SPEC® CINT2006 Result
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Huawei

Huawei RH2285 V3 (Intel Xeon E5-2650 v3)

$SPECint®2006 =$ 52.1

$SPECint\_base2006 =$ 48.5

CPU2006 license: 3175	**Test date:** Jan-2014
Test sponsor: Huawei	**Hardware Availability:** Sep-2014
Tested by: Huawei	**Software Availability:** Nov-2013

0 100 200 300 400 500 600 700 800 900   1050   1200   1350   1500   1650   1800   1950   2100   2250   2400   2550   2700   2850   3150

400.perlbench 40.0 / 33.9

401.bzip2 21.7 / 21.5

403.gcc 30.9 / 29.7

429.mcf 53.7 / 53.7

445.gobmk 24.7 / 20.5

456.hmmer 59.3

458.sjeng 28.9 / 28.4

462.libquantum 3020

464.h264ref 32.0

471.omnetpp 40.9

473.astar 27.2 / 29.1

483.xalancbmk 28.9 / 56.5 / 55.5

SPECint_base2006 = 48.5

SPECint2006 = 52.1

Hardware

CPU Name:	Intel Xeon E5-2650 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.00 GHz
CPU MHz:	2300
FPU:	Integrated
CPU(s) enabled:	20 cores, 2 chips, 10 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:	25 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem:	1 x 500 GB SATA, 7200 RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.5 (Santiago)
	2.6.32-431.el6.x86_64
Compiler:	C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4
System State:	Run level 3 (multi-user)
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V10.0

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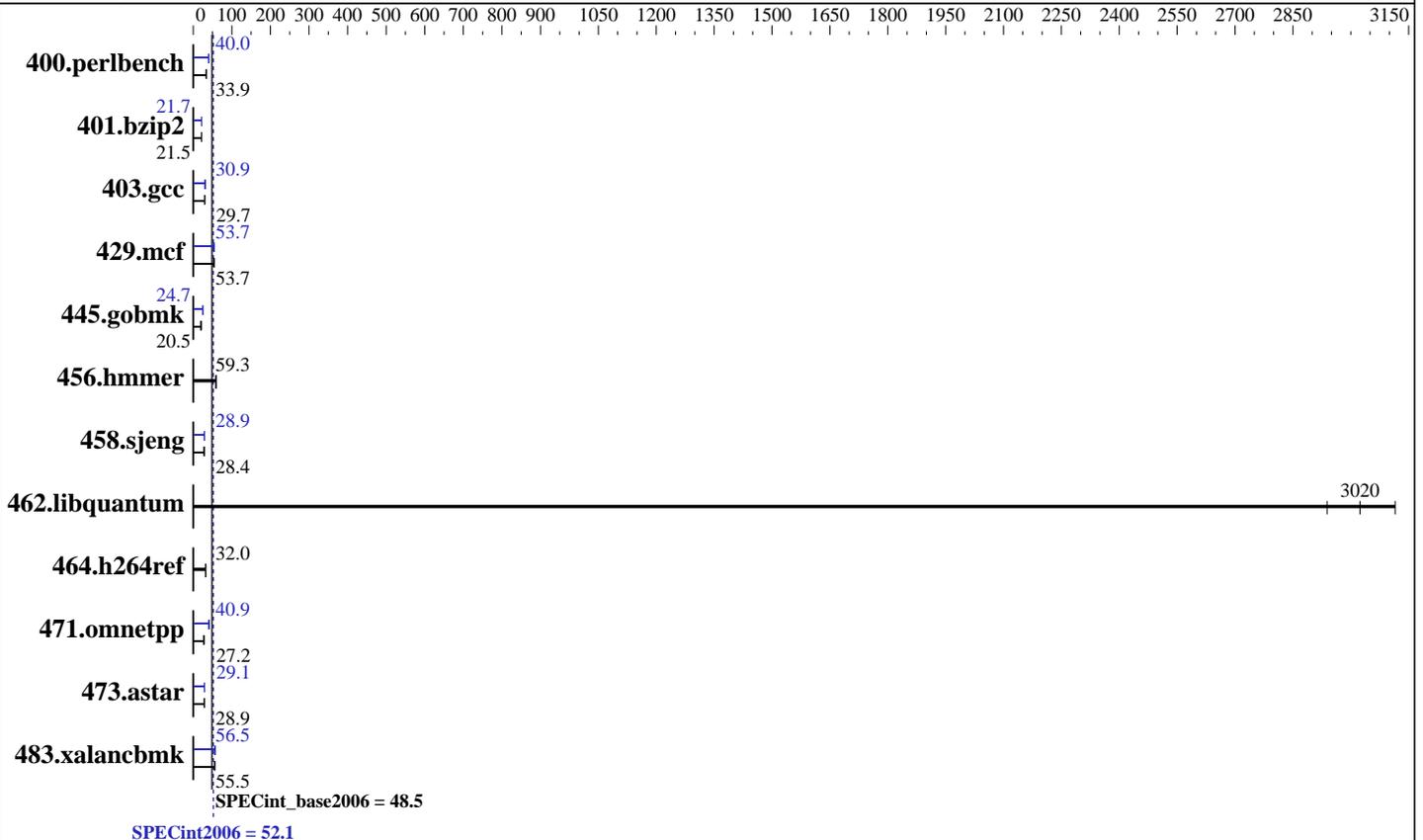SPECint_base2006 = 48.5

