Kalray Flashbox™ Data Sheet

Key Benefits

A new class of performance
Up to 12M IOPS, 100GB/s per Flashbox (2RU)

Superior economics and efficiency
Up to 15x better perf/$ @ 3x less W/IOPS, CPU-free

No-compromise data services
Accelerated data protection, durability and security

Cost-optimized capacity performance
Transparent support of NVMe SSD including latest QLC for most workloads

Robust software suite
Optimized transparency for seamless integration

Industry standard compliance
Easy integration of hardware and SPDK-based software suite

Use Cases

High-performance storage array for massive data flows and multiple workloads, including NoSQL databases, AI and ML, HPC, scale-out parallel file systems

Disaggregated composable storage enclosure with local NVMe performance, for transitioning from SAS to NVMe

Overview

Flashbox™ is a high-performance, **disaggregated NVMe storage array** designed to leverage the full potential of NVMe flash devices at massive scale, while ensuring **the lowest storage total cost of ownership (TCO).** The adoption of NVMe storage devices in data centers has resulted in huge performance and capacity growth at the server level.

Today's servers can leave device resources stranded – performance, capacity, or both. Flashbox™ disaggregates NVMe SSDs, while maintaining the same performance as local NVMe or direct-attached devices. This eliminates the siloed, shared-nothing approach in traditional server-based storage solutions. The result is QoS-optimized, shared-everything storage for each application. Flashbox™ offers a wide variety of SPDK-based standard data services, which can be managed in-band via standard APIs.

Built on an off-the-shelf appliance, the solution addresses the key challenges of scale-out NVMe storage: **scalability, performance, cost-efficiency, openness, and ease of use.**

DPUs at the Heart of a New Generation of All-Flash-Array

Flashbox is powered by a new class of fully programmable data-centric processor: the **Kalray MPPA® Data Processing Unit (DPU)**. The DPU consolidates the essential functions of a disaggregated storage appliance onto a single chip, avoiding the drawbacks of increased power consumption and higher performance costs associated with traditional architectures.

Kalray's DPU gives the end user the option to use predefined data services, build-your-own data processing applications, or a combination of both, resulting in a highly flexible storage solution.

BEST PERFORMANCE PER WATT & PER DOLLAR

At the core of the Flashbox

Software

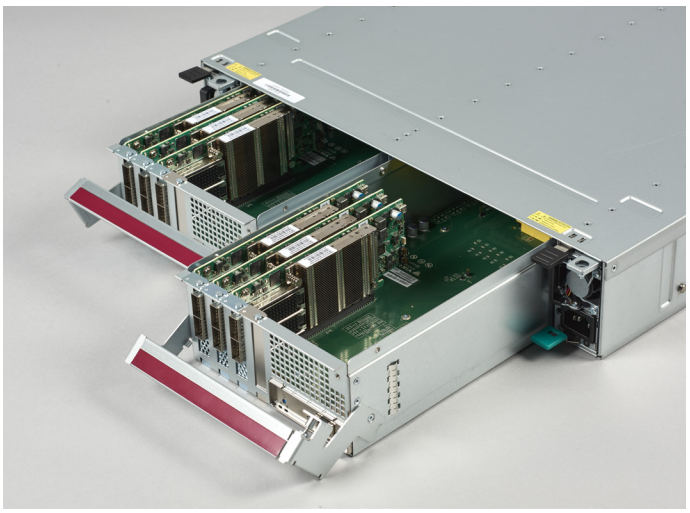
Features	Specifications
Supported protocols	NVMe-oF RoCE v1/v2 NVMe-TCP LACP 802.3ad VLAN 802.1q Global pause 802.3x PFC 802.1Qbb
Data services	Passthrough mode, RAID10, RAID6, snapshots, cloning and thin provisioning
Supported queue pairs / namespaces	512/2
System management	Redfish – monitoring status, managing logical volumes, setting thresholds
Volume management	In-band using SPDK APIs
Firmware updates	Non-disruptive to data availability
Failover	Active-active, active-passive configurable

Hardware

Features	Specifications
Interface cards	Max of 6 K200-LP DPU
Configurations	Lite - 4x 100GbE; 8x NVMe SSD Capacity – 4x 100GbE; 24x NVMe SSD Performance – 12x 100GbE; 24x NVMe SSD
SSD device manufacturer support	WD 840, Micron, Intel, Kioxia, Hynix, Seagate, Samsung, Solidigm
Device capacity	24 U.2 SFF devices
Network interface	Lite - 4x QSFP28 100GbE Capacity – 4x QSFP28 100GbE Performance – 12x QSFP28 100GbE
Cable support	Copper cables up to 3m
Data rates	100GbE, 40GbE
Management interface	2x 1GbE RJ45 (out of band)
Redundancy	Dual hot swappable IOM modules supporting redundant data paths for high availability, hot swappable PSUs and fans
Warranty	3 years (extendable)

Physical/Environmental

Features	Specifications
Chassis form factor	2RU, 19" EIA rack support with rails
Dimensions	87mm H x 438mm W x 697mm D 3.43 in H x 17.2in. W x 27.44 in. D
Weight (with devices and rail kit)	25.5kg / 56.2lbs
Cable management	Rail kit and cable management included
Power input	1 + 1 redundant 1600W 80 PLUS platinum PSUs 90–246 VAC (2x 1.2m C13 to C14 cables included)
Power consumption	Lite - 420W (avg) and 455W (peak)
Power efficiency	94% @ 50% load, 80 PLUS platinum
Cooling	N+1 redundant cooling (front to back)
Safety, regulatory, and compliance	FCC, UL, VCCI, CE, Canada, RoHS directive 2002/95/EC, WEEE directive 2002/96/EC
Operating temp	0C to 35C
Storage temp	-40C to 85C
Humidity	20% to 80% non-condensing



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