

MediaFUSE FX

AUTOMATED CONTENT REPURPOSING AND MULTI-DISTRIBUTION SYSTEM

The MediaFUSE FX automated content repurposing and multi-distribution system is a platform that is designed to make the task of repurposing file-based content for Web and mobile distribution a more efficient and profitable proposition.



The many processes used by content creators today to get multimedia files online and delivered to mobile platforms are serial and time-consuming. It can take hours, or even days to publish a small amount of content, which is rarely enough to support their online and mobile advertising avails—or to give viewers a reason to visit often and consume multiple media clips.

Our MediaFUSE® FX system enables a create once, publish everywhere (COPE) workflow for repurposing file-based or live content for Web and mobile distribution. It automates the process of encoding, editing, uploading, and streaming (with the optional FuseENCODE live stream system) and

makes it possible to add rich metadata throughout the process. The result is faster, more efficient and more profitable content distribution.

The MediaFUSE FX system supports a highly integrated workflow with common tools for production, transcoding, and content deployment to multiple publication points such as iPad, iPhone, Android, Web, etc. All of these publication points are supported with unique sets of multimedia video, text, imagery, and metadata—all automatically generated by MediaFUSE FX as part of a single unified workflow. An optional FuseENCODE system provides MediaFUSE FX with the ability to stream, record, and convert non-

file based video to the archival-quality MediaFUSE working format, and then to the most used video formats such as Flash, Windows, H.264, 3GP, etc.

The common toolset, which can be used by anyone in the content production process, combined with powerful automated and scalable hardware, allows content creators to dramatically increase the amount of content and the speed with which they repurpose video, still imagery, and textual material to the Web and mobile distribution platforms.

Your existing web and production staff can oversee the distribution of much more content, while maintaining effective control of technical content management.

KEY FEATURES

- Efficiently repurposes file-based content for distribution via Internet, mobile devices, VOD, and syndication—in fewer steps and in much less time
- COPE (create once, publish everywhere) model supports easy addition of metadata by both non-technical and technical personnel to support categorizing, transcoding, and publishing to alternate mediums
- Generates on-demand content in Windows Media, Flash, H.264, and other formats
- MediaFUSE FX provides easy-to-use management tools for video, still imagery (thumbnails, slide shows), and textual content
- Provides for maximum monetization of content via:
 - Ability to increase production output by automating many linear technical tasks
 - Repurpose as much file-based content as desired, and send to multiple publication points
 - Combine rich metadata with all content to improve indexing, searchability, and targeted advertising
 - Ability to quickly create links to related content, driving additional advertising opportunities
- Maintain an archive of repurposed multimedia content that can easily be used later
- Empower all personnel in the organization to take part in the content repurposing process using a common set of easy-to-use tools
- MediaFUSE FX intelligent watch folders allow for file-based content to be processed automatically by simply dragging and dropping, or publishing the files into network-accessible watch folders
- When combined with the optional FuseENCODE SD-SDI/HD-SDI “recorder,” baseband video can be captured to file, and streamed live
- Enables reporting/posting complete stories for online and mobile consumption, letting viewers choose between a quick overview or a full in-depth viewing experience
- XML files can accompany content dropped into intelligent watch folders to allow for customized media handling with associated images and stories

COMPONENTS USED IN THE MEDIAFUSE PRODUCTION PROCESS

The MediaFUSE FX Intelligent Watch Folders

MediaFUSE FX provides for intelligent watch folders to be created for the easy and automatic handling of file-based content. These intelligent watch folders can be assigned a "MediaFUSE Automation Preset" that will apply content repurposing commands to any files that are dragged, dropped, or published into the folder. These repurposing commands can include: "Apply Category," "Stitch Pre-roll(s)," "Stitch Post-roll(s)," "Set Publication Point(s) and File Format(s)," "Hold for Approval," or "Transcode and Distribute Immediately," and many other parameters. There is no limit to the number of watch folders that can be created, and with standard IT network protocols, these folders can be accessible from any connected location, such as a K2 server.

Intelligent Watch Folders are created and configured by interactive and engineering personnel, and then allow for anyone in the operation to drag file-based content into the folders, and have pre-programmed automation commands applied to them, such as categorization, keywords, pre- and/or post-rolls, auto-deployment in multiple formats/locations, hold for approval, etc. XML files can accompany dropped content to allow for custom media handling that overrides folder programming and associate images and HTML stories with the content.

