



SPEC[®] CFP2006 Result

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Huawei

SPECfp[®]2006 = **63.2**

Huawei RH2285 V3 (Intel Xeon E5-2609 v3)

SPECfp_base2006 = **61.3**

CPU2006 license: 3175

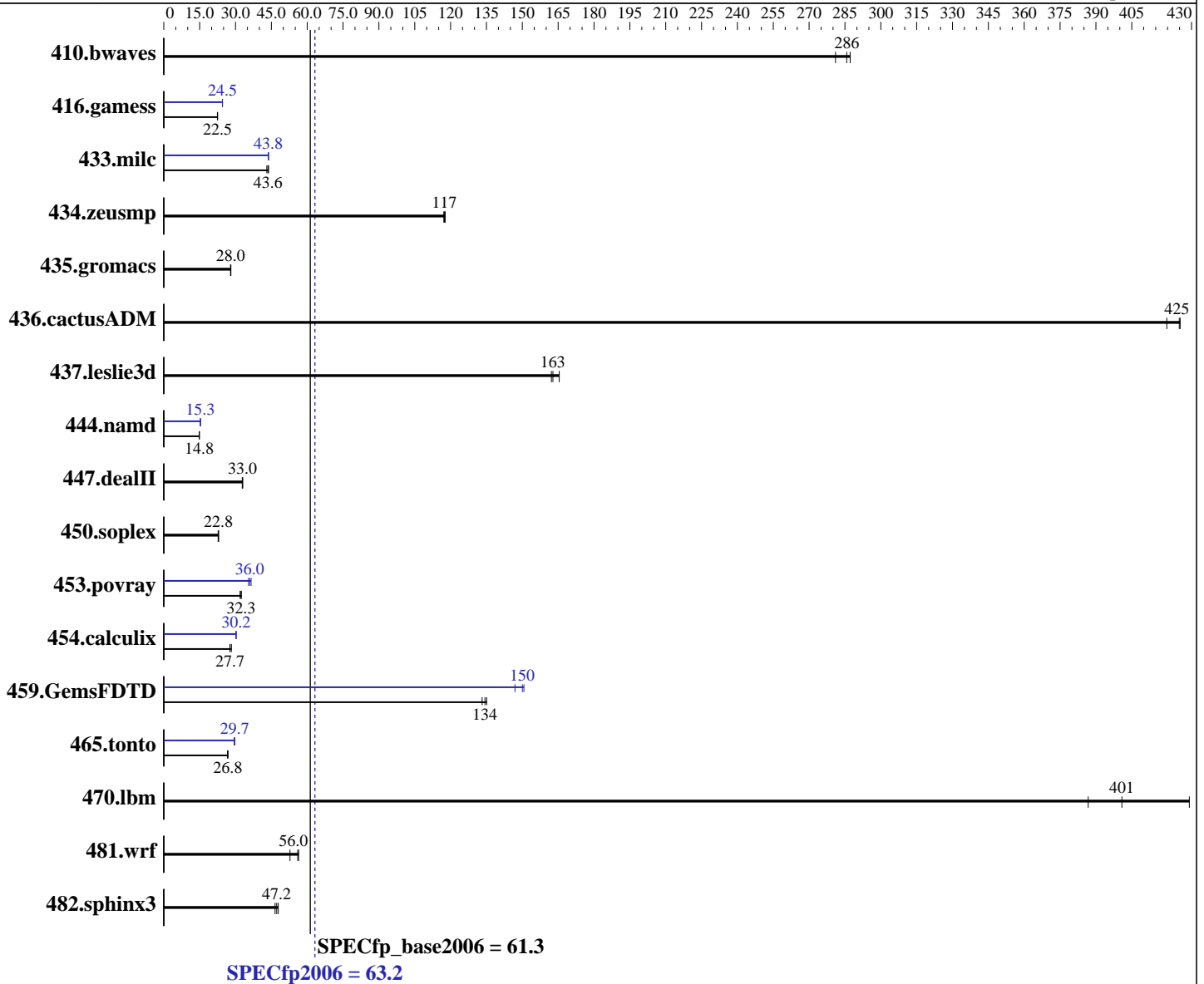
Test sponsor: Huawei

Tested by: Huawei

Test date: Nov-2014

Hardware Availability: Sep-2014

Software Availability: Sep-2014



Hardware	Software
CPU Name: Intel Xeon E5-2609 v3	Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo)
CPU Characteristics: 1900	3.10.0-123.el7.x86_64
CPU MHz: Integrated	Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;
FPU: 12 cores, 2 chips, 6 cores/chip	Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
CPU(s) enabled: 1,2 chip	Auto Parallel: Yes
CPU(s) orderable: 32 KB I + 32 KB D on chip per core	File System: xfs
Primary Cache: 256 KB I+D on chip per core	
Secondary Cache:	
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L3 Cache: 15 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
 Disk Subsystem: 1 x 500 GB SATA, 7200 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	47.3	287	48.4	281	47.6	286	47.3	287	48.4	281	47.6	286
416.gamess	869	22.5	872	22.5	873	22.4	797	24.6	798	24.5	798	24.5
433.milc	213	43.1	211	43.6	209	43.8	210	43.8	210	43.8	210	43.8
434.zeusmp	77.3	118	77.5	117	77.7	117	77.3	118	77.5	117	77.7	117
435.gromacs	255	28.0	256	27.9	254	28.1	255	28.0	256	27.9	254	28.1
436.cactusADM	28.5	420	28.1	425	28.1	425	28.5	420	28.1	425	28.1	425
437.leslie3d	57.7	163	56.8	165	58.0	162	57.7	163	56.8	165	58.0	162
444.namd	540	14.8	540	14.8	540	14.8	524	15.3	523	15.3	523	15.3
447.dealII	347	33.0	349	32.8	347	33.0	347	33.0	349	32.8	347	33.0
450.soplex	365	22.8	363	23.0	367	22.7	365	22.8	363	23.0	367	22.7
453.povray	164	32.4	165	32.3	167	31.9	148	36.0	146	36.5	150	35.4
454.calculix	292	28.3	298	27.7	298	27.7	273	30.2	273	30.2	272	30.3
459.GemsFDTD	79.0	134	79.7	133	78.5	135	72.2	147	70.4	151	70.7	150
465.tonto	369	26.7	367	26.8	367	26.8	334	29.4	331	29.7	332	29.7
