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Magic Quadrant for Midrange Enterprise Disk Arrays, 2H06

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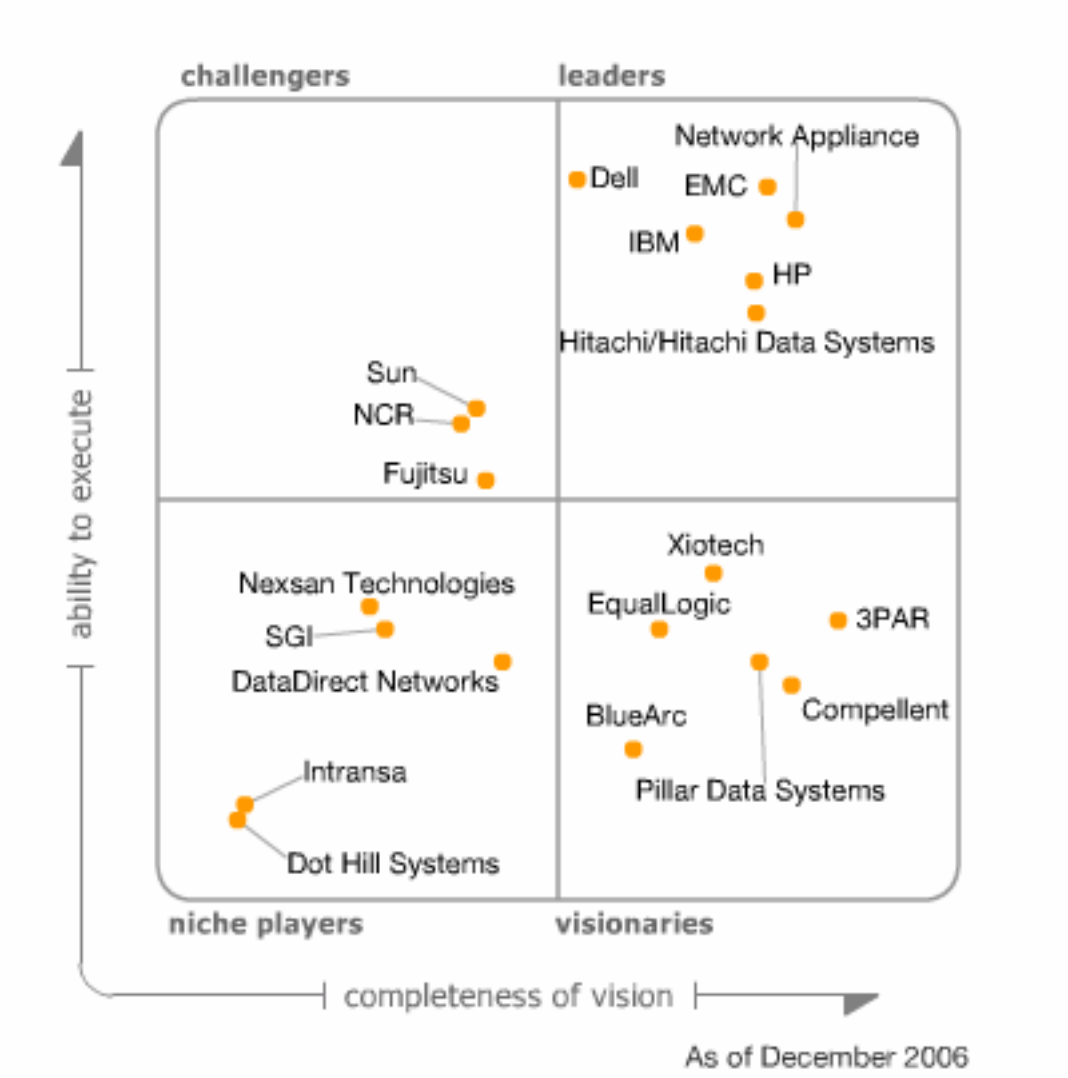
Emerging companies continue to drive innovation and gain mind share, while established companies refresh their offerings and revamp distribution channels to remove cost and gain share. Therefore, this year's Magic Quadrant includes more vendors and some changes in vendor positioning.

WHAT YOU NEED TO KNOW

Established and emerging storage vendors are in agreement on end-user needs, and are aligned in their development directions. More specifically, efforts are focused on features that improve data protection, simplify provisioning, improve staff productivity and lower costs. The functional advantages often enjoyed by emerging companies relative to established companies highlights the inhibiting effects of the need for backward compatibility, more-extensive integration testing matrices and slower decision-making processes for larger companies. Where these functional advantages create an interest in doing business with an emerging company, due diligence should include customer reference checks or an inquiry with Gartner. Whether considering products from established or emerging vendors, users should plan on storage system service lives of no more than four years.