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	**288**	**33.9**	288	34.0	289	33.8	245	39.9	**244**	**40.0**	244	40.1
401.bzip2	448	21.5	450	21.5	**449**	**21.5**	**445**	**21.7**	445	21.7	445	21.7
403.gcc	270	29.8	**271**	**29.7**	272	29.6	260	31.0	261	30.8	**260**	**30.9**
429.mcf	**170**	**53.7**	168	54.3	170	53.6	171	53.2	**170**	**53.7**	170	53.8
445.gobmk	551	19.0	511	20.5	**511**	**20.5**	424	24.7	**424**	**24.7**	425	24.7
456.hmmer	**157**	**59.3**	159	58.6	156	59.6	**157**	**59.3**	159	58.6	156	59.6
458.sjeng	**426**	**28.4**	428	28.3	426	28.4	**418**	**28.9**	418	28.9	418	28.9
462.libquantum	6.65	3110	**6.85**	**3020**	7.05	2940	6.65	3110	**6.85**	**3020**	7.05	2940
464.h264ref	**691**	**32.0**	678	32.6	698	31.7	**691**	**32.0**	678	32.6	698	31.7
471.omnetpp	229	27.2	**229**	**27.2**	224	27.9	153	40.8	**153**	**40.9**	153	41.0
473.astar	243	28.9	**243**	**28.9**	244	28.8	242	29.1	241	29.2	**241**	**29.1**
483.xalancbmk	**124**	**55.5**	125	55.3	124	55.6	122	56.6	123	56.3	**122**	**56.5**

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

Submit Notes

The config file option 'submit' was used.

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 /spec/config/sysinfo.rev6818
    $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
    running on localhost Mon Jan  6 08:34:06 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 E5-2650 v3 @ 2.30GHz
          2 "physical id"s (chips)
          40 "processors"
       cores, siblings (Caution: counting these is hw and system dependent.  The
       following excerpts from /proc/cpuinfo might not be reliable.  Use with
       caution.)
```

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Platform Notes (Continued)

```
      cpu cores : 10
      siblings  : 20
      physical 0: cores 0 1 2 3 4 8 9 10 11 12
      physical 1: cores 0 1 2 3 4 8 9 10 11 12
   cache size : 25600 KB

From /proc/meminfo
   MemTotal:       264274332 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

/usr/bin/lsb_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:
   Linux localhost 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54 EST 2013
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 5 19:39

SPEC is set to: /spec
   Filesystem      Type  Size  Used Avail Use% Mounted on
   /dev/sda1       ext4  433G   98G  314G  24% /

Additional information from dmidecode:
  BIOS Insyde Corp. 1.13 08/01/2014
  Memory:
   8x Samsung M393A2G40DB0-CPB 16 GB 2133 MHz 1 rank
   8x Samsung M393A2G40DB0-CPB 16 GB 2133 MHz 2 rank

(End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64:/spec/sh"
OMP_NUM_THREADS = "40"

 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>
```

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Base Compiler Invocation

C benchmarks:
```
icc  -m64
```

C++ benchmarks:
```
icpc -m64
```

Base Portability Flags

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

Base Optimization Flags

C benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32
```

C++ benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs -L/sh -lsmartheap64
```

Base Other Flags

C benchmarks:

```
403.gcc: -Dalloca=_alloca
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc  -m64
```

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Peak Compiler Invocation (Continued)

```
400.perlbench: icc -m32

445.gobmk: icc -m32
```

C++ benchmarks (except as noted below):
```
icpc -m32

473.astar: icpc -m64
```

Peak Portability Flags

```
400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
400.perlbench: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
               -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
               -opt-prefetch -ansi-alias

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
           -O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32
           -opt-prefetch -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc
         -opt-malloc-options=3 -auto-ilp32

429.mcf: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel
         -opt-prefetch -auto-p32

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
           -ansi-alias

456.hmmer: basepeak = yes
```

Continued on next page

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Peak Optimization Flags (Continued)

```
458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
           -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
           -unroll4
```

```
462.libquantum: basepeak = yes
```

```
464.h264ref: basepeak = yes
```

C++ benchmarks:

```
471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
             -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
             -opt-ra-region-strategy=block         -ansi-alias
             -Wl,-z,muldefs -L/sh -lsmartheap
```

```
473.astar: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
           -auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64
```

```
483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
               -ansi-alias -Wl,-z,muldefs -L/sh -lsmartheap
```

Peak Other Flags

C benchmarks:

```
403.gcc: -Dalloca=_alloca
```

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-HASWELL-V1.1.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-HASWELL-V1.1.xml

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

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