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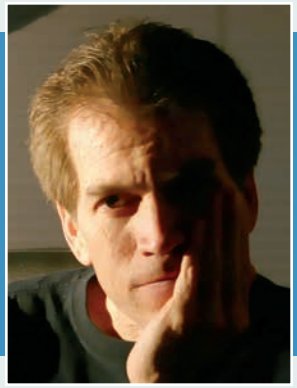

DMX-Controlled Media Servers, Pixel by Pixel

By: Richard Cadena

There's a radio show called *The Tech Guy*, where the host, Leo Laporte, talks about the latest technology like computers, smartphones, tablets, and other devices. A couple of weeks ago, he went to a Madonna concert in Denver, and talked about it on his next show. What impressed him the most? Was it the music? Nope. The singing? Uh-uh. It was the video production.

To people outside of the live event production industry, even technologically savvy people like Laporte, modern-day live event production seems like magic. When they talk about shows they've seen, they tend to use words normally associated with a David Copperfield or Penn & Teller show. It's a real testament to how far video production has come, much of which can be attributed to computers, graphics software, and LED displays. And one of the major catalysts for state-of-the-art live event production is the DMX-controlled media server.

The concept of controlling media servers with DMX is relatively new. The first stand-alone media server run by a lighting console was probably High End Systems' Catalyst, and it debuted around 2000 as a system that included a video projector, an orbital mirror head, and a DMX-controlled media server. In 2001, the media server part took on a life of its own as the Catalyst. Until then, a media server was a computer that fed video files to a manually controlled video switcher that, in turn, sent content to video displays. This was before the convergence of lighting and video in live event production.

The DMX-controlled media server spawned a cottage industry, which was spurred along by the proliferation of LEDs, LED video displays, and video projection. Today, there are a handful of media servers with a proven track record, and more are gaining recognition every year.

The baseline specs for today's standard media server seem to be DMX control, edge-blending, warping, pixel-mapping, crossfading, and masking. Beyond that, every media server offers different numbers of layers it can deal with, supported video formats, control protocols, effects, number of outputs, resolutions, and more. Most run on Windows, while the Mbox EXtreme and Catalyst run on OSX, and the RMS, Robe's media server, runs on Linux.

If you are in the market for a media server, or if you have a project and are trying to decide which one to use, the choices can be daunting. There are so many specs to compare that it could take days just to sort through the data. Complicating the decision is the fact that PRG now has a Mac-based version of the Mbox media server, called Mbox Studio, at a stunning price point ($1,000 US retail); Avolites Media got into the media server market with its line of Ai media servers, controllers, and software; and d3 recently began selling a dongle-ized version of its visualizer/pixel mapping/media server/control system. And let's not forget originals like Catalyst, Hippotizer, and Pandoras Box, which have been around since the early days of DMX-controlled media servers.

Ultimately, only a road test will tell you what you which media server is right for your project. But if you have little or no experience with them, or if you're curious about what other media servers have to offer that yours doesn't, then you've flipped to the right page.

Catalyst

The original stand-alone product that introduced the concept of DMX control of media servers opened the door for lighting programmers and operators to pre-program and play back visual media. It was the template for the structure of a media server software using layers, masking, crossfading, scaling, and other effects to deliver video to a display surface, all under the control of DMX. It came with a library of video and still content, allowed you to warp and blend projectors, and redefined lighting and video integration in live event production.

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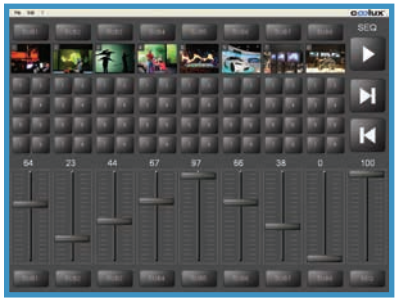
The current version is distributed by Pro Systems Group, and it has up to 32 layers, support for 4,096 x 2,304 resolution (RED camera output), text generator, multiple live video inputs, pixel-mapping, curved screen support, and support for Art-Net, MIDI, MIDI show control, MIDI time code, SMPTE, OSC, and more.

Green Hippo Hippotizer

Hippotizer belongs in the category of "one of the first to market." It came out shortly after Catalyst and has maintained a good market share ever since. The current software version, V3.2, features crossfades between media on the same layer (as opposed to crossfading between layers), support for MA-Net2, next clip preview, the ability to create play back presets without external control, Mackie control protocol with iPhone or iPad Lemur and OSC control, and more. The Hippotizer range includes top-of-the-line HD as well as the Grasshopper, HippoPortamus, and HippoCritter Rackmount. Each system has various numbers of outputs, resolutions, layers, and features.



coolux Pandoras Box

coolux was early to the media server party with the Pandoras Box, currently in Version 5.3. One of the keys to the success of the system is the Widget Designer, a highly configurable interactive interface. The latest version of Widget Designer has a built-in web server that allows you to create interfaces and control an unlimited number of devices with any HTML-browsing device like a computer, tablet, or smartphone. Pandoras Box Server Pro supports an unlimited number of layers of both graphics and video, has particle generators and effects, and has up to 2TB of hard drive storage or an optional solid-state drive with up to 960GB of storage. coolux is known for exhibiting interactive displays, projection mapping, and extreme warping at industry trade shows.

d3 Designer

d3 Designer is an integrated visual production suite of software that has a visualizer, timeline-based sequencer, video playback engine, pixel-mapper, projection simulator, and more. d3 is simultaneously an industry buzzword and the industry's best kept secret because, until recently, it was a proprietary product that United Visual Artists used to produce big shows like U2, Madonna, the Queen's Diamond Jubilee, and many more. Now it's a product that can be purchased in the form of a dongle and software to be run on either your own PC or a 2U or 4U rack-mount computer. In some ways, it's like other products, and in other ways it's like no other. But the package is a complete solution with incredible accuracy.

