



**K2 Media Storage &  
Delivery Systems**

**An IT Bill of Rights**

## A GUIDE FOR BROADCASTERS TO NO-COMPROMISE, FILE-BASED SERVER/STORAGE SYSTEMS

As the acceptance accelerates for IT-based technologies such as video servers, nonlinear editing systems, centralized storage, and more, broadcasters and video professionals must have options that give them the confidence to commit to moving wholesale to approaches that avoid many obstacles that today block their ability to truly improve their workflows.

### **The Changing Nature of Broadcast Operations.**

The nature of broadcast and production operations is rapidly shifting toward widely repurposed content for mobile and other applications; the compelling cost curves of IT technologies; and, the ability to treat assets as files versus pieces of video.

Unfortunately, today, many manufacturers would have you stick to convention about IT-based servers—commonly held beliefs that force you to make concessions and ultimately to compromise optimal workflows and operational results. In fact, many solutions today use consumer desktop technologies to create systems that are vulnerable to single points of failure, complex to install, and cost a bundle.

In other words, it's not all that easy to incorporate IT technologies into your operations and workflows with minimal disruption.

The basic tenets of traditional video server architectures must change to keep pace. Now.

### **Certain, Inalienable Rights.**

As a leading provider of premium-quality content, you have certain, inalienable RIGHTS to a server and storage approach that lets you improve quality, reduce costs, increase flexibility, enhance workflows, and deliver better technologies to improve your overall businesses.

Taken together, these rights enable you to incorporate the latest enterprise server and storage technologies for a powerful yet simple, cost-effective solution that integrates easily into high-performance, networked IP environments – without compromising quality and other issues key to broadcasters and production professionals.

### **1. The right to low-entry pricing and high performance—that remains low for large systems.**

Other server manufacturers promote low-entry prices that rapidly escalate with each added channel.

You have the right to much more – as in half the price for triple the bandwidth and systems that are architected to supply very large amounts of fast, deterministic bandwidth using iSCSI technology as well as large amounts of FTP/CIFS bandwidth for other types of clients.

### **2. The right to storage flexibility.**

We've said it before, and we'll say it again: one size doesn't fit all. Ask most vendors about the true HD and SD bit rates upon which they're basing their storage capacity numbers. The answers can be surprising – and not in a good way.

You have the right to systems that effortlessly scale to large storage amounts; distributed and standalone applications; and at RAID/performance levels that can meet any facility bandwidth and channel requirements.

### **3. The right to easy, reliable, channel scaling and full redundancy.**

There are a host of issues that accompany claims made today about channel scaling abilities.

First, IEEE 1394 simply is not a standard used in any IT environment. But Gigabit Ethernet is. Your next server/storage system should embrace an architecture that can easily accommodate 10 Gigabit Ethernet when that becomes mainstream.

Second, rather than providing a range of channel scaling, module-based approaches to I/O interconnections lead to a huge amount of cabling required in racks and introduce a much higher potential for connection losses. In fact, many times, the number of modules that are recommended for this sort of implementation often can be cut in half.

In either case (FireWire and module approaches to I/O), redundancy is an issue. Or should we say, the lack of redundancy is an issue.

With FireWire interconnects, there simply is no redundancy – an issue particularly for systems in remotely controlled multi-channel payout and for recognition of media I/Os on the network. Daisy-chained I/Os as opposed to dedicated server connections introduce bandwidth limitations—and no guarantee of redundancy, potentially impacting multiple channels.

For larger storage configurations, in many cases today, double the storage and media are required for redundant Fibre Channel support.



# K2

Finally, for automation control, many systems today require a separate PC with no redundancy – which can be a single point of failure with no automatic failure “hot stand-by” configuration.

#### 4. The right to the latest, advanced IT technologies.

Current IT-based server approaches pale in comparison to what we call a distributed intelligence approach to server and storage architecture – an architecture which will deliver entirely new levels of bandwidth flexibility and network-based control.

