

# APPLICATION NOTE

## **How To Maximize The Power Of a K2 System**

**Import and Export – Integration Extensibility**

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K2 incorporates a number of services and features to make it fast and easy to share content with other systems across networks or with standard storage devices.

# Introduction

In a file-based workflow, having the ability to work with a variety of file types from among a wide range of systems is critical for an efficient operation. The Grass Valley™ K2 system has powerful file import and export capabilities to make this possible.

# Connectivity

K2 systems include industry standard interconnects for networking and storage. All K2 clients come with USB connectors to use various storage devices for file import and export. All K2 clients and servers come with Gigabit Ethernet connections, with the latest servers also support 10 Gigabit Ethernet connectivity. These connections can be used for standard networking, and/or connecting to storage arrays such as a NAS as a mapped network drive.

K2 systems support both FTP and CIFS protocols for interchange of files. Therefore connectivity with common IT devices such as PCs, servers, storage arrays, and archives requires no special hardware or software.

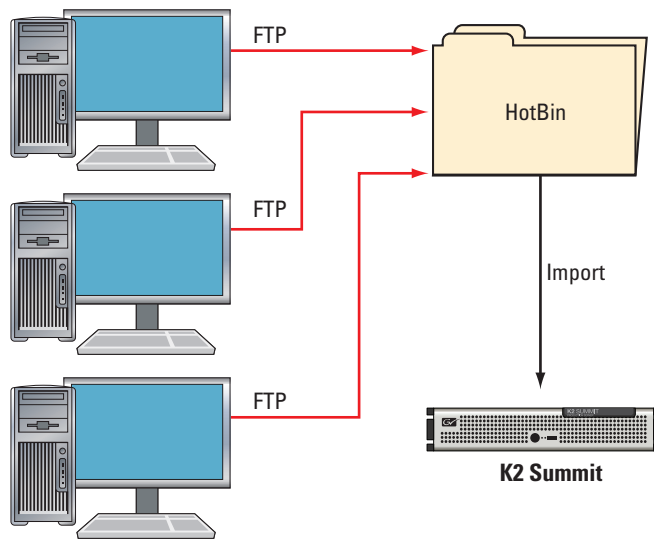


Figure 1 – Files are copied into a HotBin and then automatically imported into K2.

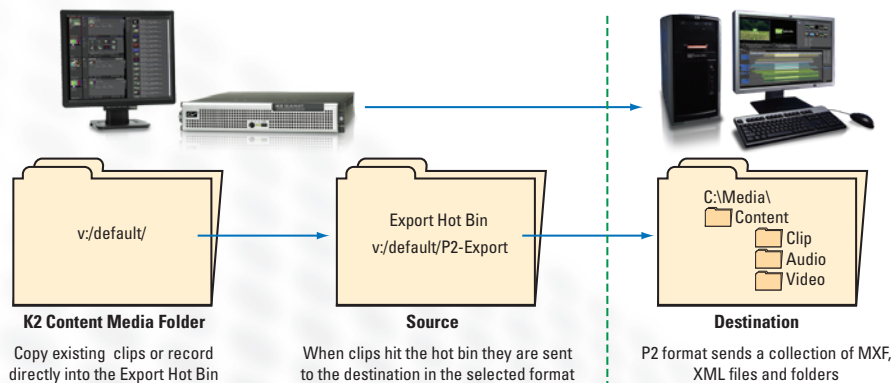


Figure 2 – Automates the process to push content that has been ingested out to a destination where users such as editors can use it.

# Services

HotBins are a feature to automate the import or export of files. A user can manually import and export single files through AppCenter, or use HotBin services to automate the process. (Figure 1).

With HotBins, a user can import or export a variety of supported file or stream types. Through a simple configuration wizard watch folders (HotBins) can be specified on the K2's V drive (video drive). This feature can be used with the K2 Solo™ media server, a stand-alone K2 Summit™ production client, a stand-alone K2 media client, or the K2 media server with the role of primary FTP server on a K2 SAN.

For import HotBin, the service is configured on the K2 system and it monitors a watched folder (HotBin). The watched folder is a specified source directory. The watched folder can be on a stand-alone K2 system, a K2 media server, a Windows PC, a Macintosh PC, or network connected storage array. When files are placed in the watched folder, the HotBin service automatically imports them as a clip into the specified destination bin. The destination bin is on the K2 system that receives the imported media and is within that K2 system's media file system and database. After a specified amount of time, the file is deleted from the HotBin folder.

