Tech Outlook

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Purpose-Built Midrange Storage

The EMC Unity family features all-flash and hybrid storage arrays that were designed to meet the needs of midsize organizations.

Some technology vendors seem to think that midsize businesses have the same IT needs as large enterprises — just smaller. They offer midrange technology products that are merely stripped-down versions of their enterprise solutions. These products may have a lower price point but they don't address the IT challenges that midsize organizations face.

This is particularly true when it comes to storage. According to a recent study by Enterprise Strategy Group (ESG), midmarket organizations are grappling with rapid data growth, data protection challenges and rising hardware costs. They are also running out of physical data center space and need to rein in power and cooling expenses. Flash storage can help SMBs address these problems — but only if it's affordable and easy to manage.

"Midsize organizations have business-critical IT requirements but most often do not have expansive teams of IT specialists to deploy and manage expensive, enterprise-oriented flash arrays. Yet they still require enterprise performance and cost-effective features that are practical to deploy," said Ryan Hicks, Director of Professional Services, ProSys.

"These midsize organizations need to free up capital and limit operational expenditures in order to focus their efforts on their respective lines of market innovation and gain competitive edges through digital transformation. Not an easy feat. These paradigms are usually conflicting where technology hardware/software manufacturers are forced to focus on one or the other."

EMC is addressing the needs of the midmarket with its Unity flash storage platform. EMC Unity unifies file and block storage in a platform that is cost-efficient, space-efficient and exceptionally easy to use. It includes many

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of the "must-have" features midsize organizations look for when purchasing storage platforms.

The Value of Flash

Flash has evolved from a high-cost niche technology to a mainstream storage solution. The price of flash has fallen dramatically in recent years, making it competitive with traditional disk drives and driving increased adoption.

Speed is the primary reason organizations implement flash. With access times measured in microseconds, flash minimizes storage latency and delivers the performance needed for today's applications. Flash is more reliable than disk, with greater tolerance for heat and vibration. It also reduces the data center footprint, cuts power and cooling requirements, and creates a more scalable infrastructure to accommodate data growth.

While these benefits can be realized by organizations of all sizes, flash has historically been too expensive for midsize organizations. As the cost of flash continues to drop, however, more and more midmarket companies are beginning to deploy flash storage solutions. In fact, 53 percent of midsize organizations surveyed by ESG said they were using flash storage, compared to just 47 percent of enterprises.

"Clearly, there is strong demand for flash among midsize organizations, and EMC is well-positioned to address it," said Hicks. "EMC Unity delivers up to 300,000 IOPS in an easy-to-manage solution that can scale up to five petabytes of storage capacity. More significantly, Unity makes it practical for midsize organizations and enterprise remote and branch offices to deploy all-flash arrays for a wide range of workloads."

Performance, Flexibility, Simplicity

EMC introduced Unity to replace VNX, its highly popular but aging flash platform for SMBs. Launched in January 2011, VNX combined EMC's market-leading SAN and NAS technologies with automated tiering software that exploited the benefits of solid-state drives.

Unity is much more than a refresh of VNX. EMC reengineered the system from the ground up to deliver highly affordable file and block storage with three times the performance of VNX. Unity has a true active-active controller architecture and enterprise-class features, including snapshots and replication, controller-based encryption, and a scalable file system for both transactional and file-based use cases.

"Because every business has unique storage challenges, EMC Unity has been designed to offer greater flexibility than competing flash storage offerings," Hicks said. "Midsize organizations can choose from all-flash and hybrid configurations in a dense 2U enclosure, as well as virtual appliances that provide Unity's advanced storage and data management features."

Previous generations of EMC's unified storage had separate Windows operating systems and management interfaces for file and block storage that were brought together into one screen. Unity features one Linux-based operating environment with all the hardware needed for file and block storage, enabling organizations to streamline their storage environments while reducing costs. In addition, Unity base software suite provides management features, unified protocols, and local and remote data protection — all included in the purchase price.

Management and More

EMC Unity features a modern, HTML5 interface that streamlines monitoring and proactive management. Its task-oriented design leads the user through daily operations and integrates with VMware and Microsoft ecosystems for easy third-party management. New Proactive Assist capabilities give IT control, visibility and automated management of Unity storage systems.

Administrators can also view Unity service data within EMC MyService360, an online service that provides real-time visibility into the health of the EMC environment. MyService360 provides IT with EMC product code levels, connectivity status, capacity alerts, service activity by site and more.

