

TrilioVault for Kubernetes

Cloud-native data protection for container-based applications

Highlights

Choose an integrated backup and recovery solution with full Red Hat OpenShift operator certification and Red Hat OpenShift Container Storage interface compatibility.

Protect both application data and metadata for Red Hat OpenShift applications using container storage interface (CSI) snapshots.

Deploy all operators as a unified solution from the Red Hat OpenShift OperatorHub.

Run container-based applications, provision OpenShift Container Storage, and protect and manage data operations with TrilioVault—all through the Red Hat OpenShift console.

Administer with Kubectl commands or the custom TrilioVault user interface (UI) with support for Red Hat OpenShift dynamic forms.



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The importance of cloud-native data protection and management

Cloud-native platforms are increasingly vital, giving organizations new ways to develop, deliver, and manage applications and microservices. Kubernetes and the stateful container-based applications at the core of new hybrid cloud-based services have quickly become critical, driving new needs for data protection and disaster recovery strategies in enterprise operations. Whether on-premise or in the cloud, the combination of [TrilioVault for Kubernetes](#), [Red Hat® OpenShift®](#), and [Red Hat OpenShift Container Storage](#) provides data protection for container-based applications.

TrilioVault for Kubernetes and Red Hat OpenShift Container Storage

Organizations need flexibility and scalability to innovate rapidly in response to emerging business challenges and opportunities—while lowering their risk of service downtime or data loss. TrilioVault for Kubernetes is a cloud-native, application-centric data protection platform that supports the scale, performance, and mobility requirements of container environments across any public, hybrid, or multicloud deployment. Coupled with Red Hat OpenShift and OpenShift Container Storage, TrilioVault for Kubernetes protects the entire application, including data, metadata, and all other associated Kubernetes resources. Once the application is protected, restoration can occur from any point-in-time snapshot with a single click of a button.

TrilioVault for Kubernetes protects application data and metadata—including pods, persistent volumes (PVs), secrets, configuration maps, and other Kubernetes resources. With Red Hat OpenShift operator certification, TrilioVault for Kubernetes is available in the Red Hat OpenShift OperatorHub, allowing simple installation and configuration. It uses the Red Hat OpenShift custom resource definition application programming interface (API) to provide a custom TrilioVault user interface (UI) for click-driven workflows. TrilioVault for Kubernetes is compatible with any Amazon Simple Storage Service (S3) object storage bucket, such as [Red Hat Ceph® Storage](#), for use as a backup target.

IT managers, backup administrators, and application developers can use TrilioVault for Kubernetes on OpenShift Container Storage to support a wide range of use cases:

- **Backup and recovery.** Schedule point-in-time backup and recovery and automate incremental backups with predefined policies, while selectively restoring containers and applications to the same or a new namespace.
- **Disaster recovery.** Use TrilioVault backup data to build disaster recovery strategies, and quickly recover any Kubernetes application in the event of a disaster.
- **Migration.** Migrate applications and data between Kubernetes clusters with TrilioVault, yielding better total cost of ownership (TCO) or tighter data control—regardless of your cloud infrastructure.
- **Application mobility.** Build multiple testing environments using TrilioVault backups from a single target location to develop and validate code and push changes to production.

Resilient data protection with OpenShift Container Storage

TrilioVault natively provides application backup using container storage interface (CSI) snapshots

With TrilioVault for Kubernetes, namespace users can restore applications on demand. Control for TrilioVault operations can be delegated based on Kubernetes role based access control. The intuitive click-driven UI provides discovery, monitoring, and operations visibility and management capability. Monitoring and metering is supported with [Prometheus](#) and [Grafana](#) with logging and tracing supported by [Fluentd](#).

TrilioVault supports Red Hat OpenShift dynamic forms, providing an alternative to YAML files to execute TrilioVault operations and workflows through simple form-fill capabilities.

to capture the state of a storage volume at a particular point in time. Cluster administrators use CSI snapshots to back up and restore PVs. App developers can use volume snapshots in a dev/test context and rapidly roll back to previous development versions when necessary. Together, TrilioVault and OpenShift Container Storage provide:

- **An enterprise-ready platform with self-service management.** TrilioVault features native integration into Kubernetes and Red Hat OpenShift with OpenShift Container Storage interface compatibility. Organizations can backup to network file system (NFS) volumes or use any S3-based storage. Support is included for Kubernetes namespaces, operators, Helm, and label backup and restore. TrilioVault can be deployed via the Red Hat OpenShift OperatorHub or Helm charts.
- **Nondisruptive backup.** Lightweight Kubernetes API and CSI snapshots capture and back up the entire application, including data, metadata, and other associated Kubernetes objects. The application supports linear, infinite-scale forever incremental backups with application-aware hooks for backup and restore.
- **One-click restore.** Organizations can recover entire applications from a particular point in time. Restore can take place to a new Red Hat OpenShift cluster or namespace. TrilioVault includes policy-based global job scheduling and data retention, with robust restoration policies.
- **Simplified provisioning, management, and maintenance.** TrilioVault works with OpenShift Container Storage, with no extra configuration steps required. Both technologies are deployed as Kubernetes operators within Red Hat OpenShift, providing a simple way to package, deploy, and manage environments. Administrators can automate container backup and storage tasks to enhance efficiency and resiliency.

Conclusion

Together, TrilioVault for Kubernetes on Red Hat OpenShift and Red Hat OpenShift Container Storage provide an integrated platform that supports running container-based workloads, supporting those workloads with enterprise-grade persistent storage, and providing those workloads with sophisticated backup and recovery functionality for PVs and complete applications. Organizations can run container-based applications, provision OpenShift Container Storage, and protect and manage data protection operations with TrilioVault.

About Red Hat

Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.



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