Hewlett Packard Enterprise

HPE MSA 1060/2060/2062 STORAGE

System and architecture questions

CONTENTS

GEN 6 ARCHITECTURE

Q: What are the 10GBase-T options for the HPE MSA 1060/2060/2062 Storage?
A: 10GBase-T will be available on the HPE MSA 1060 Storage platform to replace 1GbE copper connectivity. Initially, the HPE MSA 2060/2062 Storage (HPE MSA 206x) will use SFP+ optical/DAC iSCSI connections. 10GBase-T is being studied for inclusion in the HPE MSA 206x product lines after the HPE MSA Gen6 launch.

Q: Does the HPE MSA 1060 10GBase-T auto-shift down to 1GbE?
A: Yes, it does.

Q: What are the SFP+ (optical) connectivity options for HPE MSA 1060/2060/2062?
A: HPE MSA 1060 iSCSI systems will not offer a 10GbE SFP+ optical connection. Customers wanting this combination will need to move up to HPE MSA 206x as it will use SFP+ optical/DAC iSCSI connections.

Q: What cabling options are offered for the SFP+ (optical) connections on HPE MSA 206x?
A: For the HPE MSA 206x iSCSI systems, optical SFPs and cables are supported, along with DAC and new QSFP breakout cables (one to four) are supported. All supported cables are listed in the HPE MSA 2060/2062 QuickSpecs.

Q: Is 32 Gb Fibre Channel supported on HPE MSA 1060/206x?
A: In the first release, HPE MSA 1060/206x will only support 16 Gb Fibre Channel (FC) at the array end. The 32 Gb FC option is being investigated and may be supported later, depending on market trends in the entry storage segment. Currently, 32 Gb infrastructure (HBA/switches) is just too expensive for this market segment.

Q: Is 8 Gb FC supported on HPE MSA 1060/206x?
A: In the first release, HPE MSA 1060/206x will only support 16 Gb FC at the array end. We will support 8/16/32 Gb FC connections via FC negotiations on the switch or HBA. We are a native 16 Gb device.

Q: Do HPE MSA 2050 SAN controllers support FC and iSCSI at the same time?
A: No, for HPE MSA 2050/2052 we supported iSCSI/FC on one converged SAN controller. The I/O chips are no longer being manufactured by any vendor. HPE MSA 1060/2060/2062 uses separate SKUs and controllers to offer iSCSI, FC, or SAS.

Q: It is becoming mandatory on bids and tenders to have 32 Gb FC support on new arrays. What should we bid?
A: On HPE MSA Gen6, we can support new protocols/link rates via a simple host interface module in our controllers. Currently, the HPE MSA product management team is investigating the market opportunity for 32 Gb FC. The 32 Gb FC adoption rate is very low due to switch and HBA costs. Until such a time as HPE MSA has a formal plan, bid HPE Nimble Storage for 32 Gb FC requirements.

Q: Do the SAS Y cables (fan-out) degrade performance?
A: No, as 12 Gb SAS is made up of 4 x 12 Gb physical lanes. Fan-out cables take the four physical lanes of the standard SAS cable and divide them by two. The connectivity to the host is two lanes at 12 Gb/sec, reaching a maximum sequential throughput of ~2.4 Gb/sec per two wide cables.

Q: Is there any chance to have Y or fan-out cable on HPE MSA 206x?
A: There are no plans yet. The GUI implementation is a challenge offering little benefit. Four SAS ports/controllers are natural upper-bound of connected ports due to SAS HBA port counts and crossover cabling requirements.

Q: HPE MSA's connection via SAS sometimes needs to be connected to older servers. How can I tell which arrays can be connected via which HPE Smart Array controllers? Why are older HPE Smart Array controllers not certified on newer servers and vice versa?
A: The compute shared options road map for supported SAS HBA and HPE Smart Array controllers is driven by that group. By policy, they don't test newer controllers to older servers nor older controllers on newer servers to cut development and sustaining engineering costs on both platforms. The HPE MSA development team adheres to their road map and lifecycle dates. Always refer to SPOCK for current support information.

