SPEC® CINT2006 Result

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NEC Corporation

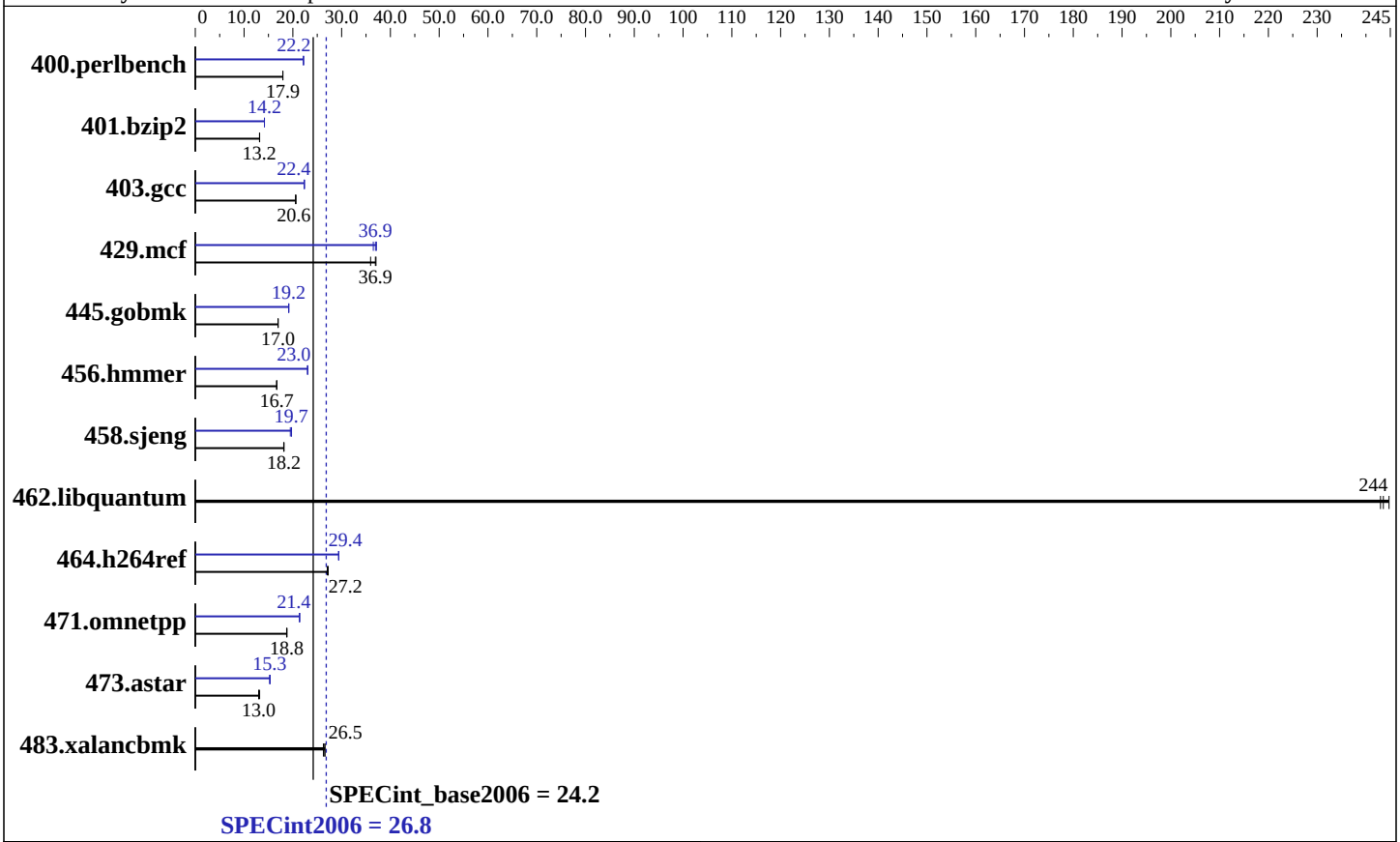
Express5800/B120a
(Intel Xeon L5520)