Magic Quadrants plot the current and probable strength of vendors in the marketplace, but do not directly compare product attractiveness or local support capabilities of different vendors' offerings. The criteria used to select vendors for inclusion in the Magic Quadrant makes it unlikely that these companies' customers will lose service and support during the planned service lives of newly acquired systems. Therefore, when decisions are made on current features and functions, it is okay to buy from vendors that are not in the Leadership Quadrant. In fact, at least one emerging storage company should be on any user's vendor shortlist because of the combination of value-added features that many emerging companies' products bring to market.

Figure 1. Magic Quadrant for Midrange Enterprise Disk Arrays, 2H06



Source: Gartner (December 2006)

Market Overview

Clients building tiered storage infrastructures and those that do not need mainframe connectivity can choose from a wide variety of vendors' midrange disk array offerings. When configured for mission-critical online environments, these systems are generally configured with 3TB to 20TB of raw capacity. When intended to store fixed content data, configurations of 100 to 150 low-cost, high-capacity disks (more than 40TB) are becoming increasingly common. Because many midrange disk arrays support multiple block-access protocols — including Fibre Channel (FC) and Internet Small Computer System Interface (iSCSI) on the same platform — the midrange disk array Magic Quadrant also includes platforms that support FC or iSCSI block-access, along with support for Common Internet File System (CIFS) and Network File System (NFS) file access.

Midrange disk arrays supporting Serial Attached SCSI (SAS) and SCSI host interfaces are also included.

Market Definition/Description

Gartner defines midrange disk array products as external controller-based redundant array of independent disks (RAID) arrays that meet the following criteria:

- Use a dual controller or cluster architecture
- Support Unix, Linux, Windows and NetWare environments
- Offer no mainframe support
- Have an average selling price of more than $24,999

Inclusion and Exclusion Criteria

The inclusion of a vendor on a Magic Quadrant is determined by the authors, with input from Gartner's analyst research community. It is based on vendor-independent selection criteria and evidence that a vendor is delivering or executing in line with these criteria. Factors that contributed to the inclusion of a vendor in this Magic Quadrant include:

- Market share and revenue data
- Client interest, as measured by the level of client inquiry received on a vendor's products in the midrange disk array market, and other client feedback
- Use of unique, unusual or interesting technology
- Sells midrange disk arrays that carry the vendor's brand to end users via its direct sales force or through a reseller partnership sales channel
- A global presence

Vendors can be selected for inclusion for meeting any one or all of these criteria. This report is not region-specific. Vendors offering midrange disk arrays that meet the Gartner requirements and are included in this Magic Quadrant are listed in alphabetical order:

- 3PAR — InServ Storage Servers
- BlueArc — Titan
- Compellent — Storage Center
- DataDirect Networks — Silicon Storage Applicance (S2A)
- Dell — Dell/EMC CLARiiON CX series
- Dot Hill Systems — SANnet II series
- EMC — CLARiiON CX series and Celerra
- EqualLogic — PS Storage
- Fujitsu — ETERNUS4000 and ETERNUS3000

- Hitachi/Hitachi Data Systems — TagmaStore Adaptable Modular Storage (AMS)/Workgroup Modular Storage (WMS)
- HP — StorageWorks Enterprise Virtual Array (EVA) series and larger Modular Smart Array (MSA) series models
- IBM — SystemStorage DS4000 series and N series
- Intransa — IntraStor Platform
- NCR — 6000 series
- Network Appliance (NetApp) — FAS series
- Nexsan Technologies — SATABeast and SATABoy
- Pillar Data Systems — Axiom
- SGI — InfiniteStorage
- Sun — Sun StorageTek 6000 series
- Xiotech — Magnitude 3D series

LSI Logic, a major OEM in the midrange enterprise disk array market, was not included in the Magic Quadrant because it does not have a direct sales channel or brand equity in the midrange disk array market. However, it does exert an influence on its OEM partners' positioning. Specifically, this applies to IBM, NCR, SGI and Sun.

The 15 criteria used in evaluating a vendor and positioning it on the Magic Quadrant are identified and weighted in the Evaluation Criteria section. Magic Quadrants measure the current and probable relative strengths of vendors in the marketplace. They are not a direct measure of a product's attractiveness or a vendor's support capabilities. Therefore, using a Magic Quadrant to ease concerns about a company's long-term financial viability is reasonable; using it as the only justification in selecting a vendor or product is not. Although we frequently recommend including one or more emerging storage vendors on your shortlist to gain access to innovative features and as negotiation leverage with established vendors, it is okay to buy from vendors that are not in the Leadership Quadrant.

