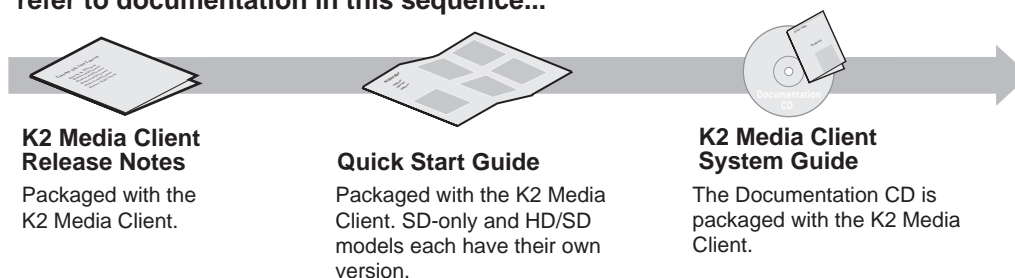


K2 Storage System Version 3.1.9 Release Notes & Upgrade Instructions

These release notes contain the latest information about the hardware and software of the K2 Storage System. For the complete description and instructions read the *K2 Storage System Instruction Manual*.

For complete coverage of the latest information about external (shared) storage K2 Media Clients, you must read these release notes and the *K2 Media Client Release Notes*. While these release notes contain information that relates to external storage K2 Media Clients, the *K2 Media Client Release Notes* contain additional information that applies to both external (shared) storage and internal (stand-alone) storage K2 Media Clients.

If you are installing new K2 Media Client models with internal storage, refer to documentation in this sequence...



If you are installing a K2 Storage System with connected K2 Media Clients, refer to documentation in this sequence...

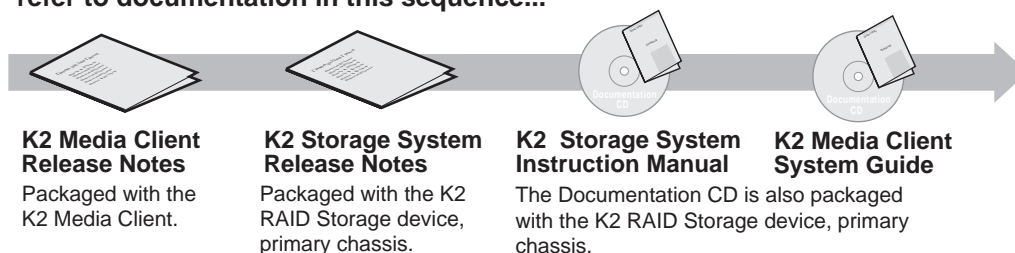


Table of Contents

- Grass Valley Product Support 3
- What's new in this release 4
- Feature limitations in this release 4
- Changes in previous releases 5
 - Version 3.0.4 5
 - Version 3.0.2 5
 - Version 3.0.1.19 6
- K2 software version compatibility 6
 - Components on K2 Storage System devices 6
 - K2 systems and other Grass Valley products 7
- About Level 4 K2 Storage Systems 7
- Upgrading K2 software 8
 - Step 1: Make recovery disk images of K2 Media Clients 8
 - Step 2: Take K2 Media Clients offline 8
 - Step 3: Manage multiple K2 Media Servers 9
 - Step 4: Disable OpForce service 9
 - Step 5: Make recovery disk image 10
 - Step 6: Install "High Priority" Windows updates (recommended)..... 10
 - Step 7: Upgrade media file system software (SNFS)..... 10
 - Step 8: Upgrade QuickTime 11
 - Step 9: Upgrade K2 Media Server system software 11
 - Step 10: Manage redundancy on K2 Media Servers 14
 - Step 11: Upgrade remaining K2 Media Servers..... 15
 - Step 12: Upgrade connected K2 Media Clients..... 15
 - Step 13: Upgrade connected generic clients 15
 - Step 14: Upgrade software on Control Point PC 16
 - Step 15: Make recovery disk images..... 16
- Downgrading 3.1 K2 software to 3.0 for Grass Valley News systems 17
- Optimizing K2 Media Server startup 18
- Converting media (iSCSI) networking 19
 - Prepare for reconfiguration..... 20
 - Reconfigure network on K2 Media Servers 21
 - Unteam K2 Media Clients..... 21
 - Recable generic iSCSI clients (Aurora Edits)..... 23
 - Reconfigure the K2 Storage System..... 24
- Considerations for GigE trunks and ISLs..... 27
 - All trunks not used with 1 Gig ISLs 27
 - Media (iSCSI) traffic does not use ISLs..... 27
 - Recommendations for changing trunks/ISLs 27
- Operation considerations 28
- Known problems 29

Grass Valley Product Support

To get technical assistance, check on the status of problems, or report new problems, contact Grass Valley Product Support via e-mail, the Web, or by phone or fax. Contact Grass Valley first regarding problems with third party software on Grass Valley products, such as the Microsoft® Windows® operating system and SQL Server™.

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.

United States	(800) 547-8949 (Toll Free)	France	+33 (1) 34 20 77 77
Latin America	(800) 547-8949 (Toll Free)	Germany	+49 6155 870 606
Eastern Europe	+49 6155 870 606	Greece	+33 (1) 34 20 77 77
Southern Europe	+33 (1) 34 20 77 77	Hong Kong	+852 2531 3058
Middle East	+33 (1) 34 20 77 77	Italy	+39 06 8720351
Australia	+61 1300 721 495	Netherlands	+31 35 6238421
Belgium	+32 2 3349031	Poland	+49 6155 870 606
Brazil	+55 11 5509 3440	Russia	+49 6155 870 606
Canada	(800) 547-8949 (Toll Free)	Singapore	+656379 1390
China	+86 106615 9450	Spain	+ 34 91 512 03 50
Denmark	+45 45968800	Sweden	+46 87680705
Dubai	+ 971 4 299 64 40	Switzerland	+41 (1) 487 80 02
Finland	+35 9 68284600	UK	+44 870 903 2022

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.

What's new in this release

This version of K2 system software includes several improvements, in addition to correcting some problems that were present in earlier releases. Take note of the following:

- **Nearline storage** — A K2 Storage System designed for nearline storage is available. A Nearline Storage System can have either SATA drives or Fibre Channel drives.
- **SATA drives** — SATA drives in Level 3 RAID storage devices are qualified for use in nearline storage systems. SATA drives must be bound as RAID 6 LUNs.
- **RAID 6** — You can configure drives in Level 3 RAID storage devices as RAID 6 to provide increased redundancy. RAID 6 is qualified on both online and nearline storage systems.
- **Dual-port iSCSI adapter** — K2 Media Servers now come from the factory with one dual-port iSCSI adapter installed instead of two single-port iSCSI adapters.
- **QuickTime support** — QuickTime reference files are created for simple DV-format clips. The reference files allow you to use QuickTime tools to open K2 media for playing and editing.
- **QuickTime 7 required** — You must install QuickTime 7 as part of the upgrade to this version of K2 system software. Refer to the software upgrade procedures later in these release notes.
- **SNFS Update** — You must update to SNFS version 2.6.5b46, if you have not already done so. Refer to the upgrade instructions later in these release notes.
- **Level 3 RAID firmware** — Disk drive firmware version 0003 is the currently supported version. Do not upgrade to disk drive firmware version 0004.
- **HP ProCurve switch firmware** — Upgrade to version M.08.86 is recommended.
- **Recovery Boot CD** — A new version of the Server Recovery Boot CD, part number 063-8246-01, is available. This version is recommended for use on all K2 systems. It is required for creating and restoring disk images on Dell D820 and HP xw9300 platforms, which are used for some Grass Valley products. The new version is compatible with disk images made with the previous version of the Server Recovery Boot CD.

