

The Intel® Core™2 Duo Processor



The World's Best Processors¹

Field Performance Guide

<http://www.intel.com/performance/>



1) For more information on why Intel Core 2 Duo processors are the world's best overall processors, please visit www.intel.com/core2duo

Legal Notices and Important Information

Regarding the performance measurements in this presentation

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.

Intel® Active Management Technology requires the platform to have an Intel® AMT-enabled chipset, network hardware and software, connection with a power source and a network connection.

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.

Intel® EM64T requires a computer system with a processor, chipset, BIOS, operating system, device drivers and applications enabled for Intel® EM64T. Processor will not operate (including 32-bit operation) without an Intel® EM64T-enabled BIOS. Performance will vary depending on your hardware and software configurations. See www.intel.com/info/em64t for more information including details on which processors support Intel® EM64T or consult with your system vendor for more information.

For processors with HT Technology, performance and functionality will vary depending on (i) the specific hardware and software you use and (ii) the feature enabling/system configuration by your system vendor. See www.intel.com/products/ht/hyperthreading_more.htm for information on HT Technology or consult your system vendor for more information.

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. 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/index.htm>

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- **Intel[®] Core[™] Microarchitecture**
- **Key Messages**
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- **Call to Action**



3rd Party Rave Reviews:

Game Over? Core 2 Duo Knocks out Athlon64 (Tom's Hardware, 7/06)

“... Core 2 Duo Is the new king. Core 2 Duo shall become the undisputed leader in performance and performance per Watt.”



Intel Core 2 Duo E6700 (CNET, 7/06)

“AMD, you've had a good run... Intel regains the crown with Core 2 Duo ”



Intel's AMD Killer (GD Hardware.com, 7/06)

“...Conroe (dubbed Core 2 Duo) kicks the Athlon64 right in the balls and doesn't look back... AM2 should be called AMwho.”

Intel's Core 2 Extreme & Core 2 Duo: The Empire Strikes Back (Anandtech 7/06)

“... the most impressive piece of silicon the world has ever seen... the fastest desktop processor we've ever tested.”



Intel Goes for the Jugular (Extremetech, 7/06)

“... Core 2 looks like the must-have CPU for enthusiast and mainstream user alike.”



3rd Party Rave Reviews (continued):

First "Conroe" Core 2 PC Delivers Amazing Benchmark Results, PC Magazine online, 7/06

“... the new desktop performance champ... the one others will be chasing around the track for quite a while...”



the **INQUIRER**

News, reviews, facts and friction

AMD chips hammered by Conroe, Inquirer, 7/06



Intel's New Core 2 Duo Processors Run Blazingly Fast... PC World online 7/06

“... the fastest we've seen by far ... Both of the Intel setups bested the AMD-based system on every test in our WorldBench 5 suite as well as on every one of our gaming tests.”



Intel's Core 2 Duo and Extreme processors, Techreport, 7/06

“... we're pleased to report that the Core 2 chips live up to the hype. Intel has recovered its stride, returned to its winning ways, gotten its groove back, and put the izzle back in its shizzle”

“... Make no mistake, the Core 2 Duo and Core 2 Extreme are very real, and their performance is undeniable... they seem to be everything Intel promised and then some.” *HotHardware.com, 7/06*



Intel® Core™ Microarchitecture:

	Feature	Function	Benefit
Execution Engine	Intel® Wide Dynamic Execution	Executes 4 instructions per clock cycle <ul style="list-style-type: none"> • vs. 3 per clock with Intel Netburst®, Intel mobile and competitor microarchitectures 	Better performance on multiple application types and user environments <ul style="list-style-type: none"> • Single and multithreaded apps • Content creation • Entertainment / gaming • Productivity
Efficient Memory Architecture	Intel® Advanced Smart Cache	Increases efficiency of L2 cache to processor core data transfers <ul style="list-style-type: none"> • Entire L2 cache can be allocated to one core (vs. dedicated L2 for each core in PDP and AMD* K8 DC) 	
	Intel® Smart Memory Access	Efficiently feeds data to Intel Wide Dynamic Execution engine <ul style="list-style-type: none"> • Maximizes main memory to processor bandwidth and reduces latency 	
Media & FP	Intel® Advanced Digital Media Boost	Allows many 128 bit SSE/2/3 instructions to execute in a single clock cycle <ul style="list-style-type: none"> • Same instructions execute in 2 cycles Intel Netburst®, Intel mobile and competitor microarchitectures 	Better performance on apps that use SSE instructions: <ul style="list-style-type: none"> • Video, speech, gaming, multimedia, photo processing • Encryption, financial • Engineering, scientific
Power Efficiency	Intel® Intelligent Power Capability	<ul style="list-style-type: none"> • Conroe 65W desktop mainstream TDP • Woodcrest 80W server mainstream & 40W ultra dense TDP • Continued low power mobile platform 	Can help enable quieter, more power efficient system designs Can help reduce overall power consumption

New levels of performance and power efficiency based on Intel® Core™ Microarchitecture



Intel® Core™2 Duo Processor:



**Up to 40%
faster than
previous
desktop
processors¹**

- Intel is now delivering a new processor with up to a 40% performance increase¹
- Provides 2x the execution throughput for common media instructions
- Incredible system responsiveness for both single and multi-threaded applications
- Up to 4MB shared level 2 Intel® Advanced Smart Cache

- Over 40% more energy efficient¹ than the previous processor generation
- Energy efficient processor enables new small form-factor designs
- Energy efficient processor enables quieter operation

