



SPEC® CINT2006 Result

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NEC Corporation

Express5800/320Fc-MR
(Intel Xeon X5355)

SPECint®2006 = 20.7

SPECint_base2006 = 17.4

CPU2006 license: 9006

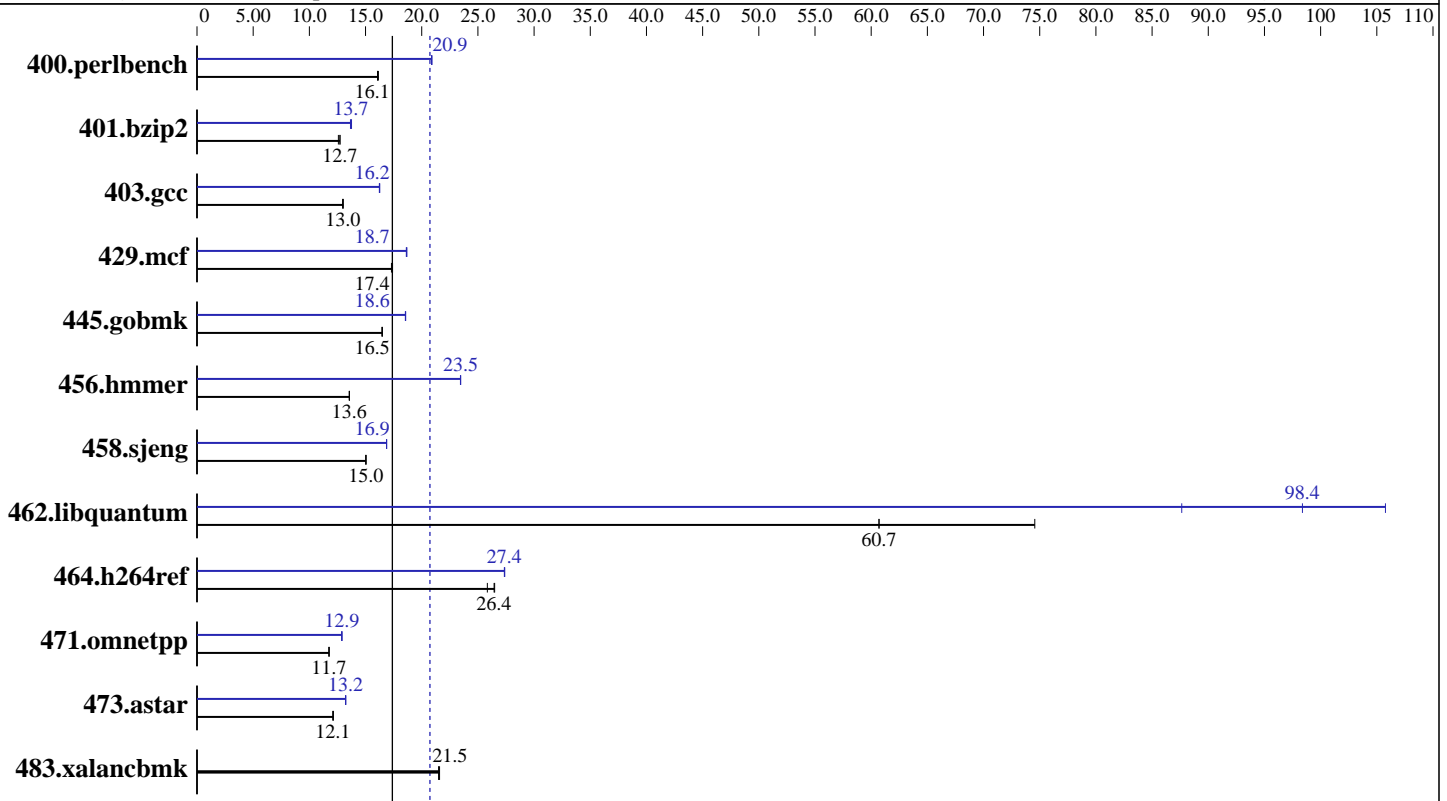
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Apr-2008

