SPEC® CINT2006 Result

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Hewlett-Packard Company

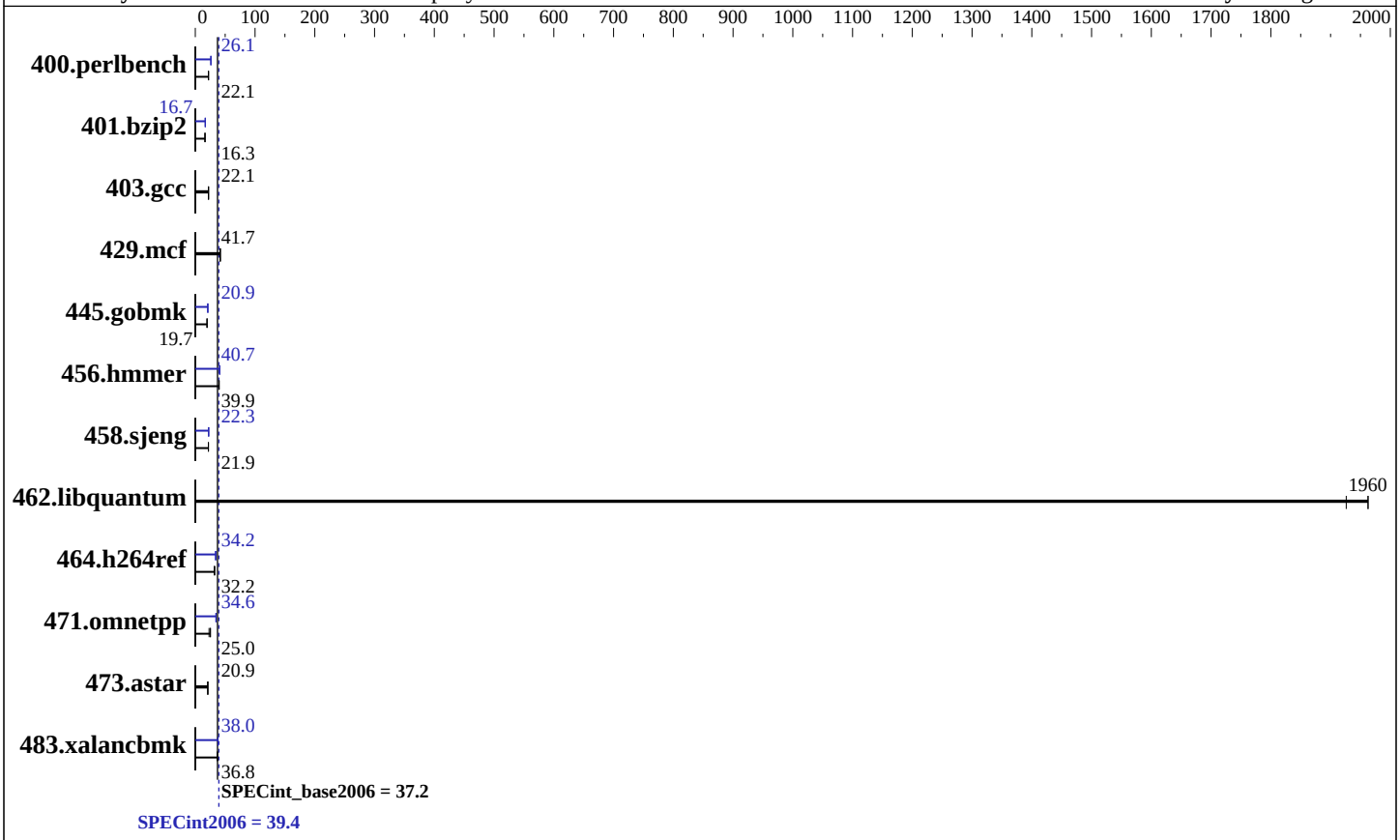
ProLiant DL580 G7
(2.40 GHz, Intel Xeon E7-4870)

SPECint®2006 = 39.4

SPECint_base2006 = 37.2

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

Test date: Oct-2011
Hardware Availability: Apr-2011
Software Availability: Aug-2011



Hardware

CPU Name:	Intel Xeon E7-4870
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	40 cores, 4 chips, 10 cores/chip
CPU(s) orderable:	2,4 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	30 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (64 x 4 GB 2Rx4 PC3-10600R-9, ECC)
Disk Subsystem:	2 x 146 GB 10 K SAS
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.1, Kernel 2.6.32-131.0.15.el6.x86_64
Compiler:	C/C++: Version 12.1.0.225 of Intel Compiler XE Build 20110803
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:	Microquill SmartHeap V9.01

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	444	22.0	441	22.2	**443**	**22.1**	**374**	**26.1**	375	26.1	374	26.1
401.bzip2	**593**	**16.3**	596	16.2	591	16.3	576	16.8	**577**	**16.7**	583	16.6
403.gcc	364	22.1	**364**	**22.1**	365	22.1	364	22.1	**364**	**22.1**	365	22.1
429.mcf	219	41.6	217	42.0	**219**	**41.7**	219	41.6	217	42.0	**219**	**41.7**
445.gobmk	**533**	**19.7**	531	19.8	534	19.7	501	20.9	**501**	**20.9**	501	21.0
456.hmmer	234	39.9	**234**	**39.9**	235	39.6	**229**	**40.7**	229	40.7	229	40.8
458.sjeng	**552**	**21.9**	552	21.9	551	21.9	542	22.3	**542**	**22.3**	541	22.4
462.libquantum	10.6	1960	**10.6**	**1960**	10.8	1930	10.6	1960	**10.6**	**1960**	10.8	1930
464.h264ref	686	32.3	688	32.2	**688**	**32.2**	**648**	**34.2**	650	34.1	648	34.2
471.omnetpp	272	23.0	**250**	**25.0**	245	25.5	181	34.6	180	34.7	**181**	**34.6**
473.astar	**335**	**20.9**	335	21.0	336	20.9	**335**	**20.9**	335	21.0	336	20.9
483.xalancbmk	187	37.0	187	36.8	**187**	**36.8**	182	38.0	**181**	**38.0**	181	38.1

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

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/cpu2006/smartheap:/cpu2006/ic12.1-libs/ia32/:/cpu2006/ic12.1-libs/intel64"
OMP_NUM_THREADS = "20"

 Stack size set to unlimited using "ulimit -s unlimited"
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

Base Compiler Invocation

C benchmarks:
```
icc  -m64
```

C++ benchmarks:
```
icpc -m64
```

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

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Base 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
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs -L/smartheap -lsmartheap64

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m64

400.perlbench: icc -m32

445.gobmk: icc -m32

464.h264ref: icc -m32

C++ benchmarks (except as noted below):
icpc -m32

473.astar: icpc -m64

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-prefetch -ansi-alias

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32
-opt-prefetch -ansi-alias

403.gcc: basepeak = yes

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
-ansi-alias

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll4

462.libquantum: basepeak = yes

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-ra-region-strategy=block -ansi-alias -Wl,-z,muldefs
-L/smartheap -lsmartheap

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Peak Optimization Flags (Continued)

473.astar: `basepeak = yes`

483.xalancbmk: `-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias -Wl,-z,muldefs -L/smartheap -lsmartheap`

Peak Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-linux64.html
http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20110316.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-linux64.xml
http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20110316.xml

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

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