SPEC® CINT2006 Result
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Fujitsu

PRIMERGY RX2520 M1, Intel Xeon E5-2440 v2, 1.90 GHz

SPECint®2006 =   40.9

SPECint_base2006 =   38.3

CPU2006 license: 19	**Test date:** Jan-2014
Test sponsor: Fujitsu	**Hardware Availability:** Feb-2014
Tested by: Fujitsu	**Software Availability:** Sep-2013

400.perlbench 27.1 / 22.7
401.bzip2 16.7 / 16.5
403.gcc 24.6 / 24.1
429.mcf 49.2
445.gobmk 18.9 / 17.4
456.hmmer 41.8
458.sjeng 20.9 / 20.4
462.libquantum 2380
464.h264ref 39.4 / 33.5
471.omnetpp 28.9 / 20.9
473.astar 22.2
483.xalancbmk 40.6

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SPECint2006 = 40.9

Hardware

CPU Name:	Intel Xeon E5-2440 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 2.40 GHz
CPU MHz:	1900
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 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:	20 MB I+D on chip per chip
Other Cache:	None
Memory:	192 GB (12 x 16 GB 2Rx4 PC3L-12800R-11, ECC)
Disk Subsystem:	1 x SATA, 500 GB, 7200 RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.4 (Santiago) 2.6.32-358.11.1.el6.x86_64
Compiler:	C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4
System State:	Run level 5 (multi-user)
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V10.0

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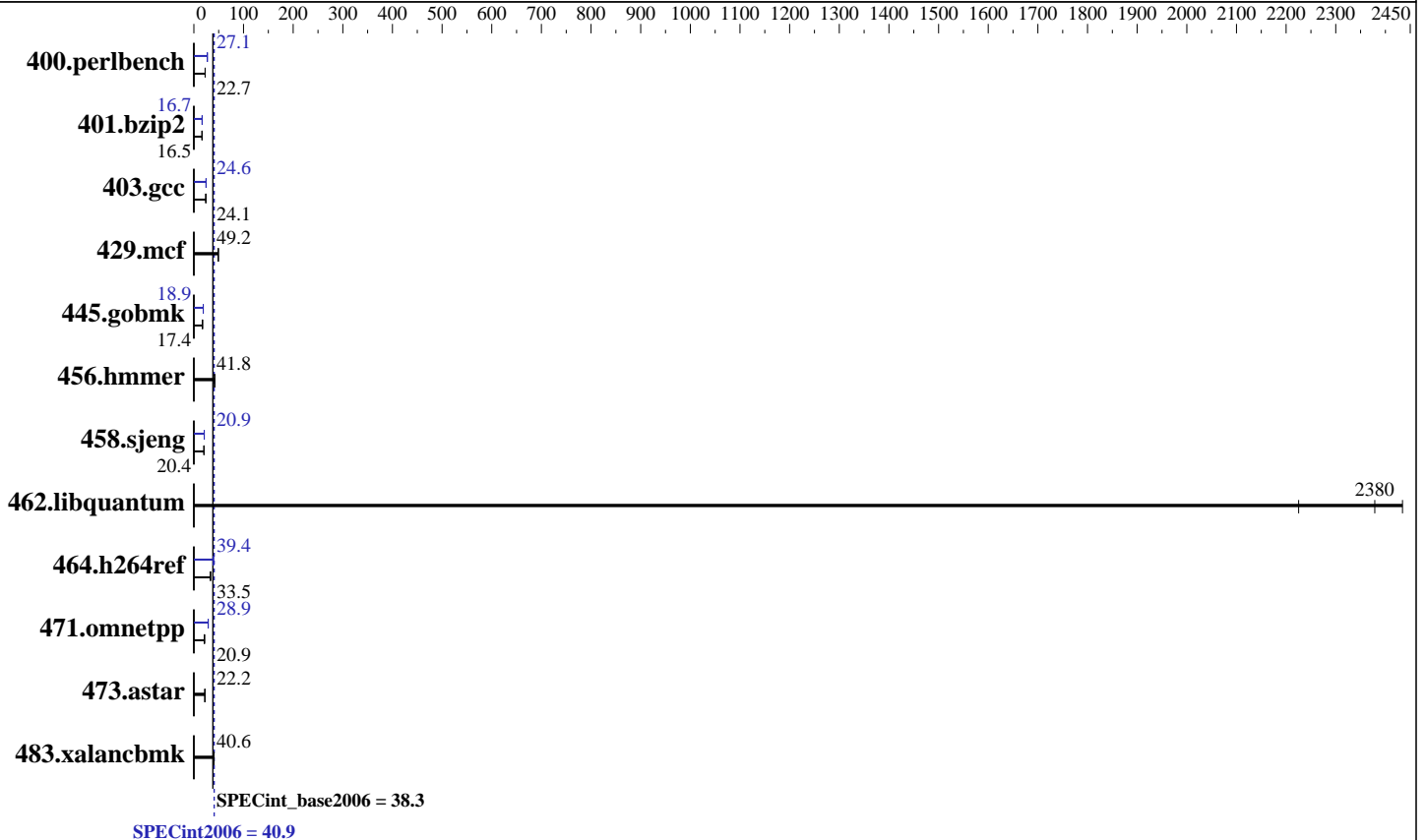SPECint2006 =   40.9

