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Intel and Microsoft Alliance

# Doing Business Better

The All New 2010 Intel® Core™ vPro™ Processor Family and Windows® 7

ENTERPRISE



# The All New 2010 Intel® Core™ vPro™ Processor Family and Windows® 7 Intel's Best Choice for Business PCs

Today's large companies face a perfect storm: reducing costs while increasing profitability. Workers must get more done faster, while IT assets must be more secure and easier to manage. The all new 2010 Intel® Core™ vPro™ processor family and Windows® 7 Professional or Windows® 7 Enterprise deliver the best foundation for an optimized desktop environment with intelligent performance, built-in manageability, and greater security to increase employee productivity while streamlining IT costs.

## Deliver an Outstanding Windows® 7 Experience with the All New 2010 Intel® Core™ vPro™ Processor Family

Intel Core vPro processors adapt to the needs of your business with smart security, cost-saving manageability, and intelligent performance while keeping downtime to a minimum in your Windows® 7 environment.

### Boost Productivity with Higher Performance

Windows 7 Enterprise and Windows 7 Professional build on the high-performance of the new Intel Core vPro processors to help users work faster with new features, including faster wake from sleep, optimized searches, and improved USB device performance. PCs powered by new Intel® Core™ i5 vPro™ processors deliver up to 2x faster multi-tasking performance than a three-year-old PC,<sup>1</sup> and shorter boot times increase efficiency even more.

Windows 7 includes easy-to-use productivity tools that streamline the PC experience:

- A new way to use libraries to organize files stored in multiple folders
- Faster file access with BranchCache that provides locally stored copies of headquarter data
- Customized searches on the PC, mail, or SharePoint® to quickly find information
- New taskbar tools to save valuable time
- Easier connections to wireless networks, Bluetooth devices, projectors, and other devices

### Get More Done by Refreshing Your Business PCs Now

**Increase employee productivity** using PCs powered by new 2010 Intel® Core™ i5 vPro™ processors that deliver up to 2x faster multi-tasking performance than a three-year-old PC.<sup>1</sup>

**Reduce maintenance costs** desk-side maintenance visits by up to 56 percent with new PCs.<sup>4</sup>

**Better manage and protect your fleet of business PCs** with intelligent performance and unique hardware-assisted security and manageability features of Intel Core vPro processors.

**Improve enterprise IT security** with added protection against attacks, viruses, and unsolicited tampering.<sup>5</sup> On average, a four-year-old PC can experience 53 percent more annual security incidents than it did in its first year.<sup>2</sup>

**Run legacy applications seamlessly** with Intel® Virtualization Technology<sup>1</sup> and Microsoft® Enterprise Desktop Virtualization (MED-V).

With Intel Core vPro processors, get the benefits of new PCs now, activate the Intel® vPro™ technology features, and then upgrade to Windows® 7 Enterprise simply and remotely when your business is ready.

#### Why Does Intel Invest in Higher-end PCs?

**“Not only were...lower-cost PCs unable to support the latest OS and application updates, but they also rarely lasted their expected life spans. We actually shortened the useful life of our assets by not buying more-capable PCs.”<sup>3</sup>**

PCs with the new Intel Core vPro processors running Windows 7 also offer unprecedented responsiveness plus simple, direct anywhere-access to people and information, including secure access to enterprise data from outside the firewall. For mobile users on the go, Microsoft® DirectAccess provides VPN-less connections, for a seamless experience in and out of the office.

## Enhance Security and Simplify PC Management

PCs powered by Intel Core vPro processors can take advantage of intelligent performance and unique hardware-assisted security and manageability features to give you a more optimized desktop environment while providing greater IT control and cost savings. Windows 7 Enterprise will help make users productive virtually anywhere, enhance security and control, and streamline PC management. Together, these technologies give your employees increased productivity and security while driving down your management costs.<sup>2</sup>

Intel vPro technology's out-of-band management also extends the functionality of Microsoft® Desktop Optimization Pack (MDOP), because policy management, monitoring, diagnostics, and recovery can all be handled, even when the PC is powered down or the OS is unresponsive. Microsoft® System Center Configuration Manager 2007 SP2 uses the out-of-band management capabilities of Intel vPro technology to provide a secure, encrypted power-up capability that enables IT to:

