SPEC® CINT2006 Result

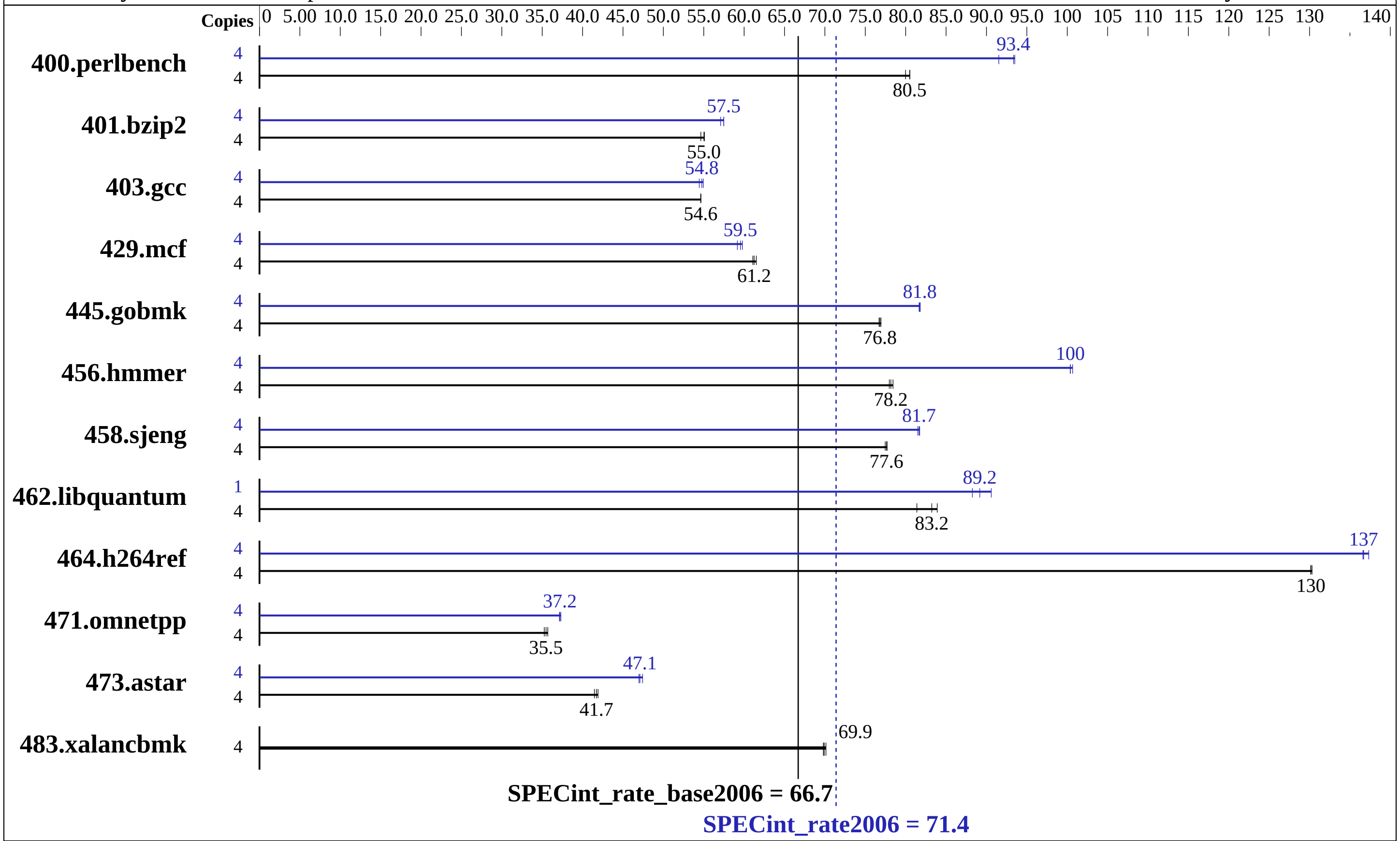
Bull SAS

NovaScale R630 E1 MR
(Intel Xeon E5450, 3.00 GHz)

SPECint®_rate2006 = 71.4

SPECint_rate_base2006 = 66.7

CPU2006 license:	20	**Test date:**	Dec-2008
Test sponsor:	Bull SAS	**Hardware Availability:**	Oct-2008
Tested by:	NEC Corporation	**Software Availability:**	Nov-2008