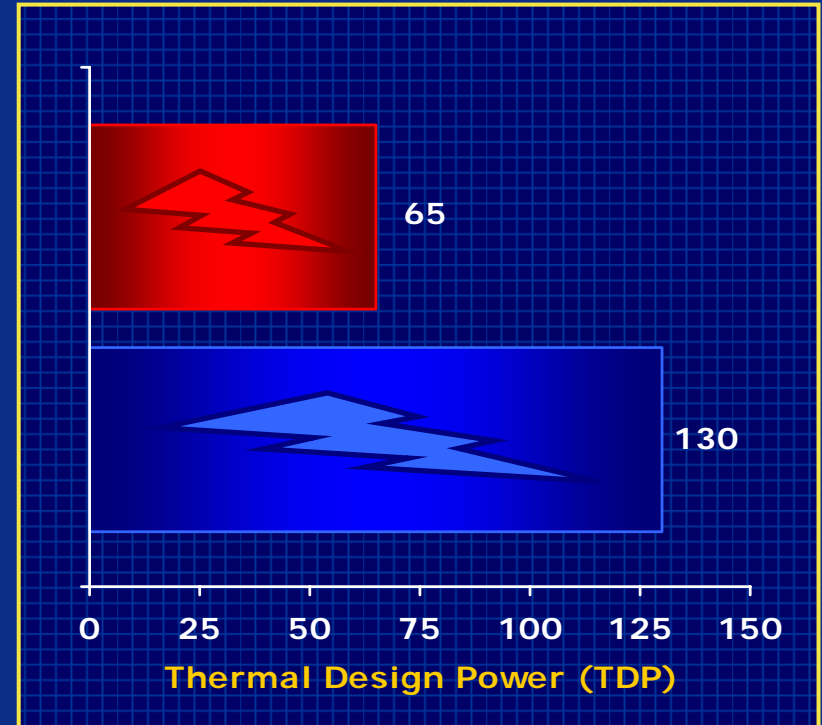
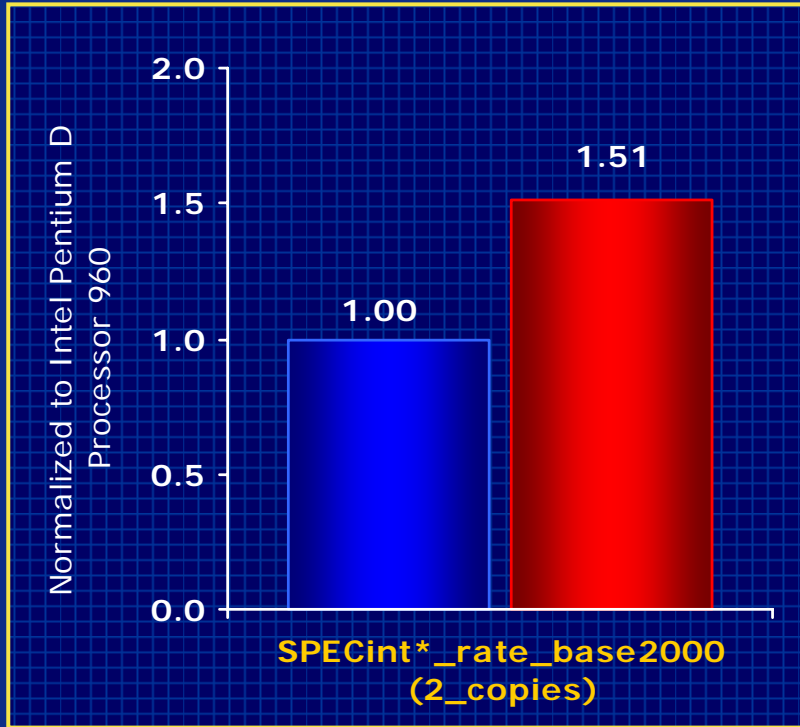
**Over 40%
more energy
efficient¹**



¹ Intel® Core™2 Duo processor E6700 when compared to the Intel® Pentium® D processor 960. Performance measured using SPECint* rate base2000. Actual performance may vary. Energy efficiency based on Thermal Design Power (TDP) measurement.

Intel® Core™2 Duo Processor:

- Intel® Core™2 Duo Processor E6700 (4MB L2 Cache, 2.66 GHz, 1066 MHz FSB)
- Intel® Pentium® D Processor 960 (2X2MB L2 Cache, 3.60 GHz, 800 MHz FSB)



Intel Core 2 Duo Processor E6700 - Over 40% performance increase and over 40% more energy efficient¹

1) Intel Core 2 Duo processor E6700 when compared to the Intel Pentium D processor 960. Performance measured using SPECint* rate base2000. Actual performance may vary. Energy efficiency based on Thermal Design Power (TDP) measurement. SPECint*, SPECfp, SPECrate are trademarks of the Standard Performance Evaluation Corporation, see <http://www.spec.org> for more information. Using Intel C++ Compiler 9.1 for Windows. Data collected July 2006.

Source: Intel. **Configuration:** 1st = Intel Core 2 Duo processor E6700 (4MB L2 Cache, 2.66GHz, 1066MHz FSB), Intel® P965 Chipset on Intel® DG965WH board, Intel chipset software install file 8.0.1.1002, 2x1GB Corsair® DDR2 800 5-5-5-15, Intel Matrix Storage Manager 6.0.0.1022 RAID-0 Ready. 2nd = Intel Pentium D Processor 960 (2x2MB L2 Cache, 3.60GHz, 800MHz FSB), Intel® 945G Express Chipset on Intel® D945GPM board, Intel chipset software install file 7.2.2.1007, 2x1GB Micron® DDR2 667 5-5-5-15, Intel Matrix Storage Manager 5.5.0.1035 RAID-0 Ready. **Both** = Maxtor® DiamondMax® 10 300GB NCQ Serial ATA 7200 RPM, ATI® Radeon® X850 XT PCIe, ATI Catalyst 6.6 Driver Suite 8.263.0.0, Windows® XP Professional Build 2600 SP2 NTFS, DirectX 9.0c. *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. 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/index.htm>*

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Digital Office Platform Capabilities “Performance Segment”



Digital Office Platform Capabilities:

Intel® Pentium® 4
Processor 670 with
HT Technology

Intel® Pentium®
D Processor 960

Intel® Core™2
Duo Processor
E6700

Motion Graphics¹

*Extract still images from raw video
footage to make clear digital pictures*

Baseline

*+27%
faster*

*+85%
faster*

Spreadsheet Productivity²

*Update your complex balance sheets
and data tables with blazing speed*

Baseline

*+4%
faster*

*+62%
faster*

Professional Image Editing³

*Auto-fix more high resolution images
and turn them into professional shots*

Baseline

*+16%
faster*

*+43%
faster*

File Creation & Virus Scan⁴

*Draft documents with peace of mind as
virus scan runs in the background*

Baseline

*+11%
faster*

*+42%
faster*

Source: Intel System configurations: shown on following slides.

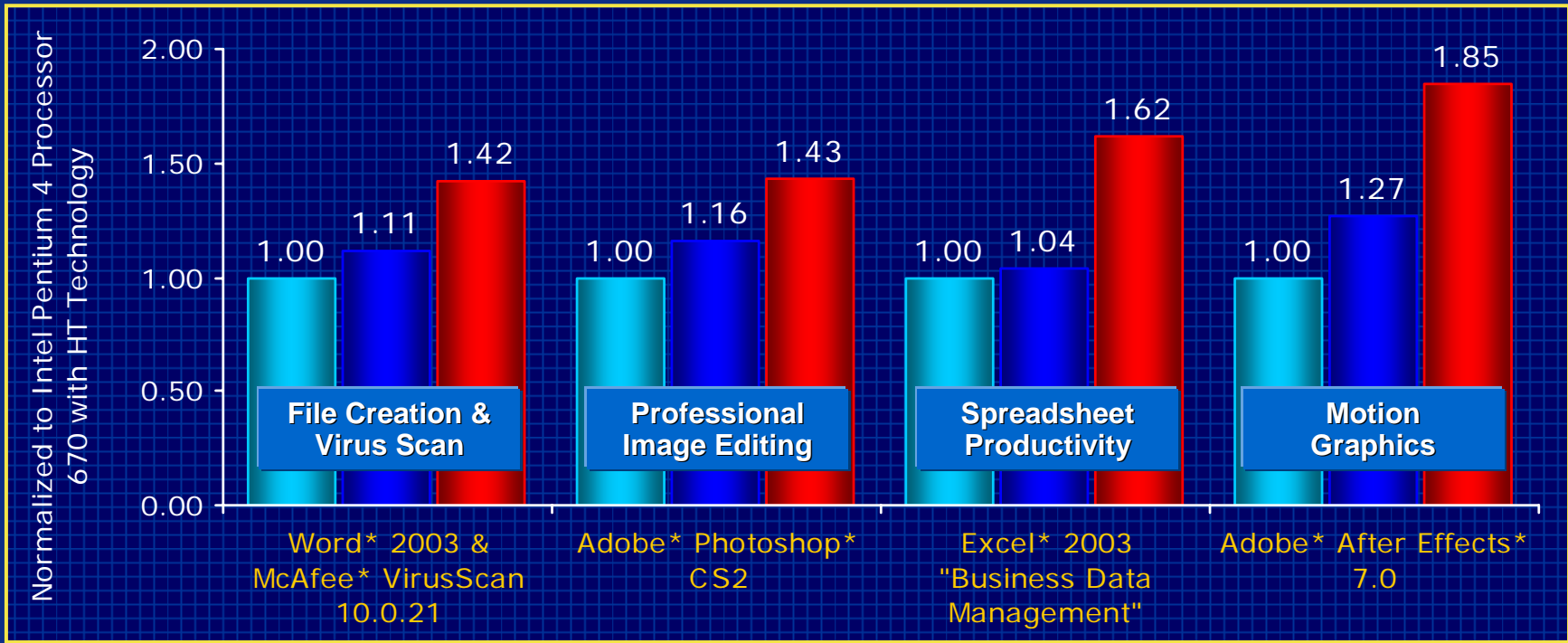
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Digital Office: Platform Capabilities

