx. When a switch is used to make the Fibre Channel connection, one subnet may be used. As shown, XP3 and XP4 and their corresponding UIMs use the same Fibre Channel IP subnet, 192.168.203.xx.





NOTE: In redundant Ethernet network configurations, you must use Ethernet switches that support Spanning Tree Protocol (STP). Refer to “Redundant Ethernet network requirements” on page 17.

Setup the master *hosts* file

Use the following steps to set up a master *hosts* file for all Profile platforms and UIM-DIS-GEIPs. You must include the names and IP addresses of all Profile systems and UIM-DIS-GEIPs in the *hosts* file. This allows you to copy the same file to all devices on the network instead of editing a unique *hosts* file on each machine.

On one of the UIM-DIS-GEIPs, create the *hosts* file as follows:

1. Power-on the UIM-DIS-GEIP and log on as Administrator (default password *triton*).
2. Open the following file using Notepad— `c:\winnt\system32\drivers\etc\hosts`
3. Enter text in a single line for each network connection including all Profile systems and UIM-DIS-GEIPs. Be sure to include the local UIM-DIS-GEIP.

First type the IP address for a network interface, then use the TAB key or Space bar to insert a few spaces. Now type the host name for that IP address, such as XP1. You must add a suffix to the hostname for each high speed network interfaces, e.g.

Fibre Channel and 1000BT Ethernet, as shown in the following table.

Network Interface	Hostname suffix^a	Example host file entry for UIM hostname "XP1_UIM"	
Control Team - Ports A & B	None	192.168.100.101	XP1_UIM
Streaming Team - Ports C & D	_he0	192.168.200.101	XP1_UIM_he0
Q-Logic FC NIC	_fc0	192.168.201.101	XP1_UIM_fc0

^a. Suffix uses the zero character, not the letter 'o'.

Example *hosts* file

The following host file was created for the example networks shown on [page 37](#) and [page 38](#). This host file is used for both non-redundant and redundant networks since teamed network adapters share the same IP address. Use this example as a model for creating your own host file.

```

192.168.100.101  XP1
192.168.201.101  XP1_fc0
192.168.100.111  XP1_UIM
192.168.201.111  XP1_UIM_fc0
192.168.200.111  XP1_he0 XP1_UIM_he0 # Streaming NIC of XP1_UIM

192.168.100.102  XP2
192.168.202.102  XP2_fc0
192.168.100.112  XP2_UIM
192.168.202.112  XP2_UIM_fc0
192.168.200.112  XP2_he0 XP2_UIM_he0 # Streaming NIC of XP2_UIM

192.168.101.103  XP3
192.168.203.103  XP3_fc0
192.168.101.113  XP3_UIM
192.168.203.113  XP3_UIM_fc0
192.168.204.113  XP3_he0 XP3_UIM_he0 # Streaming NIC of XP3_UIM

192.168.101.104  XP4
192.168.203.104  XP4_fc0
192.168.101.114  XP4_UIM
192.168.203.114  XP4_UIM_fc0
192.168.204.114  XP4_he0 XP4_UIM_he0 # Streaming NIC of XP4_UIM

```

Note that Profile systems and their corresponding UIMs have unique subnets for their point to point Fibre Channel connections. As shown, XP1 and XP2 and their UIMs have unique Fibre Channel IP subnets, 192.168.201.xx and 192.168.202.xx. When a switch is used to make the Fibre Channel connection, one subnet may be used. As shown, XP3 and XP4 and their corresponding UIMs are on the same Fibre Channel IP subnet, 192.168.203.xx. (Refer to [“Specify the subnets required” on page 37.](#))

Also notice that the IP address for the 1000BT connection used for streaming is aliased to both the UIM-DIS-GEIP and the Profile XP host names.

For example:

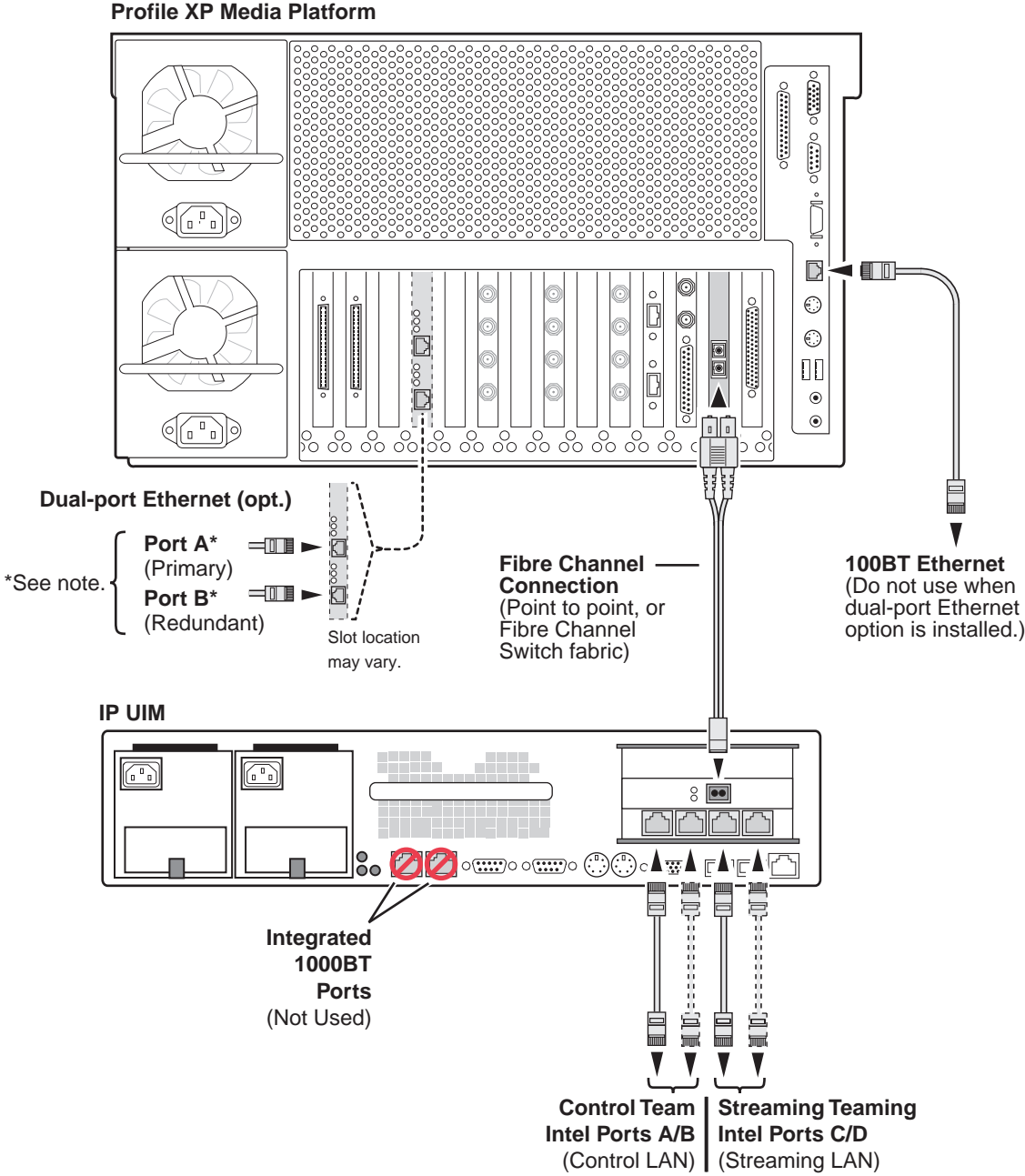
```
192.168.200.101XP1_he0 XP1_UIM_he0 #Streaming NIC of XP1_UIM
```

4. Save the file and exit Notepad.
5. Copy this new master *hosts* file onto all Profile systems and UIMs on the network.

NOTE: Errors in this configuration step will render your media exchange network inoperable. Take great care to enter all information correctly, then recheck for errors.

Connect network cables – Dell 2650

Connect the network cables for each Profile XP Media Platform and UIM-DIS-GEIP as shown.

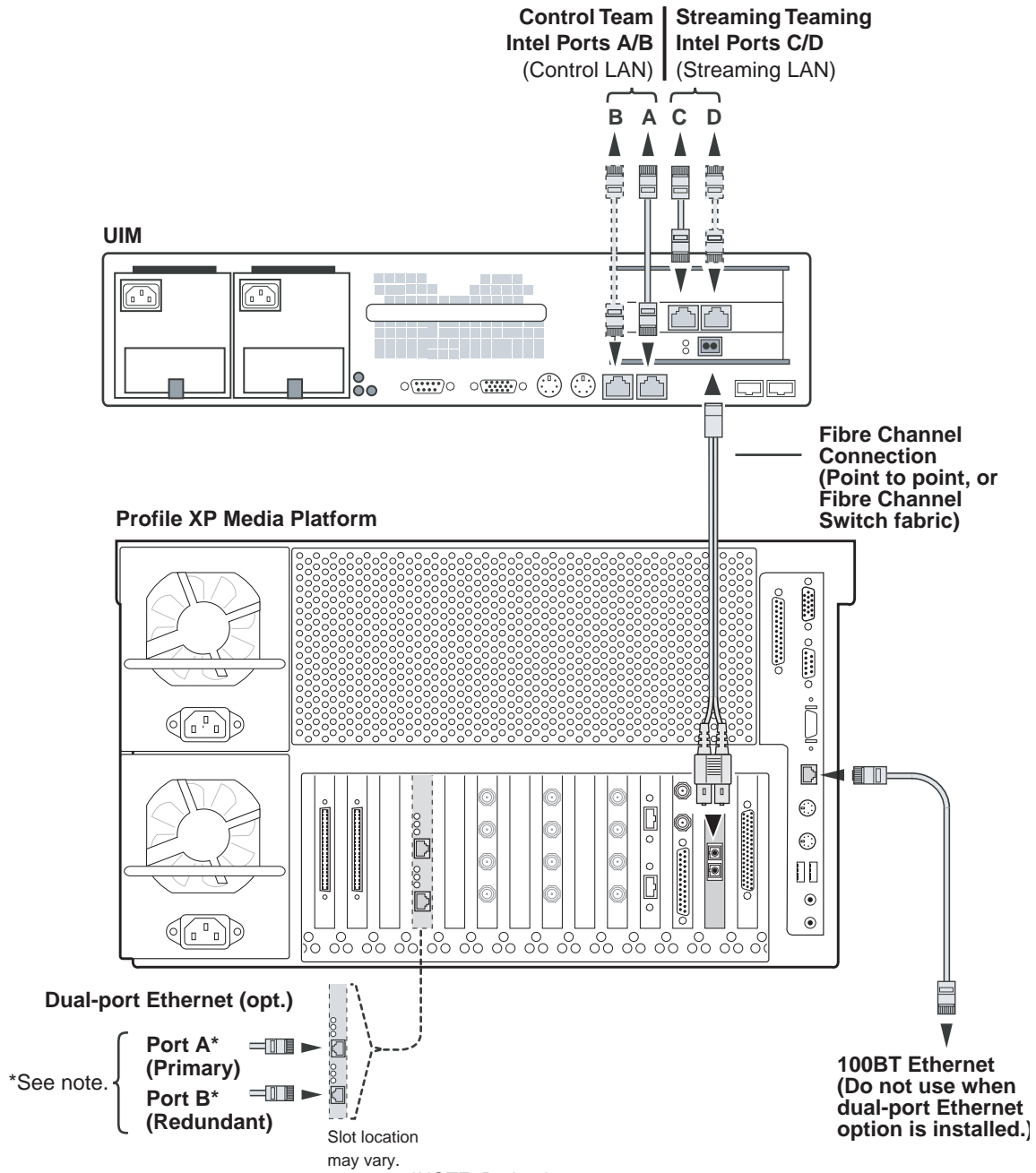


*NOTE: Redundant Ethernet Operation

1. Ensure that the primary and redundant ports are connected to different switches.
2. Verify that the Ethernet switches support Spanning Tree Protocol (STP), and that the protocol is configured as described in ["Redundant Ethernet network requirements"](#) on page 17.

Connect network cables – Dell 2850

Connect the network cables for each Profile XP Media Platform and Dell 2850-based UIM-DIS-GEIP as shown.

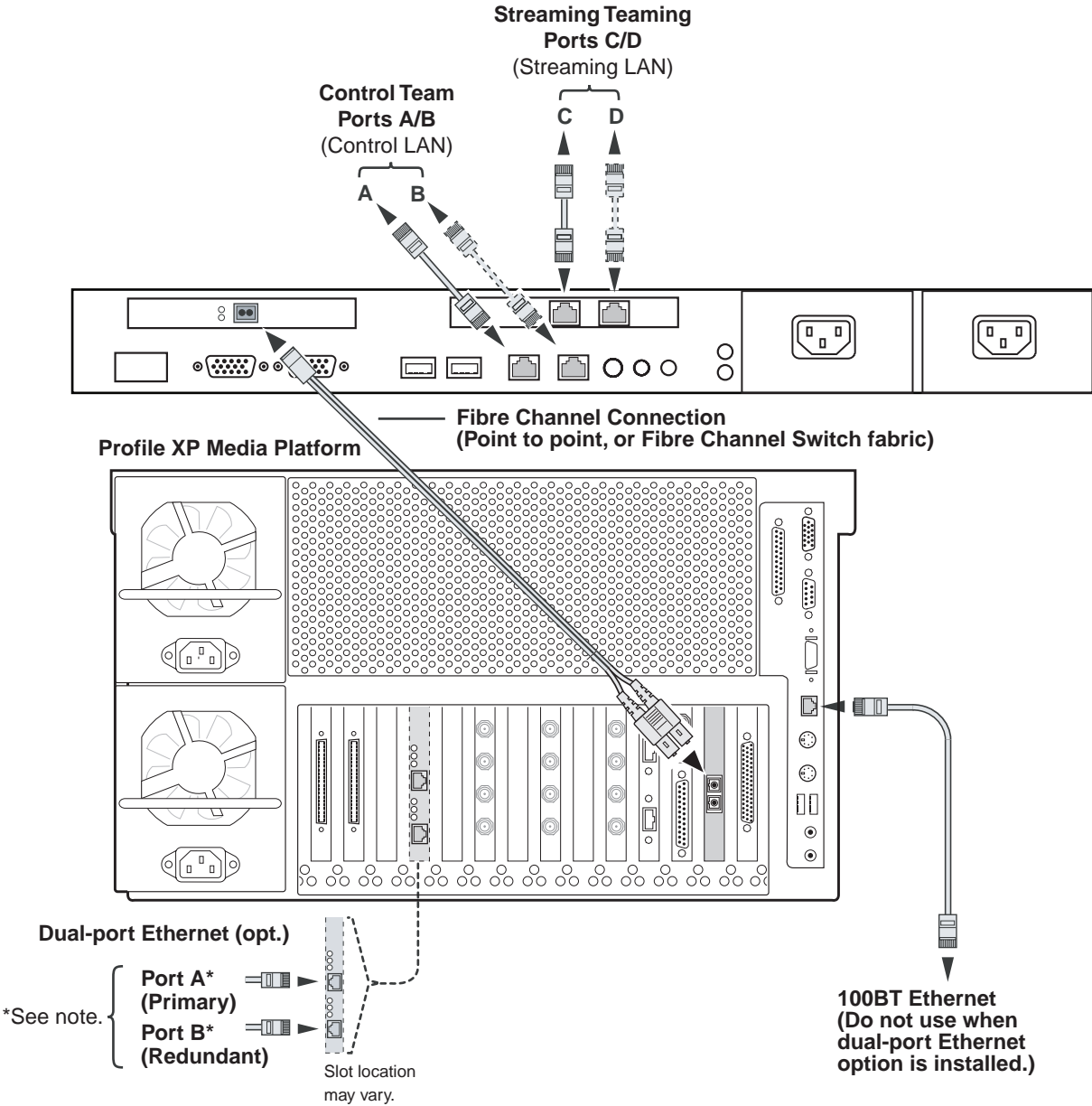


Ethernet Operation

1. Ensure that the primary and redundant ports are connected to different

Connect network cables – Dell 1950

Connect the network cables for each Profile XP Media Platform and Dell 1950-based UIM-DIS-GEIP as shown.



- *NOTE: Redundant Ethernet Operation
1. Ensure that the primary and redundant ports are connected to different switches.
 2. Verify that the Ethernet switches support Spanning Tree Protocol (STP), and that the protocol is configured as described in ["Redundant Ethernet network requirements"](#) on page 17.

Configure UIM-DIS-GEIP hostname and IP addresses

Refer to your system design and the requirements described in “Specify host names for each UIM-DIS-GEIP” on page 36 and “Specify the subnets required” on page 37, then configure the hostname and IP addresses on each UIM-DIS-GEIP as follows.

1. Power-on the UIM-DIS-GEIP and log on as *Administrator* (default password: *triton*).
2. Modify the UIM-DIS-GEIP hostname as follows:
 - a. Right-click the computer icon on the desktop, then select **Properties** to open the System Properties dialog box.
 - b. Click the **Network Identification** tab, then click **Properties**.
 - c. Enter the UIM-DIS-GEIP computer name, then click **OK**.
 - d. Click **Yes** to accept non-standard name.
 - e. Click **OK** to acknowledge the reboot message.
 - f. Click **OK** to close the System Properties dialog box.
 - g. Click **NO**. Do not reboot at this time.
3. Configure the IP address on each UIM-DIS-GEIP network adapter as follows:
 - a. Right-click the “My Network Places” desktop icon, then select **Properties** to open the Windows operating system “Network Connections” dialog box.

Depending on the Dell platform, network connections are displayed as follows:

Name	Type	Status	Device Name
Dell 2650			
QLogic FC NIC	LAN	Enabled	QLogic QLA2X00 PCI Adapter
Intel 1000BT Port A	LAN	Enabled	Intel(R) Pro/1000 MT Quad Port Server Adapter
Intel 1000BT Port B	LAN	Enabled	Intel(R) Pro/1000 MT Quad Port Server Adapter #2
Intel 1000BT Port C	LAN	Enabled	Intel(R) Pro/1000 MT Quad Port Server Adapter #3
Intel 1000BT Port D	LAN	Enabled	Intel(R) Pro/1000 MT Quad Port Server Adapter #4
Control Team - Intel Ports A/B	LAN	Enabled	Intel(R) Advanced Network Services Virtual Adapter
Streaming Team - Intel Ports C/D	LAN	Enabled	Intel(R) Advanced Network Services Virtual Adapter #2
Dell 2850			
QLogic FC NIC	LAN	Enabled	QLogic QLA2X00 PCI Adapter
Intel 1000BT Port A	LAN	Enabled	Intel(R) Pro/1000 MT Network Connection
Intel 1000BT Port B	LAN	Enabled	Intel(R) Pro/1000 MT Network Connection #2
Intel 1000BT Port C	LAN	Enabled	Intel(R) Pro/1000 MT Dual Port Server Adapter

Name	Type	Status	Device Name
Intel 1000BT Port D	LAN	Enabled	Intel(R) Pro/1000 MT Dual Port Server Adapter #2
Control Team - Intel Ports A/B	LAN	Enabled	Intel(R) Advanced Network Services Virtual Adapter
Streaming Team - Intel Ports C/D	LAN	Enabled	Intel(R) Advanced Network Services Virtual Adapter #2
Dell 1950			
QLogic FC NIC	LAN	Enabled	QLogic QLA2X00 PCI Adapter
Broadcom 1000BT Port A	LAN	Enabled	Broadcom BCM5708C NetXtreme II GigE (NDIS VBD Client)
Broadcom 1000BT Port B	LAN	Enabled	Broadcom BCM5708C NetXtreme II GigE (NDIS VBD Client) #2
Control Team - Broadcom Ports A and B	LAN	Enabled	BASP Virtual Adapter
Intel 1000BT Port C	LAN	Enabled	TEAM: Streaming Team - Intel(R) Pro/1000 MT Dual Port Server Adapter
Intel 1000BT Port D	LAN	Enabled	TEAM: Streaming Team - Intel(R) Pro/1000 MT Dual Port Server Adapter #2
Streaming Team - Intel Ports C and D	LAN	Enabled	TEAM: Streaming Team

- b. Right-click one of the connection names as listed in the following table, then select **Properties** to configure network settings.

NOTE: Always configure the Ethernet network settings using the fault tolerance teams. Do not select and configure the NIC adapters directly. In non-redundant Ethernet configurations, the unused ports will be ignored.

Connection Name Listed	Description	Configuration Tasks
QLogic FC NIC	Fibre Channel Network Adapter	Configure the IP Address, subnet mask, and other network settings for each connection as required by your network design and site requirements. (Refer to “Specify the subnets required” on page 37.) Contact your local network administrator of details.
Control Team - ...Ports A & B	Control LAN Team Members ^a : Primary: ...1000BT Port A Secondary: ...1000BT Port B	
Streaming Team-...Ports C & D	Streaming LAN Team Members ^a : Primary: ...1000BT Port C Secondary: ...1000BT Port D	

^a. Primary designates the primary adapter for the team. Secondary designates the backup adapter. If the primary connection is lost, then restored, it rejoins the team as a member and not the primary connection. When redundant connections are not used, the unused port is ignored.

- c. When prompted to restart, click **No**. Wait until all connections are configured.

- d. Repeat step b for the remaining team.
4. After all connections are configured, restart the UIM-DIS-GEIP.
5. Proceed to the next procedure, [“Configure Profile host names & IP addresses”](#).

Configure Profile host names & IP addresses

On each Profile or Profile XP system, use standard Windows procedures to setup the hostname and IP address for the Ethernet and Fibre Channel adapters. Refer to the *Profile XP System Guide* or *Profile Family Users Manual*, and Windows NT 4.0 documentation for instructions.

NOTE: *You must enable TCP checksums on the Fibre Channel Network adapter. For instructions, refer to the Fibre Channel Networking section in the Profile XP System Guide or Profile Family Users Manual.*

Test the UIM-DIS-GEIP

Stream a movie to/from the Profile XP Media Platform using FTP or a transfer application like Profile XP Media Manager. Refer to the *Profile XP Users Manual* for instructions on using Media Manager. Also refer to [“If you have a problem: UIM-DIS-GEIP”](#) on page 112.

Create UIM-DIS-GEIP system disk image

After verifying proper UIM-DIS-GEIP installation, you should create a backup image of the system disk. You can use this disk image to restore the complete software on the system disk, including all the current system settings. This simplifies the process of troubleshooting and correcting software faults.

To create a system disk image, refer to [“Creating a system disk image”](#) on page 126.

Solving common setup problems

Refer to the following sections for help in solving some common setup problems. Also refer to [“If you have a problem: UIM-DIS-GEIP”](#) on page 112.

Check the hosts file on each system

If you experience difficulty in completing the installation and getting the UIM-DIS-GEIP running, the following checks might help locate the problem.

- Check Ethernet IP addresses in the system hosts file on each UIM-DIS-GEIP and each Profile system.
- Check Fibre Channel IP addresses in the system hosts file on UIM-DIS-GEIP and each Profile system.
- Check that Fibre Channel network adapter TCP/IP checksums are enabled on the Profile systems. For instructions, refer to the Fibre Channel Networking section in the *Profile XP System Guide* or *Profile Family Users Manual*.

Testing Ethernet connectivity and name resolution

Test Ethernet connectivity and name resolution using host names and the ping command in the Windows command prompt on the UIM-DIS-GEIP.

For example, type:

```
ping XP1 <RETURN>
```

If this returns:

```
Pinging XP1 [192.168.100.101]
```

you have successfully resolved the name “XP1” to the IP address [192.168.100.101]

If not, you may want to reboot to ensure host file and network settings are in effect, or recheck your spelling in the hosts file.

If the host does not reply to the ping, check network settings on the target system, and cable connections.

Test Fibre Channel network name resolution

Test connectivity and name resolution using the ping command in the Windows command prompt.

For example:

```
ping XP1_fc0 <RETURN>
```

If this returns:

```
Pinging XP1_fc0 [192.168.201.101]
```

you have successfully resolved the name “XP1_fc0” to the IP address 192.168.201.101]

If the above ping returns:

```
Bad IP Address XP1_fc0
```

the Fibre Channel IP address is not resolved. If not, you may need to reboot to ensure changes take effect, or check again for spelling errors in the hosts file.

Check Profile (PDR Family) Fibre Channel network settings

Use the `fcconfig` commands at the Windows command prompt to verify Fibre Channel network settings on all Profile PDR family platforms. Commands are described in the *Profile Family Users Manual*. Refer to [Appendix A, Upgrading Existing Profile Systems for Deployment with the UIM-DIS-GEIP on page 151](#) for correct settings.

For example:

- On each Profile system, type `fcconfig` to check the Fibre Channel network settings.
- Verify that `fcping -all` runs and all Profile hosts can be resolved by name.

NOTE: *The IP UIM will not respond to `fcping`.*

- Check the fcconfig setting for the hardware address on each Profile system. Each hardware address must be unique.

If all routes are set up correctly and you still fail to stream between Profile systems using the Media Manager, try the following:

- Ensure that portmap and chgsrvr are running on the Profile system (should be in pdrstart.bat).

Check Profile XP (PVS) Fibre Channel network settings

Open Configuration Manager, then select **Network** to verify Fibre Channel network settings on Profile XP PVS series platforms. Refer to the *Profile XP System Guide* for information setting network settings using Configuration Manager.

Refer to [“If you have a problem: UIM-DIS-GEIP” on page 112](#) for more troubleshooting procedures.

UIM-SAN-GEIP Installation: Grass Valley Open SAN System

This chapter describes how to install the UIM-SAN-GEIP in the Grass Valley Open SAN Shared Storage system. The UIM-SAN-GEIP provides a 1000BaseT Ethernet network interface to the Open SAN shared storage for media transfers.

Procedure summary:

- “Onsite planning”
- “Rack-mount the UIM”
- “Converting the UIM-DIS-GEIP to a UIM-SAN-GEIP”
- “Modify the master hosts file”
- “Configure the UIM network settings”
- “Connect UIM-SAN-GEIP network cables Dell 2650”
- “Install CVFS client software on the UIM-SAN-GEIP”
- “Perform miscellaneous system settings”
- “Enable Fibre Channel network TCP checksums”
- “Verify access to shared storage”
- “Test the UIM-SAN-GEIP functionality”
- “Create UIM-SAN-GEIP system disk image”

Onsite planning

Use the following sections to plan the deployment of the UIM-SAN-GEIP in the Grass Valley Open SAN Shared Storage system.



CAUTION: Do not connect the UIM-SAN-GEIP to the Fibre Channel SCSI fabric until after you have performed “Uninstall the Fibre Channel adapter IP driver” on page 53. The IP driver will cause Open SAN record and payout to fail.

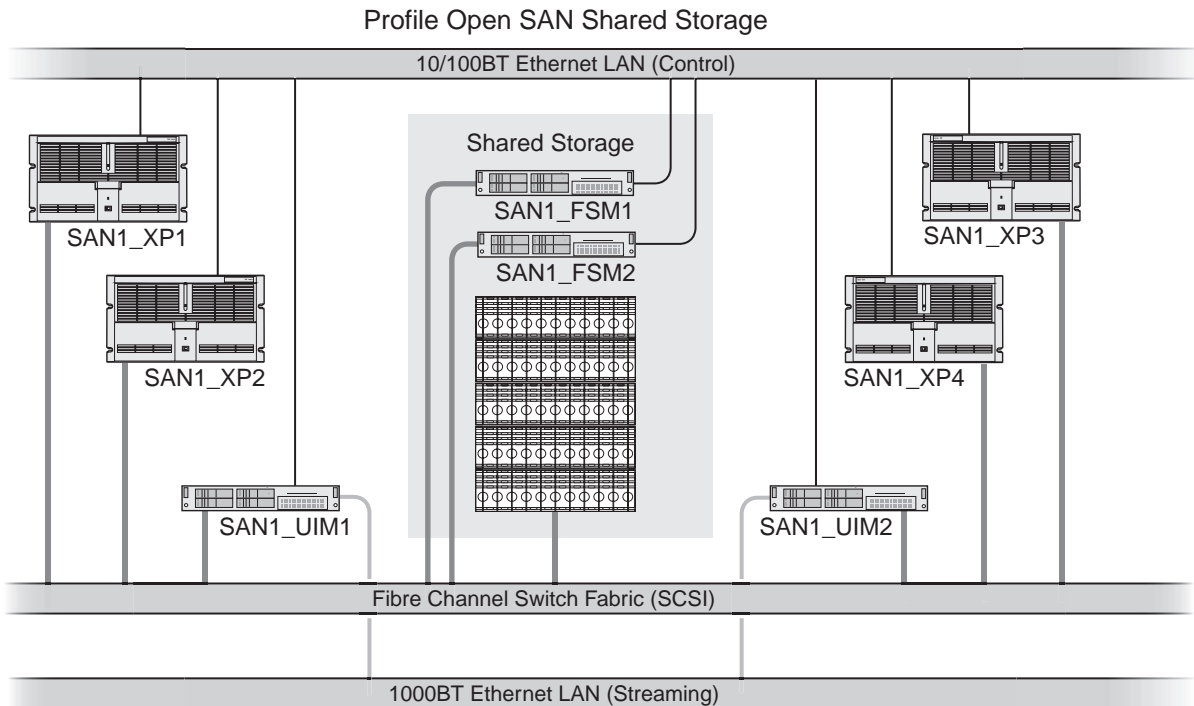
Specify host names in the Open SAN

When deploying the UIM-SAN-GEIP in an Open SAN Shared Storage system, you must follow a strict host naming convention within the Open SAN for client machines, including the UIM-SAN-GEIP. You must use a common prefix to name each client machine, as shown below:

[common prefix]_ [client hostname]

For example, you could identify the Open SAN system as *SAN1*; you would then use *SAN1* as a prefix to name all the client machines in the shared storage system—*SAN1_XP1*, *SAN1_XP2*, and so on. The naming convention does not need to apply to the FSM host name, but it can for consistency.

The following diagram illustrates the naming convention. Use this as a model for specifying host names in your Open SAN Shared Storage system.

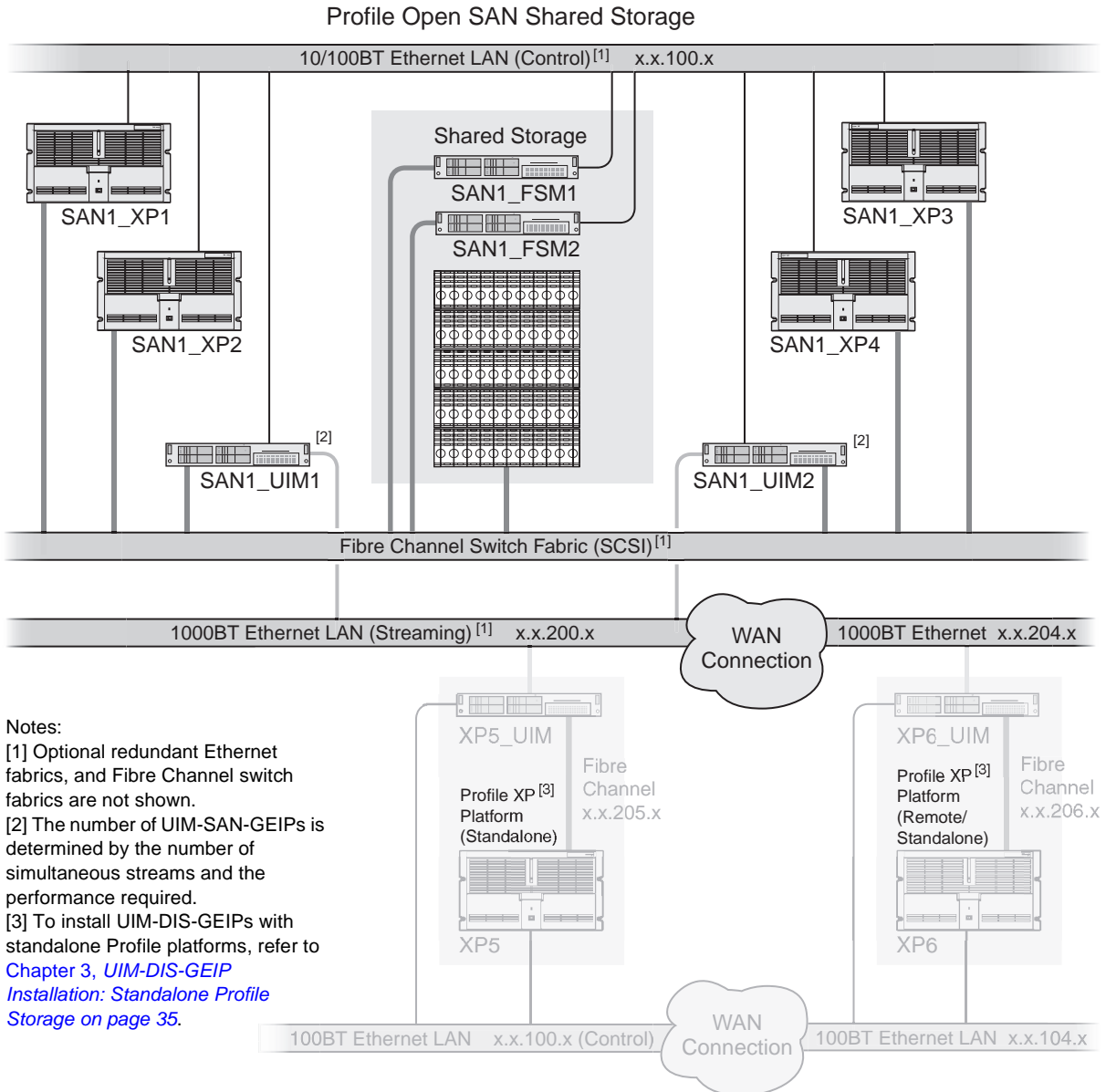


NOTE: Host names are limited to 15 characters. Also, host names are not case sensitive.

Specify a subnet address for the 1000BT streaming LAN

You must specify a unique subnet address for the 1000BT LAN used for streaming media. Do not use the same subnet address as the control LAN. Check with your local network administrator to obtain a valid subnet address.

The following diagram illustrates the subnet address requirements.



Specify redundant FC SCSI switch fabric topology

In failover-configured Open SANs that have redundant Fibre Channel SCSI fabrics, the fabric topology must be configured in a particular way to assure correct failover performance. This topology is often custom-specified for individual Open SANs; as appropriate, this specification should be sought and followed.