Q: Are there any road map items for NVMe disks?
A: No, the current architecture is still 100% SAS-focused.

Q: How many GBs controller caches are available on HPE MSA Gen6 controllers? How about ASICs?
A: There are 12 GB cache per controller and 24 GB cache per system. Each controller contains a RAID-acceleration ASIC.

Q: Any thought or plan to add NVMe caching, rather than using disk slots for read cache and tiering?
A: HPE MSA Gen6 arrays do not have any internal integration for NVMe. Performance tier and read cache are achieved by SAS SSDs Read Intensive (RI) installed in the enclosure slots.

Q: Can disk enclosures be connected between HPE MSA Gen5 and Gen6 systems?
A: This subject is covered in training materials. The HPE MSA Gen5 disk enclosures and all media are not compatible with HPE MSA Gen6 arrays. Additionally, the HPE MSA Gen6 disk enclosures and media are not compatible with Gen5 arrays.

Q: Are the older HPE MSA data-in-place upgrades possible?
A: No, data-in-place upgrades will not be available in HPE MSA Gen6. The underlying HPE MSA Gen5 metadata is not compatible with HPE MSA Gen6. Additionally, the drive carriers are different for the HPE MSA Gen6 arrays and disk enclosures. Data will need to be migrated or replicated from the HPE MSA Gen5 array to the new HPE MSA Gen6 system. HPE MSA Remote Snap Replication (RSR) can be set up to accomplish this, without host-side server impact. Online migrations using tools such as VMware vSphere® Storage vMotion® can be used. There are also many other backup and restore options.

Q: Are the HPE MSA Gen6 HDDs compatible with HPE ProLiant Gen10/Gen10 Plus HDDs?
A: No, the HPE ProLiant Gen10/Gen10 Plus HDDs are based on smart carriers. They will not fit in an HPE MSA (Gen 1–6).

Q: Will HPE MSA Gen6 drive SKUs have 6-pack drive bundles again? Would it be possible to embed the a la carte drive capacity in the bundle's SKU name?
A: Yes, 6-packs will be offered again. We will be driving a preference toward the bundles moving forward. At list price, 6-packs will have a 25% delta to the single drives at a per-drive level. We are looking into the SKU naming suggestion.

Q: What are the additional software features coming with HPE MSA Gen6?
A: The Advanced Data Services (ADS) suite is still the only software license available on HPE MSA Gen6. It includes performance tiering, snapshot increase for 64 (standard) to 512, and Remote Snapshot Replication. New features for HPE MSA Gen6 are enhancements to the snapshot functionality, which allows the system to failover and failback.

Additionally, the performance tiering engine gets a substantial revamp, termed Tiering v2.0, which streamlines the page-move algorithm to be more effective with incoming writes and with how it deals with free space on the SSDs. It results in—the new Tiering v2.0 system delivering up to 45% more performance than the same workload run against an HPE MSA Gen5 array.

The Tiering v1.0 or Tiering v2.0 engines are both efficient and deliver amazing application acceleration to a wide variety of workloads. Responding to dynamically changing workloads is this system's strength. Through time, we have integrated some tools into the tiering ecosystem, which can help analyze the hybrid system dynamics from inside the GUI and learn about the I/O workload tool. While not a licensed feature, the new HPE MSA-DP+ data protection capability is also important. We will soon build on this new RAID type as a part of our HPE MSA solution recommendations.

Q: Does the new HPE MSA Gen6 allow online drive firmware upgrades without shutting down all hosts?
A: Not yet. It is on the development road map. This feature is now much easier to implement than in the past when the HDD/SSD vendors had differing levels of support for online firmware updates.

Q: Are there any plans to offer deduplication or compression on the HPE MSA platform?
A: Not currently, as we are optimizing around hybrid-flash implementations. We have a new set of Tiering v2.0. All-flash arrays (AFAs) must have deduplication and compression to be competitive. In HPE MSA's hybrid tiering world, performance benefit for compression and deduplication of the SSD tier would be very limited. The controller horsepower required to compact the data (compress and deduplicate) as it moves on to SSDs and then rehydrating the data as it moves back off the SSDs make sense. It is more work to do the compaction on and off than possible benefits to storing more bytes on the SSDs. The bottom line—HPE MSA is not an AFA. Sell HPE Nimble Storage AF20 for that purpose.