Automatic Processing

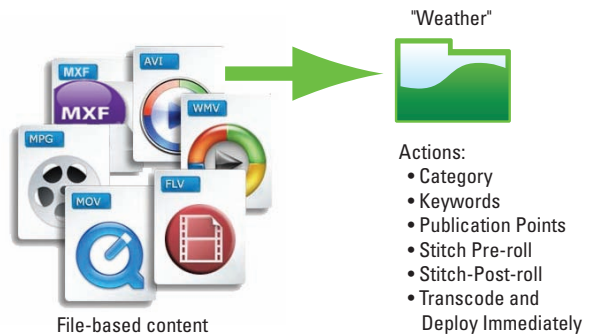
Some content of a timely nature, such as weather-oriented or breaking news stories, may need to make it to your web or mobile sites as quickly as possible. With MediaFUSE FX, it is easy to create watch folders that can apply metadata to this content, and then automatically transcode and deploy the stories or clips in a matter of minutes, with no further human touching.

Hold for Approval / Post Production

While some content may need to be deployed immediately and automatically, other content may require processing like trimming, still image thumbnail and slide show creation, addition of a textual accompaniment story, etc.

MediaFUSE FX intelligent watch folders are programmed during setup to perform certain actions on any file that is dropped into them. For example, a watch folder can apply a category, add key words, set publication points, stitch pre- and post-rolls, and hold the files for approval. Any file that is dropped or dragged into that watch folder will have those attributes associated with them, and the finished clip, once approved, will be deployed with the elements dictated by the watch folder programming.

FuseAPPROVE is a Windows software application that includes the Grass Valley™ ShuttlePRO device. MediaFUSE FX comes with two FuseAPPROVE licenses with ShuttlePRO devices, and

