Scientists, engineers, and data analysts need ever-higher performance for their technical computing applications to speed time to results, handle today's unprecedented growth in data volumes, and improve the accuracy and precision of their modeling and simulation applications. Intel® architecture is designed to address the heavy demands of technical computing at every scale, so users can continue to push the boundaries of discovery.

Nearly 85 percent of the world's 500 largest supercomputers run on Intel architecture, and that number continues to increase as 97 percent of the more recent additions to the TOP500 list (175 out of 180) are powered by Intel® technologies.1 Intel architecture provides the performance, power efficiency, cost models, and comprehensive solutions needed to deliver both exceptional performance and scale for the world's most demanding workloads.

Intel architecture provides comparable value across the full range of technical computing needs, from entry-level workstations to high-performance server clusters. By combining the right Intel® processors and coprocessors with the right Intel storage and networking components, you can create a balanced technical computing platform that delivers the combination of performance and value you need for your particular requirements.

This guide will help to clarify your options, so you can make the right choices based on your applications, workloads, and performance needs.
Choose the Right Processors – for Fast, Efficient Execution

Intel offers a number of processor families to address the diverse requirements of technical computing (Table 1). A key step in evaluating your options is to consider the degree of parallelism in your software. Today's Intel processors are built for parallel throughput. They provide many cores, each of which can execute multiple simultaneous instruction streams, or threads. Intel processors also have wide vector units, so they can execute a single instruction simultaneously across multiple data points. These parallel execution resources can dramatically improve performance, but some applications require more parallelism than others for best performance.

Intel architecture gives you unmatched flexibility for tailoring processor parallelism to meet the specific requirements of your applications. Intel® Xeon® processor options currently range from 2 cores and 4 threads per processor to 18 cores and 36 threads. You can take parallelism to even higher levels in your workstations, servers, and clusters by adding Intel® Xeon Phi™ coprocessors, each of which provides up to 61 cores and 244 threads. Intel processors and coprocessors include a variety of unique technologies that help to improve parallel throughput, overall performance, and security, while reducing energy consumption. These technologies can increase performance by as much as two times for some computational workloads. They also help to address some of the key challenges and performance bottlenecks experienced in today’s technical computing environments (Table 2).

Up to 2.0x Higher Performance with the Addition of an Intel® Xeon Phi™ Coprocessor

Application Performance

Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products.

Source: Intel measured as of Q4 2014. For more information go to http://www.intel.com/performance

Figure 1. Adding an Intel® Xeon Phi™ coprocessor to a two-socket server based on the Intel® Xeon® processor E5 v3 product family can increase application performance by as much as 2.0x for highly parallel applications. View the latest Intel Xeon Phi coprocessor performance benchmarks at intel.com/XeonPhiPerformance
### Table 1. Optimized Processors for the Full Range of Technical Workloads