Q: There has been no reference to all-flash configurations. Is this not recommended?
A: As mentioned earlier, successful AFAs need compression and deduplication. HPE MSA continues to evolve and optimize the performance tiering engine for hybrid efficiency.

HPE MSA users can configure all-flash configurations and there are reference architectures for SAP HANA® configurations, which only use SSDs. This is a unique configuration where the user can leverage HPE MSA's performance in these configurations, which is not the standard. If a customer is looking for a general purpose AFA, sell HPE Nimble Storage or HPE Primera.

Q: How does HPE MSA deliver encrypted solutions?
A: To provide full disk encryption (FDE) feature from HPE MSA, we use SED and FIPS media (HDDs/SSDs). The implementation is similar to the HPE 3PAR/HPE Primera but without multi-tenancy or centralized key management. There are no plans to provide any key management system.

Q: Are the HPE MSA SED solutions considered data-at-rest encryption?
A: SEDs for HPE MSA do provide data-at-rest encryption. All drives must be SEDs for encryption to function within the array. We continue to sell SEDs and non-SEDs, or regular HDDs/SSDs.

Q: Why do we not support encryption on the HPE MSA 2062?
A: The HPE MSA 2062 comes with two non-SED SSDs. To build an FDE for HPE MSA 2062, it would require users to remove those drives and replace them with an all-SED media to enable the encryption. It is advisable and less expensive to create an HPE MSA 2060 system with the ADS license and purchase SED and FIPS drives.

Q: Does HPE MSA plan a software encryption option?
A: No, HPE MSA encryption is accomplished with SED media, which is considered a hardware-based encryption capability in the HDDs/SSDs. Software-based encryption is not offered or supported.

Q: Are there any plans to offer a centralized key management system?
A: No, there are no plans to qualify or develop any external or centralized key management system for the HPE MSA FDE solutions.

Q: Can we improve the cabling documentation with this release?
A: Back-end cabling has been simplified to only using the straight-through cabling with HPE MSA Gen6. Host-side cabling is recommended to utilize the same ports on both controllers, but with the move to explicit-only mapping and mapping to all ports, the host side cables can be connected to any port on the opposite controller for redundancy.

Q: Is it mandatory to populate SFF slots in an HPE MSA 1060, or can we just add the three LFF shelves and only populate them?
A: The latter can be done but the configuration does not help much. Financially, the delta between HPE MSA 1060 and 2060 does not have much difference when compared to an HPE MSA 2060 LFF.

Q: How much of the HPE MSA architecture or software is HPE IP?
A: The HPE MSA is an OEM product that we integrate into the HPE ecosystem. HPE heavily influences our OEM vendor's road map to give specific features to HPE MSA users through time. We also drive standard features, which are available to all companies using the OEM products. In the future, HPE's focus will be to continue this approach with features that the OEM customers will be able to use and other features that are unique to HPE. The HPE MSA Gen6 arrays are going to be unique for quite some time. HPE is the first OEM partner to leverage RAID acceleration ASIC.

Q: Are there any plans to implement synchronous replication on HPE MSA?
A: HPE MSA has no plans to support controller-based synchronous replication. We do offer Zerto Virtual Replication that supports HPE MSA and is available through HPE Complete.

Q: Has performance measurement and reporting, especially historical performance reporting, improved over the existing units?
A: Yes, the new HPE MSA SMU v4 GUI is an improved version with its performance monitoring and dashboard, which is far more advanced than HPE MSA SMU v3 utilized on the HPE MSA 1050/2050/2052.

Q: VRO or QLC SSDs haven't been mentioned. Will HPE MSA support these new SSDs?
A: We are looking into it. The AFAs are first to pick it up. We would see it as a potential replacement for 10K HDDs, however, the cost may not line up. It will at some point, and we will productize HPE MSA Gen6 SSD media.

