



SPEC® CFP2006 Result

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Huawei

SPECfp®2006 = **NC**

Huawei RH2288H V3 (Intel Xeon E5-2609 v4)

SPECfp_base2006 = **NC**

CPU2006 license: 3175

Test date: Mar-2016

Test sponsor: Huawei

Hardware Availability: Mar-2016

Tested by: Huawei

Software Availability: Mar-2016

SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not
a href="http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2">SPEC CPU run
up policy on gener

- 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.GemsFDTD |
- 465.tonto |
- 471.lbm |
- 481.wrf |
- 482.sphinx3 |

Non-Compliant



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compliant with the SPEC CPU run and reporting rules. See http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2 for more information. See <https://www.spec.org/osg/policy.html#AppendixC> for the SPEC CPU run and reporting rules.

Hardware		Software	
CPU Name:	Intel Xeon E5-2609 v4	Operating System:	Red Hat Enterprise Linux Server release 7.0 (Maipo)
CPU Characteristics:		Kernel:	3.10.0-123.el7.x86_64
CPU MHz:	1700	Compiler:	C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux; Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux
FPU:	Integrated	Architecture:	Parallel: Yes
CPU(s) enabled:	16 cores, 2 chips, 8 cores/chip	File System:	ext4
CPU(s) orderable:	1,2 chip	System State:	Run level 3 (multi-user)
Primary Cache:	32 KB I + 32 KB D on chip per core	Base Pointers:	64-bit
Secondary Cache:	256 KB I+D on chip per core	Peak Pointers:	32/64-bit
L3 Cache:	20 MB I+D on chip per chip	Other Software:	None
Other Cache:	None		
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2400R, running at 1866 MHz)		
Disk Subsystem:	1 x 2 T SATA, 7200 RPM		
Other Hardware:	None		

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Results Table

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

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

Operating System Notes

each shell to unlimited using "ulimit -s unlimited"

Platform Notes

```

BIOS configuration:
Set Power Efficiency Mode to Custom
Set Snoop Mode to HS mode
Set Patrol Scrub to Disable
Sysinfo program /speccpu/spec16/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Wed Mar 9 10:12:41 2016

```

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Platform Notes (Continued)

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

```
From /proc/cpuinfo
model name      : Intel(R) Xeon(R) CPU E5-2609 v4 @ 1.70GHz
 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
physical 1: cores 0 1 2 3 4 5 6
cache size     : 20480 KB
```

```
From /proc/meminfo
MemTotal:      263571176 kB
HugePages_Total:
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 Mar 9 10:11

```
SPEC is set to: /speccpu/spec16
Filesystem      Type  Size  Used Avail Use% Mounted on
```

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Platform Notes (Continued)

```
/dev/sda2      ext4 1.6T  39G  1.5T  3% /
Additional information from dmidecode:
```

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Insyde Corp. 3.09 02/22/2016

Memory:

```
8x NO DIMM NO DIMM 3 rank
8x Samsung M393A2G40EB1 CRC 16 GB 1 rank 2400 MHz, configured at 1867 MHz
8x Samsung M393A2G40EB1 CRC 16 GB 2 rank 2400 MHz, configured at 1867 MHz
```

(End of data from sysinfo program)

General Notes

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

```
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/speccpu/spec16/libs/32:/speccpu/spec16/libs/64:/speccpu/spec16/sh"
OMP_NUM_THREADS = "16"
```

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using Red Hat EL 7.1

Transparent Huge Pages enabled with:

```
echo always /sys/kernel/mm/transparent_hugepage/enabled
```

runspec command invoked through numactl i.e.:

```
numactl -intel --m=0 --l=0 --s=0 --e=all runspec <etc>
```

Base Compiler Invocation

C benchmarks:

```
icc -m64
```

C++ benchmarks:

```
icpc -m64
```

Fortran benchmarks:

```
ifort -m64
```

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Base Compiler Invocation (Continued)

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:
-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



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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: basepeak = yes

470.lbm: basepeak = yes

482.splix3: basepeak = yes

C++ benchmarks:

444.namd: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -fno-alias
-auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4
Continued on next page



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Peak Optimization Flags (Continued)

453.povray (continued):
-ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-r

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2
-inline-level=0 -opt-prefetch -parallel

465.tonto: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -inline-alloc
-opt-alloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.gamess-ADM: 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-ic16.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.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-ic16.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.xml>

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

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