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# Kubernetes and cloud-native data management with Kasten by Veeam


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aws

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# Agenda

## Protecting Kubernetes applications on AWS
The shared services platform

## Kasten K10 by Veeam
Cohesive integration with AWS services

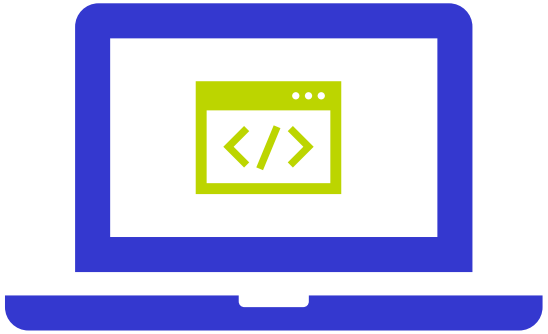
## Customer deployment examples
Kubernetes application backup, DR, and mobility

# Separation of Concerns in Software Delivery

Infrastructure teams build tools that provision, manage, and secure cloud computing infrastructure



Application teams are free to focus on building applications that deliver business value to customers



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# Kasten by Veeam

## Mission

Kasten's **Mission** is tackling Day 2 data management challenges to help enterprises confidently run applications on **Kubernetes.**



**Backup and Restore**



**Disaster Recovery**



**Application Mobility**



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# Enhanced Amazon EKS Data Protection

## Key Customer Asks



### Amazon EKS native

Automation for workflows in Amazon EKS native environments



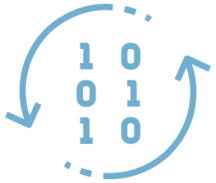
### Multi-Layered Consistency

Consistent data and application resource capture for Amazon EKS applications to Amazon EBS, Amazon EFS, and Amazon S3 storage



### Cross-Region Integrated Mobility

Avoid fragmentation and enable deployment flexibility and DR




### DevOps Speed and Scale

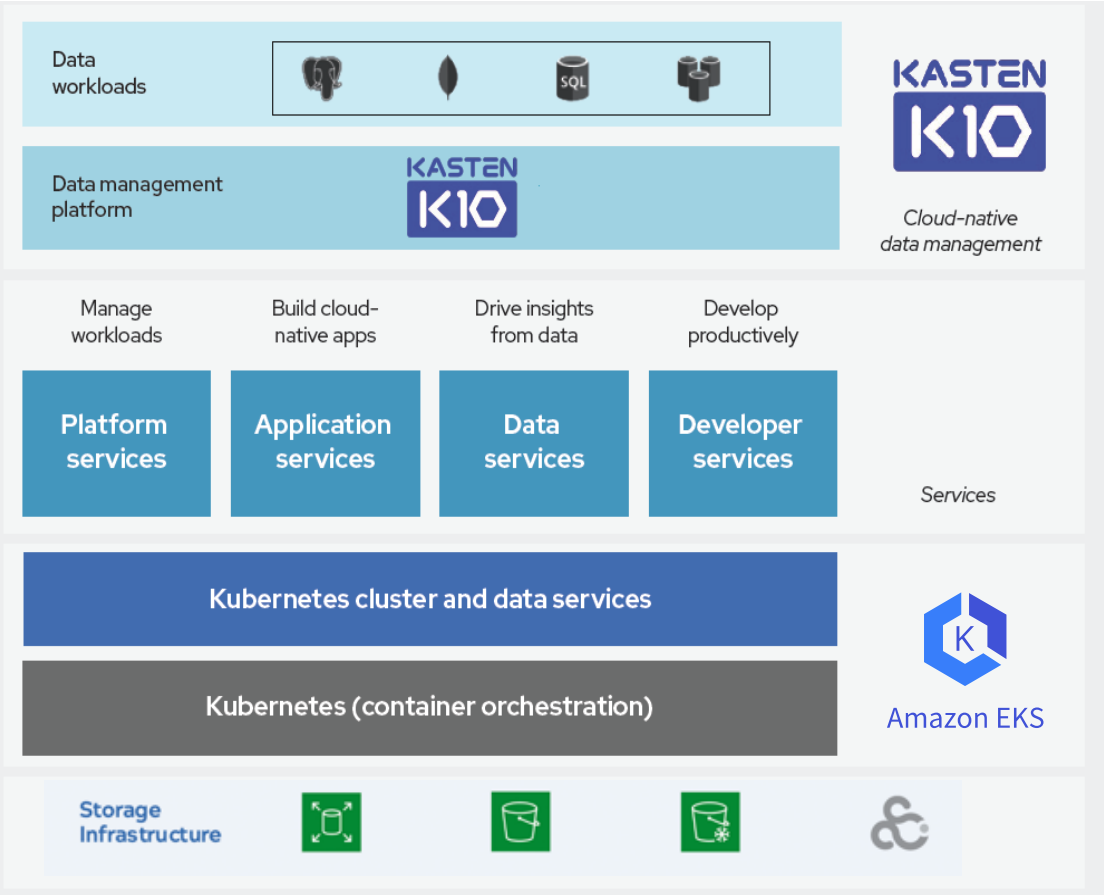
Shift-left environments, secure self-service, and IaC capability

