SPEC® CINT2006 Result
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NEC Corporation

Express5800/140Ba-10
(Intel Xeon E7340)

$SPECint®2006 =$ 20.7

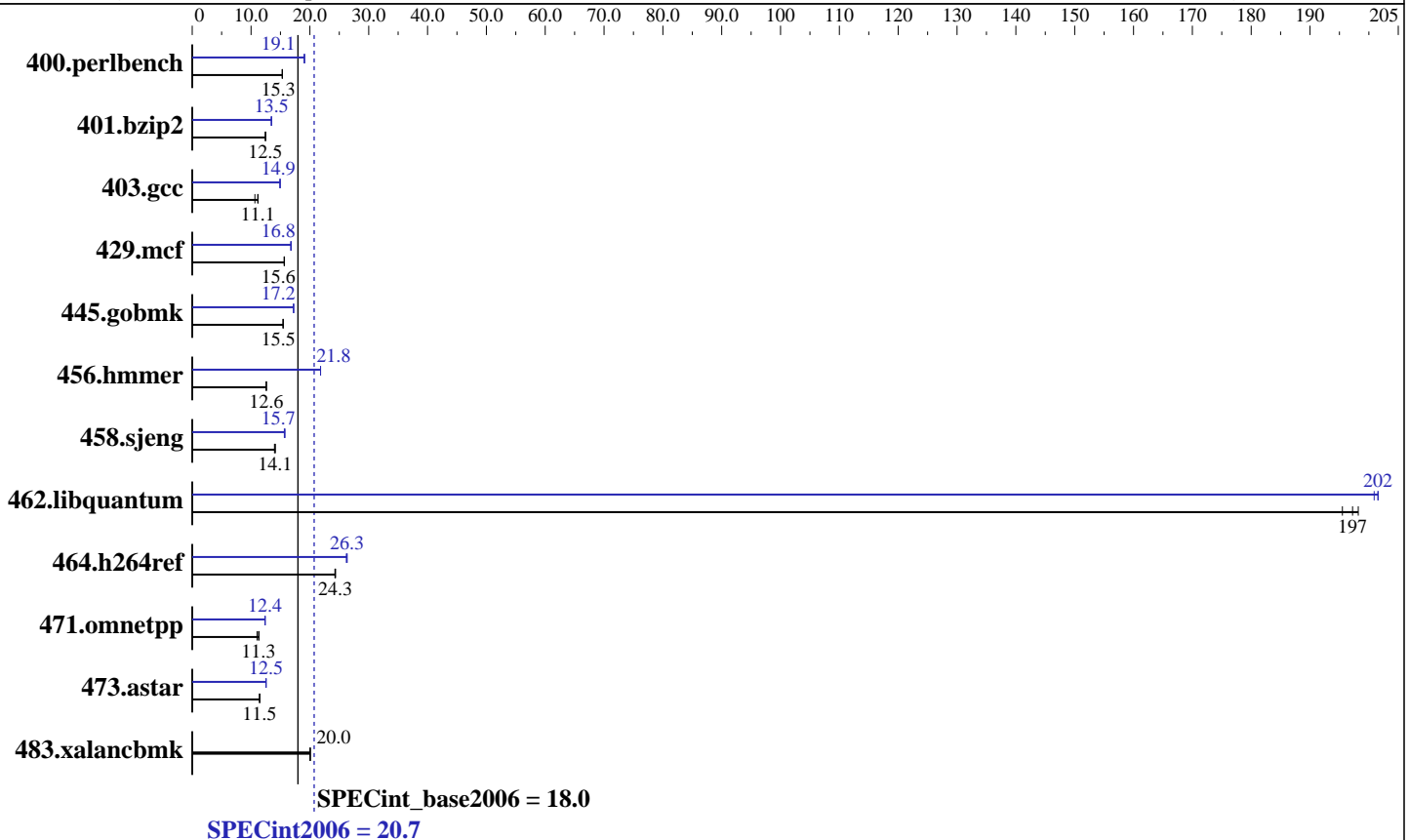$SPECint\_base2006 =$ 18.0

CPU2006 license: 9006

Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Mar-2008

Hardware Availability: Sep-2007

Software Availability: Nov-2007

400.perlbench	19.1 / 15.3
401.bzip2	13.5 / 12.5
403.gcc	14.9 / 11.1
429.mcf	16.8 / 15.6
445.gobmk	17.2 / 15.5
456.hmmer	21.8 / 12.6
458.sjeng	15.7 / 14.1
462.libquantum	202 / 197
464.h264ref	26.3 / 24.3
471.omnetpp	12.4 / 11.3
473.astar	12.5 / 11.5
483.xalancbmk	20.0

SPECint_base2006 = 18.0

SPECint2006 = 20.7

Hardware

CPU Name:	Intel Xeon E7340
CPU Characteristics:	2.40 GHz, 2x4 MB L2 shared, 1066 MHz bus
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	16 cores, 4 chips, 4 cores/chip
CPU(s) orderable:	1,2,3,4 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:	16 GB (16x1 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem:	1x73.2 GB SAS, 10000RPM
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:	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

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	637	15.3	638	15.3	**638**	**15.3**	512	19.1	513	19.0	**512**	**19.1**
401.bzip2	774	12.5	**775**	**12.5**	777	12.4	716	13.5	719	13.4	**716**	**13.5**
403.gcc	720	11.2	**722**	**11.1**	756	10.7	538	15.0	**539**	**14.9**	540	14.9
429.mcf	583	15.6	**583**	**15.6**	582	15.7	542	16.8	**543**	**16.8**	544	16.8
445.gobmk	679	15.5	**679**	**15.5**	679	15.5	609	17.2	609	17.2	**609**	**17.2**
456.hmmer	741	12.6	**741**	**12.6**	741	12.6	428	21.8	**428**	**21.8**	428	21.8
458.sjeng	865	14.0	**859**	**14.1**	857	14.1	773	15.7	**770**	**15.7**	767	15.8
462.libquantum	105	198	**105**	**197**	106	196	103	201	**103**	**202**	103	202
464.h264ref	**910**	**24.3**	908	24.4	912	24.3	845	26.2	**841**	**26.3**	840	26.3
471.omnetpp	567	11.0	**554**	**11.3**	551	11.4	505	12.4	505	12.4	**505**	**12.4**
473.astar	612	11.5	**613**	**11.5**	613	11.4	560	12.5	**559**	**12.5**	559	12.6
483.xalancbmk	344	20.0	344	20.1	**344**	**20.0**	344	20.0	344	20.1	**344**	**20.0**

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

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

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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:

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Peak Optimization Flags (Continued)

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.20090713.html

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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.20090713.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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