Hardware Availability: Oct-2007

Software Availability: Feb-2008



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Hardware

CPU Name: Intel Xeon X5355
 CPU Characteristics: 2.66 GHz, 2x4 MB L2 shared, 1333 MHz bus
 CPU MHz: 2667
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 8 MB I+D on chip per chip, 4 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: 2x73.2 GB SAS, 15000RPM, Software RAID Level1
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux AS release4 (Nahant Update 5), Kernel 2.6.9-55.0.12.ELsmp on an X86_64
 Compiler: Intel C++ Compiler for Linux32 and Linux64 version 10.1 Build 20070913 Package ID: l_cc_p_10.1.008
 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
 binutils-2.17.tar.gz, Version 2.17
 ft Server Control Software 5.0-0231



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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	605	16.1	608	16.1	608	16.1	<u>468</u>	<u>20.9</u>	468	20.9	467	20.9
401.bzip2	<u>759</u>	<u>12.7</u>	767	12.6	758	12.7	<u>704</u>	<u>13.7</u>	702	13.8	707	13.7
403.gcc	619	13.0	621	13.0	619	13.0	<u>496</u>	<u>16.2</u>	495	16.3	496	16.2
429.mcf	524	17.4	525	17.4	527	17.3	<u>489</u>	<u>18.7</u>	488	18.7	490	18.6
445.gobmk	636	16.5	637	16.5	637	16.5	<u>565</u>	<u>18.6</u>	566	18.5	565	18.6
456.hmmer	688	13.6	689	13.5	688	13.6	<u>398</u>	<u>23.5</u>	398	23.4	398	23.5
458.sjeng	805	15.0	805	15.0	805	15.0	717	16.9	<u>717</u>	<u>16.9</u>	717	16.9
462.libquantum	278	74.6	341	60.7	341	60.7	<u>211</u>	<u>98.4</u>	236	87.6	196	106
464.h264ref	837	26.4	835	26.5	856	25.8	808	27.4	809	<u>27.4</u>	809	27.4
471.omnetpp	<u>532</u>	<u>11.7</u>	532	11.8	532	11.7	<u>485</u>	<u>12.9</u>	484	12.9	486	12.9
473.astar	579	12.1	579	12.1	581	12.1	530	13.2	531	13.2	531	13.2
483.xalancbmk	321	21.5	320	21.6	321	21.5	<u>321</u>	<u>21.5</u>	320	21.6	321	21.5

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

Platform Notes

This Express5800/320Fc-MR is a fault-tolerant server.
Two modules are installed in this server and each module has "2CPU chips,12GB memory",
so total "4CPU chips,24GB memory" are on this server.
With lockstep technology, these two modules communicate each other
and handle the same instructions at the same time,
then logically the "CPU,Memory" is recognized as "2CPU chips,12GB memory" by the OS.

General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode

The NEC Express5800/320Fc-MR(Intel Xeon X5355) and
the Bull NovaScale R630 (Intel Xeon X5355,2.66GHz) models are electronically equivalent.
The results have been measured on a NEC Express5800/320Fc-MR(Intel Xeon X5355) 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:
-fast -vec-guard-write -parallel -par-runtime-control

C++ benchmarks:
-xT -ipo -O3 -no-prec-div -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/cce/10.1.008/bin/icc
-L/opt/intel/cce/10.1.008/lib
-I/opt/intel/cce/10.1.008/include

456.hmmer: /opt/intel/cce/10.1.008/bin/icc
-L/opt/intel/cce/10.1.008/lib
-I/opt/intel/cce/10.1.008/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) -fast -ansi-alias
-prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-auto-ilp32

403.gcc: -fast -inline-calloc -opt-malloc-options=3

429.mcf: -fast -prefetch

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

456.hmmer: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive
-auto-ilp32

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4

462.libquantum: -fast -unroll4 -Ob0 -prefetch
-opt-streaming-stores always -vec-guard-write
-opt-malloc-options=3 -parallel -par-runtime-control

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-ansi-alias

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo
-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) -xT -O3 -ipo
-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 file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-INT-ia32-linux-flags.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-INT-ia32-linux-flags.xml>

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

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