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### Storage Report, page 2

Studios detail their workflows, while manufacturers keep up with dense, portable and expandable solutions.

*By Christine Bunish*

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This CEO looks at the dynamically-changing landscape.

*By Jess Hartmann*

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Some of the latest product announcements from throughout the industry.

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Postmaster: Send address changes to Post Magazine, P.O. Box 3551, Northbrook, IL 60065-3551. Please send customer service inquiries to 620 W. Elk Ave., Glendale, CA 91204.

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COVER: Dot Hill, XenData, JMR and G-Technology.

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# STORAGE Report

**STUDIOS DETAIL THEIR  
WORKFLOWS, WHILE  
MANUFACTURERS KEEP UP  
WITH DENSE, PORTABLE AND  
EXPANDABLE SOLUTIONS.**

*By Christine Bunish*

Post production professionals seeking storage solutions have never had a wider choice of products to meet their needs. Whether they're cutting spots, editing creative content or putting dynamic sports pieces quickly on the air, users can select storage options designed for flexibility, ease of use and expandability as their post production needs grow and change.



Brings TV's Ralf Brings at work, where he recently added Tiger Technology's T-Box.



**Dot Hill's AssuredSAN Ultra48 is designed for 4K and stereo 3D workflows.**

**DOT HILL**

Dot Hill's AssuredSAN 4000 family of SAN storage arrays ([www.dothill.com](http://www.dothill.com)) has grown with the addition of a suite of AssuredSAN Ultra48 storage arrays, which are now generally available. The ultra-dense chassis houses nearly 58TBs of data on small form factor 2.5-inch HDDs in an efficient 2U footprint. For high-performance workloads, the array can support any combination of SSD and HDD drives in the same enclosure.

"What's new about the Ultra48 is its very high-density configuration," says senior director of marketing Jim Jonez. "It packs 48 small format disk drives in a 2U configuration. There's no other product like it on the market."

The new arrays "combine our 4000 series storage controllers with the Ultra48 chassis configuration for more spindles, more drives and a very small footprint," he reports. "The Ultra48 uses 23 percent less power, weighs 25 percent less and has twice the capacity and performance per rack-unit compared to traditional arrays."

Joe Swanson, Dot Hill's vice president of marketing and business development, notes that since the Ultra48 can handle both solid state and hard disk drives, "you can optimize this array with a combination of SSDs and HDDs, providing flexibility in high-performance applications like post production editing and streaming or broadcast applications for multi-system operators and video-on-demand providers."

The Ultra48 offers users a number of options, too: It's expandable to 192 drives in an 8U configuration and can also support a 2U 24-drive chassis and 2U 12-drive chassis with a large form factor.

With the debut of the Ultra48, Dot Hill continues to evolve its AssuredSAN 4000 family of storage solutions. "The latest version of the 4000 series controllers was updated in November," says Jonez. "And in January we announced this new chassis configuration. The Ultra48 was conceived and designed with specific input from some of our key OEM customers as well as feedback we solicited from our [user] channel."

With the 4000 series, Dot Hill was the first manufacturer "to bring a 16-gig Fibre Channel host interface to this class of storage," he notes. Users can also replace the SFP port on the host interface with an iSCSI port without replacing the array, he points out.

A growing roster of video editing applications will benefit from the Ultra48's high-performance, high-density attributes, according to Jonez. "4K workstreams are becoming common, cinema editing can incorporate

high-frame rate and high-dynamic range editing, and stereo 3D doubles the number of images.

"A traditional 2K feature film requires about 1TB capacity for one hour of video, but when you combine 4K projection, high frame rates and high dynamic range, and stereo 3D, the capacity increases to 27TBs for one hour," he says. "Your throughput increases by the same factor, too. So there are tremendous storage requirements as the industry transitions to a new cinema experience."

**JEH PRODUCTIONS**

Headquartered in San Antonio with an office in Port Washington, NY, JEH Productions ([www.jehproductions.com](http://www.jehproductions.com)) maintains a full post production facility in Texas, where four independent edit stations run Apple's Final Cut Pro 7 and the Adobe suite of software, including Premiere.

JEH cuts the commercials, Web spots, corporate branding and "promomentaries" its directors shoot, and also serves as a post facility for hire. Currently, each edit station has either a 2TB or 4TB G-Technology G-Speed RAID for near-line storage. Once projects are done, they move to a 24TB Drobo BeyondRAID for long-term archiving.