<table>
<thead>
<tr>
<th>Processor/Coprocessor</th>
<th>Parallelism</th>
<th>Platforms</th>
<th>What You Should Know</th>
<th>Best-fit Application Characteristics</th>
<th>Targeted Applications and Usage Models</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intel® Xeon Phi™ Product Family</strong></td>
<td>Highest</td>
<td>Extremely powerful clusters and workstations</td>
<td>• Delivers more than a TFLOPS of performance(^{1,6,7}) per coprocessor</td>
<td>• Highly parallel applications</td>
<td>• Intel® Xeon Phi™ coprocessor 7100: Highest performance and most features for all highly-parallel applications.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Integrates easily with the Intel Xeon processor E5 family</td>
<td>• Compatible with all x86 code</td>
<td>• Intel® Xeon Phi™ coprocessor 5100: Good choice for high-density technical computing and for memory-bandwidth and memory-capacity bound workloads, such as Digital Content Creation and Energy.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Next-generation (code-named Knights Landing) will also function as a standalone processor</td>
<td>• Code optimization may be required to maximize performance</td>
<td>• Intel® Xeon Phi™ coprocessor 3100: Good choice for compute-bound workloads, such as Monte Carlo, Black-Scholes, HPL, and Life Sciences.</td>
</tr>
<tr>
<td><strong>Intel® Xeon® Processor E7 v2 Family</strong></td>
<td>High</td>
<td>Large multiprocessor servers and clustered supernodes</td>
<td>• Available in 2-256 socket servers</td>
<td>Complex code with heavy thread-to-thread communications or large memory requirements</td>
<td>The Intel Xeon processor E7 v2 family is designed for in-memory analytics and other complex applications that require large memory capacity, have demanding compute and bandwidth requirements, and tend to run more efficiently on a smaller number of larger, more scalable servers.</td>
</tr>
<tr>
<td><strong>Intel® Xeon® Processor E5-2600 v3 Product Family</strong></td>
<td>High</td>
<td>Powerful clusters and dual-processor workstations</td>
<td>• Best choice for most technical applications at every scale</td>
<td>The Intel Xeon processor E5-2600 v3 product family provides workstations and server clusters with a balanced compute and bandwidth solution for the majority of applications, including seismic modeling, digital content creation, financial and design analysis, fluid dynamics, crash analysis, big data analytics, life sciences, and more.</td>
<td></td>
</tr>
<tr>
<td><strong>Intel® Xeon® Processor E5-1600 v3 Product Family</strong></td>
<td>Medium</td>
<td>Professional workstations</td>
<td>• Best choice for single-processor workstations</td>
<td>The broadest range of off-the-shelf and open-source technical applications</td>
<td>The Intel Xeon processor E5-1600 v3 product family powers Intel’s most robust single-processor, professional workstation solutions. These systems provide significantly more compute and memory capacity than entry level workstations, and can support advanced model generation and complex applications.</td>
</tr>
<tr>
<td><strong>Intel® Xeon® Processor E3-1200 v3 Product Family</strong></td>
<td>Medium</td>
<td>Entry-level workstations</td>
<td>• Better than a standard desktop for demanding applications.</td>
<td>The Intel Xeon processor E3-1200 v3 product family with integrated Intel® HD P4600 graphics transforms the technical desktop. Workstations based on these processors provide technical users with an application-optimized platform to view and interact with the complex data they need to make the right product decisions—from planning and development through manufacturing and support.</td>
<td></td>
</tr>
</tbody>
</table>

1. TFLOPS: Thousand Floating-point Operations Per Second
2. Intel®: A trademark or registered trademark of Intel Corporation or its subsidiaries in the United States and other countries.
3. AVX: Advanced Vector Extensions
4. HD: High Definition
5. P4600: A graphics card
6. E5: A processor family
7. E7: A processor family
8. E3: A processor family
Two Essential Resources for Technical Computing

Intel® Xeon® processor E5 v3 product family
The Right Processor for Most Technical Applications

The Intel® Xeon® processor E5 v3 family provides the best balance of per-core performance, parallelism, energy efficiency, and cost for the vast majority of technical applications. Use these processors to optimize performance and value for single- and dual-processor workstations and for HPC clusters of every size.

The Intel Xeon processor E5 v3 family provides:

- Up to 91 percent higher performance than previous-generation processors.\(^3,^9\)
- Up to 6.3X higher performance than a comparable four-year-old processor.\(^3,^10\)
- Up to 50 percent more cores and threads than the previous generation\(^1\) along with greater bandwidth, faster memory speeds, stronger per core performance, and twice the floating point capacity.\(^2,^3\)

Intel® Xeon Phi™ Coprocessor 7100
A Powerful Boost for Highly Parallel Workloads—without Recoding your Applications

Add Intel Xeon Phi coprocessors to your Intel Xeon processor E5 v3 family-based workstations and servers to increase performance for highly parallel code. These powerful coprocessors provide:

- A supercomputer in every chip, with up to 1.2 teraflops\(^3,^7,^12\) of performance.
- Up to 3.0x greater performance\(^3,^13,^14\) and up to 1.5x more performance per watt\(^3,^15\) for highly parallel applications versus the Intel® Xeon® processor E5 v3 family.
- Compatibility with x86 software, so you can reuse existing code. There is no need to rewrite your applications or master new development tools.

Am I running a vendor or in-house application?

Is my application optimized for highly parallel execution?

Do I have a skilled in-house development team?

Can my workload scale to over 100 threads?

Can my workload benefit from more memory bandwidth?

Can my workload benefit from large vectors?

Contact vendor regarding Intel® Xeon Phi™ support.