EMC believes that data protection should be an integral part of the design and deployment of every data storage environment. Unity offers tight integration with EMC Data Domain and EMC Data Protection Suite to ensure that workloads are seamlessly protected. All-flash Unity options also qualify for EMC's Xpect More program, offering lifetime maintenance price protection, flash endurance protection and three-year money-back warranty.

"EMC understands the needs of midsize organizations and has designed a purpose-built solution to help them modernize their data centers and gain the benefits of flash," said Hicks. "With EMC Unity, midmarket companies gain an affordable flash storage platform with the flexibility, scalability and simplicity they need."

News Briefs

Industrial IoT Drives Predictive Maintenance

The rapid development of the Industrial Internet of Things (IIoT) is ushering in the next generation of predictive maintenance (PdM) solutions for the world's industrial equipment. Advances in sensors, connectivity and analytics are sparking a new wave of PdM solutions that will improve asset uptimes, cut costs and create a massive overhaul of industrial organizations, according to Lux Research.

"Remote diagnostics and maintenance solutions are a key factor in enabling OEMs to offer equipment-as-a-service models," said Isaac Brown, Lux Research Analyst. "To fully benefit from the new technology, industrial organizations need to rapidly move away from the current practice of fixing equipment only after failure or at pre-determined intervals."

Lux notes that although PdM programs require significant resources, they can be tailored to specific needs to increase uptime and drive down costs. For instance, Monsanto gained $1 million by deploying integrated wireless gateways and failure ratings to 14,000 plant components.

Varied business models are emerging. Gas compressor maker Kaeser installed processing and communications capabilities on its compressors and uses data to perform predictive maintenance analytics — but also charges a monthly service fee. Caterpillar, ThysenKrupp and Tennant, among others, are also experimenting with new business models that could eliminate capital expenditures, providing equipment as a service.

Supply Chain Fraud Levels Steady

For the third year in a row, 30 percent of Deloitte poll respondents say their organizations experienced supply chain fraud, waste or abuse during the preceding 12 months — yet just 29.3 percent say they use any type of data analytics in an attempt to mitigate risks. More than 67 percent say they are confident employees will report any schemes they see in the coming year.

Deloitte found that 13.7 percent of respondents have analytics software but don't use it, and another 19.3 percent don't use analytics for supply chain financial risk management at all. Just 27 percent of respondents' organizations analyze unpaid invoices for evidence of supply chain fraud, waste and abuse prior to payment.

Using supply chain analytics to identify and investigate supply chain financial risks can help stem the fraud schemes that are proliferating in today's challenging, complex and global environment.

"Trust in employees and third parties is often misplaced," said Mark Pearson, Deloitte Advisory principal. "As a result, many organizations are trapped in a pay-and-chase model for fighting supply chain fraud — invoices are paid first, then retribution is sought much later when fraud is found, if it's found at all."

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STAYING POWER

Diligent maintenance necessary to ensure UPS systems function in an emergency.

The purpose of an uninterruptible power supply (UPS) is to keep critical equipment such as computers and servers up and running for a brief period during a power outage. UPS devices typically contain batteries that kick in during an outage to provide a clean and continuous flow of electricity for perhaps 30 minutes — long enough to allow users to save whatever they are working on and safely power everything down. A UPS can also provide protection in the event of a power surge.

In most working environments, UPS devices are considered indispensable to operations. However, they are too often forgotten about once they've been installed — which is unfortunate because uninterruptible doesn't mean infallible. A recent study conducted by the Ponemon Institute in conjunction with Emerson Network Power cites UPS system failure as the No. 1 cause of unplanned data center outages, accounting for 25 percent of all such events.

The study pegs the average cost of unplanned downtime at nearly $9,000 per minute. Given the increasingly critical nature data center workloads, those costs will certainly rise in the next few years. Clearly, organizations must develop maintenance and replacement plans for their UPS devices.

Battery Care

Power solution experts say battery failure is the chief cause of UPS problems. Like all batteries using electrochemical cells, the lead-acid batteries commonly used in UPS devices deteriorate over time. In general, UPS batteries should still be at least 80 percent effective after five years, but there are many environmental and operational conditions that can reduce that lifespan.

Temperature is one of the chief culprits in UPS battery degradation. The batteries are designed to operate in an ambient temperature of 77 degrees Fahrenheit, with space on each side for proper ventilation. A 15-degree rise in ambient temperature will cut a battery's expected life in half, manufacturers say.