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# Kasten K10 on AWS for Kubernetes Backup and DR

## Cohesive Integration




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- Integration with AWS services
- Database integration (e.g., Amazon RDS)
- BYO Kubernetes distribution

Amazon EKS

- Full application capture
- IAM role mapping
- Cross-Region, -cluster, -account

aws marketplace

- Simplified install
- Billing: Pay-as-you-go, term
- Portable BYO license

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# Kasten and Amazon EKS Customer Scenario

## The Value of Amazon EKS Integrated Data Management

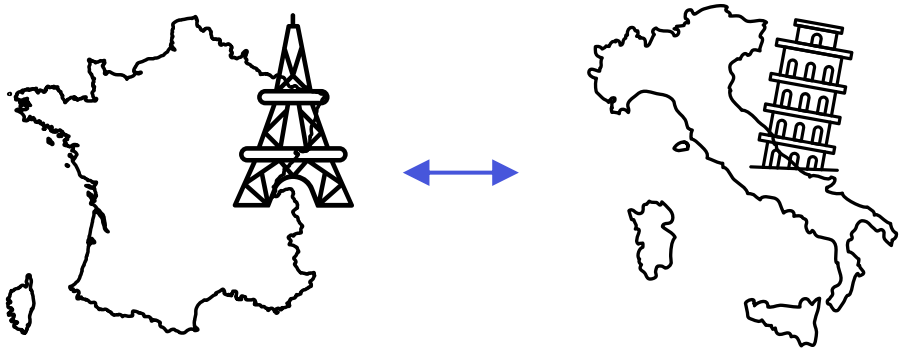
### Customer Requirements

- Deploy Amazon EKS clusters in France Region (EU-West-3) and Italy Region (EU-South-1) using IaC methodologies
- Enable cross-cluster backup and DR across Regions for stateful applications MongoDB, PostgreSQL, MySQL, and Amazon RDS
- Applications to be deployed on mix of Amazon EBS and Amazon EFS backed storage
- Enable ransomware protection

### Key Challenges

- Legacy data management solutions not a fit for cloud-native applications on Amazon EKS
- Data management solutions must support application consistency as well as Amazon EBS, Amazon EFS, and Amazon S3 w/immutability APIs

### Cross-Cluster Backup and DR






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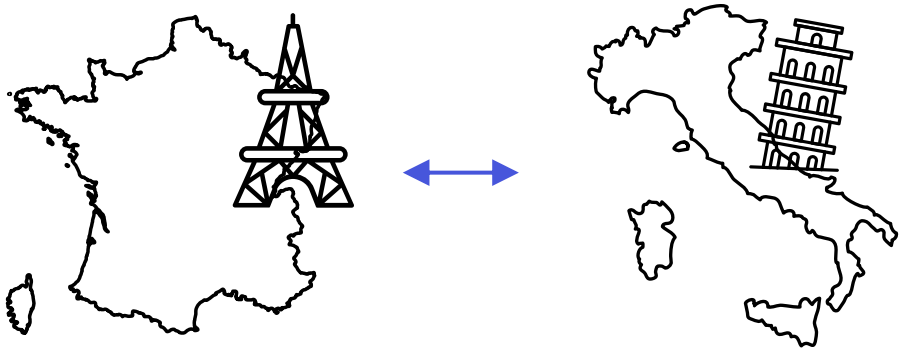
# Kasten and Amazon EKS Customer Example

