



# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

(Test Sponsor: Advanced Micro Devices)

## Compaq 6005 Pro

SPECint®\_rate2006 = 92.6

SPECint\_rate\_base2006 = 81.0

CPU2006 license: 49

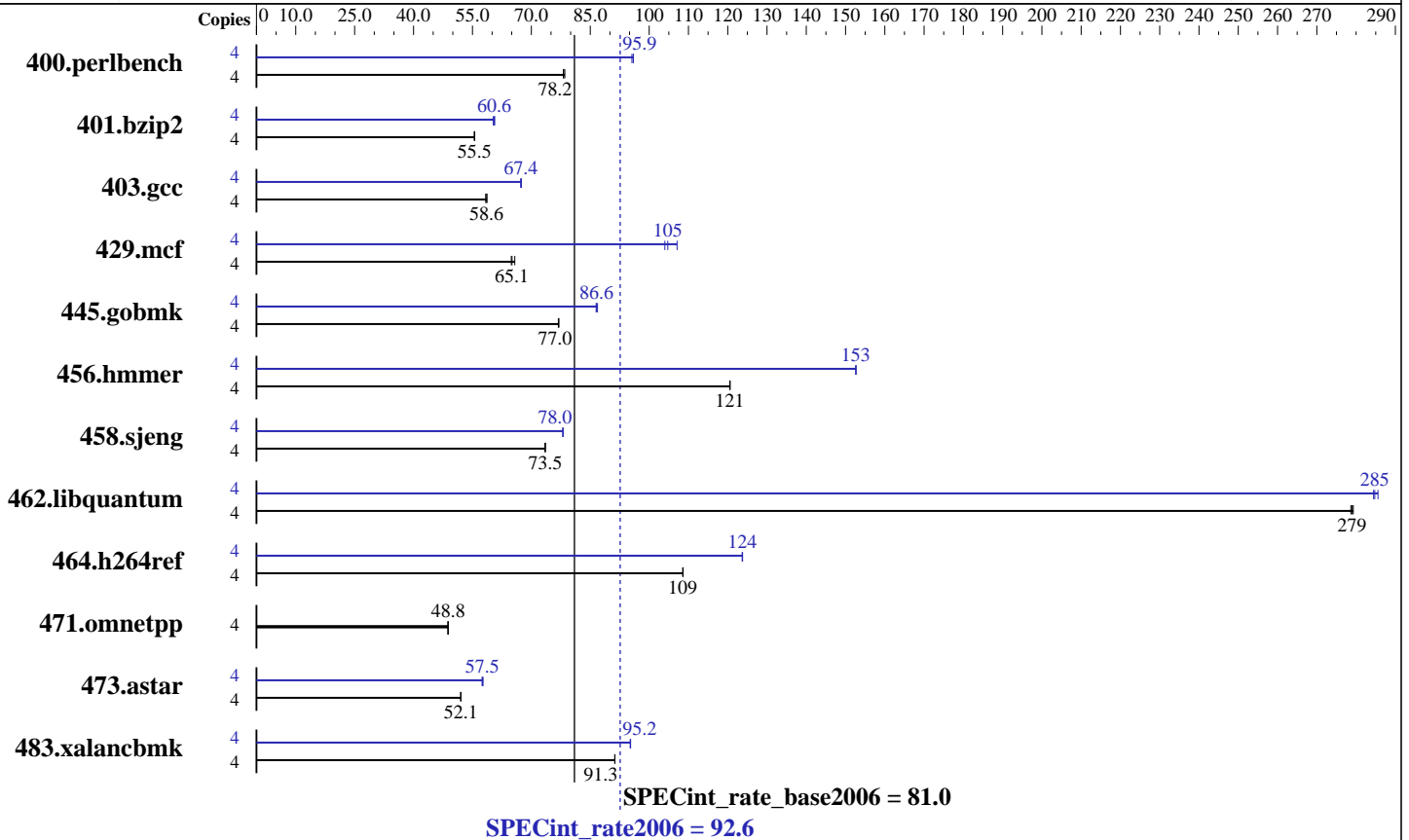
Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Aug-2012

