



# Performance, efficiency, control: software-defined storage

Facing rocketing data volumes and new demands for near real-time analytics, many organisations are struggling to deliver the required capabilities from their existing data storage infrastructure. If your data is growing and becoming more complex to manage and protect, your ability to scale your business to meet new challenges could be impaired. Drawing on our expertise in data management and protection, Northdoor can help. Using IBM's market-leading Spectrum software-defined storage portfolio, we can transform your existing investments. To enable you to treat data as an asset and storage as a cost-effective enabler of business growth, we can create a flexible, cost-effective storage environment that offers high performance, high utilisation, easy management and rapid provisioning of capacity to support new projects.

## Challenges of the digital economy

In this age of disruption, new competitors can emerge and transform whole industries in the blink of an eye. Consider that the world's largest provider of accommodation owns no residential property. That the world's most valuable retailer holds no inventory. And that the world's largest taxi company owns no cars. What unites these companies – and many others like them – is that they are essentially digital businesses. Their competitive advantage stems from their ability to store, manage and analyse vast quantities of data almost in real time. Their meteoric growth depends on their ability to make rapid, highly informed decisions that allow them to seize new opportunities ahead of the market.

How can established businesses ward off the growing threat from these fast moving digital rivals? And outside of the commercial sphere, how can public-sector organisations gear up to meet the demands of increasingly connected and mobile populations?

In both cases, the ability to identify emerging requirements and rapidly act on them depends on having agile and flexible information systems. Naturally, a key element in faster and more flexible decision-support systems is the underlying data storage infrastructure. There is no use in having high-performance applications if you cannot get data into and out of them at the required speed.

In most organisations, the storage infrastructure has been under considerable pressure for a number of years. As data volumes continue to grow, and as regulations governing the storage and usage of data become more stringent and more numerous, many organisations are struggling to manage rising cost and complexity. The problem is growing all the time: it is said that 90 percent of all data was created within just the last two years. As customers, employees and partners ramp up their use of mobile technologies, as the internet of things comes online, as blockchain and electronic contracts become business-as-usual, and as businesses invest more heavily in deep analytics, data growth is actually accelerating.

## Growing pains in storage

To cope with the explosion in data, organisations must constantly add capacity to their existing storage infrastructure, and there has certainly been massive progress in technology to help them. Thanks both to Moore's law and to the increasing commoditisation of technology, data storage costs continue to fall even as performance and availability rise.

By upgrading their existing storage solutions or by deploying entirely new technologies – for example, all-flash arrays – businesses can take advantage of improved performance at lower cost per terabyte. But on the flip side of the coin, this tends to result in greater complexity. It often increases the number of relationships the business must maintain with different suppliers, and creates difficulties in the interoperation of numerous different standards and management tools. This also pushes up the cost of training staff, and of maintaining effective internal support for storage.

As new business requirements emerge, the inflexibility and siloed nature of the typical storage infrastructure make it difficult to respond rapidly. This tends to mean that new point solutions are deployed to handle each new requirement, contributing to the ongoing sprawl of the storage infrastructure.

Equally, the inability (whether perceived or real) of the internal storage team to respond to new business requirements may drive business stakeholders to procure their own third-party solutions – this is the so-called “shadow IT” scenario. Here, it becomes even harder to understand where data resides and how to comply with a growing set of regulatory requirements.

The other major problem with the use of disconnected storage solutions is that the capacity they contain is typically under-utilised. With each new investment, the total amount of unused (indeed, unusable) capacity grows, and the economics of the storage infrastructure deteriorate further. Likewise, each new investment will tend to bring another set of management tools that push up operational costs.

As costs and complexity rise, organisations in all industries need to find ways to process larger sets of data at higher speed, and they need the agility to adapt rapidly to emerging business requirements. For the IT function, this is also an opportunity to move the conversation from the negative aspects of infrastructure to the positive aspects of adding business value and insight through effective data management and protection.

## Key data-growth challenges

- ➡ **Analyse:** *how can we support faster and more intelligent decision-making through the adoption of next-generation analytics applications and frameworks?*
- ➡ **Access:** *how can we access and share big data and insights at high speed while cutting infrastructure costs?*
- ➡ **Protect:** *how can we cost-effectively protect and manage data throughout its lifecycle?*

## Achieving agility with IBM software-defined storage

As organisations try to reduce storage costs while simultaneously supporting innovation in their business model and business processes, ongoing improvements in individual technologies may provide only temporary relief. Boosting performance in one part of the infrastructure will undoubtedly deliver benefits, but so long as the overall picture remains fragmented, organisations will not be able to achieve the agility they need to take on their digital competitors.

