Intel® Cache Acceleration Software

Intel® Cache Acceleration Software, combined with high-performance Solid-State Drives, increases application performance via intelligent caching rather than extreme spending.

Accelerate Applications, Servers, and Virtual Machines

Today's multicore, multi-CPU servers are being held back by storage I/O that cannot keep up with the ever-increasing demand, preventing systems from reaching their full performance potential. Traditional solutions, such as increasing storage, servers, or memory, add huge expense, as well as management complexity.

Intel® Cache Acceleration Software (Intel® CAS), combined with high-performance Solid-State Drives (SSDs), increases application performance via intelligent caching rather than extreme spending. Intel CAS's unique Selective Optimized Caching allows administrators to target high performance directly to the applications and data that really need it—precisely those applications that add the most value to the company.

Intel CAS interoperates with server memory to create a multilevel cache that optimizes the use of system memory and automatically determines the best cache level for active data, allowing applications to perform even faster than running fully on flash/SSDs.

Intel CAS software installs easily into the operating system, providing a cache solution that is transparent to users and applications, as well as backend storage.

Intel CAS Advantages

- Transparently accelerate applications

- Deliver application-specific performance via Selective Optimized Caching

- Provide SSD-like performance without migration cost

- Reduce storage latency

- Increase VM density

Intelligent Caching

On initial access, data is retrieved from backend storage and copied to the Intel CAS cache. Further access may promote data to system memory. Subsequent reads are returned at high-performance RAM or flash memory speed. All data is written concurrently (write-through) or sequentially (write-back) to backend storage and the cache.

When the cache is full, newly identified active data evicts stale data from the cache, utilizing the Intel CAS proprietary heuristics-based eviction algorithm.

Intel CAS runs in the Windows* or Linux* kernel for maximum performance, supporting both dedicated servers and running in a VM under VMware*, Hyper-V*, KVM*, or Citrix XenServer*, including support for VMware vMotion* and Hyper-V Live Migration*.
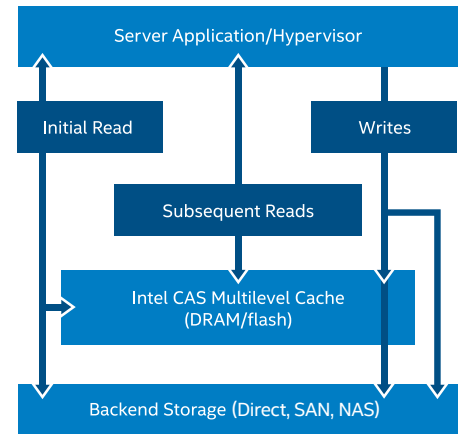
FEATURES	
Application Acceleration	Intel® CAS operates at the OS level, transparently accelerating applications with no application or storage configuration required.
Cross-Platform	Accelerates Windows* and Linux* servers and virtual machines (VMs), including VMWare vMotion* or Hyper-V Live Migration*.
Selective Optimized Caching	Accelerates data at a granular level based on applications, filenames (pattern match), directory/path, file type (extension), and more.
Storage Optimization	Offloads performance from backend storage, allowing spindles to be utilized for capacity rather than overprovisioning for performance.
I/O Latency Solution	A minimal amount of flash memory on the server caches active data locally, reducing I/O latency from primary storage, and accelerating overall storage performance.
Storage Agnostic	Works with any backend storage, including disk array, SAN, NAS, or direct attached storage. Supports any PCIe, NVMe, SAS, or SATA SSD supported by the OS platform or remotely accessible.
Data Integrity	In read with write-through mode, version consistency is maintained between Intel CAS cache and backend storage, preserving data integrity.

SPECIFICATIONS	
Operating Systems	64-bit Microsoft Windows Server* 2003, 2008 R2, 2012 R2 64-bit RHEL* 5/6, and SLES* 11 Linux.
Virtual Platforms	VMware*, Hyper-V*, Citrix XenServer*, and KVM*, including full support for live migration while maintaining a "hot cache."
Storage Requirements	Any backend storage device, including NAS, SAN, NVMe, local disk, RAID, iSCSI, or Fibre Channel.
Flash/SSD Requirements	Supports any PCIe, NVMe, SAS, or SATA SSD supported by the OS platform or remotely accessible. Validated on the Intel® SSD Data Center Family.
Application Support	I/O-intensive applications, such as Microsoft SQL Server*, Oracle*, SAS*, and Microsoft Exchange*.
Management	Graphical user interface to manage cache policies, acceleration, and overall cache operation.

Intel® CAS offers an innovative, cost-effective solution to the data performance challenge.

Learn more about Intel® Cache Acceleration Software: **intel.com/cas**

Find the Intel® Solid-State Drive that's right for you: **intel.com/go/ssd**

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