FLASHARRAY//M

Smart Storage for Cloud IT

As business moves to cloud-speed, and flash storage becomes the norm, you need Smart Storage from Pure to maintain business advantage. Because storage is not just about the raw media – it's about reliability, ease of use, and lifecycle cost. We've led the industry for years by building storage that is effortless, efficient, and evergreen. Case in point: FlashArray//m, the enterprise-proven all-flash storage with the speed, simplicity and scalability to power your applications, cloud, or entire business.

EFFORTLESS

STORAGE THAT JUST WORKS

Pure Storage all-flash starts with unwavering reliability. FlashArray//m has proven 99.9999% availability over its first year of shipments – inclusive of upgrades and maintenance. That means your data is always-on, always-fast, and always-secure. One hour install is plug-n-play simple with an array that practically manages itself. And //m is cloud-connected, with unrivalled predictive support, and powerful analytics and protection.

EFFICIENT

STORAGE THAT DOES MORE

FlashArray//m lets you run lean with proven 5:1 average data reduction across the FlashArray install base – that's 2x better than the competition. Consolidate all your workloads safely with consistent mixed workload performance even through failures and upgrades, and get all your data services built-in and without performance penalty. Integrate and automate everything, seamlessly.

EVERGREEN

STORAGE THAT GETS BETTER WITH AGE

Get storage that behaves like SaaS and the cloud. Deploy it once and keep expanding and improving performance, capacity, density and/or features for 10 years or more – without downtime, performance impact, or data migrations. With the Evergreen™ Storage business model, you'll never re-buy a TB you already own.
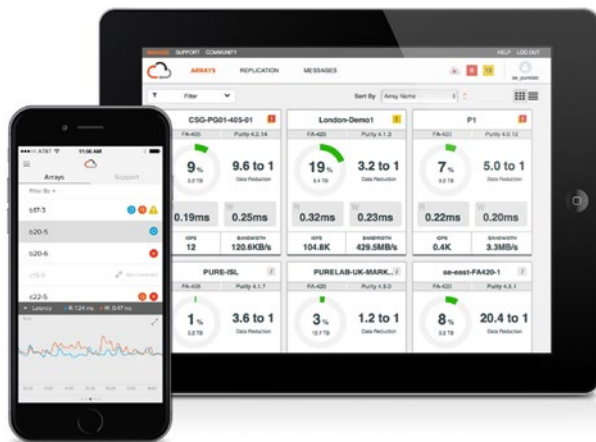

//M AT A GLANCE

PURPOSE-BUILT
to power your business:

- Transactional and analytic databases
- Virtualization and private cloud
- Business critical applications
- Virtual desktop infrastructure

PROVEN 99.9999% AVAILABILITY
including upgrades & maintenance*

2X BETTER DATA REDUCTION
without performance impact

PURE STORAGE RECOGNIZED AS A LEADER IN GARTNER MAGIC QUADRANT
for solid state arrays three years in a row

FLASHARRAY//M RANKED HIGHEST IN GARTNER CRITICAL CAPABILITIES 2016
for OLTP, Server Virtualization, and Virtual Desktop Infrastructure

SATMETRIX-AUDITED NPS OF 83
puts Pure Storage in the **TOP 1% FOR CUSTOMER SATISFACTION**

* first year of //m shipments

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EFFORTLESS

99.9999%
DELIVERED AVAILABILITY

ALWAYS-ON, ALWAYS-FAST, ALWAYS-SECURE

FlashArray//m just works, period. We've architected //m for all-inclusive 99.9999% availability – including non-disruptive upgrades and maintenance. That means your data is always-on, always-fast, and always-secure. Enjoy consistent all-flash speed and 100% performance through upgrades, maintenance, and failures. Encryption, NPIV, and disaster recovery are built-in.

SELF-MANAGING AND PLUG-N-PLAY

Setup is just one item to rack and six cables to connect – no bolt-on controllers and no external management servers. And there's no tuning within the array – no RAID, pool, tiering, caching or performance management – and no tuning of your database, file system, or virtual machine – ever. Your smartphone will ping you if there's something you need to do, and we've put all the details you'll need on two business cards.

CLOUD CONNECTED

Your FlashArray is cloud-connected. Monitor your storage from any device, including our mobile app. We'll be keeping an eye on it too, with proactive, personalized support, and predictive analytics that remove downtime risk. All FlashArrays call home with a status every 30 seconds, so in most cases we'll be acting on issues before you're even aware of them.

