Intel® Roadmap Directions

A Resource Guide for CIOs and IT Professionals

Volume 1 ▪ 2011

www.intel.com/in/irdonline

As you usher in the New Year, Intel is providing you with even more options to upgrade your IT infrastructure with innovative technologies and breakthrough products. The first edition of the Intel Roadmap Directions for the year 2011 provides you the perfect starting point for charting out the IT roadmap for your enterprise.

Intel's constant endeavour to bring unprecedented opportunities for your organization continues with the launch of the 2nd generation Intel® Core™ processor family. Learn more about this revolutionary processor family - which comes with improved performance, enhanced security and built-in visual capabilities - and how it can bring in more benefits for your organization.

You will also find more details on Intel Cloud 2015 Vision – Intel's initiative for enabling the full potential and value of Cloud computing. In addition, you can get information on Intel® Xeon® Processor 5600 Series and the benefits your organization will get from the world's most adaptable server platform.

This roadmap edition can help you make sound business decisions and take you forward to a year of robust and steady growth. Make the best use of these directions to take your business to the next level.

2nd Generation Intel® Core™ vPro™ Processor Family

More secure, manageable, and responsive — see the difference a single processor can make

Bring in more power to your business with 2nd Generation Intel® Core™ vPro™ processor family which comes with smarter security system, remote management capabilities, enhanced graphics, etc.

PC security is now smarter than ever

- Remotely isolate infected Pcs[1]
- Remotely unlock encrypted drives[1,2]
- Take advantage of hardware-assisted secure, virtual environments[3]
- Increased security with agent presence, system defense filters, remote encryption management, TXT, Intel® Anti-Theft Technology 3.0 with S3 resume

Remote management capabilities make PC upkeep easier and more cost effective

- Reduce maintenance costs with remote configuration, diagnosis, isolation, and repair[1,2]
- Reduce the need for deskside maintenance visits by up to 56%[4]
- Hardware-assisted remote shutdown, wake-up, and update of PCs[1,4]

Broad industry use and support

- Intel® vPro™ technology deployed at businesses of all sizes
- More than 500 software vendors
- Offered by leading PC manufacturers
- Fifth-generation release of Intel vPro technology[5]

System management

- Simplify IT's/MSP's ability to manage your system with KVM, Fast Call for Help, OOB support, Host Base Set up and Config

For more information on the 2nd gen Intel Core vPro processor family, visit www.intel.com/go/vpro101

2nd Generation Intel® Core™ Processor Family

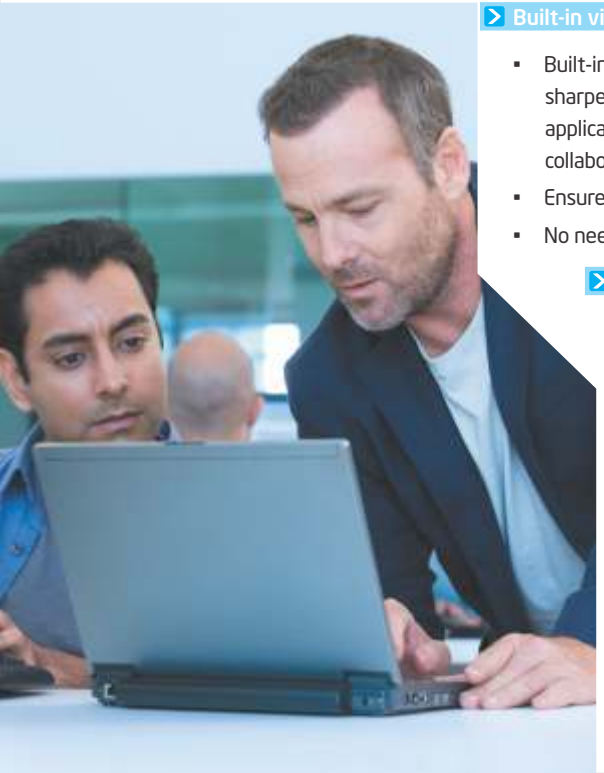
A visibly smarter way to power your business

Selecting the right processor is key when purchasing or upgrading your business PCs. The processor must keep pace with new trends in e-commerce, complex applications, and security that are applicable to your business.

Meet your business needs with a processor from the 2nd generation Intel® Core™ processor family, which offers improved adaptive performance and built-in visual capabilities to bring more intelligent performance to your business PC.

Smart performance for businesses of all sizes

- Up to 2x faster multitasking and run 60% faster business app vs. a 3-year-old PC[6]
- 4-way or 8-way multitask processing
- Built-in energy-saving features



Built-in visuals deliver stunning visual experience

- Built-in visuals provide superb visual performance, sharper images, and richer colour for multimedia applications, digital creation content, and collaboration[7]
- Ensure PCs meet business need for visual media
- No need for an additional dedicated graphics card

Safe investment with smart security

- Disable PCs at the hardware level in the event of loss or theft
- Encrypt sensitive data up to 4x faster vs. a 3-year-old PC[1,8]
- Critical background security tasks can run efficiently in the background

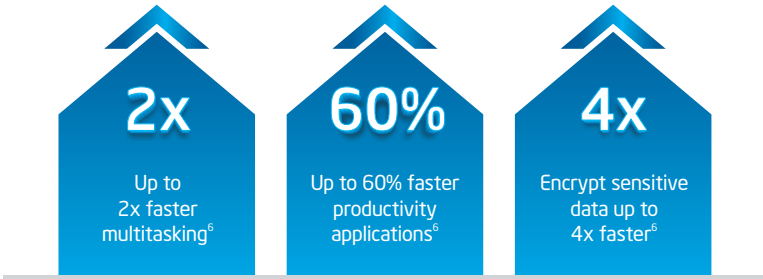
"Sandy Bridge looks to improve performance across the board regardless of thread count"
- anandtech.com*. August 2010.

Source: http://www.anandtech.com/show/3871/the-sandy-bridge-preview-three-wins-in-a-row/13

"The sandy bridge system finished the encoding process in seconds, while the core i7 based system had barely hit about the 30% mark."
- hothardware.com*. September 2010.

Source: http://hothardware.com/printarticle.aspx?articleid=1561

Accelerate workforce with smart performance



Select the 2nd Generation Intel® Core™ Processor that is Best for Your Business

Intel® Core™ i7 Processor— Best-in-Class Performance

The Intel® Core™ i7 processor delivers best-in-class performance for the most demanding applications. This quad-core processor features Intel Turbo Boost Technology[10] 2.0, 8-way multitasking capability, and additional L3 cache.

Intel ® Core ™ i5 Processor — The Next Level of Productivity

The Intel® Core™ i5 processor delivers the next level of productivity. With Intel Turbo Boost Technology 2.0, this quad-core processor with 4-way multitasking capability delivers extra speed whenever you need it as well as security features to help protect information and data.

Intel® Core™ i3 Processor— Affordable Business PC

The Intel® Core™ i3 processor provides the basis for an affordable business PC. This dual-core processor with 4-way multitasking capability has built-in performance head-room for software upgrades, providing an excellent return on investment.

For more information on 2nd generation Intel Core processors, visit www.intel.com/itcenter/products/core/index.htm

Intel® Xeon® Processor 5600 Series

Maximize Performance. Minimize Power. Automatically.