- Manage, diagnose, and repair PCs more efficiently<sup>◊</sup>
- Migrate data
- Push updates, including security software, down the wire<sup>◊</sup>
- Send and receive alerts
- Take remote inventory of PC assets
- Deploy security patches faster<sup>◊</sup>

These capabilities help increase security, reduce the overhead from company-wide OS migrations, and enhance remote manageability of your wired and wireless PC fleet – helping reduce the need for desk-side maintenance visits by up to 56 percent.<sup>◊4</sup>

Windows 7 Enterprise and Windows 7 Professional offer new technologies that help secure the PC fleet with features such as Microsoft BitLocker™, Microsoft BitLocker to Go, and Microsoft DirectAccess. Windows 7 Crypto APIs take full advantage of the new instruction sets in the Intel Core i5 vPro processor to encrypt sensitive data up to 3.5 times faster.<sup>5,6</sup> Intel vPro technology's Fast Call for Help feature complements DirectAccess and other third-party connectivity software with client-initiated requests and connections to IT even if the PC will not boot.

**PCs with Intel vPro technology activated can save up to 40 or more minutes of productivity per end user during the Windows 7 upgrade.<sup>7</sup>**

Business PCs with Intel Core vPro processors running Windows 7 Enterprise or Windows 7 Professional also enhance IT security by:

- Updating PCs in hours instead of days<sup>7</sup> to reduce security vulnerability windows
- Filtering threats and isolating PCs based on IT policy
- Continuously checking for agents to protect against unsolicited tampering
- Blocking buffer overflows with Intel® Execute Disable Bit<sup>◊</sup>
- Providing added protection against viruses and attacks with programmable system defense filters.<sup>◊</sup> Microsoft System Center Configuration Manager SP2 enables network traffic on Intel Core vPro processor-based PCs to authenticate itself, whether the enterprise is using 802.1x or Microsoft® NAP to secure end point access to these networks.

PCs with Intel vPro technology activated streamline large-business deployment to Windows 7, saving up to 40 or minutes of productivity per end user during the upgrade. In fact, PCs can be upgraded to Windows 7 overnight, to minimize downtime and productivity losses.<sup>◊</sup>

## Ensure Application Compatibility with Enterprise-ready Virtualization

Microsoft® Enterprise Desktop Virtualization (MED-V) and Intel® Virtualization Technology<sup>†</sup> (Intel® VT) can convert Windows Virtual PC into an enterprise-ready, client-side virtualization solution, so IT can run and manage legacy applications seamlessly across the enterprise. MED-V adds virtual image delivery, policy-based provisioning, and centralized management to Windows Virtual PC-hosted client-side virtual machines. Intel vPro technology's advanced out-of-band management technologies<sup>◊</sup> help to ensure a reliable client-side virtualization PC infrastructure by allowing enterprise IT to remotely manage PCs that host managed virtual machines.

## Summary

Business PCs with the all new 2010 Intel Core vPro processor family running Windows 7 Enterprise or Windows 7 Professional give enterprise IT managers a wealth of new features to help get more done while reducing operating costs. It's a smart investment in performance, manageability, and security that will drive efficiency for businesses of all sizes.

## For More Information

For more information about the all new 2010 Intel Core vPro processor family, visit [www.intel.com/go/vpro](http://www.intel.com/go/vpro).

For more information about Windows 7 for your business, visit [www.microsoft.com/windows/business/windows-7.aspx](http://www.microsoft.com/windows/business/windows-7.aspx).

To learn more about affordable solutions from Intel and Microsoft that can empower your business, visit [intelalliance.com/microsoft](http://intelalliance.com/microsoft).

## Intel and Microsoft Alliance A Trusted Partnership

Intel and Microsoft have been collaborating for more than 20 years across engineering, sales, and services to create and deliver IT solutions for a more dynamic and efficient data center.

Our collaboration has yielded:

**Commitment to Moore's Law**, bringing a seemingly unending spiral of falling prices and rising performance, and passing on savings to our customers.

**A history of innovation**, creating and driving platform advancement for greater capabilities and lower cost of ownership.

