



Vendor Spotlight

IBM Spectrum Storage: How IBM's Software-Defined Strategy Will Impact the Storage Market

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IDC OPINION

The storage market is undergoing a significant transformation, with many new storage technologies being introduced to cater to organizations' need to store, analyze, and distribute data at large scale and low cost. While organizations are working through their digital transformation initiatives – the shift from the client PC/server-based 2nd Platform era to the 3rd Platform era driven by cloud, mobile, social business, and Big Data analytics – they are looking for new storage architectures that can provide performance and agility while driving down operational cost. Such an unprecedented shift in enterprise IT is forcing vendors to transform their infrastructure portfolios and delivery models to meet the newer architectural requirements of enterprises.

IBM has become the latest supplier to unveil its multiyear transformation in storage. It has launched Spectrum Storage, a family of software-defined storage (SDS) products and solutions. It has also pledged to invest more than \$1 billion in its storage software portfolio over the next five years.

IBM's Spectrum Storage and its billion-dollar investment are significant because:

- Spectrum Storage is not a rebranding exercise simply to reposition its products or rejuvenate interest in the market. Instead, it is a coordinated approach to unify all of the disparate software offerings under a single coherent product family and have a framework under which these products can be tightly integrated.
- The investment reaffirms IBM's commitment to storage, particularly software-driven storage.
- The investment will accelerate innovation and engineering efforts in SDS, cloud storage software, and open-standards technologies.
- It signals IBM's transition from a legacy (hardware-defined) delivery model to a software-defined delivery model for every storage requirement: primary (block) storage, file storage, data protection, data management, and next-generation storage technologies.
- It marks an important inflection point for IBM Storage, which – like many traditional storage suppliers – has faced a continuous erosion of revenues from its high-end storage systems. The integrated approach will provide IBM with greater efficiencies in delivery models.

The strategy, no doubt, is a major undertaking and will require considerable efforts around marketing, training staff and channels, and driving awareness among enterprises worldwide. How IBM will execute on it will determine the success of the Spectrum Storage initiative globally.

IN THIS STUDY

This IDC Insight provides IDC's perspective on IBM's recent launch of Spectrum Storage, a family of software-defined storage products and solutions, and its impact on the global storage market.

SITUATION OVERVIEW

Technology providers have been looking for ways to disrupt themselves and reinvent their product portfolios to survive the journey from the 2nd Platform (PC and client/server-based) to the 3rd Platform (based on cloud, mobile, social business, and Big Data/analytics). Traditional IT vendors (e.g., Microsoft, IBM, HP, Oracle, and Dell) have built strong software-, infrastructure-, and platform-as-a-service portfolios ever since cloud computing started to demonstrate value to businesses.

The storage market is one of the latest technology areas to undergo significant disruption due to the complexity of the technology. More recently, to help enterprises meet their 3rd Platform era storage challenges, suppliers have innovated around flash storage, software-defined storage, open source storage, hyperconverged systems, and delivering storage services via the cloud.

IDC refers to software-defined storage as technologies that deliver the full suite of storage services via a software stack that uses (but is not dependent on) commodity hardware built with off-the-shelf components.

The commoditization of hardware platforms (and higher development costs associated with storage products based on custom hardware components) has forced suppliers to shift the focus of their innovation to delivering their value proposition via software-defined solutions.

Organizations are interested in the flexibility, ease of management, resilience, encryption, and storage tiering that SDS brings to the table to cope with their new-age storage challenges.

IBM has chosen to lead with software-defined storage as the overarching principle to brand its storage product portfolio in the short term and to completely transform it in the long term. IDC's research shows that IBM is number 1 in market size by revenue in software-defined storage platforms (SDS-P).

SDS-P is composed of four main segments – block, file, object, and hyperconverged – and is growing at double-digit rates. IDC estimates it will be a \$2.8 billion market in 2017 (See *Software-Defined Storage with HyperDup Data Services from Atlantis Computing May Change the Industry*, IDC #253058, December 2014).

The Spectrum Storage Family Overview

In a bid to simplify storage and enable enterprises to derive value from its data and embrace hybrid architectures, in February IBM unveiled the Spectrum Storage family – an initiative to offer the essential capabilities of storage but in a software-defined model.

The initiative stems from IBM's move to combine the Software and Systems Technology Group (STG) businesses into a combined Systems Division, under which Storage (led by Jamie Thomas) is now a combined and independent operating unit.

Spectrum Storage unifies all of the disparate software offerings under a single coherent product family and provides a framework under which these products can be tightly integrated. It brings together IBM's storage technologies that are based on over 700 IBM patents.

FIGURE 1

IBM Spectrum Product Portfolio

Offering	Description and Value	Based On
IBM Spectrum Control	Analytics-driven data management to reduce costs by up to 50 percent	Virtual Storage Center
IBM Spectrum Protect	Optimized data protection to reduce backup costs by up to 38 percent	Tivoli Storage Manager
IBM Spectrum Archive	Fast data retention that reduces TCO for archive data by up to 90%	LTFS
IBM Spectrum Virtualize	Virtualization of mixed environments stores up to 5x more data	SAN Volume Controller
IBM Spectrum Accelerate	Enterprise storage for cloud deployed in minutes instead of months	XIV Software
IBM Spectrum Scale	High-performance, highly scalable storage for unstructured data	Elastic Storage / GPFS

Source: IBM, 2015

All six products are based on existing IBM technology. What is new, however, is that they will be delivered flexibly, including a software-only option that can run either on bare metal or in a virtualized environment. Other delivery options include reinstallation in appliance solutions and as cloud services.

