SPEC® CINT2006 Result

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Hewlett-Packard Company

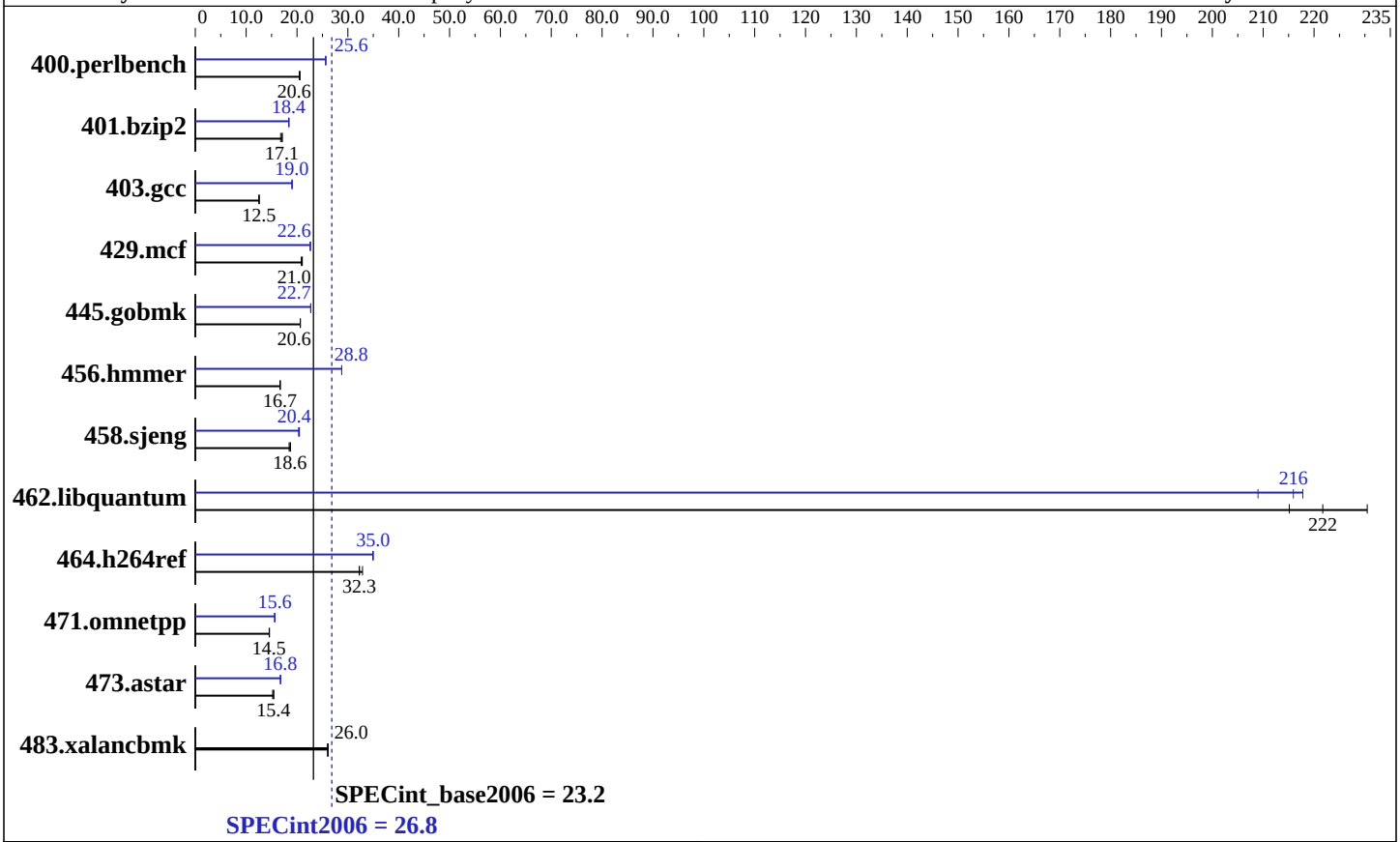
ProLiant ML350 G5
(3.16 GHz, Intel Xeon X5460)

