



SPEC® CINT2006 Result

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Fujitsu

PRIMERGY RX2540 M1, Intel Xeon E5-2697 v3, 2.6 GHz

SPECint®2006 = 66.1

SPECint_base2006 = 63.6

CPU2006 license: 19

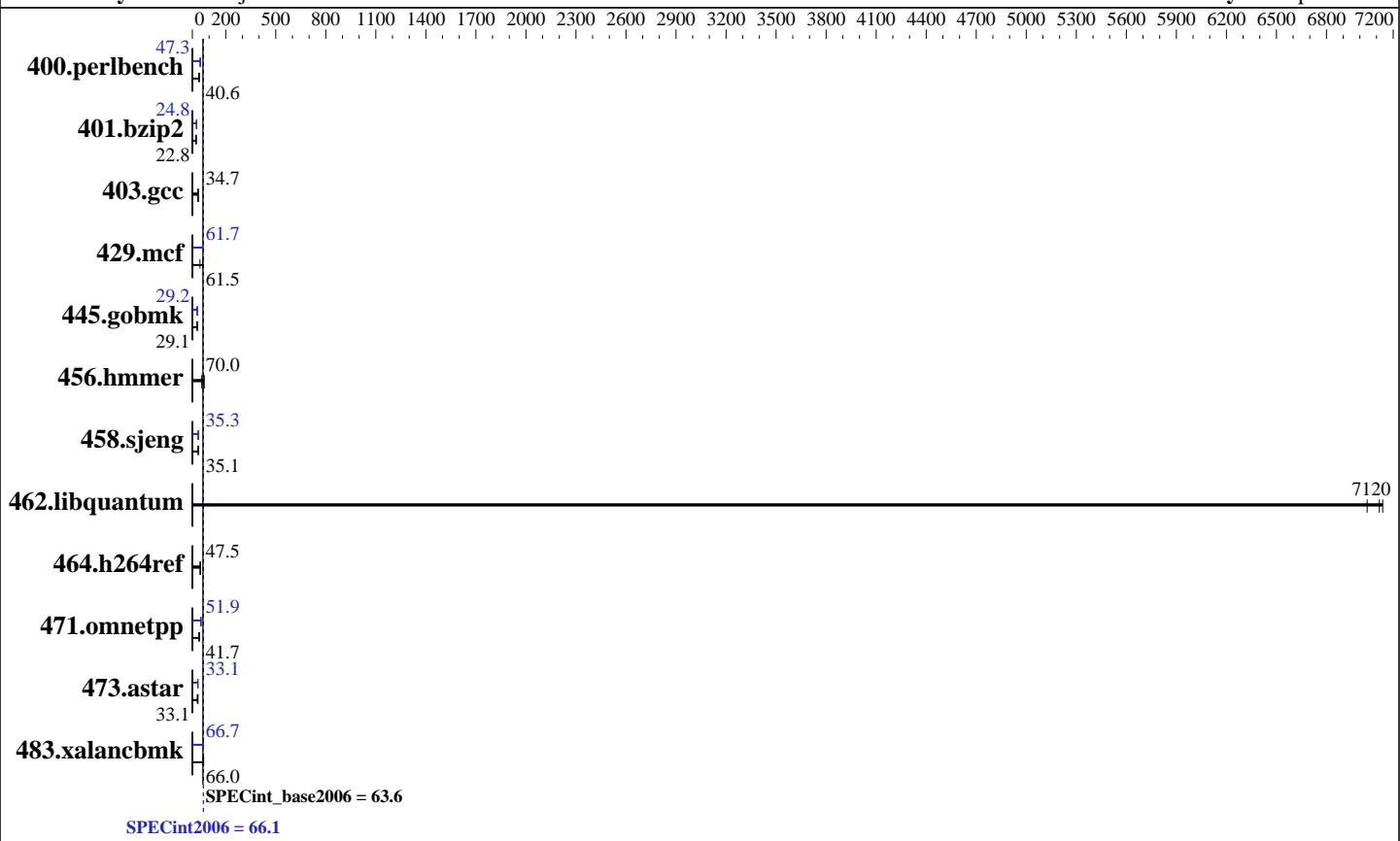
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Dec-2014

Hardware Availability: Sep-2014

Software Availability: Sep-2014



Hardware

CPU Name: Intel Xeon E5-2697 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 28 cores, 2 chips, 14 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2 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: 35 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
 Disk Subsystem: 1 x SATA, 500 GB, 7200 RPM
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo)
 Compiler: Kernel 3.10.0-123.8.1.el7.x86_64
 C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux
 Auto Parallel: Yes
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: Microquill SmartHeap V10.0