**A shared vision** of flexible computing for the agile business, with integrated solutions from the data center to the desktop.

<sup>0</sup> Enabling Execute Disable Bit functionality requires a PC or server with a processor with Execute Disable Bit capability and a supporting operating system. Check with your PC or server manufacturer on whether your system delivers Execute Disable Bit functionality.

<sup>1</sup> Intel® Virtualization Technology requires a computer system with an enabled Intel® processor, BIOS, virtual machine monitor (VMM) and, for some uses, certain platform 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>2</sup> Intel® Active Management Technology (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. Setup requires configuration by the purchaser and may require scripting with the management console or further integration into existing security frameworks to enable certain functionality. It may also require modifications of implementation of new business processes. For more information, see [www.intel.com/technology/platform-technology/intel-amt](http://www.intel.com/technology/platform-technology/intel-amt).

<sup>3</sup> 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™ i5-520M processor based laptops to theoretical installed base of Intel® Core™ 2 Duo processor T5500. Laptop system configurations: Intel® Core™ i5-520M (3 MB Cache, 2.4 GHz), with Intel Turbo Boost Technology and Intel Hyper-Threading Technology on pre-production Intel Ixex Peak HM55, Dual-channel Micron\* 4 GB (2x2 GB) DDR3-1066 7-7-7-20 with Intel® Graphics Media Accelerator HD graphics, Hitachi\* 320 GB HDD, Intel Matrix Storage Manager 8.9.0.1023 (BIOS, Intel® INF and Graphics: pre-production, Imoncompliant with VRD 11.1 requirements), Microsoft Windows\* 7 Ultimate 64-bit RTM. Intel® Core™ 2 Duo processor T5500 (2 MB Cache, 1.66 GHz, 667 MHz FSB) in Lenovo Thinkpad\* T60 laptop, Mobile Intel® 945GM Express Chipset, Micron\* PC5300 DDR2 667 2x1 GB 5-5-5-15 memory, Intel® GMA 950 graphics 224MB Dynamic video memory technology, Hitachi Travelstar\* HTS721010G9SA00 SATA 100GB 7200RPM HDD, BIOS Lenovo\* 79ETD7WW 2.17 with default settings, Microsoft Windows\* Vista Ultimate. Multitasking claims based on financial calculations workload consisting of advanced spreadsheet calculation measured using Microsoft Excel\* Monte Carlo Simulation plus Virus Scan.

(Desktop) Comparing pre-production Intel® Core™ i5-650 processor based desktops to theoretical installed base of Intel® Core™ 2 Duo Processor E6400 with comparable frequency. Desktop configurations: pre-production Intel® Core™ i5-650 processor (4 MB Cache, 3.20 GHz) on pre-production Intel® Ixex Peak P55, Dual-channel DS Micron\* 4 GB (2x2GB) DDR3-1333 9-9-9-24 with Intel® Graphics Media Accelerator HD graphics @ 900 MHz, Seagate\* 1 TB HDD, Intel® Matrix Storage Manager 8.9.1023 (BIOS, Intel® INF and Graphics: pre-production, Imon compliant with VRD 11.1 requirements), Microsoft\* Windows\* 7 Ultimate 64-bit RTM Intel® Core™ 2 Duo Processor E6400 (2M Cache, 2.13 GHz, 1066 MHz FSB) on Intel® DQ45CB, Dual channel DS Micron\* 2 GB (2x1 GB) DDR2-800 5-5-5-18 with Integrated Intel® GMA 3000 onboard graphics subsystem, Seagate\* 320GB HDD, (BIOS:0059, Intel® Chipset INF: 8.4.0.1016, Graphics: 7.14.10.1329), Microsoft Windows\* 7 Ultimate 64-bit RTM, Microsoft Windows\* Vista Ultimate 32-bit. Multitasking claims based on financial calculations workload consists of advanced spreadsheet calculation measured using Microsoft Excel\* Monte Carlo Simulation plus Virus Scan. For more information go to <http://www.intel.com/performance>.

