SPEC® CINT2006 Result

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Hewlett-Packard Company

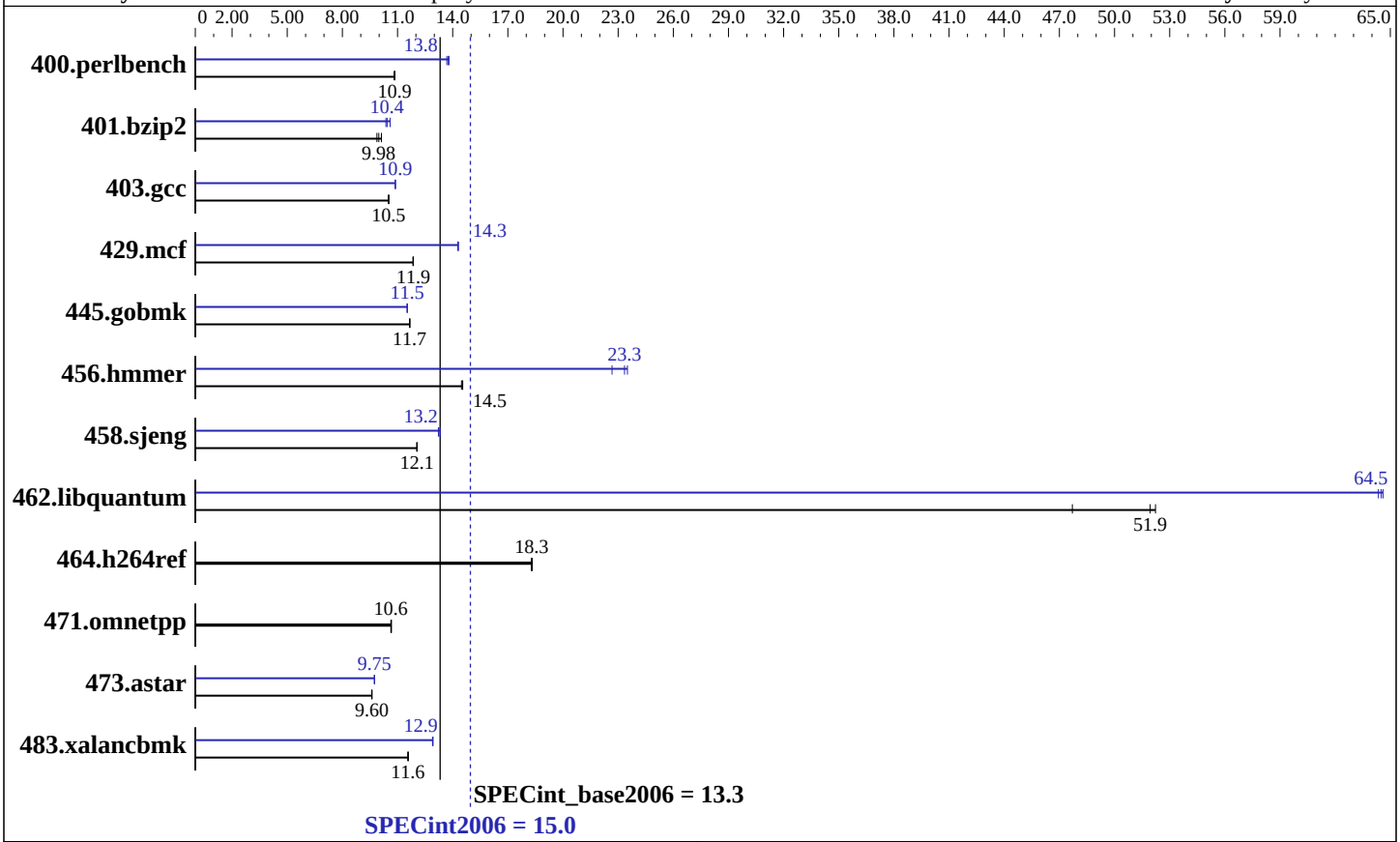
ProLiant DL185 G5
(2.3 GHz AMD Opteron 2356)

SPECint®2006 = 15.0

SPECint_base2006 = 13.3

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

Test date: Mar-2008
Hardware Availability: Mar-2008
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	**900**	**10.9**	904	10.8	900	10.9	714	13.7	708	13.8	**710**	**13.8**
401.bzip2	**967**	**9.98**	977	9.88	953	10.1	**925**	**10.4**	910	10.6	931	10.4
403.gcc	765	10.5	**765**	**10.5**	766	10.5	**740**	**10.9**	740	10.9	740	10.9
429.mcf	**769**	**11.9**	769	11.9	771	11.8	639	14.3	637	14.3	**638**	**14.3**
445.gobmk	899	11.7	**899**	**11.7**	899	11.7	**910**	**11.5**	910	11.5	910	11.5
456.hmmer	641	14.5	**642**	**14.5**	644	14.5	**400**	**23.3**	412	22.7	397	23.5
458.sjeng	1004	12.0	**1003**	**12.1**	1003	12.1	915	13.2	**913**	**13.2**	908	13.3
462.libquantum	434	47.7	397	52.2	**399**	**51.9**	322	64.3	**321**	**64.5**	321	64.6
464.h264ref	1207	18.3	1211	18.3	**1209**	**18.3**	1207	18.3	1211	18.3	**1209**	**18.3**
471.omnetpp	587	10.6	**587**	**10.6**	586	10.7	587	10.6	**587**	**10.6**	586	10.7
473.astar	730	9.61	731	9.60	**731**	**9.60**	721	9.74	720	9.75	**720**	**9.75**
483.xalancbmk	596	11.6	**596**	**11.6**	597	11.6	535	12.9	**534**	**12.9**	534	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

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: `-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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For other inquiries, please contact webmaster@spec.org.

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