## Kasten K10 Assists with Production Amazon EKS

### The Kasten K10 Solution

- Kasten K10 can be deploy with AWS Well-Architected Amazon EKS clusters as IaC with Amazon EKS Blueprints
- Deep Kubernetes integration with Amazon EKS and application-centric approach enables easy cross-Region backup and DR
- Native application support with Kasten K10 Application Blueprints support MongoDB, PostgreSQL, mySQL, Amazon RDS, and more
- Kasten K10 natively support application snapshots and backup for Amazon EBS and Amazon EFS storage tiers
- Kasten K10 first K8s solution to support Object Lock API on Amazon S3 storage for ransomware protection

### Cross-Cluster Backup and DR

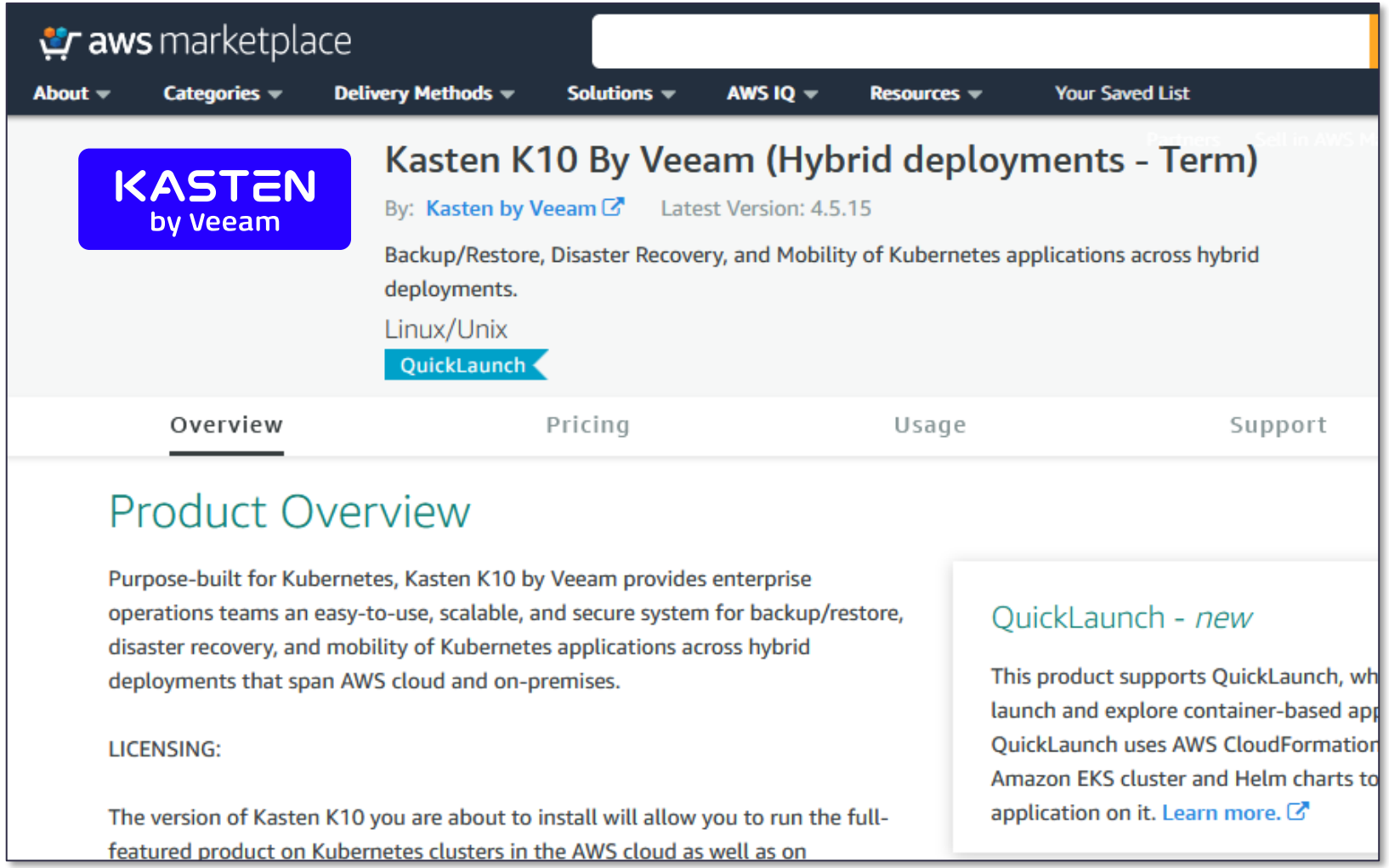





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# Kasten K10 in the AWS Marketplace




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# Building out the demo

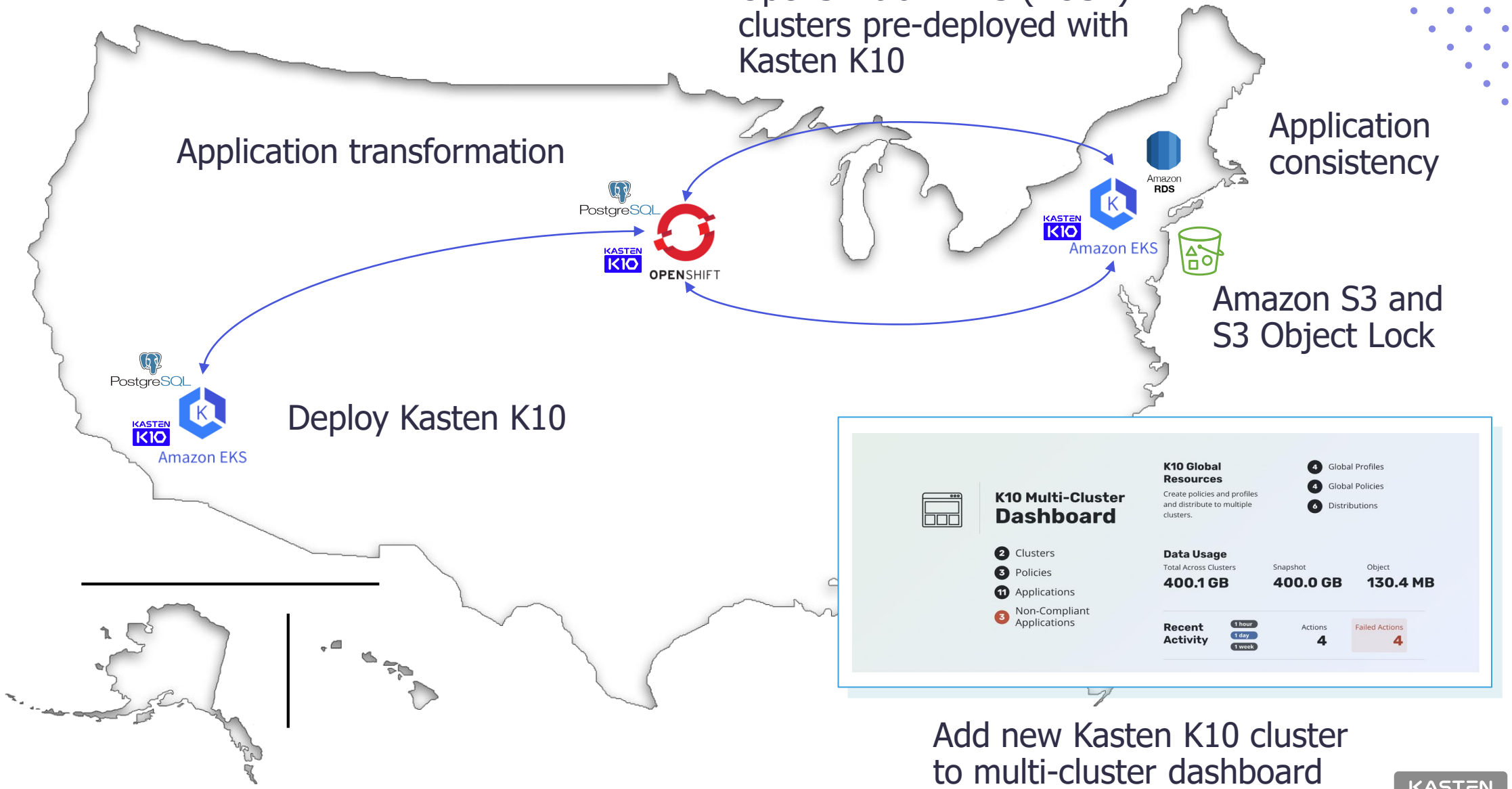
Amazon EKS and Red Hat OpenShift on AWS (ROSA) clusters pre-deployed with Kasten K10

