

about xpress disk (xpd)

The Kove® XPD® L2 storage appliance provides the highest performance Fibre Channel and InfiniBand storage available, holding world records for bandwidth, latency, and IOPS. XPD® L2 uses DRAM to deliver deterministic performance across all I/O patterns, whether reads or writes, small or large blocks, sequential, random, burst or sustained access, one minute or ten year duration, 10% or 100% full, or any combination thereof.



Applications using Kove® XPD® L2's don't worry about media wearing down or out, or performance changing because of load or occupancy. With determinacy and concurrency literally 100s of times better than Flash, apps can scale-out processing like no other product in the world. This means fewer CPUs, less energy, better output. For example, 4 servers using 4 XPDs have demonstrated 65 terabytes processing per hour at more than 800 million database operations per second. I/O is no longer the bottleneck in XPD installations.

performance The Kove® XPD® L2 delivers performance I/O across the spectrum: **20 GB/sec** bandwidth (at <20 μ s latency and <200 ns variance), **20+ million IOPS** (at <10 μ s latency and <100 ns variance), or **350K IOPS** (at <3 μ s and <30 ns variance). All performance is sustained and deterministic: XPD® L2's do just as well in customer testing as in workhorse performance lasting years at a time under load. And performance doesn't change because of age, usage, load, profile, capacity, or any other factor. Well, we have been assured that a sledge hammer would change performance, but of course customers can HA multiple XPDs to mitigate this risk also.

Some vendors "tune" product performance for 4K blocks, or optimize for access pattern, and then perform poorly when using 512-byte or 1MB blocks, or sequential or random I/O. Kove® XPD® L2's deliver consistent performance across the I/O spectrum without qualification. They just work — faster. Apps just work — better.

This is the value of deterministic and concurrent I/O, the next new. Run faster, longer, better, reduce core count, drop application licensing fees, reduce energy footprint, save more money, make more money. Let design drive profitability.

features XPD® L2's are InfiniBand and Fibre Channel direct and mesh attachable to accommodate scalable storage needs. All speeds are supported: SDR, DDR, QDR, FDR for InfiniBand, and 2-8 Gbps for Fibre Channel.

Kove® XPD® L2 storage monitors overall storage-system health, and tracks 100s of system components and monitorables. The device can self-heal most problems before they are ever noticed, and report health status via SNMP, syslog, or HTTP.

The XPD® L2 uses an uninterruptable-power supply (UPS) to protect against downtime. Utility-company power spikes or outages do not threaten data integrity.



the storage you need when time is money

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Capacity	64GB – 2TB per unit, mesh connectable for larger capacities
Bandwidth	Up to 20 GB/sec (<20 µs latency, <200 ns variance), sustainable (world record)
IOPS	Up to 20 million (<10 µs latency, <100 ns variance), sustainable (world record)
Response Time	<3 µs, random, consistent, & sustainable for any time duration (world record)
Instant Copy	6.7 PB/sec (Petabytes) – no disruption during operation (world record)
Management Connectivity	10/100/1000 Ethernet twisted pair, 4 ports
LUNs	Up to 255
Disk Drives	Up to 16 SAS
Storage Connectivity	
Fibre Channel:	2,4,8 Gbps
InfiniBand:	SDR, DDR, QDR, FDR
Storage Ports	
Fibre Channel:	Up to 24 ports 2,4,8 Gbps per port
InfiniBand:	Up to 12 ports SDR, DDR, QDR
Memory RAS Features	ECC plus SDDC (standard), rank sparing and RAM mirroring (optional)
Sparing	Prevent DIMM rank failure from affecting data integrity. Device copies failing rank to spare and then disables failed rank.
Mirroring	Device maintains mirrored copy of memory image. Device fails over to mirrored copy if an uncorrectable error occurs.
Management	HTTPS Command Line via SSH, SNMP, and syslog Phone home, customer selectable
Data Protection	Multiple modes for de-staging data from RAM onto persistent media Integrated instant copying Integrated monitoring logic for system health management and UPS
Uninterruptible Power Supply	XPD® L2 tightly integrates with standard UPS, bringing unit down gracefully if ever necessary. Integration with centralized UPS infrastructure available in many contexts.
Health Monitoring	Device tracks health components for >100 monitorables, and self-heals most problems that can occur
Hot Swappable	Disk drives (16), power supplies (4)
Power	Up to 1,100 watts. USA UL listed, FCC; Canada CUL listed; Germany TUV Certified; EN 60950/IEC 60950-Compliant; CB Report; CCC Certification.
Warranty	World-wide support under contract: on-site next day to 2-hour on-site same day