SPEC® CINT2006 Result

Huawei

Huawei RH2485 V2 (Intel Xeon E5-4607)

SPECint®_rate2006 = 712

SPECint_rate_base2006 = 690

CPU2006 license: 3175	**Test date:** May-2013
Test sponsor: Huawei	**Hardware Availability:** May-2012
Tested by: Huawei	**Software Availability:** Feb-2013

Copies

- 400.perlbench: 48 — 616; 48 — 524
- 401.bzip2: 48 — 370; 48 — 363
- 403.gcc: 48 — 543
- 429.mcf: 48 — 1060
- 445.gobmk: 48 — 525; 48 — 512
- 456.hmmer: 48 — 962; 48 — 901
- 458.sjeng: 48 — 533; 48 — 515
- 462.libquantum: 48 — 4330
- 464.h264ref: 48 — 875; 48 — 862
- 471.omnetpp: 48 — 424; 48 — 401
- 473.astar: 48 — 405
- 483.xalancbmk: 48 — 738

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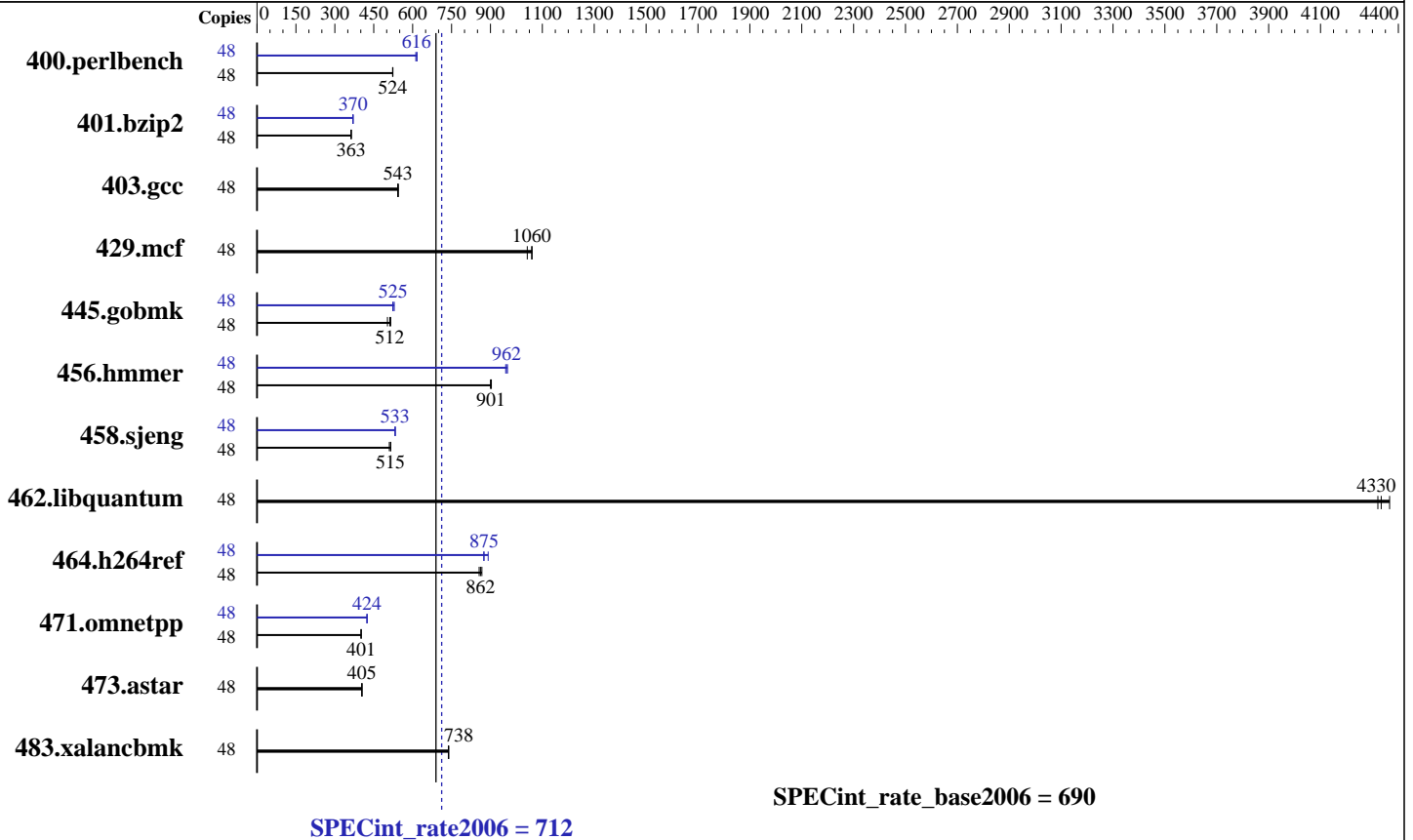
Hardware