Usage also affects lifespan. Batteries degrade the more often they are charged and discharged due to power outages. A full discharge also decreases battery life. That's why most

units have an automatic shutdown feature, which should be set to occur with some capacity left in reserve.

It is easy enough to replace batteries, but keep in mind that batteries should not be kept in storage for extended periods without charging. Batteries typically ship from the factory with about an 80-percent charge, and generally can be safely stored for 6 to 12 months from date of purchase without being fully charged. Batteries not used after this period tend to deteriorate rapidly.

At minimum, a preventive maintenance program should involve visual inspection of the equipment for loose connections or signs of corrosion, cleaning and vacuuming of the UPS enclosure, and runtime calibrations. Additionally, organizations should maintain a log noting when each battery was placed into service to ensure an effective replacement cycle.

Alternative Approaches

For many organizations, it can make sense to contract with a service provider for regular UPS maintenance. Beyond the basic maintenance tasks, a service provider will perform more comprehensive testing and inspection. This could include thermal scans to detect problems with fuses, diodes and capacitors, as well as broken conductors in wires.

A service provider should also be able to conduct functional load testing to observe temperature, voltage and current under load conditions. Typically, this will involve cutting power to the system to see if the UPS picks up the load and carries it for the specified period, while the system automatically shuts down and issues the appropriate alarms.

While regular service and maintenance are critical in ensuring the reliability of a UPS battery, there is growing debate about potential alternatives to battery-powered systems — particularly the use of flywheel-based systems. A flywheel UPS stores and converts kinetic energy through the spinning of a large, heavy disk.

Flywheel UPS has a smaller footprint than battery-based UPS systems, and flywheel technology is unaffected by temperature changes. Studies suggest flywheel UPS has a longer lifespan, lower failure rate and requires less maintenance than battery-powered systems. However, flywheel systems typically provide only about 30 seconds of full-load power, compared to 30 minutes for a battery. As such, the technology is best used in a battery/flywheel hybrid device or in conjunction with fuel-fired generators that can reach full power very quickly.

Increased adoption of cloud and mobile computing, coupled with diminishing tolerance for any type of downtime or data loss is expected to drive demand for UPS solutions in the near term. Hexa Research says the global data center UPS market will grow at 7.3 annual rate through 2020, reaching a total value of $5.7 billion. Regular preventive maintenance is essential for ensuring UPS investments deliver maximum value.

The Value of Data

Governance initiatives necessary to extract needles from stored data haystacks.

The documentary series "Hoarders" provides a startling look at people with a compulsive disorder characterized by their inability to discard anything, including items with little or no value. In many cases, the accumulation leads to clutter of such scale that it actually impairs the health and safety of these people.

When it comes to digital information, it turns out most of us suffer from a similar affliction.

Business data stores are growing by as much as 65 percent annually, and new research commissioned by Veritas Technologies indicates that a good chunk of this data does little more than waste valuable time and resources. The Global Databerg Report finds that 85 percent of all data being processed and stored by organizations around the world is functionally useless, and forecasts that organizations will waste $3.3 trillion managing this useless data by 2020.

The research illustrates the need for a comprehensive data governance strategy to ensure the efficiency of the storage infrastructure, the quality of data and the reliability of data-driven decisions.

"Understanding and acknowledging that a data hoarding culture exists is a first step in addressing the problem," said Ben Gibson, chief marketing officer of Veritas. "More and more organizations are realizing it. The problem most face is they do not know what data to start with, what risk it may contain and where the value is discovered. Once they have visibility into that environment, they can make decisions faster, with more confidence, and bring in other business stakeholders to move forward with a well-conceived plan."

Wasted Resources

According to Veritas, 52 percent of global data is considered "dark" data, which means its value is unknown. Another one-third is considered redundant, obsolete or trivial (ROT), which means it is known to have zero value. A separate Veritas study finds that 41 percent of data hasn't been accessed or modified for three years. Images, developer files and compressed files comprise nearly one-third of all stored corporate data.

Orphaned data, which refers to data that has no owner due to personnel changes, also places a heavy strain on storage. Although orphaned data represents just 1.6 percent of all files, these files take up 5.1 percent of total storage capacity. That's because orphaned data tends to include a lot of images, videos, presentations and other rich media. Orphaned data is typically forgotten and left unattended, which wastes storage capacity and makes it susceptible to theft.