Hardware Availability: Sep-2010

Software Availability: Dec-2011



### Hardware

CPU Name: AMD Phenom II X4 B97  
 CPU Characteristics: 3200  
 CPU MHz: 3200  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 64 KB I + 64 KB D on chip per core  
 Secondary Cache: 512 KB I+D on chip per core  
 L3 Cache: 6 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 8 GB (4 x 2 GB 2Rx8 PC3-10600U-9)  
 Disk Subsystem: 1 x 500 GB SATA, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.2, Kernel 2.6.32-220.el6.x86\_64  
 Compiler: C/C++: Version 4.2.4 of x86 Open64 Compiler Suite (from AMD)  
 Auto Parallel: No  
 File System: ext3  
 System State: Run level 3 (Full multiuser with network)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: SmartHeap 8.1 32-bit Library for Linux



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

(Test Sponsor: Advanced Micro Devices)

## Compaq 6005 Pro

SPECint\_rate2006 = 92.6

SPECint\_rate\_base2006 = 81.0

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Aug-2012

Hardware Availability: Sep-2010

Software Availability: Dec-2011

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	498	78.5	500	78.2	<b>500</b>	<b>78.2</b>	4	409	95.6	407	96.0	<b>407</b>	<b>95.9</b>
401.bzip2	4	<b>696</b>	<b>55.5</b>	696	55.5	694	55.6	4	<b>637</b>	<b>60.6</b>	636	60.7	640	60.3
403.gcc	4	549	58.7	552	58.4	<b>549</b>	<b>58.6</b>	4	477	67.5	<b>478</b>	<b>67.4</b>	479	67.3
429.mcf	4	555	65.8	562	64.9	<b>561</b>	<b>65.1</b>	4	341	107	351	104	<b>348</b>	<b>105</b>
445.gobmk	4	<b>545</b>	<b>77.0</b>	545	77.0	546	76.9	4	<b>485</b>	<b>86.6</b>	485	86.5	483	86.8
456.hammer	4	<b>310</b>	<b>121</b>	309	121	310	121	4	245	153	244	153	<b>245</b>	<b>153</b>
458.sjeng	4	<b>658</b>	<b>73.5</b>	658	73.5	659	73.5	4	620	78.0	<b>620</b>	<b>78.0</b>	620	78.0
462.libquantum	4	297	279	<b>297</b>	<b>279</b>	297	279	4	<b>291</b>	<b>285</b>	290	286	291	284
464.h264ref	4	815	109	815	109	<b>815</b>	<b>109</b>	4	715	124	716	124	<b>716</b>	<b>124</b>
471.omnetpp	4	512	48.8	<b>512</b>	<b>48.8</b>	513	48.7	4	512	48.8	<b>512</b>	<b>48.8</b>	513	48.7
473.astar	4	539	52.1	540	52.0	<b>539</b>	<b>52.1</b>	4	489	57.5	<b>488</b>	<b>57.5</b>	487	57.7
483.xalancbmk	4	303	91.2	302	91.3	<b>302</b>	<b>91.3</b>	4	290	95.2	290	95.3	<b>290</b>	<b>95.2</b>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The config file option 'submit' was used.  
'numactl' was used to bind copies to the cores.  
See the configuration file for details.

