



SPEC® CFP2006 Result

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Huawei

SPECfp®2006 = 72.2

Huawei DH310 V2 (Intel Xeon E3-1280 v2)

SPECfp_base2006 = 70.2

CPU2006 license: 3175

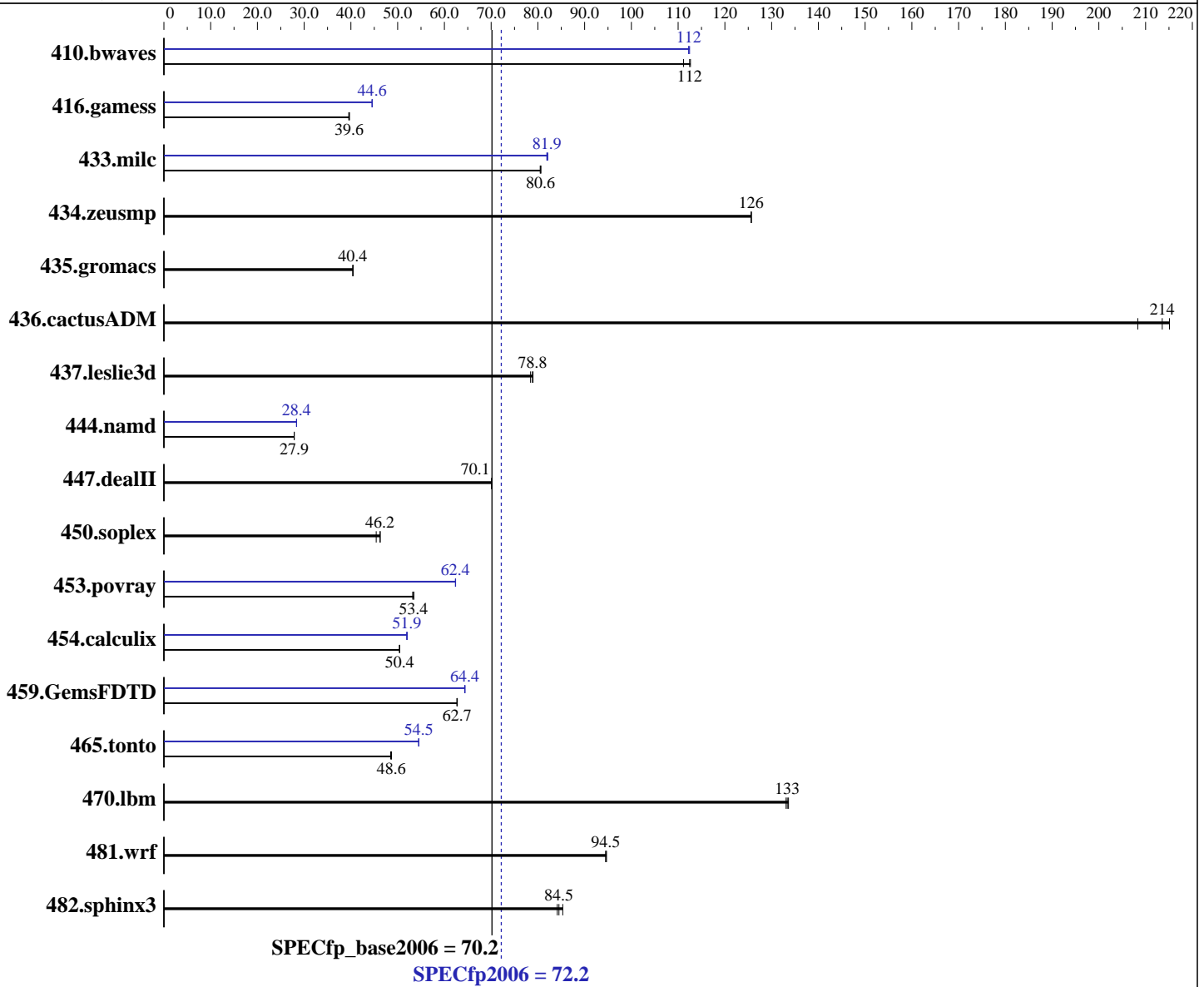
Test sponsor: Huawei

Tested by: Huawei

Test date: Jul-2012

Hardware Availability: May-2012

Software Availability: Dec-2011



Hardware

CPU Name: Intel Xeon E3-1280 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 4.00 GHz
 CPU MHz: 3600
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
 CPU(s) orderable: 1 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 6.2 (Santiago)
 2.6.32-220.el6.x86_64
 Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;
 Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4

