The demands of your business computing needs are growing in sophistication and complexity. Servers and workstations that are just a few years old are no longer capable of supporting the demands of today’s workloads which are increasing in capabilities to deliver business intelligence, acceleration, and agility. New business opportunities, new customers, and workloads drive a need for tools and technology that will help you win and stay ahead of the competition. With a wide-range of solutions in the marketplace to help you and your business, it can be difficult to identify the smart answer for your needs today and a solution that will help you win in the future. At Intel, we appreciate these challenges and have worked to understand your needs and demands. We have partnered with industry leaders and solution providers to deliver a professional-grade solution built from the ground-up with your needs in mind. The Intel® Xeon® processor family delivers trusted performance and proven innovation, starting with our entry Intel® Xeon® processor E3 product family. As your business grows and demands increase, so does the Intel Xeon processor family with performance scale and capabilities that extend up to our Intel® Xeon® processor E5 family and Intel® Xeon® processor E7 family of products. Entry workstation and entry server solutions built on the Intel Xeon processor E3-1200 v6 product family, establish a foundation of capabilities that support your growing and changing demands.

As your business grows and demands increase, so does the Intel® Xeon® processor family, with performance and scale capabilities to meet your needs.

Small business server customers are looking for solutions that deliver productivity, reliability, security, and complement their existing IT investments such as cloud-based services. An on-premise server delivers answers for a number of solution challenges, including the uncertainty for setup and ongoing cost of cloud services, support for legacy applications, regulatory compliance, and sensitive customer data protection. The balance between cloud service providers and those solutions kept in-house, provides the flexibility to choose and mix the correct balance for your business needs. The ability to have an on-premise server solution for critical business and performance needs are growing in demand. An entry server built with the Intel Xeon processor E3-1200 v6 product family is a smart investment positioning you for growth while providing a reliable, always available solution to protect sensitive customer data, financial records, and host critical business software solutions. Combine a hybrid of on-premise servers and cloud services for the best small business solution.
67% of small businesses say technology solutions help them run their business better.¹

The entry workstation workloads of yesterday are evolving and expanding. Today’s entry workstation workloads have an increasing number of software solutions and extensions that require high performing, multi-core, reliable, professional-grade solutions to support your growing workflows. These workflows include design, analytics, rendering, professional virtual reality (VR) visualization, production, and distribution. Comprehending the full demands of a growing workload and workflow is why the Intel Xeon processor E3-1200 v6 is the trusted choice for of professional CAD, media, and entry professional virtual reality (VR) workstation customers. In addition to gains in CPU performance, CPU performance per watt, support for faster memory speeds, and graphics performance for workstations, Intel Xeon processor E3-1200 v6 product family-based platforms offer fast access to data, helps protect the data integrity, and has proven reliability for a range of business needs.

**Big Performance Increase Over Your Current Entry Server or Entry Workstation**

Improvements in processor speed, enhanced memory capabilities, hardware-enhanced security and reliability, all with support for the latest Intel graphics, the Intel Xeon processor E3-1200 v6 product family delivers a suite of benefits that reflect the performance needs of today's small business servers and entry workstations customers. The impact of this benefit is significant, especially when compared to a hardware configuration of just a few years ago. With up to a 56% performance improvement² compared to an Intel® Xeon® processor E3-1200 v2, the Intel Xeon processor E3-1200 v6 delivers performance to manage today’s most professional workloads. The Intel® Xeon® processor E3-1280 v6 specifications supports up to 3.90 GHz base frequency with Intel® Turbo Boost Technology 2.0 frequency up to 4.20 GHz. Additionally, the Intel Xeon processor E3-1200 v6 product family supports enhanced memory speeds, with configurations of Error-Correcting Code (ECC) memory up to 64 GB DDR at 2400 MHz. This level of performance is required for today’s complex workflows that add new and enhanced capabilities for CAD, media, entry professional virtual reality (Pro VR), and design. These workloads and especially entry Pro VR capabilities require high performing, multi-core, reliable, professional-grade and consumer-grade solutions.

