SPEC® CINT2006 Result

Fujitsu

CELSIUS M720 (Intel Xeon E5-1603)

SPECint®_rate2006 = 133

SPECint_rate_base2006 = 128
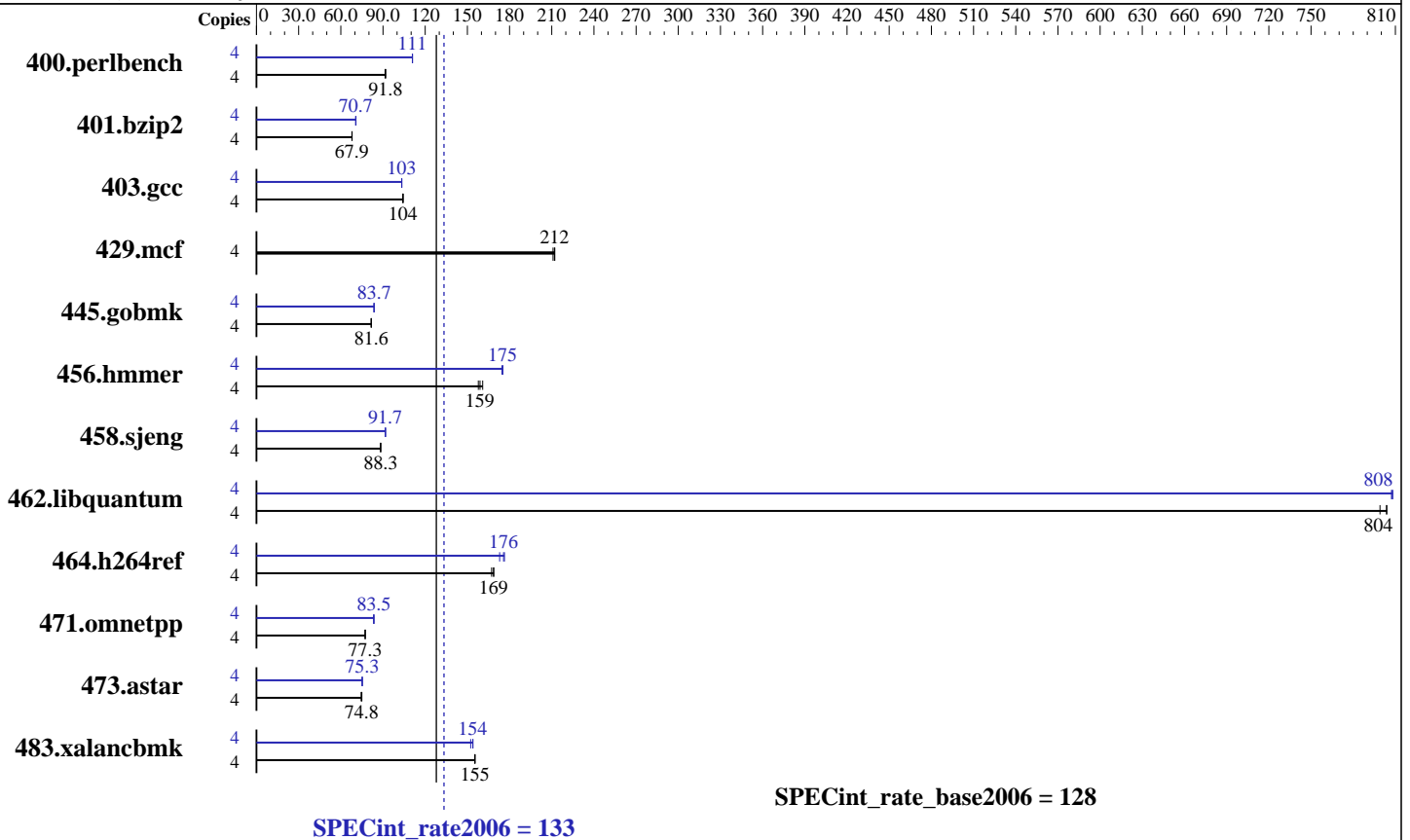
CPU2006 license: 19

Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Mar-2012

Hardware Availability: Mar-2012

Software Availability: Feb-2012

Copies — scale: 0 30.0 60.0 90.0 120 150 180 210 240 270 300 330 360 390 420 450 480 510 540 570 600 630 660 690 720 750 810

Benchmark	Copies	Peak	Base
400.perlbench	4	111	91.8
401.bzip2	4	70.7	67.9
403.gcc	4	103	104
429.mcf	4		212
445.gobmk	4	83.7	81.6
456.hmmer	4	175	159
458.sjeng	4	91.7	88.3
462.libquantum	4	808	804
464.h264ref	4	176	169
471.omnetpp	4	83.5	77.3
473.astar	4	75.3	74.8
483.xalancbmk	4	154	155