In general, given redundant SCSI fabrics A and B, follow this fabric topology:

- The A ports for all Profile XP systems and RAID chassis are connected to the A fabric domain.
- The B ports for all Profile XP systems and RAID chassis are connected to the B fabric domain.
- The UIM-SAN-GEIPs do not have redundant Fibre Channel SCSI ports. You should split the attachment of multiple UIM-SAN-GEIPs between the A and B domains.
- Domain numbers are assigned to each Fibre Channel switch such that any A-domain value is less than any B-domain value.

This topology provides the following failover behavior:

- Each Fibre Channel client, including the UIM-SAN-GEIPs, will discover in order the A, then B RAID controllers.
- The UIM-SAN-GEIPs will select a single, stable, predictable path to the redundant RAID controllers.
- In the event of a RAID controller failure, a UIM-SAN-GEIP, after rebooting if necessary, will find the alternate path to the RAID chassis.
- In the event of a Fibre Channel switch failure, the UIM-SAN-GEIP not primarily connected to the failed switch will continue to function, though it may first require rebooting.

Rack-mount the UIM

Use the instructions in the *Rack Installation Guide* provided with the Dell Server documentation set to mount the UIM in a standard 19 inch equipment rack. You can also refer to the Dell Server *Installation and Troubleshooting Guide* to make power cord, mouse, keyboard, and monitor connections at this time. Do not make network connections at this time.



CAUTION: Do not connect Fibre Channel connection at this time. Refer to “[Uninstall the Fibre Channel adapter IP driver](#)” on page 53.

Converting the UIM-DIS-GEIP to a UIM-SAN-GEIP

In most cases, UIM-SAN-GEIPs shipped from the factory are pre-configured for operation in an Open SAN environment. You should verify that all the following procedures have been accomplished, and perform any steps that are site-specific.

If you must convert the UIM-DIS-GEIP to a UIM-SAN-GEIP for deployment in an Open SAN shared storage system, perform all the procedures in the following sections.

Uninstall the Fibre Channel adapter IP driver

The Fibre Channel adapter IP driver must be uninstalled prior to connecting the UIM to the Open SAN SCSI Fibre Channel switch fabric.

To uninstall the Fibre Channel adapter IP driver:

1. Power on the UIM and log on as administrator (default password: *triton*).
2. Right-click the My Computer desktop icon, then select **Manage**.
The Computer Management application is displayed.
3. Click on **Device Manager**.
4. Expand **Network Adapters** icon in the right hand pane.
5. Right-click the Fibre Channel Adapter device, i.e. QLogic QLA2X00 PCI Adapter, then select **Uninstall**.
6. Accept the warning.
7. When uninstall is complete, restart the UIM.

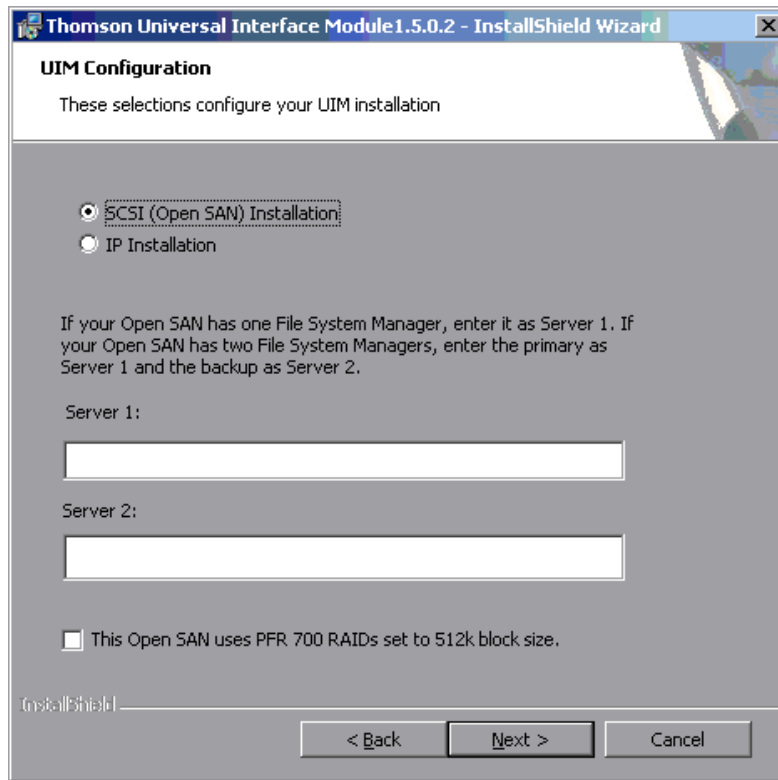
NOTE: Now it is safe to connect the UIM-SAN-GEIP to the appropriate Fibre Channel switch.

8. Proceed with [“Install UIM-SAN-GEIP System Software for Open SAN”](#).

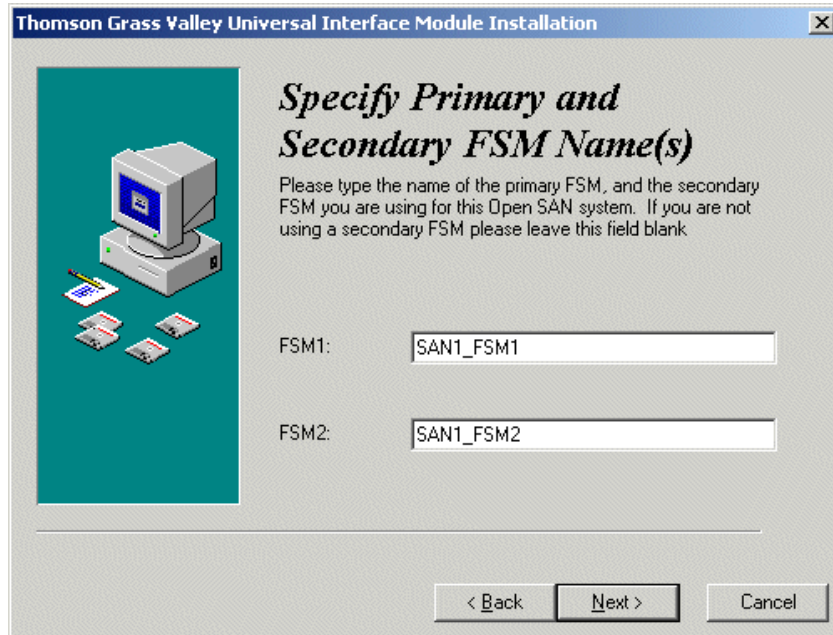
Install UIM-SAN-GEIP System Software for Open SAN

To install the Open SAN version of UIM System Software:

1. Power on the UIM and log on as administrator (password: *triton*).
2. Install software as instructed in “Installing UIM System Software” on page 21, except as follows:
 - a. On the UIM Configuration dialog box, select **SCSI (Open SAN) Installation** option.



- b. Enter the names of File System Managers on your Open SAN.



NOTE: If your Open SAN uses PFR700 RAIDs, be sure to check the option in this dialog box. If not, clear the check box.

3. Click **Next** and follow the on-screen prompts to complete the installation.
4. When installation is complete, click **Finish**.
5. Continue with the next procedure [“Modify the master hosts file”](#).

Modify the master *hosts* file

Use the following steps to modify the master *hosts* file. The master hosts file is maintained and copied to all networked devices in the Open SAN Shared Storage system as well as other Profiles and UIMs in the facility and is used for name resolution. In this procedure, you'll add the IP addresses and host names for all UIMs. After modifying the master hosts file, you must copy it to all networked devices in the Open SAN system, as well as other Profile platforms and UIMs in the facility.

If you are deploying a UIM-SAN-GEIP in an existing Open SAN system, you may have to modify all Profile XP platform host names to meet the host naming requirements described in [“Specify host names in the Open SAN” on page 50](#). If this is the case, you also need to modify the Profile XP hostname entries in the master host file.

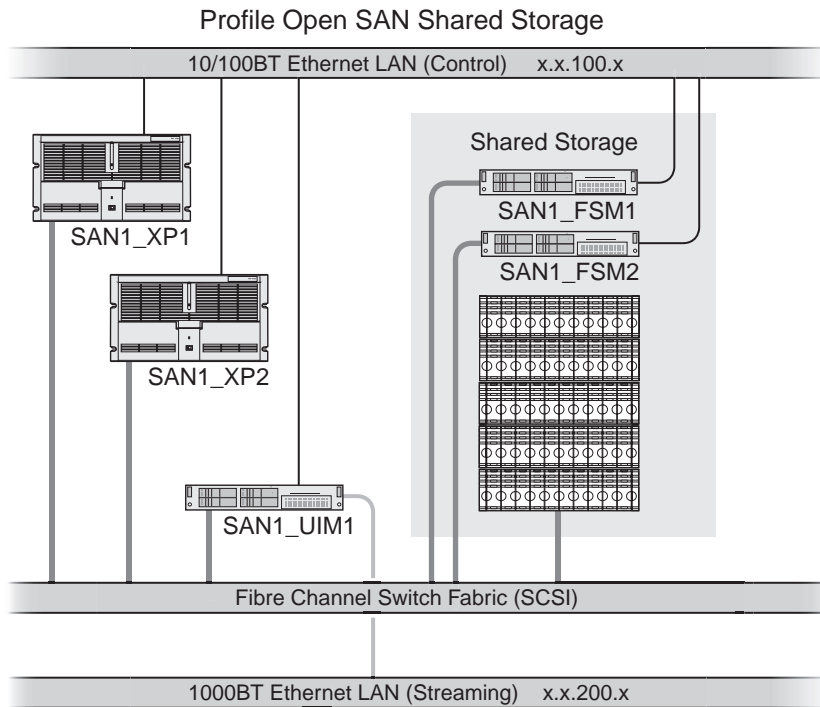
About UIM-SAN-GEIP host name aliasing

Host name aliasing in the hosts file is used to assign the UIM-SAN-GEIP as the 1000BT streaming interface for the Profile XP platforms in the Open SAN system. Aliasing is accomplished in the hosts file by assigning multiple host names to the same IP address, in this case, the UIM-SAN-GEIP network interface IP addresses. To assign the UIM-SAN-GEIP as the 1000BT interface, aliases for each Profile platform in the Open SAN must be added using a strict naming convention as shown below.

Referring to the example Open SAN system on [page 57](#), you would add the following entries to the master hosts file:

```
192.168.100.157      SAN1_UIM1   SAN1_XP1_UIM   SAN1_XP2_UIM
192.168.200.157      SAN1_UIM1_he0  SAN1_XP1_he0  SAN1_XP2_he0
```

From this example, you can see that the UIM-SAN-GEIP control LAN network interface mapped to the UIM hostname *SAN1_UIM1* is also known by the aliases *SAN1_XP1_UIM*, and *SAN1_XP2_UIM*. Also, the UIM-SAN-GEIP streaming LAN network interface mapped to *SAN1_UIM1_he0* is also known by its aliases *SAN1_XP1_he0*, and *SAN1_XP2_he0*. (Refer to [“Specify host names in the Open SAN” on page 50](#) for an explanation of the “_he0” suffix.) With these settings, SAN1_XP1 and SAN1_XP2 will both proxy their transfer requests to SAN1_UIM1.



About load balancing when multiple UIM-SAN-GEIPs are used

There can be multiple UIM-SAN-GEIPs deployed in an Open SAN Shared Storage system. The number of UIM-SAN-GEIPs needed is determined by a combination of the following requirements: the number of simultaneous transfer streams; transfer performance.

When multiple UIM-SAN-GEIPs are used, host name aliasing is used in the hosts file to assign the UIM-SAN-GEIPs to the Profile XP platforms in the Open SAN for proper load balancing. Referring to the example system on [page 51](#), *SAN1_UIM1* handles transfer requests for Profiles *SAN1_XP1* and *SAN1_XP2* while *SAN1_UIM2* handles transfer requests for *SAN1_XP3* and *SAN1_XP4*. To accomplish this, the following entries are added to the master host file.

```
192.168.100.157      SAN1_UIM1  SAN1_XP1_UIM  SAN1_XP2_UIM
192.168.100.158      SAN1_UIM2  SAN1_XP3_UIM  SAN1_XP4_UIM
192.168.200.157      SAN1_UIM1_he0  SAN1_XP1_he0  SAN1_XP2_he0
192.168.200.158      SAN1_UIM2_he0  SAN1_XP3_he0  SAN1_XP4_he0
```

NOTE: Multiple UIM-SAN-GEIPs do not provide automatic failover capability. If a UIM-SAN-GEIP becomes unavailable, transfer requests will fail for all Profile platforms assigned to it.

Example master *hosts* file entries for the UIM-SAN-GEIP

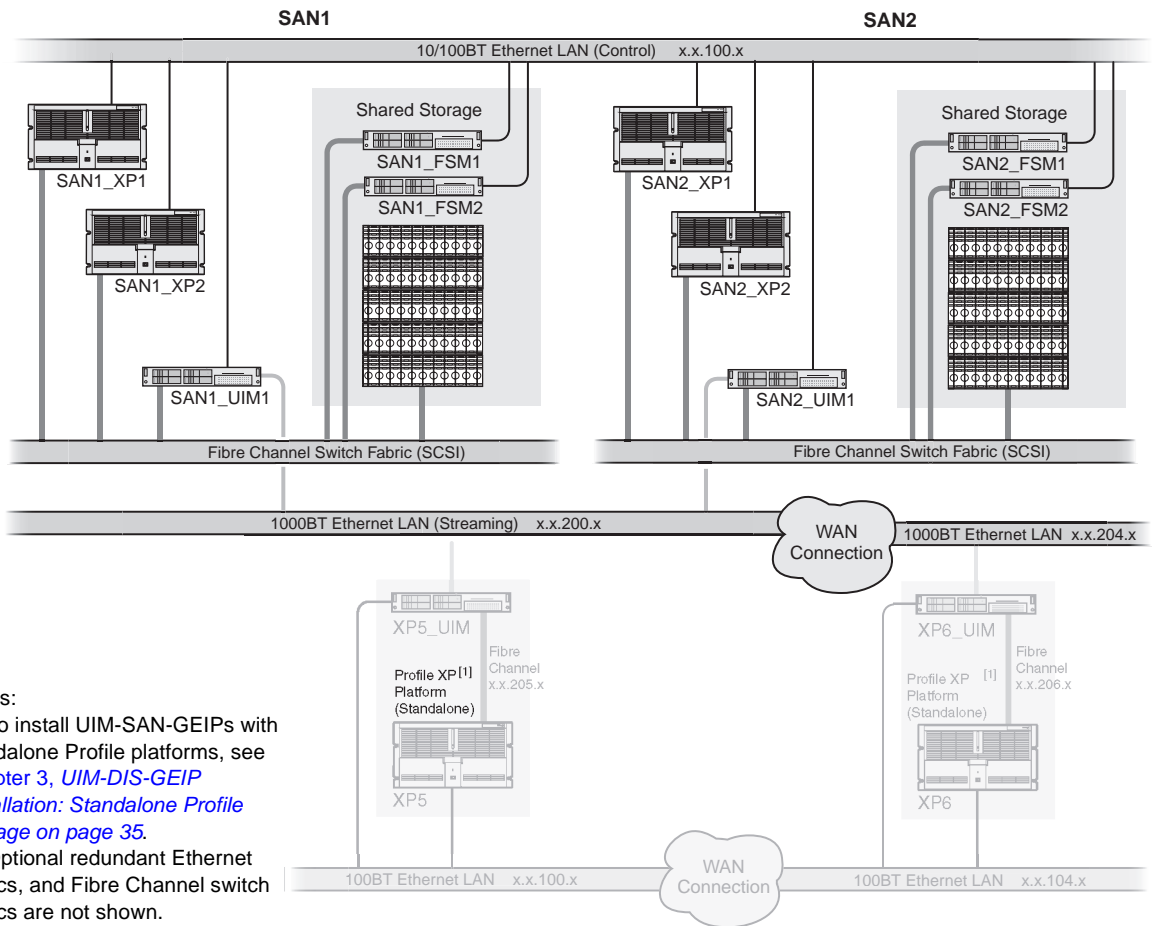
The following master host file was created for the example Open SAN system shown on [page 51](#). This host file can be used for both non-redundant and redundant network scenarios since teamed network adapters share the same IP address. You can use the following example as a model for creating your own host file.

192.168.100.151	SAN1_XP1	} 100BT Entries	
192.168.100.152	SAN1_XP2		
192.168.100.153	SAN1_XP3		
192.168.100.154	SAN1_XP4		
192.168.100.155	SAN1_FSM1		
192.168.100.156	SAN1_FSM2		
192.168.100.157	SAN1_UIM1 SAN1_XP1_UIM SAN1_XP2_UIM		} UIM- Gigabit- SCSI Entries
192.168.100.158	SAN1_UIM2 SAN1_XP3_UIM SAN1_XP4_UIM		
192.168.200.157	SAN1_UIM1_he0 SAN1_XP1_he0 SAN1_XP2_he0		
192.168.200.158	SAN1_UIM2_he0 SAN1_XP3_he0 SAN1_XP4_he0		
192.168.100.105	XP5	} Stand- alone Profile XP Systems	
192.168.205.105	XP5_fc0		
192.168.100.115	XP5_UIM		
192.168.205.115	XP5_UIM_fc0		
192.168.200.115	XP5_he0 XP5_UIM_he0 #Streaming NIC of XP5_UIM		
128.181.104.106	XP6	} Stand- alone Profile XP Systems	
128.181.206.106	XP6_fc0		
128.181.104.116	XP6_UIM		
128.181.206.116	XP6_UIM_fc0		
128.181.204.116	XP6_he0 XP6_UIM_he0 #Streaming NIC of XP6_UIM		

Example master *hosts* file entries for two SANs

The following master host file was created for the example system shown on [page 59](#). This host file can be used for both non-redundant and redundant network scenarios since teamed network adapters share the same IP address.

192.168.100.151	SAN1_XP1	} 100BT Entries
192.168.100.152	SAN1_XP2	
192.168.100.155	SAN1_FSM1	
192.168.100.156	SAN1_FSM2	
192.168.100.051	SAN2_XP1	
192.168.100.052	SAN2_XP2	
192.168.100.055	SAN2_FSM1	
192.168.100.056	SAN2_FSM2	
192.168.100.157	SAN1_UIM1 SAN1_XP1_UIM SAN1_XP2_UIM	} UIM- Gigabit- SCSI Entries
192.168.100.057	SAN2_UIM1 SAN2_XP1_UIM SAN2_XP2_UIM	
192.168.200.157	SAN1_UIM1_he0 SAN1_XP1_he0 SAN1_XP2_he0	
192.168.200.057	SAN2_UIM1_he0 SAN2_XP1_he0 SAN2_XP2_he0	
192.168.100.105	XP5	} Stand- alone Profile XP Systems
192.168.205.105	XP5_fc0	
192.168.100.115	XP5_UIM	
192.168.205.115	XP5_UIM_fc0	
192.168.200.115	XP5_he0 XP5_UIM_he0 #Streaming NIC of XP5_UIM	
128.181.104.106	XP6	} Stand- alone Profile XP Systems
128.181.206.106	XP6_fc0	
128.181.104.116	XP6_UIM	
128.181.206.116	XP6_UIM_fc0	
128.181.204.116	XP6_he0 XP6_UIM_he0 #Streaming NIC of XP6_UIM	



Notes:

- [1] To install UIM-SAN-GEIPs with standalone Profile platforms, see [Chapter 3, UIM-DIS-GEIP Installation: Standalone Profile Storage on page 35](#).
- [2] Optional redundant Ethernet fabrics, and Fibre Channel switch fabrics are not shown.

To modify the FSM master hosts file:

1. On the FSM, make a copy of the master hosts and name it *hosts.bak*. The hosts file is located at *c:\winnt\system32\drivers\etc\hosts*. This copy can be used to recover the original file if there is a problem.
2. Open the hosts file at *c:\winnt\system32\drivers\etc\hosts* using Notepad or some other text editor.
3. Use the following steps to type the entry for the UIM-SAN-GEIP network interface connected to the control LAN.
 - a. On a single line, enter the IP address for the network interface connected to the control LAN.
 - b. Insert a few spaces, then type the UIM-SAN-GEIP host name followed by the *_UIM1* suffix.
For example:

```
192.168.100.157          SAN1_UIM1
```
 - c. Insert a few more spaces, then type all Profile platform host names assigned to this UIM-SAN-GEIP. Use the Profile host name followed by the *_UIM* suffix.

For example:

```
192.168.100.157          SAN1_UIM1  SAN1_XP1_UIM  SAN1_XP2_UIM
```

4. Use the following steps to type the entry for the UIM-SAN-GEIP 1000BT streaming network interface
 - a. On a single line, enter the IP address for the network interface connected to the streaming LAN.
 - b. Insert a few spaces, then type the UIM-SAN-GEIP host name followed by the `_he0` suffix. (NOTE: The suffix uses the zero character, not the letter ‘o’.)

For example:

```
192.168.200.157          SAN1_UIM1_he0
```

- c. Insert a few more spaces, then type all Profile platform host names assigned to this UIM-SAN-GEIP. Use the Profile host name followed by the `_he0` suffix.

For example:

```
192.168.200.157          SAN1_UIM1_he0  SAN1_XP1_he0  SAN1_XP2_he0
```

5. If you modified the Profile XP platform host names as described in [“Specify host names in the Open SAN” on page 50](#), you must revise those entries in the host file now.
6. Save the master hosts file and exit Notepad.
7. Copy the new master `hosts` file to all network devices in the Open SAN system including FSMs, Profile XP platforms, other UIM-SAN-GEIPs, and standalone Profile platforms in the facility that proxy to the UIM.

```
c:\winnt\system32\drivers\etc\hosts
```

NOTE: Errors in this configuration step will render your media exchange network inoperable. Take great care to enter all information correctly, then recheck for errors.

Configure the UIM network settings

Refer to your system design and the requirements described in “Specify host names in the Open SAN” on page 50 and “Specify a subnet address for the 1000BT streaming LAN” on page 51, then configure network settings on each UIM-SAN-GEIP.

1. Power-on the UIM-SAN-GEIP and log on as *Administrator* (default password: *triton*).
2. Modify the UIM-SAN-GEIP host name as follows:
 - a. Right-click the computer icon on the desktop, then select **Properties** to open the System Properties dialog box.
 - b. Click the **Network Identification** tab, then click **Properties**.
 - c. Enter the UIM-SAN-GEIP computer name, then click **OK**.
 - d. Click **Yes** to accept non-standard name.
 - e. Click **OK** to acknowledge the reboot message.
 - f. Click **OK** to close the System Properties dialog box.
 - g. Click **NO**. Do not reboot at this time.
3. Configure the TCP/IP settings on each UIM-SAN-GEIP network adapter as follows:
 - a. Right-click the “My Network Places” desktop icon, then select **Properties** to open the Windows operating system “Network Connections” dialog box.
Depending on the Dell platform, network connections are displayed as follows:

Name	Type	Status	Device Name
Dell 2650			
QLogic FC NIC	LAN	Enabled	QLogic QLA2X00 PCI Adapter
Intel 1000BT Port A	LAN	Enabled	Intel(R) Pro/1000 MT Quad Port Server Adapter
Intel 1000BT Port B	LAN	Enabled	Intel(R) Pro/1000 MT Quad Port Server Adapter #2
Intel 1000BT Port C	LAN	Enabled	Intel(R) Pro/1000 MT Quad Port Server Adapter #3
Intel 1000BT Port D	LAN	Enabled	Intel(R) Pro/1000 MT Quad Port Server Adapter #4
Control Team - Intel Ports A/B	LAN	Enabled	Intel(R) Advanced Network Services Virtual Adapter
Streaming Team - Intel Ports C/D	LAN	Enabled	Intel(R) Advanced Network Services Virtual Adapter #2
Dell 2850			
QLogic FC NIC	LAN	Enabled	QLogic QLA2X00 PCI Adapter
Intel 1000BT Port A	LAN	Enabled	Intel(R) Pro/1000 MT Network Connection
Intel 1000BT Port B	LAN	Enabled	Intel(R) Pro/1000 MT Network Connection #2

Name	Type	Status	Device Name
Intel 1000BT Port C	LAN	Enabled	Intel(R) Pro/1000 MT Dual Port Server Adapter
Intel 1000BT Port D	LAN	Enabled	Intel(R) Pro/1000 MT Dual Port Server Adapter #2
Control Team - Intel Ports A/B	LAN	Enabled	Intel(R) Advanced Network Services Virtual Adapter
Streaming Team - Intel Ports C/D	LAN	Enabled	Intel(R) Advanced Network Services Virtual Adapter #2
Dell 1950			
QLogic FC NIC	LAN	Enabled	QLogic QLA2X00 PCI Adapter
Broadcom 1000BT Port A	LAN	Enabled	Broadcom BCM5708C NetXtreme II GigE (NDIS VBD Client)
Broadcom 1000BT Port B	LAN	Enabled	Broadcom BCM5708C NetXtreme II GigE (NDIS VBD Client) #2
Control Team - Broadcom Ports A and B	LAN	Enabled	BASP Virtual Adapter
Intel 1000BT Port C	LAN	Enabled	TEAM: Streaming Team - Intel(R) Pro/1000 MT Dual Port Server Adapter
Intel 1000BT Port D	LAN	Enabled	TEAM: Streaming Team - Intel(R) Pro/1000 MT Dual Port Server Adapter #2
Streaming Team - Intel Ports C and D	LAN	Enabled	TEAM: Streaming Team

- b. Right-click either fault tolerance team, *Control Team - ... Ports A & B*, or *Streaming Team - ... Ports C & D*, then select **Properties** to configure network settings. Team descriptions are shown in the table that follows.

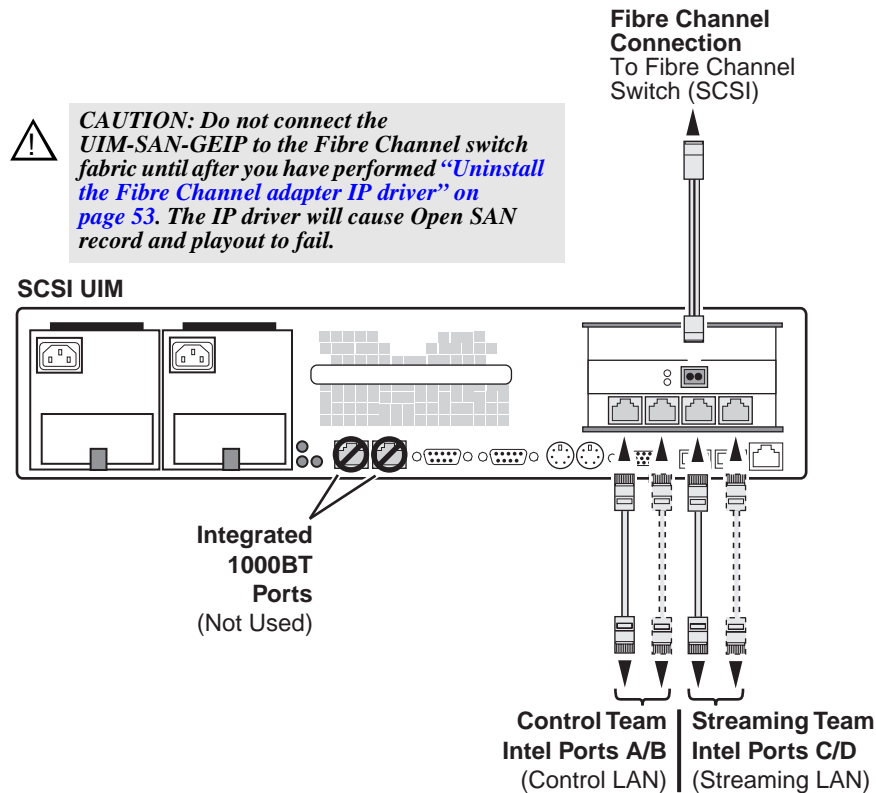
NOTE: Always configure the Ethernet network settings using the fault tolerance teams. Do not select and configure the network adapters directly. In non-redundant Ethernet configurations, the unused ports will be ignored.

Connection Name Listed	Description	Configuration Tasks
Control Team1 - ... Ports A & B	Control LAN Team Members ^a : Primary: ... 1000BT Port A Secondary: ... 1000BT Port B	Configure the IP Address, subnet mask, and other network settings for each connection as required by your network design and site requirements. (Refer to “Specify a subnet address for the 1000BT streaming LAN” on page 51.) Contact your local network administrator of details.
Streaming Team - ... Ports C & D	Streaming LAN Team Members ^a : Primary: ... 1000BT Port C Secondary: ... 1000BT Port D	

- a. Primary designates the primary adapter for the team. Secondary designates the backup adapter. If the primary connection is lost, then restored, it rejoins the team as a member and not the primary connection. When redundant connections are not used, the unused port is ignored.
 - c. When prompted to restart, click **No**. Wait until all connections are configured.
 - d. Repeat step b for the remaining team.
4. After all connections are configured, restart the UIM-SAN-GEIP.
5. Proceed to the next procedure [“Connect UIM-SAN-GEIP network cables Dell 2650”](#).

Connect UIM-SAN-GEIP network cables Dell 2650

Connect the network cables for each UIM-SAN-GEIP as shown. Be sure to consult your Ethernet and Fibre Channel switch fabric designs as you make connections. Refer to [“Onsite planning” on page 50](#).

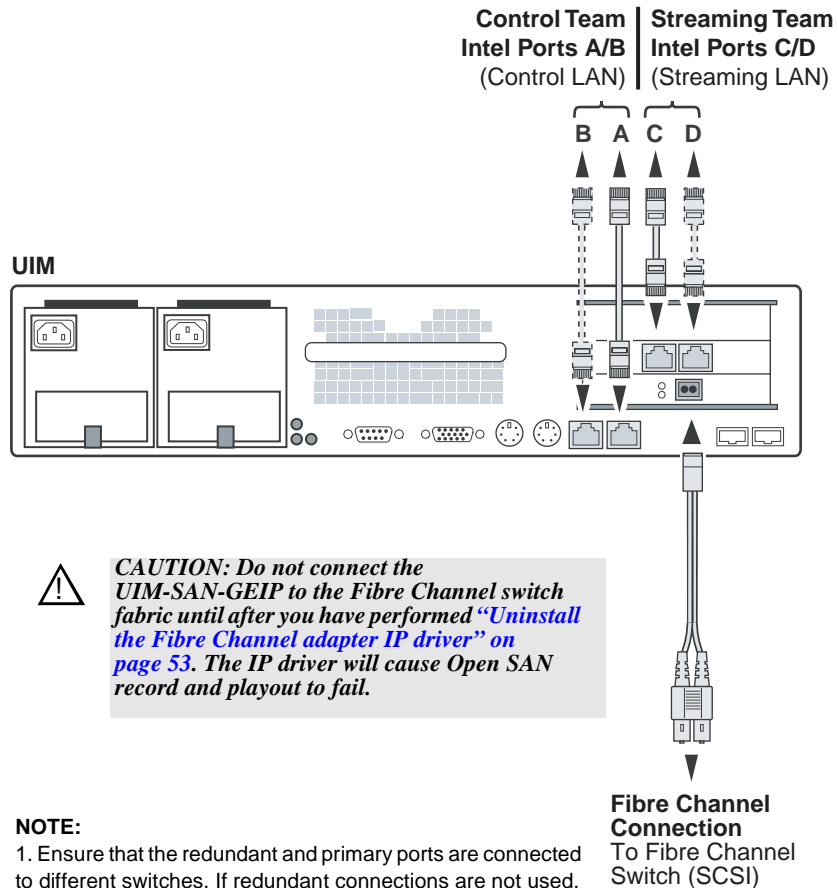


NOTE:

1. Ensure that the redundant and primary ports are connected to different switches. If redundant connections are not used, unused ports are ignored.
2. Verify that the Ethernet switches support Spanning Tree Protocol (STP), and that the protocol is configured as described in [“Redundant Ethernet network requirements” on page 17](#).

Connect UIM-SAN-GEIP network cables Dell 2850

Connect the network cables for each UIM-SAN-GEIP as shown. Be sure to consult your Ethernet and Fibre Channel switch fabric designs as you make connections. Refer to [“Onsite planning” on page 50](#).

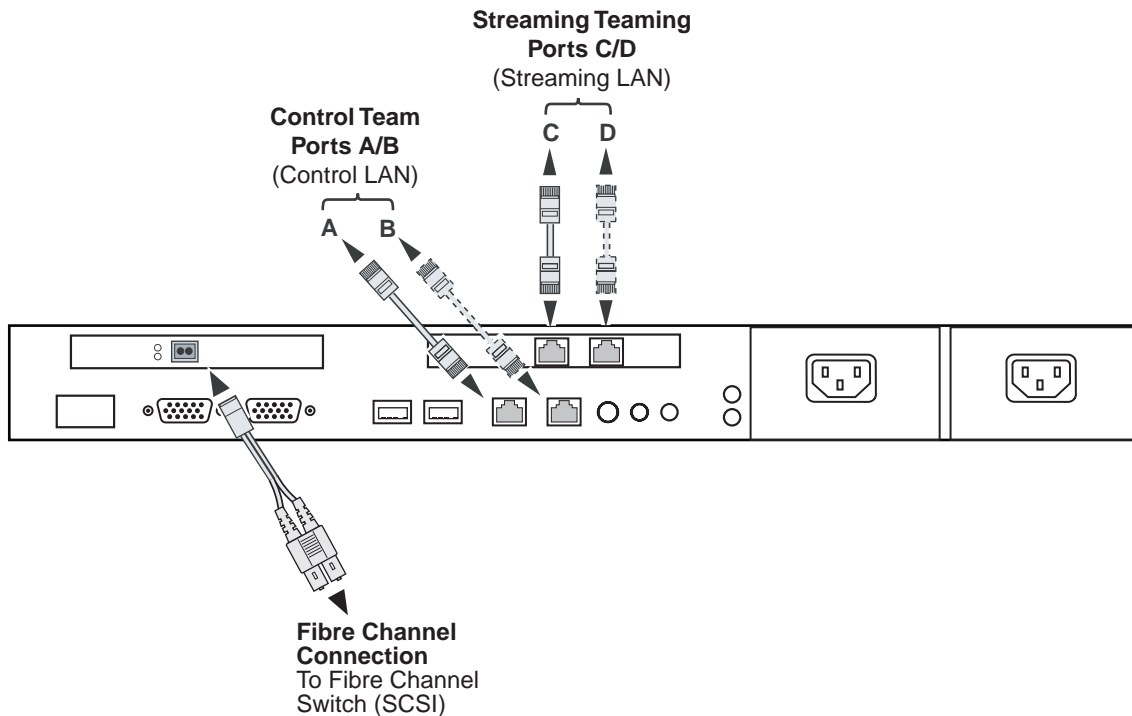


NOTE:

1. Ensure that the redundant and primary ports are connected to different switches. If redundant connections are not used, unused ports are ignored.
2. Verify that the Ethernet switches support Spanning Tree Protocol (STP), and that the protocol is configured as described in [“Redundant Ethernet network requirements” on page 17](#).