In many organizations, IT infrastructure has begun to constrain business efficiency and growth. To stay ahead, there is a need to refresh existing infrastructure with standard enterprise servers that deliver more performance and scalability, more efficiently. The Intel® Xeon® processor 5600 series automatically regulates power consumption and intelligently adjusts server performance according to your application needs, maximizing both energy efficiency and performance.

A Smart Investment

The lower TCO and groundbreaking performance of the Intel Xeon processor 5600 series offers the opportunity to transform the competitiveness of your business and the economics of your data center.

Intelligent Performance

The Intel Xeon processor 5600 series is the world's most adaptable server platform, adjusting performance and power usage in real time to meet the exact requirements of your computing workloads, while allowing manual adjustment for IT control.

Automating Energy Efficiency

Intel Xeon processor 5600 series automatically regulates power consumption to combine industry-leading energy efficiency with intelligent performance that adapts to your workload.

Maximizing Benefits from Virtualization

The Intel Xeon processor 5600 series expands the benefits of virtualization beyond consolidation with innovations that can help boost performance, increase consolidation ratios, and enable servers of different generations to be combined in the same virtualized server pool, improving virtual machine failover, load balancing, and disaster recovery capabilities.

"The Intel® Xeon® processor 5600 series allows us to achieve the highest throughput in the new and emerging digital pathology market. It is a critical component in our scanner that enables a computationally intensive parallel image processing pipeline, from optical lens correction to advanced wavelet based encoding."

- Shai Dekel, Chief Scientist, Imaging Solutions, GE Healthcare*

For more information, visit http://www.intel.com/itcenter/products/xeon/5600/index.htm

Cloud Computing

Navigate the Ongoing Shift to Cloud Computing Efficiently with Intel

More and more data centers find themselves facing real limits, whether based on lack of power, room, server capacity, or network bandwidth. The resulting complexity breeds cost, deployment risk, and operational risk. Cloud computing offers an effective solution to these challenges. When fully realized, cloud computing infrastructures can provide competitively significant IT agility, flexibility, and adaptability through systems that are efficient, flexible, and secure.

Intel's Cloud 2015 Vision - Enabling the Full Potential and Value of Cloud Computing

The technology and industry leadership that Intel brings to this environment is broader and deeper than most realize. Cloud computing according to Intel's Cloud 2015 Vision is

- **Federated:** Where communications, data, and services can move easily within and across Cloud computing infrastructure
- **Automated:** Where Cloud computing services and resources can be specified, located, and securely provisioned with very little or zero human interaction
- **Client-Aware:** Where Cloud-based applications are able to dynamically sense and take advantage of the end-point capabilities and provide secured application delivery while enhancing user experience.

Moving the industry toward that promise, Intel focuses on three industry-wide pillars of Cloud computing – efficiency, simplification, and security – and on solutions that are open, multi-vendor, and interoperable.

For more information, visit
http://www.intel.com/itcenter/cloud/

Desktop Roadmap Guidance

This latest Intel® architecture building block roadmap update is intended to provide you with recommendations for your Desktop deployments.

Desktop Segment	Processor	Chipset	Processor No.	Clock Speed	Cache	FSB / QPI©
1P Gaming / Workstation	Intel® Core™ i7 processor (Quad-core)	Intel® P55/ X58** Chipset	Intel® Core™ i7 processor 800 /900** sequence	Upto 3.33 GHz	Upto 8 MB L3 Cache	Upto 6.40 GT/sec QPI**
Enterprise managed desktop	Intel® Core™ i5 processor with vPro™ Technology	Intel® Q57 Chipset	Intel® Core™ i5 processor 600 sequence	Upto 3.60 GHz	4 MB L3 Cache	NA
Advanced desktop	Intel® Core™ i3 processor	Intel® 5 series Chipset	Intel® Core™ i3 processor 500 sequence	Upto 3.33 GHz	4 MB L3 Cache	NA
Evolving desktop	Intel® Pentium® processor	Intel® 4 series Express Chipset	Intel® Pentium® processor E6000 sequence	Upto 3.33 GHz	2 MB L2 Cache	1066 MHz
Basic desktop	Intel® Celeron® processor	Intel® G41 Express Chipset	Intel® Celeron® processor E3000 sequence	Upto 2.70 GHz	1 MB L2 Cache	800 MHz
Entry level desktop	Intel® Atom™ processor	Intel® NM10 Chipset	Intel® Atom™ processor D400/500	Upto1.80 GHz	Upto 1 MB	NA

** Compatible with X58 and have QPI BUS
NA - Not Applicable

Mobile Roadmap Guidance

This latest Intel® architecture building block roadmap update is intended to provide you with recommendations for your Mobile deployments.

Mobile Segment	Processor	Chipset	Processor No.	Clock Speed	Cache	FSB	Wireless Solution
Portable Workstation	Intel® Core™ i7 processors	Mobile Intel® PM55 Chipsets	i7-700/800QM sequence	Upto 1.86 GHz Base Freq	Upto 8 MB L3 Cache	N/A	Intel® Centrino® 6000 series (802.11 a/g/n)
Performance Notebook	Intel® Core™ i7 processors with vPro™ technology	Mobile Intel® QM57 Chipsets	i7-600M sequence	Upto 2.80 GHz Base Freq	4 MB L3 Cache	N/A	Intel® Centrino® 6000 series (802.11 a/g/n)
Mainstream Notebook	Intel® Core™ i5 processors	Mobile Intel® HM55/HM57 Chipsets	i5-500M sequence	Upto 2.66 GHz Base Freq	3 MB L3 Cache	N/A	Intel® Centrino® 6000 series (802.11 a/g/n)
Small form factor (less than 1.5KG weight)	Intel® Core™ i5 / Core™ i7 processors (LM / UM family)	Mobile Intel® HM55/QS57 Chipsets	i5-500UM/ i7-600UM/ i7-600LM sequences	Upto 2.26 GHz	Upto 4 MB L3 Cache	N/A	Intel Wifi Link 6000 series (802.11 a/g/n)
Value Notebook	Intel® Celeron® processor	Mobile Intel® HM55/HM57 Chipsets	P4000 Dual-core sequence	Upto 2.00 GHz	2 MB L3 Cache	NA	Intel Wifi Link (802.11 b/g)
Netbook	Intel® Atom™ processor	NM10 Chipset	N400/N500 processor sequence	Upto 1.83 /1.50 GHz	512 KB/ 1 MB L2 Cache	N/A	Intel Wifi Link (802.11 b/g)

NA - Not Applicable

Server Roadmap Guidance

This latest Intel® architecture building block roadmap update is intended to provide you with recommendations for your Server deployment.

Server Segment	Processor	Clock Speed	Cache	FSB / QPI[Φ]
Mission Critical	Intel® Itanium® processor 9350	1.73 GHz	24 MB L3 Cache	4.80 GT/sec QPI
Performance MP	Intel® Xeon® processor X7560 (8-core)	2.26 GHz	24 MB L3 Cache	6.40 GT/sec QPI
Mainstream MP	Intel® Xeon® processor X7542 (6-core)	2.66 GHz	18 MB L3 Cache	5.86 GT/sec QPI
Performance DP	Intel® Xeon® processor X5660 or Higher	2.80 GHz or higher	12 MB L3 Cache	6.40 GT/sec QPI
Mainstream DP	Intel® Xeon® processor E5620 or Higher	2.40 GHz or higher	12 MB L3 Cache	5.86 GT/sec QPI
Performance UP	Intel® Xeon® processor X3480	3.06 GHz or higher	8 MB L3 Cache	NA
Mainstream UP	Intel® Xeon® processor X3430	2.40 GHz or higher	8 MB L3 Cache	NA
Entry level UP	Intel® Core™ i3 processor 500 sequence	Upto 3.33 GHz	4 MB L3 Cache	NA

NA - Not Applicable

~ Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See http://www.intel.com/products/processor_number for details.

