




## Take business PCs to the next level.

Superior security and remote manageability on a chip with Intel® Centrino® Pro processor technology for notebook PCs and Intel® vPro™ processor technology for desktop PCs.





< **Superior Remote Diagnostic and Repair:** Conduct down-the-wire diagnostics and repair even if the OS is down. >

< **Speedy Remote Inventory:** Remotely inventory hardware and software assets on network-connected PCs — whether powered down or the OS is unresponsive. >

< **Advanced Virus Isolation:** Use hardware-based virus filtering and isolation to protect PCs on the network. >

< **Fast Patch Saturation:** Enable greater patch saturation in less time with encrypted remote PC power-on and update. >

< **Hardware Enhanced Virtualization:** Superior performance and security for emerging virtualized software. >

< **Smart Security Agent Detection:** Use hardware to make sure security agents remain active and operational. >

# Improve operational efficiency and increase up-time with Intel-based notebook and desktop PCs

*Time is at a premium.*

*Your budget is stretched thin.*

*And attending to daily  
employee computing crises  
consumes virtually all your resources.*

The new Intel® Centrino® Pro processor technology for notebook PCs and Intel® vPro™ processor technology for desktop PCs will change your IT reality. With security and remote manageability on a chip, you can reduce the time and resources required to maintain and protect both notebook and desktop PCs.

Building on a common technology foundation, notebook computers with Intel Centrino Pro processor technology and desktops with Intel vPro processor technology offer a unified approach for managing and protecting computers throughout your organization. With the latest IT management consoles, you can manage your notebooks and desktops over a wired or secure wireless network even if the OS is unresponsive or the PC is powered off<sup>1</sup> (See graphic on p. 5 for complete connectivity capabilities).

Plus, both Intel Centrino Pro and Intel vPro processor technology-based PCs contain the high performance, energy-efficient Intel® Core™2 Duo processor. Now, Intel hardware capabilities can provide proactive security, built-in manageability and energy-efficient performance for both your notebook and desktop PCs.

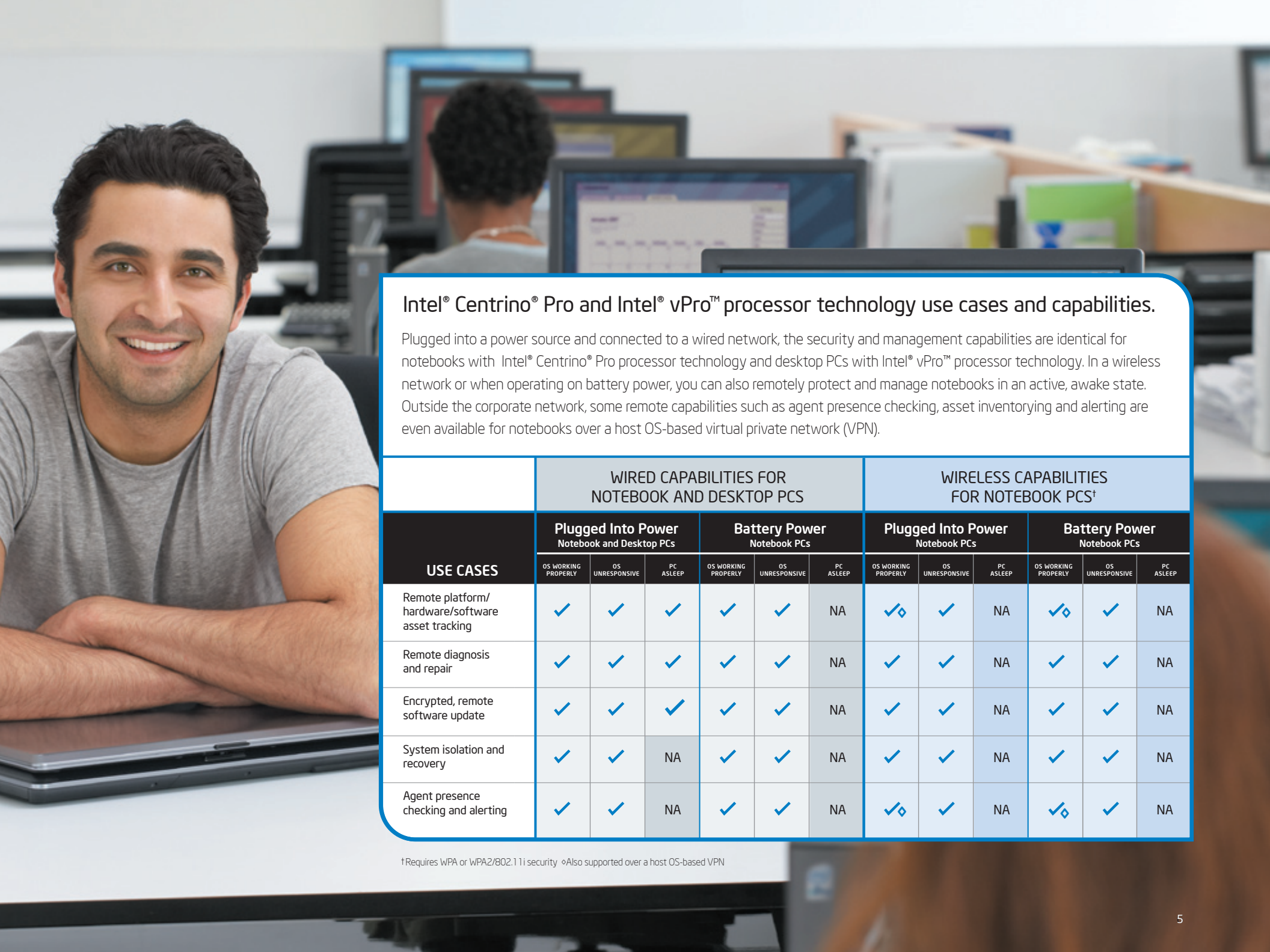
# A unified framework for secure remote management of PCs.

