



SPEC[®] CFP2006 Result

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Huawei Huawei CH121

SPECfp[®]2006 = **77.5**

SPECfp_base2006 = **72.1**

CPU2006 license: 3175

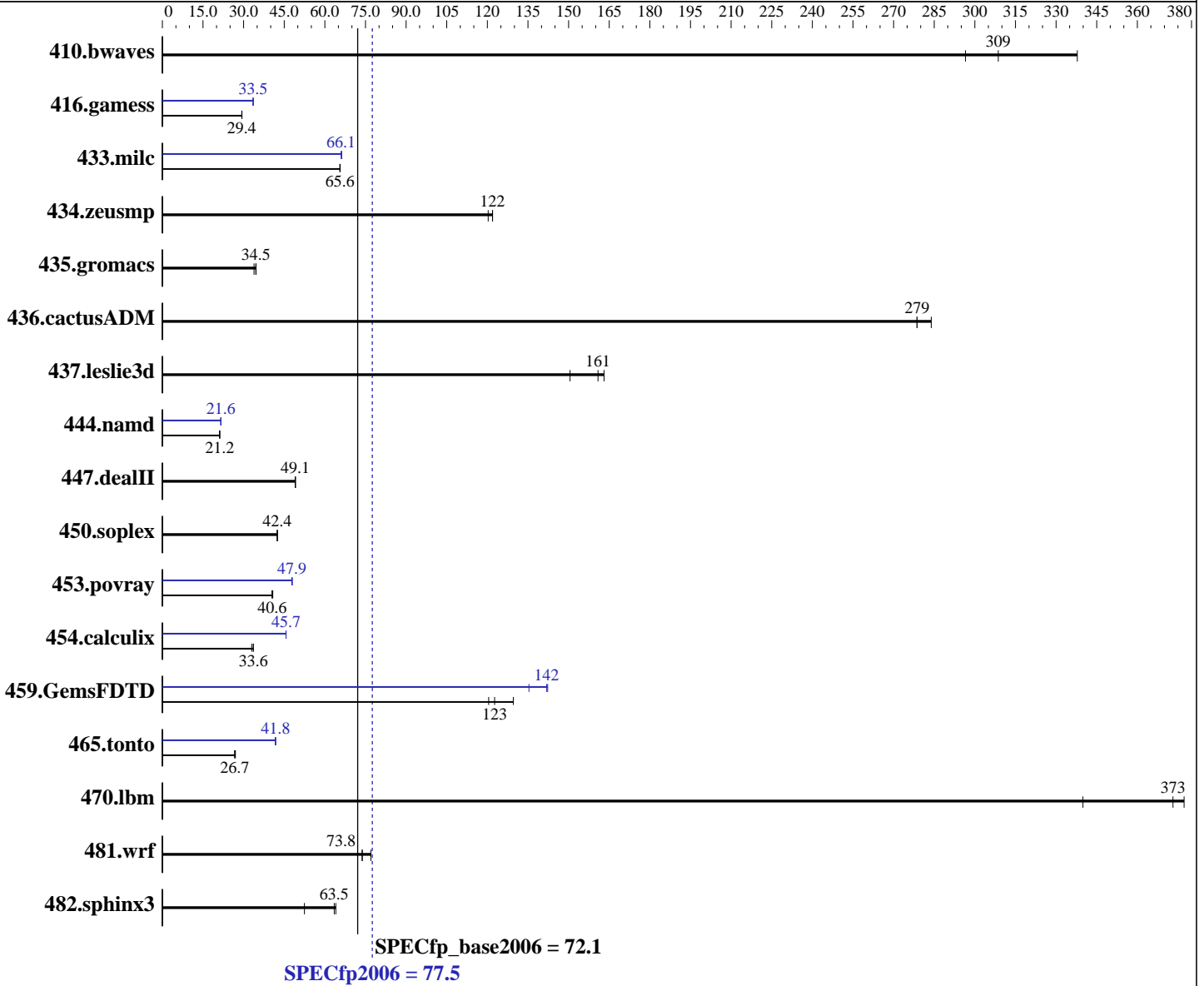
Test sponsor: Huawei

Tested by: Huawei

Test date: Mar-2014

Hardware Availability: Sep-2013

Software Availability: Nov-2013



Hardware

CPU Name: Intel Xeon E5-2658 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 20 cores, 2 chips, 10 cores/chip
 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

Continued on next page

Software

Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)
 2.6.32-431.el6.x86_64
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;
 Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4

Continued on next page



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L3 Cache: 25 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC)
Disk Subsystem: 1 X 300 GB SATA 7200RPM
Other Hardware: None

