SPEC® CINT2006 Result

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IBM Corporation

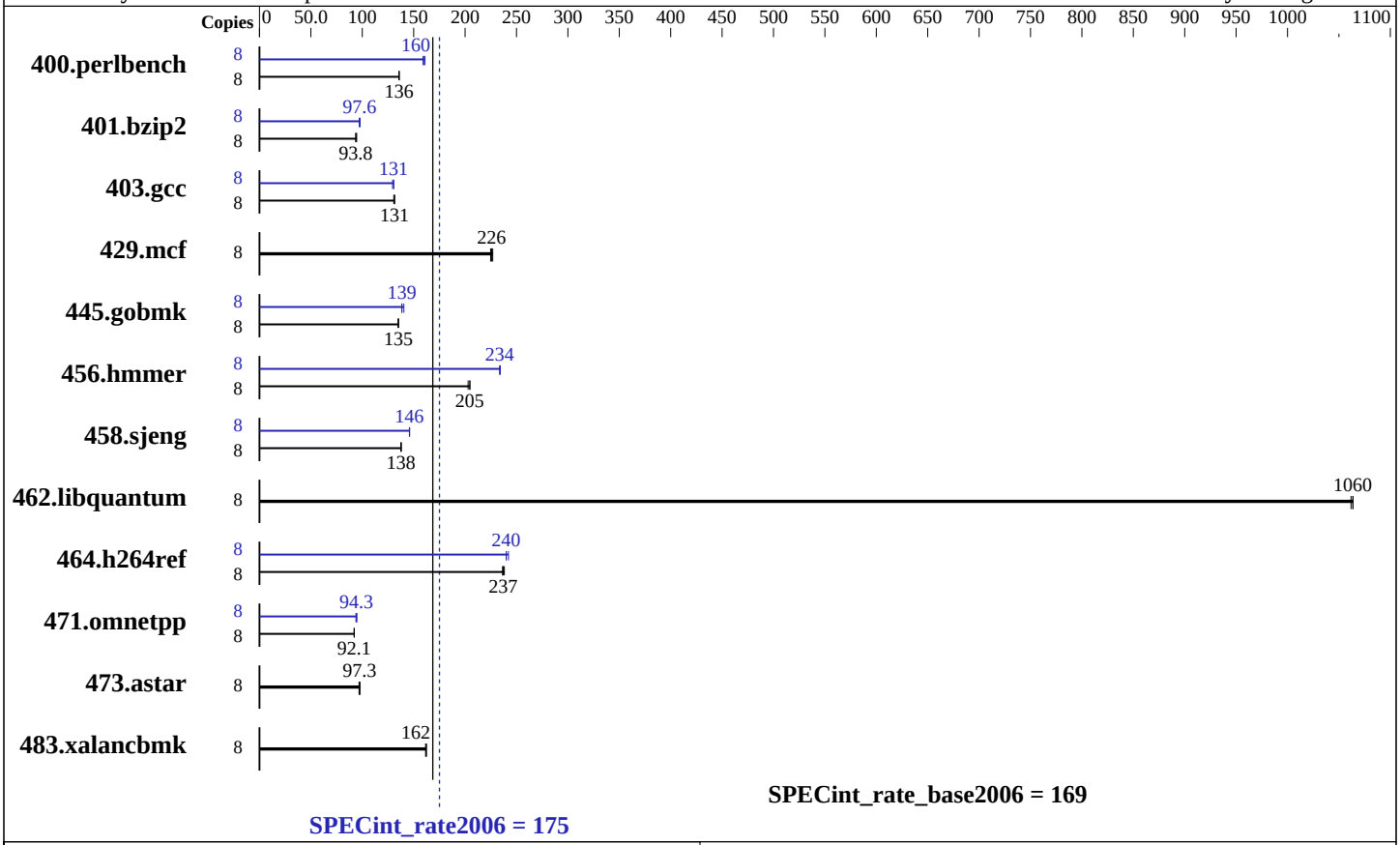
IBM System x3100 M4 (Intel Xeon E3-1270)

SPECint®_rate2006 = 175

SPECint_rate_base2006 = 169

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

Test date: Oct-2011
Hardware Availability: Oct-2011
Software Availability: Aug-2011



Hardware

CPU Name:	Intel Xeon E3-1270
CPU Characteristics:	Intel Turbo Boost Technology up to 3.80 GHz
CPU MHz:	3400
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	16 GB (2 x 8 GB 2Rx8 PC3-10600E-9, ECC)
Disk Subsystem:	1 x 250 GB SATA, 7200 RPM
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:	ext4
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	8	**576**	**136**	576	136	575	136	8	**488**	**160**	491	159	485	161
401.bzip2	8	817	94.5	**823**	**93.8**	824	93.6	8	**791**	**97.6**	789	97.8	795	97.1
403.gcc	8	**490**	**131**	490	131	493	131	8	497	129	**493**	**131**	493	131
429.mcf	8	**323**	**226**	322	227	324	225	8	**323**	**226**	322	227	324	225
445.gobmk	8	623	135	**621**	**135**	621	135	8	606	138	**606**	**139**	597	140
456.hmmer	8	365	205	368	203	**365**	**205**	8	319	234	319	234	**319**	**234**
458.sjeng	8	**703**	**138**	703	138	702	138	8	664	146	663	146	**663**	**146**
462.libquantum	8	**156**	**1060**	156	1060	156	1060	8	**156**	**1060**	156	1060	156	1060
464.h264ref	8	**747**	**237**	749	236	743	238	8	731	242	738	240	**737**	**240**
471.omnetpp	8	542	92.3	**543**	**92.1**	543	92.1	8	**530**	**94.3**	533	93.8	528	94.7
473.astar	8	575	97.7	**577**	**97.3**	580	96.9	8	575	97.7	**577**	**97.3**	580	96.9
483.xalancbmk	8	342	162	**340**	**162**	340	162	8	342	162	**340**	**162**	340	162

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.
 taskset was used to bind copies to the cores
```

Platform Notes

```
BIOS Settings:
Turbo Mode enabled in BIOS
C-State enabled in BIOS
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/root/SPECcpu12.1/smartheap:/root/SPECcpu12.1/ic12.1-libs/ia32/:/root/SPECcpu12.1/ic12.1-libs/intel64"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5 with binutils-2.17.50.0.6-14.el5
 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  -m32
```

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:
```
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
```

C++ benchmarks:
```
-xAVX -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: -xAVX(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: -xAVX(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: -xAVX -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias -opt-mem-layout-trans=3

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

458.sjeng: -xAVX(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: -xAVX(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: -xAVX(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

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/Intel-ic12.1-linux64.html`
`http://www.spec.org/cpu2006/flags/IBM-platform-linux64-revB.20111206.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/IBM-platform-linux64-revB.20111206.xml`

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