



# K2 ASI Media Client

Installation and Service Manual

SOFTWARE VERSION 5.4

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# ***Finding Information***

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## **About this manual**

This manual describes the K2 ASI Media Client and provides instructions for installing the product in a variety of applications.

## **How this manual is organized**

This manual is organized around the tasks required to install and configure the K2 ASI Media Client. The following describes the chapters included in this manual:

**Chapter 1, *Product Description*** — Provides an introduction to the K2 ASI Media Client product.

**Chapter 2, *Installing the K2 ASI Media Client*** — Contains procedures for connecting and configuring the K2 ASI Media Client.

**Chapter 3, *Servicing the K2 ASI Media Client*** — Contains procedure for installing/removing a K2 ASI card and the corresponding driver as well as backup and recovery strategies.

## Using the Dell Server Documentation

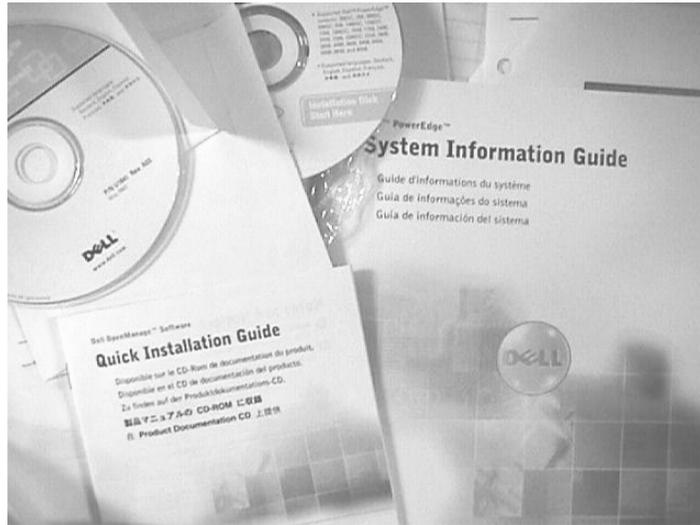
This manual contains all of the information you need to install the K2 ASI Media Client, however, a full set of Dell server documentation has been provided on the *Dell Product Documentation* CD-ROM. Refer to the documents on this CD-ROM only as required by procedures in this manual.

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

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



**CAUTION:** Do not use the Dell Quick Installation Guide provided with the Dell CD-ROM package. This guide includes instructions for using the OpenManage software CD-ROM to install an operating system. The K2 ASI Media Client comes fully configured and is ready for installation. To begin installation, refer to the installation chapter in this manual.



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## Getting more information

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

### Release Notes

The K2 ASI Media Client Release Notes are included in the K2 Storage System Release Notes. The information in this document includes software upgrade instructions, software specifications and requirements, feature changes from the previous releases, and any known problems.

### NetCentral Documentation

The NetCentral product has its own documentation set, described as follows:

- **NetCentral User Guide** — This is a printed manual. It provides instructions for installing, using, and administering the NetCentral monitoring system.
- **NetCentral Help** — From the NetCentral interface access on-line help as follows:
  - For general help with NetCentral manager, select **Help | NetCentral Help Topics**. This content is identical to that in the NetCentral User Guide.
  - For help specific to monitoring K2 ASI Media Client devices, select **Help | Device Providers** and then select the monitored device.

K2 ASI is monitored from NetCentral as a DELL PC device. Error messages may be available from SNMP traps.

### Thomson Grass Valley Web Site

This public Web site contains all the latest manuals and documentation, and additional support information. Use the following URL.

<http://www.thomsongrassvalley.com>.

### Dell Web Site

This public Web site contains all the latest manuals and documentation, and additional support information for the Dell Server used to implement the K2 ASI Media Client. Use the following URL.

<http://www.dell.com>

## Grass Valley Product Support

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

### Web Technical Support

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

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

**Technical Support E-mail Address:** [gvgtechsupport@thomson.net](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.



## END-OF-LIFE PRODUCT RECYCLING NOTICE

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

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

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



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





# Safety Summaries

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

These servicing instructions are for use by qualified personnel only.

## Safety Precautions

### Avoid electric overload

Do not apply a mains voltage that is outside the range specified in this manual.

### Circuit overloading

Considerations should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

### Reliable earthing (required for UL)

Ensure that your device is properly grounded before power-up. Grounding is through the power cords.

### Mains power and circuit overloading (required for UL)

The connection panel should comply with the legislation in force in the country of installation.

Connection panel position in the rack must ensure that plugs and power cords are within easy reach for switching off purposes.

### Use proper power cord

Use only the power cord specified for this product and certified for the country of use.

### Rack mounting instructions (required for UL)

#### Elevated operating ambient

If installed in a closed or multi-unit rack assembly, the operating air ambient temperature of the rack environment may be greater than room ambient.

Provide proper ventilation. Ventilation to keep the equipment in an environment compatible with the maximum ambient temperature specified by the manufacturer (see section Specifications).

#### Reduced air flow

Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

### **Mechanical loading**

Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

### **Reliable earthing (required for UL)**

Reliable earthing of rack-mounted equipment should be maintained.

Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

### **Power disconnecting**

Disconnect power before removing protective panel, soldering or replacing components (these operations can be performed by qualified service personnel only).