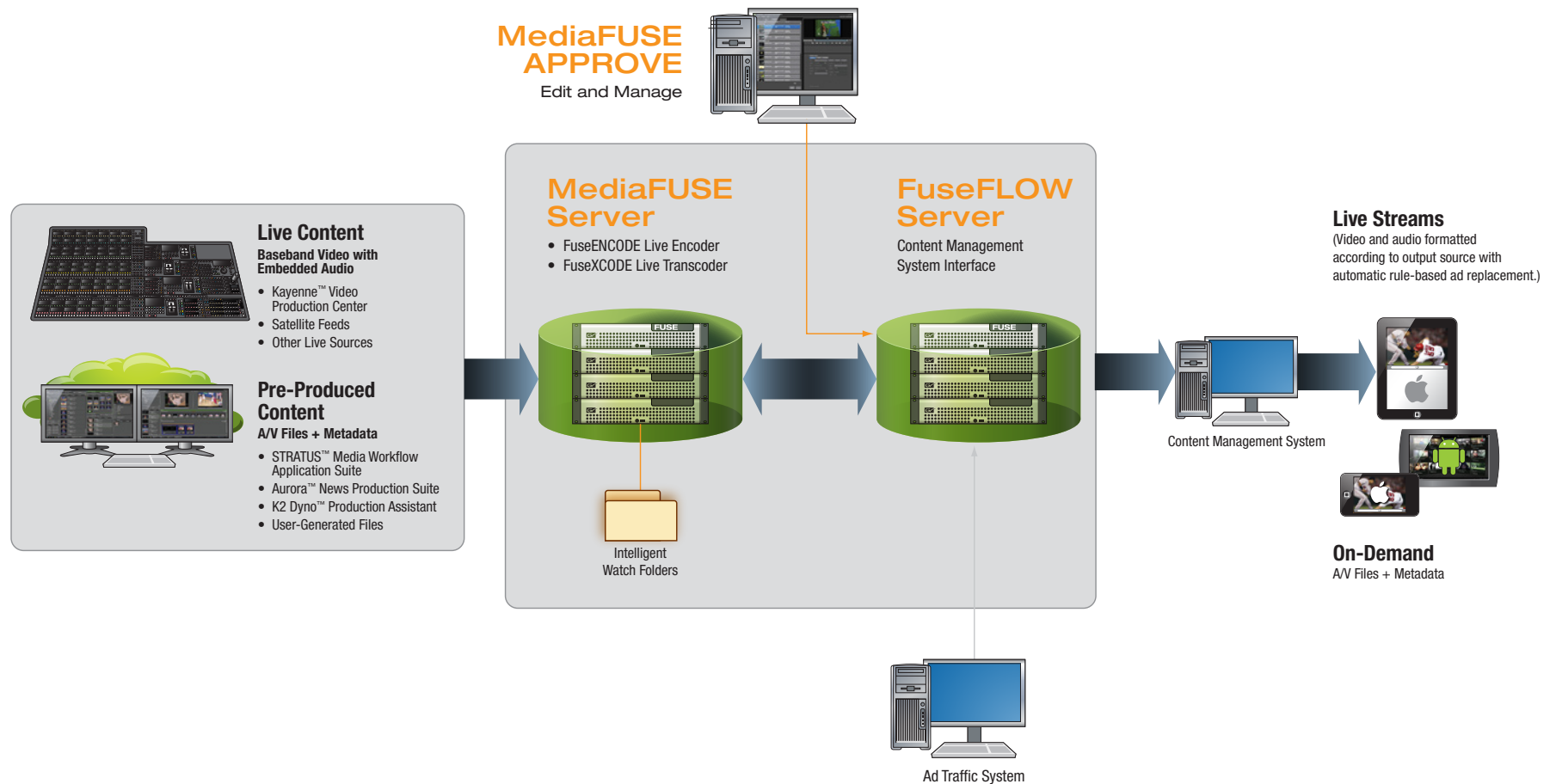


additional seats can be optionally added to meet the production requirements of any size facility. FuseAPPROVE is designed to provide any user, regardless of technical capability, with a powerful set of tools to quickly process and deploy content to the web and/or mobile distribution platforms. Any clip or story that has been dragged into a MediaFUSE FX watch folder will appear in the FuseAPPROVE segment list.

Many functions can be performed with just a few clicks of the mouse, or activation with ShuttlePRO, such as:

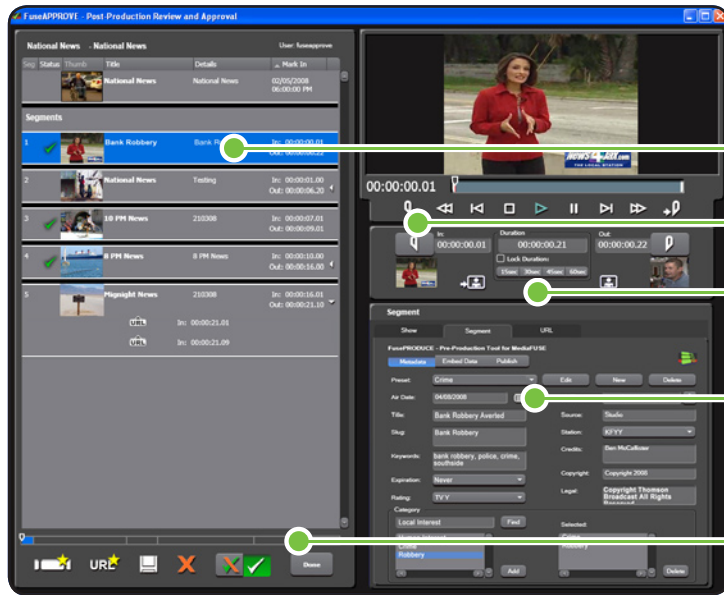
- Trim content
- Choose and save a still thumbnail
- Save multiple still images for a slide show
- Add descriptive and contextual metadata, either manually or via a preset
- Automatically set formats and publication points
- Add a textual accompaniment to the story using the powerful, but easy-to-use integrated text/HTML editor with spell check and custom control of special code insertion
- Easily combine multiple clips into a single highlight collage with pre- and post-rolls and interstitial ads with no editing skills required
- Search the MediaFUSE archive for past clips, images, or text to re-use again

Automated Content Repurposing & Multi-Distribution System



PRODUCT DATA SHEET

FuseAPPROVE



The FuseAPPROVE application runs on a workstation that can be located in a control room or in a post-production area. This application allows production personnel to approve, reject, and edit the metadata associated with shows and stories.

