

Nominee: Tegile Systems with SanDisk[®], a Western Digital Brand

Nomination title: IntelliflashHD

High speed, high performance, low cost, interoperability, ease of use, reliability and high density have always been criteria on customers' wish lists for their IT architecture. Since the emergence of virtualisation, IT boundaries are being pushed further by the requirement for hyper-convergence.

Tegile have risen to this challenge with the introduction of IntelliFlash HD. This solution combines all the best components of a flash hyper-convergence solution that has been designed to surpass customers' wish lists in many ways. As a Technology Partner with SanDisk[®], a Western Digital brand, IntelliFlash HD leverages the performance of SanDisks' InfiniFlash with high-performance software operating system, compression and de-duplication algorithms and hardware controllers to give a unique flash storage solution with the speed and density needed for big data and virtual compute environments.

IntelliFlashHD consolidates different workloads on to an all-flash array that includes a fast flash tier for performance and high-density flash tier for capacity. Unlike any other all-flash array, IntelliFlashHD can offer all flash at \$0.50 per effective gigabyte of capacity, outperforming competitors on costs.

IntelliFlashHD does this by combining high-performance flash with the world's highest density flash, then applying inline de-duplication and compression. This innovative solution also allows 1000's of virtual machines to be consolidated on to a single storage platform along with the consolidation that virtualisation has been able to achieve at the compute layer.

Delivering Hyper Consolidation and interoperability

Tegile IntelliFlash HD supports deep integration with VMware with vCenter integration (via a plug-in), and support for SRM and VAAI primitives. IntelliFlash HD is VM-aware storage, allowing a VM administrator to manage, provision, monitor performance, take VM-consistent snapshots, clone and replicate snapshots and pinpoint VM problems - all without logging into the storage array's user interface. With VAAI support, Tegile allows storage operations to be offloaded from the host down to the storage array. Tegile provides VAAI primitives for both block and file.

As with all of Tegile's storage arrays, IntelliFlashHD platform is also designed with native multi-protocol support, allowing both SAN (FC, iSCSI) and NAS (NFS, CIFS, SMB3) to be run concurrently out of the array. Instead of deploying multiple arrays from different vendors, customers can consolidate multiple workloads on a single Tegile array. This allows a customer to consolidate multiple, mixed workload applications off of legacy storage. It is especially helpful in datacentre environments where a customer is placing their VMFS data stores on to a SAN-based protocol and wish to expose NFS, CIFS or SMB3 for the corresponding file shares or home directories for virtual desktops. This is offered at no additional cost to the customer as it's a part of Tegile's all-inclusive software licensing.

Tegile's IntelliFlash HD delivers up to 1.4 Petabytes of effective storage space in 5RU (rack units) and up to 5 million IOPS which allows businesses to move data to an exclusively all-flash architecture. This also increases VM density while at the same time decreasing datacentre footprint to match the VM density achieved on the compute side of the datacentre.

Ease of Use and analytics

Tegile IntelliFlashHD user interface has been designed so that anyone in an organisation can manage the system. Wizards guide users through storage tasks that significantly cut provisioning time. The UI dashboard enables users to quickly and easily monitor performance, space usage, cache hits, CPU utilization and network throughput and this can be done for multiple storage pools from either controller.

IntelliFlash HD also comes with a cloud-based array analytics engine called IntelliCare. Driven by cloud-based analytics, customers can gain access to IntelliCare's millions of telemetry points to assist in making future decisions. This engine is designed to simplify global storage administration, connect to Tegile support teams to help proactively predict potential problems before they even occur, and provide customers with historical and future performance and capacity requirements. Tegile also includes application-optimised templates for various application workloads. Once a customer chooses the type of application workload from a drop-down list, the system will pre-select the optimal configuration properties automatically for all volumes, both LUNs and shares. These templates are based on best practices for block size. Advanced settings are also available to fine tune storage properties.

Reliability and innovation:

IntelliFlash HD is designed to offer the best innovations in software defined storage architecture to give reliability and outstanding performance:

1. **Metadata Acceleration** –Dedicates a portion of the performance layer exclusively to metadata to optimize the I/O path
2. **Dynamic Caching** – Intelligent caching algorithms keep the most frequently accessed data on the fastest media and adapt to differing media latencies across multiple levels of cache
3. **Simultaneous Data Access** – Comes with a dual-active controller architecture used for simultaneous data access
4. **Data Integrity** – Performs an end-to-end checksum process to match data blocks as reads and writes occur, automatically fixing corrupt blocks
5. **Flash Endurance** – Aligns writes to the geometry of the flash media, ensuring even wear levelling and extending the life of the system’s flash drives
6. **Data Reduction** – Offers inline compression and de-duplication
7. **Data Protection** – Provides an efficient method of disaster recovery with built-in snapshots, replication, and instant restore capabilities
8. **Disaster Recovery** –Natively replicates data between all-flash and hybrid systems, eliminating the need to deploy a powerful all-flash array where a hybrid would suffice as a lower-cost DR repository
9. **Protocol Choice** – Natively supports block and file access, and is extensible so other protocols can be added as needed
10. **RESTful API** – A programmable, task-oriented RESTful API enables you to script and automate repetitive storage tasks

On average most Tegile IntelliFlash HD customers will reduce their data requirements by up to 75% of the original requirement and in certain instances Tegile has helped many customers to reduce this down to 10% using the innovative compression and de-duplication algorithms. Other customers have also seen back-up windows reduced from 24+ hours down to 1.5 hours. In virtualized environments – customers have seen performance upgrades reducing boot storms from 40 minutes down to 30 seconds or less. However, most importantly many of Tegile’s customers have seen the number of IT related service requests reduce from 50+ per month down to zero.

Supportive quotes/case studies from customers and partners:

MLB Network, Major League Baseball’s 24/7 television channel, uses the IntelliFlash Flash HD in its post-production editing system. “The IntelliFlash HD has proven to be a valuable asset as we are always looking for ways to improve our post-production process,” said Tab Butler, Sr. Director of

Media Management and Post Production at MLB Network. “Given its efficient economics and powerful density, we have already begun using it to consolidate virtualized applications, SQL databases, and workstations boot from SAN.”

Why nominee should win

- 1. IntelliFlashHD offers true flash hyperconvergence with seamless interoperability with virtual compute environments**
- 2. IntelliFlashHD offers ease of consolidation of existing hardware and software applications**
- 3. IntelliFlashHD breaks down any silos to give access across the whole IT storage architecture**
- 4. IntelliFlashHD offers fast speed, high density and high reliability performance at competitively low costs**
- 5. IntelliFlashHD provides reliable and quality data protection at speed, densities and with the ease of use needed for the future**