"The Pure Storage team brings issues to our attention before we are even aware of them." - Matt Harris, Head of IT, MERCEDES AMG PETRONAS Formula One™ Team

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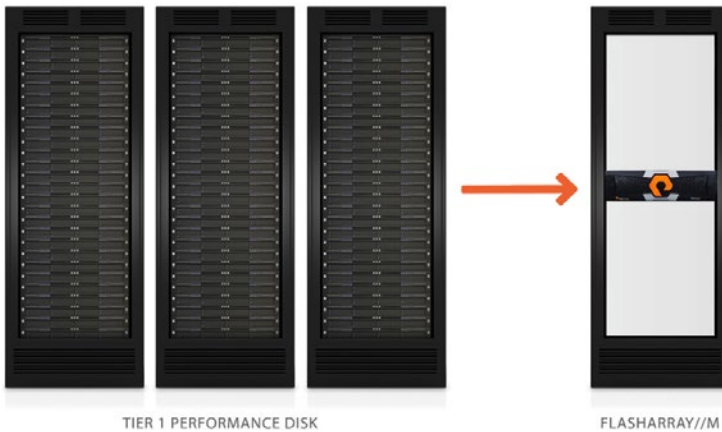
EFFICIENT

CONSOLIDATE ON UP TO 10X LESS

With an industry-leading 5:1 average data reduction across the FlashArray install base – your savings are built-in. Consolidate all your workloads safely with always-on Service Assurance – you'll get zero-configuration QoS and consistent mixed workload performance even through failures and upgrades.

ZERO-COMPROMISE DATA SERVICES

There's nothing else to buy or install – all data services are built-in and included. Enjoy the savings and protection of always-on deduplication, compression, encryption, and QoS – with no performance penalty or per volume configuration overhead. And keep that space savings with data reduction-aware snapshots and replication.

FULL AUTOMATION

Completely integrate & automate the FlashArray into an on-demand catalog of cloud IT services via REST, CLI, or Powershell. Seamlessly integrate with VMware vCenter, VMware vRealize, OpenStack, and Docker.

TIER 1 PERFORMANCE DISK   FLASHARRAY//M

"We went from 50 racks of disk down to five racks of Pure Storage." - Alex Patent, Global VP, The Nielsen Company
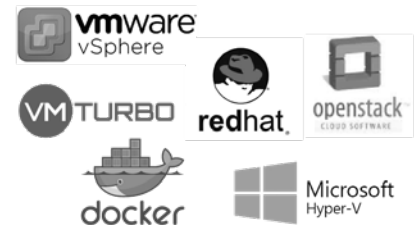

WE'VE PRE-VALIDATED THE SOLUTIONS IN YOUR DATA CENTER

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. Accelerate your deployment further with FlashStack – end-to-end converged infrastructure powered by flash and supported by our partners.
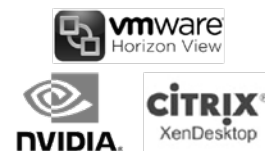
BUSINESS APPLICATIONS

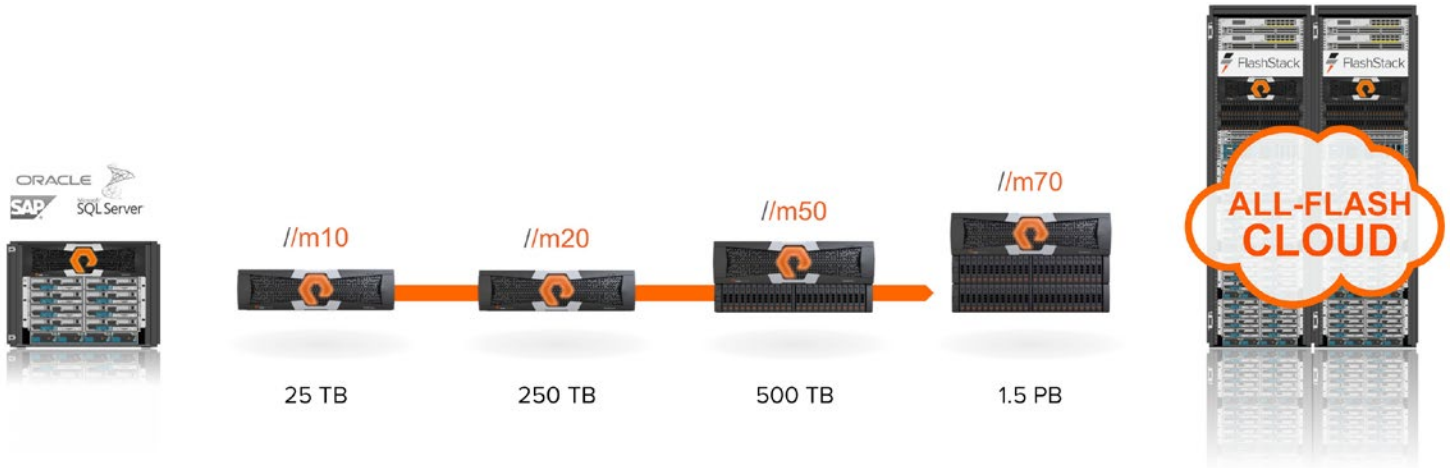### VIRTUALIZATION AND CLOUD INFRASTRUCTURE

DESKTOP VIRTUALIZATION

DATA CENTER INFRASTRUCTURE

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EVERGREEN

Get storage that behaves like SaaS and the cloud. Deploy it once and keep expanding and improving performance, capacity, density and/or features for 10 years or more – without downtime, performance impact, or data migrations. Our "Right Size" capacity guarantee ensures you get started knowing you'll have the effective capacity you need. And our Capacity Consolidation program keeps your storage modern and dense as you expand. With Evergreen Storage, you'll never re-buy a TB you already own.

