SPEC® CINT2006 Result

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Hewlett-Packard Company

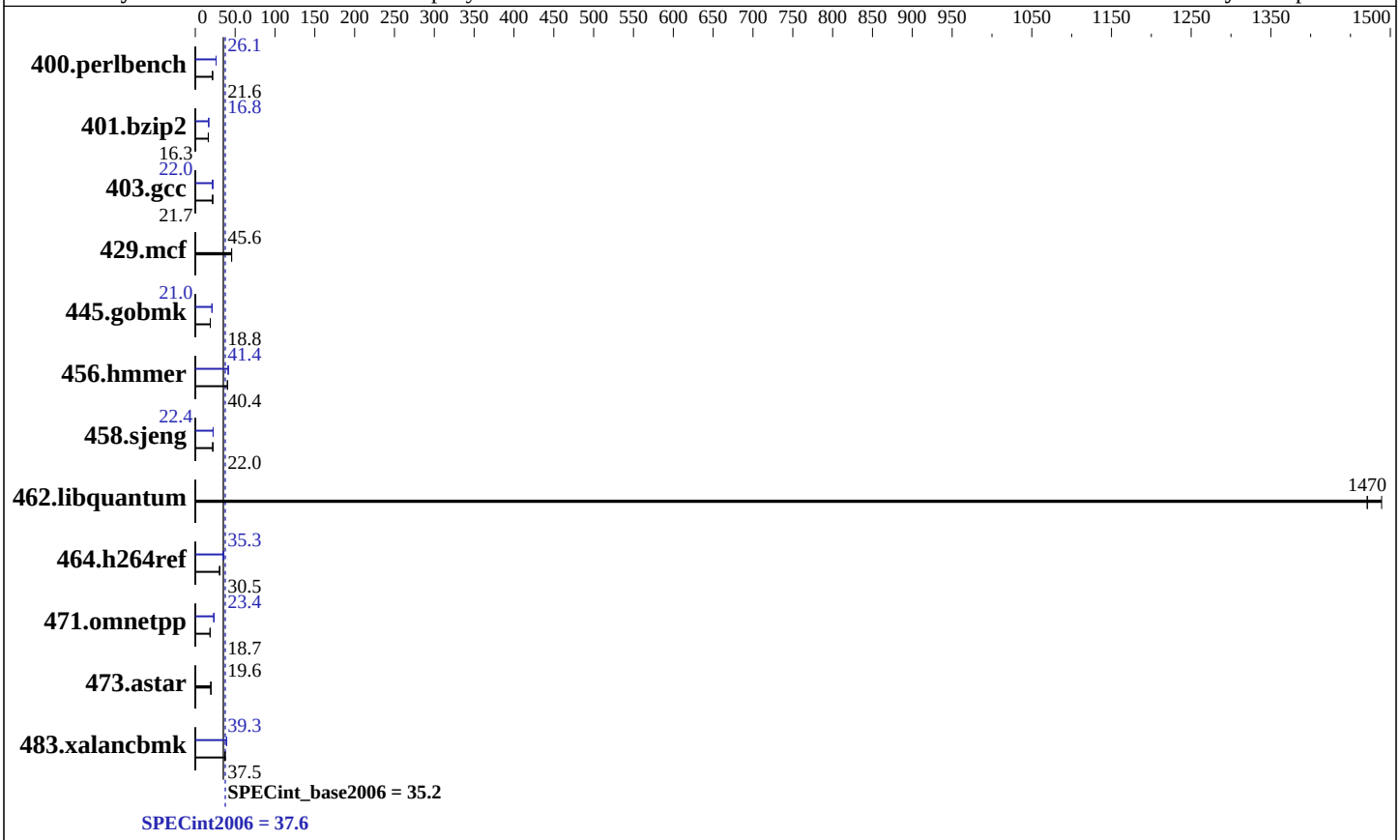
ProLiant BL460c G7
(2.40 GHz, Intel Xeon E5645)

SPECint®2006 = 37.6

SPECint_base2006 = 35.2

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

Test date: Oct-2011
Hardware Availability: Feb-2011
Software Availability: Sep-2011



Hardware

CPU Name:	Intel Xeon E5645
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 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:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC)
Disk Subsystem:	1 x 146 GB 15K SAS
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.1, Kernel 2.6.32-131.0.15.el.x86_64
Compiler:	C/C++: Version 12.1.0.225 of Intel Compiler XE Build 20110803
Auto Parallel:	Yes
File System:	ext4
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	**453**	**21.6**	451	21.6	453	21.6	**374**	**26.1**	375	26.1	374	26.1
401.bzip2	591	16.3	591	16.3	**591**	**16.3**	575	16.8	**574**	**16.8**	574	16.8
403.gcc	**370**	**21.7**	371	21.7	370	21.8	365	22.0	377	21.4	**365**	**22.0**
429.mcf	200	45.6	**200**	**45.6**	200	45.6	200	45.6	**200**	**45.6**	200	45.6
445.gobmk	557	18.8	558	18.8	**558**	**18.8**	**499**	**21.0**	501	20.9	497	21.1
456.hmmer	**231**	**40.4**	231	40.4	231	40.4	226	41.3	**226**	**41.4**	226	41.4
458.sjeng	550	22.0	**550**	**22.0**	552	21.9	541	22.4	**541**	**22.4**	539	22.4
462.libquantum	13.9	1490	**14.1**	**1470**	14.1	1470	13.9	1490	**14.1**	**1470**	14.1	1470
464.h264ref	**725**	**30.5**	724	30.6	725	30.5	**628**	**35.3**	628	35.2	628	35.3
471.omnetpp	**335**	**18.7**	338	18.5	335	18.7	**267**	**23.4**	271	23.1	266	23.5
473.astar	359	19.6	**359**	**19.6**	358	19.6	359	19.6	**359**	**19.6**	358	19.6
483.xalancbmk	**184**	**37.5**	184	37.5	187	36.9	176	39.1	175	39.4	**175**	**39.3**

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

Platform Notes

```
BIOS configuration:
 HP Power Profile set to Maximum Performance
 Thermal Configuration set to Increased Cooling
 Data Reuse set to Disabled
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/root/s2k6/smartheap:/root/s2k6/ic12.1-libs/ia32/:/root/s2k6/ic12.1-libs/intel64"

 Stack size set to unlimited using "ulimit -s unlimited"
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
 Filesystem page cache cleared with:
 echo 1>       /proc/sys/vm/drop_caches
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>
```

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
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: -xSSE4.2 -ipo -O3 -no-prec-div -inline-calloc
-opt-malloc-options=3 -auto-ilp32

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

Continued on next page

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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