SPEC® CINT2006 Result
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NEC Corporation

Express5800/T120b-E
(Intel Xeon E5503)

SPECint®2006 =　　　22.2

SPECint_base2006 =　　20.7

Benchmark	Peak	Base
400.perlbench	17.5	15.5
401.bzip2	11.6	11.6
403.gcc	16.4	15.6
429.mcf	28.5	24.7
445.gobmk	15.6	14.8
456.hmmer	28.7	28.3
458.sjeng	16.0	15.5
462.libquantum	221	200
464.h264ref	24.2	23.2
471.omnetpp	16.2	13.2
473.astar	12.0	11.7
483.xalancbmk	20.5	19.4

SPECint_base2006 = 20.7

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Hardware

CPU Name: Intel Xeon E5503

CPU Characteristics:

CPU MHz: 2000

FPU: Integrated

CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip

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: 4 MB I+D on chip per chip

Other Cache: None

Memory: 48 GB (12 x 4 GB PC3L-10600R, 2 rank, CL9, ECC, running at 800 MHz)

Disk Subsystem: 1x160 GB SATA, 7200 RPM

Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-default

Compiler: Intel C++ Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064

Auto Parallel: Yes

File System: ext3

System State: Run level 3 (multi-user)

Base Pointers: 64-bit

Peak Pointers: 32/64-bit

Other Software: Microquill SmartHeap V8.1

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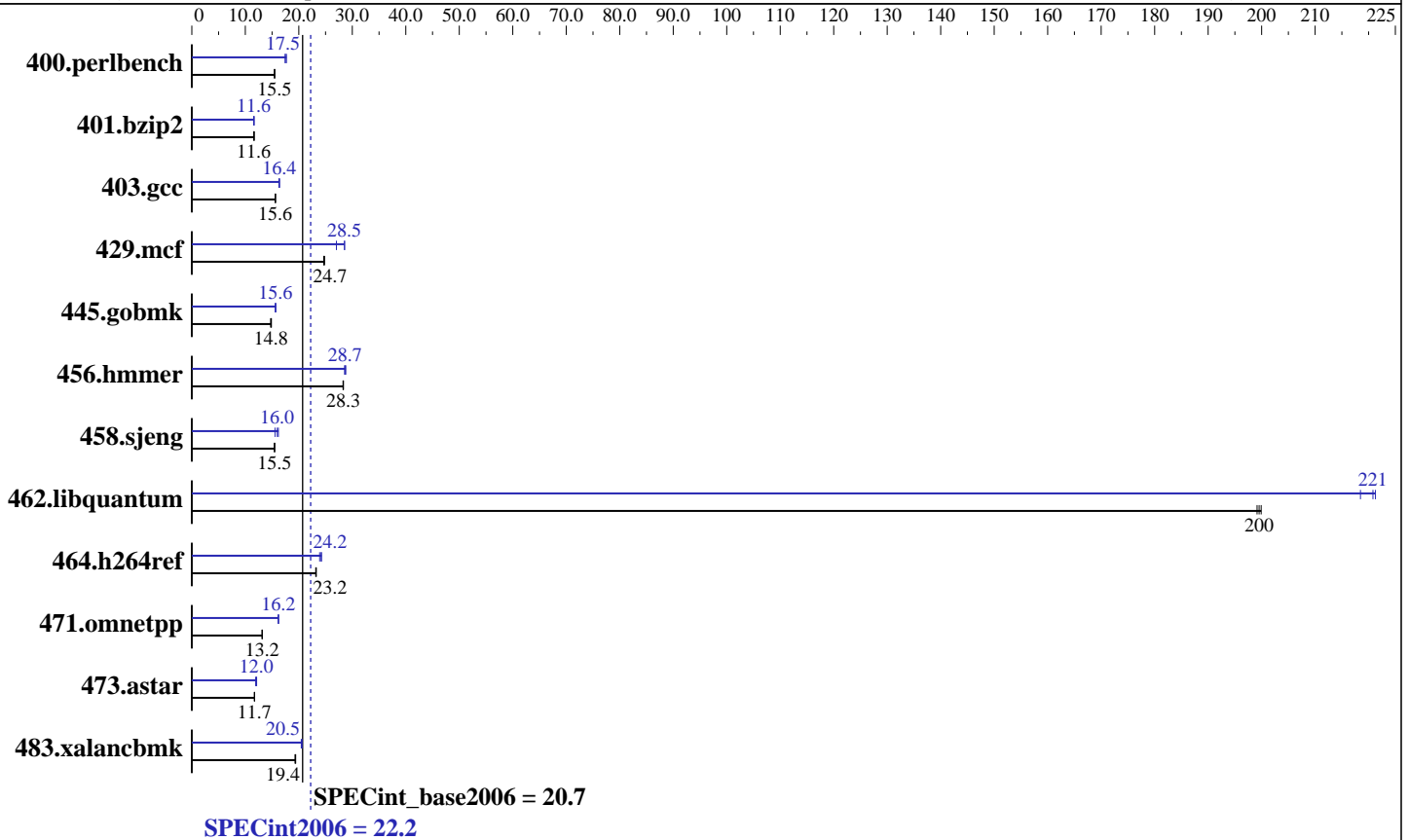SPECint2006 = 22.2

