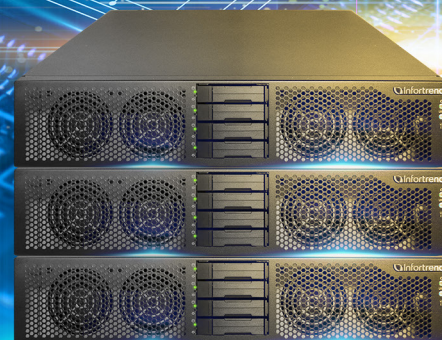




Explore IB

Edge Computing

Advanced Edge (Cluster)



Highlights

High Performance

- One KS provides up to 1M IOPS, 30 GB/s read, and 25 GB/s write throughput
- Supports AMD EPYC™ 9004 Series 64-core CPUs, scaling up to 320 cores per cluster, and up to 2 Nvidia GPUs per node

Comprehensive Data Protection

- Multi-node data replication ensures no data loss
- Remote backup of VMs and application related data to cloud or storage

User-Friendly Management

- EonOne for managing compute, GPU, and storage resources
- EonKube for managing VMs and all deployed applications

Scalability

- Expand KS cluster up to 5 nodes
- Expand storage with EonStor GS and DS solutions

Hardware Options

- Two models with configurable GPU options for various application needs

Support for Different Application Types

- Run cloud-native applications, traditional applications, and virtual machines

Introduction

Advanced Edge is a scale-out cluster solution built with three or more nodes for growing edge computing environments. It delivers both high availability and horizontal scalability, enabling node-level failover while allowing expansion of compute and storage capacity as application demands increase. With efficient resource utilization and built-in load balancing, Advanced Edge optimizes workload distribution for stable performance in larger-scale edge deployments.

High Performance

Advanced Edge compute nodes, KS, deliver outstanding storage performance, achieving 1M IOPS, 30 GB/s read, and 25 GB/s write throughput with high-speed U.2 NVMe SSDs. Offering flexible and powerful computing options, KS includes KSa models that support dual AMD EPYC™ 9004 Series 64-core processors, scaling up to 320 cores per cluster, and up to two Nvidia GPU cards per node.

Furthermore, the system supports GPU computing, making it ideal for large-scale manufacturing, city-level surveillance, city transportation systems, and smart city deployments that require scalable resources, high availability, and centralized analytics.

Comprehensive Data Protection

KS supports multi-node data replication (Replica x2 and x3), ensuring no data loss in the event of node or hard disk failure. To protect applications, KS can regularly back up data to remote locations, offering flexible backup options, including backup of VMs and application-related data. This ensures fault tolerance and comprehensive disaster recovery capabilities of KS.

User-Friendly Management

KS offers a user-friendly solution for efficient management with EonOne and EonKube graphical user interfaces. EonOne provides comprehensive hardware management for compute, GPU, and storage resources. Users can effortlessly monitor the resource status of each node and the overall cluster, making it simple to identify hardware issues. This enhances management efficiency and ensures optimal performance across the system.

EonKube is designed for managing software, including VMs and all deployed applications. It provides a simplified Kubernetes application deployment, making it more accessible for enterprises by eliminating the need for complex configuration and coding. The EonKube dashboard offers a clear view of system resources, such as CPU and GPU usage for each application, allowing administrators to monitor and adjust resource allocation as needed. Users can also easily check for the latest versions of built-in applications maintained and verified by Infortrend. Updates can be applied with a single click, streamlining the process and eliminating manual version checks, update package searches, and testing.

BMC (Baseboard Management Controller) support allows IT teams to remotely manage and monitor KS systems in both data center and edge environments.

Scalability

KS supports scalable cluster expansion, allowing users to start with a three-node cluster and non-disruptively expand up to five nodes by adding one node at a time. As compute and storage demands grow, additional KS nodes can be seamlessly added to increase cluster resources and support evolving application needs.

To expand storage capacity, KS supports various storage expansion options, allowing connection to EonStor GS unified storage or EonStor DS SAN storage.

