FLASHARRAY//M

Business and IT Transformation in 3U

TRANSFORM IT

Who knew that moving to all-flash storage could help reduce the cost of IT? FlashArray//m makes server and workload investments more productive, while lowering storage spend by up to 50%. Reduce the complexity of storage dramatically to make IT more agile and efficient, accelerating your journey to the cloud.

TRANSFORM YOUR BUSINESS

Make your organization faster by accelerating applications, increasing revenue, driving higher productivity out of staff and systems, and creating a sustainable advantage. FlashArray//m's performance can also make your business smarter by unleashing the power of real-time analytics, driving customer loyalty, and creating new, innovative customer experiences that simply weren't possible with disk.

...ALL BY TRANSFORMING YOUR STORAGE WITH FLASHARRAY//M

ALL-FLASH STORAGE FOR EVERY WORKLOAD

FlashArray//m enables you to transform your rack, data center, or cloud, with an affordable all-flash array capable of consolidating all your key business applications.

MINI SIZE

Reduce power, space and complexity by 90%

- 3U base chassis
- 15-120+ TBs usable
- ~1kW of power
- 6 cables

MIGHTY PERFORMANCE

Change your application's and user's expectations of storage performance

- Up to 300,000 32K IOPS
- Up to 9 GB/s bandwidth
- <1ms average latency

MODULAR SCALE

Scale //m inside and outside of the chassis for generations

- Expandable to ~½ PB usable via expansion shelves
- Upgrade controllers and drives – without downtime

MEANINGFUL SIMPLICITY

Appliance-like deployment with worry-free operations

- Plug-and-go deployment that takes minutes, not days
- Non-disruptive upgrades and hot-swap everything
- Less parts = more reliability

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MODULAR UPGRADABILITY FOR GENERATIONS

The FlashArray//m expands upon the FlashArray's modular, stateless architecture, designed to enable modular expandability and upgradability for generations. The //m leverages a chassis-based design with customizable modules, enabling both capacity and performance to be independently improved over time with advances in compute and flash, to always meet your business needs.

//M CHASSIS

The //m Chassis leverages internal PCIe networking for controller HA, as well as both PCIe/NVMe and 12Gb SAS for flash and NV-RAM module connectivity. The result is ultra-fast module connections that enable hot-plug and HA of every component.

FLASH MODULES

Dual-drive flash modules pack two independent SSDs in each slot, doubling the potential performance and density. Drive modules are redundantly connected to both controllers, and can be replaced without performance impact.

NV-RAM MODULES

NV-DDR4 non-volatile cache modules are used to protect writes when power is lost during I/O processing from power loss. DDR4 memory is backed by super capacitors, and the modules can retain their data for 1 year without power. 2 or 4 redundant modules are networked with hot-swap PCIe/NVMe.

EXPANSION SHELVES

FlashArray//m can expand outside the //m Chassis with 12Gb SAS networking. 12TB or 24TB expansion shelves are available, with 1-4 shelves connected per chassis.

CONTROLLER MODULES

The //m features four controller options, to allow different tiers of performance and capacity. New controllers are shipped roughly annually, and can be replaced or upgraded without performance impact.

I/O MODULES

The //m has onboard SAS, replication, and management ports, and host-based IO ports can be configured to meet a variety of needs. 6 slots per chassis, configurable with 8 or 16 Gb/s FC, or 10 Gb/s Ethernet iSCSI.

PURITY OPERATING ENVIRONMENT

Purity implements advanced data reduction, storage management and flash management features, and all features of Purity are included in the base cost of the array.

STORAGE SOFTWARE BUILT FOR FLASH

The FlashCare technology virtualizes the entire pool of flash within the FlashArray, and allows Purity to both extend the life and ensure the maximum performance of consumer-grade MLC flash.

GRANULAR AND ADAPTIVE

Purity Core is based upon a 512-byte variable block size metadata layer called the Purity Core. This fine-grain metadata enables all of Purity's data and flash management services to operate at the highest efficiency.
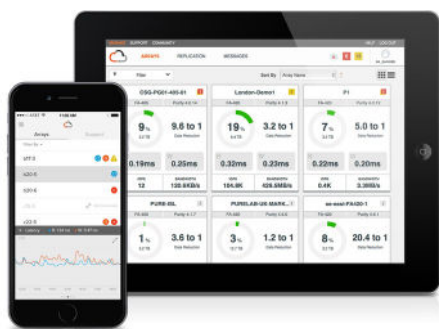
BEST DATA REDUCTION AVAILABLE

Purity FlashReduce implements five forms of inline and post-process data reduction to offer the most complete data reduction in the industry. Data reduction operates at a 512-byte aligned variable block size, to enable effective reduction across a wide range of mixed workloads without tuning.

HIGHLY AVAILABLE AND RESILIENT

Resiliency is job 1 for Purity. FlashProtect implements high availability, dual-parity RAID-3D, non-disruptive upgrades, and encryption, all of which are designed to deliver full performance to the FlashArray during any failure or maintenance event.

