



SPEC[®] CFP2006 Result

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Huawei

SPECfp[®]_rate2006 = NC

Huawei RH5885H v3 (Intel Xeon E7-4820 v2)

SPECfp_rate_base2006 = NC

CPU2006 license: 3175

Test date: Apr-2014

Test sponsor: Huawei

Hardware Availability: Feb-2014

Tested by: Huawei

Software Availability: Nov-2013

SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the submitter has notified SPEC that the system was run with a BIOS which included a version of the Intel MRC (Memory Reference Code) that is not supported by Huawei or Intel.

	Copies
410.bwaves	
416.gamess	
433.milc	
434.zeusmp	
435.gromacs	
436.cactusADM	
437.leslie3d	
444.namd	
447.dealII	
450.soplex	
453.povray	
454.calculix	
459.G	
465.tonto	
470.lbm	
481.wrf	
482.sphinx3	



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Hardware

CPU Name: Intel Xeon E7-4820 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 2.50 GHz
 CPU MHz: 2000
 FPU: Integrated
 CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip, 2 threads/core
 CPU(s) orderable: 2,4 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core
 L3 Cache: 16 MB I+D on chip per chip
 Other Cache: None
 Memory: 512 GB (64 x 8 GB 2Rx4 PC3-10600R-9, ECC)
 Disk Subsystem: 2 x 300 GB SAS, 10K RPM
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)
 Compiler: 2.6.32-431.el6.x86_64
 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
 Arch Parallel: No
 File System: ext4
 System State: Run level 3 (multi-user)
 Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: None

Non-Compliant



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Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
416.gamess	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
433.milc	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
434.zeusmp	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
435.gromacs	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
436.cactusADM	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
437.leslie3d	64	NC	NC	NC	NC	NC	NC	32	NC	NC	NC	NC	NC	NC		
444.namd	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
447.dealII	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
450.soplex	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
453.povray	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
454.calculix	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
459.GemsFDTD	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
465.tonto	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
470.lbm	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
481.wrf	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
482.sphinx3	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		

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"



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Platform Notes

BIOS configuration:

Set Power Efficiency Mode to Performance

Set Lock_step to disabled

Baseboard Management Controller used to adjust the fan speed to 100%

Sysinfo program /spec/config/sysinfo_rev0.2

\$Rev: 6818 \$ \$Date:: 2012-07-17 # \$ e6d102526650a6e4d596a3cee98f191

running on speccpu Sat Apr 19 14:52:56 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>

From /proc/cpuinfo

model name : Intel(R) Xeon(R) CPU E7-4820 v2 @ 2.00GHz

4 "physical id"s (chips)

64 "processors"

cores, siblings (Caution: counting these is hw and system dependent. The following excerpt from /proc/cpuinfo might not be reliable. Use with caution.)

cpu cores : 64

siblings : 16

physical 0: cores 0 1 2 3 4 5 6 7

physical 1: cores 0 1 2 3 4 5 6 7

physical 2: cores 0 1 2 3 4 5 6 7

physical 3: cores 0 1 2 3 4 5 6 7

cache size : 16384 KB

From /proc/meminfo

529105272 kB

HugePages_Total: 0

Hugepagesize: 2048 kB

/usr/bin/dmccsb_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:

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Platform Notes (Continued)

```
Linux speccpu 2.6.32-431.el6.x86_64 #1 SMP Sat Nov 10 22:19:54 EST 2013
x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Apr 19 01:51
```

```
SPEC is set to: /spec
```

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2        ext4  259G  68G  191G  28% /
```

```
Additional information from dmidecode:
```

```
BIOS American Megatrends, Inc. BLISV09 02/09/2014
```

```
Memory:
```

```
64x 8 GB
```

```
32x NO DIMM NO DIMM
```

```
27x Samsung M393B1K70CH0-CH9 8 GB 1333 MHz 2 rank
```

```
37x Samsung M393B1K70DH0-CH9 8 GB 1333 MHz 2 rank
```

```
(End of data from sysinfo program)
```

```
Regarding the sysinfo display about the memory installed, the correct amount of memory is 512 GB and the dmidecode description should have two lines reading as:
```

```
27x Samsung M393B1K70CH0-CH9 8 GB 1333 MHz 2 rank
```

```
37x Samsung M393B1K70DH0-CH9 8 GB 1333 MHz 2 rank
```

General Notes

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

```
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64:/spec/sh"
```

```
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
```

```
Filesystem page cache cleared with:
```

```
echo 1 > /proc/sys/vm/drop_caches
```

```
runspec command invoked through numactl i.e.:
```

```
numactl --interleave=all runspec <etc>
```



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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.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.blender: -DSPEC_CPU_LP64 -nofor_main
59.GemSFTD: -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.splix3: -DSPEC_CPU_LP64

```

Base Optimization Flags

C benchmarks:
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3

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Base Optimization Flags (Continued)

C++ benchmarks:

`-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias -opt-mem-layout-trans=3`

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

`-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias -opt-mem-layout-trans=3`

Peak Compiler Invocation

C benchmarks:

`icc -m64`

C++ benchmarks:

`icpc -m64`

Fortran benchmarks:

`ifort -m64`

Benchmarks using both Fortran and C:

`ifort -m64`

Peak Portability Flags

Same as Base Portability Flags



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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) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -auto-ilp2

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: basepeak = yes

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) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -unroll14 -ansi-alias

Fortran benchmark:

410.waves: 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) -unroll12
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.le3d: -xAVX -ipo -O3 -no-prec-div -opt-prefetch

459.GemsFDTD: basepeak = yes

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll14 -auto
-inline-calloc -opt-malloc-options=3

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Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -opt-mem-out -tans=3(pass 2)
-prof-use(pass 2) -opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xAVX -ipo -O3 -no-prec-div -auto-ilp32

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

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