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13 July 2004

## SASsy and savvy Nexsan

SATA and SAS are going to revolutionise storage

By [Chris Mellor](#)

Nexsan is a rarity; a UK-owned international drive array manufacturer. It has RAID technology and was early into the building of ATA-based arrays for enterprise use with its ATA Beast – a 42-drive disk vault for tape library replacement – and ATABoy, also D2D Pro for disk-to-disk backup. It also provides Veriture VSM virtualisation appliances and a SATAblade, which is exactly what it seems; serial ATA disks mounted in blades.

Gary Watson is Nexsan's chief technology officer and we asked him about Nexsan's IP; "Owning our own IP is crucial. Anyone who doesn't own their own IP in the storage business is dead. If you don't you can't be as responsive to users."

As an example of this responsiveness he cites this; "We introduced a GUI into our RAID Controller logic. This meant we no longer needed to have a GUI loaded on the host server, so it was supported by any server. The competition ships their boxes and this needs to be installed on the supported servers. So a new release of the host O/S means no management software support."

EMC, Dell, IBM, HP, etc. will require host server O/S software for management features. Nexsan doesn't.

### ATA and SATA

Nexsan has a strong focus on ATA technology. Here are some of Watson's comments on ATA and SATA:-

"The ATA/SATA marketplace is growing at an enormous pace. We've been doing ATA since 2001 in volume and I finished a fourteenth consecutive quarter of growth. There is room for lots of competitors."

"ATA is required in the datacentre. According to IDC 75 percent of datacentres will deploy ATA this year. If existing don't support it then Nexsan comes in."

"SATA1.0 doesn't offer much advantage over parallel ATA; you can't measure it. We've built our first SATA product, a SATA blade, which has a much-reduced pin count, impossible to do with parallel ATA."

SATA will help increase storage density and I/O per unit of rack storage.

For example, Nexsan's SATAblade has eight 250GB SATA drives, 4 per side, plus a RAID controller in a 1U form factor. The drives come from Hitachi GST; Watson describes them as, "the best SATA drives on the planet," and says 400GB drives are coming soon, meaning the SATA blade will offer 3.2TB capacity. There are two 2Gbit/s FC links or a GigE port.

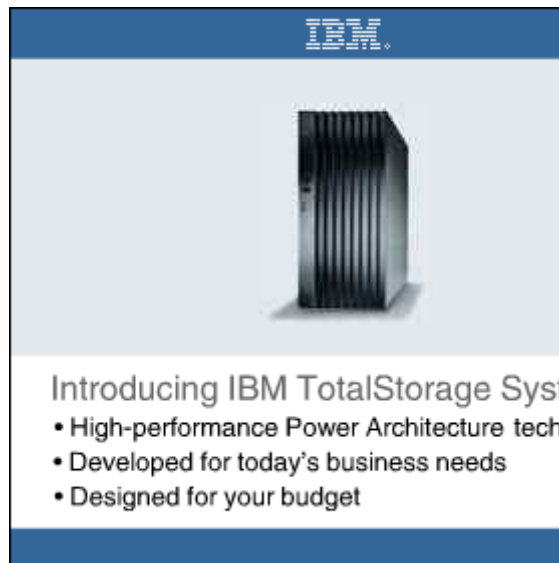
He says a 3U version will offer 1GB/sec read access, which is the fastest I/O recorded for a 3U array. This is due to the RAID controller.

### Nexsan's Competition

What does he think about Nexsan's competition?

- Engenio (ex-LSI Logic Storage Systems division) for example? "Engenio is a serious company".

- And Sun? "It's in decline. Its future is very scary."



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- Seagate? "Seagate has been caught blind-sided by SATA."

- EMC and ACX100? "The AX100 is the first EMC native ATA solution. It has a low-end RAID engine."

- Dell? "Dell will ship many millions of SAS drives."

HP's [FATA](#) idea? "It's an ATA disk with the control board removed and a Fibre Channel (FC) control board fixed in it. A good solution for HP. The FATA volume for Seagate will be very small. It will never be cost-effective." He thinks GST is also doing FATA drives for HP as an OEM project.

Nexsan's [SATAblade](#) provides FC access to ATA drives and is a native ATA solution whereas FATA drives use a method with more components, making the Nexsan system probably more reliable and less costly to manufacture

StorageTek's [BladeStore](#)? "There are five drives per blade. If one drive fails then the blade fails. The rebuild time is long because you rebuild five drives. If there is a 1.5TB shelf then the rebuild takes a week." With Nexsan's [SATAblade](#) drives are individually hot-pluggable and this disadvantage disappears.

#### Serial-attached SCSI

Watson believes that SAS will naturally complement SATA. Currently FC and SC disks are best for random I/O. Not the sequential I/O space. "In 2005 the situation will change with SAS. We'll have Nexsan SAS drives for database and for everything else. Tiered storage inside one cabinet, presented as one seamless pool of storage."

He thinks that SAS is a threat to FC drives. SAS drives will have a 2.5 inch form factor and have the highest I/O per density in a rack shelf or blade.

#### Replication

Nexsan offers a disk-to-disk backup product. Watson says that Nexsan will develop this capability; "We're going to be playing in the replication space. We'll have snapshot for D2D and replication by adding functionality to the RAID controller. You send a message to the array - 'do a snap'. There'll be a limit to the number of snaps, perhaps 32 per host per controller. That's the stepping stone to replication - that means send a snapshot across the wire."

These things will, "come in 2005, perhaps late 2004. In the meantime we'll partner with appliance people."

Nexsan's competition offers 4 or 8 snapshots per port. With Nexsan's higher number Watson envisages, "doing a snapshot every hour. Then replicate to the remote site overnight. Then free up the snapshots."

This ability to extend the capability in Nexsan's storage assemblies by developing the RAID controller functionality consequent on the ownership of its own IP. The SATA and SAS future looks to be bright and fast-moving and cause problems for any SCSI or FC array suppliers slow to respond.

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