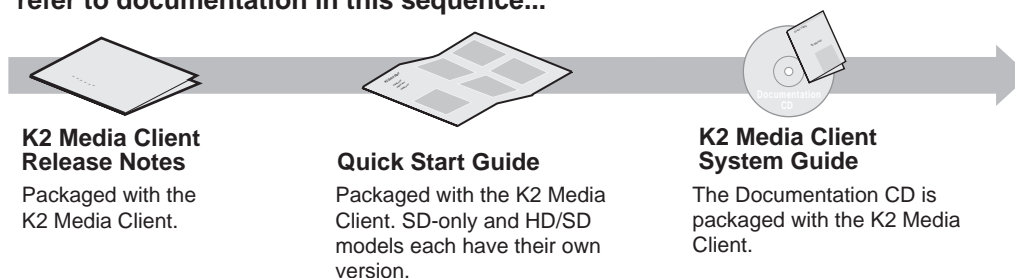


K2 Storage System Version 3.1.12 Release Notes & Upgrade Instructions

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...

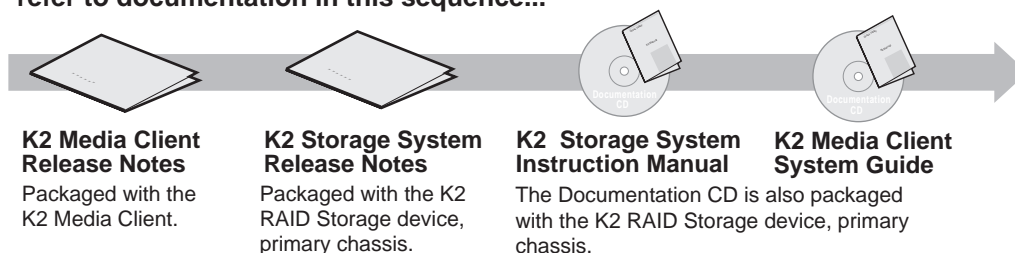


Table of Contents

| | |
|---|----|
| <i>Grass Valley Product Support</i> | 3 |
| <i>What's new in this release</i> | 4 |
| <i>Feature limitations in this release</i> | 4 |
| <i>Changes in previous releases</i> | 4 |
| <i>Version 3.1.9</i> | 4 |
| <i>Version 3.0.4</i> | 5 |
| <i>Version 3.0.2</i> | 5 |
| <i>Version 3.0.1.19</i> | 6 |
| <i>K2 software version compatibility</i> | 7 |
| <i>Components on K2 Storage System devices</i> | 7 |
| <i>Level 2 RAID disk drive microcode</i> | 8 |
| <i>Level 3 RAID disk drive microcode</i> | 9 |
| <i>K2 systems and other Grass Valley products</i> | 10 |
| <i>About Level 4 K2 Storage Systems</i> | 10 |
| <i>Upgrading K2 software</i> | 11 |
| <i>Step 1: Make recovery disk images of K2 Media Clients</i> | 11 |
| <i>Step 2: Take K2 Media Clients offline</i> | 11 |
| <i>Step 3: Manage multiple K2 Media Servers</i> | 11 |
| <i>Step 4: Disable OpForce service</i> | 12 |
| <i>Step 5: Make recovery disk image</i> | 12 |
| <i>Step 6: Install "High Priority" Windows updates (recommended)</i> | 13 |
| <i>Step 7: Upgrade media file system software (SNFS)</i> | 13 |
| <i>Step 8: Upgrade QuickTime</i> | 14 |
| <i>Step 9: Upgrade K2 Media Server system software</i> | 14 |
| <i>Step 10: Manage redundancy on K2 Media Servers</i> | 17 |
| <i>Step 11: Upgrade remaining K2 Media Servers</i> | 18 |
| <i>Step 12: Upgrade connected K2 Media Clients</i> | 19 |
| <i>Step 13: Upgrade connected generic clients</i> | 19 |
| <i>Step 14: Upgrade software on Control Point PC</i> | 19 |
| <i>Step 15: Make recovery disk images</i> | 20 |
| <i>Downgrading 3.1 K2 software to 3.0 for Grass Valley News systems</i> | 20 |
| <i>Optimizing K2 Media Server startup</i> | 21 |
| <i>K2 Media Server description</i> | 21 |
| <i>K2 Media Server specifications</i> | 23 |
| <i>Setting up the K2 media server</i> | 25 |
| <i>Operation considerations</i> | 26 |
| <i>Known problems</i> | 28 |