- Intel® Pentium® 4 Processor 670 with HT Technology (2MB L2, 3.80 GHz, 800 MHz FSB)
- Intel® Pentium® D Processor 960 (2x2MB L2, 3.60 GHz, 800 MHz FSB)
- Intel® Core™2 Duo Processor E6700 (4MB L2, 2.66 GHz, 1066 MHz FSB)



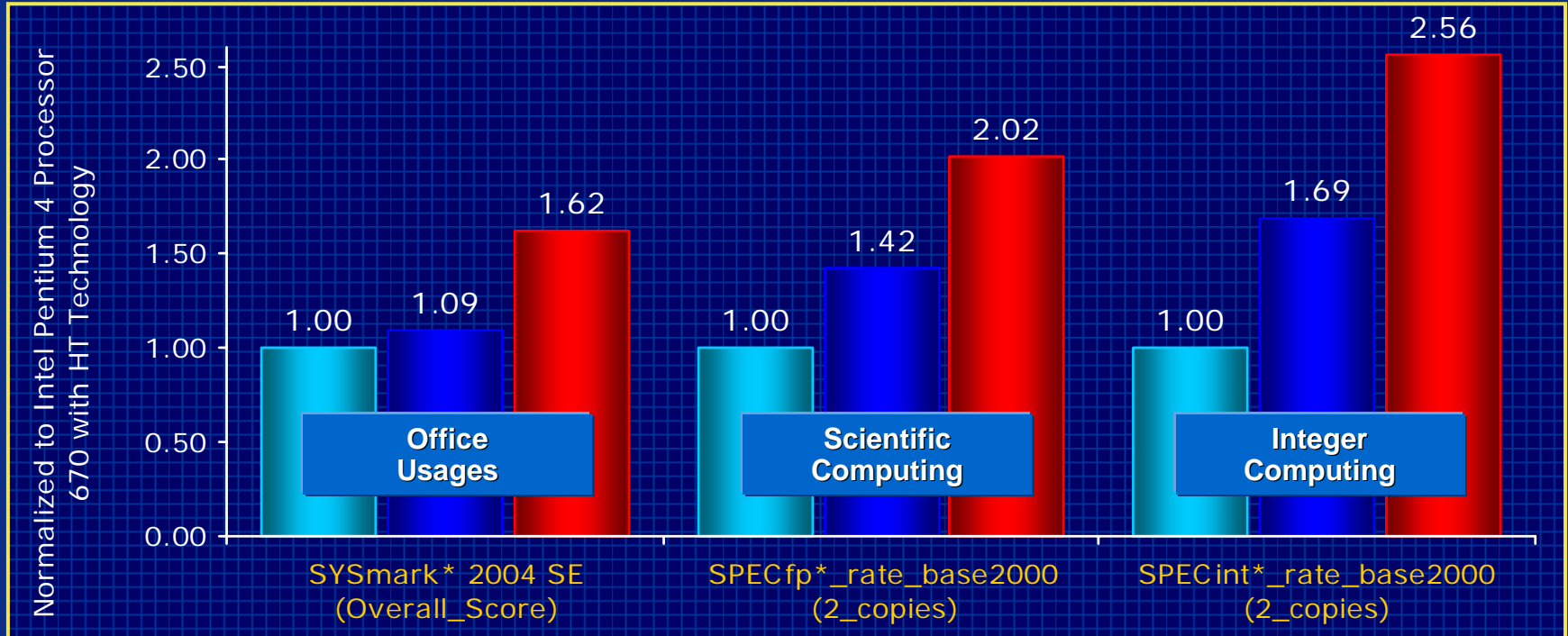
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(Tom's Hardware, 7/06)***

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Digital Office: Industry Standard Benchmarks

- Intel® Pentium® 4 Processor 670 with HT Technology (2MB L2, 3.80 GHz, 800 MHz FSB)
- Intel® Pentium® D Processor 960 (2x2MB L2, 3.60 GHz, 800 MHz FSB)
- Intel® Core™2 Duo Processor E6700 (4MB L2, 2.66 GHz, 1066 MHz FSB)



"... the new desktop performance champ... the one others will be chasing around the track for quite a while..."
(PC magazine online, 7/06)

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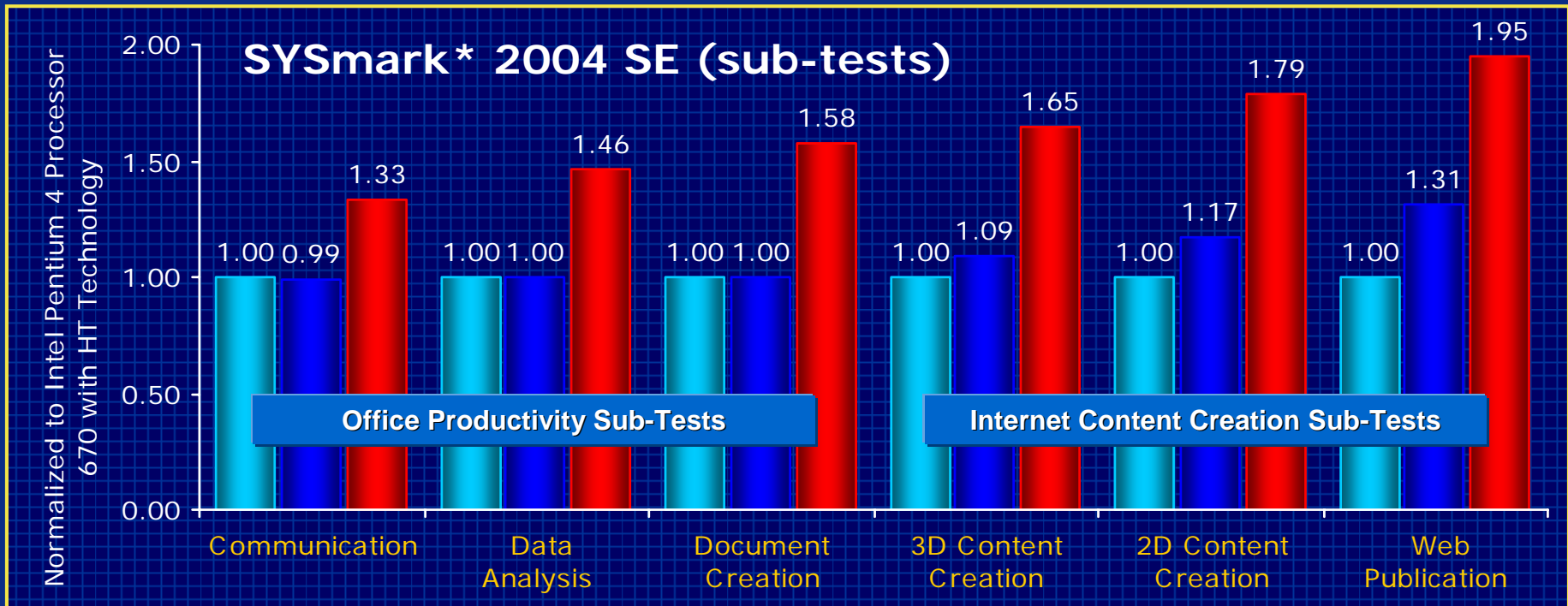
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Digital Office: SYSmark* 2004 SE (sub-tests)

