SPEC® CINT2006 Result

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NEC Corporation

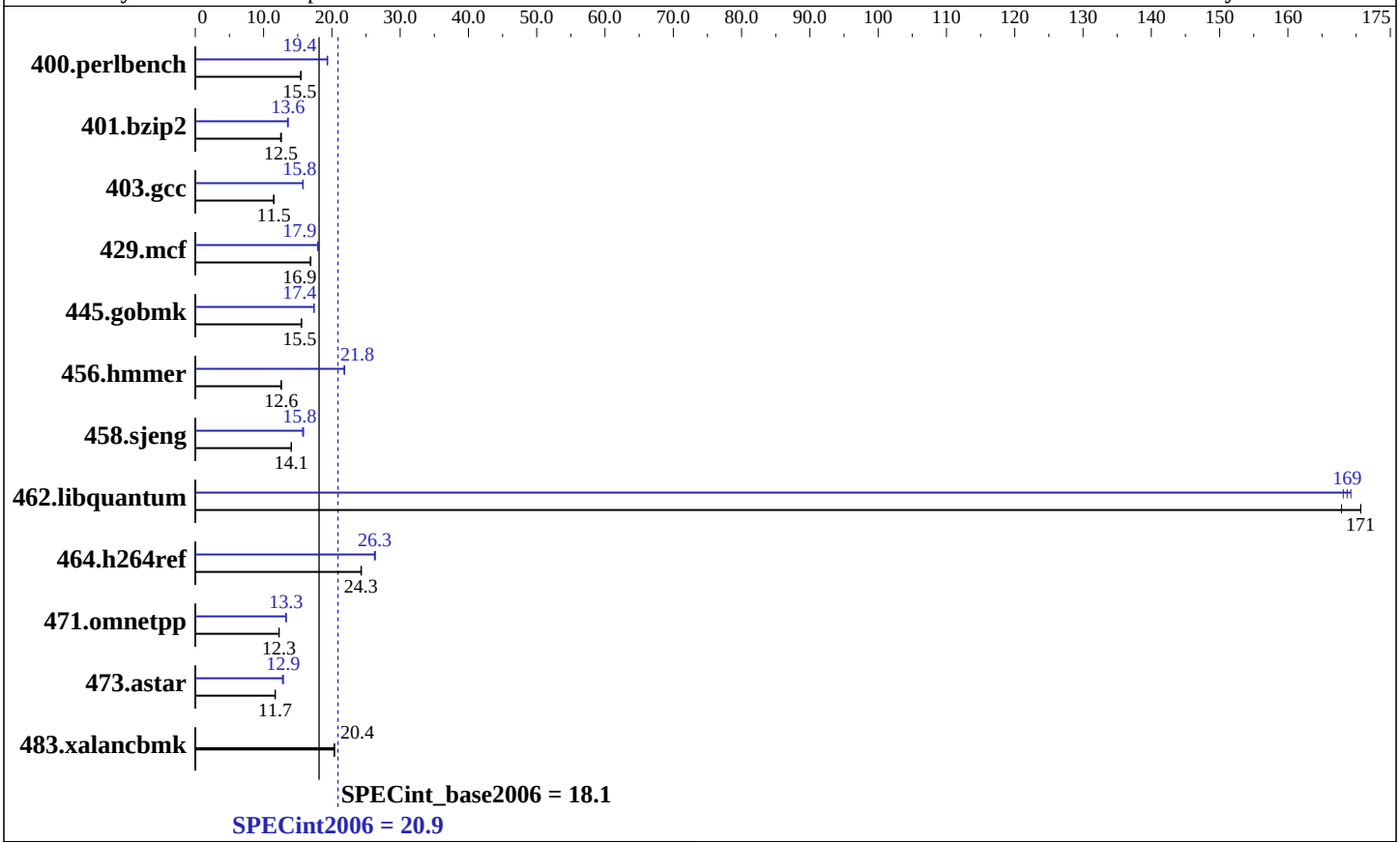
Express5800/140Rf-4
(Intel Xeon processor E7210)

SPECint®2006 = 20.9

SPECint_base2006 = 18.1

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 E7210
CPU Characteristics:	2.40 GHz, 2x4 MB L2 shared, 1066 MHz bus
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	8 cores, 4 chips, 2 cores/chip
CPU(s) orderable:	1,2,4 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	4 MB I+D on chip per core
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	633	15.4	631	15.5	**631**	**15.5**	505	19.4	**505**	**19.4**	506	19.3
401.bzip2	**769**	**12.5**	765	12.6	773	12.5	713	13.5	**710**	**13.6**	710	13.6
403.gcc	701	11.5	700	11.5	**700**	**11.5**	510	15.8	**511**	**15.8**	511	15.7
429.mcf	541	16.8	539	16.9	**540**	**16.9**	**508**	**17.9**	508	17.9	507	18.0
445.gobmk	675	15.5	675	15.5	**675**	**15.5**	**604**	**17.4**	604	17.4	604	17.4
456.hmmer	741	12.6	**741**	**12.6**	742	12.6	427	21.8	428	21.8	**427**	**21.8**
458.sjeng	860	14.1	861	14.0	**861**	**14.1**	764	15.8	**765**	**15.8**	770	15.7
462.libquantum	123	168	121	171	**121**	**171**	123	168	122	169	**123**	**169**
464.h264ref	909	24.3	**911**	**24.3**	912	24.3	**841**	**26.3**	840	26.4	844	26.2
471.omnetpp	**510**	**12.3**	509	12.3	510	12.3	471	13.3	470	13.3	**470**	**13.3**
473.astar	601	11.7	**599**	**11.7**	599	11.7	550	12.8	**545**	**12.9**	545	12.9
483.xalancbmk	339	20.4	**339**	**20.4**	339	20.4	339	20.4	**339**	**20.4**	339	20.4

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:
Adjacent Sector Prefetch:   Enabled
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
```

Base Compiler Invocation

C benchmarks:
icc

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

Continued on next page

Peak Portability Flags (Continued)

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.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.xml`

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