SPEC® CINT2006 Result

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IBM Corporation

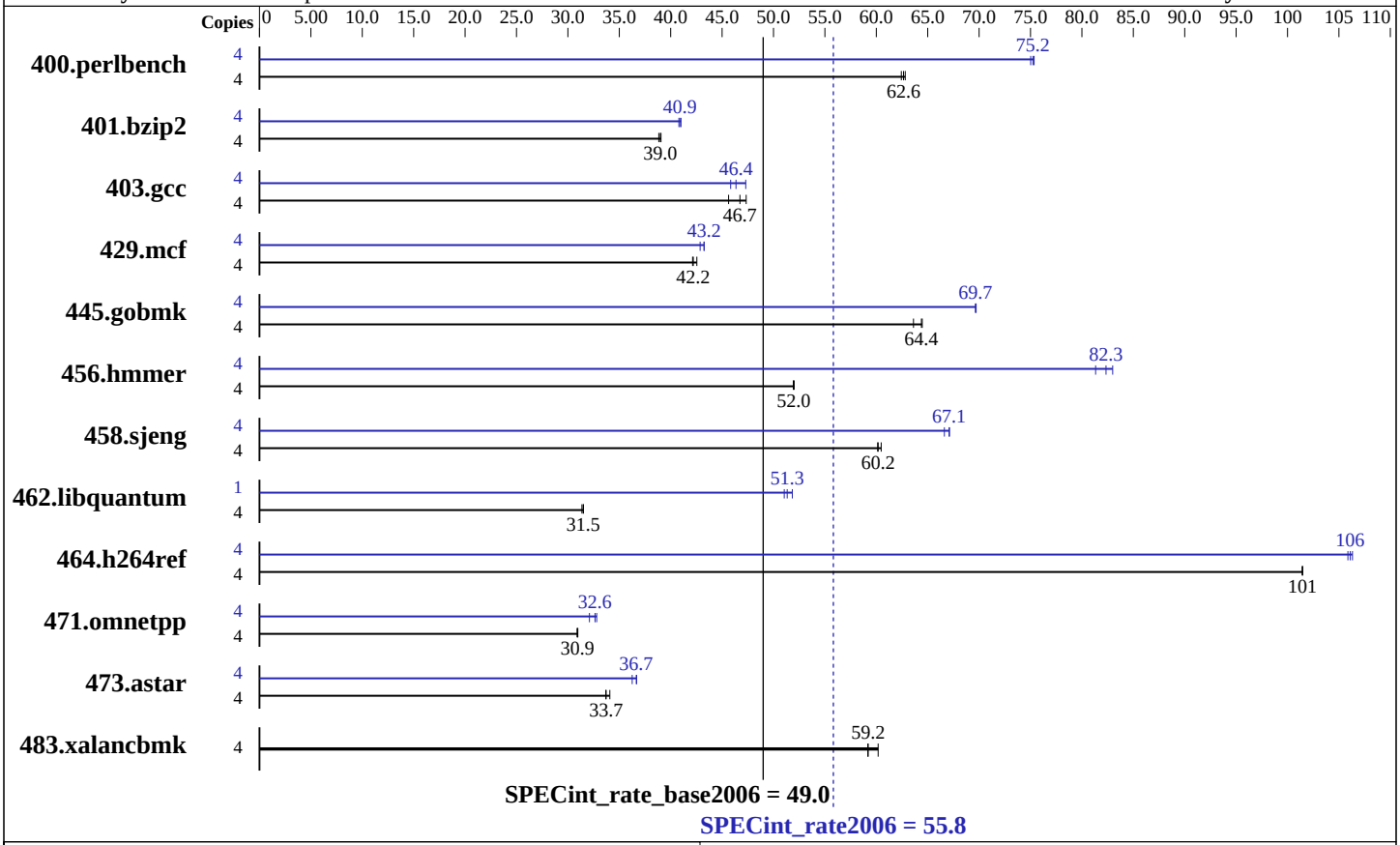
IBM BladeCenter HS12 (Intel Xeon X3323)

SPECint®_rate2006 = 55.8

SPECint_rate_base2006 = 49.0

CPU2006 license: 11
Test sponsor: IBM Corporation
Tested by: IBM Corporation

Test date: May-2008
Hardware Availability: May-2008
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon X3323
CPU Characteristics:	1333MHz system bus
CPU MHz:	2500
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
CPU(s) orderable:	1 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	6 MB I+D on chip per chip, 3 MB shared / 2 cores
L3 Cache:	None
Other Cache:	None
Memory:	8 GB (4 x 2 GB DDR2-5300 ECC)
Disk Subsystem:	1 x 73 GB SAS, 10000 RPM
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:	ReiserFS
System State:	Multi-user, run level 3
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	MicroQuill SmartHeap 8.1 Binutils 2.17.50.0.15

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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	4	626	62.4	622	62.8	**624**	**62.6**	4	**519**	**75.2**	521	75.0	519	75.3
401.bzip2	4	**990**	**39.0**	994	38.8	988	39.1	4	941	41.0	946	40.8	**944**	**40.9**
403.gcc	4	**689**	**46.7**	680	47.3	706	45.6	4	703	45.8	**695**	**46.4**	681	47.3
429.mcf	4	857	42.5	**865**	**42.2**	866	42.1	4	851	42.9	843	43.3	**844**	**43.2**
445.gobmk	4	651	64.5	**652**	**64.4**	660	63.6	4	602	69.6	602	69.7	**602**	**69.7**
456.hmmer	4	**718**	**52.0**	718	52.0	719	51.9	4	459	81.3	450	83.0	**453**	**82.3**
458.sjeng	4	800	60.5	**804**	**60.2**	805	60.1	4	726	66.6	**722**	**67.1**	721	67.1
462.libquantum	4	2642	31.4	**2632**	**31.5**	2630	31.5	1	406	51.0	**404**	**51.3**	400	51.8
464.h264ref	4	872	101	**873**	**101**	873	101	4	**834**	**106**	833	106	836	106
471.omnetpp	4	809	30.9	807	31.0	**808**	**30.9**	4	779	32.1	**766**	**32.6**	762	32.8
473.astar	4	824	34.1	833	33.7	**833**	**33.7**	4	775	36.3	**766**	**36.7**	765	36.7
483.xalancbmk	4	459	60.2	**466**	**59.2**	466	59.2	4	459	60.2	**466**	**59.2**	466	59.2

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

General Notes

```
All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode
Hardware Sector Prefetch Enabled and Adjacent Sector Prefetch Disabled
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 64M
taskset utility used to bind CPU(s) to processes
```

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:
```
-fast -inline-calloc -opt-malloc-options=3
```

C++ benchmarks:
```
-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs
-L/spec/users/rahul/cpu2006.1.0/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:

Continued on next page

Peak Optimization Flags (Continued)

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`

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`

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/spec/users/rahul/cpu2006.1.0/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/spec/users/rahul/cpu2006.1.0/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/Intel-ic10.1-int-linux64-revC.20090713.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic10.1-int-linux64-revC.20090713.xml`

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