



# SPEC® CINT2006 Result

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## Fujitsu

SPECint®\_rate2006 = 1180

PRIMERGY BX2560 M1, Intel Xeon E5-2697 v3, 2.6 GHz

SPECint\_rate\_base2006 = 1130

CPU2006 license: 19

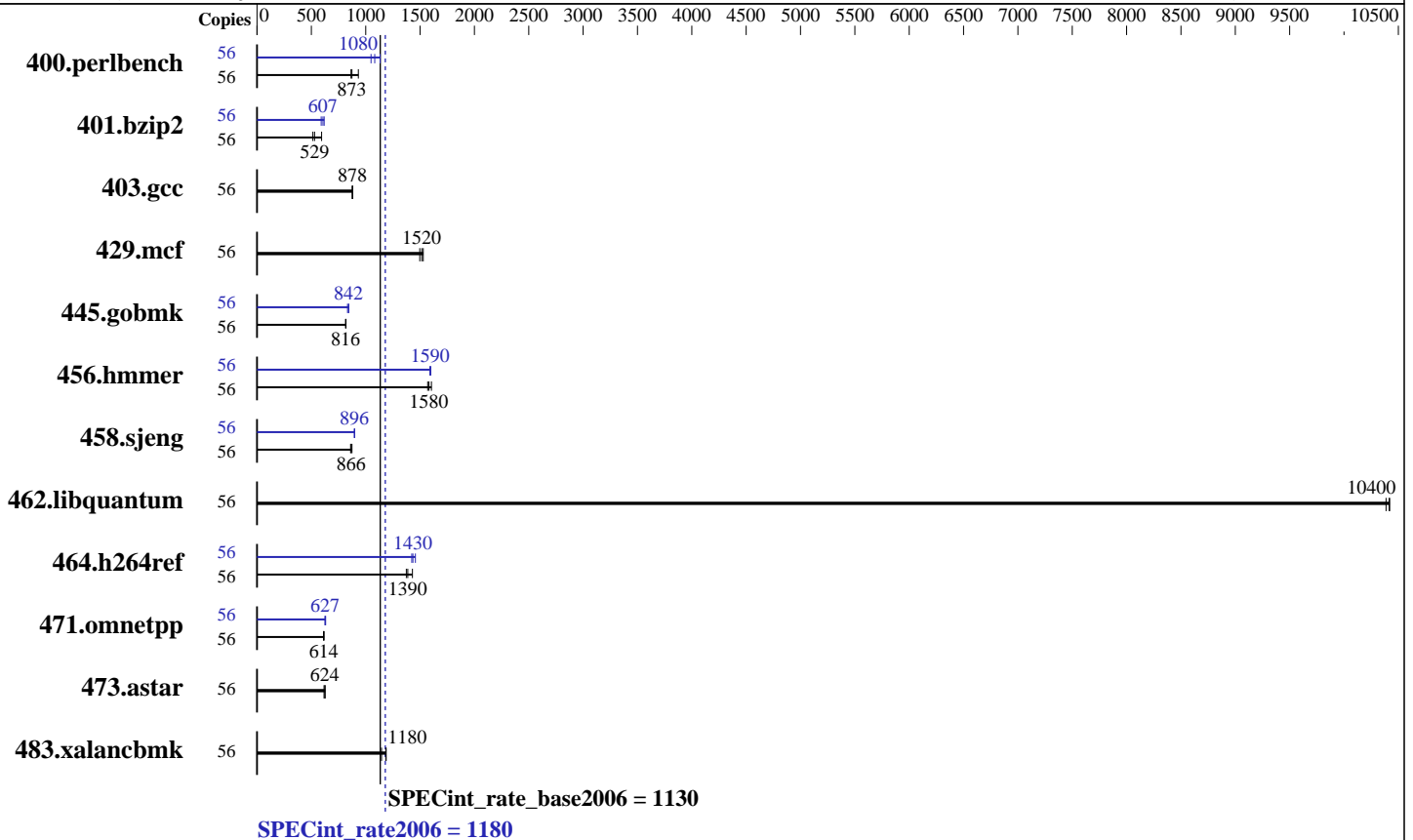
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Nov-2014

