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HPE’s MSA 2040 Storage

Competition to Other Brand

Competitive Landscape – Executive Summary

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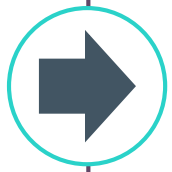
Competitive Landscape – Executive summary

EMC²

VNXe1600



VNXe1600 Key Limitations

- No support for Multi tiering and FAST VP auto-tiering
- Expensive for entry level needs (base unit is $8K + storage processor $7K).
- No flexibility connection (FC or iSCSI) and limited RAID options & LUN size

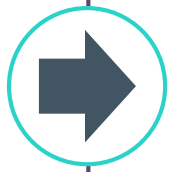
MSA Differentiators

- Supports tiering (standard SAS tiering, Archive tiering without extra cost)
- MSA offered at affordable cost ($6K starting price)
- More flexibility on connectivity with more RAID options & LUN size.

Competitive Landscape – Executive summary

EMC²

VNXe3200



VNXe3200 Key Limitations

- Average performance: supports only 78K IOPS (random read), 31K IOPS (random write)
- Base unit can scales only up to max. 150 drives
- Lack of connection flexibility (no support of 16Gb FC), does not have a combo controller option or a SAS option and limited RAID options (only 10, 5, 6)

MSA Differentiators

- Superior performance: supports max 122K IOPS (random read), 38K IOPS (random write)
- MSA can scale up to 199 drives (up to 768 TB).
- More flexibility on connectivity options of 8 or 16 Gb FC with more RAID options.

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Competitive Landscape – Executive summary

MD3 Family

MD3 Key Limitations

- Very expensive for entry level starting price at $13K.
- Even for 4GB cache controller comes with extra cost.

- No Significant difference in using Dynamic Disk Pool features for performance improvements
- Dell agrees about its performances limitations in MD3 series.

- Customer cannot upgrade or use other models – No easy migration path.

MSA Differentiators

- Very affordable price for entry level customers (starting price $6K).
- Delivers 6GB cache controller (4GB of data read/write and 2GB of system memory), Snapshots (64), archive tiering as standard features.

- MSA delivers superior performance 122k IOPS for random reads.

- Provides easy migration path from MSA 1040 to MSA 2040.

Competitive Landscape – Executive summary

IBM

Storewize 3700

Storewize Key Limitations

- Average performance: Customers need to pay (Turbo license $6850) for better performance. Does not offer SSD read cache
- Not real time tiering (take 2 days data for data movement) and does not support 16G FC
- No investment protection V3700 expansions not accepted by other IBM products, no encryption support.
- No mention of server integration, offer only dual controller – no flexibility

MSA Differentiators

- Superior performance 38K more IOPS (SSD read cache which improves the performance).
- Tiering is based on real time based on robust algorithm and minimize the I/O impact.
- Easy migration path with 16G FC support
- Strong integration with ProLiant server & supports encryption drives.

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Competitive Landscape – Executive summary

E2500 Key Limitations

- File-based storage array adapted for block functionality.
- No clear stated upgrade path for FAS2040 customers to the current FAS2500 systems.
- Lesser disk scalability of 144SFF.

MSA Differentiators

- Dedicated block based SAN storage implementation, optimized specifically to deliver SAN performance
- Excellent investment protection program, allowing data-in-place upgrades.
- Scales higher with SFF drives up to 199 drives.

Competitive Landscape – Executive summary

HUAWEI

Oceanstor T Series

Oceanstor Key Limitations

- Very expensive - Most of value added services offered with additional cost for customers. Thin provisioning, SmartCache does not support all models in T series.
- Limited Performance - Even the high end model of entry storage product can offer only up to 40K IOPS (as per SPC-1 testing).
- Does not support SAS connectivity.

MSA Differentiators

- Offers superior Performance 122K IOPS and SSD read cache feature.
- Clear migration path with non-disruptive upgrade and great investment protection for MSA 1040 customers.
- Flexibility in controller options and higher choice of connectivity options (FC, SAS, iSCSI).

Executive Summary – Features Comparisons

	HPE MSA 1040	HPE MSA2040	EMC VNXe 1600	EMC VNXe3200	DELL MD3	Dell SCv 2020
Thin Provisioning	Yes	Yes	Yes	Yes	Yes	Yes
Tiering	Yes	Yes	No	Yes (FAST VP)	No data available	No
Snapshots	Yes 64 (std) 512 (opt)	Yes 64 (std) 512 (opt)	Yes (no further data available)	Yes (no further data available)	Yes (512 per system)	Yes Max - 2000
Performance	29K IOPS – (Random read) 22K IOPS – (Random write)	122K IOPS Read 38K IOPS Write	No data available	78K IOPS (Read) 31K IOPS (Write)	Turbo 16335 (Random read) 68,782 IOPS (Random write)	85K IOPS (8KB random reads)
Replication	Yes (opt)	Yes (opt)	Yes	Yes	Yes	Yes 500 (max)
Price (starting)	From $6250	From $10,570	From $8,215	From $14,192	From $18,082	From $6,999

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NOTE: Competitor price details are as per Gartner CP Storage site (Feb 2016)

Executive Summary – Features Comparisons

	HPE MSA 1040	HPE MSA2040	IBM Storewize 3700	NetApp FAS 2500	Huawei OcenStor	Nimble CS200/300
Thin Provisioning	Yes	Yes	Yes	Yes	Yes	Yes
Tiering	Yes	Yes	Yes	No data available	Yes	No
Snapshots	Yes 64 (std) 512 (opt)	Yes 64 (std) 512 (opt)	Yes 64 (std) 2040 (opt)	Yes (no further data available)	Yes 256 (max)	Yes
Performance	29K IOPS – (Random read) 22K IOPS – (Random write)	122K IOPS Read 38K IOPS Write	With Turbo 70,755 IOPS (Read) 16207 IOPS (write)	No data available	40K Random reads	No data available
Replication	Yes (opt)	Yes (opt)	Yes	Yes	Yes	Yes
Price (starting)	from $6250	from $10,570	from $11,793	from $17,333	From $11,616 (before discount)	From $31,000

NOTE: Competitor price details are as per Gartner CP Storage site (Feb 2016)

Terminology - Summary

	HPE	EMC	DELL	IBM	NetApp	Huawei
GUI	Storage Management Utility	Unisphere	Storage Manager	Storewize Machine Code	SANtricity Storage Manager (E2700) OnCommand System Manager (FAS2500)	Integrated System Manager
Tiering	Automated Tiering	FAST VP	No data available	IBM Easy Tier	No data available	Smart Tier
Replication	HPE Remote Snap	Remote Protection	Remote Replication	Metro Mirror (Synchronous) Global Mirror (Asynchronous)	SANtricity Mirroring (E2700) SnapMirror (FAS2500)	HyperReplication
Snapshots	Snapshot & Volume copy SW	Block Snapshots (1600) Unified Snapshots (3200)	Snapshots	IBM Flash Copy	SANtricity Sanpshots (E2700) Data protection Snapshot SnapRestore	HyperSnap
Cache	SSD Cache	FAST Cache	SSD Cache	Not specified	SANtricity SSD Cache	Not specified

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Thank You!