Flexible Hardware Options

KS for Advanced Edge deployments offers two compute node models with configurable options for GPUs and U.2 NVMe SSDs, allowing enterprises to select the model that best fits their application needs. These models come in a space-efficient 2U form factor and support 25GbE and 100GbE network interfaces.

Designed for edge deployments at the source of data generation, the **KS 3000U** series offers a short-depth 2U (50 cm) design and includes the following models:

- **KSa 3004U** supports up to two full-height 450W GPU cards in a compact edge computing platform
- **KSa 3004UE** is a low-noise model operating at 55dB or less, designed for people-occupied environments such as offices and retail stores. It features low-power operation (down to 80W) and supports one GPU card.

Support for Cloud-Native and Traditional Applications

KS features a built-in Kubernetes platform for running cloud-native containerized applications. With a built-in hypervisor, KS provides support for traditional applications by running VMs. This facilitates enterprises to run all workloads on a single platform. Furthermore, KS offers a built-in Application Marketplace with a diverse selection of applications for multiple domains and industries. The Marketplace includes applications designed for HA Edge deployments, such as manufacturing operations, retail POS systems, smart surveillance, healthcare services, and transportation applications, along with tools for managing related tasks. To minimize maintenance efforts, KS supports seamless one-click deployment and rolling updates, ensuring that applications stay up to date.

High Availability

The high-availability design of KS features the advanced failover function. The system can automatically detect node failures and quickly perform a failover, transferring applications to healthy nodes. Faulty node can be completely removed from and rejoined to the cluster system after repair, without requiring system downtime. This greatly enhances availability and ensures the continuity of enterprise applications.

Automatic Scaling

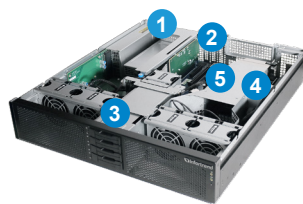
KS can dynamically scale cloud-native applications across nodes according to real-time node load conditions. It achieves this by continuously monitoring the hardware load of computing nodes, including metrics such as CPU, GPU, memory, storage space, and network usage. In response to heightened computing demands on an application, the system reallocates resources by automatically scaling the application to underutilized computing nodes. Conversely, when applications no longer require additional system resources, KS seamlessly downscales the allocated resources to optimize efficiency. By dynamically adjusting to changing demands, the automated scaling mechanism helps to ensure consistent application performance and optimized resource utilization.

Easy Deployment

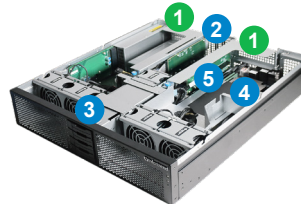
KS combines computing, storage, and Kubernetes platform within a single node appliance. This greatly simplifies deployment and management as KS eliminates the need for users to purchase these components separately and navigate through complex configurations, which can otherwise require substantial time, finances, and technical expertise. The platform features an intuitive installation wizard that guides users through the entire setup process, which is completed within 30 minutes. After setup, enterprises can immediately start installing and running applications. The initial cluster setup can start with three KS or more computing nodes, and expansion is easy – users can simply add KS nodes one by one, with each node requiring just a few simple steps through the management interface. Alternatively, users can start with one KS node in a setup mode that does not support expansion.

KS 3000U Series

KSa 3004UE



KSa 3004U



- | | |
|---|-----------------------------------|
| 1 KSa 3004UE: FHHL single- or dual-width GPU slot | 3 NVMe SSD slots |
| 1 KSa 3004U: FHFL dual-width GPU slot | 4 AMD EPYC™ 8004 Series Processor |
| 2 Network adapter slots | 5 DDR5 DIMM slots |

