AMD Processor Performance

AMD Phenom™ II Processors

Discrete Platform Benchmarks

December 2008
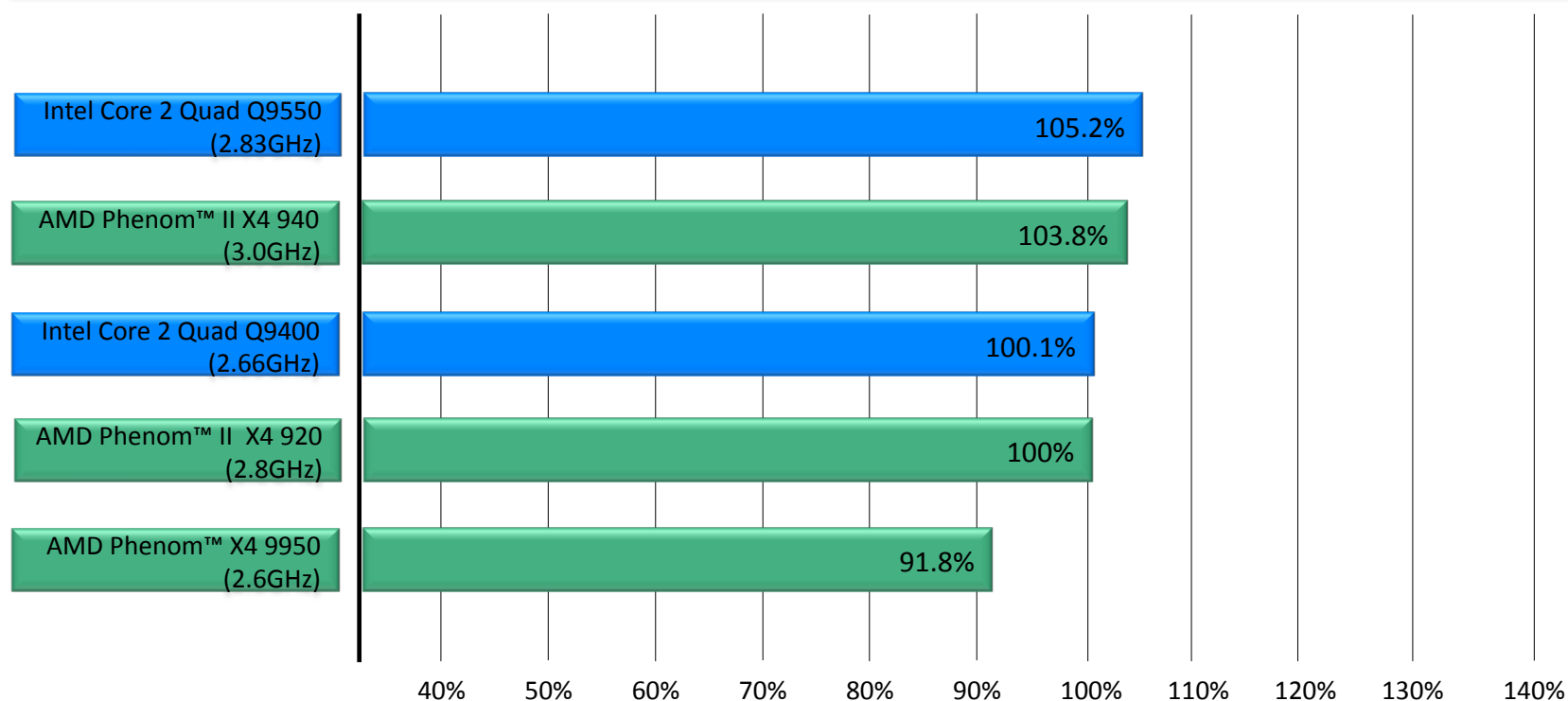
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AMD Phenom™ II Performance
Overall Performance of Office Productivity + Digital Media + Games

