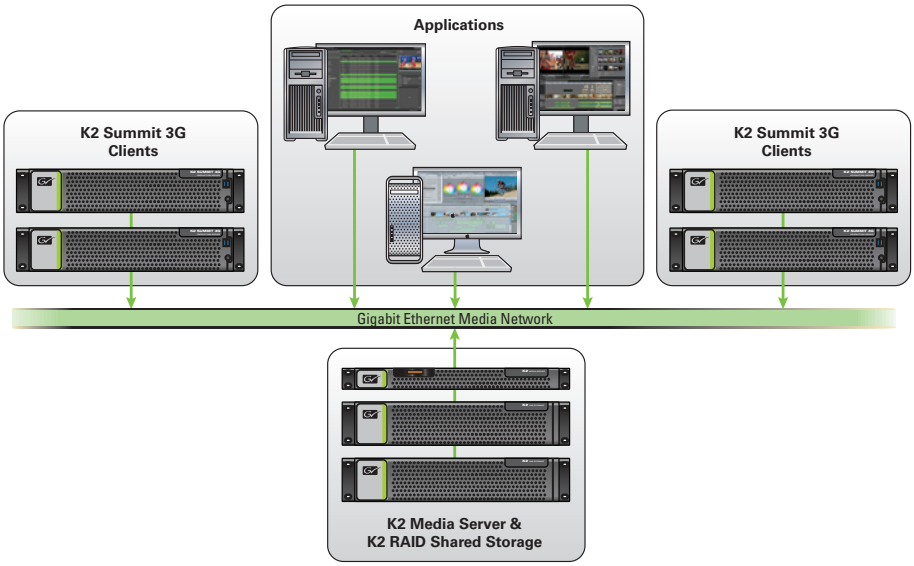
K2 MEDIA SERVER & STORAGE PLATFORM

SOLUTIONS BRIEF



EXECUTIVE SUMMARY

Video servers were one of the first IT-based systems used by broadcasters, and Grass Valley® was involved from the beginning. As performance and capabilities have increased, the K2 platform has become more versatile for different phases of production.

Content is increasingly being acquired, managed, modified, transferred, and played out as digital files. K2 is designed to provide the bandwidth for file-based processes as well as media operations.

A unified infrastructure is crucial to acquire, manage, package, and deliver content. K2 offers the services, formats, and interfaces to handle a diverse range of broadcast media requirements. K2 continues to provide a constant path of advancement as new technologies are introduced.

OVERVIEW

The K2 series of servers and storage provides IT-optimized infrastructure for a broad range of broadcast media environments. K2 incorporates the latest in high-performance computing and storage technologies with easy integration and flexible implementations.

K2 systems are comprised of various components that can be configured in a variety of ways. The K2 Summit® 3G and K2 Solo® 3G clients are used for encoding and decoding video. These devices contain media, networking, and control interfaces. The K2 Summit clients can contain integrated internal storage and operate as standalone units similar to the smaller and portable K2 Solo.

These compact purpose-built media clients offer a high density of capabilities. Some of these include low-resolution proxy creation for applications and monitoring, flexible channel configurations for HD/SD with conversion, 3D, video+key, super slow-motion, multicam record, effects, and monitoring options using integrated VGA multiviewer and secondary SDI outputs. Without internal storage, K2 Summit clients connect to a K2 server. The shared storage modules also connect to the K2 server. The K2 server manages the file system, Quality of Service, and file transfers. Systems are scalable for channel count, bandwidth, storage capacity, and level of redundancy.

The key to file-based infrastructure is bandwidth. The K2 platform features Quality of Service with dynamic allocation of bandwidth where it's needed, guaranteeing that on-air channels never drop a frame of video while simultaneously supplying high-bandwidth FTP file transfer capabilities.

K2 is very flexible as it is designed to enable easy interoperability with systems such as editors, asset management and archive. Open APIs are available to provide true platform extensibility. Other enhancements for file-base operation include shared services for file formats, proxy creation, EDL, playlists, and metadata.

