



# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Hewlett-Packard Company

SPECint®2006 = 23.4

ProLiant DL585 G5  
(3.1 GHz AMD Opteron 8393 SE)

SPECint\_base2006 = 19.7

CPU2006 license: 3

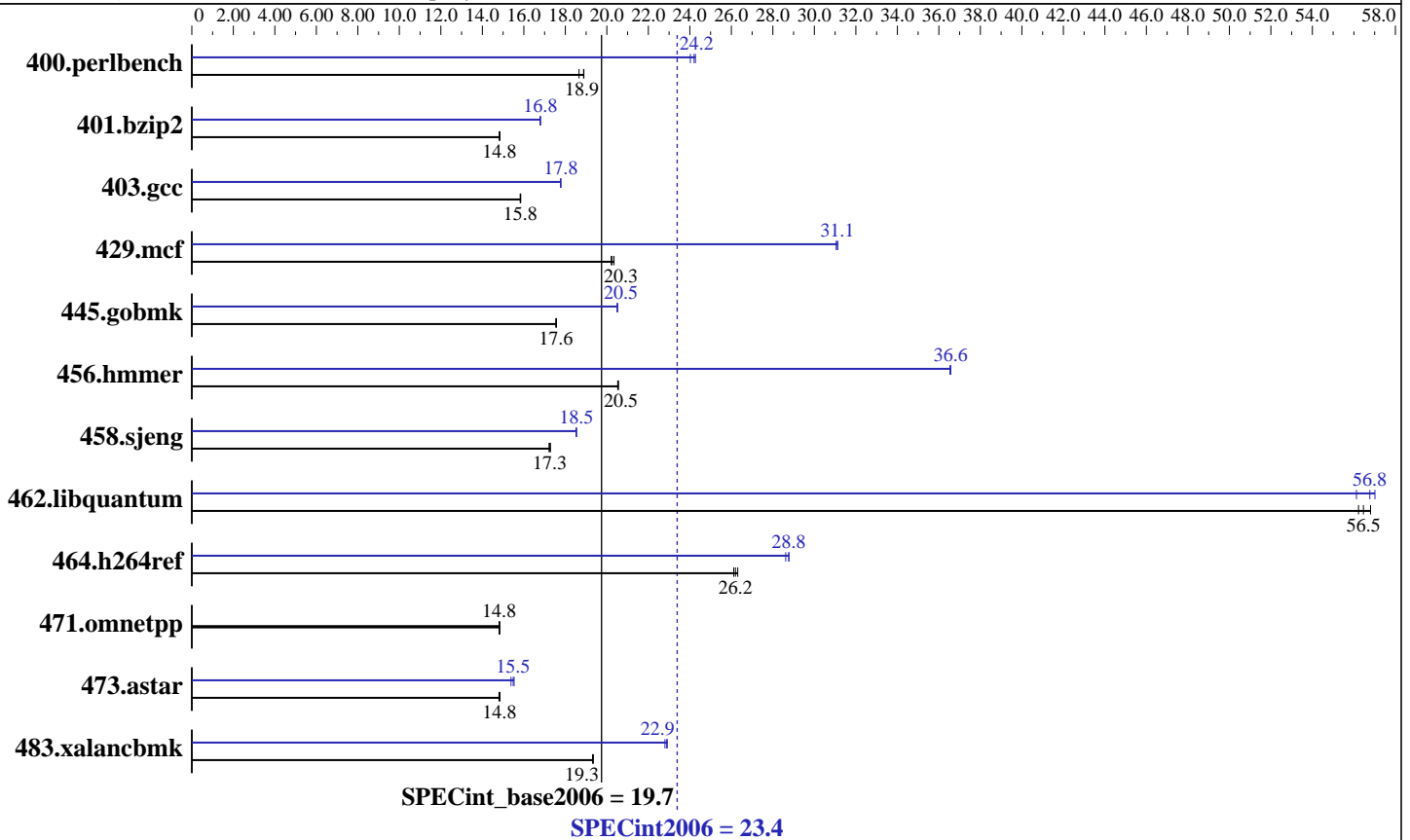
Test date: Apr-2009

Test sponsor: Hewlett-Packard Company

Hardware Availability: Apr-2009

Tested by: Hewlett-Packard Company

Software Availability: Mar-2009



### Hardware

CPU Name: AMD Opteron 8393 SE  
 CPU Characteristics:  
 CPU MHz: 3100  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 2,4 chips  
 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: 32 GB (8x4 GB, PC2-6400P CL5)  
 Disk Subsystem: 1x72 GB 15 K SAS  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 5.3, Advanced Platform, Kernel 2.6.18-128.el5  
 Compiler: PGI Server Complete Version 8.0  
 PathScale Compiler Suite Version 3.2  
 Auto Parallel: Yes  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: binutils 2.18  
 32-bit and 64-bit libhugetlbfs libraries  
 SmartHeap 8.1 32-bit Library for Linux



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Hewlett-Packard Company

ProLiant DL585 G5  
(3.1 GHz AMD Opteron 8393 SE)

SPECint2006 = **23.4**

SPECint\_base2006 = **19.7**

CPU2006 license: 3

Test sponsor: Hewlett-Packard Company

Tested by: Hewlett-Packard Company

Test date: Apr-2009

Hardware Availability: Apr-2009

Software Availability: Mar-2009

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<b>518</b>	<b>18.9</b>	524	18.7	517	18.9	403	24.3	<b>404</b>	<b>24.2</b>	407	24.0
401.bzip2	<b>651</b>	<b>14.8</b>	651	14.8	650	14.8	574	16.8	<b>574</b>	<b>16.8</b>	575	16.8
