

Kaminario's K2.N Opens a New Paradigm for Shared Storage



Kaminario K2.N builds on Kaminario's strength as the high performance, all-flash backbone for delivering Storage as a Service, with a set of software-powered solutions that fully leverage the capabilities of emerging NVMe / NVMeOF technologies.

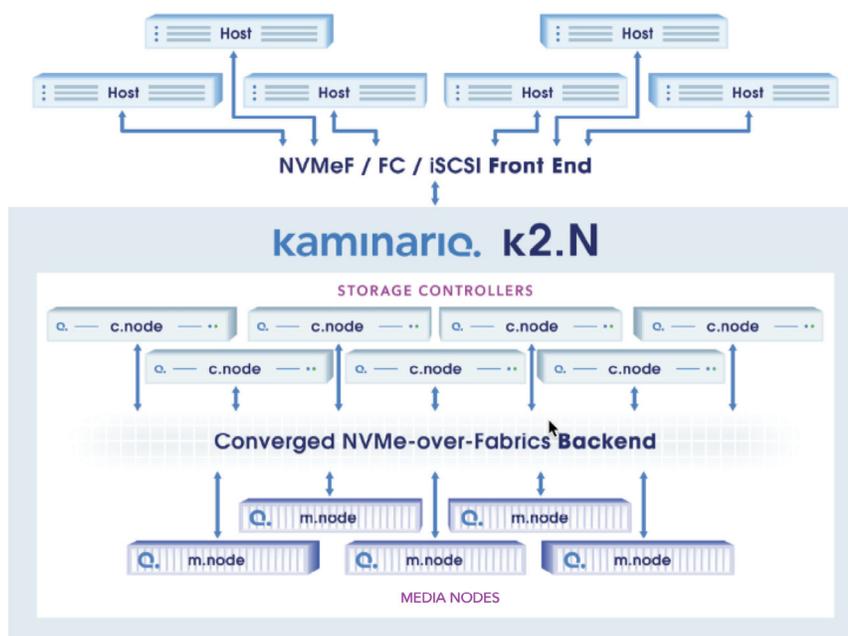
K2.N Overview

Kaminario K2.N is a true scale-out storage platform with a backend based on converged Ethernet and NVMe over Fabrics (NVMeOF), and frontend support for NVMeOF, Fiber Channel, or iSCSI. Powered by key enhancements to VisionOS, Clarity and Flex, K2.N supports enterprise-class rich data services. The K2.N delivers industry leading data reduction and native data protection powered by VisionOS, advanced machine learning and infrastructure intelligence through Clarity, and resource automation and orchestration through Flex.

The K2.N is comprised of Storage Controller Nodes (c.nodes) and Storage Capacity/Media Nodes (m.nodes) that support different configurations of x86 based servers and JBODs respectively. The K2.N is able to deliver the exact level of performance and capacity needed for a workload by enabling users to compose storage resources comprised of any number of c.nodes and m.nodes.

K2.N Architecture

The NVMeoF mesh architecture enables users to introduce new storage components or hosts in to the storage fabric as needed and on the fly. Flex then automates the process of installing and presenting different components into the storage fabric.



Ultimate Datacenter Automation and Orchestration

The combination of an NVMeOF storage network and Kaminario Flex enable the K2.N to achieve new levels of flexibility and resource optimization – based on business and workload requirements.

The K2.N and Flex take advantage of the low latency and high throughput capabilities of NVMeOF to easily orchestrate storage resources, both c.nodes and m.nodes, as needed. Changing requirements is a reality of the datacenter – where Flex users can associate unused c.nodes with m.nodes to create new K2.Ns; or automatically move resources from one K2.N to another based on pre-defined capacity and performance SLAs.

Users can also leverage policy based features to replace broken components and decommission unused components, returning them to the “free” pool and making them available for other K2.Ns if needed.

Kaminario VisionOS

Kaminario VisionOS is a software-defined storage architecture and framework for delivering advanced data services. VisionOS runs on industry standard hardware to deliver enterprise class data services within a highly flexible scale-out shared storage framework.

VisionOS turns industry standard hardware into the world’s most capable scale-out, all-flash storage array. Kaminario uniquely delivers all-flash storage array functionality with controller resources (c.nodes) logically decoupled from capacity (m.nodes). This results in an extremely flexible and scalable storage environment that can leverage the latest hardware advancements. Kaminario’s enterprise data services deliver industry-leading solid state storage array capabilities within a unique composable storage framework.



