



SPEC® CINT2006 Result

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Hewlett-Packard Company

SPECint®2006 = 15.1

ProLiant DL165 G5
(2.3 GHz AMD Opteron 2356)

SPECint_base2006 = 13.3

CPU2006 license: 3

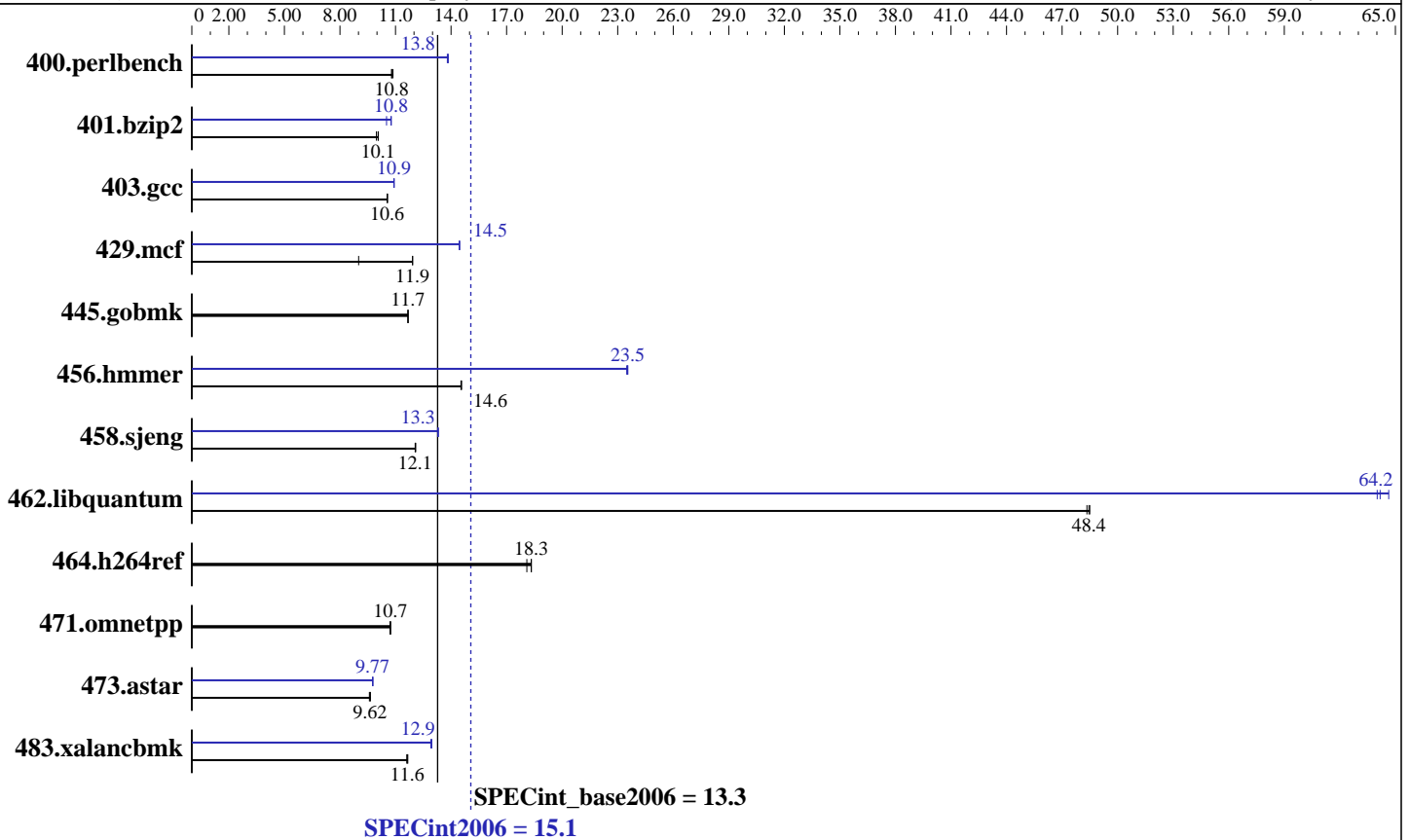
Test date: Mar-2008

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	906	10.8	899	10.9	<u>905</u>	<u>10.8</u>	706	13.8	<u>706</u>	<u>13.8</u>	708	13.8
401.bzip2	<u>959</u>	<u>10.1</u>	958	10.1	968	9.97	918	10.5	896	10.8	<u>897</u>	<u>10.8</u>
403.gcc	<u>762</u>	<u>10.6</u>	762	10.6	763	10.6	737	10.9	<u>737</u>	<u>10.9</u>	737	10.9
429.mcf	765	11.9	1012	9.01	<u>765</u>	<u>11.9</u>	<u>631</u>	<u>14.5</u>	632	14.4	630	14.5
445.gobmk	898	11.7	<u>898</u>	<u>11.7</u>	899	11.7	898	11.7	<u>898</u>	<u>11.7</u>	899	11.7
456.hammer	642	14.5	641	14.6	<u>641</u>	<u>14.6</u>	397	23.5	<u>396</u>	<u>23.5</u>	396	23.5
458.sjeng	<u>1003</u>	<u>12.1</u>	1000	12.1	1003	12.1	909	13.3	<u>910</u>	<u>13.3</u>	910	13.3
462.libquantum	<u>428</u>	<u>48.4</u>	427	48.5	429	48.3	324	64.0	321	64.6	<u>323</u>	<u>64.2</u>
464.h264ref	1223	18.1	1207	18.3	<u>1207</u>	<u>18.3</u>	1223	18.1	1207	18.3	<u>1207</u>	<u>18.3</u>
471.omnetpp	584	10.7	<u>583</u>	<u>10.7</u>	582	10.7	584	10.7	<u>583</u>	<u>10.7</u>	582	10.7
473.astar	732	9.59	728	9.65	<u>730</u>	<u>9.62</u>	718	9.78	719	9.77	<u>718</u>	<u>9.77</u>
483.xalancbmk	592	11.7	594	11.6	<u>593</u>	<u>11.6</u>	<u>533</u>	<u>12.9</u>	533	13.0	535	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.xalanbmk: -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 -Mno vect -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: basepeak = yes

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

464.h264ref: basepeak = yes

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Peak Optimization Flags (Continued)

C++ benchmarks:

471.omnetpp: basepeak = yes

473.astar: -Mpfi(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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