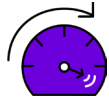SUSE

Accelerate and Scale Cloud-Native, Kubernetes Workloads with the Weka Limitless Data Platform and Rancher

ACCELERATE

Better performance than local NVMe Flash even with containers.

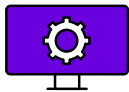Parallelism to match containers, microservices HPC architecture

OPTIMIZE

Mixed workload handling

Resolve poor utilization of expensive GPU resources

Global namespace with NVMe flash for performance and object for economics

SIMPLIFY

Checkpointing for large training jobs

Sharing training data, logs and inference results

End to End Security

ELASTIC AND HYBRID

Built-in data management – protection, DR, cloud-bursting with snap2obj

Scale as you grow

Run on-premises or in AWS

Organizations embark on their Digital Transformation journey for many reasons including, reducing time to market, improve productivity, reduce risk and launch new business models that leverage Artificial Intelligence (AI), Machine Learning (ML), and Deep Learning (DL). While doing so, they are increasingly adopting technologies like containers, NVMe flash-based storage, and GPUs.

Containers are a popular AI/ML deployment model due to their light weightness, immutability, portability, and their agility with orchestration provided by Kubernetes, deemed as the de facto cloud-native operating system.

With more than 76% of enterprises expected to standardize on Kubernetes within the next three years, having a certified WekaIO™ (Weka) and Rancher solution helps customers overcome the challenges of Kubernetes and deliver value from the data center to the cloud to the edge (aggregation), with at-scale performance.

Rancher is a leading choice for enterprises looking to run containers and Kubernetes in production. Rancher addresses the operational and security challenges of managing multiple Kubernetes clusters across any infrastructure while providing DataOps teams with integrated tools for running containerized workloads. Rancher open-software allows organizations to deploy and manage Kubernetes at scale on any infrastructure across the data center, cloud, branch offices, and the network edge. With 37,000 active users and greater than 100 million downloads, Rancher is the most widely adopted Kubernetes management platform.

The Weka Limitless Data Platform™, built on the Weka File System (WekaFS™), is used by eight of the Fortune 50 enterprise organizations to uniquely solve the newest, biggest problems holding back innovation and discovery. A modern file system purpose-built to unlock the full capabilities of today's accelerated and agile data center, WekaFS is optimized for NVMe flash and the hybrid cloud. WekaFS, the world's fastest and most scalable parallel file system for data-intensive workloads, addresses the shareability, performance, and portability challenges by providing stateful and parallel storage, allowing seamless deployment on-premises and easy migration to the Cloud. Using the WekaFS Kubernetes CSI plugin, organizations now have increased flexibility in how and where they deploy containers while delivering local storage performance and latency.

KUBERNETES CHALLENGES IN THE ENTERPRISE

80% of enterprises list persistent storage, data management, and disaster recovery as top barriers limiting container adoption.

Kubernetes at scale is difficult, especially when it comes to data management. Providing stateful-ness is only part of the problem. The state needs to be protected and needs to provide mobility and disaster recovery across hybrid workflows, when compute and storage are disaggregated.

Kubernetes benefits need to be extended over cloud-native, enterprise, and AI/ML applications alike. Equally important is to provide better TCO and utilization of expensive GPU resources, when used, scale performance and capacity independent of each other while improving productivity.

> "
> *While Kubernetes enables a common compute platform across any infrastructure and a consistent set of infrastructure capabilities, it can create overhead and risk. Weka overcomes the challenges of accelerating and scaling cloud native applications which need high performance, shared storage to deliver value faster and shorten time to market.*
>
> **Jim Sarale,** *VP Global Alliances, SUSE*