1 Intel® vPro™ Technology is sophisticated and requires setup and activation. Availability of features and results will depend upon the setup and configuration of your hardware, software and IT environment. To learn more visit http://www.intel.com/technology/vpro.

2 Requires activation and a system with a corporate network connection, an Intel® AMT-enabled chipset, network hardware and software. For notebooks, Intel AMT may be unavailable or limited over a host OS-based VPN, when connecting wirelessly, on battery power, sleeping, hibernating or powered off. Results dependent upon hardware, setup, and configuration. For more information, visit http://www.intel.com/technology/platform-technology/intel-amt.

3 Intel® Virtualization Technology requires a computer system with an enabled Intel® processor, BIOS, virtual machine monitor (VMM). Functionality, performance or other benefits will vary depending on hardware and software configurations. Software applications may not be compatible with all operating systems. Consult your PC manufacturer. For more information, visit http://www.intel.com/go/virtualization.

4 Results shown are from: the 2007 EDS Case Studies "An Analysis of Early Testing of Intel® vPro™ Technology in Large IT Departments," by LeGrand and Salamasick; third-party audit commissioned by Intel, of various enterprise IT environments; and the 2007 Benefits of Intel® vPro™ Technology in the Enterprise, Wipro Technologies study, commissioned by Intel. The EDS studies compare test environments of Intel® vPro™ Technology-based PC environments vs. non-Intel® Core™ vPro™ processor technology-based PC environments. Tested PCs were in multiple OS and power states to mirror a typical working environment. The Wipro study models projected ROI of deploying Intel® vPro™ Technology. Actual results may vary and may not be representative of the results that can be expected for smaller businesses. The study is available at http://www.intel.com/Assets/PDF/casestudies/cs_eds_vpro.pdf.

5 "Intel Developer Forum Opening Keynote by Paul Otellini, President and Chief Executive Officer" September 13, 2010. http://download.intel.com/newsroom/kits/idf/2010_fall/pdfs/Day1_IDF_Keynote_Transcript_Otellini.pdf.

6 Cross-client claim based on lowest performance data number when comparing desktop and mobile benchmarks. Configurations and performance test as follows:

Mobile: Comparing pre-production Intel® Core™ i5-2410M Processor (2C4T, 2.3GHz, 3MB cache), Intel Emerald Lake CRB, 4GB (2x2GB) PC3-10700 (DDR3-1333)-CL9, Hitachi Travelstar 320GB hard-disk drive, Intel® HD Graphics 3000, Driver: 2185 (BIOS:v.34, Intel v.9.2.0.1009) , Microsoft Windows* 7 Ultimate 64-bit RTM Intel® Core™2 Duo Processor T7250 (2M Cache, 2.00 GHz, 800 MHz FSB), Intel Silver Cascade Fab2 CRB, Micron* 4 GB (2x2GB) PC3-8500F (DDR3-1066)-400, Hitachi 320GB hard-disk drive, Mobile Intel 4 Series Express Chipset Family w/ 8.15.10.2182 (BIOS: American Megatrends AMVACRB1.86C.0104.B00.0907270557, 9.1.2.1008).

Desktop: Pre-production Intel® Core™ i5-2400 Processor (4C4T, 3.1GHz, 6MB cache), Intel Los Lunas CRB, Micron* 4GB (2x2GB) PC3-10700 (DDR3-1333)-CL9, Seagate* 1 TB, Intel® HD Graphics 2000, Driver: 2185 (BIOS:v.35, Intel v.9.2.0.1009) , Microsoft Windows* 7 Ultimate 64-bit RTM Intel® Core™ 2 Duo E6550 (2C2T, 2.33GHz, 4MB cache), Intel DG945GCL Motherboard, Micron 2GB (2x1GB) DDR2 667MHz, Seagate320 GB harddisk drive, Intel® GMA 950, Driver: 7.14.10.1329, (BIOS:CL94510J.86A.0034, INF: 9.0.0.1011), Microsoft Windows* 7 Ultimate 64-bit RTM.

Business productivity claims based on SYSmark* 2007, which is the latest version of the mainstream office productivity and Internet content creation benchmark tool used to characterize the performance of the business client. SYSmark 2007 preview features user-driven workloads and usage models developed by application experts. Multitasking claims based on PCMark Vantage, a hardware performance benchmark for PCs running Windows 7 or Windows Vista, includes a collection of various single and multi-threaded CPU, Graphics, and HDD test sets with a focus on Windows* application tests. Security workload consists of SiSoftware Sandra* 2010 - AES256 CPU Cryptographic subtest measures CPU performance while executing AES (Advanced Encryption Standard) encryption and decryption algorithm. For more information go to http://www.intel.com/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. For more information go to http://www.intel.com/performance.

7 Available on the 2nd gen Intel® Core™ processor family. Includes Intel® HD Graphics, Intel® Quick Sync Video, Intel® Clear Video HD Technology, Intel® InTru™ 3D Technology, and Intel® Advanced Vector Extensions. Also optionally includes Intel® Wireless Display depending on whether enabled on a given system or not. Whether you will receive the benefits of built-in visuals depends upon the particular design of the PC you choose. Consult your PC manufacturer whether built-in visuals are enabled on your system. Learn more about built-in visuals at http://www.intel.com/technology/visualtechnology/index.htm.

8 Intel® Advanced Encryption Standard-New Instructions (Intel® AES-NI) requires a computer system with an AES-NI enabled processor, as well as non-Intel software to execute the instructions in the correct sequence. For availability, consult your reseller or system manufacturer. For more information, see http://software.intel.com/en-us/articles/intel-advanced-encryption-standard-instructions-aes-ni.

9 64-bit computing on Intel® architecture requires a computer system with a processor, chipset, BIOS, operating system, device drivers, and applications enabled for Intel® 64 architecture. Processors will not operate (including 32-bit operation) without an Intel® 64 architecture-enabled BIOS. Performance will vary depending on your hardware and software configurations. Consult with your system vendor for more information.

10 Intel® Turbo Boost Technology requires a PC 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 PC manufacturer on whether your system delivers Intel Turbo Boost Technology. See www.intel.com/technology/turboboost/ for more information.

11 Enabling Execute Disable Bit functionality requires a PC with a processor with Execute Disable Bit capability and a supporting operating system. Check with your PC manufacturer on whether your system delivers Execute Disable Bit functionality.

