



IBM's great leap forward in storage

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Expert advice



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IBM's announcement on 12 October of its new DS6000 and DS8000 storage subsystems is a major step in its storage product development strategy. The size of its advance takes IBM from laggard to leader in the capability/performance league table for storage. The architectural approach is the most significant aspect of the development for long-term strategy and planning. Graham Titterington discusses the significance of the development.

What does this mean for users?

IBM is providing a massive improvement in the price/capability ratio for high-end users with the DS8000. For the first time, strong 'partitioning' of the device allows it to be shared by different users with complete confidence about the security of the data.

IBM plans to halve the price of a given volume of storage. The 'top of the range' model offers six times the volume of storage of the current high end of the Shark range. Architecturally, the DS8000 is designed to expand up to 96 petabytes – way above what is available today. Initially, the DS8000 will support up to 1.2 petabytes.

The DS6000 is being positioned as a mid-range device. IBM hopes to re-invigorate its storage market in the SME sector. It will also be attractive to departmental systems and smaller offices of large corporations as well as target storage for a mirror of DS8000 data to save cost in creating a disaster recovery site.

The small size of the new products is as impressive as their performance and price. In the case of the DS6000, what was previously the size of a wardrobe is now the size of a large drawer. The DS8000, while still a cabinet mounted piece of equipment, cuts the floor space requirement by nearly 70%. These products are a useful step towards data centre consolidation.

The new product range

The entire range of IBM storage products is now branded TotalStorage, and the new products fit into this. The DS6000 and DS8000 are families of products that can be configured, within certain ranges, to user needs and preferences. Both are highly reliable, with almost every active component duplicated to provide failover and uninterrupted service. The DS8000 is designed to have a mean time between failures of 100 years. In an attempt to restore its image, tarnished by reliability problems with the early Sharks, IBM is offering a four-year warranty on both new products.



Architecture

The DS6000, DS8000 and Shark ranges share a common architecture, along with most of their software. All three ranges are server-based in that they have a fully functioned server built in to handle the storage management functions, including data copying. The DS8000 has a POWER5 processor running AIX, while the DS6000 uses a smaller processor chip running Linux. Despite the different platforms, 97% of the DS6000 code is taken directly from the DS8000. IBM has introduced advanced caching algorithms in both products to improve performance and reduce cost.

Partitioning

Partitioning is the means by which two different organisations can share a DS8000 without any risk of compromising data confidentiality. At the moment, partitioning can only be used to rigidly divide the storage in half. However, IBM plans to make the number and size of partitions more flexible in future releases. The partitioning in the storage is directly related to the partitions within the POWER5 processors in the device. The mapping from processor partitions to physical storage is implemented in hardware.

What are the market prospects?

The new devices are attractively priced and offer significant advantages over earlier models, but not enough to retire existing equipment early.

In the short term, IBM's main chance of winning back market share is by capturing Symmetrix users from EMC. Many of these customers bought their kit around 2001 at highly discounted prices, and are now paying relatively high annual maintenance charges. They will be ready to replace these devices and IBM has a powerful sales message to give them.

Who needs more power?

Every business is experiencing a rapidly growing need for more storage and the DS6000 will be well received as a natural progression. However, the DS8000 is catering for storage consolidation onto fewer devices, and not just for organic growth.

The idea of shared storage, long discounted for all but the smallest of businesses, is back on the agenda. The potential for sharing storage with the high-end DS8000 models will change business models substantially for hosting data centres. This capability will take time to win acceptance.

Interoperability

Data can be freely copied between the DS6000, DS8000 and Shark ranges of devices, allowing older devices to be used for disaster recovery centres, for example.



IBM relies on its virtualisation software to facilitate data movement across multi-vendor environments, and our advice to users remains that they should perform interoperability tests as part of a 'proof of concept' study before implementing the mixed storage configuration.



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