



SPEC® CINT2006 Result

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Hewlett-Packard Company

SPECint®2006 = 14.8

ProLiant BL465c G5
(2.3 GHz AMD Opteron 2356)

SPECint_base2006 = 13.2

CPU2006 license: 3

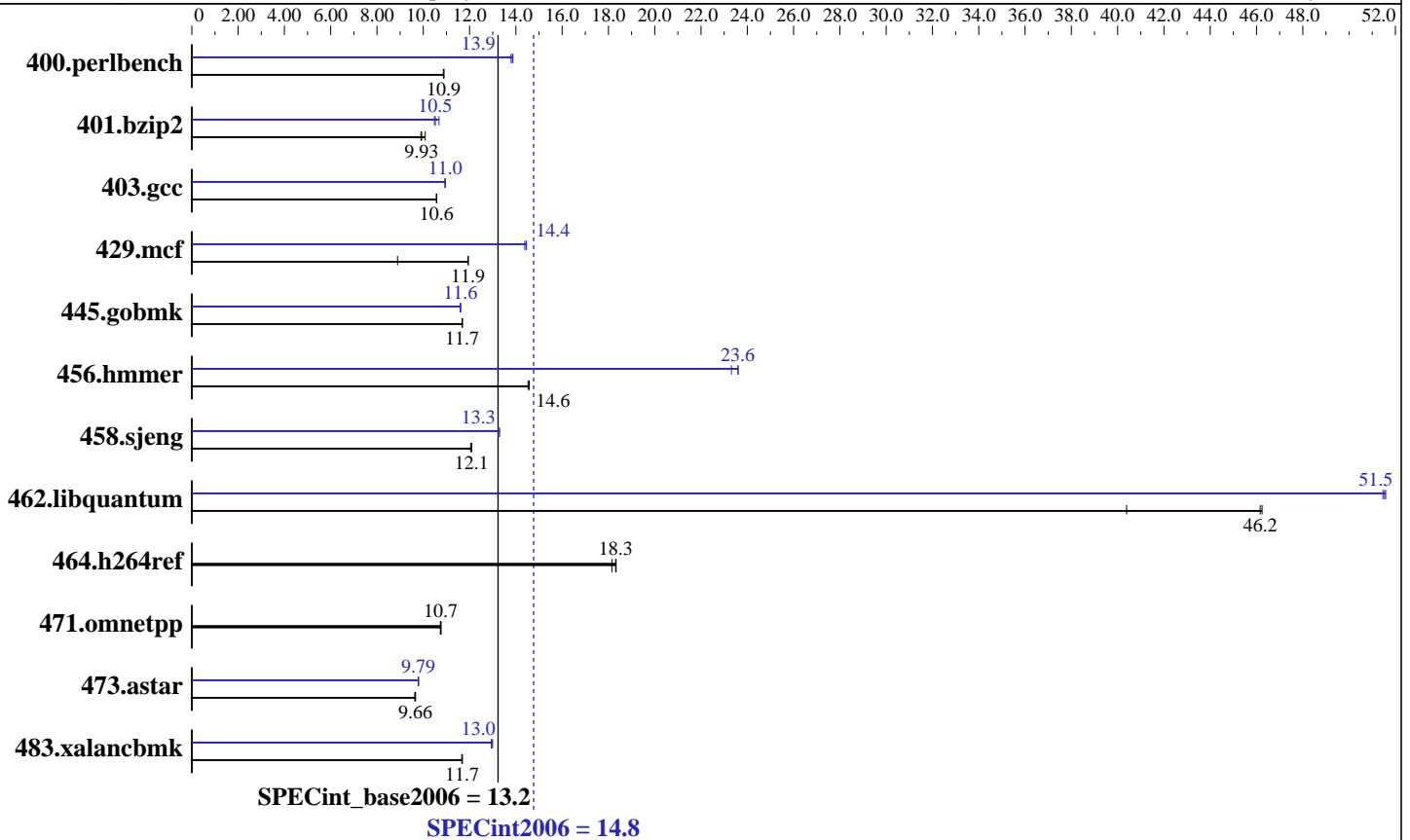
Test date: Mar-2008

Test sponsor: Hewlett-Packard Company

Hardware Availability: Mar-2008

Tested by: Hewlett-Packard Company

Software Availability: May-2008



Hardware

CPU Name: AMD Opteron 2356
 CPU Characteristics:
 CPU MHz: 2300
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 CPU(s) orderable: 1,2 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: 2 MB I+D on chip per chip
 Other Cache: None
 Memory: 32 GB (8x4 GB, PC2-5300P CL5)
 Disk Subsystem: 1x146 GB 10 K SAS
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
 Compiler: PGI Server Complete Version 7.2
 Auto Parallel: Yes
 File System: ext2
 System State: Run level 3 (multi-user)
 Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: binutils-2.18.50, SmartHeap 8.1 32-bit Library for Linux