Feature limitations in this release

The following information applies to the K2 Storage System. Refer to the *K2 Media Client Release Notes* for similar information that applies to the K2 Media Client.

- AVI import/export is supported only via AppCenter import/export features and only for DVCAM/DV25/DV50 clips.
- QuickTime import/export is supported only via AppCenter import/export features and only for DVCAM/DV25/DV50 clips.
- There is no centralized logging of the K2 Storage System. Logs are stored on each individual device.
- NetCentral does not auto-discover the K2 Storage System structure. (NetCentral does auto-discover the individual devices of the K2 Storage System).

Changes in previous releases

The following sections describe the changes in recent past releases.

Version 3.0.4

- Version 2.6.5b46 SNFS (StorNext File System) software required. This is the media file system software.

Version 3.0.2

- **Faster K2 Media Server startup** — You can configure a K2 Media Server so it starts up faster. Refer to [“Optimizing K2 Media Server startup” on page 18](#).
- **K2 Media Client media (iSCSI) port unteamed** — The standard configuration for external storage K2 Media Clients is that media ports are independent, rather than being teamed. This supports the new networking for redundant systems. To unteam media ports on existing systems, refer to [“Converting media \(iSCSI\) networking” on page 19](#).
- **Networking for redundant systems** — Redundant K2 Storage Systems (Level 2R and Level 3R) now require two subnets for the media (iSCSI) network. This means that iSCSI traffic no longer uses ISLs/trunks between GigE switches. Only control and FTP traffic use the ISLs. Refer to [“Considerations for GigE trunks and ISLs” on page 27](#).
- **Level 3 RAID firmware** — Updated firmware is available for Level 3 RAID storage devices as follows:

Type	Version	File name	Improvements	Comments
Controller (online)	05VD	04FH05VD.BIN	Bug fixes and operational features to extend the life of drives and to support RAID 6.	For online (playout) K2 Storage Systems only
Controller (nearline)	05ND	04FH05ND.BIN	Not applicable. This is the first release.	For nearline K2 Storage Systems only
Controller (nearline expansion)	06F	DEA_AP.06F	Not applicable. This is the first release	Supports the proper operation of nearline expansion enclosures. (Cannot be loaded with Storage Utility)

These controller firmware upgrades are not mandatory for compatibility with K2 system software 3.0.2. However, you should consider loading the firmware at the next most convenient time. Refer to the *K2 Storage System Instruction Manual* for procedures.

- **SNFS Update** — Version 2.6.4b41 SNFS (StorNext File System) software required. This is the media file system software.
- **NewsShare support** — Shared SmartBins are supported.

Version 3.0.1.19

- **SNFS upgrade** — Version 2.6.3b39 SNFS (StorNext File System) software required. This is the media file system software.
- **Level 2 RAID firmware** — Updated firmware for Level 2 RAID storage devices as follows:

Type	Version	File name	Improvements	Instructions
Controller	RV70	03FHRV70.BIN	Bug fixes and operational features to extend the life of drives	This upgrade is not mandatory for compatibility with K2 system software 3.1.9. However, you should consider loading the firmware at the next most convenient time. Refer to the <i>K2 Storage System Instruction Manual</i> for procedures.
LAN card	GS05	03SPGS05.bin	Fixes an SNMP device offline/online problem	This upgrade is not mandatory for compatibility with K2 system software 3.1.9. However, if you monitor the Level 2 RAID chassis with NetCentral or another SNMP Manager, it is highly recommended. Contact your Grass Valley representative for instructions.

K2 software version compatibility

Versions qualified for compatibility with this 3.1.9 release of K2 software are summarized in the following tables:

Components on K2 Storage System devices

K2 device	Component	Version
K2 Media Client	Media file system (SNFS)	2.6.5b46
	QuickTime	7
K2 Media Server	Media file system (SNFS)	2.6.5b46
	QuickTime	7
HP ProCurve GigE switch	Firmware	M.08.66 or M.08.86. Upgrade to M.08.86 is recommended
Level 2 RAID	Controller firmware	RV70
	LAN card firmware	GS05
Level 3 RAID	Controller firmware for online systems	05VD
	Controller firmware for nearline primary chassis	05ND
	Controller firmware for nearline expansion chassis	06F

K2 systems and other Grass Valley products

Product	Version	Comments
Profile XP Media Platform	5.4.8 or higher	From a K2 system you can browse/transfer assets on a Profile XP system.
M-Series iVDR	2.0.11 or higher	Some transfer limitations
Aurora products	6.0a	Will be fully qualified upon release of Aurora 6.0a. Refer to Aurora 6.0a release notes.
News products	—	At the time of this writing, 5.6b News systems are not qualified with 3.1 K2 software. Contact Grass Valley Support for an update on this qualification. 5.6b News systems are qualified with 3.0.4.546 K2 software. K2 products in these systems must remain at the 3.0 version. Refer to downgrade instructions later in these release notes if necessary.
NetCentral	4.1.10 or higher	Upgrade to the latest Service Pack is recommended. Information is provided when you license NetCentral.
UIM	2.1.0.216 or higher	—
ContentShare	—	Not supported

About Level 4 K2 Storage Systems

Level 4 systems are custom systems that do not fit one of the pre-defined Level 1, Level 2, or Level 3 configurations. For example, a K2 Storage System with Fibre Channel attached K2 Media Clients is considered a Level 4 system. Only qualified Grass Valley personnel should attempt to design, install, and configure Level 4 systems.

The K2 documentation set is intended for customers with Level 1 – 3 systems. While much of the information also applies to Level 4 systems, consult your Grass Valley representative before using Level 1 – 3 procedures on a Level 4 system.

Upgrading K2 software

NOTE: These upgrade instructions assume that current K2 software is at version 3.0.1.4 or higher. If you have a lower version of software, contact Grass Valley Support before upgrading.

K2 system software version 3.1.9 is installed on new K2 systems as they come from the factory. If you have a new K2 system, you should not need to upgrade software. For general information about K2 software, refer to the *K2 Storage System Instruction Manual* and the *K2 Media Client System Guide*.

Do not attempt to upgrade software incrementally across the devices of a K2 Storage System while media access is underway. Online software upgrading is not supported.

The following installation steps provide information specifically for the upgrade to version 3.1.9 software. Read the information in these sections carefully before attempting any upgrade to software on any of the devices of a K2 Storage Systems, including K2 systems, Aurora Edits, or other generic clients.

NOTE: In the following upgrade steps the K2 Level 1 device is considered a K2 Media Server. If you have a Level 1 device, apply the instructions accordingly.

Step 1: Make recovery disk images of K2 Media Clients

Skip this step if:

- You previously made a disk images of your K2 Media Clients at their current software version. Skip ahead to [“Step 2: Take K2 Media Clients offline”](#).

Do this step if:

- You do not have disk images of your K2 Media Clients at their current software version.

The recommended procedure is to make a recovery disk image immediately after a software upgrade. If you neglected to do this when you last upgraded software you should make the recovery disk image now, before upgrading to the new version. Refer to the *K2 Media Client Service Manual* for instructions.

Step 2: Take K2 Media Clients offline

When upgrading software on a K2 Storage System, you upgrade software on K2 Media Servers before you upgrade software on the connected K2 Media Clients. While you are upgrading software on K2 Media Servers you must keep all connected K2 Media Clients shut down. Do not power up K2 Media Clients until the upgrade on K2 Media Servers is complete and the media file system/database server is fully operational.

