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STORAGE SOLUTIONS

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EDITORIAL

RANDI ALTMAN

Editor-in-Chief
(516) 797-0884
raltman@postmagazine.com

MARC LOFTUS

Senior Editor/Director of Web Content
(516) 376-1087
mloftus@postmagazine.com

MICHAEL VIGGIANO

Art Director
mviggiano@postmagazine.com

ADVERTISING

NATASHA SWORDS

VP Marketing
(818) 291-1112
nswords@copcomm.com

MARI KOHN

Director of Sales
(818) 291-1153 cell: (818) 472-1491
mkohn@postmagazine.com

GARY RHODES

Eastern & Intl Sales Manager
(631) 274-9530 cell (516) 410-8638
grhodes@copcomm.com

CHRIS SANCIDO

Account Manager
(818) 291-1144
csalcido@copprints.com

CUSTOMER SERVICE

620 West Elk Ave., Glendale, CA 91204
csr@postmagazine.com
(800) 280 6446
opt 2 (publishing), opt 1 (subscriptions)

LA SALES OFFICE:

620 West Elk Avenue,
Glendale, California 91204
(800) 280-6446

WILLIAM R. RITTWAGE
President / CEO

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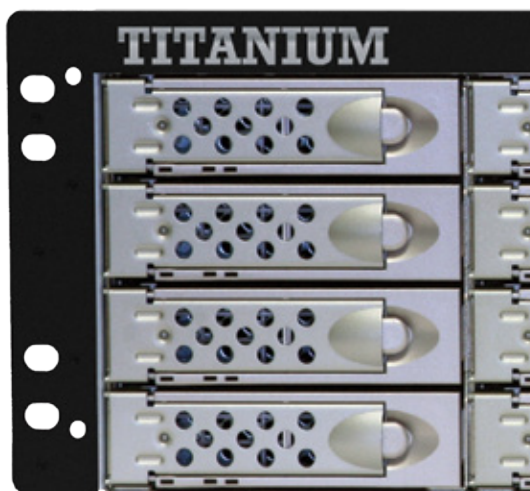
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Data, data everywhere

Finding the right storage fit for your workflow is critical.

By Christine Bunish

At the heart of the infrastructure for anyone doing high-volume, data-intensive post production today, storage systems are key to throughput, speed and workflow integration. Choosing the right storage solution for the application is critical to success as facilities and independent editors attest.

dedicated data wrangler for daily housekeeping."

Creative Post has been a Facilis customer since 2004. It had one TerraBlock of its own, acquired a second when it took over a competing facility, then bought a third unit as business grew upgrading all systems to 64-bits and integrating them on fibre. The company handles a large volume of cable

reality shows for the Canadian and US markets, which make constant use of the storage systems. Post for feature films — including an increasing amount of 2K stereo 3D post — and TV drama is done in suites not attached to the TerraBlocks; they use proprietary storage and a centralized SAN.

MacNeil says the TerraBlocks "are a very workable solution for our mid-grade TV programming. We can grow them as needed, but the Canadian market is only so big so we're at a comfortable size right now."

MacNeil admits, however, that his fast-growing global DI and stereo 3D business, including Imax 3D, is definitely SAN-oriented. "I'm not a huge fan of SANs: They take a tremendous amount of housekeeping to keep them running at top performance. But we also need the huge output speeds they deliver." So Creative Post is likely to continue with a two-pronged approach to storage for the foreseeable future.



Creative Post's Ken MacNeil: a large part of the studio's work is reality TV.

CREATIVE POST

One of the largest independent post production facilities in Canada, Toronto's Creative Post (www.creativepostinc.com) uses a trio of 48TB Facilis TerraBlock 24Ds for centralized shared storage for its TV post division.

The TerraBlocks support seven Apple Final Cut Pro rooms and four Avid Symphony suites where programs are conformed; they also support the company's DI suites for ease in moving feature film and high-end TV programming files from conforming to color correction, mastering, DCP creation or Blu-ray encoding.

"Everyone in our facility can get to the TerraBlocks, so there's a big ease of use factor," says Creative Post president Ken MacNeil. "The systems require very little maintenance: You can fill them up and nothing really happens, where a SAN takes a

MODERN VIDEOFILM

At Modern VideoFilm (www.mvfilm.com), all three of Harmonic's Omneon MediaGrid active storage products, which combine clustered storage with grid computing, come into play.

