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RELDATA IP Storage Gateway 9200



“A terrific IP storage gateway also supporting Fibre Channel”

By [Dave Mitchell](#)

- List price: As reviewed £15,300 ex. VAT
- Made by: [RELDATA](#)
- Pros: Very good build quality and design, ability to mix SCSI and FC disk arrays makes it highly versatile, excellent iSCSI and NAS performance, virtualisation allows storage to be expanded on the fly, snapshots and replication provide good backup and data security options
- Cons: More could be done to hide the Linux kernel in the management interface, NAS file share creation is lengthy, iSCSI target access security requires an iSNS server
- Buying advice: Fibre Channel SANs are still costly and those that include support for iSCSI and NAS functions can incur a hefty premium. IP SANs are increasingly looking a more cost-effective alternative where performance isn't the top priority and the IP Storage Gateway 9200 offers a versatile solution that supports both FC and SCSI disk arrays and doesn't lock you into single vendor solutions

Most enterprise level network storage products whether they be FC SAN, NAS or iSCSI are generally offered as a complete package which often combines separate controller units and disk arrays. This is all well and good if you're happy to stick with one vendor but it does limit your choice and type of storage as most focus purely on fibre channel.

RELDATA takes a different tack as it only provides the controller unit and allows you to add whatever storage array you want.

The choices are endless as the IP Storage Gateway 9200 has built in support for both SCSI and fibre channel disk arrays and can present the attached storage as either NAS (network attached storage) or iSCSI (Internet SCSI) targets. Another advantage is that legacy SCSI disk arrays can be given a new lease of life as well.

Physically, the 9200 appliance is very solidly engineered and built around a Supermicro X6DH8-G motherboard equipped with a pair of 3GHz Intel Xeon processors teamed up with 1GB of DDR-333 memory. The Linux-based operating system is implemented on a 256MB Linux CompactFlash card attached to an IDE interface. Storage connections abound as the appliance offers a QLogic PCI-X dual port FC HBA and the motherboard's dual Ultra320 SCSI ports are routed through to the rear as well. iSCSI services are equally well endowed as the motherboard sports a pair of Intel Gigabit network ports and the appliance comes with an Intel dual port Gigabit PCI-X adapter as well. All four can be used to present iSCSI targets to the network and the appliance supports adapter bonding for load balancing and failover.



For testing we used a Dot Hill SANnet II 200 FC disk array equipped with a sextuplet of 146GB Seagate Cheetah FC hard disks. As the array brings in plenty of its own features the general storage picture gets even brighter. The SANnet II comes with dual redundant controllers each with a quad of 2Gbps FC ports and RAID controllers with battery backed up cache memory. Consequently, on our test rig we were able to create hardware managed RAID arrays which are presented to the 9200 as logical drives. The 9200 can manage its own arrays and supports RAID-1 and -5 but as these will be implemented in software there will be a performance hit. The SANnet II was connected to the 9200 via both 2Gbps fibre channel ports and we configured the drives all to appear as separate volumes with three on each FC port.

Initial configuration for the 9200 starts at the smart colour LCD display and control pad on the front where you can add a static IP address to first Ethernet port on the motherboard - the other three are disabled by default. Next, you move over to the Java-based remote management console which is a tidy affair designed to manage multiple appliances. Select your appliance and log in and you are presented with a row of chunky icons to the left offering shortcuts to the various storage related functions. Alongside is a tree-style hierarchy of storage resources for the selected appliance and these are partnered by a window to the right which offers a list of options for the selected resource along with a basic description of its function.

An entry in the tree is provided for all storage adapters so you can easily see what devices are attached to each one.

iSCSI target creation is simple enough as you select a disk or logical drive and take ownership. A simple wizard helps you create a new IP storage target where you can accept the default IQN or enter your own. Next, you select the storage devices to be added to the target and then choose a portal which can be any of the active Gigabit Ethernet ports. Enable the target and it will then be presented to the network ready for use. Security is very good as you can limit target access to specific initiators, IP address ranges and those running CHAP authentication. Creating NAS file sharing for Windows users is a lengthier process and we felt that more could be done to conceal the underlying Linux kernel during this process.

For performance testing we connected the appliance to a Gigabit Ethernet network and used a dual Xeon server running Windows Server 2003 and equipped with the Microsoft iSCSI initiator v2.0. To test raw throughput we called in the open-source Iometer and configured it to use two disk workers, 64KB sequential transfer requests and ten outstanding I/Os. Logged on to a single iSCSI target we saw Iometer report a very impressive 92.5MB/sec throughput for read operations and 57MB/sec for write operations. NAS performance was also good as Iometer returned 77MB/sec average read throughput and 56MB/sec write throughput for a simple Windows CIFS/SMB shared drive

There are plenty more features on offer as storage pools comprising multiple physical disks are used to create virtual volumes which can be expanded on the fly by using spare space in the pool. The pool itself can also be increased by adding more disks to it. Snapshots provide a useful backup facility by taking point-in-time read only copies but note these can only be used with virtual volumes. However, snapshots can be scheduled to run at regular intervals, volumes can be rolled back to a specific snapshot and the snapshots themselves can also be exported as iSCSI targets. Replication is also supported so a virtual volume on one appliance can be mirrored to a remote iSCSI target which would typically be hosted by another 9200 controller.

RELDATA is offering an interesting alternative to companies that don't want to be locked in with one storage vendor. Support for both SCSI and FC disk arrays and NAS and iSCSI makes it highly versatile, it is comparatively easy to configure and manage and offers very good overall performance.

Product: RELDATA IP Storage Gateway 9200

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