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- Intel® Pentium® D Processor 960 (2x2MB L2, 3.60 GHz, 800 MHz FSB)
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"... the new desktop performance champ... the one others will be chasing around the track for quite a while..."
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Digital Office Platform Capabilities “Mainstream Segment”



Digital Office Platform Capabilities:

Intel® Pentium® 4
Processor 631 with
HT Technology

Intel® Pentium®
D Processor 930

Intel® Core™2
Duo Processor
E6300

Motion Graphics¹

*Extract still images from raw video
footage to make clear digital pictures*

Baseline

**+35%
faster**

**+66%
faster**

Spreadsheet Productivity²

*Update your complex balance sheets
and data tables with blazing speed*

Baseline

**+3%
faster**

**+34%
faster**

File Creation & Virus Scan³

*Draft documents with peace of mind as
virus scan runs in the background*

Baseline

**+17%
faster**

**+34%
faster**

Professional Image Editing⁴

*Auto-fix more high resolution images
and turn them into professional shots*

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**+23%
faster**

**+30%
faster**

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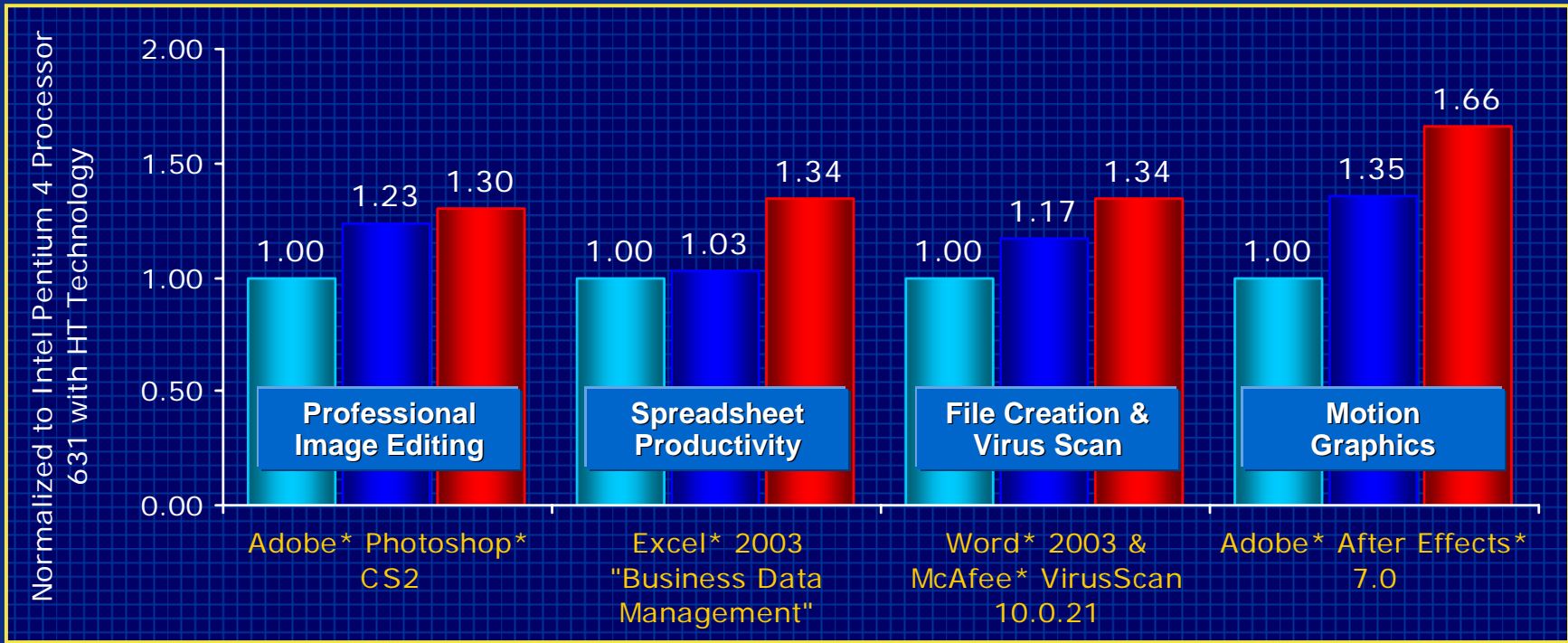
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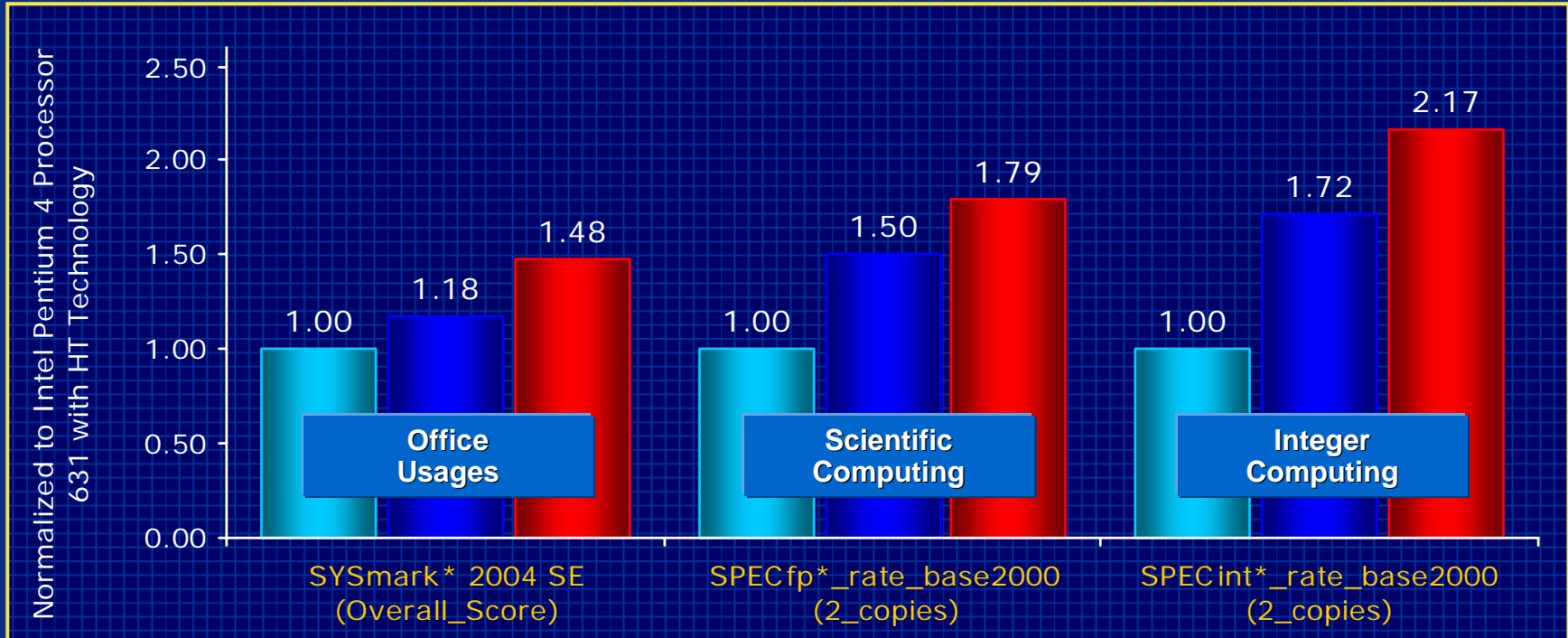
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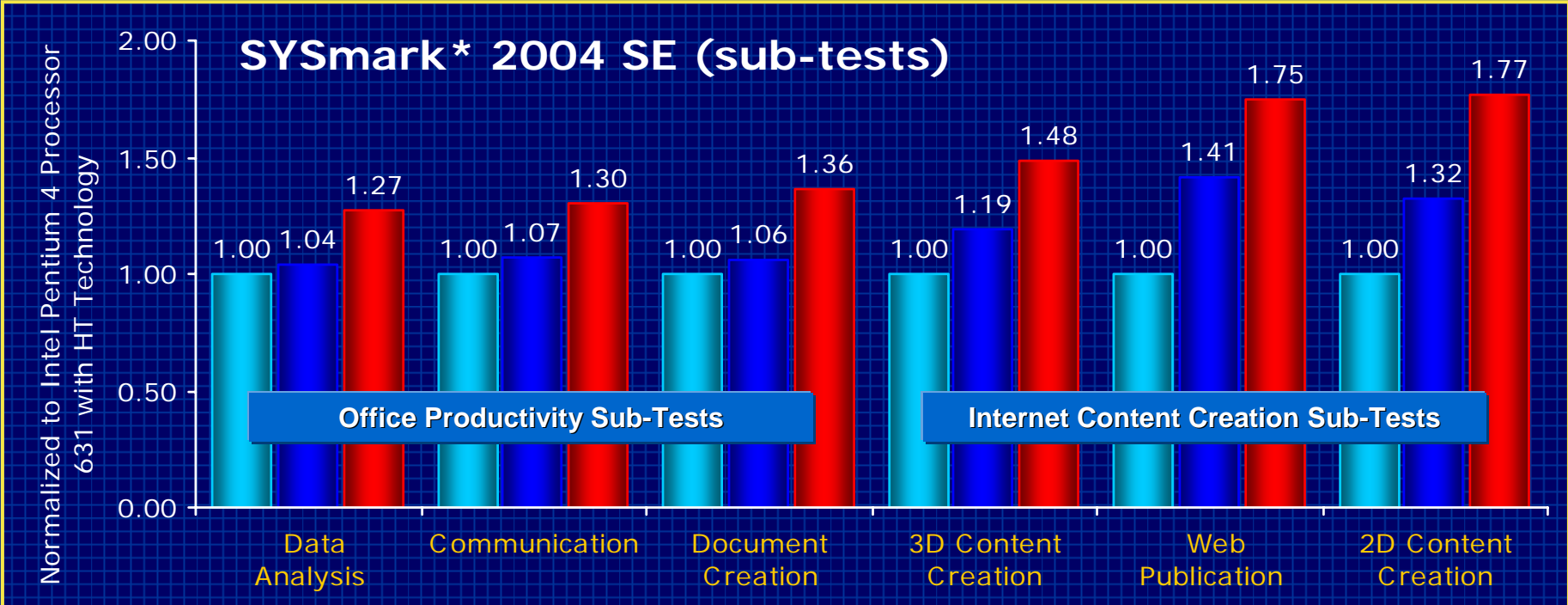
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Digital Office Platform Capabilities

