Executive Brief

Modernizing Data Protection With Backup Appliances

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IDC OPINION

Transformation of the backup infrastructure is the next frontier for IT and storage managers. Backup is an area where architectures are only slowly evolving, and "never touch a running system" is the mantra in many organizations. However, the transformation of the IT infrastructure that is happening in most IT departments today, starting with the introduction of server virtualization technologies and driving towards greater levels of automation and orchestration, has a significant impact on current and future data protection architectures.

Another significant driver of the need to transform the backup infrastructure is the constantly growing volume of data. Data growth is driven by Big Data, social and mobile applications, and machine and sensor-generated data, typically collected for analytics purposes. Backup infrastructures need to be re-architected to allow for faster backups and faster restore times even when facing rapid data growth.

IN THIS EXECUTIVE BRIEF

This IDC executive brief will discuss the evolution and challenges of data protection and how backup appliances can form part of a modern data protection architecture. Benefits and challenges of an appliance-based data protection approach will be discussed, as well as emerging best practices for modern data protection.

SITUATION OVERVIEW

Innovation and Transformation are Imperative Today

Companies in all industries are currently undergoing the most significant IT-driven transformation in a decade. While applications are becoming increasingly mobile and move to the cloud, IT infrastructures are challenged and require modernization. One of the areas where IDC observes rapid evolution is data protection. While data volumes are rising significantly, backup windows are shrinking and IT needs to operate 24 x 7. IT infrastructures are becoming more heterogeneous, partially physical with different hardware brands, partially virtual with multiple hypervisors. Data resides not only on-premises, but also in the cloud and on mobile devices. In addition, Europe has gone through a prolonged period of economic challenges, and IT budgets are stable at best.

These developments have favored the emergence of a new architecture for data protection that combines high performance of dedicated hardware with simplicity of use of pre-configured

systems. Backup appliances have been enjoying increasing popularity, both at the edge in branch offices and subsidiaries, as well as in the datacenter due to fast deployment, ease of operation, and high performance.

The Evolution of Data Protection Technologies

The data protection market has evolved from the original architecture of backup software and tape libraries, to increasing usage of disk-based technologies like virtual tape libraries and general purpose disk-systems as backup targets. The newest development is the usage of purpose-built backup appliances that combine backup software and dedicated optimized disk-systems into a backup solution.

The evolution of data protection technologies needs to be viewed in the context of the IT infrastructure transformation that we have observed over the past decade. The IT infrastructure that needs to be protected through data protection technologies has evolved to be increasingly complex, consisting of both physical and virtual servers and different brands of hardware and hypervisors. As a reaction to the increasing complexity, IT and storage administrators have started purchasing point products for physical and virtual environments and for various applications. However, this has created complexity in the backup environment and makes it difficult to manage data protection centrally and under one policy. Operational complexity drives operational cost and turns this fragmented approach into a time consuming and costly affair for IT and storage managers.

Assembling the data protection infrastructure using backup software and disk systems, adding data deduplication, snapshots, image-based backup and tape to the mix has become a rather complex and time consuming task. License management and the need for hardware upgrades add to the challenges. One of the solutions to this problem is the use of purpose-built backup appliances. IDC has observed that many organizations are taking advantage of this new technology and the market for purpose-built backup appliances in EMEA grew 36% in the first three quarters of 2013.

Current Data Protection Challenges

IT and storage managers are struggling to operate their fragmented data protection environments and to meet the requirements for meeting shortening backup windows and fast recovery. They are typically facing the following challenges:

- Time and effort spent on determining and implementing the appropriate backup solution. Assessing and sizing the right disk storage for the backup workload and making sure that it integrates with the current environment takes a long time and is not always successful.
- Operational inefficiency. Operating several different backup applications for physical and virtual environments, data deduplication for full system recovery, some using snapshots, some using image-based backup, a different one for databases, creates a very inefficient environment to manage. IT and storage managers need to be trained on various different user interfaces and backup processes.
- Operational cost. The plethora of point products in the backup space also accelerate operational cost due to multiple required skill sets, various maintenance contracts, and incomplete overview of data protection performance. By consolidating the backup infrastructure, organizations can consolidate their maintenance contracts and bargain for a better deal with their supplier.

