SPEC® CINT2006 Result
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Supermicro

Supermicro SuperServer 2027R-N3RF4+
(X9DRW-3LN4F+, Intel Xeon E5-2650 v2)

$SPECint^®\_rate2006 = 682$

$SPECint\_rate\_base2006 = 659$

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Nov-2013

Hardware Availability: Oct-2013

Software Availability: Sep-2013

SPECint_rate2006 = 682

SPECint_rate_base2006 = 659

Hardware

CPU Name:	Intel Xeon E5-2650 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.40 GHz
CPU MHz:	2600
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 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:	128 GB (16 x 8 GB 2Rx4 PC3-14900R-13, ECC)
Disk Subsystem:	1 x 500 GB SATA II, 7200 RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.?, Kernel 2.6.32-358.23.2.el6.x86_64
Compiler:	C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux; Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
Auto Parallel:	No
File System:	ext4
System State:	Run level 3 (multi-user)
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	None

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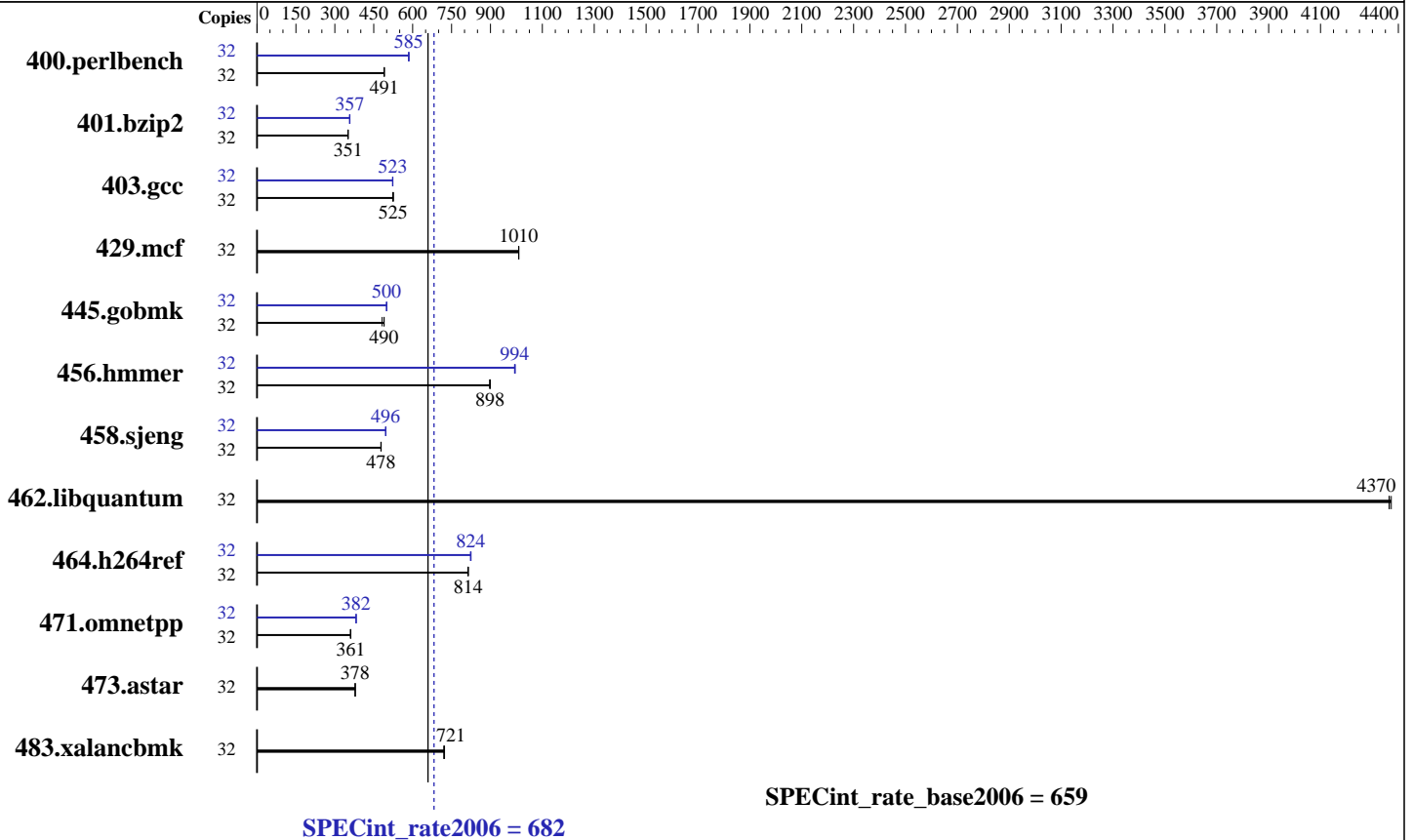SPECint_rate_base2006 = 659

