



PLATFORM*D

Development and Operations Transformation

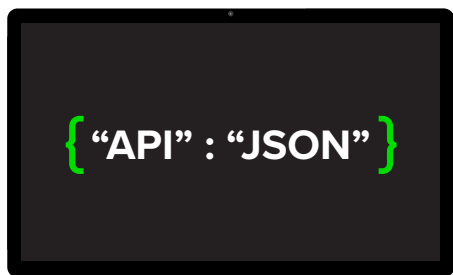
ACCELERATE DEVELOPMENT & OPERATIONS.

Spend less time managing infrastructure and more time building products. Reduce developer friction and accelerate performance. Dramatically simplify management with tools and interfaces built for DevOps. Deploy agile infrastructure as the foundation of micro-services and service-oriented architecture.

ALL FLASH. ALWAYS FAST.

Platform*D brings cost-effective all-flash elastic storage, secure micro-segmentation, and quality of service to development and test environments. Operate CI/CD pipelines with deterministic performance. Add new workloads without affecting existing ones and re-adjust priorities on demand. Monitor and troubleshoot application performance over time. Build immutable application infrastructure.

...WITH API-DRIVEN SOFTWARE-DEFINED STORAGE.



Service	Reads	Writes	Reads	Writes
Service 1	33	8	16.05	184.8
Service 2	154	166	8	158
Service 3	308	159	154	4
Service 4	25751	100.6	23831	93.09

UNBEATABLE ECONOMICS

Commodity pricing and flexible data protections allow you to fine-tune cost, performance & efficiency.

- As low as \$0.04 per IOP
- As low as \$0.85 per GB

SERVICE-ORIENTED SIMPLICITY

Developers, operators and orchestration layers can consume storage in a controlled manner, without touch-points.

- Open-source command line tools
- Self-describing RESTful JSON API
- Native Docker Integration
- Deep OpenStack Integration

OUTSTANDING PERFORMANCE

Ultra-fast performance using industry standard protocols and commodity interconnects.

- 300K random 4K reads (sustained)
- 250K random 4K writes (sustained)
- < 35/55µs sequential 4K (r/w)

MODULAR SCALE

Scale inside a chassis. Scale outside a chassis. Scale as a service. Scale on demand!

- > 1 EB capacity per-service
- > 300 million IOPS per-service
- > 3 TB/s per-service

ENTERPRISE SOFTWARE. COMMODITY HARDWARE.

Blockbridge is enterprise-grade software that transforms commodity hardware into an elastic storage service. Our software delivers consistent features, interfaces and behavior across platforms that are optimized for different applications. Platform*D is a reference architecture optimized for development, test and non-critical business functions.



CHASSIS

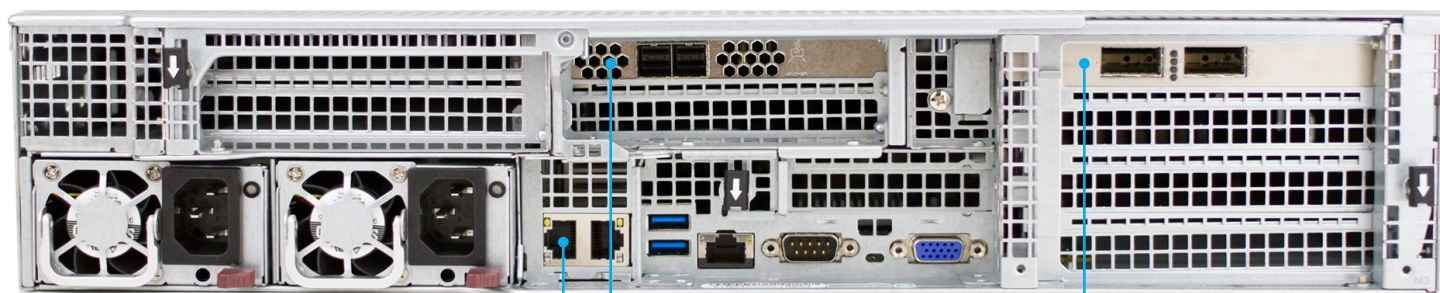
The Platform*D chassis provides ultimate flexibility. It contains an Avago 24xSAS-3 expander; four of its drive slots are multi-purpose PCIe NVMe. It supports dual cpus, up to 1.5 TiB of memory and has plenty of PCIe slots for additional HBAs and connectivity.

MLC SATA FLASH

Commodity MLC SATA SSDs deliver efficient performance, endurance and density. Use drives that are priced to market, readily available at online retailers. Customize performance, density and reliability to the needs of your application.

MLC PCI NVMe

Experience NVMe write performance at a SATA price point. Commodity PCIe NVMe delivers low latency, consistent performance and power-loss protection. It also enables efficient disk-based data protections.



CONTROL FABRIC

Platform*D features multiple 10Gb networking ports that allow you to isolate control traffic from data. An additional isolated IPMI 2.0 port permits remote monitoring and power control.