**Enhanced Graphics Performance, Certified and Optimized for Your Workload**

In addition to enhanced processor performance, and support for faster memory, the latest Intel® HD graphics P630 is available on select products within the Intel Xeon processor E3-1200 v6 product family. With discrete graphic performance included as part of the overall Intel Xeon processor E3 product family, you gain the added benefit of an on-board graphics engine to help drive an outstanding visual experience, and often at a lower total cost of ownership when compared to purchasing a separate professional-level graphics adapter. The value and performance of Intel® HD graphics P630 is reflected in a 3X graphics performance improvement² when compared to an Intel® Xeon® processor E3-1280 v2. The performance improvements extended to new HVEC 10-bit hardware acceleration, enabling enhanced decoding, and encoding of 4K video.


These certifications showcase Intel's commitment to delivering enhancements and support for professionals. We work closely with third-party application developers to ensure product certification, performance, and unique optimizations to deliver the best experience on your Intel Xeon processor-based platform.

Intel® HD graphics P630: Up to 3x performance improvement² and new HVEC 10-bit hardware acceleration support.

**Professional, Industrial, and Commercial Applications Require Professional Compute**

There are many foundational capabilities and enhancements that differentiate a professional computing solution built on the Intel Xeon processor-based platform. Professional, industrial, and commercial applications require professional compute. There are significant differences between professional-grade and consumer-grade solutions.
Professionals Demand Hardware-Enhanced Security and Reliability

A primary motivator in considering a professional-grade entry server or entry workstation is the increasing need for hardware-enhanced security and reliability of the Intel® Xeon® processor family. The Intel Xeon processor E3-1200 v6 product family includes support for the following hardware-enhanced security features:

- **Intel® Data Protection Technology:** Accelerate encryption and decryption, enhance security, performance, and protect your system using software enhanced with Intel® Data Protection Technology.

- **Intel® Software Guard Extensions:** Software enhanced with Intel® Software Guard Extensions help protect application code and data from disclosure and modification, helping enhance the security of your workloads and applications.

- **Intel® Authenticate Solution:** The Intel® Authenticate Solution delivers customizable multi-factor authentication options to fit your IT policy needs while giving you a comprehensive solution that is easy to deploy.

- **Intel® Active Management Technology (Intel® AMT):** Intel AMT uses integrated platform capabilities and popular third-party management and security applications, to allow IT or managed service providers to better discover, repair, and protect their networked computing assets, available anytime from anywhere.

- **Intel® Server Platform Services:** Designed for managing rack-mount servers, Intel® Server Platform Services provides a suite of tools to control and monitor power, thermal, and resource utilization.

- **Intel® Rapid Storage Technology:** Protect your critical business information with redundant storage capabilities that allow quick recovery in the event of a hard drive failure.

$8,220 to $25,601: estimated hourly average cost range of downtime for an SMB.¹

Entry Servers for Small Business Customers

No matter what the size of your business, the value of your data is enormous. Keep it accessible and better protected at all times with an affordable Intel Xeon processor E3-1200 v6 product family-based entry server. An on-premise server delivers answers for a number of small business customers including:

- Bandwidth constraints, latency, or heavy data usage that cause performance issues
- Uncertainty and inability to plan for setup and ongoing cloud service costs
- Preference for up-front payment over extended payment schedule
- Some legacy applications cannot be migrated to the cloud
- Regulatory, compliance, or data sovereignty requirements mandate that data must be secured on-premises

For a small or medium business, all of your data is your data center and is your connection to customers, sales, inventory, financial records, and ultimately growth. Help protect your customer, inventory, and financial records with a server that delivers the integrity and reliability of an all-day, all-night workhorse. Implementing a server is also a smart investment in growth. You’ll gain the power to deploy new business-class applications and tools that can help you increase sales and improve margins. A server based on the Intel Xeon processor E3-1200 v6 product family lets you

---

Percentage of businesses that have suffered data security breaches in the last year³

- **Small Business:** 44%
- **Midsize Business:** 54%
access your information faster and respond to customers sooner from any device on your network. Help you and your employees become more productive and keep data safe. Position your company for growth with an affordable small business server based on the Intel Xeon processor E3 family.

While many small businesses are choosing cloud service solutions, you can own your own piece of the cloud by co-location your server with an IT managed service provider (MSP). You get the benefit of cloud accessible software services without the burden of housing and powering the server.