RANCHER
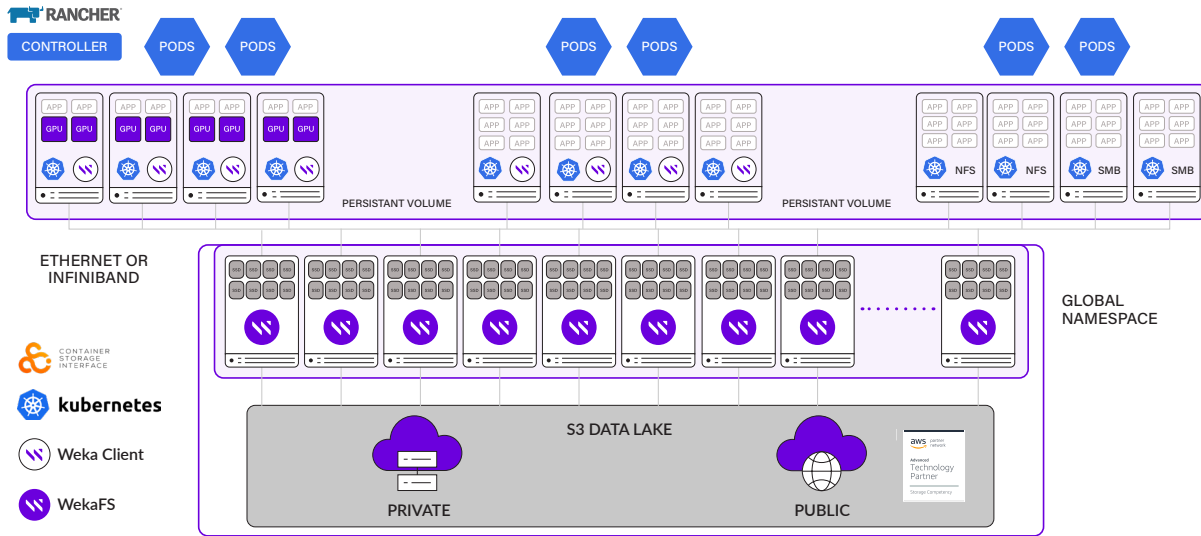
WEKA SOLVES STORAGE PERSISTENCE CHALLENGES WITH ITS CSI PLUG-IN

Using the WekaFS Kubernetes CSI plugin, organizations now have increased flexibility in how and where they deploy containers while delivering local storage performance and low latency. In fact, throughout the system, WekaFS delivers the speed-to-market required of an AI-first solution. The WekaFS CSI plugin is deployed using a Helm Chart and the POSIX agent on Kubernetes worker nodes. WekaFS supports volume provisioning in both the dynamic (persistent volume claim) and static (persistent volume) forms with its own storage class. It also supports ReadOnlyOnce, ReadOnlyMany, ReadWriteOnce, and ReadWriteMany access modes.

WekaFS provides multi-protocol access to containerized applications with POSIX, NFS, SMB and S3. WekaFS also provides a unique way of data protection, mobility and disaster recovery in a Kubernetes environment, with its snap2object feature, where a persistence volume claim can match to a virtual filesystem within WekaFS global namespace. WekaFS supports 1024 of these virtual filesystems in a given global namespace, which can extend over NVMe flash tier and private or public S3 bucket. WekaFS also provides integration with leading KMS (Key Management Systems) for end to end and at-rest security.

WekaFS, thus, addresses the shareability, acceleration, and portability challenges by providing stateful, parallel storage. WekaFS also allows seamless deployment on premises and easy migration to the cloud, all while meeting high performance requirements, mixed-workload handling, and low latency. WekaFS CSI plug-in is available on github and is also part of the Rancher application catalog, where customers can easily download it on Rancher distro installation.

* SPEC® SFS2014 Results: https://bit.ly/35UHLDk

WekaFS Data Sheet: https://bit.ly/36BRJdc
Weka AI™ Data Sheet: https://bit.ly/30UNp70

> " By partnering with SUSE on Rancher, we can offer a solution that fulfills the enterprise- and cloud-ready features required of today's AI/ML container ecosystems. We believe this to be a key step in fulfilling our vision of helping organizations overcome their biggest storage problems with AI- and Cloud-first strategies, while accelerating portability so that they may extract more value from their data, faster.
>
> *Shailesh Manjrekar, Head of AI and Strategic Alliances, WekaIO*

ENTERPRISE VERTICAL SOLUTIONS

- Banking
- Government
- Healthcare and Life sciences
- Manufacturing and Energy
- Telco
- Retail

ENTERPRISE USE CASES

- Big Data, Databases and Messaging Applications
  - » Hadoop, Spark, NoSQL and single instance databases, enterprise business applications
- Edge to Core to Cloud MLOps Pipelines
  - » Autonomous vehicle data pipelines
- CI/CD DevOps Pipelines
  - » Cloud native applications
- Modernizing IT Infrastructure