## Operating System Notes

'ulimit -s unlimited' was used to set environment stack size  
'ulimit -l 2097152' was used to set environment locked pages in memory limit

Huge pages were not configured for this run.  
Transparent huge pages were enabled for this run (OS default)

Binaries were compiled on a system with 2x AMD Opteron 2220SE chips + 32GB Memory using SLES10 SP2 (with binutils 2.18)

## General Notes

Environment variables set by runspec before the start of the run:

HUGETLB\_LIMIT = "0"

LD\_LIBRARY\_PATH = "/root/work/cpu2006v1.1/amd1002-rate-libs-revC/64:/root/work/cpu2006v1.1/amd1002-rate-libs-revC/32"

The x86 Open64 Compiler Suite is only available from (and supported by) AMD at  
<http://developer.amd.com/cpu/open64>



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

(Test Sponsor: Advanced Micro Devices)

## Compaq 6005 Pro

SPECint\_rate2006 = 92.6

SPECint\_rate\_base2006 = 81.0

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Aug-2012

Hardware Availability: Sep-2010

Software Availability: Dec-2011

## Base Compiler Invocation

C benchmarks:  
opencc

C++ benchmarks:  
openCC

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
401.bzip2: -DSPEC\_CPU\_LP64  
403.gcc: -DSPEC\_CPU\_LP64  
429.mcf: -DSPEC\_CPU\_LP64  
445.gobmk: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64  
458.sjeng: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
464.h264ref: -DSPEC\_CPU\_LP64  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:  
-march=barcelona -mso -Ofast -CG:local\_sched\_alg=1  
-INLINE:aggressive=on -IPA:plimit=8000 -IPA:small\_pu=100  
-HP:bdt=2m:heap=2m

C++ benchmarks:  
-march=barcelona -mso -Ofast -m32 -INLINE:aggressive=on  
-CG:cmp\_peep=on -L/root/work/libraries/SmartHeap-8.1/lib -lsmartheap

## Peak Compiler Invocation

C benchmarks:  
opencc

C++ benchmarks:  
openCC

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

(Test Sponsor: Advanced Micro Devices)

## Compaq 6005 Pro

SPECint\_rate2006 = 92.6

SPECint\_rate\_base2006 = 81.0

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Aug-2012

Hardware Availability: Sep-2010

Software Availability: Dec-2011

## Peak Portability Flags (Continued)

401.bzip2: -DSPEC\_CPU\_LP64  
 445.gobmk: -DSPEC\_CPU\_LP64  
 456.hmmer: -DSPEC\_CPU\_LP64  
 458.sjeng: -DSPEC\_CPU\_LP64  
 462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
 464.h264ref: -DSPEC\_CPU\_LP64  
 483.xalancbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -march=barcelona -mso -fb\_create fbdata(pass 1)  
 -fb\_opt fbdata(pass 2) -Ofast -IPA:plimit=20000 -LNO:opt=0  
 -OPT:unroll\_times\_max=8 -OPT:unroll\_size=256  
 -OPT:unroll\_level=2 -OPT:keep\_ext=on -WOPT:if\_conv=0  
 -CG:local\_sched\_alg=1 -CG:unroll\_fb\_req=on  
 -HP:bdtd=2m:heap=2m

401.bzip2: -march=barcelona -mso -fb\_create fbdata(pass 1)  
 -fb\_opt fbdata(pass 2) -O3 -OPT:alias=disjoint  
 -OPT:goto=off -CG:local\_sched\_alg=1 -HP:bdtd=2m:heap=2m

403.gcc: -march=barcelona -mso -fb\_create fbdata(pass 1)  
 -fb\_opt fbdata(pass 2) -Ofast -LNO:trip\_count=256  
 -LNO:prefetch\_ahead=10 -CG:cmp\_peep=on -m32  
 -HP:bdtd=2m:heap=2m -GRA:unspill=on -IPA:small\_pu=200

429.mcf: -march=barcelona -mso -O3 -ipa -INLINE:aggressive=on  
 -CG:gcm=off -GRA:prioritize\_by\_density=on -m32  
 -HP:bdtd=2m:heap=2m