403.gcc	<b>508</b>	<b>15.8</b>	509	15.8	508	15.9	453	17.8	453	17.8	<b>453</b>	<b>17.8</b>
429.mcf	<b>450</b>	<b>20.3</b>	448	20.3	451	20.2	<b>293</b>	<b>31.1</b>	293	31.1	294	31.0
445.gobmk	<b>598</b>	<b>17.6</b>	597	17.6	598	17.5	511	20.5	512	20.5	<b>511</b>	<b>20.5</b>
456.hammer	<b>454</b>	<b>20.5</b>	455	20.5	454	20.6	<b>255</b>	<b>36.6</b>	255	36.6	255	36.5
458.sjeng	<b>701</b>	<b>17.3</b>	703	17.2	700	17.3	653	18.5	<b>653</b>	<b>18.5</b>	653	18.5
462.libquantum	369	56.2	<b>367</b>	<b>56.5</b>	365	56.8	369	56.1	<b>365</b>	<b>56.8</b>	363	57.0
464.h264ref	841	26.3	<b>845</b>	<b>26.2</b>	847	26.1	769	28.8	<b>769</b>	<b>28.8</b>	773	28.6
471.omnetpp	421	14.8	<b>422</b>	<b>14.8</b>	422	14.8	421	14.8	<b>422</b>	<b>14.8</b>	422	14.8
473.astar	<b>473</b>	<b>14.8</b>	473	14.9	474	14.8	<b>453</b>	<b>15.5</b>	452	15.5	456	15.4
483.xalancbmk	357	19.3	<b>357</b>	<b>19.3</b>	357	19.3	301	22.9	<b>302</b>	<b>22.9</b>	303	22.8

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

## Operating System Notes

Environment stack size set to 'unlimited'  
Max locked memory set to 2097152  
The libhugetlbfs libraries were installed using the installation rpms that came with the distribution.  
PGI\_HUGE\_PAGES set to 896.  
Total number of huge pages available is 7168.  
NCPUS set to number of cores

## Platform Notes

BIOS configuration:  
Power Regulator set to Static High Performance Mode

## General Notes

Environment variables set by runspec before the start of the run:  
HUGETLB\_MORECORE = "yes"  
NCPUS = "8"



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Hewlett-Packard Company**

**SPECint2006 = 23.4**

ProLiant DL585 G5  
(3.1 GHz AMD Opteron 8393 SE)