Hardware

CPU Name:	Intel Xeon E5450
CPU Characteristics:	1333 MHz system bus
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
CPU(s) orderable:	1,2 chips (fault tolerant, see Platform Notes)
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:	24 GB (6x4 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem:	2x146.5 GB SAS, 15000 RPM, Software RAID Level1
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 5.2 Advanced Platform, Kernel 2.6.18-92.1.13.el5 on an x86_64
Compiler:	Intel C++ Compiler 11.0 for Linux Build 20081105 Package ID: l_cproc_p_11.0.074
Auto Parallel:	Yes
File System:	ext3
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	MicroQuill SmartHeap Library 8.1 ft Server Control Software 6.0.2-198

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	489	80.0	**485**	**80.5**	485	80.5	4	418	93.5	427	91.5	**419**	**93.4**
401.bzip2	4	**702**	**55.0**	706	54.6	701	55.1	4	**671**	**57.5**	671	57.5	676	57.1
403.gcc	4	**589**	**54.6**	589	54.6	589	54.6	4	591	54.4	**588**	**54.8**	586	54.9
429.mcf	4	597	61.1	**596**	**61.2**	593	61.5	4	617	59.2	**613**	**59.5**	610	59.8
445.gobmk	4	547	76.7	**546**	**76.8**	545	76.9	4	**513**	**81.8**	514	81.7	513	81.8
456.hmmer	4	479	78.0	**477**	**78.2**	476	78.4	4	371	101	**372**	**100**	372	100
458.sjeng	4	623	77.7	**623**	**77.6**	625	77.5	4	**593**	**81.7**	594	81.5	592	81.7
462.libquantum	4	1018	81.4	**996**	**83.2**	988	83.9	1	235	88.3	**232**	**89.2**	229	90.6
464.h264ref	4	680	130	**680**	**130**	679	130	4	648	137	**648**	**137**	645	137
471.omnetpp	4	709	35.3	**705**	**35.5**	700	35.7	4	673	37.1	**672**	**37.2**	670	37.3
473.astar	4	677	41.5	**673**	**41.7**	670	41.9	4	**596**	**47.1**	592	47.4	598	47.0
483.xalancbmk	4	395	69.8	**395**	**69.9**	394	70.1	4	395	69.8	**395**	**69.9**	394	70.1

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 processes to cores except
 for 462.libquantum peak
```

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

```
This Express5800/320Fd-MR is a fault-tolerant server.
Two modules are installed in this server.
Each module physically has "2CPU chips,24GB memory", The total physical configuration
is "4CPU chips,48GB memory".
Using fault-tolerant lockstep technology, these two modules communicate with each other
and execute the same instructions at the same time, The operating system only sees
"2CPU chips,24GB memory" as the other components add only redundancy and do not
contribute to any performance benefit.
```

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General Notes

```
The NEC Express5800/320Fd-MR(Intel Xeon E5450) and
the Bull NovaScale R630 E1 MR(Intel Xeon E5450, 3.00 GHz) models are electronically equivalent.
The results have been measured on a NEC Express5800/320Fd-MR(Intel Xeon E5450) model.
```

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:
`-xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc -opt-malloc-options=3 -opt-prefetch`

C++ benchmarks:
`-xSSE4.1 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs -L/opt/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/11.0/074/bin/intel64/icc -L/opt/intel/Compiler/11.0/074/ipp/em64t/lib -I/opt/intel/Compiler/11.0/074/ipp/em64t/include`

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Peak Compiler Invocation (Continued)

456.hmmer: /opt/intel/Compiler/11.0/074/bin/intel64/icc -L/opt/intel/Compiler/11.0/074/ipp/em64t/lib -I/opt/intel/Compiler/11.0/074/ipp/em64t/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) -xSSE4.1 -ipo -O3 -no-prec-div -static -ansi-alias -opt-prefetch

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

403.gcc: -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc -opt-malloc-options=3

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

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

456.hmmer: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll4

462.libquantum: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-malloc-options=3 -parallel -par-runtime-control -opt-prefetch

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias

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Peak Optimization Flags (Continued)

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs -L/opt/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/Intel-ic11.0-int-linux64-revD.20090713.html
http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revB.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revD.20090713.xml
http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revB.xml

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

Tested with SPEC CPU2006 v1.1.
Report generated on Tue Jul 22 21:31:13 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 24 December 2008.