SPEC® CINT2006 Result
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Huawei

Huawei CH242 (Intel Xeon E7-4850)

SPECint®_rate2006 = 921

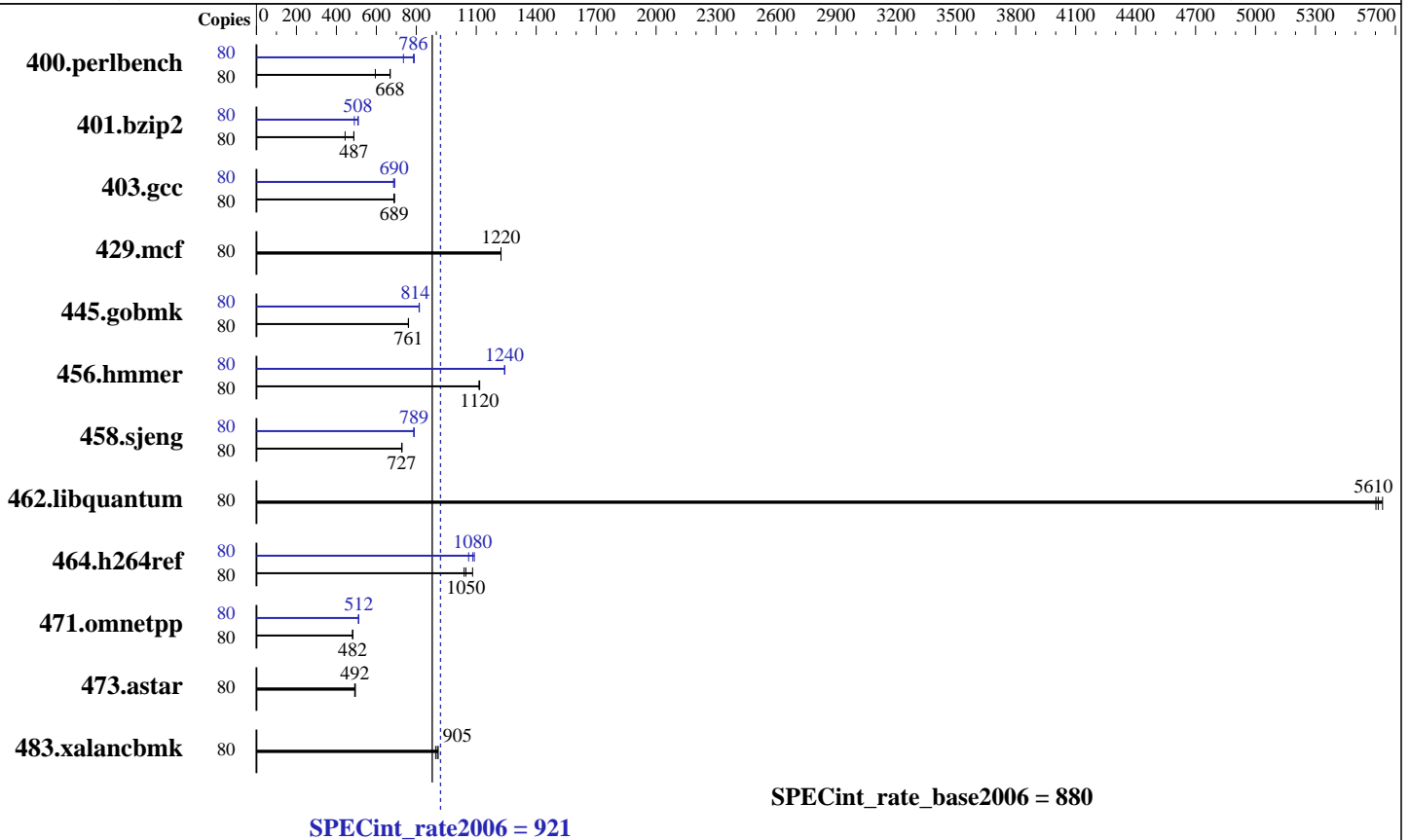SPECint_rate_base2006 = 880

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

Test date: Aug-2014
Hardware Availability: Apr-2011
Software Availability: Nov-2013