Approve the segment

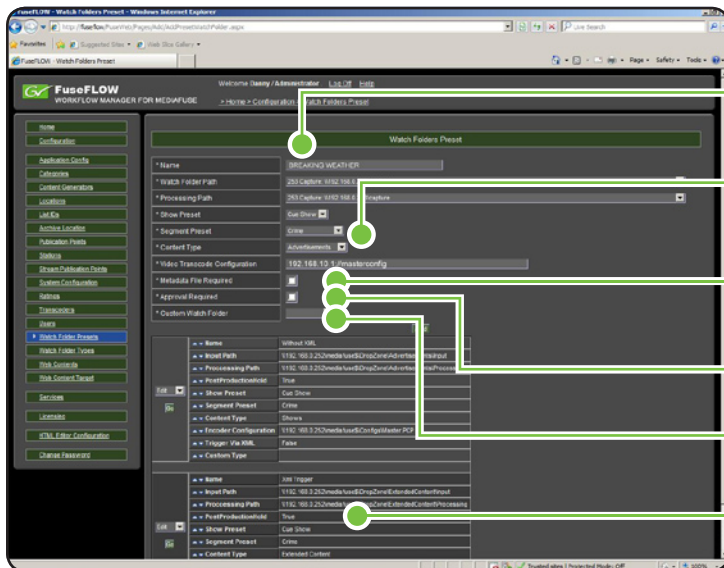
Change thumbnail

Edit clip

Edit the final metadata

Approve the show

FuseFLOW Workflow Management Interface



The FuseFLOW application is accessed via Web browser by authorized users and is where the system is managed and maintained.

Name watch folders to match content subject

Choose presets that are associated with the watch folders

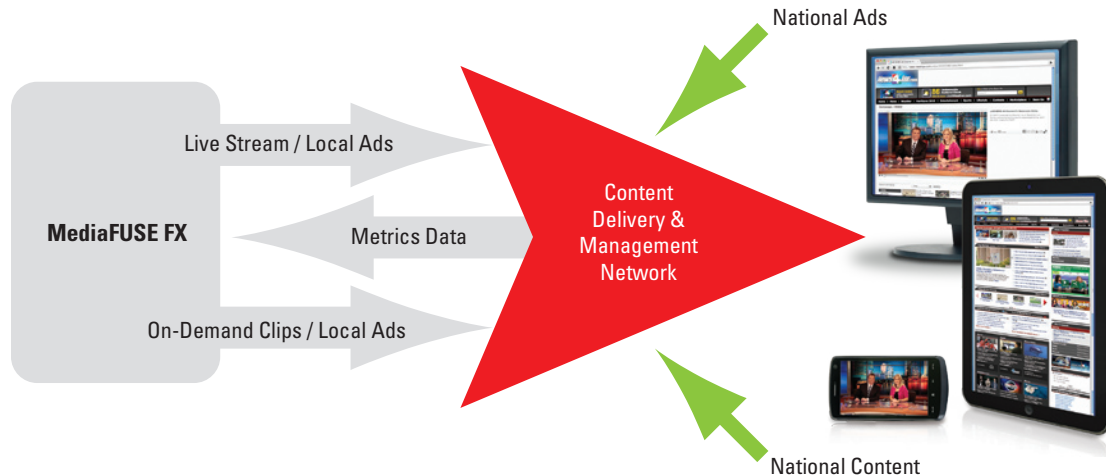
XML Metadata files can accompany video assets, if desired

Files can either be processed and deployed automatically, immediately, or held for approval/editing

Custom watch folder presets may be used, if desired

Existing watch folders can be edited by authorized users when necessary

MEDIAFUSE CONTENT MULTI-DISTRIBUTION AND FEEDBACK SYSTEM



Publishing and Management

Once a show and its segments are approved and processed for delivery, all content enters the MediaFUSE FX publishing and management chain, which is controlled by the FuseFLOW system. The on-demand clips and XML metadata coming from either the automatic processing watch folders, or from the FuseAPPROVE applications are sent either directly to the ASP/CDN via FTP, or to a folder on an ASP's network that is being monitored for file processing.

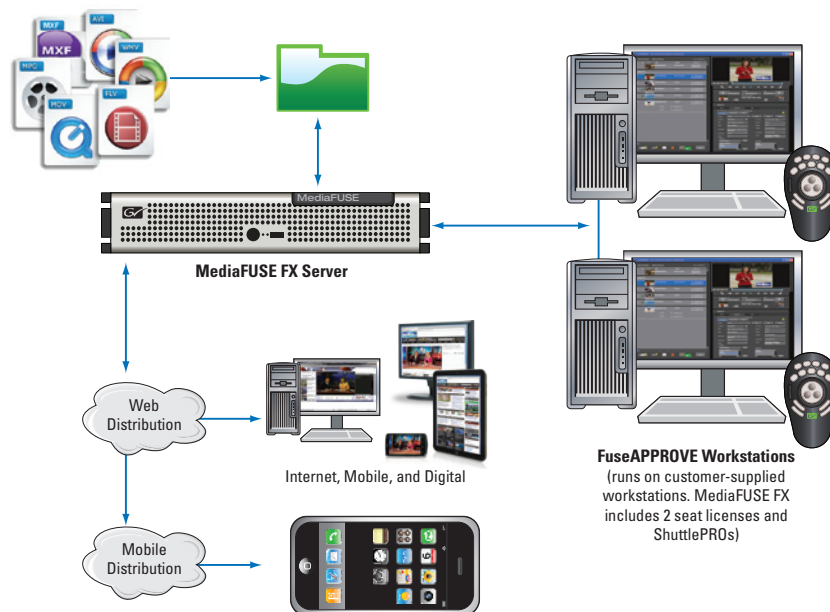
If an optional FuseENCODE system is used with MediaFUSE FX, the live stream can be sent directly to the CDN.