"We've had the G-Speed RAIDs for a while, and they've been really good. We use G-Technology portable drives on-set too, to shuttle footage back and forth and as secondary back ups," says JEH president Tony Gallardo. "G-Tech has offered a great balance of price, performance and reliability for what we do as [an Apple] ProRes shop."

JEH directors shoot on Red, Canon C300 and C500, and an array of DSLR cameras. AJA Ki Pro file-based recorders/playback units are used in tandem with Red and Canon cinema cameras and the Atomos Ninja HDMI smart production recorder/monitor/playback deck with the DSLRs so directors can take their files and "jump right into editorial" when they get back, Gallardo explains.

Last year he directed a compelling Web campaign for Children's Hospital of San Antonio, which eventually went to broadcast, featuring interviews with parents of children with traumatic illnesses who were brought back to health after other hospitals were unable to treat them. DP Jamie Rosenberg shot on Red, recording direct to Ki Pro, which went straight to editorial where the Final Cut Pro/G-Speed RAID system was in place. The campaign won San Antonio Ad Federation Gold Addys and a Special Judges Award.



**Agency Doner's in-house post studio The Underground uses Scale Logic storage. The studio recently completed this JCP spot.**

JEH is about to install new Mac Pros and boost storage for post production as well. The new workstations will have 32TBs of Promise Technology Pegasus2 R8 RAID storage with Thunderbolt in a customized, shared-storage solution. "We've had a need for shared storage on a budget," Gallardo admits. "Sneakernet is killing us."

Doug Krainman, COO and executive producer at JEH Productions, says the new configuration has as much to do with changing the way the company works as it does with upgrades that were overdue. "We approach all of our projects as storytellers first, and ultimately one of the main benefits of our new configuration is to our workflow, which will become more collaborative. The files will live on one shared server that each editor will access and share, as opposed to separate files kept on their hard drives, working independently. Additionally, we're reconfiguring our physical space along with the new system, so our team will work in closer proximity to each other, fostering collaboration and communication even more."

JEH also plans to add LTO back up storage. "LTO has proven itself in other industries and is really making good inroads in our sector," Gallardo says.

## JMR

JMR Electronics Inc.'s ([www.jmr.com](http://www.jmr.com)) BlueStor product line continues to expand with the addition of the BlueStor Networked Storage Server powered by technology partner euroNAS's Premium Ultra 64-bit operating system. Targeted to the multi-client media and entertainment post market

that has high-load applications requiring high throughput, the BlueStor Networked Storage Server is a very robust storage appliance for file serving, digital A/V workflow storage, and back-up storage. It's available in 16-, 32-, 48- and 64TB data capacities.

The American-made product comes in a base 16TB system capable of streaming 4K uncompressed video files and 256 tracks of audio simultaneously without degradation through a 10GbE network. It supports data rates for every video file format currently used, from 8-bit SD to 10-bit 4K and is compatible with any network-connected workstation. Remote monitoring of operation and complete status is standard, along with remote notification of errors or failures.

The BlueStor Networked Storage Server has a unique modular design that uses no cables in the data path, minimizing airflow restrictions and points of failure. The 3U rackmounted product uses vertically mounted disk drives in lightweight, low-cost, vibration-dampening disk drive canisters for the highest signal integrity and airflow. The result is lower drive temperatures and higher operational efficiency.

"The BlueStor offers some unique features: using two 6Gb SAS expanders and two 6Gb hardware RAID controllers to address eight disks; each optimizes R/W performance to provide greater than 100MB/s per disk data transfer rates, sustained, using 7,200rpm SATA-3 disks," says Steve Katz, vice president of sales at JMR Electronics Inc. "It packs up to 64TBs native capacity in the same 3U platform

as the server engine and is expandable via 6Gb SAS links to additional storage. We think it's the most bang for the buck available in any Ethernet-based storage product."

Katz says that the BlueStor was developed years ago "as a high-performance, economically-priced platform, and the earliest products were SAS RAID systems and file servers. By combining these functions into a single unit and continually evolving the product technically, we've created something quite unique that fills a need between very high-end enterprise systems costing five times more and lower-end SMB systems, which can't offer such performance and reliability."

The powerful BlueStor Networked Storage Server software has a number of features that make it attractive to DITs and editors, including AFP, NFS, SMB/CIFS and FTP support; built-in iSCSI and fibre channel target; asynchronous replication that replicates storage to another server; snapshot replication that replicates live data quickly; and point-in-time snapshots that recover files to the earlier state.