Q: Is Direct Connect supported?
A: Yes, same as HPE MSA Gen5. Check SPOCK to be sure your HBA supports Direct Connect.

Q: HPE MSA Gen6 has SMU v4. What is special about it?
A: HPE SMU v4 is has been rewritten from the ground up. The new GUI is an improved and modernized dashboard, so the customer gets an at-a-glance view with abilities to drill in. It is an improvement over SMU v3.

We now have accurate performance reporting and a historical change log. It has a modern and visually fresh look. The second improvement is the use of guided workflows to help a user do complex tasks that they might only take place once in a long while. For example, creating disk groups and volumes, and initial unit setup. By guiding the user through the workflow, we can eliminate mistakes, errors, skipped steps, and referring to a manual. GUI guides the user through the tough stuff.

Q: Has TLS 1.0 been disabled in HPE MSA Gen6?
A: TLS 1.0 and 1.1 have both been disabled and it now uses TLS 1.2.

Q: What coding is the new HPE SMU v4 GUI based on?
A: HPE SMU v4 is HTML-based.

RAID AND HPE MSA-DP+

Q: Does HPE MSA Gen6 have the same limit of 16 virtual disk groups per virtual pool as Gen5?
A: Yes, but while using many drives in the same tier, you can create an HPE MSA-DP+ disk group of up to 128 drives, which counts as a single disk group.

Q: What is the minimum number of drives required to start the array?
A: Two drives (RAID 1) is the minimum configuration.

Q: Do we have to use HPE MSA-DP+ or are the old RAID types still available?
A: HPE MSA-DP+ is highly recommended for HDDs, but other levels of RAID are supported as well.

Q: Please clarify the "we don't recommend this (HPE MSA-DP+) for SSDs" comment. This could be a performance-related issue, but customers are often willing to trade top-end performance for manageability, especially in the SMB space.
A: It is absolutely not a performance issue. This means HPE MSA-DP+ requires that the customers start with 12 drives. Very few HPE MSA customers require so many SSDs up front. Additionally, SSDs do not commonly fail and the resiliency that HPE MSA-DP+ provides would not be as helpful as with HDDs.

Q: Does this mean that the power-of-2 best practices in a disk group is no longer needed?
A: Yes and no. With HPE MSA-DP+, the data stripes will be configured to follow the power-of-2 conventions without having to manually set the number of drives in the disk group. The minimum of 12 drives in HPE MSA-DP+ facilitates this to be true at the controller level. For any other RAID types, the power-of-2 best practices rule still applies.

Q: What is the parity overhead with HPE MSA-DP+?
A: Each stripe zone will be configured as a RAID 6 stripe using segments from 10 drives, which means the parity overhead will be two drives for every 10 drives in the disk group. Spare capacity has to be included as an overhead. In a 12-drive disk group, the overhead is four drives by default (two drives for parity, two drives for spares). If spare capacity is not manually increased that overhead decreases as more drives are added.

Q: For HPE MSA-DP+ disk groups, must the type of disk be the same (though different in capacity) or can it be a different disk type?
A: Correct, the HPE MSA-DP+ disk group will conform to the tiers for the drive types (SSD, SAS, MDL-SAS) but you can have an HPE MSA-DP+ disk group on each of those tiers. Each of the tiers in a pool can have its own RAID layout. Our best practices will recommend all spinning disks (HDDs) should prefer HPE MSA-DP+.

Q: Does HPE MSA-DP+ require a minimum number of drives?
A: Yes, the minimum number of drives for HPE MSA-DP+ is 12 drives, with a maximum of 128.

Q: With the past generations of HPE MSA, the maximum number of disks within a group was 16 or 32 (if it is configured to RAID 50). With the HPE MSA-DP+, is it possible to make groups bigger than 16 or 32 disks independent of the RAID?
A: HPE MSA-DP+ should be treated as a RAID level. There can be between 12 and 128 drives in an HPE MSA-DP+ disk group. RAID 50 has not been supported on virtual storage since its introduction on HPE MSA Gen4 arrays. Only the now-obsolete linear disk groups support this and is no longer required to achieve the same benefits (wide-striping).