In addition to its standard FTP delivery capabilities, the MediaFUSE system can be extended in some cases to support feature-rich interfaces of select content management providers, such as Brightcove, WorldNow, IB, etc.

System Configuration and Options

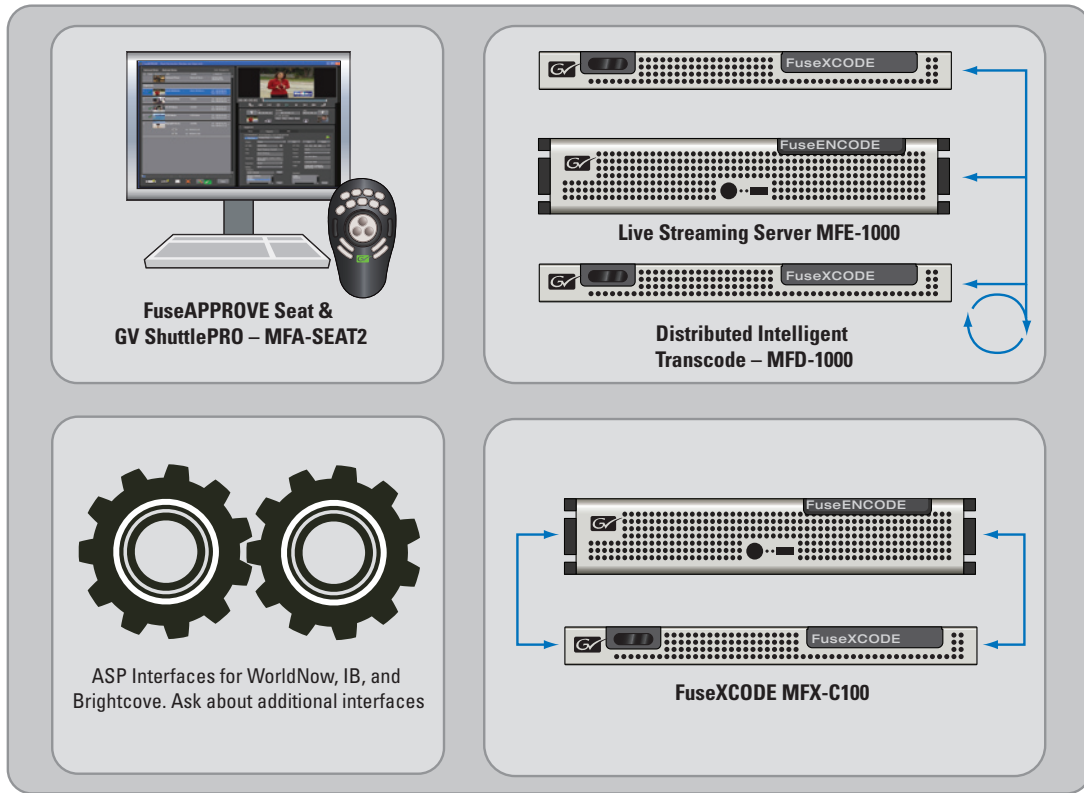
The MediaFUSE system is built around a scalable architecture with support for powerful multi-distribution today and for future expansion as requirements dictate. Options and accessories are available to meet the requirements of all content creators, broadcasters, and markets.

The base MediaFUSE FX system includes the hardware and software for any content creator to implement a highly efficient, powerful, expandable and easy-to-use file-based content repurposing system. MediaFUSE FX also supports a range of options to further increase the capabilities and failsafe security of the system. Content creators can add encoding and/or additional transcoding modules, as well as redundancy and other third-party interfaces, to meet their needs.