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Hardware

CPU Name: Intel Xeon E7-4850
CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz
CPU MHz: 2000
FPU: Integrated
CPU(s) enabled: 40 cores, 4 chips, 10 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: 24 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (32 x 8 GB 2Rx4 PC3L-10600R-09, ECC, running at 1067 MHz)
Disk Subsystem: 1 X 600 GB SAS 10000 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 12.1.0.225 of Intel C++ Studio XE for Linux
Auto Parallel: No
File System: ext3
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							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	80	1167	670	1314	595	**1169**	**668**	80	1063	736	**995**	**786**	990	790
401.bzip2	80	1583	488	1741	444	**1584**	**487**	80	1576	490	1515	510	**1520**	**508**
403.gcc	80	937	688	932	691	**934**	**689**	80	931	692	939	686	**933**	**690**
429.mcf	80	**596**	**1220**	596	1220	596	1220	80	**596**	**1220**	596	1220	596	1220
445.gobmk	80	1104	760	1103	761	**1103**	**761**	80	1031	814	**1030**	**814**	1029	815
456.hmmer	80	668	1120	670	1110	**668**	**1120**	80	**601**	**1240**	601	1240	601	1240
458.sjeng	80	1329	728	**1331**	**727**	1332	727	80	1226	789	1230	787	**1227**	**789**
462.libquantum	80	294	5640	296	5600	**295**	**5610**	80	294	5640	296	5600	**295**	**5610**
464.h264ref	80	1637	1080	**1689**	**1050**	1704	1040	80	**1635**	**1080**	1667	1060	1623	1090
471.omnetpp	80	1038	482	1040	481	**1038**	**482**	80	**977**	**512**	980	510	977	512
473.astar	80	1134	495	1142	492	**1140**	**492**	80	1134	495	1142	492	**1140**	**492**
483.xalancbmk	80	616	897	607	910	**610**	**905**	80	616	897	607	910	**610**	**905**

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

     'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
     'mount -t hugetlbfs nodev /mnt/hugepages' was used to enable large pages
     echo 21600 > /proc/sys/vm/nr_hugepages
     export HUGETLB_MORECORE=yes
     export LD_PRELOAD=/usr/lib64/libhugetlbfs.so

Platform Notes

     BIOS Settings:
     Power Management = Maximum Performance (Default = Active Power Controller)
     Sysinfo program /spec/config/sysinfo.rev6800
     $Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
     running on localhost.localdomain Sat Aug 16 08:18:32 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 E7- 4850 @ 2.00GHz
           4 "physical id"s (chips)
           80 "processors"
        cores, siblings (Caution: counting these is hw and system dependent. The

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Platform Notes (Continued)

```
   following excerpts from /proc/cpuinfo might not be reliable.  Use with
   caution.)
      cpu cores : 10
      siblings  : 20
      physical 0: cores 0 1 2 8 9 16 17 18 24 25
      physical 1: cores 0 1 2 8 9 16 17 18 24 25
      physical 2: cores 0 1 2 8 9 16 17 18 24 25
      physical 3: cores 0 1 2 8 9 16 17 18 24 25
   cache size : 24576 KB

 From /proc/meminfo
    MemTotal:       264375564 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.localdomain 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 Aug 14 08:24

 SPEC is set to: /spec
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sda2       ext3  547G  176G  344G  34% /

 Additional information from dmidecode:
   Memory:
    32x RAMAXEL RMS6031EC64FAF1333 8 GB 1067 MHz 2 rank

 (End of data from sysinfo program)
```

General Notes

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

Base Compiler Invocation

C benchmarks:
```
     icc  -m32
```

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Base Compiler Invocation (Continued)

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
    -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

C++ benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
    -Wl,-z,muldefs -L/opt/cpu2006/smartheap -lsmartheap
    -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

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: `-xSSE4.2 -ipo -O3 -no-prec-div`
`-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT`

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`
`-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT`

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/opt/cpu2006/smartheap -lsmartheap`

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Peak Optimization Flags (Continued)

473.astar: basepeak = yes

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-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-ic12.1-official-linux64.20120425.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.xml

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

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