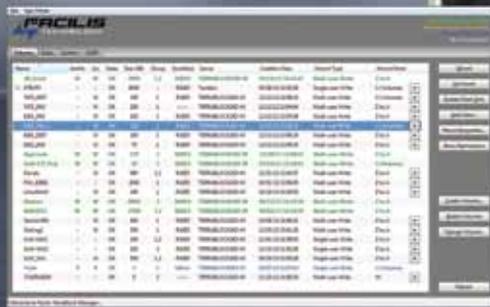
The euroNAS software operates in harmony with hardware provided by JMR, including: dual 8-core Xenon CPUs; 32GBs of DDR3/1333MHz memory, expandable to 1,000GBs; dual 24-port 6GB SAS expanders; dual PCIe3.0/6Gb SAS hardware RAID controllers, usually configured for RAID 50 or RAID 60; 16 RAID disk drives with up to 64TBs of native capacity; and a dual-port 10GbE network interface with port bonding available. The BlueStor server



**JEH Productions' Jordan Mitchell. The Texas studio relies on storage solutions from G-Technology.**

also features a redundant, thermostatically-controlled cooling system and hot-swappable power supply system.

"We've sold the BlueStor networked storage servers into small- to medium-size production/post production facilities where, in some cases, 100 percent of all assets are managed and retained by the BlueStor systems," Katz reports. "One local post house is using a single BlueStor to file share among 24 editors; they have maxed out their network switch and now need to improve that so it's not a bottleneck."



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## BRINGS TV

Cologne, Germany-based Brings TV ([www.bringstv.de](http://www.bringstv.de)) provides a mobile editing truck and post production fly packs for live events, primarily sports and often European football such as the UEFA Champions League, Germany's Bundesliga, European Championship Football and the FIFA World Cup.

Recently, company head Ralf Brings was exploring a new storage solution that would give him the high performance and additional bandwidth he needs to record multiple HD live streams and edit sports news packages for television while he is ingesting data. He wraps finished football reports for broadcast just minutes after matches end and player interviews are conducted. For example, Brings delivers a two-minute news clip of a UEFA Champions League match with voiceover 10 to 20 minutes after the game finishes.

"I record up to four HD streams and edit from them maybe eight seconds behind realtime," he explains. "So I need very large bandwidth. I was looking for a new solution and another company in Cologne told me to try the brand new T-Box from Tiger Technology ([www.tiger-technology.com](http://www.tiger-technology.com)). I saw it and did a 24-hour live test with four to six live HD streams and was quite impressed by its

material and several laptops, which handle media management. Brings records the normal camera angles from the game's national or international director, isolates the camera angles, and switches channels to capture post-game interviews. If the EVS live slo-mo system is very busy he sometimes plays out content directly to air from T-Box. Voiceover is recorded in the truck, the package is finished and Brings TV meets another rapid broadcast deadline.

He typically keeps all material for a project online until the end of production; winter sports, such as skiing, and UEFA Champions League material is stored online all season.

Brings is planning to build a twin mobile truck and notes that his T-Box can connect as many clients as capacity will allow since Tiger Technology does not charge customers on a per-seat basis. "With other solutions, you need to buy individual licenses," he notes. "With T-Box I can just plug in new clients and download the client management software." He expects 32TBs to continue to be sufficient for his needs but says, "we can always grow T-Box with larger drives or add an expansion chassis."

Tiger Technology offers 24/7 phone and email support for all of its products, a must for Brings, who can't afford one second of downtime.



**Buddha Jones in Hollywood recently upgraded its storage infrastructure with Facilis' TerraBlock.**

## BUDDHA JONES

Hollywood-based Buddha Jones ([www.buddha-jones.com](http://www.buddha-jones.com)) is an entertainment marketing and creative content company with extensive in-house post production capabilities.

An all-Mac house, Buddha Jones boasts 50 edit bays running Avid Media Composer, three Avid Symphony suites, a DaVinci Resolve bay and an Avid Pro Tools 5.1 surround mixing room. A pair of Avid ISIS servers is used for off-line editing; four Facilis TerraBlock 24D servers, with 192TBs of total raw storage, are new additions for online conforming ([www.facilis.com](http://www.facilis.com)).

Buddha Jones acquired the TerraBlock servers after "greatly increasing our creative content output," says head of IT Kyle Gascho. It's not uncommon for Buddha Jones to have 60 projects in-house at a time, he reports. Among recent creative content credits are behind-the-scenes and EPK material for the Blu-ray release of *Man of Steel*, and behind-the-scenes footage and interviews for the Blu-ray release of *Gravity*.