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. Contact Grass Valley first regarding problems with third party software on Grass Valley products, such as the Microsoft® Windows® operating system, Windows Media® player, Internet Explorer® internet browser, 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:

- **RAID controller firmware and disk drive microcode** — New versions are supported and ship pre-installed on new systems. Refer to “[Components on K2 Storage System devices](#)”, “[Level 3 RAID disk drive microcode](#)”, and “[Level 2 RAID disk drive microcode](#)” later in these release notes. Upgrade to these new versions is not required. The changes in these versions do not effect functionality as a K2 RAID storage device. The new versions are compatible with all previous versions.
- **Dell 2950** — The Dell 2950 PowerEdge server is now qualified as a platform for the K2 Media Server. Refer to “[K2 Media Server description](#)” later in these release notes.

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 3.1.9

- **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.
- **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.

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 21](#).
- **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.
- **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.
- **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 this release of K2 system software. 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 this release of K2 system software. 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 3.1.12 release of K2 software are summarized in the following tables:

Components on K2 Storage System devices

| K2 device | Component | Version | Comment |
|--|--|----------------------|---|
| 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 | This older version is still compatible. |
| | | M.08.86 | Upgrade to this version is recommended. |
| Level 2 RAID | Controller firmware | RV62 | Filename: 03FHRV62.BIN This older version is still compatible. |
| | | RV70 | Filename: 03FHRV70.BIN Upgrade to this version is recommended. |
| | LAN card firmware | GS05 | Filename: 03SPGS05.bin Upgrade to this version is recommended. |
| Level 3 RAID | Controller firmware for online systems | 04VJ | Filename: 04FH04VJ.BIN This older version is still compatible. |
| | | 05VD | Filename: 04FH05VD.BIN Upgrade to this version is recommended. |
| | | 05VG ^a | Filename: 04FH05VG.BIN Upgrade to this version is optional. |
| | Controller firmware for nearline primary chassis | 05ND | Filename: 04FH05ND.BIN This older version is still compatible. |
| | | 05NG ^a | Filename: 04FH05VN.BIN Upgrade to this version is optional. |
| Controller firmware for nearline expansion chassis | 06F | Filename: DEA_AP.06F | |

^a. New in this release

Level 2 RAID disk drive microcode

The Storage Utility can report inconsistent disk drive microcode versions. This can be a normal condition, since the Level 2 RAID system supports multiple drive capacities and microcode versions. Be sure to compare the version numbers with this table, and update only as required.

| Drive Capacity | Drive Speed | Microcode Type | Microcode Version | Microcode File Name ^a | Comments |
|----------------|-------------|----------------|-------------------|--|--|
| 73G | 10K | Interface | 0003 | ST373207FC 0003.bin | These older versions are still compatible. |
| | | Servo | B58 | | |
| | | Interface | DB90 | ST373207FC DB90.bin ^b | Upgrade to these versions is optional. |
| | | Servo | B5A | | |
| 146G | 10K | Interface | 0003 | ST3146707FC 0003.bin | These older versions are still compatible. |
| | | Servo | B58 | | |
| | | Interface | DB90 | ST3146707FC DB90.bin ^b | Upgrade to these versions is optional. |
| | | Servo | B5A | | |
| 300G | 10K | Interface | 0003 | ST3300007FC 0003.bin | These older versions are still compatible. |
| | | Servo | B58 | | |
| | | Interface | DB90 | ST3300007FC DB90.bin ^b | Upgrade to these versions is optional. |
| | | Servo | B5A | | |
| — | 15K | — | 2606 | MAU3xxxFC_15Krpm.2606 -or- MAX3xxxFC_15Krpm.2606 (either file loads the same version) | This is the only version supported. (15K drives are for RAID 1 metadata LUNs.) |