## **Injury Precautions**

### **Do not operate without covers**

To avoid electric shock or fire hazard, do not operate this equipment with cover or blank panels removed.

### **Do not service alone**

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

### **Do not operate in explosive atmosphere**

To avoid injury or fire hazard, do not operate this product in an explosive environment (atmosphere and materials).

### **Do not operate in wet/damp conditions**

To avoid electric shock, this product should only be operated in dry conditions.

### **Avoid exposed circuitry**

Do not touch exposed connections and components when power is present.

### **Use care when servicing with power on**

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

If the chassis has more than one power supply cord, disconnect all power supply cords before servicing.

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## Handling precautions (Weight >18 kg)

When fully equipped, the chassis can be heavy (see section Specifications for more details). To avoid injury, it is therefore advisable to take all the necessary precautions when installing the device in a rack (or removing it from a rack).

Ask another person for help or use an adapted carry lift.

## Replacement of lithium battery

The product includes a lithium battery which should never require replacing. If for any reason replacement does prove necessary, please observe the following conditions:

The operation must only be performed by qualified personnel.



**CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer, dispose of used batteries according to the manufacturer's instruction.**



**ATTENTION: Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.**

Do not dispose of batteries with the general household waste.

## Specific safety instructions for Finland, Norway and Sweden

**Finland:** Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan.

**Norway:** Apparatet må tilkoples jordet stikkontakt.

**Sweden:** Apparatens skall anslutas till jordat uttag.

# Product Damage Precautions

## Fitting

Observe the installation instructions in section [“Rack Mounting”](#).

## Dusty atmosphere

As the device features no air filter, it must be installed in a dust free environment.

## Provide proper ventilation

Provide proper ventilation to prevent product overheating. All empty slots should be fitted with blank panels (mask plates) so as not to impair ventilation.

## Do not operate with suspected failures

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

## Replacing components

Only use components from or approved by Grass Valley.

## Retain original packaging

If equipment is returned to the Customer Services Department, the faulty device must be packed where possible in its original packaging (protective corners and boxes).

## Use proper fuse

Use only the fuse type and rating specified for this product.

## Do not operate without covers

Do not operate this product with covers or panels removed.

## Keep product surfaces clean and dry

# Safety Terms and Symbols

### Terms in This Manual

These terms may appear in this manual:



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



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

### Terms on the Product

These terms may appear on the product:

**DANGER** indicates a personal injury hazard immediately accessible as one reads the marking.

**WARNING** indicates a personal injury hazard not immediately accessible as you read the marking.

**CAUTION** indicates a hazard to property including the product.

### Symbols on the Product

The following symbols may appear on the product:



DANGER high voltage



Protective ground (earth) terminal

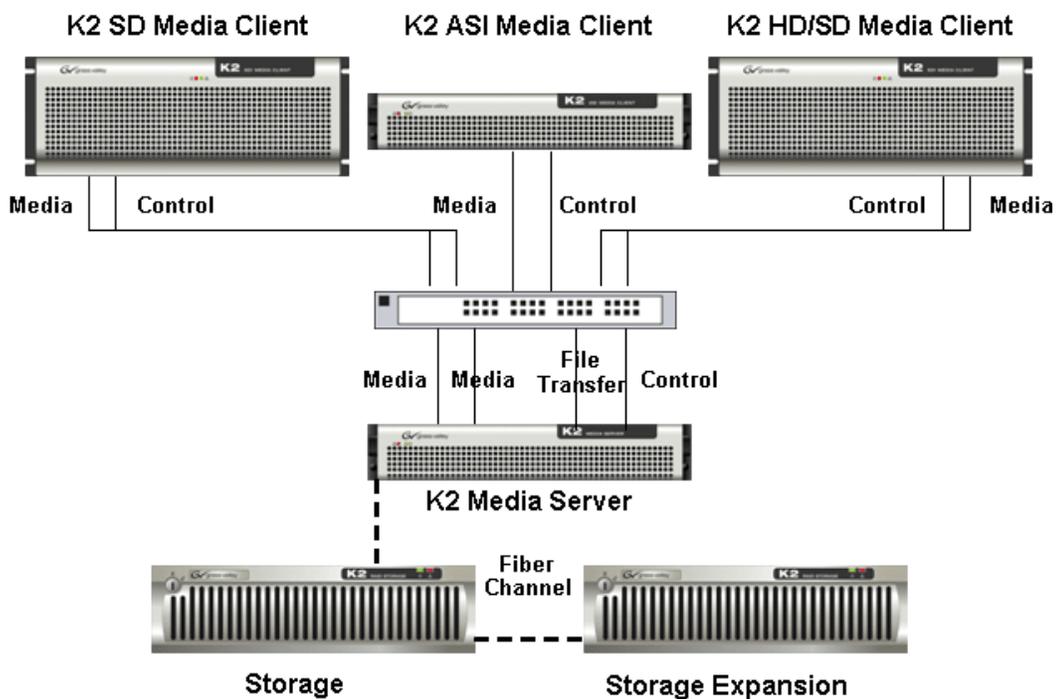


ATTENTION – refer to manual



# Product Description

The K2 ASI Media Client is an MPEG-2 transport stream capture device that uses the K2 SAN for media storage. It receives a live Multiple Program Transport Stream from an ASI input and provides advanced record capabilities of this stream (manual or triggered captures). Material recorded by K2 ASI Media Client then manifests as a K2 clip on the SAN.