*Intel® Centrino® Pro and Intel® vPro™ processor technology enable more accurate inventories, greater policy compliance, fewer deskside service visits and less interruption to business operations.*

Enable more secure remote management of both notebooks and desktop PCs from the same console with Intel® Centrino® Pro and Intel® vPro™ processor technology.<sup>2</sup>

These computers incorporate hardware-based security and enhanced maintenance and management capabilities that integrate seamlessly with management solutions from leading Independent Software Vendors (ISVs). Because these capabilities are built into the hardware, Intel Centrino Pro and Intel vPro processor technology provide IT with the industry's first solution for OS-absent manageability and down-the-wire security in 802.1x and Cisco NAC networks even when the PC is off, the operating system is unresponsive or software agents are disabled.

Notebooks with Intel Centrino Pro processor technology and desktops with Intel vPro processor technology enjoy the support of a wide range of PC manufacturers and technology service providers. These high-performance, feature-rich PCs are ready to accommodate new technologies or software such as Windows Vista\* or Office 2007.\* Powered by the Intel Core 2 Duo processor, you also get exceptional performance to support compute intensive applications as well as powerful desktops with small, compact designs and notebooks with great battery life.



## Intel® Centrino® Pro and Intel® vPro™ processor technology use cases and capabilities.

Plugged into a power source and connected to a wired network, the security and management capabilities are identical for notebooks with Intel® Centrino® Pro processor technology and desktop PCs with Intel® vPro™ processor technology. In a wireless network or when operating on battery power, you can also remotely protect and manage notebooks in an active, awake state. Outside the corporate network, some remote capabilities such as agent presence checking, asset inventorying and alerting are even available for notebooks over a host OS-based virtual private network (VPN).

USE CASES	WIRED CAPABILITIES FOR NOTEBOOK AND DESKTOP PCs						WIRELESS CAPABILITIES FOR NOTEBOOK PCs†					
	Plugged Into Power Notebook and Desktop PCs			Battery Power Notebook PCs			Plugged Into Power Notebook PCs			Battery Power Notebook PCs		
	OS WORKING PROPERLY	OS UNRESPONSIVE	PC ASLEEP	OS WORKING PROPERLY	OS UNRESPONSIVE	PC ASLEEP	OS WORKING PROPERLY	OS UNRESPONSIVE	PC ASLEEP	OS WORKING PROPERLY	OS UNRESPONSIVE	PC ASLEEP
Remote platform/hardware/software asset tracking	✓	✓	✓	✓	✓	NA	✓◊	✓	NA	✓◊	✓	NA
Remote diagnosis and repair	✓	✓	✓	✓	✓	NA	✓	✓	NA	✓	✓	NA
Encrypted, remote software update	✓	✓	✓	✓	✓	NA	✓	✓	NA	✓	✓	NA
System isolation and recovery	✓	✓	NA	✓	✓	NA	✓	✓	NA	✓	✓	NA
Agent presence checking and alerting	✓	✓	NA	✓	✓	NA	✓◊	✓	NA	✓◊	✓	NA

†Requires WPA or WPA2/802.11i security ◊Also supported over a host OS-based VPN

## **HARDWARE-ENHANCED VIRTUALIZATION: IT'S TIME FOR PC DEFENSE IN-DEPTH**

Get ready to harness the power of protected virtualization to create a more secure, isolated environment from which you can detect and prevent attacks against your most sensitive IT applications.