Do the following on each K2 Media Client on the K2 Storage System:

1. Stop all media access.
2. Shut down the K2 Media Client.

Step 3: Manage multiple K2 Media Servers

Skip this step if:

- You are upgrading a K2 Storage System with only one K2 Media Server. This is the case for Level 1 and Level 2 non-redundant K2 Storage Systems. Skip ahead to [“Step 4: Disable OpForce service”](#) and begin the upgrade on the K2 Media Server.

Do this step if:

- You are upgrading a non-redundant K2 Storage System with multiple servers. This means you have just one K2 Media Server that takes the role of media file system/database server and one or more other K2 Media Servers dedicated to other roles, such as FTP server. For example, this is the case for a Level 3 non-redundant K2 Storage System.
- You are upgrading a redundant K2 Storage System. This means you have two K2 Media Servers (primary and backup) that take the role of media file system/database server. This is the case for Level 2 and Level 3 redundant K2 Storage Systems.

NOTE: If the K2 Storage System has multiple K2 Media Servers, you must upgrade all to the same version.

If you are upgrading a non-redundant K2 Storage System with multiple servers, do the following:

1. Upgrade the server that takes the role of media file system/database server first. The upgrade starts with the next step [“Step 4: Disable OpForce service”](#).
2. After the media file system/database server is upgraded and when instructed to do so in [“Step 11: Upgrade remaining K2 Media Servers”](#) later in this section, upgrade your other servers.

If you are upgrading a redundant K2 Storage System, do the following:

Apply the remainder of this step and subsequent steps to your two K2 Media Servers that take the role of media file system/database server. If you have additional servers, upgrade them later, when instructed to do so in [“Step 11: Upgrade remaining K2 Media Servers”](#).

To prevent triggering failover mechanisms, you must manage primary/backup roles and upgrade media file system/database servers in the proper sequence, as follows:

1. Determine the current primary/backup roles of the servers. You can use Server Control Panel (via the K2 System Configuration application or on the local K2 Media Server) or NetCentral to make this determination.
2. Shut down the backup server.
3. Upgrade the primary server, beginning with the next step [“Step 4: Disable OpForce service”](#).

Step 4: Disable OpForce service

If you have not already done so, it is recommended that you disable the OpForce service, to make system startup faster. Refer to [“Optimizing K2 Media Server startup” on page 18](#) of these release notes.

Step 5: Make recovery disk image

Skip this step if:

- You previously made a disk image of the K2 Media Server at its current software version. Skip ahead to “[Step 6: Install “High Priority” Windows updates \(recommended\)](#)”.

Do this step if:

- You do not have a disk image of the K2 Media Server at its current software version.

The recommended procedure is to make a recovery disk image immediately after a software upgrade. If you neglected to do this when you last upgraded software you should make the recovery disk image now, before upgrading to the new version. Refer to the *K2 Storage System Instruction Manual* for instructions.

Step 6: Install “High Priority” Windows updates (recommended)

Windows “High Priority” updates are recommended, but not required, for version 3.1.9. While you have K2 Media Servers in an offline state to upgrade software, you should check to see if there are any new updates that you need to install. Use standard Windows procedures.



CAUTION: Only “High Priority Updates” should be installed. Do not install other Windows or driver updates.

Step 7: Upgrade media file system software (SNFS)

The “simple” SNFS installers, such as *SNFS2.x.xbxxSimple.exe*, are special batch files designed by Grass Valley engineers for use on K2 systems only. When installing SNFS software on a K2 system, make sure that you are using the correct simple installer, as instructed in the detailed procedure. Do not use a standard SNFS installer, such as *snfs2xxbxx.exe*. Likewise, do not use the simple SNFS installers on Aurora Edits or other generic clients.

To upgrade SNFS software on the K2 Media Server, you can install on top of the current version of SNFS software, as instructed in the following steps:

1. Make sure all connected K2 Media Clients are shut down.
2. Insert the version 3.1.9 K2 System Software CD in the K2 Media Server’s CD drive or otherwise access the version 3.1.9 installation files.
3. Open the following file:

`\\snfs\SNFS2.6.5b46Simple.exe`

NOTE: Do not open *SNFS2.6.5b46Simple_clientonly.exe*.

The StorNext File System Install Wizard runs automatically.

4. When the automatic installation pauses at the License Agreement page, click **Yes**.
5. When the StorNext File System installation completes, click **Finish**, and when prompted to restart, select **Yes**, then **OK**. When you select OK the K2 Media Server should restart automatically. If it does not, restart it manually.

6. Wait for restart processes to complete before continuing with the next step.

Step 8: Upgrade QuickTime

Before beginning this procedure, make sure that you have upgraded SNFS, as instructed in the previous step.

To upgrade QuickTime, do the following:

1. Insert the version 3.1.9 K2 System Software CD in the K2 Media Server's CD drive, if it is not already inserted, or otherwise access the version 3.1.9 installation files.
2. Locate and open the following QuickTime install file:
QuickTimeInstaller.exe
3. Work through the install wizard. Choose **English** and respond with **Next**, **Yes**, **Next**, **Finish**, and **No Thanks**.

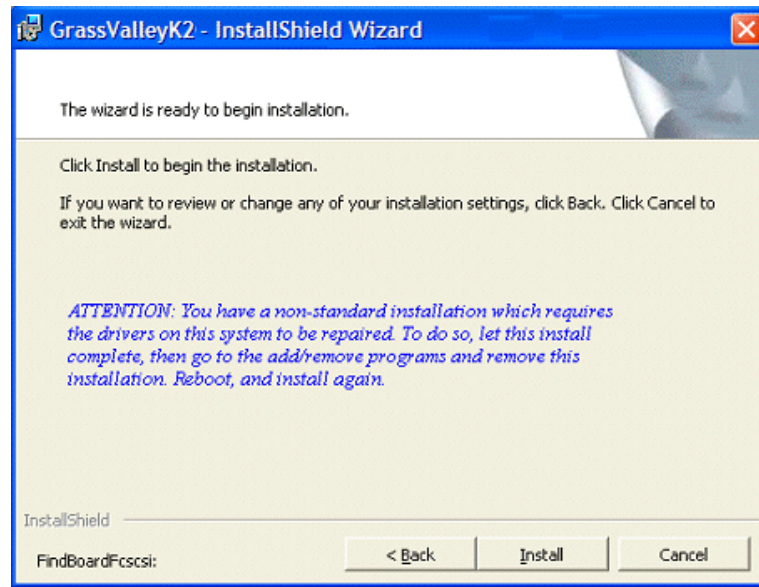
Step 9: Upgrade K2 Media Server system software

Before upgrading K2 software, make sure that you have upgraded SNFS and upgraded QuickTime, as instructed in the previous steps. If QuickTime 7 is not installed, the installation program pops up an informative message and you are prevented from completing the installation.

To upgrade K2 Media Server system software, do the following:

1. Make sure all connected K2 Media Clients are shut down.
2. Insert the version 3.1.9 K2 System Software CD in the K2 Media Server's CD drive, if it is not already inserted, or otherwise access the version 3.1.9 installation files.
3. Open the following file:
\K2Server\setup.exe
4. Follow the onscreen instructions, and work through each page.
5. Depending on the state of the system when upgrading, you might see one or more of the following screens or messages as you work through the installation wizard. Proceed as instructed, and then continue with this procedure:

If a "...non-standard installation..." message is displayed in the installation wizard in blue text, as in the image below, follow the instructions in the message, as follows:



- Complete the installation wizard.
- Uninstall K2 Media Server software.
- Restart the K2 Media Server.
- Repeat this procedure and install software again.