Expanding the amount of creative content Buddha Jones is producing "required us to come up with a more collab-

quality, size and performance."

Tiger Technology's T-Box is a SAN solution and digital storage hub designed to smooth complex workflows and take 1Gb/10Gb ethernet as well as 8Gb/16Gb fibre channel to a new level of performance and simplicity.

Brings TV invested in a 32TB T-Box, which occupies just 3U — a small footprint compared to other 32TB systems and ideal for the limited space available in the truck. "The quality of construction of T-Box is absolutely amazing," he says. He's especially pleased with the steel mounting brackets, which provide the stability he needs in a mobile post facility.

Brings TV's T-Box has nine connections for four Avid Media Composer 7.03 clients, two digitizing stations for live



**Tiger Technology's T-Box doesn't require individual seat licenses.**

orative way of working with high-resolution footage," Gascho notes. "Before, we had a lot of local storage attached to a single system. Now, with a few hands needing to access the same material, we needed a high-speed, cost-effective storage solution."

After comparing various systems on the market, Buddha Jones opted for TerraBlock, which "matched our needs and workflow requirements the best," he reports.

The typical workflow is to import directly or Link-AMA raw QuickTime material onto TerraBlock, where the master files are then transcoded to the ISIS offline editing environment as Avid DNxHD 36. "By linking to AMA files on TerraBlock and transcoding straight into ISIS, we cut ingesting time in half," says Gascho. "Facilis allows for Avid-shared projects, and that's huge for us. Our Symphony editors can collaboratively work with the uncompressed footage. When

it's time for the conform, the assistants simply give the bin from offline to the Symphony editor, who has the high-resolution material at his fingertips."

A "big selling point" for TerraBlock was the ability "to connect at 16Gb fiber or as a 10-gig ethernet client or a 1-gig ethernet client," he notes. "That flexibility enables the Symphony

to connect at 16Gb and the assistant editors, who are wrangling files, at 1Gb."

Buddha Jones chose four of TerraBlock's 48TB chassis, which it hopes will be sufficient for a while. "But if we need more storage, we can just buy another crate and plug it in. There's no need to reformat the existing server," Gascho explains.

Projects are archived to LTO-4, -5 and -6 for long-term storage.

**DONER**

The Underground @ Doner in Southfield, MI, provides the advertising agency ([www.doner.com](http://www.doner.com)) with extensive post production services for its broadcast commercials and for internal projects such as client brand and business videos. Eighteen edit suites feature Mac Pros equipped with Apple's Final Cut Pro Studio 3 and Adobe Master Collection CS6; four of them also have Avid Media Composer 7, and several have The Foundry's Nuke X 7, Imagineer's Mocha



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A pair of PC-based audio suites run Fairlight EVO, and a single Mac-based audio bay features Avid's Pro Tools 10.

The Underground's storage solution consists of a 228TB SAN comprising Scale Logic Genesis RX RAID running HyperFS ([www.scalelogicinc.com](http://www.scalelogicinc.com)) for shared online storage to all but the Avid DS suite, where the SAN works locally; FlavourSys Strawberry Project Management software plays a key role in the workflow.

The Scale Logic products have been in place for about 18 months, says Doner's director of engineering Steve Kennedy. "Although we fill out storage pretty quickly, the size of the SAN is more a case of speed over storage: We needed spindles fast enough to support the work for all our edit suites and laptops simultaneously," he explains. "The Underground typically works from 9am until 6pm, with occasional evening and weekend work."

Scale Logic's HyperFS SAN has proven to be "very user friendly and stable, without any issues," Kennedy reports. "It does everything it needs to do. And Scale Logic provided us with a one-stop solution, including Strawberry Project Management software, which they fully support. That usually doesn't happen with companies and third-party software."

Kennedy says Strawberry serves as "a central solution for

same way. All of them sub-mounted the asset project so they could work with the footage.

Once offline editorial was complete and approved, it passed an EDL to finish editorial, which conformed the spot from the sub-mounted asset project. Finish editorial could also sub-mount the graphics and audio projects to get elements from them to complete the spot.

When the spot was client approved, mastered and sent out for broadcast traffic, all projects associated with the spot were archived to LTO-5 tape for long-term storage and removed from the SAN.

Kennedy notes that The Underground is "talking about upgrading to the latest [editing] software release and possibly adding four more edit systems. At that point we'll look at more storage, too. What's nice about our Scale Logic system is that if we increase our editing capacity we can also increase our SAN capacity without redesigning the system or investing in a new one."