“Competitive Comparison”



Digital Office Platform Capabilities:

AMD* Athlon* 64
X2 5000+

Intel® Core™2
Duo Processor
E6700

Motion Graphics¹

*Extract still images from raw video
footage to make clear digital pictures*

Baseline

**+56%
faster**

Professional Image Editing⁴

*Auto-fix more high resolution images
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Spreadsheet Productivity²

*Update your complex balance sheets
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Baseline

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File Creation & Virus Scan³

*Draft documents with peace of mind as
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Baseline

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faster**

Source: Intel System configurations: shown on following slides.

Run Description: Calculations base on = 1) Adobe* After Effects* 7.0 applying filters and effects to 12 different multimedia input files and saving the output as an uncompressed AVI file. 2) Excel* 2003 searching a 9MB source spreadsheet for specific data and then displays the data on an executive summary spreadsheet. 3) Adobe* Photoshop* CS2 filtering 5 pictures ranging in size from 11.3 to 14.4MB with a resolution of 2592x1944. Then uses web gallery feature to automatically create a web page with thumbnails and photos. 4) Average response time of Word* 2003 building two documents by pasting in 5 bmp images and 3 excel tables and changing content layout while running McAfee* VirusScan* 10.0.21 in the background. All) Performance tests and ratings are measured using specific computer systems and/or components and reflect approximate performance of Intel products as measured by those tests. Any difference in system hardware, software, 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>.

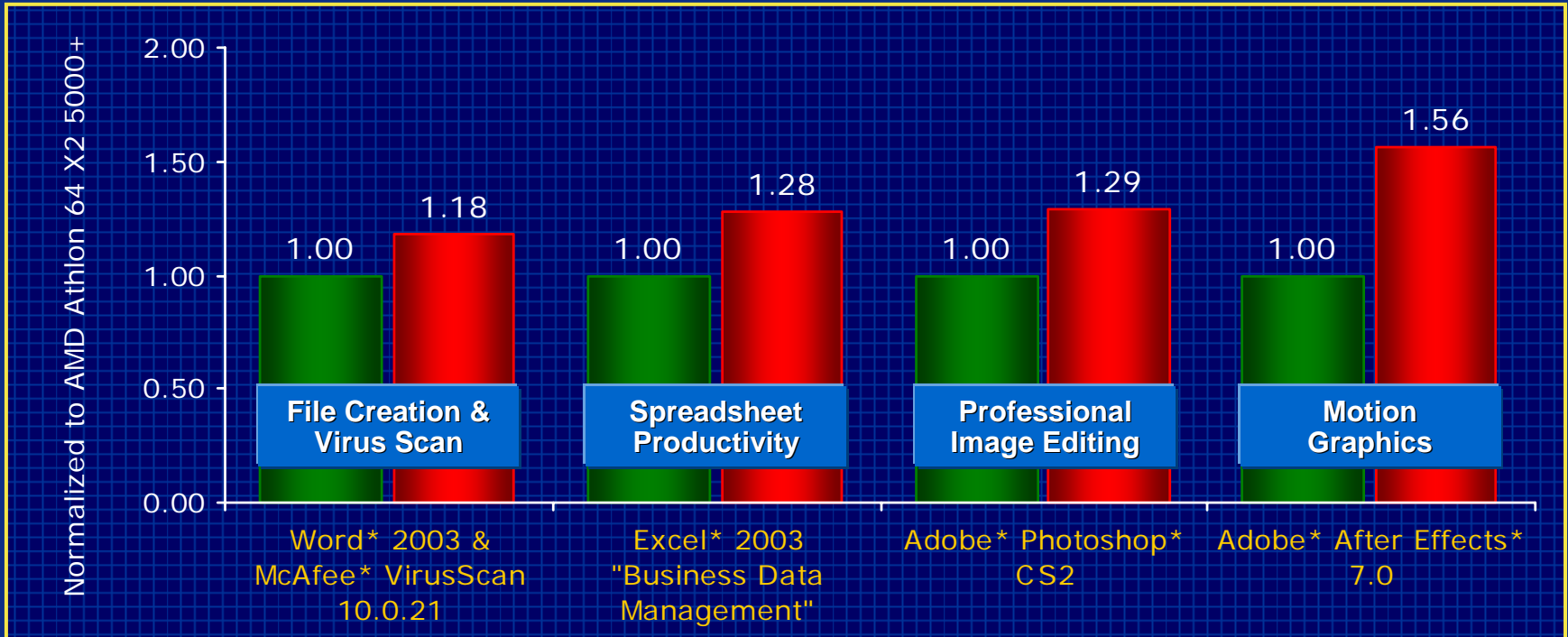
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Digital Office: Platform Capabilities