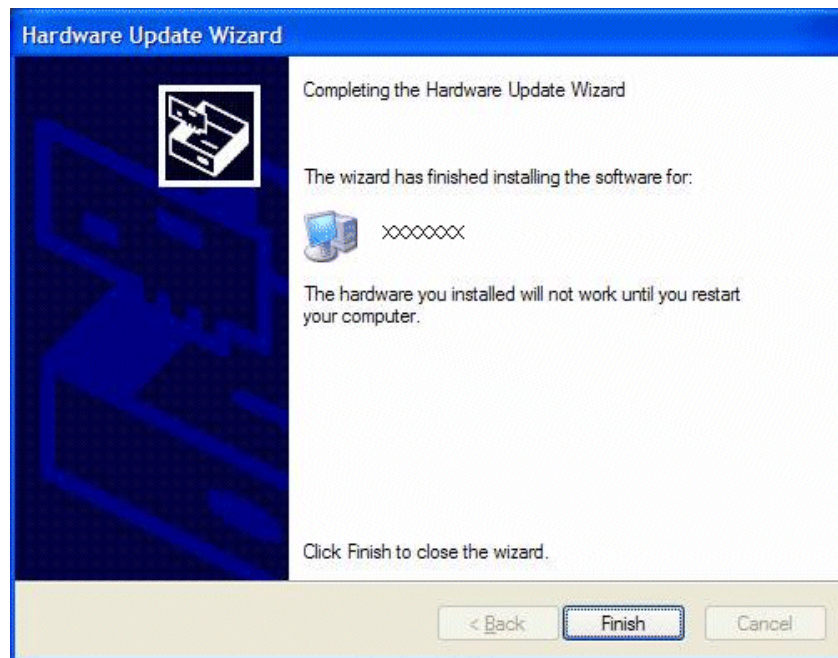
If one or more messages appear referring to software unsigned or untested, as in the following examples, you can safely continue.





- Click **Yes** or **Continue...** to allow the installation to progress.

If installation progress stops after about a minute and does not proceed, look in the Windows taskbar for a Hardware Update Wizard window that has opened.



- Click **Finish** on the Hardware Update Wizard to continue installation.

If a "...insert disk..." message appears while installing from a CD, cancel the installation wizard and do one of the following:

- Uninstall the current version of software, then repeat this procedure.
- Copy the directory that contains the installation files from the CD to the local hard drive, then repeat this procedure, opening the local *setup.exe* file

rather than the file on the CD.

6. Click **Next** and **Finish** to complete the installation.
7. When prompted, restart the machine. Wait until startup processes complete before continuing.

NOTE: *You must restart after installing K2 software.*

The upgrade to the K2 Media Server is now complete.

Step 10: Manage redundancy on K2 Media Servers

Skip this step if:

- You are upgrading a non-redundant K2 Storage System. This means you have just one K2 Media Server that takes the role of media file system/database server. Skip ahead to [“Step 11: Upgrade remaining K2 Media Servers”](#).

Do this step if:

- You are upgrading a redundant K2 Storage System. To prevent triggering failover mechanisms, you must manage primary/backup roles as instructed in this step.

If you have completed the upgrade to the primary server but you have not yet upgraded the backup server, do the following:

1. Make sure the backup server is still shut down.
2. Put the primary server in service as follows:
 - a. On the primary server, run Server Control Panel. You can do this at the local server or through the K2 System Configuration application.
The Failover Monitor service should currently be off, as this is the normal state of the service at system startup.
 - b. Use the **Start** button on Server Control Panel to start Failover Monitor. This makes the primary server qualified to take the role of media file system/database server.
 - c. Make sure that Server Control Panel reports that the media file system and the media database is active and fully functional and that the server on which you have upgraded software is indeed the current primary server.
3. Power up the backup server. Wait until startup processes complete before continuing.
4. Upgrade the backup server by returning to [“Step 4: Disable OpForce service”](#) earlier in this section and performing that step and subsequent steps on the backup server.

If you have completed the upgrade to both the primary and backup servers, do the following:

1. Make sure the primary server is powered up.
2. Run Server Control Panel. You can do this at the local server or through the K2 System Configuration application. Make sure that the media file system and the media database is active and fully functional and that the first server on which you upgraded software is still the current primary server.

3. Put the backup server in service as follows:
 - a. Run Server Control Panel. You can do this at the local server or through the K2 System Configuration application.

The Failover Monitor service should currently be off on the backup server, as this is the normal state of the service at system startup.
 - b. Use the **Start** button on Server Control Panel to start Failover Monitor. This makes the backup server qualified to take the role of media file system/database server.
 - c. Make sure that Server Control Panel reports that the media file system and the media database is active and fully functional and that servers are correctly taking primary/backup roles.
4. Continue with the next step “[Step 11: Upgrade remaining K2 Media Servers](#)”.

Step 11: Upgrade remaining K2 Media Servers

Skip this step if:

- All the K2 Media Servers on the K2 Storage System have been upgraded. Skip ahead to “[Step 12: Upgrade connected K2 Media Clients](#)”.

Do this step if:

- There are K2 Media Servers that do not take the role of media file system/database server on the K2 Storage System that have not yet been upgraded. For example, this is the case for the Level 3 K2 Storage Systems in which servers are dedicated to the role of FTP server.

Upgrade each of the remaining K2 Media Servers as follows:

1. Return to “[Step 4: Disable OpForce service](#)” earlier in this section and perform that step and subsequent steps on the K2 Media Server.
2. When all the K2 Media Servers on the K2 Storage System have been upgraded, continue with the next step “[Step 12: Upgrade connected K2 Media Clients](#)”

Step 12: Upgrade connected K2 Media Clients

After K2 Media Servers are upgraded, upgrade all connected K2 Media Clients to the same version of software, as instructed in the *K2 Media Client Release Notes*. Do not resume media access on a K2 Media Client until it is upgraded.

NOTE: *You must restart after installing K2 software.*

After upgrading all connected K2 Media Clients, continue with the upgrade steps in these *K2 Storage System Release Notes* and complete the upgrade to the K2 Storage System.

Step 13: Upgrade connected generic clients

Skip this step if:

- The only clients on the K2 Storage System are K2 Media Clients. Skip ahead to “[Step 14: Upgrade software on Control Point PC](#)”.

Do this step if:

- You have clients on the K2 Storage System that are not K2 Media Clients. This is the case if you have Aurora Edit workstations or other Aurora products that use the shared storage of the K2 Storage System.

Upgrade all remaining client devices on the K2 Storage System. Refer to the release notes or other upgrade instructions for the client product.

NOTE: *You must restart after installing K2 software.*

Step 14: Upgrade software on Control Point PC

To upgrade Control Point software, do the following:

1. Insert the version 3.1.9 K2 System Software CD in the Control Point PC's CD drive or otherwise access the version 3.1.9 installation files.
2. Run the Control Point installation program. No special procedures are required.
3. From the K2 System Configuration application, use Server Control Panel to verify that the media file system and the media database is active and fully functional.

The K2 software upgrade on the K2 Storage System is now complete. Continue with the next step "[Step 15: Make recovery disk images](#)".

Step 15: Make recovery disk images

After you have upgraded software as instructed in these release notes and verified that your system is working properly, you should always make a recovery disk image of each of your K2 systems. Use a sequence of events similar to those you followed for upgrading software, so that as you take systems offline you manage redundancy, servers, and clients, as appropriate for your K2 Storage System.