Added

- BlueArc — Titan
- Compellent — Storage Center
- DataDirect Networks — S2A
- EqualLogic — PS Storage
- Fujitsu — ETERNUS4000 and ETERNUS3000
- Intransa — IntraStor Platform
- NCR — 6000 series
- Nexsan — SATABeast and SATABoy
- Pillar Data Systems — Axiom

- SGI — InfiniteStorage

Dropped

None

Evaluation Criteria

Ability to Execute

The criteria weights used for this analysis are unchanged from the 2H05 version of this Magic Quadrant. This highlights the change in vendor positioning directly attributable to vendor actions.

Table 1. Ability to Execute Evaluation Criteria

Evaluation Criteria	Weighting
Product/Service	high
Overall Viability (Business Unit, Financial, Strategy, Organization)	high
Sales Execution/Pricing	high
Market Responsiveness and Track Record	high
Marketing Execution	high
Customer Experience	high
Operations	standard

Source: Gartner

Completeness of Vision

The weightings for these criteria are also unchanged from last year's Magic Quadrant.

Table 2. Completeness of Vision Evaluation Criteria

Evaluation Criteria	Weighting
Market Understanding	standard
Marketing Strategy	high
Sales Strategy	high
Offering (Product) Strategy	high
Business Model	high
Vertical/Industry Strategy	standard
Innovation	high
Geographic Strategy	standard

Source: Gartner

Leaders

A midrange enterprise disk array storage vendor in the Leaders Quadrant has the market share, credibility, and marketing and sales capabilities needed to drive the acceptance of new technologies. It demonstrates understanding of market needs, is an innovator and thought leader,

and has well-articulated plans that customers and prospects can use in designing their storage infrastructure and strategies.

Challengers

A midrange enterprise disk array storage vendor in the Challengers Quadrant has demonstrated the ability to increase revenue and take market share from leaders, but has limited ability to change the storage market or deliver innovation and backward compatibility over multiple generations of products.

Visionaries

A midrange enterprise disk array storage vendor in the Visionaries Quadrant delivers uniquely innovative products that address operationally or financially important end-user problems, but has not demonstrated the ability to capture market share or sustainable profitability. Visionary vendors are frequently privately held companies and acquisition targets for larger established companies. The likelihood of acquisition often reduces the risks associated with installing their systems.

Niche Players

A midrange enterprise disk array storage vendor in the Niche Players Quadrant focuses on a small market segment and does it well, or is unfocused and underperforms compared with vendors in other market segments. Niche vendors are often smaller companies that do not have the resources or credibility to compete with larger established vendors, or they are simply new to the market and, although worth watching, have not yet demonstrated the ability to expand market share or sustain profitability.

Vendor Comments

3PAR

3PAR is continuing to expand its sales force and grow sales revenue, and claims to have achieved "proforma profitability" in 3Q06. 3PAR has kept its InServ Storage Server systems competitive by delivering thin provisioning, a quality-of-service (QOS) feature called Dynamic Optimization, that provides intra-storage platform tiering, capacity-free snapshot copies of virtual volumes with Virtual Copy, remote data replication over Internet Protocol (IP) with Remote Copy, concurrent FC and iSCSI support, and many scale-out capabilities. With its August 2006 announcement of the E200, 3PAR lowered the entry point into the InServ series. Upward scalability has also improved as higher performance electronics and disks have been incorporated into the hardware.

Messaging is focused on "utility computing" rather than traditional vertical markets. Key elements of this messaging include fine-grain virtualization and automation and clustering, which improves usability. This messaging and focus helps explain the findings from a recent Gartner survey that 3PAR is the No. 2 provider, behind EMC, in providing disk arrays in the outsourced/managed market segment. Although this is all positive, other companies are beginning to narrow the functionality gap, but not the scalability advantage enjoyed by 3PAR.

BlueArc

BlueArc has positioned its Titan storage system as a feature-rich, high-performance, unified storage system with scalability to 512TBs. Titan functionality includes iSCSI-only storage area network (SAN) connectivity, a unified global namespace that spans CIFS and NFS, a thin-provisioning file system, space-efficient point-in-time copies, synchronous and asynchronous

remote copy, policy-based data migration between various back-end storage tiers, and ease-of-use features. Unique among the NAS and unified storage vendors, BlueArc emphasizes its use of field programmable logic arrays to boost the performance of its file system.

BlueArc's investments in its sales and marketing organization are translating into a growing installed base and revenue. The entry price of Titan puts it at the high end of the midrange market segment and suggests that the addition of a less-costly system will expand BlueArc's market reach.

