SPEC® CINT2006 Result

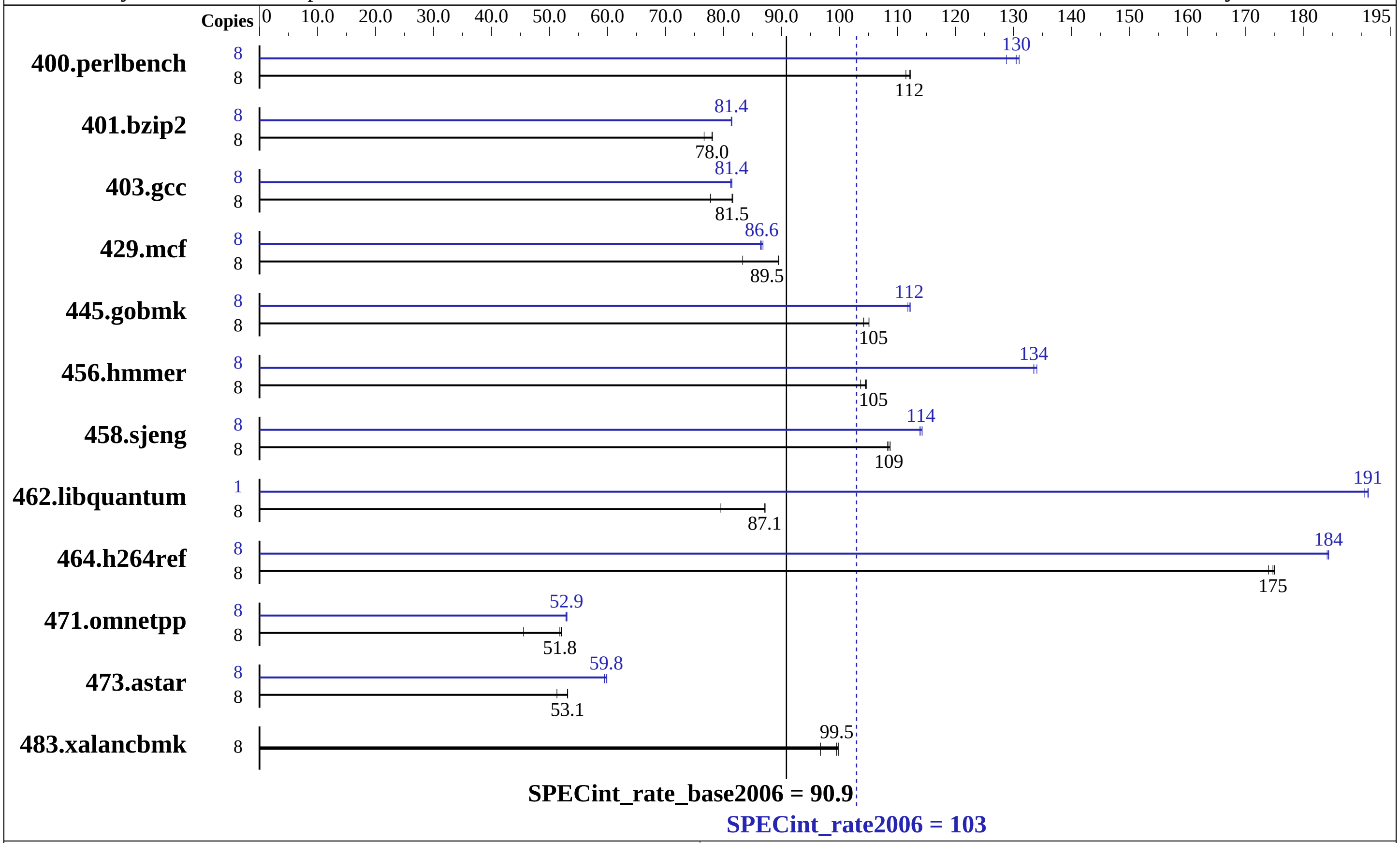
Bull SAS

NovaScale R630 E1 LR
(Intel Xeon E5405, 2.00 GHz)

SPECint®_rate2006 = 103

SPECint_rate_base2006 = 90.9

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 E5405
CPU Characteristics:	1333 MHz system bus
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 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:	12 GB (6x2 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

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Results Table

	Base							Peak						
Benchmark	**Copies**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Copies**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
400.perlbench	8	**698**	**112**	701	111	696	112	8	607	129	597	131	**599**	**130**
401.bzip2	8	1007	76.7	**989**	**78.0**	988	78.1	8	948	81.5	949	81.3	**949**	**81.4**
403.gcc	8	828	77.8	**790**	**81.5**	789	81.6	8	793	81.3	791	81.5	**791**	**81.4**
429.mcf	8	876	83.3	815	89.5	**815**	**89.5**	8	**842**	**86.6**	844	86.4	840	86.8
445.gobmk	8	805	104	**799**	**105**	798	105	8	751	112	**749**	**112**	748	112
456.hmmer	8	720	104	713	105	**714**	**105**	8	**559**	**134**	559	134	557	134
458.sjeng	8	**892**	**109**	890	109	894	108	8	**849**	**114**	850	114	847	114
462.libquantum	8	2083	79.6	**1903**	**87.1**	1901	87.2	1	109	191	108	191	**108**	**191**
464.h264ref	8	1017	174	1012	175	**1013**	**175**	8	**960**	**184**	960	184	962	184
471.omnetpp	8	1098	45.5	**965**	**51.8**	960	52.1	8	**945**	**52.9**	946	52.8	943	53.0
473.astar	8	1095	51.3	1056	53.2	**1057**	**53.1**	8	**939**	**59.8**	944	59.5	937	59.9
483.xalancbmk	8	571	96.7	**555**	**99.5**	553	99.8	8	571	96.7	**555**	**99.5**	553	99.8

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-LR is a fault-tolerant server.
Two modules are installed in this server.
Each module physically has "2CPU chips,12GB memory", The total physical configuration
is "4CPU chips,24GB 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,12GB memory" as the other components add only redundancy and do not
contribute to any performance benefit.
```

General Notes

```
The NEC Express5800/320Fd-LR(Intel Xeon E5405) and
the Bull NovaScale R630 E1 LR(Intel Xeon E5405, 2.00 GHz) models are electronically equivalent.
The results have been measured on a NEC Express5800/320Fd-LR(Intel Xeon E5405) 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-revE.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-revE.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.

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