Storage Industry Leaders and Generosity from 9/11 to the Pandemic

The storage and server industry has always been quick to help when it comes to national emergencies. Within a few days after 9/11, Michael Dell emphasized to his company's leadership the need to focus on Dell's people and helping affected customers rebuild their businesses, providing a personal connection and direct communications and support. The COVID-19 pandemic is no different - Michael and Susan Dell donated $100 million through their foundation to help global initiatives related to COVID-19. A portion of Michael Dell's, CEO and Chairman at Dell Technologies, statement:

> We are **committing $20 million** to COVID-19 Therapeutics Accelerator, launched by the Bill & Melinda Gates Foundation, Wellcome, and Mastercard, to identify potential treatments for COVID-19 and accelerate their development and distribution. Secondly, we are committing **an additional $80 million** to providing relief for the communities we serve with a focus on four areas: supporting our healthcare systems; sustaining the work

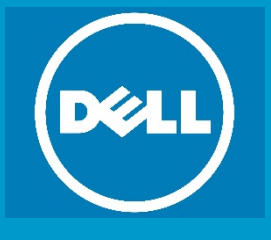
of nonprofits and social enterprises; supporting our education systems; and stabilizing livelihoods and small businesses. You can learn more about this work here: https://www.msdf.org/blog/2020/04/covid19-dell-foundation-response/.

Similarly, Hewlett Packard Enterprise released an extensive fact sheet summarizing their COVID-19 response efforts. These efforts include monetary, in-kind, and technology support. HPE launched a $2 billion relief effort to allow customers to defer 90% of contract value of products and services to lessen the economic impact and keep them in business, preserving jobs – and relationships. Hewlett Packard also donated $3 million to 9/11 relief efforts.

Bay area companies, including NetApp and 24 others, collectively committed $22 million to pandemic relief efforts. Some of this work started before the current pandemic. Two years ago, IBM launched a five-year, $30 million initiative to create applications to help communities prepare for natural disasters, using AI, cloud, and IoT technologies. IBM is also leading a public-private COVID-19 High Performance Computing Consortium to bring industry and academic leaders together to apply their knowledge, computing power, and insights to find solutions. Industry leaders volunteer free compute time and resources on their machines and include Amazon, AMD, BP, D,E, Shaw Research, Dell, Google Cloud, HPE, Microsoft, NVIDIA, and Intel.

The generosity of businesses and foundations in the aftermath of 9/11 is too vast to comment on in any real detail but this publication provides a good summary. While this pandemic, 9/11, natural and purposeful attacks, have far-reaching impacts, one constant remains – the generosity of individuals - people who step up to use their positions, name, brand, and resources to aid in the recovery.

18 Top Enterprise Data Storage Vendors



18 Top Enterprise Data Storage Vendors Setting the Pace for the Storage Industry

Datacenter storage companies (market leaders for storage area network (SAN), network-attached storage (NAS) technologies, and hybrid cloud storage solutions):

1) Dell/EMC- Tops the external enterprise storage systems market with product such as Isilon NAS storage, EMC Unity hybrid-flash storage arrays for block and file storage, SC series arrays and VMAX.
2) HPE- Hewlett Packard Enterprise and its Chinese joint venture, the New H3C Group, has surpassed Dell EMC in the overall market for enterprise storage systems, but not in the traditional storage array segment. Product lines include HPE 3PAR StoreServ midrange arrays, entry-level HPE StoreEasy Storage NAS systems and flash-enabled MSA Storage.
3) NetApp- adding latency-busting NVMe-over-Fabrics (FC-NVMe) support to its all-flash arrays and offering hybrid cloud data tiering support in its ONTAP storage software.
4) IBM- has come to fully embrace flash in its arrays. In 2017, the company announced a big push into NVMe-based storage
5) Hitachi Vantara- In September 2017, Hitachi combined Hitachi Data Systems with Pentaho and the Hitachi Insights Group to focus on data integration, the Internet of Things (IoT), big data analytics, and of course, enterprise storage. HDS storage systems live on in the form of the company's Hitachi NAS Platform and G Series arrays.
6) Huawei- quickly growing its market share. Its products include all-flash OceanStor Dorado V3 arrays with NVMe support and OceanStor 18000 V5 hybrid-flash storage systems.

Data Storage Companies: Well-Versed in the Enterprise

7) Oracle- Oracle offers more than business databases and related software products, it also sells ZFS Storage, whose legacy can be traced back to the Sun Microsystem days, along with Zero Data Loss Recovery Appliances and StorageTek archival tape systems.
8) Lenovo- Known for its ties with EMC and resells IBM Storwize arrays, lately it has been venturing out on its own with Lenovo Storage S2200 and S3200 SAN hardware.

9) Fujitsu- Reflecting the company's vision of providing storage solutions for the entire data lifecycle, Fujitsu gathers its arrays, backup appliances, tape libraries and software-defined storage (SDS) offerings under the ETERNUS banner.
10) Western Digital- Western Digital is synonymous with hard drives, but the company also produces data center storage systems like Ultrastar for the data center via its Hitachi Global Storage Technologies (HGST) subsidiary.

