Managing the information that drives the enterprise

STORAGE

JUNE 2013
VOL. 12 | NO. 4

ARCHIVE IT!

Archiving is among the best storage management technologies available. It can help protect retained data while freeing up space on pricey arrays.

PAGE 9

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

CASTAGNA:
STILL A NEED FOR STORAGE PROS

TOIGO:
CAN STORAGE PASS THE YOGA PANTS TEST?

BUFFINGTON:
MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

BOLES:
FINDING A FIT FOR FLASH

SNAPSHOT:
DEDUPE USERS REAPING BIG REWARDS

TechTarget

The day you get back, challenges will be solutions

Storage Decisions CONFERENCES AND SEMINARS

TechTarget

Storage Decisions events are guaranteed to deliver practical advice and technical guidance that you can put to use as soon as you return to the office. Featuring the world's most renowned storage experts, our events offer tips and vendor-neutral advice for tackling current issues. Our innovative vendor showcases help you avoid falling behind by providing exclusive insight into market trends and emerging technologies. Plus, only you and your true peers in IT can qualify for FREE admission, ensuring an unmatched experience at an unbeatable value.

Visit www.StorageDecisions.com to register for an event near you.

Wanted: Storage pros

All this talk about storage being a commodity might make storage professionals feel inferior. But if you look at storage pay, those gloom-and-doom prophecies just don't add up.

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

A FEW MONTHS BACK, I wrote a column about how I thought storage was getting short shrift as so many conversations were hovering around data center technologies and practices. Storage often seems to be dismissed as one of those infrastructure things, like the network gear that knits everything together. My reaction at the time was "try doing that [server virtualization, big data analysis, ERP, CRM, you fill in the blank] without storage" (or networks, etc.).

These infrastructure components were somehow being reduced to so-called commodities. Call 'em what you please—commodities, things, gear, kit, caboodles—but you're not going to get very far building any IT business initiative without them. And you're going to need a storage professional who knows how to keep them running efficiently.

Of course, in the 21st century we expect our technology to be easy: easy to buy, deploy, use and maintain. But some stuff is still pretty complex, like storage, for instance. It's the underpinning for everything; it has to serve many masters and perform in a multitude of ways to meet varied requirements. It's not a simple task and, accordingly, the technology to achieve it isn't necessarily very simple either.

Just like all technologies, storage could probably be a little simpler and still perform adequately and meet all the demands of modern applications and users. Because networked storage was initially a fairly arcane science, it attracted the kind of techies who live for the chance to delve into the inner workings of a high-tech system. With an army of storage geeks at the ready, storage vendors are

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

a little less inclined to create slicker user interfaces or to streamline processes.

But even if some of storage's rough edges were smoothed out, it still doesn't mean managing enterprise arrays will be easy. Lately, there have been suggestions that the popularization of some technologies, such as software-defined storage, will eliminate the need for the special expertise of a storage pro. Or that storage functions could be handled by systems folks now that they've virtualized their environments and live and breathe VMware vCenter.

But just saying storage hardware is less important than the software that governs it (no kidding!) doesn't make managing it any easier. Similarly, being able to control some array functions from a virtual server management environment doesn't turn those virtual server jockeys into storage specialists. If you want to leverage storage to eke out the last ounce of performance, you're going to need someone who knows what levers to pull and buttons to push.

Obviously, there's more to storage than just revving it up and making capacity available to apps. Besides the intricacies of things like performance tuning, someone has to ensure that the data residing on the systems is protected. In the last year alone, I've seen a dozen or more studies that show how companies are struggling to adequately protect data. It's even been difficult for backup and disaster recovery veterans as data capacities grow at unprecedented rates and companies cling to every bit and byte hoping to squeeze out some new intelligence that can provide a competitive advantage. With more of that data reaching more mobile devices every day, someone with a casual interest in data protection won't be much help.

In its 2013-2012 Salary Survey, Dice, the big tech job-placement service, provided some details that show just how important storage expertise is to corporate America. (In this case, "importance" is measured in dollars.)

Storage pros should take heart in knowing that amid all this talk about storage becoming less important, their value in the workplace is rising. In its 2013-2012 Salary Survey, Dice, the big tech job-placement service, provided some details that show just how important storage expertise is to corporate America. (In this case, "importance" is measured in dollars.)

Dice listed a number of storage specializations and the associated average salaries for professionals with those skills. For example, a storage worker with EMC expertise averaged $99,073 in annual salary. Got 3PAR

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

chops? Those with that expertise have an average salary of $99,057, according to Dice, while NetApp-ers average $95,173. And did somebody say Fibre Channel (FC) is a fading technology? They may not have met the FC pros pulling down an average of $95,523.

Overall, Dice found the average salary for enterprise storage pros to be approximately $90,000. Our own *Storage* magazine Storage Salary Survey—fielded annually for the last 10 years—showed an average salary of $94,170 for IT pros who spend a significant amount of their time tooling around with storage.

What do all those numbers add up to? Storage is serious stuff, and companies value people who have taken the time to become storage experts. And that's a good thing, because—as I've said before—there are probably more tech developments, high-impact products and greater demands nowadays than networked storage has probably ever seen. Solid-state storage, object-based storage and converged infrastructures are just a few examples of storage's shifting landscape. Somebody's going to have to help usher these techs in and manage them. Is storage sexy? No. As we all know, when it comes to cool and popular, you look for technologies such as mobile apps or big data. But like I keep saying: Try doing that without storage. ■

RICH CASTAGNA *is editorial director of TechTarget's Storage Media Group.*

Can storage pass the Yoga Pants Test?

What criteria are you basing your storage purchases on: a prestigious label or real-world requirements?

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

AS I WRITE this column, the furor is beginning to die down around a scandal involving a popular (and very expensive) brand of yoga pants. The microfiber material used to make these pants apparently becomes transparent when the yoga enthusiast bends over or otherwise imitates the choreography of a pretzel. In a remarkable bit of chutzpah, the pants vendor's CEO has promised to make things right and to provide refunds or exchanges to anyone who returns their flawed merchandise. She also recommends testing the new product before finishing the exchange by donning the pants, bending over and asking the attendant if there are any visibility issues. Funny as it sounds, customers regard the CEO's offer as reasonable and fair.

The Yoga Pants Test, as I have come to call it, should also apply to data storage equipment purchases. Like the malfunctioning clothing items, we're talking about some similarly overpriced gear in the case of storage—all made of the same components and mostly in the same factories, but differentiated by brand name, just like yoga pants. With the clothing, the branding is probably a tag attached to the waistband. (I wouldn't know, as I wear sweats whenever I'm not in a suit.) While hidden, the tag still provides the wearer with bragging rights during post-Pilates socials over steaming soy lattes.

With storage gear, the brand is on the bezel plate, which no one outside the data center ever sees. Presumably, the logo gives an IT pro bragging rights whenever he or she is at a conference or seminar, or lurking on Twitter and speaking with other storage-interested folks. Even a casual reference establishes the owner as a serious player,

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

if the gear is considered "enterprise class," that is.

What makes a rig "enterprise class?" As near as I can tell, it's the price tag for both the rig itself, and for its warranty and maintenance agreement. It used to be that enterprise class referred to the type of drive, like a 15K rpm Fibre Channel Seagate, used in the kit. But ever since Nexsan promoted itself to the front of the bus with its arrays of consumer SATA drives, and everyone else began embracing SAS drives, the drives themselves no longer provide a basis for caste.

If not the spinning rust, then what is it that makes a storage rig a member of the 1% rather than an outcast? Perhaps it was just that question, with its many nuances and complexities, that caused Gartner to re-establish (after a much deserved hiatus) its "Magic Quadrant" for storage arrays. Surely, Gartner can divine the truly enterprise class from the steerage class, even if its criteria might have more to do with how many Gartner services a vendor purchases rather than any empirical test data.

You can't blame Gartner entirely. Purchasers are also to blame for not establishing selection criteria for hardware linked to any real requirements. When was the last time you characterized your workload to determine what kind of storage it actually required? According to IBM, there's more "tier one" storage deployed today than any other kind of disk arrays, mainly because every IT maven on the planet thinks that his/her latest application deserves (not necessarily requires) enterprise-class hardware. That's seriously misguided thinking that plays directly into the whole game of fashion branding.

It's also the kind of thinking that's likely to break the budgets of many companies in the near future. Our appetite for storage is only growing, and vendors are singing the praises of flash storage—whether server side, in disk form factors or in the shape of flash-only storage arrays. "Anybody who's anybody," we're told, is deploying flash storage, regardless of workload requirements.

