



White Paper

IBM Spectrum Storage Suite: Meeting Industry Needs for Software-Defined Storage

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IDC OPINION

The rise of 3rd Platform computing and cloud services, analytics, mobility and social media are driving the development of modern next generation applications. These applications are built with software-defined storage (SDS) in mind. Central to an SDS approach are native capabilities of both data persistence and storage management services. Another essential attribute of SDS is the ability for the storage software stack to be deployed and run on industry standard, commercially available compute resources with either shared or shared nothing storage. The adoption of SDS among datacenter managers today is being fueled by cost reduction, automation and vendor lock-in objectives. SDS brings with it a transition away from commercial SAN and NAS storage to scale-out architectures that use server-rich storage.

As a leading IT supplier, IBM has recognized the industry transformation that is occurring and developed a strategy for ushering in the era of SDS. Already a material SDS player, IDC reports that IBM enjoys a top share position in the software-defined storage-controller software market today and has arguably one of the most extensive SDS portfolios. IBM Spectrum Storage, the company's portfolio of SDS offerings, is comprehensive and inclusive of scale-out block and file storage, virtualization protection, archiving and control and automation. However, with the growing interest in SDS comes a desire by customers to procure storage functions in new ways.

IBM has responded with Spectrum Storage Suite. This Suite is designed to offer customers superior economics, deployment flexibility and ongoing investment protection with access to a broad range of SDS functions supported on heterogeneous storage platforms and architectures. IBM is unique in the industry in having such a comprehensive portfolio of SDS offerings under a common management framework and procurement model available today. The advantages of the new IBM Spectrum Storage Suite: procurement and deployment are easier and more cost effective than ever before.

SITUATION OVERVIEW

The era of 3rd Platform computing has come as a result of cloud, analytics, mobility and social innovation and adoption. These trends have driven businesses to seek engagement with customers, partners, consumers and communities in new and game-changing ways. One mechanism for this new engagement model has been through the development of newer, modern and externally-facing applications. These new modern applications which IDC refers to as next generation applications (NGAs) allow for better stakeholder engagement which ultimately drives better business outcomes.

These NGAs share a common set of design considerations and from an architectural approach tend to be diverse from traditional, commercial enterprise applications. NGAs are commonly custom built, horizontally scalable and stateless in nature. These applications are composite-based, leverage micro-services and are built with or rely heavily on open source software in their development. Many such applications employ new database approaches which are schema-less in nature including document, key/value and other NoSQL databases which in turn enable greater developer flexibility. Many of these NGAs are developed using a continuous development/continuous integration model employing a DevOps organizational structure and approach. As it pertains to the underlying compute and storage infrastructure, the application itself is designed to provide for resiliency and availability – the application assumes the underlying hardware will fail. As such, NGAs make greater use of scale-out, software-defined storage approaches with shared or shared nothing storage architectures.

At the same time that NGAs are being developed and relying on software-defined infrastructure, centralized IT organizations must maintain existing storage environments. With existing infrastructure, challenges abound. Data growth continues unabated and is exacerbated by mobility, analytics and IoT demands. The current storage environments in most datacenters is a mix of storage platforms, protocols and vendors challenging standardization, consolidation and cost reduction. There is an insatiable need for better performance in IOPS and reduced latency. This need is being met with the growing use of flash memory in server and shared storage architectures. However, customers face ongoing challenges with reducing storage costs, mitigating vendor lock-in and providing greater levels of infrastructure automation. These requirements are ushering in the era of software-defined storage, a topic IDC has studied extensively in the software-defined storage research series.

According to this research, software-defined storage is being adopted by cloud providers and enterprises alike. In fact, 60% of firms are committed to an SDS approach. Why? SDS provides an economically advantageous transition away from commercial scale-up SAN and NAS storage to scale-out architectures that use server-rich storage. SDS offers flexibility in procurement models including software running on industry-standard servers, to appliances to cloud-based services. Customers who can leverage a software-stack that can run on heterogeneous infrastructure aids in mitigating vendor lock-in at the hardware level. And leading SDS approaches are increasingly making open APIs available, further mitigating lock-in while enabling the automation of infrastructure provisioning. These factors are and will continue to drive the ongoing adoption of SDS over the next decade and successful suppliers are responding.

IBM SPECTRUM STORAGE OVERVIEW

IBM Spectrum Storage is a comprehensive family of SDS offerings developed by IBM to address today's leading operational storage challenges and business needs. The Spectrum Storage family of offerings spans scale-out block and file storage, storage virtualization, data protection, archiving and storage management and automation functions. While each offering serves a different use case, all the products share a flexible deployment model and supplier. IDC research on SDS indicates 70% of firms committed to SDS favor a single vendor approach. Each Spectrum Storage offering can be procured and deployed as software-only running on server-based storage, as IBM appliances or as cloud services. In addition to deployment flexibility, all the Spectrum Storage offerings support a broad range of heterogeneous storage platforms and architectures, including IBM and third party platforms. Each module in the Spectrum family is described below:

- **Spectrum Control** provides efficient infrastructure management for virtualized, cloud and software-defined storage to simplify and automate storage provisioning, capacity management, availability monitoring and reporting
- **Spectrum Virtualize** provides industry-leading virtualization that transforms existing and new storage and streamlines deployment for a simpler, more responsive, scalable and cost-efficient IT infrastructure
- **Spectrum Accelerate** includes enterprise-class software-defined block storage services. It deploys rapidly on- or off-premise including as-a-service, adds extreme flexibility to cloud deployments and offers superb savings through simplicity and license transferability.
- **Spectrum Scale** provides software-defined-storage to make management at scale easier, efficient, and intelligent. Global shared access to data with unified file, object and HDFS support enables unprecedented savings and agility for clusters, clouds and analytics.
- **Spectrum Protect** enables reliable, efficient data protection and resiliency for software-defined, virtual, and physical and cloud environments.
- **Spectrum Archive** enables the automatic movement of infrequently accessed data from disk to tape to lower costs while retaining ease of use and without the need for proprietary tape applications

INTRODUCING IBM SPECTRUM STORAGE SUITE

With the introduction of the IBM Spectrum Storage Suite, customers can now have unlimited access to all the offerings of the Spectrum Storage family. Spectrum Storage Suite is both a new bundle and licensing model where all capabilities are available on a flat, cost-per-TB basis. While licensing of the individual modules is still available, customers can now easily license the Spectrum software together in either a perpetual or term agreement. The per-TB pricing allows for greater cost predictability as storage capacity demands vary over time. The IBM Spectrum Suite is designed with change in mind, both in terms of capacity and feature/functions needed. In short, a single license for all the functionality is available and customers only pay for the TBs they use in production. Any use of Spectrum Storage Suite in non-production environments is excluded from per-TB pricing.

License Entire Suite Together – Reduce Complexity and Cost

With the broad set of functions included in the Spectrum Storage family, customers are unconstrained with the functionality they can use. With the successful deployment of several offerings in the Spectrum Storage family, customers wanted to expand their deployment over time which resulted in additional transitions, longer time to deployment and value and was quite costly. With the availability of the Suite, customers now can license together all the functionality in a single license agreement. This license agreement, available on a term, perpetual or utility basis, can offer customers as much as a 50% savings over procuring all the modules independently. Refer to Table 1 for licensing options.

License Based on Usable TBs – Pay Only for What You Use

Licensing is based on a cost-per-TB basis which means customers pay only for what they use. This results in an economic advantage in that customers can avoid a large capital outlay for infrastructure that is not yet in use. The licensing model also allows for a greater use of opex dollars and a corresponding decrease in the use of capex dollars. This is particularly attractive for those customers seeking to shift away from procuring commercial storage systems managed as capex to a software licensing model managed as opex.

Unlimited Use in Non Production – No Cost for Test/Dev Environments

As a result of 3rd Platform computing and the development of NGAs, there is an increasing need for developing custom applications with corresponding test and development infrastructure requirements. For these customers, the use of Spectrum Storage Suite is unlimited in their non-production environments. As a result, DevOps teams incur no cost for the scale-out block and file capacity functions, protection functions, archiving functions as so on. This allows for management of data across its entire lifecycle, and leveraging clones, mirrors and snapshot copies in a zero cost manner.

Common Management – Improve Operational Productivity and Reduce Error

The IBM Spectrum Storage Suite includes all components of the family, and each shares a common management model. A similar user interface across all the offerings reduces training time and associated cost, increases administrator productivity and mitigates human error. The Suite is managed under a common, consolidated support agreement which simplifies the management of IBM support calls, maintaining contracts and license keys.

TABLE 1

IBM Spectrum Storage Suite Licensing Options

Perpetual License Agreement	Term-Based License Agreement	Utility-Based License Agreement
<ul style="list-style-type: none">• Designed for capital expenditure budgeting• One-time, upfront purchase of a single license for all products• Annual subscription and support fee for access to technical support and product upgrades• Ideal for users with slower growing or easier-to-predict capacity needs	<ul style="list-style-type: none">• Designed for operational expenditure budgeting• A single license for all products, with cost per terabyte of storage• Licensed for a specified term, usually one to 60 months• License for use of software, download updates and technical support for the license term• Ideal for users with rapidly growing capacity needs or who experience short-term spikes in demand	<ul style="list-style-type: none">• Designed for operational expenditure budgeting• Combination of perpetual- and monthly-style licenses:<ul style="list-style-type: none">• One-time, upfront purchase• Per-terabyte and per-term licensing• Ideal for service providers or others with more complex storage needs

CONCLUSION

The storage industry is facing a transformative shift away from traditional SAN- and NAS-based architectures to an SDS approach. IDC research indicates that over the next decade, there will be a growing use of server-rich storage architectures leveraging SDS software. Conversely, there will a decline in traditional external storage appliances. Datacenter storage suppliers are left with two choices: continue to do things status quo or respond to changing user needs. As a leading IT supplier, IBM has recognized the industry transformation. In response, the company has developed a comprehensive strategy – in terms of both products and licensing terms – for software-defined infrastructure. Customers evaluating SDS offerings should place the IBM Spectrum Storage Suite on their short list for evaluation.

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