Connect UIM-SAN-GEIP network cables Dell 1950

Connect the network cables for each UIM-SAN-GEIP as shown. Be sure to consult your Ethernet and Fibre Channel switch fabric designs as you make connections. Refer to [“Onsite planning” on page 50](#).



CAUTION: Do not connect the UIM-SAN-GEIP to the Fibre Channel switch fabric until after you have performed [“Uninstall the Fibre Channel adapter IP driver” on page 53](#). The IP driver will cause Open SAN record and playout to fail.

NOTE:

1. Ensure that the redundant and primary ports are connected to different switches. If redundant connections are not used, unused ports are ignored.
2. Verify that the Ethernet switches support Spanning Tree Protocol (STP), and that the protocol is configured as described in [“Redundant Ethernet network requirements” on page 17](#).

Install CVFS client software on the UIM-SAN-GEIP

Use the following sections to install, license, and configure the CVFS client software on the UIM-SAN-GEIP.

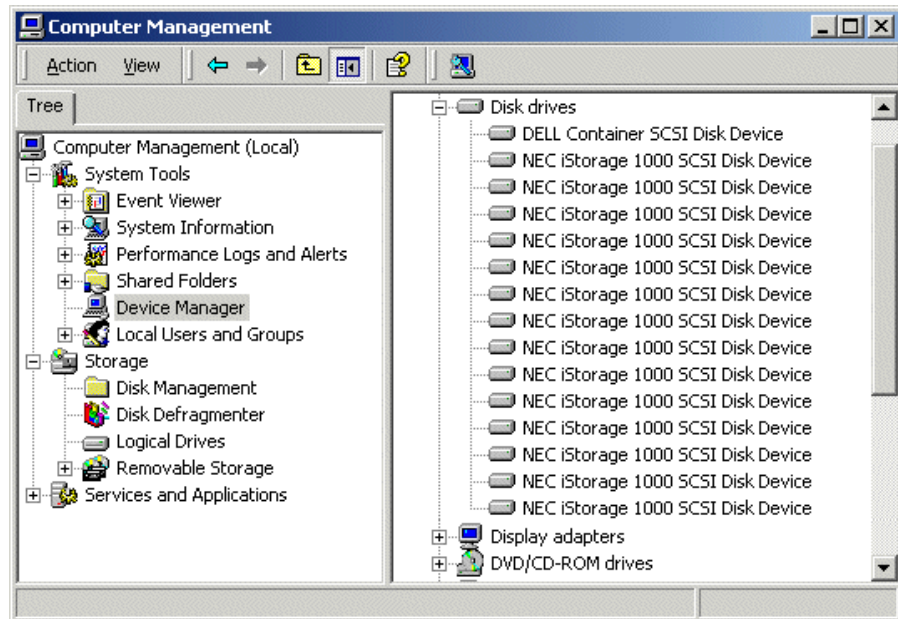
Install CVFS client software on the UIM

Use the following steps to install the CVFS client software on the UIM-SAN-GEIP. This procedure requires the CVFS setup program located on the *Open SAN File System* CD-ROM or downloaded from the Thomson Grass Valley FTP site.

NOTE: Be sure to install the correct client software version. The software version must match the CVFS software running on the File System Manager (FSM) in the Open SAN system.

To install the file system client software:

1. First verify the UIM-SAN-GEIP Fibre Channel connection to the shared storage disks using the following steps.
 - a. Right-click the computer icon on the desktop, then select **Manage**.
 - b. Select Device Manager in the tree.
 - c. Expand Disk drives.
 - d. Verify that the LUNs in the SCSI fabric are displayed.



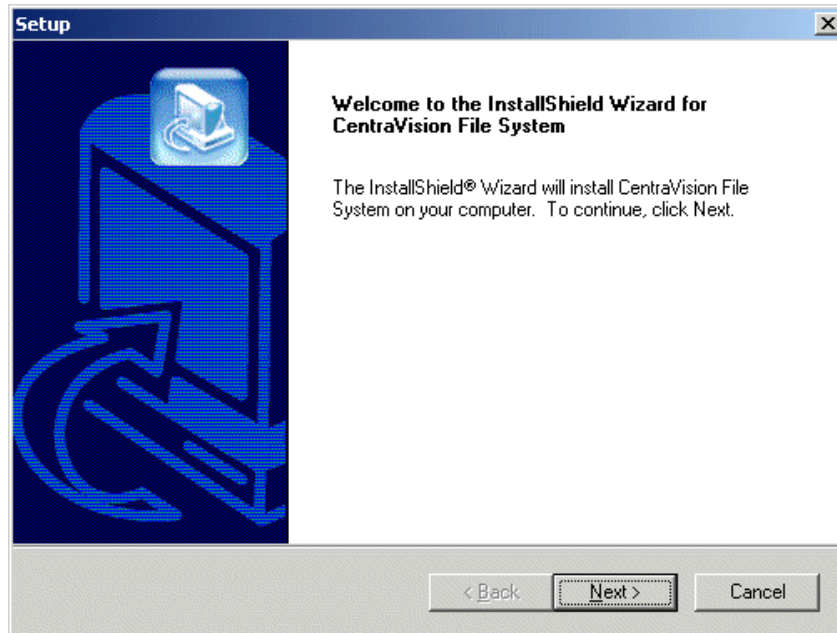
The UIM-SAN-GEIP must “see” the physical drives at the SCSI level in order to support the Open SAN file system. If not, check that the Fibre Channel adapter IP driver was removed as in [“Uninstall the Fibre Channel adapter IP driver” on page 53](#), and check Fibre Channel adapter cabling. Also refer to [“If you have a problem: UIM-SAN-GEIP” on page 116](#).

2. Insert the *Open SAN File System* CD-ROM into the UIM-SAN-GEIP's CD-ROM drive.

The installation program starts automatically and guides you through the installation process.



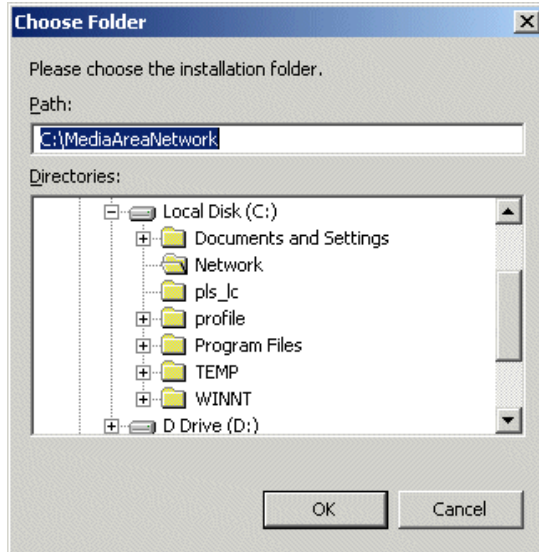
3. On the Welcome is displayed, click **Next**.



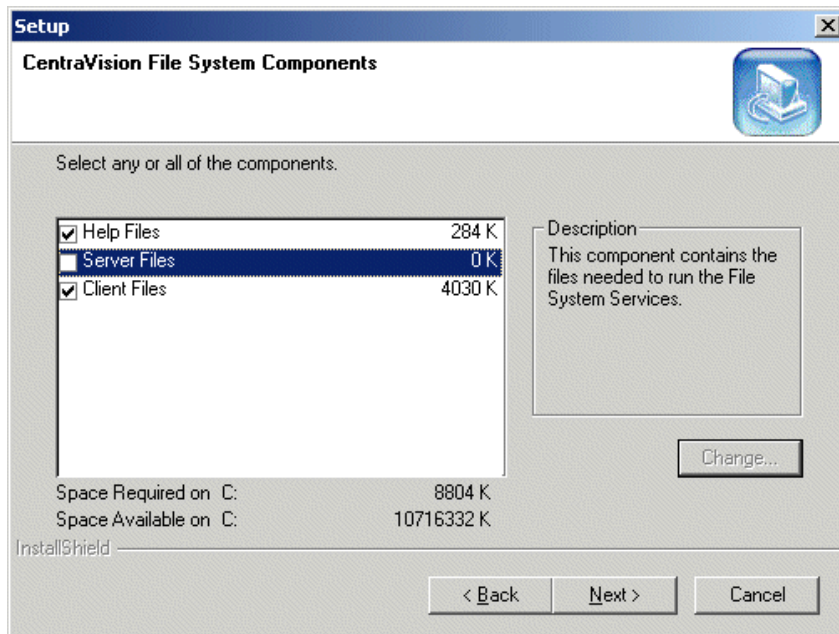
4. On the Setup page, click **Next**, then accept the license agreement to continue.

5. On the Choose Destination Location page, click **Browse**, to type C:\MediaAreaNetwork, then click **OK** to close.

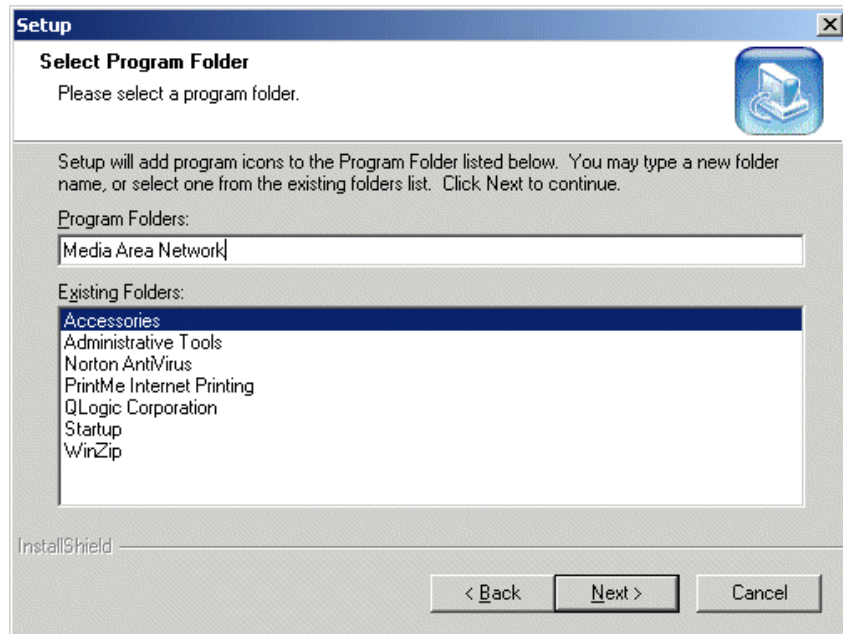
NOTE: Do not use spaces in the directory name.



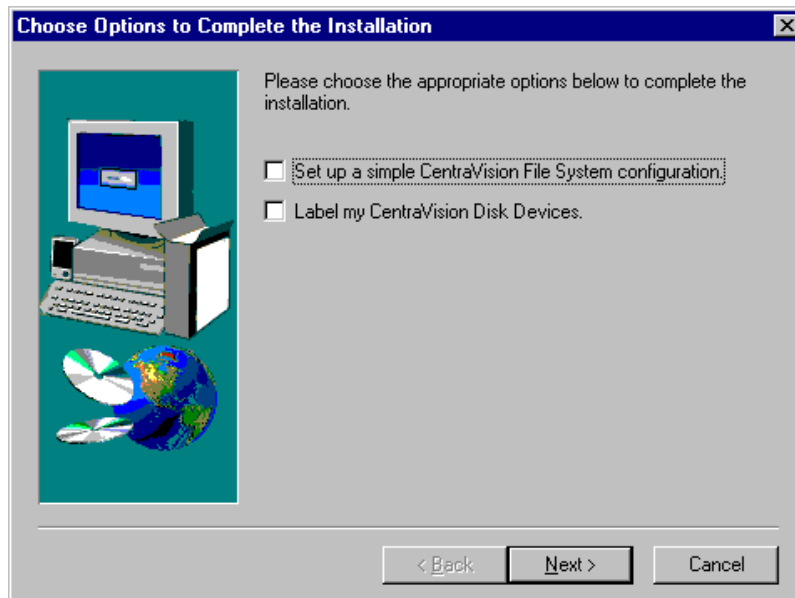
6. Click **Next**, then answer **Yes** when prompted to create the directory.
7. When the File System Components page appears, select the components shown, then click **Next**.



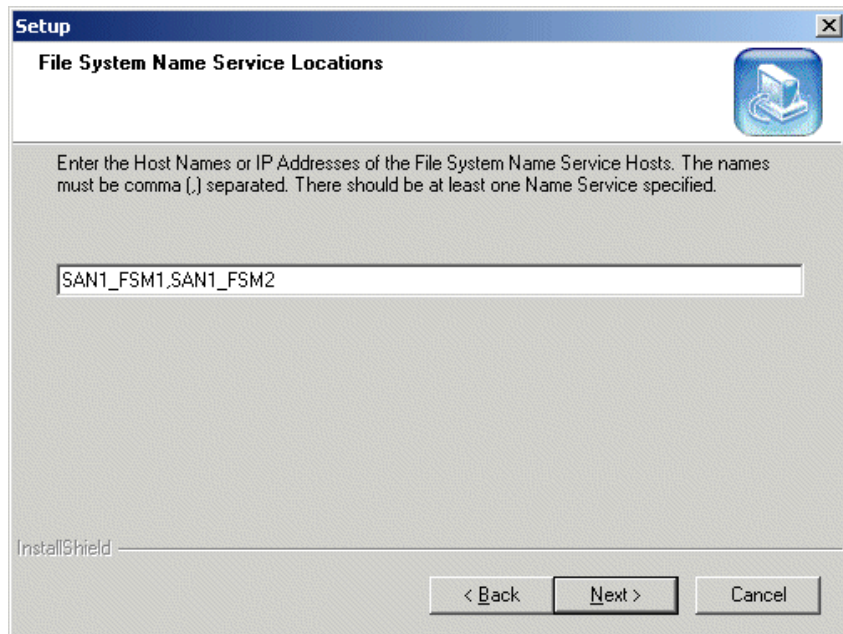
8. In the Select Program Folder page, type Media Area Network, then click **Next**.



9. On the Start Copying Files page, click **Next**.
10. When prompted to view Help Files during installation, click **No**.
11. When the Choose Options to Complete the Installation screen appears, leave the check boxes blank and click **Next**.



12. When the File System Name Service Locations screen appears, enter the name or IP address of the File System Manager (FSM).
If your Open SAN uses redundant FSMs, enter the redundant FSM here as shown.



13. Click **Next** on this screen and on the next screen to confirm.
14. Click **OK** on the message that informs you that the file system services have started.
15. When prompted to establish drive mapping and credentials, click **No**.
16. Click **Finish**.
17. When prompted, restart Windows.
18. After restart, click **Start | Programs** and verify that the installation program correctly created a **Media Area Network** program group. If it is not correct, use **Start | Settings | Taskbar** to change the name of the program group.
19. Continue with the next procedure "[License the UIM-SAN-GEIP CVFS Client Software](#)".

License the UIM-SAN-GEIP CVFS Client Software

The CVFS client software you installed on the UIM-SAN-GEIP is licensed by modifying the *license.dat* file on the File System Manager (FSM) in the Open SAN system. The CVFS software *license.dat* file contains the license for the FSM as well as the license for each Profile XP Media platform, and UIM-SAN-GEIP in the Open SAN system. If you are using two FSMs, the redundant FSM needs the same master license file.

For this procedure, you'll need the *license.txt* file generated for your UIM-SAN-GEIP. To obtain the license, contact Grass Valley Support.

Once you have the *license.txt* file, perform the following procedure.



CAUTION: Do not overwrite the license.dat file on the FSM since it contains authorization strings for all client and server devices in the Open SAN system. Use the following steps to append the UIM-SAN-GEIP authorization string without deleting or modifying information currently in the file.

To modify (append) the *license.dat* file on the FSM:

1. Locate the FSM for the Open SAN system. (You can select the primary or redundant FSM if two FSMs are used.)
2. On the FSM, browse to the following file and open it with a text editor.

```
C:\MediaAreaNetwork\config\license.dat
```

3. Use the following steps to add the UIM-SAN-GEIP license data to the FSM *license.dat*:

- a. On the FSM, browse to the following file and open it with a text editor:

```
license.txt
```

- b. Copy the file contents and paste to the end of the FSM *license.dat* file on the FSM.

Example license.txt file contents:

```
# System:          SAN1_UIM1
# Identifier:      65BF1485D
# Platform:       NT
# Number Cpus:    Unlimited
# Option:         none
# License Authorization String:
client 1 NT 65BF1485D AAAAAABWAAASCCY9TKBQSCNQMJKPSRER75A2RSHEE7P9DSLEM4RSA
SAN1_UIM1 GVG
```

NOTE: Only the authorization string is required for licensing. You can safely modify the “System” text to match the UIM-SAN-GEIP host name.

- c. Save changes.
4. If a redundant FSM is used, copy the master *license.dat* file to the following location on the redundant FSM.

```
C:\MediaAreaNetwork\config\license.dat
```

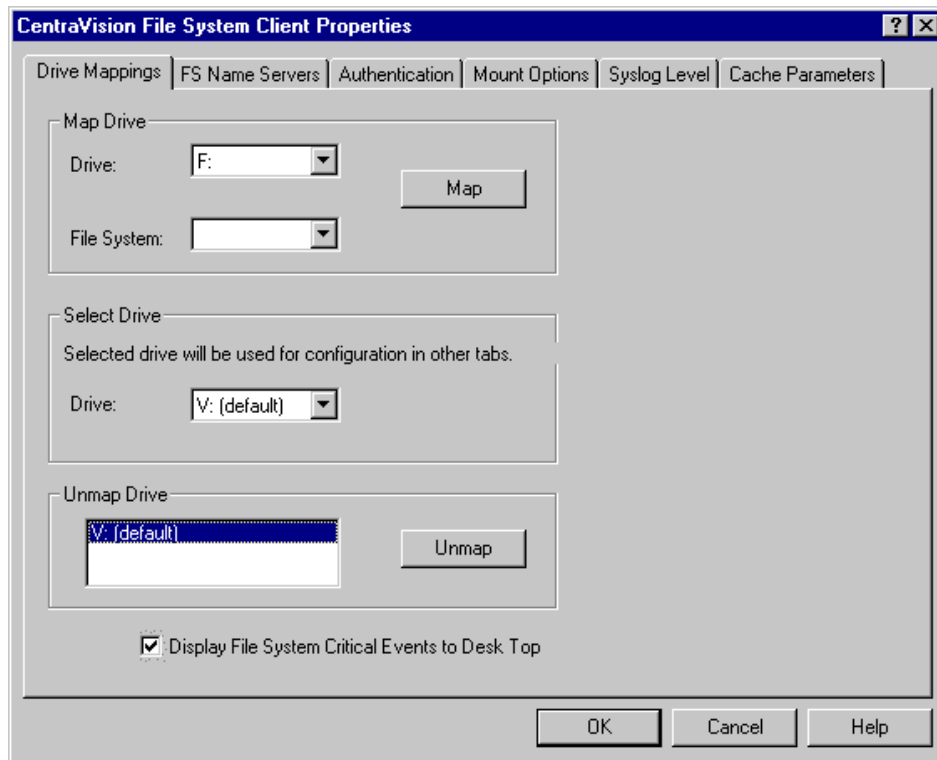
5. When you have verified that the UIM-SAN-GEIP is correctly licensed on both FSMs, continue with the next procedure [“Test the UIM-SAN-GEIP functionality” on page 79](#).

Configure CVFS Client software on the UIM-SAN-GEIP

Now that the CVFS client software is licensed, you can configure the software to access the file system as follows:

1. On the UIM-SAN-GEIP, click **Start | Programs | Media Area Network | File System Control Parameters**.

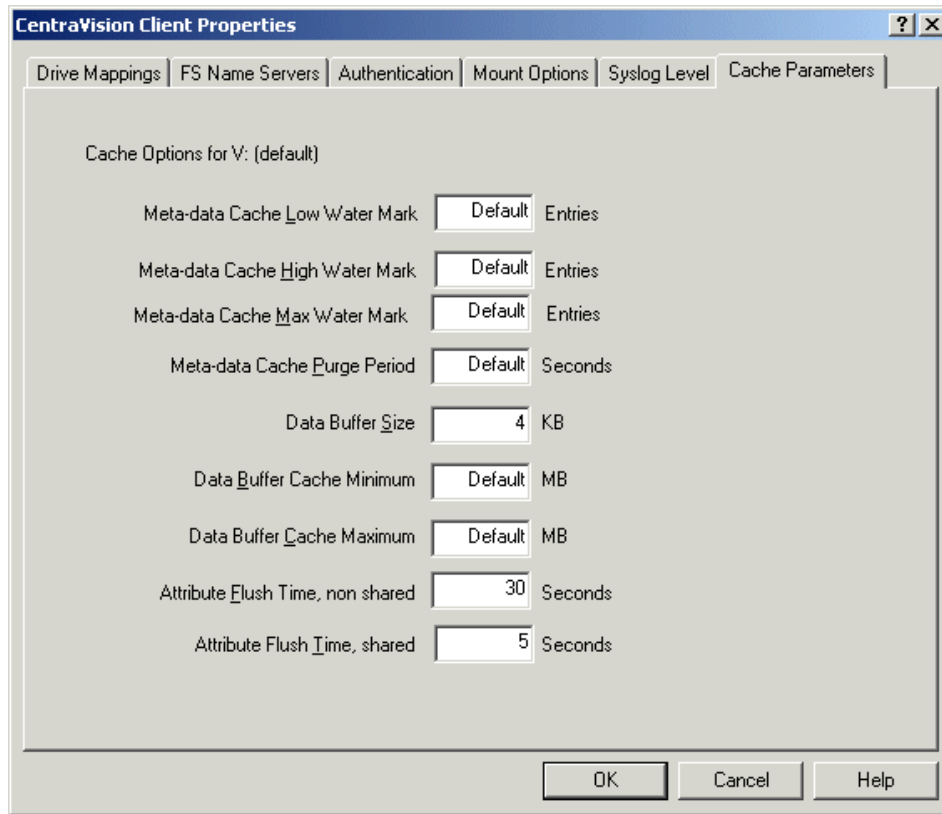
The File System Client Properties application opens.



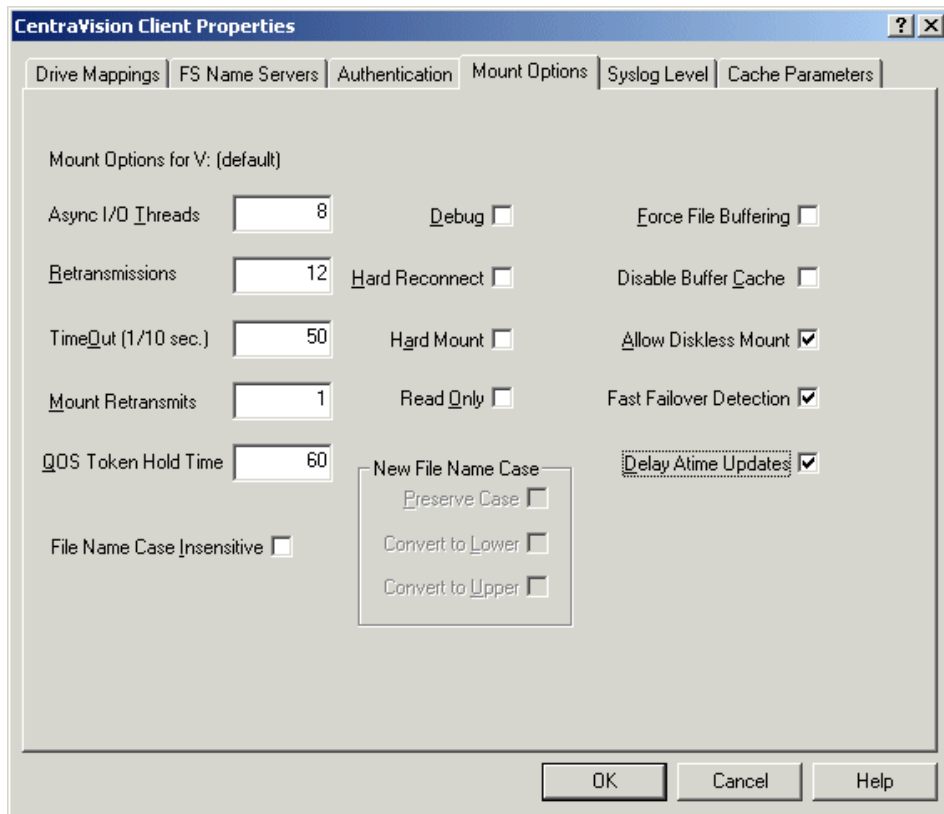
2. In the Map Drive | Drive drop-down list, select **V**.
3. On the Drive Mappings tab, in the Map Drive | File System drop-down list, select **default**.

NOTE: If you have a problem, refer to [“Check network connections and hosts file name resolution” on page 78](#).

4. Click the **Map** button.
Your selected drive and file system appear in the Select Drive | Drive box.
5. Select the **Display File System Critical Events to Desk Top** checkbox.
6. Select the Cache Parameters tab, configure as follows:



7. On the Mount Options tab, configure as follows:



- Select **Allow Diskless Mount**. This setting is required on both redundant FSM and single FSM systems.
 - Select **Fast Failover Detection**. This setting takes effect only on redundant FSM systems. For consistency, you should select it on single FSM systems as well, as it has no adverse effect.
 - Select **Delay Atime Updates**. This setting improves the ability of transfer streams to continue during an automatic system recovery event.
Leave the rest of at their default settings.
8. Click **OK** and **Yes** to save settings and close the application.
 9. When prompted, re-start the UIM-SAN-GEIP.
 10. Continue with the next procedure “[Perform miscellaneous system settings](#)”.

Perform miscellaneous system settings

Perform the following procedures to configure system settings.

Add TCP/IP service registry setting

Perform the following steps to use Registry Editor to modify TCP/IP service parameters.

1. Start Registry Editor by clicking **Start | Run**, then type `regedit` and click **OK**.
2. Expand the tree to locate and select the following:

```
HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\Tcpip\Parameters
```

3. In the Registry Editor main menu, click **Edit | New | DWORD Value**.
4. For the new DWORD value name, type the following, then press **Enter**.

```
DisableDHCPMediaSense
```
5. Double-click the new DWORD value, and enter a Value data of 1, then click **OK**.
6. Proceed to [“Add CVFS Multipath disable setting”](#).

Add CVFS Multipath disable setting

Perform the following steps to use Registry Editor to add the CVFS Fibre Channel multipath disable entry.

1. Start Registry Editor by clicking **Start | Run**, then type `regedit` and click **OK**.
2. In Registry Editor, expand the tree to locate and select the following:

```
HKEY_LOCAL_MACHINE\Software\ADIC\CentraVision File System\1
```

3. In the Registry Editor main menu, click **Edit | New | DWORD Value**.
4. For the new DWORD value name, type the following, then press **Enter**.

```
NoMultiplePaths
```

5. Double-click the new DWORD value, and enter a Value data of 1, then click **OK**.
6. Close Registry Editor.

Set Control Team to top priority

For the UIM-SAN-GEIP, ensure that the machine's Control adapter team has top priority.

1. Click through **Start | Settings | Control Panel | Network and Dial-up Connections**.
2. In the main menu of the window that appears, click **Advanced | Advanced Settings**.
3. Under the Adapters and Bindings tab, observe that the *Control Team - ... Ports A/B* has top priority, followed by *Streaming Team - ... Ports C & D*. If this is not the case, select adapters as appropriate and use the up and down arrow dialog buttons to order them correctly.

The remaining adapter icons should be located below the teams. Their order is irrelevant.

4. Click **OK**.

Enable TCP/IP checksum offload on the Streaming Team - ... Ports C & D

For the UIM-SAN-GEIP, ensure that the network port connected to the streaming LAN has TCP/IP checksum enabled.

1. Right-click My Network Places desktop icon, then select **Properties**.
2. Right-click the connection named ... *1000BT Port C*, then select **Properties**.
3. Click **Configure**.
4. Click the **Advanced** tab.
5. Set the properties for this port as shown in the table.

Properties	Value
Offload Receive IP Checksum	On
Offload Receive TCP Checksum	On
Offload Transmit IP Checksum	On
Offload Transmit TCP Checksum	On

6. Click **OK** to accept changes.
7. Click **OK** to close.
8. Repeat step 2 through step 7 for the connection named ... *1000BT Port D*.
9. Close the Network and Dialup Connection dialog box.

Create fsroutes file for all clients on the Open SAN

On each CVFS client machine on the Open SAN, create a fsroutes file located at:
C:\MediaAreaNetwork\config\fsroutes

In this text file, add a line as follows for each of the FSM in the SAN:

<FSM machine name> <FSM IP address>

The file might, for example, have these entries:

```
SAN1_FSM1                192.168.100.155
SAN1_FSM2                192.168.100.156
```

The fsroutes file should exist on every CVFS client machine, including Profiles and FSMs at *C:\MediaAreaNetwork\config\fsroutes*. You may find it convenient to create the file on one client and then copy the file onto all the others.

After you have made these configuration changes, reboot each client, then test the system. For a single-FSM system, establish CVFS attachment (a functioning V: drive) for all clients. Reboot the FSM. It should complete its start-up and automatically resume control of the CVFS file system. For a dual-FSM system, similarly establish CVFS attachment for a nominal primary FSM and cause a failover to an active-backup FSM. The backup FSM should automatically take control of the CVFS file system. Repeat the test to fail back to the previous FSM.

Enable Fibre Channel network TCP checksums

When configuring Profile XP Media Platform, you must enable TCP checksums on the Fibre Channel Network adapter. For instructions, refer to the Fibre Channel Networking chapter in the *Profile XP Media Platform System Guide*.

Verify access to shared storage

Before continuing, you can confirm UIM-SAN-GEIP access to the shared storage using Windows Explorer to view the V: drive.

To check for access to shared storage:

1. On the UIM-SAN-GEIP, open Windows Explorer.
2. Double-click the computer icon, and check that the “V” drive is listed.

The following folders are present:

- attic
- media
- Pdr



CAUTION: Do not browse the folders on the V: drive or alter any data in the V: drive. This may render the Open SAN inoperable.

3. If all the UIM-SAN-GEIPs have access to shared storage, proceed to [“Test the UIM-SAN-GEIP functionality” on page 79](#). If not, proceed to the next section [“The UIM-SAN-GEIP does not recognize shared storage”](#).

The UIM-SAN-GEIP does not recognize shared storage

If the UIM-SAN-GEIP does not have access to the shared storage, use the following procedures to diagnose possible setup problems.

Check network connections and *hosts* file name resolution

If access to shared storage or transfer request fails, use the following procedure to test for basic Ethernet connectivity and name resolution on the UIM-SAN-GEIP. This is a common setup problem and can prevent media transfers.

To test basic Ethernet connectivity and name resolution:

1. On the UIM-SAN-GEIP, open the Windows command prompt and use the **ping** command to test the network connection to the Open SAN FSM.

For example, on one of the UIM-SAN-GEIPs, type:

```
ping SAN1_FSM <RETURN>
```

2. If the command returns:

```
Pinging SAN1_FSM [192.168.100.155]
```

you have successfully resolved the name “SAN1_FSM” to the IP address [192.168.100.155].

If not, you may want to recheck the master hosts file for the correct host name and IP address.

3. If the host fails to reply, check the network settings on the target system, and all Ethernet cable connections.

Perform Quick-Check procedures

Use the quick-check procedures in the following table to help determine why the UIM-SAN-GEIP does not have access to the V: drive.

Quick-check steps	Possible problems	Corrective action
A. On the UIM-SAN-GEIP system, open Windows Explorer and check that drive “V” is listed as a mapped network drive.	There is a long delay before drives are displayed, then drive “V” is not displayed in the drive list.	Make sure the client file system client software is configured properly. Refer to “Configure CVFS Client software on the UIM-SAN-GEIP” on page 73 to check your configuration.
B. On the Open SAN FSM, view the file system client license info by opening the file C:\MediaAreaNetwork\config\license.dat.	CVFS client licenses for one or more UIM-SAN-GEIPs is not installed.	Install the missing client license(s) on the FSM. Refer to “License the UIM-SAN-GEIP CVFS Client Software” on page 71 .
C. On the UIM-SAN-GEIP, check that all shared storage LUNs are displayed in the disk list. Perform step 1 of “Install CVFS client software on the UIM-SAN-GEIP” on page 67 .	One or more RAID-3 LUNs are not displayed in the connected devices list.	Recheck all Fibre Channel connections. Also, check that other devices on the SAN have access to the RAID-3 LUNs. If not, refer to MAN troubleshooting information in the <i>MAN Instruction Manual</i> , otherwise, refer to “Grass Valley Product Support” on page 10 .

Test the UIM-SAN-GEIP functionality

To test the setup, you can stream media to/from the Open SAN system using FTP or a transfer application. You can use Profile XP Media Manager to transfer files between Profile storage, i.e. standalone or another Open SAN shared storage system. Refer to the *Profile XP Users Manual* for instructions on using Media Manager.

To transfer the test file to shared storage:

1. To perform and ftp test, refer to [“Step 7: FTP a file using the 1000BT interface connected to the streaming LAN” on page 119](#).
2. If the transfer request fails, use [“Check network connections and hosts file name resolution” on page 78](#) to test for basic Ethernet connectivity and name resolution on the UIM-SAN-GEIP. This is a common setup problem and can prevent media transfers.

Create UIM-SAN-GEIP system disk image

After verifying proper installation, you should create a backup image of the UIM-SAN-GEIP system disk. You can use this disk image to restore the complete software on the system disk, including all the current system settings. This simplifies the process of troubleshooting and correcting software faults. To proceed, refer to [“Creating a system disk image” on page 126](#).

UIM-SAN-FCIP Installation: Grass Valley Open SAN System

This chapter describes how to install the UIM-SAN-FCIP in the Grass Valley Open SAN Shared Storage system. The UIM-SAN-FCIP provides a Fibre Channel IP network interface to the Open SAN shared storage for media transfers.