AMD Phenom™ II Processor Performance

Desktop Platform Performance – Overall Performance (Windows Vista®) Discrete

Processor	Performance
Intel Core 2 Quad Q9550 (2.83GHz)	105.2%
AMD Phenom™ II X4 940 (3.0GHz)	103.8%
Intel Core 2 Quad Q9400 (2.66GHz)	100.1%
AMD Phenom™ II X4 920 (2.8GHz)	100%
AMD Phenom™ X4 9950 (2.6GHz)	91.8%

40%   50%   60%   70%   80%   90%   100%   110%   120%   130%   140%

See Slide 4 for a list of the benchmark tests comprising each category benchmarked (e.g. Office Productivity, Digital Media and Games). The Overall Performance score for each processor in this chart is based on the geometric mean of all the benchmark category scores. The scores of each of the benchmark categories are based on the geometric mean of each of the tests within that category. The Overall Performance scores for each processor in this chart are normalized to the score of the AMD Phenom™ II X4 920 Quad-Core Processor. See slides 4-6 for system configuration details.

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BACK UP

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Benchmark Suite
For Discrete Platforms

PRODUCTIVITY

•PC World WorldBench 6.0 (Beta v2)

•WinRAR (RAR Best) version 3.7.1

•BAPCo SYSmark® 2007preview patch 4

•Instant Effects OfficeFX (4x AA) version 3

•Futuremark Corp. PCMark VANTAGE version 100 + Nov'07 hot-fix

•PDF-antiVirus versions Microsoft Office'07-SP1, Adobe Acrobat-8, NAV-10

•TrueCrypt ® Version 6.0a

•Microsoft Windows® Vista 64 SP1 (Windows-sendToCompressedFolder)

DIGITAL MEDIA

•Cinebench (CPUx) version 10

•Expressions Encoder version 2.0.1406.0

•Apple iTunes (WAV-to-AAC) version 7.6.0.29

•Apple iTunes (WAV-to-MP3) version 7.6.0.29

•MainConcept Encode version 1.0.0.0

•Photoshop Elements version 6

•POV-Ray version 3.7 beta 29

•POV-Ray RTR version 3.7 beta 29

•Apple iTunes Quicktime version 7.4.5

•Windows Media Encoder version 9

•Microsoft® Windows® Movie Maker Vista 64-SP1

GAMING

- Futuremark Corp. 3DMark™06 VANTAGE version 101 hot-fix
- Futuremark Corp. 3DMark™06   Patch 1.1.0 (CPU)
- Futuremark Corp. 3DMark™06 Patch 1.1.0 (Hardware Vertex Shaders)
- Futuremark Corp. 3DMark®06 Patch 1.1.0 (Software Vertex Shaders)
- Ubisoft, Call of Juarez version 1.3.0.1
- Company of Heroes version 2.301
- Crytek, Crysis (CPU)   version 1.2
- Crytek, Crysis (GPU)   version 1.2
- Id Software, Enemy Territory- QuakeWars version 1.4
- Valve, Half Life 2 – Episode2
- Lost Planet version: DX10 Demo
- Id Software, Quake 4 Arena version 1.4.2
- Epic Games, Unreal Tournament 3 version 1.3
- Massive Entertainment, World in Conflict version 1.006
- Supreme Commander- Forged Alliance version 1.5.3598
- FEAR version 108

SYNTHETIC

- Microsoft Windows® Vista WINSAT version Vista64-SP1
- SiSoftware SANDRA ™(CPU/FPU, multi-media & Mem) version XII-SP2
- ATI STREAM™

DISCRETE *Benchmark test (display) resolution details*

Office Productivity tests:	1920x1200 resolution
Digital Media tests:	1920x1200 resolution
Gaming:	1920x1200 resolution
BAPCo SYSmark ®	1280x1024 resolution

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AMD System Configurations:
Windows Vista® with Discrete Graphics