In-House

YES

NO

YES

NO

YES

NO

YES

NO

YES

Contact vendor regarding Intel® Xeon Phi™ support.

Ready

Not ready or suitable

Figure 2. Intel® Xeon Phi™ coprocessors can deliver significant performance gains for highly parallel applications, but code optimization may be required.
### Table 2. Intel Processor Technologies to Increase Performance and Security

<table>
<thead>
<tr>
<th>Intel Technology</th>
<th>Impact and Benefit</th>
</tr>
</thead>
</table>
| **Intel® Integrated I/O (Intel® I/O)**| • Delivers data to processor cores up to 30 percent faster.\(^{3,17}\)  
• Reduces power consumption and helps to improve performance for I/O bound applications. |
| **Intel® Data Direct I/O (Intel® DDIO)**| • Reduces I/O latencies up to 2.3x\(^{3,18}\) by transferring data directly from Intel® Ethernet Controllers to processor cache.  
• Reduces power consumption and helps to improve performance for I/O bound applications. |
| **Intel® Advanced Vector Extensions (Intel® AVX) and Intel AVX 2.0**| • Intel AVX accelerates vector and floating point computations by up to 2x\(^{3,19}\)  
• Intel AVX 2.0 accelerates integer vector computations by up to 1.91x\(^{3,20}\) |
| **Intel® Rapid Storage Technology\(^2\)**| • Helps to improve performance for applications that rely on fast data retrieval from storage.  
• Works with all storage types, including Intel® Solid-State Drives (Intel® SSDs) and traditional mechanical drives. |
| **Intel® Turbo Boost Technology 2.0\(^2\)**| • Increases core frequencies beyond rated values when thermals allow.  
• Helps to increase performance during peak workloads, without raising power consumption at other operating points. |
| **Large, fast L3 caches**| • Holds data close to processor cores for fast access to frequently used data.  
• Choose processors with large cache to achieve best performance for data-intensive applications. |
| **Intel® Data Protection Technology\(^2\)** with:  
  • Advanced Encryption Standard New Instructions (AES-NI)  
  • Secure Key | • Accelerates and strengthens encryption through hardware acceleration and integrated, high-quality key generation.  
• Protects sensitive data without slowing application performance.  
• Provides enhanced protection against sophisticated “side-channel” attacks (versus traditional, software-generated keys). |
| **Intel® Virtualization Technology**| • Comprehensive hardware assists for virtualization across the platform (processors, chipsets, and network adapters).  
• Enables near-native performance in virtualized computing environments, with improved reliability and enhanced workload isolation.  
• New support for cache monitoring provides deeper insight into virtual machine resource utilization for optimizing performance. |
| **Intel® Run Sure Technology\(^3\)** (Intel® Xeon® processor E7 v2 family only) | Advanced reliability, availability, and serviceability (RAS) features help to improve uptime. Includes:  
• Resilient System Technologies that integrate processor, firmware and software layers to help diagnose and/or recover from previously fatal errors.  
• Resilient Memory technologies that help to improve data integrity and enable systems to keep running over longer periods, reducing the need for immediate service calls. |
| **Intel® HD Graphics P4600** (Intel® Xeon® processor E3-12x5 v3 family only) | • Delivers exceptional graphics performance for workstations.  
• Eliminates the need for an add-in graphics card for simpler implementation and lower costs.  
• Ideal for CAD, video editing, and more. |
Choose the Right Network – to Avoid Bottlenecks

Data volumes are rising rapidly in almost every discipline, so the ability to move large data sets quickly into and out of technical computing workstations and clusters is essential for efficient workflows. Fast cluster interconnects (the networking fabric that connects nodes within a cluster) are equally important, and can have a dramatic impact on application performance for workloads with heavy message passing requirements.

Intel offers two solutions that address the full range of networking needs for technical computing (Table 3):

- **10/40 Gigabit Intel® Ethernet technology** provides a flexible, high-performance solution for connecting nodes in a loosely coupled cluster or for connecting a workstation or cluster to a site network. This technology provides flexible and reliable connections that are optimized for Intel Xeon processor-based clusters and workstations and also help to improve server and network virtualization performance. The Intel® Ethernet Controller XL710 includes Intel® Ethernet Flow Director, an advanced traffic steering technology that increases the number of transactions per second and reduces latency. This controller also provides the scalability to handle varied workloads, with easy migration from 10 to 40 gigabit per second network speeds.