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Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|----------------|--------------------|--------------------|-------------------|--------------------|-------------------|--------------------|--------------------|--------------------|-------------------|--------------------|---------|-------|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 235 | 41.5 | 253 | 38.6 | <u>241</u> | <u>40.6</u> | 206 | 47.4 | <u>207</u> | <u>47.3</u> | 207 | 47.1 |
| 401.bzip2 | 472 | 20.4 | 412 | 23.4 | <u>424</u> | <u>22.8</u> | <u>389</u> | <u>24.8</u> | 389 | 24.8 | 390 | 24.8 |
| 403.gcc | 231 | 34.8 | <u>232</u> | <u>34.7</u> | 232 | 34.7 | 231 | 34.8 | <u>232</u> | <u>34.7</u> | 232 | 34.7 |
| 429.mcf | <u>148</u> | <u>61.5</u> | 200 | 45.6 | 148 | 61.7 | <u>148</u> | <u>61.7</u> | 147 | 62.0 | 149 | 61.3 |
| 445.gobmk | 361 | 29.1 | <u>361</u> | <u>29.1</u> | 361 | 29.0 | <u>359</u> | <u>29.2</u> | 359 | 29.2 | 359 | 29.2 |
| 456.hammer | <u>133</u> | <u>70.0</u> | 166 | 56.2 | 133 | 70.1 | <u>133</u> | <u>70.0</u> | 166 | 56.2 | 133 | 70.1 |
| 458.sjeng | 344 | 35.2 | <u>344</u> | <u>35.1</u> | 345 | 35.1 | <u>343</u> | <u>35.3</u> | <u>343</u> | <u>35.3</u> | 342 | 35.3 |
| 462.libquantum | <u>2.91</u> | <u>7120</u> | 2.94 | 7040 | 2.90 | 7140 | <u>2.91</u> | <u>7120</u> | 2.94 | 7040 | 2.90 | 7140 |
| 464.h264ref | 469 | 47.2 | <u>466</u> | <u>47.5</u> | 466 | 47.5 | 469 | 47.2 | <u>466</u> | <u>47.5</u> | 466 | 47.5 |
| 471.omnetpp | 150 | 41.7 | <u>150</u> | <u>41.7</u> | 160 | 39.0 | <u>125</u> | <u>49.9</u> | <u>120</u> | <u>51.9</u> | 120 | 52.0 |
| 473.astar | 212 | 33.2 | <u>212</u> | <u>33.1</u> | 241 | 29.1 | <u>211</u> | <u>33.2</u> | <u>212</u> | <u>33.1</u> | 214 | 32.8 |
| 483.xalancbmk | 102 | 67.9 | 106 | 64.9 | <u>105</u> | <u>66.0</u> | 104 | 66.6 | <u>103</u> | <u>66.7</u> | 103 | 66.9 |

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

QPI snoop mode: Early Snoop

COD Enable = Disabled, Early Snoop = Enabled

CPU C1E Support = Disabled

General Notes

Environment variables set by runspec before the start of the run:

KMP_AFFINITY = "granularity=fine,scatter"

LD_LIBRARY_PATH = "/home/SPECcpu2006/libs/32:/home/SPECcpu2006/libs/64:/home/SPECcpu2006/sh"

OMP_NUM_THREADS = "28"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0

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.hmmr: `-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:

`-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32`

C++ benchmarks:

`-xCORE-AVX2 -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 -L/opt/intel/composer_xe_2015/lib/ia32`

445.gobmk: `icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

C++ benchmarks (except as noted below):

`icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

473.astar: `icpc -m64`

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.hammer: `-DSPEC_CPU_LP64`

458.sjeng: `-DSPEC_CPU_LP64`

462.libquantum: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`

464.h264ref: `-DSPEC_CPU_LP64`

473.astar: `-DSPEC_CPU_LP64`

483.xalancbmk: `-DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

400.perlbench: `-xCORE-AVX2(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: `-xCORE-AVX2(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: `basepeak = yes`

429.mcf: `-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel`
`-opt-prefetch -auto-p32`

445.gobmk: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)`
`-ansi-alias`

456.hammer: `basepeak = yes`

458.sjeng: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`
`-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)`
`-unroll14`

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Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

```
471.omnetpp: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
            -auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64
```

```
483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
                -ansi-alias -Wl,-z,muldefs -L/sh -lsmartheap
```

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-ic15.0-official-linux64.html>
<http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-HSW-RevA.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>
<http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-HSW-RevA.xml>

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 For other inquiries, please contact webmaster@spec.org.

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