■ AMD* Athlon* 64 X2 5000+ (2x512KB L2, 2.60 GHz)

■ Intel® Core™2 Duo Processor E6700 (4MB L2, 2.66 GHz, 1066 MHz FSB)



*"... Core 2 Duo Is the new king. Core 2 Duo shall become the undisputed leader in performance and performance per Watt."
(Tom's Hardware, 7/06)*

Source: Intel. Configuration: 1st = Intel Core 2 Duo Processor E6700 (4MB L2, 2.66GHz, 1066MHz FSB), Intel® P965 Chipset, Intel® DG965WH, Intel chipset software install file 8.0.1.1002, Intel® Matrix Storage Manager 6.0.0.1022 RAID-0 Ready. 2nd = AMD Athlon 64 X2 5000+ (2x512KB L2, 2.60GHz), nVidia* nForce* 5900, Asus* M2N32-SLI Deluxe with nVidia nForce driver Smbus 4.52, nVidia disk driver 5.10.2600.654. All = Corsair* 2x1GB DDR2 800 5-5-5-15, ATI* Radeon* X850 XT PCIe, ATI Catalyst Driver 6.6 driver 8.263.0.0, Maxtor* DiamondMax* 10 300GB NCQ Serial ATA 7200RPM, Windows* XP Professional Build 2600 SP2 NTFS, DirectX 9.0c. 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. 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/index.htm>

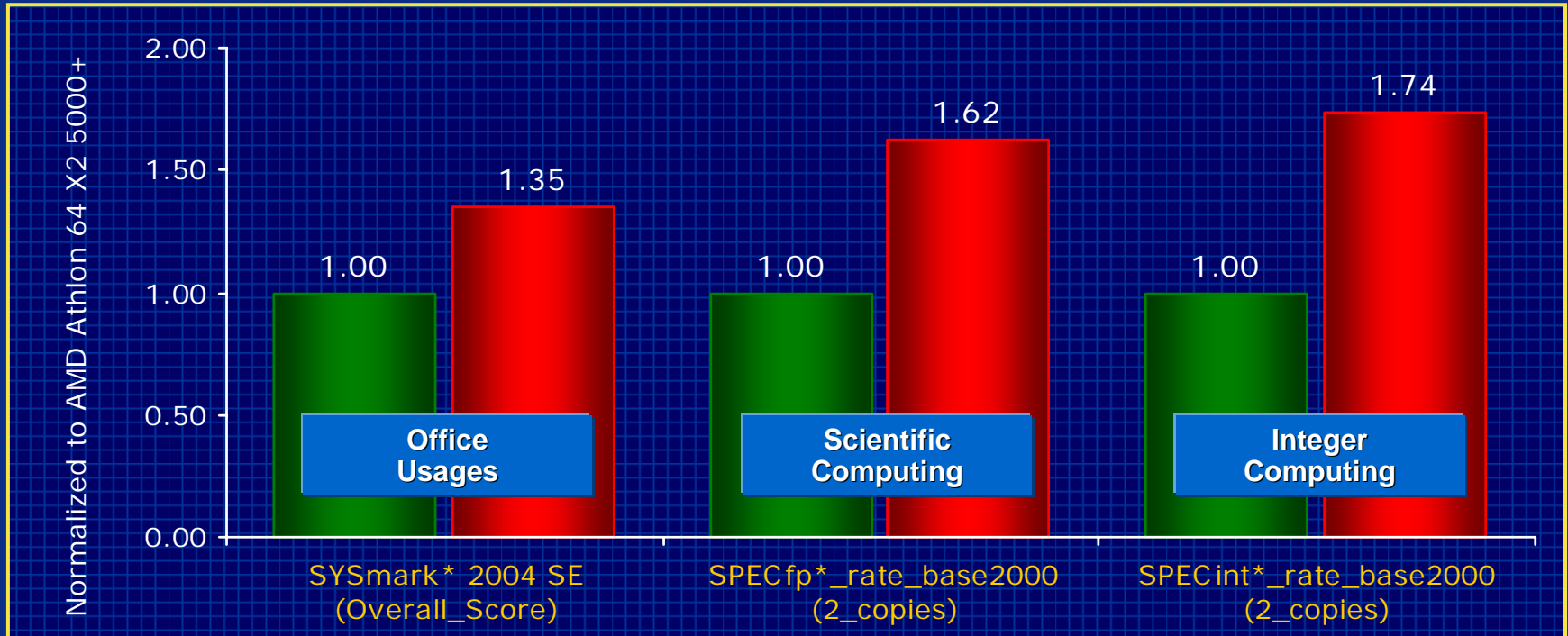
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Digital Office: Industry Standard Benchmarks

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■ Intel® Core™2 Duo Processor E6700 (4MB L2, 2.66 GHz, 1066 MHz FSB)



"... the new desktop performance champ... the one others will be chasing around the track for quite a while..."
(PC magazine online, 7/06)

SPECint, SPECfp, SPECrate are trademarks of the Standard Performance Evaluation Corporation. SPEC benchmark results reflect Windows-based, single socket systems published on www.spec.org as of July, 2006. The comparison represents the top processors for the digital office segment. Using Intel C++ Compiler 9.1 for Windows.