Among the core technologies that comprise this distributed intelligence approach are the iSCSI (Internet SCSI) networking protocol that delivers high throughput and storage area network (SAN) performance over standard Ethernet connections, File Transfer Protocol (FTP), and Common Internet File System (CIFS) protocol. When coupled with leading optimization techniques, this provides deterministic bandwidth and availability for critical applications such as editing and playout.

And, it enables advanced server/storage systems to handle file-based content from other critical applications, such as automation, archiving, billing, feature editing, traffic, and third-party storage packages.

#### 5. The right to upgrade without disruption to your current system.

It should be possible to add servers and storage for added bandwidth and capacity to existing systems without re-striping – and certainly without being destructive to existing content. A simple reboot should be all that is required.

#### 6. The right to robust software applications.

The true value of a media storage and distribution system has often less to do with I/O, servers, and storage than with the system’s interaction with software at various levels.

Does your server/storage system come standard with a remote-capable, proven operator application center that includes multiple recording modes, simple time delay, playback with cue points, topping/tailing clips, sub-clip creation, basic playlists, graphics import, clip import/export, and clip management and transfer? It shouldn’t be an option.

Also key is remote-capable systems management for easy installation, configuration, and upgrading – and the ability to easily integrate with a variety of third-party systems – such as archive and newsroom systems, and application – such as editing on shared storage, through a tested, proven API.

#### 7. The right to boundless format support.

You shouldn’t have to invest in extra hardware or software to support the import and export of video and graphics assets. From MXF, GXF, and AVI media files to JPEG, TIFF, and BMP graphics files, import and export should be easy.

For critical distribution and playout applications, server/storage systems should enable the storage of ASI streams in one elegant solution, versus a fractured approach involving working with and without demultiplexing. It should be all there for you – in a common management tool and system operator application center.

You have the right to much more – as in half the price for triple the bandwidth



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# THE FORMAT YOU NEED, WHEN AND WHERE YOU NEED IT

## Your High-Quality Content. The format you want, when and where you want. 24 x 7.

Built on and extending the Emmy® award-winning Profile® family of media servers, the new Grass Valley™ K2™ media system employs an open and innovative architecture which combines the extensive video expertise of Grass Valley with the best-in-class solutions available from the IT industry.

And true to its Profile legacy, the K2 media server and media client systems promise to transform the economics of the broadcasting industry.

Designed specifically for the sharing and reuse of digital media assets, these server and client systems are architected entirely around intelligent distributed processing. Ideally suited for IT-centric, file-based environments, they deliver the high-capacity throughput, concurrency, and availability that media-driven operations demand.

Instead of using consumer desktop technologies such as FireWire that are vulnerable to single points of failure – or more traditional and expensive technologies such as SCSI or Fibre Channel – the K2 system incorporates the latest enterprise server and storage technologies. The result: a powerful-yet-simple, cost-effective solution that integrates easily into high-performance networked IP environments, one that features Gigabit Ethernet connectivity, iSCSI access protocol support, RAID 1, 3, and 5 storage, and FTP and CIFS transfers.

When combining these devices with new protocols and patent-pending optimization techniques, that also means providing deterministic availability for critical applications such as editing and playout.

Your content in the format you need, when and where you need it.

Offering rock-solid reliability and redundancy, these server and storage systems offer such incredible scalability that they have yet to meet a facility that is too large to implement. With a simplified graphical user interface for operation and administration as well as new levels of remote network control and a powerful K2 AppCenter, the K2 system greatly simplifies installation. And all at nearly half the cost of other servers.

**Call us today to find out how to assert your bill of rights for your next IT-based server and storage purchase.**

## About Grass Valley

If you watch TV or go to the movies, you've seen Grass Valley products at work. That's because we offer the most comprehensive, multi-format solutions for acquisition, production, storage, and playback-and a strong foundation for centralized, proactive status and activity monitoring. With Emmy® award-winning products and world-class technical and service expertise, we're the experts in professional video and film technologies-especially as broadcast, television, and film production go digital. And we've got the Emmy award-winning technologies and the top-flight customers to prove it.

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