One vendor recently told me his users are increasingly storage illiterate, which makes them perfect targets for vendors who want to sell relationships rather than technological excellence.

Heck, we're deploying flash kit to make VMware process guest machine I/O faster, even though it's VMware's code creating the I/O chokepoint in systems; faster storage isn't likely to make guest machines run any faster.

We're mistaking spoofing for storage: the former being a practice used by NetApp (and other storage vendors) to make their piggish Write Anywhere File Layout (WAFL) and RAID scheme appear to perform acceptably

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

well. In point of fact, NetApp front ends its network-attached disk arrays with expensive, memory-laden Flash Cache cards that acknowledge writes and let applications go on about their business while storing data in memory queues waiting to be recorded to disk.

How many times do folks deploy "faster" or "tier one" storage to deal with database speed issues caused by the improper allocation of indexes on the same spindles as block rows and columns? How many times is data laid out on improperly organized scale-out clusters, slowing access speeds and feeds? One vendor recently told me his users are increasingly storage illiterate, which makes them perfect targets for vendors who want to sell relationships rather than technological excellence.

In the final analysis, if we wanted to rightsize our storage infrastructure, align it with actual application requirements and drive cost to the bottom line, we would need to start testing data storage equipment again. The good news is that there are some testing rigs appearing in the market that can help even those lacking deep technical skills to make a pretty good go of it. I'm referring to a test rig from a little-known company called SwiftTest that I was introduced to last week.

Based on a couple of hours of research and conversations with CEO Philippe Vincent, I'm impressed with the work this firm is doing in the area of storage validation, and I encourage readers to visit the company website. Instead of collecting baseline IOmeter data, which basically black boxes the kit, SwiftTest is paying closer attention to workload generation and end-to-end testing to provide users with a better approximation of what kind of performance a specific rig with a specific interconnect to a server will deliver under a specific workload.

Now we're talking a real Yoga Pants Test for storage. It's worth a look. ■

JON WILLIAM TOIGO *is a 30-year IT veteran, CEO and managing principal of Toigo Partners International, and chairman of the Data Management Institute.*

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

ARCHIVE IT!

One of the core best practices for effective storage management is archiving. It frees up pricey storage resources, improves performance and helps protect data that must be retained.

DATA ARCHIVING HAS typically fallen into the realm of storage infrastructure, more or less by default. That made sense originally, as the first use case was clearing older data from expensive disk. Usually, that meant moving data to tape and then more or less forgetting about it. Seven years was usually the extent of the retention limit, but recovery was often problematic. Tapes faded with time, applications became obsolete and data formats changed. Organizations struggled to respond to court-ordered discovery motions, having to retrieve, recover and read potentially hundreds or thousands of tapes to get the slice of data that was usually demanded in a short period of time.

ARCHIVING TECHNOLOGY'S DUAL ROLE

Even now, the sheer volume of data drives an economic incentive to move older data to lower cost media, but

By Phil Goodwin

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

archiving is increasingly bifurcating into a storage management task and a business-driven application. As a business application, the primary use case is data retention for regulatory reasons; move-and-forget is not enough. Data recovery in some form is a virtual certainty and that form is unpredictable, given the whims of regulators and the courts. Moreover, some data, such as health care information, may need to be retained and recovered decades from now. Email, SharePoint and other file-system data are problem areas for almost all organizations because they consume inordinate amounts of capacity and may be subject to legal holds.

Archive solutions range from general purpose to specialized. However, most will have a set of features that classify, move, index and discover data.

Because of these new requirements, IT managers need to employ a collaborative approach and work with the business units and legal department for archive implementations. IT staff can hardly be expected to know what legal policies are needed, but they should know the technological options that will help match business requirements with the archive implementation. We'll run down some archiving technology options so storage managers can get a sense of the breadth of alternatives in the marketplace as well as the capabilities they should be looking for.

ARCHIVERS MORPHING INTO MANAGEMENT APPS

As the purpose for archiving data has shifted from storage management to include data management, archiving solutions have taken on the characteristics of broader data management applications. Consequently, the key user constituencies have also shifted. Rather than storage managers alone, key users of archive applications include CIOs, compliance officers and attorneys. User concentrations have skewed toward more heavily regulated industries, especially finance and health care.

Archive solutions range from general purpose to specialized. However, most will have a set of features that classify, move, index and discover data. Many will also include features that facilitate long-term data recovery, data destruction, data deduplication and compression, single-instance storage and integrity checking. Which combination of these features is included may be determined by the target user and use case.

Because early archiving technology efforts were limited to moving backup tapes off-site, organizations cannot make the mistake of thinking a new archive application is

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

a "green field" opportunity. In most cases, years of legacy tapes remain in the vault, all with their own retention and expiration policies. Storage managers need to ensure that backup policies don't conflict with archiving policies. Destroying data prematurely could put the organization at risk of noncompliance with court orders. On the other hand, retaining data unnecessarily makes it fair game for legal discovery, even though it's not strictly required for a given order. Either way, the result can cost organizations staggering sums in penalties or awards.

HORIZONTAL APPLICATION PROVIDERS

CommVault Systems Inc. is an example of a company that targets both backup and archive from a single point. The company's Simpana OnePass feature is designed to scan, copy, index, store, report on and create a synthetic full in a single pass. The data is moved to the Simpana ContentStore, which is the virtual back-end repository for all backup and archive metadata. ContentStore facilitates a global view of all data, where it can be searched, discovered and deduplicated. Policies regarding retention, legal holds and "defensible deletion" can be applied to this single repository. CommVault also positions this solution for big data applications regardless of data source. However, social media, instant messages (IM), blogs and the like are not presently within the scope of the product.

Archive solution essentials

Must haves:
- Data classification
- Data mover
- Data indexing
- Discovery tool

Nice to haves:
- Data destruction
- Deduplication
- Compression
- Single-instance store
- Integrity checking

Hardware:
- Scalable
- Cost-effective
- Reliable
- Immutable (as required)
- Integrity checking

Two products specifically targeted at the email and file system problem are EMC Corp.'s SourceOne archive suite and Symantec Corp.'s Enterprise Vault, though both also provide litigation support. SourceOne includes

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

components for Microsoft Exchange, IBM Lotus Notes, SharePoint and file systems. In addition, the product includes an Email Supervisor that monitors inbound and outbound email for compliance with policies; this supervisor facilitates Financial Industry Regulatory Authority regulatory compliance. The SourceOne Discovery Manager searches the SourceOne repository for relevant information and can output the data into an Electronic Discovery Reference Model (EDRM) XML format.

SourceOne is built upon EMC's Data Domain platform, which the company indicates is evolving into a "protection storage platform" for consolidated backup and archive. While this doesn't currently imply a melding of the backup catalog and archive metadata, it does yield the benefits of deduplication and a single physical target for both purposes.

Symantec Enterprise Vault is designed for both storage optimization and e-discovery. Symantec indicates that e-discovery is now the predominant use case in the U.S., although it remains more mixed between optimization and discovery in Europe. Whereas single-instance storage was removed as a feature of Exchange 2010, Enterprise Vault still deduplicates these files. The biggest benefit of deduplication is in the backup and archive operations. So, the benefit is both in physical space savings as well as reduced backup and archive operational time. Enterprise Vault dedupes across all data sources and does so upon ingestion into the archive. This includes not only email and SharePoint files, but social media. By virtue of Symantec's acquisition of Clearwell Systems Inc., Enterprise Vault includes a self-service e-discovery capability suitable for attorneys and other non-IT users. The result is removal of IT from the discovery process and lower attorney costs.

SPECIALIZED APPLICATION PROVIDERS

Two of the more specialized archiving providers are Patrina Corp. and Hewlett-Packard (HP) Co.'s Autonomy. Patrina focuses on the financial industry and goes so far as to be located on Wall Street, near the epicenter of its key market. Patrina offers a Software-as-a-Service-based records management solution that encompasses typical unstructured data and email as well as social media, blogs, IM and chats. Patrina differentiates its offering largely through customization, and estimates that 90% of its users have some amount of customization. For Patrina users, the key is being able to discover and aggregate data. Because of the unforeseen nature of the slices of data requested by regulators, not to mention changing regulations, Patrina offers both self-service data discovery and support teams to assist its customers. Patrina uses a Windows platform with data stored on Windows-readable WORM CDs, ensuring long-term readability of media.