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	431	22.7	430	22.7	**430**	**22.7**	360	27.1	363	26.9	**361**	**27.1**
401.bzip2	**587**	**16.5**	586	16.5	587	16.4	579	16.7	**579**	**16.7**	577	16.7
403.gcc	**334**	**24.1**	334	24.1	334	24.1	**327**	**24.6**	328	24.6	327	24.6
429.mcf	**185**	**49.2**	185	49.2	185	49.2	**185**	**49.2**	185	49.2	185	49.2
445.gobmk	604	17.4	604	17.4	**604**	**17.4**	**555**	**18.9**	555	18.9	555	18.9
456.hmmer	223	41.9	**223**	**41.8**	225	41.5	223	41.9	**223**	**41.8**	225	41.5
458.sjeng	**595**	**20.4**	595	20.3	594	20.4	579	20.9	579	20.9	**579**	**20.9**
462.libquantum	**8.71**	**2380**	8.51	2430	9.31	2230	**8.71**	**2380**	8.51	2430	9.31	2230
464.h264ref	662	33.4	660	33.5	**660**	**33.5**	**562**	**39.4**	562	39.4	562	39.4
471.omnetpp	300	20.8	**300**	**20.9**	284	22.0	217	28.8	216	29.0	**216**	**28.9**
473.astar	316	22.2	**316**	**22.2**	316	22.2	316	22.2	**316**	**22.2**	316	22.2
483.xalancbmk	170	40.6	**170**	**40.6**	170	40.5	170	40.6	**170**	**40.6**	170	40.5

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.

Operating System Notes

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

Platform Notes

    BIOS configuration:
    Energy Performance = Performance
    Utilization Profile = Unbalanced

General Notes

    Environment variables set by runspec before the start of the run:
    KMP_AFFINITY = "granularity=fine,compact,1,0"
    LD_LIBRARY_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64:/SPECcpu2006/sh"
    OMP_NUM_THREADS = "16"

    Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
    memory using RedHat EL 6.4
    Transparent Huge Pages enabled with:
    echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled

    For information about Fujitsu please visit: http://www.fujitsu.com

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Base Compiler Invocation

C benchmarks:
        icc -m64

C++ benchmarks:
        icpc -m64

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:
        -xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:
        -xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -Wl,-z,muldefs
        -L/sh -lsmartheap64

Base Other Flags

C benchmarks:

        403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

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

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Peak Compiler Invocation (Continued)

400.perlbench: `icc -m32`

445.gobmk: `icc -m32`

464.h264ref: `icc -m32`

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

471.omnetpp: `icpc -m32`

Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
401.bzip2: `-DSPEC_CPU_LP64`
403.gcc: `-DSPEC_CPU_LP64`
429.mcf: `-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_LP64 -DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

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

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

403.gcc: `-xAVX -ipo -O3 -no-prec-div -inline-calloc`
`-opt-malloc-options=3 -auto-ilp32`

429.mcf: `basepeak = yes`

445.gobmk: `-xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)`
`-ansi-alias`

456.hmmer: `basepeak = yes`

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Peak Optimization Flags (Continued)

```
    458.sjeng: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
               -no-prec-div(pass 2) -prof-use(pass 2) -unroll4

462.libquantum: basepeak = yes

   464.h264ref: -xAVX(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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
               -no-prec-div(pass 2) -prof-use(pass 2)
               -opt-ra-region-strategy=block            -ansi-alias
               -Wl,-z,muldefs -L/sh -lsmartheap

     473.astar: basepeak = yes

 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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20131009.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20131009.xml

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

Tested with SPEC CPU2006 v1.2.
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