2nd Generation Intel® Core™ Processors for Business PCs

Small, medium, and large businesses have a variety of computing needs. Whether your goal is to improve security, cut costs, maximize data security, or improve worker productivity, the 2nd generation Intel® Core™ processor family is a visibly smarter way to power your business PCs.[1]

		ENTRY-LEVEL COMPUTING		SMART PERFORMANCE			SMART PERFORMANCE, IT INTELLIGENT	
		Intel® Celeron® (Laptop)	Intel® Pentium® (Desktop)	Intel® Core™ i3	Intel® Core™ i5	Intel® Core™ i7	Intel® Core™ i5 vPro™	Intel® Core™ i7 vPro™
Smart security and manageability	Reduce maintenance costs with remote configuration, diagnosis, isolation, and repair of infected PCs, even if they are unresponsive[2]	○	○	○	○	○	●	●
	Hardware-based KVM Remote Control allows IT to remotely see what your users see through all states[3]	○	○	○	○	○	●	●
	Remote unlock of encrypted drives that require pre-boot authentication, and manage data security settings even when the PC is off[2]	○	○	○	○	○	●	●
	Hardware-assisted remote shutdown, wake-up, and update of PCs during off-hours—reduces energy costs and enables up to 56% faster time to patch saturation[2,4]	○	○	○	○	○	●	●
Secure virtual environments for desktop virtualization	Take advantage of hardware-assisted secure, virtual environments to centralize management of operating system and application images, and enable the use of local computing resources for a rich, end-user experience[5]	○	○	◑	◑	◑	●	●
Responsive, adaptive performance	Intel® Turbo Boost Technology 2.0 adapts performance when needed for more demanding tasks, and saves energy when additional performance is not needed[6]	○	○	○	●	●	●	●
	Hardware-based acceleration of encryption and decryption with Intel® AES-New Instructions[7]	○	○	○	●	●	●	●
	Built-in visuals provide superb visual performance and sharper images for multimedia applications, digital content creation, and collaboration[8]	○	○	●	●	●	●	●
	Multitask processing enables the PC to work on more tasks at the same time—resulting in enhanced multitasking when working among multiple office applications[9]	Up to 2-way	Up to 2-way	4-way	4-way	Up to 8-way	4-way	Up to 8-way
Safe investment	Plan PC qualification and deployment strategy with Intel® Stable Image Platform Program (Intel® SIPP)[10]	○	○	○	●	●	●	●
	Disable PCs at the hardware level in the event of loss or theft through optional Intel® Anti-Theft technology[11]	○	○	●	●	●	●	●
	Have the performance you need for Windows* 7 when your business is ready to migrate	◑	◑	●	●	●	●	●
	Help PCs meet ENERGY STAR* requirements[12]	●	●	●	●	●	●	●

○ Not applicable ◑ Basic capability ● Advanced capability

2nd Generation Intel® Core™ Processors for Business PCs

Small, medium, and large businesses have a variety of computing needs. Whether your goal is to improve security, cut costs, maximize data security or improve worker productivity, the 2nd generation Intel® Core™ processor family is a visibly smarter way to power your business PCs.[1]

More secure, manageable, responsive. That's visibly smart.

Business PCs powered by the 2nd generation Intel® Core™ vPro™ processor family provide both IT intelligence and smart performance, with hardware-assisted security, easier remote PC management, and greater user responsiveness and adaptability.[1] Intelligent, hardware-assisted security features help you quickly deploy security patches across PCs, remotely unlock encrypted drives, and manage data security settings, even when the PC is off.[2]

For users, 4-way or 8-way multitask processing allows them to move between business applications quickly and seamlessly.[9] They'll also enjoy better adaptive performance through Intel® Turbo Boost Technology 2.0, along with stunning built-in visuals, all from one processor.[6,8] See the benefits of IT intelligent security, remote manageability, and responsive performance.

Get results and performance that you can see

The 2nd gen Intel Core processor family brings visibly smart performance to your business PCs. These processors help you increase productivity and user satisfaction with up to 2x faster multitask processing, and up to 60% faster processing for business productivity applications.[13] These processors deliver extra speed whenever you need it—via Intel Turbo Boost Technology 2.0—so PCs stay responsive for demanding tasks, but dial down energy usage when additional processor performance is not needed.[6]

The 2nd gen Intel Core processor family also features built-in graphics that offer superb visual performance for sharper images and richer color, without the added cost burden and power requirements of a dedicated graphics card.[8] With smart performance, built-in visuals, and adaptive energy efficiency, it's easy to see why the 2nd gen Intel Core processor family translates into visible benefits in the most important area of your business—the bottom line.

Entry-level business computing

When you use an Intel® Pentium® processor-based desktop PC for business computing, you're making sure you have the proven reliability you need for your basic applications. For laptops, get entry-level business computing with an Intel® Celeron® processor. Ensure your value PC has Intel Inside.®

[1] Intel® vPro™ Technology is sophisticated and requires setup and activation. Availability of features and results will depend upon the setup and configuration of your hardware, software, and IT environment. To learn more visit http://www.intel.com/technology/vpro.

[2] Intel® Active Management Technology (Intel® AMT) requires activation and a system with a corporate network connection, an Intel® AMT-enabled chipset, network hardware, and software. For notebooks, Intel AMT may be unavailable or limited over a host OS-based VPN, when connecting wirelessly, on battery power, sleeping, hibernating or powered off. Results dependent upon hardware, setup and configuration. For more information, visit http://www.intel.com/technology/platform-technology/intel-amt .

[5] KVM Remote Control (Keyboard Video Mouse) is only available with Intel® Core™ i5 vPro™ processors and Core™ i7 vPro™ processors with active integrated graphics. Discrete graphics are not supported.

[4] Results shown are from: the 2007 EDS Case Studies "An Analysis of Early Testing of Intel® vPro™ Technology in Large IT Departments," by LeGrand and Salamasick; third-party audit commissioned by Intel, of various enterprise IT environments; and the 2007 Benefits of Intel® vPro™ Technology in the Enterprise, Wipro Technologies study, commissioned by Intel. The EDS studies compare test environments of Intel® vPro™ Technology-based PC environments vs. non-Intel® Core™ vPro™ processor technology-based PC environments. Tested PCs were in multiple OS and power states to mirror a typical working environment. The Wipro study models projected ROI of deploying Intel® vPro™ Technology. Actual results may vary and may not be representative of the results that can be expected for smaller businesses. The study is available at http://www.intel.com/Assets/PDF/casestudies/cs_eds_vpro.pdf.

[5] Intel® Virtualization Technology requires a computer system with an enabled Intel® processor, BIOS, virtual machine monitor (VMM). Functionality, performance or other benefits will vary depending on hardware and software configurations. Software applications may not be compatible with all operating systems. Consult your PC manufacturer. For more information, visit http://www.intel.com/go/virtualization.

[6] Requires a system with Intel® Turbo Boost Technology capability. Intel Turbo Boost Technology 2.0 is the next generation of Turbo Boost Technology and is only available on 2nd gen Intel Core processors. Consult your PC manufacturer. Performance varies depending on hardware, software and system configuration. For more information, visit http://www.intel.com/technology/turboboost.

[7] Intel® Advanced Encryption Standard-New Instructions (Intel® AES-NI) requires a computer system with an AES-NI enabled processor, as well as non-Intel software to execute the instructions in the correct sequence. For availability, consult your reseller or system manufacturer. For more information, see http://software.intel.com/en-us/articles/intel-advanced-encryption-standard-instructions-aes-ni.

[8] Available on the 2nd gen Intel® Core™ processor family. Includes Intel® HD Graphics, Intel® Quick Sync Video, Intel® Clear Video HD Technology, Intel® InTru™ 3D Technology, and Intel® Advanced Vector Extensions. Also optionally includes Intel® Wireless Display depending on whether enabled on a given system or not. Whether you will receive the benefits of built-in visuals depends upon the particular design of the PC you choose. Consult your PC manufacturer whether built-in visuals are enabled on your system. Learn more about built-in visuals at http://www.intel.com/technology/visualtechnology/index.htm.