Procedure summary:

- “Onsite planning”
- “Rack-mount the UIM”
- “Modify the master hosts file”
- “Configure the UIM network settings”
- “Connect UIM-SAN-FCIP network cables Dell 2850”
- “Install CVFS client software on the UIM-SAN-FCIP”
- “Perform miscellaneous system settings”
- “Enable Fibre Channel network TCP checksums”
- “Verify access to shared storage”
- “Test the UIM-SAN-FCIP functionality”
- “Create UIM-SAN-FCIP system disk image”

Onsite planning

Use the following sections to plan the deployment of the UIM-SAN-FCIP in the Grass Valley Open SAN Shared Storage system.



CAUTION: Do not connect IP port on the UIM-SAN-FCIP to the Fibre Channel SCSI fabric. The IP driver on that port will cause Open SAN record and pload to fail. Do not mix IP and SCSI fabrics on the same Fibre Channel switch.

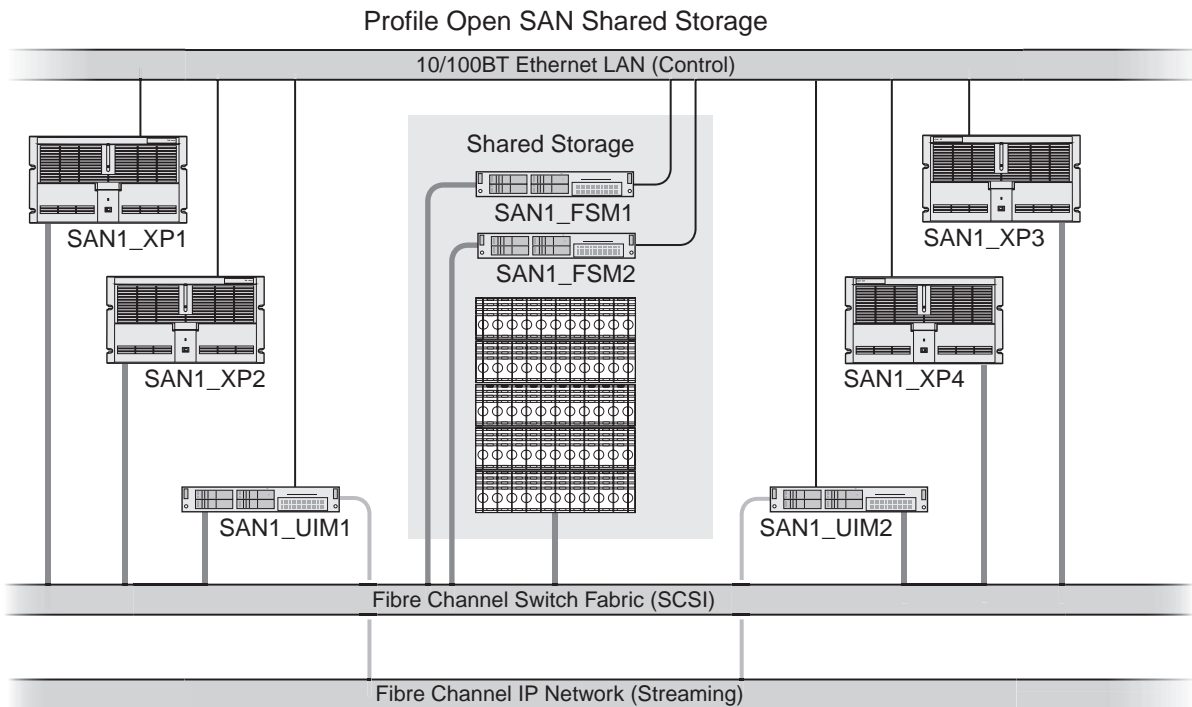
Specify host names in the Open SAN

When deploying the UIM-SAN-FCIP in an Open SAN Shared Storage system, you must follow a strict host naming convention within the Open SAN for client machines, including the UIM-SAN-FCIP. You must use a common prefix to name each client machine, as shown below:

[common prefix]_ [client hostname]

For example, you could identify the Open SAN system as *SAN1*; you would then use *SAN1* as a prefix to name all the client machines in the shared storage system—*SAN1_XP1*, *SAN1_XP2*, and so on. The naming convention does not need to apply to the FSM host name, but it can for consistency.

The following diagram illustrates the naming convention. Use this as a model for specifying host names in your Open SAN Shared Storage system.

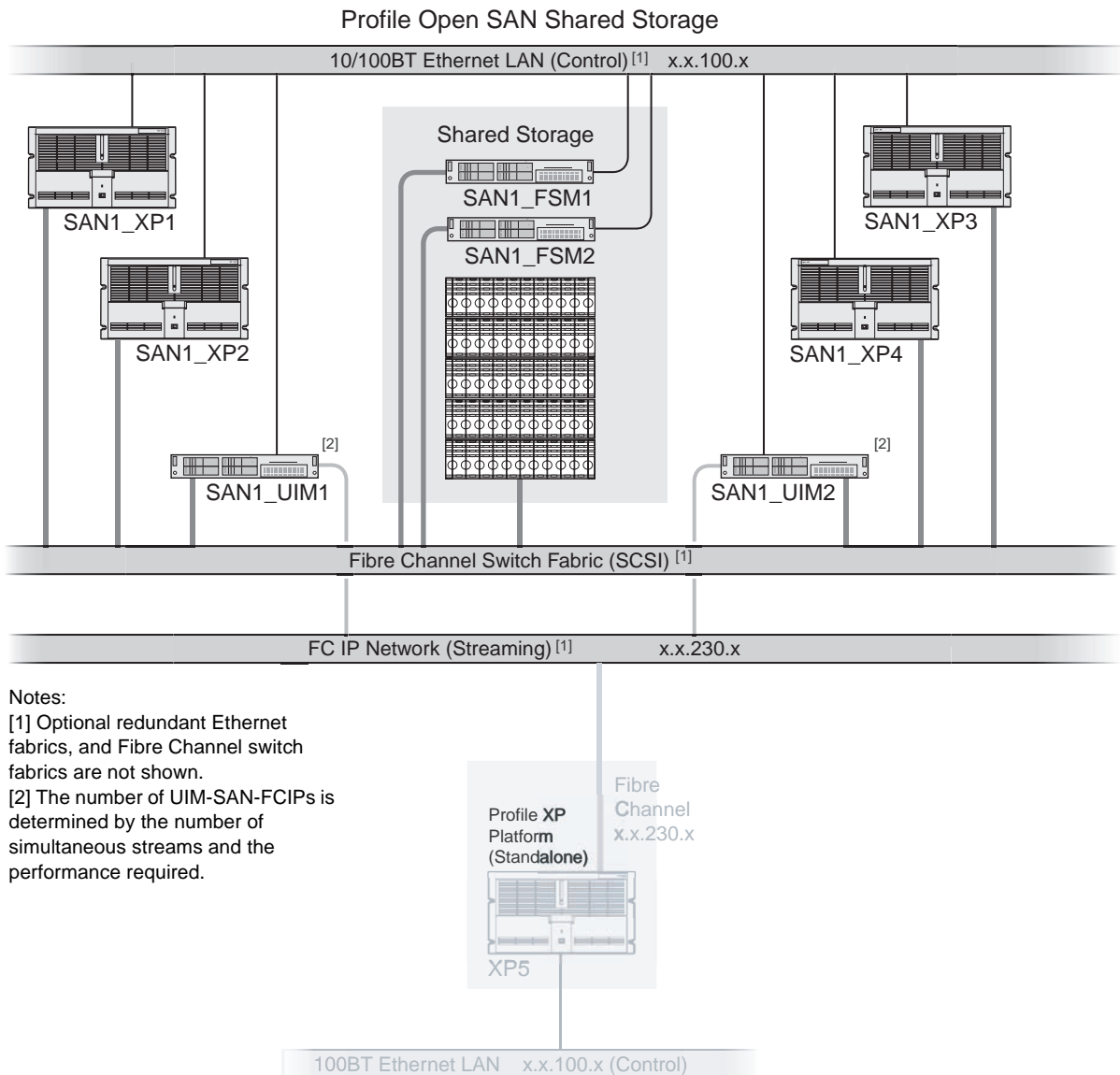


NOTE: Host names are limited to 15 characters. Also, host names are not case sensitive.

Specify a subnet address for the FC IP streaming network

You must specify a unique subnet address for the FC IP network used for streaming media. Do not use the same subnet address as the control LAN. Check with your local network administrator to obtain a valid subnet address.

The following diagram illustrates the subnet address requirements.



Specify redundant FC SCSI switch fabric topology

In failover-configured Open SANs that have redundant Fibre Channel SCSI fabrics, the fabric topology must be configured in a particular way to assure correct failover performance. This topology is often custom-specified for individual Open SANs; as appropriate, this specification should be sought and followed.

In general, given redundant SCSI fabrics A and B, follow this fabric topology:

- The A ports for all Profile XP systems and RAID chassis are connected to the A fabric domain.
- The B ports for all Profile XP systems and RAID chassis are connected to the B fabric domain.
- The UIM-SAN-FCIPs do not have redundant Fibre Channel SCSI ports. You should split the attachment of multiple UIM-SAN-FCIPs between the A and B domains.
- Domain numbers are assigned to each Fibre Channel switch such that any A-domain value is less than any B-domain value.

This topology provides the following failover behavior:

- Each Fibre Channel client, including the UIM-SAN-FCIPs, will discover in order the A, then B RAID controllers.
- The UIM-SAN-FCIPs will select a single, stable, predictable path to the redundant RAID controllers.
- In the event of a RAID controller failure, a UIM-SAN-FCIP, after rebooting if necessary, will find the alternate path to the RAID chassis.
- In the event of a Fibre Channel switch failure, the UIM-SAN-FCIP not primarily connected to the failed switch will continue to function, though it may first require rebooting.

Rack-mount the UIM

Use the instructions in the *Rack Installation Guide* provided with the Dell Server documentation set to mount the UIM in a standard 19 inch equipment rack. You can also refer to the Dell Server *Installation and Troubleshooting Guide* to make power cord, mouse, keyboard, and monitor connections at this time. Do not make network connections at this time.

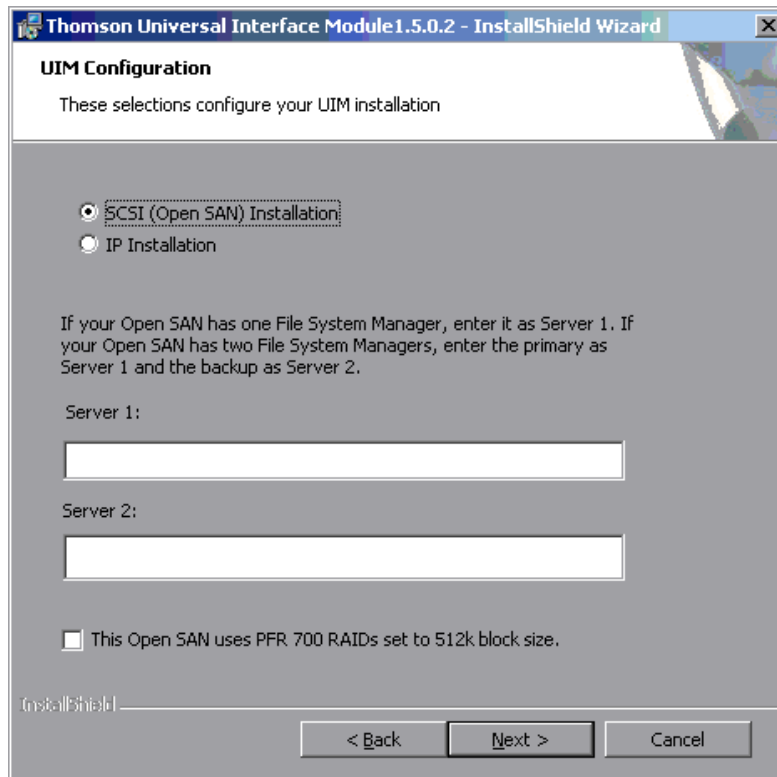


CAUTION: Do not connect Fibre Channel ports at this time.

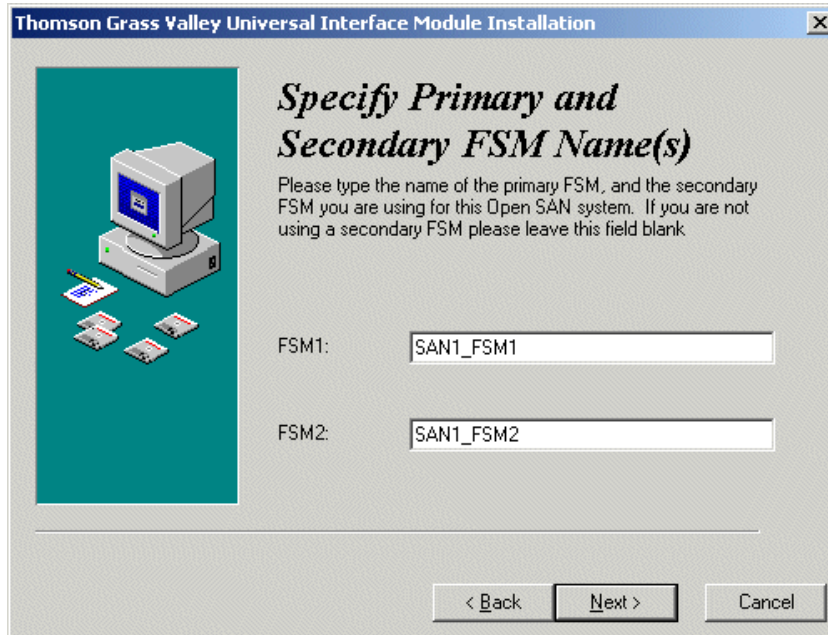
Install UIM-SAN-FCIP System Software for Open SAN

To install the Open SAN version of UIM System Software:

1. Power on the UIM and log on as administrator (password: *triton*).
2. Install software as instructed in “[Installing UIM System Software](#)” on page 21, except as follows:
 - a. On the UIM Configuration dialog box, select **SCSI (Open SAN) Installation** option.



- b. Enter the names of File System Managers on your Open SAN.



NOTE: *If your Open SAN uses PFR700 RAIDs, be sure to check the option in this dialog box. If not, clear the check box.*

3. Click **Next** and follow the on-screen prompts to complete the installation.
4. When installation is complete, click **Finish**.
5. Continue with the next procedure [“Modify the master hosts file”](#).

Modify the master *hosts* file

Use the following steps to modify the master *hosts* file. The master hosts file is maintained and copied to all networked devices in the Open SAN Shared Storage system as well as other Profiles and UIMs in the facility and is used for name resolution. In this procedure, you'll add the IP addresses and host names for all UIMs. After modifying the master hosts file, you must copy it to all networked devices in the Open SAN system, as well as other Profile platforms and UIMs in the facility.

If you are deploying a UIM-SAN-FCIP in an existing Open SAN system, you may have to modify all Profile XP platform host names to meet the host naming requirements described in [“Specify host names in the Open SAN” on page 82](#). If this is the case, you also need to modify the Profile XP hostname entries in the master host file.

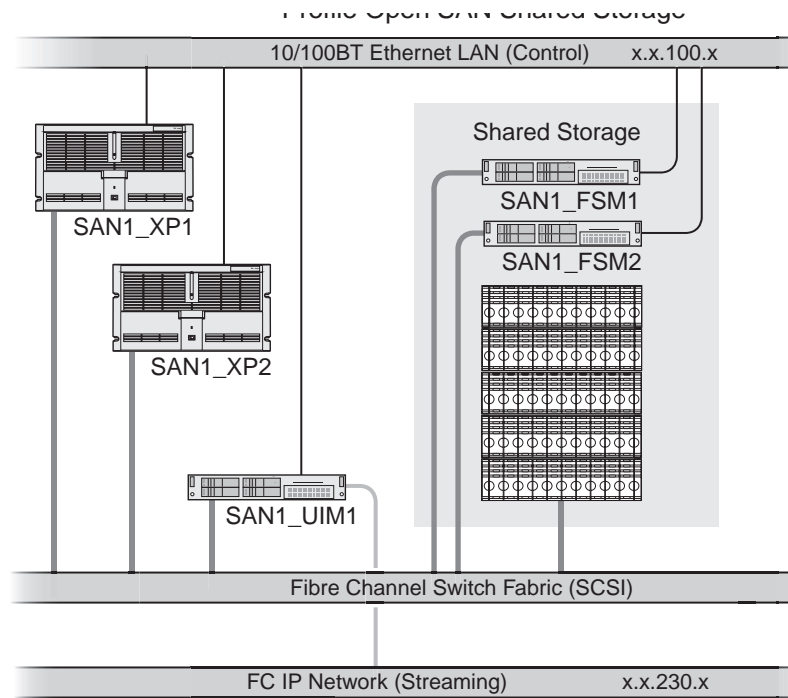
About UIM-SAN-FCIP host name aliasing

Host name aliasing in the hosts file is used to assign the UIM-SAN-FCIP as the Fibre Channel IP streaming interface for the Profile XP platforms in the Open SAN system. Aliasing is accomplished in the hosts file by assigning multiple host names to the same IP address, in this case, the UIM-SAN-FCIP Fibre Channel network interface IP addresses. To assign the UIM-SAN-FCIP as the Fibre Channel interface, aliases for each Profile platform in the Open SAN must be added using a strict naming convention as shown below.

Referring to the example Open SAN system on [page 88](#), you would add the following entries to the master hosts file:

```
192.168.100.157      SAN1_UIM1      SAN1_XP1_UIMFC  SAN1_XP2_UIMFC
192.168.230.157    SAN1_UIM1_fc0 SAN1_XP1_fc0    SAN1_XP2_fc0
```

From this example, you can see that the UIM-SAN-FCIP control LAN network interface mapped to the UIM hostname *SAN1_UIM1* is also known by the aliases *SAN1_XP1_UIMFC*, and *SAN1_XP2_UIMFC*. Also, the UIM-SAN-FCIP streaming LAN network interface mapped to *SAN1_UIM1_fc0* is also known by its aliases *SAN1_XP1_fc0*, and *SAN1_XP2_fc0*. With these settings, *SAN1_XP1* and *SAN1_XP2* will both proxy their transfer requests to *SAN1_UIM1*.



About load balancing when multiple UIM-SAN-FCIPs are used

There can be multiple UIM-SAN-FCIPs deployed in an Open SAN Shared Storage system. The number of UIM-SAN-FCIPs needed is determined by a combination of the following requirements: the number of simultaneous transfer streams; transfer performance.

When multiple UIM-SAN-FCIPs are used, host name aliasing is used in the hosts file to assign the UIM-SAN-FCIPs to the Profile XP platforms in the Open SAN for proper load balancing. Referring to the example system on [page 83](#), *SAN1_UIM1* handles transfer requests for Profiles *SAN1_XP1* and *SAN1_XP2* while *SAN1_UIM2* handles transfer requests for *SAN1_XP3* and *SAN1_XP4*. To accomplish this, the following entries are added to the master host file.

```

192.168.100.157      SAN1_UIM1  SAN1_XP1_UIMFC  SAN1_XP2_UIMFC
192.168.100.158      SAN1_UIM2  SAN1_XP3_UIMFC  SAN1_XP4_UIMFC
192.168.230.157     SAN1_UIM1_fc0  SAN1_XP1_fc0  SAN1_XP2_fc0
192.168.230.158     SAN1_UIM2_fc0  SAN1_XP3_fc0  SAN1_XP4_fc0
    
```

NOTE: Multiple UIM-SAN-FCIPs do not provide automatic failover capability. If a UIM-SAN-FCIP becomes unavailable, transfer requests will fail for all Profile platforms assigned to it.

Example master *hosts* file entries for the UIM-SAN-FCIP

The following master host file was created for the example Open SAN system shown on [page 83](#). This host file can be used for both non-redundant and redundant network scenarios since teamed network adapters share the same IP address. You can use the following example as a model for creating your own host file. Note that XP5_fc0 is on the same subnet as the aliased SAN interfaces (230).

```

192.168.100.151      SAN1_XP1
192.168.100.152      SAN1_XP2
192.168.100.153      SAN1_XP3
192.168.100.154      SAN1_XP4
192.168.100.155      SAN1_FSM1
192.168.100.156      SAN1_FSM2
192.168.100.157      SAN1_UIM1  SAN1_XP1_UIMFC  SAN1_XP2_UIMFC
192.168.100.158      SAN1_UIM2  SAN1_XP3_UIMFC  SAN1_XP4_UIMFC
192.168.230.157      SAN1_UIM1_fc0  SAN1_XP1_fc0  SAN1_XP2_fc0
192.168.230.158      SAN1_UIM2_fc0  SAN1_XP3_fc0  SAN1_XP4_fc0

192.168.100.105      XP5
192.168.230.105      XP5_fc0
    
```

] UIM-SAN-FCIP Entries
] Stand-alone Profile XP System

Example master *hosts* file entries for two SANs

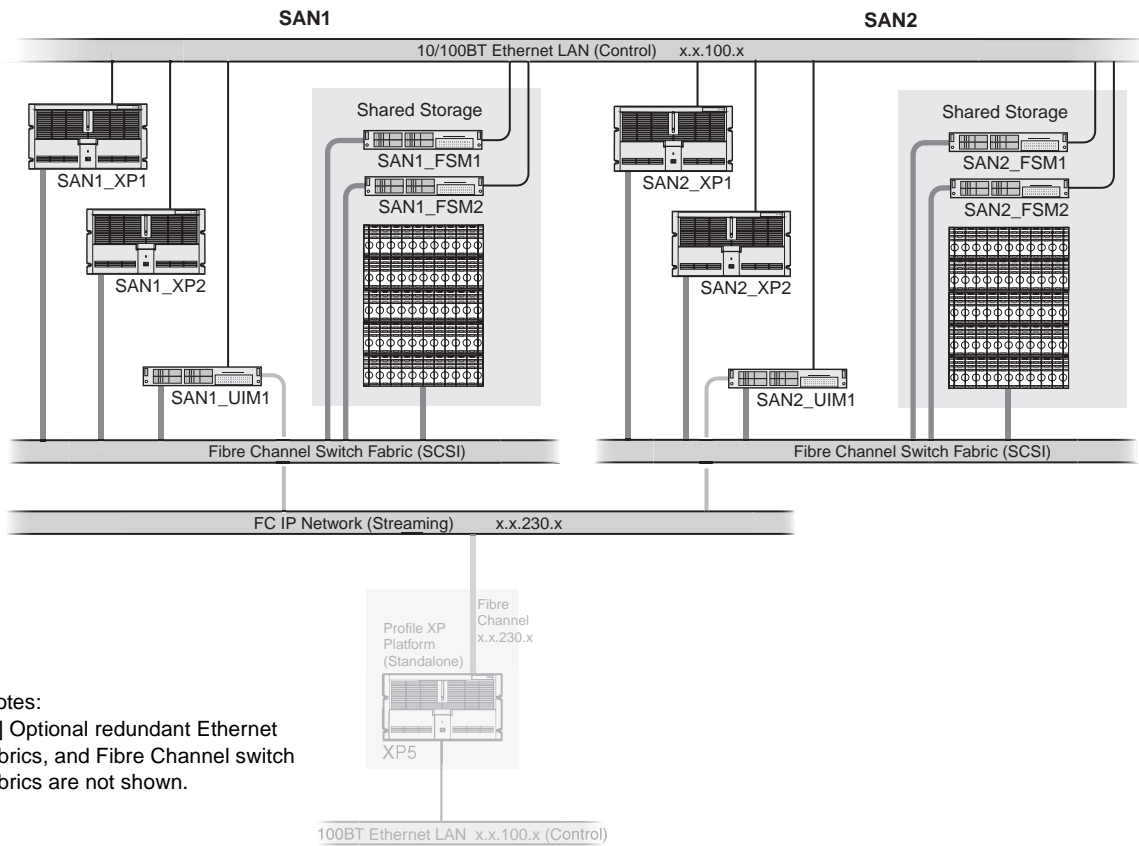
The following master host file was created for the example system shown on [page 90](#). This host file can be used for both non-redundant and redundant network scenarios since teamed network adapters share the same IP address.

```

192.168.100.151      SAN1_XP1
192.168.100.152      SAN1_XP2
192.168.100.155      SAN1_FSM1
192.168.100.156      SAN1_FSM2
192.168.100.051      SAN2_XP1
192.168.100.052      SAN2_XP2
192.168.100.055      SAN2_FSM1
192.168.100.056      SAN2_FSM2
192.168.100.157      SAN1_UIM1  SAN1_XP1_UIMFC  SAN1_XP2_UIMFC
192.168.100.057      SAN2_UIM1  SAN2_XP1_UIMFC  SAN2_XP2_UIMFC
192.168.230.157      SAN1_UIM1_fc0  SAN1_XP1_fc0  SAN1_XP2_fc0
192.168.230.057      SAN2_UIM1_fc0  SAN2_XP1_fc0  SAN2_XP2_fc0

192.168.100.105      XP5
192.168.230.105      XP5_fc0
    
```

] 100BT Entries
] UIM-SAN-FCIP Entries
] Stand-alone Profile XP System



Notes:

[1] Optional redundant Ethernet fabrics, and Fibre Channel switch fabrics are not shown.

To modify the FSM master hosts file:

1. On the FSM, make a copy of the master hosts and name it *hosts.bak*. The hosts file is located at *c:\winnt\system32\drivers\etc\hosts*. This copy can be used to recover the original file if there is a problem.
2. Open the hosts file at *c:\winnt\system32\drivers\etc\hosts* using Notepad or some other text editor.
3. Use the following steps to type the entry for the UIM-SAN-FCIP network interface connected to the control LAN.

- a. On a single line, enter the IP address for the network interface connected to the control LAN.
- b. Insert a few spaces, then type the UIM-SAN-FCIP host name followed by the *_UIM1* suffix.

For example:

```
192.168.100.157      SAN1_UIM1
```

- c. Insert a few more spaces, then type all Profile platform host names assigned to this UIM-SAN-FCIP. Use the Profile host name followed by the *_UIMFC* suffix.

For example:

```
192.168.100.157          SAN1_UIM1  SAN1_XP1_UIMFC  SAN1_XP2_UIMFC
```

4. Use the following steps to type the entry for the UIM-SAN-FCIP Fibre Channel streaming network interface

- a. On a single line, enter the IP address for the Fibre Channel network interface connected to the FC IP network.
- b. Insert a few spaces, then type the UIM-SAN-FCIP host name followed by the `_fc0` suffix. (NOTE: The suffix uses the zero character, not the letter 'o'.)

For example:

```
192.168.230.157          SAN1_UIM1_fc0
```

- c. Insert a few more spaces, then type all Profile platform host names assigned to this UIM-SAN-FCIP. Use the Profile host name followed by the `_fc0` suffix.

For example:

```
192.168.230.157          SAN1_UIM1_fc0  SAN1_XP1_fc0  SAN1_XP2_fc0
```

5. If you modified the Profile XP platform host names as described in [“Specify host names in the Open SAN” on page 82](#), you must revise those entries in the host file now.
6. Save the master hosts file and exit Notepad.
7. Copy the new master *hosts* file to all network devices in the Open SAN system including FSMs, Profile XP platforms, other UIM-SAN-FCIPs, and standalone Profile platforms in the facility that proxy to the UIM.

```
c:\winnt\system32\drivers\etc\hosts
```

NOTE: Errors in this configuration step will render your media exchange network inoperable. Take great care to enter all information correctly, then recheck for errors.

Configure the UIM network settings

Refer to your system design and the requirements described in [“Specify host names in the Open SAN” on page 82](#) and [“Specify a subnet address for the FC IP streaming network” on page 83](#), then configure network settings on each UIM-SAN-FCIP.

1. Power-on the UIM-SAN-FCIP and log on as *Administrator* (default password: *triton*).
2. Modify the UIM-SAN-FCIP host name as follows:
 - a. Right-click the computer icon on the desktop, then select **Properties** to open the System Properties dialog box.
 - b. Click the **Network Identification** tab, then click **Properties**.
 - c. Enter the UIM-SAN-FCIP computer name, then click **OK**.
 - d. Click **Yes** to accept non-standard name.
 - e. Click **OK** to acknowledge the reboot message.
 - f. Click **OK** to close the System Properties dialog box.
 - g. Click **NO**. Do not reboot at this time.
3. Configure the TCP/IP settings on each UIM-SAN-FCIP network adapter as follows:
 - a. Right-click the “My Network Places” desktop icon, then select **Properties** to open the Windows operating system “Network Connections” dialog box.
Depending on the Dell platform, network connections are displayed as follows:

Name	Type	Status	Device Name
Dell 2650			
QLogic FC NIC	LAN	Enabled	QLogic QLA2X00 PCI Adapter
Intel 1000BT Port A	LAN	Enabled	Intel(R) Pro/1000 MT Quad Port Server Adapter
Intel 1000BT Port B	LAN	Enabled	Intel(R) Pro/1000 MT Quad Port Server Adapter #2
Intel 1000BT Port C	LAN	Enabled	Intel(R) Pro/1000 MT Quad Port Server Adapter #3
Intel 1000BT Port D	LAN	Enabled	Intel(R) Pro/1000 MT Quad Port Server Adapter #4
Control Team - Intel Ports A/B	LAN	Enabled	Intel(R) Advanced Network Services Virtual Adapter
Streaming Team - Intel Ports C/D	LAN	Enabled	Intel(R) Advanced Network Services Virtual Adapter #2
Dell 2850			
QLogic FC NIC	LAN	Enabled	QLogic QLA2X00 PCI Adapter
Intel 1000BT Port A	LAN	Enabled	Intel(R) Pro/1000 MT Network Connection
Intel 1000BT Port B	LAN	Enabled	Intel(R) Pro/1000 MT Network Connection #2
Intel 1000BT Port C	LAN	Enabled	Intel(R) Pro/1000 MT Dual Port Server Adapter

Name	Type	Status	Device Name
Intel 1000BT Port D	LAN	Enabled	Intel(R) Pro/1000 MT Dual Port Server Adapter #2
Control Team - Intel Ports A/B	LAN	Enabled	Intel(R) Advanced Network Services Virtual Adapter
Streaming Team - Intel Ports C/D	LAN	Enabled	Intel(R) Advanced Network Services Virtual Adapter #2
Dell 1950			
QLogic FC NIC	LAN	Enabled	QLogic QLA2X00 PCI Adapter
Broadcom 1000BT Port A	LAN	Enabled	Broadcom BCM5708C NetXtreme II GigE (NDIS VBD Client)
Broadcom 1000BT Port B	LAN	Enabled	Broadcom BCM5708C NetXtreme II GigE (NDIS VBD Client) #2
Control Team - Broadcom Ports A and B	LAN	Enabled	BASP Virtual Adapter
Intel 1000BT Port C	LAN	Enabled	TEAM: Streaming Team - Intel(R) Pro/1000 MT Dual Port Server Adapter
Intel 1000BT Port D	LAN	Enabled	TEAM: Streaming Team - Intel(R) Pro/1000 MT Dual Port Server Adapter #2
Streaming Team - Intel Ports C and D	LAN	Enabled	TEAM: Streaming Team

- b. Right-click the *Control Team - ... Ports A & B*, then select **Properties** to configure network settings. Team descriptions are shown in the table that follows.

NOTE: Always configure the Ethernet network settings using the fault tolerance teams. Do not select and configure the network adapters directly. In non-redundant Ethernet configurations, the unused ports will be ignored.

Connection Name Listed	Description	Configuration Tasks
QLogic FC NIC	Fibre Channel Network Adapter	Configure the IP Address, subnet mask, and other network settings for each connection as required by your network design and site requirements. (Refer to “Specify a subnet address for the FC IP streaming network” on page 83.) Contact your local network administrator of details.
Control Team - ... Ports A & B	Control LAN Team Members ^a : Primary: ... 1000BT Port A Secondary: ... 1000BT Port B	

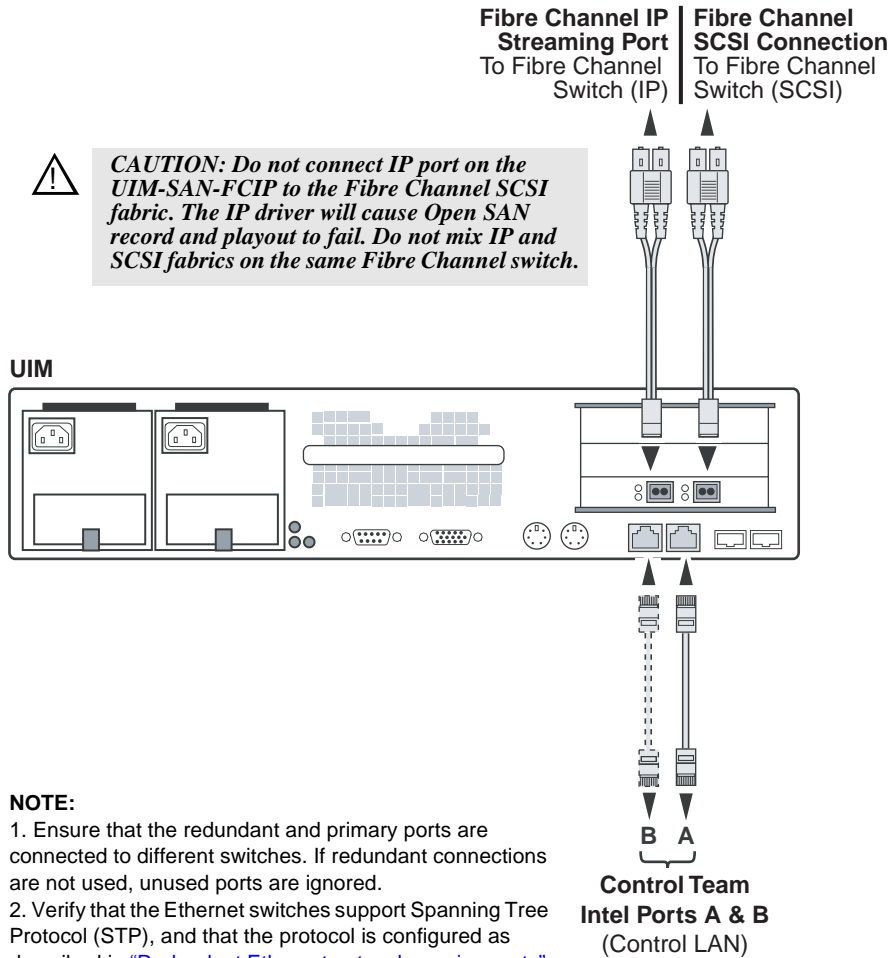
^a. Primary designates the primary adapter for the team. Secondary designates the backup adapter. If the primary connection is lost, then restored, it rejoins the team as a member and not the primary connection. When redundant connections are not used, the unused port is ignored.