**Professional VR Visualization with Entry Workstations**

Virtual reality (VR) is one of the most exciting and revolutionary capabilities to impact professional workstation customers in recent years. One example is how professional designers can draft their CAD drawings and quickly visualize in full 3D/VR with a compatible hardware and software configuration that support a VR headset. The ability to view your design in VR delivers huge savings in design time, production, testing, and development. Previously, designs would often require rendering in 2D or limited 3D experiences, printing, assembly, or physical testing. Today, many of these tasks are streamlined and accelerated through the aid of commercial/professional VR usages and capabilities.

The Intel® Xeon® processor E3-1200 V6 product family supports the latest VR headset processor requirements from manufacturers like HTC® Vive and Oculus® Rift. When paired with the proper memory and storage configurations and a VR-ready Pro GPU, you can add VR visualization to your Intel® Xeon® processor E3-1200 V6 entry workstation experience.

Additional scale and VR capabilities are possible with Intel® Xeon® processor E5 product family-based workstations that can support VR creation and visualization, allowing you to build, modify, visualize, and experience your designs in real-time.

Are you Pro VR ready? VR headsets require the enhanced performance found in Intel® Xeon® processors. Older workstations are not Pro VR ready.

**Step Up to Professional Compute with the Intel Xeon Processor E3-1200 v6 Product Family**

The unique, professional-grade benefits, of the Intel Xeon processor family set it apart from other computing solutions, showcasing the capabilities and enhancements that businesses demand to remain productive and competitive in a rapidly changing marketplace. The Intel Xeon processor E3-1200 v6 product family is a step up in performance and capabilities welcoming you to Intel Xeon processor family and its scalable performance, security and reliability. Entry servers and workstations powered by Intel Xeon processor E3-1200 v6 deliver a strong return on investment with improvements and enhancements to give you confidence in your professional compute to deliver on your growing workloads, workflows, and business needs.

**Typical Intel® Xeon® Processor E3 Platform Configuration**

- **PCI Express® 3.0**
- **Up to 10 USB 3.0 Ports; Up to 14 USB 2.0 Ports**
- **Intel® Gigabit Ethernet**
- **3 DDI (WS)**
- **x4 DMI Gen 3.0**
- **Intel® C230 Series Chipset**
- **Intel Management Engine Firmware and BIOS Support**
- **DDR4/2400 ECC**
- **Intel® High Definition Audio**
- **Up to 8 Serial ATA Ports**
- **Up to 20 PCI Express® 3.0**

Features may vary depending on processor and chipset SKUs.
## INTEL® XEON® PROCESSOR E3-1200 V6 PRODUCT FAMILY OVERVIEW

### FEATURES

<table>
<thead>
<tr>
<th>Feature</th>
<th>BENEFITS</th>
</tr>
</thead>
</table>
| Intel® Xeon® Processor E3-1200 v6 product family | Enhanced performance, support for faster memory speeds, hardware-enhanced security and reliability for entry server and entry workstation customers.  
  • Accelerate your business growth with up to 56% better performance\(^1\) than the second generation of Intel Xeon processor E3-1200 product family. |
| Intel® HD graphics P630 | With built-in graphics capabilities, designers may no longer need a discrete graphics card for some of the most commonly used workloads. Optimized performance for a range of common workstation applications, Intel HD graphics P630 provides designers, engineers, and media creators with entry-level workstation performance and visuals.  
  • Intel HD graphics P630 delivers up to 3X graphics\(^1\) and is certified on many popular workstation applications when compared to the second generation of Intel Xeon processor E3-1200 family-based entry workstation. |
| Skylake microarchitecture | Enhanced energy efficiency and performance  
  • Intel's industry-leading 14nm process technology |