Compellent

Compellent's Storage Center is a feature-rich block-storage system built using industry standard components. Software functionality includes concurrent FC and iSCSI support, a virtualized back end, space-efficient snapshots, thin provisioning, and QOS and ease-of-use features. The Data Progression feature provides fine-grained, page-level, policy-based data migration between high-performance and high-capacity disks, which makes it suitable for use in file and database environments.

Sales are through indirect channel, and break/fix support is provided by Anacomp. In markets characterized by low margins and many vertical markets, this is becoming the preferred sales channel. Coupled with high product attractiveness and aggressive prices, Compellent is gaining market visibility and showing revenue growth. However, like all relatively new startups, Compellent has not yet demonstrated the ability to achieve profitability or gain measurable market share.

DataDirect Networks

DataDirect Networks (DDN) is a privately held storage company focused on high-performance computing (HPC), cluster computing (DDN claims installation in seven of the top 10 clusters in the world, and 35 out of the top 100 clusters in the world) and rich-media computing. Founded in 1998, DDN began shipping its S2A storage systems in June 2000. Since its introduction, the S2A has been through six technical refreshes; current product highlights include 4 Gb/sec FC and native InfiniBand-4X (10Gb/s), delivering up to 3 GB/sec of front-end bandwidth, FC and SATA disk support, RAID 6, and a modular and scalable architecture, up to 1,120 disks in the S2A9550.

DDN has created four sales divisions: HPC, rich media, government and corporate. To further expand its market reach and leverage its investments in infrastructure, DDN has also established an indirect channel. Service and support are handled through a third-party service provider (Anacomp), and the company has a presence in more than 70 countries.

Dell

Dell has positioned itself in the marketplace as a low-cost, low-risk supplier of functionally competitive midrange disk arrays. Dell has differentiated its Dell/EMC CLARiiON CX series, sourced from EMC, largely by pre-configuring its storage, SAN components, host bus adaptors, and various backup/restore and storage resource management tools that are scaled to the infrastructure and designed for ease of use and low cost. Dell's five enterprise command centers, located around the world, are providing Dell customers with 24/7 support. Break-fix service and support is provided by Dell-badged field engineers or independent service organizations, depending on the location. Customer satisfaction is generally positive but restricted to environments associated with the Windows, NetWare and Linux operating systems.

To further reduce Dell storage total cost of ownership (TCO) and minimize the appeal of competitors' various capacity-on-demand programs, Dell has invested in integrating storage and server management, enabling customer self-maintenance and shortening the delivery time of new

systems and upgrades to 10 days or less. Despite Dell's recent shortfall in meeting corporate earning forecasts, its midrange disk array revenue and market share continue to grow, making Dell the second-largest worldwide provider of midrange disk storage.

Dot Hill Systems

Dot Hill's SANnet II series, based on RAID controllers sourced from Infortrend, spans the full range of the midrange disk array market. The most distinguishing feature of Dot Hill's SANnet II disk arrays is that they are Network Building Equipment Systems Level 3 and MIL-STD-810F-certified, making them suitable for deployment in rugged telecommunications and military environments. Supporting FC and SCSI host interfaces, and FC, SCSI and SATA disk-drive technology, SANnet II is a basic disk-array solution at a reasonable price point. However, SANnet II lacks controller-based snapshot and remote replication functionality, as well as an iSCSI host interface, which diminishes its product attractiveness.

Leveraging the financial strength provided by an OEM relationship with Sun, which Sun is not re-awarding to Dot Hill, Dot Hill acquired Chaparral Network Storage in 2004, enabling internally developed RAID controllers based on what Dot Hill calls the R/Evolution architecture. Beyond providing Dot Hill with control over its RAID-controller IP, products based on the R/Evolution architecture provide RAID 6, controller-based snapshot functionality and a battery-free alternative to cache backup. Dot Hill plans to provide controller-based remote replication in the late second quarter of 2007.

EMC

EMC has refreshed its CLARiiON storage with its May 2006 announcement of three new CX3 models: the CX3-20, CX3-40 and CX3-80, which have more scalability, performance and availability than their predecessors. These gains were achieved through a combination of faster electronics, a tripling of internal bandwidth, doubling of cache, a full 4Gbps FC architecture and a new microcode release. Performance claims are impressive but should be viewed primarily as scalability enablers rather than differentiators, because the differences in performance and throughput of most vendors' midrange offerings rarely result in bidding different configurations.

EMC messaging and sales campaigns remain focused on information life cycle management, solution selling and vertical markets. EMC has expanded its indirect channels into the "white box" market by entering into a relationship with Intel, and it further improved access to the Japanese market by entering into a relationship with NEC. The company has also expanded its sales efforts in the small and midsize business (SMB) market with the creation of its Insignia line of hardware and software.

