SPEC® CINT2006 Result

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Hewlett-Packard Company

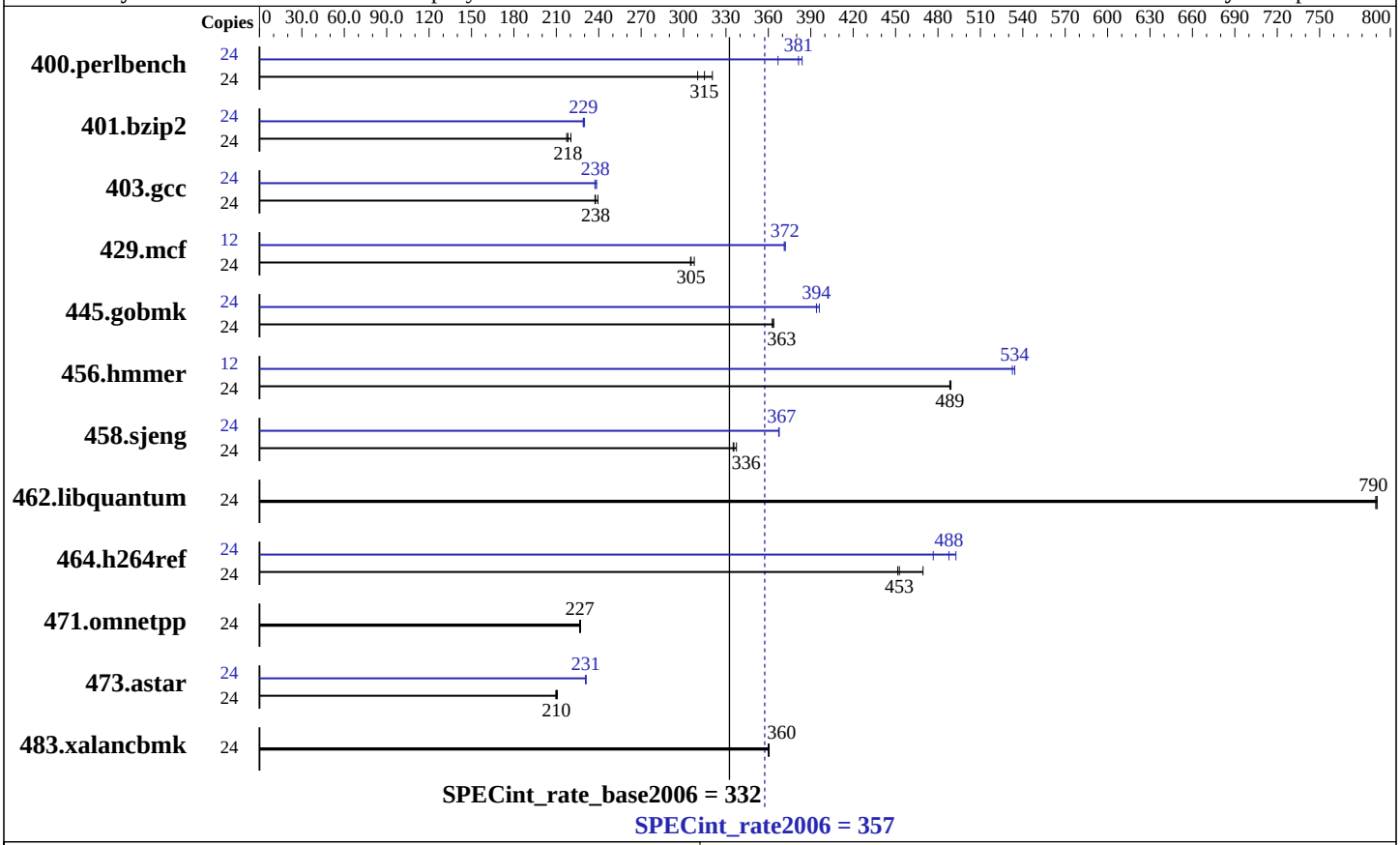
ProLiant ML350 G6
(2.93 GHz, Intel Xeon X5670)

SPECint®_rate2006 = 357

SPECint_rate_base2006 = 332

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

Test date: Apr-2010
Hardware Availability: Jun-2010
Software Availability: Sep-2009



Hardware

CPU Name:	Intel Xeon X5670
CPU Characteristics:	Intel Turbo Boost Technology up to 3.33 GHz
CPU MHz:	2933
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 (12x4 GB 2Rx8 PC3-10600R CL9)
Disk Subsystem:	1x500 GB 7.2 K SATA
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 5.4 Kernel 2.6.18-164.el5
Compiler:	Intel C++ Compiler 11.1 for Linux Build 20090827 Package ID: l_cproc_p_11.1.056
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 V8.1 Binutils 2.17.50.0.18

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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	24	**745**	**315**	756	310	732	320	24	639	367	**615**	**381**	611	384
401.bzip2	24	**1061**	**218**	1066	217	1051	220	24	**1010**	**229**	1011	229	1007	230
403.gcc	24	**813**	**238**	807	239	814	237	24	**813**	**238**	810	239	814	237
429.mcf	24	718	305	712	308	**717**	**305**	12	295	371	294	372	**294**	**372**
445.gobmk	24	692	364	694	363	**694**	**363**	24	636	396	639	394	**639**	**394**
456.hmmer	24	459	488	458	489	**458**	**489**	12	210	533	**210**	**534**	210	534
458.sjeng	24	861	337	**865**	**336**	867	335	24	**790**	**367**	791	367	790	368
462.libquantum	24	629	791	630	790	**629**	**790**	24	629	791	630	790	**629**	**790**
464.h264ref	24	1131	469	**1173**	**453**	1176	452	24	**1089**	**488**	1114	477	1078	493
471.omnetpp	24	**661**	**227**	660	227	662	226	24	**661**	**227**	660	227	662	226
473.astar	24	800	211	**802**	**210**	804	210	24	729	231	730	231	**730**	**231**
483.xalancbmk	24	**460**	**360**	459	361	460	360	24	**460**	**360**	459	361	460	360

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

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
```

Platform Notes

```
BIOS configuration:
 HP Power Profile set to Maximum Performance
 Thermal Configuration set to Increased Cooling
 Memory Speed with 2 DIMMs per Channel set to 1333 MHz Maximum
 Data Reuse set to Disabled
```

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

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 -static -inline-calloc
-opt-malloc-options=3 -opt-prefetch

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/cpu2006/SmartHeap_8.1/lib -lsmartheap

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc

401.bzip2: /opt/intel/Compiler/11.1/056/bin/intel64/icc

456.hmmer: /opt/intel/Compiler/11.1/056/bin/intel64/icc

458.sjeng: /opt/intel/Compiler/11.1/056/bin/intel64/icc

C++ benchmarks:
icpc

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX

Continued on next page

Peak Portability Flags (Continued)

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) -static(pass 2)
-prof-use(pass 2) -ansi-alias -opt-prefetch

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

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc
-opt-malloc-options=3

429.mcf: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
-prof-use(pass 2) -opt-prefetch

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2
-ipo -no-prec-div -ansi-alias

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

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

C++ benchmarks:

471.omnetpp: basepeak = yes

473.astar: -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=routine -Wl,-z,muldefs
-L/cpu2006/SmartHeap_8.1/lib -lsmartheap

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.20100525.html`
`http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revF.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.20100525.xml`
`http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revF.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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