### Reliability and Security to Protect Your Business

<table>
<thead>
<tr>
<th>Feature</th>
<th>BENEFITS</th>
</tr>
</thead>
</table>
| Support for error-correcting code (ECC) memory | Better data integrity and system reliability through automatic data correction  
  • Intel Xeon processor E3-1200 v6 supports DDR4 memory speeds up to 2400 MHz |
| Intel® Rapid Storage Technology enterprise (Intel® RSTe) for servers | Uninterrupted operation and quick data recovery in the event of a hard drive failure  
  • Supports latest server operating systems (OSes), including Red Hat\(^*\) and SUSE\(^*\) Linux\(^*\) OSes |
| Intel® Rapid Storage Technology (Intel® RST) for workstations | Uninterrupted operation and quick data recovery in the event of a hard drive failure  
  • Dynamic storage acceleration—dynamically adjusts system power state policies based on I/O loading conditions and power profile |
| Intel® Data Protection Technology (with Advanced Encryption Standard New Instructions (AES-NI)) | Improves security by encrypting data—without slowing response times |
| Intel Data Protection Technology (with Secure Key) | Enhances security and performance for a wide range of security applications  
  • Enables faster, higher-quality cryptographic keys and certificates |
| Intel Platform Protection Technology (with Trusted Execution Technology (TXT)) | Protects your business by increasing security against many digital threats  
  • Helps to ensure that the system launches into a known good state |
| Intel Platform Protection Technology (with BIOS Guard 2.0) | Protects your system from malware and denial-of-service (DoS) attacks |
| Intel Platform Protection Technology (with OS Guard) | Improves security by strengthening malware protection  
  • Provides hardware-based protection for your server operating system |
| Intel® Software Guard Extensions (Intel® SGX) | • Allows application developers to protect sensitive data from unauthorized access or modification by rogue software running at higher privilege levels, secures data\(^5\) while in use in a Windows\(^*\) or Linux\(^*\) environment |
| USB Blocker for servers | Improves security and productivity  
  • Helps prevent malware and unauthorized data transfers\(^5\) by blocking classes of devices while enforcing company policies and allowing flexibility to white-list specific devices |

### Responsive Performance To Grow Your Business

<table>
<thead>
<tr>
<th>Feature</th>
<th>BENEFITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel® Advanced Vector Extensions 2 (Intel® AVX2)</td>
<td>Significant performance benefit for developers of imaging, video editing, modeling, and simulation applications.</td>
</tr>
</tbody>
</table>
| Intel® Turbo Boost Technology 2.0 | Higher performance when you need it most  
  • Accelerates processor and graphics performance for peak loads |
| Intel® Hyper-Threading Technology (Intel® HT Technology) | Faster performance for many demanding business applications  
  • Thread-level parallelism benefits multi-threaded and concurrently running applications |
| PCI Express\(^*\) 3.0 ports | Extra capacity and flexibility for storage and networking connections  
  • Up to double the I/O bandwidth of prior-generation PCIe\(^*\) 2.0\(^6,7\) |
| Serial ATA 3.0 (SATA 3.0) | Faster data access, system startups, and application load times  
  • Doubles data throughput versus previous generation for faster hard drive performance\(^5,6,8\) |
| Intel® Virtualization Technology (Intel® VT) for IA-32 and Intel 64 (Intel® VT-x) | Faster performance for core virtualization processes  
  • Improves application performance, live migration, provisioning, dynamic load balancing, and disaster recovery |
| Intel Virtualization Technology (Intel® VT) for Directed I/O (Intel® VT-d) | Built-in hardware support for I/O virtualization  
  • Improves I/O performance, increases system reliability, and provides enhanced memory protection |
### INTEL® XEON® PROCESSOR E3-1200 V6 PRODUCT FAMILY SKU LIST