NOTE: When prompted to restart, click **Yes**. Wait until all connections are configured.

- c. Repeat step b for the QLogic FC NIC.
4. After all connections are configured, restart the UIM-SAN-FCIP.
5. Proceed to the next procedure [“Connect UIM-SAN-FCIP network cables Dell 2850”](#).

Connect UIM-SAN-FCIP network cables Dell 2850

Connect the network cables as shown. Be sure to consult your Ethernet and Fibre Channel switch fabric designs as you make connections. Refer to [“Onsite planning”](#) on page 82.

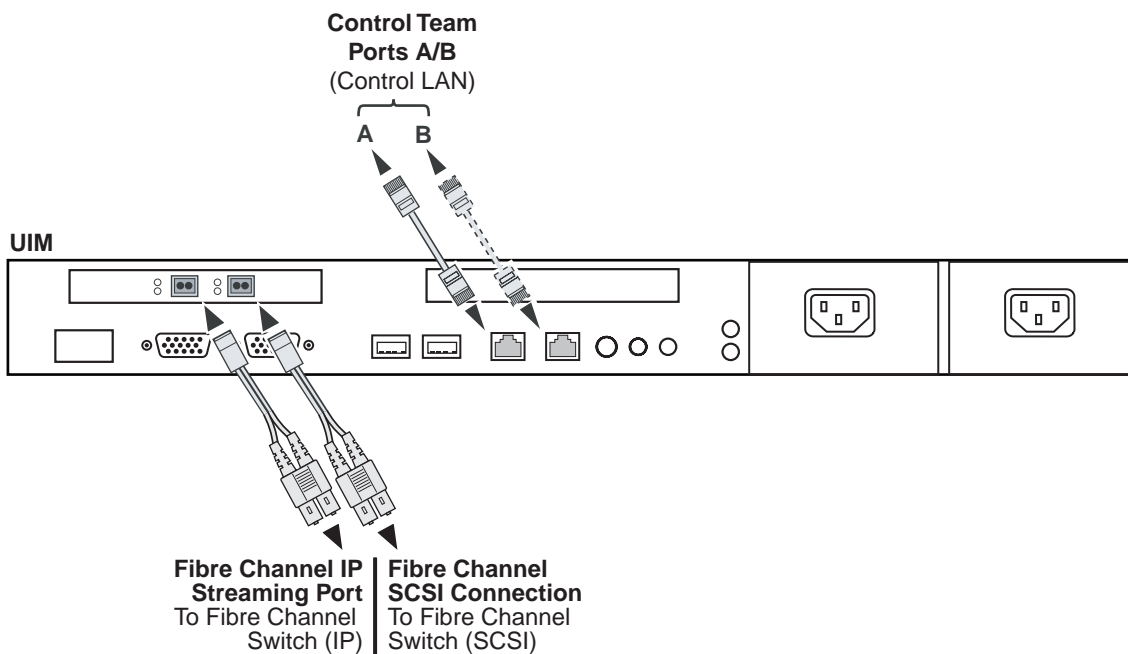


Connect UIM-SAN-FCIP network cables Dell 1950

Connect the network cables as shown. Be sure to consult your Ethernet and Fibre Channel switch fabric designs as you make connections. Refer to [“Onsite planning”](#) on page 82.



CAUTION: Do not connect IP port on the UIM-SAN-FCIP to the Fibre Channel SCSI fabric. The IP driver will cause Open SAN record and playout to fail. Do not mix IP and SCSI fabrics on the same Fibre Channel switch.



NOTE:

1. Ensure that the redundant and primary ports are connected to different switches. If redundant connections are not used, unused ports are ignored.
2. Verify that the Ethernet switches support Spanning Tree Protocol (STP), and that the protocol is configured as described in [“Redundant Ethernet network requirements”](#) on page 17.

Install CVFS client software on the UIM-SAN-FCIP

Use the following sections to install, license, and configure the CVFS client software on the UIM-SAN-FCIP.

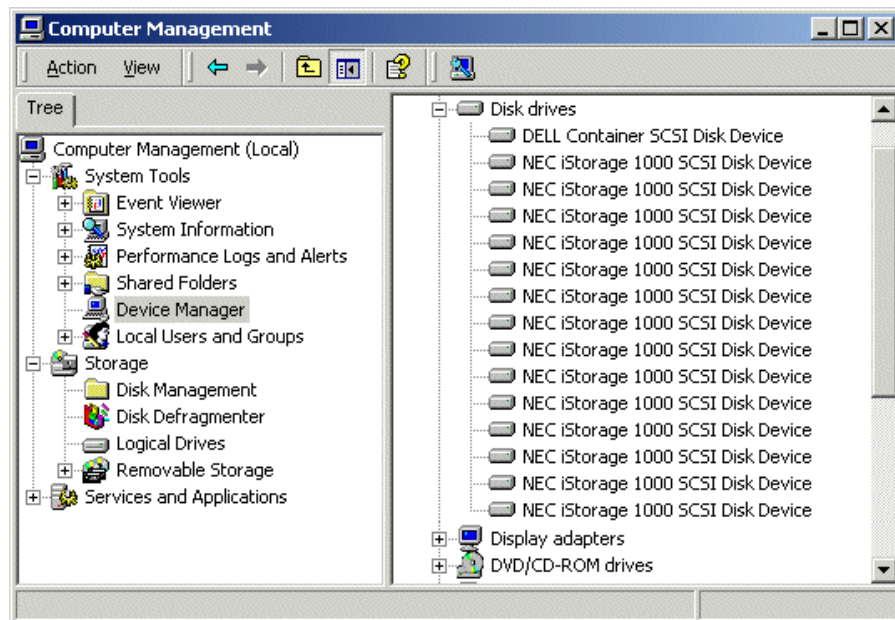
Install CVFS client software on the UIM

Use the following steps to install the CVFS client software on the UIM-SAN-FCIP. This procedure requires the CVFS setup program located on the *Open SAN File System* CD-ROM or downloaded from the Thomson Grass Valley FTP site.

NOTE: Be sure to install the correct client software version. The software version must match the CVFS software running on the File System Manager (FSM) in the Open SAN system.

To install the file system client software:

1. First verify the UIM-SAN-FCIP Fibre Channel connection to the shared storage disks using the following steps.
 - a. Right-click the computer icon on the desktop, then select **Manage**.
 - b. Select Device Manager in the tree.
 - c. Expand Disk drives.
 - d. Verify that the LUNs in the SCSI fabric are displayed.



The UIM-SAN-FCIP must “see” the physical drives at the SCSI level in order to support the Open SAN file system. If not, check Fibre Channel adapter cabling to be sure that the FC IP and SCSI connections are not reversed. Also refer to [“If you have a problem: UIM-SAN-GEIP” on page 116](#).

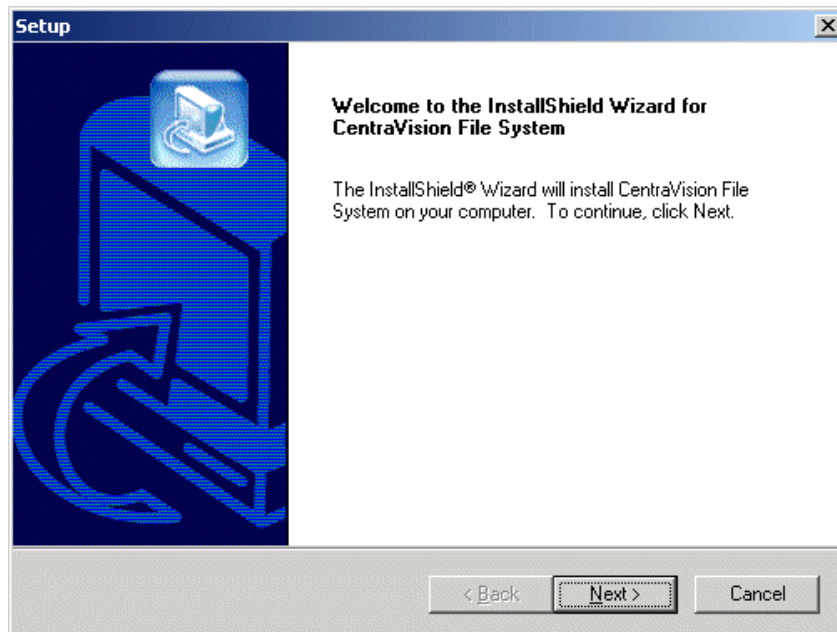
2. Insert the *Open SAN File System* CD-ROM into the UIM-SAN-FCIP’s CD-ROM

drive.

The installation program starts automatically and guides you through the installation process.



3. On the Welcome is displayed, click **Next**.

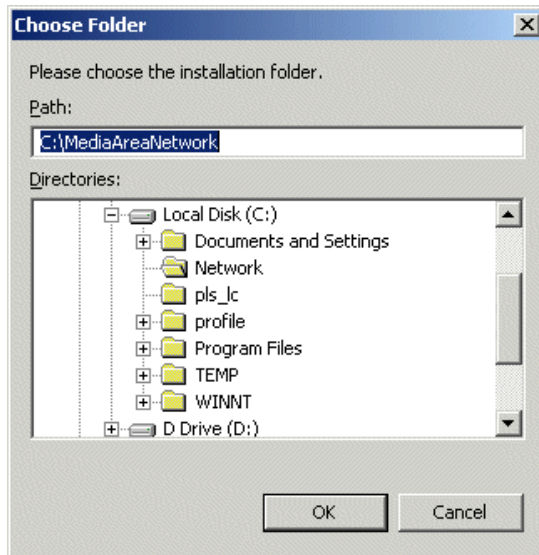


4. On the Setup page, click **Next**, then accept the license agreement to continue.

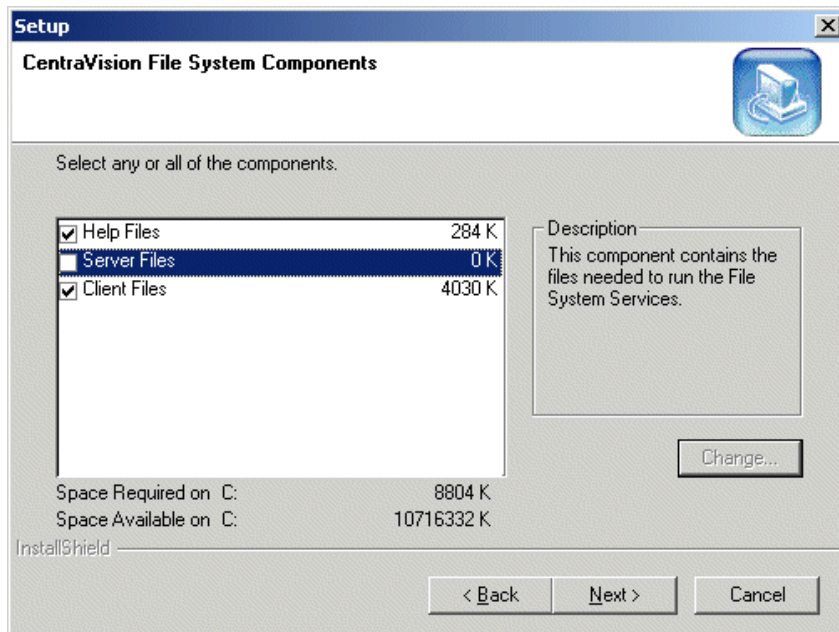
5. On the Choose Destination Location page, click **Browse**, to type

C:\MediaAreaNetwork, then click **OK** to close.

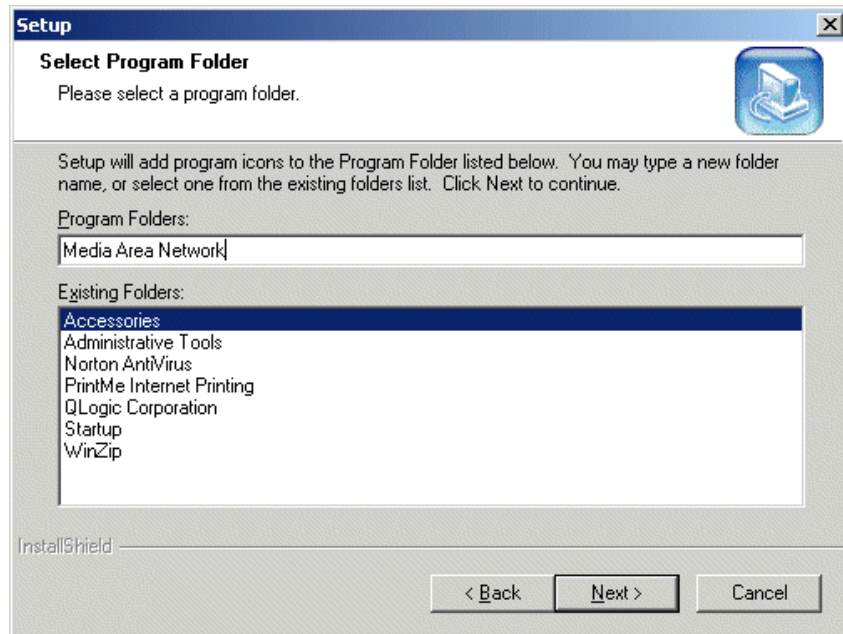
NOTE: Do not use spaces in the directory name.



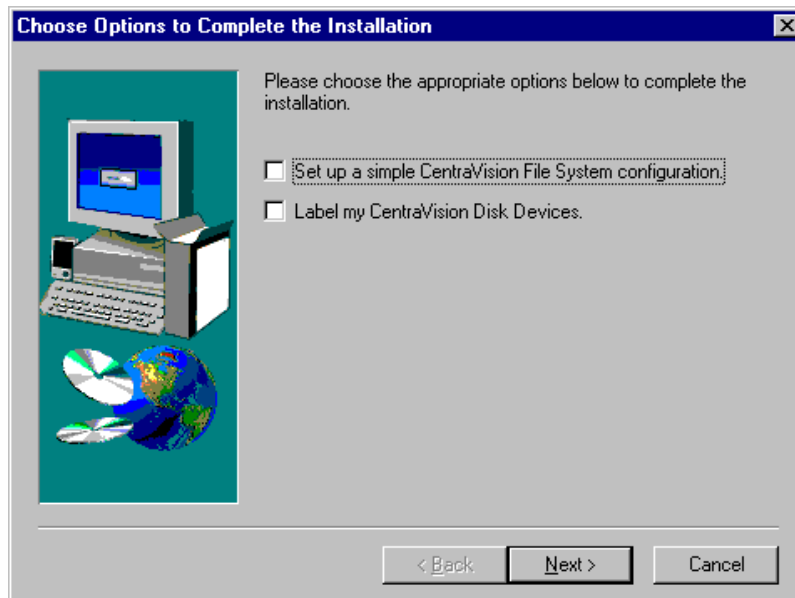
6. Click **Next**, then answer **Yes** when prompted to create the directory.
7. When the File System Components page appears, select the components shown, then click **Next**.



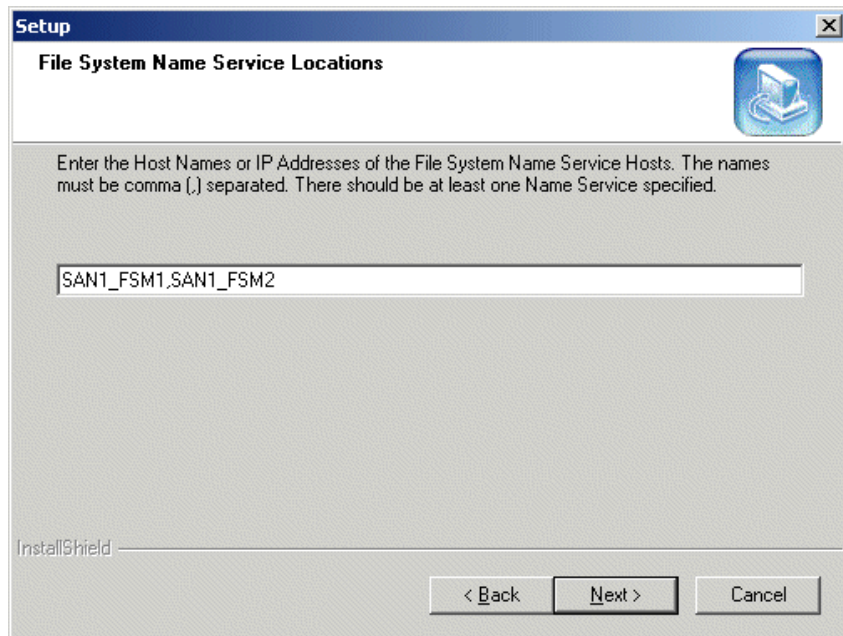
8. In the Select Program Folder page, type Media Area Network, then click **Next**.



9. On the Start Copying Files page, click **Next**.
10. When prompted to view Help Files during installation, click **No**.
11. When the Choose Options to Complete the Installation screen appears, leave the check boxes blank and click **Next**.



12. When the File System Name Service Locations screen appears, enter the name or IP address of the File System Manager (FSM).
If your Open SAN uses redundant FSMs, enter the redundant FSM here as shown.



13. Click **Next** on this screen and on the next screen to confirm.
14. Click **OK** on the message that informs you that the file system services have started.
15. When prompted to establish drive mapping and credentials, click **No**.
16. Click **Finish**.
17. When prompted, restart Windows.
18. After restart, click **Start | Programs** and verify that the installation program correctly created a **Media Area Network** program group. If it is not correct, use **Start | Settings | Taskbar** to change the name of the program group.
19. Continue with the next procedure "[License the UIM-SAN-FCIP CVFS Client Software](#)".

License the UIM-SAN-FCIP CVFS Client Software

The CVFS client software you installed on the UIM-SAN-FCIP is licensed by modifying the *license.dat* file on the File System Manager (FSM) in the Open SAN system. The CVFS software *license.dat* file contains the license for the FSM as well as the license for each Profile XP Media platform, and UIM-SAN-FCIP in the Open SAN system. If you are using two FSMs, the redundant FSM needs the same master license file.

For this procedure, you'll need the *license.txt* file generated for your UIM-SAN-FCIP. To obtain the license, contact Grass Valley Support.

Once you have the *license.txt* file, perform the following procedure.



CAUTION: Do not overwrite the license.dat file on the FSM since it contains authorization strings for all client and server devices in the Open SAN system. Use the following steps to append the UIM-SAN-FCIP authorization string without deleting or modifying information currently in the file.

To modify (append) the *license.dat* file on the FSM:

1. Locate the FSM for the Open SAN system. (You can select the primary or redundant FSM if two FSMs are used.)
2. On the FSM, browse to the following file and open it with a text editor.

```
C:\MediaAreaNetwork\config\license.dat
```

3. Use the following steps to add the UIM-SAN-FCIP license data to the FSM *license.dat*:

- a. On the FSM, browse to the following file and open it with a text editor:

```
license.txt
```

- b. Copy the file contents and paste to the end of the FSM *license.dat* file on the FSM.

Example license.txt file contents:

```
# System:          SAN1_UIM1
# Identifier:      65BF1485D
# Platform:       NT
# Number Cpus:    Unlimited
# Option:         none
# License Authorization String:
client 1 NT 65BF1485D AAAAAABWAAASCCY9TKBQSCNQMJKPSRER75A2RSHEE7P9DSLEM4RSA
SAN1_UIM1 GVG
```

NOTE: Only the authorization string is required for licensing. You can safely modify the “System” text to match the UIM-SAN-FCIP host name.

- c. Save changes.
4. If a redundant FSM is used, copy the master *license.dat* file to the following location on the redundant FSM.

```
C:\MediaAreaNetwork\config\license.dat
```

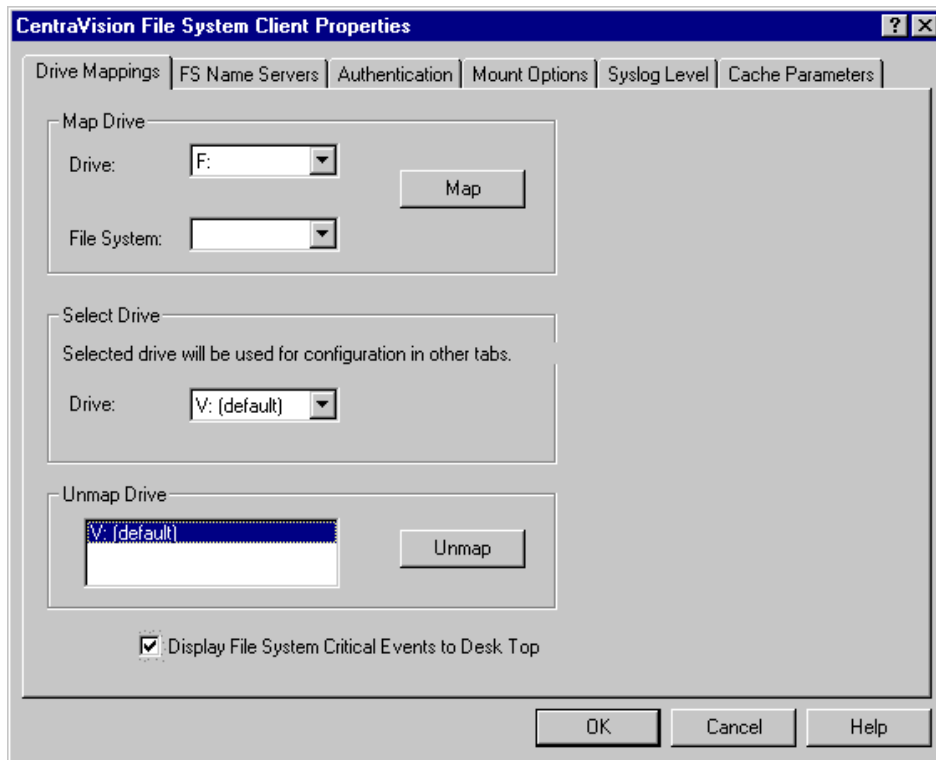
5. When you have verified that the UIM-SAN-FCIP is correctly licensed on both FSMs, continue with the next procedure [“Test the UIM-SAN-FCIP functionality” on page 108.](#)

Configure CVFS Client software on the UIM-SAN-FCIP

Now that the CVFS client software is licensed, you can configure the software to access the file system as follows:

1. On the UIM-SAN-FCIP, click **Start | Programs | Media Area Network | File System Control Parameters**.

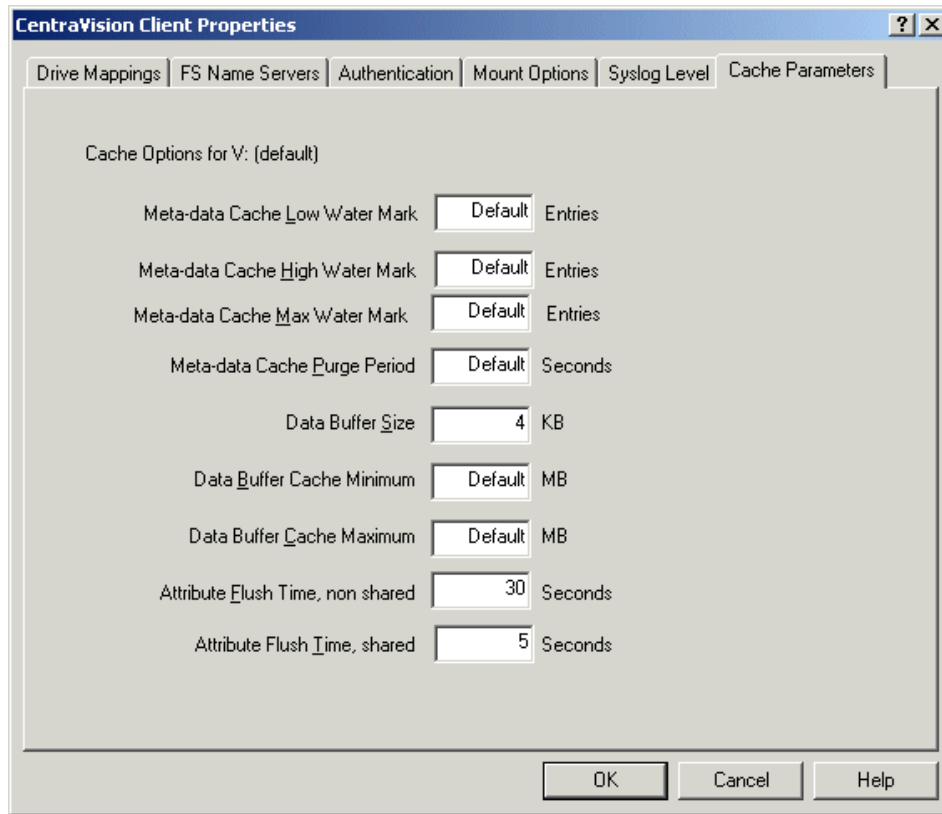
The File System Client Properties application opens.



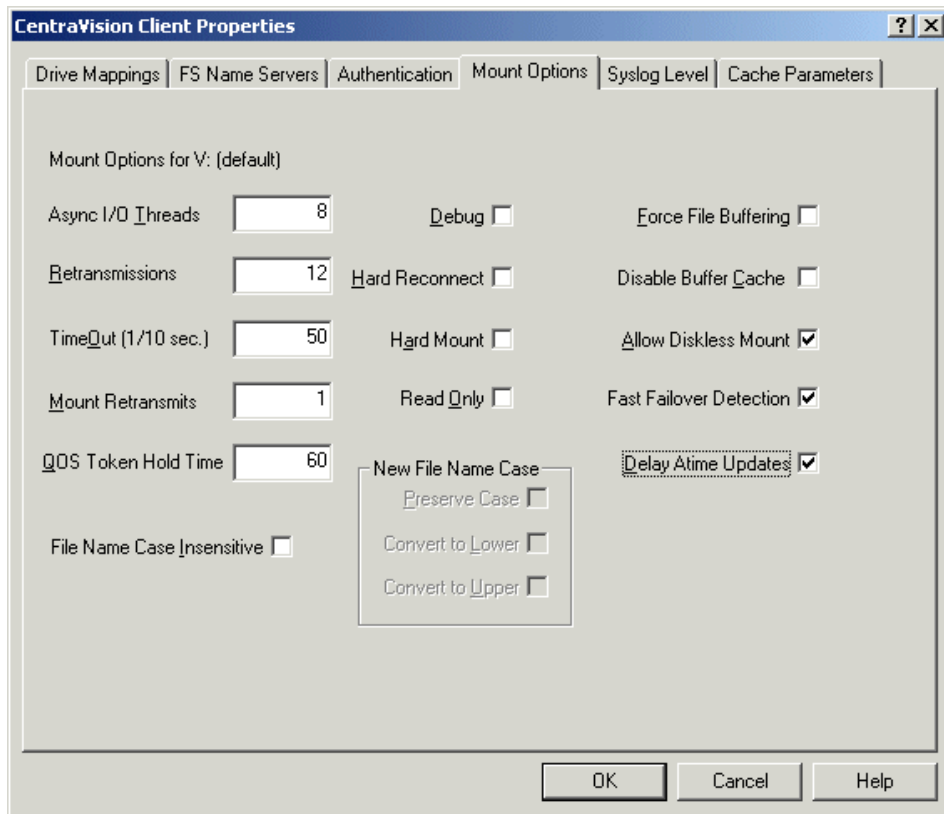
2. In the Map Drive | Drive drop-down list, select **V**.
3. On the Drive Mappings tab, in the Map Drive | File System drop-down list, select **default**.

NOTE: If you have a problem, refer to [“Check network connections and hosts file name resolution” on page 107](#).

4. Click the **Map** button.
Your selected drive and file system appear in the Select Drive | Drive box.
5. Select the **Display File System Critical Events to Desk Top** checkbox.
6. Select the Cache Parameters tab, configure as follows:



7. On the Mount Options tab, configure as follows:



- Select **Allow Diskless Mount**. This setting is required on both redundant FSM and single FSM systems.
 - Select **Fast Failover Detection**. This setting takes effect only on redundant FSM systems. For consistency, you should select it on single FSM systems as well, as it has no adverse effect.
 - Select **Delay Atime Updates**. This setting improves the ability of transfer streams to continue during an automatic system recovery event.
Leave the rest of at their default settings.
8. Click **OK** and **Yes** to save settings and close the application.
 9. When prompted, re-start the UIM-SAN-FCIP.
 10. Continue with the next procedure [“Perform miscellaneous system settings”](#).

Perform miscellaneous system settings

Perform the following procedures to configure system settings.

Set Control Team to top priority

For the UIM-SAN-FCIP, ensure that the machine's Control adapter team has top priority.

1. Click through **Start | Settings | Control Panel | Network and Dial-up Connections**.
2. In the main menu of the window that appears, click **Advanced | Advanced Settings**.
3. Under the Adapters and Bindings tab, observe that the *Control Team - ... Ports A/B* has top priority, followed by *QLogic FC IP NIC*. If this is not the case, select adapters as appropriate and use the up and down arrow dialog buttons to order them correctly.
The remaining adapter icons should be located below the teams. Their order is irrelevant.
4. Click **OK**.

Create fsroutes file for all clients on the Open SAN

On each CVFS client machine on the Open SAN, create a fsroutes file located at:
C:\MediaAreaNetwork\config\fsroutes

In this text file, add a line as follows for each of the FSM in the SAN:

<FSM machine name> <FSM IP address>

The file might, for example, have these entries:

```
SAN1_FSM1                    192.168.100.155
SAN1_FSM2                    192.168.100.156
```

The fsroutes file should exist on every CVFS client machine, including Profiles and FSMs at *C:\MediaAreaNetwork\config\fsroutes*. You may find it convenient to create the file on one client and then copy the file onto all the others.

After you have made these configuration changes, reboot each client, then test the system. For a single-FSM system, establish CVFS attachment (a functioning V: drive) for all clients. Reboot the FSM. It should complete its start-up and automatically resume control of the CVFS file system. For a dual-FSM system, similarly establish CVFS attachment for a nominal primary FSM and cause a failover to an active-backup FSM. The backup FSM should automatically take control of the CVFS file system. Repeat the test to fail back to the previous FSM.

Enable Fibre Channel network TCP checksums

When configuring a Profile XP Media Platform which will connect to a UIM-SAN-FCIP via a Fibre Channel IP network, you must enable TCP checksums on its Fibre Channel Network adapter. For instructions, refer to the Fibre Channel Networking chapter in the *Profile XP Media Platform System Guide*.

Verify access to shared storage

Before continuing, you can confirm UIM-SAN-FCIP access to the shared storage using Windows Explorer to view the V: drive.

To check for access to shared storage:

1. On the UIM-SAN-FCIP, open Windows Explorer.
2. Double-click the computer icon, and check that the “V” drive is listed.

The following folders are present:

- media
- Pdr



CAUTION: Do not browse the folders on the V: drive or alter any data in the V: drive. This may render the Open SAN inoperable.

3. If all the UIM-SAN-FCIPs have access to shared storage, proceed to [“Test the UIM-SAN-FCIP functionality” on page 108](#). If not, proceed to the next section [“The UIM-SAN-FCIP does not recognize shared storage”](#).

The UIM-SAN-FCIP does not recognize shared storage

If the UIM-SAN-FCIP does not have access to the shared storage, use the following procedures to diagnose possible setup problems.

Check network connections and *hosts* file name resolution

If access to shared storage or transfer request fails, use the following procedure to test for basic Ethernet connectivity and name resolution on the UIM-SAN-FCIP. This is a common setup problem and can prevent media transfers.

To test basic Ethernet connectivity and name resolution:

1. On the UIM-SAN-FCIP, open the Windows command prompt and use the **ping** command to test the network connection to the Open SAN FSM.

For example, on one of the UIM-SAN-FCIPs, type:

```
ping SAN1_FSM <RETURN>
```

2. If the command returns:

```
Pinging SAN1_FSM [192.168.100.155]
```

you have successfully resolved the name “SAN1_FSM” to the IP address [192.168.100.155].

If not, you may want to recheck the master hosts file for the correct host name and IP address.

3. If the host fails to reply, check the network settings on the target system, and all Ethernet cable connections.

Perform Quick-Check procedures

Use the quick-check procedures in the following table to help determine why the UIM-SAN-FCIP does not have access to the V: drive.

Quick-check steps	Possible problems	Corrective action
A. On the UIM-SAN-FCIP system, open Windows Explorer and check that drive “V” is listed as a mapped network drive.	There is a long delay before drives are displayed, then drive “V” is not displayed in the drive list.	Make sure the client file system client software is configured properly. Refer to “Configure CVFS Client software on the UIM-SAN-FCIP” on page 103 to check your configuration.
B. On the Open SAN FSM, view the file system client license info by opening the file C:\MediaAreaNetwork\config\license.dat.	CVFS client licenses for one or more UIM-SAN-FCIPs is not installed.	Install the missing client license(s) on the FSM. Refer to “License the UIM-SAN-FCIP CVFS Client Software” on page 101 .
C. On the UIM-SAN-FCIP, check that all shared storage LUNs are displayed in the disk list. Perform step 1 of “Install CVFS client software on the UIM-SAN-FCIP” on page 97 .	One or more RAID-3 LUNs are not displayed in the connected devices list.	Recheck all Fibre Channel connections. Also, check that other devices on the SAN have access to the RAID-3 LUNs. If not, refer to MAN troubleshooting information in the <i>MAN Instruction Manual</i> , otherwise, refer to “Grass Valley Product Support” on page 10 .

Test the UIM-SAN-FCIP functionality

To test the setup, you can stream media to/from the Open SAN system using FTP or a transfer application. You can use Profile XP Media Manager to transfer files between Profile storage, i.e. standalone or another Open SAN shared storage system. Refer to the *Profile XP Users Manual* for instructions on using Media Manager.

To transfer the test file to shared storage:

1. To perform and ftp test, refer to [“Step 7: FTP a file using the Fibre Channel interface connected to the FC IP network” on page 123](#).
2. If the transfer request fails, use [“Check network connections and hosts file name resolution” on page 107](#) to test for basic Ethernet connectivity and name resolution on the UIM-SAN-FCIP. This is a common setup problem and can prevent media transfers.