HP's Autonomy product is also primarily focused on

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

the compliance market for regulated industries with an emphasis on archiving only data that is truly necessary. This means having robust policies that govern the data throughout its lifecycle, including data deletion, or "deletion by design" as HP terms it. HP uses Autonomy's analytics engine as a key differentiator. This analytics engine is designed to manage data using pattern matching and context to filter out "noise" and provide extensive information on unstructured data. It can also simultaneously search text, video and audio files. In addition to unstructured data archives, HP is noticing a trend toward archiving structured data, such as when an application is retired. Autonomy indexes across all data sources while applying both compression and single-instance storage.

STORAGE PLATFORM CONSIDERATIONS

The storage platform attributes needed to support archive operations must include scalability, data integrity and security. Security can include both encryption and immutability. Although some archive applications perform single-instance storage and deduplication at the software level, companies like EMC take advantage of the native capabilities of the Data Domain hardware.

In addition to its Data Domain platform, EMC positions its Isilon line of scale-out arrays as an archive platform. Isilon arrays are designed to accommodate hundreds of terabytes of data, so searching for relevant data should be simplified by using a single platform. Although Isilon can certainly support traditional archive workloads, the company positions it specifically for big data and large files, such as geophysical and medical imaging files. Additionally, Isilon includes an InsightIQ management platform to give storage administrators reports of trends, performance attributes and other information to optimize the system. EMC also has its Centera content-addressable storage for immutable requirements and Atmos for geographically distributed cloud environments.

The storage platform attributes needed to support archive operations must include scalability, data integrity and security.

HP matches its Autonomy app with the HP StoreAll family of arrays. One unique aspect of StoreAll is its Constant Validation feature to perform constant integrity checks. Given the massive scale anticipated by HP, the company feels that checking data integrity after writing is essential to proactively avoid problems and ensure the files have not been unexpectedly altered. When combined with Autonomy, HP StoreAll's Express Query feature can scan metadata, not the actual files, at a rate the firm claims is 100,000 times faster than traditional file scans.

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

TAPE STILL PLAYS A PART IN ARCHIVING

No discussion of archiving technology platforms would be complete without mentioning tape. In this regard, the LTO Consortium's Linear Tape File System (LTFS) transforms tape from passive media into an integral part of an archive offering. This file system spans both near-line tape and disk. As promoted by the Active Archive Alliance industry consortium, when combined with automated tiering software, archiving allows data to be moved to the lowest cost media automatically. Tape remains the lowest cost media for long-term storage, and LTFS makes it easier to integrate into archiving systems because it supports a familiar file system. Cleversafe Inc. (scale-out storage), HP, Scality (large-scale unstructured storage) and XenData Ltd. (video archive) are among the recent companies to join the consortium. Spectra Logic Corp., a traditional tape vendor and Active Archive Alliance member, continues to expand its use of "archive-grade" disk to front-end tape and facilitate better performance and integrity checking. ■

PHIL GOODWIN *is a storage consultant and freelance writer.*

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

CONVERGED SYSTEMS OFFER TURNKEY STORAGE AND SERVER BUNDLES

Storage vendors are packaging their products with servers and networking gear to create ready-to-run systems. Could this be the end of best-of-breed deployments?

TRADITIONALLY, TO MAXIMIZE performance and ensure enterprise-class capabilities, IT organizations have adopted a best-of-breed approach to selecting servers, storage, networking and other infrastructure components. But requirements to lower costs and gain greater efficiencies have resulted in consolidation of infrastructure to reduce physical hardware using techniques such as server virtualization, which enables better resource utilization and administrative benefits. While virtualization makes it easier to roll out new servers and applications, it has led to server sprawl that's not only burdening physical resources but taxing IT with additional maintenance and support chores.

Statistics from an IDC report, *Converging the Datacenter Infrastructure: Why, How, So What?* (May 2012), show that while server spending has stayed about the same in the past 10 years, the cost of management and administration has ballooned by several factors over the

By Jacob Gsoedl

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

same period. The report claims IT departments now spend three-quarters of their time and resources maintaining their environment, leaving little time for value-added activities.

The best-of-breed approach of acquiring IT infrastructure is one of the causes for escalating administration and management costs. Best-of-breed usually results in mixed infrastructure components from different vendors, each with their own management tools and peculiarities, requiring continuous effort to ensure interoperability and compatibility. As a result, many IT organizations are reconsidering the best-of-breed approach and opting for more standardized hardware where a single vendor ensures compatibility and provides support for the complete system, from servers and storage to networking components. These systems are also known as converged storage systems, or simply converged systems. All major server and storage vendors offer converged systems with varying degrees of convergence and configuration flexibility.

ALL-IN-ONE EQUALS EASY IMPLEMENTATION

Converged systems are turnkey packages that include servers, storage, networking, hypervisors and management software. Some are optimized for specific workloads and applications, and can be purchased with certain applications pre-installed. Converged systems only include qualified components that are compatible with each other, and they're pre-tested before they're shipped to customers.

Rapid deployment is one of their key benefits. Since a converged system vendor or one of its channel partners takes ownership of putting together a compatible, performance-optimized offering, the tedious task of sourcing and testing individual components is no longer the responsibility of IT. Instead, IT organizations can focus on selecting a converged system from a growing list of commercially available products that meets their performance, feature, availability, scalability and cost requirements. Most converged system vendors provide an option to rack and cable the product to ensure rapid deployment. The IDC report noted that five customers who deployed VCE Vblock bundles were able to reduce deployment of the new infrastructure from five weeks to one week and cut staff time to configure, test and deploy by 75%.

Besides faster deployment, converged systems significantly reduce ongoing support and maintenance. With all components compatible and pre-tested, the likelihood of issues is greatly reduced, and as new patches and updates are applied, they're certified by the converged storage system vendor—or one of its certified partners—minimizing the likelihood of problems. If problems do arise, single-vendor support can help overcome issues. Converged systems take some of the burden from in-house resources as problem resolution is largely in the hands of the vendor that supports many instances of identical configurations.

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

The standardization offered with converged systems along with the vendor's support organization lessens the need for having expensive IT specialists on staff.

Converged storage systems not only increase the efficiency of the IT operation, but help lower data center cost, resulting in overall lower total cost of ownership.

VARYING DEGREES OF CONVERGENCE

Converged storage systems come in various flavors, but their main differentiators are the degree of convergence and configuration flexibility. Available products range from highly configurable systems that allow building many different combinations from a pool of certified components, to fully converged systems, where the configuration is completely pre-defined. Contemporary converged systems can be grouped into two major categories.

- **Reference architecture-based systems.** A vendor's reference architecture is a design guideline to build a system from pre-qualified and tested infrastructure components, usually from a mix of vendors. Since the list of qualified servers, storage, networking and software components can be long, the number of permutations of systems based on a reference architecture can be large.

Systems based on reference architectures are next to best-of-breed designs in a spectrum where fully converged systems reside at the opposite end. They provide

Converging VMs, storage

COLLAPSING SERVER VIRTUALIZATION and storage, with both compute and storage services running on a single system, is a convergence approach touted by a different group of vendors. The idea is to set aside some percentage of the available compute resources for storage processing and leave the remaining compute cycles to virtual machines (VMs).

Simplification, lower cost and maximizing system utilization are the basic premises of the value proposition of converging VMs and storage. Limited scalability and the potential of VMs adversely impacting storage performance are some of the concerns of combining VMs and storage in a single system.

"I wouldn't be surprised to see storage vendors run virtual machines on their storage controllers in the foreseeable future," said Mark Bowker, a senior analyst at Enterprise Strategy Group.

Nutanix, Pivot3, Scale Computing and SimpliVity all offer converged virtualization and storage systems. ■

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

the highest degree of flexibility and are often deployed in companies that aren't ready for the more rigid fully converged storage systems. They're usually built and sold by a vendor's channel partner that also provides the single-contact support for the system. Although systems based on reference architectures inherit many of the benefits of a fully converged system, their configuration flexibility makes them somewhat less predictable than fully converged systems.

Reference architectures are offered by all major storage and server vendors. For example, NetApp's FlexPod reference model integrates NetApp storage, Cisco Unified Computing System servers and Cisco Nexus switches into a converged, validated data center architecture.

"Because of our unified architecture, we can make extremely large and very low-end pods, managed by the same software, and they work seamlessly together," said Jim Sangster, NetApp's senior director of solutions marketing.

