Solution Showcase

IBM Spectrum Virtualize Software Frees Service Providers and Enterprises from Traditional Storage Constraints

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Abstract: IBM Spectrum Virtualize software is going solo. Until now, it's been bundled with IBM storage systems. Buyers can still order it that way, but the new downloadable, DIY, software-only offering signals that IBM "gets" where the market is headed—toward software-defined storage and the cloud.

Because IBM Spectrum Virtualize can be used eventually with any standard server and storage hardware, and because it virtualizes many storage capabilities including data encryption, it is likely to provide a compelling value proposition to cloud service providers (CSPs) and enterprises.

Cloud, Converged Infrastructure, and SDS Are Shaking Up the Storage Landscape

Although changes are always happening in the storage industry, some are incremental, and others are fundamental. Bigger systems or broader connectivity are incremental; fundamental changes shake up the storage ecosystem. They include the trends of cloud computing, converged infrastructure, and software-defined storage (SDS). In fact, a five-year outlook (see Figure 1) reveals that more than three-quarters of organizations surveyed by ESG expect these trends to dramatically alter traditional, on-premises data storage infrastructures.[1]

Are respondents "betting" on that five-year outlook? Yes, given their current and projected storage spending.

For example, users are progressing well with their adoption of public cloud computing services. Specifically, 75% of midmarket and enterprise organizations report using some combination of cloud-based business applications (i.e., SaaS), infrastructure services (i.e., IaaS), and/or application development platforms (i.e., PaaS), with an additional 19% indicating plans to do so.[2]

Moreover, 37% say that one of their top storage initiatives over the next 12 months will center on using cloud storage services as a way to source storage capacity without buying new on-premises infrastructure, making it the most popular response.[3]
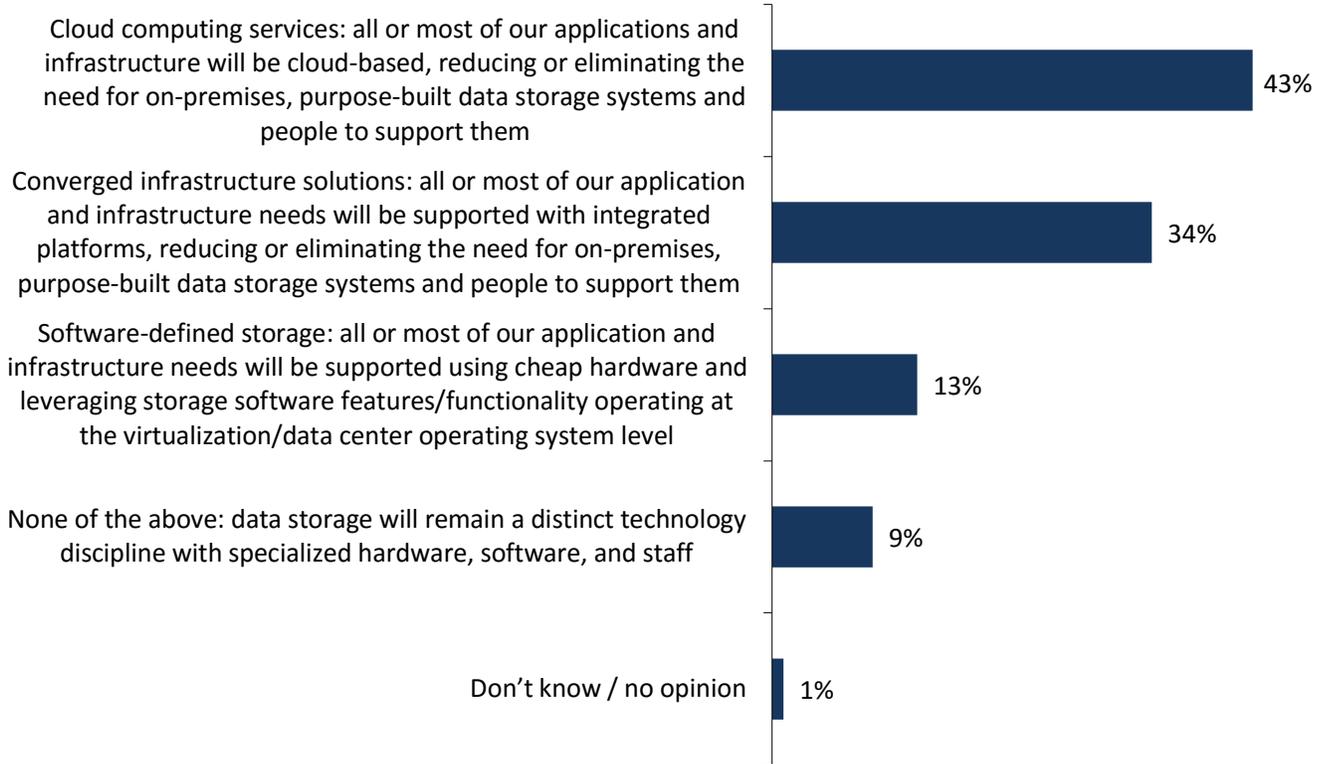
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[1] Source: ESG Research Report, *2015 Data Storage Market Trends*, October 2015.
[2] Source: ESG Research Report, *2016 IT Spending Intentions Survey*, February 2016.
[3] Source: ESG Research Report, *2015 Data Storage Market Trends*, October 2015.