Avolites Media Sapphire Infinity

The Avolites Media line of media servers are probably the longest existing media servers that you only recently heard about. That's because Avolites bought the intellectual property of Addict Show Control Systems, formed Avolites Media, and went into partnership with Immersive Ltd. to produce a line of media servers and related products. Like other media servers, it uses layers to build looks and effects to modify and create content. Unlike some, it allows you to build or import 3-D models to simulate the show environment, has a timeline, and allows you to map video onto moving scenery. It uses the Salvation node-based engine, which is a virtual patch of everything in the system, including media, effects, outputs, inputs, and more. The node-based display allows you to quickly see signal routing. Avolites Media recently jazzed up the line with the Sapphire Media Console. It connects directly to Ai Infinity media servers, and it has two touch screens, four assignable touch preview monitors, 15 motorized faders, T-bar handles for manual switching, and more. Infinity servers were recently used during the Olympic Opening and Closing Ceremonies, among other high-profile shows.

ArKaos MediaMaster Pro

In 1996, Belgium-based ArKaos started making what was perhaps the first software for video jockeys (VJs) that made it easy to produce animated graphics for nightclubs and discotheques. The company's products have evolved throughout the years, and now

its top-of-the-line MediaMaster Pro is a full-featured media server with video mapping, MSEX support, geometry correction, audio mixing, audio visualization, video loops, and more. MediaMaster Express is the entry-level version of the media server software. On the hardware side, they offer the Stage and A30 media servers. ArKaos also developed a proprietary protocol called Kling-Net, which allows a media server to stream video to LED fixtures and displays using Ethernet. It simplifies setup and configuration, and several third-party manufacturers, like Elation and Chauvet, offer LED fixtures and panels with Kling-Net input.

RMS (Robe Media Server)

Robe is known for its luminaires, but the company's experience with digital lighting produced the Robe media server. It features four layers, more than 60,000 video clips and graphic images, and effects like warping, positioning, color mixing, digital iris, digital framing shutters, and adjustable playback speed. It supports MPG1, MPG2, JPG, TGA, PNG, GIF, PCX, PNM, XPM, and LBM.

MA Lighting VPU

MA Lighting has had a media server solution for several years. The VPU is available in two versions, the plus and the basic. Both offer two outputs, but the resolutions differ: The plus outputs 1,080P while the basic outputs 720P. Both come with library of 17GB, pixel-

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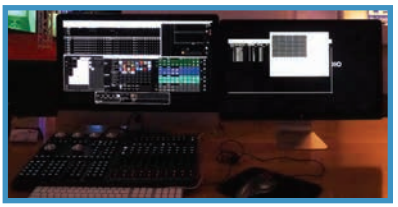
mapping capability, live video output, audio playback, and 32 layers.

High End Systems Axon

The Axon began as the on-board media server in the DL2 digital luminaire and continues as the stand-alone media server that served up the content at the 2008 Olympic Opening and Closing Ceremonies in Beijing. Among other features, the Axon offers the Collage Generator, which is the ability to combine multiple units to create an array of up to 8-by-16 media servers with resolution of up to 2,560-by-1,600 each. The content management application allows you to remotely configure and update the media in the system, including Axon media servers and DL.2 and DL.3 digital luminaires. Other features include curved surface support, control of 36 object parameters and 52 global parameters, and a content library with more than 14,000 lighting-optimized files.

Martin Professional Maxedia

Three versions of Maxedia allow you to choose among the broadcast, pro, and compact versions, depending on the number of outputs, resolution, and number of layers that you need. Maxedia is designed for easy touch-screen control and visual access to media, including video and graphics preview. It works as a stand-alone media server, or it can be controlled via DMX or Art-Net. Maxedia 4 software supports H.264/MPEG-4 AVC, MOV and AVI HD codecs. It features pixel mapping, networking across multiple media servers, master/slave capability, effects, fixture library, support for plug-ins like particle generators, text, ribbons, and spikes.



PRG Mbox

Mbox has a long track record serving media at major events. Mbox EXtreme is the hardware package and Director software is the application that it interfaces with, allowing you to remotely configure and control the media server with a PC. Mbox Studio is the newest addition to the line. It's a Mac-based media server that runs Mbox Designer software with most of the power of the full Mbox. It has fewer parameters but the same playback, effects, and transitions. Although it's designed primarily for playback of SD content, it can also run HD content. It has eight playback layers, pixel mapping, and a demo content library that can be downloaded. The same computer can also run Mbox Director.

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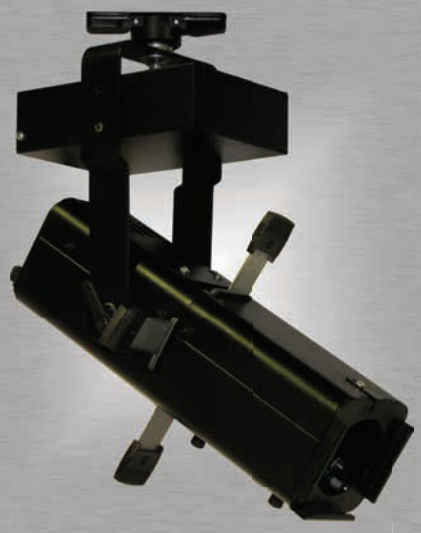

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