Create UIM-SAN-FCIP system disk image

After verifying proper installation, you should create a backup image of the UIM-SAN-FCIP system disk. You can use this disk image to restore the complete software on the system disk, including all the current system settings. This simplifies the process of troubleshooting and correcting software faults. To proceed, refer to [“Creating a system disk image” on page 126](#).

Chapter **6**

Service Information

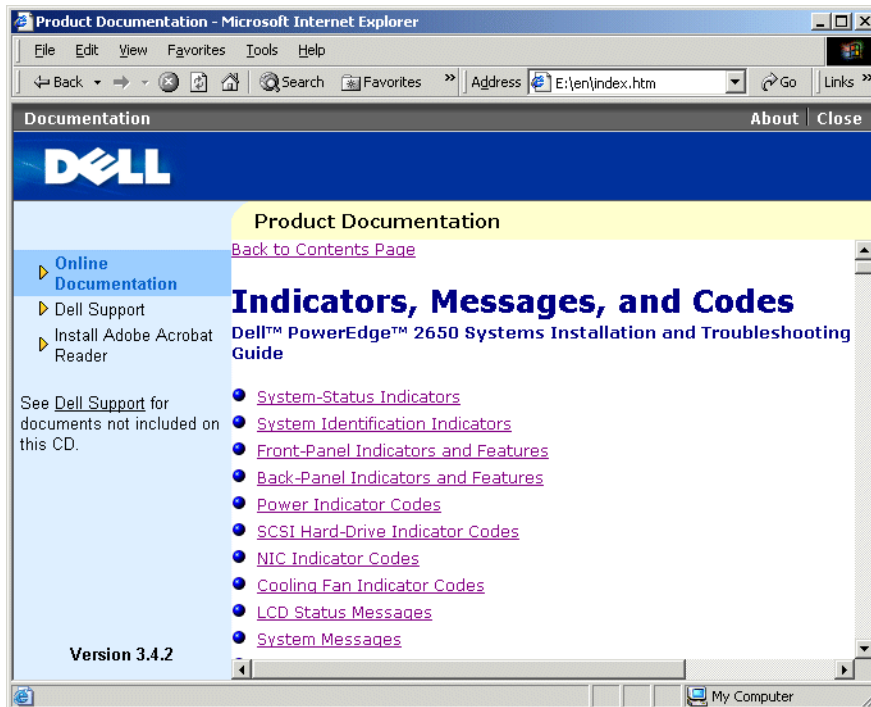
This chapter contains information for repairing and maintaining the UIM.

Information in the chapter includes:

- “Interpreting front panel and rear panel indicators”
- “Troubleshooting”
- “Creating a system disk image”
- “Restoring the system disk image”
- “Installing the disk image on a replacement UIM”

Interpreting front panel and rear panel indicators

The Dell server used to implement the UIM provides front and rear panel status indicators. These are useful during system boot-up and operation for monitoring hardware and software status. To learn about these status indicators, refer to the *Installation and Troubleshooting* documentation located on the Dell Product Documentation CD provided with the UIM that you received with the UIM.



Configuring data transfer timeouts

Problems can occur with archive restore when a clip spans multiple tapes. The large stall in the data transfer may exceed the 60 second timeout of the UIM. For sites that are expected to have large stalls in their data transfers, the default timeouts can be overwritten via registry settings.

Set the following values:

```
HKLM\System\CurrentControlSet\Services\ftpd  
REG_DWORD "FtpSocketTimeoutSec" // time out in seconds
```

```
HKLM\Software\Grass Valley Group\Streaming  
REG_DWORD "FtpSocketTimeoutSec" // time out in seconds
```

These settings can be applied to UIM-SAN-FCIP.

Troubleshooting

This section is written for troubleshooting a UIM that was installed and working properly prior to experiencing any failures. Use this section in conjunction with [Chapter 3, UIM-DIS-GEIP Installation: Standalone Profile Storage on page 35](#), or [Chapter 4, UIM-SAN-GEIP Installation: Grass Valley Open SAN System on page 49](#).

The Dell Server includes a number of status indicators and diagnostic functions to aid in troubleshooting. To interpret these indicators refer to the Dell Documentation CD-ROM shipped with your UIM. (See [“Interpreting front panel and rear panel indicators” on page 110](#).)

NOTE: *There are no field replaceable modules in the UIM. Hardware faults are repaired by replacing the UIM.*

Before calling product support

Before calling Grass Valley Product Support, use the following checklist to collect the information needed to help diagnose and repair the problem.

- Perform the problem solving steps located in [“If you have a problem: UIM-DIS-GEIP” on page 112](#), [“If you have a problem: UIM-SAN-GEIP” on page 116](#), or [“If you have a problem: UIM-SAN-FCIP” on page 121](#).
- Capture all Event Viewer logs in the Windows operating system from pertinent devices.
- Capture the UIM log file located at `c:\profile\logs\uimlog.xxx`
- Capture all Profile logs located at `c:\profile\logs`.
- Make note of the current software versions in the system, including the UIM system software version, the Profile system software, or the Open SAN software version.
- Make note of any recent changes to the system, for example, software updates, network changes.

If you have a problem: UIM-DIS-GEIP

Use the following steps to help solve problems that cause UIM transfers to fail.

Step 1: Power-on the UIM, and log on as Administrator

Look for a successful Windows operating system boot. Watch for software error messages, devices and services that fail to start, or problems using the Windows desktop. You can also use the Windows Event Viewer to check for error messages. If the Windows operating system fails to start and run properly, contact Grass Valley Product Support. (See [“Before calling product support” on page 111.](#))

Step 2: Make note of any recent system changes

Make note of any recent changes to the system, for example, software updates, network changes. If changes have been made to device names and network settings, use the procedures in manual to edit the *hosts* file.

Step 3: Check the status of Grass Valley Services on the UIM

On the UIM, open the Windows operating system Services tool and check that the following services are running.

- Grass Valley FTP Daemon
- Grass Valley UIM Transfer Service

If any of the services are not running, try the following:

1. Reboot the UIM and try again.
2. If the problem persists, try reinstalling UIM System Software.
3. If the problem persists, contact Grass Valley Product support. Refer to [“Before calling product support” on page 111.](#)

Step 4: Use “ping” utility to test Fibre Channel connectivity

Use the following steps to test connectivity to the Profile system.

On the UIM, do the following:

1. At the Windows command prompt, ping the Profile using the `_fc0` suffix by typing the following, then pressing Enter.

```
ping XP1_fc0
```

2. If there is no reply, do the following, otherwise proceed to step 3.
 - a. Note the IP address reported, then open Configuration Manager on the Profile, and check **Network** settings. Verify the IP addresses are the same.
 - b. Verify that the **Checksums** option is enabled.
 - c. Reboot the Profile.
 - d. On the Profile system, open the Profile Log utility and examine the profile log file for a text string stating that a Fibre Channel network connection has been established. The exact string varies with software releases.

- e. Do one of the following:
 - If the Profile cannot establish a Fibre Channel network connection, refer to your *Profile Service Manual* to solve the problem.
 - If the Profile Fibre Channel network connection is made, continue with step 3.
3. On the UIM, right-click the My Network Places desktop icon, then select **Properties** to open the Network Connections dialog box.
4. Right click **FC NIC**, then select **Status**.
5. Check that status is *Connected*. If not, check cabling and/or the FC switch. If this does not correct the connection problem, you may have a FC NIC hardware problem. Call Grass Valley Product Support.

Step 5: FTP a media file via Fibre Channel

Use the following steps test the UIMs ability to stream a file over the Fibre Channel interface. You'll first get, then put a Profile media file. ***Be sure to choose a small file to shorten the test time.***

1. On the UIM, open the Windows command prompt window, then use the following syntax to ftp a media file. Insert your own host names and file names. Text you enter is in bold.

```
C:\TEMP>ftp XP1_fc0
Connected to XP1_fc0.
220 Profile FTP server (1.0)
User (XP1_fc0:(none)): movie
230 Aspect successfully set to MOVIE.
ftp> bin
200 TYPE command okay. Type is IMAGE.

ftp> get /explodedFile/EXT:/default/clip1 clip1.gxf
200 PORT command okay.
150 Opening data connection.
250 Transfer complete.
ftp: xxxxxxx bytes received in x.xxSeconds xxxx.xxKbytes/sec.

ftp> put Clip1.gxf /explodedFile/EXT:/default/clip1_back
200 PORT command okay.
150 Opening data connection.
250 Transfer complete.
ftp: xxxxxxx bytes sent in x.xxSeconds xxxx.xxKbytes/sec.
ftp> bye
221 Connection closing.
```

2. Perform one of the following steps:
 - If the test passes, proceed to [“Step 8: FTP a file using the 1000BT interface connected to the streaming LAN”](#)
 - If the test fails, contact Grass Valley Product Support. See [“Before calling product support”](#) on page 111.

Step 6: Use the “ping” utility to test Ethernet connectivity

Use the following steps to test Ethernet connectivity to the Profile system.

On the UIM, do the following:

1. On the UIM, right-click the My Network Places desktop icon, then select **Properties** to open the Network Connections dialog box.
2. One at a time, right click each Ethernet adapter team (Control/Streaming), then select **Status**.
3. Check that status of each adapter is Connected. If not, check cabling and/or the Ethernet switch. If this does not correct the connection problem, you may have an Ethernet NIC hardware problem. You can use of the diagnostics tools that come with the Ethernet adapter software. If you still cannot establish an Ethernet hardware connection, call Grass Valley Product Support.
4. At the Windows command prompt, ping the Profile system by host name. Both the command and control and the media network adapter names are shown here.

Examples:

```
ping XP1_he0  
ping XP1
```

5. If there is no reply, do the following:
 - a. Note the IP address reported by the ping utility.
 - b. On the Profile, use Windows Network Settings to check the IP address setting of the Profile Ethernet adapter.
 - c. Correct the settings if needed, then test again.
 - d. Do one of the following:
 - If you cannot establish an Ethernet connection, contact Grass Valley Product Support. See [“Before calling product support” on page 111](#).
 - If the Ethernet connections to the Profile systems are made, then, continue to [“Step 7: Check Ethernet switch status”](#).

Step 7: Check Ethernet switch status

The Intel PROSet software used with the Ethernet adapters contains a useful switch diagnostic to test switch settings. This is especially useful in testing redundant Ethernet topologies.

To test the switch:

1. On the UIM, right-click the My Network Places desktop icon, then select **Properties** to open the Network Connections dialog box.
2. Select one of the teams listed.
3. Click the **Team Configuration** tab.
4. Click the **Test Switch** button.
5. Read the results displayed. Correct as needed.

Step 8: FTP a file using the 1000BT interface connected to the streaming LAN

Use the following steps test the UIMs ability to stream a file over the 1000BT streaming interface. This test does not actually transfer the file over the 1000BT network, but can be looked at as a 1000BT loop-back test. You'll first get, then put a Profile media file. **Be sure to choose a small file to shorten the test time.**

1. On the UIM, open a command prompt window, then use the following syntax to ftp a media file. Insert your own host names and file names. Text you enter is in bold.

```
C:\TEMP>ftp XP1_he0
Connected to XP1_he0.
220 UIM FTP Server (2, 0, 9, 1) ready.
User (XP1_he0:(none)): movie
230 Aspect successfully set to MOVIE.
ftp> bin
200 Type set to IMAGE.
ftp> get /explodedFile/EXT:/default/clipname clipname_he0.gxf
200 PORT command okay.
150 Opening MOVIE mode data connection for /explodedFile/EXT:/
default/clipname.
250 Transfer complete.
ftp: xxxxxxx bytes received in x.xxSeconds xxxxx.xxKbytes/sec.
ftp> put clipname_he0.gxf /explodedFile/EXT:/default/
clipname_back_he0
200 PORT command okay.
150 Opening MOVIE mode data connection for /explodedFile/EXT:/
default/#1_back_he0.
250 Transfer complete.
ftp: xxxxxxx bytes sent in x.xxSeconds xxxxx.xxKbytes/sec.
ftp> bye
221 Goodbye.
```

2. Perform one of the following steps:

- If the test passes, all required software and hardware components in the UIM are functional. If the problem persists, verify external cabling and switch equipment.
- If the test fails, contact Grass Valley Product Support. See [“Before calling product support” on page 111.](#)

Step 9: Test the streaming performance

Use the following steps to test the UIM's transfer performance over the 1000BT streaming interface. This test verifies that the UIM can transfer data at specified rates. You'll first get, then put a Profile media file. **Transferring longer files will give you a better idea of the system's performance.**

1. On a PC connected via 1000BT to the UIM, open a command prompt window, then use the following syntax to ftp a media file. Insert your own host names and file names. Text you enter is in bold. The put test uses the file transferred in the previous test.

```
C:\TEMP>ftp SAN1_XP1_he0
Connected to SAN1_XP1_he0.
220 UIM FTP Server (2, 0, 9, 1) ready.
User (XP1_he0:(none)): movie
230 Aspect successfully set to MOVIE.
ftp> bin
200 Type set to IMAGE.
ftp> get /explodedFile/EXT:/default/clip1 nul:
200 PORT command okay.
150 Opening MOVIE mode data connection for /explodedFile/EXT:/
default/clip1.
250 Transfer complete.
ftp: xxxxxxx bytes received in x.xxSeconds xxxx.xxKbytes/sec.
ftp> put clip1_he0.gxf /explodedFile/EXT:/default/clip1_back_he0
200 PORT command okay.
150 Opening MOVIE mode data connection for /explodedFile/EXT:/
default/#1_back_he0.
250 Transfer complete.
ftp: xxxxxxx bytes sent in x.xxSeconds xxxx.xxKbytes/sec.
ftp> bye
221 Goodbye.
```

2. Perform one of the following steps:
 - If the test data rates approach the specification, all software and hardware components in the UIM are correctly configured.
 - If the test data rates are too low in one or both directions:
 - Set the connection priorities as described in [“Part 12: Setup Connection Priorities”](#) on page 141.
 - Set the TCPWindowSize for all networking ports as described in [“Part 14: Set up TCP/IP Scaling”](#) on page 141.

NOTE: Put operations are typically limited by the system drive on the PC, and will rarely exceed 25MB/sec.

- If performance is still less than anticipated, contact Grass Valley Product Support. See [“Before calling product support”](#) on page 111f
-

If you have a problem: UIM-SAN-GEIP

Use the following steps to help determine faults that can cause UIM transfers to fail.

Step 1: Power-on the UIM, and log on as Administrator

Look for a successful Windows operating system boot. Watch for software error messages, devices and services that fail to start, or problems using the desktop. You can also use the Windows Event Viewer to check for error messages. If the Windows operating system fails to start and run properly, contact Grass Valley Product Support. (See [“Before calling product support” on page 111.](#))

Step 2: Make note of any recent system changes

Make note of any recent changes to the system, for example, software updates, network changes. If changes have been made to device names and network settings, use the procedures in manual to edit the *hosts* file.

Step 3: Check access to the shared storage

This procedure is located in the SCSI UIM installation chapter. Refer to the procedures in [“Verify access to shared storage” on page 78.](#) If the test fails, follow instructions in that procedure to resolve the problem. If the test passes, continue to [“Step 7: FTP a file using the 1000BT interface connected to the streaming LAN”.](#)

Step 4: Check the status of Grass Valley Services on the UIM

On the UIM, open the Windows operating system Services tool and check that the following services are running.

- Grass Valley FTP Daemon
- Grass Valley UIM Transfer Service

If any of the services are not running, try the following:

1. Reboot the UIM and try again.
2. If the problem persists, try reinstalling UIM System Software.
3. If the problem persists, contact Grass Valley Product support. Refer to [“Before calling product support” on page 111.](#)

Step 5: Use the “ping” utility to test Ethernet connectivity

Use the following steps to test Ethernet connectivity to networked devices in the system.

On the UIM, do the following:

1. On the UIM, right-click the My Network Places desktop icon, then select **Properties** to open the Network Connections dialog box.

NOTE: On Dell 2850 based UIMs, ports A and B appear as *Intel Pro/1000MT Network Connection* and *Intel Pro/1000MT Network Connection 2*, and ports C and D appear as *Intel Pro/1000MT Dual Port Server Adapter* and *Intel Pro/1000MT Dual Port Server Adapter 2*, respectively.

2. One at a time, right click each Ethernet adapter team (Control/Streaming), then select **Status**.

3. Check that status of each adapter is Connected. If not, check cabling and/or the Ethernet switch. If this does not correct the connection problem, you may have an Ethernet NIC hardware problem. You can use of the diagnostics tools that come with the Ethernet adapter software. If you still cannot establish an Ethernet hardware connection, call Grass Valley Product Support.

4. At the Windows command prompt, ping the each device in the system by host name.

Examples:

```
ping SAN1_XP1_he0  
ping SAN1_FSM1
```

5. If there is no reply from one of the devices, do the following:

- a. Note the IP address reported by the ping utility.
- b. On the device, use Windows Network Settings to check the IP address setting of the Ethernet adapter.
- c. Correct the settings if needed, then test again.
- d. Do one of the following:
 - If you cannot establish an Ethernet connection, contact Grass Valley Product Support. See [“Before calling product support” on page 111](#).
 - If the Ethernet connections to all devices are good, then, continue to [“Step 7: Check Ethernet switch status”](#).

Step 6: Check Ethernet switch status

The Intel PROSet software used with the Ethernet adapters contains a useful switch diagnostic to test switch settings. This is especially useful in testing redundant Ethernet topologies.

To test the switch:

1. On the UIM, right-click the My Network Places desktop icon, then select **Properties** to open the Network Connections dialog box.
2. Select one of the teams listed.
3. Click the **Team Configuration** tab.
4. Click the **Test Switch** button.
5. Read the results displayed. Correct as needed.

Step 7: FTP a file using the 1000BT interface connected to the streaming LAN

Use the following steps to test the UIMs ability to stream a file over the 1000BT streaming interface. This test does not actually transfer the file over 1000BT network, but can be looked at as a 1000BT loop-back test. You'll first get, then put a Profile media file. **Be sure to choose a small file to shorten the test time.**

1. On the UIM, open a command prompt window, then use the following syntax to ftp a media file. Insert your own host names and file names. Text you enter is in bold.

```
C:\TEMP>ftp SAN1_XP1_he0
Connected to SAN1_XP1_he0.
220 UIM FTP Server (2, 0, 9, 1) ready.
User (XP1_he0:(none)): movie
230 Aspect successfully set to MOVIE.
ftp> bin
200 Type set to IMAGE.
ftp> get /explodedFile/V:/default/clip1 clip1_he0.gxf
200 PORT command okay.
150 Opening MOVIE mode data connection for /explodedFile/V:/default/
#1.
250 Transfer complete.
ftp: xxxxxxx bytes received in x.xxSeconds xxxx.xxKbytes/sec.
ftp> put clip1_he0.gxf /explodedFile/V:/default/clip1_back_he0
200 PORT command okay.
150 Opening MOVIE mode data connection for /explodedFile/V:/default/
#1_back_he0.
250 Transfer complete.
ftp: xxxxxxx bytes sent in x.xxSeconds xxxx.xxKbytes/sec.
ftp> bye
221 Goodbye.
```

2. Perform one of the following steps:

- If the test passes, all required software and hardware components in the UIM are functional. If the problem persists, verify external cabling and equipment.
- If the test fails, contact Grass Valley Product Support. See [“Before calling product support” on page 111.](#)

Step 8: Test the streaming performance

Use the following steps to test the UIM's transfer performance over the 1000BT streaming interface. This test verifies that the UIM can transfer data at specified rates. You'll first get, then put a Profile media file. **Transferring longer files will give you a better idea of the system's performance.**

1. On a PC connected via 1000BT to the UIM, open a command prompt window, then use the following syntax to ftp a media file. Insert your own host names and file names. Text you enter is in bold. The put test uses the file transferred in the previous test.

```
C:\TEMP>ftp SAN1_XP1_he0
Connected to SAN1_XP1_he0.
220 UIM FTP Server (2, 0, 9, 1) ready.
User (XP1_he0:(none)): movie
230 Aspect successfully set to MOVIE.
ftp> bin
200 Type set to IMAGE.
ftp> get /explodedFile/V:/default/clip1 nul:
200 PORT command okay.
150 Opening MOVIE mode data connection for /explodedFile/V:/default/
clip1.
250 Transfer complete.
ftp: xxxxxxx bytes received in x.xxSeconds xxxx.xxKbytes/sec.
ftp> put clip1_he0.gxf /explodedFile/V:/default/clip1_back_he0
200 PORT command okay.
150 Opening MOVIE mode data connection for /explodedFile/V:/default/
#1_back_he0.
250 Transfer complete.
ftp: xxxxxxx bytes sent in x.xxSeconds xxxx.xxKbytes/sec.
ftp> bye
221 Goodbye.
```

2. Perform one of the following steps:
 - If the test data rates approach the specification, all software and hardware components in the UIM are correctly configured.
 - If the test data rates are too low in one or both directions:
 - Set the connection priorities as described in [“Part 12: Setup Connection Priorities”](#) on page 141.
 - Set the TCPWindowSize for all networking ports as described in [“Part 14: Set up TCP/IP Scaling”](#) on page 141.

NOTE: *Put operations are typically limited by the system drive on the PC, and will rarely exceed 25MB/sec.*

- If performance is still less than anticipated, contact Grass Valley Product Support. See [“Before calling product support”](#) on page 111.

If you have a problem: UIM-SAN-FCIP

Use the following steps to help determine faults that can cause UIM transfers to fail.

Step 1: Power-on the UIM, and log on as Administrator

Look for a successful Windows operating system boot. Watch for software error messages, devices and services that fail to start, or problems using the desktop. You can also use the Windows Event Viewer to check for error messages. If the Windows operating system fails to start and run properly, contact Grass Valley Product Support. (See [“Before calling product support” on page 111.](#))

Step 2: Make note of any recent system changes

Make note of any recent changes to the system, for example, software updates, network changes. If changes have been made to device names and network settings, use the procedures in manual to edit the *hosts* file.

Step 3: Check access to the shared storage

This procedure is located in the UIM-SAN-FCIP installation chapter. Refer to the procedures in [“Verify access to shared storage” on page 107.](#) If the test fails, follow instructions in that procedure to resolve the problem. If the test passes, continue to [“Step 7: FTP a file using the Fibre Channel interface connected to the FC IP network”.](#)

Step 4: Check the status of Grass Valley Services on the UIM

On the UIM, open the Windows operating system Services tool and check that the following services are running.

- Grass Valley FTP Daemon
- Grass Valley UIM Transfer Service

If any of the services are not running, try the following:

1. Reboot the UIM and try again.
2. If the problem persists, try reinstalling UIM System Software.
3. If the problem persists, contact Grass Valley Product support. Refer to [“Before calling product support” on page 111.](#)

Step 5: Use the “ping” utility to test Ethernet connectivity

Use the following steps to test Ethernet connectivity to networked devices in the system.

On the UIM, do the following:

1. On the UIM, right-click the My Network Places desktop icon, then select **Properties** to open the Network Connections dialog box.
2. One at a time, right click the Control Team and the QLogic FC NIC, then select **Status**.
3. Check that status of each adapter is Connected. If not, check cabling and/or the switch. If this does not correct the connection problem, you may have an NIC hardware problem. You can use of the diagnostics tools that come with the Ethernet

adapter software. If you still cannot establish an Ethernet hardware connection, call Grass Valley Product Support.

4. At the Windows command prompt, ping the each device in the system by host name.

Examples:

```
ping SAN1_XP1_fc0
ping SAN1_FSM1
```

5. If there is no reply from one of the devices, do the following:
 - a. Note the IP address reported by the ping utility.
 - b. On the device, use Windows Network Settings to check the IP address setting of the Fibre Channel adapter.
 - c. Correct the settings if needed, then test again.
 - d. Do one of the following:
 - If you cannot establish a Fibre Channel IP connection, contact Grass Valley Product Support. See [“Before calling product support”](#) on page 111.
 - If the Fibre Channel and Ethernet connections to all devices are good, then, continue to [“Step 7: Check Ethernet switch status”](#).

Step 6: Check Ethernet switch status

The Intel PROSet software used with the Ethernet adapters contains a useful switch diagnostic to test switch settings. This is especially useful in testing redundant Ethernet topologies.

To test the switch:

1. On the UIM, right-click the My Network Places desktop icon, then select **Properties** to open the Network and Dial-up Connections dialog box.
2. Select one of the teams listed.
3. Click the **Team Configuration** tab.
4. Click the **Test Switch** button.
5. Read the results displayed. Correct as needed.

Step 7: FTP a file using the Fibre Channel interface connected to the FC IP network

Use the following steps to test the UIMs ability to stream a file over the Fibre Channel streaming interface. This test does not actually transfer the file over Fibre Channel IP network, but can be looked at as a Fibre Channel IP loop-back test. You'll first get, then put a Profile media file. **Be sure to choose a small file to shorten the test time.**

1. On the UIM, open a command prompt window, then use the following syntax to ftp a media file. Insert your own host names and file names. Text you enter is in bold.

```
C:\TEMP>ftp SAN1_XP1_fc0
Connected to SAN1_XP1_fc0.
220 UIM FTP Server (2, 0, 9, 1) ready.
User (XP1_he0:(none)): movie
230 Aspect successfully set to MOVIE.
ftp> bin
200 Type set to IMAGE.
ftp> get /explodedFile/V:/default/clip1 clip1_fc0.gxf
200 PORT command okay.
150 Opening MOVIE mode data connection for /explodedFile/V:/default/
#1.
250 Transfer complete.
ftp: xxxxxxx bytes received in x.xxSeconds xxxx.xxKbytes/sec.
ftp> put clip1_fc0.gxf /explodedFile/V:/default/clip1_back_fc0
200 PORT command okay.
150 Opening MOVIE mode data connection for /explodedFile/V:/default/
#1_back_fc0.
250 Transfer complete.
ftp: xxxxxxx bytes sent in x.xxSeconds xxxx.xxKbytes/sec.
ftp> bye
221 Goodbye.
```

2. Perform one of the following steps:

- If the test passes, all required software and hardware components in the UIM are functional. If the problem persists, verify external cabling and equipment.
- If the test fails, contact Grass Valley Product Support. See [“Before calling product support”](#) on page 111.

Step 8: Test the streaming performance

Use the following steps to test the UIM's transfer performance over the 1000BT streaming interface. This test verifies that the UIM can transfer data at specified rates. You'll first get, then put a Profile media file. *Transferring longer files will give you a better idea of the system's performance.*

1. On a PC connected via 1000BT to the UIM, open a command prompt window, then use the following syntax to ftp a media file. Insert your own host names and file names. Text you enter is in bold. The put test uses the file transferred in the previous test.

```
C:\TEMP>ftp SAN1_XP1_fc0
Connected to SAN1_XP1_fc0.
220 UIM FTP Server (2, 0, 9, 1) ready.
User (XP1_he0:(none)): movie
230 Aspect successfully set to MOVIE.
ftp> bin
200 Type set to IMAGE.
ftp> get /explodedFile/V:/default/clip1 nul:
200 PORT command okay.
150 Opening MOVIE mode data connection for /explodedFile/V:/default/clip1.
250 Transfer complete.
ftp: xxxxxxx bytes received in x.xxSeconds xxxx.xxKbytes/sec.
ftp> put clip1_fc0.gxf /explodedFile/V:/default/clip1_back_fc0
200 PORT command okay.
150 Opening MOVIE mode data connection for /explodedFile/V:/default/#1_back_fc0.
250 Transfer complete.
ftp: xxxxxxx bytes sent in x.xxSeconds xxxx.xxKbytes/sec.
ftp> bye
221 Goodbye.
```

2. Perform one of the following steps:
 - If the test data rates approach the specification, all software and hardware components in the UIM are correctly configured.
 - If the test data rates are too low in one or both directions:
 - Set the connection priorities as described in [“Part 12: Setup Connection Priorities”](#) on page 141.
 - Set the TCPWindowSize for all networking ports as described in [“Part 14: Set up TCP/IP Scaling”](#) on page 141.

NOTE: *Put operations are typically limited by the system drive on the PC, and will rarely exceed 25MB/sec.*

- If performance is still less than anticipated, contact Grass Valley Product Support. See [“Before calling product support”](#) on page 111.

Using a generic rebuild CD

If restoring from the generic factory disk image, it is important that you use the correct image to match your UIM hardware and configuration. The following table provides a guide to rebuild CDs.

Dell server platform	Nomenclature	Rebuild CD part number
2650	—	063-8159-01
2850	UIM-DIS-GEIP, UIM-SAN-GEIP	063-8223-01
2850	UIM-SAN-FCIP	063-8232-01
1950	UIM-DIS-GEIP, UIM-SAN-GEIP	063-8223-02
1950	UIM-SAN-FCIP	063-8232-02

Creating a system disk image

Use the procedure to create a system disk image (the C: partition) and store the image file on the D: partition. You can use this disk image to restore the complete software on the system disk, including all the current system settings. This simplifies the process of troubleshooting and correcting software faults.

To create a system disk image and store the image on the D: partition, do the following:

1. Insert the *UIM Restore Program CD*. If there are multiple CDs in the set, insert the last volume. Then restart the machine.

The machine boots from the disc. The Acronis True Image program loads.

2. At the startup screen, select **True Image Server (Full Version)**.

The Acronis True Image program loads.

The Acronis True Image main window appears.

3. In the Acronis True Image main window, click **Backup**.

The Create Backup Wizard opens.

4. On the Welcome page, click **Next**.

The Select Backup Type page opens.

5. Select **The entire disk contents or individual partition** and then click **Next**.

The Partitions Selection page opens.

6. Select the partition labeled **C Drive** and then click **Next**.

The Backup Archive Location page opens.

7. In the tree view select the partition labeled **D Drive** and then enter the name of the image file you are creating. It is recommended that you incorporate a portion of the UIM name and the current date in the file name so that you can easily identify the disk image for the UIM. Click **Next**.

The Backup Creation Options page opens.

8. Do not change any settings on this page. Click **Next**.

The Archive Comment page opens.

9. If desired, enter image comments, such as the date, time, and software versions contained on the image you are creating. Click **Next**.

The "...ready to proceed..." page opens.

10. Verify that you are creating an image from the C: partition and writing to the D: partition. Click **Proceed**.

The Operation Progress page opens and displays progress.

11. When a "Backup archive creation has been successfully completed" message appears, click **OK**.

12. Click **Operations | Exit** to exit the Acronis True Image program.

The machine restarts automatically.

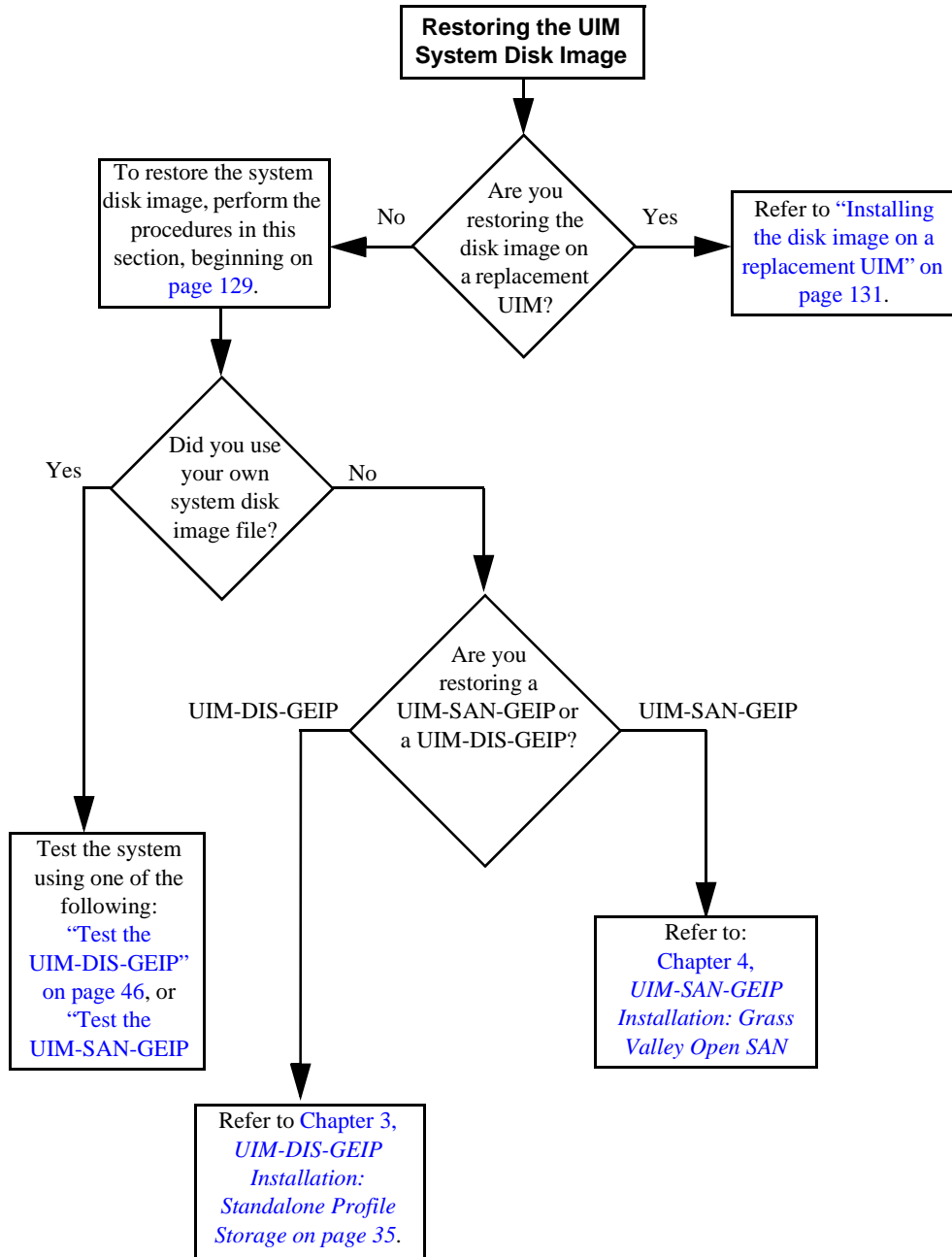
13. Remove the CD while the machine is shutting down.

14. Upon restart, open Windows Explorer and find the image file on the D: partition.
You can copy the file to a network drive or other location for backup purposes.

Restoring the system disk image

Restoring the system disk image simplifies the process of troubleshooting and correcting software faults. You can restore the Windows O/S software and UIM system software using the system disk image file stored on the system disk's 'D' partition.

