

Solutions Insight

Storage Automation

EXECUTIVE SUMMARY

Without insight into data, companies cannot innovate, differentiate, engage, perform or compete.

Data has become the heartbeat of the modern organisation. Whether you are a hospital delivering care into the home; a retailer running analytics to inform a new product strategy; or a scientist working in a laboratory on a cure for cancer; none of these activities are possible without data. Where Gartner once asserted that ‘legacy ruled the world,’ surely data has now taken that crown. Without insight into data, companies cannot innovate, differentiate, engage, perform or compete.

Yet a whole myriad of regulatory and compliance standards that span the enterprise from HR to finance make this most prized business asset exceptionally onerous to manage, maintain, archive and access. With businesses now consuming and generating more data than ever before, storage has fast risen up the priority list. In the face of a digital explosion and increased demands driven by e-commerce, globalisation and virtualisation, businesses are struggling to find the time to put in place the strong, proactive storage strategies they need to put them on the front foot. This has left many with a storage landscape that is in chaos and, as a result, so is their data.

What has emerged is a significant disconnect between how applications must perform for the business and how underlying data is stored. Unable to make this link, companies are simply acquiring more and more expensive hardware to ensure the needs of both business critical and business-as-usual applications are met. Not only does this generate huge inefficiencies, it is also draining investment that could be put to better use elsewhere in the enterprise. Hampered by a lack of insight, and unable to align application performance with appropriate storage policies, many organisations are struggling to bring control to where there is currently chaos.

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INTRODUCTION

We are living in the age of a data explosion. In 2011 alone, 1.8 zettabytes of data will be created – a figure that a recent study by IDC estimates will double every two years. To put that statistic into context, Mashable estimates that it would require 57.5 billion 32 GB iPads to store all that information. That's an investment of \$34.4 trillion, the equivalent of the US, Japanese, Chinese, German, French, Italian and UK GDPs combined. And that's just this year.

To businesses, this data is invaluable. It drives their operations from beginning to end. But as well as being used to provide intelligence, businesses must also ensure that it is managed and stored effectively as well as in a compliant manner. There are many regulations, such as the Data Protection Act, PCI DSS and Sarbanes Oxley, to name but a few, that set out strict guidelines relating to how data should be handled both when it is 'live' and once it has been archived. Just because the data is no longer active doesn't mean that you won't be asked to recall it. For example, if they deem it necessary, HMRC can request audit trails relating to mergers and acquisitions many years after they have been finalised. Undoubtedly storage growth is being driven by a need to store all this business data for longer. If your company is unable to access data in the required timescale and prove that it has been managed in line with the standards set out by legislation, you can face hefty fines. Managing storage is not just about information; it is also about managing risk.

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The increasing volume of data and the legislation around it are putting increasing strain on the data centre as people clamber to ensure that they have enough storage space and that their data can be accessed at the click of a button. Faster, bigger storage systems are, however, expensive. In some cases an organisation's investment in ever more hardware is choking the IT budget.

This isn't helped by the fact that unlike many other parts of the IT landscape, storage remains heavily reliant on manual processes, which creates two key barriers. Firstly, it is widely recognised that management easily represents the largest proportion of the IT department's total cost of ownership. Storage environments in particular tend to be managed by highly skilled and valuable employees. As a result, managing a large and/or complex storage environment can prove to be a very costly undertaking. Secondly, as well as being a drain on IT productivity it also prevents organisations from configuring their storage architecture around standardised best practices, business rules, processes and priorities.

Without this structure in place a culture of guesstimating storage needs and then provisioning double the amount has arisen, which has over the years become the defacto storage strategy for many organisations. In the face of ever escalating data demands these organisations are lacking the control to manage data.

THE CHALLENGES

More, more, more

Over-provisioning is a serious problem and one that IT can't solve alone. For example, if a retail bank launches a new budgeting application for customers, the likelihood is that the owner of that application will significantly over-provision how much storage that application needs. Rather than asking for how much storage is needed today, they will make a request based on worst-case scenario planning and on average ask for at least 50 per cent more than they actually need. In itself this might seem prudent but what the business might not realise is that it's paying for hardware, the physical cost of housing the application in the data centre and also backing it up. At the same time, much of the space it's paying to manage and maintain is in actual fact empty.

Deployment

This behaviour is being driven by deployment times. A typical enterprise IT department will receive storage requests that outline the amount of storage required and the hosts that need access it. There is then a longwinded process of cutting up disks, tailoring the storage to the application's specifications and putting it live. Depending on the size of the company this can take three to five working days because there are no controls to streamline or automate this process. Each time storage is provisioned, IT must start from scratch as it seeks to understand the different nuances of the data in order to ensure it is configured and managed correctly.

The time that elapses between the request for storage to be provisioned and the capacity going live is fuelling the unhelpful cycle of the business requesting more storage than it actually needs. Line of business managers believe it is easier to request the storage up front, as IT is perceived as being unable to right-size storage and manage it accordingly as the application scales.

The need for speed

To ensure performance and fast access to their data, many organisations are storing their applications on tier one disks. The prevailing misconception is that this is the only way to ensure the application performs in line with business and customer expectations. Yet this isn't necessarily always the case.

