SPEC® CFP2006 Result

Huawei RH1288 V3 (Intel Xeon E5-2695 v4)

Huawei

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Huawei

SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not available as required by <a href="http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2">SPEC CPU rule 1.3.2</a> and the SPEC Open Systems Group policy on general availability.<n>
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**Hardware**

- **CPU Name:** Intel Xeon E5-2695 v4
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.30 GHz
- **CPU MHz:** 2100
- **FPU:** Integrated
- **CPU(s) enabled:** 36 cores, 2 chips, 18 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
- **L3 Cache:** 45 MB I+D on chip per chip
- **Other Cache:** None
- **Memory:** 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R)
- **Disk Subsystem:** 1 x 500GB SATA, 7200 RPM
- **Other Hardware:** None

**Operating System:** Red Hat Enterprise Linux Server release 7.0 (Maipo) 3.10.0-123.el7.x86_64

**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

**Auto Parallel:** Yes

**File System:** xfs

**System State:** Run level 3 (multi-user)

**Base Pointers:** 64-bit

**Peak Pointers:** 32/64-bit

**Other Software:** None
Huawei

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SPECfp2006 = NC
SPECfp_base2006 = NC

CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei

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Results Table

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</tbody>
</table>

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 mode
Set Patrol Scrub to Disable
Set Hyper-Threading to Disable
Sysinfo program /spec16/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 ## e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Tue Mar  8 22:36:42 2016

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Huawei RH1288 V3 (Intel Xeon E5-2695 v4)

<table>
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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, set:

http://www.spec.org/cpu2006/Docs/config.html#sysinfo

---

**From /proc/cpuinfo**

```
model name : Intel(R) Xeon(R) CPU E5-2695 8 @ 2.10GHz
  2 "physical id"s (chips)
  36 "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 : 18
siblings : 18
physical 0: cores 0 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 1: cores 0 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
```

**From /proc/meminfo**

```
MemTotal:       263568856 kB
HugePages_Total:       0
Hugepagesize:       2048 kB
```

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

```
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-cputype: cputype: x86_64
system-cversion: x86_64
system-ostype: Red Hat Enterprise Linux Server release 7.0 (Maipo)
```

**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 8 07:50**

**SPEC is set to:** /spec16
Huawei RH1288 V3 (Intel Xeon E5-2695 v4)

CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei

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Platform Notes (Continued)

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 449G 139G 311G 31% /

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. 3.12 03/03/2016
Memory:
8x Samsung M393A2G40EB1-CRC 16 GB 1 rank 2400 MHz
8x Samsung M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/spec16/libs/32:/spec16/libs/64:/spec16/sh"
OMP_NUM_THREADS = 36

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
runcpl command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icc -m64

Fortran benchmarks:
ifort -m64

Continued on next page
## SPEC CFP2006 Result

**Huawei**

Huawei RH1288 V3 (Intel Xeon E5-2695 v4)

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| CPU2006 license: | 3175 |
| Test date:       | Mar-2016 |
| Hardware Availability: | Mar-2016 |
| Software Availability: | Aug-2015 |
| Tested by:       | Huawei |
| Test sponsor:    | Huawei |

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### Base Compiler Invocation (Continued)

Benchmarks using both Fortran and C:

- icc  -m64 ifort -m64

### Base Portability Flags

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<thead>
<tr>
<th>Benchmark</th>
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<tbody>
<tr>
<td>410.bwaves</td>
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<tr>
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<td>482.sphinx3</td>
<td>-DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX</td>
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</tbody>
</table>

### 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
Huawei RH1288 V3 (Intel Xeon E5-2695 v4)  

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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.sphinx3: 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
SPEC CFP2006 Result

Huawei
Huawei RH1288 V3 (Intel Xeon E5-2695 v4)

CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei

SPECfp2006 = NC
SPECfp_base2006 = NC

CPU2006 license: 3175
Test date: Mar-2016
Hardware Availability: Mar-2016
Software Availability: Aug-2015

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Peak Optimization Flags (Continued)

453.povray (continued):
  -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes
  -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-rep

416.games: -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

434.zeusmp: basepeak = yes
  -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

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes
  -CORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

437.leslie3d: basepeak = yes
  -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-calloc
  -opt-prefetch -parallel
  -opt-prefetch -parallel

436.cactusADM: basepeak = yes
  -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-calloc

454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

459.GemsFDTD: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes
  -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-calloc

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 using the following links:
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For questions about this result, please contact the tester.

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

Originally published on 29 June 2016.


Tested with SPEC CPU2006 v1.2.

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