SPEC® CINT2006 Result

Hewlett-Packard Company

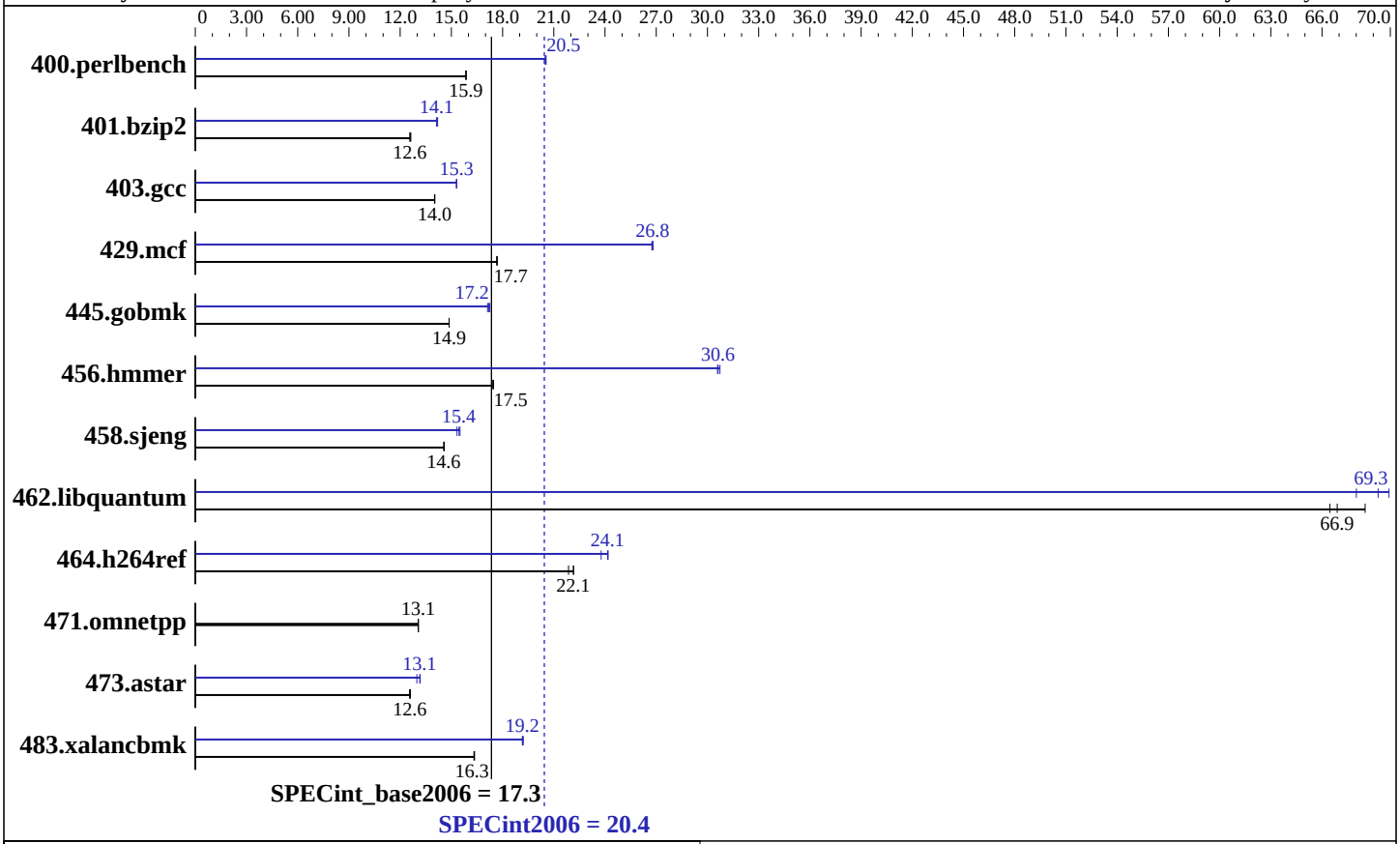
ProLiant DL585 G6
(2.6 GHz AMD Opteron 8435)