These agreements have not affected the EMC/Dell relationship, and even if they did at some future date, Dell customers would not be adversely affected. One concern is customer experience, which, despite broad service and support coverage and capabilities, no longer has the differentiating competitive advantage in break/fix support that it once had.

EqualLogic

The PS series is a modular block storage system with iSCSI connectivity and a peer-to-peer topology that enables capacity, performance and connectivity to scale linearly. Controller-based snapshot, remote copy and automatic load-balancing features are included at no additional charge. The EqualLogic PS400E, with dual controllers and 10.5 TB of SATA disk in a 3U high package, makes it attractive in situations where space and power consumption are important considerations. EqualLogic's early support of 15K rpm SAS disks in its PS3800XV increases performance relative to SATA disks and, compared with FC disks, reduces costs while simplifying the back-end design.

EqualLogic relies primarily on indirect channels to sell its storage. This reduces sales and marketing expenses and the potential for channel conflicts. As a company, EqualLogic has reached profitability, is growing its sales channels and revenue, and has expanded its compatibility support matrix, which includes VMware Infrastructure 3 and archiving solutions. Messaging emphasizes performance, ease of installation, ease of management, a rich feature set, easy scalability and low cost. Not charging for value-added features and a three-year return policy on failed disks lowers storage TCOs.

Fujitsu

Consistently ranked as one of the top 10 providers of midrange disk array storage on a worldwide revenue basis, Fujitsu previously concentrated its storage marketing and sales activities in its home market, Japan. With the recent release of the new ETERNUS4000, however, Fujitsu is taking steps to expand its geographical reach to include other countries in the Asia/Pacific region, the Americas and, to a more limited extent, specific countries in Europe, the Middle East and Africa. Featuring enhanced performance, capacity and functionality over its well-established predecessor — the ETERNUS3000 — the ETERNUS4000 is a competitive midrange disk array alternative. In addition, the ETERNUS4000 controller-based encryption function represents an industry first and is an appealing optional capability for providing additional protection for online data.

Although the new regional initiatives into the heterogeneous midrange storage market are relatively immature and unproven, a large and financially secure parent, with proven engineering credentials, backs the regional subsidiaries. Fujitsu is also able to leverage its established American and Asia/Pacific server-client-care infrastructures to provide competitive ETERNUS4000 service and support.

Hitachi/Hitachi Data Systems

Hitachi/Hitachi Data Systems (HDS) finished refreshing its TagmaStore AMS/WMS series with the announcement of the AMS1000, the successor to the Thunder 9585V, in April 2006. The AMS series is competitive with respect to scalability, performance and functionality. Key features include nondisruptive intra-storage platform volume migration, RAID 6 support, cache partitioning and functional overlap between the application programming interfaces in their midrange and high-end systems. To support sales activities in the Windows market, HDS has qualified its WMS and AMS series for the designation of "Microsoft-simple SAN-certified." Nonetheless, compared with some competitors, its agent support still needs improvement.

HDS is still expanding its sales force and re-engineering its marketing and direct and indirect channels in an attempt to drive market share increases in the faster-growing midrange disk array market. Many of the executive new hires come with experience in marketing, sales, and service and support, suggesting that HDS is attempting to improve its ability to compete at the business level rather than at the operational "feeds and speeds" level.

Whether these changes are sufficient to increase HDS's share of the midrange market and improve its attractiveness as a channel partner remains to be determined. Of particular concern is Hitachi's (HDS's parent) apparent reluctance to invest in storage software companies with compelling products or to compete on price — often a major deciding factor in the SMB market. Balanced against this concern is HDS's claim that it obtained contract language that protects it and its customers if the company's OEMs are acquired by Hitachi/HDS competitors, and its willingness to partner with companies such as Archivas, Dilligent Solutions and CommVault to enter newer high-growth markets.

HP

HP is the worldwide leading provider of midrange disk arrays from a revenue, units shipped, as well as terabytes shipped, perspective. With the retirement of the VA-7000 series, the flagship EVA series and larger MSA series models comprise the HP midrange disk array portfolio. The EVA series, which offers controller-based replication features, is suitable for midrange enterprise applications associated with the Windows, NetWare, Linux and Unix operating systems, whereas the MSA series is appropriate for smaller or less-mission-critical Windows, NetWare, Linux and some HP-UX environments.

Rounding out controller-based replication software and developing unified infrastructure management software, along with the release of optional iSCSI connectivity, represents the principal product investments for the EVA series since the May 2005 major refresh. Although generally slow to embrace new hardware technology, HP has kept the EVA series attractive by emphasizing the value of its virtualized back end, ease of use and data availability features. The announcement of MSA1500 active/active support and MSA1510i with native iSCSI capabilities and SAS disk drives provides a competitive alternative in the lower price range of the midrange disk array market, although they lack controller-based snapshots or replication and synergistic interoperability with the EVA series.

