SPEC® CINT2006 Result
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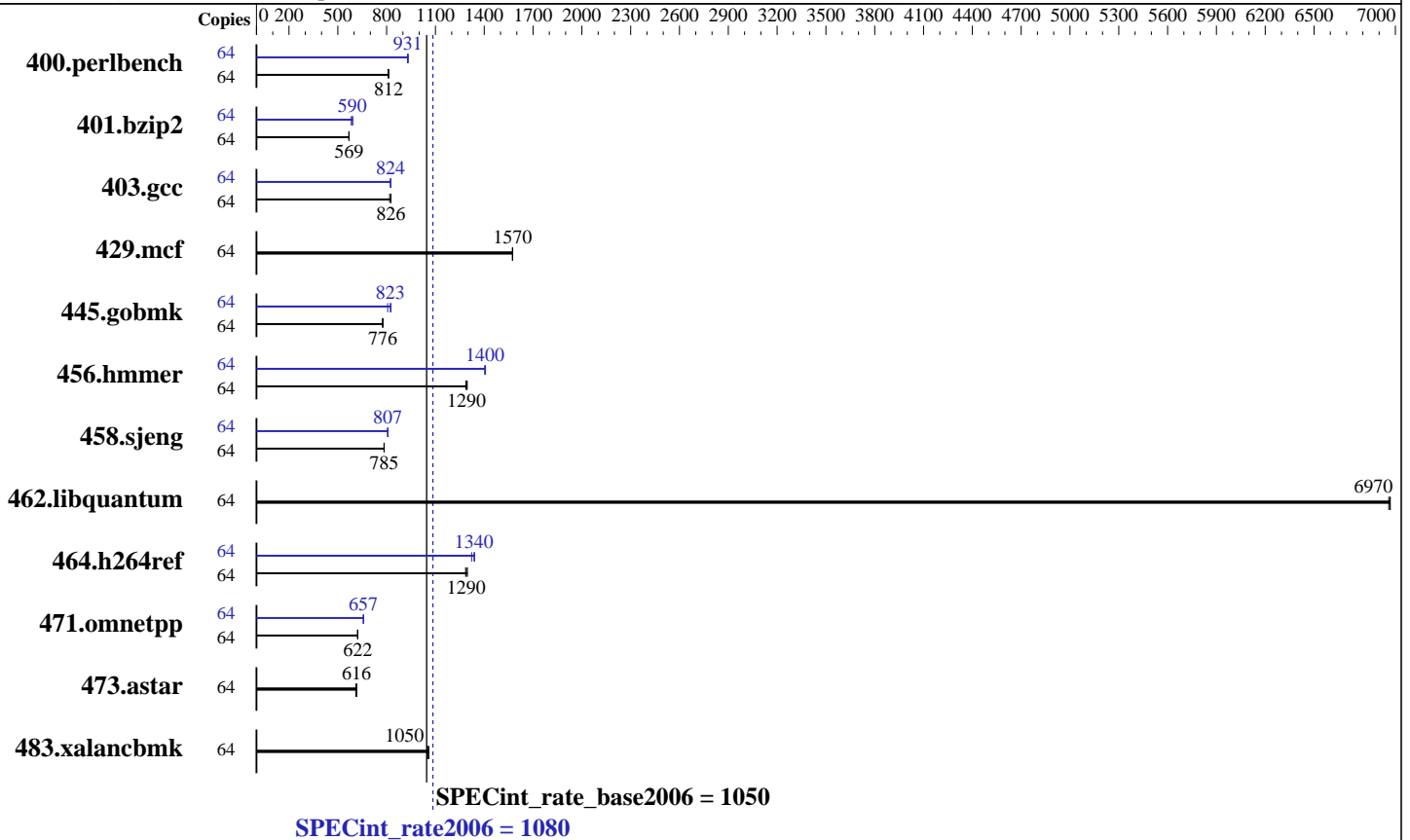
Acer Incorporated

Acer AR580 F2 (Xeon E5-4640)

SPECint®_rate2006 = 1080

SPECint_rate_base2006 = 1050

CPU2006 license: 97
Test sponsor: Acer Incorporated
Tested by: Acer Incorporated

Test date: Apr-2013
Hardware Availability: Dec-2012
Software Availability: Feb-2013

Copies

Benchmark	base	peak
400.perlbench	64 / 812	64 / 931
401.bzip2	64 / 569	64 / 590
403.gcc	64 / 826	64 / 824
429.mcf	64 / 1570	
445.gobmk	64 / 776	64 / 823
456.hmmer	64 / 1290	64 / 1400
458.sjeng	64 / 785	64 / 807
462.libquantum	64 / 6970	
464.h264ref	64 / 1290	64 / 1340
471.omnetpp	64 / 622	64 / 657
473.astar	64 / 616	
483.xalancbmk	64 / 1050	

