



SPEC® CINT2006 Result

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Bull SAS

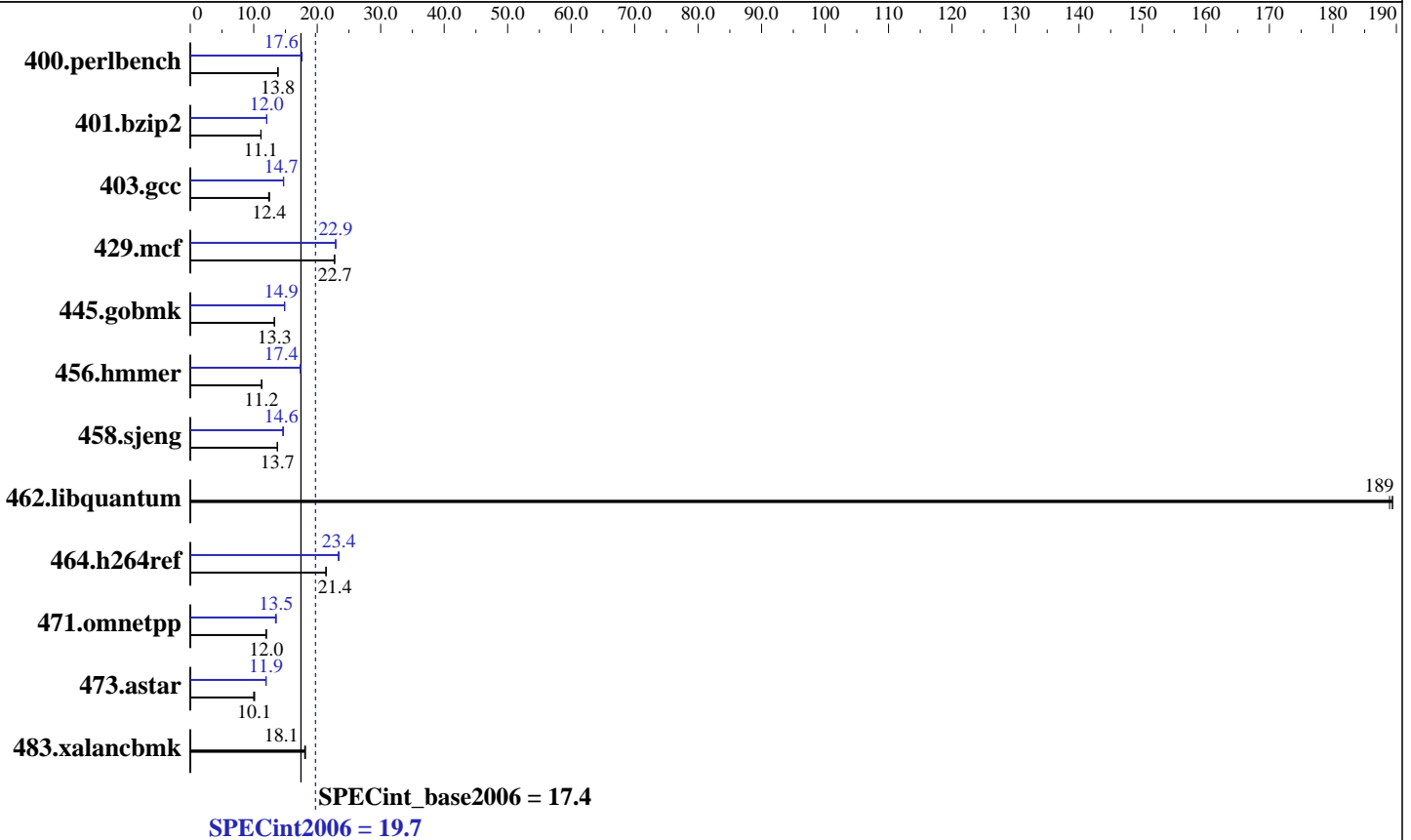
NovaScale R630 E1 LR
(Intel Xeon E5405, 2.00 GHz)

SPECint®2006 = 19.7

SPECint_base2006 = 17.4

CPU2006 license: 20
Test sponsor: Bull SAS
Tested by: NEC Corporation

Test date: Dec-2008
Hardware Availability: Oct-2008
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

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	708	13.8	707	13.8	708	13.8	555	17.6	556	17.6	555	17.6
401.bzip2	868	11.1	864	11.2	866	11.1	801	12.0	802	12.0	801	12.0
403.gcc	652	12.3	646	12.5	647	12.4	549	14.7	547	14.7	548	14.7
429.mcf	402	22.7	401	22.7	401	22.7	398	22.9	398	22.9	398	22.9
445.gobmk	792	13.3	791	13.3	791	13.3	706	14.9	707	14.8	706	14.9
456.hammer	830	11.2	830	11.2	829	11.3	537	17.4	538	17.4	537	17.4
458.sjeng	883	13.7	881	13.7	881	13.7	830	14.6	824	14.7	827	14.6
462.libquantum	109	189	109	189	110	189	109	189	109	189	110	189
464.h264ref	1033	21.4	1035	21.4	1035	21.4	949	23.3	945	23.4	946	23.4
471.omnetpp	524	11.9	522	12.0	522	12.0	466	13.4	462	13.5	463	13.5
473.astar	694	10.1	703	9.98	695	10.1	588	11.9	588	11.9	588	11.9
483.xalancbmk	381	18.1	381	18.1	383	18.0	381	18.1	381	18.1	383	18.0

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

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"

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

Continued on next page



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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:
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel
-par-runtime-control -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

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



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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 -auto-ilp32 -opt-prefetch
-ansi-alias
403.gcc: -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc
-opt-malloc-options=3
429.mcf: -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 -auto-ilp32
458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll4
462.libquantum: basepeak = yes
464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -ansi-alias

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



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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>

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