EXPANSION SHELVES

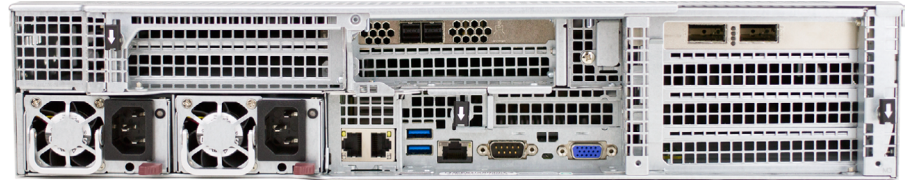
Expand outside of a single chassis with optional 16Gb SAS-3 networking. You may prefer to use Supermicro JBODs with Avago expanders. However, you can use anything that fits your needs.

DATA FABRIC

iSCSI data fabrics operate on standard ethernet interconnects. Choose the connectivity, transceiver, and redundancy options that work best in your network.

PLATFORM

Chassis	SuperServer 2028U-E1CNRT+ 24x 2.5" SAS3 via Expander 4x NVMe Ports (or SAS-3) 2x 10Gbe
Processor	2x Intel E5-2620v3 2.4GHz
Memory	8x Hynix DDR4-2133 8GB Single Rank, Registered, ECC Model # DR480L-HL01-ER21
Network	Mellanox 40/56Gbe QSFP+ x1 Model # MCX313A-BCBT
Controller	Avago 9300-8i SAS3 HBA
Physical	2U 3.5" x 17.2" x 27.76" 300 Watts (Nominal)



MEDIA OPTIONS

Storage	Samsung EVO PRO 512 Model # MZ-7KE512BW	Samsung EVO PRO 1TB Model # MZ-7KE1T0BW	Samsung EVO PRO 2TB Model # MZ-7KE2T0BW
Journal	Intel 750 Series 2.5" 400GB Model # SSDPE2MW400G4X1		

CONFIGURATIONS & PRICING

CAPACITY OPTIMIZED

Storage	20 + 1 EVO PRO 512	20 + 1 EVO PRO 1TB	20 + 1 EVO PRO 2TB
Capacity	6.9 TB Usable / 10.7 TB Raw	13.5 TB Usable / 21 TB Raw	27 TB Usable / 42 TB Raw
Performance	240K/120K Random IOPS (r/w) 350K Random IOPS (peak) < 35/55µs Sequential 4K < 1.1 ms Response time (avg)	240K/120K Random IOPS (r/w) 350K Random IOPS (peak) < 35/55µs Sequential 4K < 1.1 ms Response time (avg)	240K/120K Random IOPS (r/w) 350K Random IOPS (peak) < 35/55µs Sequential 4K < 1.1 ms Response time (avg)
QoS Rating	100,000 IOPS	100,000 IOPS	100,000 IOPS
Efficiency	\$1.43/GB, \$0.08 per IOP	\$1.10/GB, \$0.12/IOP	\$0.85/GB, \$0.19/IOP
Street Price	\$9,900	\$14,900	\$22,900

PERFORMANCE OPTIMIZED

Storage	20 + 1 EVO PRO 512	20 + 1 EVO PRO 1TB	20 + 1 EVO PRO 2TB
Capacity	4.4 TB Usable / 10.8 TB Raw	8.5 TB Usable / 21 TB Raw	17 TB Usable / 42 TB Raw
Performance	300K/250K Random IOPS (r/w) 350K Random IOPS (peak) < 600µs Response time (avg) < 35/55µs Sequential 4K	300K/250K Random IOPS (r/w) 350K Random IOPS (peak) < 600µs Response time (avg) < 35/55µs Sequential 4K	300K/250K Random IOPS (r/w) 350K Random IOPS (peak) < 600µs Response time (avg) < 35/55µs Sequential 4K
QoS Rating	225,000 IOPS	225,000 IOPS	225,000 IOPS
Efficiency	\$2.27/GB, \$0.04/IOP	\$1.75/GB, \$0.06/IOP	\$1.35/GB, \$0.09/IOP
Street Price	\$9,900	\$14,900	\$22,900

* Usable capacity accounts for data protections and over-provisioned flash. It does not assume efficiency gains from thin provisioning.

* All secure micro-segmentation and crypto features are enabled during measurement.

* Random IOPS are measured with caching disabled and reflect actual throughput to disk.

* Peak IOPS are measured with caching enabled.

* Quality of Service ratings reflect average random IOPS guarantee available during recovery from a single storage drive failure.

* All benchmarks recorded with FIO 2.6.3 using a single Centos 6.7 client accessing a single volume. Multi-host or Multi-volume performance may exceed specification.

* Pricing and efficiency calculations are based on market prices (March 2016) for hardware, including spare media.

* Pictured configuration shows MCX314-BCBT NIC and SAS9300-8e HBA connectively upgrades (not included in pricing calculations).