- To make a recovery disk image of the K2 Media Server, refer to the *K2 Storage System Instruction Manual* for procedures.
- To make a recovery disk image of the K2 Media Client or Control Point PC, refer to the *K2 Media Client Service Manual* for procedures.

The upgrade to the K2 Storage System is now complete.

Downgrading 3.1 K2 software to 3.0 for Grass Valley News systems

These downgrade instructions are for customers that receive a new K2 Media Server from the factory with 3.1 software pre-installed, yet they must downgrade the system to 3.0.4.546 software in order to stay compatible with their current 5.6b version of News software. Refer to the version compatibility table earlier in these release notes. Contact Grass Valley Support for questions about procuring 3.0.4.546 K2 software or other version compatibility issues.

These downgrade instructions assume that the K2 Media Server has not yet been installed as a part of a working K2 Storage System.

If you have an existing K2 Media Server that had 3.0 software but that you have since upgraded to 3.1, you should not use these downgrade instructions. Instead, you should use the disk image that you made of the 3.0 system to restore the system to 3.0 software.

To downgrade a factory installed 3.1 K2 Media Server to 3.0.4.546, do the following:

1. Uninstall 3.1 software using the Windows Control Panel **Add/Remove Programs**.
2. Restart the K2 Media Server.
3. Install 3.0.4.546 K2 software. Use the installation procedure earlier in these release notes, with the following additions:
 - When prompted to overwrite *kipmdrv.sys* click **Yes**.
 - When prompted to overwrite *ql4010t.sys* click **Yes**.
 - When prompted to overwrite *gibr.sys* click **Yes**.
4. Restart the K2 Media Server.

There is no need to do any SNFS installation. The same SNFS version (2.6.5b46) is qualified for both 3.1 and 3.0.4.546.

Refer to *K2 Media Client Release Notes* for instructions on downgrading a K2 Media Client.

Optimizing K2 Media Server startup

The *OpForce* service has been determined to be a contributor to the slow startup processes on a K2 Media Server. This service comes from the Dell Open Manage utility and supports provisioning multiple servers simultaneously. This service is not necessary for operation on a K2 Storage System. When this service is turned off, it allows the K2 Media Server to complete its startup processes in approximately half the time.

If your K2 Storage System has redundant K2 Media Servers in the role of media file system/database server, use the following sequence:

1. Do the procedure on the backup server.
2. Shut down the backup server and leave it shut down. Do not startup the backup server at this time.
3. Do the procedure on the primary server.
4. Restart the primary server. Wait until startup is complete and networks are up before continuing.
5. Start up the backup server. Wait until startup is complete and networks are up before continuing.

To turn the OpForce service off on a K2 Media Server, do the following:

1. Stop all media access on the K2 Storage System.
2. From the Windows Startbar, open **Settings | Control Panel | Administrative Tools | Services**. The Services control panel opens.
3. Locate the OpForce service and configure it as follows:
 - a. Change the startup state to **Disabled**.
 - b. Click **Apply**.
4. Depending on the primary/backup status of the server, shutdown or restart the K2 Media Server.
5. Do this procedure as applicable on your remaining K2 Media Servers.

Converting media (iSCSI) networking

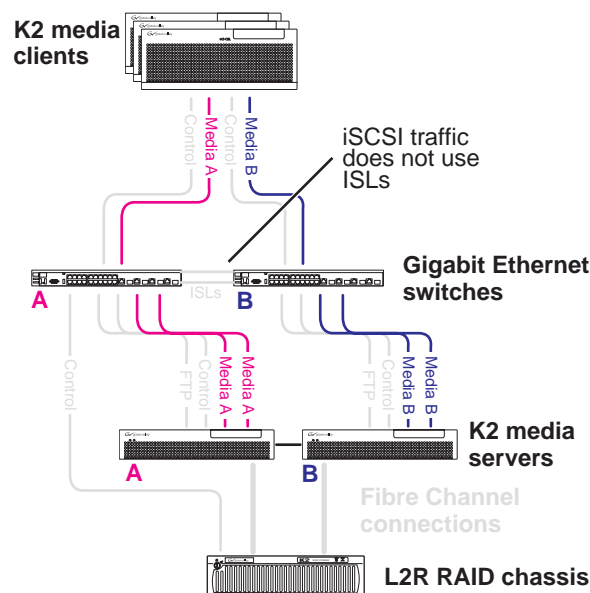
A previous network configuration for K2 Media Clients included teaming of the media (iSCSI) ports. This teaming provided the failover mechanism for redundant K2 Storage Systems. Because the teaming provided one IP address for both ports, only one iSCSI network was required.

The media team is no longer supported for external storage K2 Media Clients. There is a new networking scheme that optimizes automatic system recovery for redundant K2 Storage Systems. The new networking scheme requires two independent (unteamed) media ports. This is the standard configuration for all external storage K2 Media Clients.

For K2 Media Clients on a redundant K2 Storage System, unteamed media ports are required. You must unteam media ports as part of this upgrade or when installing a new redundant system.

For K2 Media Clients on an existing non-redundant K2 Storage System, unteamed media ports are not required as part of this upgrade. Both teamed and unteamed media ports are compatible with a non-redundant K2 Storage System. However, to standardize configurations and receive the benefits of ongoing testing, you should plan to unteam media ports when you have a convenient opportunity on existing non-redundant systems. If you are installing a new non-redundant system, you should unteam media ports as part of the install process.

To support the new networking scheme, redundant K2 Storage Systems require two media (iSCSI) subnets. You must convert to the two media subnets as part of this upgrade or when installing a new redundant system. Redundant K2 Media Servers are split between these subnets, with the “A” server connected only to the “A” network and the “B” server connected only to the “B” network. There is no media (iSCSI) traffic on ISLs.



For redundant K2 Storage Systems, tasks for the required networking conversion are summarized as follows:

1. Prepare for reconfiguration
2. Reconfigure networking on K2 Media Servers.
3. Unteam media ports on K2 Media Clients.
4. Recable generic iSCSI clients (Aurora Edits) if applicable.
5. Reconfigure the K2 Storage System with the K2 System Configuration application.
6. Reconfigure GigE switch trunks and ISLs, if applicable.

For non-redundant K2 Storage Systems, tasks for the optional networking conversion are summarized as follows:

1. Prepare for reconfiguration
2. Unteam media ports on K2 Media Clients.
3. Reconfigure the K2 Storage System with the K2 System Configuration application.
4. Reconfigure GigE switch trunks and ISLs, if applicable.

The following sections provide instructions for converting from the previous networking scheme to the new networking scheme. Work through these sections sequentially, reading the explanations to determine the appropriate procedures for your K2 Storage System.

Prepare for reconfiguration

If you are doing the required conversion on a redundant K2 Storage System, do the following:

1. Plan out your networking to accommodate two media (iSCSI) networks. For example, if your previous media network was 192.168.99.xx, you might designate 192.168.98.xx as your new media “A” network and 192.168.99.xx as your new media “B” network. Designate IP addresses accordingly.
2. Stop all media access on the K2 Storage System.
3. In the K2 System Configuration application, remove all K2 Media Clients and other iSCSI clients.
4. Continue with the next procedure, [“Reconfigure network on K2 Media Servers”](#).