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MEDIAFUSE FX OPTIONS



Base Platform

The MediaFUSE FX base platform provides intelligent watch folders and post/repurposing tools for efficient, on-demand, and live multi-platform distribution. It includes:

- FuseFLOW workflow management and content transcode server
- Two FuseAPPROVE seats with Grass Valley ShuttlePRO devices
- Ability to create and manage unlimited number of intelligent watch folders
- Process video on demand using H.264, Windows Media, Flash, or many other popular formats
- 4 TB of RAID-5 storage for storing system and working repurposed file content
- Easy-to-use repurposed content archiving and management system for searching for and managing repurposed content using select metadata tags

Flexible Configurations

- Optional FuseENCODE servers can be added to provide the ability to “record” or encode SD-SDI/HD-SDI video with embedded stereo AES audio for either live streaming using Flash, HLS-5 (for HTML5), and Windows Media, or for processing and creating on-demand segments using FuseAPPROVE
- Additional FuseXCODE servers can be added to increase the transcoding capacity
- Interfaces to supported ASPs are available

Common Options

The MediaFUSE FX system can be configured with a range of capability-extending options, including:

- **FuseENCODE Encoding Server and Software** – Adds one SD-SDI or HD-SDI signal with embedded stereo AES audio.
- **Additional FuseXCODE System** – Rack-mountable server that produces files (or streams) that can be transrated or transcoded into different compression resolutions and formats, including Windows Media, Flash, H.264, 3GP, MXF, and MPEG-2.
- **FuseSAFE MediaFUSE Redundancy Option** – Provides backup software to sense, and automatically switch from, failed hardware to a backup system in a seamless manner, with little or no lost content or processing resources. At least two optional FuseENCODE servers are required.
- **Additional FuseAPPROVE Seats** – The base MediaFUSE FX systems includes two FuseAPPROVE seats for Windows-based workstations, each with a Grass Valley ShuttlePRO device. Additional FuseAPPROVE seats can be added as required.

SPECIFICATIONS

FuseFLOW System

The FuseXCODE/FuseFLOW system includes the following hardware components:

- High performance 2 RU server that contains a minimum of:
 - 12 GB RAM and 4 TB storage space
 - Optical DVD ± RW drive, internal
- Network interfaces:
 - One gigabit Ethernet NIC for use with the content network
 - One 10/100Base-T minimum NIC for use with the control network

Transcoding Content

FuseFLOW and FuseXCODE process files from intelligent watch folders, based upon the parameters that are programmed for the folders from the FuseFLOW workflow management software. Files are transcoded into different compression resolutions and formats that include:

- WMV
- H.264
- Flash
- 3GP
- MXF (Material eXchange Format)
- MPEG-2
- Additional formats supported

Optional FuseENCODE System

The FuseENCODE system includes the following hardware components:

- High-performance 2 RU server with an HD/SD-SDI video capture input and a minimum of:
 - 12 GB RAM and 1 TB RAID1 storage space
 - Optical DVD ± RW drive, internal
- Network interfaces:
 - One Gigabit Ethernet NIC for use with the content network
 - One 10/100Base-T minimum NIC for use with the control network
 - Video capture input is dual-mode HD/SD-SDI video with embedded AES/EBU audio

The FuseENCODE server includes video, audio, control, and encoded content connections

- **Connection type/connection features:**
 - Video: Standard-definition (SD) video connection is SDI (SMPTE 259M on BNC)
 - Audio: Connections include analog (XLR) through the supplied analog audio embedder, embedded in SDI (SMPTE 272M on BNC)
- **Live content:** The live, encoded content is streamed via TCP/IP on the content network to the CDN in Flash, HLS-5 (for HTML-5), and WMV formats
- **Recorded content:** The encoded content is transferred to the FuseFLOW server on the content network
- **HD and SD video features:** WMV encoded HD and SD video. SD resolutions include NTSC (up to 720x480) or PAL (up to 720x576) at 64 kb/s to 10 Mb/s. HD resolutions up to 1920x1080i60 or 1280x720p60 at 5 to 20 Mb/s. The connection is a dual-rate HD/SD-SDI (SMPTE 259M or SMPTE 292M on BNC)

FuseAPPROVE Module

- Minimum hardware requirements for the FuseAPPROVE workstation (supplied by customer):
- Windows XP-SP3 or later workstation with graphics card and monitor (1024x768 minimum resolution, 1280x1024 recommended)
- Network interfaces: Gigabit Ethernet NIC for connection with the content network
- USB port for jog/shuttle controller (supplied with the FuseAPPROVE application) – external jog/shuttle controller improves the efficiency of reviewing and approving content

ORDERING INFORMATION

Please contact your authorized Grass Valley representative.

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