IBM

IBM grew its share of the midrange disk array market in 2005 and 1H06 with its System Storage DS4000 series by leveraging its market presence and size while competing aggressively on price. Relative to its competitors, IBM has broader market coverage, and more vertical-industry expertise, professional services, outsourcing and financial resources. IBM has also been aggressive in using IBM Global Finance to provide favorable bundling and financing arrangements. It has also leveraged its SAN Volume Controller as an effective data migration and consolidation platform.

The DS4000 series, sourced from LSI Logic, is competitive with respect to availability, scalability, performance and feature/function. The N series, sourced from NetApp, originally positioned as NAS/iSCSI-only storage, is also being sold as FC SAN storage.

Intransa

Based on an N-way-clustered architecture and an internal IP topology, Intransa has endeavored to make its IntraStor Platform an affordable, scalable and easy-to-use disk array for the nascent iSCSI market. Although it recognizes that pure-play iSCSI disk array vendors have generally faced an historic uphill battle against incumbent storage infrastructures, Intransa's go-to-market initiatives, as well as executive turnover, have hindered its market traction relative to other early developers of pure-play iSCSI disk arrays.

However, many organizations, particularly those that cannot afford FC-based SANs, are turning to iSCSI-based SANs as a way to reap the benefits of storage consolidation and replacement for applications deployed on direct-attached storage. Although Intransa's new executive leadership team continues to refine and expand its go-to-market strategies, initiatives and partnerships, its core-to-edge product portfolio represents stable technology with a competitive set of features and functions.

NCR

NCR sources its 6000-series midrange disk array technology from LSI Logic. Optimized and sold for use with NCR's Teradata Database application, the four NCR 6000-series models use end-to-end high-speed FC technology and dual hot-swap components, including active RAID controllers,

to satisfy the demanding performance and high-availability requirements associated with a Teradata installation.

Depending on installation requirements, NCR's 6000-series models range from desk-side towers to rack-dense form factors. Priced at a premium relative to comparable, competing midrange disk arrays, the NCR 6000 series is a fully featured midrange disk storage platform. Array management is provided by NCR-developed Teradata administrative management hardware and software. The database administrator or Storage Manager in a customer environment does not configure, allocate storage or even monitor storage in a Teradata environment. With respect to customer experience, users report satisfaction with NCR's pre- and post-installation support.

Network Appliance

NetApp, with its announcement of its FAS6000 series in May 2006, increased the performance and physical scalability of its largest FAS systems. For example, the FAS6070 delivers up to 1.8 times the throughput of the FAS980C, and scalability up to 1,008 disks or 504 TBs. The FAS6000 series, like the FAS3000 series (introduced in May 2005), supports FC and SATA disks, thereby reinforcing the merging of the NearStore and FAS target markets, simplifying NetApp's product offerings and creating opportunities to provide intra-platform storage-tiering solutions. NetApp's June 2006 announcement of ONTAP GX is interesting because it specifically targets the HPC market, it incorporates Spinnaker technology and it highlights the difficulty of integrating independently developed software packages and the need for NetApp to expand beyond its NAS heritage to maintain aggressive revenue growth.

NetApp's marketing and sales departments are doing a reasonably effective job of positioning the company's products, building indirect channels and OEM relationships, and achieving revenue objectives: NAS/Unified Storage 2004 to 2005 market share increased 3.1%.

Key messages remain focused on the advantages of unified storage architecture, ease of use, improving use rates and low TCOs. SAN revenue is growing; NetApp credibility in mission-critical environments is improving; and the IBM relationship is on track to becoming an important NetApp revenue source, but the relationship with IBM may potentially produce damaging channel conflicts.

Nexsan Technologies

Since its incorporation as a U.S. company in 2001, Nexsan Technologies has focused on developing SATABeast and SATABoy midrange disk arrays based on low-cost, high-capacity Parallel Advanced Technology Attachment and Serial Advanced Technology Attachment (SATA) disk drives. In the first half of 2006, Nexsan enhanced its platforms by announcing support for RAID 6 and iSCSI. Further extending this functionality, Nexsan announced a unified block- and file-access solution by co-branding a NAS gateway from Reldata with Nexsan's SATABoy array.

Generally, Nexsan's products are suitable for applications such as, but not limited to, disk-to-disk backup, extreme density tiered storage, remote replication, HPC, digital closed circuit TV and, when configured with Nexsan's Assureon product, online archiving. However, the Nexsan midrange disk arrays lack controller-based snapshot and replication functionality.

