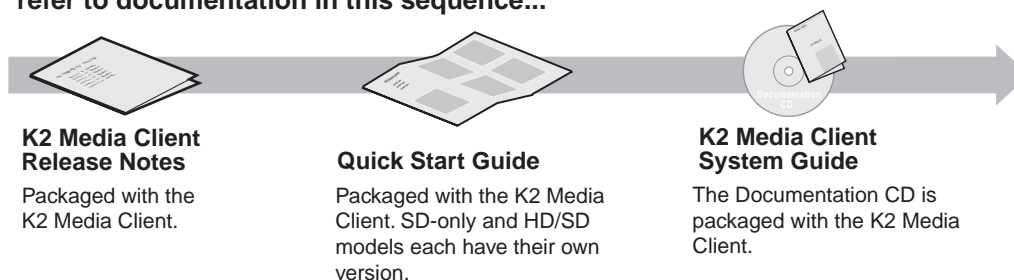


# K2 Storage System Version 3.1.14 Release Notes & Upgrade Instructions

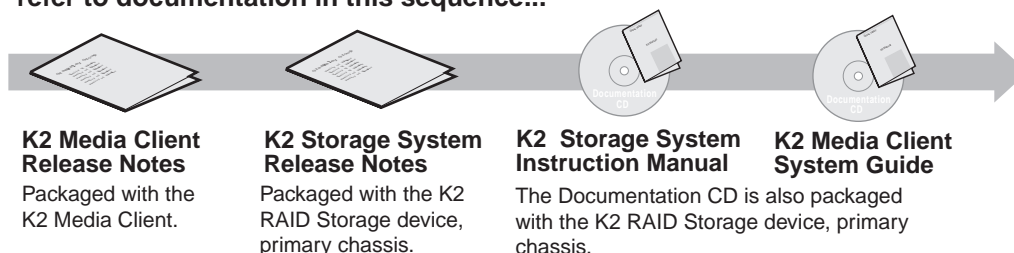
These release notes contain the latest information about the hardware and software of the K2 Storage System. For the complete description and instructions read the *K2 Storage System Instruction Manual*.

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...**



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## 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](mailto:gvgtechsupport@thomson.net).

### Phone Support

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

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

### Authorized Support Representative

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

## 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.
- **SQL 2005** — This release of K2 system software is qualified to work with Microsoft SQL Server 2005, which is on new K2 Media Servers shipping from the factory. To retain compatibility, this release is also qualified to work with SQL 2000, which is on previously shipped K2 Media Servers. Therefore, upgrading to K2 System Software version 3.1.14 on existing systems does not require an upgrade to SQL Server 2005.
- **RSTP GigE switch configuration** — Recent testing has revealed that the HP ProCurve Ethernet switches must have their Spanning Tree Protocol (STP) configured to RSTP, rather than STP. Some switch configuration procedures do not have this specified. You should check this setting on your switch or switches as soon as possible, as instructed in [“Verifying spanning tree settings” on page 27](#).

## 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 3.1.13

- **Factory installation** — This release provides updated software for pre-installation at the factory and for upgrade of existing systems at customer sites. The release contains quality and performance improvements.
- **Product compatibility** — This release is qualified with updated versions of Grass Valley News products. Refer to [“Grass Valley products” on page 11](#).
- **Media File System** — Upgrade to version 2.6.5b50 SNFS (StorNext File System) software is required. This is the media file system software.
- **2900 series switch** — A new Gigabit Ethernet switch, the “ProCurve Networking Switch 2900 Series” is qualified for use with K2 Storage Systems. Its use and configuration are the same as the existing 3400cl series switch, as documented in the *K2 Storage System Instruction Manual* part number 071-8461-01, with the following exceptions:

- **Set Flow Control to Enable** for all ports and trunks on the 2900 series switch. This is an important difference from the configuration of the 3400cl series switch, in which Flow Control is set to Disable.