SPECint®2006 = 26.8

SPECint_base2006 = 23.2

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

Test date: Apr-2008
Hardware Availability: Jul-2008
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon X5460
CPU Characteristics:	3.16 GHz, 2x6 MB L2 shared, 1333 MHz system bus
CPU MHz:	3166
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	12 MB I+D on chip per chip, 6 MB shared / 2 cores
L3 Cache:	None
Other Cache:	None
Memory:	32 GB (8x4 GB PC2-5300F CL5)
Disk Subsystem:	1x72 GB 10 K SAS
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
Compiler:	Intel C++ Compiler 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008
Auto Parallel:	Yes
File System:	ext2
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	MicroQuill SmartHeap Library 8.1 binutils-2.17.50

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	475	20.6	478	20.5	**475**	**20.6**	381	25.6	381	25.7	**381**	**25.6**
401.bzip2	575	16.8	**565**	**17.1**	565	17.1	524	18.4	**525**	**18.4**	525	18.4
403.gcc	642	12.5	642	12.5	**642**	**12.5**	**423**	**19.0**	424	19.0	422	19.1
429.mcf	433	21.0	438	20.8	**435**	**21.0**	403	22.6	403	22.6	**403**	**22.6**
445.gobmk	508	20.7	**508**	**20.6**	508	20.6	462	22.7	462	22.7	**462**	**22.7**
456.hmmer	559	16.7	**559**	**16.7**	559	16.7	**324**	**28.8**	324	28.8	324	28.8
458.sjeng	**649**	**18.6**	656	18.4	647	18.7	**592**	**20.4**	591	20.5	596	20.3
462.libquantum	**93.5**	**222**	96.3	215	89.9	230	**96.0**	**216**	95.1	218	99.2	209
464.h264ref	686	32.2	**686**	**32.3**	673	32.9	632	35.0	634	34.9	**633**	**35.0**
471.omnetpp	430	14.5	428	14.6	**430**	**14.5**	398	15.7	**400**	**15.6**	402	15.6
473.astar	455	15.4	**456**	**15.4**	461	15.2	**419**	**16.8**	420	16.7	418	16.8
483.xalancbmk	264	26.1	265	26.0	**265**	**26.0**	264	26.1	265	26.0	**265**	**26.0**

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 the stacksize to unlimited prior to run
 OMP_NUM_THREADS set to number of cores
 KMP_AFFINITY set to physical,0
 KMP_STACKSIZE set to 64M
```

Platform Notes

```
BIOS configuration:
  Power Regulator set to Static High Performance Mode
```

Base Compiler Invocation

C benchmarks:
`icc`

C++ benchmarks:
`icpc`

Base Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
462.libquantum: `-DSPEC_CPU_LINUX`

Continued on next page

Base Portability Flags (Continued)

483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-fast -vec-guard-write -opt-malloc-options=3 -parallel
-par-runtime-control

C++ benchmarks:
-xT -ipo -O3 -no-prec-div -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/cce/10.1.008/bin/icc
-L/opt/intel/cce/10.1.008/lib
-I/opt/intel/cce/10.1.008/include

456.hmmer: /opt/intel/cce/10.1.008/bin/icc
-L/opt/intel/cce/10.1.008/lib
-I/opt/intel/cce/10.1.008/include

C++ benchmarks:
icpc

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -ansi-alias -prefetch`

401.bzip2: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -prefetch -auto-ilp32`

403.gcc: `-fast -inline-calloc -opt-malloc-options=3`

429.mcf: `-fast -prefetch`

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

456.hmmer: `-fast -unroll2 -ansi-alias -opt-multi-version-aggressive -auto-ilp32`

458.sjeng: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll4`

462.libquantum: `-fast -unroll4 -Ob0 -prefetch -opt-streaming-stores always -vec-guard-write -opt-malloc-options=3 -parallel -par-runtime-control`

464.h264ref: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -ansi-alias`

C++ benchmarks:

471.omnetpp: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xT -O3 -ipo -no-prec-div -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/cpu2006/SmartHeap_8.1/lib -lsmartheap`

473.astar: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xT -O3 -ipo -no-prec-div -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 file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/HP-Intel-ic10.1-linux-int-flags.20090714.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/HP-Intel-ic10.1-linux-int-flags.20090714.xml

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