These studies illustrate the dangers of the "save everything" mentality that most organizations take with their data. They tend to hoard data even though they have no visibility into what they're storing or the data's value. In fact, the Global Databerg Report found that IT managers classify just 15 percent of all stored data as business-critical information. Meanwhile, the cost to store 1000TB of non-critical data is estimated to be more than $650,000 per year.

Quality Control

Storing and managing data that has questionable or no value not only wastes money and resources, but also makes it more difficult to manage data that does have value. This makes organizations less responsive, slows decision-making, and increases risks related to security, regulatory compliance and e-discovery. The problem is only getting worse with the development of mobile, cloud and

big data initiatives leading to an explosion in the number of data sources.

Data governance efforts are essential for imposing a quality-control discipline on the processes for assessing, managing, using, improving, monitoring, maintaining and protecting data. This requires a framework for identifying who owns and is accountable for data assets. The program should include procedures for storing, archiving, backing up and securing data. Data governance will clarify who should have access to data and for what purpose, and ensure that compliance requirements are being met.

Packaged applications can provide a good starting point by automating some of the processes involved with data discovery and management. Classification and retention policy engines improve compliance and make it easier to identify and eliminate data that has no value. Automated archival tools streamline the process of moving data off primary storage tiers, reducing storage costs and improving overall efficiency. E-discovery tools deliver powerful search and tagging functionality, improving the ability to review and classify data.

Not Just an IT Issue

However, organizations often make the mistake of treating data governance as an IT project that can be handled by software rather than seeing it as a business function requiring the involvement of stakeholders throughout the organization. The problem with the IT-centric approach is that data won't be managed as an asset that crosses organizational boundaries. Governance winds up becoming just a series of tactical projects such as data migrations or storage upgrades, with little chance of delivering much organization-wide value beyond compliance and risk mitigation.

Gartner notes that modern CIOs are already overloaded with responsibilities beyond IT housekeeping, including digital innovation, change management programs and transformation. If organizations are serious about extracting maximum business value from their data, the research firm says organizations much appoint chief data officers (CDOs) to take charge of data management and control. In fact, Gartner predicts that 25 percent of organizations will have a CDO by 2017, with that figure rising to 50 percent in heavily regulated industries such as banking and insurance.

Gartner recommends that CDOs have a background that includes legal and compliance or risk management responsibilities, an understanding of data as an asset, a solid background in the industry they work in, and knowledge of the tools and techniques of data modeling.

"CIOs do not own the CDO's responsibilities. CIOs and CDOs should have distinct and separate roles in the digital era, and they will need different skills and capabilities." said Debra Logan, vice president and Gartner Fellow. ""The CDO is a peer of the CIO, but practices a different discipline. The CDO also becomes an advocate of information, not just a governor of it. Increasingly, successful information governance is about advocating the use of information as a source of value, not just controlling and monitoring it."

Study Shows Enterprises Lack Control over Data

Analysis of a limited subset of data stored in corporate file systems shows a staggering lack of control over company data. The study, conducted by Varonis Systems, found that 9.9 million files could be accessed by every employee in the company, regardless of role. An average of 28 percent of all folders had the "everyone" group permission enabled, meaning that they were open to all users on the network.

As a convenience, the "everyone" group permission is typically enabled whenever folders are set up. However, that mass access opens the door to insider threats, makes it easier for hackers to steal company data and increases the risks associated with ransomware.

The insights were gleaned from data collected during risks assessments conducted in midsize to large enterprises over the course of a year. The average company had 35.3 million files, stored in 4 million folders, meaning the average folder has 8.8 files. Approximately 2.8 million folders, or 70 percent, contained stale data — untouched for the past six months.

In one company, every employee had access to 82 percent of the 6.1 million total folders. Another company had more than 2 million files containing sensitive data (credit card, social security or account numbers) that everyone in the company could access. Half of another company's folders had the "everyone" group permission, and more than 14,000 files in those folders were found to contain sensitive data.

The average company had 25,000 user accounts, with 7,700 of them, or 31 percent, "stale," meaning the user had not logged in for the past 60 days. This suggests that former employees, employees who had changed roles, or consultants and contractors whose engagements had ended still had access to company data. One organization had more than 146,000 stale users — nearly three times more users than the total number of employees in the average Fortune 500 company.