**NOTE: You must set Flow Control to Enable. Failure to do so results in unacceptably low performance for record operations.**

- The switch has been qualified with **firmware version T.11.12**. Check the firmware version on the switch and downgrade or upgrade as necessary.
- The two 10 Gigabit ports are standard on the 2900 series switch.

2900 series switches and 3400cl series switches are fully compatible and can coexist on the network. Having the Flow Control setting different on ports and/or trunks between the two different models of switches (enable for 2900 series, disable for 3400cl series) does not cause problems. If your existing 3400cl series switches are properly configured, it is not necessary to reconfigure them in order to make them work with 2900 series switches.

## Version 3.1.12

- **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.

## 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 3.1.14 release of K2 software are summarized in the following tables:

### Components on K2 Storage System devices

Versions of components that reside on K2 Storage System devices are compatible with this 3.1.14 release of K2 software as follows:

K2 device	Component	Version	Comment
K2 Media Client	Windows Operating System	Windows XP	With the latest updates
	AppCenter	3.1.14	—
	Media file system (SNFS)	2.6.5b50	—
	QuickTime	7	—
K2 Media Server	Windows Operating System	Windows 2003 Server	With the latest updates
	K2 Server software	3.1.14	—
	Media file system (SNFS)	2.6.5b50	—
	QuickTime	7	—
	SQL Server	2000 or 2005	Systems with multiple K2 Media Servers must be at the same SQL version on all servers. Contact Grass Valley Support for more information.
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	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	Filename: 04FH05VN.BIN Upgrade to this version is optional.
	Controller firmware for nearline expansion chassis	06F	Filename: DEA_AP.06F



## 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 <sup>a</sup>	Comments
73G	10K	Interface	0003	ST373207FC 0003.bin	These older versions are still compatible.
		Servo	B58		
		Interface	DB90	ST373207FC DB90.bin	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	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	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.)

<sup>a</sup>. For Level 2 RAID, interface and servo microcode are combined in one file

## 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 <sup>a</sup>	Comments
73G	10K	Interface	0003	CH7_10K_Interface.0003	These older versions are still compatible.
		Servo	B58	CH7_10K_ST373207FC_Servo.B58	
		Interface	DB90	CH7_10K_Interface.DB90	Upgrade to these versions is optional.
		Servo	B5A	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	CH7_10K_Interface.DB90	Upgrade to these versions is optional.
		Servo	B5A	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	CH7_10K_Interface.DB90	Upgrade to these versions is optional.
		Servo	B5A	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.)

<sup>a</sup>. For Level 3 RAID, interface microcode and servo microcode each have their own file

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.

## Grass Valley products

Grass Valley products are compatible with this 3.1.14 release of K2 software as follows:

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	6.1	Qualified with Aurora products except Aurora Browse. Contact Grass Valley Support for an update on Aurora Browse qualification.
News products	5.6c	If your News products are at version 5.6b or lower, you must upgrade them to version 5.6c to be compatible with K2 System Software version 3.1.13 or higher.
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	—
K2 TimeDelay	2.1.13	—
K2 Avid plug-in	1.0.0.5	—
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 3.1.14 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 3.1.14 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 3.1.14. 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)

Skip this step if:

- SNFS is currently at version 2.6.5b50. Skip ahead to “[Step 8: Upgrade QuickTime](#)”.

Do this step if:

- SNFS is at a version lower than 2.6.5b50.