"The 1000 series provides inbound and outbound storage for all of our Burbank content delivery operations," says senior engineer Bill Womack. "A MediaGrid 2000 is working storage for ingest, transcoding and editorial.

"The MediaGrid 1000 and 2000 systems are true clustered storage, so they have replication of data within them; they're very fast and reliable," he reports. "The 3000 is a RAID-based system that offers more usable space per dollar. It's deployed



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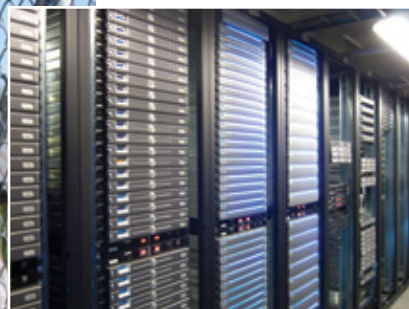
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in our Scottsdale, AZ, site where it acts as the content delivery cache for the whole facility, a fully-automated site that provides file fulfillment for our customers." The Scottsdale facility also has its own MediaGrid 2000 for transcoding and working storage.

"We've had the MediaGrid 1000 and 2000 in Burbank for a couple of years now," says Womack. "Our Scottsdale facility has been operating a Media Grid 2000 and 3000 since September 2011. The 1000 and 2000 in Burbank replaced generic RAID-based Windows servers. We moved to Har-

online. With other systems, to buy a new node and install it you need to start Friday night to get it ready to use on Monday. A MediaGrid expansion is ready to use immediately."

He also likes that MediaGrid is "media-optimized" to make the best use of various file types on the same cluster, and any failures that occur are easy and quick to remedy. In MediaGrid it's possible to specify optimum block size based on the type of files being stored, he says. For example, it's possible to have different block sizes for DPX files and MPEG files on the same MediaGrid.



Modern, which employs Harmonic storage, works on TV series like the *The Walking Dead*.

monic initially just for speed, but as we progressed, part of the decision to deploy these systems in Arizona was that they delivered SAN performance at a NAS price."

Womack says transcoding speeds are important. "The faster the storage can supply the transcoder, the faster the job finishes and we can get another job in behind it," he says. "Our transcoding farm has become much more efficient."

Modern VideoFilm has seen a lot of content delivery migrate to the Internet in the aftermath of last year's earthquake and tsunami in Japan that effectively quashed availability of Sony HDCAM SR tape for deliverables. "Instead of using master tapes for the source of TV station program dubs, we now have a master file that resides on a MediaGrid. That file is then transcoded to the customer's specifications and staged for Internet delivery via the 3000," Womack explains.

Currently, Burbank's edit suites use Quantum's StorNext SAN for shared storage. "We're looking at the potential of MediaGrid to fill that role as well as we do full-resolution DI editorial," says Womack. "It would be a very cost-effective way to it. While the MediaGrid file system driver's software and client machine come with an unlimited license, every SAN client on every machine has an associated cost attached to it. And MediaGrid has a significant advantage in cost per TB of storage as well."

Womack sees MediaGrid having the ability to "grow with us. One of the nicest things about it is the way it scales: For our last expansion, it took about 30 minutes to get the additional chassis in the rack and another 10 minutes to get it

TYLER NELSON

Feature film assistant editor Tyler Nelson has several top movies to his credit, including *The Social Network* and *The Curious Case of Benjamin Button*. Most recently he reteamed with colleagues from those films, editors Kirk Baxter, ACE, and Angus Wall, ACE, assistant editor Alex Olivares and post production supervisor Peter Mavromates, on *The Girl with the Dragon Tattoo* (Wall and Baxter just won an Oscar for their work). They decided to follow the same process they'd successfully used in the two films they'd previously done together.

"We try to do the online inhouse, not at an outside facility," says Nelson. "We learned that the more horsepower we have behind us, the quicker that will be." This time that horsepower took the form of four compact G-Speed eS Pro external RAID5s from G-Technology by Hitachi with two ATTO cards. They were connected via SAS to the editors' computer.

"We had various resolutions on *Benjamin Button*, *The Social Network* and *Dragon Tattoo*. Over the course of these three films to get higher-quality images and large file sizes we went from 8.1MB per frame to 54.4MB per frame. That's an astronomical leap. So we needed a lot more horsepower behind us this time," Nelson says.