DISASTER RECOVERY BUILT IN

FlashRecover combines space-saving snapshots, replication, and protection policies into an end-to-end data protection and recovery solution that protects data against loss locally and globally. All FlashProtect services are fully-integrated in the FlashArray and leverage the native data reduction capabilities.

CLOUD-BASED MANAGEMENT AND SUPPORT

PURE1 MANAGE

By combining local web-based management with cloud-based monitoring, Pure1 Manage allows you to manage your FlashArray wherever you are – with just a web browser.
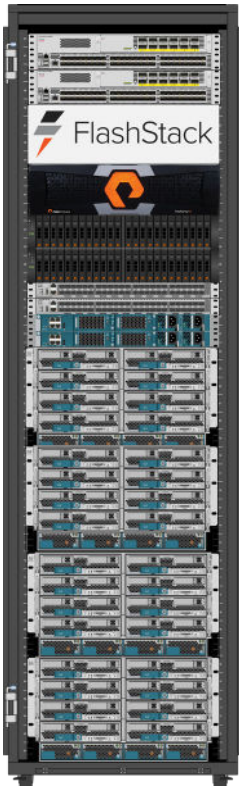
PURE1 SUPPORT

FlashArray//m is constantly cloud-connected, enabling Pure Storage to deliver the most proactive support experience possible. Highly trained staff combined with big data analytics help resolve problems before they start.

PURE1 CONNECT

A rich set of APIs, plugins, application connectors, and automation toolkits enable you to connect FlashArray//m to all your data center and cloud monitoring, management, and orchestration tools.

PURE1 COLLABORATE

Extend your development and support experience online, leveraging the Pure1 Collaborate community to get peer-based support, and to share tips, tricks, and scripts.
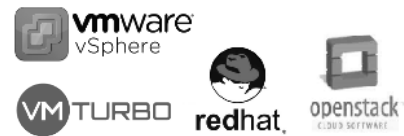
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CONSOLIDATE APPLICATIONS WITH PRE-VALIDATED SOLUTIONS

The FlashArray//m is tested and validated with a wide range of data center infrastructure and applications to enable seamless deployment and multi-workload consolidation in your data center. Deployments can be further accelerated with FlashStack – end-to-end converged infrastructure powered by flash and supported by our partners.

BUSINESS APPLICATIONS

ORACLE®
SAP HANA
Microsoft® SQL Server®
mongoDB

VIRTUALIZATION AND CLOUD INFRASTRUCTURE

vmware vSphere
VM TURBO
redhat.
openstack CLOUD SOFTWARE

DESKTOP VIRTUALIZATION

vmware Horizon View
NVIDIA.
CITRIX® XenDesktop

DATA CENTER INFRASTRUCTURE

CISCO.
BROCADE
vmware
COMMVAULT
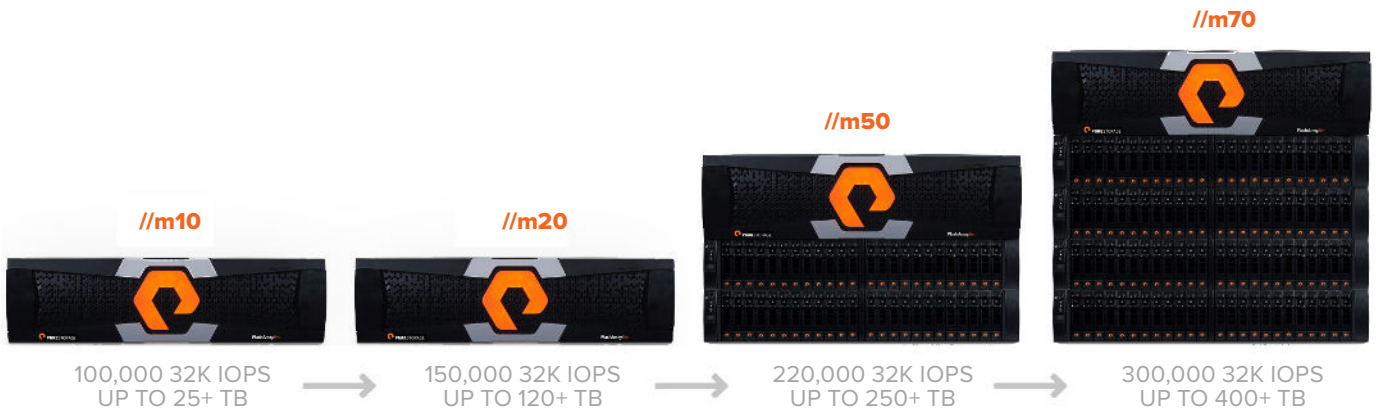ARISTA

EXPERIENCE EVERGREEN STORAGE

Evergreen™ Storage

Tired of the 3-5 year array replacement merry-go-round? Say hello to storage that behaves like SaaS and the cloud. You can deploy it once and keep expanding and improving it for 10 years or more, all without any downtime, performance impact, or data migrations. Right Size capacity guarantee helps you get started knowing you'll get the effective capacity your applications need. And Capacity Consolidation program keeps your media modern and dense as you expand. With Evergreen Storage you'll never re-buy a TB you already own.