The K2 ASI Media Client comes with the following items:

- A 2-RU rackable device
- An ASI input card, limited to 84 Mb/s
- A dual port Gigabit Ethernet adapter for remote control and iSCSI access to shared storage
- An RS-422 card for remote control
- A Software Suite, which allows operating captures locally or remotely

The K2 ASI Media Client product is further described in the following sections:

- [“K2 ASI Media Client Features” on page 19](#)
- [“K2 ASI Media Client Technical Specifications” on page 19](#)
- [“K2 ASI Media Client Operating Limits” on page 20](#)

## K2 ASI Media Client Features

Grass Valley K2 ASI Media Client components & features are:

- High performance ASI input scanning
- Real-time program de-multiplexing and analysis
- Support for MPEG-2 video with SD or HD contents
- Frame-accurate manual or automated capture capabilities
- Support for in-band (SCTE35) or out-band (GPI) commands
- Interfacing with most popular automation systems through VDCP
- Easy-to-Use Graphical User Interface, based on dynamic video thumbnails
- SNMP Monitoring

## K2 ASI Media Client Technical Specifications

### Server Characteristics

<b>Item</b>	<b>Description</b>
PC server	DELL-2850
OS	Windows 2003 Server R2
CD-ROM	Standard
MPEG-2 TS interface	1 dual I/O ASI card
Network interfaces	Dual-port Gigabit Ethernet Controller (RJ-45 connectors).
RS422 interface	Dual port RS422 serial board
Power supply	Two redundant PSU

## Services

The following Windows services run during operation to allow specific K2 ASI Media Client functionality.

Service	Description
Video Service	This service controls K2 ASI software engine start-up.
Grass Valley FTP Daemon	This service supports transfers between K2 ASI and K2 appliance software that occur internally on the K2 ASI Media Client.
SNMP Service SNMP Trap Service	These services are standard Windows service that has been adapted for the K2 Media Client. They are required only for remote monitoring via a SNMP manager.

## K2 ASI Media Client Operating Limits

Feature	Performances
ASI input	1 input from the two available connectors is available at a time.
Input bit-rate	84 Mb/s maximum; 1 Mb/s minimum.
Record	Up to 4 simultaneous record sessions.

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## ***Installing the K2 ASI Media Client***

The K2 ASI Media Client allows recording live MPEG-2 streams and makes them available from the K2 storage system for play back purposes.

This section describes the procedure to install and configure a K2 ASI Media Client unit in a typical K2 Level 2 Storage system. In such a system, K2 ASI Media Client should be considered as an iSCSI Client, and integrated as a K2 Appliance.

This section contains the following topics:

- [“Hardware Installation” on page 22](#)
- [“System Installation” on page 25](#)

# Hardware Installation

## Rack Mounting

The K2 ASI platform is based on a DELL Power-Edge 2850:

- Unit width: 482.6mm
- Unit depth: 756.8mm
- Unit height: 86.6mm
- Weight:
  - of the server alone (in its most loaded configuration): 27kg
  - of the rack mounting accessories: 5kg

*NOTE: Use of a minimum 800mm depth rack is required.*

When installing the K2 ASI client in a rack, product ventilation is a prime concern:

- Air taken in at the front
- Air ejected through the rear

The K2 ASI is shipped with two rails and an articulated arm (for cables). For rack mounting instructions, refer to the *Dell™ Systems - Rack Installation Guide* included in the accessory pack.

## Front Panel Removal

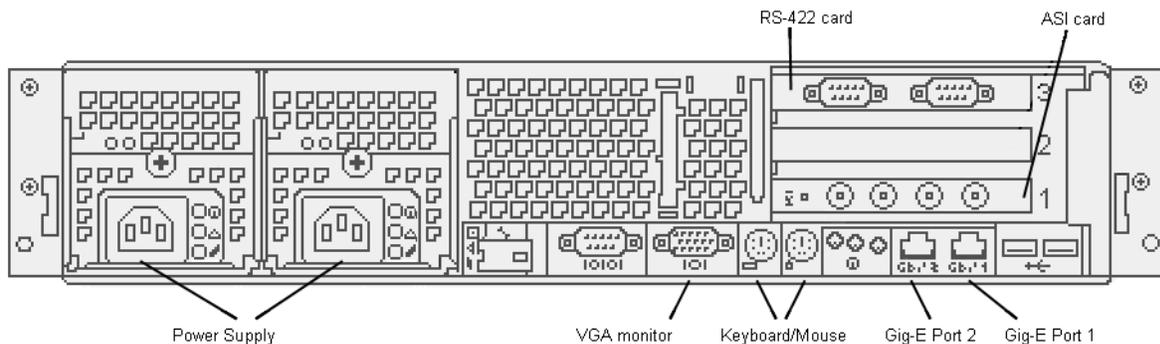
The front panel needs removing to gain access to the **On/Off** button.

Lightly press on the metal clips either side of the grey front panel.