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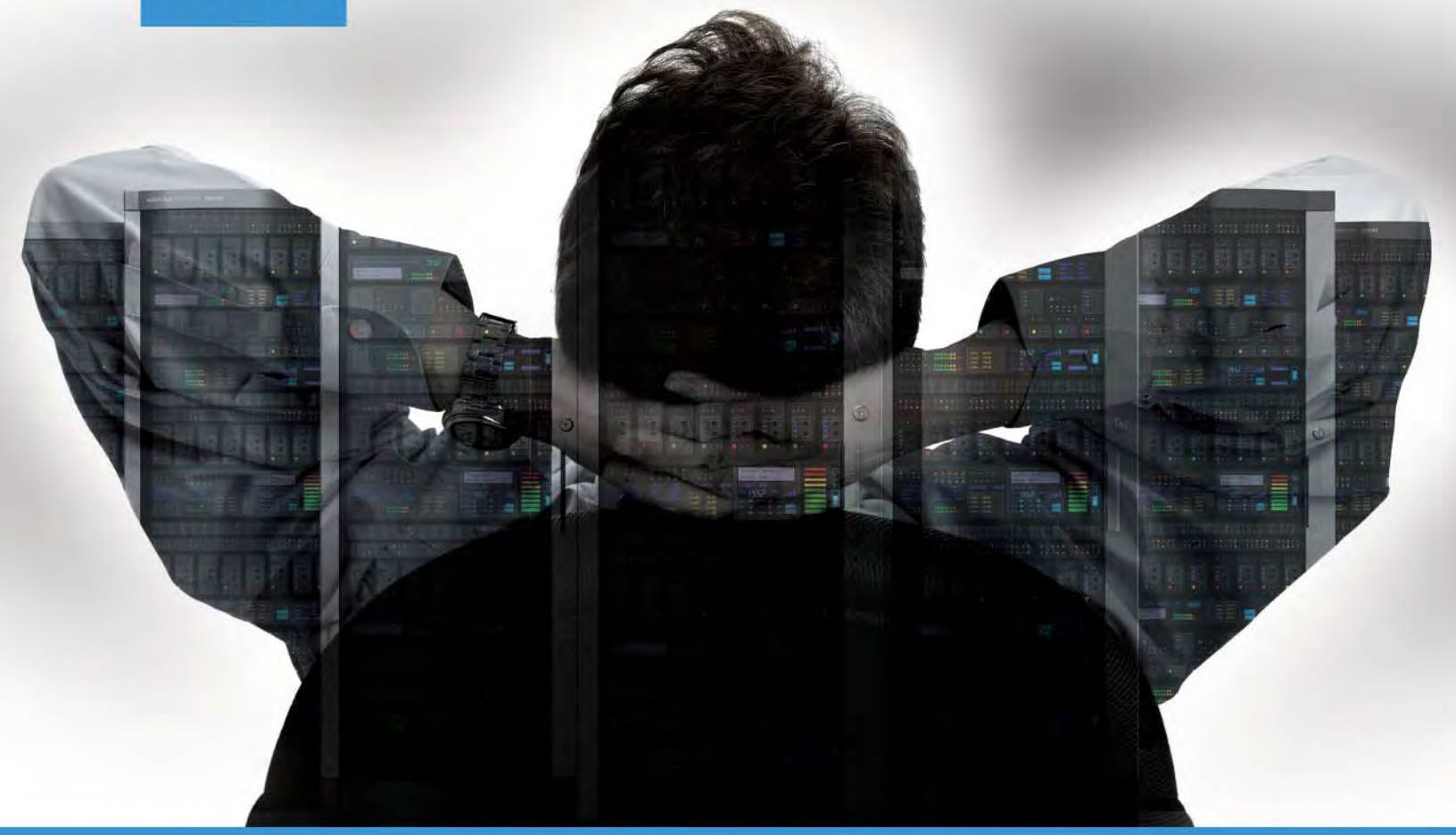

Flash Storage Simplicity

EMC's new Unity family of flash storage breaks new ground for simplicity and affordability. Easy to install, easy to manage, and easy to service, the midrange platform was designed specifically for small, midsized and departmental enterprise IT deployments.

Available in all-flash array, hybrid array, software-defined and converged configurations, Unity delivers order-of-magnitude leaps in performance and simplicity over the current generation of competing products

Unity's dual-active controller system was designed to optimize the performance, density, and cost of your storage to deliver all-flash performance for much less than you thought possible.

Contact your ProSys representative to learn more.

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