DataShrink

With industry-leading data reduction including advanced compression and de-duplication, VisionOS-powered storage environments lead the industry in capacity and cost efficiency.



DataProtect

Native array-based snapshots and replication allow customers to return to any point in time. Data-at-rest AES256 encryption makes sure that data is kept private and safe at all times.



DataManage

Kaminario is managed via intuitive web GUI, fully scriptable CLI, and a set of programmable RESTful APIs. SNMP and Syslog enable system data access for monitoring and reporting.



DataConnect

RESTful API allows for integration with external applications and frameworks including VMware vSphere and LogInsight, Microsoft VSS, OpenStack, Kubernetes, and Cisco UCS director.

Kaminario Clarity

Kaminario Clarity is a SaaS-based predictive analytics platform that includes a comprehensive set of management and monitoring functionalities for Kaminario infrastructure, including a unique capability to leverage application-level intelligence, machine learning, and big data analytics.

Clarity's big data platform analyzes over 150 million call-home data points from Kaminario deployments around the world every day to drive automation and predictive alerting. Clarity's advanced analytics engine provides recommendations on preemptive resource optimization and enables a whole new approach of managing business and application SLAs.



Multi-System Management

Clarity provides a centralized cloud-based portal for effortless monitoring and management of multiple virtual arrays from a single pane of glass.



From Realization to Action

Applying machine learning to install base data, Clarity analytics provide insight and advice on optimizing your storage environment.



Automated Case Management

The Clarity Data Hub monitors real-time events to automatically initiate maintenance cases and ensure a seamless support experience.

Kaminario Flex

Kaminario Flex is a storage orchestration platform for managing storage resources in your Kaminario environment. Dynamically compose, optimize, manage, and release storage resources with no physical reconfiguration. Orchestrate storage resources as new workloads emerge, move, and evolve over time. Scale-up. Scale-out. Scale-in. Scale-off. Welcome to the era of composable storage.

Flex leverages Kaminario's unique software-defined architecture to dynamically associate controller resources (called c.nodes) and solid state media resources (called m.nodes) to build shared storage assets that deliver industry-leading all-flash capability. Virtual arrays deliver enterprise class storage capabilities but with a game-changing level of flexibility. Build and manage storage resources with a swipe of your finger or a line of code. Composable storage is the next-generation paradigm for cloud-scale, business-critical applications.



Orchestrated Composability

Dynamically compose and orchestrate storage resources from a shared pool of controllers (c.nodes) and media (m.nodes) on a common NVMeOF network.



Orchestrated Containers

Create, assign, and manage storage resources for containerized applications on the fly. Leverage the Kaminario RESTful API to dynamically request storage resources.



Orchestrated Automation

Incorporate analytics and optimization from Clarity to automate storage management tasks based on a rules engine maintained in Flex. Realize the potential of an autonomous storage infrastructure.



Kaminario's K2 provided the best combination of scalability, performance, and cost efficiency. Their architecture gives them the unique capability to deliver consistently high performance in mixed workload."

Frederick Van Haren
Principle,
HighFens Consulting



K2.N c.nodes*	
IOPS	Up to 550K x N
Throughput	5.5GB/s x N
Latency	100µs
Host Connectivity	FC -- 16/32 GB iSCSI – 2 x 25GbE NVMeOF – 2 x 25GbE
Backend Connectivity	2 x 50 GbE ROCE v2

K2.N m.nodes	
SSD Capacity	JBOF Useable Capacity
3.84TB	60TiB (300TiB effective)*
7.68TB	120TiB (600TiB effective)*
Connectivity	4 x 100GbE ROCE v2

*Kaminario typically observes DRR of 5:1

About Kaminario

Kaminario delivers a Storage as a Service (STaaS) platform for business-critical applications hosted on and off premises. Software composable architecture combined with advanced analytics and automation let our customers realize the agility and simplicity of public cloud while gaining the performance and control of dedicated infrastructure. With disruptive economics, Kaminario delivers flexible, consumption-based licensing that aligns with our customers' business priorities. Headquartered outside of Boston, Kaminario works globally with a network of strategic partnerships. For more information, visit www.kaminario.com.

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