

Accelerating Possibilities

A 10X Boost for Amazon EKS Workloads

Containers provide greater development and deployment flexibility as well as make it easy to scale up applications to meet peak workloads and also cost-effectively scale down when they aren't needed. Amazon EKS is a managed Kubernetes service that allows companies to easily deploy and manage containerized services in the cloud. EKS handles common tasks including scheduling, data management, application monitoring, and other key tasks so customers don't have to. EKS provides the flexibility for applications the cloud promises, including the ability to use the Container Storage Interface (CSI) standard for connecting storage to containers.

Normally, Kubernetes container storage is stateless and ephemeral, but an increasing number of containerized applications require access to coherent, shared persistent storage. AWS offers access to several Amazon native storage services, including Amazon EBS for block storage, Amazon EFS for files, and several database options. However, each storage service is optimized for a narrow set of use cases, which means developers have to deploy multiple storage options in silos to meet the needs of the application, adding complexity and costs. Further, these offerings lack the low latency and high IO to support many performance intensive applications customers want to run the cloud.

QUOTE



WEKA support is outstanding, the team members we work with are so helpful, and when we need help they are available. We really appreciate their help."

ALEX WANG,
SR. DIRECTOR, HEALTHCARE DEVELOPMENT, INFOR

The WEKA Data Platform on AWS

The WEKA® Data Platform is the industry's first multi-cloud data platform for AI and next-generation workloads. It provides consistent high performance for files of all sizes and robust data services that deliver a seamless, simplified data management experience with best-in-class economics. The WEKA Data Platform seamlessly combines the performance tier of local NVMe available on EC2 i3en instances for the lowest latency with the capacity tier of S3 for massive scalability – all presented in a single namespace for best economics at petascale. And, WEKA is the only storage solution that supports auto-scaling groups in AWS.

To integrate with EKS or any Kubernetes environment, the WEKA Container Storage Interface (CSI) plugin provides an interface between the logical volumes in a Kubernetes environment – Persistent Volumes (PVs) – and the data platform, enabling customers to deploy stateless WEKA clients to connect the WEKA Data Platform to the appropriate container.

The CSI plugin provisions a Kubernetes pod volume either by an administrator via Persistent Volume or dynamically through a Persistent Volume Claim (PVC). This simplifies the process of moving containerized workloads to the cloud or sharing data across multiple Kubernetes clusters. The CSI plugin also supports using quotas to help manage space consumption for containerized applications. For full data resiliency, the WEKA CSI plugin fully supports WEKA snapshots and WEKA snapshot-to-a-remote-region as well as running the container environment across multiple availability zones (AZs). The WEKA CSI plugin for Kubernetes

KEY INSIGHT

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provides a robust foundation for building a resilient containerized environment for cloud-native applications, but the ultimate bonus is the performance and scalability gains from moving to the WEKA Data Platform in AWS. WEKA has consistently demonstrated huge performance gains of 10x when deployed in a Kubernetes environment.

Making the Cloud Possible for a Containerized Healthcare Application

Infor Cloverleaf, a 20-year-old company, began a journey from on-premises to the cloud but was stymied by resiliency, performance, and multi-tenancy challenges with native cloud services.

Cloverleaf is the industry's most widely deployed integration platform because of its ability to tackle the most complex integration challenges for Electronic Medical Records (EMR) and Electronic Health Records (EHR). The company's application must process millions of medical records and documents daily in the order that they are received across heterogeneous systems. Infor uses the Raima Database and SQLite to process the transactions in an EKS containerized environment. The company's typical customers are hospitals and medical laboratories dealing with sensitive patient information. Therefore, any storage solution must ensure that patient data be kept private and cannot be lost.

Infor's cloud plans were challenged by the inability of the public cloud environment to regularly keep up with their workload which then created the potential for critical data loss. When data was not being processed fast enough and then an Availability Zone (AZ) were to fail, the queued data would be lost.

Infor identified three key requirements that had to be met by a data solution:

1. Resiliency across multiple AWS Availability Zones without the need for complex data movers
2. Multi-tenancy to pass HIPPA/PII audits with customers
3. Maximum performance to ensure 10s of millions of transactions per day with near-zero message queue buildup

During their evaluation, Infor was able to easily integrate WEKA into their Kubernetes environment and quickly demonstrate huge performance gains—going from 6 million to 69 million transactions in a 24-hour period—a **1,052% or 10x increase**.

In addition to the performance gains that eliminated queue build-up, the WEKA Data Platform allowed Infor to implement an easy to deploy and manage multi-AZ architecture, and meet their data privacy needs by using the WEKA Organizations feature with Amazon Virtual Private Cloud (VPC) to ensure compliance with HIPAA privacy regulations.

Because of the capabilities of the WEKA Data Platform in AWS, Infor gained confidence they could run their existing container-based applications in the cloud without the need for a substantial rewrite of the code, freeing up engineering teams to focus on building great products Infor estimated that it saved over two man-years of engineering effort required to refactor its application to run in a containerized cloud environment.

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