CPU Name:	Intel Xeon E5-4607
CPU Characteristics:	
CPU MHz:	2200
FPU:	Integrated
CPU(s) enabled:	24 cores, 4 chips, 6 cores/chip, 2 threads/core
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:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (32 x 8 GB 2Rx4 PC3-12800R-11, ECC running at 1066 MHz and CL7)
Disk Subsystem:	1 x 300 GB SAS 10K RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.4 (Santiago) 2.6.32-358.el6.x86_64
Compiler:	C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux
Auto Parallel:	No
File System:	ext4
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V9.01

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Results Table

Benchmark	Base Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
400.perlbench	48	897	523	**896**	**524**	896	524	48	**762**	**616**	760	617	766	612
401.bzip2	48	**1275**	**363**	1274	364	1279	362	48	1251	370	1253	370	**1251**	**370**
403.gcc	48	**712**	**543**	712	543	709	545	48	**712**	**543**	712	543	709	545
429.mcf	48	420	1040	413	1060	**413**	**1060**	48	420	1040	413	1060	**413**	**1060**
445.gobmk	48	1001	503	977	516	**983**	**512**	48	952	529	962	523	**959**	**525**
456.hmmer	48	**497**	**901**	496	903	497	900	48	464	966	**466**	**962**	467	959
458.sjeng	48	1139	510	**1129**	**515**	1126	516	48	1091	532	1090	533	**1090**	**533**
462.libquantum	48	228	4370	**229**	**4330**	230	4320	48	228	4370	**229**	**4330**	230	4320
464.h264ref	48	1225	867	**1233**	**862**	1240	856	48	**1214**	**875**	1215	874	1192	891
471.omnetpp	48	748	401	747	402	**748**	**401**	48	708	424	**707**	**424**	707	424
473.astar	48	834	404	833	405	**833**	**405**	48	834	404	833	405	**833**	**405**
483.xalancbmk	48	448	739	449	738	**449**	**738**	48	448	739	449	738	**449**	**738**

Results appear in the order 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"
    Transparent Huge Pages enabled with:
    Select only test related files when installing the operating system

Platform Notes

    BIOS configuration:
    Set Power Efficiency Mode to Performance
    Baseboard Management Controller used to adjust the fan speed to 100%
    Sysinfo program /spec/config/sysinfo.rev6800
    $Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
    running on localhost.localdomain Wed May 29 02:31:24 2013

    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 E5-4607 0 @ 2.20GHz
          4 "physical id"s (chips)
          48 "processors"

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Platform Notes (Continued)

```
   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 : 6
      siblings  : 12
      physical 0: cores 0 1 2 3 4 5
      physical 1: cores 0 1 2 3 4 5
      physical 2: cores 0 1 2 3 4 5
      physical 3: cores 0 1 2 3 4 5
   cache size : 12288 KB

 From /proc/meminfo
   MemTotal:       264557600 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

 /usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.4 (Santiago)

 From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

 uname -a:
   Linux localhost.localdomain 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41
   EST 2013 x86_64 x86_64 x86_64 GNU/Linux

 run-level 3 May 29 02:29

 SPEC is set to: /spec
   Filesystem     Type     Size  Used Avail Use% Mounted on
   /dev/sda1      ext4     241G  8.5G  220G   4% /

 Additional information from dmidecode:

 (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"

 Binaries compiled on a system with 2 x Xeon X5645 CPU + 16GB memory
 using RHEL 6.1
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_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>
```

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Base Compiler Invocation

C benchmarks:
    icc -m32

C++ benchmarks:
    icpc -m32

Base Portability Flags

    400.perlbench: -DSPEC_CPU_LINUX_IA32
    462.libquantum: -DSPEC_CPU_LINUX
    483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

C++ benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
    -Wl,-z,muldefs -L/smartheap -lsmartheap

Base Other Flags

C benchmarks:

        403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
    icc -m32

    400.perlbench: icc -m64

      401.bzip2: icc -m64

    456.hmmer: icc -m64

     458.sjeng: icc -m64

C++ benchmarks:
    icpc -m32

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Peak Portability Flags

```
400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
    401.bzip2: -DSPEC_CPU_LP64
   456.hmmer: -DSPEC_CPU_LP64
    458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
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)
               -auto-ilp32

    401.bzip2: -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 -auto-ilp32 -ansi-alias

      403.gcc: basepeak = yes

      429.mcf: basepeak = yes

    445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
               -ansi-alias -opt-mem-layout-trans=3

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

    458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
               -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
               -unroll4 -auto-ilp32

462.libquantum: basepeak = yes

   464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
               -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
               -unroll2 -ansi-alias
```

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)
               -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
               -L/smartheap -lsmartheap

     473.astar: basepeak = yes
```

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Peak Optimization Flags (Continued)

483.xalancbmk: basepeak = yes

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-ic12.1-official-linux64.20120425.html
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-revE.20121120.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-revE.20121120.xml

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Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 15:55:28 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 19 June 2013.