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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	899	10.9	898	10.9	897	10.9	704	13.9	708	13.8	705	13.9
401.bzip2	972	9.93	957	10.1	975	9.90	917	10.5	921	10.5	904	10.7
403.gcc	762	10.6	761	10.6	761	10.6	735	11.0	736	10.9	735	11.0
429.mcf	1026	8.89	764	11.9	764	11.9	631	14.4	634	14.4	631	14.5
445.gobmk	898	11.7	898	11.7	898	11.7	904	11.6	904	11.6	904	11.6
456.hammer	641	14.6	642	14.5	640	14.6	400	23.3	395	23.6	395	23.6
458.sjeng	1005	12.0	1001	12.1	1001	12.1	913	13.3	914	13.2	910	13.3
462.libquantum	448	46.2	513	40.4	449	46.2	402	51.5	402	51.6	403	51.5
464.h264ref	1219	18.2	1209	18.3	1207	18.3	1219	18.2	1209	18.3	1207	18.3
471.omnetpp	580	10.8	581	10.7	582	10.7	580	10.8	581	10.7	582	10.7
473.astar	727	9.66	726	9.67	729	9.63	717	9.79	717	9.79	716	9.80
483.xalancbmk	591	11.7	591	11.7	591	11.7	533	13.0	531	13.0	533	12.9

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

Operating System Notes

Environment stack size set to 'unlimited'
Max locked memory set to 2097152
PGI_HUGE_PAGES set to 896.
Total number of huge pages available is 7168.
NCPUS set to number of cores
numactl used to bind processes to CPUs

Platform Notes

BIOS configuration:
Power Regulator set to Static High Performance Mode

Base Compiler Invocation

C benchmarks:
pgcc

C++ benchmarks:
pgcpp



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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:

```

-fast -Mipa=jobs:8 -Mipa=fast -Mipa=inline -Mfprelaxed -Mloop32
-Mconcur=innermost -Msmartalloc=huge:896 -tp barcelona-64 -Bstatic_pgi

```

C++ benchmarks:

```

-fastsse -Mipa=jobs:8 -Mipa=fast -Mipa=inline -Mfprelaxed -Mloop32
-Msmartalloc=huge:896 --zc_eh -tp barcelona -Bstatic_pgi

```

Base Other Flags

C benchmarks:

-w

C++ benchmarks:

-w

Peak Compiler Invocation

C benchmarks:

pgcc

C++ benchmarks:

pgcpp

Peak Portability Flags

```

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64

```

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Peak Portability Flags (Continued)

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: -Mpfi(pass 1) -Mpfo(pass 2) -Mipa=jobs:8(pass 2)
-Mipa=inline(pass 2) -fast -O4 -Mfprelaxed
-Msmartalloc=huge:896 -Mnounroll -Mnovect -tp barcelona-64
-Bstatic_pgi

401.bzip2: -Mpfi(pass 1) -Mconcur=innermost(pass 2) -Mpfo(pass 2)
-fast -O4 -Msmartalloc=huge:896 -Mnounroll
-tp barcelona-64 -Bstatic_pgi

403.gcc: -Mpfi(pass 1) -Mpfo(pass 2) -Mconcur(pass 2)
-Mipa=jobs:8(pass 2) -Mipa=fast(pass 2)
-Mipa=inline(pass 2) -fastsse -Mfprelaxed
-Msmartalloc=huge:896 -tp barcelona -Bstatic_pgi

429.mcf: -fastsse -Mconcur -Mipa=jobs:8 -Mipa=fast -Mipa=inline:1
-Msmartalloc=huge:896 -Mloop32 -tp barcelona -Bstatic_pgi

445.gobmk: -Mpfi(pass 1) -Mpfo(pass 2) -Mconcur(pass 2)
-Mipa=jobs:8(pass 2) -Mipa=fast(pass 2) -fast -O4
-Msmartalloc=huge:896 -Mfprelaxed -Mnovect
-tp barcelona-64 -Bstatic_pgi

456.hmmer: -fastsse -Munroll=n:8 -Msmartalloc=huge:896 -Mfprelaxed
-Mvect=partial -Msafeptr -Mipa=jobs:8 -Mipa=const
-Mipa=ptr -Mipa=arg -Mipa=inline -tp barcelona-64
-Bstatic_pgi

458.sjeng: -Mpfi(pass 1) -Mipa=jobs:8(pass 2) -Mipa=fast(pass 2)
-Mipa=inline:1(pass 2) -Mipa=noarg(pass 2) -Mconcur(pass 2)
-Mpfo(pass 2) -fastsse -Msmartalloc=huge:896 -Mfprelaxed
-tp barcelona-64 -Bstatic_pgi

462.libquantum: -fastsse -Mfprelaxed -Msmartalloc -Mvect=nosse
-Munroll=m:8 -Mconcur=innermost -Mconcur=noaltcode
-Mipa=jobs:8 -Mipa=fast -Mipa=noarg -tp barcelona-64
-Bstatic_pgi

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Peak Optimization Flags (Continued)

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: basepeak = yes

473.astar: -Mphi(pass 1) -Mipa=jobs:8(pass 2) -Mipa=fast(pass 2)
-Mipa=inline(pass 2) -Mpfo(pass 2) -fastsse -O4
-Msmartalloc=huge:896 -Mfprelaxed -Mloop32 --zc_eh
-tp barcelona -Bstatic_pgi

483.xalancbmk: -fastsse -O4 -Mipa=jobs:8 -Mipa=fast -Mipa=inline
-Mfprelaxed -Msmartalloc -Mloop32 --zc_eh -tp barcelona
-Bstatic_pgi
-L/proj/qa/smartheap/SmartHeap_8.1/lib -lsmartheap

Peak Other Flags

C benchmarks:

-w

C++ benchmarks:

-w

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/hp-PGI72-PS32-flags.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/hp-PGI72-PS32-flags.xml>

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For other inquiries, please contact webmaster@spec.org.

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