**SPECint\_base2006 = 19.7**

**CPU2006 license:** 3

**Test date:** Apr-2009

**Test sponsor:** Hewlett-Packard Company

**Hardware Availability:** Apr-2009

**Tested by:** Hewlett-Packard Company

**Software Availability:** Mar-2009

## Base Compiler Invocation

C benchmarks:

pgcc

C++ benchmarks:

pgcpp

## 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:

```

-Mvect=cachesize:6291456 -fastsse -Msmartalloc=huge -Mconcur=innermost
-Mfprelaxed -Mipa=fast -Mipa=inline -tp barcelona-64 -Bstatic_pgi

```

C++ benchmarks:

```

-Mvect=cachesize:6291456 -fastsse -Msmartalloc=huge -Mfprelaxed
--zc_eh -Mipa=fast -Mipa=inline:6 -tp barcelona-32 -Bstatic_pgi

```

## Base Other Flags

C benchmarks:

-Mipa=jobs:4

C++ benchmarks:

-Mipa=jobs:4

## Peak Compiler Invocation

C benchmarks (except as noted below):

pathcc

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Hewlett-Packard Company**

**SPECint2006 = 23.4**

ProLiant DL585 G5  
(3.1 GHz AMD Opteron 8393 SE)

**SPECint\_base2006 = 19.7**

**CPU2006 license:** 3

**Test date:** Apr-2009

**Test sponsor:** Hewlett-Packard Company

**Hardware Availability:** Apr-2009

**Tested by:** Hewlett-Packard Company

**Software Availability:** Mar-2009

## Peak Compiler Invocation (Continued)

456.hmmcr: pgcc

462.libquantum: pgcc

C++ benchmarks (except as noted below):

pgcpp

483.xalancbmk: pathCC

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
401.bzip2: -DSPEC\_CPU\_LP64  
445.gobmk: -DSPEC\_CPU\_LP64  
456.hmmcr: -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 -fb\_create fbdata(pass 1)  
-fb\_opt fbdata(pass 2)  
-Wl,-T/usr/share/libhugetlbfs/ldscripts/elf\_x86\_64.xBDT(pass 2)  
-L/usr/lib64 -lhugetlbfs(pass 2) -Ofast -IPA:plimit=20000  
-IPA:field\_reorder=on -LNO:opt=0 -WOPT:if\_conv=0  
-CG:local\_sched\_alg=1

401.bzip2: -march=barcelona -O3 -OPT:alias=disjoint -OPT:Ofast  
-OPT:goto=off -INLINE:aggressive=on -CG:local\_sched\_alg=1  
-m3dnow  
-Wl,-T/usr/share/libhugetlbfs/ldscripts/elf\_x86\_64.xBDT  
-L/usr/lib64 -lhugetlbfs

403.gcc: -march=barcelona -fb\_create fbdata(pass 1)  
-fb\_opt fbdata(pass 2) -Ofast -OPT:malloc\_alg=1  
-LNO:trip\_count=256 -LNO:prefetch\_ahead=10  
-CG:prefer\_lru\_reg=off -m32

429.mcf: -march=barcelona -O3 -ipa -INLINE:aggressive=on  
-CG:gcm=off -GRA:prioritize\_by\_density=on -m32  
-L/usr/lib -lhugetlbfs

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Hewlett-Packard Company**

**SPECint2006 = 23.4**

ProLiant DL585 G5  
(3.1 GHz AMD Opteron 8393 SE)

**SPECint\_base2006 = 19.7**

**CPU2006 license:** 3

**Test date:** Apr-2009

**Test sponsor:** Hewlett-Packard Company

**Hardware Availability:** Apr-2009

**Tested by:** Hewlett-Packard Company

**Software Availability:** Mar-2009

## Peak Optimization Flags (Continued)

445.gobmk: -march=barcelona -fb\_create fbdata(pass 1)  
-fb\_opt fbdata(pass 2)  
-Wl,-T/usr/share/libhugetlbfs/ldscripts/elf\_x86\_64.xBDT(pass 2)  
-L/usr/lib64 -lhugetlbfs(pass 2) -O3 -OPT:alias=restrict  
-LNO:prefetch=1 -LNO:ignore\_feedback=off -CG:p2align=on