## Connecting System I/O ports

The K2 ASI Media Client is equipped with:

- An ASI input/output card, featuring two inputs and two outputs
- An RS-422 dual port card



## Network Connections

The K2 ASI Media Client operates as a K2 Appliance component into a K2 Shared Storage. It therefore requires:

- One connection to the K2 Storage System control network: Gig-E port 1 named Control Connection #1
- One connection to the media (iSCSI) network: Gig-E port 2 named Media Connection #1

## ASI Connection

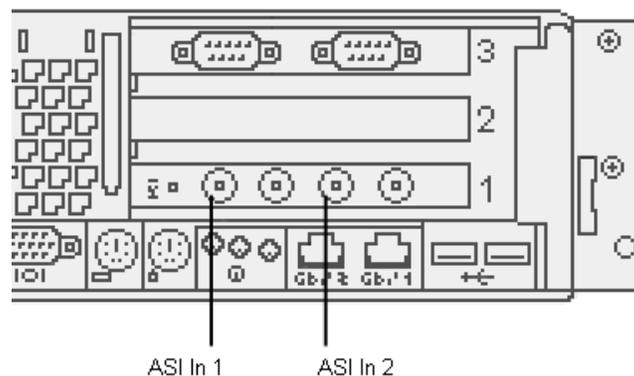
One ASI input/output card is located at the back of your system. It provides:

- Two input connectors (only one can be used at a time)
- Two output connectors (not used)

Its specifications are detailed in the table below.

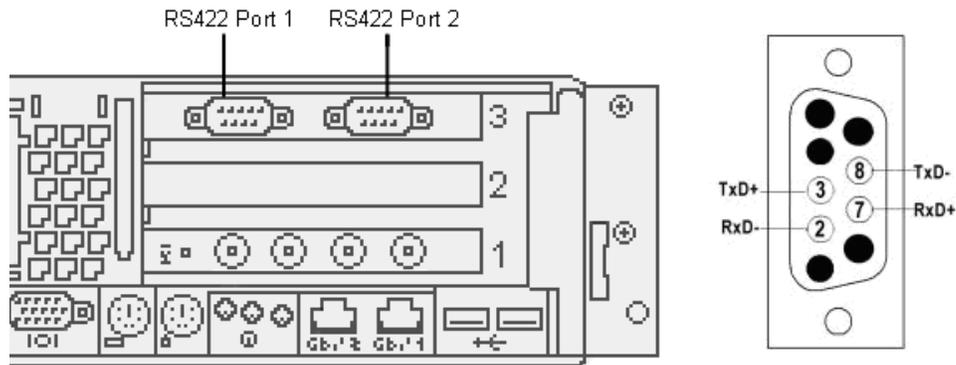
Item	Description
Frequency offset: accuracy	$\pm 1.0$ ppm.
Frequency offset: drift, typical	$\pm 0.5$ ppm per year
Connector	BNC, female
Transport stream rate per input	84 Mbps maximum; 1 Mbps minimum
Data format	Supports both burst and packet mode of ASI format
Packet length	188, 204 bytes
Signal amplitude	880 mV p-p maximum; 200 mV p-p minimum
Termination	75 Ohms
Return loss	- 17 dB, 27 to 270 MHz

The incoming MPEG-2 transport stream should be therefore connected to ASI in 1 or 2.



### RS422 Connection

The RS-422 card allows connecting the K2 ASI Media Client to an Automation System, using the VDCP protocol. Two serial ports are available and their pin assignment is described in the figure below.



### Supplying Power

Once you have installed your system and completed making the signal, network, and peripheral connections:

- Plug the device end of power cable to the product's main connector(s)
- Ensure that the on/off switch is switched "off". If the product is not fitted with an on/off switch ensure the local main supply is switched off
- Plug the power cable to the local main power supply



**CAUTION:** Supply power to the product with the type of power source indicated on the marking label.

**Mains Voltage Range.** You can power the system computer from mains without setting a voltage selection switch (see section Specifications for more details on the voltage).

**Mains Frequency.** The product operates on either 50 Hz or 60 Hz line frequencies.



**CAUTION:** Never plug a supply unit which is not connected to a server.



**CAUTION:** To prevent damage, protect the product from power fluctuations and temporary interruptions with a regulating non-interruptible power supply. This device protects the hardware from damage caused by power surges and voltage spikes. In addition, it allows the product to operate temporarily during a power failure.

**NOTE:** The power supply cord should comply with the legislation in force in the country of installation.



**CAUTION:** Do not supply power to the product until all connections have been made.



**WARNING:** *The product is designed for connection to an earth-grounded AC outlet and must be correctly earthed through the main outlet end of cable.*

## System Installation

The K2 ASI Media Client allows recording live MPEG-2 streams and makes them available from the K2 storage system for play back purposes. This section describes how to add a K2 ASI Media Client device to an existing K2 Storage System.

### System Requirements

The requirements for adding a K2 ASI Media Client appliance to an existing K2 Storage System are as follows.

- The K2 ASI Media Client is connected to the K2 Storage System control network (NIC port 1) and iSCSI network (NIC port 2)
- IP address and other network properties are configured for the control network
- SNMP properties are configured so the trap destination points to the NetCentral server PC
- If using host files for network name resolution, the K2 ASI Media Client is in the K2 Storage System host file and the host file is on the K2 ASI Media Client
- Adequate bandwidth is available on the K2 Storage System to meet the bandwidth needs of the K2 ASI Media Client
- .Net and MSXML (refer to the K2 Storage System Release Notes for the latest version information)

### Adding a K2 ASI Appliance

The procedure for adding a K2 ASI Media Client to a K2 Storage System is the following.

