IBM announces new Spectrum Fusion Software and Systems, new ESS and enhancements to Spectrum Scale

Silverton Consulting, Inc. StorInt™ Briefing

IBM® recently announced new IBM Spectrum Fusion software-defined storage and hyperconverged systems, a new Elastic Storage System (ESS) and enhancements to Spectrum Scale.

IBM Spectrum Fusion

Spectrum Fusion is a new storage solution from IBM that is fully containerized and includes a storage platform layer based on- IBM-Spectrum Scale and other software components including, but not limited to, IBM Spectrum Protect Plus, and IBM Spectrum Discover and put them together into a single storage solution, purpose built to support Red Hat OpenShift (Kubernetes [K8s] and Virtualization) environments.

The first solution in the new product family to be released will be an HCI system in the 2nd half of 2021. Next year IBM is expecting to release the software defined storage version that is also fully container native. The HCI system is available in 1U and 2U X86 servers with onboard NVMe SSD storage. The 2U version is a GPU enhanced Spectrum Fusion HCI server and storage node with up to 3 NVIDIA A100 GPUs. These server and storage nodes, together with internal networking switches, are delivered pre-installed in a rack with all software included.

Containerization has taken over web-intensive and highly scalable workloads. Spectrum Fusion provides a native containerized persistent storage to go along with them. By containerizing and gathering parts of Spectrum Scale, Spectrum Discover and Spectrum Protect Plus in one solution, container applications can have advanced unstructured data functionality, with extensible metadata cataloging and indexing services with enterprise class backup/data protection that can scale as fast and as far as they can.

For storage services, Spectrum Fusion inherits Spectrum Scale's scale out unstructured data functionality that includes global data access and advanced file management. That is application file data can now easily access data outside the data center, including most public cloud providers, private cloud environments or on prem in IBM Cloud Object Storage or external NAS appliances, etc., while Spectrum Fusion provides local container application access to this data using sophisticated local metadata and data caching.

Spectrum Fusion also offers single pane management of its storage environment, configuration management and monitoring. Operations or applications can automatically clone/migrate application data, without interrupting access. And of course, Spectrum Fusion supplies enterprise grade high availability, erasure coding to protect data from drive failures and data-at-rest encryption for container data. In addition, data can be marked as WORM and left immutable.

For compliance, Spectrum Fusion brings scan and search metadata services to help validate data access and use. This includes scanning data residing both within and outside Spectrum Fusion control.

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For data protection, Spectrum Fusion supports Red Hat Open APIs for Data Protection (OADP) to create container data snapshots for local backup on secondary storage, local tape or cloud storage. Spectrum Fusion's Protect Plus functionality offers enterprise class data protection services that operate internal to the storage system.

Moreover, Spectrum Fusion is completely containerized. So, one can manage and scale storage, data protection and discovery services all through standard K8s commands, APIs or OpenShift. This includes Red Hat Ansible dev/ops access for automated deployment and upgrades.

Finally, as it's an HCI solution, Spectrum Fusion HCI comes with both compute and storage. Spectrum Fusion HCI can start out with as few as 6 servers and can scale up to 20 servers of compute-storage. These numbers are just the start, we have it on good authority that they will expand this range significantly over time.

New Elastic Storage System (ESS) 3200

The new ESS 3200 is IBM's next generation upgrade to the ESS 3000, and it supports up to 80GB/s of data throughput with linear performance scalability up to TB/sec and yottabytes (millions of PB) of capacity, using a multi-ESS/Spectrum Scale nodes.

The new ESS 3200 offers dual active-active controllers, with up to 8 host ports of 100Gbps Ethernet or 200Gbps InfiniBand, and 12 or 24 NVMe flash drives with a max capacity of 368.6TB raw. The new solution also includes flash wear monitoring, call home/remote diagnostics and customer swappable drives. Moreover, software upgrades can be automated via Red Hat Ansible DevOps.

Spectrum Scale enhancements

Spectrum Scale now supports K8s CSI snapshots for volume backups and data immutability for compliance regimens. That is Spectrum Scale now offers WORM and append-only filesets/directories that are defined using industry standard APIs and has been validated by Cohasset to support SEC Rule 17a-4(f), FINRA Rule 4511© and principles of CFTC Rule 1.31(c)-(d).

Significance

IBM sees containerized workloads as a new application environment that needs storage. They aren't the only one. But IBM is the first to convert the best of Scale, Protect Plus and Discover functionality into a micro-services, fully containerized app.

The new ESS provides a great high performing storage appliance that bundles traditional Spectrum Scale functionality into a highly available AFA appliance. The ESS 3200 seems well suited for new AI/DL and data intensive workloads.

Not to be left behind, Spectrum Scale adds new container functionality and data services to expand its support of containerized and enterprise environments.

Silverton Consulting, Inc., is a U.S.-based Storage, Strategy & Systems consulting firm offering products and services to the data storage community.

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