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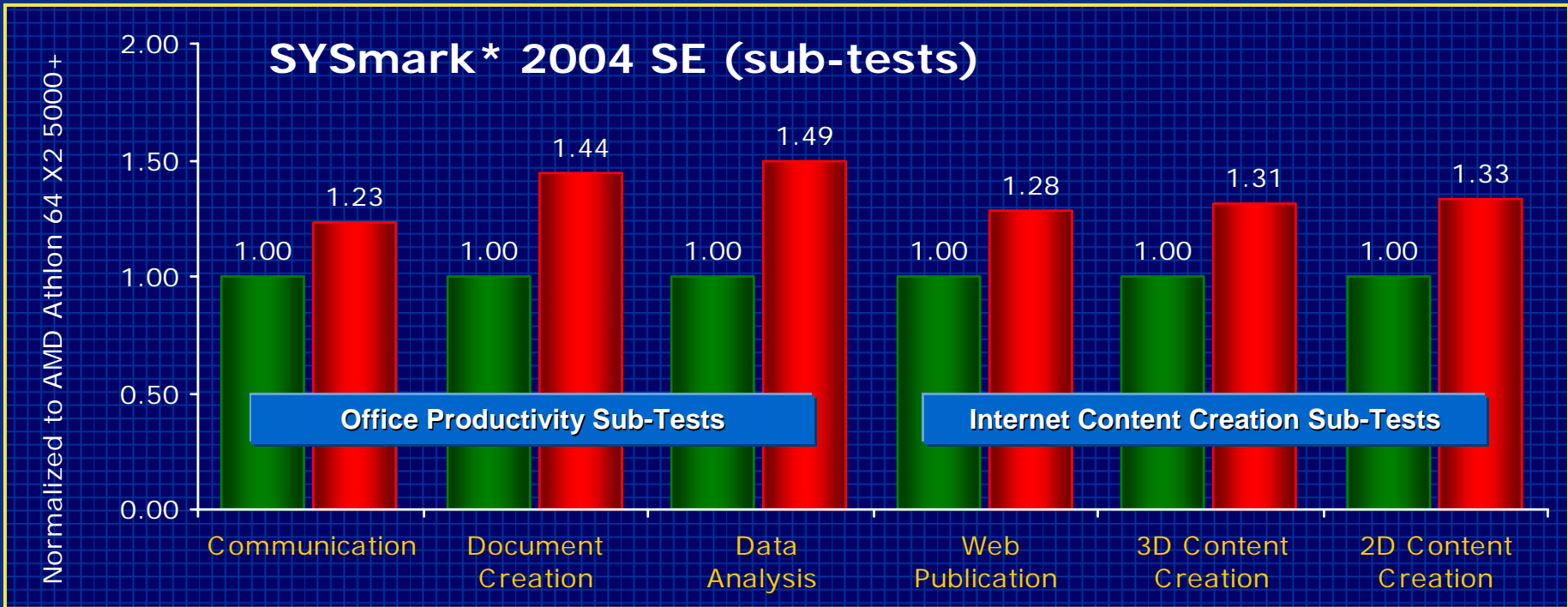
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Digital Office: SYSmark* 2004 SE (sub-tests)

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Digital Office Platform Capabilities:

AMD* Athlon* 64
X2 4200+

Intel® Core™2
Duo Processor
E6300

Motion Graphics¹

*Extract still images from raw video
footage to make clear digital pictures*

Baseline

**+33%
faster**

Professional Image Editing⁴

*Auto-fix more high resolution images
and turn them into professional shots*

Baseline

**+11%
faster**

Spreadsheet Productivity²

*Update your complex balance sheets
and data tables with blazing speed*

Baseline

**+6%
faster**

File Creation & Virus Scan³

*Draft documents with peace of mind as
virus scan runs in the background*

Baseline

**+2%
faster**

Source: Intel System configurations: shown on following slides.

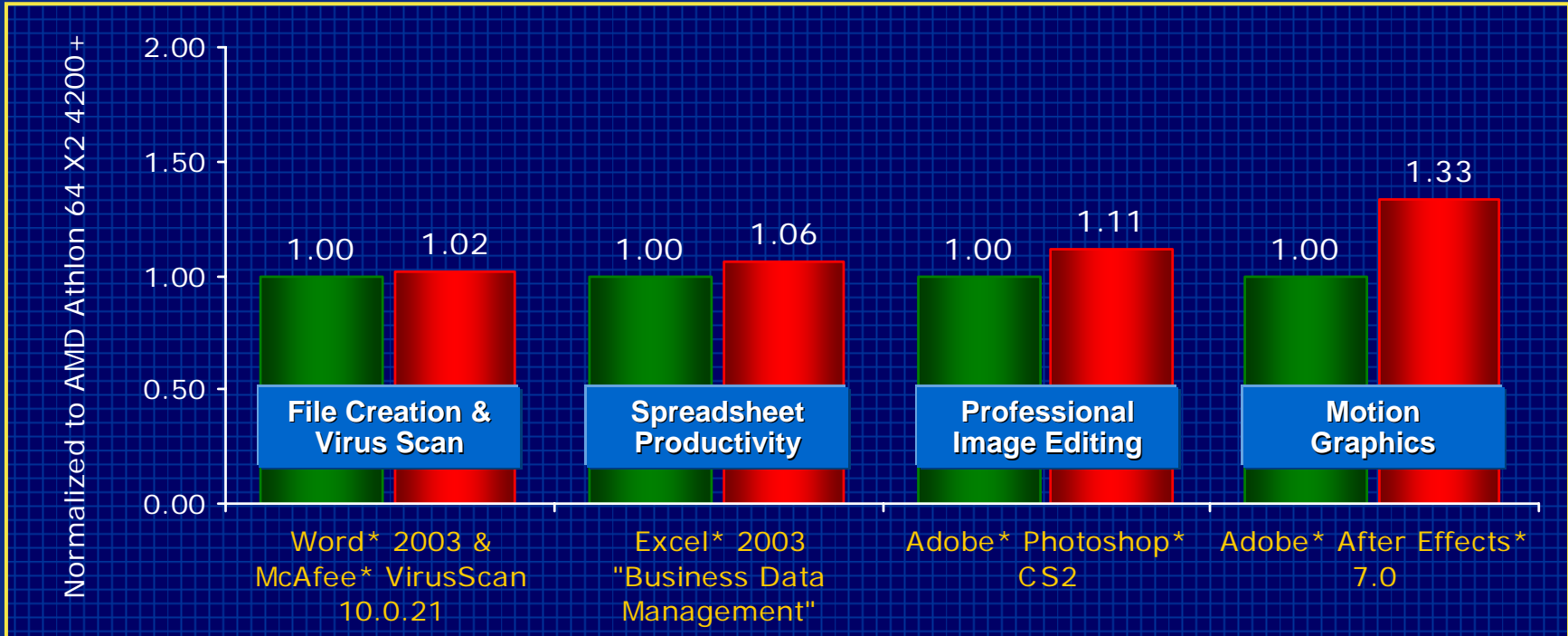
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Digital Office: Platform Capabilities

