# IBC wrap-up

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Second-generation solutions abound

# Advance of the server

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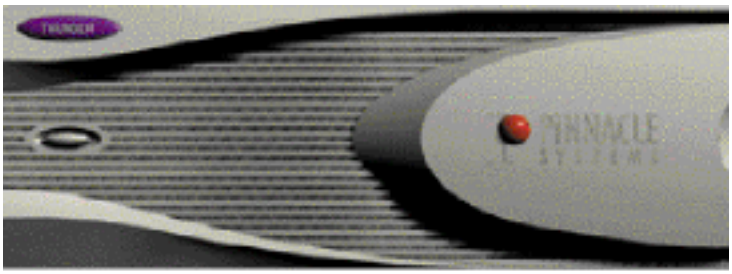

Pinnacle Thunder: Streaming video

Where are we heading with server technology? A good question, bearing in mind that there are no new MPEG coding or other compression schemes. Manufacturers at IBC showed many new developments in hardware and software, as well as announcing buy-outs of well-known suppliers.

Offerings ranged from 601-video quality disk recorders with increased functionality and storage capacity to low-budget storage. There was also palpable confusion as to which format could best support customers' needs. The only format that offers best picture and sound quality is still uncompressed 601 video and AES/EBU audio.

Quantel increased its product line with new developments towards networked disk and work sharing technology. Clipnet with metadata support will run on Quantel's GigaByte network.

As announced earlier at NAB99, the server systems line based on Cachebox and Clipbox has been extended by SpotRunner, several media applications (such as acquisition, production, distribution) and HDTV capability with multi-gigabit bandwidth for non-compressed, MPEG or DV video.

Other manufacturers of uncompressed disk recording devices/servers are DVC, with the HDTV-ready Pronto video server and Avid with the Unity video server, that supports uncompressed as well as compressed signals. Other storage solutions could be found which are designed for applications requiring continuous transfer rate capabilities with up to more than 80Mbps for realtime access with RAID architecture and support for IRIX and PC hosts.

FibreRAID Express from Storage Concepts -- as well as other manufacturers -- provides such a solution that supports multiple, simultaneous streams of CCIR-601-quality video streams equipped with a 1.062Gbps Fibre Channel IF to the host system. The need for fast, reliable networking is growing and the range of products available on the market is rising too.

MPEG-2

The amount of servers and hard disk solutions for MPEG-2, whether in MP@ML or 422P@ML, DVCPRO 50 or other compression formats, is rising dramatically. The Pro-MPEG-Forum

demonstrated installations and operability between different hard and software applications. MPEG-4 and MPEG-7 were key topics at several sessions and will increase standards confusion in the near future.

Grass Valley expanded the Profile line with the Profile XP media platform -- a fully RAID-3 compliant server with hot-swappable HDDs. Shipping this month, the Profile supports SDTI and MTS (MPEG transport stream) for the interchange of compressed video, audio and data.

The trend towards 50Mbps data rate servers is unstoppable. Leitch, with the VR400 MPEG-2 video server, is one of the best examples of enhancement of a product. It's now available with VR mirror streamer application, providing maximum system reliability. VR400 uses high-speed FibreDrive technology to maintain realtime synchronisation of video files stored in two separate video server systems.

With the new VR 420 MPEG-2 server, Leitch offers bi-directional video channels for recording and playback, eliminating the need to purchase dedicated en- and decoders.

The Abekas 6000 MultiFlex DTV Server represents a new generation of server, said to remove many operational limitations. It is designed to fit multiple applications within any broadcast television facility. A single 6000 MultiFlex system can be used as a news-edit and new playout server, spot cache, programme server, and as a time-delay device.

FibreRAID Express from Storage Concepts

The 6000 MultiFlex DTV features DVCPRO compression with user-selectable bit rates of either 25Mbps or 50Mbps and can be configured with anywhere between two and eight digital video I/O channels, each with associated 4-track digital audio. It offers up to 40 hours of RAID-3 disk storage in a single chassis. Fibre Channel networking allows sharing of material between separate systems, without interfering with normal video I/O. Each channel in the Abekas 6000 can be controlled independently by external station automation using Louth protocol.