- **Intel® True Scale Fabric** is a purpose-built interconnect solution for HPC clusters designed to support the most demanding performance requirements. Based on InfiniBand* technology, it provides high-speed message passing and includes Intel technology innovations that enable near-linear scaling of application performance as a cluster grows. Intel True Scale Fabric provides exceptional performance today. It also provides a foundation for moving to next-generation Intel® Omni-Path Fabric solutions that will deliver a dramatic leap in performance and scalability, along with improved cost models.

Choose the Right Storage – for High Performance and Scalable Growth

Moving large data volumes quickly from storage to processors is an ongoing challenge in today’s technical computing and big data environments—and the transition toward greater processor parallelism and density only increases the challenge. A scalable, high-performance storage solution is essential to

Table 3. Choose the Right Network

<table>
<thead>
<tr>
<th>Networking Solution</th>
<th>Usage Model</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/40 Gigabit Intel® Ethernet</td>
<td>• Workstation and cluster network connectivity</td>
<td>• High performance network for fast data throughput.</td>
</tr>
<tr>
<td></td>
<td>• Cluster interconnect (in Ethernet-centric data centers)</td>
<td>• Helps to avoid bottlenecks that might otherwise slow performance.</td>
</tr>
<tr>
<td>Intel® True Scale Fabric</td>
<td>• Cluster interconnect (ideal for most clusters)</td>
<td>• Compatible with the vast ecosystem of Ethernet switches, controllers,</td>
</tr>
<tr>
<td></td>
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<td>software, and tools.</td>
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</tbody>
</table>

Table 4. Choose the Right Storage

<table>
<thead>
<tr>
<th>Storage Component</th>
<th>Description</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel® Solid-State Drive Data Center Family (Intel® SSDs)</td>
<td>Extreme performance for the most demanding storage requirements</td>
<td>• Accelerates storage performance to unleash the full potential of today's dense, highly-parallel computing architectures.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Intel High Endurance Technology (HET) extends write endurance for long, reliable operation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The Intel® SSD Data Center Tool provides a powerful set of management capabilities.</td>
</tr>
<tr>
<td>Intel® Enterprise Edition for Lustre® software</td>
<td>Parallel file system software purpose-built for performance at large scale</td>
<td>• Parallel, distributed storage for superior, sustainable performance and virtually unlimited scalability.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Efficient utilization of network fabrics and storage server hardware (often up to 90 percent).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Compliant with key standards, including POSIX.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Includes unique software &quot;connectors&quot; that allow users to couple POSIX and MapReduce application workflows on HPC configurations that deliver superior performance and higher resource productivity.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Includes a Lustre client for Intel® Xeon Phi™ coprocessors that delivers 10x better streaming I/O than NFS.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Simple but powerful graphical management tools reduce management complexity and costs.</td>
</tr>
</tbody>
</table>
provide a balanced architecture that can take advantage of today’s highly parallel compute capabilities. Intel provides storage building blocks to meet storage requirements at every scale (Table 4).

• The Intel® Solid-State Drive Data Center Family for PCIe* (Intel® SSD) addresses today’s unprecedented pressure to maximize performance, reduce power consumption, and lower operating costs. Based on a new Non-Volatile Memory Express* (NVMe*) interface created by Intel, these SSDs are designed for the most intense workloads. Intel SSDs for SATA interfaces are also available, offering additional cost efficiencies for less demanding requirements.

Both product families are designed for read- and write-intensive storage workloads. They are optimized to deliver predictable throughput, along with world-class reliability, endurance, and data protection for smooth data center operation.

• Intel® Solutions for Lustre* are feature-enhanced versions of open source Lustre software, which is purpose-built for maximum performance and massive scalability and is the most widely used parallel storage software for technical computing. Intel is the largest contributor and a global technical support provider for all Lustre solutions. Intel® Enterprise Edition for Lustre software includes software “connectors” that simplify Apache Hadoop* application deployments and enable powerful, pipelined workflows in combination with new and legacy applications. It also includes Intel® Manager for Lustre, a powerful administration console that makes deployment and management easy. Intel® Foundation Edition for Lustre software is aimed at users who need maximum flexibility and scalability, plus all the latest features of community Lustre. This version couples community Lustre software with a subscription-based support model that includes access to top technical support experts.

