SPEC® CINT2006 Result

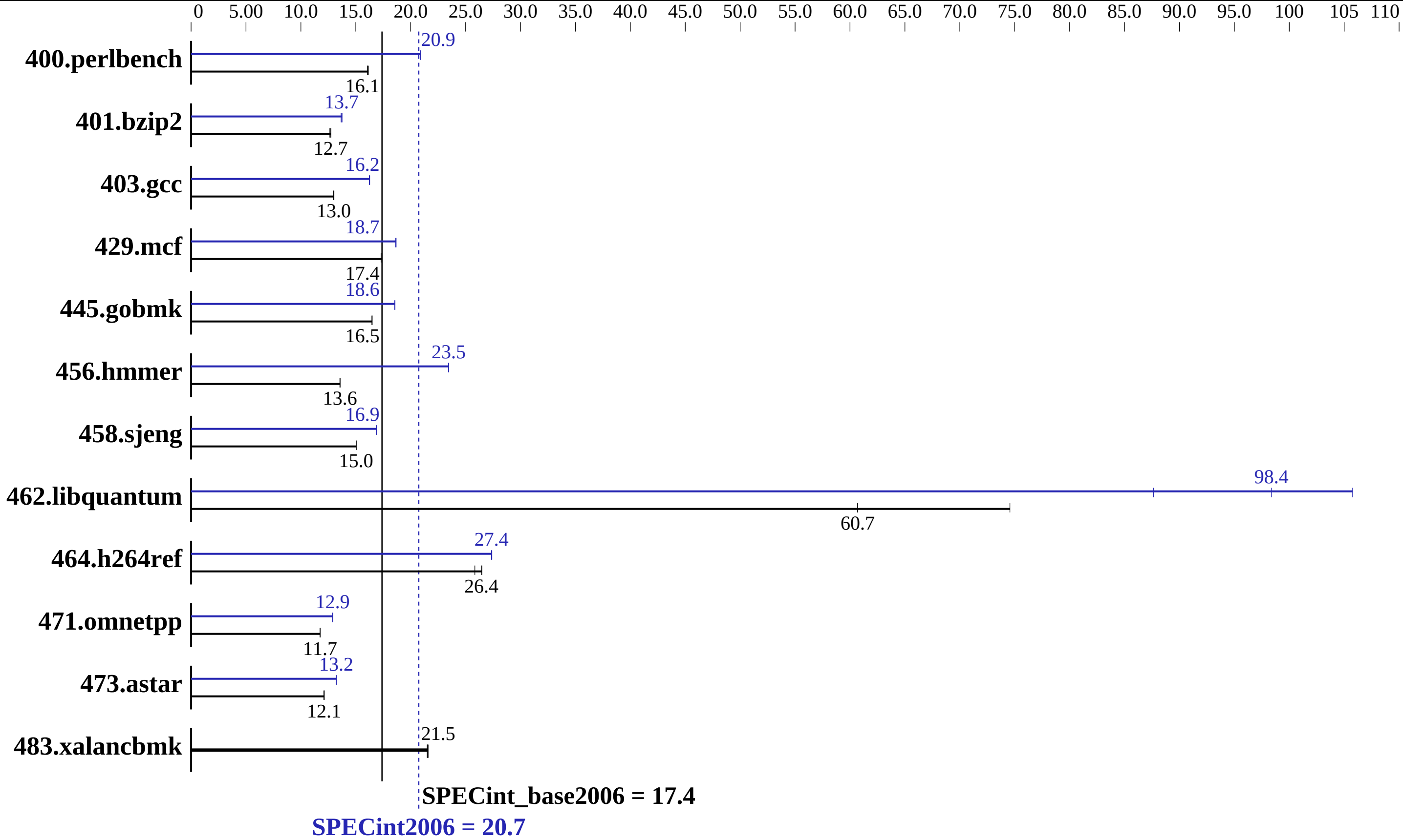
NEC Corporation

Express5800/320Fc-MR
(Intel Xeon X5355)

SPECint®2006 = 20.7

SPECint_base2006 = 17.4

CPU2006 license:	9006	**Test date:**	Apr-2008
Test sponsor:	NEC Corporation	**Hardware Availability:**	Oct-2007
Tested by:	NEC Corporation	**Software Availability:**	Feb-2008



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

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

Continued on next page

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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Tested by: NEC Corporation

Test date: Apr-2008
Hardware Availability: Oct-2007
Software Availability: Feb-2008

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

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

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

Tested with SPEC CPU2006 v1.0.
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