

APPLICATION NOTE

Interfacing K2 to Avid Editing Systems

**Example Workflows with K2 and Avid Interplay and Avid
Standalone Editing Systems**

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K2's open file system approach makes it easy to interface to various editing systems. This application note describes several methods to optimize your K2 production workflow with various Avid editing systems.

Supported Avid Systems

Introduction

Avid systems are one of many NLE systems customers have integrated with K2 systems. There are many different Avid editing systems with various compression formats supported. This application note provides information on the various ways to move content between your K2 systems and Avid NLEs.

There are two transfer modes:

DHM – Data Handler Module is a K2 plug-in to Avid’s Transfer software. Transfer software runs on standalone NLE systems or on a separate server on a SAN. In earlier Avid systems, this was called Transfer Manager. The plug-in is available from Grass Valley as K2-AvidTM-Client for standalone NLE systems or K2-AvidTM-SAN for Avid Unity or Interplay systems. See http://www.grassvalley.com/products/servers/k2_software/ for more information.

Generic FTP – this is a standard feature in Avid Interplay systems v1.6x and above. This provides a generic FTP interface for specific formats as shown in the table below.

Table 1: Supported Avid Systems

The table below is a summary of different configurations, compression formats, and servers. For DNxHD support see the section at end of this application note.

Avid Standalone Systems	Avid Software Required	Transfer Mode	Import/Export Tools	Supported Formats
Media Composer v3.5.x NewsCutter v7.5.x Symphony v3.5.x	Standalone Interplay Transfer software v1.6x installed on an Avid editing system	DHM with K2 plug-in	Import: Drag and drop from within Avid interface Export: Avid “Send To” command	I-frame formats: • SD/HD, NTSC/PAL • DV25/50/100 (HD) • IMX 30/40/50
		Generic FTP	Avid’s FTP interface	Long GOP formats: • MPEG Long GOP • XDCAM HD —1080i, 720p @ 25, 35, 50 Mb/s • MXF —(Op1a ↔ OPAAtom)
Avid SAN Systems				
Unity Media Composer v3.5.x NewsCutter v7.5.x Symphony v3.5.x Assist v1.6.x Instinct v1.6.x	Interplay Transfer server v1.6.x connected to an Avid Unity Media Network, Avid Unity LANshare, or Avid Unity ISIS that includes an Avid Interplay Server	DHM with K2 plug-in	Ingest: Drag and drop from within Avid interface Export: Avid “Send To” command	I-frame formats: • SD/HD, NTSC/PAL • DV25/50/100 (HD) • IMX 30/40/50
		Generic FTP	Avid’s FTP interface	Long GOP formats: • MPEG Long GOP • XDCAM HD —1080i, 720p @ 25, 35, 50 Mb/s • MXF —(Op1a ↔ OPAAtom)

K2 Support

K2-SD-04:

- SD: DV25/50
- SD: IMX 30/40/50

K2-HD-xx:

- SD: IMX 30/40/50
- HD: XDCAM HD

K2 Summit/Solo:

- SD: DV25/50, IMX 30/40/50
- HD: DVCPRO HD, XDCAM HD, AVC-Intra 50/100*

*AVC-Intra support will be available when Avid introduces support for AVC-Intra export.

Workflow Description

The basic workflow is simple: take content ingested on a K2 server and transfer it to an Avid system for editing. When finished, transfer the edited clip back to K2 for layout.

When using the DHM mode and the K2 plug-in, the workflow is faster as it supports file streaming. File streaming enables editing to start shortly after the file begins to be received on the NLE or on export, and it can be played out on K2 while it is being transferred.

The Avid transfer service module manages the processor-intensive media transfers between Avid's NLEs and other devices such as the K2 server. It runs on a standalone Avid NLE or on a shared storage system.

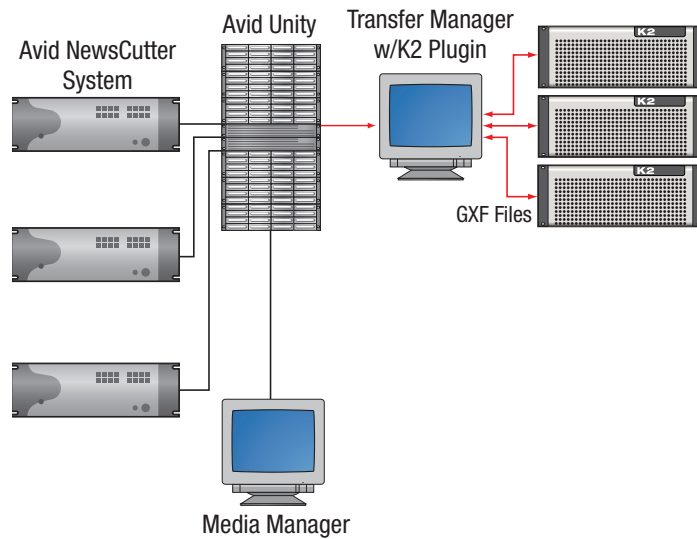


Figure 1. Typical workflow for video- or file-based operations.

Transfer Modes

There are two modes of operating in Avid Interplay Transfer Engine: Data Handler Module (DHM) and Generic FTP

DHM with K2-Avid-TM Plug-in

Avid DHM – The Avid Data Handler Module supports I-frame compression formats as listed in the Table 1. Avid provides an API for the DHM to enable developers to write custom plug-ins for specific products. Grass Valley™ has written a plug-in that works for both K2 and Profile® servers (K2-AVID-TM application software). When using the DHM, all file transfers are wrapped as GXF files.

