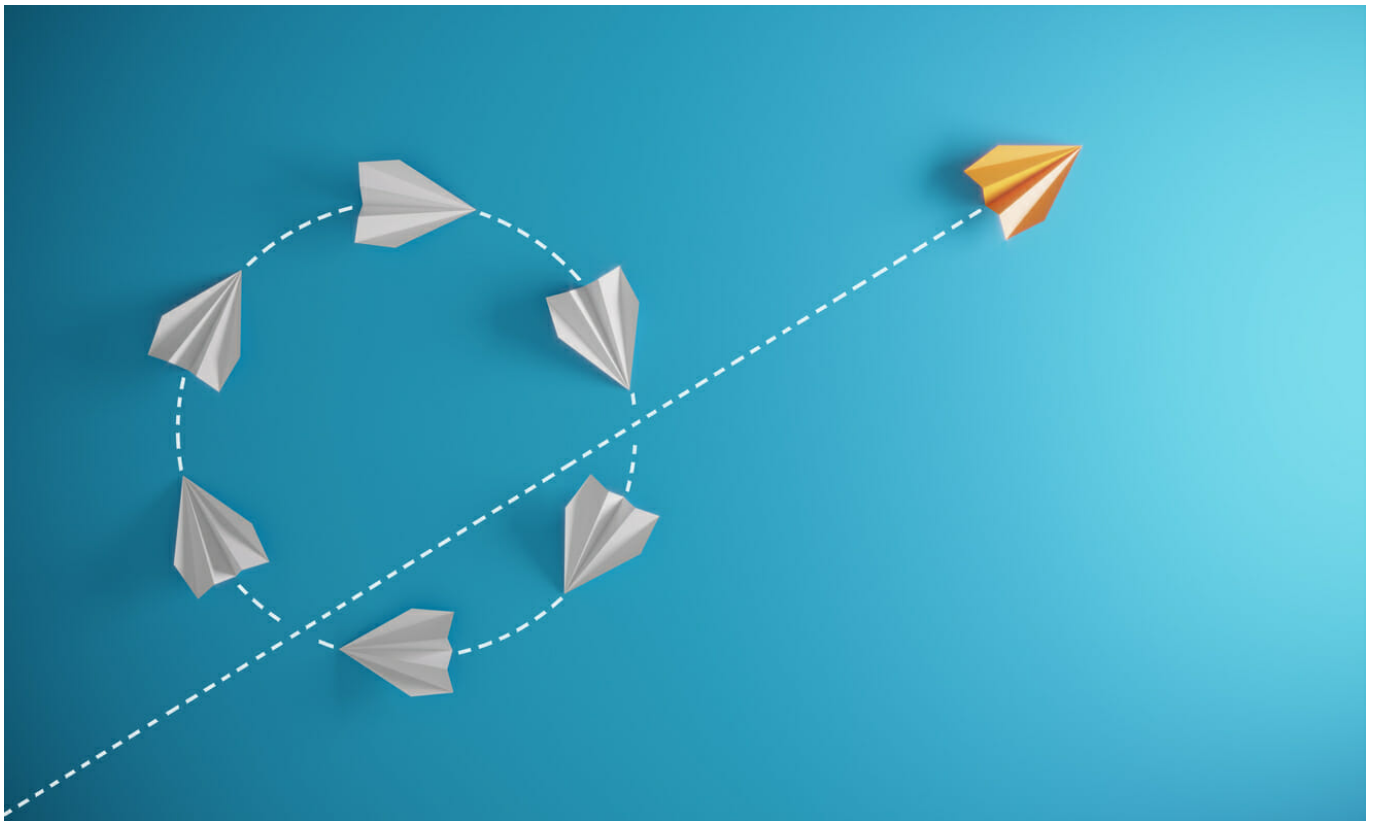


Flash Accompli: The HDD to SSD Crossover Is All But Complete



In recent weeks, a few storage vendors have been talking about the shift from spinning disk to all-flash. To this we say, “Welcome to the party!” [Pure hasn’t had time for spinning disk since 2014.](#)

While Pure has been the leader of the “all-flash” revolution for more than 11 years, we see the trend accelerating further over the next couple of years.