Nexsan continues to strengthen its dedication to a value-added, indirect go-to-market model by establishing new relationships with vertical-market resellers and other technology providers where product synergy exists. Nexsan has valued-added resellers in 53 countries, handling Level 1 sales, service and support.

Pillar Data Systems

Pillar Data Systems is a rather uniquely positioned, privately held storage company. It is funded by Larry Ellison's Tako Ventures (Ellison is the founder of Oracle) instead of multiple venture capital funding sources. Ellison charged the Pillar management team with lowering the cost of storage. They responded by building a unified storage system that maximizes the performance of back-end SATA and FC disks and developing easy-to-use management tools. Product highlights include a scalable architecture; no hardware single points of failure; NAS and SAN connectivity using iSCSI or FC; a virtualized back end that creates domains in storage pools that segment back-end disks into high performance, average performance and high-capacity domains to create multiple storage tiers; and easy-to-use management tools. The lack of controller-based remote copy feature support is the most significant feature-deficiency of the Axiom storage system.

Marketing and sales have positioned the Axiom storage system as easy to install, configure and maintain, and inexpensive to buy. Software license fees are tied to system serial numbers and do not increase as system capacity grows. Pillar also encourages self maintenance using "guided maintenance tools." This not only lowers Pillar customers' TCOs, but lowers the perceived risk of making a Pillar decision. Pillar, recognizing the cost of building a direct sales channel and developing vertical-market expertise, is also investing in building an indirect sales channel and is planning to expand into other geographic markets in the coming year.

SGI

As SGI emerges from bankruptcy, the storage market is one of its key areas of investment focus. Forming strategic partnerships with LSI Logic and DataDirect Networks, SGI has assembled a full portfolio of competitively priced midrange disk storage arrays that are able to meet a broad range of user needs. The InfiniteStorage shared-file system and InfiniteStorage file system represent internally developed technologies that SGI uses to differentiate its disk storage offerings from competing midrange disk arrays.

Carrying the brand InfiniteStorage, SGI's midrange storage initiatives attempt to go beyond the company's historic core markets. Accordingly, SGI is embracing a broader number of storage-oriented value-added resellers to expand its market reach. Moreover, SGI is bringing expanded storage solutions to market via internally developed software, or by forming relationships with independent software vendors that address data life cycle management, data migration, data protection and resource management. To assist customers in deploying complex storage infrastructures, SGI has established an appropriately sized, but limited, storage professional-service practice.

Sun

Sun sources the basic RAID controller technology and companion controller-based data services software for its midrange Sun StorageTek 6000-series from LSI Logic, but internally develops the Sun StorageTek Common Array Manager software, which is used on all Sun midrange disk arrays. The recently released Sun StorageTek 6540 and Sun StorageTek 6140 disk arrays represent competitive midrange disk array offerings from a functionality, performance and capacity scalability perspective. Also, the new Sun StorageTek 6540 and 6140 models illustrate Sun's progress in rationalizing the former Sun StorEdge and StorageTek Flex midrange disk array product cards, resulting from the August 2005 StorageTek acquisition. However, the future status of the internally developed Sun StorageTek 6920 disk array is in doubt. Earlier statements of direction are delinquent, and Sun management is unwilling to clarify its future status. Therefore, users should assume a "buyers beware" attitude with respect to the Sun StorageTek 6920.

Sun's storage practice leadership and organizational structure continues to undergo change since the August 2005 StorageTek acquisition. Consolidation of responsibilities in the Sun storage practice, caused by the 2006 employee reduction initiative, will likely cause at least temporary turmoil, thus delaying previously planned disk array product announcements.

Lack of proactive clarity by the new leadership is casting a cloud over Sun's future midrange disk array strategy. Furthermore, Sun's public pronouncements by its executive leaders to incorporate more Sun IP into its future disk storage platforms is creating uncertainty about Sun's commitment to the current midrange disk array product strategy.

Xiotech

Xiotech has improved the attractiveness of its Magnitude 3D systems with the addition of a solid-state disk option, which dramatically improves the performance of certain high-impact workloads while retaining the traditional advantages of no-server-side software and ease of installation and management. Other features include a clustered architecture and a virtualized back end. Unlike other midrange storage systems, each Magnitude 3D controller has separate data cache and nonvolatile storage, which eliminates the need to turn off write cache in the event of a controller card failure.

In April 2005, Xiotech restructured its sales force to increase sales productivity. It also built a telemarketing organization to better pursue low-margin opportunities. Although it is still a privately held company, management claims that the revenue impact of this restructuring was revenue-neutral is plausible given the company's strong repeat business.

