Unified Approach to Data Resilience for Containers

Containers and microservices now play a strategic and central role in application development. According to a 2020 IDC survey, the storage capacity for containerized environments is growing 47% YoY, and more than 50% of companies have deployed containers in their environments, with over 34% citing production deployments.[1]

Development and operations teams are moving to containers because they are more nimble and agile than virtual machine (VM) images, enabling greater portability, better application availability, and require fewer system resources. Also, container deployment can dramatically change the speed at which teams can move from deployment to production, providing increased agility and productivity and hence competitive advantage.

As containerized applications move into production, IDC recommends, “companies take a holistic data protection, data management and data security approach for expanding their container and microservices strategy.”

Unified Approach to Data Resilience for Red Hat Openshift and Kubernetes

IBM Spectrum Protect Plus’ unified workload protection includes comprehensive data resilience for containers running in Red Hat OpenShift and Kubernetes environments. Native integration with Kubernetes enables developer productivity and ensures complete data recovery with a modern data protection solution that manages both persistent volumes (PVs) and Kubernetes resource meta-data (etcd).

KEY BENEFITS:

- Native integration with Kubernetes and Red Hat OpenShift maximizes developer productivity
- CSI snapshot support spans both container native and existing container ready storage
- SLA policies help ensure data resilience and compliance

Support for Container Storage and Common Storage Interface (CSI) snapshots provide the flexibility to utilize both existing and container-native storage. IBM Spectrum Protect Plus can back up the Kubernetes resource metadata (etcd) by using RedHat OpenShift API Data Protection (OADP).

Maximize Developer Productivity

Kubernetes administrators and application developers can use the native command line interface (kubectl) to enable data protection for their containerized applications. To protect applications, developers assign SLAs at the project or namespace level, or they can use labels to assign SLAs to persistent volume claims (PVCs) and associated Kubernetes resource metadata (etcd). This ability to protect both PVCs and Kubernetes resource metadata (etcd) supports disaster recovery and enables data reuse for development, testing, and analytics.

Lower Storage Costs

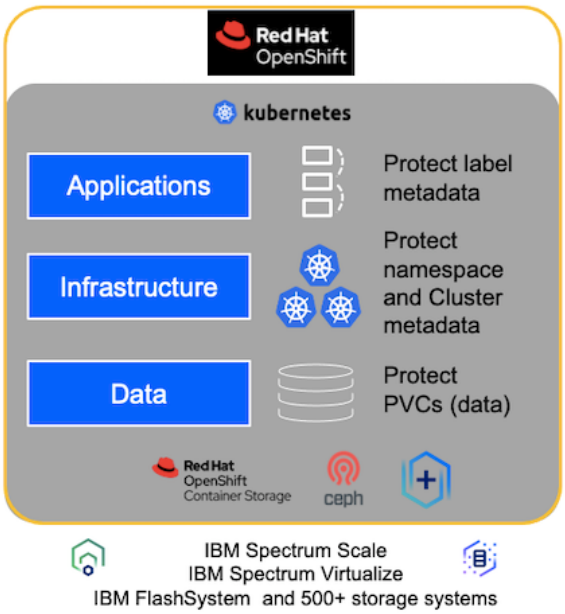
To snapshot persistent container volumes, IBM Spectrum Protect Plus uses the CSI snapshots. Support for CSI is significant because CSI unifies container orchestration with multiple storage systems. IBM Spectrum Protect Plus supports container native storage for Red Hat CephFS, Red Hat Ceph Storage RADOS Block Device (RBD) CSI snapshots, and container ready storage in IBM Spectrum Scale and IBM Spectrum Virtualize for IBM FlashSystem and 500+ storage systems.

Drive Operational Efficiency

IBM Spectrum Protect Plus is an end-to-end, modern data protection solution that unifies data recovery, data retention, and data reuse for physical, virtualized, and container-based workloads. Developers can use policies to create copies of container data for protection or data reuse. Data can be copied to secondary sites, cloud object storage, or IBM Spectrum Protect for secure long-term data retention.

Support Cyber Resilience

To protect data against cyberattacks, IBM Spectrum Protect Plus provides the ability to securely store container data in Red Hat Ceph Storage, in immutable IBM Cloud Object Storage, or companies can air-gap data using IBM tape, via IBM Spectrum Protect.



"IBM Spectrum Protect Plus delivers true data resilience for containers running in Red Hat OpenShift and Kubernetes environments. Native integration with Kubernetes increases developer productivity, the ability to protect both persistent volumes and operational metadata ensures complete recovery, and support CSI snapshots gives our clients the flexibility to utilize both existing container-ready storage and container-native storage."

Christophe Lesur
CEO, Cloud Temple

Source 1: The Importance of Data Management for Containers By: Phil Goodwin and Ashish Nadkarni. October 2020. IDC report - Doc # US46961420