Operating System	
Name:	Microsoft Windows Vista64 Ultimate SP1
Version:	
Build #:	
DirectX Version:	Nov'08
Processor	
Hardware	
Motherboard:	GIGABYTE GA-MA790GP-DS4H AM2+
BIOS Info:	F3M
Is BIOS publicly available?	Yes No Unknown X
Chipset:	AMD 790GX
Memory	
Manufacturer & Type:	Corsair CM2X2048-8500C5D
Quantity & Size: (each)/(MB)	Qty (4) 2048MB DIMM Module
Total Memory Size: (MB)	8 GIG Total
Hard Drive	x1
Model Name:	Western Digital Raptor
Model Number:	WD300HLFS WD VelociRaptor
Hard Drive Size:	300GB
Transfer Mode:	SATA 10000 RPM
Other Info:	NTFS was used to format the hard disk
Network Card	Onboard
Manufacturer's Name:	Realtek
Model Number:	
Sound Card	Onboard
Manufacturer's Name:	Realtek
Model Number:	Realtek RTL8168C(P)8111C(P) Family PCI-E Gigabit Ethernet NIC (NDIS 6.0)
Video: UMA	
Graphics Adapter:	Sapphire ATI Radeon HD 4870
Memory Size (MB) and Type:	1GB DDR5
Drivers	Cat 8.11
Network Card	Publisher Name: Realtek
	Version: 6.206.502.2008 Date if applicable: 5/2/2008
SATA Drivers	Standard Dual Channel PCI IDE Controller
	Publisher Name: Microsoft
	Version: 6.0.6001.18000 Date if applicable: 6/21/2006
Sound Card	Realtek Semiconductor Corp.
	Version: 6.0.1.5745 Date if appicable: 11/25/2008
Video Card	Publisher Name: ATI Technologies Inc.
	Version: 8.552.0.0 Date if applicable: 10/28/2008
	Graphics Resolution: 1920x1200
	Color Depth: 32 bit Refresh Rate: 60Hz Texture Format: n/a
Other: (Specify any other special conditions or enhancements that are made to the system.)	Memory (5/5/5/15)

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Intel System Configurations:
Windows Vista® with Discrete Graphics

Operating System	
Name:	Microsoft Windows Vista64 Ultimate SP1
Version:	
Build #:	
DirectX Version:	Nov'08
Processor	
Hardware	
Motherboard:	DP45SG
BIOS Info:	OO83
Is BIOS publicly available?	Yes
Chipset:	P45
Memory	
Manufacturer & Type:	Corsair TR3XG1600C8D
Quantity & Size: (each)/(MB)	Qty (4) 2048 DIMM Module
Total Memory Size: (MB)	8GIG Total
Hard Drive	X1
Model Name:	Western Digital Raptor
Model Number:	WD300HLFS WD VelociRaptor
Hard Drive Size:	300GB
Transfer Mode:	SATA 10000 RPM
Other Info:	NTFS was used to format the hard disk
Network Card	Onboard
Name:	Intel
Model Number:	Intel® 82567LF-2 Gigabit Network Connection
Sound Card	
Manufacturer's Name:	Onboard
Model Number:	IDT High Definition Audio CODEC
Video Card	
Graphics Adapter:	Sapphire ATI Radeon HD 4870
Memory Size (MB) and Type:	1GB DDR5
Drivers	8.11 Cat
SATA Drivers	Intel® ICH10 Faimly 4 Port Serial ATA Storage Controller 1 - 3A20
	Publisher Name: Intel
	Version: 9.0.0.1005
	Date if applicable: 2/25/2008
Network Card	Publisher Name: Intel
	Version: 9.52.18.0 Date if applicable: 10/13/2008
Sound Card	IDT
	Version: 6.0.6033.2 Date if applicable: 7/2/2008
Video Card	Publisher Name: ATI Technologies Inc.
	Version: 8.552.0.0 Date if applicable: 10/28/2008
	Graphics Resolution: 1920x1200
	Color Depth: 32 bit Refresh Rate: 60Hz Texture Format: n/a
Other: (Specify any other special conditions or enhancements that are made to the system.)	Details: Memory Auto (8/8/8/19)

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