SPEC® CINT2006 Result

Huawei

Huawei CH242 V3 (Intel Xeon E7-8891 v2)

SPECint®2006 = 65.2

SPECint_base2006 = 62.3

CPU2006 license:	3175	**Test date:**	Jan-2015
Test sponsor:	Huawei	**Hardware Availability:**	Sep-2014
Tested by:	Huawei	**Software Availability:**	Sep-2014

Results graph — benchmark scores:

- 400.perlbench: 43.0 / 35.6
- 401.bzip2: 25.6 / 25.6
- 403.gcc: 36.6 / 36.0
- 429.mcf: 62.6 / 62.0
- 445.gobmk: 29.6 / 29.6
- 456.hmmer: 66.8 / 66.0
- 458.sjeng: 31.6
- 462.libquantum: 5490
- 464.h264ref: 56.1
- 471.omnetpp: 57.3 / 42.1
- 473.astar: 34.3 / 34.3
- 483.xalancbmk: 61.6 / 60.9

SPECint_base2006 = 62.3

SPECint2006 = 65.2

Hardware

CPU Name:	Intel Xeon E7-8891 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.70 GHz
CPU MHz:	3200
FPU:	Integrated
CPU(s) enabled:	40 cores, 4 chips, 10 cores/chip
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:	37.5 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (32 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz)
Disk Subsystem:	1 x 500 GB SATA, 7200 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 15.0.0.090 of Intel C++ Studio XE for Linux
Auto Parallel:	Yes
File System:	xfs
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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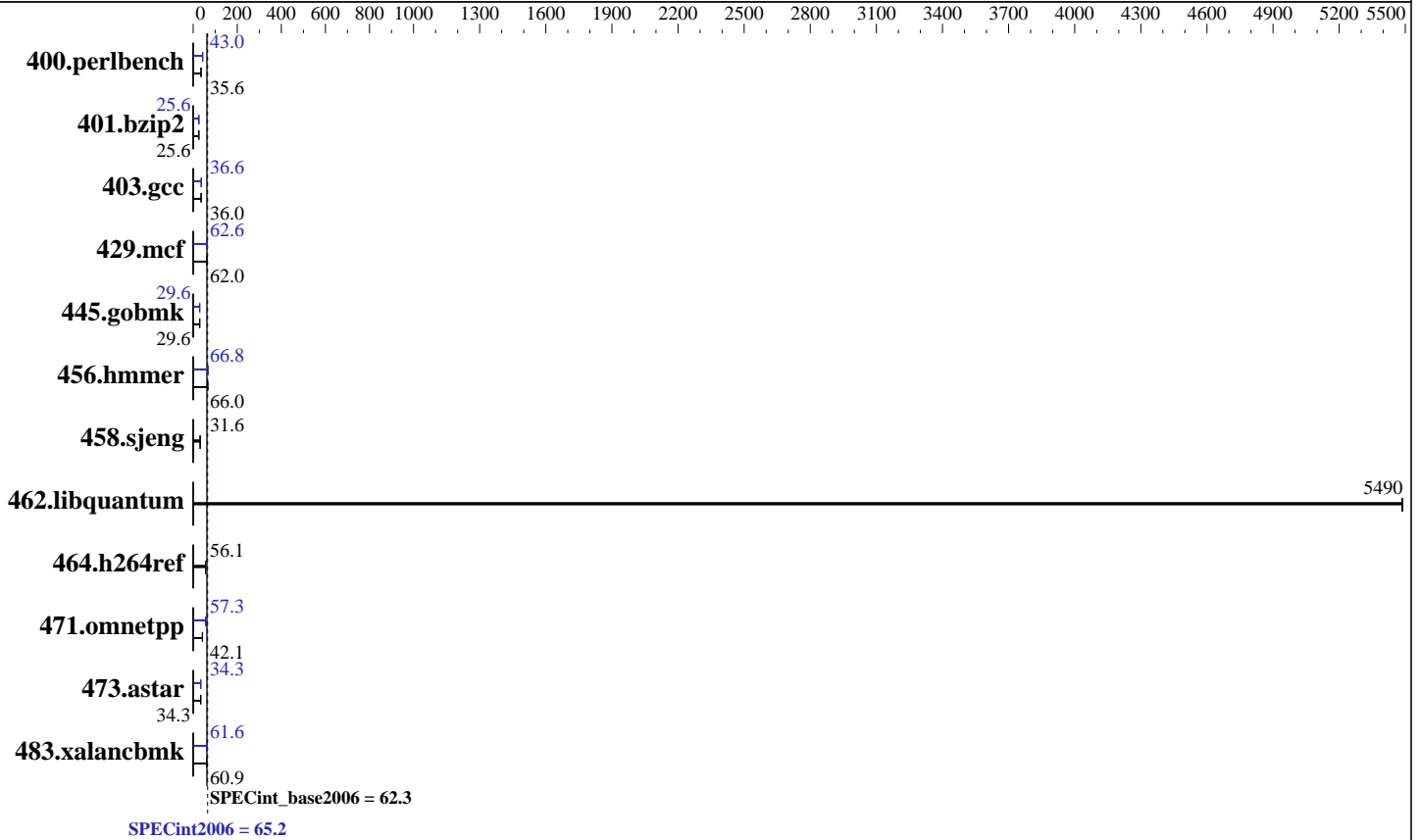| SPECint2006 =	65.2
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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	273	35.8	**274**	**35.6**	275	35.6	**227**	**43.0**	228	42.9	227	43.0
401.bzip2	377	25.6	377	25.6	**377**	**25.6**	**376**	**25.6**	376	25.6	376	25.6
403.gcc	224	36.0	223	36.0	**224**	**36.0**	220	36.6	**220**	**36.6**	220	36.6
429.mcf	147	61.9	**147**	**62.0**	145	63.1	146	62.5	**146**	**62.6**	145	63.0
445.gobmk	355	29.6	353	29.7	**354**	**29.6**	354	29.6	**354**	**29.6**	354	29.6
456.hmmer	**141**	**66.0**	141	66.1	141	65.9	140	66.8	**140**	**66.8**	140	66.8
458.sjeng	**383**	**31.6**	383	31.6	383	31.6	**383**	**31.6**	383	31.6	383	31.6
462.libquantum	3.77	5490	**3.78**	**5490**	3.78	5480	3.77	5490	**3.78**	**5490**	3.78	5480
464.h264ref	395	56.0	**394**	**56.1**	394	56.2	395	56.0	**394**	**56.1**	394	56.2
471.omnetpp	147	42.5	**149**	**42.1**	151	41.4	113	55.4	109	57.4	**109**	**57.3**
473.astar	205	34.3	**205**	**34.3**	206	34.2	205	34.3	205	34.3	**205**	**34.3**
483.xalancbmk	**113**	**60.9**	113	60.9	113	60.8	**112**	**61.6**	112	61.7	112	61.6

