OnyxCorp uses Kasten K10 for On-Premises Kubernetes Backup and Disaster Recovery

ENVIRONMENT
› Bare metal servers
› Upstream Kubernetes
› PostgreSQL, FoundationDB, MySQL, Argo
› Linstor and OpenEBS

CHALLENGES
› Kubernetes talent shortage
› Reliable Kubernetes backup
› Capturing Kubernetes application resources
› Cross-data center and storage infrastructure DR

SOLUTION
› Kubernetes-native backup platform
› Easy-to-use dashboard that hides Kubernetes complexity
› Extensibility for complex DevOps workflows, when needed
› Policy-based automation

RESULTS
› Providing a bridge to Kubernetes for Linux and vSphere administrators
› Less than 15 minutes to deploy and start protection applications on new Kubernetes clusters
› Ability to transparently migrate across storage systems within and across clusters

ABOUT ONYXCORP

OnyxCorp, headquartered in Calgary, Canada, is a software development company that builds solutions to emerging digital privacy and security threats including the use of quantum-resistant cryptography primitives. CEO and Co-Founder, Jonathan Simon, oversees software development and management of a development team spread across the world.

OnyxCorp operates across two on-premises data centers for redundancy, DR, and better performance for geographically distributed customers. The company has been rapidly migrating to Kubernetes and the observed benefits already include greater reliability, lower operations overhead, and greater resource efficiency and cost savings. "Given our traditional application footprint of over 500 VMs, it had become really tedious to deploy, update, and manage infrastructure upgrades in any sane fashion. I saw migrating to Kubernetes as an opportunity to simplify these problems, despite some of the complexity inherent to Kubernetes today," said Simon.

CHALLENGES

As workloads started moving into production, including databases and NoSQL systems, OnyxCorp was faced with two challenges. First, it was extremely hard to find Kubernetes talent that understood backup and disaster recovery. When folks with the right skills and experience were found, they were expensive and often got pulled onto other higher-priority tasks.

Second, their backup solution, built for VMs, failed at protecting Kubernetes applications. Only disk snapshots were possible and recovery was manual, error-prone, and had multi-hour recovery times. Additionally, OxyCorp also uses multiple storage systems and has seamless application migration requirements. Their existing solution, without Kubernetes application understanding, could not help. Other evaluated systems, including scripting around open-source tools or legacy solutions that have a "bolt-on" Kubernetes approach, either tended to be hard to use, had the bare minimum for Kubernetes integration, were expensive in terms of resource usage and cost, and/or lacked or weakened basic security restrictions (e.g., no encryption or required firewalls holes).

SOLUTION

With a focus on ease-of-use and a simple dashboard, Kasten's K10 platform easily solved the talent shortage problem OnyxCorp was running into. "K10's simplicity allowed our existing VM administrators to quickly take over Kubernetes backup and DR while still allowing us to implement more complex workflows whenever needed," said Jonathan Simon. "K10's deep Kubernetes integration and application-centric approach enabled reliable backup and DR, small RTOs, and cross-infrastructure migration without sacrificing security."

With its Kubernetes-native focus, K10 protected the entire Kubernetes application stack while significantly reducing the RPO and RTO for backup and recovery operations. K10 also transparently integrates into cluster deployment pipelines and can now be seamlessly baked into a cluster deployment template.
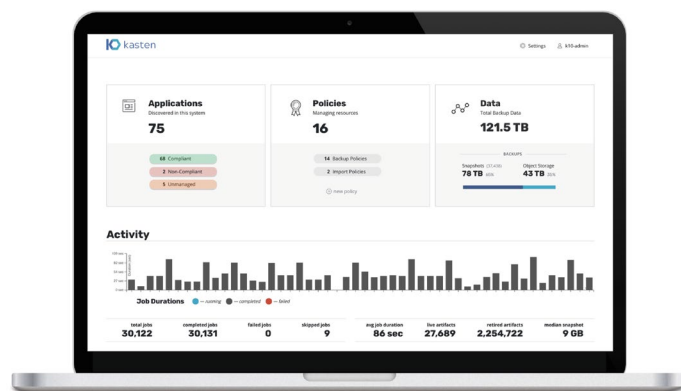
K10 DATA MANAGEMENT PLATFORM

KEY BENEFITS

› **Simplicity**:
With a dashboard and UX that was easy to learn and use, admins with minimal Kubernetes experience were able to reduce the time taken to set up backup and DR policies for critical applications from multiple hours to less than 15 minutes.

› **Scalability:**
Kasten K10's ability to dynamically scale, both up and down, in response to application footprint and cluster size made it an ideal fit for OnyxCorp's growing Kubernetes environment. Not requiring privileged DaemonSets further reduces the cluster resource footprint when compared to other options.

› **Security:**
K10's extensive support ranging from encryption with customer-managed keys, RBAC, network policies and its transparent insertion without requiring firewall holes allowed it to fit cleanly into OnyxCorp's infrastructure without reducing their security posture.

› **Observability:**
K10's cloud-native ecosystem integration made it very easy to log, audit, monitor and alert on backup and DR jobs with their existing tools. It was easy to identify reasons for failures and fix underlying infrastructure issues.

› **Release Cycle:**
K10's regular release cadence of two weeks ensures that it supports the most recent Kubernetes releases that OnyxCorp tends to deploy, includes fix for new CVEs, and can quickly deliver features and improvements critical to OnyxCorp's growing requirements.

› **Application Migration:**
Using the same workflows, OnyxCorp now uses K10 to migrate their applications across clusters, across storage vendors, and data centers.

› **Database Integration:**
OnyxCorp's applications use multiple relational and NoSQL systems. While crash or application-consistent backups provided by K10 are usually sufficient, being able to easily inject custom backup actions into K10 for databases such as FoundationDB was a feature that wasn't found in other competing solutions.