Kubernetes Backup and Recovery

Kubernetes is an open-source container orchestration system for automating the deployment, scaling, and management of containerized applications. It was originally developed by Google and is now maintained by the Cloud Native Computing Foundation (CNCF).

Kubernetes provides a number of features and tools that make it easier to deploy and manage containerized applications at scale, including:

- A declarative configuration model, which allows you to define the desired state of your applications and their components, and have Kubernetes manage the actual state to match the desired state
- Automatic binpacking, which allows you to specify how much CPU and memory resources your applications need, and have Kubernetes automatically place them on the most appropriate nodes in the cluster
- Self-healing capabilities, which allow Kubernetes to automatically detect and replace failed containers or nodes
- Load balancing and service discovery, which allow you to expose your applications to external traffic and have Kubernetes automatically distribute the traffic across multiple replicas of your application
- Rollouts and rollbacks, which allow you to easily deploy new versions of your applications and roll back to previous versions if needed
- Automatic scaling, which allows you to scale your applications up or down based on demand.
- Kubernetes is widely used in a variety of environments, including on-premises, in the cloud, and in hybrid environments, and is supported by most major cloud providers.

Supported Platforms

Kubernetes 1.10+

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Features

- incremental backup (when using Ceph RBD as PV)
- file-level restore (when using Ceph RBD as PV)
- VM disk exclusion
- quiesced snapshot (optional deployment pause)
- pre/post snapshot command execution
- backup disks sharable over iSCSI (when using Ceph RBD as PV)
- name-based policy assignment
- tag-based policy assignment
- power-on VM after restore

Storware provides an agentless, crash-consistent backup of deployments running in Kubernetes environments and stored on persistent volumes. What's more, it gives the option to store these backups in a wide range of backup destinations, including mounted file systems, enterprise-level backup solutions (IBM Spectrum Protect, DellEMC NetWorker, Veritas NetBackup), cloud storage (Amazon S3, Google Cloud, Microsoft Azure), and many others.

How to start

Single command to deploy, wizard to configure everything - simple as that. Then you just provide credentials to your Kubernetes and you can detect and back up your deployments.

Storware provides an agent-less backup for deployments in Kubernetes and no side-car pods are required in your deployments. Storware protects both deployment metadata as well as Persistent Volumes that it uses. When using Ceph RBD-based PVs it also is able to provide incremental and crash-consistent backups. And of course backup of etcd with our predefined template in application

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Future-oriented and competitive backup and recovery for Kubernetes

- Storware provides the single hypervisor-agnostic approach in terms of UX. Quite often we have multiple different platforms to support, and Kubernetes is yet another one. It is easier to use a single solution that covers so many different sources and is able to store data in multiple different backup providers. Administrators coming from typical virtualization platforms will have exactly the same experience in the Storware UI for VMs and deployments.
- Storware is a non-invasive solution that doesn't require administrators to exchange existing storage or replace existing backup providers, but rather smoothly integrates with what is available in the company.
- Unlike the competition, Storware provides high-performance transfer from Ceph RBD volumes - it does not use the Velero method, but direct transfer from Ceph monitors.
- Soon for Kubernetes environments we will get a more tailored set of features to what is already available for OpenShift. In addition, we will introduce support for virtualization - KubeVirt.

Highlights

Versatility – independent data protection solution with no vendor lock-in. A single application that can backup various container platforms to various backup providers.

Scalability – it is ready to grow together with you via multi-node architecture. Scale-out by adding as many nodes as you need, scale-up by assigning more resources to Storware nodes.

Easy Configuration – Configuration Wizard makes the launch and setup of Storware fast and easy. Start to protect your container environments within minutes!

Easy to Manage – with an intuitive and modern UI (HTML 5 Web Console), you can quickly set up protection and store backups in several different backup providers. Manage and monitor backup processes from a single pane of glass.

Set and Forget Automation – automate container protection with custom or predefined backup policies. Test backup automatically to ensure recoverability.

Transparent Licensing and Costs Optimization –the easiest licensing without hidden costs: per VM, per Host, per TB. at your disposal.

Security and Reporting – role-based access controls give administrators greater control over security and an advanced reporting system to evaluate the size and time of backup/restore operations.

Support – highly-responsive 24/7 global support and the Storware Insight option. Storware Insight is an additional technical support enhancement. It sends a daily report on your instance so that our support can react quickly when something unexpected occurs.

Open RESTful API and CLI – Storware Backup and Recovery is ready to be part of wider automation or orchestration solutions. All communication between 3rd party systems goes via RESTful API exposed by Storware Server. Tasks are being performed by the Node behind the scenes. End-user is going to use only a 3rd party system to invoke and monitor the status of the tasks.