1. Open the K2 System Configuration application and log in with permissions equivalent to K2 Administrator or higher.
2. In the tree view, select the name of the K2 Storage System, which is the top node of the storage system view.
3. Click **Add Device**. The **Add Device** dialog box opens.
4. Select **K2 Appliance**.
5. Click **OK**. The new client device appears in the tree view.
6. In the tree view, select the K2 ASI Media Client.
7. Click the **Configure** button. The **Client Configuration** wizard opens.

**NOTE:** *If your server has a large number of K2 Media Client and other iSCSI clients, you are prompted to restart the K2 Media Server when you configure clients and cross the following thresholds: 64 clients; 80 clients; 96 clients.*

8. Enter the hostname for the K2 Appliance, as currently configured on the K2 ASI

Media Client.

If you have multiple K2 Appliance types, you should configure your highest bandwidth K2 appliances first, as this ensures load balancing is correct. Refer to the load balancing topic in the K2 Media Client System Guide.

9. For Storage Access, leave **iSCSI** selected.

10. For K2 Appliance Type, select **K2 ASI**.

11. Click **Next**. The **Software Configuration** page opens.

This page checks the K2 ASI Media Client appliance for the required software:

- SNFS
- .NET 1.1
- Grass Valley K2 Appliance Software

12. Identify software installed on the K2 ASI Media Client and proceed as follows.

- If any software with Yes in the Required column reports as Not Installed, you must install it on the K2 ASI Media Client. After installing the software, click Check Software.
- If all software with Yes in the Required column reports as Installed, click Check Software.

13. When all required software reports as **Installed**, click **Next**. The **Network Configuration** page opens.

This page configures both control and media (iSCSI) network connections. The top port is the port over which the K2 System Configuration application is communicating with the K2 ASI Media Client. If correctly configured, it is already assigned the control network IP address, which is displayed in the window.

14. Select the media (iSCSI) port and click **Modify**. A network configuration dialog box opens.

15. Enter the media network IP address and subnet mask and then click **OK**.

16. Click **Next**. The **Database Client Configuration** page opens.

This page connects the K2 ASI Media Client as a media database client to the K2 Media Server taking the role of media database server. If there are redundant K2 Media Servers, both are listed on this page as database servers.

17. Verify that the K2 ASI Media Client is connecting to the correct K2 Media Server or servers as follows:

- For non redundant K2 Storage Systems, the client connects to the only server.
- For iSCSI redundant K2 Storage Systems, the client connects to server A as database server 1 and server B as database server 2, so that if there is a problem with one server, the other server is available.

18. Click **Check**.

19. When the wizard reports that the configuration check is successful, click **Next**. The **File System Configuration** page opens.

This page connects the K2 ASI Media Client as a media file system client to the K2

Media Server taking the role of media file system server. If there are redundant K2 Media Servers, both are listed on this page as file system servers

20. Verify that the K2 ASI Media Client is connecting to the correct K2 Media Server or servers as follows:

- For non redundant K2 Storage Systems, the client connects to the only server.
- For iSCSI redundant K2 Storage Systems, the client connects to server A as file system server 1 and server B as file system server 2, so that if there is a problem with one server, the other server is available.

21. Click **Check**.

22. When the wizard reports that the configuration check is successful, click **Next**. The **iSCSI Initiator Configuration** page opens.

This page load balances the K2 appliance's iSCSI connection to the K2 Storage System. The iSCSI adapters on your K2 Media Server or servers are listed here as iSCSI targets.

The K2 System Configuration application determines the iSCSI target to which each K2 appliance subscribes, based on the bandwidth values that you enter. This enforces policies by which each K2 appliance has sufficient bandwidth for its intended use and no individual iSCSI target is oversubscribed.

23. Click **Modify**. The **Bandwidth Input** dialog box opens.

24. Enter 10 MB\sec as the bandwidth for the K2 ASI Media Client, unless specified otherwise by Grass Valley.

25. Click **Assign TOE**.

The K2 System Configuration application automatically chooses an iSCSI target to assign the K2 ASI Media Client. A message appears that specifies the chosen iSCSI target, but allows you to choose a different iSCSI target if a custom SAN type.

26. Respond to the message as follows:

- In most cases you should accept the iSCSI target chosen by the K2 System Configuration application. Click **Yes**, and then **OK** to continue.
- If your system design specifies a different iSCSI target, click **No**, and then select the iSCSI target on the **iSCSI Initiator Configuration** page.

27. Click **Next**. The **Completing the Configuration Wizard** page opens.

28. Click **Finish**. The K2 ASI Media Client restarts and the wizard closes.

## **Identifying K2 ASI Media Client Software Versions**

To identify K2 ASI Media Client software versions, use the following procedure.

1. In the K2 System Configuration application tree view, open the node for the K2 ASI Media Client. This exposes the nodes for individual configuration pages.
2. Select the **Software configuration** page to view software version information.
3. To check for recent changes in software, click the **Check** button.

## Modifying K2 ASI Media Client Control Network Settings

To modify the hostname or IP address of a K2 ASI Media Client, use the following procedure. Refer to procedures elsewhere in this chapter for the details of individual steps.