Q: HPE MSA-DP+ stripe zones have a minimum drive quantity of 10, but can it grow one by one?
A: The minimum number of drives is 12 for an HPE MSA-DP+ disk group, due to the included spare capacity. The disk group can then be expanded by one or many drives. The disk group will rebalance the stripe zones when a new drive is added.

Q: In this case, do customers have to start with 12 HDDs per pool?
A: To use the HPE MSA-DP+ disk group, the customer will need to have a minimum of 12 of the same type of drive (SSD, SAS, or MDL-SAS) to create the disk group. We recommend HPE MSA-DP+ for HDD tiers, but other RAID types that require fewer drives (for example, RAID 6) are also supported. However, we do not recommend RAID 5 for HDDs.

Q: Will this performance impact/rebuild timetable be available in a white paper once the HPE MSA Gen6 announcement is made?
A: This is documented in the HPE MSA Gen6 Virtual Storage reference guide. HPE MSA-DP+ will be big going forward.

Q: Can you possibly share some basic calculation method to calculate usable capacity until a sizing tool is available?
A: Standard RAID overhead is well known and does not vary array vendor-to-array vendor. HPE MSA-DP+ is a little more complex as it uses RAID 6 in the core but also layers in the overhead of spares in the calculation. This will be much easier when the new NinjaOnline tool is available.

Q: If I want to use both controllers (two pools) and HPE MSA-DP+ with tiering, what's the minimum number of disks?
A: Each pool would have two SSDs (RAID 1 pair) and twelve HDDs (HPE MSA-DP+ group).

Q: Is HPE MSA-DP+ only available for the SSD layer?
A: HPE MSA-DP+ is available for all tiers of storage—MDL-SAS, SAS, or SSD. It works well with MDL-SAS or SAS as the cost to create an SSD for the HPE MSA-DP+ disk group is substantial. Additionally, SSDs are not susceptible to mechanical failures and would benefit less from the resiliency that HPE MSA-DP+ provides.

AUTOMATED TIERING AND READ CACHE

Q: What is the maximum read cache per array?
A: The per pool limitations are maximum of two SSDs and 4 TB. Both pools can be configured for read cache.

Q: Is the flash-to-disk ratio based on raw or usable capacities of the capacity tier?
A: It is based on the usable capacities.

Q: So, are you seeing (or advocating) HPE MSA configs where all drives and SSDs are run by just one controller, with the second controller as a standby, similar to how HPE Nimble Storage runs? Your comments about SMB customers not exceeding the performance of one controller seem to point to this scenario.
A: Yes, with the controller performance available today, HPE MSA no longer requires a dual pool (active-active) for most SMB customers. One can achieve better performance than what most SMBs need with one pool (active-passive) configurations like HPE Nimble Storage does. However, this option remains available when very high performance is required and lowers the cost per IOPS ratio.

ECOSYSTEM QUESTIONS—HPE INFOSIGHT, HPE ONEVIEW, HPE RMC, VEEAM

Q: Will HPE MSA Gen6 support Veeam snapshot integration?
A: We will not have this support at launch. Contact the HPE MSA product management team if this is of interest to help set prioritization for future releases. Work through your Geo Category management team to make this connection. We do support Veeam's target-based snapshots.

Q: Is HPE InfoSight support in the road map for the HPE MSA family?
A: HPE MSA Health Check has already done the algorithms we would do in HPE InfoSight. The REST interface is the next step. There is a big HPE InfoSight project, which will centralize and streamline integration for all the HPE InfoSight integration partners. It might be a good place for new offerings like HPE MSA.

Q: Will HPE MSA Gen6 get the HPE OneView support?
A: In time, HPE MSA's new RESTful interface makes it possible to begin conversations with the HPE OneView team. If this functionality is important to your customers, send a note out to an HPE MSA product manager. Work through your Geo Category management team to make this connection.

