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Today’s Challenges with Data Backup and Recovery

Enterprises in nearly every industry face huge challenges in managing their data backup and recovery processes. Traditional on-premises backup and recovery solutions in many cases fall short in meeting today’s business needs in a number of areas.

For one thing, older solutions are too costly. As the volume of data storage continues to grow at a rapid pace, enterprises struggle with the rising cost of protecting data on the premises. In addition, bandwidth costs and constraints are becoming more acute with larger datasets. Many IT departments operate with limited budgets, and the pressure is on to keep costs down.


As difficult as the cost challenges are for larger enterprises, they can be even more of an issue for medium-sized and smaller companies that have much more limited resources. Even these smaller businesses are seeing increased demand for data backup and recovery, and they must deal with the rising costs of storage at a time when they’re trying to keep technology spending under control.

Another shortcoming of traditional backup and recovery solutions is that the technology behind these solutions is too complex and slow for today’s agile business environment. Speed is everything in today’s business world. Users expect instant recovery and minimal data loss, and legacy backup and recovery systems simply can’t keep pace. As a result, organizations run the risk of failing to meet the backup and recovery demands of the business.

Finally, current solutions can actually add to corporate risk. Many organizations still rely on tape, which increases their risk exposure because of the potential for lost media in transport, increased downtime and data loss, and limited testing capability.



### HOMEBUILDER SAVES TIME, MONEY WITH CLOUD STORAGE



Customer Story

**Metricon, one of the largest residential homebuilders in Australia, had amassed nearly 40 terabytes of business data over the years, which it backed up to tapes and moved off site for safekeeping. Backing up data was taking a large and growing amount of time for its IT staff, as well as cutting into the technology budget.**

**By early 2014, IT staffers were spending 10 hours per week managing backups, taking them away from managing and improving business-critical systems and upgrading to new technologies.**

**To reduce the time spent backing up data as well as keeping the data more secure, the company switched from tape backup to a hybrid cloud solution from NetApp and Microsoft. The cloud storage appliance product from NetApp enables Metricon to back up data to a local NetApp solution, which applies deduplication technology to eliminate redundancy within the data and then transfers files to the Microsoft Azure cloud.**

**The NetApp appliance keeps frequently accessed data cached, which improves access time while enabling the entire dataset to be secured in Azure. Deduplication reduced the amount of Metricon data stored in the cloud to just seven terabytes, which were copied to Azure in one week.**

**By backing up data to the cloud, Metricon was able to cut tape backup work by 80%, and it eliminated \$28,000 per year in tape administration costs. The company also improved backup reliability. Daily and weekly backups are faster, but the biggest time savings come from a reduction in backup management work. There’s no longer a need to monitor the backup process and change tapes.**

**The cloud-based storage solution enabled the homebuilder to address a significant challenge within its IT operations and benefit the entire company through increased efficiency.**

Enterprises that deploy cloud-integrated storage can benefit in a number of ways from the technology and meet the challenges they face today with backup and recovery.

that enterprises face with backup and recovery, those that drive them most often to make a change are efficiency and economics. It’s up to IT leadership to help drive this change.

One option that can address all of these challenges is cloud-integrated storage. This approach potentially offers a number of significant advantages to organizations looking to enhance their storage infrastructure, including keeping costs under control. The following chapters describe some of these key benefits.

How Cloud-Integrated Storage Can Reduce Backup and Recovery Costs

Enterprises that deploy cloud-integrated storage can benefit in a number of ways from the technology and meet the challenges they face today with backup and recovery.

Two of the biggest benefits of this type of storage are reduced costs and improved efficiency. Some cloud-integrated storage appliances are capable of reducing datasets by as much as 30 times through the use of inline deduplication and compression technology. This can result in up to 90% data reduction

meaning that companies can store less data in the cloud and move it there with less bandwidth, which saves tens of thousands of dollars per year.

Given the growing volumes of data, not only through enterprise applications but through social media and hundreds—in some cases, thousands—of mobile devices at large enterprises, the number of datasets is likely to increase dramatically in the coming years. That means that the economics of cloud-based backup and recovery will only get better.

Research by IDC shows that the emergence of wireless technologies, smart products, and other factors contribute to worldwide data growth, with volume expected to multiply 10-fold between 2013 and 2020, from 4.4 trillion gigabytes to 44 trillion gigabytes.

Another cost benefit from this approach comes from the basic economics of the cloud model itself. With cloud services, customers pay only for the storage services they need when they need them. This on-demand model produces lower capital expenditures, and it can result in significantly lower costs than those of a traditional licensing model for storage products.

The upshot is that businesses can store huge and growing volumes of data at a lower total cost than they would with a traditional, on-premise storage approach. Financial benefits can also come from other improvements. For example, companies can reduce tape management overhead and manual tasks that tend to be error prone and time consuming. This allows them to allocate staff to other, more innovative and potentially revenue-generating projects.

