

## Product Reviews

### Networks/Servers

#### Nexsan SATABeast [PC Pro]

**COMPANY:** Nexsan Technologies **PRICE:** £28,500 exc VAT

**RATING:** ★★★★★

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**Verdict:** A truly remarkable appliance that delivers one of the highest storage densities in the industry allied with good performance, top management facilities and plenty of fault tolerance

In the network storage market, we're seeing more and more vendors embracing SATA as the disk interface of choice. No more expensive Fibre Channel or SCSI, as the majority of businesses are now putting a higher priority on capacity as opposed to performance. As we saw with its ATABeast, Nexsan Technologies excels at providing some quite remarkable capacities, and the latest SATABeast takes this into the stratosphere. This 4U chassis delivers a stunning raw capacity of 21TB. That gives an industry-standard 42U rack cabinet the capability of serving up 210TB, allowing companies to maximise their investment in server room floor space.

The SATABeast achieves this remarkable feat by utilising a horizontally mounted controller board with 42 combined SATA and power interfaces on it. The drives come with rails already fitted, so you simply drop each one vertically into the cabinet using the plastic guides. It's a simple enough process, and we had the cabinet fully populated inside 30 minutes. Build quality also sees improvements over the ATABeast. The upper lid is now held in place by the hinged front panel, so access to the drive bays is a lot easier. Also, each drive slot is accompanied by a status LED, making it straightforward to spot a failed unit and remove it easily using the supplied puller tool.

With so many drives in a relatively small space, you'd expect cooling to be a high priority, and you'd be right. Nexsan has fitted three large fans in the front panel, and these are accompanied by four blower fans in a hot-swap tray at the rear - the power supplies also have two powerful fans each. It may be noisy, but Nexsan has over-specified cooling in readiness for the next generation of higher-capacity drives. Fault tolerance is in abundance too, as the chassis comes as standard with two redundant power supplies and a pair of RAID controllers. The appliance does support a single

controller, and with two in place they normally run in active/passive roles to provide RAID controller redundancy. However, you can opt for an active/active mode, which will lose redundancy and cause the arrays to be divided among each controller.

Network installation is a swift affair and helped along by a well-designed CLI, which provides a smart GUI rather than simple text commands. It's actually possible to configure the entire appliance from here, but it's much more fun using Nexsan's web browser interface. From the homepage, you can see at a glance the status of every component along with enclosure temperatures. Moving the mouse pointer over each item brings up the current values. Below is a matrix, which shows every storage bay, with animated graphics revealing the status of each drive.

You can't use the drives as simple volumes, but the SATABeast currently supports RAID0, 1, and 5 arrays, with RAID6 coming along in the next firmware update. We were also advised by Nexsan that iSCSI support is on the cards as well and will utilise the controller's existing pair of Gigabit ports. A quick-start wizard gets you off the starting blocks and, in our case, it automatically created four ten-disk RAID5 arrays with rotating parity, keeping two drives aside as global hot spares for all the arrays. You can go for manual control and select mirrored or striped arrays and choose which drives are to be members of each. Nexsan introduces yet another acronym to the storage industry in the shape of its MAID (massive array of idle disks). Simply put, the appliance can reduce power consumption by placing drives in an idle state. From the web interface, you can select a time period in minutes, after which the appliance will park the drive's heads, reduce their speed and finally spin them down.

For performance testing, the SATABeast was installed on our lab's resident 2Gb/sec FC SAN constructed from a QLogic SAN Connectivity Kit. We created two quad-disk striped arrays, with one on each controller, and used each one to create a single volume. We then used Windows Server 2003 test clients equipped with 2Gb/sec QLogic HBAs, and started with one system directly attached to the first controller. Using the freely available Iometer configured with two disk workers, 64KB transfer request and 100 per cent sequential reads, we saw the server return a speedy 184MB/sec average transfer rate. We then added a second test system to the other controller and logged on to the second volume. With Iometer running on both systems, we saw a cumulative throughput of no less than 364MB/sec.

General performance isn't too far behind the more expensive FC-based appliances. For example, check out NetApp's FAS3020c, as its FC hard disks and multiple controllers returned a raw performance of 191MB/sec for one server and 380MB/sec for two. Definitely faster, but its 2TB of fast FC storage will set you back around £43,000. Quite simply, businesses that need a whole heap of network storage at a competitive price should look no further than the SATABeast.

By Dave Mitchell

#### **SPECIFICATIONS:**

4U disk enclosure: 42 x 500GB Hitachi Deskstar SATA/150 hard disks in hot-swap bays; 2 x 760W hot-swap power supplies; 2 x hot-swap RAID controller modules; 64-bit 533MHz MIPS processor; 512MB PC2100 cache; battery backup pack; supports RAID0, 1, and 5 arrays plus hot-swap and global hot-standby; 2 x 2Gb/sec FC SFP ports, serial port, 2 x Gigabit Ethernet; CLI and NexScan web browser management.