The EMC VSPEX reference architecture provides a list of compute, storage, networking and hypervisor options that EMC's channel partners can assemble and sell. Dell's Active System platform architecture is a reference architecture that can be customized to customers' needs. The Hewlett-Packard (HP) Converged Infrastructure Reference Architecture comprises a list of compatible options and templates, and gives best-practice guidelines for HP channel partners to build and sell converged systems.

■ **Fully converged storage systems.** Fully converged systems are integrated turnkey platforms in which servers, storage, network connectivity and software are built into a single offering that's sold and supported by one vendor. While reference architecture-based systems compromise the benefits of convergence for the sake of flexibility, fully converged storage systems maximize the benefits of convergence.

On the downside, converged storage systems may pose a challenge for larger IT organizations where server, storage and networking teams are often separate groups.

On the downside, converged storage systems may pose a challenge for larger IT organizations where server, storage and networking teams are often separate groups. "Converged systems require organizational maturity and they can be an agent to transform an IT organization from a support organization that keeps the lights on to a true enabler and business asset," said Bharat Badrinath, EMC's senior director of cloud marketing.

Fully converged storage systems can also be a good

(Continued on page 20)

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

Data center infrastructure deployment options

	BEST-OF-BREED	REFERENCE ARCHITECTURE	FULLY CONVERGED STORAGE SYSTEMS
Merits	• Maximum flexibility • Ability to maximize performance and capabilities	• Combines flexibility of best-of-breed with the advantages of a fully converged storage system	• Rapid deployment • Highest degree of pre-testing and standardization • Single-vendor support • Ability to leverage vendor's expertise and support resources
Challenges	• Highest reliance on in-house resources • Disparate infrastructure, management tools and support	• Compromises some of the advantages of full convergence for the sake of greater flexibility	• Lowest degree of configuration flexibility • Requires organizational maturity • May require changes to the internal IT organization
Target customer	• Prevailing in all market segments	• Midsize companies and enterprises	• Midsize companies and enterprises
Cost	• Highest operational expenses	• Lower operational expenses than best-of-breed	• Lower operational expenses than best-of-breed
Performance	• No constraints	• Little to no performance constraints	• Little to no performance constraints • Top performance in the case of workload- and application-optimized converged systems

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

(Continued from page 18)

fit for midsize companies and smaller enterprises, where IT generalists prevail but specialization may be lacking. By being able to rely on the vendor's expertise and support organization, fully converged systems enable smaller companies to run complex systems they might not have been able to deploy if they had taken the best-of-breed route.

Fully converged systems are available in several forms that address different IT needs. They're available as general compute platforms to support hypervisors and a mix of different workloads. The Dell Active System, Hitachi Data Systems Unified Compute Platform (UCP) Pro for VMware, HP CloudSystem, IBM PureFlex System and the VCE Vblock systems are examples of fully converged systems in this category.

A second group of fully converged systems offers configurations for specific workloads and applications. Oracle's Exadata is a prime example of a converged system that's optimized for a specific application—to deliver best performance and capabilities for Oracle databases. Similarly, Hitachi UCP Select for Oracle and UCP Select for SAP HANA, and the IBM PureData System for Hadoop/Analytics/Transactions are examples of application-optimized converged systems.

TRENDING TOWARD CONVERGENCE

The increasing complexity of IT systems and a continuous call to lower cost—to do more with less—are on opposing trajectories. IT organizations must adopt strategies that help align those two trends. Abandoning the best-of-breed, multivendor paradigm of the past and replacing it with a single-vendor converged system strategy is one way of aligning the opposing forces. Converged systems bring about standardization and make it easier to leverage external expertise and resources that can lead to leaner IT organizations and significantly lower operational expenses. The approach, however, requires organizational maturity and a willingness to alter traditional organizational structures. ■

JACOB N. GSOEDL *is a freelance writer and a corporate director for business systems.*

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

RECORD-BREAKING RESULTS FOR BACKUP SOFTWARE QUALITY AWARDS

CommVault returns to the top spot among enterprise backup apps, while Dell AppAssure prevails over seven midrange finalists.

IN OUR EIGHTH Quality Awards for backup and recovery software survey, backup application vendors racked up some of the highest scores we've ever seen in this product category. Implementing a backup application is a lot like getting married—it's a long-term commitment, so you're more than willing to overlook a minor flaw or two in your partner. But judging by our survey results, there seem to be plenty of matches made in heaven in our data centers.

On the enterprise front, CommVault Systems Inc.'s Simpana edged out EMC Corp.'s NetWorker by a very slender margin to take top honors. Symantec Corp.'s NetBackup had finished first in the last two surveys, breaking CommVault's previous string of three straight wins.

Among midrange backup applications, a first-time winner emerged as Dell Inc.'s AppAssure fought off stiff challenges from Microsoft Data Protection Manager (DPM), EMC Avamar and Acronis International's Backup & Recovery.

By Rich Castagna

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

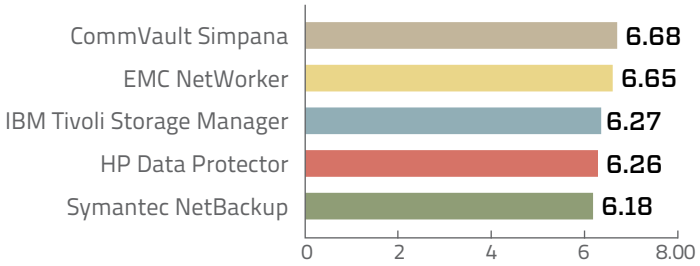
FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

Overall Rankings

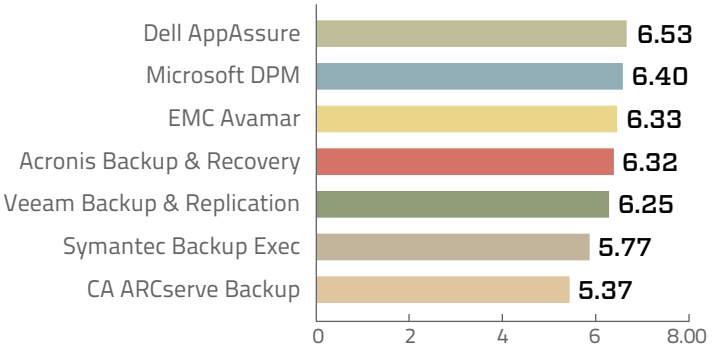
Enterprise. EMC NetWorker garnered the highest scores in three of the five rating categories, but CommVault Simpana emerged on top by a super-slim margin of 0.03 points by running a close second in those same categories and scoring convincing victories in the remaining two. As it has in the past, CommVault showed particular strength in the product features rating category with a score of 7.05—the first 7.00-plus category rating we've seen for an enterprise or midrange backup app. CommVault prevailed in the sales-force competence and product features categories, while EMC led the field for initial product quality, product reliability and technical support. IBM Tivoli Storage Manager (TSM) and Hewlett-Packard (HP) Co.'s Data Protector duked it out for third, with IBM achieving a wispy 0.01 advantage over HP (6.27 to 6.26). Rounding out the strong field, Symantec NetBackup's 6.18 would've been good enough to win in five earlier surveys.

ENTERPRISE BACKUP APPLICATIONS: OVERALL RANKINGS



Midrange. EMC Avamar's hopes for a three-peat in the midrange group were dashed by Dell AppAssure, which earned a second-highest-ever 6.53 overall ranking for midrange backup apps. It was only Dell AppAssure's second appearance among the finalists; last year, it finished third. This time, the product's 6.53 score gave it a relatively comfortable margin of victory over Microsoft DPM, which earned a personal best of 6.40 for its highest finish. The honors were well distributed, with the Dell product scoring highest in two categories, Acronis on top for two and EMC Avamar taking the fifth. The midrange products broke some records, too, with all-time-high overall averages in four of the five categories.