Figure 1. Five-year Outlook on On-premises Data Storage Infrastructure

Looking ahead five years, which of the following is most likely to impact your organization's current on-premises data storage infrastructure environment and, ultimately, your job? (Percent of respondents, N=373)

| Category	Percent
Cloud computing services: all or most of our applications and infrastructure will be cloud-based, reducing or eliminating the need for on-premises, purpose-built data storage systems and people to support them	43%
Converged infrastructure solutions: all or most of our application and infrastructure needs will be supported with integrated platforms, reducing or eliminating the need for on-premises, purpose-built data storage systems and people to support them	34%
Software-defined storage: all or most of our application and infrastructure needs will be supported using cheap hardware and leveraging storage software features/functionality operating at the virtualization/data center operating system level	13%
None of the above: data storage will remain a distinct technology discipline with specialized hardware, software, and staff	9%
Don't know / no opinion	1%

Source: Enterprise Strategy Group, 2016

Furthermore, end-users are thinking about the challenges and logistics of cloud computing. Nearly 75% of respondents say it's very important or even critical that a cloud service provider uses the same cloud infrastructure technologies as those used by their own organization (see Figure 2).

Figure 2. Cloud Infrastructure Technologies

How important is it that your organization's current or potential cloud service provider(s) use the same cloud infrastructure technologies as those used in your organization's internal private cloud/virtualized data centers? (Percent of respondents, N=308)

Not at all important, 2%
Not very important, 6%
Somewhat important, 17%
Don't know, 1%
Critical, 16%
Very important, 58%
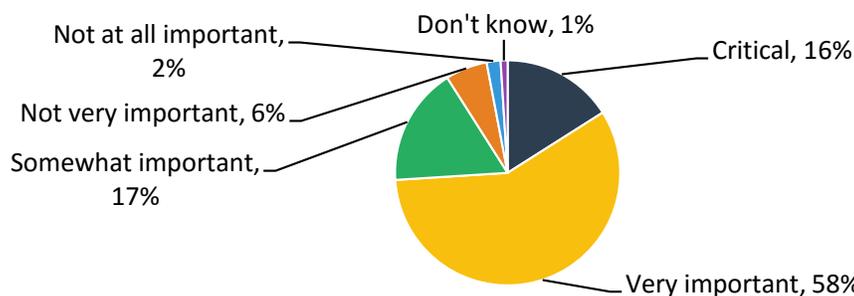
Source: Enterprise Strategy Group, 2016

Clearly, these findings point to the high importance of choice, flexibility, and economic value. In theory, if one controls the storage, one can mitigate performance concerns as well as risk and cost. Because IBM Spectrum Virtualize software offers

broad control through virtualization and supports all three of these "new" approaches to storage, it offers a compelling value proposition to enterprises and service providers.