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 3.1.14 K2 System Software CD in the K2 Media Server’s CD drive or otherwise access the version 3.1.14 installation files.
3. Open the following file:

`\\snfs\SNFS2.6.5b50Simple.exe`

**NOTE:** Do not open *SNFS2.6.5b50Simple\_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 3.1.14 K2 System Software CD in the K2 Media Server’s CD drive, if it is not already inserted, or otherwise access the version 3.1.14 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:

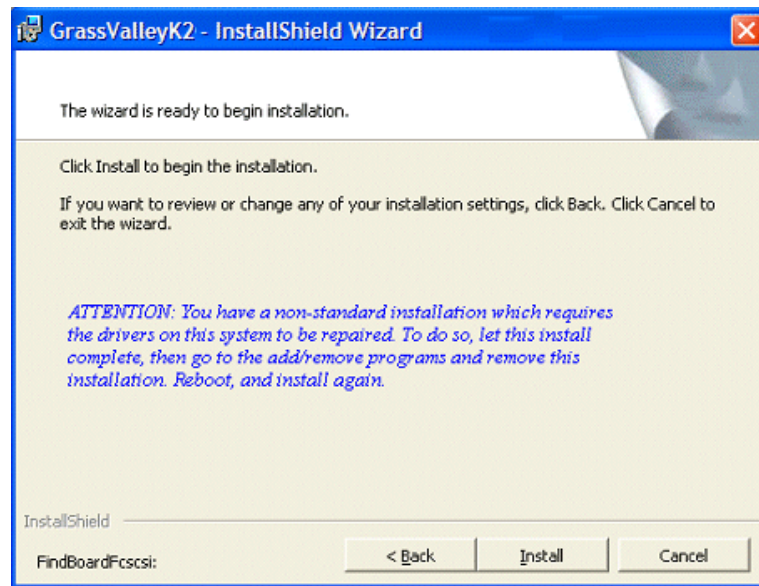
1. Make sure all connected K2 Media Clients are shut down.
2. Insert the version 3.1.14 K2 System Software CD in the K2 Media Server’s CD drive, if it is not already inserted, or otherwise access the version 3.1.14 installation files.
3. Open the following file:  
*\K2Server\setup.exe*
4. Follow the 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.

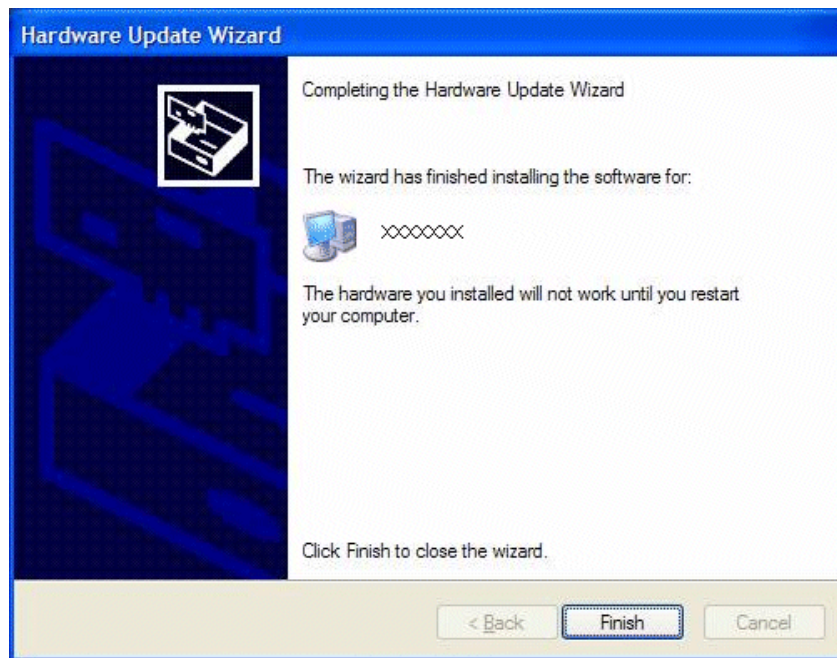


If one or more messages appear referring to software unsigned or untested, as in the following examples, you can safely continue.



- 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 3.1.14 K2 System Software CD in the Control Point PC’s CD drive or otherwise access the version 3.1.14 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.

