



SPEC[®] CFP2006 Result

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Huawei

SPECfp[®]2006 = **77.4**

Huawer RH2288 V3 (Intel Xeon E5-2630L v3)

SPECfp_base2006 = **70.6**

CPU2006 license: 3175

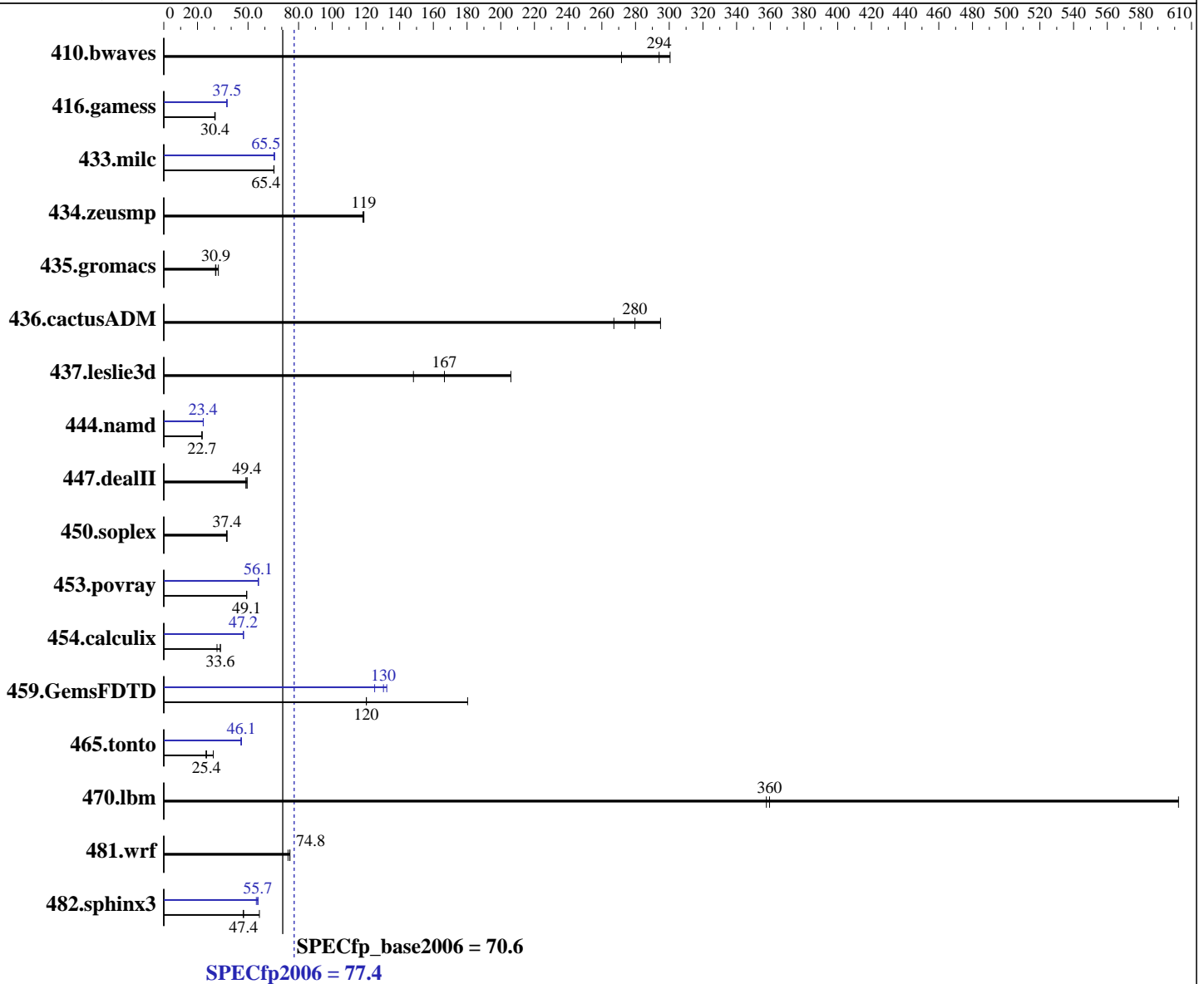
Test date: Sep-2014

Test sponsor: Huawei

Hardware Availability: Sep-2014

Tested by: Huawei

Software Availability: Nov-2013



Hardware

CPU Name: Intel Xeon E5-2630L v3
 CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz
 CPU MHz: 1800
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 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

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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