The editors online *The Girl With the Dragon Tattoo* with Adobe After Effects, admittedly an unusual software choice. "Nobody uses After Effects to online a film," Nelson concedes. "But with the workflow we've set up, we've turned a prosumer compositing application into an online tool for multi-million-dollar films."



Tyler Nelson and the Oscar-winning editing team on *The Girl With the Dragon Tattoo* used G-Speed eS Pro for their work.



He says that the "eS Pro worked well in the workflow because it can take an extraordinary amount of data and run it through the system at incredible speed — something you usually only get with higher-end tools."

For *The Girl with the Dragon Tattoo* the editors were working with approximately 4.5K files "because we had the technology and speed to do it. The eS Pro drives allowed us to

have faster connections to the media we were working with and sped up the process."

Nelson says, "for its price point, the eS Pro was amazing and very cost efficient. And it's so small — we had four tethered together for 48TB of storage, and they were the size of two shoeboxes. They were also plug-and-play, so it gave us the ability to move from one editing facility to another easily."



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Toward the end of the workflow, the editors changed locations, he points out. "To be able to get VFX shots right up to the last minute we moved to the DI facility, Lighttron in Hollywood. We were 20 feet away from the color suite."

Nelson notes that by using After Effects, "a tool that usually works in layers" and putting it into a nonlinear environment "you can offset 400 layers in a single timeline. You get the ability to manage all that in a pipeline that works with you. So I was able to make sure I got results that matched the offline. Working on the film for over a year we had a lot of care and precision invested in the outcome."

He believes the success of their unique online process "bodes well" for what the editing team will be able to accomplish with a similar workflow in the future. And "until something better comes along, G-Tech's eS Pro will continue to be part of it," concludes Nelson.

BREATHE

New York City-based Breathe Editing (www.breatheediting.com), the editorial division of ThinkBreatheLive (www.thinkbreathelive.com), continues its relationship with former Pink Floyd frontman Roger Waters on his current incar-



nation of "The Wall Tour," celebrating the 30th anniversary of the multi-platinum conceptual work.

Waters began touring North America and Europe in the fall of 2010 and has South American dates set for this spring. The centerpiece for the show is an enormous wall that's erected on stage, brick by brick, to become a projection surface for bold video and graphics.

When Waters approached Breathe Editing to contribute VFX and 3D animations for "The Wall" it didn't take long for executive producer Kenny Pedini to accept the task. "But we knew we needed to retool in several areas, including workstations and building a renderfarm, to prepare for this," he says.

Although the company uses an Avid Unity for shared storage for its edit bays, it sought the advice of systems integrator VCA Fusion on a shared storage solution for eight workstations, primarily running Adobe After Effects and Maxon Cinema 4D, and its new 20-station renderfarm. VCA Fusion guided Breathe Editing to Rorke Data's Galaxy Aurora feature-rich RAID and SAN appliance.

"We got a 24TB system at first," says editor Ian Mayer. "Roger initially played indoor arenas in North America and Europe with a 240-foot wide projection wall. But when it came time for Roger to book dates in South America, the only venues that exist are soccer stadiums, which are twice the size of the US indoor arenas."

"Because the venues are bigger, the size of the wall need-

ed to bigger — two times bigger," he continues. "Since the show we created was originally designed for a 240-foot wide projection surface, we needed to shift our thinking to a much larger projection surface — 420 feet to be exact. As a result, we needed a lot more storage space to create new elements in a larger size. They weren't going to just stretch the images to fit the bigger screen. Everything needed to be recreated."

So Breathe Editing invested in a second Galaxy Aurora, this one with 72TB of storage. "The Wall" is a pretty unique project," Mayer points out. "I haven't heard of anybody else working at this resolution. The pixel ratio is 15,200x1,620 pixels or nine times HD."

The company put the robustness and capacity of its Galaxy Auroras to the test; Gigabit Ethernet connections from the workstations ran through a switch to the Auroras' fibre for fast throughput. "We're finishing the project now and have had no storage issues," Mayer reports. "The Galaxy Auroras have been solid performers."

"The Wall" may be a one-of-a-kind job, "but it's nice to know that we have the capabilities and storage capacity to handle other projects of this size," says Pedini. "I don't like to



Breathe called on Rorke Data's Galaxy Aurora when providing graphics and images for screens used during Roger Waters' "The Wall" tour.

turn down projects due to lack of technical capabilities. We want to be equipped for any project — we want to say, 'absolutely, we can handle it.' And we can."