<sup>2</sup> Using Total Cost of Ownership to Determine Optimal PC Refresh Lifecycles", Wipro Technologies, March 2009 ([www.wipro.com/industryresearch](http://www.wipro.com/industryresearch)). Based on a survey of 106 firms in North America and Europe representing 15 different industries and projections based on a Model Company developed by Wipro Technologies. Actual results may vary based on the number of use-cases implemented and may not be representative of results that individual businesses may realize. For additional implementation examples refer to Intel Case Studies available at <http://communities.intel.com/openport/docs/DOC-1494>.

<sup>3</sup> Source: From PCs as Strategic Assets, Intel Information Technology, May 2009.

<sup>4</sup> Results shown are from the 2007 EDS Case Studies with Intel® Centrino® Pro and the 2007 EDS case studies with Intel® vPro™ processor technology, by LeGrand and Salamasic, 3rd party audit commissioned by Intel, of various enterprise IT environments and the 2007 Benefits of Intel® Centrino® Pro Processor Technology in the Enterprise, Wipro Technologies study commissioned by Intel. The EDS studies compare test environments of Intel® Centrino® Pro and Intel® vPro™ processor technology equipped PCs vs. non-Intel® vPro™ processor technology 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® Centrino® Pro processor 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 [www.intel.com/vpro](http://www.intel.com/vpro), [www.eds.com](http://www.eds.com) and [www.wipro.com](http://www.wipro.com).

<sup>5</sup> Based on lowest performance data number when comparing desktop and mobile benchmarks. Configurations and performance test as follows: Comparing pre-production Intel® Core™ i5-650 processor based desktops to theoretical installed base of Intel® Core™ 2 Duo Processor E6400 with comparable frequency. Desktop configurations: pre-production Intel® Core™ i5-650 processor (4 MB Cache, 3.20 GHz) on pre-production Intel® Ixex Peak P55, Dual-channel DS Micron\* 4 GB (2x2 GB) DDR3-1333 9-9-9-24 with Intel® Graphics Media Accelerator HD graphics @ 900 MHz, Seagate\* 1TB HDD, Intel® Matrix Storage Manager 8.9.1023 (BIOS, Intel® INF and Graphics: pre-production, Imon compliant with VRD 11.1 requirements), Microsoft\* Windows\* 7 Ultimate 64-bit RTM Intel® Core™ 2 Duo Processor E6400 (2M Cache, 2.13 GHz, 1066 MHz FSB) on Intel® DQ45CB, Dual channel DS Micron\* 2 GB (2x1 GB) DDR2-800 5-5-5-18 with Integrated Intel® GMA 3000 onboard graphics subsystem, Seagate\* 320GB HDD, (BIOS:0059, Intel® Chipset INF: 8.4.0.1016, Graphics: 7.14.10.1329), Microsoft Windows\* 7 Ultimate 64-bit RTM, Microsoft\* Windows\* Vista Ultimate 32-bit. Security workload consists of Winzip\* 14 decompressing an encrypted archive containing 200 photos, 125 of which are 10MP photos and 75 which are 6MP photos. The photos are in jpeg format. The total size of all the photos is about 830 MB. For more information go to <http://www.intel.com/performance>.

<sup>6</sup> Advanced Encryption Standard New Instructions (AES-NI) is a set of instructions that consolidates mathematical operations used in the Advanced Encryption Standard (AES) algorithm. Enabling 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. AES-NI is available on Intel® Core™ i5-600 Desktop Processor Series, Intel® Core™ i7-600 Mobile Processor Series, and Intel® Core™ i5-500 Mobile Processor Series. For further availability of AES-NI enabled processors or systems, check with your reseller or system manufacturer. For more information, see [http://softwarecommunity.intel.com/isn/downloads/intelavx/AES-Instructions-Set\\_WP.pdf](http://softwarecommunity.intel.com/isn/downloads/intelavx/AES-Instructions-Set_WP.pdf).

<sup>7</sup> MMS demo showing remote, wireless Windows 7 upgrade on Win XP laptops: <http://www.vimeo.com/4430604>. Time to upgrade a PC with a HDD on a standard enterprise network is approximately 40 minutes. This time can vary depending on network conditions and HDD/PC performance. Time to upgrade could be considerably longer if a depot visit is required.

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