



SPEC® CINT2006 Result

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Huawei

SPECint®_rate2006 = **NC**

Huawei RH1288 V3 (Intel Xeon E5-2690 v4)

SPECint_rate_base2006 = **NC**

CPU2006 license: 3175

Test date: Apr-2016

Test sponsor: Huawei

Hardware Availability: Mar-2016

Tested by: Huawei

Software Availability: Aug-2015

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

| | Copies |
|----------------|--------|
| 400.perlbench | |
| 401.bzip2 | |
| 403.gcc | |
| 429.mcf | |
| 445.gobmk | |
| 456.hmmer | |
| 458.sjeng | |
| 462.libquantum | |
| 464.h264ref | |
| 471.omnetpp | |
| 473.astar | |
| 483.xalancbmk | |

Hardware

CPU Name: Intel Xeon E5-2690 v4
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 28 cores, 2 chips, 14 cores/chip, 2 threads/core
 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: 35 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, 10000 RPM
 Other Hardware: None

Software

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
 Auto Parallel: No
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 32-bit
 Peak Pointers: 32/64-bit
 Other Software: Microquill SmartHeap V10.2



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Results Table

| Benchmark | Base | | | | | | | | Peak | | | | | | | |
|----------------|--------|---------|-------|---------|-------|---------|-------|--------|---------|-------|---------|-------|---------|-------|--|--|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | | |
| 400.perlbench | 56 | NC | NC | NC | NC | NC | NC | 56 | NC | NC | NC | NC | NC | NC | | |
| 401.bzip2 | 56 | NC | NC | NC | NC | NC | NC | 56 | NC | NC | NC | NC | NC | NC | | |
| 403.gcc | 56 | NC | NC | NC | NC | NC | NC | 56 | NC | NC | NC | NC | NC | NC | | |
| 429.mcf | 56 | NC | NC | NC | NC | NC | NC | 56 | NC | NC | NC | NC | NC | NC | | |
| 445.gobmk | 56 | NC | NC | NC | NC | NC | NC | 56 | NC | NC | NC | NC | NC | NC | | |
| 456.hmmer | 56 | NC | NC | NC | NC | NC | NC | 56 | NC | NC | NC | NC | NC | NC | | |
| 458.sjeng | 56 | NC | NC | NC | NC | NC | NC | 56 | NC | NC | NC | NC | NC | NC | | |
| 462.libquantum | 56 | NC | NC | NC | NC | NC | NC | 56 | NC | NC | NC | NC | NC | NC | | |
| 464.h264ref | 56 | NC | NC | NC | NC | NC | NC | 56 | NC | NC | NC | NC | NC | NC | | |
| 471.omnetpp | 56 | NC | NC | NC | NC | NC | NC | 56 | NC | NC | NC | NC | NC | NC | | |
| 473.astar | 56 | NC | NC | NC | NC | NC | NC | 56 | NC | NC | NC | NC | NC | NC | | |
| 483.xalancbmk | 56 | NC | NC | NC | NC | NC | NC | 56 | NC | NC | NC | NC | NC | NC | | |

Results appear in the column 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"

Platform Notes

BIOS configuration:
Set Power Efficiency Mode to Performance
Set Snoop Mode to COD mode
Set Patrol Scrub to Disable
Sysinfo program /spec16/config/sysinfo.rev6914
\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Thu Apr 7 15:44:45 2016

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

Continued on next page



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http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2 SPEC CPU run
<https://www.spec.org/osg/policy.html#AppendixC> gener

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 E5-2690 v4@ 2.50GHz
 2 "physical id"s (chips)
 56 "processors"
cores, siblings (Caution: counting them is slow and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
caution.)
  cpu cores : 7
  siblings  : 14
  physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
  physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
cache size : 17920 KB
```

```
From /proc/meminfo
MemTotal:      263566032 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"
base: 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 Apr 7 05:14

```
SPEC is set to: /spec16
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sda2        xfs       449G      352G    98G   79% /
```

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a href="http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2">SPEC CPU run
up policy on gener

Platform Notes (Continued)

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 rank 2400 MHz
8x Samsung M393A2G40EB1-CRC 16 GB rank 2400 MHz

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/spec16/libs/32:/spec16/libs/64:/spec16/sh"

Binaries compiled on 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
Filesystem page cache cleared with:
echo 1 > /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

Base Compiler Invocation

C benchmarks:

icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

C++ benchmarks:

icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin



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up policy on gener

Base Portability Flags

```

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX IA32
401.bzip2: -D_FILE_OFFSET_BITS=64
403.gcc: -D_FILE_OFFSET_BITS=64
429.mcf: -D_FILE_OFFSET_BITS=64
445.gobmk: -D_FILE_OFFSET_BITS=64
456.hmmer: -D_FILE_OFFSET_BITS=64
458.sjeng: -D_FILE_OFFSET_BITS=64
462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
464.h264ref: -D_FILE_OFFSET_BITS=64
471.omnetpp: -D_FILE_OFFSET_BITS=64
473.astar: -D_FILE_OFFSET_BITS=64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

```

Base Optimization Flags

C benchmarks:

```

-xCORE-AVX2 -ipo -O3 -n -prec-div -opt-prefetch
-opt-mem-layout-trans=3

```

C++ benchmarks:

```

-xCORE-AVX2 -ipo -O3 -n -prec-div -opt-prefetch
-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmarthearp

```

Base Other Flags

C benchmarks:

```

403.gcc: -Dalloca=_alloca

```

Peak Compiler Invocation

C benchmarks (except as noted below):

```

icc -m32 -I/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

```

400.perlbench: icc -m64

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up policy on gener

Peak Compiler Invocation (Continued)

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:

icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

Peak Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
403.gcc: -D_FILE_OFFSET_BITS=64
429.mcf: -D_FILE_OFFSET_BITS=64
445.gobmk: -D_FILE_OFFSET_BITS=64
456.hmmer: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
458.sjeng: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
464.h264ref: -D_FILE_OFFSET_BITS=64
471.omnetpp: -D_FILE_OFFSET_BITS=64
473.astar: -D_FILE_OFFSET_BITS=64
483.xalanbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Peak Optimization Flags

400.perlbench: -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) -auto-ilp32
401.bzip2: -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) -opt-prefetch
-auto-ilp32 -ansi-alias
403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div

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Peak Optimization Flags (Continued)

429.mcf: basepeak = yes

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 2)
-prof-use(pass 2) -par-num-threads=1(pass 1) -ansi-alias
-opt-mem-layout-trans=3

456.hmmcr: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -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
-auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: -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
-ansi-alias

C++ benchmarks:

471.omnetpp: -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) -ansi-alias
-opt-mem-layout-trans=3 -region-strategy=block -Wl,-z,muldefs
-L/sh -lsmartheap

477.astar: basepeak = yes

482.libquantum: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca



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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-BTW-V1.0.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml>

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

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Fri Oct 21 16:47:15 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 29 June 2016.