## G-TECHNOLOGY

G-Technology ([www.g-technology.com](http://www.g-technology.com)) is now shipping its latest products, G-Drive Pro with Thunderbolt and G-Dock ev with Thunderbolt.

G-Drive Pro is a desktop, external hard drive solution in 2TB and 4TB models, which delivers data transfer rates of up to 480MB/s. It's easily transportable for editing in the field or in the studio and has dual Thunderbolt ports for daisy chaining with other Thunderbolt-enabled devices.

"G-Drive Pro is optimized for performance and capacity," says product line manager Greg Crosby.

"Four hard drives working together give the level of performance of a RAIDed solution at a cost-effective price." G-Drive Pro is well suited for transferring and storing content captured in the field or for shuttling data to those involved in the production and post processes. "It's so compact that it can easily fit in a Pelican case," he notes.

Early adopters are working with multi-stream 2K and 4K data, and looking for "high capacity

and high performance in a small, desktop-style solution instead of a larger multi-bay RAID configuration," Crosby explains. "Adventure photographer and filmmaker Lucas Gilman has five in a Pelican case, which he uses to store 4K content captured in the field."

G-Dock ev with Thunderbolt is part of the Evolution Series. Its two-bay, hot swappable JBOD media drive system can be user configured to RAID 1 (protected) or RAID 0 (performance). It ships with two 1TB removable and portable G-Drive ev external hard drive modules with USB 3.0. It provides dual Thunderbolt ports for external storage expansion and daisy chaining with other G-Dock ev solutions or other Thunderbolt-based devices.

"G-Dock is a flexible, scalable and expandable storage solution," says Crosby. "We're highlighting it for content capture — offloading camera media to multiple G-Drive evs



**G-Tech's G-Dock ev features Thunderbolt connectivity.**

all the workstations, no matter whether they're Final Cut Pro, Avid, Adobe. They all work off Strawberry; it's a very important part of the process for us."

Doner's recent *Rise* spot for JC Penney, which aired nationally during the Winter Olympics, followed the typical workflow at The Underground. After footage arrived from the shoot, an asset project was created on the Genesis RX RAID running HyperFS via Strawberry Project Management software and the footage was loaded onto the SAN under that project. The footage was also sent out as an archive to LTO-5 tape for a back up if needed.

Offline editorial created an offline project on the SAN via Strawberry, graphics created a graphics project, audio an audio project, and finish editorial a finish project in the

**Fox Sports uses Studio Network Solutions' EVO servers in its remote trucks.**

at the same time. It streamlines the process. You can buy a set of G-Drive evs for a project to use for field drives and as a way to distribute final project files to a customer and keep for back up."

Crosby notes that since G-Technology is part of HGST (Hitachi Global Storage Technologies) it can integrate innovative hard-drive technology in its products. "We're the only ones with a 1TB 7,200rpm hard drive; it's about 20 percent faster than the 1TB 5,400rpm hard drives on the market today."

Both G-Drive Pro and G-Dock ev are formatted to work with Apple and Windows environment, he reports. In addition, the Evolution Series is "ruggedized with an all-aluminum enclosure built to withstand a one-meter drop onto carpeted concrete." All Thunderbolt solutions come with a Thunderbolt cable, which is typically a costly standalone item. And all G-Technology products have a three-year warranty, Crosby notes.

### **FOX SPORTS REMOTE OPERATIONS**

Fox Sports Remote Operations handles live sports production in the field for the sports network, including 250 college basketball games annually, NFL football, the Super Bowl, the Daytona 500 and NASCAR season.

"Everything is on 53-foot tractor-trailers, and we have a growing need for post production in the field," says Kevin Callahan, director of engineering for Fox Sports Remote Operations. "In the past we used standalone editing systems with individual FireWire or USB drives. To get material from one computer to another we'd transfer over the 'net or walk the drive from edit bay to edit bay. So to get more efficiency in editorial and optimize the amount of editing time we looked for a shared-storage solution."

After six months of research, Callahan selected the EVO RAID-protected SAN and NAS shared media storage server from Studio Network Solutions ([www.studionetworksolutions.com](http://www.studionetworksolutions.com)).

With 32TBs of raw storage, EVO made its debut at last July's Major League Baseball All Star Game. It has since been deployed with the NFL crew through the Super Bowl and is now onboard for the NASCAR race season.

EVO was chosen for its "feature set and price, as well as its scalability," says Callahan. "At some point we're going to grow, and we have a habit of not letting go of material. We can always add more storage through an expansion chassis."