## 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:

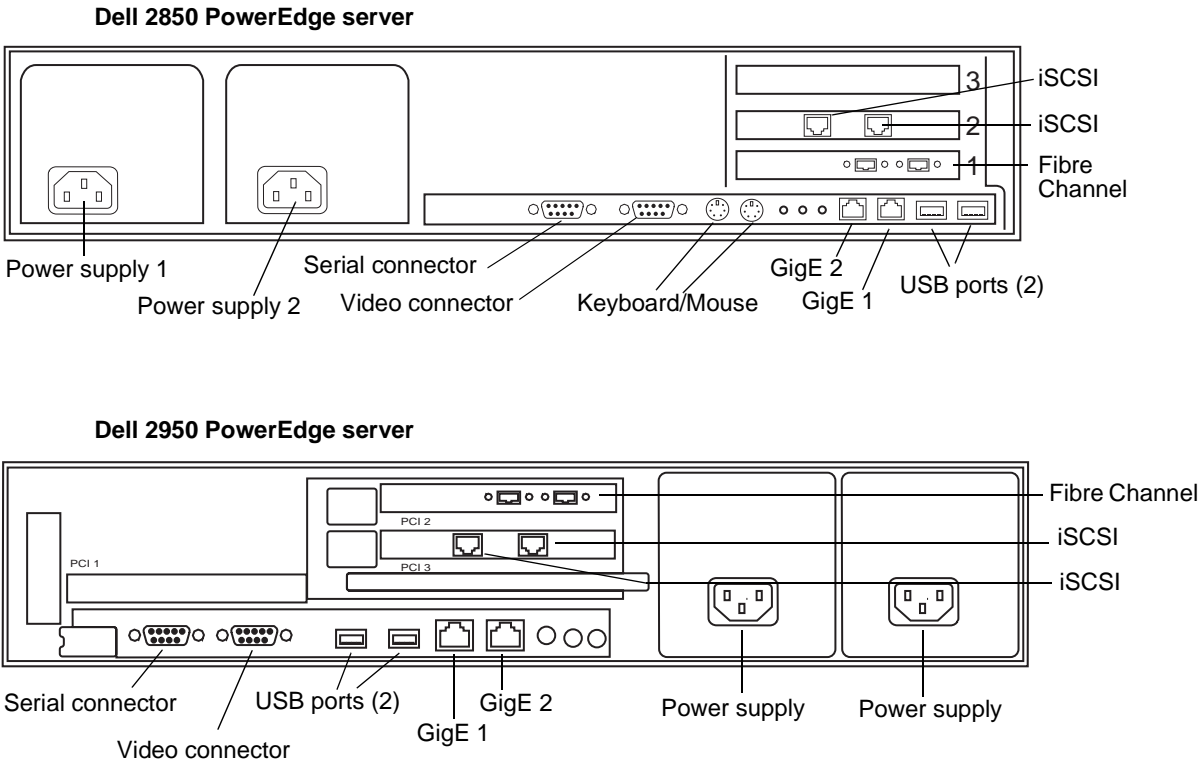
1. Do the procedure on the backup server.
2. Shut down the backup server and leave it shut down. Do not startup the backup server at this time.
3. Do the procedure on the primary server.
4. Restart the primary server. Wait until startup is complete and networks are up before continuing.
5. Start up the 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, 800MHzFront 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 Gigabit1 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**

<b>Characteristic</b>	<b>Specification</b>
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)

