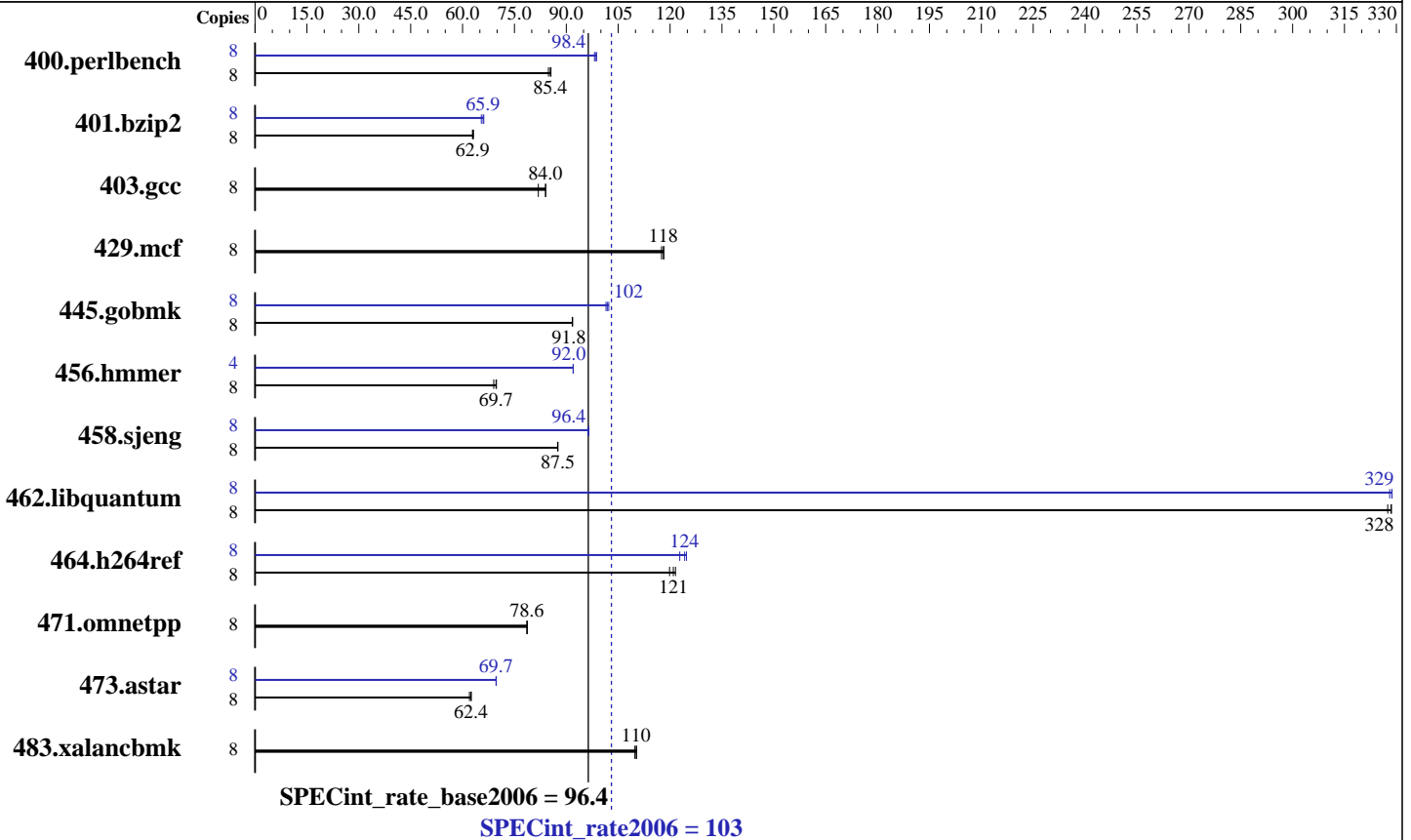# SPEC® CINT2006 Result

Bull SAS

NovaScale R460 E2
(Intel Xeon L5520, 2.26 GHz)

SPECint®_rate2006 =   103

SPECint_rate_base2006 = 96.4

CPU2006 license: 20

Test sponsor: Bull SAS

Tested by: NEC Corporation

Test date: Aug-2009

Hardware Availability: Jul-2009

Software Availability: Feb-2009

Benchmark	Copies	Result
400.perlbench	8	98.4
	8	85.4
401.bzip2	8	65.9
	8	62.9
403.gcc	8	84.0
429.mcf	8	118
445.gobmk	8	102
	8	91.8
456.hmmer	4	92.0
	8	69.7
458.sjeng	8	96.4
	8	87.5
462.libquantum	8	329
	8	328
464.h264ref	8	124
	8	121
471.omnetpp	8	78.6
473.astar	8	69.7
	8	62.4
483.xalancbmk	8	110

SPECint_rate_base2006 = 96.4

SPECint_rate2006 = 103

Hardware

CPU Name: Intel Xeon L5520

CPU Characteristics: Intel Turbo Boost Technology up to 2.53 GHz

CPU MHz: 2267

FPU: Integrated

CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core

CPU(s) orderable: 1,2 chips

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: 24 GB (6 X 4 GB PC3-8500R, 2 rank, CL7, ECC)