The Daytona 500 just launched the NASCAR calendar,



and editorial was at work on-site, cutting driver interviews and interstitials to be used throughout the racing season. "EVO initially served as the landing spot for about 120 hours of raw footage shot by the features department on Sony F55, F5 and F3 cameras, Red Epic and DSLRs," Callahan explains. "The material needed to be transferred, stored and available to four Final Cut Pro 7 editing systems on the road."

At Daytona, three edit bays were in a single truck and one edit bay was in a second mobile unit. The EVO, located in the three-bay truck, was linked by a 10Gb connection to one of the three edit bays, a transcoding engine and the replay network. It was linked to the edit bay in the second truck by a 1Gb connection.

The four editors were tasked with turning around finished pieces in 36 to 48 hours, Callahan reports. In addition, the 10Gb connection to the replay network allowed in-race pieces to be cut. "Producers would select clips or media off the replay server, and they'd land on EVO for immediate editing by any editor," he says.

During the NASCAR season the features group shoots about 20 hours of additional footage each week, which is stored on EVO. "Some content shot in Week 1 will be used in Week 13 or 14 of the season," Callahan explains, "so we need to keep it around. We're on the air roughly 15 hours every weekend of the season."

He expects the current capacity of EVO to be sufficient for the NASCAR season; the trucks also have 50TBs of NAS near-line storage for clips of the races, but it's not used for online storage for editorial. At the end of the season the complete NASCAR archive on EVO will go to Fox Sports' LA post production facility for archiving on LTO.

"Our editors are happy and our producers are even more pleased," says Callahan of the EVO. "They're getting more productivity out of our edit rooms. No more time spent on ingesting and making copies to distribute to the other edit systems. No more producers deciding ahead of time what editor will cut what piece. Now, they get the media into shared storage and figure out who will be editing it later."

**POST**

## Post Positions

# Shared Storage Trends

Since acquiring ProMAX Systems in 2008, I've worked to dramatically expand the company's product development and manufacturing operations by breaking into new areas of industry leadership and by building innovative and powerful systems to meet the performance needs of collaborative media creation and demanding post production processes.

Here, I'd like to answer some questions and share my perspective on the dynamically-changing landscape of "shared storage."

*What are the issues driving shared storage trends?*

The rapid growth of storage space requirements are being fed by more and more content creation in 2K and 4K, and the reality that most companies don't have an archiving plan. As businesses, we keep everything because we are scared to delete anything. We fear that the one

thing we delete we will end up needing next week. Another aspect of these higher end storage needs are that with 2K and 4K come higher storage speed and bandwidth requirements to be able to edit and work with that material efficiently. It's true for every company out there.

*What are the most common challenges for companies dealing with shared storage technologies?*

Shared storage is not new. In video, in Hollywood, or in the world; most middle to larger-sized organizations already have shared storage in place. You go into these companies and they have every flavor of technology that's existed in the last 10 to 15 years. They've got a little bit of everything, it's all over the place, and it's all running. The challenge is how to create a seamless infrastructure and connectivity among all of your technology? How do you keep up with your content growth requirements and still do it on an ROI that makes sense?

*How are advancements in shared storage impacting workflows?*

We need to be able to use our technology investment to the fullest extent possible. That means shared storage servers can't be just storage servers anymore. There's too much opportunity to use those systems to do other things; to be connected into the entire environment through a unifying, permission-control structure. The processors on the storage system should also be used to manage asset databases, to transform content through rendering, and transcoding to other formats to improve the workflow process. I think these are the trends and the opportunities that will impact workflow.

*What are the most important aspects to evaluate when considering shared storage?*

Selecting shared storage always comes to evaluating each company's specific workflow and requirements. But the process to go through is universal. I see it as a business/technology conversation. Companies should look

**ProMax's products are scalable. They also integrate with legacy technology.**



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at their business plan; look at where they are expecting the company to go; and what its growth looks like. Every firm can assess the existing technology infrastructure, understand current workflow bottlenecks and problems, and their personnel constraints based on technology. There's a consulting opportunity to wrap that all that together into a technology plan for the organization that will support them into their next stages of growth. The plan pulls all these pieces together for reviewing the ROI for shared storage and other technology improvements.

*What do you see coming next in shared storage development?*

I think we are at the infancy of truly integrated workflows. I think that's the panacea for organizations; real management control over the workflow process. What I mean by that is a fully-integrated pipeline, from acquisition of content through editing, transcoding, delivery, and doing that in a way where metrics are managed. We can see what's in a pipeline, when it's going to move from stage to stage, and when it's going to go out the other side. Then we can start running our creative businesses as more finely tuned operations, instead of by, "It will get done, when we get it done." That is where we're headed, and creative companies will

get pressure from their competitors as organizations start adopting more of a process-oriented, or business-oriented methodology to create content.