If you are doing the optional conversion on a non-redundant K2 Storage System, you only need one iSCSI network, so it is likely that you can retain your existing iSCSI network. In this case you do not need to designate new IP addresses or reconfigure networking on K2 Media Servers, so do the following:

1. Stop all media access on the K2 Storage System.
2. In the K2 System Configuration application, remove all K2 Media Clients and other iSCSI clients.
3. Continue with [“Unteam K2 Media Clients”](#) on page 21.

Reconfigure network on K2 Media Servers

This procedure should not be necessary on non-redundant K2 Storage Systems, since they retain their single iSCSI network.

On redundant K2 Storage Systems converting from one to two iSCSI networks, you must reconfigure networking on all K2 Media Servers that have the role of iSCSI bridge.

The network configuration requires shutting down and starting up servers. For redundant K2 Media Servers in the role of media file system/database server, use the following sequence:

1. Reconfigure networking on the backup server.
2. Shut down the backup server and leave it shut down. Do not startup the backup server at this time.
3. Reconfigure networking on the primary server.
4. Restart the primary server. Wait until startup is complete and networks are up before continuing.
5. Start up the backup server. Wait until startup is complete and networks are up before continuing.

To reconfigure networking on a K2 Media Server, do the following:

1. In the K2 System Configuration application, open the server's iSCSI Bridge Server Configuration page.
2. Assign IP addresses to iSCSI adapters as follows:
 - If you are configuring an "A" server, assign IP addresses for the "A" network to both its iSCSI adapters.
 - If you are configuring a "B" server, assign IP addresses for the "B" network to both its iSCSI adapters.
3. Depending on the primary/backup status of the server, shutdown or restart the K2 Media Server.

NOTE: *Make sure you wait after restart until networks come up on servers.*

4. Repeat this procedure as necessary on your remaining K2 Media Servers.
5. Continue with the next procedure, "[Unteam K2 Media Clients](#)".

Unteam K2 Media Clients

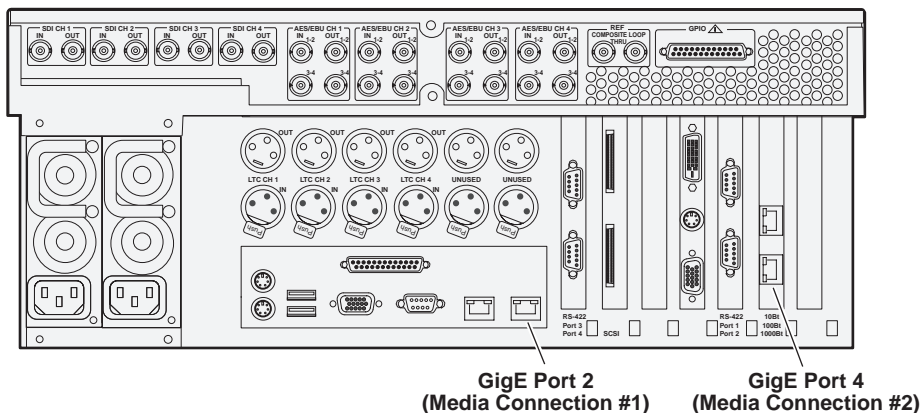
This procedure is recommended but not required as part of this upgrade for external storage K2 Media Clients on a non-redundant K2 Storage System.

This procedure is required as part of this upgrade for external storage K2 Media Clients on a redundant K2 Storage System.

Do the following on each K2 Media Client on the K2 Storage System:

1. On the Windows desktop right-click **My Network Places** and select **Properties**. The Network Connections window opens.

2. In the Network Connections window, double-click the Media Team. The Status dialog box opens.
3. Click the **Properties** button. The Properties dialog box opens.
4. Click the **Configure** button. The dialog box hangs then closes. Repeat the previous two steps to arrive again at this step. The TEAM: Media Team Properties dialog box opens.
5. On the **Settings** tab, click the **Remove Team** button.
6. In the Network Connections window, identify the first media (iSCSI) port. This should be named *Media Connection #1*, although sometimes the enumeration is otherwise. To verify, do the following:
 - a. On the Windows desktop, right-click **My Computer** and select **Manage**. The Computer Management window opens.
 - b. In the left pane select **Device Manager**. Device Manager opens in the right pane.
 - c. Under Network adapters, right-click an adapter and select **Properties**. The Properties dialog box opens.
 - d. Select the **Link** tab and then click **Identify Adapter**. The Identify Adapter dialog box opens.
 - e. Click **Start**. On the K2 Media Client rear panel, the LED blinks next to the physical network port. Identify rear panel ports as follows:



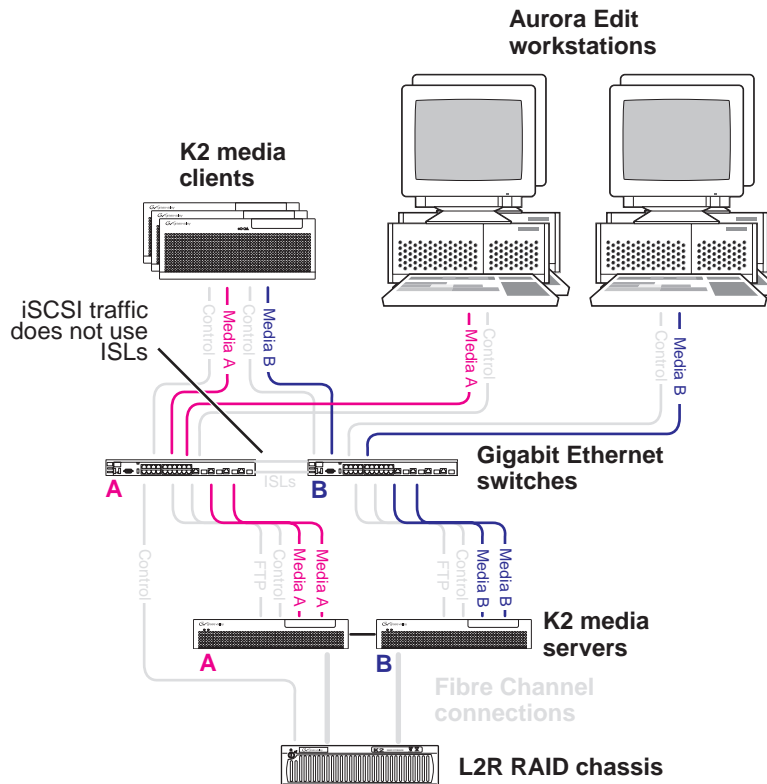
- f. Identify the physical port corresponding to that adapter software name as displayed in the Network Connections window.
7. In the Network Connections window, rename adapters as follows:
 - a. Select the adapter that is GigE Port 2.
 - b. Click **File | Rename** to enter rename mode.
 - c. To name as the factory default name, type *Media Connection #1*. Some earlier systems use other names, such as *Media Port 1*.
 - d. Select the adapter that is GigE Port 4.

- e. Click **File | Rename** to enter rename mode.
- f. To name as the factory default name, type `Media Connection #2`. Some earlier systems use other names, such as *Media Port 2*.
8. In the Network Connections window, on the menu bar at the top of the window, select **Advanced**, then **Advanced Settings...**
9. On the **Adapters and Bindings** tab, scroll down and select **Control Team** in the Connections field.
10. Use the up arrow button, move the Control Team to TOP priority (1st).
11. Select Media Connection #1, and then use up arrow to move just below Control Team.
12. Select Media Connection #2, and then use up arrow to move just below the first media port.
13. Select **Loopback** adapter, and then move it to the bottom of the list (leaving it above Remote Access).
14. Click **OK** to close Advanced settings and accept the changes.
15. Close the Network Properties window.
16. Repeat this procedure on the other K2 Media Clients.
17. Proceed as follows:
 - For non-redundant K2 Storage Systems, continue with [“Reconfigure the K2 Storage System” on page 24](#).
 - For redundant K2 Storage Systems that have no generic iSCSI clients (Aurora Edits), continue with [“Reconfigure the K2 Storage System” on page 24](#).
 - For redundant K2 Storage Systems that have generic iSCSI clients (Aurora Edits), continue with the next procedure, [“Recable generic iSCSI clients \(Aurora Edits\)”](#).