WINK

Wink, a full-service media company (www.winkingproductions.com) with facilities in Denver and Jackson Hole, WY, has found cost-effective, Ethernet-based shared storage in a GraniteStor ST-RAID from Small Tree. The storage solution enables six edit rooms in Denver and two edit rooms in Jackson Hole to share media among themselves within their own locations.

Prior to acquiring the Small Tree RAID, Wink used another brand of RAID storage with a Small Tree Ethernet switch. "We found ourselves using the RAID for everything we did, so we needed more capacity," says Wink founder/owner Jason Winkler. "Small Tree's RAID offered more capacity and speed, and it integrated perfectly with the switches we already had" in each of the Wink offices.

Demonstrating the diversity of its client base, the company currently has in-house a wildlife project for National Geographic, a series of Webisodes about women in sports



A series of Webisodes for National Geographic were completed at Wink.

for Rodale Media, a Web graphics project for Vail Resorts and an industrial video for Cochlear Corp. Commercials also form part of the customer mix.

The GraniteStor ST-RAID enables multiple editors to work on the same project simultaneously, starting with ingesting footage or files in the edit rooms or at logging stations. "We can now ingest media in half a day or a day where it would have been multiple days without the RAID," Winkler says.

"Once editing starts we can have two, three or four editors working at the same time — on different segments, on graphics. With the old system we had to clone FireWire or other drives and finish the day by exchanging project files. Now we just work away and changes take place immediately for everybody."

Winkler admits to being a shared storage skeptic before the GraniteStor ST-RAID. "I didn't think it would save us as much money or time," he says. "But the minute we installed the system the editors were saying, 'How did we exist without it?'"

Wink designed a mobile server app that also takes advantage of Small Tree technology. "We installed another Small Tree Ethernet switch in a Mac tower for 6TB of RAID-protected storage," Winkler explains. "The switch allows up to four edit or ingest systems to hook up to the tower so we can set up a mini version of our studio in a condo or hotel in 90 minutes. We can go to a sporting event or press conference and immediately begin ingesting and putting out video clips or Web releases or even a broadcast-quality show. Clients really love it."

Once back in Denver or Jackson Hole, the mobile server can be plugged into the main SAN so editors can start cutting all the material ingested in the field. "The name of the game is to be smart and efficient," says Winkler.

Thanks to the scalability of the GraniteStor ST-RAID, the storage solution is likely to remain useful for quite some time. "Small Tree products are robust and strong," Winkler notes.

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(www.fotokem.com), six Isilon IQ 6000x clustered storage systems are distributed in machine rooms around the facility where they facilitate “everything you need NAS to do for DI work,” says senior VP/GM Bill Schultz.