1. Make sure you know the load balancing (bandwidth) parameters currently set for the K2 ASI Media Client in the K2 System Configuration application. You must reconfigure these parameters later in this procedure.
2. Remove the K2 appliance from the K2 Storage System.
3. Modify the hostname or IP address.
4. Edit hosts files or other name resolution mechanisms for all the devices of the K2 Storage System.
5. Add the K2 appliance as a new device to the K2 Storage System, load balancing the K2 appliance just as it was previously. This is important, as you want the K2 System Configuration application to assign it to the same available bandwidth on the same iSCSI target as previously.

## Modifying K2 ASI Media Client Media Network Settings

To modify a media network IP address for a K2 ASI Media Client, use the following procedure. Refer to procedures elsewhere in this document for the details of individual steps.

1. Stop media access on the K2 ASI Media Client.
2. In the K2 System Configuration application, open the **Network configuration** page for the K2 ASI Media Client.
3. Modify the IP address.
4. Restart the K2 ASI Media Client.

## Installing K2 ASI Video Application

The K2 ASI Video Application allows you to operate the K2 ASI Media Client. To install this software application on any Control Point PC, proceed as follows.

1. Insert the K2 ASI Media Client CD-ROM on the Control Point PC.
2. Run the `setup.exe` application located on the K2 ASI Media Client CD-ROM from the Control Point PC.
3. An install wizard appears: click **Next**.
4. Select **Client only** and click **Next**.
5. Click **Next** and then **Finish**.

**NOTE:** The remote Video Application uses the 4012 and 4751 TCP/IP ports to connect to a K2 ASI device.

---

## **Servicing the K2 ASI Media Client**

The K2 ASI Media Client product contains two PCI cards that can be replaced in case of hardware failure: the ASI board and the RS-422 board.

Before replacing any K2 ASI card, please first stop all media access on the K2 ASI Media Client, and use the K2 System Configuration application to take the K2 ASI Media Client offline.

This section contains the following topics:

- [“Installing/Removing the K2 ASI Card” on page 29](#)
- [“Installing the K2 ASI Card Driver” on page 32](#)
- [“Installing/Removing the RS-422 Card” on page 33](#)
- [“Backup and Recovery Strategies” on page 33](#)

### **Installing/Removing the K2 ASI Card**

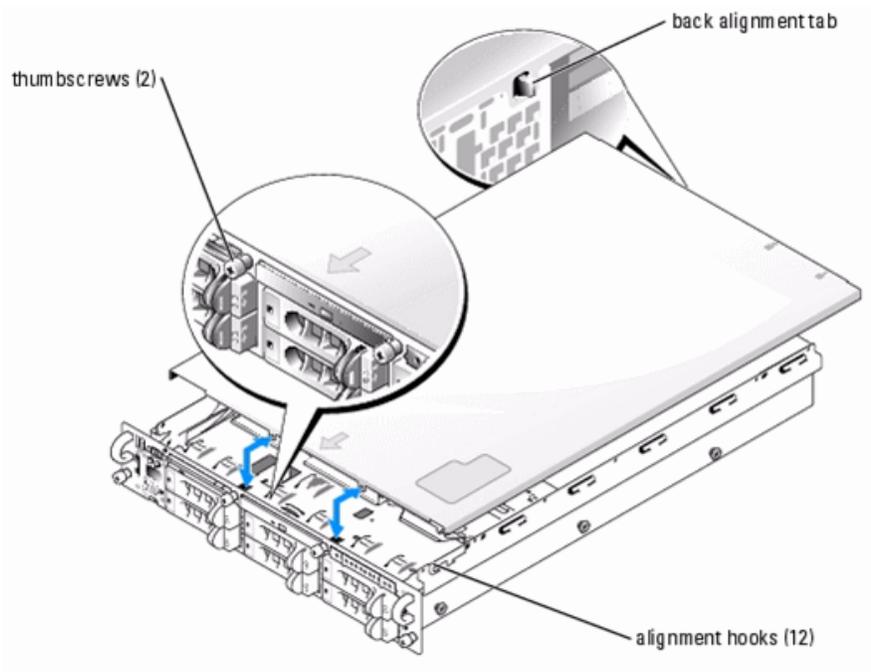
The K2 ASI Media Client ASI card is a PCI-X board that must be placed on slot number 1.