Q: In the future, will the HPE MSA integrate with HPE StoreOnce and HPE RMC?
A: The POC is already done between HPE RMC and HPE MSA Gen6. We are scoping the release mechanisms. It would give us data mobility in the HPE ecosystem and application awareness for our replication services. It will take some time, but we would like to be on the next big HPE RMC platform release.

Q: Any plans for a multi-array or multi-site management tool?
A: Currently, Arxscan is a great tool for fleet monitoring, hence, we do not have any plan to create one. There is special pricing for HPE MSA or HPE 3PAR on this tool. It is available in the HPE Complete portfolio.

Q: Is there a CSI plug-in for HPE MSA in plans? When will it be available?
A: We do not have any plans for the first release. Contact the HPE MSA product management team if this is of interest to help set prioritization for future releases. Work through your Geo Category management team to make this connection.

Q: Will SAF tools be able to collect performance data from this generation product?
A: There is no SAF integration. Use and understand the I/O workload tool within the capacity section of the new GUI.

Q: Any plan to integrate HPE iLO 5 and Silicon Root of Trust into the new Gen6 ASIC?
A: There no formal plans on this technology thus far. We are looking at a storage implementation on this for later. Contact the HPE MSA product management team if this is of interest to help set prioritization for future releases. Work through your Geo Category management team to make this connection.

PERFORMANCE, SIZING, AND QUOTING TOOLS

Q: When will HPE MSA Gen6 be available to quote in OCA?
A: It will be available on the NPI date of September 8, 2020.

Q: Will the HPE MSA be available within the HPE NinjaSTARS suite?
A: HPE MSA Gen6 will be the first storage platform released under new tools infrastructure called NinjaOnline. It's been a challenge, but it is happening. We anticipate the tool to be open for sizing about one month after the HPE MSA Gen6 platform launches. The old HPE storage sizing tool used for HPE MSA Gen 1—5 will not be available for Gen6 and beyond.

Q: Is there a way to size HPE MSA before the new NinjaOnline tool is released?
A: Yes, we plan to make a simple capacity-sizing tool to the field, which will facilitate understanding usable capacity and configurations on the new HPE MSA Gen6 platform. To accompany this simple tool, we will release a PPT with a number of simple but common examples. We will also include the performance data curves, which come from the performance estimation module (PEM) datasets the NinjaOnline tool will be pulling from. As a final tie-in, we will do a TekTalk on Point (TToP), which will walk through these examples. When the official NinjaOnline tool is released, we will follow up with an official TToP on how to size/configure using that too.

Q: Will we detail the R/W ratio and I/O sizes along with the 350K IOPS numbers?
A: The performance numbers for our benchmark specs will be included in the QuickSpecs (1060, 2060, and 2062). Details of how the tests were run are included along with maximum random read and write numbers, as well as sequential ones.

Q: Are those IOPS only considering back end? Or are there new metrics that consider controller performance?
A: The 325K IOPS are as measured from the host in an end-to-end configuration.

COMPETITIVE

Q: Which competitors use the OEM products from Seagate? Will Lenovo have the same product?
A: Dell purchases a very similar solution from Seagate. It is half a generation behind HPE MSA Gen6. We have the latest acceleration ASIC, GUI, RESTful interface, Tiering v2.0, HPE MSA Health Check, and more. Lenovo used to purchase a Gen4/Gen5 product from Seagate, but they have dissolved that relationship and moved to a new joint venture with the LSI side of NetApp.

Q: What are our key differentiators versus Dell ME4?
A: Dell purchases a similar array from Seagate as an OEM customer. Dell is now half a generation behind HPE MSA Gen6. Dell only productizes the HPE MSA 2060 equivalent configurations. In addition to the HPE MSA 2060 model, HPE MSA has the low-end HPE MSA 1060 series and the HPE MSA 2062 models. This model family flexibility is advantageous to HPE MSA at both the high and low end of the spectrum. HPE MSA Gen6 arrays utilize the latest RAID acceleration ASIC (improves performance on various RAID calculations), the HPE MSA SMU v4 (with simplicity, guided workflows, and better dashboard), RESTful interface, and Tiering v2.0 as key differentiators for HPE MSA.