The need for support of Internet TV and streaming video merges platforms more than ever. For instance, Pinnacle Thunder can create Web browseable video clips, images and audio files. Thunder was launched in April this year as a multi-format server for broadcast and Internet that supports MPEG-2 and DV signals.

The existing 100Base-T network will be upgraded to Connect+ 1000 (1GB Ethernet) that enables transfer to MediaStream. The Pinnacle HP server product line will be upgraded to 50GB HDDs (Seagate/IBM) which increases the MediaStream storage capacity to 100 hours. MediaStream 700 and 1600 servers can be expanded to more than 1,000 hours of online storage capacity. MediaStream is built to support next generation requirements such as ATSC/DVB MPEG streaming.

Philips premiered Surf, the video browsing system for its Media Pool server. Along with the automatic creation of low-resolution MPEG copy and storyboard of incoming/modified video, comes the ability to view the material using standard Web browser technology. With Surf, the journalist gets a tool that enables remote dial-up to view Real Video proxy copies of material stored on the central Media Pool server.

Edits made on either the server or a proxy video editor are automatically conformed on both. TV

broadcasting and Internet support is fully implemented, and opens new horizons on the Web.

Sony presented the MAV-555 (Multi Access VideoDisk) recorder; it is a server in a VTR housing. Judging by the number of units already sold the philosophy of building a more or less common control panel for use as an input device looks like a real success. Equipped with SDI/SDTI/Composite I/O's and video effects, this 'server' represents a stand-alone editing suite designed for live, sports and news. The storage capacity exceeds six hours (50Mbps) with four channels of non-compressed audio. The MAV-565 comes with 18GB HDDs (RAID-3) and records up to 10 hours at 30Mbps.

The TV market is asking for solutions and opportunities that combine editing and news production utilities along with MPEG-2 servers. Sony, Pinnacle, Quantel and Avid are among those tackling these requests. New companies like Vibrint Technologies with its FeedClip, and other news production utilities, flooded IBC. FeedClip enables users to record incoming feeds directly to disk and play trimmed clips to air without tape or even an edit suite involved. The original material remains complete until overwritten.

For more sophisticated editing, clips are exported to Vibrint's NewsEdit, mixed with archive material and treated with simple effects. The Vibrint video server with standard protocol (Sony BVW-75, Odetics, and Louth VDCP) support, plays material to air. NewsEdit also works with Pinnacle's HP MediaStream server for playout and supports SDTI CP.

NETWORK STORAGE

StorageTek underlined the need for fast access, efficient video asset manageability and storage capacity with the PowderHorn 9310 with six 9840 data-tape drives connected. The 9153 is a 10x18GB RAID disk system through FC-AL, and the TimberWolf 9740 library comes with six 9840 data-tape drives (up to 500 cartridge slots). Both solutions are controlled by an archive manager that fulfils in conjunction with a server-based environment (i.e. a Profile broadcast server or a SGI Origin 2000 server). StorageTek uses Quantum drives that are slightly modified to fit into its robotic system.

Leitch's newly released VR Archive Streamer application monitors, moves and distributes video files between servers and nearline storage for archiving and back-up protection. It supports digital libraries from Ampex, Sony and StorageTek.

The DTF-2 technology, a further data storage development by Sony, offers five times the storage capacity and twice the data transfer rate of DTF-1. The DTF-2 GY-8240 data drive supports a sustained data transfer rate of 24Mbps and a burst rate of 40Mbps. The technology now offers 518GB of compressed and 200GB of uncompressed data with large cassettes. That opens new perspectives in a post production environment, allowing the realtime transfer of uncompressed component material in file form.

Obviously, there is a demand for high quality server and storage solutions, in tandem with the merging of the broadcast and Internet communities. The manufacturing industry is aware of the changes -- is the TV broadcasting world too?

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