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Drobo's venerable 4-bay array gains USB 3.0 speed boost

by Steven Sande Jul 8th 2014 at 6:00PM

Drobo's products have come a long way over the years. The company started with a 4-bay BeyondRAID array with a FireWire connection that was sold in one form or another for quite a few years, and has expanded the product line with everything from the mini (with 2.5" drives, Thunderbolt and USB) to the rack-mounted B1200i (12 bays and quad gigabit Ethernet ports). Now Drobo has updated the original 4-bay array (US$349.99) with USB 3.0, so let's see how this box of storage works.

Specifications

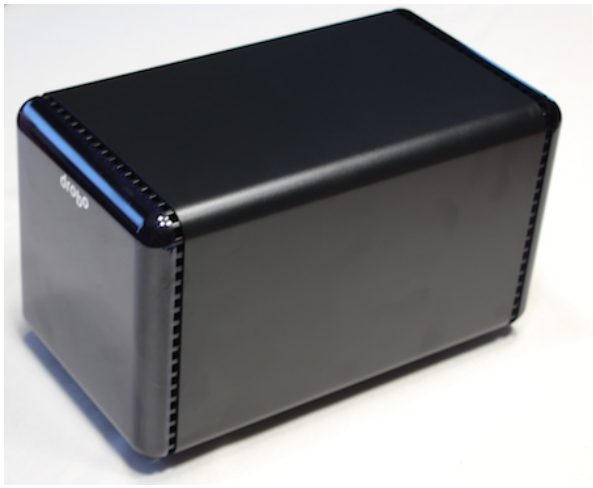
- Dimensions: 5 in wide x 6.3 in high x 10.7 in depth (152.4 x 160 x 271.8 mm)
- Weight: 6 lb, 11.3 oz (3 kg) without hard drives, power supply, or packaging
- Connectivity: 1 USB 3.0 port
- Capacity: Up to four 3.5" SATA II/III hard drives. With four 4 TB drives installed, the device has 10.89 TB of available storage space (one drive redundancy).
- Time Machine compatible, and Drobo Dashboard now allows user to select the size of the Time Machine backup volume so that Apple's OS X backup software doesn't take up all of the available drive capacity.
- Power Fail Protection: In case of a power failure, all data in memory or cache is protected by being moved to onboard flash, where it resides until power is restored and it can be moved to your disk drives.
- OS X Compatibility: Requires OS X 10.7 or higher

Design Highlights
As with the previous incarnations of this drive array, the Drobo 4-bay comes in a solid black box with a magnetically-attached door that covers the drives. There's no need for drive "sleds" -- the drives simply slide right into the slots and lock into place.

There are blue LEDs along the bottom of the drive that indicate percentage capacity during startup, as well as a status LED for each drive. Power is supplied by a "brick" with a six-foot cable.

Setup is quite easy; I simply inserted the drives into the bays, plugged in the power, and turned on the drive. Once it went through its startup routine, I plugged the USB 3.0 cable into an empty port on a MacBook Pro, where it was recognized quickly by the Drobo Dashboard utility. The drive array was formatted using Disk Utility.

So why would you want a Drobo instead of just purchasing a regular drive for backups? Expandability, for one -- you can replace smaller drives with larger ones in the future, just by popping out one of the existing drives and sliding in a new one in its place. RAID arrays also provide redundancy, so if one of your drives fails, your data is still safe. A Drobo array can be set up with dual drive redundancy, meaning that two drives can fail simultaneously and your data is still safe. Setting the array up this way reduces the available capacity quite significantly, though.



One final note about design. The Drobo has a large cooling fan inside that is very quiet. If the device is installed on a desk or table near you, you might hear the slight noise of the fan as well as the occasional "rattle" of the drives. I found the sound from the Drobo to be quite acceptable when it was placed under my desk.

Benchmarks

The Drobo BeyondRAID drives are designed so that you start out "small" with whatever drives you have on hand or can afford, then swap them out with drives of larger capacity as time goes by. The review array was shipped with two 1 TB drives and two 2 TB drives for an out-of-the-box working capacity of 3.63 TB.

For the purposes of testing external drives and RAID arrays, we traditionally use the Intech SpeedTools QuickBench 4.0 app to run multiple cycles of read/write tests. The Drobo was directly connected to a MacBook Pro with Retina display using the provided USB 3.0 cable.

To ensure accuracy in testing, I performed a 100-cycle complete test. This subjects the drive to sequential and random read and write tests with file sizes from 4K to 100 MB, then graphically or textually displays that information to show the "sweet spots" for a specific drive or array. For example, if your work involves shuffling around a lot of very large files, you'll probably want a drive that has peak read/write speeds for files around your average file size. Here are the test results, compared to a Drobo mini running on USB 3.0:

- Sequential Read: 97.030 MB/Sec (72.593 MB/Sec for Drobo mini via USB 3.0)
- Sequential Write: 75.976 MB/Sec (112.456 MB/Sec for Drobo mini via USB 3.0)
- Random Read: 31.969 MB/Sec (62.968 MB/Sec for Drobo mini via USB 3.0)
- Random Write: 49.505 MB/Sec (70.996 MB/Sec for Drobo mini via USB 3.0)
- Large Read: 227.036 MB/Sec (220.192 MB/Sec for Drobo mini via USB 3.0)
- Large Write: 224.274 MB/Sec (242.503 MB/Sec for Drobo mini via USB 3.0)
- Extended Read: 233.445 MB/Sec (184.446 MB/Sec for Drobo mini via USB 3.0)
- Extended Write: 207.724 MB/Sec (161.916 MB/Sec for Drobo mini via USB 3.0)

With smaller files sizes, the Drobo isn't a speed demon. When looking at larger file sizes, the Drobo is as fast or faster than its little bro the mini when running on USB 3.0. However, compared to a Thunderbolt-equipped RAID array like the CalDigit T3 we tested in March of 2014, the Drobo absolutely crawls. It's not surprising that Drobo didn't add Thunderbolt to the 4-bay -- as the Drobo mini benchmarks demonstrate, adding a faster interface doesn't necessarily give a RAID array faster throughput.

Conclusion

Drobo's namesake product received USB 3.0 connectivity and a much lower price, making the 4-bay BeyondRAID array a bargain for anyone who wants expandable and redundant storage without spending the nest egg. Those looking for speed for video editing and similar requirements would be better served by faster competitors or others members of the Drobo product line. Drobo's product build quality, ease of setup, and amazing management tool (Drobo Dashboard) definitely make this product a standout despite its relatively slow throughput.

Rating: 3-1/2 stars out of 4 stars possible