### Intel® CAS Advantages

- Delivers workload-specific performance by means of Selective Optimized Caching
- Unique I/O hinting and classification caching optimizations for Software Defined Storage (Ceph®/Swift®)
- Transparently accelerates applications modifying backend IT storage infrastructure
- Reduces storage latency
- Increases Virtual Machine density
- Intel validated and supported product, optimized for Intel® NVMe™ SSDs

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**Intel CAS**

Accelerate Server Workloads and Software Defined Storage Nodes

Intel® Cache Acceleration Software for Linux, when combined with high-performance Solid State Drives, increases overall system-level performance by means of intelligent caching rather than extreme spending.

Today’s multicore, multi-CPU servers are frequently held back by storage and network I/O bottlenecks that cannot keep up with the ever increasing demand. This prevents systems from reaching their full performance potential. There are three traditional solutions: increasing storage (local or SAN); increasing number of servers; or increasing memory. Each of these solutions can add huge expense, as well as management complexity.

Intel® Cache Acceleration Software (Intel® CAS) for Linux®, when combined with high performance solid state drive (SSD), increases overall system-level performance by means of intelligent caching rather than extreme spending. Intel CAS’s unique Selective Optimized Caching allows administrators to focus performance directly to the workloads and data that really need it—those that add the most value to the company.

Intel CAS interoperates with local drives as well as server system memory to create a multilevel cache. Multilevel cache optimizes the use of system memory and automatically determines the best cache level for active data, thereby allowing applications to perform even faster than running entirely on SSDs.

Intel CAS software installs easily into the operating system, providing a cache solution that is transparent to users, applications, and the backend storage (either local or remote).

**Intelligent Caching**

On initial access, data is retrieved from backend storage and copied to the Intel CAS cache device. Subsequent reads are returned at high performance DRAM (RAMdisk) or SSD speeds. All data is written concurrently (write-through) or sequentially (write-back) to backend storage and the cache.
Intel CAS provides the ability to optimize caching of data at a finer granularity due to I/O classification and selective caching intelligence. I/O classification enables the administrator to further optimize system-level performance based on I/O types (data versus metadata), size, and additional parameters.

When the cache is full, newly identified active data evicts stale data from the cache, utilizing the Intel CAS proprietary heuristics-based eviction algorithm or user-defined parameters. The Intel CAS caching engine is optimized to support Intel® Optane™ technology.

Intel CAS runs in the Linux kernel for maximum performance, supporting both dedicated and virtualized servers.

<table>
<thead>
<tr>
<th>FEATURES</th>
<th>Intel CAS operates in the Linux kernel as a block caching engine, utilizing both system memory (DRAM) and a local SSD, transparently accelerating applications with no application or storage configuration required.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platform and Storage Agnostic</td>
<td>Works with any backend storage, including disk array, SAN, or direct attached storage. Supports any PCIe®, NVMe, SAS, or SATA SSD supported by the OS platform. Validated on the Intel® SSD Data Center Family, optimized for Intel® SSD Data Center Family for NVMe™</td>
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<tr>
<td>Selective Optimized Caching</td>
<td>Accelerates data at a granular level based on data activity (hot data), directory/ path, specific file(s), as well as by I/O type, size, and more with I/O classification.</td>
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<td>Storage Optimization</td>
<td>Offloads performance from local or remote backend storage, allowing slower media (such as traditional hard-disks) to be utilized for capacity rather than overprovisioning for performance as well as addresses existing SAN installation network I/O bottlenecks.</td>
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<tr>
<td>I/O Latency Solution</td>
<td>A minimal amount of flash/SSD capacity on the server caches active data locally, reducing I/O latency from local or remote storage, and accelerating overall storage performance.</td>
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<td>Flexible Pricing Options</td>
<td>Intel® CAS is licensed under an Intel proprietary license for the Command Line and user-space capabilities on a perpetual basis with one year of support included at time of purchase, several SKUs available. Non-Inel SSDs are licensed per 200GB cache size • Select Intel SSDs with Intel® CAS bundles available • Various options for support • Intel SSDs are licensed per SSD</td>
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<th>SPECIFICATIONS</th>
<th>RHEL® 6.6, 7.0, 7.1, CentOS® 6.6, 7.0, 7.1, SLES® Version 11 SP3 and support for ext3, ext4, and xfs file systems VMWare® ESXi (operating in a guest OS) Refer to the Intel® CAS for Linux Admin Guide for the latest information on OS support.</th>
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<td>Virtual Platforms</td>
<td>Host virtualization support at the hypervisor for KVM* and Xen* Guest virtualization support for VMWare*</td>
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<tr>
<td>Storage Requirements</td>
<td>Any backend storage device, including local disk, SAN, NVMe, RAID, iSCSI, or Fibre Channel Supports any PCIe®, NVMe, SAS, or SATA SSD supported by the OS platform. Validated on the Intel® SSD Data Center Family, optimized for Intel® SSD Data Center Family for NVMe</td>
</tr>
<tr>
<td>Application Support</td>
<td>Intel CAS operates in the Linux kernel as a block caching engine, transparent to the application with no modifications required.</td>
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<tr>
<td>Management</td>
<td>Command line interface to manage cache policies, acceleration, and overall cache operation with a robust set of statistics for workload tuning and optimization.</td>
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</tbody>
</table>

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
Start a Free 120 day trial: https://www-ssl.intel.com/content/www/us/en/forms/cache-acceleration-contact-us.html

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