SPEC® CINT2006 Result

E4 Computer Engineering S.p.A.
E-Rack Twin E7116

$SPECint®2006 =$ 26.2

$SPECint\_base2006 =$ 24.6

CPU2006 license: 3106
Test sponsor: E4 Computer Engineering S.p.A.
Tested by: E4 Computer Engineering S.p.A.

Test date: Feb-2011
Hardware Availability: Mar-2010
Software Availability: Jun-2009

Benchmark	Peak	Base
400.perlbench	23.2	20.3
401.bzip2	15.1	15.0
403.gcc	21.6	20.8
429.mcf	37.8	35.3
445.gobmk	20.2	19.2
456.hmmer	24.7	24.3
458.sjeng	20.5	19.9
462.libquantum	105	105
464.h264ref	31.0	29.3
471.omnetpp	23.1	18.3
473.astar	16.4	15.9
483.xalancbmk	28.4	26.5

SPECint_base2006 = 24.6
SPECint2006 = 26.2

Hardware

CPU Name: Intel Xeon E5620
CPU Characteristics: Intel Turbo Boost Technology up to 2.67 GHz
CPU MHz: 2400
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: 256 KB I+D on chip per core
L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 24 GB (6 x 4 GB 2Rx4 PC3-10600R-9, ECC, running at 1066 MHz)
Disk Subsystem: 1 x 250GB SATA II Western Digital WD2502ABYS-01B7A0, 7200 rpm
Other Hardware: None

Software

Operating System: openSUSE 11.1 (x86_64) Kernel 2.6.27.s7-9-default
Compiler: Intel C++ Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.046
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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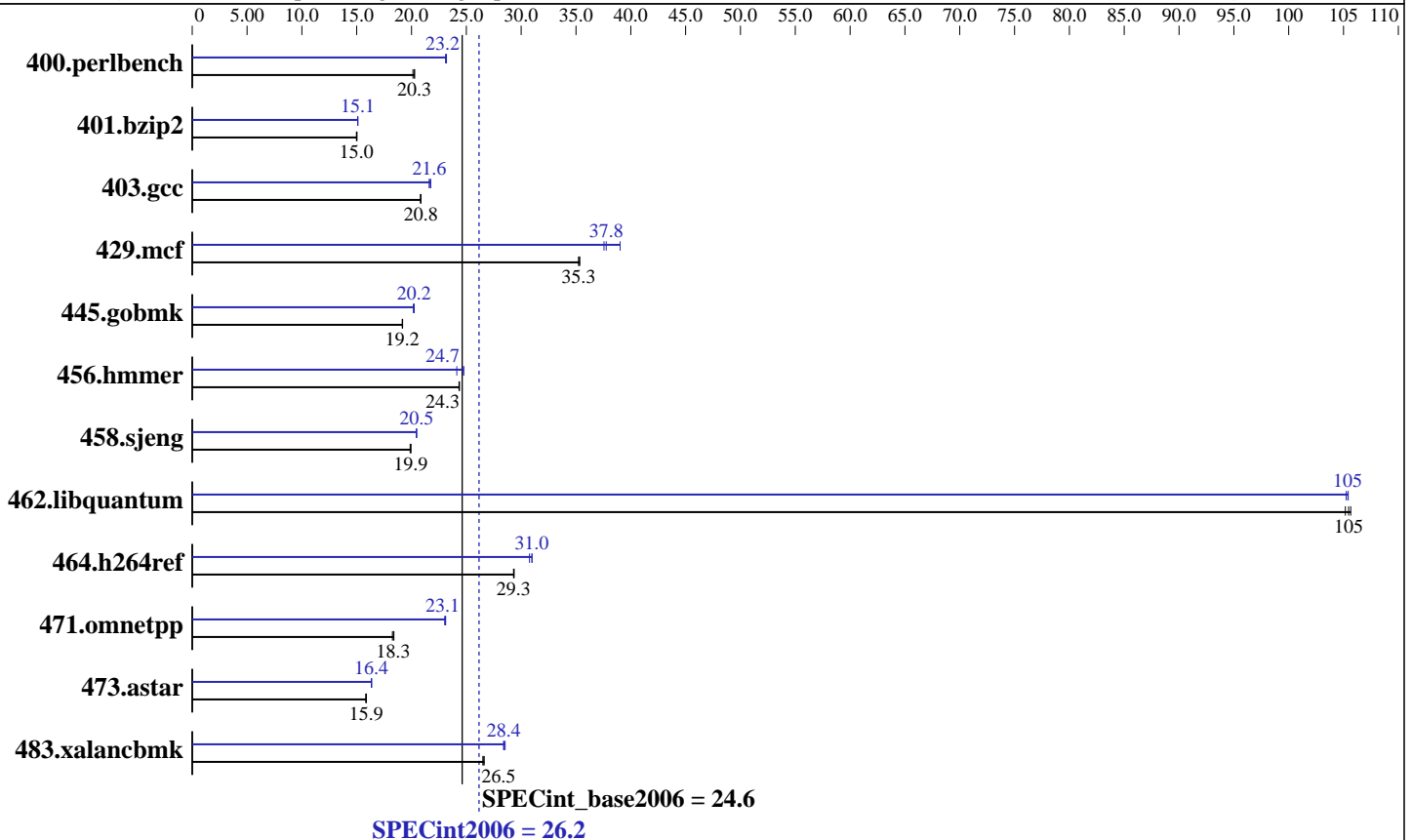SPECint_base2006 = 24.6