<table>
<thead>
<tr>
<th>Processor Numbera</th>
<th>CPU Cores</th>
<th>Graphics Core</th>
<th>Speed</th>
<th>L3 Cache</th>
<th>Intel® Turbo Boost Technology 2.0</th>
<th>Intel® HT Technology</th>
<th>Intel® HD Graphics P630**</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard SKUs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intel® Xeon® processor E3-1280 v6</td>
<td>4</td>
<td>0</td>
<td>3.90 GHz</td>
<td>8 MB</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>72 W</td>
</tr>
<tr>
<td>Intel® Xeon® processor E3-1275 v6</td>
<td>4</td>
<td>2</td>
<td>3.80 GHz</td>
<td>8 MB</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>73 W</td>
</tr>
<tr>
<td>Intel® Xeon® processor E3-1270 v6</td>
<td>4</td>
<td>0</td>
<td>3.80 GHz</td>
<td>8 MB</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>72 W</td>
</tr>
<tr>
<td>Intel® Xeon® processor E3-1245 v6</td>
<td>4</td>
<td>2</td>
<td>3.70 GHz</td>
<td>8 MB</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>73 W</td>
</tr>
<tr>
<td>Intel® Xeon® processor E3-1240 v6</td>
<td>4</td>
<td>0</td>
<td>3.70 GHz</td>
<td>8 MB</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>72 W</td>
</tr>
<tr>
<td>Intel® Xeon® processor E3-1230 v6</td>
<td>4</td>
<td>0</td>
<td>3.50 GHz</td>
<td>8 MB</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>72 W</td>
</tr>
<tr>
<td>Intel® Xeon® processor E3-1225 v6</td>
<td>4</td>
<td>2</td>
<td>3.30 GHz</td>
<td>8 MB</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>73 W</td>
</tr>
<tr>
<td>Intel® Xeon® processor E3-1220 v6</td>
<td>4</td>
<td>0</td>
<td>3.00 GHz</td>
<td>8 MB</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>72 W</td>
</tr>
</tbody>
</table>

**Intel HD Graphics P630 requires the latest-version Intel Graphics Driver, Intel C236 chipset, and Intel Xeon processor E3-1225 v6, E3-1235 v6, E3-1245 v6, or E3-1275 v6 to enable workstation application optimizations. Optimized Intel HD Graphics P630 is only available on select models of the Intel Xeon processor E3 family. To learn more about Intel Xeon processors for workstations, visit intel.com/workstation. To learn more about Intel Xeon processors for small and medium businesses, visit intel.com/smallbusiness. To learn more about Certified Applications for the Intel Xeon Processor E3 family, visit intel.com/certifications**

### INTEL® C230 SERIES CHIPSET

<table>
<thead>
<tr>
<th>Chipset</th>
<th>Intel® HD Graphics P630</th>
<th>Intel® AMT 11.0</th>
<th>Intel® Node Manager</th>
<th>Gen 3 PCIe*</th>
<th>USB 3.0 Ports</th>
<th>SATA Ports 6 GB/s</th>
<th>Intel® Rapid Storage Technology</th>
<th>LAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel® C236</td>
<td>–</td>
<td>–</td>
<td>20‘</td>
<td>10‘</td>
<td>8‘</td>
<td>–</td>
<td>–</td>
<td>Integrated MAC</td>
</tr>
<tr>
<td>Intel® C232</td>
<td>8‘</td>
<td>6‘</td>
<td>6‘</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>Integrated MAC</td>
</tr>
</tbody>
</table>

*Port counts are dependent on how I/O flexibility is configured between PCIe*, SATA and USB 3.0 for a total of 26 ports. Intel C236 will support SATA 1.5(3)/6GB/s. Intel Anti-Theft Technology is not supported on any SKU of the Intel C230 series chipset.

For more information on the Intel Xeon processor E3-1200 v6 product family, visit intel.com/xeone3

---

**INTEL® XEON® PROCESSOR E3-1200 V6 PRODUCT FAMILY OVERVIEW (continued)**

**FEATURES**

<table>
<thead>
<tr>
<th>BENEFITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>E3-1200 V6</td>
</tr>
<tr>
<td>Thunderbolt™ 3 (for workstations)</td>
</tr>
<tr>
<td>Intel® vPro™ Technology</td>
</tr>
<tr>
<td>Intel® Active Management Technology (Intel® AMT)</td>
</tr>
<tr>
<td>Intel Server Platform Services</td>
</tr>
<tr>
<td>Intel® Optane™ Memory (accelerator) (for workstations)</td>
</tr>
<tr>
<td>Intel® Authenticate Solution (for workstations)</td>
</tr>
<tr>
<td>Intel® Node Manager</td>
</tr>
</tbody>
</table>

---

Share with Colleagues

---

[6]
Intel processor numbers are not a measure of performance. Processor numbers differentiate features within a processor model, not across different processor series. See intel.com/proc/ for more product information. intel products are not intended for use in medical, lifesaving, life sustaining, critical control, or safety systems, or in nuclear facility applications. All dates and products specified are for planning purposes only and are subject to change without notice.