470.lbm	32.0	429	35.5	387	34.3	401	32.0	429	35.5	387	34.3	401
481.wrf	212	52.8	199	56.0	198	56.4	212	52.8	199	56.0	198	56.4
482.sphinx3	407	47.9	419	46.5	413	47.2	407	47.9	419	46.5	413	47.2

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
 Baseboard Management Controller used to adjust the fan speed to 100%
 Sysinfo program /spec14/config/sysinfo.rev6818
 \$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191
 running on localhost.localdomain Tue Nov 11 19:41:36 2014

This section contains SUT (System Under Test) info as seen by

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Platform Notes (Continued)

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 E5-2609 v3 @ 1.90GHz
 2 "physical id"s (chips)
 12 "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     : 6
  siblings      : 6
  physical 0    : cores 0 1 2 3 4 5
  physical 1    : cores 0 1 2 3 4 5
cache size     : 15360 KB
```

From /proc/meminfo

```
MemTotal:      263721960 kB
HugePages_Total: 0
Hugepagesize:  2048 kB
```

From /etc/*release* /etc/*version*

```
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server
```

uname -a:

```
Linux localhost.localdomain 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57
EDT 2014 x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Nov 11 08:45

SPEC is set to: /spec14

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdal        xfs   98G   17G   81G  18% /
```

Additional information from dmidecode:

```
BIOS Insyde Corp. 1.16 09/02/2014
Memory:
 8x Samsung M393A2G40DB0-CPB 16 GB 1600 MHz 1 rank
 8x Samsung M393A2G40DB0-CPB 16 GB 1600 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 = "/spec14/libs/32:/spec14/libs/64:/spec14/sh"

OMP_NUM_THREADS = "12"

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: basepeak = yes

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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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