456.hmmr: -Mvect=cachesize:6291456 -fastsse -Mvect=partial  
-Munroll=n:8 -Msmartalloc=huge -Msafeptr -Mprefetch=t0  
-Mfprelaxed -Mipa=const -Mipa=ptr -Mipa=arg -Mipa=inline  
-tp barcelona-64 -Bstatic\_pgi

458.sjeng: -march=barcelona -fb\_create fbdata(pass 1)  
-fb\_opt fbdata(pass 2)  
-Wl,-T/usr/share/libhugetlbfs/ldscripts/elf\_x86\_64.xBDT(pass 2)  
-L/usr/lib64 -lhugetlbfs(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: -Mvect=cachesize:6291456 -fastsse -Munroll=m:8  
-Msmartalloc=huge -Mprefetch=distance:8 -Mconcur=innermost  
-Mconcur=noaltcode -Mfprelaxed -Mipa=fast -Mipa=inline  
-Mipa=noarg -tp barcelona-64 -Bstatic\_pgi

464.h264ref: -march=barcelona -fb\_create fbdata(pass 1)  
-fb\_opt fbdata(pass 2)  
-Wl,-T/usr/share/libhugetlbfs/ldscripts/elf\_x86\_64.xBDT(pass 2)  
-L/usr/lib64 -lhugetlbfs(pass 2) -O3 -IPA:plimit=20000  
-OPT:alias=disjoint -LNO:prefetch=0 -CG:ptr\_load\_use=0  
-CG:push\_pop\_int\_saved\_regs=off -CG:prefer\_lru\_reg=off

C++ benchmarks:

471.omnetpp: basepeak = yes

473.astar: -Mpfi(pass 1) -Mpfo(pass 2) -Mipa=fast(pass 2)  
-Mipa=inline:6(pass 2) -Mvect=cachesize:6291456 -fastsse  
-O4 -Msmartalloc=huge -Msafeptr=global -Mfprelaxed  
--zc\_eh -tp barcelona-32 -Bstatic\_pgi

483.xalancbmk: -march=barcelona -Ofast -INLINE:aggressive=on -m32  
-L/cpu2006/SmartHeap\_8.1/lib -lsmartheap

## Peak Other Flags

C benchmarks:

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Hewlett-Packard Company**

**SPECint2006 = 23.4**

ProLiant DL585 G5  
(3.1 GHz AMD Opteron 8393 SE)

**SPECint\_base2006 = 19.7**

**CPU2006 license:** 3

**Test date:** Apr-2009

**Test sponsor:** Hewlett-Packard Company

**Hardware Availability:** Apr-2009

**Tested by:** Hewlett-Packard Company

**Software Availability:** Mar-2009

## Peak Other Flags (Continued)

456.hmmer: -Mipa=jobs:4

462.libquantum: -Mipa=jobs:4

C++ benchmarks (except as noted below):  
-Mipa=jobs:4(pass 2)

483.xalancbmk: No flags used

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

[http://www.spec.org/cpu2006/flags/pgi80\\_linux\\_flags.20090710.00.html](http://www.spec.org/cpu2006/flags/pgi80_linux_flags.20090710.00.html)

[http://www.spec.org/cpu2006/flags/CPU2006\\_flags.20090710.00.html](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090710.00.html)

<http://www.spec.org/cpu2006/flags/amd-platform-amd909gh.20090710.html>

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

[http://www.spec.org/cpu2006/flags/pgi80\\_linux\\_flags.20090710.00.xml](http://www.spec.org/cpu2006/flags/pgi80_linux_flags.20090710.00.xml)

[http://www.spec.org/cpu2006/flags/CPU2006\\_flags.20090710.00.xml](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090710.00.xml)

<http://www.spec.org/cpu2006/flags/amd-platform-amd909gh.20090710.xml>

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 Wed Jul 23 02:02:18 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 28 April 2009.