Achieving the right balance between performance, reliability and cost means maintaining and managing multiple different types of storage. And of course, the situation is never static: the value of data changes over time. Therefore, businesses must also have the ability to move data in a seamless, low-risk and low-cost manner between the different tiers or classes of storage in their infrastructure.

The good news is that there is an approach that sets the stage for transformation while enabling you to maximise the value of your existing investments in capacity: IBM Spectrum software-defined storage. Software-defined storage decouples the management logic from the underlying hardware. This means that existing capacity can be united and shared across multiple applications, and that future capacity can be deployed on low-cost commodity hardware.

By separating the physical reality of the storage landscape from the ways in which that storage is managed and consumed, software-defined storage provides enormous flexibility and agility. It can also significantly reduce costs – by providing a single set of powerful storage management tools, by enabling the reuse of existing capacity (and increasing its utilisation), and by reducing the need to invest in proprietary storage solutions. IBM's software-defined storage portfolio also makes it easier to create a hybrid cloud architecture that spans both on-premises and offsite resources in a seamless and transparent manner.

As the IT department strives to meet business needs around innovation and speed of response to new challenges, adopting software-defined storage makes it easier to act as an internal service provider. With a single set of (highly automated) management tools layered on top of a fully virtualised storage infrastructure, IT teams can focus on meeting SLAs and provisioning the right storage to meet new workload requirements – instead of spending their time managing multiple underlying technologies.

### Conventional storage

Complex management,  
multiple disparate tools

Low performance,  
inconsistent time-to-results

Costly, poorly utilised  
silos of capacity

Point solutions, hard to  
adapt to new requirements

### Software-defined storage

Automated management,  
single toolset

Consistently high performance  
for short time-to-insight

Abstraction of management from physical  
resources enables higher utilisation

All capacity becomes part of a single, highly  
flexible shared storage resource

## Features of a software-defined storage architecture

Simplification of storage management through virtualisation, which accelerates the deployment of new technologies and facilitates the movement of data between tiers.

Extensive monitoring, automation and analytics in support of storage and data optimisation, reducing storage costs and simplifying capacity and performance management.

Use of intelligent workload- and policy-driven resource management to optimise both on-premises and cloud resources.

Use of performance-aware intelligence to keep data in the right place (balancing cost, performance and availability) at the right time across disparate underlying physical storage.

Creation of a single platform for managing all backups, with built-in on-the-fly compression, scalable deduplication and access to cloud storage.

Enablement of full-lifecycle storage and data management in compliance with evolving regulatory frameworks.

### The right partner for an evolving solution

Software-defined storage is, properly speaking, an approach rather than a solution. There are many different options from different primary vendors that claim to deliver software-defined storage, and many different ways of designing and implementing such an architecture. Equally, the environment will change over time as new requirements come to the fore, so choosing a management layer with the maximum degree of flexibility is vital.

Building on 30 years of experience in designing, delivering and managing infrastructure for blue-chip companies, Northdoor has the skills to help your organisation:

- Determine the current and likely future requirements in data management and protection
- Design an appropriate software-defined architecture with a costed business case
- Plan a phased transition that maximises the reuse potential of existing investments
- Execute the transformation with minimal disruption or risk
- Train internal staff to master the new tools, and support them with first-class expertise
- Set up ongoing reviews to keep the architecture aligned to changing business needs.

Northdoor believes that IBM offers an unmatched breadth of capabilities in software-defined storage, built around its Spectrum and Storage brands. As a pioneer in storage virtualisation – which is the key building-block of software-defined storage – IBM has proven capabilities in layering management software on top of multi-vendor environments. The flexible licensing model for IBM Spectrum Suite provides further benefits, enabling businesses to access all software-defined storage capabilities within a single licence. This allows you to focus fully on your digital transformation without continually re-investing in storage technology.

### For more information

Contact us for a no-obligation assessment showing how we can help your organisation transition to software-defined storage, for lower costs, greater flexibility and the performance to tackle big data and analytics challenges.