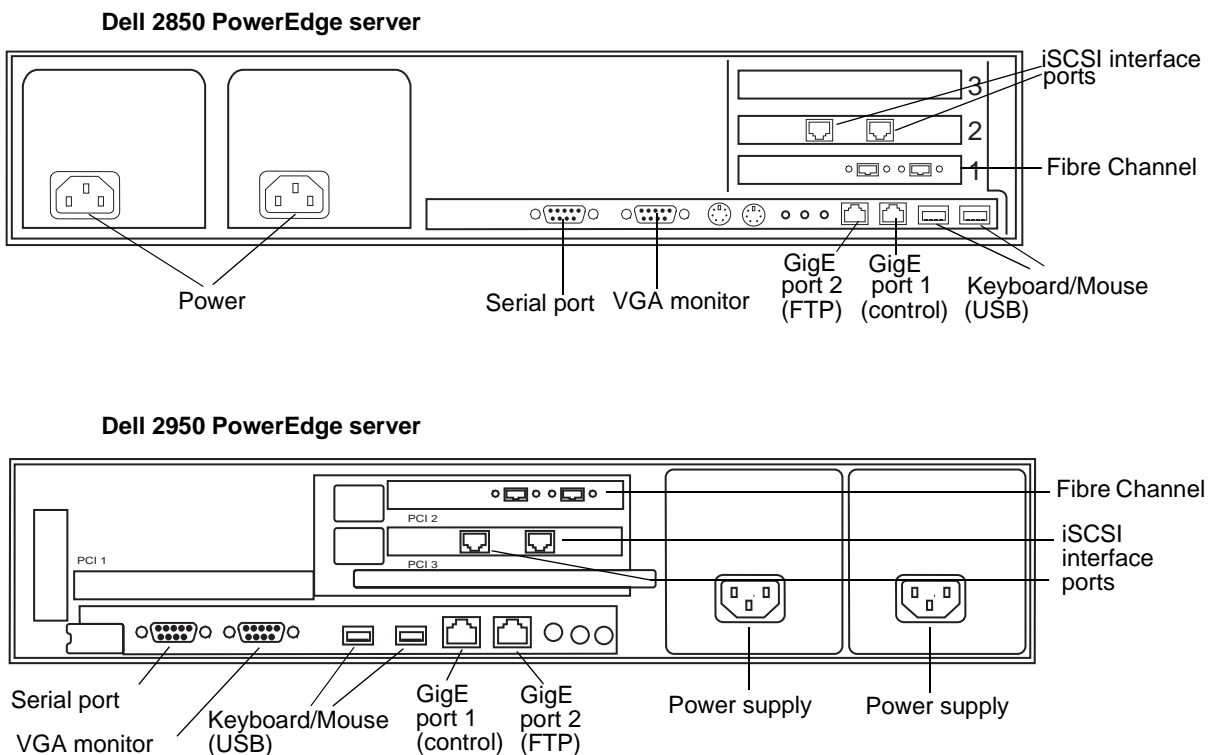


## Setting up the K2 media server

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:



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.

## Verifying spanning tree settings

Use the following procedures to check and (if necessary) set your HP ProCurve Ethernet switches to have the proper spanning tree settings. These procedures apply to both the 3400cl series switches and the 2900 series switches. Refer to the *K2 Storage System Instruction Manual* for the complete switch configuration procedures.

### Check the firmware version

You must have the proper version of firmware on the switch to be able to check and make the settings.

1. Telnet to the switch and login with the administrator username and password.
2. At the switch console command (CLI) prompt, type the following, then press **Enter**:

```
menu
```

If prompted to save the current configuration, answer no (press the n key) to proceed.

The main menu opens.

3. From the main menu, tab to **Command Line (CLI)** and press **Enter**. The command prompt appears.
4. Type the following, then press **Enter**:

```
show flash
```

Information is displayed similar to the following example:

```
HP_iSCSI_switch1# show flash
Image                Size(Bytes)   Date   Version
-----
Primary Image       : 3287779     03/15/05 M.08.86
Secondary Image    : 3287779     03/15/05 M.08.86
Boot Rom Version: I.08.07
Current Boot       : Primary
```

5. Check the Primary Image Version and proceed as follows:
  - If the version is not M.08.86, you must change to version M.08.86 before continuing. These procedures are qualified only with version M.08.86. Refer to the documentation you received with the switch for instructions to change the firmware. After you have changed the firmware, continue with the next procedure.
  - If the version is M.08.86, continue with the next procedure.