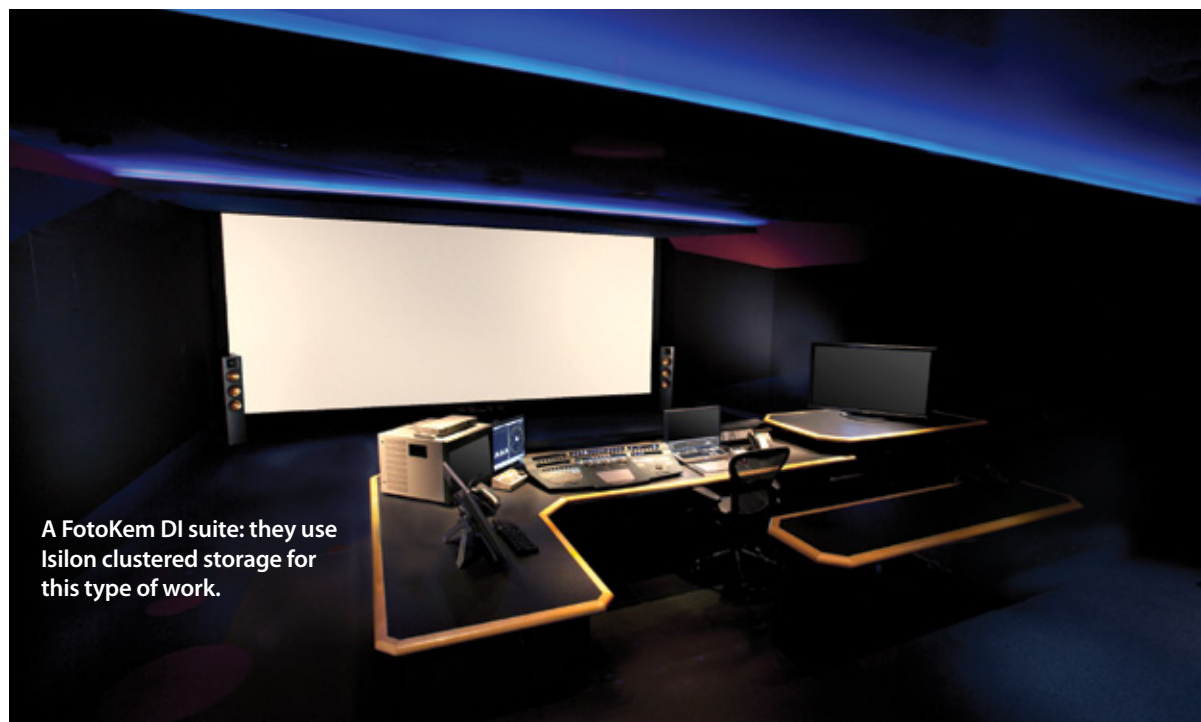
The NAS systems support at least 12 lower-bandwidth I/O machines, including Arri scanners and laser recorders for 35mm work, a super high-resolution scanner for 65mm, and 5-, 8- and 15-perf film recorders. Multiple high-bandwidth Quantel Pablo systems are connected to its shared storage as are The Foundry’s Nuke and Ocula renderfarms, Clipsters and the company’s own NextLAB systems.

Schultz says FotoKem has been a longtime Isilon custom-

He gives kudos to the ability to have a single namespace for arbitrarily large partitions. “It’s nice to have a single namespace of 90TB, and we have three of them.”

Schultz notes that FotoKem’s Keep Me Posted facility, about two miles away, has a 10GB dark fibre link to his division that enables them to pass work back and forth and share the Isilon storage. The company’s San Francisco-based Spy also has 9000i clusters with Accelerator X-series nodes.

He says FotoKem Burbank expects to move to new Isilon products later this year since the 6000x clusters are no longer being manufactured. “We expect new Isilon products to give us even better performance,” he predicts.



A FotoKem DI suite: they use Isilon clustered storage for this type of work.

er starting with 20TB of storage. “These 6000xs represent about 450TBs,” he reports. “They have never failed us and have throughput like nothing I’ve seen before. They can sustain the aggregate throughputs of 740MB/s for long periods with 1GB nodes on the renderfarm. We have 10GB Accelerators to take advantage of the speed of the Pablos and Clipsters, which achieve and sustain 240MB/s over a single link.”

He expects to keep the 6000xs online for another three or four years before migrating them to nearline storage where they will continue to remain useful “for a long time. We’ve never lost a byte of data, and the downtime has been virtually non-existent.”

The Isilon architecture permits users to independently scale performance versus storage size, he explains. “We can add more storage without buying additional network interfaces, a combination of storage with network interface or an Accelerator with network interface only.”

Schultz also likes that the 6000xs are “OS agnostic — they work with everything at a very high rate of speed: Windows, Linux, Unix, Mac. We have all flavors here — a Mac render farm, Windows-based Pablos, Linux-based Nuke rendering. All of them connect easily to the Isilons.”

ORIGINAL MEDIA

With offices in New York City and Los Angeles, 10-year-old Original Media (www.originalmedia.com) specializes in unscripted television and films from development through post production. The company started with the *Miami Ink* and *LA Ink* tattoo-themed series and now has *New York Ink* running on TLC. It also produces *Swamp People* and the new *Mud Cats* on The History Channel, *The Rachael Zoe Project* on Bravo, the tattoo competition *Ink Master* on Spike, *Dual Survival* and *Storm Chasers* on Discovery, the new *Being Johnny Weir* on Logo, *King of Dirt* on DIY, *Barbecue Masters* on TLC, and the new *Comic Book Men*, about film director Kevin Smith’s comic book shop, on AMC.

With such a full slate of shows, no wonder the company acquired Avid’s ISIS 5000 realtime shared media storage system at the end of last year. A second system was just installed in LA to usher in post production capabilities at that office; its first series will be *LA Style* on Oxygen.