### **General-purpose virtualization**

Built-in Intel® Virtualization Technology (Intel® VT)<sup>3</sup> for notebook and desktop PCs helps you use general-purpose virtualization to run more than one OS on a PC and protect each environment from the other. With the addition of Intel VT for Directed I/O to the latest generation Intel® vPro™ processor technology, the PC can even prevent unauthorized direct memory accesses (DMAs) from the hardware from reading or writing information to other virtual environments.

### **Special-purpose virtualization**

Intel vPro processor technology also lets you deploy virtual appliances from leading third-party security and management vendors such as Lenovo, Parallels, and Symantec. Invisible to users and under IT control through your management application, these virtual appliances provide a more secure, stable environment for critical services, such as deep packet inspection for malicious software and asset monitoring for compliance.

### **Trusted launch and protected shutdown**

Intel® Trusted Execution Technology (Intel® TXT)<sup>4</sup> enables an additional layer of security for all your virtualized applications and data. Using Intel TXT, the PC can now boot software into a trusted state and also protect credentials during both orderly and disorderly shutdowns. These features protect the integrity of the Virtual Machine Monitor and data that resides in the virtual machines.

### **Multiply your security levels**

With enhanced isolation, greater efficiency, and lower overhead, Intel VT and Intel TXT can help you protect virtual environments against rootkit and other attacks, multiply your security levels, and minimize business risk.



# Proactively protect your notebook and desktop PCs.

Protect your infrastructure and ensure business continuity with the unique hardware-enhanced security technologies in notebooks with Intel® Centrino® Pro processor technology and desktops with Intel® vPro™ processor technology. Now you can stop many threats before they reach the operating system, isolate infected systems, and update PC security software more efficiently and effectively than ever before.

The hardware-based capabilities of Intel Centrino Pro and Intel vPro processor technology improve network traffic filtering and isolate clients under attack to protect your network. Automatic verification of the presence of security agents and immediate remote restoration enhances your preventive security efforts. And with secure, reliable remote wake-up functionality, you can deploy off-hours patches across your enterprise faster and without disrupting end users, reducing the time to achieve patch saturation by up to 94%.<sup>††</sup>

Intel Centrino Pro and Intel vPro processor technology also enable more accurate inventories to ensure all systems are compliant with security policies. Additionally, the hardware-assisted anti-virus protection of Execute Disable Bit protects your PCs from certain viruses that use buffer overflow attack.<sup>5</sup>



## INTEL® CENTRINO® PRO PROCESSOR TECHNOLOGY

Beyond their proactive security and built-in manageability features, notebooks with Intel® Centrino® Pro processor technology deliver the outstanding mobile experience of the Intel Centrino processor technology family. Mobile users will enjoy:

- Up to two times more processor performance when multi-tasking<sup>6</sup> and great battery life.
- Secure, flexible wireless connectivity supporting 802.11 a/b/g wireless protocols and Intel® Next-Gen Wireless-N technology offering five times the performance and twice the wireless range<sup>7</sup> on a new wireless n network.
- Support for Windows Vista's\* latest graphic interface, Aero\* 3D-desktop, for a better user experience.
- Up to 2X faster performance when loading frequently used applications and up to 20% faster boot time with optional Intel® Turbo Memory<sup>8</sup> when running Windows Vista.

<sup>††</sup>An Analysis of Early Testing of Intel® vPro™ Processor Technology in Large IT Departments; Charles LeGrand, Tech Par Group and Mark Salamasick, Center for Internal Auditing Excellence, University of Texas at Dallas; commissioned by Intel April 2007 and Improving Mobile Asset Experiences with Intel® Centrino® Pro Processor Technology; EDS Lab Evaluation; commissioned by Intel May 2007

# Lower costs and improve efficiency with built-in manageability.

Using hardware-based security and management technology you can support both notebooks with Intel® Centrino® Pro processor technology and desktops with Intel® vPro™ processor technology. These capabilities work with management solutions from leading ISVs such as HP, LANDesk, Microsoft and Symantec to enhance control of your company's computers and streamline operations.