^a. For Level 2 RAID, interface and servo microcode are combined in one file

^b. New in this release

0003/B58 and DB90/B5A version are fully compatible. The versions can be mixed on drives in a LUN and mixed in LUNs in a RAID device. A drive with one version can be a replacement (FRU) for a drive with the other version.

Level 3 RAID disk drive microcode

The Storage Utility can report inconsistent disk drive microcode versions. This can be a normal condition, since the Level 3 RAID system supports multiple drive capacities and microcode versions. Be sure to compare the version numbers with this table, and update only as required.

| Drive Capacity | Drive Speed | Microcode Type | Microcode Version | Microcode File Name ^a | Comments |
|----------------|-------------|----------------|-------------------|--|--|
| 73G | 10K | Interface | 0003 | CH7_10K_Interface.0003 | These older versions are still compatible. |
| | | Servo | B58 | CH7_10K_ST373207FC_Servo.B58 | |
| | | Interface | DB90 ^b | CH7_10K_Interface.DB90 | Upgrade to these versions is optional. |
| | | Servo | B5A ^b | CH7_10K_ST373207FC_Servo.B5A | |
| 146G | 10K | Interface | 0003 | CH7_10K_Interface.0003 | These older versions are still compatible. |
| | | Servo | B58 | CH7_10K_ST3146707FC_Servo.B58 | |
| | | Interface | DB90 ^b | CH7_10K_Interface.DB90 | Upgrade to these versions is optional. |
| | | Servo | B5A ^b | CH7_10K_ST3146707FC_Servo.B5A | |
| 300G | 10K | Interface | 0003 | CH7_10K_Interface.0003 | These older versions are still compatible. |
| | | Servo | B58 | CH7_10K_ST3300007FC_Servo.B58 | |
| | | Interface | DB90 ^b | CH7_10K_Interface.DB90 | Upgrade to these versions is optional. |
| | | Servo | B5A ^b | CH7_10K_ST3300007FC_Servo.B5A | |
| — | 15K | — | 2606 | MAU3xxxFC_15Krpm.2606 -or- MAX3xxxFC_15Krpm.2606 (either file loads the same version) | This is the only version supported. (15K drives are for RAID 1 metadata LUNs.) |

^a. For Level 3 RAID, interface microcode and servo microcode each have their own file

^b. New in this release

Interface and Servo microcode versions must match. 0003 and B58 must be together. DB90 and B5A must be together.

When loading Level 3 RAID disk drive microcode, load the servo file for the specific drive capacity on the drive first, then load the interface file. After loading the interface file, wait several minutes while the drives automatically re-power themselves.

0003/B58 and DB90/B5A versions are fully compatible. The versions can be mixed on drives in a LUN and mixed in LUNs in a RAID device. A drive with one version can be a replacement (FRU) for a drive with the other version.

K2 systems and other Grass Valley products

Versions of Grass Valley products are qualified for compatibility with this 3.1.12 release of K2 software as listed in the following table:

| 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 | Qualified with Aurora products except Aurora Browse. Contact Grass Valley Support for an update on Aurora Browse qualification. |
| News products | 5.6c | Qualification with 3.1.12 K2 software is underway. 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 | — |
| K2 InSync | 4.0.0.12 | — |
| 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 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 2 – 3 systems. While much of the information also applies to Level 4 systems, consult your Grass Valley representative before using Level 2 – 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 3.1.12 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 3.1.12 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.