If you created your own system disk image during installation or last software update as described in [“Creating a system disk image” on page 126](#), you can use this image file to restore the system disk. If you use your own system disk image file, all of UIM configuration information is restored along with the Windows and UIM software.



CAUTION: This procedure overwrites the system disk. You must backup any valuable data to prevent loss.

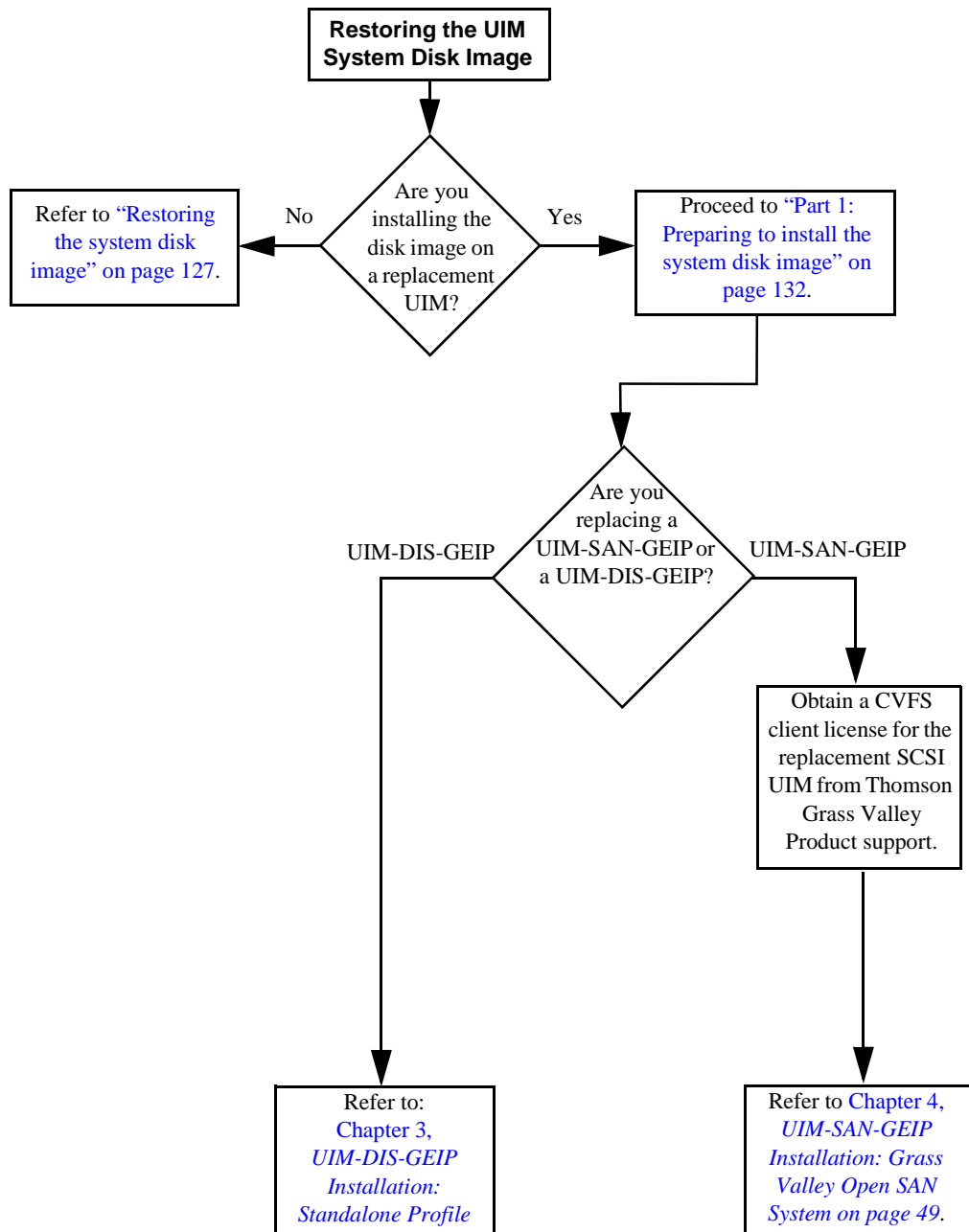
NOTE: At any step in this procedure if a message appears asking for disc/volume, insert CDs as prompted until you can proceed to the next step.

1. If restoring from the generic factory image, locate the Windows operating system software license shipped with your UIM. You'll need the license number during this procedure. Also refer to ["Using a generic rebuild CD" on page 125](#).
2. Insert the *UIM Restore Program CD*. If there are multiple CDs in the set, insert the last volume. Then restart the machine.
The machine boots from the disc. The Acronis True Image program loads.
3. At the startup screen, select **True Image Server (Full Version)**.
4. Under "Pick a Task", select **Recovery**.
The Recovery Data Wizard opens.
5. On the first page, click **Next**.
The Archive Selection page opens.
6. In the tree view, do one of the following:
 - If restoring from an image on the D: partition, expand the node for the D: partition and select the image file, then click **Next**.
 - If restoring from an image on a CD, expand the node for the CD and select the image file, then click **Next**.The Restoration Type Selection page opens.
7. Select **Restore disks or partitions** and then click **Next**.
The Partition or Disk to Restore page opens.
8. Check the box next to **C Drive** and then click **Next**.
The Restored Partition Resizing page opens.
9. Select **No, I do not want to resize partitions** and then click **Next**.
10. The Restored Partition Location page opens.
11. Select **C Drive** and then click **Next**.
12. If **C Drive** cannot be selected, go back to the Restored Partitions Resizing page and select **Yes, I want to resize partitions**.
The Restored Partition Type page opens.
13. Select **Active** and then click **Next**.
The Restored Partition Size page opens.
14. Do not make any selections. Click **Next**.
The Next Selection page opens.
15. Select **No, I do not** and then click **Next**.
The Restore Operation option page opens.
16. Do not make any selections. Click **Next**.
The Verify Procedure page opens.
17. Verify that you are restoring partitions. Click **Proceed**.
A page opens and displays progress.
18. Insert CDs as prompted. As messages appear asking for disks, insert CDs sequentially and click **Retry**.

19. When a “The data was successfully restored” message appears, click **OK**.
20. Exit the Acronis True Image program and restart.
21. Click **File | Operations | Exit**.
The machine restarts automatically.
22. Remove the CD from the CD drive while the machine is shutting down.
23. If restoring from a factory default image, upon restart you must enter the Windows software license number, computer name, and password. Refer to [“Part 3: Enter Windows software license number” on page 133](#).
24. Return to the [“Restoring the system disk image” flow chart on page 127](#) to continue.

Installing the disk image on a replacement UIM

A replacement UIM may be used if your UIM has a hardware fault. The replacement UIM is shipped with no operating system or UIM software installed. Use procedures in this section to install the system disk image on the replacement UIM. You must use the factory default image file located on the *UIM Restore Program CD* that you received with your original UIM. Use the following flow chart as a guide.





CAUTION: Do not use the system disk image you created for your own UIM. The factory default image file on the UIM Restore Program CD is designed to operate with replacement UIMs.

Part 1: Preparing to install the system disk image

1. If possible and if needed, backup all user data from the existing UIM system drive before replacing it.
2. Locate the Windows operating system software license shipped with your UIM. You'll need the license number during this procedure.



CAUTION: If the UIM is installed in an Open SAN shared storage system, do not connect the Fibre Channel interface to the SCSI fabric at this time. Wait until after you have performed [“Uninstall the Fibre Channel adapter IP driver” on page 53](#). The IP driver installed by the factory default disk image will cause Open SAN record and ployout to fail.

Part 2: Replace the system disk image

This procedure uses the UIM restore program and the factory default image file to install the system disk image on the replacement UIM. The restore program and default file are located on the *UIM Restore Program* CD-ROM. Refer to [“Using a generic rebuild CD” on page 125](#).

NOTE: At any step in this procedure if a message appears asking for disc/volume, insert CDs as prompted until you can proceed to the next step.

1. Insert the *UIM Restore Program* CD. If there are multiple CDs in the set, insert the last volume. Then restart the machine.
The machine boots from the disc. The Acronis True Image program loads.
2. At the startup screen, select **True Image Server (Full Version)**.
3. Under “Pick a Task”, select **Recovery**.
The Recovery Data Wizard opens.
4. On the first page, click **Next**.
The Archive Selection page opens.
5. In the tree view expand the node for the CD ROM drive and select the image file, then click **Next**:
The Restoration Type Selection page opens.
6. Select **Restore disks or partitions** and then click **Next**.
The Partition or Disk to Restore page opens.
7. Check the box next to **C Drive** and then click **Next**.
The Restored Partition Resizing page opens.
8. Select **No, I do not want to resize partitions** and then click **Next**.
9. The Restored Partition Location page opens.
10. Select **C Drive** and then click **Next**.

11. If **C Drive** cannot be selected, go back to the Restored Partitions Resizing page and select **Yes, I want to resize partitions**.
The Restored Partition Type page opens.
12. Select **Active** and then click **Next**.
The Restored Partition Size page opens.
13. Do not make any selections. Click **Next**.
The Next Selection page opens.
14. Select **Yes, I want to restore another partition or hard disk drive** and then click **Next**.
The Partition or Disk to Restore page opens.
15. Note that C Drive has a green checkmark. Select **D Drive** and then click **Next**.
The Restored Partition Resizing page opens.
16. Select **No, I do not want to resize partitions** and then click **Next**.
The Restored Partition Location page opens.
17. Select **Unallocated** and then click **Next**.
If **Unallocated** cannot be selected, go back to the Restored Partitions Resizing page and select **Yes, I want to resize partitions**.
The Restored Partition Type page opens.
18. Select **Primary** and then click **Next**.
The Restored Partition Size page opens.
19. Do not make any selections. Click **Next**.
The Next Selection page opens.
20. Select **No, I do not** and then click **Next**.
The Restore Operation option page opens.
21. Do not make any selections. Click **Next**.
The Verify Procedure page opens.
22. Verify that you are restoring partitions. Click **Proceed**.
A page opens and displays progress.
23. Insert CDs as prompted. As messages appear asking for disks, insert CDs sequentially and click **Retry**.
24. When a “The data was successfully restored” message appears, click **OK**.
25. Exit the Acronis True Image program and restart.
26. Click **File | Operations | Exit**.
The machine restarts automatically.
27. Remove the CD from the CD drive while the machine is shutting down.

Part 3: Enter Windows software license number

Use this procedure to enter the software license number required for the Windows operating system for your UIM.

1. Wait for Windows to boot.

2. When prompted, enter the Windows operating system software license number shipped with your UIM.
3. Click **Next**.
4. When prompted, type the Computer Name and the Administrative password.
Computer name: *Enter the UIM host name chosen for your system.*
Default administrator password: *triton*
5. Click **OK**, then **Next** to continue.
The system will finish setup, and then restart.
6. When the system restarts, login to the administrator account. Use *triton* for the password.
7. Proceed to [“Part 4: Modifying Windows operating system settings”](#).

Part 4: Modifying Windows operating system settings

Use this procedure to configure the Windows operating system to factory specifications.

1. Rename My Computer icon.
 - a. Right-click the My Computer icon, then select **Rename**.
 - b. Type the host name used for this UIM.
2. Modify Virtual Memory setting using the following:
 - a. Right-click the My Computer icon, then select **Properties**.
 - b. In the System Properties window, select the **Advanced** tab.
 - c. Click the **Performance Options** or **Settings**.
 - d. On the Advanced tab, click the **Change** button in the Virtual Memory section of the Performance Options dialog box.
 - e. Set the Initial size (MB) entry to **1024** (1024MB)
 - f. Set the Maximum size (MB) entry to **1024**.
 - g. Click the **Set**.
 - h. Click **OK** in the Virtual Memory window.
 - i. Click **OK** in the restart notification dialog box.
 - j. Click **OK** in the Performance Options window.
3. Click **OK** in the System Properties dialog box.
4. When prompted to restart, select **Yes**.
The UIM reboots automatically.
5. Verify that the UIM reboots initializes fully, passing all startup tests without errors.

Part 5: Update IP UIM System Software

NOTE: This step is for IP UIM only. If you restoring a UIM-SAN-GEIP or UIM-SAN-FCIP, proceed to “Part 6 for Dell 2650/2850: Setup Ethernet port teams” on page 135 or “Part 6 for Dell 1950: Setup Ethernet port teams” on page 136.

The Factory default image may not have the correct version of UIM system software for your system. Obtain your copy of the UIM system software, then perform the procedures in “Installing UIM System Software” on page 21. Afterward, proceed to “Part 6 for Dell 2650/2850: Setup Ethernet port teams” or “Part 6 for Dell 1950: Setup Ethernet port teams”.

Part 6 for Dell 2650/2850: Setup Ethernet port teams

- Do not do this procedure if your UIM is based on a Dell 1950 server platform. Instead, do the next procedure, “Part 6 for Dell 1950: Setup Ethernet port teams”.
- Do this procedure if your UIM is based on a Dell 2650 or 2850 server platform.

Use this procedure to create the Ethernet port adapter fault tolerance (AFT) teams. This procedure uses the Intel PROSet configuration utility.

1. Start Intel PROSet using the desktop icon.
2. Clear the **Show the tray icon** option if it is selected.
3. Select **Action | Add to Team | Create New Team**.
4. Select **Adapter Fault Tolerance** option from the Teaming wizard, and click **Next**.
5. If your UIM is based on a Dell 2650 server platform, select the first two Intel® PRO/1000MT Quad Port Server Adapters listed in the window.

NOTE: Intel® PRO/1000MT Quad Port Server Adapter, and Intel® PRO/1000MT Quad Port Server Adapter #2 should be the **ONLY** check-boxes that are **CHECKED**.

6. If your UIM is based on a Dell 2850 server platform, select the two Intel Pro/1000MT Network Connections listed in the window.

NOTE: Intel® PRO/1000MT Network Connection and Intel® PRO/1000MT Network Connection 2 should be the **ONLY** check-boxes that are **CHECKED**.

7. Click **Next**, then **Finish** to create the team.
8. Right-click on the new Team #0 entry, and select **Rename Team**.
9. Type **Control Team** in the rename team window, and click **OK**. Ensure that the team is renamed.
10. Right-click on the first adapter listed below Control Team\Member Adapters and select **Preferred Primary**.
11. Right-click on the second adapter listed below Control Team\Member Adapters and select **Preferred Secondary**.

NOTE: The following steps are not required for the UIM-SAN-FCIP.

12. Select the Intel® PRO/1000MT Quad Port Server Adapter #3 (Dell 2650) or Intel® PRO/1000MT Dual Port Server Adapter (Dell 2850) from the list; should be highlighted.
13. Select **Action | Add to Team | Create New Team**.
14. Select **Adapter Fault Tolerance** option from the Teaming wizard, then click **Next**.
15. The two remaining Intel PRO/1000MT ports should be listed in the Teaming Wizard window and BOTH check-boxes should be CHECKED.
16. Click **Next**, then **Finish** to create the team.
17. Right-click on the new Team #1 entry, and select **Rename Team**.
18. Type *Streaming Team* in the rename team window, and click **OK**. Ensure that the team is renamed.
19. Right-click on the first adapter listed below Streaming Team\Member Adapters and select **Preferred Primary**.
20. Right-click on the second adapter listed below Streaming Team\Member Adapters and select **Preferred Secondary**.
21. Click the **Apply** button to save all configuration changes.
This takes approximately one minute to complete.

Part 6 for Dell 1950: Setup Ethernet port teams

- Do not do this procedure if your UIM is based on a Dell 2650 or 2850 server platform. Instead, do the previous procedure, [“Part 6 for Dell 2650/2850: Setup Ethernet port teams”](#).
- Do this procedure if your UIM is based on a Dell 1950 server platform.

Use this procedure to create the Ethernet port adapter fault tolerance (AFT) teams. This procedure uses the Broadcom Advanced Control Suite 2 (BACS2) for the Control Team and the Intel PROSet configuration utility for the Streaming Team.

1. In the Windows Desktop system tray, double-click the Control Suite icon.
The Broadcom Advanced Control Suite 2 opens.
2. Click **Tools | Create a Team**.
The Teaming Wizard opens to the Welcome page
3. Click **Next**.
The Team Name page opens.
4. Type `Control Team`. Click **Next**.
The Team Type page opens.
5. Select **Smart Load Balancing and Failover**. Click **Next**.
The Assigning Team Members page opens.
6. Do the following:
 - a. From the Available Adapters list, select a Broadcom adapter and then click **Add**.

- b. From the Available Adapters list, select the remaining Broadcom adapter and then click **Add**.
7. Click **Next**.
The Designating a Standby Member page opens.
8. Do the following:
 - a. Select **Use the following member as a standby member**
 - b. From the list of adapter, select **(0046) Broadcom....**
Leave Enable Auto Failback Disable Mode unselected
 - c. Click **Next**.
The Configuring a LiveLink page opens
9. Select **No**. Click **Next**.
The Configure VLAN Support page opens
10. Select **No**. Click **Next**.
The Congratulations page opens
11. Select **Commit Changes....** Click **Finish**. When prompted, confirm with **Yes** and **OK**.
12. In Broadcom Advanced Control Suite 2 tree-view, expand all nodes and then do the following:
 - a. Under Primary Adapters, select a Broadcom adapter.
 - b. Click the **Advanced** tab.
 - c. In the Property box, select **Flow Control**.
 - d. In the Value drop-down list, select **Rx/Tx PAUSE**.
 - e. Repeat these steps for the other Broadcom adapter, which is under Standby Adapters.
 - f. Click **Apply**. When prompted to confirm, click **Yes**.
13. Close the Broadcom Advanced Control Suite 2.

NOTE: The following steps are not required for the UIM-SAN-FCIP.

14. Open Device Manager as follows:
 - a. On the Windows desktop, right-click the **My Computer** icon (which has been renamed with the UIM hostname) and select **Manage**. The Computer Management window opens.
 - b. In the left pane select **Device Manager**. Device Manager opens in the right pane.
15. In Device Manager, expand the Network adapters node.
16. In Device Manager | Network adapters, right-click **...MT Dual Port Server Adapter** and select **Properties**. The Properties dialog box opens.
17. Select the **Teaming** tab.

18. Select **Team with other adapters**, then click **New Team**. The New Team Wizard opens.
19. Enter Streaming Team.
Click **Next**.
20. Select the check box for **...Adapter** and **...Adapter #2**. Click **Next**.
21. Select **Switch Fault Tolerance**. Click **Next**.
22. Click **Finish** and wait a few seconds for the adapters to be teamed.
The TEAM: Streaming Team Properties dialog box opens.
23. Select the **Settings** tab.
24. Click **Modify Team**.
The Modify Team dialog box opens.
25. On the **Adapters** tab, do the following:
 - a. Select the top entry, which is **Intel® PRO/1000 MT Dual Port Server Adapter**, and click **Set Primary**.
 - b. Select **Intel® PRO/1000 MT Dual Port Server Adapter #2** and click **Set Secondary**.
26. Click **OK** and **OK** and to close dialog boxes.

Part 7: NIC Name & IP Address Setup

Use this procedure to rename all Ethernet adapters using factory default names.

1. On the Windows desktop, right-click **My Network Places** icon, then select **Properties**.
The Network Connections window opens.
2. In the Network Connections window, rename each Ethernet adapter as follows:
 - a. Refer to the following table and identify the appropriate section of the table for the Dell server platform.
 - b. Identify each adapter by comparing the Device Name column in the Network Connections window and the Device Name column in the table.
 - c. In the Network Connections window name column, for each adapter, in the Name column, right-click the adapter, then select **Rename**.
 - d. Rename adapters as specified in the table.

Name	Type	Status	Device Name
Dell 2650			
QLogic FC NIC	LAN	Enabled	QLogic QLA2X00 PCI Adapter
Intel 1000BT Port A	LAN	Enabled	Intel(R) Pro/1000 MT Quad Port Server Adapter
Intel 1000BT Port B	LAN	Enabled	Intel(R) Pro/1000 MT Quad Port Server Adapter #2
Intel 1000BT Port C	LAN	Enabled	Intel(R) Pro/1000 MT Quad Port Server Adapter #3

Name	Type	Status	Device Name
Intel 1000BT Port D	LAN	Enabled	Intel(R) Pro/1000 MT Quad Port Server Adapter #4
Control Team - Intel Ports A/B	LAN	Enabled	Intel(R) Advanced Network Services Virtual Adapter
Streaming Team - Intel Ports C/D	LAN	Enabled	Intel(R) Advanced Network Services Virtual Adapter #2
Dell 2850			
QLogic FC NIC	LAN	Enabled	QLogic QLA2X00 PCI Adapter
Intel 1000BT Port A	LAN	Enabled	Intel(R) Pro/1000 MT Network Connection
Intel 1000BT Port B	LAN	Enabled	Intel(R) Pro/1000 MT Network Connection #2
Intel 1000BT Port C	LAN	Enabled	Intel(R) Pro/1000 MT Dual Port Server Adapter
Intel 1000BT Port D	LAN	Enabled	Intel(R) Pro/1000 MT Dual Port Server Adapter #2
Control Team - Intel Ports A/B	LAN	Enabled	Intel(R) Advanced Network Services Virtual Adapter
Streaming Team - Intel Ports C/D	LAN	Enabled	Intel(R) Advanced Network Services Virtual Adapter #2
Dell 1950			
QLogic FC NIC	LAN	Enabled	QLogic QLA2X00 PCI Adapter
Broadcom 1000BT Port A	LAN	Enabled	Broadcom BCM5708C NetXtreme II GigE (NDIS VBD Client)
Broadcom 1000BT Port B	LAN	Enabled	Broadcom BCM5708C NetXtreme II GigE (NDIS VBD Client) #2
Control Team - Broadcom Ports A and B	LAN	Enabled	BASP Virtual Adapter
Intel 1000BT Port C	LAN	Enabled	TEAM: Streaming Team - Intel(R) Pro/1000 MT Dual Port Server Adapter
Intel 1000BT Port D	LAN	Enabled	TEAM: Streaming Team - Intel(R) Pro/1000 MT Dual Port Server Adapter #2
Streaming Team - Intel Ports C and D	LAN	Enabled	TEAM: Streaming Team

Part 8: Set the Control Team IP Address

1. Double-click the *Control Team* entry to display its Properties Window.
2. Click the “Show icon in taskbar when connected” option, and ensure the checkmark is present.
3. Select the Internet Protocol (TCP/IP) component from the components list, and click the **Properties** button.
4. Click the “Use the following IP address” option.
5. Enter the Control Team IP address in the IP address field.

6. Enter subnet mask.
7. Click **OK** to close the Internet Protocol (TCP/IP) Properties window.
8. Click **OK** to close the Control Team Properties window.
9. Click **Close** to close the Control Team Status Window
10. The Control Team icon should be displayed in the Windows taskbar if there is a network connection.

Part 9: Set the Streaming Team IP Address

1. Double-click the *Streaming Team* entry to display its Properties Window
2. Click the “Show icon in taskbar when connected” option, then ensure the checkmark is present.
3. Select the Internet Protocol (TCP/IP) component from the components list, and click the **Properties** button.
4. Click the “Use the following IP address” option.
5. Enter the Streaming Team IP address in the IP address field.
6. Enter the subnet mask.
7. Click **OK** to close the Internet Protocol (TCP/IP) Properties window.
8. Click **OK** to close the Streaming Team Properties window.
9. Click **Close** to close the Streaming Team Status Window.
10. The Streaming Team icon should be displayed in the Windows taskbar if connected to the network.

Part 10: Rename the Qlogic FC NIC

1. In the Network and Dial-Up Connections window identify the local area connection that is assigned to the Qlogic QLA2X00 PCI Adapter (Should be Local Area Connection 5).
2. In the Network and Dial-Up Connections window, right-click this connection, then select **Rename** and rename this connection: *QLogic FC NIC*.

Part 11: Set the Qlogic FC NIC IP Address

1. Double-click the *Qlogic FC NIC* entry to display its Status Window.
2. In the Qlogic FC NIC Status Window click **Properties**.
3. Click the “Show icon in taskbar when connected” option, then ensure the checkmark is present.
4. Select the Internet Protocol (TCP/IP) component from the components list, and click the **Properties** button.
5. Click the “Use the following IP address” option.
6. Enter the IP address for the Fibre Channel interface in the IP address field.
7. Enter the subnet mask.

8. Click **OK** to close the Internet Protocol (TCP/IP) Properties window.
9. Click **OK** to close the Qlogic FC NIC Properties window.
10. Click **Close** to close the Qlogic FC NIC Status Window

Part 12: Setup Connection Priorities

Setup the Connection priority so that the Control Team is highest, then Streaming Team, then Qlogic FC NIC in the Network and Dial-up Connections Advanced Settings window.

1. Select **Advanced | Advanced Settings**.
2. Select the **Adapters and Bindings** tab.
3. Ensure that the *Control Team* is listed first in the Connections window. Use the Up Arrow control to move the Control Team connection up if needed.
4. Ensure that the *Streaming Team* is listed second in the Connections window. Use the Up/down Arrow controls to move the Streaming Team connection up if needed.
5. Ensure that the *Qlogic FC NIC* is listed third in the Connections window. Use the Up/Down Arrow controls to move the Qlogic FC NIC connection up if needed.
6. Click **OK** to close the Advanced Settings window.
7. Close the Network and Dial-Up Connections window
8. Close the PROSet window.

Part 13: Set the Qlogic MTU size

1. On the Windows desktop, right-click **My Computer** and select **Manage**.
The Computer Management application is displayed.
2. Click on **Device Manager**.
3. Expand **Network Adapters** icon in the right hand pane.
4. Right-click the Fibre Channel Adapter device, i.e. QLogic QLA2X00 PCI Adapter, then select **Properties**.
The Properties dialog box opens.
5. Select **Advanced**, and for **MTU Size**, enter the following:
65280
6. Click **OK** to save settings and close.
7. Close the Computer Management application

Part 14: Set up TCP/IP Scaling

NOTE: *The setup done in this section is based on the GUID of network adapters, and is unique to each system.*

1. In a Command Prompt (DOS Prompt) window, navigate to the location of the UIMIPConfig.exe tool. It is located in either *c:\profile*, or in *c:\profile\Unsupported Tools*.

2. Start the configuration tool by typing the following at the command prompt:
`uimipconfig -i`
3. Confirm that you wish to reset TCP IP settings (y).
4. From the displayed list of IP addresses, note which one corresponds to your Control Team and enter its number at the prompt, 0, 1, or 2.
5. Enter `c` to configure this port as a Control port.
6. Repeat step 4 and step 5 for the Streaming (s) and Fibre Channel (f) ports respectively.
7. Enter `q` at the prompt once you have configured all the required ports.

This completes the replacement UIM system disk image installation procedure. You must now reconfigure your system settings. Return to the [“Restoring the system disk image”](#) flow chart on [page 127](#) to continue.

Chapter 7

Information for application developers

This chapter contains information about writing applications to manage transfers through the UIM.

Information in the chapter includes:

- [“UIM API overview”](#)
- [“Material Exchange Format”](#)

UIM API overview

The UIM supports all the FTP commands that are supported by the Profile video server. Provided the correct name aliasing is in place, the UIM intercepts these commands and services them. In the case of UIM-DIS-GEIP, the UIM initiates a corresponding command to the Profile video server and relays all data, command responses, and error messages. If the UIM is directly connected to the Fibre Channel SCSI fabric of an Open SAN, the UIM itself services all requests, moves data, and generates responses and error messages itself.

The UIM is an extension of a Profile video server. Any Profile API transfer command that is sent to a Profile video server will be appropriately acted upon, with UIM acting as proxy for the Profile video server.

The following sections describe the UIM interfaces.

The FTP interface

An application writer may choose to initiate clip transfers via FTP. Provided the appropriate name aliasing is established in the host table, the FTP commands destined for the Profile's streaming interfaces (Fibre Channel IP or 1000BT Ethernet) are directed to the UIM. Client applications are not aware of the presence of the UIM. The only change required in the controlling application is to send commands to the `hostname_he0` interface (or `hostname_fc0` in the case of a UIM-SAN-FCIP).

Supported commands

The UIM's FTP server supports the following commands:

FTP command name	FTP command description	Streaming support requirement
USER	User Name	GXF – Username “movie”, no password MXF – Username “mxfmovie”, no password
PASS	Password	Not supported
ACCT	Account	Not supported
CWD	Change working directory	Not supported
CDUP	Change to parent directory	Not supported
SMNT	Structure mount	Not supported
REIN	Reinitialize	Not supported
QUIT	Logout	Supported
PORT	Data port	Supported
PASV	Passive	Supported
TYPE	Representation type	Supported
STRU	File structure	Not supported
MODE	Transfer mode	Not supported
RETR	Retrieve	Supported
STOR	Store	Supported
STOU	Store unique	Not supported
APPE	Append (with create)	Not supported
ALLO	Allocate	Not supported
REST	Restart	Not supported
RNFR	Rename From	Not supported
RNTO	Rename To	Not supported
ABOR	Abort	Supported
DELE	Delete	Supported
RMD	Remove directory	Not supported
MKD	Make directory	Not supported
PWD	Print working directory	Not supported
LIST	List	Not supported

NLST	Name List	Not supported
SITE ^a	Site Parameters	Supported
SYST	System	Supported
SIZE	Size of file (clip)	Not supported
STAT	Status	Supported
HELP	Help	Supported
NOOP	No Operation	Supported

^aRefer to “The SITE STATUS command” on page 147.

A sample GXF session

The following illustrates a command session that transfers a clip named *EXT:/default/clip1* on a standalone Profile XP video server and sends it to a file named *clip1.gxf*, then sends the file back to the Profile video server as a clip named *EXT:/default/clip1_back*. Application developers can use this example to understand how to transfer clips to and from a Profile video server via FTP.

```
C:\TEMP>ftp XP1_fc0
Connected to XP1_fc0.
220 Profile FTP server (1.0)
User (XP1_fc0:(none)): movie
230 Aspect successfully set to MOVIE.
ftp> bin
200 TYPE command okay. Type is IMAGE.

ftp> get /explodedFile/EXT:/default/clip1 clip1.gxf
200 PORT command okay.
150 Opening data connection.
250 Transfer complete.
ftp: xxxxxxx bytes received in x.xxSeconds xxxx.xxKbytes/sec.

ftp> put Clip1.gxf /explodedFile/EXT:/default/clip1_back
200 PORT command okay.
150 Opening data connection.
250 Transfer complete.
ftp: xxxxxxx bytes sent in x.xxSeconds xxxx.xxKbytes/sec.
ftp> bye
221 Connection closing.
```

The SITE STATUS command

When the transfer has been initiated, your FTP client can send the 'SITE STATUS' command to the K2 FTP Server. Here is how we format the reply string to a 'SITE STATUS' command:

```
sprintf(statusString, "%d %d %I64d %I64d %I64d %I64d %ld %ld",
        status,          // 0 =>active/in progress, 1 => Error, 2 => Done/complete
        hrError,        // a DWORD error code, set if above status is equal to 1
        nCurBytes,     // __int64 value equal to the number of bytes transmitted so far
        nTotBytes,     // __int64 value equal to the total number of bytes required by this GXF stream
        nCurFields,   // __int64 value equal to the number of fields transmitted so far
        nTotFields,   // __int64 value equal to the total number of fields required by this GXF stream
        nAvgRate,      // long value indicating current bit rate in bytes per second
        nLastRate     // long value indicating average bit rate in bytes per second);
```

The algorithm is as follows:

1. If there is no session active/queued, SITE STATUS will return a 'no transfer'
2. If a transfer request was made, SITE STATUS will return a string formatted according to the above rules
3. After the transfer completes/errors, SITE STATUS will continue to return the last known status, which is cached by the server
4. The client must explicitly call QUIT/ABOR to clear the status

Profile API

Application writers may choose to use commands from the TekXfr library to manage transfers through the UIM. The UIM is transparent in these operations, and the application must be written directly to the Profile video server.

The Profile API commands used to transfer clips are:

- **XfrAbort()**
- **XfrGetActiveTokens()**
- **XfrGetStatus()**
- **XfrRequest()**

Note that the **XfrRequest** must include a *DestUmlList* that can include an *?option*. When a UIM is part of the data stream, only the range option is supported. Neither the *HOT* nor the *exact* options are supported.

Refer to the Profile SDK documentation for more information about the TekXfr Library and its commands.

Material Exchange Format

This version of the UIM supports transfers of clips in the Material Exchange Format (MXF).

UIM transfers only simple clips (not complex movies) in the MXF format. It does so using Operation Pattern 1a of the MXF standards.

MXF transfers through the UIM are supported via FTP only, and not through the Profile API.

Supported MXF standards

The following standards are supported in whole or in part by the UIM:

SMPTE standard	Subject
377M	General Format Specification
378M	Operational Pattern 1a (Op1a)
379M	Generic Container
381M	MPEG
382M	Audio
383M	DV
385M	CP compatible system
386M	D10
EG41	Engineering guideline

About UMIDs

The UIM extracts the clip UMID and saves it as part of the movie description when it converts an MXF stream into a Profile video server movie.

When the UIM creates an MXF stream from a Profile movie, it generates a UMID for the clip if no UMID was saved with the clip. However, this UMID is not added to the Profile movie description. Therefore, if the same clip is transferred more than once, it will receive a different UMID each time.

About Metadata

The UIM inserts MXF metadata differently according to its type. Similarly, upon receiving an MXF stream, the UIM uses metadata in different ways.

Structural metadata

Structural metadata describe how material is included in the MXF stream. Information such as the clip name, In and Out points, number of audio tracks, and similar clip definition information are considered structural metadata.

When receiving an MXF stream, the UIM parses the structural metadata and uses it to decompose the stream into its various elementary essences, such as video, audio, and timecode. Once the essence is extracted, it is either written to the file system (UIM-SAN-GEIP or UIM-SAN-FCIP), or assembled into a GXF stream for transfer to a standalone Profile (UIM-DIS-GEIP).

When creating an MXF stream from either a GXF stream or a clip on an Open SAN file system, the UIM reformulates Profile clip metadata into MXF structural metadata to ensure that the stream can be parsed by other MXF readers.

Descriptive metadata

Descriptive metadata includes information such as Producer name, name(s) of actor(s), etc.

When receiving descriptive metadata within the MXF stream, the UIM does not retain this information.

When generating an MXF stream, the UIM does not insert any descriptive metadata. Any information of this type that was stored as Profile user data is inserted into a MXF Dark Metadata KLV element, as mentioned below.