Whilst tier one disks are quicker, the data sitting on these disks in the large majority of cases has not been classified in terms of its importance to the business. All applications are developed with specific Service Level Agreements (SLAs) in mind, yet all too often companies fail to apply these same SLAs to storage requirements. Business data differs in terms of its sensitivity and criticality to the organisation. As a result the speed at which data needs to be served to applications to meet SLAs varies considerably.

At the moment IT lacks the standards needed to classify data and store it in line with the performance expectations of the business. Tier one disks have become an expensive default. It's an unsustainable strategy, not least from a cost perspective.

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As an application becomes less critical and is accessed less frequently so it should be managed down the storage tiers to make more expensive, high performing storage space available to the applications that need it. Lacking the necessary visibility into the storage landscape to make these changes, businesses often continue to store and manage data in a uniform fashion even when it comes to the end of its life cycle.

Data classification is pivotal to this process. For example banks must keep all data, structured and unstructured, relating to the mortgages that they sell. If the FSA asks to see data regarding the first 500 mortgages they sold in 2010, the bank will only be able to provide that information within the regulatory timeline if the data has been classified properly. At the moment, because data is not being tiered, provisions for the lifecycle of an application and the information it contains cannot be made. Too much is being left simply to chance and without the right storage framework in place, data resides where it is for its entire lifecycle. This consumes expensive storage, puts additional strain on the data centre and eats into the maintenance budget.

Security

All compliance legislation sets out very strict security guidelines to protect data from being mistreated. With many different regulations affecting different areas of the business, this creates a complex spider's web that storage managers must unravel in order to understand the implications of legislation for the business. Without a framework in place to help IT understand the different elements of the data, companies have chosen to play it safe by keeping just one application on one disk that can then only be used by that application. This, in theory, simplifies how security is managed as it ensures data won't be compromised but it is also hugely inefficient. A typical large organisation will have more than 500 applications. Each of those disks needs to be provisioned, backed up in the data centre, managed and maintained. The cost and resources dedicated to this task are immense.

As businesses develop more and more applications and process ever more zettabytes of data, this approach to storage security is fast becoming outdated. Businesses need to work with experienced partners who can help them to generate cost efficiencies through the deployment of robust, compliant security strategies within their storage architecture. These strategies should enable applications to share disk space by creating zones that protect the integrity of the data.

Sub system management

To ensure that data is appropriately backed up companies need to apply appropriate RAID and replication levels. Both are equally important and necessary. Whilst RAID focuses on security in the event of a disk failing, replication is key for business continuity planning. Both are critical: however, it means that the data on every single disk in the data centre is being replicated to another disk. This means that businesses are consuming twice as much storage space. The 500 disks to support each application have just become 1,000 along with a doubling of the cost. With data not being managed as effectively as it could be, businesses are acquiring more and more hardware to back up and secure their information.

HOW STORAGE AUTOMATION CAN HELP

It's clear from what has been discussed thus far that, despite the best efforts of IT, storage is teetering on the brink of chaos. Without business rules in place, businesses will continue to amass hardware that it is not needed and divert spend from transformational projects in order to keep business-as-usual activity ticking over. As the world becomes leaner and faster, and data centre space becomes even more of a premium, traditional approaches to storage are not maintainable.

By putting business rules in place, combined with best practice process and procedures, you will be able to get a single view of your entire storage infrastructure.

Many large organisations are underpinned by multiple storage technologies that have been implemented from multiple vendors across different eras in order to satisfy a variety of evolving requirements. As a result many companies are put off by the thought of costly and lengthy migration projects that they perceive a reconfiguration of their storage architecture will entail. However, storage automation does not mean having to rip out your existing infrastructure and starting again.

Working with the right partner can help your business to put in place a heterogeneous environment that makes the most of your existing investments. By putting business rules in place, combined with best practice process and procedures, you will be able to get a single view of your entire storage infrastructure. This in turn gives you the control needed to move away from a strategy based around acquiring increasing volumes of storage computing and towards a more proactive, less time consuming approach to managing what you already have.

HOW CAN 2e2 HELP?

2e2 has a proven track record in helping companies from across different industries implement successful storage automation projects. We recognise that storage automation is a sustainable strategy for balancing the cost of storing and managing information with its business value. The right automation strategy will result in a more agile organisation, reduce business risk and drive down both storage unit and management costs.

Our approach to helping our customers starts by working with them to classify their data. As we said earlier, when applications are developed they are done so with strict SLAs in mind. Yet these are often the missing link when it comes to storage requirements. If data can be aligned with the right storage based on its priority to the business, IT can make informed decisions about where in the storage landscape the application should sit.

Once a customer's data has been classified, it is then possible to write business rules that will provide the guidelines needed to provide a framework for how your storage environment is managed moving forward. Once in place, these rules provide the foundations of the architecture required to enable organisations to automate the majority of storage tasks that are currently undertaken manually.

Let us help
you create
storage without
boundaries.

These first steps are the platform for success. From there we will work with you to determine service levels, understand your current storage infrastructure and policies, establish tiered services and help you to select the products and tools that are right for your business. Let us help you create storage without boundaries.



Next Steps

For more information call +44 (0)1635 583000 or
email info@2e2.com

www.2e2.com