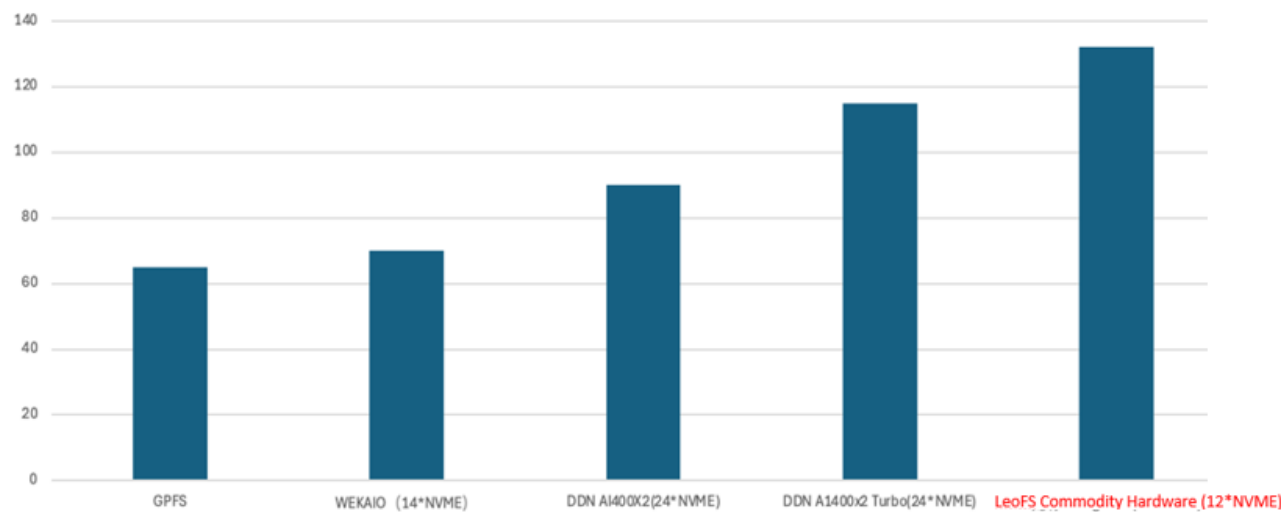


LeoFS Surpasses DDN on Parallel File System Performance

Performance Throughput of LeoFS Solution



Testing with RoCE and NVMe PCIe 5.0

	Storage Node * 1
CPU	AMD EPYC 9453 32-Core Processor
Memory	384GB
Network Cards	ConnectX – 7 200GbE * 6 Mellanox MT 2910 Family
OS Disks	SSD 960GB * 2
NVMe Disks	SAMSUNG MZWLO3T8HCLS 3840GB * 14
	Computing Node * 2
CPU	AMD EPYC 9453 32-Core Processor
Memory	384GB
Network Cards	ConnectX – 7 200GbE * 6 Mellanox MT 2910 Family
OS Disks	SSD 960GB * 2

Mar 23, 2025	.Interval.	.ReqstdOps...	...cpu%...	readread.....write....	..mb/sec...	mb/sec	.xfer...					
		rate	resp	total	sys	pct	rate	resp	total	size				
09:14:24.045	91	68020	1.410	6.2	5.99	100.0	68020	1.410	0.0	0.000	136040	0.00	136040	2097152
09:14:25.045	92	67797	1.414	6.2	5.98	100.0	67797	1.414	0.0	0.000	135592	0.00	135592	2097121
09:14:26.044	93	67646	1.416	6.0	5.82	100.0	67646	1.416	0.0	0.000	135292	0.00	135292	2097152
09:14:27.044	94	67493	1.421	6.1	5.94	100.0	67493	1.421	0.0	0.000	134986	0.00	134986	2097152
09:14:28.043	95	68181	1.405	6.1	5.86	100.0	68181	1.405	0.0	0.000	136362	0.00	136362	2097152
09:14:29.045	96	67944	1.411	6.2	5.98	100.0	67944	1.411	0.0	0.000	135888	0.00	135888	2097152
09:14:30.045	97	67641	1.417	6.2	5.97	100.0	67641	1.417	0.0	0.000	135282	0.00	135282	2097152
09:14:31.044	98	67975	1.409	6.1	5.89	100.0	67975	1.409	0.0	0.000	135950	0.00	135950	2097152
09:14:32.046	99	67405	1.422	6.1	5.92	100.0	67405	1.422	0.0	0.000	134810	0.00	134810	2097152
09:14:33.043	100	67405	1.421	6.2	5.98	100.0	67405	1.421	0.0	0.000	134810	0.00	134810	2097152
09:14:33.045	avg_2-100	67610	1.414	6.1	5.84	100.0	67610	1.414	0.0	0.000	135220	0.00	135220	2097151
09:14:33.253														
09:14:33.253	Miscellaneous statistics:													
09:14:33.253	(These statistics do not include activity between the last reported interval and shutdown.)													
09:14:33.253	READ_OPENS	Files opened for read activity:							13,250	132/sec				
09:14:33.253	FILE_CLOSES	Close requests:							13,154	131/sec				
09:14:33.253														
09:14:34.056	Vdbench execution completed successfully. Output directory: /root/vdbench50406/output													

LeoFS VDBench results:

Erasure Coding	2M	4M	8M
8 + 2 Read	132GB/s	128GB/s	124GB/s
8 + 2 Write	53GB/s	48GB/s	53GB/s

DDN AI400X2 Performance Throughput

DDN offers flexibility in platform choice with the all-flash NVMe AI400X2, a hybrid flash and hard drive storage platform which leverages parallel access to flash and deeply expandable HDD storage.

From DDN A³I Datasheet (<https://www.ddn.com/resources/brochures-and-datasheets/a3i-datasheet/>):

	AI400X2 QLC	AI400X2	AI400X2 TURBO
	More Useable Capacity	Optimal Performance/Capacity	Extra Performance Boost
Parallel File System Performance	90 GB/s (r), 70 GB/s (w), 3.5M IOPs	90 GB/s (r), 65 GB/s (w), 3M IOPs	115 GB/s (r), 75 GB/s (w)*
Appliance Capacity	1 or 2 PB useable (QLC)	120, 250, 500 TB useable (TLC)	120, 250, 500 TB useable (TLC)
Appliance Requirements	6 RU • 4.4 KW • 15K BTU/hr	2 RU • 2.2 KW • 7.5K BTU/hr	2 RU • 2.2 KW • 7.5K BTU/hr
Controller Host Ports	HDR200/100GbE/200GbE QSFP 56 (8) or NDR200/200GbE QSFP 112 (8)	HDR200/100GbE/200GbE QSFP 56 (8) or NDR200/200GbE QSFP 112 (8)	NDR200/200GbE QSFP 112 (16)

* AI400X2-Turbo GA in Q1 2024. Current numbers are projected performance.