Application transformation

Application consistency

Amazon S3 and S3 Object Lock

Deploy Kasten K10




Add new Kasten K10 cluster to multi-cluster dashboard

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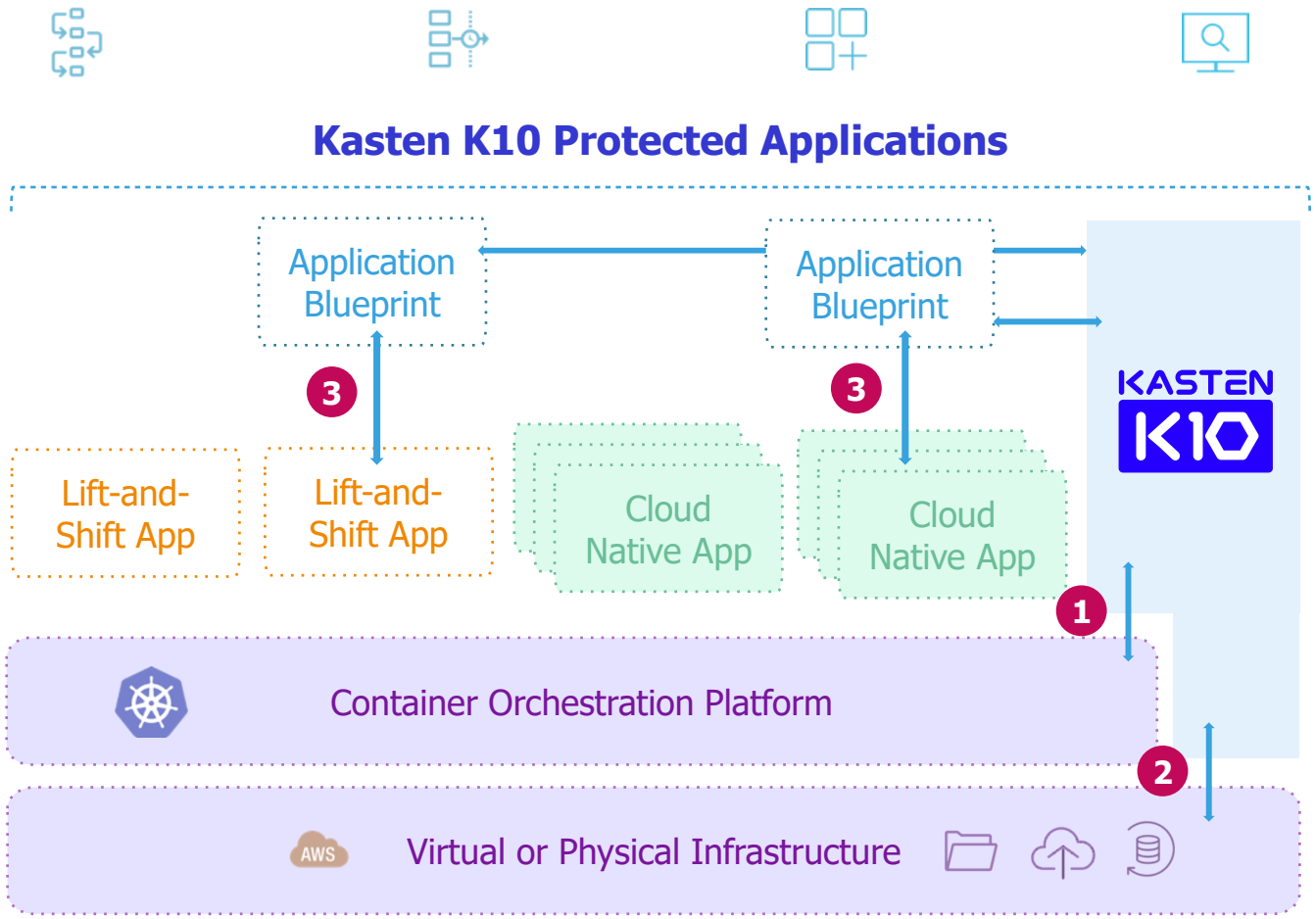
# Kasten K10 deployment