SPECint®2006 = 20.4

SPECint_base2006 = 17.3

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

Test date: May-2009
Hardware Availability: Jun-2009
Software Availability: May-2009



Hardware

CPU Name:	AMD Opteron 8435
CPU Characteristics:	
CPU MHz:	2600
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 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:	1x146 GB 10 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

Hewlett-Packard Company

ProLiant DL585 G6
(2.6 GHz AMD Opteron 8435)

SPECint2006 = 20.4

SPECint_base2006 = 17.3

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

Test date: May-2009
Hardware Availability: Jun-2009
Software Availability: May-2009

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	616	15.9	**616**	**15.9**	616	15.9	**476**	**20.5**	475	20.5	477	20.5
401.bzip2	764	12.6	**767**	**12.6**	768	12.6	**682**	**14.1**	682	14.1	680	14.2
403.gcc	574	14.0	**574**	**14.0**	574	14.0	**526**	**15.3**	526	15.3	526	15.3
429.mcf	**516**	**17.7**	516	17.7	516	17.7	341	26.7	340	26.8	**341**	**26.8**
445.gobmk	**706**	**14.9**	706	14.9	706	14.9	608	17.2	**610**	**17.2**	613	17.1
456.hmmer	534	17.5	536	17.4	**534**	**17.5**	304	30.7	**305**	**30.6**	305	30.6
458.sjeng	830	14.6	**831**	**14.6**	831	14.6	780	15.5	**783**	**15.4**	789	15.3
462.libquantum	302	68.5	312	66.5	**310**	**66.9**	296	69.9	305	68.0	**299**	**69.3**
464.h264ref	1012	21.9	**999**	**22.1**	999	22.2	**916**	**24.1**	931	23.8	915	24.2
471.omnetpp	**478**	**13.1**	479	13.1	478	13.1	**478**	**13.1**	479	13.1	478	13.1
473.astar	557	12.6	559	12.6	**558**	**12.6**	**534**	**13.1**	541	13.0	533	13.2
483.xalancbmk	422	16.4	**422**	**16.3**	423	16.3	359	19.2	360	19.2	**360**	**19.2**

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

Operating System Notes

```
'ulimit -s unlimited' was used to set environment stack size
'ulimit -l 2457600'  was used to set environment locked pages in memory limit
The libhugetlbfs libraries were installed using the
installation rpms that came with the distribution.
PGI_HUGE_PAGES set to 450.
Total number of huge pages available is 5400.
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 = "12"
```

Base Compiler Invocation

C benchmarks:

```
pgcc
```

Continued on next page

Base Compiler Invocation (Continued)

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:11

C++ benchmarks:
-Mipa=jobs:11

Peak Compiler Invocation

C benchmarks (except as noted below):
pathcc

456.hmmer: pgcc

Continued on next page

Peak Compiler Invocation (Continued)

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.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 -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

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)

Continued on next page

Peak Optimization Flags (Continued)

445.gobmk (continued):
-L/usr/lib64 -lhugetlbfs(pass 2) -O3 -OPT:alias=restrict
-LNO:prefetch=1 -LNO:ignore_feedback=off -CG:p2align=on

456.hmmer: -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:

456.hmmer: -Mipa=jobs:11

Continued on next page

Peak Other Flags (Continued)

462.libquantum: `-Mipa=jobs:11`

C++ benchmarks (except as noted below):
`-Mipa=jobs:11`(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.html`
`http://www.spec.org/cpu2006/flags/amd-platform-amd909gh.20090710.00.html`
`http://www.spec.org/cpu2006/flags/CPU2006_flags.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2006/flags/pgi80_linux_flags.xml`
`http://www.spec.org/cpu2006/flags/amd-platform-amd909gh.20090710.00.xml`
`http://www.spec.org/cpu2006/flags/CPU2006_flags.xml`

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 01:08:17 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 23 June 2009.