[9] Requires an Intel® Hyper-Threading Technology enabled system, consult with your PC manufacturer. Performance will vary depending on the specific hardware and software used. Not available on all Intel® Core™ processors. For more information including details on which processors support Intel HT Technology, visit http://www.intel.com/info/hyperthreading.

[10] Check with your PC vendor for availability of computer systems that meet Intel SIPP guidelines. A stable image computer system is a standardized hardware configuration that IT departments can deploy into the enterprise for a set period of time, which is usually 12 months.

[11] Intel® Anti-Theft Technology (Intel® AT). No system can provide absolute security under all conditions. Requires an enabled chipset, BIOS, firmware and software and a subscription with a capable Service Provider. Consult your system manufacturer and Service Provider for availability and functionality. Intel assumes no liability for lost or stolen data and/or systems or any other damages resulting thereof. For more information, visit http://www.intel.com/go/anti-theft.

[12] ENERGY STAR is a system-level energy specification, defined by the Environmental Protection Agency, that relies on all system components, such as processor, chipset, power supply, etc.) For more information, visit http://www.intel.com/technology/epa/index.htm.

[13] Cross-client claim based on lowest performance data number when comparing desktop and mobile benchmarks. Configurations and performance test as follows:

Mobile: Comparing pre-production Intel® Core™ i5-2410M Processor (2C4T, 2.3GHz, 3MB cache), Intel Emerald Lake CRB, 4GB (2x2GB) PC3-10700 (DDR3-1333)-CL9, Hitachi Travelstar 320GB hard-disk drive, Intel® HD Graphics 3000, Driver: 2185 (BIOS:v.34, Intel v.9.2.0.1009), Microsoft Windows* 7 Ultimate 64-bit RTM Intel® Core™2 Duo Processor T7250 (2M Cache, 2.00 GHz, 800 MHz FSB), Intel Silver Cascade Fab2 CRB, Micron* 4 GB (2x2GB) PC3-8500F (DDR3-1066)-400, Hitachi 320GB hard-disk drive, Mobile Intel 4 Series Express Chipset Family w/ 8.15.10.2182 (BIOS: American Megatrends AMVACRB1.86C.0104.B00.0907270557, 9.1.2.1008).

Desktop: Pre-production Intel® Core™ i5-2400 Processor (4C4T, 3.1GHz, 6MB cache), Intel Los Lunas CRB, Micron* 4GB (2x2GB) PC3-10700 (DDR3-1333)-CL9, Seagate* 1 TB, Intel® HD Graphics 2000, Driver: 2185 (BIOS:v.35, Intel v.9.2.0.1009), Microsoft Windows* 7 Ultimate 64-bit RTM Intel® Core™ 2 Duo E6550 (2C2T, 2.33GHz, 4MB cache), Intel DG945GCL Motherboard, Micron 2GB (2x1GB) DDR2 667MHz, Seagate320 GB hard-disk drive, Intel® GMA 950, Driver: 7.14.10.1329, (BIOS:CL94510J.86A.0034, INF: 9.0.0.1011), Microsoft Windows* 7 Ultimate 64-bit RTM.

Business productivity claims based on SYSmark* 2007, which is the latest version of the mainstream office productivity and Internet content creation benchmark tool used to characterize the performance of the business client. SYSmark 2007 preview features user-driven workloads and usage models developed by application experts. Multitasking claims based on PCMark Vantage, a hardware performance benchmark for PCs running Windows 7 or Windows Vista, includes a collection of various single and multi-threaded CPU, Graphics, and HDD test sets with a focus on Windows* application tests. Security workload consists of SiSoftware Sandra* 2010 - AES256 CPU Cryptographic subtest measures CPU performance while executing AES (Advanced Encryption Standard) encryption and decryption algorithm. For more information go to http://www.intel.com/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. Configurations: [describe config + what test used + who did testing]. For more information go to http://www.intel.com/performance.

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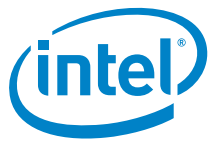

Client table - OEMs and other brands△

OEM	Intel® Core™ i3/i5/i7 processor based Desktop PCs	Intel® Pentium® processor E5000 sequence based Desktop PCs	Intel® Core™ i7 and Core™ i5 processors with vPro™ technology based Mobile PCs	Intel® Core™ i7 and Core™ i5 processors based Mobile PCs
acer	Veriton* M200-H55, M200-H57, M200-Q57, Aspire* 3900	Veriton* M200-G31, M200-G41, M200-G43, M200-Q45	TravelMate* 6594 series	Aspire* 4740 Series, 5740 Series, 5740G Series, 5745 Series, 4745 Series, TravelMate 4740 series, 5740 series, 8372 series, 8472 series, 8572 series , Aspire Timeline* X 4820T Series
DELL	Vostro* 460, Optiplex* 990/790			Latitude* 6320/6420, 5420/5520, Vostro* N13/N14/N15/N17
HCL	Infiniti* M/L A350 Pro/ Tru, Infiniti M/L A355 Pro/ Tru, Infiniti M/L A345 Pro/ Tru, Infiniti Challenger M/L A325	Infiniti M/L A330 Pro/ Tru, Infiniti M/L A300 Pro/ Tru	Infiniti M/L A360 Pro/ Tru	
hp	Elite* 8100	Pro* 3090, 6000, Elite 8000		ProBook* 6440b, 6540b, EliteBook* 8440p, 8540p, 8440w, 8540w
lenovo	M90, M90p on Q57 chipset - Tower / SFF / USFF	M58e, A58, M70, M70e, M58p - Tower / SFF	M90 / M90p on Q57 chipset - Tower / SFF / USFF	Thinkpad* W Series W710, 510, Thinkpad* X Series X210, X210s, X210t, Thinkpad T Series 510, 410, 410s
TOSHIBA				Qosmio* F60-X5310, Satellite* L650-X5310, Satellite L640-X4310, Portege* R700-X3530, M780-X2530
WIPRO	WSG59355W7, WSG59315W7, WSG59325W7	WSG52105, WSG52405, WSG52A05, WSG52G05, WSG52255, WSG52B55, WSG52F55, WSG52355, WSG52955, WSG52J55, WSG52655, WSG52755, WSG52C55, WSG52055, WSG52E55, WSG52H55, WSG52D55, WSG52K55, WSG54555, WSG55105, WSG48105, WSG48255, WSG48355, WSG48455, WSG48555, WSG53105, WSG53255, WSG37205X, WSG37455X, WSG37555X, WSG37555X		WNBXXBC48XXX
ZENITH	Zenith Corporate PC H55 with i3/i5/i7 ProcessorsZenith Smart Style Performance* PC H55 with i3 Processors	Zenith Corporate PC G31, Zenith Corporate PC G41, Zenith Smart Style Performance PC G31, Zenith Smart Style Performance PC G41		Zenith Uranium* Laptop with Core i5 Processor

△ Model numbers and configurations of OEMs are subject to change without notice and may be available at their sole discretion

