SPEC® CINT2006 Result

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NEC Corporation

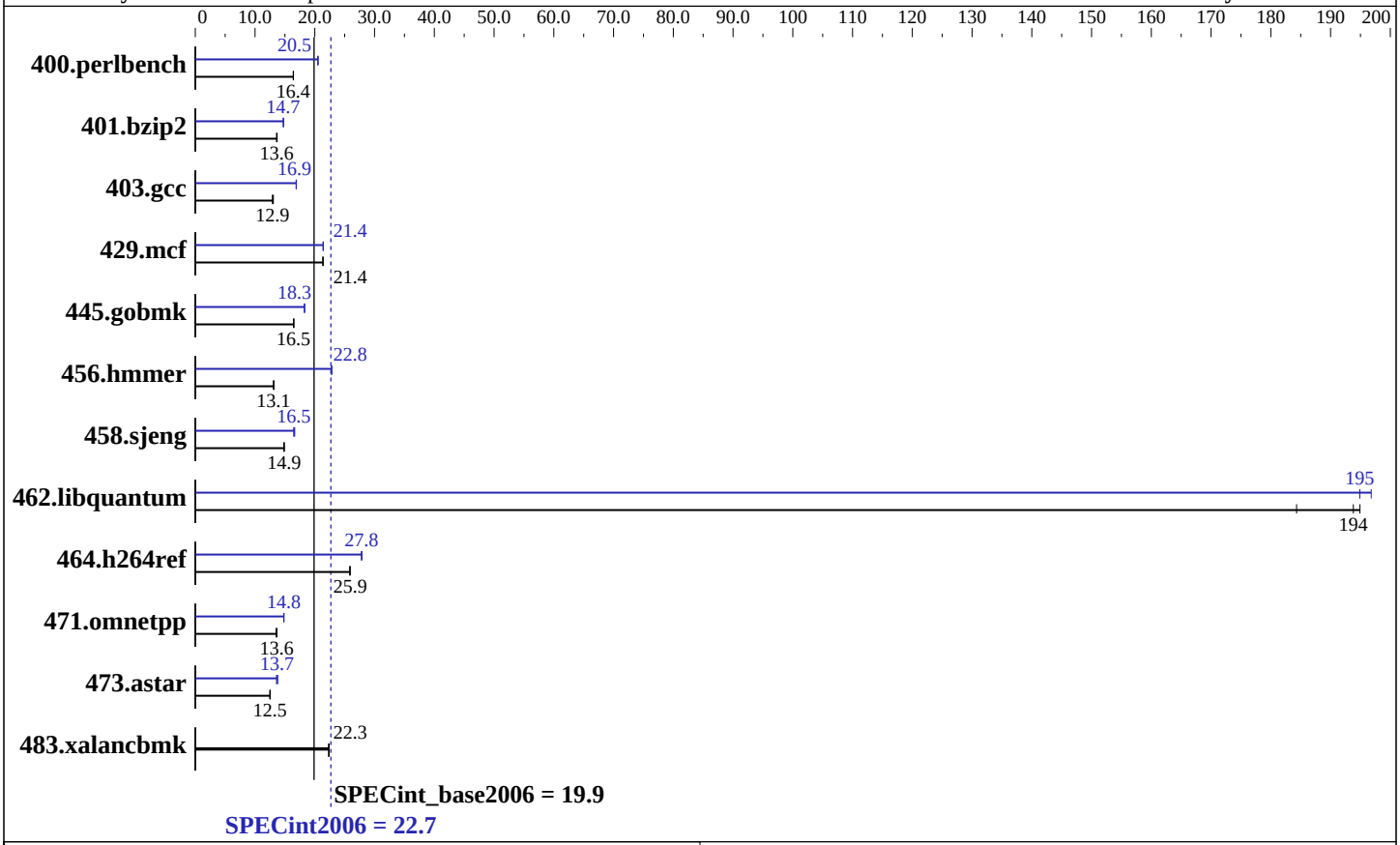
Express5800/120Rh-1
(Intel Xeon processor E5420)

SPECint®2006 = 22.7

SPECint_base2006 = 19.9

CPU2006 license: 9006
Test sponsor: NEC Corporation
Tested by: NEC Corporation

Test date: Jan-2008
Hardware Availability: Dec-2007
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon E5420
CPU Characteristics:	2.50 GHz, 2x6 MB L2 shared, 1333 MHz bus
CPU MHz:	2500
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:	12 MB I+D on chip per chip, 6 MB shared / 2 cores
L3 Cache:	None
Other Cache:	None
Memory:	12 GB (12x1 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem:	1x73.2 GB SAS, 15000RPM
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
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:	ext2
System State:	Multiuser, Runlevel 3
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	MicroQuill SmartHeap library 8.1 binutils-2.17.tar.gz, Version 2.17

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	**595**	**16.4**	596	16.4	595	16.4	**476**	**20.5**	477	20.5	475	20.6
401.bzip2	705	13.7	**707**	**13.6**	709	13.6	654	14.7	**654**	**14.7**	655	14.7
403.gcc	616	13.1	623	12.9	**622**	**12.9**	476	16.9	477	16.9	**476**	**16.9**
429.mcf	427	21.4	**427**	**21.4**	427	21.4	426	21.4	426	21.4	**426**	**21.4**
445.gobmk	636	16.5	637	16.5	**637**	**16.5**	**574**	**18.3**	573	18.3	574	18.3
456.hmmer	**711**	**13.1**	712	13.1	711	13.1	409	22.8	**409**	**22.8**	409	22.8
458.sjeng	813	14.9	**814**	**14.9**	816	14.8	**732**	**16.5**	727	16.6	734	16.5
462.libquantum	106	195	112	184	**107**	**194**	105	197	106	195	**106**	**195**
464.h264ref	854	25.9	**854**	**25.9**	857	25.8	796	27.8	**795**	**27.8**	794	27.9
471.omnetpp	**459**	**13.6**	458	13.6	462	13.5	421	14.8	423	14.8	**421**	**14.8**
473.astar	**562**	**12.5**	562	12.5	560	12.5	517	13.6	509	13.8	**511**	**13.7**
483.xalancbmk	308	22.4	**309**	**22.3**	309	22.3	308	22.4	**309**	**22.3**	309	22.3

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 (default).

Platform Notes

Bios settings:
Intel SpeedStep Technology: Disabled

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 Express5800/120Rh-1(Intel Xeon Processor E5420),
the NEC Express5800/120Rj-2(Intel Xeon Processor E5420),
the Bull NovaScale R440 E1 (Intel Xeon E5420,2.50GHz) and
the Bull NovaScale R460 E1 (Intel Xeon E5420,2.50GHz) models are electronically equivalent.
The results have been measured on a NEC Express5800/120Rj-2(Intel Xeon Processor E5420) 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

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-ia32-intel64-linux-flags.20090714.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-ia32-intel64-linux-flags.20090714.xml`

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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 16:36:31 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 6 February 2008.