

Axstor Ai-Lite Ai-408

It has a few rough edges, but the Ai-408 delivers scorching performance and is good value

As iSCSI gains popularity as the preferred choice for building cost-effective SANs, we're seeing a variety of solutions aimed at the lucrative SMB market. Axstor's Ai-Lite family brings yet another new approach, since they're built around iStor's GigaStorATX controller board, which delivers a remarkable range of innovative features.

Most iSCSI appliances use a standard Intel- or AMD-based server platform and provide iSCSI target implementation within a Linux OS. Not so with the GigaStorATX: this custom board uses iStor's iSNP8008 SoC (system on chip) ASIC, which combines a range of key functions in a single chip. Using multiple embedded microprocessors, it can deliver features such as hardware RAID, full iSCSI and TCP/IP offload functions, SATA interface controls, cache management and volume virtualisation. It comes with a battery backup pack as standard and supports up to eight Gigabit Ethernet ports and 16 SATA interfaces – all on one board. Axstor's choice of chassis isn't overly impressive in terms of build quality, but it's solid and has room for a pair of four-drive hot-swap cages. The bays are also unusual in that they're designed to accept bare drives without carriers. The hard disks slip neatly into the bays, and the lever pushes them smoothly onto the power and interface connectors.

The board provides a dedicated Fast Ethernet port that allows management access to be secured on a separate subnet. General access is through the Java-based web interface, which lets the side down as it takes an age to load and could have been better designed. Nevertheless, after some practice, you'll find it provides easy access to the various features. The Ai-408 on review is the base model and comes with eight embedded SATA interfaces and four Gigabit ports, and the price includes four 250GB Seagate SATA hard disks.

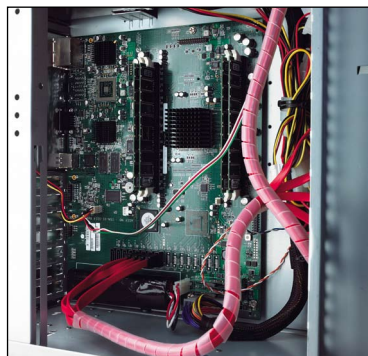
The left pane of the management interface offers views of physical and logical resources. It provides a view of installed hard disks and network interfaces, and icons for the latter change to show which are active. You start by selecting physical drives and dragging them into a pool ready to be split into logical volumes. The system

creates multiple volumes from a single storage pool, and during this phase you decide the type of RAID configuration for each one and which drives to use. The appliance supports RAID0, 1, 5 and 10 plus JBODs; the storage pool can contain multiple volumes, all of which use different types of array. Even better is that volumes can be expanded online into any spare space. Furthermore, you can install new hard disks, add them to the pool and use this space to increase the size of selected volumes.

Access security is good, as only those iSCSI initiators that have been declared to the appliance are permitted to access it. Be careful here, as your entries must precisely match the name of each initiator. You can't edit initiator details, so if you get it wrong you have to delete them and start again. You'll know if you've made a mistake, though, as you'll get an authentication error when trying to log on an initiator. We've never been impressed by the standard IQN naming conventions and find it easier to change the names of each of our servers to something simpler.

Network portals come next, as these are used to bind specific targets to a physical Ethernet port. It's possible to have each on a different subnet for even tighter security. Finally, you create iSCSI target nodes where you provide them with an alias, assign them to a portal, select initiators and decide which volume, or volumes, the initiator is allowed to access.

For performance testing, we used four Supermicro dual-core Xeon servers, all running Windows Server 2003 R2 along with Microsoft's iSCSI initiator 2.03. We configured the appliance with four virtual



The extra board offers a complete iSCSI solution, including hardware RAID management.



ISCSI APPLIANCE

PRICE
£1,799 exc VAT

SUPPLIER
Axstor
0870 330 0770

INTERNET
www.axstor.com

WARRANTY
3yrs RTB

SPECIFICATIONS

Pedestal chassis • 8 x hot-swap drive bays • iStor GigaStorATX controller • iSNP9008 ASIC • 4 x 250GB Seagate Barracuda ES SATA hard disks • 8-port SATA 3Gb/sec embedded controller with 512MB system memory • 4MB flash • 1GB cache memory • battery backup pack • 4 x Gigabit Ethernet, 1 x 10/100 management port • 9-pin serial port • web management. Options: redundant PSU, £300

The Ai-408 reached 458MB/sec in our transfer speed tests.

volumes made up of dual-disk RAID0 stripes and presented them on four subnets, so that each server had its own dedicated SAN storage. With one server logged on to a 50GB iSCSI target, we ran the free lometer utility configured with four workers, ten outstanding I/Os and 64KB transfer requests. For 100% read operations, it reported 118MB/sec. With two servers logged on to their own iSCSI targets, lometer reported a cumulative speed of 232MB/sec, and with four servers in the mix this rose to a remarkable 458MB/sec. Write speeds were equally impressive, and we saw 106MB/sec for one server, a cumulative 201MB/sec for two servers and an excellent 402MB/sec with all four test servers in full song.

It may have a basic chassis and rudimentary management interface, but the Ai-408 is without doubt one of the fastest iSCSI appliances we've yet seen. The iStor controller delivers a range of features plus good security, and Axstor complements this with an aggressive pricing structure that offers a low cost per gigabyte. **DAVE MITCHELL**

PERFORMANCE ★★★★★★
FEATURES & DESIGN ★★★★★☆
VALUE FOR MONEY ★★★★★☆
OVERALL ★★★★★☆

An explanation of how we test products for PC Pro Business is on the cover disc