Another Leap in Parallel Performance

Optimizing your code for Intel® Xeon Phi™ coprocessors offers increasing value over time. Next-generation Intel Xeon Phi processors scheduled for release in 2016 (code-named Knights Landing), are expected to provide up to 3X higher performance than the current generation. With an integrated high-speed fabric and integrated high-bandwidth memory—plus the option of using them as standalone processors—these powerful components will transform the fundamental building block of technical computing.

Learn more at intel.ly/1yOjFC0.
**Optimize Your Software – For Fast, Parallel Execution**

One of the most important strategies for accelerating technical application performance is ensuring that your code runs efficiently on today’s parallel computing platforms and can take advantage of the increasing parallelism to come in future Intel processors and coprocessors. Intel provides resources that help to simplify software development and optimization for parallel computing. These resources build on time-tested industry-standard languages and parallel models such as C/C++, Fortran, OpenMP, and MPI.

- **Intel® Parallel Studio XE Professional Edition and Cluster Edition** helps developers design, build, debug, verify, and tune both serial and parallel applications. You can optimize your code just once for better performance on both Intel Xeon processors and Intel Xeon Phi coprocessors to deliver optimized performance across all your technical computing platforms, from entry-level workstations to massively parallel supercomputers.

- **Intel® Math Kernel Library** provides high performance vectorized and threaded algorithms for linear algebra, Fast Fourier Transforms (FFT), vector math, and statistics functions on the latest Intel architectures. All algorithms are accessible through a simple call using standards-driven application programming interfaces (APIs).

- Standards-based parallel models of OpenMP 4.0, Intel® Cilk™ Plus and Threading Building Blocks (TBB) are included to support implementation of vector and task parallelism.

- **Intel® MPI Library** provides sustained scalability with low latencies, higher bandwidth, and fabric flexibility, plus support for MPI-3.

- Powerful analysis tools help to accelerate software development and performance optimization. Options include **Intel® Advisor XE** for rapid threading design and prototyping, **Intel® Inspector XE** for memory and thread debugging, **Intel® VTune™ Amplifier XE** for performance profiling, and **Intel® Trace Analyzer and Collector** for MPI applications.

**Simplify Your Cluster Deployment**

Intel® Cluster Ready allows you to purchase, deploy, and manage an HPC cluster more quickly and easily and with reduced risk. Clusters that are certified by the Intel® Cluster Ready program help to ensure that registered Intel Cluster Ready applications will load and run reliably “out of the box.” The high level of interoperability enables faster and more reliable deployments and reduces the need for cluster-specific expertise across the system lifecycle.

Learn more at [software.intel.com/cluster-ready](http://software.intel.com/cluster-ready)
Stay on Track – The Road Ahead is Fast and Wide

Discovery is accelerating across virtually every discipline, and much of the progress is being fueled by rapid, ongoing advances in technical computing capability. Intel is at the center of this transformation and will continue to deliver hardware and software building blocks that push the boundaries of performance and value at every scale. For the latest information and product updates, visit the following web sites.

Intel® Processor-Based Workstations: [www.intel.com/workstations](http://www.intel.com/workstations)
Intel® Solutions for Lustre® software: [lustre.intel.com](http://lustre.intel.com)

Contact your preferred vendor today to order a workstation or cluster based on Intel Xeon processors and Intel Xeon Phi coprocessors. To learn more visit [intel.com/HPC](http://intel.com/HPC)
Source: TOP500 Supercomputer web site as of January 14, 2015. Data was extracted from the November 2014 list of the Top500 supercomputers using the information available at http://www.top500.org/statistics/sublist/.

The Intel® Xeon® processor ES v3 product family supports Intel® Advanced Vector Extensions 2 (Intel® AVX 2.0). Intel AVX2 enables up to twice the work to be accomplished per clock cycle during certain floating point and vector operations versus processors which support Intel® AVX and not Intel® AVX 2.0. The Intel® Xeon Processor ES v2 product family supports Intel® AVX. Other Intel processor technologies may deliver additional performance benefits.

