Private Cloud Data Centers Powered by Cisco and Kaminario

CISCO AND KAMINARIO

Cost effectively combine to provide that essential foundation without compromising on performance

- Scalable High Performance

- Cost Efficiency

- Operating Simplicity

- Architecture Designed for What's Next

Virtual Optimized Infrastructure Accelerating Possibilities

The benefits of private cloud start with challenges. Enterprise IT needs simplicity, agility, and power. IT architecture must be scalable and cost efficient. High-performance data storage and computing are essential. Together, Cisco's Unified Computing System™ and Kaminario's all-flash storage provide the essential building blocks for virtualized cloud infrastructures.

Critical Solutions

Server Virtualization/Private Cloud

Server virtualization has laid the foundation for cloud computing growth. Cisco's Unified Computing System (Cisco UCS) and Kaminario's K2 all-flash array join to meet increased performance demands from growth in virtual machines and data scale.

### Virtual Desktop Infrastructure (VDI)

Companies create VDI initiatives to gain substantial returns on investment (ROI) and provide workforce flexibility. Cisco and Kaminario solutions serve to maximize the density of virtual desktop processing and storage while delivering low latency, scalable and cost efficient solutions.

SaaS

The flexibility of cloud computing allows businesses to increasingly shift models to Software as a Service (SaaS). They gain tremendous advantages in application development and delivery along with decreased complexity, comprehensive data protection, and consolidated disaster recovery. Cisco and Kaminario can help SaaS customers to achieve increased speed, cost reductions, and reliability on a global scale.

Big Data & IIoT

The Industrial Internet of Things (IIoT) is pushing the growth of an already expanding Big Data pool. Companies can substantially improve revenue results through real-time analytics, provided the supporting infrastructure is in place to process and store vast volumes of data with consistent performance. The combined Kaminario and Cisco solutions provide scalable processing power and bandwidth at extremely low latencies to facilitate the advantages of real-time Big Data analytics.
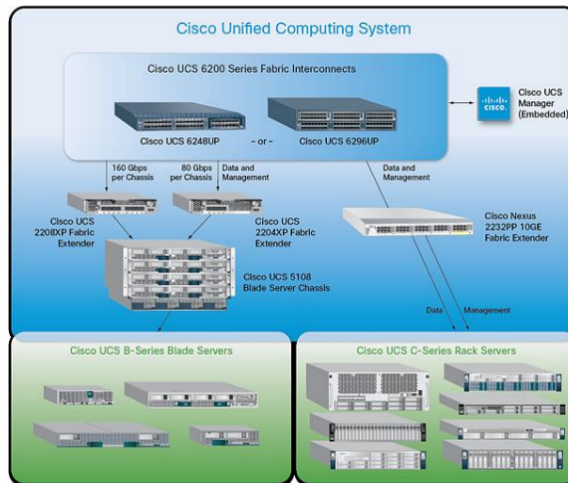
CISCO UCS

- Integrated infrastructure cloud fabric foundation for highly efficient cloud deployments

- Consistent policies applied for on-premise and private cloud applications to ease deployment, management, and migration

- Cisco Scalable Architecture for VDI supporting high-performance, dense, large-scale environments, logging up to 5000 desktops in as little as 30 minutes

- UCS provides an agile platform for clustered analytical infrastructure with high bandwidth, rapid failover and write-once architecture that lowers costs

Cisco Unified Computing System (UCS)

The Cisco Unified Computing System addresses challenges faced by enterprise IT, making it an ideal platform for mission-critical implementations.

Comprehensive Management

Cisco UCS uses an embedded, end-to-end management system with a high-availability active-standby configuration. Role and policy-based management mean subject matter experts can continue defining server, network, and storage access policies. Defined firmware, configuration, and connectivity can be automatically deployed to one or more servers in minutes, not hours or days. The result is greater operational simplicity and relief from tedious, manual assembly processes.

Radical Simplification

The Cisco Unified Computing System represents a radical simplification to the way that servers and networks are deployed. The system reduces network access-layer fragmentation by eliminating switching inside the blade server chassis. It integrates compute resources on a unified I/O fabric that supports standard IP protocols as well as Fibre Channel through FCoE encapsulation. It also eliminates limitations of fixed I/O configurations with an I/O architecture that can be changed through software on a per-server basis, providing connectivity on a just-in-time basis. The result is extreme simplification with fewer switches, cables, adapters, and management points, all helping to reduce cost, complexity, power, and cooling overhead.