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
    Baseboard Management Controller used to adjust the fan speed to 100%
    Set Hyper Threading to Disabled
    Sysinfo program /spec/config/sysinfo.rev6914
    $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
    running on localhost.localdomain Thu Jan 29 13:29:17 2015

    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 E7-8891 v2 @ 3.20GHz
         4 "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.)
```

Continued on next page

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Platform Notes (Continued)

```
     cpu cores : 10
     siblings  : 10
     physical 0: cores 2 3 4 5 6 7 8 10 11 12
     physical 1: cores 2 3 4 5 6 7 8 10 11 12
     physical 2: cores 2 3 4 5 6 7 8 10 11 12
     physical 3: cores 2 3 4 5 6 7 8 10 11 12
   cache size : 38400 KB

From /proc/meminfo
   MemTotal:       263802256 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"
   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 Jan 29 13:28

SPEC is set to: /spec
   Filesystem      Type  Size  Used Avail Use% Mounted on
   /dev/sda2       xfs   445G  163G  282G  37% /
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 American Megatrends Inc. BLISV308 11/28/2014
  Memory:
   32x Micron 36KSF1G72PZ-1G6K1 8 GB 2 rank 1600 MHz, configured at 1333 MHz

(End of data from sysinfo program)
```

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General Notes

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

 Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB
 memory using RedHat EL 7.0
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/transparent_hugepage/enabled
```

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:
```
    -xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32
```

C++ benchmarks:
```
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
    -Wl,-z,muldefs -L/sh -lsmartheap64
```

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Base Other Flags

C benchmarks:

    403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

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

  400.perlbench: icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

    445.gobmk: icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

C++ benchmarks (except as noted below):
    icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

    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: -xSSE4.2(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: -xSSE4.2(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

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Peak Optimization Flags (Continued)

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -inline-calloc
-opt-malloc-options=3 -auto-ilp32

429.mcf: -xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
-auto-p32

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
-ansi-alias

458.sjeng: basepeak = yes

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -xSSE4.2(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: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs -L/sh -lsmartheap64

483.xalancbmk: -xSSE4.2 -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-ic15.0-official-linux64.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-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.xml

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

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