In summary, traditional backup and recovery solutions are too expensive, too slow, and too risky for organizations. It should come as no surprise, then, that improving data backup and recovery operations was rated one of the highest IT priorities for the next 12 months according to a 2015 survey of 601 senior IT decision makers by research firm Enterprise Strategy Group (ESG).

Of the executives surveyed by ESG, 26% said improving data backup and recovery is one of their top IT priorities. It was the second most common priority cited by the respondents, trailing behind only information security initiatives and scoring ahead of managing data growth, increasing use of server virtualization, and desktop virtualization. Nearly 40% of those executives who want to make a change in their backups do so because of cost, according to ESG.

As ESG stated in a January 2015 report, “It is clear that improving data backup and recovery is a priority for IT groups in organizations of all sizes. It has consistently appeared as one of the most commonly identified IT priorities by senior IT decision makers participating in ESG’s annual spending intentions survey for several years running. And in mid-market organizations, improving backup and recovery often appears as the most-often-cited priority. Evidently, backup is not ‘solved’ yet.”

Clearly it is time for IT and business leaders to look for an alternative to the old way of doing things. Of all the challenges



By using cloud-integrated storage, organizations can send data off site immediately, and there is no need to physically ship and handle tapes.

Research by ESG shows that an interest in reducing costs is a major driver of IT strategy. It also shows that increasing use of cloud computing services and buying new technology that can provide a better overall return on investment were among the most-often-mentioned efforts cited by organizations trying to cut technology costs. These efforts were mentioned by one third of the organizations the firm surveyed that are trying to reduce or otherwise contain IT expenses.

The “Computerworld Forecast Study 2015,” which included an online survey of 194 IT and business professionals in the United States, shows that cutting costs is one of the top business priorities for IT departments for the next 12 months. This priority was cited by nearly half (47%) of the IT leaders surveyed. Among others in the survey group, that percentage was even higher (58%).

Cost cutting is among the top goals for key IT projects such as cloud computing and modernizing legacy systems, according to the Computerworld study.



**How Cloud-Integrated Storage Can Speed Up Backup and Recovery**

In addition to saving costs, cloud-integrated storage can save companies time, speeding up the process of backing up and recovering data. This is especially critical at a time when users expect lightning-fast speeds for everything they do, including storing and retrieving data.

The “Computerworld Forecast Study 2015” notes that accelerating business processes and agility is also a high priority for IT leaders, a point cited by nearly 40% of the executives surveyed.

And, as research firm IDC noted in a 2014 market analysis, “Worldwide Disk-Based Data Protection and Recovery 2014–2018 Forecast: The Rise of the 3rd Platform and Implications on Data Protection,” organizations are demanding faster backup, restore, and recovery capability “to meet their aggressive backup windows and recovery times.”

By using cloud-integrated storage, organizations can send data off site immediately, and there is no need to physically ship and handle tapes. Daily and weekly backups can be done much faster. By replacing tapes with a cloud-integrated solution, companies have been known to reduce the time they spend on backup work by as much as 80%. Some cloud-integrated storage solutions can cache the most recent backups locally. Then, when it comes time to restore data, they can do so very quickly, meeting recovery objectives. Cloud-integrated storage solutions can also accelerate cloud on-ramping by deduplicating, encrypting, and quickly streaming data to the cloud.

**ENGINEERING FIRM DESIGNS MORE EFFICIENT STORAGE INFRASTRUCTURE**



Engineering firm Wright-Pierce, based in the New England region of the U.S., specializes in water, wastewater, and infrastructure services for public and private clients. It was dealing with increasing volumes of data as its business continued to grow.

When its tape system became outdated and difficult to maintain, the firm switched to disk-to-disk backup. Although this improved the speed of restores, it fell short in other ways, including being unreliable and expensive to maintain.

Wright-Pierce deployed a cloud-integrated storage appliance solution from NetApp that it uses in conjunction with a cloud storage service from Amazon.

Among the key benefits are saving countless staff-hours by having only one backup appliance to maintain, reduced backup-related costs, no need to expand its costly disk-to-disk system, increased data security, and faster data restores (minutes compared to several hours with tape).

In addition, the firm planned to retire a network-attached storage device that it had used to store project archives and instead uses the NetApp appliance to house that data. Further savings from the cloud-integrated storage solution come from significant reductions in electricity and cooling costs. The appliance consumes 20% of the power the disk-to-disk backup system used, and, because it requires less rack space, the cooling requirements are less as well.



Technologies available with these services, such as built-in WAN optimization and deduplication, can reduce the amount of data transported to the cloud and speed transfer times by as much as four times.

As one network manager at a global manufacturing company points out, “A huge advantage of [cloud-integrated storage] is how quickly we can restore data now. With tape, you can lose part of a week’s data depending on when you last backed up, which means you would lose the most recent information.” With a cloud service, “A full restore can be done within an hour or two, and can be done from any location,” the manager says.