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 a Level 2 non-redundant K2 Storage System. 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 21](#) 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 3.1.12. 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)

From the Windows desktop, click **Start | Programs | StorNext File System | Versions** to check the current SNFS version.

Skip this step if:

- SNFS is currently at version 2.6.5b46. This is the case if the current K2 software is a 3.1.x.x version, as SNFS 2.6.5b46 is required for K2 3.1. Skip ahead to “[Step 8: Upgrade QuickTime](#)”.

Do this step if:

- SNFS is at a version lower than 2.6.5b46. This is the case if the current K2 software is a 3.0.1 version.

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 *snfs2xbxx.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 3.1.12 K2 System Software CD in the K2 Media Server’s CD drive or otherwise access the version 3.1.12 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

From the Windows desktop, click **Start | Programs | QuickTime | About QuickTime** to check the current QuickTime version.

Skip this step if:

- QuickTime is currently at version 7. This is the case if the current K2 software is a 3.1.x.x version, as QuickTime 7 is required for K2 3.1. Skip ahead to [“Step 9: Upgrade K2 Media Server system software”](#).

Do this step if:

- QuickTime is at a version lower than 7. This is the case if the current K2 software is a 3.0.1 version.

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 3.1.12 K2 System Software CD in the K2 Media Server’s CD drive, if it is not already inserted, or otherwise access the version 3.1.12 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 SNFS and QuickTime are at the required versions, 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:

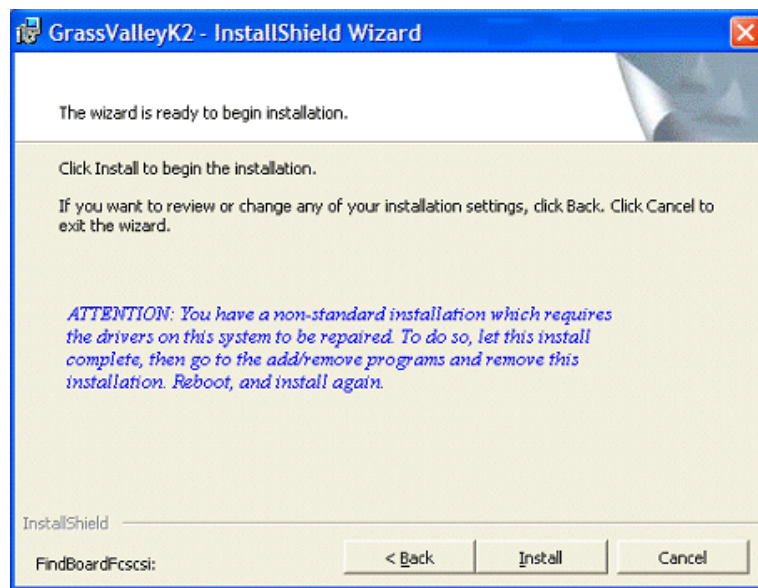
1. Make sure all connected K2 Media Clients are shut down.
2. Insert the version 3.1.12 K2 System Software CD in the K2 Media Server’s CD drive, if it is not already inserted, or otherwise access the version 3.1.12 installation files.
3. Open the following file:
\K2Server\setup.exe

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 “...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.

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:



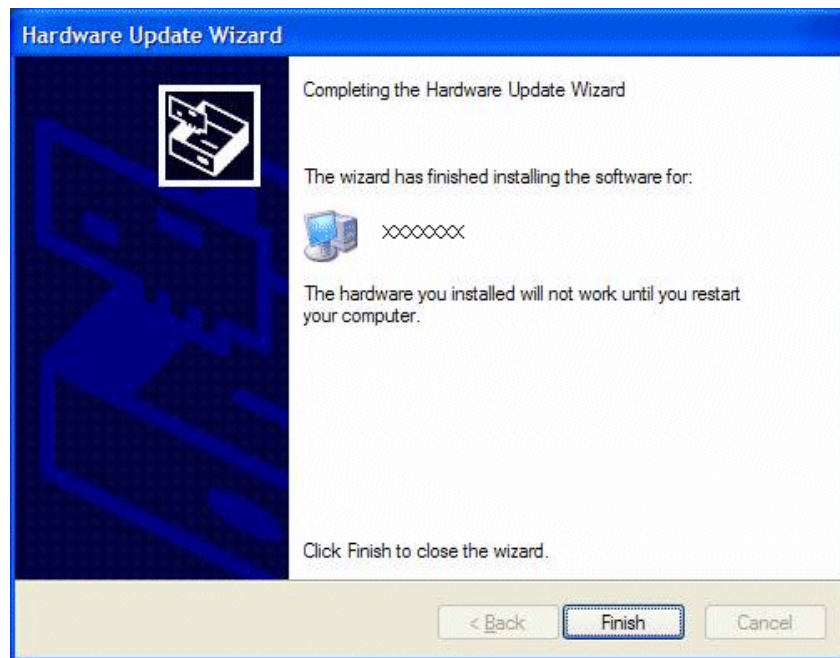
- Complete the installation wizard.
- Uninstall K2 Media Server software.
- Restart the K2 Media Server.
- Repeat this procedure and install software again.

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.
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 3.1.12 K2 System Software CD in the Control Point PC’s CD drive or otherwise access the version 3.1.12 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:

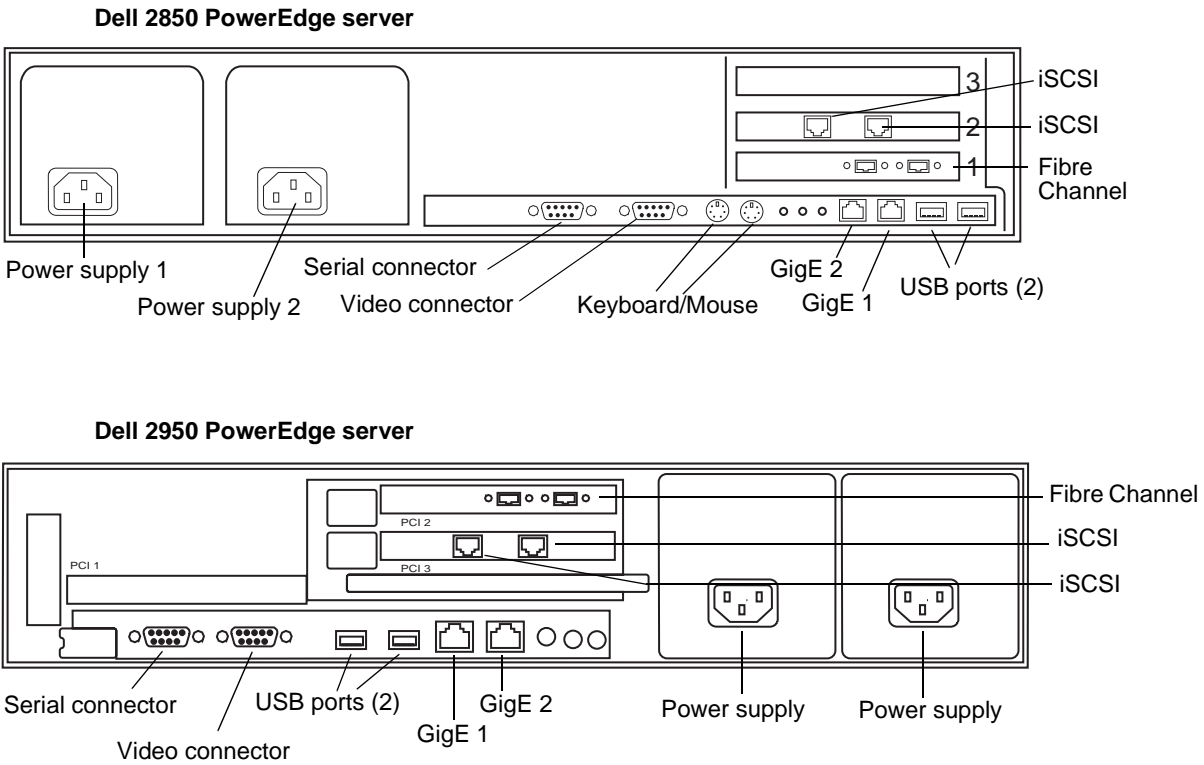
1. Do the procedure on the backup server.
2. Shut down the backup server and leave it shut down. Do not startup the backup server at this time.
3. Do the procedure on the primary server.
4. Restart the primary server. Wait until startup is complete and networks are up before continuing.
5. Start up the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