Recable generic iSCSI clients (Aurora Edits)

This procedure should not be necessary on non-redundant K2 Storage Systems, since they retain their single iSCSI network.

On redundant K2 Storage Systems, if you have generic iSCSI clients connected, you might need to recable. If the iSCSI client has just one iSCSI port and it is on a redundant K2 Storage System, it must be connected to either the “A” iSCSI network and the “A” K2 Media Servers, or to the “B” iSCSI network and the “B” K2 Media Servers. This means that in a failover event or other system fault in which one of the redundant K2 Media Servers is not available, the clients connected to that server are not operational. Generally you want half your iSCSI clients on one network and half your iSCSI clients on the other network. Decide which of your iSCSI clients should be on each network and recable as necessary.



Also check the release notes that apply to your generic iSCSI client for additional information.

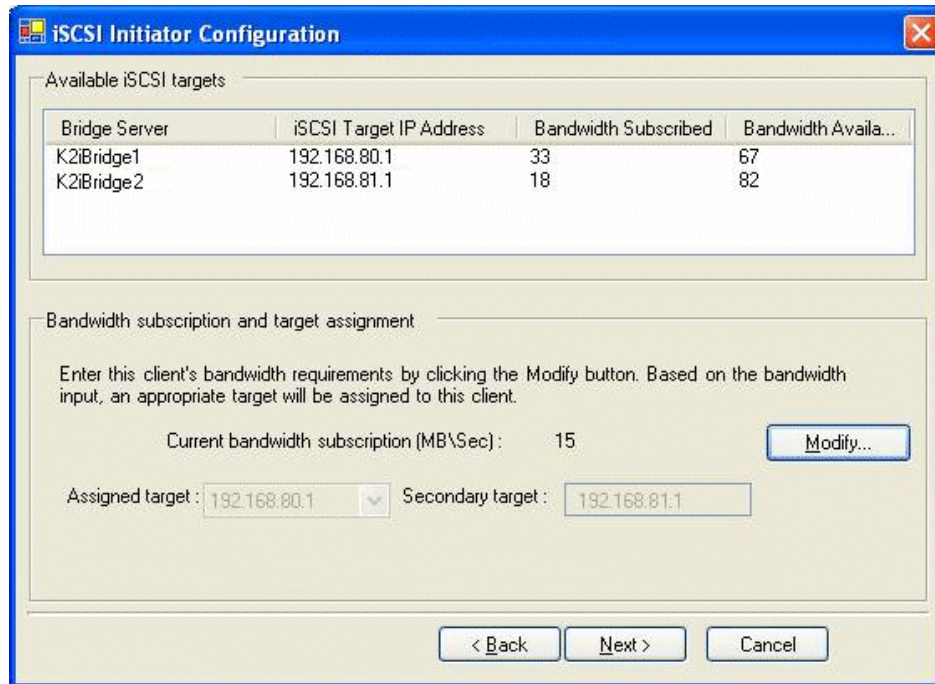
Continue with the next procedure, [“Reconfigure the K2 Storage System”](#).

Reconfigure the K2 Storage System

This procedure is necessary for both redundant and non-redundant K2 Storage Systems as part of the networking conversion.

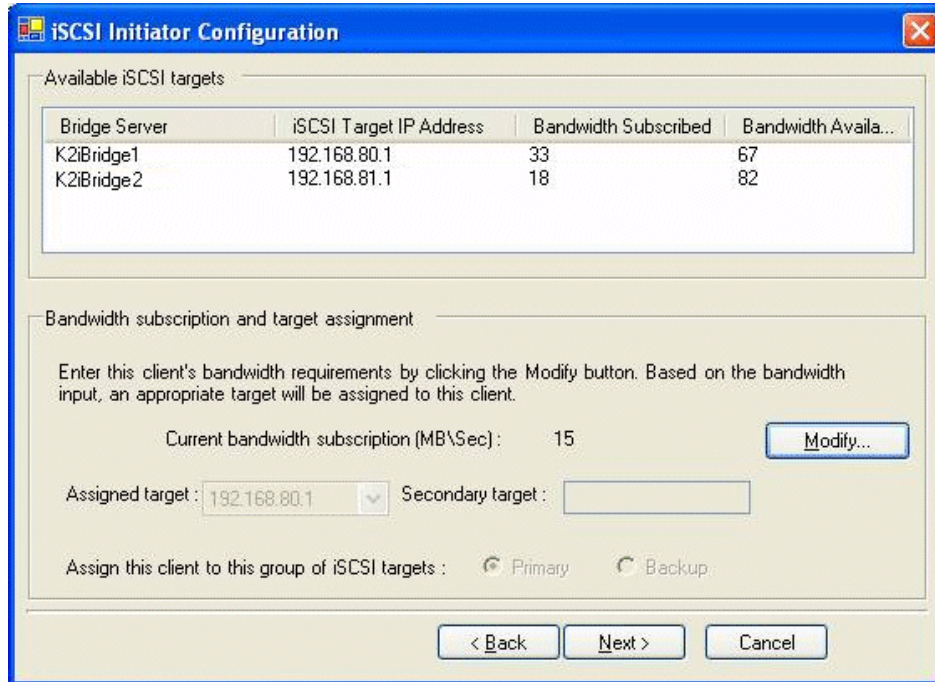
1. In the K2 System Configuration application, add K2 Media Clients and other iSCSI clients to the K2 Storage System.
2. In the K2 System Configuration application, configure each of the K2 Media Clients. Work through the configuration wizard as follows:
 - a. When you arrive at the Network Configuration page, do the following:
 - For clients on a non-redundant K2 Storage System (with one media network), assign a media network IP address to Media Connection #1.
 - For clients on a redundant K2 Storage System, assign an IP address for the “A” media network to Media Connection #1 and an IP address for the “B” media network to Media Connection #2.
 - b. When you arrive at the iSCSI Initiator Configuration page, do the following:
 - For clients on a non-redundant K2 Storage System, click **Modify**, enter bandwidth values, and assign the portal. The K2 System Configuration

application assigns the client to one of the available iSCSI bridges on the media network.



- For clients on a redundant K2 Storage System, click **Modify**, enter bandwidth values, and assign the portal. The K2 System Configuration application assigns the client's "A" media connection to an iSCSI bridge on an "A" K2 Media Server and the client's "B" media connection to an iSCSI bridge on a "B" K2 Media Server.
- c. Complete the configuration wizard similarly for each K2 Media Client.
3. If you have generic iSCSI clients, in the K2 System Configuration application configure each of the clients. Work through the configuration wizard as follows:
 - a. When you arrive at the Network Configuration page, do the following:
 - For clients on a non-redundant K2 Storage System (with one media network), assign a media network IP address to the client's media (iSCSI) connection.
 - For clients on a redundant K2 Storage System, if the client is connected to the "A" media network, assign an IP address for the "A" media network to the client's media (iSCSI) connection.
 - For clients on a redundant K2 Storage System, if the client is connected to the "B" media network, assign an IP address for the "B" media network to the client's media (iSCSI) connection.
 - b. When you arrive at the iSCSI Initiator Configuration page, do the following:
 - For clients on a non-redundant K2 Storage System, click **Modify**, enter bandwidth values, and assign the portal. The K2 System Configuration

application assigns the client to one of the available iSCSI bridges on the media network.