RECOMMENDED READING

"Magic Quadrants and MarketScopes: How Gartner Evaluates Vendors Within a Market"

"Vendor Rating Update: EMC 'Positive' Amid Flurry of Acquisitions"

"Vendor Rating Update: Dell Becoming a Trusted Storage Provider"

"Vendor Rating Update: Hitachi Data Systems' Enterprise Disk Arrays, 2004"

"Vendor Rating Update: HP Strives to Regain Momentum in the Storage Market"

"Vendor Rating Update: IBM Storage Is Promising, but Its Software Still Needs Improvement"

"Vendor Rating Update: Network Appliance Thrives on Single Platform"

"Sun Microsystems' Storage Business Rates a 'Caution' in 1Q05"

"Sun Strengthens Its Storage Business by Acquiring StorageTek"

"Market Share: External Controller-Based Disk Storage, Worldwide, 2001-2004"

"ECB Disk Storage Market Showed Healthy Growth in 1Q05"

"Hype Cycle for Storage Hardware Technologies, 2005"

Vendors Added or Dropped

We review and adjust our inclusion criteria for Magic Quadrants and MarketScopes as markets change. As a result of these adjustments, the mix of vendors in any Magic Quadrant or

MarketScope may change over time. A vendor appearing in a Magic Quadrant or MarketScope one year and not the next does not necessarily indicate that we have changed our opinion of that vendor. This may be a reflection of a change in the market and, therefore, changed evaluation criteria, or a change of focus by a vendor.

Acronym Key and Glossary Terms

CIFS Common Internet File System

DDN DataDirect Networks

FC Fibre Channel

HDS Hitachi Data Systems

HPC high-performance computing

IP Internet Protocol

iSCSI Internet Small Computer System Interface

NFS Network File System

QOS quality of service

RAID redundant array of independent disks

SAN storage area network

SAS Serial Attached SCSI

SATA Serial Advanced Technology Attachment

SMB small and midsize business

TCO total cost of ownership

Evaluation Criteria Definitions

Ability to Execute

Product/Service: Core goods and services offered by the vendor that compete in/serve the defined market. This includes current product/service capabilities, quality, feature sets, skills, etc., whether offered natively or through OEM agreements/partnerships as defined in the market definition and detailed in the subcriteria.

Overall Viability (Business Unit, Financial, Strategy, Organization): Viability includes an assessment of the overall organization's financial health, the financial and practical success of the business unit, and the likelihood of the individual business unit to continue investing in the product, to continue offering the product and to advance the state of the art within the organization's portfolio of products.

Sales Execution/Pricing: The vendor’s capabilities in all pre-sales activities and the structure that supports them. This includes deal management, pricing and negotiation, pre-sales support and the overall effectiveness of the sales channel.

Market Responsiveness and Track Record: Ability to respond, change direction, be flexible and achieve competitive success as opportunities develop, competitors act, customer needs evolve and market dynamics change. This criterion also considers the vendor's history of responsiveness.

Marketing Execution: The clarity, quality, creativity and efficacy of programs designed to deliver the organization's message in order to influence the market, promote the brand and business, increase awareness of the products, and establish a positive identification with the product/brand and organization in the minds of buyers. This "mind share" can be driven by a combination of publicity, promotional, thought leadership, word-of-mouth and sales activities.

Customer Experience: Relationships, products and services/programs that enable clients to be successful with the products evaluated. Specifically, this includes the ways customers receive technical support or account support. This can also include ancillary tools, customer support programs (and the quality thereof), availability of user groups, service-level agreements, etc.

Operations: The ability of the organization to meet its goals and commitments. Factors include the quality of the organizational structure including skills, experiences, programs, systems and other vehicles that enable the organization to operate effectively and efficiently on an ongoing basis.

Completeness of Vision

Market Understanding: Ability of the vendor to understand buyers' wants and needs and to translate those into products and services. Vendors that show the highest degree of vision listen and understand buyers' wants and needs, and can shape or enhance those with their added vision.

Marketing Strategy: A clear, differentiated set of messages consistently communicated throughout the organization and externalized through the Web site, advertising, customer programs and positioning statements.

Sales Strategy: The strategy for selling product that uses the appropriate network of direct and indirect sales, marketing, service and communication affiliates that extend the scope and depth of market reach, skills, expertise, technologies, services and the customer base.

Offering (Product) Strategy: The vendor's approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature set as they map to current and future requirements.

Business Model: The soundness and logic of the vendor's underlying business proposition.

Vertical/Industry Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of individual market segments, including verticals.

Innovation: Direct, related, complementary and synergistic layouts of resources, expertise or capital for investment, consolidation, defensive or pre-emptive purposes.

Geographic Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of geographies outside the "home" or native geography, either directly or through partners, channels and subsidiaries as appropriate for that geography and market.

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