*How have these market trends affected ProMax's product development?*

With ProMax's Platform Series, we're addressing the need for more storage space and more functionality. Our servers easily expand up to Petabytes — they're very scalable, and they're some of the fastest shared storage systems in terms of bandwidth throughput on the market. They integrate and connect various pieces of existing legacy technology together so you don't lose your existing technology investments while you continue to march forward toward new requirements. They create an IT technology foundation because of the operating systems they're based on. With Platform, you can integrate the creative side of your company with the IT side, removing the division so CTOs can run a holistic operation. Finally, we've designed our servers to do more than just shared storage. ProMax Platform servers operate as workflow integrators with ingest, transcoding, rendering, asset management, archiving and all of the pieces that create this kind of integrated workflow that companies will want to adopt.

**POST**

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# Storage News

## Glyph releases rugged, portable Studio Mini

**NEW YORK** — Glyph ([www.glyphtech.com](http://www.glyphtech.com)) recently began shipping the Studio Mini, the first in an all-new Studio family of products. As the successor to the company's PortaGig50, Studio Mini is based on a 2.5-inch, 7,200rpm hard drive, and features a sturdy, metal enclosure, USB 3.0 speeds up to 420 MB/s, specialized heat transfer technology, SMART disk monitoring, bus-power via FireWire or USB, and a competitive warranty.

Studio Mini is available in capacities of 500GBs (\$159), 1TB (\$199), and 2TBs (\$359). SSD models were also slated to be released at press time, with capacities including 120GBs, 240GBs, and 480GBs. Glyph's heat transfer technology allows the Studio Mini to withstand the requirements of demanding post workflows while maintaining safe temperatures and providing near-silent operation. The company provides a three-year warranty, along with two years of free basic data recovery, and a one-year advance replacement policy.



## LaCie grows with 5TB drives

**TIGARD, OR** — LaCie ([www.lacie.com](http://www.lacie.com)) is now offering 5TB, 7,200rpm hard-drive capacities in its 5big Thunderbolt Series, 2big Thunderbolt Series and d2 Thunderbolt Series. The availability of 5TB hard drives enables the company to deliver significantly more storage capacity in the same compact designs, saving valuable desktop space.

LaCie's 5big Thunderbolt now features a capacity of up to 25TBs, making it one of the largest five-bay storage solutions on the market. Combined with speeds up to 785MB/s, the solution is well suited for video pros working in 4K with Thunderbolt-enabled computers, like the new Mac Pro and MacBook Pro. The new capacities are also available on the USB 3.0-outfitted LaCie 2big Quadra and d2 Quadra storage solutions. LaCie professional storage solutions are protected by a three-year limited warranty.

## XenData releases scalable LTO archive

**WALNUT CREEK, CA** — XenData ([www.xendata.com](http://www.xendata.com)), a provider of digital video archiving solutions, has released the SXL-5000, a high performance, scalable LTO archive that's specifically designed for video applications. The base model SXL-5000 has 210TBs of near-line LTO capacity and can scale to 1.18PBs. This equates to 9,000 to 50,000 hours of HD video, recorded at 50 Mbits/s.

The SXL-5000 has a network attached storage (NAS) architecture, connecting to the network via 1GbE or 10GbE. Powered by XenData6 Server software, it has a standard file and folder interface used for both archive and restore operations. This means that it is compatible with a wide range of applications used in the media industry, including most media asset management systems. Alternatively, video files may be archived and restored manually to a file-folder structure using Windows Explorer, Finder or via FTP utilities.

The SXL-5000 is designed for mounting in standard 19-inch racks. The 210TB base model consists of a 2U server and an expandable 10U robotic LTO library with two high performance IBM LTO-6 drives. It can be fully expanded to 1.18PBs of near-line LTO capacity by adding three 10U expansion modules to the robotic library. Each LTO-6 drive has a throughput of 160Mbytes per second when either writing or restoring files. Pricing starts at \$67,700.





## EditShare improves shared storage platform

**BOSTON** — The EditShare Storage V.7 platform operates on a high performance Linux OS and now sports a totally new and intuitive EditShare Connect interface. EditShare ([www.editshare.com](http://www.editshare.com)) is known for its advanced project and media sharing capabilities, as well as for high stream counts for users working with Avid, Adobe Premiere Pro, Apple Final Cut Pro, Lightworks and other major NLEs.