When desktops or notebooks experience issues, you can speed recovery times and minimize desk-side visits. Intel Centrino Pro and Intel vPro processor technology can help you diagnose and repair systems remotely, cut downtime, and reduce the average in-person IT support time. You can even access notebook and desktop PCs when the user OS is unresponsive. This functionality and the ability to store asset information in the computer's secure, non-volatile memory can help reduce manual inventories of hardware and software assets by up to 94%<sup>Δ</sup>. For desktop PCs, it has been shown to reduce the incidence of inventory failures or errors, eliminating up to 91% of remedial work.<sup>^</sup> You can also perform remote asset tracking and check the presence of management agents.

And readily-available access to a secure, hardware-based communication channel also facilitates superior off-site management by an IT service provider.

PCs with Intel Centrino Pro and Intel vPro processor technology are part of the Intel® Stable Image Platform Program (Intel® SIPP), so you can avoid unexpected changes that might force software image revisions or hardware re-qualifications. This helps your team more effectively plan replacement cycles and reduce the number of deployed client configurations. Plus, these PCs are built on industry standards such as ASF, SOAP, and TLS and desktop PCs with Intel vPro processor technology support next generation communication protocols such as WS-MAN and DASH.

<sup>Δ</sup> An Analysis of Early Testing of Intel® vPro™ Processor Technology in Large IT Departments; Charles LeGrand, Tech Par Group and Mark Salamasick, Center for Internal Auditing Excellence, University of Texas at Dallas; commissioned by Intel April 2007 and Improving Mobile Asset Experiences with Intel® Centrino® Pro Processor Technology; EDS Lab Evaluation; commissioned by Intel May 2007

<sup>^</sup> Measuring the Value of Intel® vPro™ Technology in the Enterprise – Wipro Technologies, August 2006



## ENTERPRISES ARE BENEFITTING

Intel® Centrino® Pro and Intel® vPro™ processor technology enable you to shift your focus from managing your PCs to accelerating your overall business success.

- Conduct manual hardware and software inventories up to 94% faster<sup>++</sup>
- Achieve patch saturation up to 94% faster<sup>++</sup>
- Reduce desk-side visits for software problems up to 75%<sup>++</sup>
- Reduce desk-side visits for hardware problems up to 50%<sup>++</sup>

<sup>++</sup>An Analysis of Early Testing of Intel® vPro™ Processor Technology in Large IT Departments; Charles LeGrand, Tech Par Group and Mark Salamasick, Center for Internal Auditing Excellence, University of Texas at Dallas; commissioned by Intel April 2007 and Improving Mobile Asset Experiences with Intel® Centrino® Pro Processor Technology; EDS Lab Evaluation; commissioned by Intel May 2007

## Setting new standards in energy-efficient performance.



Intel® Core™2 Duo processors are at the heart of Intel's most advanced computing processor technologies.

The industry-leading performance of Intel Core 2 Duo processors enable you to multi-task or run background management applications for manageability, security or communications while maintaining superior responsiveness for foreground applications. At the same time, their reduced power consumption enables smaller, quieter systems and delivers great battery life for mobile PCs. These 64-bit PCs<sup>9</sup> offer full support for Windows Vista, including the premium Windows Vista Aero interface, Microsoft Office 2007 and other next generation software.

When your business needs to respond, your PCs will be responsive. PCs with Intel® Centrino® Pro and Intel® vPro™ processor technology are powered by the dual-core Intel® Core™2 Duo processor for more computing power and better energy efficiency.