MIDRANGE BACKUP APPLICATIONS: OVERALL RANKINGS



HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

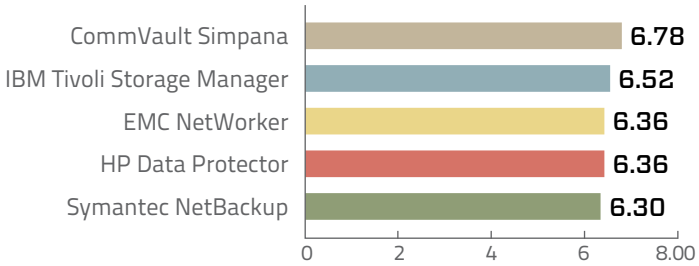
FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

Sales-Force Competence

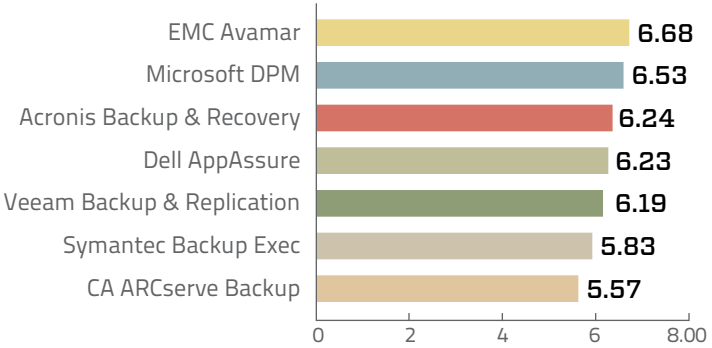
Enterprise. CommVault won the sales-force competence category in convincing style by coming out on top for each of the seven statements that comprise the category. Its range of scores was impressively consistent, running from a 6.56 for a licensing formula that offers good value up to a 6.96 for having a knowledgeable sales support team. IBM TSM was a strong second with an average score of 6.52, highlighted by a 6.85 for the knowledgeable sales support team statement and a 6.74 for having reps who are knowledgeable about customers' industries. EMC and HP finished in a dead heat for third (6.36), with both showing strength on the same "knowledge" statements. All the products scored well for sales-force competence, with only one sub-6.00 statement score and a group average that topped all seven previous survey results.

ENTERPRISE BACKUP APPLICATIONS: SALES-FORCE COMPETENCE



Midrange. EMC Avamar nearly equaled CommVault's category sweep among the midrange products, but had to settle for ranking highest on six of the seven category statements. EMC's 6.68 category score was highlighted by an eye-popping 7.07 for "The vendor's sales support team is knowledgeable." With a 6.81 for knowing about customers' industries, Microsoft DPM's category average of 6.53 put it firmly in second. Acronis nipped Dell AppAssure for third—6.24 to 6.23—despite Dell's top mark for the licensing statement. Veeam netted all 6.00-plus statement ratings to take the fifth spot with a solid 6.19.

MIDRANGE BACKUP APPLICATIONS: SALES-FORCE COMPETENCE



HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

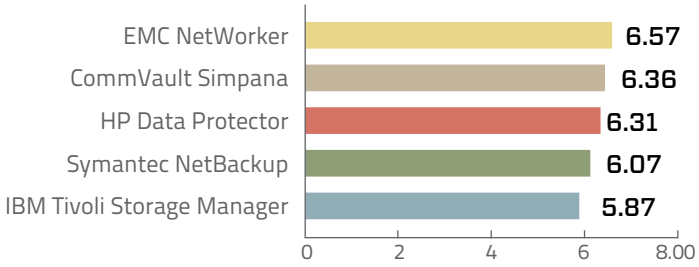
FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

Initial Product Quality

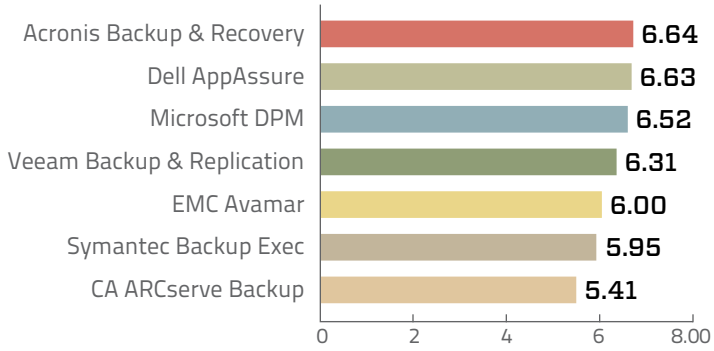
Enterprise. Getting up and running fast and flawlessly is a great way for a backup app to endear itself to a storage manager. EMC NetWorker proved its mettle for initial product quality (6.57) by scoring highest on four of the category's seven rating statements, highlighted by a flashy 7.11 for "This product uses tape efficiently" and a 6.74 for being easy to install. Second-place CommVault (6.36) prevailed on the other two statements—requiring very little daily intervention (6.37) and delivering good value for the money (6.59)—and matched EMC on one statement (both earning 6.44 for ease of use). HP Data Protector trailed CommVault by a mere 0.05 points to finish third with a score of 6.31.

ENTERPRISE BACKUP APPLICATIONS: INITIAL PRODUCT QUALITY



Midrange. As a group, the midrange backup apps in our survey had the highest initial product quality score ever, highlighted by Acronis' 6.64, which was nearly matched by Dell's 6.63 in a well-contested category. Acronis scored highest for easy configuration, requiring little daily intervention and for not requiring professional services, and it tied Dell for ease of installation. Dell earned the best statement marks for ease of use and using tape efficiently; third-place Microsoft DPM led the group on the bellwether statement "This product delivers good value for the money." It was the tape efficiency statement that accounted for the 0.01 point difference in the first- and second-place products: Acronis' score was pulled down a bit by a 5.79, while Dell's AppAssure got a boost with a 7.00 (the only 7.00-or-better statement score in the category).

MIDRANGE BACKUP APPLICATIONS: INITIAL PRODUCT QUALITY



HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

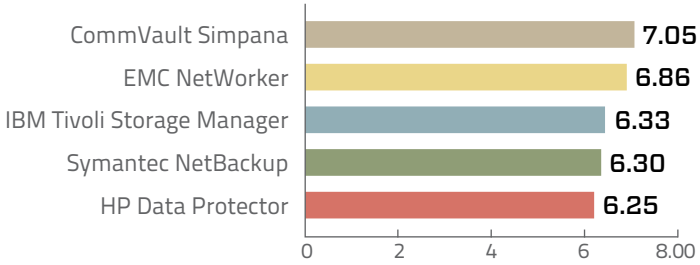
DEDUPE USERS REAPING BIG REWARDS

Product Features

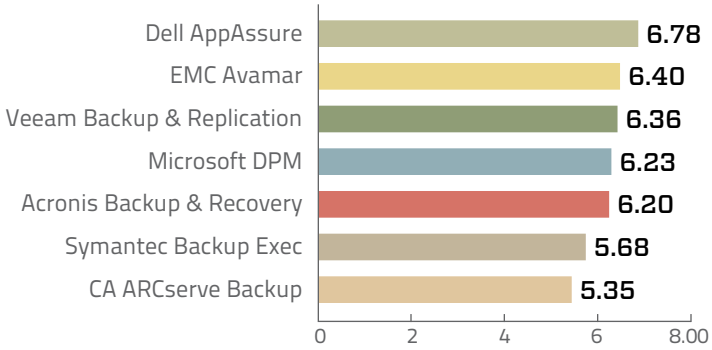
Enterprise. Historically, CommVault's strongest Quality Awards showings have been in the product features category. This time around, CommVault outdid its impressive past performances with a category score of 7.05 (an all-time high), earned on the strength of 7.00-plus scores for five category statements. It received an astounding 7.52 for "This product is a complete solution," a 7.38 for scaling well and a 7.22 for file-system backup features. Second-place EMC NetWorker was hardly a slouch, with top scores on three statements: archiving features (6.79), interoperability (6.67) and backup-to-disk functionality (7.21). The remaining products—IBM (6.33), Symantec (6.30) and HP (6.25)—also fared very well in the category, adding up to the strongest overall product features average ever.

Midrange. Dell's AppAssure distanced itself from the field in this category with the rare achievement of notching four scores of exactly 7.00: for being a complete solution, and in the categories of file-system backup features, database backup and archiving. Dell also scored best for scalability (6.85), while second-place EMC ranked highest for interoperability and backup-to-disk functionality. Microsoft DPM won the final statement related to management features. Although it didn't score highest on any individual statement, Veeam posted consistently high marks that totaled 6.36, good for a third-place category finish. Category winner Dell's overall score of 6.78 was the second best ever for midrange backup products in this rating category.

