

# InfoWorld

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GET TECHNOLOGY RIGHT

## TEST CENTER

### STORAGE

# Just Add the Network

IP5000 comes fully equipped with superb administration and plenty of capacity

A NEW CATEGORY of SAN based exclusively on IP protocol is entering the market, targeting the sweet spot of small and midsize datacenters for which FC (Fibre Channel) solutions are too expensive.

The IP5000, a recently released IP-SAN solution from Intransa, offers solid, built-in resilience to hardware failures, powerful storage provisioning and virtualization tools, and flexibility to add more capacity without increasing management complexity, all of which translates into a system that is surprisingly easy to use and administer.

Although its price puts the IP5000 in the same range of entry-level FC

solutions, it also includes the management software, which usually comes at additional cost in the FC world. The heart of the IP5000 is a rack-ready 1U box that contains dual power supplies and two controller modules, each running an instance of the Intransa management software over a clustered version of Linux. Each instance works independently or cooperatively with the other to provide fail-over and load balancing.

Storage capacity is provided by a 3U, rack-mountable disk enclosure

with four dual-ported disk controllers, redundant power supply, and 16 hot-swappable Maxtor ATA drives, totaling a nominal capacity of 3.2TB, although 1GB on each disk is reserved for metadata. Adding two more disk enclosures pushes the capacity close to 10TB; after that, the system can expand further by adding more IP5000 boxes.

To configure the IP5000, I ran a wizard on each controller module, describing my network settings. Next, I installed the StorControl client, a Java-based administrative GUI, and prepared my two servers for iSCSI. I successfully used the Microsoft iSCSI

Initiator software for Gigabit Ethernet NICs and an Intel Pro/1000 T IP Adapter, which has its own iSCSI initiator and a TOE (TCP/IP Offload Engine) that uses less CPU resources.

The IP5000 StorControl management tools are powerful and easy to use. They include a comprehensive CLI (command line interface), accessed via Telnet or serial connection, and the GUI client. The client has less functionality but should cover most daily

storage-management activities, including creating and extending volumes, defining snapshots and mirrors, assigning volume to hosts, and monitoring performance and error conditions on controllers and disk drives.

Predefined policies simplify provisioning storage from the StorControl GUI, and from the CLI you can create custom policies that set the RAID level, the number of mirror images and the stripe size for new volumes. You can carve volumes from shared or, for more demanding applications, dedicated storage pools.

Creating a new volume entailed simply typing the size and chose the appropriate policy and storage pool. From the iSCSI initiator on my server, I easily connected the new volume, which immediately appeared in Windows Disk Management. For improved security, you can implement the CHAP (Challenge Handshake Authentication Protocol) on initiators and targets.

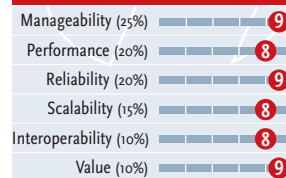
Extending a volume with the StorControl GUI couldn't be easier: You can use a context menu (choose Extend and type percent, GB increase, or desired new size) or simply drag the volume icon border to the new size.

Back to Disk Management, I added the new extent to the Windows volume while my script ran undisturbed. This is the kind of flexibility that can save the day if a critical application is running out of space.

### IP5000

Intransa [intransa.com](http://intransa.com)

**EXCELLENT** 8.6



**COST:** \$62,500

**PLATFORMS:** Linux and Windows for initiators; Windows for management GUI

**BOTTOM LINE:** The IP5000 is a reliable and easy-to-manage storage array suitable for a variety of tasks, including consolidating local server storage and setting near-line repositories for backup or reference data.

Notably, Intransa did not implement RAID 5 on the IP5000. However, to make a volume more resistant to disk failures, you can set up to four automatically synchronized mirrors. Should a physical disk fail, the IP5000 will automatically grab a free disk and rebuild the broken mirror without affecting running applications. Moreover, after you replace the faulty disk, the IP5000 will automatically add it to its storage pool.

Furthermore, you can detach a mirror image to create a new volume or manually create a volume snapshot to use for a different application or server; you must be sure, though, that the data on the new volume is logically consistent.

Though the IP5000's entry price may require some creative budgeting, my overall impressions of it are decidedly positive. The array offers good performance, scales well, and is a pleasure to manage. The IP5000 passed with aplomb my attempts to kill running apps, such as removing a disk drive in use or zapping a critical connection.

— Mario Apicella