K2 Media Server description

The central component of the K2 Storage System at Level 2 and higher is the K2 Media Server. It is built on a Dell PowerEdge server platform. Both the Dell 2850 and the Dell 2950 are qualified as platforms for the K2 Media Server. This section provides information on both platforms.



The following interfaces provide K2 Storage System functionality:

- Two GigE ports on the motherboard
- One dual port iSCSI interface card. Each port is also referred to as a TOE (TCP/IP Offload Engine).
- One Fibre Channel card with two Fibre Channel ports. This is the Grass Valley Fibre Channel card.

K2 Media Server specifications

The K2 Media Server is built on a Dell PowerEdge server platform, with specifications as follows:

Dell 2850 PowerEdge server

| Characteristic | Specification |
|-----------------------------|--|
| Processor | 2.8GHz/1MB Cache, Xeon, 800MHz Front Side Bus |
| Memory | 1 GB |
| Hard Drives | 36GB RAID 1 |
| Operating System | Microsoft® Windows® Server 2003, Standard Edition |
| Fibre Channel Adapter | GVG SCSI |
| iSCSI Adapter | Qlogic SANblade 1-Gbps iSCSI dual-TOE PCI-X Host Bus Adapter |
| Removable Media Drives | 1.44MB Floppy Drive 24X IDE CD-RW/DVD ROM Drive |
| Communications | Dual Embedded Intel Gigabit 1 82541 Server Adapter on motherboard |
| Graphics | ATI Radeon with 16MB SDRAM |
| Form Factor | 2U |
| Dimensions (with bezel) | 75.68 cm (29.79") D x 44.7 cm (17.6") W x 8.656 cm (3.38") H |
| Rack Weight | 26.76kg (59 lb), maximum configuration |
| Rack Mount | Sliding rails with rack ear kit |
| Rear Ports | Two RJ-45, one 9-pin serial, two Universal Serial Bus (USB) 2.0, Video, PS/2 mouse, PS/2 keyboard, ID push button with blue/amber LED, RJ-45 for optional DRAC 4/I management controller |
| Front Ports | Two Universal Serial Bus (USB) 2.0, ID push button with blue/amber LED, 15-pin video, system power on/off button |
| Power | 700W, hot-plug redundant power, 110/220 Volts |
| Cooling | Hot-plug, redundant cooling fans |
| Operating Temperature | 10° to 35°C (50° to 95°F) |
| Storage Temperature | -40° to 65°C (-40° to 149°F) |
| Operating Relative Humidity | 20% to 80% (non-condensing) |
| Storage Relative Humidity | 5% to 95% non-condensing |
| Operating Vibration | 0.25G at 3Hz to 200Hz for 15 minutes |
| Storage Vibration | 1.54Grms at 10Hz to 250Hz for 15 minutes |
| Operating Shock | 1 shock pulse of 41G for up to 2ms |
| Storage Shock | 6 shock pulses of 71G for up to 2ms |
| Operating Altitude | -15.2m to 3,048m (-50ft to 10,000ft) |
| Storage Altitude | -15.2m to 10,668m (-50ft to 35,000ft) |