- For clients on a redundant K2 Storage System, if the client is connected to the “A” media network, select **Primary**, then click **Modify**, enter bandwidth values, and assign the portal. The K2 System Configuration application assigns the client to an iSCSI bridge on an “A” K2 Media Server.
- For clients on a redundant K2 Storage System, if the client is connected to the “B” media network, select **Backup**, then click **Modify**, enter bandwidth values, and assign the portal. The K2 System Configuration application assigns the client to an iSCSI bridge on a “B” K2 Media Server.

Also check the release notes that apply to your generic iSCSI client for additional information.

c. Complete the configuration wizard similarly for each generic iSCSI Client.

When you have worked through the configuration wizards for all connected K2 Media Clients and generic iSCSI clients, your media networking conversion is complete.

Depending on the FTP bandwidth needs of your K2 Storage System, you might also need to reconfigure trunks and ISLs on your GigE switches. Read the next section “[Considerations for GigE trunks and ISLs](#)” to determine if changes are necessary.

Considerations for GigE trunks and ISLs

You might need to reconfigure trunks and/or ISLs on your HP ProCurve switches, based on the following considerations:

All trunks not used with 1 Gig ISLs

Because of the design of network paths on a K2 Storage System, 1 Gig ISLs on the GigE switches are not used efficiently, especially if you have an even number of configured trunk ports. For example, if you have two ISLs, traffic only uses one of the two configured trunk ports. Or, if you have four ISLs, traffic only uses two of the four configured trunk ports. This severely limits the total bandwidth for cross-switch data movement.

Ports are used in a more uniform pattern if you use an odd number of ports in a trunk. For example, three ports in a trunk will support about 1.25 X a single Gigabit port. If one port fails only one of the remaining two ports will be used, yielding 1 X a single port. Five ports in a trunk will support about 4 X a single port. One failed port will result in a system that runs at 2 X a single port.

Media (iSCSI) traffic does not use ISLs

With the change to two media networks for redundant K2 Storage Systems, iSCSI traffic uses neither 1 Gig ISLs nor 10 Gig ISLs to cross from one switch to another. iSCSI traffic is kept separate on the two networks, with the “A” switch exclusively for “A” network traffic and the “B” switch exclusively for “B” network traffic. Refer to [“Converting media \(iSCSI\) networking” on page 19](#).

Therefore, only control traffic and FTP traffic use ISLs. Since FTP traffic is more variable and has potentially higher bandwidth needs, it is the primary consideration when designing the trunks and ISLs for your system. You no longer need to consider the bandwidth required for iSCSI traffic.

Recommendations for changing trunks/ISLs

A pair of 10 Gig ISLs is the recommended configuration for K2 Storage Systems. Refer to the following table for other options. Contact your Grass Valley representative for advice about your particular system.

If your current configuration is...	And the maximum FTP bandwidth is...	Then change your configuration as follows:
Two switches with two 1 Gb/sec ISLs	Less than 100 MB/sec	Change to three trunks with three 1 Gb/s ISLs
	100 - 300 MB/sec	Change to five trunks with five 1 Gb/s ISLs
	More than 300 MB/sec	Change to two trunks with two 10 Gb/s ISL
Two switches with four 1 Gb/sec ISLs	Less than 100 MB/sec	No change necessary
	100 - 300 MB/sec	Change to five trunks with five 1 Gb/s ISLs
	More than 300 MB/sec	Change to two trunks with two 10 Gb/s ISL
Two switches with two 10 Gb/sec ISLs	Any bandwidth	No change necessary

Operation considerations

- Do not neglect to make a “first birthday” disk image shortly after the K2 Media Server is installed and configured. Refer to the *K2 Storage System Instruction Manual* for procedures.
- If you are using the Grass Valley control point PC, you should also make a first birthday image of the control point PC. To do this you use the K2 Media Client Recovery CD. Both the Grass Valley control point PC and the K2 Media Client can boot from this CD and make recovery disk images. Refer to the instruction in the *K2 Media Client Service Manual* for creating a recovery disk image.
- K2 Media Servers and Level 1 devices can have either one dual-port iSCSI interface card or two single-port iSCSI interface cards. These cards are also called TOEs. The configuration depends on the manufacturing run during which your machine was built. K2 System Software version 3.1 and higher supports either configuration, and there is no difference in functionality. When using cabling diagrams and other artwork to reference the iSCSI ports, make the necessary adjustments if your machine is different than that illustrated.

Known problems

The following limitations are present in this 3.1.9 release of the K2 Storage System. If you wish to obtain more information about these limitations, please mention the reference numbers that follow the description of each limitation.

K2 System Configuration

- Description:** After configuring K2 Media Servers there can be multiple, conflicting media file systems active. (CR61721, CR62774)
- Workaround:** The problem occurs only when a media file system server is not properly removed using K2 Config, and then the server is reused to no longer take the role of media file system server. To prevent this problem, before configuring with K2 Config, open D:\SNFS\config and delete fsnameservers, fsmlist, and default.cfg files.

NetCentral

- Description:** The automatic discovery by NetCentral of the K2 Storage System structure is not implemented in this release. (CR62931)
- Workaround:** Add K2 Storage System devices to NetCentral manually, then group them under a NetCentral tree view folder named for the K2 Storage System. For procedures, refer to the NetCentral User Guide and to the NetCentral Help menu for Device Providers.
- Description:** NetCentral reports a Failover Monitor fault, even though Failover Monitor is actually running with no problem. Also, there is no report of database replication currently underway. (CR 62119)
- Workaround:** Verify that Failover Monitor is still running and database replication is underway by using the Server Control Panel in the K2 System Configuration application.

RAID

- Description: Loading controller firmware simultaneously on two controllers fails. (CR63092)
- Workaround: Load firmware completely on one controller, then on the other controller. Do not load in parallel. Do not use Storage Utility for other tasks while firmware is loading.

Storage Utility

- Description: The message box that reports progress for the Storage Utility "Clean Unreferenced Files" feature is not visible. (CR67900)
- Workaround: The message box is not visible because it opens under the Storage Utility main window. With no progress visible, a common mistake is to then close Storage Utility before the "Clean Unreferenced Files" process is complete. To prevent this, arrange windows so you can see progress and do not close Storage Utility until the process is complete.
- Description: When binding LUNs on a Nearline system, you might get an error message that the binding process did not complete on all LUNs. (CR68994)
- Workaround: This error message is not correct. Check LUNs in Storage Utility to verify that the binding process was successful.

System

- Description: A "...service or driver failed..." message appears when the K2 Media Server starts up. (CR68251)
- Workaround: Check Windows Event Viewer to identify the problem service. If you uninstalled K2 software, the problem service is likely GVGSCSI, in which case the solution is to install K2 software and restart. If you used an early version of the K2 System Configuration application to configure the server, the problem service is likely MSSQLADHELPER, in which case the solution is to disable the service.

Transfer

- Description:** On redundant K2 Storage System, a K2 Media Client does not redirect FTP traffic to the redundant FTP server after a failover event. (CR62027)
- Workaround:** In your facility's FTP application, provide an alternative path for FTP connections. If the connection at one FTP server fails, the FTP application should connect to the redundant FTP server.