PHYSICAL SPECIFICATIONS

Product Series		KS 3000U	
Model	KSa 3004 UE		KSa 3004 U
Form Factor	2U 4-bay		2U 4-bay
Mounting Options	Desktop / Rackmount		Desktop / Rackmount
Processor	Single AMD EPYC™ 8004 Series Processors		
Processor Core Available	16 to 24 cores		16 to 64 cores
Cache Memory	• 6 x DDR5 DIMM slots • Default 128GB, up to 576GB DDR5 RDIMM		
Supported Drives	2.5" U.2 NVMe SSD		
	Note: 1. A minimum of four drives is required. 2. For the latest Compatibility Guide, refer to our official website.		
PCIe Expansion Slots	• 1 x FHHL PCIe Gen5 x16 slot for GPU • 1 x HHHL PCIe Gen5 x16 slot • 2 x HHHL PCIe Gen5 x8 slots		• 2 x FHFL PCIe Gen5 x16 slots for GPUs • 1 x HHHL PCIe Gen5 x16 slot • 2 x HHHL PCIe Gen5 x8 slots
	Note: The number of supported network adapters per node via PCIe expansion slots depends on the deployment mode (standalone or cluster mode).		
Network Adapter Options	• Dual-port 25GbE SFP28 adapter • Dual-port 100GbE QSFP56 adapter		
	Note: Network adapters must be purchased from Infortrend.		
Max. FHHL Single- or Dual-width GPUs	1		0
Max. FHFL Dual-Width GPUs	0		2
System Fans	5		
Rear IO Ports	• 1 x RJ45 dedicated BMC/IPMI LAN port • 1 x RJ45 1GbE management port (shared with IPMI access) • 1 x RS232 serial port (COM) • 1 x VGA port • 4 x USB 3.2 Gen1 ports • 1 x RJ45 2.5GbE LAN port • 2 x RJ45 10GbE LAN ports		
Dimensions (W x H x D) (Without Chassis Ears and Protrusions)		445 x 86.8 x 498 mm	
Package Dimensions (W x H x D)		600 x 215 x 780 mm	
Power Supply	Power Supplies	2 x 1300W 80 PLUS Titanium redundant hot-plug	
	AC Input	100-127VAC/12A 200-240VAC/8.5A, 50/60Hz	
		Note: Please use 200-240VAC for the KS 3004U model	
Environmental (Without GPU)	Temperature	Operating: 10 to 35°C; non-operating: -40 to 60°C	
	Altitude	Operating: Sea level to 3,660m (12,000ft); non-operating: sea level to 12,192m (40,000ft)	
	Relative Humidity	5 to 95% non-condensing, operating and non-operating	
Safety Standards		• Electromagnetic compatibility: CE, BSMI, FCC	• Safety: UL, BSMI, CB

SOFTWARE SPECIFICATIONS

Management	EonOne, EonKube
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SOFTWARE LICENSE

EonSight		Optional	EonSight enables AI-driven system monitoring and analytics, providing anomaly detection, performance insights, and capacity forecasting to help optimize cluster stability and operational efficiency.
Application Services	AI	Optional	AI License enables one-click deployment of built-in AI applications via the App Marketplace, accelerating AI environment setup and supporting advanced data analytics and machine learning workloads.
	HPC	Optional	HPC License enables deployment and management of built-in HPC applications through the App Marketplace, supporting efficient job scheduling, workload monitoring, and centralized management of HPC data and tasks.
	Manufacture	Optional	Manufacturing License enables one-click deployment of built-in manufacturing applications via the App Marketplace, providing a streamlined way to support and manage manufacturing operations and workflows.

WARRANTY AND SERVICE

Service and Support	Standard Service	3-year limited hardware warranty and 8 x 5 phone, web, and email support (batteries are covered under warranty for 2 years)
	Upgrade or Extension Options	Warranty extension: Standard service can be extended up to 5 years. The following services can be upgraded to 5 years. • Upgrade: Replacement part dispatch on the next business day • Advanced service: Phone, web, and email support + onsite diagnostics on the next business day • Premium service: Phone, web, and email support + onsite diagnostics within 4 hours Note: Options may vary by region. For more details, please contact our sales representatives.
	Technical Support	Get information on system installation and maintenance, download technical documents and software, or issue a support ticket
	Product Services	Register products, download firmware, apply for licensing services, create product repair tickets, or check product repair status

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