IBM's objective with the Spectrum Storage portfolio is grand; it wants to extract intelligence from its traditional storage hardware products and help its customers use it in any form – as a service, as an appliance, or as software.

The product family is divided into two parts: the Control Plane (a view into the business workloads – this is where analytics sit) and the Data Plane (which enables actual data transfers).

The Control Plane includes:

- **IBM Spectrum Control:** Analytics-driven data and storage management solution for traditional, software-defined, and cloud storage
- **IBM Spectrum Protect:** Data protection service for traditional, software-defined, and cloud storage

The Data Plane includes:

- **IBM Spectrum Archive:** Data retention service aimed at reducing total cost of ownership (TCO) for active archive data
- **IBM Spectrum Virtualize:** Virtualization of mixed environments
- **IBM Spectrum Accelerate:** Enterprise storage for cloud
- **IBM Spectrum Scale:** High-performance, highly scalable storage for unstructured data

Spectrum Virtualize software drives IBM's SAN Volume Controller and Storwize family, whereas Spectrum Accelerate is the software inside IBM's XIV storage appliance.

With XIV, IBM has demonstrated how it is possible to decouple the hardware and software components of a traditionally hardware-defined storage system and make the storage platform available as a software-only option. High-profile customers such as Netflix have powered their large cloud-like infrastructures with XIV storage systems to manage their databases, development, testing, and backup operations.

End Users and SDS

IBM's huge bet on SDS comes at a time when organizations' appetites for newer storage technologies are growing. Enterprises are continuing to install virtualization at a rapid rate, and most have a "virtual first" strategy. Highly virtualized environments generally demand heterogeneous support, ease of use, and agility that hardware-defined storage has difficulty meeting.

IDC sees the software component of storage for virtual environments growing at a compound annual growth rate (CAGR) of 14.7% through 2018, almost four times the growth rate of enterprise storage systems (i.e., hardware) as a whole over that same period.

Also, a glimpse into IDC's 2015 Storage End-User Survey in Europe reveals that the number of organizations that have already invested in SDS products has increased in 2015 (25%) as compared to 2014 (just over 15%). It further revealed that 41% of enterprises said they are evaluating SDS options this year, with 25% stating they are interested but do not have concrete SDS plans yet.

The research further found that simplifying storage management tasks, slashing storage budgets with commodity hardware, and extending the life of existing storage investment were the three primary drivers for SDS investment.

FUTURE OUTLOOK

IDC sees IBM's Spectrum Storage strategy as one that aims to advance and enable "true" software-defined storage, unlike many other suppliers with traditional storage whose efforts seem to be much more tied to pushing their own systems hardware.

It has also raised the bar on software-defined storage by making Spectrum Accelerate part of the Spectrum Storage family. IBM has said that it will add a multi-cloud connector as a software feature in Spectrum Storage to allow organizations to dynamically migrate data across multiple clouds, while keeping the data confidential. The solution promises to take away the pain of embracing cloud storage and moving data – an attractive proposition for enterprises.

IDC believes these factors will distinguish IBM from other suppliers in the SDS segment.

Much of the effort from storage suppliers under pressure to reinvent themselves has been to innovate on the product front or acquire assets. IBM seems to take this one level up by reinventing on the delivery model and building a storage portfolio for the software-defined future.

IDC's survey in 2014 analyzing software-defined storage demands in Japan revealed that more users prioritized a "vendor that provides current servers" or "vendor that provides current storage" over cost or market performance when selecting SDS suppliers (*See Japan Software-Defined Storage Demands Analysis 2014, IDC # JP1073513X, February 2015*). This shows a characteristic trend of selecting storage vendors that tend to focus on product reliability and stable administration. IBM's long-standing investment and engineering efforts in enterprise storage solutions will stand it in good stead in these markets.

But its journey is not without challenges. Integrating the storage resources seamlessly, building awareness in the channel and enterprise segments, demonstrating quick ROIs, and executing the vision will all be crucial for its success.

Although the company has gone through significant internal transformations previously (acquiring SoftLayer and building its Cloud Services Division or combining the software and STG businesses into a combined Systems Division) and has executed on those strategies, IDC would like to iterate that storage is a different beast.

IDC's end-user survey also revealed that among those not investing in SDS, security concerns, immaturity in technology, and lack of resources to evaluate SDS offerings were the three major concerns.

One of IBM's challenges will be to win over these customers by addressing their concerns. To be successful on this ambitious transformational journey, IBM needs to ensure that it can maintain the momentum that it is now creating with the launch of the Spectrum Storage family, educate its channel partners on the benefits of the software-defined storage architecture, and guide storage users on their transformational journey as they are re-architecting their storage infrastructures to meet the demands of the new era of IT.

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