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Results Table

Benchmark	Base						Peak					
	Seconds	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
400.perlbench	482	20.3	**482**	**20.3**	485	20.1	421	23.2	**422**	**23.2**	423	23.1
401.bzip2	644	15.0	**644**	**15.0**	642	15.0	639	15.1	**639**	**15.1**	639	15.1
403.gcc	387	20.8	386	20.9	**386**	**20.8**	**372**	**21.6**	370	21.8	372	21.6
429.mcf	259	35.2	258	35.3	**259**	**35.3**	234	39.0	243	37.6	**242**	**37.8**
445.gobmk	548	19.2	**547**	**19.2**	547	19.2	518	20.2	**518**	**20.2**	520	20.2
456.hmmer	383	24.4	**383**	**24.3**	383	24.3	377	24.8	387	24.1	**377**	**24.7**
458.sjeng	**607**	**19.9**	609	19.9	607	19.9	591	20.5	**591**	**20.5**	592	20.4
462.libquantum	196	106	197	105	**196**	**105**	197	105	197	105	**197**	**105**
464.h264ref	754	29.4	**755**	**29.3**	755	29.3	**714**	**31.0**	719	30.8	714	31.0
471.omnetpp	**341**	**18.3**	342	18.3	340	18.4	270	23.1	**271**	**23.1**	271	23.0
473.astar	442	15.9	444	15.8	**442**	**15.9**	**429**	**16.4**	429	16.4	430	16.3
483.xalancbmk	259	26.6	**260**	**26.5**	260	26.5	**243**	**28.4**	243	28.4	242	28.5

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

```
BIOS setting:
Hyper-Threading Technology : Disabled
```

General Notes

```
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=physical,0
```

Base Compiler Invocation

C benchmarks:
```
icc -m64
```

C++ benchmarks:
```
icpc -m64
```

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Base Portability Flags

```
  400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
      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/tools/smartHEAP/SmartHeap_8/lib -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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Test sponsor: E4 Computer Engineering S.p.A.	**Hardware Availability:** Mar-2010
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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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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/tools/smartHEAP/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/tools/smartHEAP/SmartHeap_8/lib -lsmartheap64`

483.xalancbmk: `-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch`
`-Wl,-z,muldefs`
`-L/opt/tools/smartHEAP/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/flag_icc.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/flag_icc.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 16:10:43 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 3 March 2011.