### Check spanning tree settings

1. If you have not already done so, telnet to the switch and login with the administrator username and password.

2. At the switch console command (CLI) prompt, type the following and press **Enter**:  

```
show spanning-tree
```

Spanning tree information is displayed.
3. Check the spanning tree information and make sure that settings are correct, as follows:  

```
STP Enabled: Yes  
Force Version: RSTP-operation
```
4. If settings are correct, no further configuration is required.
5. If settings are not correct, you have the following options:
  - If you have one switch only and the switch is not connected to any other switches, these spanning tree settings are recommended, but not required. You should make the correct settings at your next opportunity when it is convenient.
  - If your switch is connected to another switch, either because you have a multi-switch K2 Storage System or for any other reason, these spanning tree settings are required. You must correct your spanning tree settings as soon as possible.
6. Changing spanning tree settings requires a restart of the switch, so you must make the settings while the K2 Storage System is offline. When you can take your system offline, continue with the next procedure.

## **Configure RSTP**

1. Stop all media access on the K2 Storage System.
2. If you have not already done so, telnet to the switch and login with the administrator username and password.
3. At the switch console command (CLI) prompt, type the following and then press **Enter**:  

```
configure
```

You are now in configuration mode.
4. To set spanning tree to RSTP, type the following and then press **Enter**:  

```
spanning-tree force-version rstp-operation
```

This configures spanning tree, but it does not turn spanning tree on.
5. Type the following, then press **Enter**:  

```
menu
```

When prompted, save the configuration by pressing the y key.  
The main menu opens.

6. Proceed as follows, depending on the STP Enabled setting that you discovered when you checked spanning tree settings:
  - If STP Enabled is already set to Yes, no further configuration is required. Restart the switch to put changes into effect.
  - If STP Enabled is set to No, you must turn spanning tree on using the switch's Web interface. Continue with the next procedure.

## Enable spanning tree

1. From the control point PC or another PC, make sure that you have a direct Ethernet cable connection to the switch, with no switches, routers, proxies, or other networking devices in between.
2. On the PC, open Internet Explorer and type the switch's IP address in the Address field, as in the following example.

http://192.168.100.61

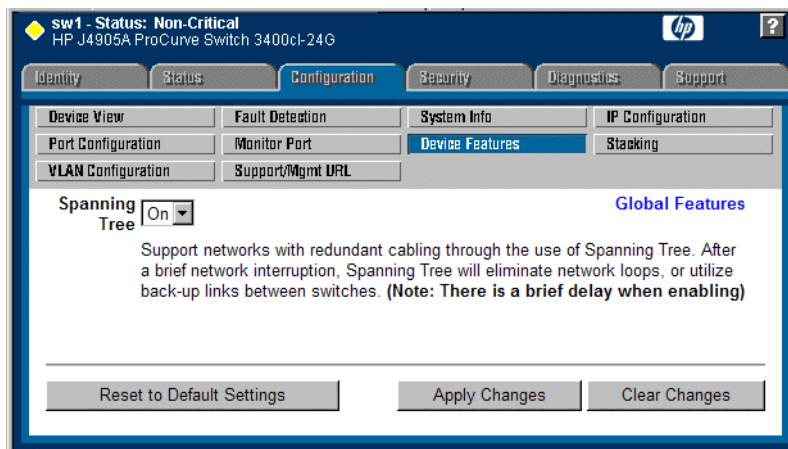
This should be the name or IP address as currently configured on the switch.

3. Press **Enter** to open the switch's configuration application.

**NOTE:** *The configuration application for the HP ProCurve switch requires Java.*

You can also access the switch's configuration application from the K2 System Configuration application.

4. In the switch's configuration application, choose **Configuration**, then **Device Features**.



5. Set Spanning Tree to **On** and click **Apply Changes**. If prompted, log in with the switch's administrator username and password.
6. Close the configuration application.
7. Restart the switch to put changes into effect.

## **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 3.1.14 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, refer to the procedure earlier in these release notes.

### 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.