ENTERPRISE BACKUP APPLICATIONS: PRODUCT FEATURES



MIDRANGE BACKUP APPLICATIONS: PRODUCT FEATURES



HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

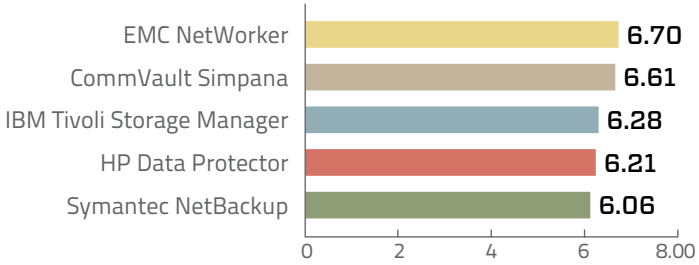
FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

Product Reliability

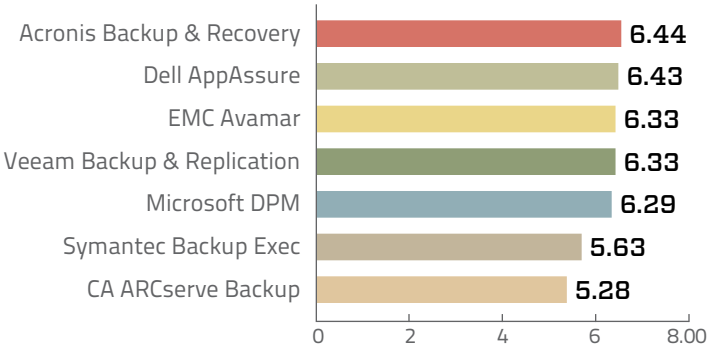
Enterprise. Apparently all five enterprise finalist products have earned their chops as reliable backup applications, as evidenced by the solid scores across the board. With a category score of 6.70, EMC NetWorker led the group, followed by CommVault and IBM. EMC and CommVault split the statements, with each coming out on top for four. Among EMC's winning marks, it earned a 6.89 for requiring few unplanned patches and a 6.78 for providing comprehensive upgrade guidance. EMC also registered a 7.06 for adequate OS/platform support, but was nudged out by CommVault's 7.11 for that statement. CommVault had another above-7.00 grade, a 7.07 for meeting service-level requirements. IBM's best score was a 6.76 for the OS/platform statement.

ENTERPRISE BACKUP APPLICATIONS: PRODUCT RELIABILITY



Midrange. Acronis snared its second category crown by outdoing Dell 6.44 to 6.43. Three different products had top statement scores: Acronis and Dell each led for three statements and EMC prevailed on the final two. EMC and Veeam earned category scores of 6.33 to finish in a tie for third. Acronis' greatest strengths were for requiring few unplanned patches (6.78) and having very few bugs (6.73). Dell had the two highest statement scores in the group, a 6.92 for OS/platform support and a 6.85 for meeting service-level requirements. Error handling was something of an Achilles' heel for the group as all but EMC (6.14) scored below 6.00 for the statement.

MIDRANGE BACKUP APPLICATIONS: PRODUCT RELIABILITY



HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

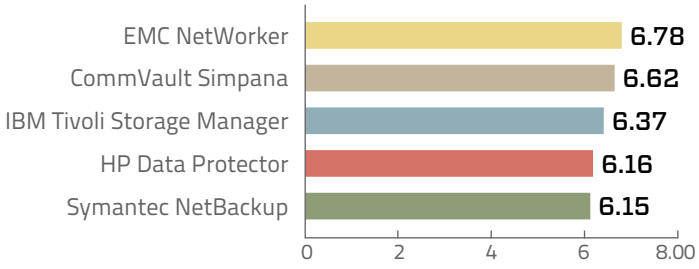
DEDUPE USERS REAPING BIG REWARDS

Technical support

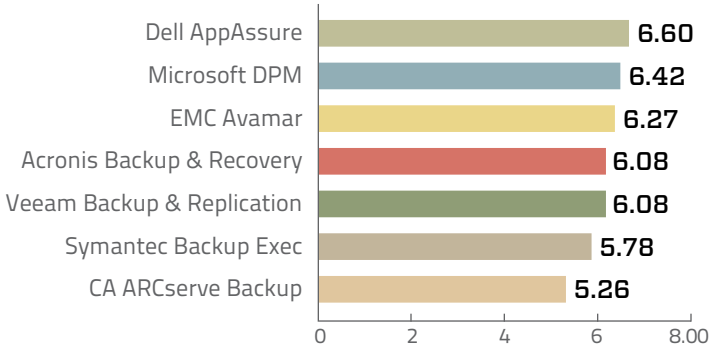
Enterprise. We've often noted that solid technical support can make up for other product shortcomings, and while these enterprise vendors are obviously delivering solid products, they're not skimping on support either. At 6.42, the group's overall average for the tech support category is the highest ever, led by EMC's 6.78. Once again dueling with CommVault, EMC scored highest on three statements while CommVault came out on top for four. EMC exceeded 7.00 on three statements: having knowledgeable third-party partners (7.07), documentation (7.00) and providing support as contractually specified (7.00). CommVault had its share of 7.00s, highlighted by a 7.19 for the "contractually specified" statement and a 7.00 for having knowledgeable support personnel.

Midrange. Dell's AppAssure netted a 6.92 for having knowledgeable third-party partners among its two leading statement scores on its way to a 6.60 category win. Second-place Microsoft DPM earned top marks for three statements, including a pair of 6.58s for resolving problems in a timely manner and knowledgeable support personnel. Dell and Microsoft tied in one category. The final statement—"Vendor supplies support as contractually specified"—was won by third-place finisher EMC with a 7.03, the only over-7.00 mark for the seven finalist products. The overall average for the whole group was 6.07, which was just a hair under the previous best of 6.08.

ENTERPRISE BACKUP APPLICATIONS: TECHNICAL SUPPORT



MIDRANGE BACKUP APPLICATIONS: TECHNICAL SUPPORT



HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

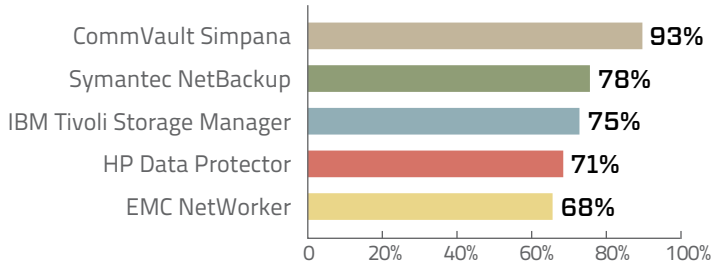
Would you buy this product again?

Often, when we ask if users, given their experience with a product, would buy that product again, the results don't jibe with other category ratings in the survey. But this time, 93% of CommVault's users said they would repeat their purchases. Overall, 77% of the enterprise backup application rating group said they'd pony up their bucks again to buy the same products.

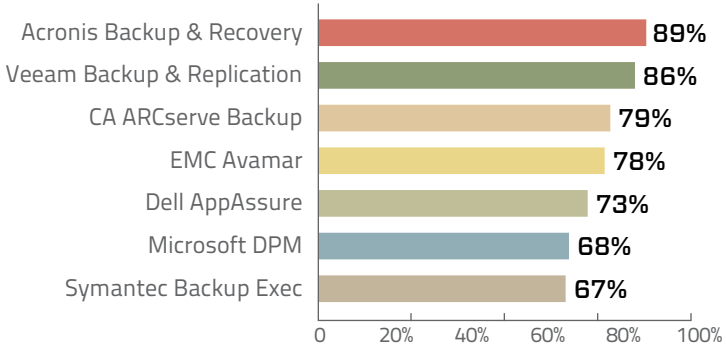
In the midrange group, fourth-place Acronis had the highest "buy again" rating, with 89% of its users saying they would buy it again today. Veeam's 86% buy again score also demonstrated solid user loyalty, as the mark for the midrange group as a whole averaged 77%. We did see some of those familiar anomalies, however, as CA ARCserve Backup customers showed significant product loyalty despite its category rankings.

RICH CASTAGNA *is editorial director of TechTarget's Storage Media Group.*

ENTERPRISE BACKUP APPLICATIONS: WOULD YOU BUY THIS PRODUCT AGAIN?



MIDRANGE BACKUP APPLICATIONS: WOULD YOU BUY THIS PRODUCT AGAIN?



HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

About the Quality Awards

The *Storage* magazine/SearchStorage.com Quality Awards are designed to identify and recognize products that have proven their quality and reliability in actual use. The results are derived from a survey of qualified readers who assess products in five main categories: sales-force competence, initial product quality, product features, product reliability and technical support. Our methodology incorporates statistically valid polling that eliminates market share as a factor. Indeed, our objective is to identify the most reliable products on the market regardless of vendor name, reputation or size. Products were rated on a scale of 1.00 to 8.00, where 8.00 is the best score. A total of 243 respondents provided 541 backup and recovery software product evaluations.

Products in the survey: These 37 products were included in the eighth Quality Awards for backup and recovery software survey; the number of responses for each finalist product is shown in parentheses.

ENTERPRISE

Asigra Cloud Backup (on-premises software)*
CommVault Simpana (30)
EMC NetWorker (22)
Hewlett-Packard Data Protector (21)
IBM Tivoli Storage Manager (44)
Quest NetVault Backup (formerly BakBone)*
Symantec NetBackup (69)
Syncsort BEX (Backup Express)*
Zmanda Amanda Enterprise*

*TOO FEW RESPONSES TO QUALIFY

MIDRANGE

Acronis Backup & Recovery (44)
Archiware PresStore*
Arkeia Network Backup*
Atempo Time Navigator*
BarracudaWare Yosemite Server Backup*
BridgeHead Software HT Backup*
CA ARCserve Backup (14)
CMS BounceBack Server*
Code 42 Software CrashPlan PROe*
Cofio AIMstor Backup*
Copiun Data Manager*
Dell AppAssure (15)
Druva inSync*
EMC Avamar (32)
EVault (Seagate) EVault Data Backup Software*
FalconStor Continuous Data Protector*
Microsoft Data Protection Manager (25)
NovaStor NovaBackup*
Paragon Drive Backup Server*
PHD Virtual Technologies PHD Virtual Backup (formerly esXpress)*
Quest vRanger (formerly Vizioncore)*
Retrospect Inc. Retrospect*
SonicWALL Continuous Data Protection*
StorageCraft ShadowProtect*
Symantec Backup Exec (178)
UltraBac Software Server or Enterprise Edition*
Veeam Backup & Replication (28)
Vision Solutions Double-Take RecoverNow (formerly Double-Take Backup)*

Backing up mobile devices might be impossible

Selectively backing up work and personal data from mobile devices can't be done, but perhaps not for the reasons you think.

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

BEFORE I GET started, let me define the two basic types of endpoint devices: consumption devices and creation devices. *Consumption devices* are like e-readers that fetch data from a cloud repository. As long as there's a log-in screen that keeps someone who finds a lost device from ordering every book in the store, there isn't much risk in losing a consumption device. If it breaks, you replace it and re-sync the content. Even if the device is used for business, corporate documents likely come from Dropbox, GoogleDocs, SkyDrive or a similar service that typically doesn't require explicit backups.

Creation devices can be used to create new content that might not exist elsewhere. Like consumption devices, creation devices often leverage online file-sharing services that can ensure data survives even if the device doesn't. In addition to the data files, the configuration of the device itself usually requires protection.

Depending on how you use a tablet, it may be a consumption device, a creation device or both, and you might use it for business and personal work.

It's the blending of personal and business data (from a content-creation perspective) that breaks all current approaches to bring-your-own-device (BYOD) protection. Here's an example: I use one device for work (ESG) and when I volunteer with Boy Scouts. My mobile device backup options include:

- **Self-managed backups**. I have the option of purchasing external storage (personally or through my company) and configuring built-in or third-party backup tools to regularly protect my data as well as the

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

device's OS/app configuration. But frankly, if typical users did that, endpoint backup problems would have been solved years ago.

- **Self-managed cloud backups**. I could use a combination of online file sharing and online backup services to ensure my data is synchronized to at least one cloud-based repository. These services usually don't protect the entire machine, so I risk running into problems because of a bad application or OS patch. More importantly, if I pay for the service myself and then leave the company, my employer won't have the original data on my machine or any of the backups. If my employer pays for the service, they'll likely have access to the backups of my work data *and* my personal data. I don't care if my employer sees pictures of my family or hears my favorite songs, but they shouldn't have access to information about the kids in the Scout units I serve.

- **Corporately managed backups**. I could have my backups done through my company's data center backup software or its cloud-based services. This option presumes the company offers a capability to back up not only corporate-owned devices, but devices purchased by employees. And while it would be noble of my employer to back up a device it didn't pay for, the same issue of a company having access to personal or non-company data still exists. In addition, many IT-controlled endpoint services include the ability to remotely wipe my device if it's lost or stolen—and you can't just wipe corporate data directories while leaving the rest intact.

To be clear, a company has the right and responsibility to ensure that its data is backed up; but it equally should not have the right to the personal data on that same device. There are niche scenarios that try to address this, such as remote desktop connectivity, in which a device has no corporate data on it. Instead, the user connects to a virtual machine within the company and works within a confined window. But that method negates why most employees choose to purchase their own device: to increase their productivity. Radically changing one's work style between opening a personal Word document on a device versus laboriously connecting to a remote desktop and launching Word inside of one window is a "non-starter" for most BYOD users.

The bad news is that your backup vendor may never be able to solve this BYOD backup problem for you (not alone, anyway). What's needed is a set of multiple personas or other means of differentiating data during a mobile device backup so business data is protected in one way, and personal data is protected in another.

Perhaps backup vendors will develop better ways of selecting data directories within a device. But that will

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

probably require a device-by-device configuration, where users or IT select the data manually—and that isn't likely to happen. Years ago, laptop backups forced users to change their work styles with a promise of "If you put your data here, IT will back it up." But most users felt that was inconvenient, so the data didn't get protected. Over time, many of those offerings evolved so they can now discover and back up "My Documents" wherever that directory may be. But most tablet OSes don't offer even that granularity, and laptops running today's newer OS versions often have just a single MyDocs directory for data.

The real work needs to be done by Apple (iOS), Google (Android) and Microsoft (WindowsRT/Phone) to enable a file-system or directory structure with top-level directories that can be predictably identified by backup software. These directories would look something like "My Work Docs" or "My Personal Docs" without affecting the rest of the user's experience. Clicking a .doc file should open Word, regardless of which directory the file is in. The backup software client would then have the option of offering to protect work files, personal files, both or the whole machine.

Until then, your company will either have to trust you to back up its data for them or you'll have to trust the company not to read your personal data. Of course, you could just carry two devices. But who wants to *Buy* Your Own Device twice? ■

JASON BUFFINGTON *is a senior analyst at Enterprise Strategy Group. He focuses primarily on data protection, as well as Windows Server infrastructure, management and virtualization. He blogs at CentralizedBackup.com and tweets as @Jbuff.*

Tapping flash's performance: Look before you leap

The solid-state storage market is still a work in progress, with multiple high-performance alternatives. A prudent approach will ensure that a flash deployment fits well with an overall storage strategy.

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

OVER THE PAST year and a half, the market has been flooded with products designed to solve storage performance problems. Taneja Group has recently completed field research with several hundred storage practitioners regarding storage performance—specifically what products and technologies enterprises are looking at to enhance data storage performance.

It was clear from this exercise that IT priorities remain pretty straightforward. In the midst of all the buzz about cloud, server virtualization still rules the roost. After server virtualization, a basketful of storage infrastructure initiatives surfaced, followed by client virtualization. Cloud infrastructure was a distant fourth, with the prevailing impression that cloud is still too young, distant and/or opportunistic for it to be on the IT strategy radar.

As we dove deeper into the study data, we found this set of IT priorities aligned fairly well with where these IT pros said they were experiencing storage performance challenges. Many reported storage performance issues, with server virtualization, client virtualization and data warehousing lining up as the prime suspects. Interestingly, storage acceleration still doesn't rank very high as an independently funded IT priority. This suggests that despite the proliferation of performance-oriented solutions, users still don't have a firm grasp on how they're going to get a much-needed storage performance boost.

We also see users actively seeking solutions, but where their storage dollars will end up is not yet entirely clear. For instance, some are focusing on server-based flash offerings using SAS or PCI Express (PCIe) flash as

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

direct-attached storage. That type of solid-state implementation has received a lot of attention with Fusion-io's success, and its big customer wins like Facebook. But interest hasn't necessarily translated into action: We see far fewer users who have concrete deployment plans.