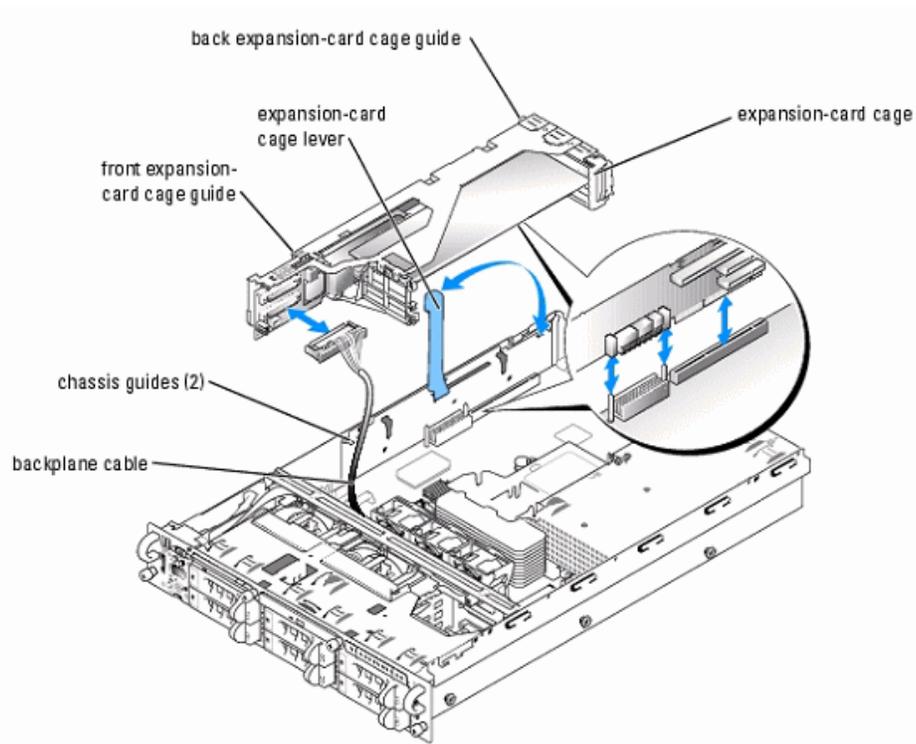
***CAUTION: Only trained service technicians are authorized to remove the system cover and access any of the components inside the server.***

To install the K2 ASI board, please follow the steps below:

1. Turn off the server and any connected peripherals and unplug the server from the mains.
2. Remove the front panel as indicated in section [“Front Panel Removal”](#).
3. Remove the cover as follows:
  - a. Loosen the two thumbscrews that secure the cover to the chassis (see the following Figure).



- b. Slide the top cover backward and grasp the cover at both sides.
  - c. Carefully lift the cover away from the system.
4. Disconnect all cables of already installed K2 ASI boards.
5. Remove the expansion-card cage as follows:
  - a. Rotate the expansion-card cage lever up to a 90-degree angle until the cage is released from the chassis (see the following Figure).

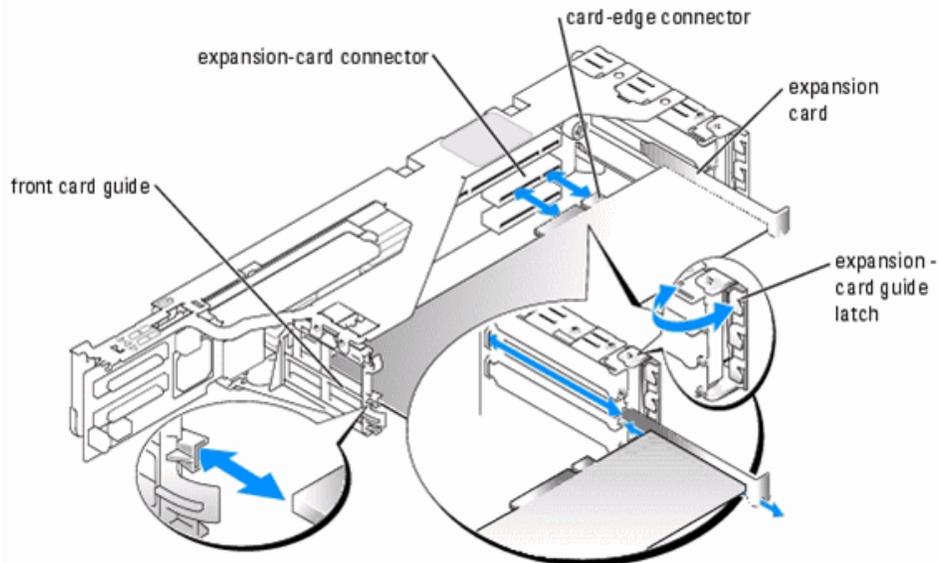


The expansion-card cage lever pauses at a 45-degree angle, but is not unlocked. Continue rotating the lever to a 90-degree angle to unlock the cage.

- b. Lift the cage straight up to clear the chassis.
- c. Disconnect the backplane cable(s) from the riser board.

**NOTE:** If two SCSI data cables are connected to the riser card, carefully note their relative locations so that you can reinstall them correctly.

- 6. Position the expansion-card cage so that the riser board lies horizontally on your work surface.



7. Open the expansion-card guide latch and remove the filler bracket.
8. Install the ASI expansion card as follows:
  - a. Align the front edge of the K2 ASI expansion card with the front card guide.
  - b. Position the expansion card so that the card-edge connector aligns with the expansion-card connector on the expansion-card riser board.
  - c. Insert the card-edge connector firmly into the expansion-card connector until the card is fully seated.
  - d. When the card is seated in the connector, close the expansion-card latch.
9. Replace the expansion-card cage as follows:
  - a. Reconnect the backplane cable(s) to the riser board.
  - b. With the expansion-card cage lever rotated to a 90-degree angle, align the guides on each end of the expansion-card cage with the guides on the chassis wall, and lower the cage.
  - c. Rotate the expansion-card cage lever down until the handle is flush with the top of the cage to secure the cage in the chassis.
10. Reconnect all the cables.
11. Replace the cover, plug the system and its peripherals back in and switch them back on.

