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Rhythm & Hues calls on Integrated Media Technologies to set up their storage infrastructure, making it easier to work on VFX blockbusters like *The Incredible Hulk*.

# Storage for **VFX**

**Finding the right system for your company's huge storage needs.**

**By Christine Bunish**

There are more storage options than ever before for studios specializing in visual effects work. With an embarrassment of riches to choose from, no wonder many companies sport several visual effects storage solutions dedicated to different functions and workflows.

## FEATURE FILMS

At effects studio Rhythm & Hues ([www.rhythm.com](http://www.rhythm.com)) in Los Angeles, there are three layers of visual effects storage. Tier one storage, which the artists and render nodes work off directly, features two BlueArc Titan 2S and two Isilon IQ1920 systems, which share chores equally.

Tier two, for nearline storage, consists of BlueArc Titan 2S and Sun Microsystems' Thumper X4500 systems. The latter is a new acquisition. "Integrated Media Technologies [IMT] brought it to our attention," says R&H systems administrator Chris Banal. "The X4500 was priced very competitively and was very reliable. Somehow, with every project we do, there never seems to be enough storage, so we continue to acquire systems. With the cost of tier one storage, the need for nearline storage grows. Nearline storage is for material not actively in use but which can be brought back quickly if needed."

Tier three storage has a Sun SL500 tape robot running SAM-QFS software, which enables users to view the tape library as a virtual disk. "The library contains our back-ups, archived shots or jobs, and digital dailies for review," Banal explains. "IMT also suggested the SL500 tape robot. Its QFS software makes it very easy to integrate the tape library into the environment; we evaluated several types of software and only QFS was able to keep up with us. We're basically going 24/7 with our studio here in LA and two in India. Our old ADIC AMASS tape robot couldn't keep up with our workflow any more. Back-ups were taking more than 24 hours to complete."

Fortunately, the new tape robot is modular since Rhythm & Hues "underpurchased space" when the system was installed. "You can buy expansion modules and be up and running in 20 minutes," Banal points out. "We went from our too small 100TB to 150TB; that's still okay but we have another 50TB of tape sitting on the shelf that needs to be added. And in another six months to a year we'll need to purchase more space again!"

He estimates that among the various

BlueArc and Isilon systems, the studio has about 30TB of each brand. The company's three-level VFX storage has been tested by features like *The Golden Compass* (for which Rhythm & Hues won an Academy Award for Best Visual Effects) and the new films *Mummy 3*, starring Brendan Fraser, and *The Incredible Hulk*, starring Edward Norton. Rhythm & Hues is the lead VFX house for both of these new features.

"Every project pushes the envelope of VFX and requires a bit more render nodes, more storage, more everything," Banal declares. "We're very happy with the systems we have, but any time we need anything new we take a lot of time evaluating storage to keep up with our demands. We push terabytes and terabytes of data across storage systems, so we need systems with super reliability and very high performance. We can't get away with the slightest glitch."

## FEATURES, TV & MORE

Santa Monica-based Entity FX ([www.entityfx.com](http://www.entityfx.com)) has both 8TB Isilon and 20TB Sun Lustre file systems for its feature film, TV and commercial work. "The Isilon is our day-to-day, bread-and-butter server," points out head of technology Todd Daugherty. "We don't have to think about it; it does it what it has to do."

"But Isilon didn't have a 10GB solution available when we needed speed and graphics at the same time, so I built one with Lustre and InfiniBand cards I got on eBay. Put together with spare parts, glue and love, the system outputs two streams of HD and keeps all our nearline stuff accessible," he explains.

Entity FX installed its Isilon IQ1920i in March 2006. Effects for episodes of *Fight Science*, for Discovery, *Sports Science* for Fox Sports and the new *Crime 360* for A&E, plus numerous commercials and the feature *Into the Wild* all went through Isilon during production.

"It's been operating at 90 percent capacity since two days after we bought it," Daugherty reports. "And we're at 35 to 40 percent bandwidth capacity over time, which is pretty high. There's a constant cycling of work on and off the system."

The company's Lustre solution began as a 20TB system earlier this year and is fast edging toward a 40TB system. "Anything that no longer needs to be on Isilon but we're not sure will come back for additional work goes to the



Café FX, which uses BlueArc and Isilon as their tier one storage systems, provided VFX for the film *Nim's Island*.

Lustre cluster," says Daugherty. "It's perfect for nearline storage and playback. We can get real-time playback without shipping to multiple stations throughout the studio. We use it constantly for that, to look at work in progress. Because the system is so big we can keep an entire episode online so we can watch effects shots in context and match color. The creators of *Smallville* come here to watch their effects shots played back from the Lustre storage."

Entity FX's Vancouver office has been using a Net-app storage system for the last four years. The Santa Monica studio's Netapp 940 system was replaced by the Isilon. "The Netapp couldn't keep up with our demands, so we got the Isilon here," Daugherty recalls. "But it's a perfect size for Canada, a good solution for them."

## BROADCAST DESIGN

Atlanta's RGBTV ([www.rgbtvinc.com](http://www.rgbtvinc.com)), a motion graphics, animation and compositing boutique with broadcast, commercial and feature film clients, opted for a 6TB Sonnet HD RAID array for its visual effects storage.

"We started with a Huge drive set-up; five years ago it was the pre-eminent SD drive array," says motion designer Jonathan Sargent. "It was time to upgrade to HD and our tech advisor suggested we consider Sonnet." RGBTV retained its Huge RAID system with Blackmagic capture card, which runs on Mac G5s, for SD projects. "Machines don't really die, they just get used for something else," Sargent quips. "They're still good for rendering or other storage or a server. You can always find new uses for them."