

Enterprise Class Availability for Containers with InfoScale

Run your enterprise applications in containers with confidence.

Industry Trends

Containers managed by Kubernetes have been quickly adopted by developers to become the new standard for creating native applications in the cloud and on-premises. The motives for container adoption are clear—it minimizes the cost and complexity associated with managing and developing cloud or on-premises solutions. Containers also provide excellent flexibility, which is important to any business or application developer. Finally, containerization helps customers avoid vendor lock-in by enabling application portability across conventional and cloud infrastructure platforms.

Challenges

IT is under extreme pressure from the business to deliver solutions like containers that have a faster time to value, without incurring additional risk and retaining tight service-level agreements (SLAs). In most cases, new technologies such as container orchestration engines like Kubernetes are still evolving and depend on third-party vendors to provide functionality like persistent storage for stateful applications and application-level monitoring to manage high availability for applications running in containers.

Solution

Veritas InfoScale™ 7.4.3 further extends our commitment to customers and their multi-vendor IT environments with support for physical, virtual, cloud and now containerized environments managed by Kubernetes. InfoScale integrates seamlessly with Kubernetes using a Container Storage Interface (CSI) plug-in that enables Kubernetes to provide the storage features needed to run enterprise-class applications in containers. InfoScale also provides application-aware high availability with Veritas Cluster Server (VCS) agents designed to manage containerized applications.

Storage Efficiency—The InfoScale CSI plug-in enables Kubernetes to provide the following persistent storage capabilities that are needed by stateful applications running in containers:

Software-defined persistent volumes—You can provision these as a shared storage pool using direct-attached storage in cluster nodes or using existing network-attached storage (NAS) devices to ensure data continues to exist beyond the lifetime of a pod.



Persistent volume storage classes—InfoScale provides three classes of persistent volumes (performance, resilient and secure with encryption) you can use based on application requirements and dynamically provision using native Kubernetes commands.



Non-disruptive scaling—You can easily scale InfoScale storage volumes without any application downtime.



Point-in-time copies with snapshots and cloning—You can create copies of persistent volumes for analytics, data protection and data resiliency and use third-party applications such as Velero for snapshot lifecycle management.



Application Resilience—InfoScale provides the application-aware availability and resiliency needed by mission-critical applications running in containers. Without the following levels of application availability, your business could be at risk of downtime:

Application availability and performance monitoring—

InfoScale constantly monitors applications within Kubernetes pods and facilitates container restarts by augmenting the functionality provided by Kubernetes Liveness Probes.



Persistent storage volume and network monitoring—InfoScale also monitors the storage volumes and network infrastructure to ensure both are accessible and functioning properly. It confirms the application has all the resources needed to be functional. If any storage or network resource is not available, InfoScale will notify Kubernetes so the container or the whole pod can be restarted.



Out-of-the-box support for mission-critical applications—

InfoScale includes an agent for MySQL that will minimize database downtime and help ensure supporting applications are highly available. Veritas also provides the ability to create your own customized application monitoring for home-grown applications.



Protection against data corruption—Containerized applications that use persistent volumes provided by InfoScale are automatically protected from data corruption due to a split-brain scenario caused by inter-cluster communication or hardware failure. InfoScale provides advanced data fencing by preventing data from being written to nodes within the Kubernetes cluster that have lost cluster membership due to communication disruptions.



Conclusion

InfoScale's industry-leading data management and availability technology provides the functionality and confidence organizations need to run mission-critical applications in containerized environments with Kubernetes. InfoScale is a software-defined solution from Veritas, which has over 30 years of experience and innovation supporting the latest IT trends and advancements like containers. Unlike point solutions for application availability and storage management, InfoScale is a single enterprise solution for managing SLAs for all your IT services to ensure your business is online and highly available.

About Veritas

Veritas Technologies is a global leader in data protection and availability. Over 80,000 customers—including 87 percent of the Fortune Global 500—rely on us to abstract IT complexity and simplify data management. The Veritas Enterprise Data Services Platform automates the protection and orchestrates the recovery of data everywhere it lives, ensures 24/7 availability of business-critical applications, and provides enterprises with the insights they need to comply with evolving data regulations. With a reputation for reliability at scale and a deployment model to fit any need, Veritas Enterprise Data Services Platform supports more than 800 different data sources, over 100 different operating systems, more than 1,400 storage targets, and more than 60 different cloud platforms. Learn more at www.veritas.com. Follow us on Twitter at [@veritastechllc](https://twitter.com/veritastechllc).

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