System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 44.0 | 309 | 45.8 | 297 | 40.2 | 338 | 44.0 | 309 | 45.8 | 297 | 40.2 | 338 |
| 416.gamess | 668 | 29.3 | 667 | 29.4 | 666 | 29.4 | 584 | 33.5 | 584 | 33.5 | 584 | 33.5 |
| 433.milc | 140 | 65.6 | 140 | 65.7 | 140 | 65.6 | 139 | 66.0 | 139 | 66.1 | 139 | 66.2 |
| 434.zeusmp | 74.6 | 122 | 75.6 | 120 | 74.6 | 122 | 74.6 | 122 | 75.6 | 120 | 74.6 | 122 |
| 435.gromacs | 211 | 33.8 | 206 | 34.6 | 207 | 34.5 | 211 | 33.8 | 206 | 34.6 | 207 | 34.5 |
| 436.cactusADM | 42.9 | 279 | 42.9 | 279 | 42.1 | 284 | 42.9 | 279 | 42.9 | 279 | 42.1 | 284 |
| 437.leslie3d | 62.4 | 151 | 58.4 | 161 | 57.6 | 163 | 62.4 | 151 | 58.4 | 161 | 57.6 | 163 |
| 444.namd | 379 | 21.2 | 379 | 21.2 | 379 | 21.2 | 371 | 21.6 | 371 | 21.6 | 371 | 21.6 |
| 447.dealII | 233 | 49.1 | 233 | 49.1 | 233 | 49.1 | 233 | 49.1 | 233 | 49.1 | 233 | 49.1 |
| 450.soplex | 197 | 42.4 | 197 | 42.4 | 196 | 42.4 | 197 | 42.4 | 197 | 42.4 | 196 | 42.4 |
| 453.povray | 131 | 40.6 | 131 | 40.5 | 130 | 40.8 | 111 | 47.8 | 111 | 47.9 | 111 | 48.0 |
| 454.calculix | 250 | 33.0 | 246 | 33.6 | 246 | 33.6 | 181 | 45.7 | 181 | 45.7 | 181 | 45.7 |
| 459.GemsFDTD | 86.5 | 123 | 88.1 | 120 | 81.9 | 130 | 78.4 | 135 | 74.6 | 142 | 74.8 | 142 |
| 465.tonto | 368 | 26.7 | 365 | 27.0 | 368 | 26.7 | 235 | 41.8 | 236 | 41.7 | 236 | 41.8 |
| 470.lbm | 40.4 | 340 | 36.4 | 377 | 36.8 | 373 | 40.4 | 340 | 36.4 | 377 | 36.8 | 373 |
| 481.wrf | 145 | 77.0 | 151 | 73.7 | 151 | 73.8 | 145 | 77.0 | 151 | 73.7 | 151 | 73.8 |
| 482.sphinx3 | 307 | 63.5 | 372 | 52.5 | 304 | 64.0 | 307 | 63.5 | 372 | 52.5 | 304 | 64.0 |

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

Operating System Notes

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

Platform Notes

BIOS configuration:
Set Power Efficiency Mode to Performance
Set Intel HT Technology to Disable
Sysinfo program /spec/config/sysinfo.rev6818
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Mon May 5 18:39:13 2014

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

Continued on next page



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Platform Notes (Continued)

```

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2658 v2 @ 2.40GHz
 2 "physical id"s (chips)
20 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
caution.)
  cpu cores : 10
  siblings  : 10
  physical 0: cores 0 1 2 3 4 8 9 10 11 12
  physical 1: cores 0 1 2 3 4 8 9 10 11 12
cache size : 25600 KB

From /proc/meminfo
MemTotal:      264480104 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.5 (Santiago)

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
Linux localhost.localdomain 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54
EST 2013 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 May 5 17:31

SPEC is set to: /spec
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2        ext4  265G  113G  139G  45% /

Additional information from dmidecode:
BIOS Insyde Corp. OARYV388 04/23/2014
Memory:
16x Micron 36JSF2G72PZ-1G9E1 16 GB 1866 MHz 2 rank
8x NO DIMM NO DIMM

(End of data from sysinfo program)

```

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64:/spec/sh"
OMP_NUM_THREADS = "20"

Continued on next page



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| | | |
|------------------------|-------------------|------|
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General Notes (Continued)

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
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>

Base Compiler Invocation

C benchmarks:
 icc -m64

C++ benchmarks:
 icpc -m64

Fortran benchmarks:
 ifort -m64

Benchmarks using both Fortran and C:
 icc -m64 ifort -m64

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
 416.gamess: -DSPEC_CPU_LP64
 433.milc: -DSPEC_CPU_LP64
 434.zeusmp: -DSPEC_CPU_LP64
 435.gromacs: -DSPEC_CPU_LP64 -nofor_main
 436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
 437.leslie3d: -DSPEC_CPU_LP64
 444.namd: -DSPEC_CPU_LP64
 447.dealII: -DSPEC_CPU_LP64
 450.soplex: -DSPEC_CPU_LP64
 453.povray: -DSPEC_CPU_LP64
 454.calculix: -DSPEC_CPU_LP64 -nofor_main
 459.GemsFDTD: -DSPEC_CPU_LP64
 465.tonto: -DSPEC_CPU_LP64
 470.lbm: -DSPEC_CPU_LP64
 481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
 482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
 -xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

Continued on next page



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Base Optimization Flags (Continued)

C++ benchmarks:

`-xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias`

Fortran benchmarks:

`-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch`

Benchmarks using both Fortran and C:

`-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias`

Peak Compiler Invocation

C benchmarks:

`icc -m64`

C++ benchmarks:

`icpc -m64`

Fortran benchmarks:

`ifort -m64`

Benchmarks using both Fortran and C:

`icc -m64 ifort -m64`

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: `-xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32
-ansi-alias`

470.lbm: `basepeak = yes`

482.sphinx3: `basepeak = yes`

C++ benchmarks:

444.namd: `-xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -fno-alias
-auto-ilp32`

Continued on next page



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Peak Optimization Flags (Continued)

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -opt-prefetch -parallel

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc
-opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes

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/Huawei-Platform-Settings-V1.0-IVB-RevG.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/Huawei-Platform-Settings-V1.0-IVB-RevG.xml>



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