Ways to Simplify Storage Management Complexity

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The expansion of business-critical information and rich content within extended enterprises continues to change the storage and data management dynamic in a wide range of industries and organizations. In addition, the impact of virtualized server and desktop images on datacenter design and operations is growing. More and more businesses are looking to virtualize their server infrastructure, which allows them to consolidate IT assets and gives them greater flexibility to add resources on a just-in-time basis. Server virtualization has been a high priority in large businesses for several years and is of growing importance in medium-sized and small businesses, but limitations in many legacy storage systems are driving development of more unified (block and file) storage systems, which IDC calls multiprotocol storage systems.

The following questions were posed by Hitachi Data Systems to Richard L. Villars, vice president of IDC’s Information & Cloud practice, on behalf of Hitachi Data Systems' customers:

Q. People today keep talking about the data deluge; why is this so important right now?

A. Let's put the growth of data in context. In today's world, there is an explosion of mobile devices; over the next four years, IDC sees the number of smartphones, tablets, and laptops growing from around 1 billion to more than 4 billion devices. In addition, we are seeing an explosion in applications — both mobile applications and virtual server applications that companies are very rapidly generating for business services. In practical terms, companies need to think tens of billions of downloads of applications every year. And another trend is an explosion in rich content — movies, videos, digital health records, genomic sequencing data, and so on. The amount of storage needed to store rich content will grow sixfold over the next several years.

What all three of these trends have in common is that they all generate data about where people are, what people like/want, and what people are doing. How well we collect, protect, and use this data — or don't — is at the heart of the data deluge issue. It's significant now and is only going to become more challenging in the future.

Q. What kind of stress is data growth placing on today’s storage administrators?

A. Efficiency is a big source of stress today for storage administrators. Smart use of storage virtualization in the datacenter can boost standard utilization rates from 30–40% to 60–70%.

When IDC speaks with IT and business executives, however, the top challenge is business agility. Organizations know that they need to be able to react quickly when there is a new
data source or when they transition to a new application environment like mobile. For storage administrators, this pace of change is taxing their ability to keep up business requirements. Administrators have to be able to deliver new services to open new connections to data sets to allow for quick analysis. These agility demands are the issues that are really causing significant stress.

What storage administrators are dealing with is an explosion in new platforms. They have storage systems optimized for archives, storage systems optimized for video streaming, and storage optimized for virtual environments. Now throw in use of external cloud solutions for backup and archiving, and life is even more complex. In this diverse data world, storage administrators have to manage the movement of information among different systems and between different storage pools. If the movement is not managed correctly, storage administrators have to resort to a lot of manual processes.

The result: lots of delays in delivery. When storage administrators’ main task is to help the business be agile, delays in delivery are very stressful.

Q. What do storage managers need to do to fix this situation?

A. The first step is to look at the environment. Specifically, storage managers should look at what systems are in place and look at what systems they could use that are easier to deploy. They should consider systems that automatically deliver more efficient storage while providing a more unified foundation for dealing with new data sets and new data types. Implementing new storage is just a start, however. In reality, the challenges that storage managers are dealing with are less about the storage devices themselves and more about the processes for managing and moving data between data pools.

How does one move data from a transaction system to an analytics system? How is rich content moved from active storage to long-term preservation or compliance-related storage? These are the questions storage managers need to address. Ultimately, this points to the need for a unified management schema that allows storage managers to understand where all their pools of data are, and how data is being moved around the organization. This management solution addresses both operational efficiency and security/privacy requirements. With unified storage management, storage managers can rely on a simpler, unified process for moving data rather than employ several independent processes that they can't coordinate easily.

Q. What kind of storage solution is appropriate?

A. When considering the storage systems that underlie this unified management environment, IT teams need flexibility at three levels. First, the storage solution has to have the ability to continue to grow and expand to accommodate the range of data types out there. A solution needs to support the different storage protocols (block, file, and object based). The solution also must support different storage media — solid state, high-speed disks, and low-cost disks — that are a part of that environment.

Second, the system also needs to support scale-out requirements. No one system is ever going to be able to deal with all the data a large or even midsize organization will generate and manage. The data is not going to be put in one location. A storage solution should allow an organization to locate data where it is appropriate from a geographic or from a performance standpoint. An organization can intelligently place data in a location that’s most appropriate.

Third, and most important, organizations really need a storage solution that gives all the benefits of a unified environment yet allows for a gradual transition that reduces the pain of
migration from existing legacy data sets and data systems. Organizations can't perform a forklift upgrade. The cost of migration and the displacement and disruption faced by the business operations are too prohibitive. Organizations need to recognize that there are some very new, rapidly growing pools of storage, and they should not be limited to using their legacy environment because of fears about forced migrations for older data sets.

Q. How does the deployment of a unified storage system relate to moving to the cloud or taking a services approach?

A. The underlying goal for moving to a cloud, or taking a services-based model of IT, really goes back to the concept of agility. A unified storage system enables the rapid delivery of information and IT capacity as a service. A unified approach also gives an organization a common foundation (think of offering a basic storage cloud). With a unified system, there is a standard way of storing the information, protecting the information, organizing the information, and ultimately delivering that information.

So deployment of a unified storage system and unified data management serves as the foundation for moving to the cloud and developing a services model of IT. Unified storage is an absolutely critical building block for taking IT to that next step — integrating storage into a cloud or an IT or business services approach to running your IT operations.

ABOUT THIS ANALYST

As vice president, Information & Cloud, Richard Villars is a senior member of IDC’s Information Infrastructure research team, which assesses the development and adoption of solutions for datacenter transformation and the exploitation of rapidly growing information assets. He develops IDC’s viewpoints on the evolution of next-generation storage technologies and the adoption of public and private cloud solutions. He advises clients on the impact of converged IT infrastructure, archival storage systems, Big Data applications, and rich content on organizations’ storage and information management practices.

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