DHM Import Mode – The K2 plug-in has a K2 file explorer window that lets you drag and drop files from K2 into Avid’s editing bin. Frame Chase Editing (edit while ingesting) is supported with the DHM when used on an Interplay Shared Storage System. Editing can start approximately one minute after start of transfer. This is one of the main advantages of using the K2 plug-in.

DHM Export Mode – When done editing there is a “send to” function in the Avid editor that will send one or more

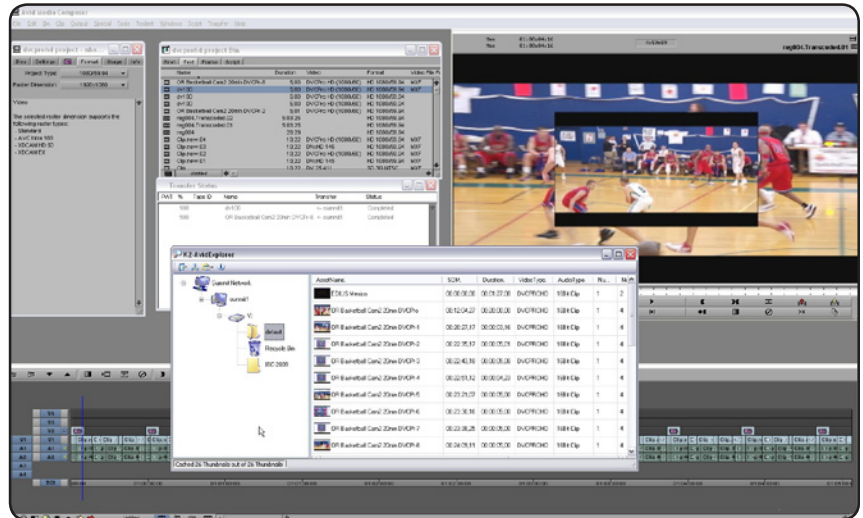


Figure 2. The K2 DHM plug-in provides a view into the K2 file system and lets you transfer files between K2 and Avid’s NLEs.

files to a preconfigured destination. This is configured in the Interplay Transfer Engine configuration tool. Playout of the file on K2 can start approximately one minute after it starts to receive the file. It can also be configured to send to a main and backup K2 server in one operation, another advantage of using the K2 plug-in.

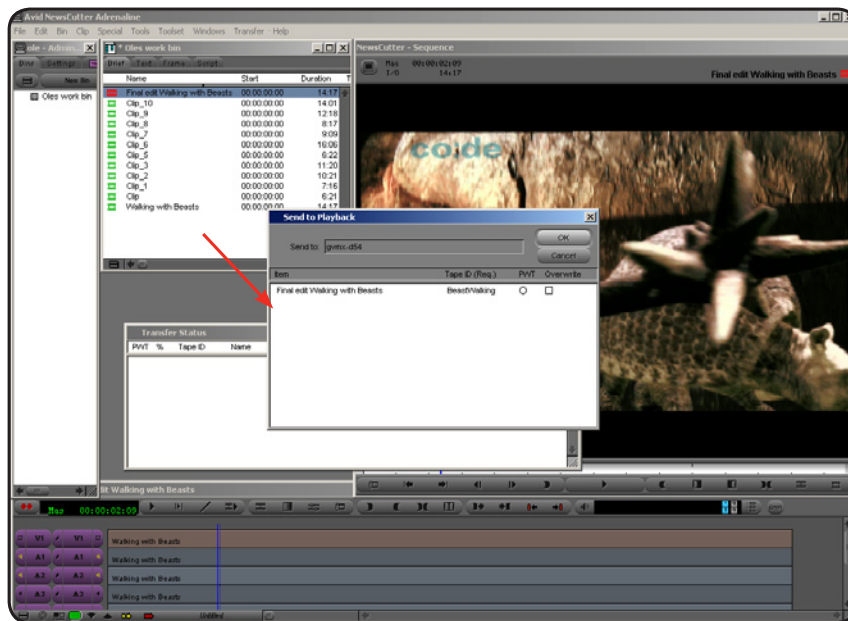


Figure 3. The Generic FTP mode is standard in Avid Interplay v1.6.x and is used to transfer specific file formats between K2 and Avid’s NLEs.

Interplay Generic FTP Mode

In the Generic FTP mode, Long GOP files can be transferred between K2 and Avid systems. Long GOP formats require additional handling by the editor. This is done within the Interplay system. In this mode, theK2-AvidTM plug-in is not required.

Import/Export – In this mode, the standard Avid FTP interface is used. It uses a simple drag and drop user interface. (see Figure 3)

Format Support

MXF Support

Avid supports MXF OPAtom format while K2 and most other video servers support MXF Op1a. Avid Interplay Transfer service automatically converts between these two wrappers as needed. When using the DHM, transfers are all wrapped as GXF.

DNxHD Support

DNxHD is not a common format supported by broadcast servers. It was designed for high-end production and requires a large amount of disk space and bandwidth. Broadcasters generally cannot afford the storage or bandwidth required for DNxHD in a play-to-air environment. Currently MPEG-2 Long GOP formats are the most efficient format and most used throughout the world. DV is also popular, especially in news applications.

Grass Valley provides the K2 Coder system as a mechanism to automatically convert between DNxHD and MPEG-2 Long GOP for K2 SANs. Operation is the same as above, only the K2 Coder processes the stream between the two systems.

Currently the time to transcode DNxHD to other formats is greater than real-time. For moving content from editing to playout, you can choose either transcoding or doing a simple baseband transfer with K2 encoding the media into MPEG-2 HD or DVCPRO HD.

Summary

The K2 family (including the new K2 Summit™ and K2 Solo™) supports a variety of compression formats and is continually adding new formats. The open architecture of K2 enables it to be easily interfaced to third-party products.

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