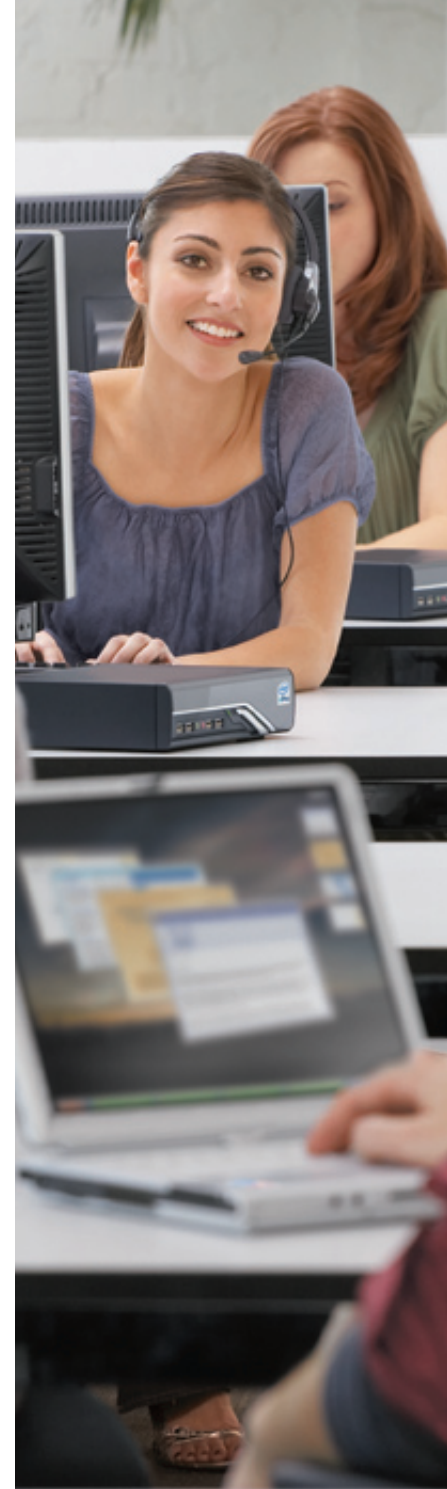
### The Intel® Core™2 Duo processor performance advantage vs. Intel® Pentium® D processor

#### APPLICATION PERFORMANCE<sup>10</sup>

Calculate revenue with Microsoft Excel 2007*	171% Faster
Review financial data with Intuit QuickBooks Pro 2006*	91% Faster
Open and edit a Microsoft PowerPoint 2007* presentation	56% Faster
Open a PDF in Adobe Acrobat 7.0.8* thumbnail view while playing HD video	37% Faster
Find and preview digital photos with Windows Vista Aero*	30% Faster
Copy a folder on an HD volume protected by Windows Vista BitLocker* drive encryption.	26% Faster

#### ENERGY-EFFICIENT PERFORMANCE<sup>11</sup>

Yearly energy costs	42% Savings
SYSmark* Score	48% Better



# Security and manageability for superior business performance.

*Intel® Centrino® Pro and Intel® vPro™ processor technology can help cut average user downtime and reduce the average in-person IT support time.*

Take your business computing to the next level with Intel Centrino Pro and Intel vPro processor technology. Now you can minimize the time and money spent on PC management and focus on IT innovation, thanks to this unified approach for more efficiently managing your notebook and desktop computers. The proactive security, built-in manageability, and energy efficient performance of notebook computers with Intel Centrino Pro processor technology and desktop computers with Intel vPro processor technology will directly benefit your business. With broad support from leading PC

manufacturers, ISVs, and IT service providers, these notebook and desktop PCs deliver a complete solution for a wide range of business environments and a superior foundation for your transition to Windows Vista.

Leap forward with the latest advances from Intel and focus on accelerating your overall business success. Make the move to Intel Centrino Pro processor technology and Intel vPro processor technology today.

**Visit [www.intel.com/go/businesspc](http://www.intel.com/go/businesspc)**



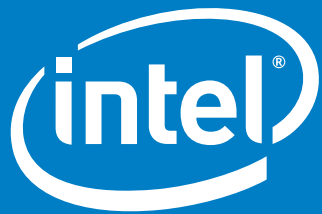
< Ensure all your PCs always have the most up-to-date security. >

< Increase efficiency and accuracy of asset inventories. >

< Prevent end-user system tampering from making your PCs more vulnerable. >

< Protect your network from intrusion and malicious attacks. >

< Minimize the need for deskside visits. >



[www.intel.com/go/businesspc](http://www.intel.com/go/businesspc)

<sup>1</sup>Intel® Centrino® Pro and Intel® vPro™ processor technology includes powerful Intel® Active Management Technology (Intel® AMT). Intel AMT requires the computer system to have an Intel® AMT-enabled chipset, network hardware and software, as well as connection with a power source and a corporate network connection. With regards to notebooks, Intel AMT may not be available or certain capabilities may be limited over a host OS-based VPN or when connecting wirelessly, on battery power, sleeping, hibernating or powered off. For more information, see <http://www.intel.com/technology/manage/iamt>.