Server table - OEMs and other brands△

OEM	Intel® Xeon® processor 3000 sequence based Servers (UP)	Intel® Xeon® processor 5000 sequence based Servers (DP)	Intel® Xeon® processor 5600 series based Servers (DP)	Intel® Xeon® processor 7000 sequence based Servers (MP)	Intel® Itanium® processor based Servers
acer	AT110 F2 (Pedestal server based on Intel Bromolow platform), AT310 F1 (Supports Intel Xeon 3400 series based on Intel 3420 chipset), AR320 F1 (1U Rack on Intel 3420 chipset)	AT150 F1, AT350 F1, AR160 F1/AR360 F1 (1U Rack), AR180 F1/AR380 F1 (2U Rack), Acer Blade: AB2x280 F1 (Half height), AB460 F1 (Full height), Acer Gemini* (Modular Rack): AW170 F1/AW170d F1/AW170q F1 (2 nodes in 1U Rack), AW170h F1/AW170hd F1/AW170hq F1 (4 nodes in 2U Rack)	AT150 F1/AT350 F1 (Pedestal server based on Intel 5520 chipset), AR160 F1/AR360 F1 (1U Rack), AR180 F1/AR380 F1 (2U Rack), AB2x280 F1 (Half height), AB460 F1 (Full height), AW170 F1/AW170d F1/ AW170q F1 (2 nodes in 1U Rack), AW170h F1/AW170hd F1/AW170hq F1 (4 nodes in 2U Rack)		
DELL	T110 (Tower), T310 (Tower), R210 (Rack), R310 (Rack)	PowerEdge* 2900 (Tower), 2950 (Rack), 1950 (Rack), 1900 (Tower), M600 Blades, Precision* T3500, T5500 and T7500	2S Westmere Blades – M610, M610X M710, M710HD, 2S Westmere Racks – R710, R610, R510, R410, 2S Westmere Tower – T710, T610, T510, T410, Power Edge C series C1100, C2100, C 4100, C6100	Power Edge* Rack R910, R810, Blades M810, M910	
HCL	HCL Infiniti* Global line* , 1700/ 01GR (3420 chipset), Infiniti Challenger 5145 (x58 chipset) - WS		HCL Infiniti* Global line* 2700/01 BC, 2700/01 HC, 2700 UR, DCIB v3.0 - IGL 2700 MF, 2701 SC (DP Workstation)	HCL Infiniti* Global line* 4700 PS (7500 chipset)	
hp	HP ProLiant* Servers - ML110G6, DL120 G6	HP ProLiant* Servers - DL320G6, ML330G6, ML370G6	HP ProLiant* DL160G6, DL180G6, DL320G6, DL360G6, DL380G6, BL2X220cG6, BL280cG6, BL460cG6, BL490cG6, DL360G7, DL380G7, ML/DL 370 G6, ML 330 G6	HP ProLiant* Servers - DL580G5, BL680G5, DL980 G7	HP Integrity* BI860c, BI870c, rx2660, rx3600, rx6600, rx7640, rx8640, Superdome*, NS1200, NS14200, NS16200, BL860c i2, BL870c i2, BL890c i2, rx2800 i2, Superdome 2, NS2000, NS5000-CG, NS3000, NB50000c, NB50000c-CG, NB54000c
IBM	x3100 M3, x3100 M4, x3200 M3, x3250 M3, HS12, x3250 M4		2S Westmere EP – x3400M3, x3500M3, x3650M3, x3550M3, x3620 M3, x3630 M3, dx360 M3, HS22, HS22V	x3850 X5, x3950 X5, HX5, x3690 X5	
sgi	SGI* CloudRack* C2	SGI CloudRack C2, SGI Altix* ICE 8200, XE 250, XE 320, SGI Half-Depth Servers C1001, 2005	SGI Octane III, SGI CloudRack* X2 and C2, SGI Altix ICE 8400 LX/EX, XE 270, XE 340, XE 500, SGI Half-Depth Servers C1001, 2005	SGI Altix UV 100, UV 1000, SGI UV 10	
Sun microsystems		Sun Blade* X6250, X6270, X6275,Sun Fire*X4150, X2250, X4250, X4170, X4270, X2270, Netra* X4250	2S Westmere EP – X4170M2, X2270 M2 and X4270 M2, Blades - X6270M2, Netra X4270	4S Nehalem EX–X4470 and 8S Nehalem EX X4800	
WIPRO	Wipro* NetPower* Z1505, Z1107, Z1105, Z1530, Z1531, Z1130, Z1130-H	Wipro* NetPower* Z2204, Z2504, Z2511, Z2514, Z2531, Z2533, Z2537, Z2135, Z2235, Z2235-LFZ2141, Z2243, Z2244, Z2246, Z2238, Z4171, Wipro*NetBlade* 1600 with Wipro* NetPower*Z2601 & Z2602, Wipro NetBlade 1000 with Z2701, Z2215, Z2301, Netpower Sigma Blade M & H, Netpower SMP Xeon Kona 5800 series	Wipro* NetPower* Z2531R, Z2533R, Z2537R, Z2135R, Z2235R, Z2235-LFR, Z2141R, Z2243R, Z2244R, Z2246R, Z2238R, Z4171R, Wipro*NetBlade* 1600 with Wipro* NetPower*Z2601 & Z2602, Wipro NetBlade 1000 with Z2701, Z2215, Z2301, Netpower Sigma Blade M & H, Netpower SMP Xeon Kona 5800 series	Wipro* Netpower* SMP Xeon Kona 5800 series (8-16 sockets), Z4402 (4 socket)	Wipro* Netpower* X 5800 Xpress

△ Model numbers and configurations of OEMs are subject to change without notice and may be available at their sole discretion

Intel® processor reference chart - Desktop PCs

Intel® Brand or Processor Family	Processor Number	Clock Speed (GHz)	Intel® QPI[Φ] (GT/Sec)	Memory Speed DDR3 only (MHz)	Cache	Cores / Threads	Intel® Technologies			
							Intel® VT[3]	Intel® HD Graphics	Intel® 64[9]	Intel® Turbo Boost Technology[10]
The All New 2010 Intel® Core™ Processor Family (45nm)										
	i7-960	3.20	4.80	1066 / 800	8 MB L3	4/8	✓		✓	✓
	i7-950	3.06	4.80	1066 / 800	8 MB L3	4/8	✓		✓	✓
	i7-880	3.06		1333 / 1066	8 MB L3	4/8	✓		✓	✓
	i7-875K	2.93		1333 / 1066	8 MB L3	4/8	✓		✓	✓
	i7-870	2.93		1333 / 1066	8 MB L3	4/8	✓		✓	✓
	i7-870S	2.66		1333 / 1066	8 MB L3	4/8	✓		✓	✓
	i5-760	2.80		1333 / 1066	8 MB L3	4/4	✓		✓	✓
	i5-750S	2.40		1333 / 1066	8 MB L3	4/4	✓		✓	✓
The All New 2010 Intel® Core™ Processor Family & Pentium Processor (32nm)										
	i7-980X	3.33	6.40	1066	12 MB L3	6/12	✓		✓	✓
	i7-970	3.20	4.80	1066	12 MB L3	6/12	✓		✓	✓
	i5-680	3.60		1333 / 1066	4 MB L3	2/4	✓	✓	✓	✓
	i5-670	3.46		1333 / 1066	4 MB L3	2/4	✓	✓	✓	✓
	i5-661	3.33		1333 / 1066	4 MB L3	2/4	✓	✓	✓	✓
	i5-660	3.33		1333 / 1066	4 MB L3	2/4	✓	✓	✓	✓
	i5-655K	3.20		1333 / 1066	4 MB L3	2/4	✓	✓	✓	✓
	i5-650	3.20		1333 / 1066	4 MB L3	2/4	✓	✓	✓	✓
	i3-560	3.33		1333 / 1066	4 MB L3	2/4	✓	✓	✓	
	i3-550	3.20		1333 / 1066	4 MB L3	2/4	✓	✓	✓	
	i3-540	3.06		1333 / 1066	4 MB L3	2/4	✓	✓	✓	
	Pentium G6960	2.93		1066	3 MB L3	2/2	✓	✓	✓	
	Pentium G6950	2.80		1066	3 MB L3	2/2	✓	✓	✓	