445.gobmk: -march=barcelona -mso -fb\_create fbdata(pass 1)  
 -fb\_opt fbdata(pass 2) -O3 -OPT:alias=restrict  
 -OPT:unroll\_times\_max=8 -OPT:unroll\_size=256  
 -OPT:unroll\_level=2 -OPT:keep\_ext=on -ipa -IPA:plimit=750  
 -IPA:min\_hotness=300 -IPA:pu\_reorder=1 -LNO:prefetch=1  
 -LNO:ignore\_feedback=off -CG:p2align=on  
 -CG:unroll\_fb\_req=on -HP:bdtd=2m:heap=2m

456.hmmer: -march=barcelona -mso -fb\_create fbdata(pass 1)  
 -fb\_opt fbdata(pass 2) -Ofast -LNO:prefetch=0  
 -OPT:alias=disjoint -OPT:unroll\_times\_max=8  
 -OPT:unroll\_size=256 -OPT:unroll\_level=2 -OPT:keep\_ext=on  
 -CG:local\_sched\_alg=1 -CG:cflow=0  
 -CG:push\_pop\_int\_saved\_regs=off -CG:cmp\_peep=on  
 -HP:bdtd=2m:heap=2m

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

(Test Sponsor: Advanced Micro Devices)

## Compaq 6005 Pro

SPECint\_rate2006 = 92.6

SPECint\_rate\_base2006 = 81.0

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Aug-2012

Hardware Availability: Sep-2010

Software Availability: Dec-2011

## Peak Optimization Flags (Continued)

458.sjeng: -march=barcelona -mso -fb\_create fbdata(pass 1)  
 -fb\_opt fbdata(pass 2) -O3 -ipa -LNO:ignore\_feedback=off  
 -LNO:full\_unroll=10 -LNO:fusion=0 -LNO:fission=2  
 -IPA:pu\_reorder=2 -CG:ptr\_load\_use=0  
 -OPT:unroll\_times\_max=8 -INLINE:aggressive=on

462.libquantum: -march=barcelona -mso -Ofast -LNO:pf2=0 -CG:gcm=off  
 -CG:use\_prefetchnta=on -CG:cmp\_peep=on -WOPT:aggstr=0  
 -HP:bdt=2m:heap=2m -OPT:alias=disjoint  
 -INLINE:aggressive=on -IPA:space=1000 -IPA:plimit=20000

464.h264ref: -march=barcelona -mso -fb\_create fbdata(pass 1)  
 -fb\_opt fbdata(pass 2) -O3 -IPA:plimit=20000  
 -OPT:alias=disjoint -LNO:prefetch=0 -CG:ptr\_load\_use=0  
 -CG:push\_pop\_int\_saved\_regs=off

C++ benchmarks:

471.omnetpp: basepeak = yes

473.astar: -march=barcelona -mso -fb\_create fbdata(pass 1)  
 -fb\_opt fbdata(pass 2) -Ofast -TENV:frame\_pointer=off  
 -WOPT:if\_conv=0 -GRA:optimize\_boundary=on  
 -OPT:alias=disjoint -INLINE:aggressive=on  
 -IPA:small\_pu=3000 -IPA:plimit=3000 -m32  
 -HP:bdt=2m:heap=2m

483.xalancbmk: -march=barcelona -mso -Ofast -INLINE:aggressive=on -m32  
 -CG:cmp\_peep=on -GRA:unspill=on -TENV:frame\_pointer=off  
 -fno-emit-exceptions  
 -L/root/work/libraries/SmartHeap-8.1/lib -lsmarheap

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/x86-open64-424-flags-rate-revC-I.html>

<http://www.spec.org/cpu2006/flags/amd-platform-rate-revC-I.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/x86-open64-424-flags-rate-revC-I.xml>

<http://www.spec.org/cpu2006/flags/amd-platform-rate-revC-I.xml>



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

(Test Sponsor: Advanced Micro Devices)

## Compaq 6005 Pro

SPECint\_rate2006 = 92.6

SPECint\_rate\_base2006 = 81.0

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Aug-2012

Hardware Availability: Sep-2010

Software Availability: Dec-2011

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.1.  
Report generated on Thu Jul 24 13:44:13 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 23 October 2012.