Dark metadata

The MXF standard allows for metadata that is not described by the standard to be included as part of the MXF stream. This metadata is may be used for proprietary purposes such as including scripts or scene information. Creating and reading dark metadata is entirely the responsibility of the application that creates the clip.

When receiving dark metadata in the MXF stream, the UIM parses the metadata and determines if it was originally Profile User Data, or if it came from some other source. If it was Profile User Data, the UIM extracts the packets and identifies them as Profile User Data, to be saved in the Profile format for such data. If the dark metadata came from another source, the KLV information is stored as-is in Profile user data extensions. The information remains part of the clip as long as the clip exists and can be accessed by any application using relevant Profile User Data API calls

When creating an MXF stream, Profile User Data that was stored using the Profile API as extensions is repackaged as with appropriate KLV information and included in the stream. Incoming dark metadata associated with the clip that was stored as-is in its KLV form is included as dark metadata in the stream, preserving its format exactly as it was originally stored.

MXF transfers via FTP

An application can transfer a clip in the MXF format using the same FTP command syntax as is used for GXF transfers. To initiate an MXF transfer, the specified username must be *mxfmovie*, not *movie* as is used for GXF transfers.

The UIM always transfers essence in its original format. If it receives an MXF stream that contains video essence in DVCPRO25, the resulting clip is stored in that format. Similarly, MXF streams generated by the UIM always contain the same essence as the clip to be transferred. If the clip's video is recorded in MPEG Long GoP at 24 Mb/s, the video essence is included in the MXF stream in that format.

In addition, the UIM supports the generation of MXF streams that conform to SMPTE 385M, the format used by the Sony e-VTR. To generate such a stream, add the ?D10AES3 option to the UML, as shown in this example.

```
get /explodedFile/EXT:/default/clip1?D10AES3 clip1.mxf
```

This command generates an MXF stream in the SMPTE 385E format and stores it as an MXF file.

When generating such a stream, the clip must be in the MPEG D10 format, at 30, 40, or 50 Mb/sec. Audio must be recorded in 24-bit PCM format. The stream will contain eight audio channels. If the original clip included fewer than eight channels, the missing channels are added by the UIM, but contain no audio data.

No option is required when the UIM receives a stream in the SMPTE 385M format. The UIM detects this format and decomposes the AES3 audio in the stream into eight 24-bit PCM audio channels for storage on the Profile video server's file system.

A sample MXF session

The following illustrates a command session that transfers a clip named *EXT:/default/clip1* on a standalone Profile XP video server to a file named *clip1.mxf*, then sends the file back to the Profile video server as a clip named *EXT:/default/clip1_back*. Application developers can use this example to understand how to transfer clips to and from a Profile video server via FTP.

```
C:\TEMP>ftp XP1_fc0
Connected to XP1_fc0.
220 Profile FTP server (1.0)
User (XP1_fc0:(none)): mxfmovie
230 Aspect successfully set to MXFMOVIE.
ftp> bin
200 TYPE command okay. Type is IMAGE.

ftp> get /explodedFile/EXT:/default/clip1 clip1.mxf
200 PORT command okay.
150 Opening data connection.
250 Transfer complete.
ftp: xxxxxxx bytes received in x.xxSeconds xxxx.xxKbytes/sec.

ftp> put Clip1.mxf /explodedFile/EXT:/default/clip1_back
200 PORT command okay.
150 Opening data connection.
250 Transfer complete.
ftp: xxxxxxx bytes sent in x.xxSeconds xxxx.xxKbytes/sec.
ftp> bye
221 Connection closing.
```

Upgrading Existing Profile Systems for Deployment with the UIM-DIS-GEIP

This chapter contains procedures for preparing an existing Profile system for operation with the IP UIM.

This chapter includes:

- “Preparing the Profile XP Media Platform”
- “Preparing the Profile Video Server (PDR family)”

NOTE: *The procedures in this section require that you be logged in to Windows NT as administrator or as a user with administrator-level privileges.*

Preparing the Profile XP Media Platform

Profile XP Media Platforms ordered from the factory for deployment with the IP UIM are ready to install and configure. However, if you are redeploying existing Profile systems for operation with the IP UIM, you may need to upgrade and prepare the Profile system using procedures in this appendix.

After preparing the Profile XP platform for operation, refer to [Chapter 3, UIM-DIS-GEIP Installation: Standalone Profile Storage on page 35](#) to install the IP UIM-DIS-GEIP.

Procedure summary:

- “Install Windows NT Service Pack 6a” on page 151
- “Update Profile XP (PVS Series) System Software” on page 152.
- “Enable Fibre Channel network TCP checksums” on page 152
- “Remove the optional 100BT Video Network Ethernet adapter” on page 152
- “Install dual port Ethernet board (optional)” on page 152 (Optional)

Install Windows NT Service Pack 6a

Profile System Software requires Microsoft Windows NT Service Pack 6a.

To install the service pack, do the following:

1. On the *Windows NT* CD-ROM that shipped with the Profile XP, locate the Service Pack 6 setup file. The following is an example of a Service Pack 6 setup file:
sp6i386-128bit.exe
2. Run the setup program and follow the instructions on the screens to install the Windows NT Service Pack.
3. When prompted, reboot the Profile XP Media Platform.

Update Profile XP (PVS Series) System Software

Refer to “[Software requirements](#)” on page 20 to determine the Profile System Software version required for UIM 2.x.x, then use the following steps to determine the current Profile System Software version. Update Profile System Software if needed.

Use this the following steps to verify and update the system software if needed.

1. Click **Start | Programs | Profile Applications | Configuration Manager** and check the version number displayed at **Help | About**.
2. Refer to “[Software requirements](#)” on page 20 to determine the required Profile System Software version.
3. Install the Profile XP System Software version required. Be sure to follow the installation instructions found in the release notes you received with the software.

Enable Fibre Channel network TCP checksums

When configuring Profile XP Media Platform, you must enable TCP checksums on the Fibre Channel Network adapter. For instructions, refer to the Fibre Channel Networking chapter in the *Profile XP Media Platform System Guide*.

Remove the optional 100BT Video Network Ethernet adapter

If your Profile XP Media Platform has the optional 100BT Video Network Ethernet adapter installed, it must be removed for operation with the IP UIM. Refer to the *Profile XP Service Manual* for instructions on removing the adapter.

NOTE: You must also remove the “<ProfileHostname>_le0” entry from the *Profile XP hosts file* and all the hosts files in the facility.

Install dual port Ethernet board (optional)

If you are deploying the Profile XP platform using redundant Ethernet topology, the Profile XP system must have the dual port Ethernet adapter installed. This adapter is orderable from Thomson Grass Valley. Use the following procedures to install the optional dual port Ethernet board in Profile XP Media Platform.

Move boards

When you install the dual port Ethernet board in the Profile XP Media Platform, it is recommended that you install it according to the following table of slot assignments. These slot assignments allow for optimal performance. You might have to move an existing board, such as the RS-422 board, in order to follow these recommendations. If you move or install any of the boards listed in the table (except for the dual port Ethernet board), you must re-install Profile System Software, as described in “[Upgrade Profile System Software](#)” on page 153, before using the boards. Read the

document *Installing a circuit board in a Profile XP Media Platform* that you received with the dual port Ethernet board for more information on installing or moving boards.

Board	Slot
Applications Processor	J0
Dual port Ethernet	J1
Fibre Channel Network (TCP/IP)	J2
Real Time System	J3
Fibre Channel Disk	J4
RS-422	J11

If the dual port Ethernet board is already installed in the Profile XP system but it is not in the correct slot, you must move it to the correct slot.

To move a previously installed dual port Ethernet board, do the following:

1. Record the current Ethernet network settings.
2. Remove the dual port Ethernet adapter.
3. Move the board to the correct slot. Do not re-install the dual port Ethernet driver at this time.

After the board is installed in the correct slot, do the following:

1. Connect Ethernet cable or cables to the dual ports.
2. Power on the Profile XP Media Platform and continue with the next procedure [“Upgrade Profile System Software”](#). Do not install the dual port Ethernet driver at this time.
3. Proceed to the next section, [“Upgrade Profile System Software”](#).

Upgrade Profile System Software

Refer to [“Software requirements” on page 20](#) to determine the system software requirements for your Profile XP system. Install this version now, especially if you moved boards in the previous procedure [“Install dual port Ethernet board \(optional\)”](#).

To upgrade Profile System Software for operation with UIM:

1. Power on the Profile XP system and log on as administrator (default password: *triton*).
2. Verify Profile System Software version using the following steps.
 - a. Click **Start | Programs | Profile Applications | Configuration Manager** and check the version number displayed at **Help | About**.
 - b. Refer to [“Software requirements” on page 20](#) to determine Profile System Software required.
 - c. Install the required Profile System Software. The installation instructions are

located in the *Profile XP System Software Release Notes* that you received with the software.

NOTE: You must uninstall Profile XP System Software versions 5.1.x, 5.2.x, 5.3.x before upgrading.

3. Proceed to the next section, [“Install and configure the dual port Ethernet driver”](#).

Install and configure the dual port Ethernet driver

NOTE: Refer to [“Software requirements” on page 20](#) to determine the Profile System Software required to support the IP UIM, then upgrade the Profile System Software before installing the driver as described below.

Use this procedure to install the dual port Ethernet board driver and configure it for Adapter Fault Tolerance (AFT) teaming. This means both ports share one IP address and are capable of failover from one to the other in the event of a fault.

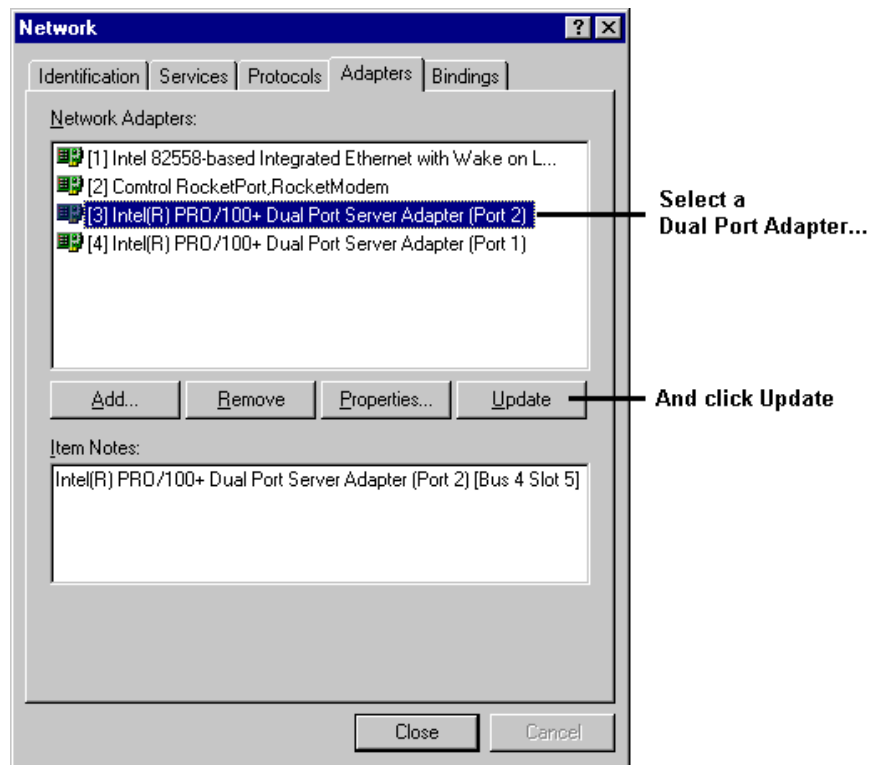
These procedures assume that the Profile XP Media Platform currently has a valid IP address assigned to the standard single port Ethernet adapter. The procedures ensure that the Profile XP Media Platform retains the current IP address and that the IP address is re-assigned correctly for shared use by the dual Ethernet ports.

To install and configure the driver:

1. Open the **Network** icon in the Control Panel.
2. On the **Adapters** tab, click **Add**. The Select Network Adapter dialog box appears.
3. Don't select an Intel adapter from the list. Instead, click **Have Disk**. The Insert Disk dialog box appears.
4. Type the following path into the dialog box:

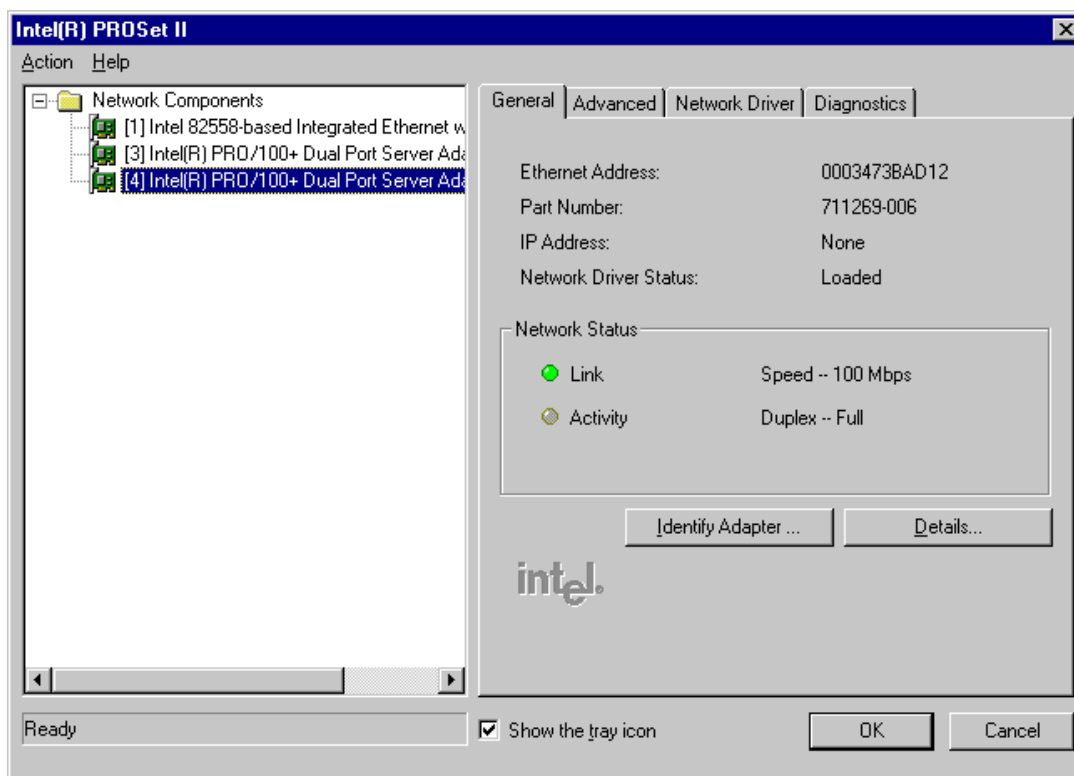
```
C:\profile\drivers\IntelDualPort  
The driver was copied into this directory during Profile System Software  
installation.
```

5. Click **OK**. The Select OEM Option dialog box opens.
6. Select the **Intel PRO** adapter and click **OK**. The Select OEM Option dialog box closes and Windows adds the driver. In the Network dialog box on the Adapters tab, the driver appears in the Network adapters list as two dual Port Server adapters.

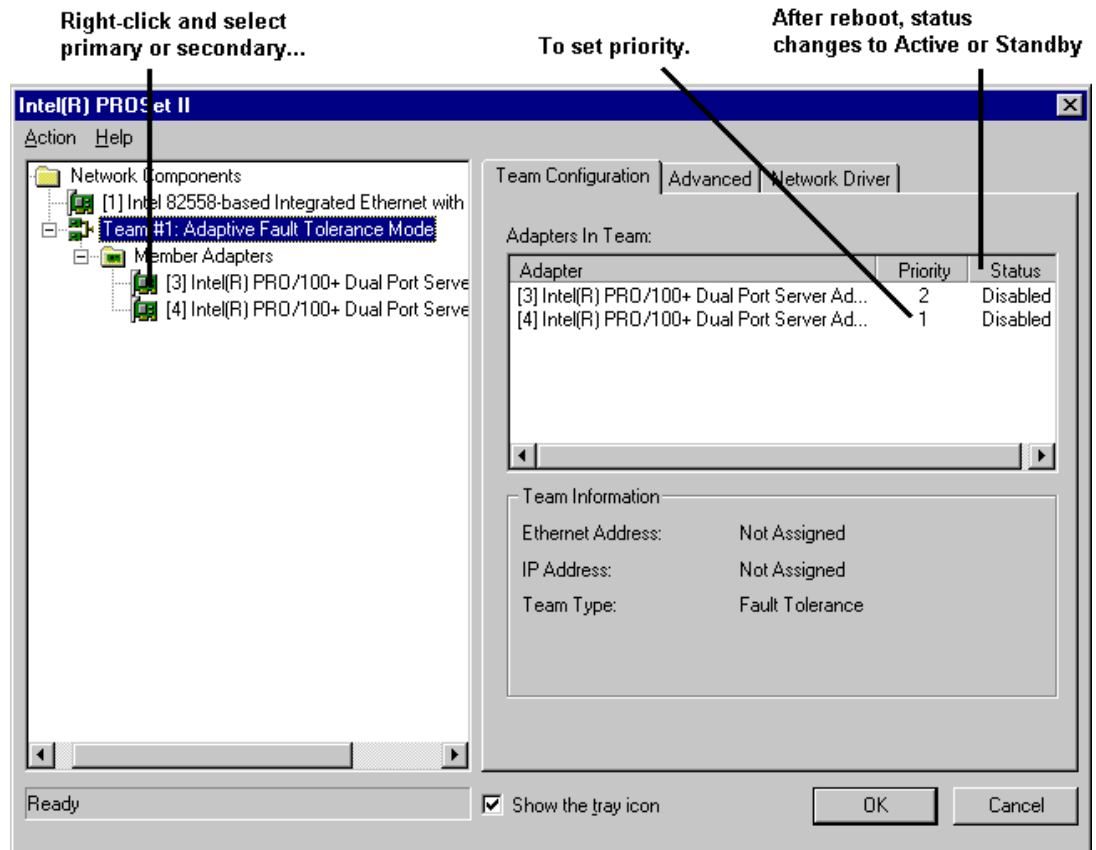


7. Select one of the **Dual Port Server** adapters and click **Update**. If the Windows NT Setup dialog box appears, again type in the path to the driver as you did earlier in this procedure and click **Continue**. Windows updates the driver.
8. After updating, select one of the **Dual Port Server** adapters and click **Properties**. The Intel PROSet II application opens.

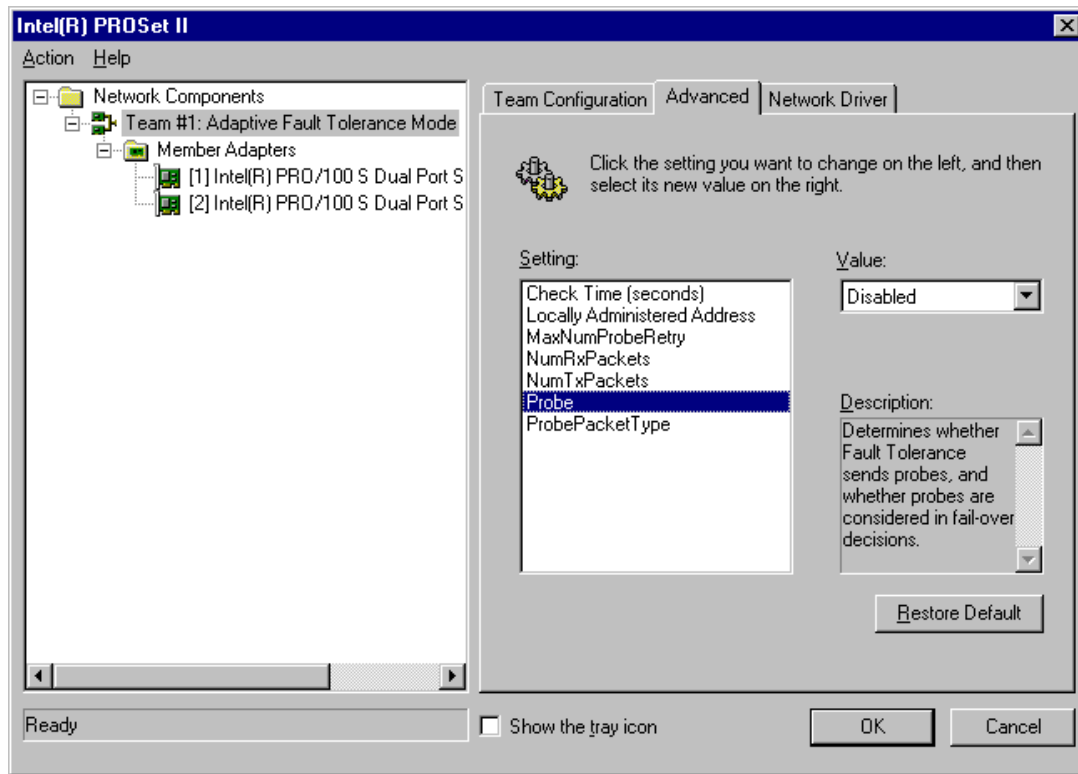
NOTE: If the *Intel PROSet II* application does not open, click the *Update* button. Do not proceed without first updating the driver.



9. Select a **Dual Port Server Adapter** and click **Action | Add to Team | Create New Team**. The Teaming Wizard starts.
10. Complete the Teaming Wizard to add the adapters to the team as follows:
 - Screen 1: Select **Adapter Fault Tolerance**
 - Screen 2: Select the two **Intel PRO/100+ Dual Port Server** adapters only. Deselect other adapters.
 - Screen 3: Click **Finish**.
The Teaming Wizard closes.
11. Expand the Tree view so that all nodes are exposed. Select **Team #1: Adaptive Fault Tolerance Mode**. The Team Configuration tab is displayed.

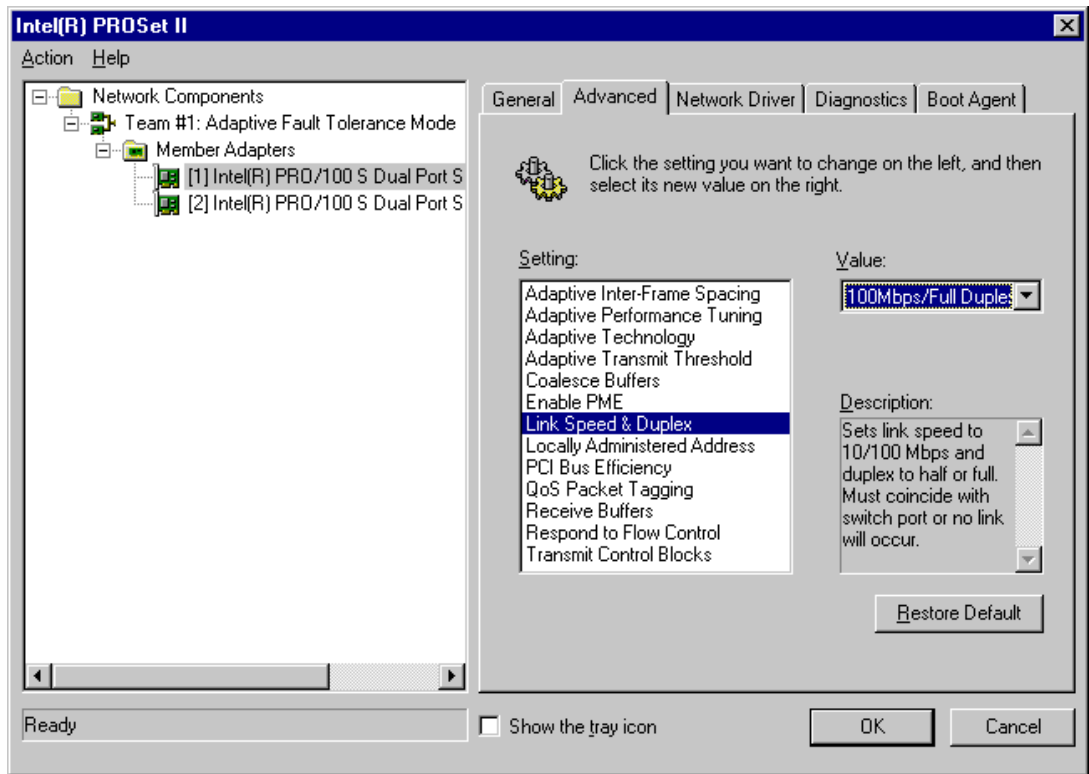


12. In the Tree view, right-click each **Dual Port Server Adapter** and configure as follows:
 - For the Port 1 adapter, select **Preferred Primary**
 - For the Port 2 adapter, select **Preferred Secondary**
13. In the Tree view, select **Team #1: Adaptive Fault Tolerance Mode** and then click the **Advanced** tab.



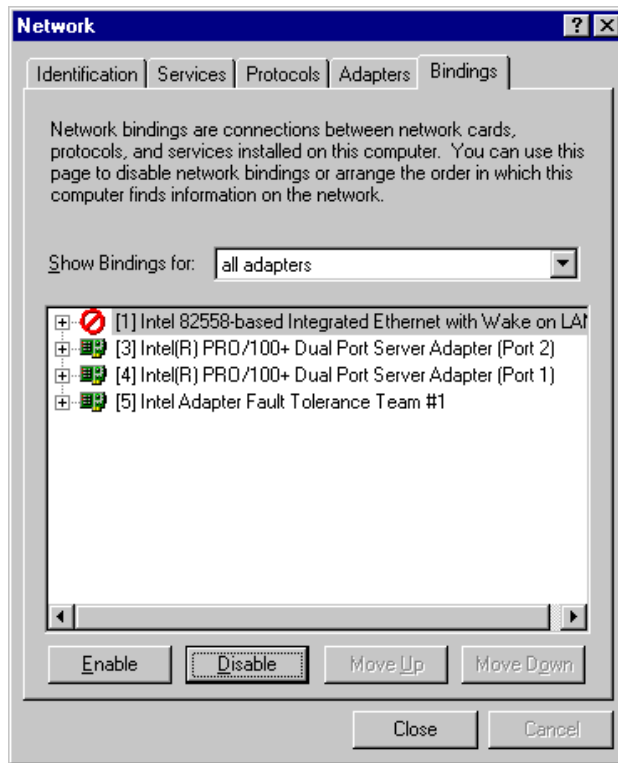
14. Select **Probe** and set the value to **Disabled**.

15. In the Tree view, select the first adapter and then click the **Advanced** tab.

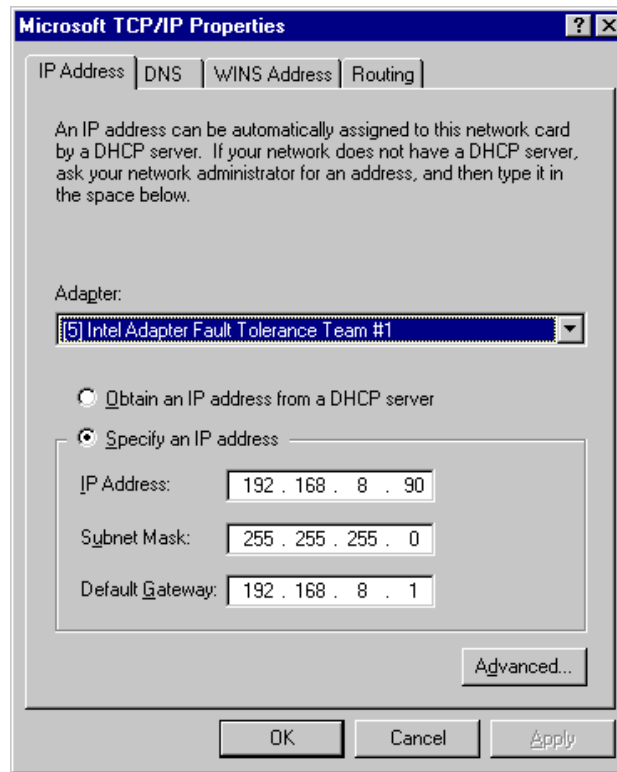


16. Select **Link Speed & Duplex** and set the value to **100Mbps/Full Duplex**.
17. Repeat the previous two steps for the second adapter.
18. Click **OK** to close the Intel PROSet II Application. Do not restart if prompted.
19. Disable the standard Ethernet adapter by doing the following:
 - a. In the **Network** dialog box on the **Protocols** tab, select **TCP/IP Protocol** and click **Properties** to open the TCP/IP Properties dialog box. Make a note of the IP address and all other network settings currently applied to the standard Ethernet adapter, as you will be transferring these settings to the dual port Ethernet adapter. Click **Cancel** to close the TCP/IP Properties dialog box.
 - b. On the **Bindings** tab, select **all adapters**. A list of adapters is displayed.

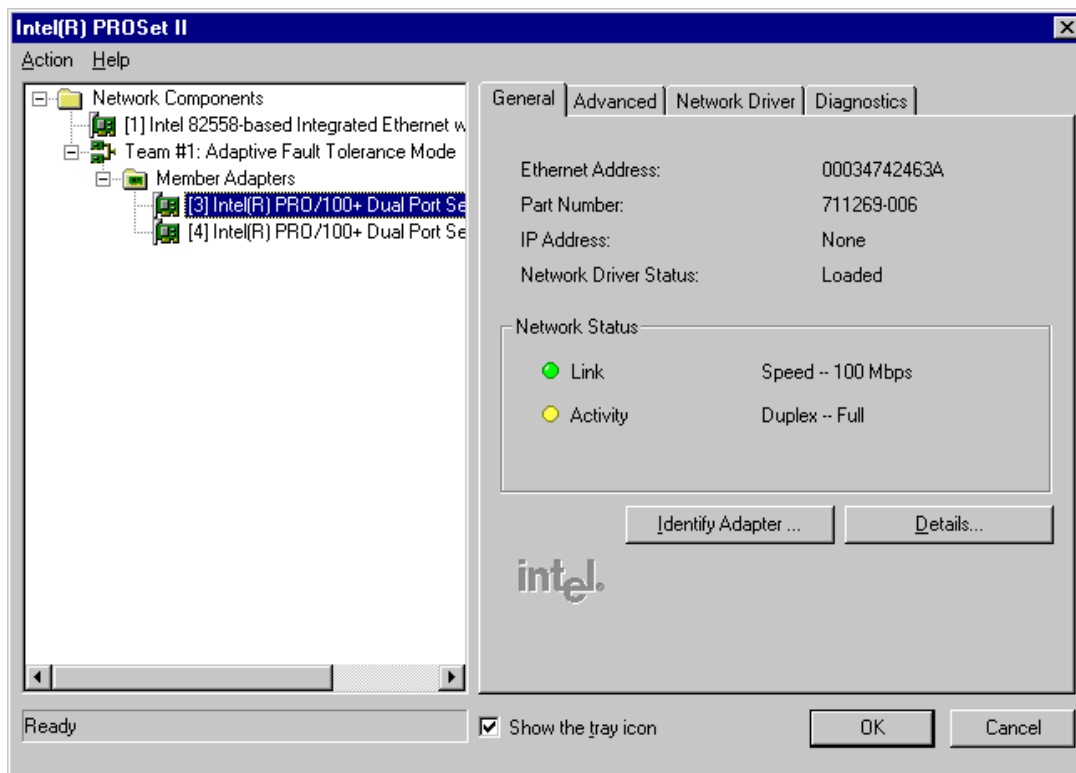
NOTE: Do not remove the standard single port Ethernet adapter. The Open SAN requires its presence for licensing and authentication purposes.



- c. Select the **Intel 82558-based Integrated Ethernet** adapter.
 - d. Click **Disable**. The adapter can be either at the top or the bottom of the list when it is disabled.
20. Click the **Adapters** tab and click **Yes** on the message box that asks if you want to save changes. The TCP/IP Properties dialog box opens.



21. In the Adapter drop-down list, select the **Intel Adapter Fault Tolerance Team** and enter the Profile XP Media Platform's IP address settings. These settings should be the same as those previously assigned to the standard Ethernet adapter
22. Configure settings on the rest of the tabs so that the settings assigned to the Intel Adapter Fault Tolerance team are the same as those previously assigned to the standard Ethernet adapter.
23. When settings have been appropriately configured, click **Apply** and **OK**. On the Network dialog box, click **Close**. Click **Yes** when prompted to restart.
24. After restart, open the **Network** icon and on the **Bindings** tab, select **all adapters**. Verify that the standard Ethernet adapter is present, but disabled. The two Intel PRO/100 adapters and their Intel Adapter Fault Tolerance team should be the only adapters enabled.
25. Also open the **PROSet II** application from the Control Panel. Click **OK** or **Cancel** if error messages appear.



- On the **General** tab, verify that selecting an Intel PRO/100 adapter that is connected to the network displays Network Status lights, while selecting the Intel 82558-based Integrated Ethernet adapter does *not* display Network Status lights.
- Select **Team #1: Adaptive Fault Tolerance Mode** and on the Team Configuration tab, verify adapter status. Initially, the status of the primary adapter is **Active**, while the status of the secondary adapter is **Standby**. Upon an automatic system recovery event, status switches.

26. This concludes the dual port Ethernet board installation procedure. Proceed to the next section.

This concludes the Profile XP upgrade procedure. Return to [Chapter 3, UIM-DIS-GEIP Installation: Standalone Profile Storage on page 35](#) to begin IP UIM-DIS-GEIP installation.

Preparing the Profile Video Server (PDR family)

Use the procedures in this section to prepare an existing Profile PDR Family Video Server (PDR200 and up) for operation with the IP UIM.

This section includes:

- [“Update Profile \(PDR Family\) System Software”](#)
- [“Enable Fibre Channel network TCP checksums”](#)

Update Profile (PDR Family) System Software

Refer to [“Software requirements” on page 20](#) to determine the Profile System Software version required for UIM 2.x.x, then use the steps in the following sections to determine the current Profile System Software version. Update Profile System Software if needed.

Use the following steps to verify and update the system software if needed.

1. Click **Start | Programs | Profile Applications | Media Manager** and check the version number displayed at **Help | About**.
2. Refer to [“Software requirements” on page 20](#) to determine the required Profile System Software version.
3. Update the Profile System Software if required.
Follow software installation instructions in the release notes you receive with the software.

Enable Fibre Channel network TCP checksums

When configuring PDR Video Servers (200 series and up), you must enable TCP checksums on the Fibre Channel Network adapter. For instructions, refer to the Fibre Channel Networking chapter in the Profile Family User Guide.

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