SPECint_rate_base2006 = 1050

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Hardware

CPU Name:	Intel Xeon E5-4640
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	32 cores, 4 chips, 8 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:	20 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (32 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem:	1 x 900 GB SAS, 10K RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.3 (Santiago) 2.6.32-279.el6.x86_64
Compiler:	C/C++: Version 13.0.0.133 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 V10.0

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Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	64	769	813	772	810	**770**	**812**	64	670	933	**672**	**931**	674	928
401.bzip2	64	1086	569	1087	568	**1086**	**569**	64	**1047**	**590**	1045	591	1060	583
403.gcc	64	630	818	623	827	**624**	**826**	64	626	823	624	826	**625**	**824**
429.mcf	64	371	1570	371	1570	**371**	**1570**	64	371	1570	371	1570	**371**	**1570**
445.gobmk	64	**865**	**776**	866	775	864	777	64	**816**	**823**	812	827	832	807
456.hmmer	64	**462**	**1290**	464	1290	461	1300	64	426	1400	**425**	**1400**	424	1410
458.sjeng	64	986	785	988	784	**987**	**785**	64	**960**	**807**	959	807	961	806
462.libquantum	64	190	6970	191	6960	**190**	**6970**	64	190	6970	191	6960	**190**	**6970**
464.h264ref	64	1092	1300	1102	1290	**1098**	**1290**	64	1056	1340	1071	1320	**1059**	**1340**
471.omnetpp	64	644	621	**643**	**622**	642	623	64	**608**	**657**	609	657	608	657
473.astar	64	730	616	**730**	**616**	736	610	64	730	616	**730**	**616**	736	610
483.xalancbmk	64	417	1060	**420**	**1050**	420	1050	64	417	1060	**420**	**1050**	420	1050

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"

Platform Notes

    Sysinfo program /usr/cpu2006/config/sysinfo.rev6818
    $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
    running on r580f2 Wed Apr 3 17:45:52 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 E5-4640 0 @ 2.40GHz
          4 "physical id"s (chips)
          64 "processors"
       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 : 8
          siblings : 16

Continued on next page

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Platform Notes (Continued)

```
      physical 0: cores 0 1 2 3 4 5 6 7
      physical 1: cores 0 1 2 3 4 5 6 7
      physical 2: cores 0 1 2 3 4 5 6 7
      physical 3: cores 0 1 2 3 4 5 6 7
    cache size : 20480 KB

  From /proc/meminfo
    MemTotal:       264460152 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB

  /usr/bin/lsb_release -d
    Red Hat Enterprise Linux Server release 6.3 (Santiago)

  From /etc/*release* /etc/*version*
    redhat-release: Red Hat Enterprise Linux Server release 6.3 (Santiago)
    system-release: Red Hat Enterprise Linux Server release 6.3 (Santiago)
    system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

  uname -a:
    Linux r580f2 2.6.32-279.el6.x86_64 #1 SMP Wed Jun 13 18:24:36 EDT 2012 x86_64
    x86_64 x86_64 GNU/Linux

  run-level 3 Apr 3 11:59

  SPEC is set to: /usr/cpu2006
    Filesystem     Type    Size  Used Avail Use% Mounted on
    /dev/sda3      ext4    698G   14G  650G   2% /

  Additional information from dmidecode:
    BIOS Intel Corp. SE5C600.86B.01.07.0001.111620121607 11/16/2012
    Memory:
    32x     8 GB
    32x Hynix HMT31GR7CFR4C-PB 8 GB 1600 MHz 2 rank
    16x NO DIMM NO DIMM

  (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"

  Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
  memory using RHEL5.5
  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:
      -xAVX -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

C++ benchmarks:
      -xAVX -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
      -Wl,-z,muldefs -L/sh -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: -xAVX(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: -xAVX(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: -xAVX -ipo -O3 -no-prec-div

     429.mcf: basepeak = yes

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

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

    458.sjeng: -xAVX(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: -xAVX(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: -xAVX(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/sh -lsmartheap

     473.astar: basepeak = yes

 483.xalancbmk: basepeak = yes
```

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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-ic13-official-linux64.html
http://www.spec.org/cpu2006/flags/Acer-Platform-Settings-V1.2-revA.20130423.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.xml
http://www.spec.org/cpu2006/flags/Acer-Platform-Settings-V1.2-revA.20130423.xml

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 Thu Jul 24 15:30:08 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 23 April 2013.