Dell 2950 PowerEdge server

| Characteristic | Specification |
|-----------------------------|--|
| Processor | Dual Core Xeon Processor 5140 4MB Cache, 2.33GHz, 1333MHz FSB |
| Memory | 1 GB |
| Hard Drives | 36GB RAID 1 (Two 36GB, SAS, 3.5-inch, 15K RPM Hard Drives) |
| Operating System | Microsoft® Windows® Server 2003, Standard Edition |
| Fibre Channel Adapter | GVG SCSI |
| iSCSI Adapter | Qlogic SANblade 1-Gbps iSCSI dual-TOE PCI-X Host Bus Adapter |
| Removable Media Drive | 24X IDE CD-RW/DVD ROM Drive (No Floppy Drive) |
| Communications | Dual Embedded Intel Gigabit Server Adapter on motherboard |
| Graphics | ATI ES1000 with 16MB SDRAM |
| Form Factor | 2U |
| Dimensions (with bezel) | 75.68 cm (29.79") D x 44.7 cm (17.6") W x 8.656 cm (3.38") H |
| Rack Weight | 26.76kg (59 lb), maximum configuration |
| Rack Mount | Sliding rails with rack ear kit |
| Rear Ports | Two RJ-45, one 9-pin serial, two Universal Serial Bus (USB) 2.0, Video, system status indicator connector, system identification button, system status indicator |
| Front Ports | Two Universal Serial Bus (USB) 2.0, NMI button, system identification button, LCD panel, 15-pin video, system power on/off button |
| Power | 750W, hot-plug redundant power, 110/220 Volts |
| Cooling | Hot-plug, redundant cooling fans |
| Operating Temperature | 10° to 35°C (50° to 95°F) |
| Storage Temperature | -40° to 65°C (-40° to 149°F) |
| Operating Relative Humidity | 20% to 80% (non-condensing) |
| Storage Relative Humidity | 5% to 95% non-condensing |
| Operating Vibration | 0.25G at 3Hz to 200Hz for 15 minutes |
| Storage Vibration | 0.5G at 3Hz to 200Hz for 15 minutes |
| Operating Shock | 1 shock pulse of 41G for up to 2ms |
| Storage Shock | 6 shock pulses of 71G for up to 2ms |
| Operating Altitude | -16m to 3,048m (-50ft to 10,000ft) |
| Storage Altitude | -16m to 10,668m (-50ft to 35,000ft) |

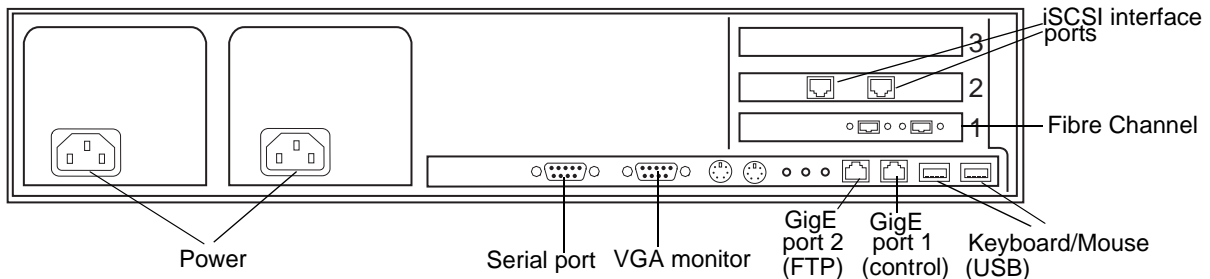
Setting up the K2 media server

Both the Dell PowerEdge 2850 and the Dell PowerEdge 2950 are qualified as platforms for the K2 Media Server. This section provides information on both platforms.