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L3 Cache: 20 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1867 MHz)
 Disk Subsystem: 1 x 300 GB SAS, 10K RPM
 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	<u>46.2</u>	<u>294</u>	45.2	300	50.0	272	<u>46.2</u>	<u>294</u>	45.2	300	50.0	272
416.gamess	<u>644</u>	<u>30.4</u>	648	30.2	642	30.5	<u>522</u>	<u>37.5</u>	524	37.4	<u>522</u>	<u>37.5</u>
433.milc	141	65.3	140	65.4	<u>140</u>	<u>65.4</u>	140	65.8	140	65.4	<u>140</u>	<u>65.5</u>
434.zeusmp	77.0	118	<u>76.6</u>	<u>119</u>	76.6	119	<u>77.0</u>	118	<u>76.6</u>	<u>119</u>	76.6	119
435.gromacs	<u>231</u>	<u>30.9</u>	233	30.7	220	32.4	<u>231</u>	<u>30.9</u>	233	30.7	220	32.4
436.cactusADM	40.5	295	<u>42.7</u>	<u>280</u>	44.7	267	<u>40.5</u>	295	<u>42.7</u>	<u>280</u>	44.7	267
437.leslie3d	45.6	206	<u>56.4</u>	<u>167</u>	63.4	148	<u>45.6</u>	206	<u>56.4</u>	<u>167</u>	63.4	148
444.namd	353	22.7	354	22.7	<u>354</u>	<u>22.7</u>	<u>342</u>	<u>23.4</u>	343	23.4	342	23.4
447.dealII	235	48.7	<u>232</u>	<u>49.4</u>	232	49.4	<u>235</u>	48.7	<u>232</u>	<u>49.4</u>	232	49.4
450.soplex	222	37.5	224	37.2	<u>223</u>	<u>37.4</u>	<u>222</u>	37.5	224	37.2	<u>223</u>	<u>37.4</u>
453.povray	108	49.1	<u>108</u>	<u>49.1</u>	108	49.3	<u>94.9</u>	<u>56.1</u>	94.6	56.3	95.0	56.0
454.calculix	261	31.6	<u>246</u>	<u>33.6</u>	246	33.6	<u>175</u>	<u>47.2</u>	175	47.3	175	47.2
459.GemsFDTD	<u>88.2</u>	<u>120</u>	58.8	180	88.3	120	<u>81.4</u>	<u>130</u>	84.8	125	80.2	132
465.tonto	335	29.4	393	25.0	<u>388</u>	<u>25.4</u>	<u>214</u>	46.1	<u>214</u>	<u>46.1</u>	215	45.8
470.lbm	38.4	358	22.8	602	<u>38.2</u>	<u>360</u>	<u>38.4</u>	358	22.8	602	<u>38.2</u>	<u>360</u>
481.wrf	<u>149</u>	<u>74.8</u>	149	74.8	151	73.7	<u>149</u>	<u>74.8</u>	149	74.8	151	73.7
482.sphinx3	343	56.7	414	47.1	<u>411</u>	<u>47.4</u>	<u>350</u>	<u>55.7</u>	348	55.9	355	54.9

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 Custom
 Set Snoop Mode to HS
 Set Hyper-Threading to Disabled
 Baseboard Management Controller used to adjust the fan speed to 100%
 Sysinfo program /spec/config/sysinfo.rev6818
 \$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191
 running on administrator Fri Sep 19 11:02:38 2014

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Platform Notes (Continued)

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>

```
From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2630L v3 @ 1.80GHz
 2 "physical id"s (chips)
16 "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 : 8
  siblings  : 8
  physical 0: cores 0 1 2 3 4 5 6 7
  physical 1: cores 0 1 2 3 4 5 6 7
cache size : 20480 KB
```

```
From /proc/meminfo
MemTotal:      264277304 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 administrator 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 Sep 18 05:22
```

```
SPEC is set to: /spec
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdal        ext4  231G  122G   98G  56% /
```

```
Additional information from dmidecode:
BIOS Insyde Corp. 1.16 09/02/2014
Memory:
8x NO DIMM NO DIMM      3 rank
8x Samsung M393A2G40DB0-CPB 16 GB 1867 MHz 1 rank
8x Samsung M393A2G40DB0-CPB 16 GB 1867 MHz 2 rank
```

(End of data from sysinfo program)



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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 = "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

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



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Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
-ansi-alias

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:
-xCORE-AVX2 -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: -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 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

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Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -xCORE-AVX2(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

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2 -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>



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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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Tested with SPEC CPU2006 v1.2.
Report generated on Wed Oct 22 12:19:55 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 22 October 2014.