<sup>2</sup>Contact your ISV for specific implementation schedules and support for both desktop and notebook PCs.

<sup>3</sup>Intel® Virtualization Technology requires a computer system with an enabled Intel® processor, BIOS, virtual machine monitor (VMM) and, for some uses, certain computer system software enabled for it. Functionality, performance or other benefits will vary depending on hardware and software configurations and may require a BIOS update. Software applications may not be compatible with all operating systems. Please check with your application vendor.

<sup>4</sup>No computer system can provide absolute security under all conditions. Intel® Trusted Execution Technology (Intel® TXT) requires a computer system with Intel® Virtualization Technology, an Intel TXT-enabled processor, chipset, BIOS, Authenticated Code Modules and an Intel TXT-compatible measured launched environment (MLE). The MLE could consist of a virtual machine monitor, an OS or an application. In addition, Intel TXT requires the system to contain a TPM v1.2, as defined by the Trusted Computing Group, and specific software for some uses. For more information, see <http://www.intel.com/technology/security>

<sup>5</sup>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.

<sup>6</sup>As measured by SPEC®CPU2006 comparing latest generation Intel® Core™2 Duo Processor T7700 & T7100 with a comparable frequency single core Intel® Pentium® M Processor. Actual performance may vary. See <http://www.intel.com/performance/mobile/benchmarks.htm> for important additional information.

<sup>7</sup>Up to 2x greater range and up to 5x better performance with optional Intel® Next-Gen Wireless N technology enabled by 2x3 Draft N implementations with 2 spatial streams. Actual results may vary based on your specific hardware, connection rate, site conditions, and software configurations. See <http://www.intel.com/performance/mobile/index.htm> for more information. Also requires a Connect with Intel® Centrino® processor technology certified wireless n access point. Wireless n access points without the Connect with Intel Centrino processor technology identifier may require additional firmware for increased performance results. Check with your PC and access point manufacturer for details.

<sup>8</sup>Tests run on customer reference boards and preproduction latest generation Intel® Centrino® processor technology with optional Intel® Turbo Memory enabled against like systems without Intel® Turbo Memory. Results may vary based on hardware, software and overall system configuration. All tests and ratings reflect the approximate performance of

Intel products as measured by those tests. All testing was done on Microsoft® Vista® Ultimate (build 6000). Application load and runtime acceleration depend on Vista®'s preference to pre-load those applications into the Microsoft® Ready-Boost® cache. See <http://www.intel.com/performance/mobile/benchmarks.htm> for more information.

<sup>9</sup>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. Performance will vary depending on your hardware and software configurations. Consult with your system vendor for more information.

<sup>10</sup>Comparison based on Intel Core™2 Duo processor E6700 with Intel® Q965 Chipset versus Intel® Pentium® D processor 930 3.0 GHz with Intel® D945GTP motherboard. Testing commissioned by Intel in November, 2006 and performed by Principled Technologies. Performance dependent on software, hardware, OS, and system configurations.

Actual performance may vary. For test system configuration, see these results:  
<http://principledtechnologies.com/clients/reports/Intel/vProVistaEmp.pdf>  
<http://principledtechnologies.com/clients/reports/Intel/vProVistaPred.pdf>  
<http://principledtechnologies.com/clients/reports/Intel/vProVistaAero.pdf>

<sup>11</sup>Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Comparison of system based on dual-core Intel® Core™2 Duo processor E6700 (2.66GHz, 1066MHz FSB, 4MB L2 Cache) versus with Intel Pentium D processor 945 (3.4GHz, 800MHz FSB, 2x2MB L2 Cache). Both systems tested with Intel Q965 Chipset on DG965SS board, Intel Chipset Software Installation File 8.0.1.1002, Dual Channel Micron® PC2-5300U 2x512MB of DDR2 667 5-5-5-15, Maxtor® Diamond Max 10 NCQ Serial ATA (300GB, 7200RPM), Intel® Graphics Media Accelerator X3000, Windows® XP Professional 2600 SP2 NTFS, DirectX 9.0c. Any difference in system hardware or software design or configuration may affect actual performance. Buyers should consult other sources of information to evaluate the performance of systems or components they are considering purchasing. For more information on performance tests and on the performance of Intel products, visit <http://www.intel.com/performance/resources/limits.htm>

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