New features in V.7 include a Quality of Service (QoS) system, which reserves bandwidth for high-priority activities, such as realtime capture or playout, and limits the bandwidth of low-priority activities. EditShare Connect's Project Profiles allow the system to remember which spaces need to be displayed and/or mounted for different projects. There is now support for Active Directory Single Sign On (SSO); a system status indicator; and localization support for virtually any language. EditShare Storage V.7 also allows FCP X workgroups to use AFP-mounted spaces as SAN volumes, giving editors the ability to store FCP X libraries, events and projects on central storage.

## OWC's ThunderBay utilizes Thunderbolt connectivity

**WOODSTOCK, IL** — Other World Computing, ([www.macsales.com](http://www.macsales.com)), a zero emissions Mac upgrade and storage technology company, has expanded its line of Thunderbolt interface storage products with the addition of the OWC ThunderBay IV four-bay external high-performance drive. The ThunderBay IV is available in capacities up to 16TBs of total storage and can add tremendous storage capacity and throughput to any Mac or PC with a Thunderbolt port. Users can access data at sustained data rates of up to 887MB/s read and 884MB/s write.

The ThunderBay IV supports independent drive access of up to four installed drives, is fully RAID ready, and is suited for RAID 0, 1, and 5 configurations. ThunderBay's dual Thunderbolt ports allow daisy chaining of up to five additional devices plus one high-resolution display. Currently, up to 96TBs of storage, plus a display, can be added using the ThunderBay IV solution with any Mac or PC via a single available Thunderbolt port.

The unit features a durable aluminum enclosure that protects the four internal drives and keeps them cool. In addition, the locking faceplate keeps the installed drives secure. A 1.0 meter certified Thunderbolt cable is included. Pricing begins at \$494.99 for an "add your own drive" configuration. Other configurations include 4.0TBs for \$699.99; 8.0TBs for \$869.99; 12.0TBs for \$979.99; and 16.0TBs for \$1,399.99. SSD configurations are also available, starting at \$979.99 for 480GBs.

## Cache-A adds 10GbE connectivity

**GOLDEN, CO** — Cache-A Corporation ([www.cache-a.com](http://www.cache-a.com)) recently showed off its latest innovations in LTO-tape archiving that support enhanced productivity and deliver greater levels of asset protection.

The company's Pro-Cache610 was developed in response to the advent of low-cost, 10GbE infrastructure technology and the media and entertainment industry's demand to take advantage of the extra productivity 10GbE delivers. Pro-Cache610 is based on Cache-A's flagship Pro-Cache6 appliance, and features dual RJ-45 connections for 10Gb Ethernet I/O, allowing high-speed archiving at over 150MB/s. It also has eSATA ports for fast access to direct-attached storage, and a SAS connection, allowing seamless connectivity to Cache-A LTO-6 library or sidecar expansion units, as well as third-party robotic systems.

Pro-Cache610 comes with 6TB internal HDD RAID 0 or RAID 1 disk-cache storage, while LTO-6 cartridges can hold up to 2.5TBs of data natively. It is rack-mountable in a central machine room, but can also be easily deployed in on-set cart systems. The company's new Simul-Copy capability improves archiving workflow by speeding-up the delivery of LTO-tape copies. It is especially helpful on long-form projects that can produce several Terabytes of RAW camera data.



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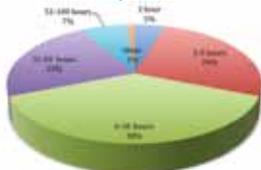


Dr. Tom Coughlin is the Distinguished Author of the Digital Storage in Media and Entertainment Reports and the Founder and Chairman of the Entertainment Storage Alliance<sup>TM</sup>.

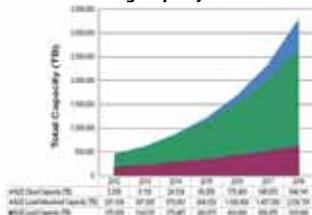
Media and Entertainment Market Storage Revenue Share by Segment



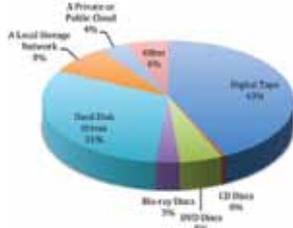
Content Shot for an Hour of Completed Work



Post Production Annual Storage Capacity Demand



Percentage of digital long-term archives on various media



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