Intel® Brand or Processor Family	Processor Number	Clock Speed (GHz)	Front Side Bus (MHz)	Cache	Cores / Threads	Intel® Technologies			
						Intel® VT[3]	Enhanced Intel SpeedStep® Technology	Intel® 64[9]	Execute Disable Bit[11]
Intel® Core™2 Quad Processors Q9000 and Q8000 Sequence~									
	Q9650	3.00	1333	12 MB L2	4/4	✓	✓	✓	✓
	Q9550	2.83	1333	12 MB L2	4/4	✓	✓	✓	✓
	Q9505	2.83	1333	6 MB L2	4/4	✓	✓	✓	✓
	Q9500	2.83	1333	6 MB L2	4/4	✓	✓	✓	✓
	Q8400	2.66	1333	4MB L2	4/4	✓	✓	✓	✓

Φ Intel® QuickPath Interconnect (Intel® QPI) unleashes the parallel processing performance of next-generation Intel® 45nm microarchitectures.

Intel® processor reference chart - Desktop PCs

Intel® Brand or Processor Family	Processor Number	Clock Speed (GHz)	Front Side Bus (MHz)	Cache	Cores / Threads	Intel® Technologies			
						Intel® VT[3]	Enhanced Intel SpeedStep® Technology	Intel® 64[9]	Execute Disable Bit[11]
Intel® Core™2 Quad Processors (Low Power)									
	Q9550S	2.83	1333	12 MB L2	4/4	✓	✓	✓	✓
	Q9505S	2.83	1333	6 MB L2	4/4	✓	✓	✓	✓
	Q8400S	2.66	1333	4 MB L2	4/4	✓	✓	✓	✓
Intel® Core™2 Duo Processors E8000 and E7000 Sequence~									
	E8600	3.33	1333	6 MB L2	2/2	✓	✓	✓	✓
	E8500	3.16	1333	6 MB L2	2/2	✓	✓	✓	✓
	E8400	3.00	1333	6 MB L2	2/2	✓	✓	✓	✓
	E7600	3.06	1066	3 MB L2	2/2	✓	✓	✓	✓
	E7500	2.93	1066	3 MB L2	2/2	✓	✓	✓	✓
Intel® Pentium® Processors E6000 and E5000 Sequence~									
	E6800	3.33	1066	2 MB L2	2/2	✓	✓	✓	✓
	E6700	3.20	1066	2 MB L2	2/2	✓	✓	✓	✓
	E5800	3.20	800	2 MB L2	2/2	✓	✓	✓	✓
	E5700	3.00	800	2 MB L2	2/2	✓	✓	✓	✓
Intel® Celeron® Processors E3000 Sequence~									
	E3500	2.70	800	1 MB L2	2/2	✓	✓	✓	✓
	E3400	2.60	800	1 MB L2	2/2	✓	✓	✓	✓
Intel® Celeron® Processors 400 Sequence~									
	450	2.20	800	512 K L2	1/1			✓	✓
	440	2.00	800	512 K L2	1/1			✓	✓
Intel® Atom™ Processors									
	D525†	1.80		1 MB L2	2/4			✓	✓
	D510	1.66		1 MB L2	2/4			✓	✓
	D425†	1.80		512 K L2	1/2			✓	✓
	D410	1.66		512 K L2	1/2			✓	✓

†Supports both DDR2 and DDR3 Memory

Intel® processor reference chart - Mobile PCs

Intel® Brand or Processor Family	Processor Number	Clock Speed (GHz)	Memory Speed DDR3 only (MHz)	Cache	Cores / Threads	Intel® Technologies			
						Intel® VT[3]	Intel® HD Graphics	Intel® vPro™ Technology	Intel® Turbo Boost Technology[10] (Max Turbo) GHz
Intel® Core™ i7 Extreme Edition, Core™ i7 & Core™ i5 Processors									
	i7-940XM	2.13	1333	8 MB L3	4/8	✓			3.33
	i7-840QM	1.86	1333	8 MB L3	4/8	✓		✓	3.20
	i7-740QM	1.73	1333	6 MB L3	4/8	✓		✓	2.93
	i7-640M	2.80	1066	4 MB L3	2/4	✓	✓	✓	3.46
	i5-580M	2.66	1066	3 MB L3	2/4	✓	✓	✓	3.33
	i5-560M	2.66	1066	3 MB L3	2/4	✓	✓	✓	3.2
Intel® Core™ i7 & Core™ i5 Processors (Small Form Factor)									
	i7-660LM	2.26	1066	4 MB L3	2/4	✓	✓	✓	3.06
	i7-640LM	2.13	1066	4 MB L3	2/4	✓	✓	✓	2.93
	i7-680UM	1.46	800	4 MB L3	2/4	✓	✓	✓	2.53
	i7-660UM	1.33	800	4 MB L3	2/4	✓	✓	✓	2.40
	i7-640UM	1.20	800	4 MB L3	2/4	✓	✓	✓	2.26
	i5-560UM	1.33	800	3 MB L3	2/4	✓	✓	✓	2.13
	i5-540UM	1.20	800	3 MB L3	2/4	✓	✓	✓	2.00

Intel® Brand or Processor Family	Processor Number	Clock Speed (GHz)	Front Side Bus (MHz)	Cache	Cores / Threads	Intel® Technologies			
						Intel® VT[3]	Enhanced Intel SpeedStep® Technology	Intel® 64[9]	Execute Disable Bit[11]
Intel® Core™2 Extreme Processors									
	QX9300	2.53	1066	12 MB L2	4/4	✓	✓	✓	✓
	X9100	3.06	1066	6 MB L2	2/2	✓	✓	✓	✓
Intel® Core™2 Quad Processors based on Centrino® 2 Processor Technology									
	Q9100	2.26	1066	12 MB L2	4/4	✓	✓	✓	✓
	Q9000	2.00	1066	6 MB L2	4/4	✓	✓	✓	✓

Intel® 64 is default feature of Intel Core i5 and Core i7 processors

Intel® processor reference chart - Mobile PCs

Intel® Brand or Processor Family	Processor Number	Clock Speed (GHz)	Front Side Bus (MHz)	Memory Speed DDR3 only (MHz)	L2 Cache	Cores / Threads	Intel® Technologies			
							Intel® VT[3]	Enhanced Intel SpeedStep® Technology	Intel® 64[9]	Execute Disable Bit[11]
Intel® Core™2 Solo Processors (Small Form Factor) based on Centrino® Processor Technology										
	SU3500	1.40	800		3 MB L2	1/1	✓	✓	✓	✓
Intel® Celeron® Processors (Small Form Factor)										
	U3600	1.20		800	2 MB L3	2/2	✓	✓	✓	✓
	SU2300	1.20	800		1 MB L2	2/2	✓	✓	✓	
	ULV763	1.40	800		1 MB L2	1/1				
Intel® Celeron® Processors										
	P4600	2.00		1066	2 MB L3	2/2	✓		✓	✓
	T3500	2.10	800	800	1 MB L3	2/2			✓	✓
	925	2.30	800	800	1 MB L3	1/1			✓	✓
Intel® Atom™ Processors										
	N550	1.50		667	1 MB L2	2/4		✓	✓	✓
	N475	1.83		667	512 K L2	1/2		✓	✓	✓
	N455	1.66		667	512 K L2	1/2		✓	✓	✓