**How Cloud-Integrated Storage Can Enable Employees to Reclaim Time**

The way that IT employees and managers spend their time at work is a major factor in how productive they are and how much value they contribute to the organization. Any technology that can help staffers avoid manual, time-consuming tasks that don’t directly translate to business value is a good thing to have.

This is especially important for small and midsized organizations, which in many cases have limited technology staff and resources. Freeing up people to do more innovative work can actually become a competitive differentiator for many companies.

Another key benefit of cloud-integrated storage is that it can result in time savings through a reduction in the amount of backup management work that an

organization needs to do. With this solution, the amount of time needed to monitor the backup process is greatly reduced, and, of course, there is no longer a need to change and ship tapes.

Companies can dramatically cut back on the amount of time they spend on various types of backup work. All of this time savings means that IT staff and management can spend more of their work hours focused on strategic efforts that can have an impact on the business, such as rolling out new technologies or upgrading existing systems.

Companies can save hundreds of man-hours per year with cloud-integrated storage and, as a result, their employees can spend more time on business-critical initiatives.

**The NetApp Solution**

Vendors offer solutions today that can help enterprises address their data backup and recovery challenges. For example, NetApp offers a new solution called NetApp® AltaVault® storage, which is the only cloud-integrated storage appliance that enables companies to securely back up data to the cloud at up to 90% less total cost of ownership than that of on-premises methods.

AltaVault enables organizations to securely back up data to any of the leading cloud storage providers. The cost savings come from having the ability to leverage the economics of the cloud while preserving investments in existing backup infrastructure and meeting backup and recovery service-level agreements.

The solution uses inline deduplication and compression, which result in up to 30:1 data reduction ratios. That enables enterprises to store less data in the cloud and to get it there quickly. The offering features built-in wide-area-network optimization and deduplication, which reduce the amount of data transported to the cloud and speed transfer times by up to four times. A quality-of-service capability enables data to move to and from cloud storage at whatever speed an organization requires.

AltaVault improves recoverability because 95% of restores occur from local cache. With intelligent prefetching, the platform restores data from the cloud within minutes. Companies can restore data up to 32 times faster compared with tape. AltaVault is compatible with all leading backup and archival software solutions, including those from EMC, Symantec, IBM, and CommVault.

The solution is easy to deploy and manage. Companies can be up and running with AltaVault in less than 30 minutes and start sending data to the cloud.

It’s likely that demand for these types of solutions will increase as organizations look to decrease costs, speed up storage processes, and mitigate risk. As IDC noted in its report on the market, “We expect the disk-based data protection and recovery market will evolve to meet the needs of 3rd

**VIEW THE CLOUD-INTEGRATED STORAGE INFOGRAPHIC HERE**







Platform computing trends such as greater integration with cloud-based architectures, increased use of flash as a storage tier, and infrastructure convergence with storage and networking as well as software-based storage.”

The disk-based data protection and recovery market has largely grown out of the need for greater efficiencies with regard to backup and recovery, IDC notes. It goes on to say, “However, we believe the advent of the software-defined data center will demand greater integration with solutions that have been adjacent to the data protection process. Disk-based data protection and recovery will remain a critical process in the highly distributed and virtualized 3rd Platform era. Increasingly, data protection and recovery solutions will need to be designed to be decoupled from proprietary storage architectures.”

**For more information about cloud-integrated storage, visit [www.netapp.com/AltaVault](http://www.netapp.com/AltaVault).**

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## TRADING FIRM SEES PAYOFF FROM CLOUD STORAGE INVESTMENT



Spot Trading, a technology-focused proprietary trading firm based in Chicago, has a staff of professionals working in technology; equity research; and quantitative, administrative, and trading roles. As its business grew and regulatory requirements increased, the IT team spent more time backing up systems and storing trading logs, e-mail, and other communications rather than working on other pressing business problems.

The backup process took about one week of staffers’ time each month to manage. The basic tape management process was not only time consuming, but the restores could dominate the efforts of one or two workers for as long as three days.

The firm deployed a cloud-integrated storage solution from NetApp along with an Amazon cloud service. As a result, Spot Trading has seen approximately 40 hours per month reclaimed by IT staffers, which now allows them to focus on new strategies and systems. Restores are completed within minutes instead of two or three days with tape.

Annual archival storage and associated costs were reduced by 96% because the firm eliminated its tape library and canceled its tape management service. From this cost savings alone, Spot Trading estimated that the cloud-integrated appliance would pay for itself in about two years.

Furthermore, the compression and deduplication of data enabled by the NetApp appliance prior to sending it to the cloud resulted in a dataset reduction of 85%. The firm estimated that the total cost for archival storage using the application and cloud solution would be about 4% of the cost of backing up to tapes each year.

The basic tape management process was not only time consuming, but the restores could dominate the efforts of one or two workers for as long as three days.