All-Flash Upstart Storage Companies

11) Pure Storage- The company made a name for itself by being an all-flash "purist." continues that vision with the FlashArray//X, a storage system packed with NVMe SSDs.
12) Violin Systems- made an early bet on all-flash (with a healthy dose of RAM) in the data center. After a brush with bankruptcy, Violin reemerged with a focus on not only delivering high-performance Flash Storage Platform arrays, but also storage services and management software tools that support modern-day workloads.
13) Kaminario- leading all-flash storage vendor focused on delivering flash-friendly storage software. In January 2018, the Boston area flash storage specialist announced it was leaving the hardware side of the business to Tech Data to focus on supplying SDS solutions to enterprises. For those wondering, IT buyers can still snag highly-capable Kaminario K2 arrays from resellers through Tech Data.

Hyperconverged storage combines storage, compute and networking into highly-virtualized systems that offer enterprises immense flexibility in how to run and manage storage workloads.

14) Nutanix- Available in hardware appliances or as a software that organizations can install on their own systems, Nutanix's Enterprise Cloud platform enables software-defined storage (SDS) in the data center. It supports a wide range of storage services (file, block, container and virtual machine), along with backup and disaster recovery orchestration.
15) Pivot 3- offers flash and hybrid flash HCI systems with a number of desirable data services, including asynchronous replication, erasure coding, and thin provisioning. The company's high-end, all-flash HCI appliances pack both NVMe SSDs and conventional SSDs to accelerate storage workloads.

Companies focused on Data Recovery

16) Veritas- In 2016, Veritas split from cybersecurity giant Symantec, which merged with the company in 2005. Now Veritas serves the market with its NetBackup backup and recovery

suite and the Flex Appliance, which can be deployed in minutes to provide on-demand backup, recovery, archiving and cloud tiering services using microservices-based approach.

17) Commvault- Targeting midsized to large businesses, designed to help enterprises wring more value out of their information as it passes from primary to secondary storage. Commvault Hyperscale is available as an appliance that integrates storage, compute, networking, backup and recovery, analytics and data lifecycle management, or as software that works with systems from Dell EMC, HPE, Cisco and others.
18) Actifio- a copy data management specialist, helps businesses optimize their complex storage environments enables the company to offer disaster recovery as a service (DRaaS).

Data Storage Companies: Up and Coming Storage Vendors

Cobalt Iron- Compass solution uses automation to ease the constant challenging workload of managing data backup. Cobalt offer the “single pane of glass” – a single dashboard to manage backup. This console can manage the many enterprise backup tasks at any level, including global policy administration. This single console gives you the data you need to more easily troubleshoot the system. Compass can be found in many global data centers, including AWS, Google Cloud, IBM Cloud, Alibaba and Microsoft Azure.

Pavilion Data Systems- Leader in NVMe over Fabric, offers write performance at speeds up to 90 GBs per second. Write latency can be a low as 40 microseconds. The company incorporates Swarm, decentralized data storage and distribution; with Swarm, the Pavilion system can rebuild a solid-state drive in just a few minutes. Also, the company offers encryption, thin provisioning and an array of data management tools.

StorONE- Offers flexible software-defined data storage solution that can be used for virtual storage, or to handle cloud storage and other secondary storage, hybrid arrays or those ultra-fast all-flash arrays.

Upcoming 2020 Enterprise Storage Events - All Virtual

SNIA SDC, September 22-23
Microsoft Ignite, September 22-24
VMworld US, September 29- October 1
NetApp Insight 2020, October 26-29
Flash Memory Summit, November 10-12
SC 20, November 16-19

Join us "In the Hot Seat"
Let's talk about what is Hot and what is Not in the World of High Tech, Storage, and Security

The convention floors will be empty (and virtual occupied) so we won't be on the floor interviewing people at FMS this year BUT we could do zoom interviews to highlight things going on in the industry. Sound interesting? Keep in mind, these are not infomercials. But they could be "industry shorts" to get the word out about events, technology development, challenges, major personnel changes, shifts in direction, and focuses on your area of expertise and interest. We are planning to record a couple of these each week in October.

G2M Research Webinars for the Rest of 2020

As our industry continues to be virtual, webinars can be a good way to stay up to date and get your message out. G2M has several webinars scheduled for this year on hot topics in our industry. Interested in attending our webinars? Register by clicking on the dates of interest. Interested in Sponsoring a webinar? Contact **G2M** for a prospectus.

Our August webinar "Advanced SSDs – PCIe Gen4, New Form Factors, and Smart SSDs" was sponsored by Kioxia (Matt Hallber) and Intel (Jonmichael Hands). View the recording and/or download a PDF of the slides here.

G2M RESEARCH

Sept 15: Edge Computing/Storage – Get (& Keep) Your Data Off Of My Cloud

Oct 20: AI and Storage Use Cases in Healthcare

Nov 17: NVMe-oF™ - Using Telemetry to Improve Network Latency

Check back for additional 2020 company-specific, conference, and other webinars (to be posted soon).

Let us know if there are any endpoint security and/or enterprise storage topics you would like to see covered this year or next.

Our 2021 webinar schedule will be released soon.

Survey results from our Webinar, "AI, Self-Driving Cars, and Advanced Storage" sponsored by WekaIO, b-plus group, and NVIDIA

When you consider solutions for AI training and data acquisition, what factor is most important to your organization?

Cost:	23%
Storage Capacity:	13%
Storage Performance:	**45%**
Storage Networking:	10%
Future Expandability:	3%
Other Issues:	6%