Intel® processor reference chart - Servers

Intel® Brand or Processor Family	Processor Number	Clock Speed (GHz)	Front Side Bus (MHz)	Memory Speed DDR3 only (MHz)	Cache	Intel® QPI[Φ] (GT/Sec)	Cores / Threads	Power (Max TDP)	System Type
	Intel® Itanium® Processors 9000 Sequence~								
	9350	1.73			24 MB L3	4.80	4/8	185W	MP
	9340	1.60			20 MB L3	4.80	4/8	185W	MP
	9330	1.46			20 MB L3	4.80	4/8	155W	MP
	9320	1.33			16 MB L3	4.80	4/8	155W	MP
	9310	1.60			10 MB L3	4.80	2/4	130W	MP
	9150M	1.66	667		24 MB L3		2/4	104W	MP
	9150N	1.60	533/400		24 MB L3		2/4	104W	MP
	9140M	1.66	667		18 MB L3		2/4	104W	MP
	9140N	1.60	533/400		18 MB L3		2/4	104W	MP
	9130M	1.66	667		8 MB L3		2/2	104W	MP
	9120N	1.42	533/400		12 MB L3		2/4	104W	MP
	9110N	1.60	533/400		12 MB L3		1/1	75W	MP
	Intel® Xeon® Processors 7500/6500 Sequence~								
	X7560	2.26		1066	24 MB L3	6.40	8/16	130W	MP
	X7550	2.00		1066	18 MB L3	6.40	8/16	130W	MP
	X7542	2.66		1066	18 MB L3	5.86	6/6	130W	MP
	E7540	2.00		1066	18 MB L3	6.40	6/12	105W	MP
	E7530	1.86		1066	12 MB L3	5.86	6/12	105W	MP
	E7520	1.86		800	18 MB L3	4.80	4/8	95W	MP
	L7555	1.86		1066	24 MB L3	5.86	8/16	95W	MP
	L7545	1.86		1066	18 MB L3	5.86	6/12	95W	MP
	X6550	2.00		1066	18 MB L3	6.40	8/16	130W	2-Sky Only
	E6540	2.00		1066	18 MB L3	6.40	6/12	105W	2-Sky Only
	E6510	1.73		800	12 MB L3	4.80	4/8	105W	2-Sky Only
	Intel® Xeon® Processors 5600 Sequence~								
	X5680	3.33		1333/1066/800	12 MB L3	6.40	6/12	130W	DP
	X5677	3.46		1333/1066/800	12 MB L3	6.40	4/8	130W	DP
	X5670	2.93		1333/1066/800	12 MB L3	6.40	6/12	95W	DP
	X5667	3.06		1333/1066/800	12 MB L3	6.40	4/8	95W	DP
	X5660	2.80		1333/1066/800	12 MB L3	6.40	6/12	95W	DP
	X5650	2.66		1333/1066/800	12 MB L3	6.40	6/12	95W	DP
	E5640	2.66		1066/800	12 MB L3	5.86	4/8	80W	DP
	E5630	2.53		1066/800	12 MB L3	5.86	4/8	80W	DP
	E5620	2.40		1066/800	12 MB L3	5.86	4/8	80W	DP
	L5640	2.26		1333/1066/800	12 MB L3	5.86	6/12	60W	DP
	L5630	2.13		1066/800	12 MB L3	5.86	4/8	40W	DP
	L5609	1.86		1066/800	12 MB L3	5.86	4/4	40W	DP

Φ Intel® QuickPath Interconnect (Intel® QPI) unleashes the parallel processing performance of next-generation Intel® 45nm microarchitectures.

Intel® processor reference chart - Servers

Intel® Brand or Processor Family	Processor Number	Clock Speed (GHz)	Memory Speed DDR3 only (MHz)	Cache	Intel® QPI$^{\Phi}$ (GT/Sec)	Cores / Threads	Power	System Type
	Intel® Xeon® Processors 5500 Sequence~							
	W5580	3.20	1333/1066/800	8MB L3	6.40	4/8	130W	DP
	X5560	2.80	1333/1066/800	8MB L3	6.40	4/8	95W	DP
	E5540	2.53	1066/800	8MB L3	5.86	4/8	80W	DP
	E5530	2.40	1066/800	8MB L3	5.86	4/8	80W	DP
	L5530	2.40	1066/800	8MB L3	5.86	4/8	60W	DP
	L5520	2.26	1066/800	8MB L3	5.86	4/8	60W	DP
	E5507	2.26	800	4MB L3	4.80	4/4	80W	DP
	E5506	2.13	800	4MB L3	4.80	4/4	80W	DP
	L5506	2.13	800	4MB L3	4.80	4/4	60W	DP
	E5503	2.00	800	4MB L3	4.80	2/2	80W	DP
	Intel® Xeon® Processors 3600, 3500 and 3400 Sequence~							
	W3680	3.33	1333/1066/800	12 MB$^{\Diamond}$ L3	6.40	6/12	130W	UP
	W3580	3.33	1333/1066/800	8 MB$^{\Diamond}$ L3	6.40	4/8	130W	UP
	W3565	3.20	1066/800	8 MB$^{\Diamond}$ L3	4.80	4/8	130W	UP
	W3550	3.06	1066/800	8 MB$^{\Diamond}$ L3	4.80	4/8	130W	UP
	W3530	2.80	1066/800	8 MB$^{\Diamond}$ L3	4.80	4/8	130W	UP
	W3520	2.66	1066/800	8 MB$^{\Diamond}$ L3	4.80	4/8	130W	UP
	X3480	3.06	1333/1066/800	8 MB$^{\Diamond}$ L3		4/8	95W	UP
	X3470	2.93	1333/1066/800	8 MB$^{\Diamond}$ L3		4/8	95W	UP
	X3460	2.80	1333/1066/800	8 MB$^{\Diamond}$ L3		4/8	95W	UP
	X3450	2.66	1333/1066/800	8 MB$^{\Diamond}$ L3		4/8	95W	UP
	X3440	2.53	1333/1066/800	8 MB$^{\Diamond}$ L3		4/8	95W	UP
	X3430	2.40	1333/1066/800	8 MB$^{\Diamond}$ L3		4/4	95W	UP
	L3426	1.86	1333/1066/800	8 MB$^{\Diamond}$ L3		4/8	45W	UP
	L3406	2.26	1066	4 MB L3		2/4	30W	UP

$^{\Phi}$ Intel® QuickPath Interconnect (Intel® QPI) unleashes the parallel processing performance of next-generation Intel® 45nm microarchitectures.
$^{\Diamond}$ Intel® Smart Cache provides a higher-performance, more-efficient cache subsystem. Optimized for industry-leading multi-threaded applications.

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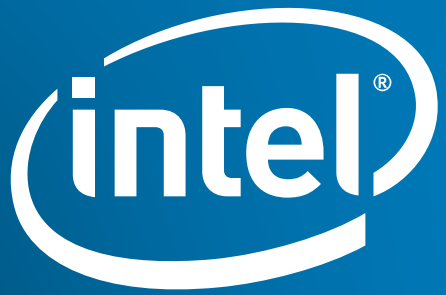

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