“We have 18 Avid Nitris systems, 12 Avid Adrenalines and another 20 Avid Media Composer software-only systems in New York,” says VP of post production Chelsey Trowbridge. “We had two LAN shares and an Avid Unity

for storage before. Working with three storage solutions was a bit difficult when editors were jumping from show to show. With ISIS 5000 we now have the storage capacity to have all our shows on one system."

Technical supervisor Anthony G. Crisano says that ISIS "doesn't have the limitations that Unity had with its file and directory count. Our ISIS is wired with 44 clients. Unity had one, and we had to purchase each additional fibre or Ethernet client. So ISIS is much more cost effective for the volume of work we do."

Trowbridge notes that Original Media usually has four or five shows in post simultaneously. "Most editors stay on the same shows but the development department can pull them off to work on a sizzle reel or they can bounce from a series to development pieces. With our past infrastructure they sometimes couldn't go onto Unity because we were out of client seats or there was no fibre pull to the floor they were working on. Now, they can jump back and forth at will."

The company's ISIS 5000 has a 32TB chassis, which can scale up to 128TBs, "so there's plenty of room for us to grow," she says. "We've only had the system for two months but we haven't experienced any issues, and it's easy to set up work spaces for our new shows."



Avid-based Original Media works on a host of reality shows, including *Storm Chasers*.

Crisano echoes her early kudos. "The install was really seamless — we just popped it in and started creating work spaces. Ethernet is the best way to go; fibre breaks all the time and you get the same exact speed with Ethernet, if not more. In fact, ISIS seems to handle HD resolution better than Unity on fibre."

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Storage News

iQ-XL debuts from iQstor

NEWBURY PARK, CA — iQstor (www.iqstor.com) has introduced its iQ-XL high-performance digital media disk array, an affordable, intelligent storage solution with sustained throughput well over 4,000MB/s, which is ideal for multi-stream content creation and broadcast applications.

The new product is designed to offer unparalleled performance with built-in AST read ahead buffering technology



that eliminates frame drops. It features an 8Gb fibre channel front end with 4GB of cache per controller (expandable to 16GB), 64-bit Intel Quad Core CPU per controller and True Active-Active Dual Controllers. iQ-XL streams 4K in a single 16-bay SAS and provides multiple stream support of HD, ProRes and more. iQstor's iQ-XL supports 6Gb/s SAS and NL-SAS disk drives; DAS, workgroup and networked environments; and Windows, Linux and Mac OS X platforms. The product's 3U 16-bay enclosure is expandable up to 240 disk drives with an affordable expansion chassis.

Other standard features include RAID levels 0, 1, 5, 6, 10, on-line RAID expansion and multiple RAID sets; a VMware VSphere plug-in; enhanced AST backup agents for SQL, Oracle, and Exchange; thin provisioning hot swap disk drives and global hot spare disks; automatic drive failure detection and rebuild; and MAID 2.0 Support Storage Management software.



Active's mRAID supports mMedia platform

TORRANCE, CA — Active Storage (www.activestorage.com) has announced mRAID, a high-capacity, high-performance and high-availability RAID storage solution that provides key high-capacity online production storage for the company's new mMedia platform, which delivers an end-to-end workflow storage solution for post and broadcast.

"The mRAID is unlike any storage you have used in a creative workflow," says Active Storage founder/president Alex Grossman. "It's fast, smart, scalable and easy. As heterogeneous workstation environments are becoming the norm, and increased resolutions and more distribution formats make ad-hoc approaches unworkable, the mRAID changes the game, making it easy to host powerful applications and support multiple Petabytes of connected storage."

Active's mRAID, which offers 48TBs of storage capacity in 3RU, has the throughput and low latency to power high-bandwidth post and broadcast production environments. mRAID is engineered to handle current and next-gen Intel-based storage processors with a new CrossFlow cooling system and a new high-speed bus interconnect between RAID controllers, new multi-core aware software design, and next-gen, hot-swappable Environmental Processing Engine.

Archion EditStor ES adds Avid project sharing

BURBANK — Archion (www.archion.com) EditStor ES shared storage system now provides Avid project sharing that enables complete collaboration between multiple Avid editors simultaneously working on the same open project.

This enhancement, which is transparent to the Avid workflow, is an example of how Archion is using its 10 years of experience with Avid workflows.