Continued on next page



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L3 Cache: 8 MB I+D on chip per chip
 Other Cache: None
 Memory: 16 GB (2 x 8 GB 2Rx4 PC3-12800R-11, ECC)
 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	122	111	<u>121</u>	<u>112</u>	121	113	<u>121</u>	<u>112</u>	<u>121</u>	<u>112</u>	121	112
416.gamess	495	39.5	493	39.7	<u>494</u>	<u>39.6</u>	<u>439</u>	<u>44.6</u>	440	44.5	439	44.6
433.milc	114	80.6	114	80.5	<u>114</u>	<u>80.6</u>	<u>112</u>	<u>81.9</u>	112	81.9	112	82.1
434.zeusmp	<u>72.4</u>	<u>126</u>	72.4	126	72.4	126	<u>72.4</u>	<u>126</u>	72.4	126	72.4	126
435.gromacs	177	40.4	<u>177</u>	<u>40.4</u>	176	40.5	<u>177</u>	<u>40.4</u>	<u>177</u>	<u>40.4</u>	176	40.5
436.cactusADM	<u>56.0</u>	<u>214</u>	55.6	215	57.4	208	<u>56.0</u>	<u>214</u>	55.6	215	57.4	208
437.leslie3d	119	79.0	<u>119</u>	<u>78.8</u>	120	78.4	<u>119</u>	<u>79.0</u>	<u>119</u>	<u>78.8</u>	120	78.4
444.namd	288	27.9	288	27.9	<u>288</u>	<u>27.9</u>	<u>283</u>	<u>28.4</u>	282	28.4	283	28.4
447.dealII	<u>163</u>	<u>70.1</u>	163	70.1	163	70.2	<u>163</u>	<u>70.1</u>	163	70.1	163	70.2
450.soplex	180	46.3	<u>180</u>	<u>46.2</u>	184	45.4	<u>180</u>	<u>46.3</u>	<u>180</u>	<u>46.2</u>	184	45.4
453.povray	99.5	53.5	<u>99.6</u>	<u>53.4</u>	100	53.2	<u>85.3</u>	<u>62.4</u>	85.3	62.4	85.3	62.3
454.calculix	164	50.4	164	50.4	<u>164</u>	<u>50.4</u>	158	52.1	<u>159</u>	<u>51.9</u>	159	51.9
459.GemsFDTD	169	62.8	<u>169</u>	<u>62.7</u>	169	62.7	165	64.3	165	64.4	<u>165</u>	<u>64.4</u>
465.tonto	202	48.7	<u>202</u>	<u>48.6</u>	203	48.5	181	54.5	<u>180</u>	<u>54.5</u>	180	54.6
470.lbm	103	134	<u>103</u>	<u>133</u>	103	133	<u>103</u>	<u>134</u>	<u>103</u>	<u>133</u>	103	133
481.wrf	118	94.7	118	94.5	<u>118</u>	<u>94.5</u>	118	94.7	118	94.5	<u>118</u>	<u>94.5</u>
482.sphinx3	228	85.3	<u>231</u>	<u>84.5</u>	232	84.1	228	85.3	<u>231</u>	<u>84.5</u>	232	84.1

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"
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
 Select only test related files when installing the operating system

Platform Notes

BIOS configuration:
 Intel Hyper-Threading set to Disabled
 Set Power Efficiency Mode to Performance
 Sysinfo program /spec/config/sysinfo.rev6800
 \$Rev: 6800 \$ \$Date:: 2011-10-11 # \$ 6f2ebdff5032aaa42e583f96b07f99d3
 running on RH62-com Tue Jul 10 01:32:31 2012

Continued on next page



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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 E3-1280 V2 @ 3.60GHz
 1 "physical id"s (chips)
 4 "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 : 4
  siblings  : 4
  physical 0: cores 0 1 2 3
cache size : 8192 KB
```

```
From /proc/meminfo
MemTotal:      16302876 kB
HugePages_Total:    0
Hugepagesize:    2048 kB
```

```
From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

```
uname -a:
Linux RH62-com 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13 EST 2011
x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Jul 8 03:23
```

```
SPEC is set to: /spec
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sdal        ext4      289G   48G  227G  18% /
```

Additional information from dmidecode:

```
Memory:
2x Samsung M391B1G73BH0-CK0 8 GB 1600 MHz 2 rank
```

General Notes

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

```
KMP_AFFINITY = "granularity=fine,compact,0,1"
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64"
OMP_NUM_THREADS = "4"
```

Binaries compiled on a system with 2 x Xeon X5645 CPU + 16GB memory using RHEL 6.1



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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.lelie3d: -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 -static -parallel -opt-prefetch
-ansi-alias

C++ benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

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



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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) -static -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

447.dealII: 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: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel
-static

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Peak Optimization Flags (Continued)

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- -static

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-ic12.1-official-linux64.20120425.html>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-revE.20120703.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-revE.20120703.xml>

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

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