

IntelliFlash™ Features

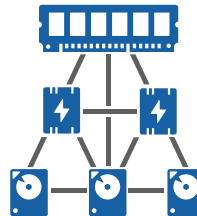
Tegile Intelligent Flash Arrays are powered by IntelliFlash™ operating system. This intelligent software architecture includes several patented technologies designed to deliver consistently high performance and low latency while maximizing uptime, streamlining data protection, and curbing storage costs. Key technologies include:

Flexible Architecture



IntelliFlash gives you the flexibility to use all flash, a mixture of flash and disk, or a mixture of high-performance flash and high-density flash — all within a single storage system. The software architecture intelligently manages different storage media to deliver optimal performance and capacity.

Intelligent Caching



Intelligent caching algorithms place the most frequently accessed application data on DRAM and flash. These caching algorithms are optimized for various I/O patterns and seamlessly adapt to differing media latencies across multiple levels of cache.

Metadata Acceleration



IntelliFlash automatically separates metadata from data. The metadata is then organized, aggregated, and placed on dedicated logical devices using high-performance, low-latency storage (DRAM and flash) accelerating advanced data services such as deduplication, compression, snapshots, clones, and thin provisioning.

Flash Endurance



Tegile arrays use enterprise-class MLC SSDs — offering 10X the endurance of consumer-grade MLCs while still delivering consistently high performance. IntelliFlash further lengthens the life of SSDs by optimizing I/O for the geometry of flash media. Writes are aligned to sector boundaries and native page sizes to avoid I/O fragmentation and unnecessary media writes. Data is intelligently relocated to ensure uniform wear leveling.

Inline Compression & Deduplication



Data is compressed and redundant blocks are removed before they are written to disk. These techniques not only reduce the storage footprint, they also help to improve performance by freeing up cache space in DRAM and flash for faster reads and writes.

Thin Provisioning



Increase storage utilization rates by not over-allocating capacity at provisioning time. Thin provisioning automatically allocates physical storage as data is being written. Any space that's been allocated but hasn't been consumed remains available for other applications.

IntelliFlash RAID



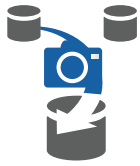
IntelliFlash RAID uses multi-parity protection schemes and dynamic stripe widths to eliminate performance overhead and media wear from read-modify-write operations. Supported RAID levels include dual parity RAID, two-way mirroring and three-way mirroring.

Unified Storage



Tegile arrays natively support both block (SAN) and file-sharing (NAS) protocols, enabling you to run applications and manage files on a single array. Supported protocols include iSCSI, Fibre Channel, NFS, CIFS and SMB 3.0*.

Point-in-Time Snapshots & Replication



Take an instantaneous snapshot of your data. Snapshots are VM-aware and application-consistent. They are also space-efficient and incur no performance overhead. Replicate snapshots for DR, and restore data instantaneously from the local or remote array.

No-Impact Read/Write Clones



Accelerate the development, test and QA timeframes of mission-critical applications by creating multiple read/write clones without incurring a performance hit. Like snapshots, clones are space-efficient, allocating storage only for changed blocks.

Data Integrity



To protect against silent data corruption, Tegile arrays perform a checksum process to match data blocks as reads and writes happen and automatically fix corrupt blocks. They also store the checksum and data in separate nodes of the block tree for further protection.

Non-Disruptive Operations



All hardware components, including SSDs and HDDs, can be replaced online with zero downtime. Software upgrades to the array can also be performed with no downtime or loss of access to data.

No Single Point of Failure



All media (SSDs and HDDs) in Tegile arrays are dual-ported and accessible through a pair of highly available, redundant controllers. The controllers are configured in an active/active manner and can be used simultaneously for data access.

IntelliCare Customer Care Program



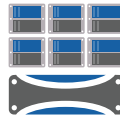
Tegile's IntelliCare customer care program combines cloud-based analytics with a team of storage experts so you can save time on storage administration and maximize the uptime and efficiency of your storage system.

Encryption



Data security is provided using 256-bit AES encryption of data at rest. IntelliFlash delivers inline encryption of data on SSDs and HDDs with unnoticeable impact on performance. Key management required for encryption is performed natively in the system without needing any user intervention.

Application-Aware Provisioning



Automatically tune volumes for specific applications at the click of a button. Select a use case — such as database, server virtualization, and virtual desktop — to instantly optimize the volume's configuration (block size, compression and deduplication settings, etc.).

VMware Integration



Tegile arrays take advantage of VAAI to minimize I/O on the storage network and hypervisor host. Tegile also includes a vCenter plug-in, enabling you to provision datastores, manage snapshots and restores, and monitor I/O status, space usage and latency from within vCenter.

Citrix Ready



Tegile arrays have been tested and verified as part of the Citrix Ready® VDI Capacity Program Verified for Citrix XenDesktop®. This enables you to leverage best practices and ensure optimal performance and capacity for your VDI.

Microsoft Integration



Tegile arrays integrate with a broad set of Microsoft technologies, including CSV for failover clustering for Hyper-V; VSS for application-consistent snapshots and clones; and SMB 3.0 protocol*.

Validated Oracle Designs



Tegile has worked closely with Oracle to build pre-tested, validated architectures—including software, hardware, storage, and network components—along with documented deployment guides. Tegile arrays have also been tested and certified with Oracle VM and validated with Oracle Linux with UEK in single instance and Oracle RAC deployments.

*SMB 3.0 support will be available soon.