"EditStor ES offers the native Avid project sharing that once only existed when using Avid shared storage solutions," says Archion CTO James Tucci. "We've made it possible for Avid users to realize the benefits of this feature while also enjoying greater media management tools."

EditStor ES is a shared storage system that has been specifically designed with the level of features and scalability needed for media workflows.

"Having more than a decade of Avid workflow and shared storage experience, our customers rely on us to introduce and enhance products that improve their workflows," says Archion COO Reuben Lima.

NetApp expands Content Management solution

SUNNYVALE, CA — NetApp (www.netapp.com) has followed the successful launch of its E5460 Media Content Management solution at SMPTE 2011 with the introduction of two additional chassis: the E2612 and E5424, both of which are now available.

The original E5460 chassis is a 60-drive, 4RU configuration designed for large media and entertainment customers. The two new products address market segments that don't need the capacity of a 60-disk system.

NetApp's E2612 is a modular 12-disk system, 2RU high, which offers expansion shelves for additional chassis that can expand the Media Content Management solution to 24, 36 or 48 drives. Its 1.5 GB/s bandwidth make it well suited for 2K ingest and color correction at smaller facilities or in departments within larger companies.

"The sweet spot for this product will probably be 24 disks," says Jason Danielson, NetApp media and entertainment industry lead. "The hardware controllers in this generation of technology are so fast that you want to put at least 24 disk drives behind them to leverage the bandwidth of the controller. Having the modularity of

the 12-disk chassis works well for most people."

The company's new E5424 features a 24-disk enclosure with fast 2.5-inch drives capable of over 3GB/s of sustainable mixed read/write video throughput. It is designed for high-bandwidth usage, such as dozens of editors doing uncompressed HD editing requiring Tier 1 storage. The product boasts the same 5400 controller as the E5460 enclosure.

The E5424 is expandable with as many as eight enclosures, but Danielson sees most customers opting for 24- or 48-disk configurations. The system can also accommodate solid-state drives to reduce latency for 24/7 transcoding farms. "NetApp is traditionally known as an enterprise storage vendor," he notes. "But we're at a crossroads with our new storage line and its E Series technology. When we acquired the Engenio line we gained 30 years of engineering experience in developing the fastest RAID controllers and disk arrays. Their fifth-generation system with hardware controllers is optimized for sustained video throughput. That gives these chassis the best bandwidth per rack unit, which is important to post facilities."


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Storage News

LaCie's 2big Thunderbolt series available

HILLSBORO, OR — The 2big Thunderbolt Series from LaCie (www.lacie.com) is now available in 4TB and 6TB capacities through the LaCie Online Store and LaCie Storage Partners. The new Thunderbolt interface delivers speeds up to 327MB/s — up to three times faster than FireWire 800. That means 1TB of data can be transferred in less than one hour.

If you need more, dual Thunderbolt ports on the 2big permit up to six Thunderbolt peripherals to be daisy chained, without the

need to purchase a hub. Daisy chaining multiple 2big's pushes overall performance to more than 670MB/s for the most data-intensive tasks.

The LaCie 2big Thunderbolt Series also features RAID flexibility for speed or security with Mac operating systems; hot-swappable drives for easy replacement; and an advanced aluminum heat sink design for efficient cooling and reduced electricity usage.

With the 2big Thunderbolt, backups now take a fraction of the time, so users can back up more frequently. Editors working in Apple Final Cut Pro X or other pro software can even stream multiple HD video streams directly from the drive.



ATTO's audio and video workflow solutions at BVE 2012

AMHERST, NY — ATTO Technology teamed with its UK distribution partner, Global Distribution, to showcase its line of storage and network connectivity products in interactive workflow demos at the 2012 Broadcast Video Expo (BVE) in London in February.

ATTO featured its portfolio of products optimized for post and broadcast workflows, including Celerity 8Gb/s Fibre Channel Host Bus Adapters (HBAs), FibreConnect 8Gb Fibre Channel Switches, ExpressSAS 6Gb SAS/SATA HBAs and RAID Adapters, FastFrame 10Gb/s Ethernet Network Interface Cards, FastStream RAID Storage Controllers, and FibreBridge 8Gb Fibre Channel Bridges in a variety of storage solutions.

"BVE 2012 is a great opportunity for ATTO to illustrate why we are the leader in powering all facets of high-performance audio and video workflows," says Wayne Arvidson, ATTO's VP of marketing. "This year, we are demonstrating a breadth of our products with leading solution providers to show why they select ATTO as the foundation to build marquee solutions in the market."