On this foundation, Grass Valley has constantly innovated to deliver a mission-critical, 24/7/365 file-based infrastructure that meets the demands of a wide range of media and broadcast applications.

BENEFITS

K2 provides a flexible infrastructure supplying superior performance and scalability, ease of implementation, and a range of cost-effective configurations:

- **Agile 3G/HD/SD in multiple formats**
- **Flexible channel configurations**
- **Managed bandwidth for media and files**
- **Application hosting**
- **Open interfaces and APIs**
- **Optimized IT technology**
- **Distributed or shared storage**
- **Integrated streaming and proxy creation**

TRENDS

Competitive responsiveness is not a new trend, but one that is shifting with a more-connected industry. Broadcasters and program producers now need to be able to integrate secondary media (graphics, audio, captions, etc.) along with metadata to reuse and repurpose their content for emerging revenue streams. It is also necessary to have an environment that provides the means to scale, upgrade, and add capabilities and services.

With content being acquired, managed, modified, transferred, and played out as digital files, production is more multitrack, file-based, and less dependent on baseband ingest and even playout. By working with digital files, production processes can occur in parallel thus producing additional efficiencies. It is also more conducive to utilizing software tools to manage various workflows.

Events are getting more complex with more sources, higher production values, increases in metadata, and added requirements to distribute material in various ways and formats for use on multiple platforms, including nonlinear formats such as mobile devices and Internet-connected television. Further, additional distribution modes are showing only nominal incremental revenues, so a unified approach to acquiring, managing, packaging, and delivering content is needed to achieve desired return on investment.

CHALLENGES

Production – At the same time events have gotten more complex, there is severe competition and intense downward pressure on capital and operational expense budgets. Flexibility of design and implementation is absolutely key to optimizing usage rates of infrastructure and to support large numbers of different types of events. This provides new opportunities to monetize assets in client-controlled projects.

Distribution – While growth is being seen in over-the-top (OTT), online, and connected television, short-term revenues are limited. Additionally, alternative content delivery methods can be offered from media aggregators and distributors, increasing competition. For broadcasters and program producers to expand their reach, media aggregation and distribution must be done in a cost-effective manner that simultaneously manages multiple output types.

Technology – Ongoing innovation presents a unique challenge. More file-based processes and multiformat delivery increase the need for playout solutions that streamline workflows. The demand to lower both capital and operational expenditures means solutions are needed that improve agility, reduce risk, and increase reliability.

IMPACT

- Capital costs can be reduced by having a smaller number of system components, easy integration with facility infrastructure, and APIs to facilitate customization of deployments.
- Efficiency and productivity is increased by enabling workflows that use automated processes including additional value-added services using various secondary media types.
- With incrementally small costs to add capabilities, revenues over time increase through cost-effective system expansion to increase channel count, capacity, and services with a scalable architecture.
- Operational risks are reduced while quality is increased by utilizing purpose-built devices and optimized applications that incorporate redundancy so that incidents of no content or incorrect content are not a concern.
- Cost of ownership is reduced by system management tools and support services which are based on extensive expertise and result in lower support costs over the lifetime of the system.
- Revenues are enhanced by the lower capital and operational costs of producing and distributing content.

ABOUT GRASS VALLEY

For more than 50 years, the Grass Valley name has been synonymous with innovation, leadership, and performance. Our full range of solutions and services is unmatched in the industry, leveraging the economies of scale of the IT industry with our proprietary core knowledge of media processing and storage. Grass Valley customers include most of the world's leading broadcasters, teleproduction facilities, and service providers, as well as independent video professionals who rely on our products to cover the world's most high-profile live events, as well as to benefit from efficiencies in day-to-day operations. When you're watching news, sports, or entertainment programming—whether on a TV, the web, or a mobile device—you're watching Grass Valley at work in today's connected world.

For information about Grass Valley solutions and services, please visit: **www.grassvalley.com.**

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