SPECint®2006 = 26.8

SPECint_base2006 = 24.2

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

Test date: Jul-2009
Hardware Availability: Apr-2009
Software Availability: Feb-2009



Hardware

CPU Name:	Intel Xeon L5520
CPU Characteristics:	Intel Turbo Boost Technology up to 2.53 GHz
CPU MHz:	2267
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	24 GB (6 X 4 GB PC3-8500R, 2 rank, CL7, ECC)
Disk Subsystem:	1x73 GB SATA2, 10000 RPM
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP2 with patch Linux kernel 20090119, Kernel 2.6.16.60-0.34-smp
Compiler:	Intel C++ Compiler Professional 11.0 for Linux Build 20090131 Package ID: l_cproc_p_11.0.081
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	MicroQuill SmartHeap Library 8.1 Binutils 2.18.50.0.7.20080502

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	544	18.0	**544**	**17.9**	545	17.9	441	22.2	440	22.2	**441**	**22.2**
401.bzip2	733	13.2	**733**	**13.2**	731	13.2	**681**	**14.2**	681	14.2	681	14.2
403.gcc	**391**	**20.6**	391	20.6	391	20.6	360	22.3	360	22.4	**360**	**22.4**
429.mcf	254	35.9	246	37.0	**247**	**36.9**	246	37.1	**247**	**36.9**	250	36.5
445.gobmk	618	17.0	**618**	**17.0**	618	17.0	547	19.2	548	19.1	**547**	**19.2**
456.hmmer	559	16.7	558	16.7	**559**	**16.7**	**405**	**23.0**	405	23.0	405	23.0
458.sjeng	666	18.2	667	18.1	**666**	**18.2**	**614**	**19.7**	613	19.7	621	19.5
462.libquantum	**85.1**	**244**	85.3	243	84.7	245	**85.1**	**244**	85.3	243	84.7	245
464.h264ref	818	27.1	813	27.2	**813**	**27.2**	752	29.4	753	29.4	**753**	**29.4**
471.omnetpp	**333**	**18.8**	333	18.8	334	18.7	293	21.3	**293**	**21.4**	292	21.4
473.astar	541	13.0	**538**	**13.0**	532	13.2	**459**	**15.3**	457	15.4	461	15.2
483.xalancbmk	**260**	**26.5**	263	26.3	260	26.6	**260**	**26.5**	263	26.3	260	26.6

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 granularity=fine,scatter
```

Platform Notes

```
BIOS setting:
NUMA configuration : Enabled
```

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:
`-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -par-runtime-control -opt-prefetch`

C++ benchmarks:
`-xSSE4.2 -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/11.0/081/bin/intel64/icc`

456.hmmer: `/opt/intel/Compiler/11.0/081/bin/intel64/icc`

458.sjeng: `/opt/intel/Compiler/11.0/081/bin/intel64/icc`

C++ benchmarks (except as noted below):
`icpc`

473.astar: `/opt/intel/Compiler/11.0/081/bin/intel64/icpc`

Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
401.bzip2: `-DSPEC_CPU_LP64`
456.hmmer: `-DSPEC_CPU_LP64`
458.sjeng: `-DSPEC_CPU_LP64`
462.libquantum: `-DSPEC_CPU_LINUX`
473.astar: `-DSPEC_CPU_LP64`
483.xalancbmk: `-DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -ansi-alias -opt-prefetch

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -auto-ilp32 -opt-prefetch -ansi-alias

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc -opt-malloc-options=3

429.mcf: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2 -ipo -no-prec-div -ansi-alias

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias -auto-ilp32

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll4 -auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap

473.astar: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -ansi-alias -opt-ra-region-strategy=routine -auto-ilp32 -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib64 -lsmartheap64

483.xalancbmk: basepeak = yes

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-revG.html`
`http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revE.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-revG.xml`
`http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revE.xml`

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For other inquiries, please contact webmaster@spec.org.

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