High Performance

UCS blade servers are based on the Intel Xeon 5670 and 7500 series processors. Performance is adapted to application demands, increasing the clock rate on specific processor cores as workload and thermal conditions permit. Combined with patented Cisco Extended Memory Technology, the processors deliver extreme database performance with memory capabilities needed to support large in-server caches. The system is integrated within a 10 Gigabit Ethernet-based unified fabric that delivers throughput and low-latency characteristics required of the cluster's public network, storage traffic, and high-volume cluster messaging traffic.

KAMINARIO K2 ALL-FLASH ARRAY

- Scale-out for linear performance and capacity growth with consistently low latency

- Scale-up to increase capacity with better density and lower $/GB

- Advanced processor, networking and drive technology delivers consistent low latency and high throughput/IOPS for virtual server workloads

- Global inline selective deduplication lowers virtual desktop storage physical capacity needs by up to 20:1. Global deduplication domain extends to all added capacity

- Benchmarks, run on a single K-Block K2 array holding 1,500 virtual desktops, measured only 8 minutes required to boot all desktops and only 3 minutes required to power them down, with array latency remaining well below 1.0 ms

- The time required for data preparation and analysis can be cut by over 90%. Customers running Big Data processing tasks on a K2 array have achieved a 16X improvement in I/O performance, reducing processing time from 11 hours to less than an hour.

Kaminario K2 All-Flash Array

The Kaminario K2 All-Fash storage array delivers predictable performance, cost, scale, resiliency, and simplicity so organizations can handle ever-changing and unforeseen business requirements as they arise.

Cost Efficiency

Every element of the K2 design is optimized to balance costs with value and functionality. Customers can start small and grow with all benefits and capabilities included at every step. Added operational savings include reduced energy consumption and larger storage capacity in a smaller data center space. K2 storage is designed for now and whatever comes next.

Scalability

Kaminario's K2 delivers value at every stage of growth. Scale-up to add capacity. Scale-out to add performance. Assured Scale supports adding the latest drives and processors to an expanded array with Assured Capacity. Linear growth maintains consistently low latency while expanding both capacity and performance.

Performance

A unique software-defined scale-out architecture combined with selective global deduplication and adaptive block size powers Kaminario's exceptional all-flash performance that smoothly handles simultaneous mixed workloads. It easily combines transaction processing and analytics workloads onto a single array.

Resiliency

The Kaminario K2 is designed to meet the most stringent requirements of sensitive enterprise applications. The advanced failure handling delivers a new assurance level in data protection. Sophisticated engineering and non-disruptive expansion maintain continuous performance fused with a high availability design and active system monitoring.

Simplicity

The K2 All-Flash storage array simplifies the user experience. It globally optimizes data and metadata layout as the system expands. Administered via an intuitive browser-based GUI, K2's built-in intelligence automatically executes RAID optimization, performance tuning, data distribution, monitoring, and capacity management. K2 supports a fully scriptable CLI, RESTful APIs, VMware vCenter plug-in and Microsoft VSS.

CISCO

Case Studies

The Cisco UCS architecture and Kaminario K2 array combination delivers a suite of cost-effective configuration choices that flexibly address requirements for compute power, performance, scale-up and scale-out capabilities.

A Community Health Care Provider challenged by poor application performance

A large independent multi-specialty physician group was experiencing significant growth. Now in over 100 locations and suites spread in 40 cities throughout the Southwest, their Electronic Medical Records system suffered from poor performance. High Availability features and DR capabilities no longer provided sufficient protection. Their hybrid storage array could no longer keep up. Their users were complaining.

Cisco UCS and Kaminario combined to provide a simple, scalable solution that delivers consistently superior performance with latency reduced from 20ms to less than 1ms. All performance problems have been eliminated, along with user complaints.

A Global Payments Company challenged by growth and inconsistency

Operating a SaaS-based business, a global payment company was experiencing rapid growth. However, the existing compute and storage infrastructure was not able to accommodate the expanding performance requirements. Capacity demands were doubling every six months. Transaction times were lagging. Latency had degraded. Keeping the promise to service any number of payees or increase in transaction volumes had become a challenge.

Cisco UCS blade servers now provides this customer with converged server and network capabilities combined with K2's flexible all-flash storage. The solution delivers required scalability that enables the business to deploy new environments as their customer base continues to grow. Online expansion of capacity and performance are carried out non-disruptively, delivering the same consistent sub-1ms latency and benefits their growing customer base.

Contact

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.

About Kaminario

Kaminario, the leading all-flash storage company, is redefining the future of modern data centers.
To learn more, please visit www.kaminario.com.