

## Maxx Digital Evo High-speed RAID 5 slashes production time

What kind of storage infrastructure does it take to edit and deliver seven high-definition (HD) episodes for the Food Networks' "Good Eats" show in fewer than 10 days? According to Walter Biscardi, owner of Atlanta-based Biscardi Creative Media, much comes down to the speed and reliability of the underlying storage.

Over the past three years, Biscardi and two other full-time staffers have been responsible for producing 75 broadcast HD masters and 150 standard-definition (SD) broadcast masters. They've also been the recipients of many awards for excellence in HD broadcast and postproduction.

Biscardi credits his latest storage configuration with dramatic boosts in his staff's creative output. He estimates that with a slower storage system, it would have taken him about 18 to 20 days to deliver the seven shows he was ultimately able to deliver in fewer than 10 days. The underlying storage engine that drives high-speed reads-and-writes in two of Biscardi's three Apple Macintosh Pro-based creative suites is an 8TB RaidPro SATA array from Maxx Entertainment Digital. The array is direct-attached to the Mac workstations via Atto Technology's ExpressSAS R380 RAID adapters.



*Walter Biscardi, Jr., in the "Wally World" suite at Biscardi Creative Media, has a broadcast HD workstation with equipment from Apple, Atto Technology, and Maxx Entertainment Digital.  
Photo courtesy of Biscardi Creative Media*

The ExpressSAS R380 adapters support SAS and/or SATA drives, x8 PCIe host interfaces, and eight external ports. For high-performance environments, such as Biscardi's, the adapters leverage Atto's Advanced Data Streaming (ADS) technology for high I/O throughput and reduced CPU utilization.

Biscardi had previously used SATA-based arrays from other vendors, with mixed results. Some vendors provided the requisite performance, but only in RAID-0 configurations—a factor that didn't inspire much confidence in the case of drive failures.

Biscardi tested SATA arrays from three vendors: Sonnet Technologies, Dulce Systems, and Maxx Entertainment Digital Evo. The results? "Maxx Evo had the fastest performance with RAID 5, which was what I wanted. It also had the best price." The MaxxEvo HD RaidPro array clocked RAID-5 write speeds of 488MBps and read speeds of 429MBps with 1920x1080 10-bit RGB

frame sizes. "The speed allows me to work in real-time without doing very much rendering," says Biscardi.

Interestingly, two of the three RAID vendors tested were also using the same Atto adapters. Being familiar with Atto's adapters from previously used Medea systems, Biscardi enlisted Atto's advice during the testing process to help tune the Evo systems for optimal performance in uncompressed HD mode.

According to David Martin, an Atto application engineer, one trick for high-performance, uncompressed HD environments is to set the interleave size to 1MB, which allows larger blocks of data to be sent to the array. For mostly standard definition work, a better interleave setting might be 512KB, says Martin. "The lower [interleave] setting would probably give you the best of both worlds, where it's still fast enough to do some HD work if you need to."