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# Kasten K10 Architecture

## High-Level Overview




### 1 Orchestrator APIs

Uses Kubernetes API to discover applications and underlying components and perform lifecycle operations.

### 2 Infrastructure APIs

**No proprietary storage layer.** Integration with infrastructure specific APIs for the following:

- **Block storage provider** - Snapshot functionality, snapshot and block copy
- **Object/file provider** - S3-compatible object store or other file storage like NFS for artifacts

### 3 Application Framework

**Optional** agentless application-centric hooks can be invoked by easy-to-use blueprints

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# K10 Helm Install with Role

# Kasten K10 Multi-Cluster




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# Centralized Amazon EKS Data Management

## In the Public Cloud or at the Edge




- Simple operations for multi-cluster protection
- Global policies across distributed environments
- AWS IAM Integrated

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# K10 Multi-Cluster Setup Primary

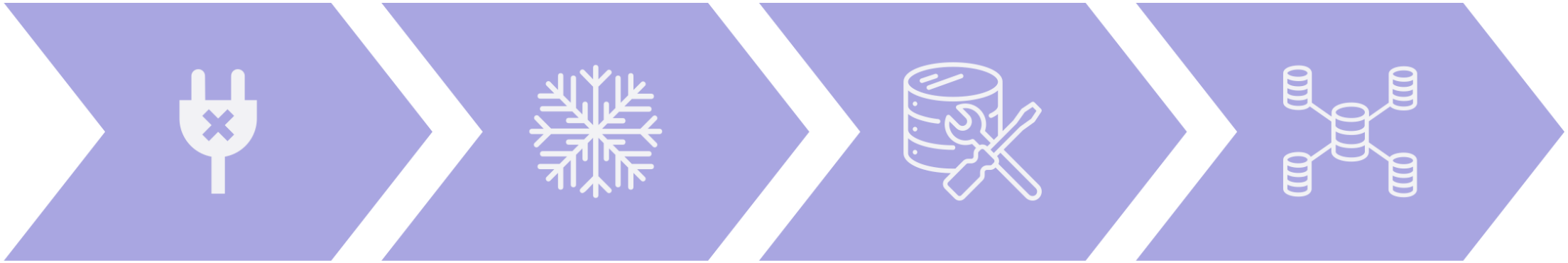
# Kasten K10 Application Consistency




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# Kasten K10 Consistency Spectrum

## for Data Services – Including Amazon RDS



### Crash Consistent

- Storage snapshots
- EBS and EFS

### “app” Consistent

- Freeze data service
- Storage snapshot
- Unfreeze data service

### db Consistent

- Logical dumps via data service-specific tool (e.g., pg_dump)

### System Consistent

- Full app capture
- Combination of tools across data and storage layers

PostgreSQL MySQL mongoDB elastic cassandra FoundationDB redis Couchbase

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# Not all Data is in the Kubernetes cluster

# Restoring your Application which includes AWS RDS Postgres

# Kasten K10 with Amazon S3 with Object Lock




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# Kubernetes Is Not Immune To Ransomware

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## Kubernetes: An Examination of Major Attacks

15 Jun 2021 8:00am, by Manoj Ahuje

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MUST READ: The

## Hackers target Kubernetes to steal data and processing power. Now the NSA has tips to protect yourself

Top causes of compromises include supply chain risks, malicious attacks, and insider threats.