SPECint_base2006 = 20.7

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

Test date: Aug-2010
Hardware Availability: Jun-2010
Software Availability: Dec-2009

Results Table

Benchmark	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	632	15.5	**631**	**15.5**	631	15.5	559	17.5	552	17.7	**559**	**17.5**
401.bzip2	832	11.6	827	11.7	**831**	**11.6**	828	11.6	834	11.6	**831**	**11.6**
403.gcc	514	15.6	**515**	**15.6**	516	15.6	494	16.3	491	16.4	**492**	**16.4**
429.mcf	**369**	**24.7**	368	24.8	370	24.7	**320**	**28.5**	319	28.6	337	27.0
445.gobmk	705	14.9	712	14.7	**707**	**14.8**	672	15.6	668	15.7	**671**	**15.6**
456.hmmer	**329**	**28.3**	330	28.3	329	28.3	**326**	**28.7**	327	28.6	324	28.8
458.sjeng	782	15.5	783	15.5	**782**	**15.5**	**758**	**16.0**	778	15.6	748	16.2
462.libquantum	104	199	**104**	**200**	104	200	94.8	218	**93.8**	**221**	93.6	221
464.h264ref	**953**	**23.2**	955	23.2	951	23.3	926	23.9	**915**	**24.2**	913	24.2
471.omnetpp	**475**	**13.2**	475	13.2	475	13.2	386	16.2	**386**	**16.2**	387	16.2
473.astar	600	11.7	598	11.7	**600**	**11.7**	579	12.1	**583**	**12.0**	588	11.9
483.xalancbmk	**356**	**19.4**	358	19.3	355	19.4	337	20.5	**336**	**20.5**	335	20.6

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

Platform Notes

Default BIOS settings were used.

General Notes

OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter

Base Compiler Invocation

C benchmarks:
    icc -m64

C++ benchmarks:
    icpc -m64

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64

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Base Portability Flags (Continued)

```
     401.bzip2: -DSPEC_CPU_LP64
       403.gcc: -DSPEC_CPU_LP64
       429.mcf: -DSPEC_CPU_LP64
    445.gobmk: -DSPEC_CPU_LP64
   456.hmmer: -DSPEC_CPU_LP64
     458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
   464.h264ref: -DSPEC_CPU_LP64
   471.omnetpp: -DSPEC_CPU_LP64
     473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
```

Base Optimization Flags

C benchmarks:

```
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

C++ benchmarks:

```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/opt/SmartHeap_8.1/lib64 -lsmartheap64
```

Base Other Flags

C benchmarks:

```
403.gcc: -Dalloca=_alloca
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc -m64
```

400.perlbench: `icc -m32`

429.mcf: `icc -m32`

445.gobmk: `icc -m32`

464.h264ref: `icc -m32`

C++ benchmarks (except as noted below):
```
icpc -m32
```

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Software Availability: Dec-2009

Peak Compiler Invocation (Continued)

473.astar: `icpc -m64`

Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
401.bzip2: `-DSPEC_CPU_LP64`
403.gcc: `-DSPEC_CPU_LP64`
456.hmmer: `-DSPEC_CPU_LP64`
458.sjeng: `-DSPEC_CPU_LP64`
462.libquantum: `-DSPEC_CPU_LP64 -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 -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 -auto-ilp32`

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`

462.libquantum: `-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel`
`-opt-prefetch -par-schedule-static=32768 -ansi-alias`

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`

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CPU2006 license:	9006	**Test date:**	Aug-2010
Test sponsor:	NEC Corporation	**Hardware Availability:**	Jun-2010
Tested by:	NEC Corporation	**Software Availability:**	Dec-2009

Peak Optimization Flags (Continued)

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 -Wl,-z,muldefs
             -L/opt/SmartHeap_8.1/lib64 -lsmartheap64

483.xalancbmk: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch
             -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap
```

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/Intel-ic11.1-linux64-revE.20100721.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100721.xml

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

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 10:17:38 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 14 September 2010.