For export HotBin, the service is configured on the K2 system and it monitors a watched folder. The watched folder is a K2 storage system bin. Media placed in the folder is exported automatically from the K2 system. The watched bin is configured to export the K2 media in the desired clip wrapper format. (MXF Op-1A, MOV, GXF, P2) When K2 clips are moved to the folder, the service validates the media to make sure it has the proper structure for the desired file format. If it is valid, the service then does the necessary processing to export the clip to a designated destination folder. This destination can be to network connected devices such as other K2 systems, PCs, transcoders, or storage arrays such as archive.

The Export service and its HotBin must be on a K2 system that hosts the K2 FTP interface. On a stand-alone K2 system, the service exports the clip from the internal storage or direct-connect media storage of the K2 system. For a K2 media server with role of FTP server, the service exports the clip from the shared media storage of the K2 SAN. In both instances, the HotBin must be on the K2 system's V drive.

XML Import is a K2 system software service that permits a customized import function with a user-defined XML file. This enables clips to be stored on a centralized file system with a range and type of audio, video, and data tracks, but import into a K2 system with just a subset of the video, audio, and data tracks. The watched folder is any standard file system directory that can be recognized by the Windows operating system. Media is transferred to the directory using a third party application. After all the media files are finished being transferred to the watched folder, the third-party application then transfers an XML file to the watched folder. This XML file defines the media files and specifies how they are to be assembled to create a K2 clip. When the XML file finishes transferring to the watched folder, the service validates the XML file to make sure it has the proper structure. If the XML file is valid, the service then does the necessary processing to create the clip in the K2 media storage.

The K2 system also offers a software service that can automatically import syndicated content distributed by companies such as Pathfire and DG FastChannel. This saves significant time, eliminates the need for transcoding, improves quality, and can totally automate the workflow.

# File Wrappers and Types

Sometimes there is a misperception that all files in the K2 systems are GXF. Actually, all data in files on a K2 system are presented as directly accessible elementary streams consisting of discrete tracks for video, audio, timecode, and ancillary data. GXF is simply one of a group of supported file wrappers.

## Graphics Import

- Support for QuickTime files with two video tracks for video and key layout
- The imported file must be QuickTime 32 with alpha RLE 32-bit raster encoding, as produced by the Apple Animation Codec
- File is converted to IMX 50 SD video or AVC-Intra 100 HD video

## Audio Import

- WAV

## Video Import

- AVI: DVCPRO25, DVCPRO50, DVCPRO HD, and DVCAM with audio
- MPEG: Support for MPEG-2 program and transport streams with audio

# Interchange Formats

For some file types, the K2 system can support not only file transfers with real-time wrapping and unwrapping, but also continuous streaming of media. K2 can provide four simultaneous actions with standalone systems and 10 simultaneous actions with K2 SANs. Higher numbers are supported with cueing.

## MXF Op1A

- DV, IMX, AVC-Intra, XDCAM, MPEG-2 I-Frame, and MPEG-2 long GOP
- Import and export of transfers and streaming

## QuickTime

- DV, IMX, AVC-Intra, XDCAM
- Import and export of transfers
- Streaming can be supported with optional GV Connect software application

## GXF

- DV, IMX, AVC-Intra, XDCAM, MPEG-2 I-Frame, and MPEG-2 long GOP
- Import and export of transfers and streaming

A completed continuous (loop) record clip can be exported as MXF or QuickTime, with the result being a flattened stream file. Recording must be completed before the clip is exported, however sub-clips made while recording is underway can be exported. For this feature, MPEG-2 long GOP format is not supported.

Playlists created in K2 AppCenter can be exported as flattened files with no transitions in GXF or MXF.

## P2

- DV and AVC-Intra
- Import and export of transfers—no streaming

With the K2 system's extensive import and export capability, file-based workflows can easily be automated resulting in significant time and cost savings.

## CUSTOMER SUPPORT & PROFESSIONAL SERVICES

Our customer support and professional services offerings ensure optimal system performance and maximize uptime. These services include call centers staffed around the clock, commissioning, professional training courses, and technical maintenance programs and service agreements.

[www.grassvalley.com/support](http://www.grassvalley.com/support)