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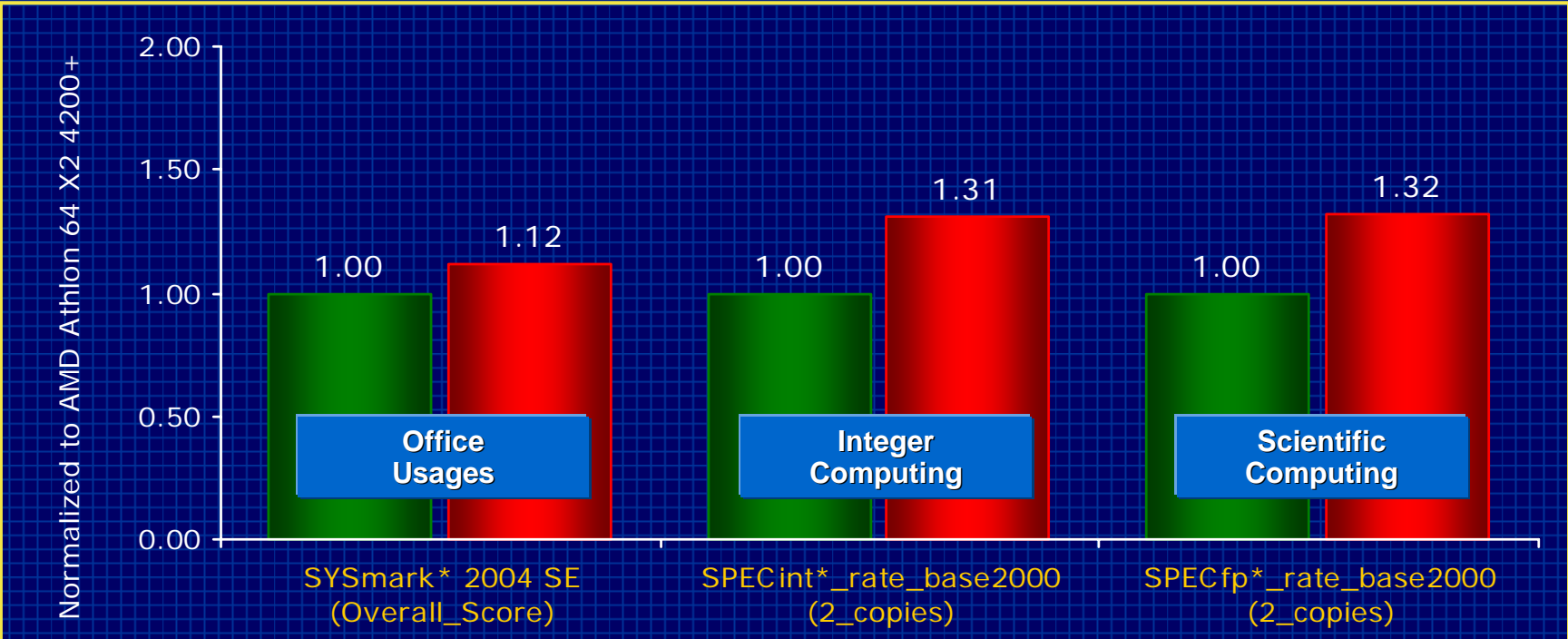
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(PC magazine online, 7/06)

SPECint, SPECfp, SPECrate are trademarks of the Standard Performance Evaluation Corporation. SPEC benchmark results reflect Windows-based, single socket systems published on www.spec.org as of July, 2006. The comparison represents the volume processors in the digital office segment. Using Intel C++ Compiler 9.1 for Windows. Source: Intel. Configuration: 1st = Intel Core 2 Duo Processor E6300 (2MB L2, 1.86GHz, 1066MHz FSB), Intel® P965 Chipset, Intel® DG965WH, Intel chipset software install file 8.0.1.1002, Intel® Matrix Storage Manager 6.0.0.1022 RAID-0 Ready. 2nd = AMD Athlon 64 X2 4200+ (2x512KB L2, 2.20GHz), nVidia® nForce® 5900, Asus® M2N32-SLI Deluxe with nVidia nForce driver Smbus 4.52, nVidia disk driver 5.10.2600.654. All = Corsair® 2x1GB DDR2 800 5-5-5-15, ATI® Radeon® X850 XT PCIe, ATI Catalyst Driver 6.6 driver 8.263.0.0, Maxtor® DiamondMax® 10 300GB NCQ Serial ATA 7200RPM, Windows® XP Professional Build 2600 SP2 NTFS, DirectX 9.0c. 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. 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/index.htm>

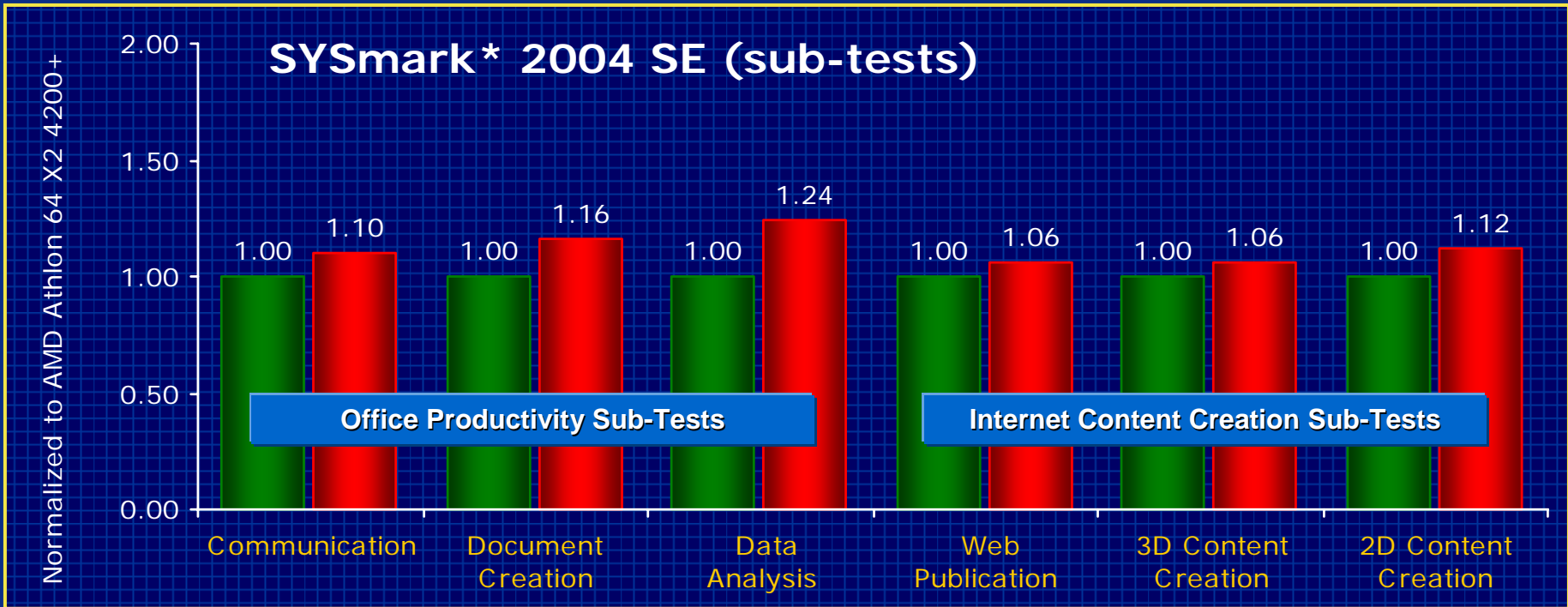


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Call to Action:

The Intel® Core™2 Duo Processor World's Best Processor¹

- Intel Core 2 Duo Processor E6700 - Up to 40% performance increase and over 40% more energy efficient²
- These new levels of performance and power efficiency based on Intel® Core™ Microarchitecture
 - Intel® Wide Dynamic Execution
 - Intel® Intelligent Power Capability
 - Intel® Advanced Digital Media Boost
 - Intel® Advanced Smart Cache
 - Intel® Smart Memory Access

1. For more information on why Intel Core 2 Duo processors are the world's best overall processors, please visit www.intel.com/core2duo
2. Intel® Core™2 Duo processor E6700 when compared to the Intel® Pentium® D processor 960. Performance measured using SPECint* rate base2000. Actual performance may vary. Energy efficiency based on Thermal Design Power (TDP) measurement.