Q: Lenovo has a NetApp OEM offering that is very aggressively priced in the entry segment. Will HPE MSA compete against this?
A: Yes, HPE MSA will compete with the low-end offerings. Lenovo continues to change its entry storage strategy year after year. For a few years, they were using IBM Storwize V3700, then a product from Dot Hill (T-series) for a couple of years, now they have announced a new joint venture (JV) with NetApp. Each of these product shifts leaves customers' investment protection at a dead-end state. The JV with NetApp is new so it is too early to tell if it will work in long term. It should be easy enough to sell against. Customers need to understand that it is not just a price game. Investment protection depends heavily on our vendor's strategy. HPE strategy and our execution, including the new HPE MSA Gen6 product introduction, build toward a proven track record.

Q: How do we compete with NetApp's unified product lines?
A: NetApp has vacated the sub $20K market segment and is focusing on the midrange segment. Adding file and block services by design has a cost impact (memory and processor power), which makes it very difficult to keep the entry price points low enough to compete in the $10K range. While HPE has been using the file controller strategy, we have seen sales of the low-end general file controller drop to near zero. For HPE MSA, we are working on solution white papers on how customers deal with this through hosted VMs and/or HPE StoreEasy appliances. Many customers are already following this way.

Q: How do we match up with IBM Storwize V5030E?
A: Very well. The V5030E is a midrange box stripped down to be offered for a lower price. We don't see them being any more successful than the low-end EMC VNX and Unity machines we've seen in the past. To perform well in the entry segment, they need a product design to hit the entry-level price points (Under $10K US). Selling a product at extreme discounts is not a product strategy in this segment. See the comprehensive HPE MSA competitive deck posted in Seismic.

POSITIONING

Q: What is HPE MSA's position in the HPE primary storage family?
A: Position HPE MSA where the budgets are $20K or less. From a host connectivity standpoint, HPE MSA ships with FC, iSCSI, or SAS connectivity. FC is ~50%, iSCSI is 25%, and SAS is 25%. HPE MSA 1060 series is designed for the lowest starting price point. HPE MSA 2060 is the building-block flexible configuration array and the HPE MSA 2062 is the hybrid flash model from day one.

Q: Is HPE MSA positioned as an AFA?
A: Strictly speaking, HPE MSA would not fare well in the AFA category. Without compression and deduplication, the AFA competitors would be far less expensive than HPE MSA as they would only require lesser (half) SSD media to meet a specific capacity point. HPE MSA does allow all-flash configurations but we do not position HPE MSA as AFA. HPE Nimble Storage and HPE Primera are proper AFA offerings and should be very competitive against AFA competitors.

Q: Are there specific workloads or deployment methods where HPE MSA is perfect?
A: HPE MSA is best positioned as a general-purpose shared storage array. It is run in virtual deployments most of the time. For SMBs using HPE MSA, the array is expected to run all VMs (applications) it takes to run their businesses. HPE MSA is also sometimes selected to run on applications (such as SAP HANA) and optimized for speed. The other common deployment mode for HPE MSA is that of ROBO. This deployment method depends on optimized costs per site (cost/site).

Q: Does HPE have a low-cost, general SAN software-defined storage (SDS) solution now that HPE StoreVirtual is end of life?
A: Yes, the StorMagic application is sold via HPE Complete.

Q: Should HPE MSA and file controllers still be positioned for mix file/block requirements?
A: Standard (low-performance) models have already announced EOL, but they are still shipping. Performance models are also still shipping. They will be going away, as HPE Primera or HPE Nimble Storage customers will have a new strategy going forward.

Q: With Microsoft possibly discontinuing "Windows Storage Server 2019", what is our HPE StoreEasy strategy going forward?
A: Our HPE StoreEasy platform will continue as it has, regardless of Microsoft's licensing strategy. Customers who want a turnkey appliance will always have the HPE StoreEasy option. If they want to roll their file server, they don't want or need an appliance. Simplicity is at the heart of HPE StoreEasy appliances.

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HPE MSA briefcase

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