Hardware Availability: Sep-2014

Software Availability: Nov-2013



### 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: 128 GB (8 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 6.5 (Santiago)  
 2.6.32-431.23.3.el6.x86\_64  
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux  
 Auto Parallel: No  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.0



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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  | 56     | 587        | 932         | 633        | 865          | <b>627</b>  | <b>873</b>  | 56     | 522        | 1050        | <b>505</b> | <b>1080</b>  | 483        | 1130        |
| 401.bzip2      | 56     | 909        | 594         | 1051       | 514          | <b>1021</b> | <b>529</b>  | 56     | <b>891</b> | <b>607</b>  | 915        | 590          | 875        | 618         |
| 403.gcc        | 56     | 512        | 880         | 515        | 876          | <b>514</b>  | <b>878</b>  | 56     | 512        | 880         | 515        | 876          | <b>514</b> | <b>878</b>  |
| 429.mcf        | 56     | 334        | 1530        | 341        | 1500         | <b>337</b>  | <b>1520</b> | 56     | 334        | 1530        | 341        | 1500         | <b>337</b> | <b>1520</b> |
| 445.gobmk      | 56     | 718        | 819         | <b>720</b> | <b>816</b>   | 720         | 816         | 56     | <b>697</b> | <b>842</b>  | 705        | 833          | 696        | 844         |
| 456.hammer     | 56     | <b>330</b> | <b>1580</b> | 333        | 1570         | 326         | 1600        | 56     | <b>328</b> | <b>1590</b> | 328        | 1590         | 327        | 1600        |
| 458.sjeng      | 56     | <b>782</b> | <b>866</b>  | 787        | 861          | 776         | 874         | 56     | 754        | 898         | 756        | 896          | <b>756</b> | <b>896</b>  |
| 462.libquantum | 56     | 111        | 10400       | <b>111</b> | <b>10400</b> | 112         | 10400       | 56     | 111        | 10400       | <b>111</b> | <b>10400</b> | 112        | 10400       |
| 464.h264ref    | 56     | 902        | 1370        | 867        | 1430         | <b>893</b>  | <b>1390</b> | 56     | 851        | 1460        | <b>864</b> | <b>1430</b>  | 870        | 1420        |
| 471.omnetpp    | 56     | 572        | 612         | <b>570</b> | <b>614</b>   | 567         | 617         | 56     | 559        | 626         | 554        | 631          | <b>558</b> | <b>627</b>  |
| 473.astar      | 56     | 627        | 627         | 638        | 617          | <b>630</b>  | <b>624</b>  | 56     | 627        | 627         | 638        | 617          | <b>630</b> | <b>624</b>  |
| 483.xalancbmk  | 56     | 325        | 1190        | 337        | 1150         | <b>326</b>  | <b>1180</b> | 56     | 325        | 1190        | 337        | 1150         | <b>326</b> | <b>1180</b> |

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

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl 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 configuration:  
Energy Performance = Performance  
Utilization Profile = Unbalanced  
QPI snoop mode: Cluster on Die  
COD Enable = Enabled, Early Snoop = Disabled  
CPU C1E Support = Disabled  
QPI Link Frequency Select = 6.4 GT/s

## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/home/SPECcpu2006/libs/32:/home/SPECcpu2006/libs/64:/home/SPECcpu2006/sh"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4  
Transparent Huge Pages enabled with:

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## General Notes (Continued)

echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled  
Filesystem page cache cleared with:  
echo 1> /proc/sys/vm/drop\_caches  
runspec command invoked through numactl i.e.:  
numactl --interleave=all runspec <etc>

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

## 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:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-opt-mem-layout-trans=3

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m32

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## Peak Compiler Invocation (Continued)

400.perlbench: `icc -m64`

401.bzip2: `icc -m64`

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

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: `-xCORE-AVX2(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: `-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 -auto-ilp32 -ansi-alias`

403.gcc: `basepeak = yes`

429.mcf: `basepeak = yes`

445.gobmk: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias -opt-mem-layout-trans=3`

456.hmmer: `-xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32`

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 -auto-ilp32`

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## Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: -xCORE-AVX2(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: -xCORE-AVX2(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/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-revB.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-ic14.0-official-linux64-revB.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](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.

Report generated on Tue May 19 18:14:54 2015 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 19 May 2015.