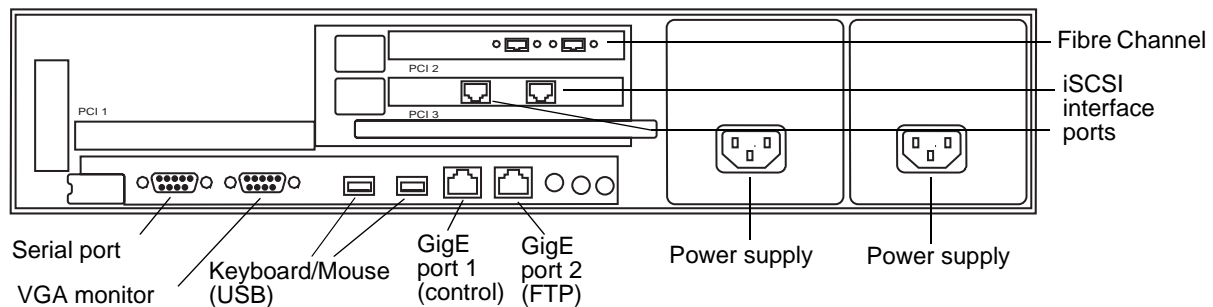
Do the following to prepare the K2 media server:

- Install the server in its permanent location. Refer to the rack mount instructions that you received with the server's product bundle.
- Provide power to the servers.
- Connect cables as follows:

Dell 2850 PowerEdge server



Dell 2950 PowerEdge server



Connect the two iSCSI interface ports as follows:

- For Levels 2 and 3, connect to media ports on the GigE switch.
- For Levels 2R and 3R, connect A servers to media ports on the A GigE switch. Connect B servers to media ports on the B GigE switch.
- For Nearline, do not connect the iSCSI ports. They are not used for the Nearline storage system.

Connect GigE port 1 and GigE port 2 as follows:

- For Levels 2, 3, and Nearline, connect to control ports on the GigE switch.
- For Levels 2R and 3R, connect A servers to control ports on the A GigE

switch. Connect B servers to control ports on the B GigE switch.

Connect one of the Fibre Channel ports to the RAID storage device.

Connect the serial port as follows:

- For Levels Levels 2, 3, and Nearline, make no connection to the serial port. This port is only used on redundant K2 Storage Systems.
- For Level 2R, make a direct connection between the serial ports of the two servers.
- For Level 3R, make a direct connection between the serial ports of redundant server pairs. Connect server 1A to server 1B, and connect server 2A to server 2B.

Take care to use the proper serial cable to interconnect redundant K2 Media Servers that take the role of file system/database servers. This cable supports the heartbeat mechanism whereby the servers monitor each other's health. It is a 9 pin serial cable, but it is not a standard RS-232 null modem cable. The heartbeat cable is supplied with your system (Grass Valley part number 174-8137-00) and has a pin configuration as follows:

1 – 4
2 – 3
3 – 2
4 – 1&6
5 – 5
6 – 4
7 – 8
8 – 7
9 – No Connect

- Assign a control network IP address to GigE port 1. Use standard Windows procedures.
- Change the hostname. Use standard Windows procedures.
- Configure SNMP properties so the trap destination points to the NetCentral server PC. Use standard Windows procedures. If you are not using the SNMP community name “public”, configure the community name and set permissions to RW. Also make sure that the Authentication trap is enabled.

Operation considerations

- When you receive a K2 Media Server new from the factory, at first startup an End User License Agreement (EULA) dialog box opens automatically on the screen. By agreeing you can dismiss the dialog box and allow startup processes to continue. This is normal behavior and occurs only at the first startup.
- 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 can have either one dual-port iSCSI interface card or two single-port iSCSI interface cards. 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 3.1.12 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.

- Description: In the GigE switch configuration procedure in the *K2 Storage System Instruction Manual* part number 071-8461-01, the spanning tree step is missing.
- Workaround: The missing step in the procedure enables spanning tree operation. To verify the setting, access the switch's Web configuration application, click **Configuration | Device Features**, and make sure Spanning Tree is set to **On**.

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.