Software and workloads used in performance tests may have been optimized for performance only on Intel® microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations, and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products.

All results comparing a 2S E5-2697v3 vs. 2S E5-2697v3 + a single 7120. Scores by application. ISO RTM 3SFD (4.9 vs. 8.9 G cells/s); LAMMPS (13.34 vs. 10.04 sec); LAMMPS (13.34 vs. 10.04 sec); NAMD AopsA1 (2.78 vs. 4.234 ns/day); NAMD STMV (20.23 vs. 5.401 ns/day); STAC-A2 WARM (0.739 vs. 0.531 sec); Binomial DP (68.056 vs. 104.853 Koptions/sec); Monte Carlo RNG DP (22.754 vs. 42.496 Koptions/sec); Ansys Mechanical 16.0 v15sp-3 (469 vs. 284 sec); Ansys Mechanical 16.0 v15sp-5 (233 vs. 128 sec); BerkeleyGW (Benzene) (36.37 vs. 30.33 sec); WRF CONUS52.6K (1.8565 vs. 1.2471 sec/time step).

Processors with fewer cores and threads may be available within each product family.

Next-generation Intel® Xeon Phi™ coprocessors (code-named Knights Landing) are expected to deliver more than 3 TFLOPS of double-precision theoretical peak performance based on internal and preliminary Intel projections. They are also expected to deliver up to three times the single threaded performance relative to the 1st generation Intel® Xeon Phi™ coprocessor 7120P (formerly code-named Knights Corner).

A teraflop is equivalent to one trillion floating point operations per second.

No computer system can provide absolute reliability, availability, or serviceability. Requires an enabled Intel® Run Sure Technology-enabled system, including an enabled Intel® processor and enabled technology(s). Built-in reliability features available on select Intel processors may require additional software, hardware, and/or an internet connection. Results may vary depending upon configuration. Consult your system manufacturer for more details.


The Intel® Xeon® processor ES v2 family provides up to 12 cores and 24 threads per processor. The Intel® Xeon® processor ES v3 family provides up to 18 cores and 36 threads per processor, which equates to 50 percent more cores and threads.

The claim of up to 1.2 teraflops of performance per coprocessor is based on Intel calculations of theoretical peak double precision performance capability for a single coprocessor (16 DP FLOPS/ clock/core * 61 cores * 1.238Hz = 1.208 teraflops per coprocessor).

Intel does not control or audit the design or implementation of third party benchmark data or Web sites referenced in this document. Intel encourages all of its customers to visit the referenced Web sites or others where similar performance benchmark data are reported and confirm whether the referenced benchmark data are accurate and reflect performance of systems available for purchase.

Intel measurements of DGEMM performance per watt for a 2 socket server based on the Intel® Xeon® Processor E5-2697 v3 family (perf/watt score of 1045 GF/s @ 447W) vs. a single Intel® Xeon Phi™ coprocessor 5120 (perf/watt score of 837 GF/s @ 225W).

Supported processor technologies depend on the particular Intel processor. See the following for details:


For more information on Intel® Rapid Storage Technology, visit http://www.intel.com/technology/raid/

Other Intel® Turbo Boost Technology requires a platform with a processor with Intel Turbo Boost Technology capability. Intel Turbo Boost Technology performance varies depending on hardware, software and overall system configuration. Check with your platform manufacturer on whether your system delivers Intel Turbo Boost Technology. For more information, see http://www.intel.com/technology/turboboost/

No computer system can provide absolute security. Requires an enabled Intel® processor and software optimized for use of the technology. Consult your system manufacturer and/or software vendor for more information.

Configurations: (Coffax SXP8600p workstation with four Intel(R) Xeon Phi(TM) coprocessors with Intel(R) MPSS 3.1.2. Intel Enterprise Edition for Lustre version 2.0 and CondorG 8.14.5 was installed on storage servers. The VirtIO benchmark was used to measure the performance of Network File System and Lustre clients. All tests were performed by Coffax International). For more complete information visit https://research.coffaxinternational.com/file.asp?fileid=2014%2F7%2FCoffax_File_ID_On_In tel_Xeon_Phi_Coprocessors.pdf.