## Installing the K2 ASI Card Driver

Since the driver is already installed on the K2 ASI Media Client, it is not necessary to install it when you replace the ASI card. Install the driver only if directed by Grass Valley Support.

To install the K2 ASI card driver, proceed as follows.

1. Insert the K2 ASI Media Client CD-ROM.
2. Run `UpdateDriver.exe` (located into the `.\Drivers\PassPro` folder).
3. An install wizard opens; press **Y** to all the questions.

## Installing/Removing the RS-422 Card

The K2 ASI Media Client ASI card is a PCI-X board that must be placed on slot number 3.



**CAUTION:** *Only trained service technicians are authorized to remove the system cover and access any of the components inside the server.*

To install the K2 ASI board, please follow the steps described in the [“Installing/Removing the K2 ASI Card”](#) section above.

## Backup and Recovery Strategies

On the K2 ASI Media Client, there are three partitions on the system drive to support backup and recovery strategies as follows:

- The C: drive is for the Windows operating system and applications
- The D: drive is for SNFS applications
- The E: drive is for storing a system image of the other partitions. From the E: drive you can restore images to the C: drive.

When you receive a K2 ASI Media Client from the factory, the machine has a generic image on the E: drive. This image is not specific to the individual machine. It is generic for all machines of that type.

The recommended recovery disk image process is described in the K2 Storage System Instruction Manual.



# Glossary

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## **Ancillary Data**

Digital data carried in the non-active video regions of a serial digital interface (SDI) stream as defined by SMPTE 291M.

## **ASI**

Asynchronous Serial Interface.

## **Channel**

A set of resources that together have the ability to record or play media.

## **Clip**

Portion of recorded stream corresponding to a useful asset.

## **Compression Layer**

The compression layer is the compressed elementary stream and associated metadata that describes the elementary stream. Usually this layer is organized into variable length packets with headers and payloads of data, in which case the bit stream is called a packetized elementary stream, or PES.

See the appropriate MPEG-2, DVB, or ATSC standards for more information.

See also [“System Layer”](#).

## **Configuration Manager**

A tool in K2 Media Client that configures system settings.

## **Cue Tone**

Also called trigger tones. Signal that is broadcast by the network feed and intercepted by the video switch. Cue tones notify the systems of breaks in programming during which events can be aired. Cue tones can be initiated by a tone from a network or by contact closure. There are two types of cue tones: start tones trigger an insertion to begin, and stop tones can stop an event that is being played.

## **Drop Frame**

Drop frame is a timecode adjustment that applies to NTSC video only. Due to the framerate of NTSC, a system that normally outputs 30 frames per second must adjust timecode by subtracting two frames every minute except every tenth minute to achieve the effective framerate.

## **Drop Frame Timecode**

Drop-frame time code yields precise running times, but frames are not all numbered sequentially. A frame number must be dropped periodically to keep the clock right. In non-drop time code, all frames are numbered sequentially, but the ending time code of a program does not accurately give the program's length.

## **Ethernet**

A local area network used with some remote protocol applications; it operates over twisted wire and over coaxial cable.

**Event**

An event is defined as a video list element: it is recorded or played from one time during a certain period.

**Fibre Channel**

A general set of integrated standards developed by ANSI for flexible information transfer over multiple physical interface types.

**GOP**

Group Of Pictures: this represents the MPEG 2 group of pictures I, B and P. The beginning of a GOP is always an I picture.

**GPI**

General Purpose Interface. GPI triggers are physical connections between two pieces of equipment. Typically GPI triggers are based on a change of state on a monitored pin of the serial port. For instance you could create a GPI trigger that was operated by a port on a piece of broadcast equipment.

**HD**

High Definition video.

**iSCSI**

Internet SCSI (small computer storage interface) is a storage access protocol that can use a transport layer such as Gigabit Ethernet rather than be restricted to the short distances determined by computer hardware buses. K2 Media Servers use iSCSI for clients that need to deliver media assets with real-time performance. The tuning and optimizing done by Grass Valley permits the use of iSCSI to deliver unparalleled, high-throughput, and deterministic performance.

**K2 Media Client**

A Broadcast Enterprise Server that incorporates IT server platform and storage technologies.

**Non Drop Frame Timecode**

In non-drop time code, all frames are numbered sequentially, but the ending time code of a program does not accurately give the program's length. Drop-frame time code yields precise running times, but frames are not all numbered sequentially. A frame number must be dropped periodically to keep the clock right.

**Protocol**

A convention for data transmission that defines timing, control, format, and data transmission.

**RS-422**

A standard interface, 9-pin serial port connector used with some remote protocol applications; it supports multipoint connections.

**SD**

Standard Definition video.

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**SNMP**

System and Network Management Protocol.

**Status Bar**

Displays status and error messages.

**System Layer**

The system layer is the transport stream with program data and associated metadata that describes the composition and organization of the transport stream. MPEG-2 system layer information includes synchronization bytes, PID numbers, scrambling information, and other indicators, including the start of the transport packet payload. Transport packets can be PES packet, a PSI table, or other private data. ATSC and DVB transport streams are MPEG-2 compatible because the required ATSC and DVB system layer data are MPEG-2 private data structures.

See the appropriate MPEG-2, DVB, or ATSC standards for more information.

**Widescreen Mode**

An aspect ratio of 16:9, as opposed to an aspect ratio of 4:3.



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