- **Shrinking backup windows and shorter recovery times due to "always on" business models**. Meeting the SLAs for backup and recovery in our connected business world is very challenging with a fragmented backup infrastructure, especially as data volumes are growing unabated. The sheer size of data that needs protection and potentially restore makes meeting SLAs a daunting task.
- **Skills shortage for IT professionals in Europe, especially on IT infrastructure side**. As many backup processes continue to involve manual intervention, there is a high turnover of storage professionals. Automating standard tasks leaves more time for architecture, integration and innovation and makes backup jobs more attractive.
- **Different data protection requirements for physical and virtual environments**. Several data protection methods for virtual environments have evolved over time and IT and storage managers have been struggling with degrading performance of the virtual environment while the backup has been performed due to a high impact of the backup process on the host and network resources. In addition, protection of virtual environments have favored a shift from the traditional file-level backups to image-based backups for full system recovery. To add to the complexity, different hypervisors require different backup processes.

FUTURE OUTLOOK

Emerging Best Practices for Data Protection

Modernization of the IT infrastructure to enable business users to become more agile and to provide the required service levels needs to include consolidation of the backup infrastructure. Using products that can integrate into the current environment with ease and become the data protection platform over time provides a future-proof modernization path for IT and storage managers. IDC observes several best practices emerging:

- **Consolidate point products** into a single data protection platform and under one management layer, spanning both physical and virtual environments.
- **Use of backup appliances**, because they are purpose-built systems including hardware and software, instead of acquiring and integrating separate hardware and software assets. This saves IT and storage managers' time and money, as they don't need to evaluate, select, purchase and integrate the various piece-parts.
- **Reduce the data footprint** for faster backup and restore. The sometimes explosive growth of data volumes driven by Big Data, social, and mobile applications as well as machine or sensor-generated data combined with shrinking backup windows requires a consistent reduction of data volume for faster backup and restore.
- **"Best of suite" approach**. Choose a backup product that provides a wide array of functionality, including data deduplication, snapshot support, and file and image-based backup, encryption to provide fast recovery for physical and virtual environments and applications. The benefits of managing one platform oftentimes outweigh the perceived benefits of point solutions.

Benefits of a Consolidated Appliance-based Data Protection Approach

In today's changing world, IT managers need to enable business leaders to innovate to stay competitive. One way of achieving this is to streamline the backup and recovery infrastructure, to free up resources for transformational and business innovation projects while providing better service levels to customers. Consolidating a fragmented backup infrastructure yields several benefits that support this aim:

- Use of appliance-based data deduplication will speed up both backup and restore of large data volumes and enable storage managers to meet tight SLAs.
- A single management layer will provide one place for policy setting, monitoring, and reporting and enable an overview of data protection performance across the whole infrastructure. It creates transparency for IT managers about the organization's ability to recover and to operate a resilient IT infrastructure.
- An appliance-based approach speeds up time to first backup and enables generalist IT professionals to successfully perform backups without major investments in time and effort. This frees up their time to operate other parts of their organization's IT estate.
- Low operating costs because it is a "set and forget" system that can be operated by anyone while at the same time providing enterprise-class performance. Using a fully automated and seamlessly integrated backup appliance makes backup a non-issue and provides a vital part of the IT infrastructure with little time and effort spent.
- Convenience and capabilities of restore are key, as this is when the system truly has to prove its worth and the customer experiences if the system works or not. Being able to restore in a short timeframe is the key proofpoint for the worth of a backup system. This is the moment when the user experiences the agreed service levels. Providing piece of mind to IT and storage managers that they will be able to restore files and folders as well as systems in the agreed timeframe is a major benefit of backup appliances.
- Seamless integration with existing infrastructure. New backup solution purchases do not happen in isolation, and all organizations will have an existing solution in place. The ability to use the current backup processes and procedures while introducing a new technology platform enables easier backup transformation and guarantees minimal impact on the user experience.

ESSENTIAL GUIDANCE

Your business is under transformation. So is your IT infrastructure. Data protection is a central component of this transformational journey and needs to be modernized as well to keep up with the evolving requirements. If backup modernization is not addressed it can turn into a major bottleneck for an organization's ability to provide the required service levels for application performance, reliability, and resiliency.

Evaluating an appliance-based approach to data protection eliminates time-consuming considerations in the purchasing process about the right sizing of the backup hardware as well as integration of hardware and software products. Consequently, deployment is easier and faster, and appliances can be operated at lower cost, as the hardware is optimized for the software that is running on it.

In addition, an appliance-based approach can be the first step towards backup consolidation, in which over time all backup tasks can be managed and monitored from one data protection platform, driving down operational costs of running a backup infrastructure. Overall, IDC believes that usage of backup appliances will become more widespread in Europe, due to their ease of use and cost/performance characteristics.

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