Written by **Liam Tung**, Contributor
on August 4, 2021 | Topic: Security

RELATED




## Newly detected malware targets Kubernetes clusters for cryptocurrency mining



BY **DUNCAN RILEY**

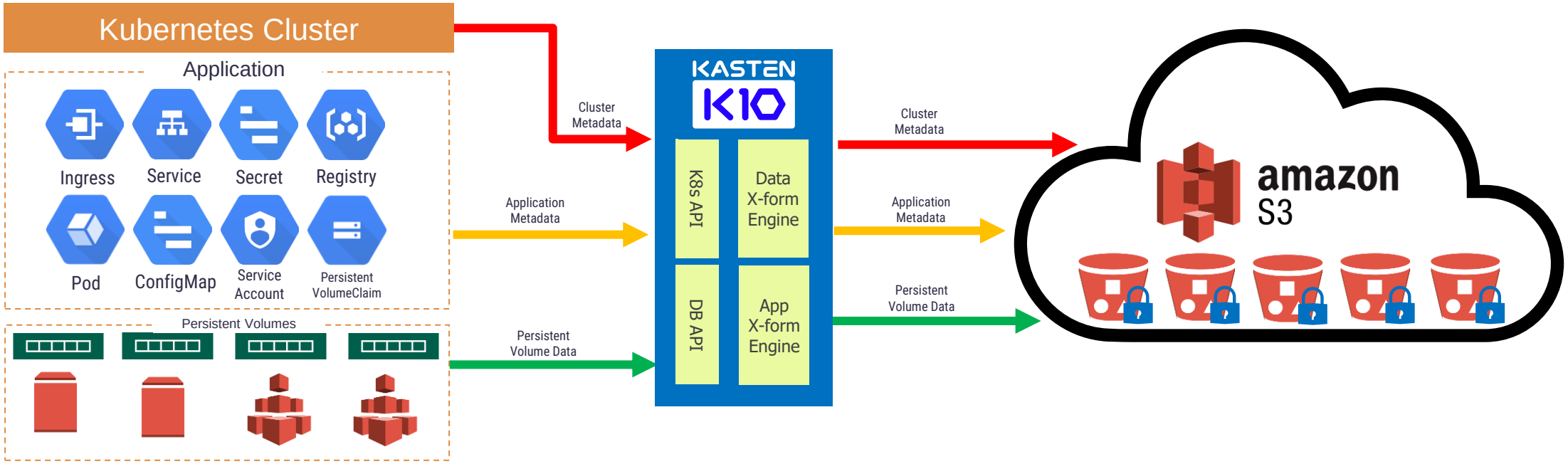
A newly detected form of malware has been detected in the wild, targeting Kubernetes clusters for cryptocurrency mining.

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# Kubernetes Ransomware Protection