Here’s why: To meet today’s challenges, organizations need fast access to all data, whether it powers systems of record or key systems of innovation. Yet, up to now, the attractive economics of legacy spinning hard drives have forced IT organizations to distinguish between performance-oriented workloads and everything else. Simply put, disk was significantly cheaper than flash.

Data has also evolved. In fact, within the next five years, machine-generated unstructured data powering new workloads will grow in velocity to represent 80% of all enterprise data. Adding to this growth challenge, unstructured data does not reduce well, nor by compression or deduplication. It increasingly requires higher performance that isn’t easily met by spinning disk (at least not without the addition of expensive memory caches or write buffers).

These new workloads also need to be analyzed in real-time—for everything from AI-assisted diagnostic

imaging, high-frequency trading in a hedge fund, fraud detection in a financial institution, or even robots making real-time decisions about how and where to send packages. Most importantly, all these workloads require the ability to recover rapidly in the event of a business-halting ransomware attack.

The fact is that all these capabilities are better served by solid-state flash. Based on the latest economics, we believe we'll see an accelerated retirement of spinning disk. Why?

- The price per gigabyte of solid-state drives (SSDs) will soon match traditional spinning hard-disk drives (HDDs).
- The benefits of flash extend beyond traditional block storage to support the market need for fast file and fast object across a unified and scalable platform—specifically high-performance NFS/SMB and S3 within the data center.
- The pandemic has forced organizations to look at the human touchpoints associated with forklift upgrades, painful upgrades, unplanned outages, and the need to eliminate them. Flash is better enabled by software and significantly more reliable.
- Truly elastic “as-a-service consumption” is delivering agility that organizations need as they evolve to distributed cloud architectures. Flash is more agile and efficient.

Third-party analyst data also supports our thesis.

IDC projects that SSDs will steadily displace performance-optimized HDDs (10K and 15K RPM) for primary storage in servers and storage systems, with SSD market revenue doubling from 2019-2024 to \$30.7B. The enterprise HDD segment also is still growing, but significantly more slowly (\$10.4B to \$14.2B over the same period).

This is all great news. The best part is that Pure saw this shift coming before it happened.

A decade ago, Pure built a company on the vision of the “all-flash data center.” Over the last decade, we have challenged the notion that flash was an “expensive option” restricted to mission-critical environments. Furthermore, as we have continued to innovate across our product portfolio, our products have delivered industry-leading performance, reliability, and simplicity by deeply integrating our storage software and hardware. Here are a few examples:

- When the industry said flash was only affordable as a cache, we figured out how to marry it with dedupe/compression, improving the efficiency and economics while driving market adoption.
- When the industry focused on “lots of disk/lots of spindles” to handle big data, we integrated the power of flash with the architecture of FlashBlade® to make it fast, scalable, and significantly more efficient.
- When the industry thought spinning disk was the economic answer for tier 2 data, we did heavy software and hardware engineering on FlashArray//C to take advantage of QLC and (without the need for Optane SCM). We made flash affordable for tier 2, rendering hybrid arrays obsolete.
- When the industry thought data protection was all about backup speeds, we focused on recovery speeds and safeguarding volumes against malicious encryption to power all-flash in the fight against ransomware.

From our inception, Pure has architected data solutions to address the demands of modern and diverse applications. We've focused on support the needs of a wide range of structured and unstructured data at scale across any workload. Our foundational platform is “all-flash” with no retrofits, no compromises, and no regrets.

Our software is what enables “all-flash.” It's the software on which Pure, and our vision of the all-flash data

center, is built. It's also what powers our continued innovation. Moreover, it's what enables simple and fast access to your unstructured data; the data that is growing most rapidly in both volume and business value. All of this combines for customer outcomes and experiences all around.

We're excited to be at the dawn of SSDs officially overtaking HDDs. And we're glad to see that storage vendors across the board are finally catching on. We look forward to continuing to lead the way well into the future.

For these reasons, [Gartner has named Pure Storage the Leader](#) in its CY2020 Magic Quadrant for Primary Storage Arrays. But don't take our word for it, check out what your storage pro peers have said about Pure Storage. Gartner's Peer Insights reports a rating of 4.9 out of 5 for [FlashArray](#), and 4.8 out of 5 for [FlashBlade](#). Please [contact us](#) to learn more.