Disk Subsystem: 1x146.5 GB SAS, 15000 RPM

Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP2 with patch Linux kernel 20090119, Kernel 2.6.16.60-0.34-smp

Compiler: Intel C++ Compiler Professional 11.0 for Linux Build 20090131 Package ID: l_cproc_p_11.0.081

Auto Parallel: No

File System: ReiserFS

System State: Run level 3 (multi-user)

Base Pointers: 32-bit

Peak Pointers: 32/64-bit

Other Software: MicroQuill SmartHeap Library 8.1 Binutils 2.18.50.0.7.20080502

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Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	914	85.6	**916**	**85.4**	921	84.8	8	791	98.8	796	98.2	**794**	**98.4**
401.bzip2	8	1228	62.9	**1227**	**62.9**	1222	63.2	8	**1171**	**65.9**	1167	66.1	1180	65.4
403.gcc	8	**767**	**84.0**	766	84.1	786	81.9	8	**767**	**84.0**	766	84.1	786	81.9
429.mcf	8	617	118	**618**	**118**	621	118	8	617	118	**618**	**118**	621	118
445.gobmk	8	**914**	**91.8**	914	91.8	915	91.7	8	**824**	**102**	827	101	821	102
456.hmmer	8	**1071**	**69.7**	1069	69.8	1082	69.0	4	406	92.0	406	92.0	**406**	**92.0**
458.sjeng	8	**1106**	**87.5**	1105	87.6	1107	87.5	8	1003	96.5	**1004**	**96.4**	1005	96.4
462.libquantum	8	506	328	504	329	**505**	**328**	8	**504**	**329**	505	328	504	329
464.h264ref	8	1456	122	**1464**	**121**	1477	120	8	1442	123	1419	125	**1425**	**124**
471.omnetpp	8	636	78.6	635	78.7	**636**	**78.6**	8	636	78.6	635	78.7	**636**	**78.6**
473.astar	8	906	62.0	899	62.5	**899**	**62.4**	8	806	69.7	805	69.8	**806**	**69.7**
483.xalancbmk	8	503	110	**501**	**110**	500	110	8	503	110	**501**	**110**	500	110

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.
numactl was used to bind copies to the cores

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

Platform Notes

Default BIOS settings were used.

General Notes

The NEC Express5800/R120a-1(Intel Xeon L5520),
the NEC Express5800/R120a-2(Intel Xeon L5520),
the Bull NovaScale R440 E2 (Intel Xeon L5520, 2.26 GHz) and
the Bull NovaScale R460 E2 (Intel Xeon L5520, 2.26 GHz) models are electronically equivalent.
The results have been measured on a NEC Express5800/R120a-1(Intel Xeon L5520) model.

Base Compiler Invocation

C benchmarks:
    icc

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Base Compiler Invocation (Continued)

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:
    `-xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc`
    `-opt-malloc-options=3 -opt-prefetch`

C++ benchmarks:
    `-xSSE4.2 -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/11.0/081/bin/intel64/icc`

      456.hmmer: `/opt/intel/Compiler/11.0/081/bin/intel64/icc`

       458.sjeng: `/opt/intel/Compiler/11.0/081/bin/intel64/icc`

C++ benchmarks (except as noted below):
    icpc

       473.astar: `/opt/intel/Compiler/11.0/081/bin/intel64/icpc`

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Bull SAS

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SPECint_rate_base2006 =　96.4

CPU2006 license: 20		**Test date:**	Aug-2009
Test sponsor: Bull SAS		**Hardware Availability:**	Jul-2009
Tested by: NEC Corporation		**Software Availability:**	Feb-2009

Peak Portability Flags

```
   400.perlbench: -DSPEC_CPU_LINUX_IA32
       401.bzip2: -DSPEC_CPU_LP64
      456.hmmer: -DSPEC_CPU_LP64
       458.sjeng: -DSPEC_CPU_LP64
  462.libquantum: -DSPEC_CPU_LINUX
        473.astar: -DSPEC_CPU_LP64
   483.xalancbmk: -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

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

       401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                  -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
                  -prof-use(pass 2) -opt-prefetch -ansi-alias -auto-ilp32

         403.gcc: basepeak = yes

         429.mcf: basepeak = yes

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

      456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2
                  -ansi-alias -auto-ilp32

       458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                  -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
                  -prof-use(pass 2) -unroll4 -auto-ilp32

  462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static
                  -opt-malloc-options=3 -opt-prefetch

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

C++ benchmarks:

```
     471.omnetpp: basepeak = yes

        473.astar: -xSSE4.2(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=routine -auto-ilp32
                  -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib64 -lsmartheap64
```

Continued on next page

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Peak Optimization Flags (Continued)

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-revG.html
http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revE.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-revG.xml
http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revE.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 Wed Jul 23 04:04:08 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 28 October 2009.