The key to Evergreen upgrades and scale is the modular, stateless architecture designed into FlashArray//m from day one. Modularity enables expandability and upgradability for generations. By leveraging a chassis-based design and customizable modules, //m enables both capacity and performance to be independently improved over time along with advances in compute and flash. Keep your storage evergreen, modern and dense – and always meet your business needs.

//M CHASSIS

The //m Chassis leverages internal PCIe networking for controller HA, as well as both PCIe/NVMe and 16Gb SAS for flash and NV-RAM module connectivity. The result is ultra-fast module connections that enable hot-plug and HA of every component.

CONTROLLER MODULES

The //m features three 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.

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.

EXPANSION SHELVES

FlashArray//m can expand outside the //m Chassis with 16Gb SAS networking. 12TB or 24TB expansion shelves are available, with 1-4 shelves connected per chassis.

NV-RAM MODULES

Non-volatile cache modules are used to protect writes during I/O processing from power loss. The NV-RAM 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, dual-ported PCIe/NVMe.

I/O MODULES

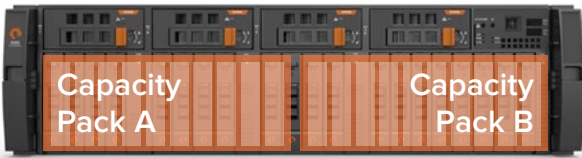The //m has onboard SAS, replication, and management ports, and host-based IO ports can be configured to meet a variety of needs. 6 slots per chassis, configurable with 8 or 16 Gb/s FC, or 10 Gb/s Ethernet iSCSI.

"Pure Storage helped us solve the problem of scale."
- Neil Pinto, Senior Director, LinkedIn

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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.

BASE CHASSIS   EXPANSION SHELF

	512 GB Modules	1 TB Modules	2 TB Modules	3.8TB Modules	7.6TB Modules
10-MODULE CHASSIS CAPACITY	5 TB	10 TB	20 TB	38 TB	76 TB
12-MODULE SHELF CAPACITY PACKS		11 TB 960GB MODULES	22 TB 1.9TB MODULES	45 TB	90 TB

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

TECHNICAL SPECIFICATIONS*

	//M10	//M20	//M50	//M70
Capacity	Up to 25TBs effective capacity** 5 – 10TBs raw capacity	Up to 250+TBs effective capacity** 5 – 80TBs raw capacity	Up to 500+TBs effective capacity** 20 – 176TBs raw capacity	Up to 1.5PBs effective capacity** 42 – 512TBs raw capacity
All-Inclusive Performance*	Up to 100,000 32K IOPS† <1ms average latency Up to 3 GB/s bandwidth††	Up to 200,000 32K IOPS† <1ms average latency Up to 6 GB/s bandwidth††	Up to 270,000 32K IOPS† <1ms average latency Up to 9 GB/s bandwidth††	Up to 370,000 32K IOPS† <1ms average latency Up to 11.5 GB/s bandwidth††
Connectivity	16 Gb/s Fibre Channel 10 Gb/s Ethernet iSCSI 1 Gb/s Management & Replication 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	16 Gb/s Fibre Channel 10 Gb/s Ethernet iSCSI 10 Gb/s Replication ports 1 Gb/s Management ports
Physical	3U 575 – 625 Watts (nominal – peak) 95 lbs (43.1 kg) 5.12" x 18.94" x 29.72" chassis	3U – 5U 600 – 950 Watts (nominal – peak) 95 lbs (43.1 kg) fully loaded 5.12" x 18.94" x 29.72" chassis	3U – 5U 650 – 1280 Watts (nominal – peak) 95 lbs (43.1 kg) fully loaded + 44 lbs per expansion shelf 5.12" x 18.94" x 29.72" chassis	5U - 7U 1230 – 1760 Watts (nominal – peak) 97 lbs (44.0 kg) fully loaded + 44 lbs per expansion shelf 5.12" x 18.94" x 29.72" chassis

*   Stated specifications are applicable to //M R2 versions.

** 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, and pattern removal. Average data reduction is calculated at 5-to-1.

*** Includes always-on RAID-HA, deduplication, compression, and encryption.

†   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 average closer to 32K. FlashArray adapts automatically to 512B – 32KB IO for superior performance, scalability, and data reduction. IOPs are based on 100% 32KiB reads.

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

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