Intel® Xeon® Processor E3-1275 v6 compared to an Intel® Xeon® Processor E3-1275 v2.


SATA 3.x specification enables double the data rate (from 3 GB/s to 6 GB/s) of that enabled by the SATA 2.x specification. Source: sata-io.org/technology/6Gbdetails.asp.

Eight gigatransfers (GT) per second and 128b/130b encoding in PCIe 3.0 specification enables double the interconnect bandwidth over the PCIe 2.0 specification. Source: pcisig.com/news_room/November_18_2010_Press_Release/.

**Showcase v12 (R) 7.91, SPECviewperf – SNX SNXv12 (R) 11.9, SPECviewperf – SW SWv12 (R) 30.58.**

3X graphics improvement: SPECviewperf* 12 SPECviewperf v12 Geomean (R) 7.53, SPECviewperf – CataCa-tav12 (R) 115.77, SPECviewperf – CreoCreo12 (R) 101.52, SPECviewperf – Energy SPECviewperf – 2.0; SPECviewperf – Maya Maya12 (R) 14.14; SPECviewperf – Medical Medical12 (R) 4.28, SPECviewperf – Showcase Showcase12 (R) 7.91, SPECviewperf – SNX SWv12 (R) 11.9, SPECviewperf – SW SWv12 (R) 30.58.


Intel does not control or audit third-party benchmark data or the web sites referenced in this document. You should visit the referenced website and confirm whether referenced data is accurate.

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, practices, and features 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. For more complete information visit www.intel.com/benchmarks.

Results have been estimated or simulated using internal Intel analysis or architecture simulation and modeling, and provided to you for informational purposes. Any differences in your system hardware, software or configuration may affect your actual performance.

Eight gigatransfers (GT) per second and 128b/130b encoding in PCIe 3.0 specification enables double the interconnect bandwidth over the PCIe 2.0 specification. Source: pcisig.com/news_room/November_18_2010_Press_Release/.

The SATA 3.x specification enables double the data rate (from 3 GB/s to 6 GB/s) of that enabled by the SATA 2.x specification. See: sata-io.org/technology/6Gbdetails.asp.

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. For more complete information visit www.intel.com/benchmarks.

Optimization Notice: Intel’s compilers may or may not optimize to the same degree for non-Intel microprocessors for optimizations that are not unique to Intel microprocessors. These optimizations include SSE2, SSE3, and SSSE3 instruction sets and other optimizations. Intel does not guarantee the availability, functionality, or effectiveness of any optimization on microprocessors not manufactured by Intel. Microprocessor-dependent optimizations in this product are intended for use with Intel microprocessors. Certain optimizations not specific to Intel microarchitecture are reserved for Intel microprocessors. Please refer to the applicable product User and Reference Guides for more information regarding the specific instruction sets covered by this notice. Notice Revision 420110804

Revenue performance policy is defined by assigning a baseline value of 1.0 to one benchmark result, and then dividing the actual benchmark result for the baseline platform into each of the specific benchmark results of each of the other platforms, and assigning them a relative performance number that correlates with the performance improvements reported.

Intel does not control or audit third-party benchmark data or the web sites referenced in this document. You should visit the referenced website and confirm whether referenced data is accurate.

SPEC, SPECint, SPECfp, SPECrate, SPECPower, SPECAppServer, SPECEnterprise, SPECjb, SPECCompM, SPECCompL, and SPEC MPI are trademarks of the Standard Performance Evaluation Corporation. See http://www.spec.org for more information.

Information in this document is provided in connection with Intel products. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Intel’s Terms and Conditions of Sale for such products, Intel assumes no liability whatsoever, and Intel disclaims any express or implied warranty, relating to sale and/or use of Intel products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right. Intel products are not intended for use in medical, lifesaving, or life sustaining applications.

Intel technologies’ features and benefits depend on system configuration and may require enabled hardware, software or service activation. Performance varies depending on system configuration. No computer system can be absolutely secure. Check with your system manufacturer or retailer or learn more at intel.com.