SPECint_rate_base2006 = 128

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Hardware

CPU Name:	Intel Xeon E5-1603
CPU Characteristics:	
CPU MHz:	2800
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
CPU(s) orderable:	1 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	10 MB I+D on chip per chip
Other Cache:	None
Memory:	32 GB (8 x 4 GB 2Rx8 PC3-12800E-11, ECC, running at 1067 MHz and CL8)
Disk Subsystem:	1 x SATA III, 500 GB, 7200 rpm
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.2, 2.6.32-220.0.el6.x86_64
Compiler:	C/C++: Version 12.1.3.293 of Intel C++ Studio XE for Linux
Auto Parallel:	No
File System:	ReiserFS
System State:	Run level 3 (multi - user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap 10 (Multi-Core)

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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	427	91.5	**426**	**91.8**	425	91.9	4	352	111	**352**	**111**	352	111
401.bzip2	4	567	68.0	**568**	**67.9**	569	67.9	4	**546**	**70.7**	545	70.8	547	70.5
403.gcc	4	308	104	310	104	**309**	**104**	4	312	103	**312**	**103**	311	103
429.mcf	4	172	212	**172**	**212**	173	211	4	172	212	**172**	**212**	173	211
445.gobmk	4	**514**	**81.6**	514	81.7	514	81.6	4	502	83.7	502	83.6	**502**	**83.7**
456.hmmer	4	**235**	**159**	232	161	237	158	4	**213**	**175**	213	175	214	175
458.sjeng	4	548	88.3	**548**	**88.3**	548	88.3	4	528	91.7	528	91.7	**528**	**91.7**
462.libquantum	4	103	804	**103**	**804**	104	799	4	**103**	**808**	103	808	103	807
464.h264ref	4	**525**	**169**	529	167	524	169	4	512	173	502	176	**504**	**176**
471.omnetpp	4	323	77.4	324	77.3	**323**	**77.3**	4	300	83.3	299	83.6	**299**	**83.5**
473.astar	4	**376**	**74.8**	375	75.0	377	74.4	4	373	75.3	374	75.1	**373**	**75.3**
483.xalancbmk	4	177	156	178	155	**178**	**155**	4	**179**	**154**	181	152	179	154

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

```
    The config file option 'submit' was used to generate taskset commands
    to bind each copy to a specific processor.
    For details, please see the config file.
```

Operating System Notes

```
    Stack size set to unlimited using "ulimit -s unlimited"
```

Platform Notes

```
    BIOS settings:
    Frequency Floor Override = Enabled
```

General Notes

```
    Environment variables set by runspec before the start of the run:
    LD_LIBRARY_PATH = "/work/cpu2006/libs/32:/work/cpu2006/libs/64"

    Binaries compiled on a system with
    2x Xeon E5-2650 CPU + 64 GB memory using
    Red Hat Enterprise Linux Server release 6.2 (Santiago)
    The RPMs glibc-static-2.12-1.47.el6.x86_64.rpm
    and glibc-static-2.12-1.47.el6.i686.rpm
    were added to enable static linking.

    Transparent Huge Pages disabled with:
```

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General Notes (Continued)

```
echo never > /sys/kernel/mm/redhat_transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1>       /proc/sys/vm/drop_caches
```

Base Compiler Invocation

C benchmarks:
```
icc  -m32
```

C++ benchmarks:
```
icpc -m32
```

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 -opt-prefetch -opt-mem-layout-trans=3
```

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
-Wl,-z,muldefs -L/opt/SmartHeap/lib -lsmartheap
```

Base Other Flags

C benchmarks:

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

Peak Compiler Invocation

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

```
403.gcc: icc  -m32
```

```
429.mcf: icc  -m32
```

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Peak Compiler Invocation (Continued)

```
      445.gobmk: icc  -m32

   462.libquantum: icc -m32

     464.h264ref: icc  -m32

C++ benchmarks:
      icpc -m32
```

Peak Portability Flags

```
    400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
       401.bzip2: -DSPEC_CPU_LP64
      456.hmmer: -DSPEC_CPU_LP64
       458.sjeng: -DSPEC_CPU_LP64
   462.libquantum: -DSPEC_CPU_LINUX
   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) -prof-use(pass 2)
                -auto-ilp32

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

         403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div

         429.mcf: basepeak = yes

      445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
                -ansi-alias -opt-mem-layout-trans=3

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

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

   462.libquantum: -xAVX -ipo -O3 -no-prec-div -opt-prefetch
                -opt-mem-layout-trans=3
```

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Peak Optimization Flags (Continued)

464.h264ref: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2)
`-O3`(pass 2) `-no-prec-div`(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/lib -lsmartheap`

473.astar: `-xAVX -ipo -O3 -no-prec-div -opt-prefetch`
`-opt-mem-layout-trans=3 -Wl,-z,muldefs`
`-L/opt/SmartHeap/lib -lsmartheap`

483.xalancbmk: `Same as 473.astar`

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-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120313.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120313.xml

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Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 04:10:15 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 24 April 2012.