ATTO was tested and certified with over 20 partners exhibiting at BVE 2012, helping to reinforce its leadership in the media and entertainment market.

Sonnet's Qio E3 pro SxS media reader shipping

IRVINE, CA — Sonnet (www.sonnettech.com) is now shipping its Qio E3 professional SxS media reader, a cost-effective, high-speed alternative to standalone card readers. The first three-slot SxS memory card reader available, it includes an integrated two-port 6Gb/s eSATA interface for connecting external storage systems and doubles as a bus expansion system for ExpressCard/34 adapter cards.

Qio E3 users have the ability to transfer data concurrently from three SxS memory cards, increasing efficiency on location or in the studio. Users can copy files between any cards, attached storage and the computer with aggregate bandwidth of up to 400MB/sec, with an aggregate ingest speed for three SxS cards of 300MB/sec.

Two eSATA connectors on the back of Qio E3 enable the user to connect two Sonnet Fusion F2QR or F3 portable two-drive hardware RAID SATA storage systems or other SATA storage. These fast SATA connections accelerate card ingest when SATA is not otherwise available on a laptop.

"The Qio E3 is ideal for customers who don't need the variety of slots included in the original Qio, but instead require multiple SxS slots in their workflow," says Sonnet CEO Robert Farnsworth. "Studios that use Sony XDCAM EX or Arri Alexa digital cameras will find that the E3 provides incredibly fast ingest speeds for increased efficiency."



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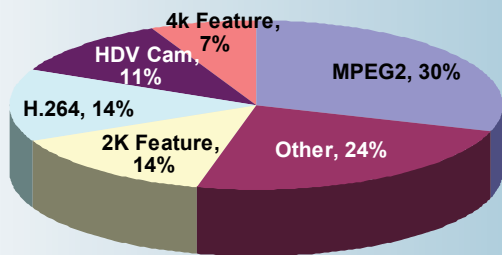
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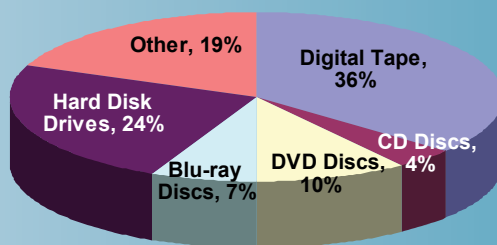
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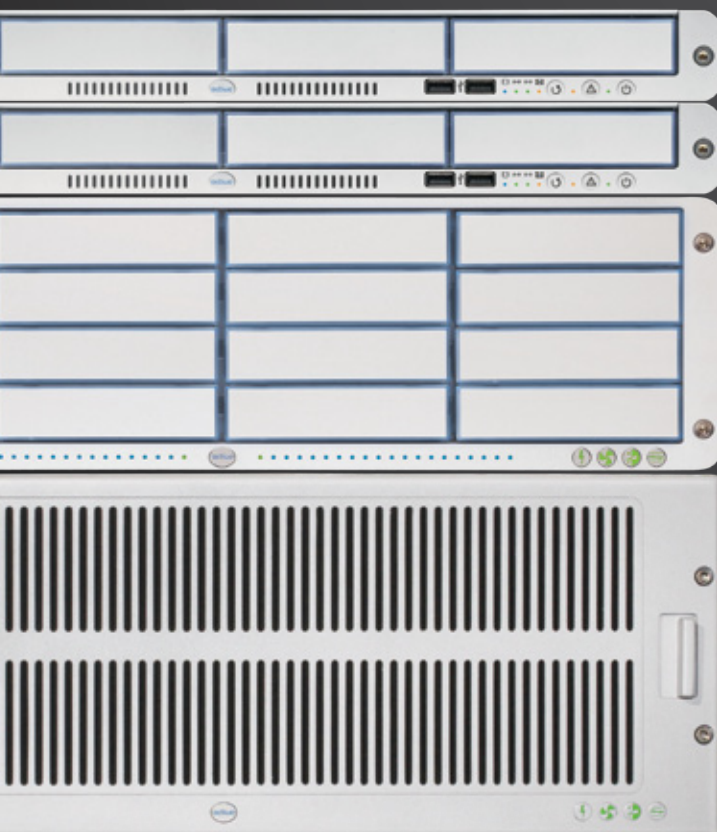
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