//m70

//m50

//m10

//m20

//m10	//m20	//m50	//m70
100,000 32K IOPS UP TO 25+ TB	150,000 32K IOPS UP TO 120+ TB	220,000 32K IOPS UP TO 250+ TB	300,000 32K IOPS UP TO 400+ TB

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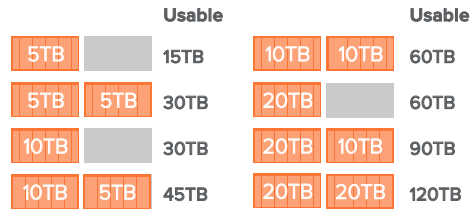sales@purestorage.com | 800-379-PURE | @purestorage
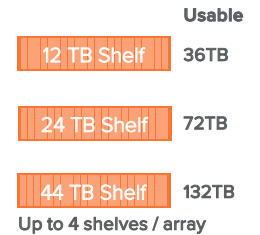
CAPACITY CONFIGURATION OPTIONS

Capacity packs are available to accommodate any deployment. Expand capacity online within or outside the base chassis with flexibility to mix and match flash capacities and generations.

Capacity Pack A **Capacity Pack B**

10-MODULE CAPACITY PACKS

5TB	**10TB**	**20TB**
512 GB Modules	1 TB Modules	2 TB Modules

Note: Only two configurations supported in //m10 are 5TB, and 2 x 5TB

UP TO 120 TB USABLE IN BASE CHASSIS

		Usable			Usable
5TB		15TB	10TB	10TB	60TB
5TB	5TB	30TB	20TB		60TB
10TB		30TB	20TB	10TB	90TB
10TB	5TB	45TB	20TB	20TB	120TB

EXPAND UP TO 400TBS WITH EXPANSION SHELVES

	Usable
12 TB Shelf	36TB
24 TB Shelf	72TB
44 TB Shelf	132TB

Up to 4 shelves / array

CONTROLLER SPECIFICATIONS

	//M10	//M20	//M50	//M70
Capacity	Up to 25 TBs effective capacity* 5 – 10TBs raw capacity	Up to 120+ TBs effective capacity* 5 – 40TBs raw capacity	Up to 250+ TBs effective capacity* 30 – 88TBs raw capacity	Up to 450+ TBs effective capacity* 44 – 136TBs raw capacity
Performance	Up to 100,000 32K IOPS** <1ms average latency Up to 3 GB/s bandwidth†	Up to 150,000 32K IOPS** <1ms average latency Up to 5 GB/s bandwidth†	Up to 220,000 32K IOPS** <1ms average latency Up to 7 GB/s bandwidth†	Up to 300,000 32K IOPS** <1ms average latency Up to 9 GB/s bandwidth†
Connectivity	16 Gb/s Fibre Channel 10 Gb/s Ethernet iSCSI 1 Gb/s Management & Replication ports	8 Gb/s Fibre Channel 10 Gb/s Ethernet iSCSI 10 Gb/s Replication ports 1 Gb/s Management ports	16 Gb/s Fibre Channel 10 Gb/s Ethernet iSCSI 10 Gb/s Replication ports 1 Gb/s Management ports	16 Gb/s Fibre Channel 10 Gb/s Ethernet iSCSI 10 Gb/s Replication ports 1 Gb/s Management ports
Physical	3U 610 Watts (nominal) 95 lbs (43.1 kg) 5.12" x 18.94" x 29.72" chassis	3U*** 742 Watts (nominal) 95 lbs (43.1 kg) fully loaded 5.12" x 18.94" x 29.72" chassis	3U – 7U 1007 - 1447 Watts (nominal) 95 lbs (43.1 kg) fully loaded + 44 lbs per expansion shelf 5.12" x 18.94" x 29.72" chassis	5U – 11U 1439 – 2099 Watts (nominal) 97 lbs (44.0 kg) fully loaded + 44 lbs per expansion shelf 5.12" x 18.94" x 29.72" chassis

* Effective capacity assumes HA, RAID, and metadata overhead, GB-to-GiB conversion, and includes the benefit of data reduction with always-on inline deduplication, compression, & pattern removal. Average data reduction is calculated at 5-to-1.

** Why does Pure Storage quote 32K, not 4K IOPS? The industry commonly markets 4K IOPS benchmarks to inflate performance numbers, but multiple real world workloads consolidating on a single array averages closer to 32K. FlashArray adapts automatically to 512B-32KB IO for superior performance, scalability, and data reduction.

***//m20 can be expanded beyond the 3U base chassis with expansion shelves.

† Data throughput is based on 100% 32KiB reads.

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