The takeaway is that a server-based flash deployment looks like a viable solution for specific problems, but a clear path for integrating those products with an overall enterprise storage strategy is still lacking. Deploying server-based flash presents its own challenges, as it fragments storage management, requires the installation and maintenance of multiple devices, and a lot of storage pros are unwilling to give up traditional storage features for the sake of performance. For the typical enterprise, server-based flash remains a narrowly deployed solution that is only installed when there's a great need for more performance. That need may be defined by specific applications, or it may be a relatively inexpensive fix when there's not enough budget for a broader solution.

Meanwhile, those who like the idea of server-based flash may be convinced to take another route to solid-state performance that would either enable acceleration without breaking enterprise storage strategy or be more easily deployed without having to crack open a bunch of servers.

Companies leaning toward those approaches are likely to meet up with two types of vendors. Server-based storage accelerators (SSAs) promise to cache data while keeping the authoritative data centrally stored; this provides tremendous acceleration without breaking the enterprise storage strategy. Examples of those vendors and their products include EMC with XtremSF, Marvell and its DragonFly products and QLogic's 1000 Series FabricCache adapters. Software vendors may also be able to deliver required performance improvements. The list of software vendors in this space is fairly long, but some examples are Intel's Cache Acceleration Software (CAS), Proximal Data's AutoCache and SanDisk with FlashSoft. There are many other small vendors active in this space, and even VMware is working on an offering.

Popular alternatives to server-based flash technologies are hybrid storage arrays that accelerate storage performance using a combination of flash and hard disk drives.

Popular alternatives to server-based flash technologies are hybrid storage arrays that accelerate storage performance using a combination of flash and hard disk drives. Most users recognize the difference between traditional arrays that "up-tier" hot data to solid-state media, and newer-generation arrays that more seamlessly interweave

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

flash with hard disks by using flash as the primary storage and de-staging data rather than using an up-tiering strategy.

The net-net is that it's still very early stages for the solid-state storage market. We still lack a clear understanding of how to identify, quantify, value and address storage performance issues, but at the same time the performance pressure on the storage infrastructure is growing. Some early adopters hacked together short-term solutions that may not fit well with their enterprise storage strategy or be viable longer term solutions. If you're up against storage performance demands, you may want to dig a little deeper into what the solid-state market has to offer so that your chosen path will be more strategic and manageable. ■

JEFF BOLES *is a senior analyst at Taneja Group.*

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

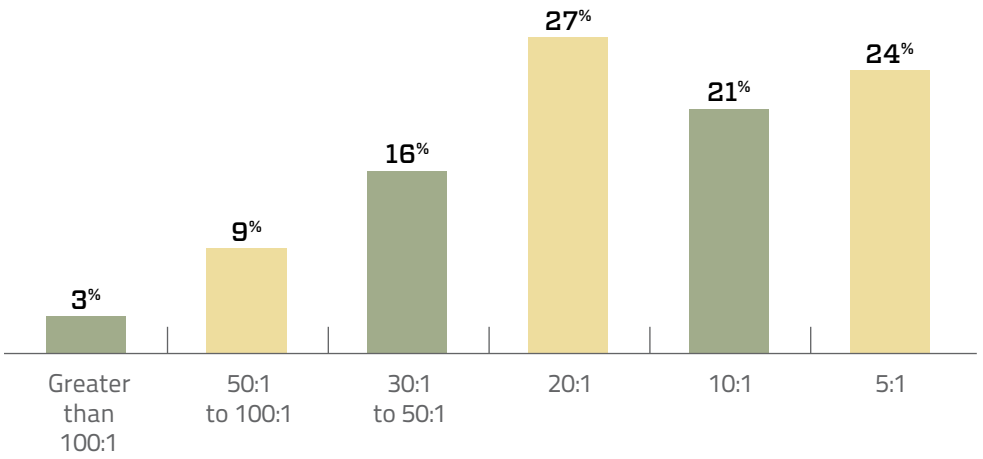
FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

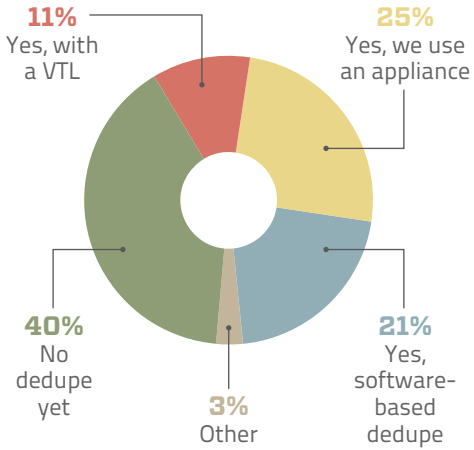
Big capacity reductions reported by data deduplication for backup users

Not too long ago, the storage world celebrated the 10th anniversary of backup data deduplication. Even if you weren't invited to the party, it's a good bet you're enjoying the benefits of deduplication. Fifty-seven percent of our respondents say they're deduplicating data backups, with an average of 2.8 years experience using the technology. Dedupe vendors may tout reduction ratios that strain credulity, but our group sees an average data reduction of 27:1, which helps reduce the amount of disk capacity needed for backup by an average of 44%. For restoring deduped data, 76% say it's the same or easier than restoring non-deduped data and 15% note that it's a little to considerably tougher. Does it sound too good to pass up? Forty percent of non-dedupers don't see a need for it, and another 30% think backup data deduplication still isn't mature enough. Still, 45% of non-users plan to deploy dedupe in the next six to 24 months. *—Rich Castagna*

ON AVERAGE, WHAT DATA DEDUPLICATION RATIOS ARE YOU ACHIEVING?



DO YOU CURRENTLY USE DATA DEDUPLICATION TECHNOLOGY IN YOUR BACKUP PROCESS?



44%

AVERAGE DISK CAPACITY REDUCTION GAINED BY DEDUPLICATING BACKUPS

HOME

STILL A NEED FOR STORAGE PROS

CAN STORAGE PASS THE YOGA PANTS TEST?

ARCHIVE IT!

STORAGE, SERVERS AND NETWORKS CONVERGE

USERS RATE COMMVAULT, DELL APPASSURE TOP BACKUP APPS

MOBILE DEVICE BACKUP MAY BE FUTILE EFFORT

FINDING A FIT FOR FLASH

DEDUPE USERS REAPING BIG REWARDS

TechTarget Storage Media Group

STORAGE MAGAZINE

EDITORIAL DIRECTOR Rich Castagna
SENIOR MANAGING EDITOR Kim Hefner
EXECUTIVE EDITOR Ellen O'Brien
CONTRIBUTING EDITORS James Damoulakis, Steve Duplessie, Jacob Gsoedl

SEARCHSTORAGE.COM

EXECUTIVE EDITOR Ellen O'Brien
SENIOR NEWS DIRECTOR Dave Raffo
SENIOR NEWS WRITER Sonia R. Lelii
SENIOR WRITER Carol Sliwa
SENIOR MANAGING EDITOR Kim Hefner
ASSISTANT SITE EDITOR Sarah Wilson

SEARCHCLOUDSTORAGE.COM
SEARCHVIRTUALSTORAGE.COM

EXECUTIVE EDITOR Ellen O'Brien
SENIOR MANAGING EDITOR Kim Hefner
ASSISTANT SITE EDITOR Sarah Wilson

SEARCHDATABACKUP.COM
SEARCHDISASTERRECOVERY.COM
SEARCHSMBSTORAGE.COM
SEARCHSOLIDSTATESTORAGE.COM

SENIOR SITE EDITOR Andrew Burton
MANAGING EDITOR Ed Hannan
ASSOCIATE SITE EDITOR John Hilliard
FEATURES WRITER Todd Erickson

STORAGE DECISIONS TechTarget Conferences

EDITORIAL EVENTS MANAGER Jacquelyn Hinds

SUBSCRIPTIONS

www.SearchStorage.com
Storage magazine
275 Grove Street
Newton, MA 02466
editor@storagemagazine.com

TechTarget Inc.
275 Grove Street
Newton, MA 02466
www.techtarget.com

©2013 TechTarget Inc. No part of this publication may be transmitted or reproduced in any form or by any means without written permission from the publisher. TechTarget reprints are available through The YGS Group.

About TechTarget: TechTarget publishes media for information technology professionals. More than 100 focused websites enable quick access to a deep store of news, advice and analysis about the technologies, products and processes crucial to your job. Our live and virtual events give you direct access to independent expert commentary and advice. At IT Knowledge Exchange, our social community, you can get advice and share solutions with peers and experts.

COVER IMAGE AND PAGE 9: PAUL JACKSON/GETTY IMAGES/IKON IMAGES