kaminario.

Kaminario DataProtect™

High Availability and Data Protection

Kaminario DataProtect Key Features and Benefits

HIGH AVAILABILITY:

- No single point of failure
- Full HW redundancy
- Fast failover and recovery
- Redundant host connections

NON-DISRUPTIVE OPERATIONS:

- Non-disruptive code upgrades
- Hot-swappable components
- Little to no performance impact
- Automatic self-healing

DATA PROTECTION:

- Fast, space-efficient snapshots
- RAID mirroring and striping
- Support for third-party replication

The Kaminario K2, with its innovative DataProtect capabilities, is architected from the ground up to provide enterprise-class data availability and data protection. Based on Kaminario's unique, patent-pending Scale-out Performance Storage Architecture (SPEAR), DataProtect embodies a number of innovative high availability and data protection features that are integral to the Kaminario K2 system, including hot-swappable components, reliable fast failover, Flash resiliency, and space-efficient, ultra-high-speed snapshots (snaps). DataProtect also supports third-party replication processes within the K2 for disaster recovery operations. DataProtect's high availability and data protection features are designed to maintain the K2's high performance standards.

Self-Healing High Availability
No single point of failure, no disruption, no data loss

DataProtect supports a number of self-healing high availability and fast data protection features. Self-healing means that the K2 automatically detects failures, initiates a recovery process and tries to fix and phase in the faulty component, limiting the servicing needs of the K2.

The K2 hardware components are all redundant and ensure no single point of failure. Its built-in fast and reliable failover and recovery capabilities protect applications and databases from experiencing a significant interruption in data access, and there is minimal performance degradation during recovery – less than 25% impact for a full node failover that takes less than 90 minutes to complete.

The K2 is optimized for Flash resiliency and endurance and offers a 7 year warranty for its Flash drives. Also, when the K2 software requires an upgrade, it is done in a nondisruptive manner. There will be no interruption in system availability and little to no performance degradation.

All hardware components in the K2 are hot-swappable. So, for example, if there is a disk failure, the K2 would automatically notify the systems administrator ("call home") and let them know that an SSD has failed. In the meantime, the K2 is automatically accessing data from the internal backup SSD without impacting application or database performance. The SSD can be pulled from the K2 without bringing the system down or disrupting data access.

Kaminario Snapshots Key Features and Benefits

Instant creation and recovery

Creating a snapshot takes less than tens of milliseconds; restore and recovery are enabled from any snapshot.

Space-efficients

Snapshots are space-efficient and are managed to allow maximum SSD endurance and minimum data overhead.

Does not affect production performance

Production is not impacted when creating or accessing a large number of snapshots.

Writable snapshots

Any snapshot can be accessed in read/write at any time and simultaneously by hosts.

Thousands of snapshots

The system supports up to 8,000 snapshots system-wide.

Application integration

K2 snapshots work seamlessly with databases in UNIX operating systems and Windows (supports VSS).

Automatic Data Protection

Kaminario K2 DataProtect includes automatic data protection through a variety of methods such as RAID (Redundant Array of Independent Disks) and snapshots. Kaminario's fast, space-efficient snapshots enable faster, more frequent backups for both production and test and development environments. Snaps can be taken in just milliseconds, 20 times faster than with any legacy SAN system on the market today. In addition, the K2 supports more than 8,000 snapshots system-wide, double what is possible on most other systems. Kaminario uses redirect-on-write instead of copy-on-write for faster performance, and since the snapshots are space-efficient, K2 can support a higher volume of snaps. Kaminario snapshots do not impact production performance and can be used to off-load tasks from the production server.

How Kaminario Snapshots Work

Snapshots are fundamental to overall enterprise data protection and business continuity. They are required to maintain a consistent record of data that is being backed up at a certain point in time. Snaps are static representations of the production data; they present the data as it was at the time the snapshot was taken. The K2 system allows maximum flexibility by enabling multiple layers of snaps, snapshot management capabilities and full control over snapshot retention.

Kaminario snaps are designed to be fast. The expected I/O performance of a snapshot in a K2 is equivalent to the expected performance from a production volume. The K2 snapshot technology is capable of taking snapshots of the data in less than tens of milliseconds (the system quiesce time is 10 milliseconds), which enables faster, more frequent backups. K2 exposes copies or "replicas" of snapshots to the host for development, performance tests and other I/O processes.

Kaminario's SPEAR Storage OS has the ability to create point-in-time snaps from production volumes or other replicas. Snaps are performed on consistency groups, which are a collection of logically related production volumes. Creating

a snap is accomplished by creating a "picture" of the data stored in a consistency group at the time the snapshot was taken. By redirecting any new writes to a different location (rather than copying on writes), the system is able to preserve the snapshots and manage the point-in-time snap when it is needed. This redirect on write method is faster than legacy copy on write methods because it takes fewer I/Os to create and manage the snapshot. The result is higher performance in your backup, recovery, testing and development processes.

The K2 snapshot technology is highly space-efficient, thus optimizing the space utilized in the storage system for snaps. The K2 allocates storage for the data that is actually used rather than for a snapshot's entire address space, which can result in significant cost savings. In the K2, the space efficiency facilitates a high number of snapshots: up to 512 per consistency group and up to 16 consistency groups (or more than 8,000 snapshots). This equals more snapshots on less capacity than can be taken by legacy storage vendors.

Summary

The K2 high availability and data protection capabilities are fast, efficient and accurate, and they meet the high demands of any enterprise backup or disaster recovery environment when using third-party replication solutions. Combining high performance Flash SSDs together with SPEAR Storage OS's self-healing high availability and data protection enables IT professionals to safely leverage the advantages of SSD media. The K2's unique snapshot and replication capabilities are designed for fast and safe backups.

About Kaminario

Kaminario, the leading all-flash storage company, is redefining the future of modern data centers. Its unique solution enables organizations to succeed in today's on-demand world and prepares them to seamlessly handle tomorrow's innovations. Only Kaminario K2 delivers the agility, scalability, performance and economics a data center requires to deal with today's cloud-first, dynamic world and provide real-time data access -- anywhere, anytime. Hundreds of customers rely on the Kaminario K2 all-flash array to power their mission critical applications and safeguard their digital ecosystem.

Headquartered in Needham, MA, Kaminario works with an extensive network of resellers and distributors, globally.

For more information, visit www.kaminario.com.

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Contact a business development representative to answer any questions you may have.

Schedule a Demo
Schedule a demo with an engineer and learn if Kaminario's solution works for you.

Request a Quote
Request a quote for your application from our business development team.