SPEC® CINT2006 Result

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Hewlett-Packard Company

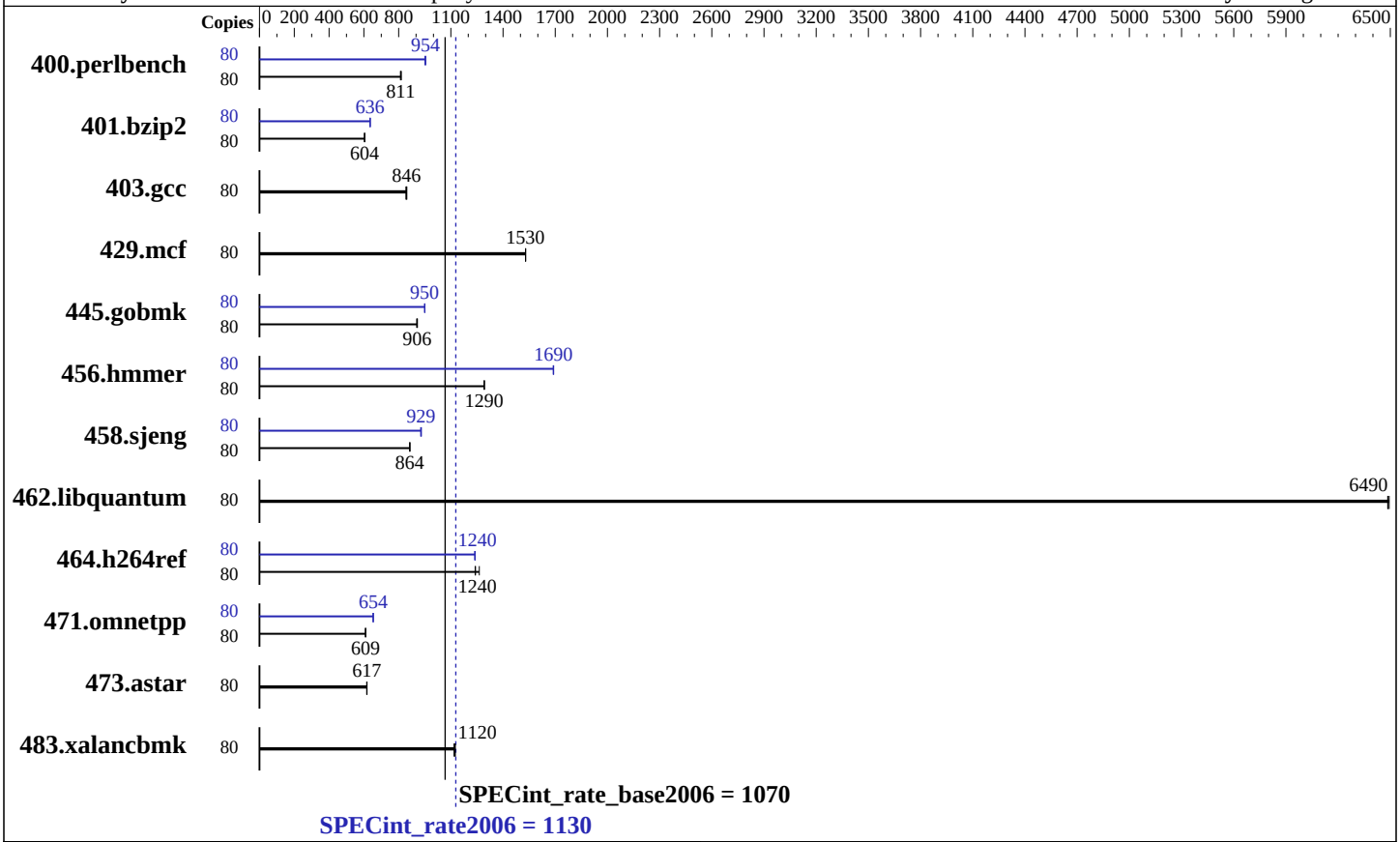
ProLiant DL580 G7
(2.40 GHz, Intel Xeon E7-4870)

SPECint®_rate2006 = 1130

SPECint_rate_base2006 = 1070

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

Test date: Sep-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, 2 threads/core
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:	1 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:	No
File System:	ext3
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V9.01

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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	80	**964**	**811**	959	815	964	811	80	**819**	**954**	822	951	818	955
401.bzip2	80	1279	604	1276	605	**1277**	**604**	80	1214	636	**1214**	**636**	1212	637
403.gcc	80	**761**	**846**	765	842	761	847	80	**761**	**846**	765	842	761	847
429.mcf	80	477	1530	477	1530	**477**	**1530**	80	477	1530	477	1530	**477**	**1530**
445.gobmk	80	929	903	924	908	**926**	**906**	80	883	950	**884**	**950**	884	949
456.hmmer	80	578	1290	577	1290	**578**	**1290**	80	**442**	**1690**	442	1690	441	1690
458.sjeng	80	**1121**	**864**	1121	864	1119	865	80	1040	931	**1042**	**929**	1045	927
462.libquantum	80	256	6480	**256**	**6490**	255	6490	80	256	6480	**256**	**6490**	255	6490
464.h264ref	80	1401	1260	**1426**	**1240**	1428	1240	80	1432	1240	1428	1240	**1428**	**1240**
471.omnetpp	80	819	610	**820**	**609**	821	609	80	764	654	765	653	**765**	**654**
473.astar	80	911	617	908	618	**910**	**617**	80	911	617	908	618	**910**	**617**
483.xalancbmk	80	**492**	**1120**	490	1130	494	1120	80	**492**	**1120**	490	1130	494	1120

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

Submit Notes

```
The config file option 'submit' was used.
numactl was used to bind copies to the cores
```

Operating System Notes

```
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
```

Platform Notes

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

General Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
```

Base Compiler Invocation

C benchmarks:

```
icc  -m32
```

Continued on next page

Base Compiler Invocation (Continued)

C++ benchmarks:
icpc -m32

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
-Wl,-z,muldefs -L/smartheap -lsmartheap

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m32

400.perlbench: icc -m64

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:
icpc -m32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
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) -auto-ilp32

401.bzip2: -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 -auto-ilp32 -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 -opt-mem-layout-trans=3

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

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 -auto-ilp32

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) -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/smartheap -lsmartheap

473.astar: basepeak = yes

Continued on next page

Peak Optimization Flags (Continued)

483.xalancbmk: `basepeak = yes`

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/HP-Intel-Linux-Settings-flags.20110316.html`
`http://www.spec.org/cpu2006/flags/Intel-ic12.1-linux64.html`

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

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

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