

Veeam Kasten Use Case

Kubernetes-native Application Mobility

Kubernetes Advances Service Flexibility

As the doors opened to infrastructure choices like on-premises, private, public, and multi-clouds, new tools have been added to the modern organization's toolkit. Application mobility is one of these tools, and allows organizations to leverage the advantages of modern compute infrastructures. Application mobility refers to the capability to move an application from one platform to another without needing to change or re-program the application code.

Containers Unleash Platform Advantages

With respect to Kubernetes container environments, an application designed to run from on-premises cloud servers, can be re-located to a private or public cloud, or configured to span more than one infrastructure platform. This is different from application migration, which refers to an application or service being ported from a traditional infrastructure environment to a virtual or containerized environment without reworking the code. However, migrated applications — those ported from a traditional to a container environment — can also benefit from application mobility.

What are the Benefits of Application Mobility?

The benefits of application mobility are many and span several categories, including cloud service provider choice, revenue analyses, and risk profile management. Financial gains come from the application TCO thanks to its dynamic deployment cycles. As application demands are determined by customer use, application owners can manage the optimal mix of cloud environments for each application and protection system. Application mobility in a Kubernetes context is an invaluable data management tool for near real-time (NRT) analyses and performance evaluation, but this feature is not available in traditional compute environments. The net impact of application mobility is its strategic value for short- and long-term planning and the operational efforts necessary to protect a Kubernetes application portfolio throughout its life on a dynamic digital landscape.

Key Veeam Kasten Capabilities



Automatic Import and Restore

Automatically import and restore application changes to a cluster when a new application export is generated. This provides DevOps teams with a direct and simplified path to update production environments across a variety of infrastructures and cloud platforms.



Environment Isolation

Allow for migration between non-federated clusters for better environment isolation and operational control. This capability applies to all container and data objects and can be used to address internal requirements and external regulations.



Rapid Service Restoration

Avoid the need for custom scripting and migrate applications with robust scheduled and on-demand workflows. Easily monitor execution across platforms, including on-premises, public, private, and hybrid cloud.

Application Mobility for Kubernetes and Traditional Workloads are Based on Different Architectures

Service Transfer in a Traditional Scenario	VS	Kubernetes Application Mobility
Traditional service mobility refers to moving a three-tiered application to a new bare metal or hypervisor environment. This may require extensive code revision and platform configuration.	VS	In a business context, the application core of a microservices architecture can be easily deployed or restored across platforms without having to change code.
With volume backup tools, service migration is treated as a volume restore and the application is not automatically in production once the volume is created in a new environment.	VS	A Kubernetes microservices architecture is highly scalable, resilient, and agile with respect to its independently deployable components.
Data integration is dependent on design when the application is deployed. Therefore, each new data source requires a new interface and can only be incorporated via code base changes through release cycles.	VS	Data used by Kubernetes applications can be used across a wide variety of sources and through a wide variety of data interfaces.

Application Mobility Use Case Scenarios

Cross Cloud Portability

Kubernetes container applications are independent from infrastructure, which enables them to be transferred among a variety of platforms, including on-premises, public, private, and hybrid cloud infrastructures. Businesses then gain the agility to meet customer demand, which is often difficult to forecast and protect across platforms. However, the benefits from this capability are only accessible when backup solutions match the portability of the application.

Multi-cloud Balancing

Load balancing across public and private clouds is enabled by the API gateway. This capability is ideal for application management according to business policies intended to manage cost, risk, and performance in real-time. This creates a challenge for business owners to manage a backup solution that can meet recovery time objectives and recovery point objectives (RTOs and RPOs).

Cluster Upgrade Testing

Manage Kubernetes changes by migrating applications in a predictable manner to an upgraded cluster. The ability to catch and address upgrade-related issues as part of normal operating processes is imperative for business owners. A Kubernetes application-centric mobility solution can also catch important changes before they become a problem at scale.

Data Management

To analyze data and protect it once an application or service begins production, application mobility can be used to spin data to an offline copy. The value of creating a copy of a live application or service is to measure performance, data usage, and other evaluation techniques with the most current application data set.



Specification Sheet for Application Mobility

Application Mobility Key Features

Security	<ul style="list-style-type: none">• Encryption of in-flight and at-rest data
Policy-based automation	<ul style="list-style-type: none">• Declarative policy definitions for separation of concerns• Automatic misconfiguration detection• GFS retention policy
Transforms library	<ul style="list-style-type: none">• TransformSet custom resource
External integrations to monitor alerts	<ul style="list-style-type: none">• Pre-integrated with Azure Sentinel, DataDog and Prometheus
User interface	<ul style="list-style-type: none">• Out-of-the-box dashboards, metrics, and reports• Up-to-date status indicators for all live applications• Pre-set alarm triggers
Re-deployment flexibility	<ul style="list-style-type: none">• Cross-cloud portability/restorability (i.e., protection from vendor lock-in)



Veeam Kasten for Kubernetes Data Protection Platform

Veeam Kasten is a Kubernetes-native data protection platform that provides enterprise operations teams with an easy to use, scalable, and secure system for backup and restore, disaster recovery (DR), and application mobility of Kubernetes applications. With Veeam, teams achieve Kubernetes-native resilience against ransomware attacks. Kasten offers an application-centric approach and deep integrations with relational and NoSQL databases, Kubernetes distributions and APIs, and cloud platforms. This provides teams with the freedom to choose any infrastructure they want while achieving maximum operational simplicity. Policy-driven and extensible, Kasten also includes features such as full-spectrum consistency, database integrations, automatic application discovery, multi-cloud mobility, and a powerful web-based user interface.

“ Throughout our evaluation, Enterprise Strategy Group determined that Kasten can deliver the data protection and recovery capabilities required by Kubernetes applications. We examined this by comparing how traditional solutions and Kasten address four major use cases: Backup and restore, DR, application mobility, and ransomware protection. ”

Dispelling the Myths of Kubernetes Data Protection
ESG 04 2024

Kubernetes Data Protection Use Cases: Summary

Veeam deeply understands Kubernetes and it's unique challenges with regard to backup, restore, DR, application mobility, and ransomware protection. Veeam Kasten helps enterprises successfully run applications on Kubernetes with confidence.

Veeam Kasten Use Cases



Backup & Restore

Protect your cloud native Kubernetes and VM applications, while preserving your business-critical data.



Disaster Recovery

Manage how backups are replicated off-site to meet business and regulatory requirements.



Application Mobility

Move applications between clouds and on-premises for test/dev, load balancing, data management, and upgrades.



Ransomware Protection

Protect your Kubernetes platform during cyberattacks to preserve business continuity.

➔ For more information, visit [Veeam.com](https://www.veeam.com) or follow [@Veeam](https://twitter.com/Veeam) on X.