## Kasten K10 with Amazon S3 with Object Lock




100% Immutable Data Protection with AWS S3 Object Lock Integrations

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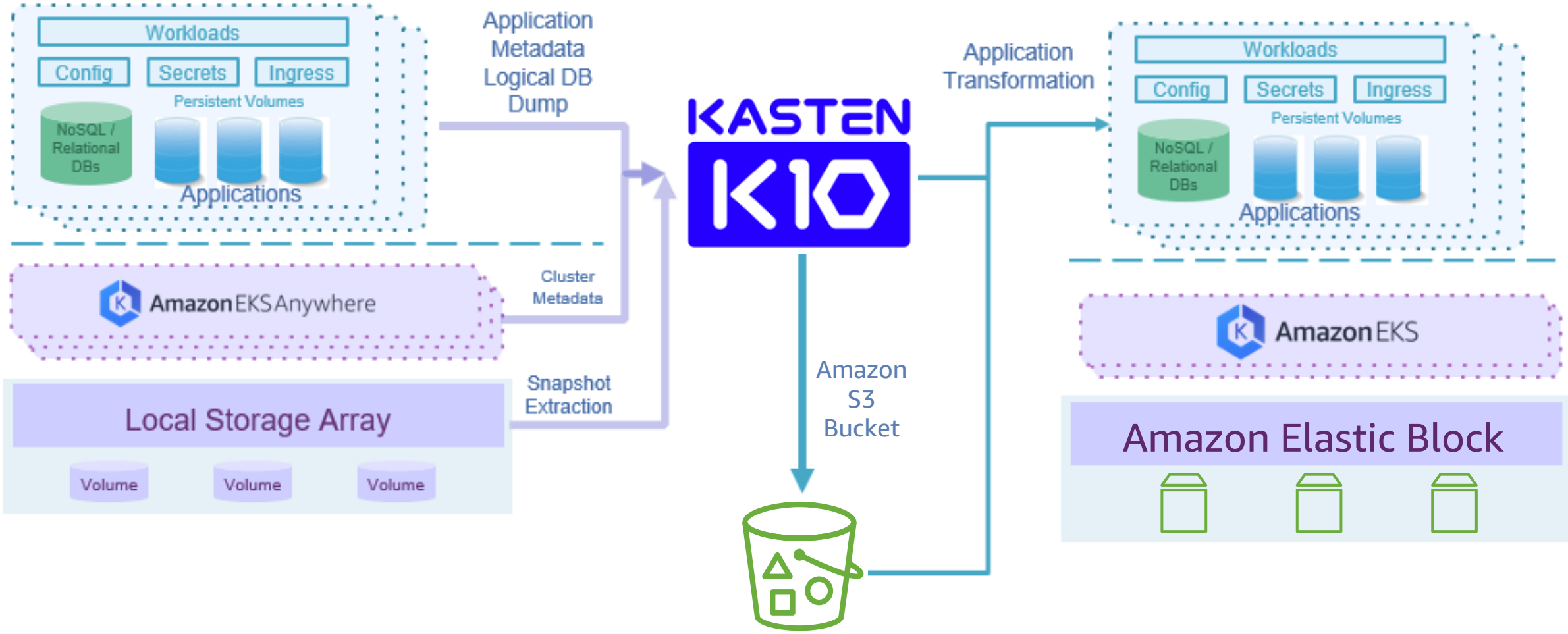
If you don't encrypt your data... someone else will!

# Kasten K10 Application Transformation




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# Application Transformation




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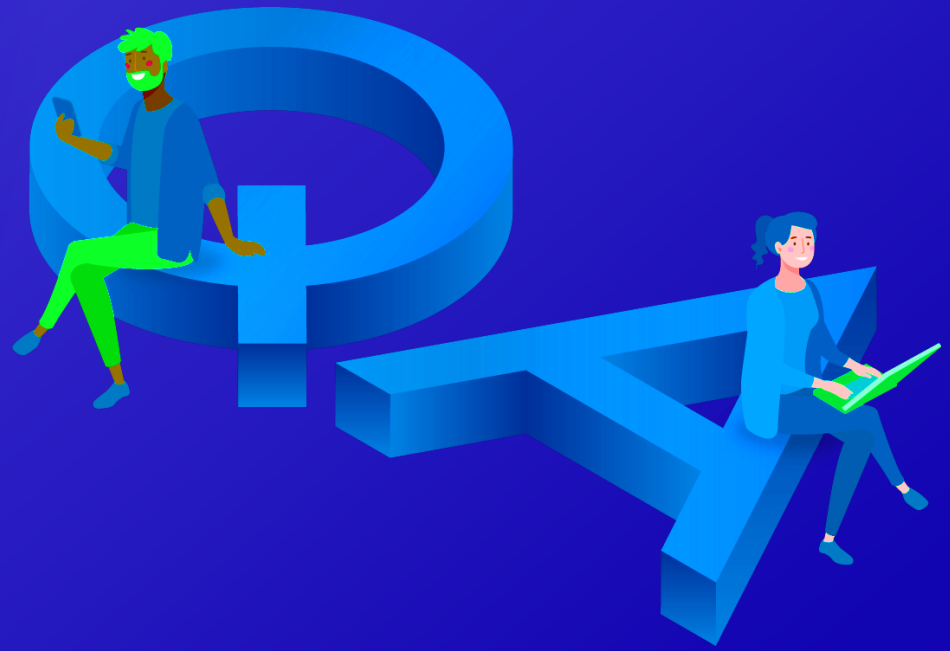
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# K10 Application Transformation

# Try Kasten K10 for free!



kasten.io/try-kasten-k10



# Thank you!

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