A Strategic Shift to Software Only

IBM has been on the SDS path for a long time. IBM Spectrum Storage is an SDS family of products whose components provide capabilities such as data management, data protection, data retention, and virtualization via Spectrum Virtualize. It appears that IBM's strategy is shifting to include more software-only offerings—a smart move in view of what's happening in the storage market. In 2015, IBM introduced IBM Spectrum Accelerate, which is based on its XIV Storage System software, to enable enterprise storage for private clouds to be deployed "in minutes instead of months."

Now IBM is offering Spectrum Virtualize software as a *standalone* product instead of only bundling it with IBM SAN Volume Controller, IBM Storwize V5000, IBM Storwize V7000, IBM FlashSystem V9000, or IBM VersaStack. Initially, it will work with bare-metal Lenovo 3650 M5 servers. Then, it will be extended to work with additional servers—IBM's formal Statement of Direction (SoD) includes a roadmap for supporting bare-metal Supermicro, Cisco, and HP servers as well as virtual machines and/or containers that will enable generic Intel-based servers. This strategy gives enterprises and CSPs freedom of choice and all the benefits of virtualization, regardless of their hardware.

Virtualization Unleashed for Enterprises and CSPs

Virtualization already abstracts data so that it is easy to deploy and optimize, boosting efficiency and utilization. And the related economics are good, especially with a software-only method of virtualization. No matter where the software sits, IBM Spectrum Virtualize adds sophisticated tools such as thin provisioning, real-time compression, and encryption to augment less-capable hardware. Encryption can ease a lot of minds about data protection with SDS and cloud deployments.

With its "Tower of Babel" ability to act as a translation layer, Spectrum Virtualize enables users to simplify storage-related activities, thereby tangibly improving their TCO.

For example, enterprise data centers can use different storage systems if they prefer to keep vendors on their toes. And migrations are easy because virtualization makes it look like "the same thing is going to the same thing." Ditto for moving data to the cloud.

Cloud service providers, on the other hand, are invariably going to be more interested in ROI (the other half of the TCO/ROI economic coin), which comes in part from being able to use investments in different ways—with Spectrum Virtualize, CSPs can do that.

On-premises private clouds, for example, can be a CSP's own infrastructure or an infrastructure managed by the customer via the software controls. Or, some customers might prefer a co-located managed-cloud arrangement. And CSPs can store data and/or replicate data to remote sites easily because the hardware doesn't matter. It is all very fluid, and it drives flexible, pragmatic productivity.

IBM Spectrum Virtualize: Real SDS

The software abstracts and virtualizes many storage capabilities across a variety of configurations in a mixed-IT, cloud, or virtualized environment:

- Includes data encryption, compression, tiering, thin provisioning, and more.

- Operates independently of storage hardware and potentially other encryption protocols.

- Fits into new, existing, homogeneous, or heterogeneous storage.

- Offers buy-as-you-like options such as perpetual license or monthly billing.

The Bigger Truth

The announcement of a software-only version of IBM Spectrum Virtualize reveals IBM's perceptive take on the dramatic changes (shown in Figure 1) that are anticipated in the storage market over the next five years. Basically, it's a nod to the fact that heterogeneity is the way of the world, and providing a platform is better than being simply a provider of component elements. Spectrum Virtualize, which already has a proven track record, works across cloud computing, converged infrastructure, and SDS, making IBM a front-runner in moving storage functionality and capacity out of the box and higher up the stack.

Software-defined storage that moves storage functionality to, say, the hypervisor or operating system might *only* lead to the use of more cheap/commodity hardware. However, the more commonly expected converged and cloud approaches (which are jointly the expectation of more than three-quarters of the organizations surveyed by ESG) should have even more drastic implications for traditional storage environments—specifically, the reduction or flat-out elimination of on-premises, purpose-built data storage systems and, therefore, even the people that support them.

Naturally none of these scenarios represents a demise or reduction of the storage industry per se; but, if manifested, they do represent a dramatic and imminent shift in the *nature* of the industry. And now, with software-only Spectrum Virtualize, IBM will be able to deliver the traditional values of virtualization to many more users.

Use Cases

Enterprises/data centers:
- Data migrations
- Cloud deployments

Cloud service providers:
- Private clouds
- Managed clouds
- Mixed storage

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