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Results Table

Benchmark	Copies	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	32	637	491	638	490	**637**	**491**	32	533	586	535	584	**535**	**585**
401.bzip2	32	**879**	**351**	879	351	881	351	32	862	358	**864**	**357**	866	357
403.gcc	32	**491**	**525**	490	526	492	523	32	**493**	**523**	493	523	492	524
429.mcf	32	289	1010	289	1010	**289**	**1010**	32	289	1010	289	1010	**289**	**1010**
445.gobmk	32	**686**	**490**	696	482	685	490	32	671	500	**672**	**500**	672	499
456.hmmer	32	**332**	**898**	332	900	333	897	32	301	993	**300**	**994**	300	996
458.sjeng	32	**809**	**478**	809	479	811	477	32	781	496	**781**	**496**	779	497
462.libquantum	32	152	4370	**152**	**4370**	152	4360	32	152	4370	**152**	**4370**	152	4360
464.h264ref	32	871	813	869	815	**870**	**814**	32	**860**	**824**	860	823	858	825
471.omnetpp	32	556	360	553	362	**554**	**361**	32	523	382	524	382	**524**	**382**
473.astar	32	594	378	593	379	**594**	**378**	32	594	378	593	379	**594**	**378**
483.xalancbmk	32	305	723	**306**	**721**	307	720	32	305	723	**306**	**721**	307	720

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

    BIOS Configuration:
    Disable C1E Support, DRAM RAPL Mode, Demand Scrub, Double Refresh.
    Set Package C-state Limit to C0
     Sysinfo program /usr/cpu2006/config/sysinfo.rev6818
     $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
     running on 170-231.jnet Fri Oct 25 18:29:35 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 E5-2650 v2 @ 2.60GHz
           2 "physical id"s (chips)
           32 "processors"
        cores, siblings (Caution: counting these is hw and system dependent. The
        following excerpts from /proc/cpuinfo might not be reliable. Use with

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Platform Notes (Continued)

```
      caution.)
         cpu cores : 8
         siblings  : 16
         physical 0: cores 0 1 2 3 4 5 6 7
         physical 1: cores 0 1 2 3 4 5 6 7
      cache size : 20480 KB

   From /proc/meminfo
      MemTotal:       132122920 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 170-231.jnet 2.6.32-358.23.2.el6.x86_64 #1 SMP Sat Sep 14 05:32:37 EDT
      2013 x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Oct 25 17:52

   SPEC is set to: /usr/cpu2006
      Filesystem     Type     Size  Used Avail Use% Mounted on
      /dev/sda2      ext4     241G   85G  145G  37% /

   Additional information from dmidecode:
    BIOS American Megatrends Inc. 3.00 07/05/2013
    Memory:
    1x   16 MB
    16x   8 GB
    1x DimmA3_Manufacturer DimmA3_PartNumber
    1x DimmB3_Manufacturer DimmB3_PartNumber
    1x DimmC3_Manufacturer DimmC3_PartNumber
    1x DimmD3_Manufacturer DimmD3_PartNumber
    1x DimmE3_Manufacturer DimmE3_PartNumber
    1x DimmF3_Manufacturer DimmF3_PartNumber
    1x DimmG3_Manufacturer DimmG3_PartNumber
    1x DimmH3_Manufacturer DimmH3_PartNumber
    16x Hynix Semiconductor HMT31GR7CFR4C-RD 8 GB 1866 MHz 1 rank
    1x Micron/Numonyx 25Q Series 16 MB 33 MHz

   (End of data from sysinfo program)
```

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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 RedHat EL 6.4
 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>
```

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/sh -lsmartheap
```

Base Other Flags

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

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CPU2006 license: 001176

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Test date: Nov-2013

Hardware Availability: Oct-2013

Software Availability: Sep-2013

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`

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`

    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`

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Peak Optimization Flags (Continued)

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/sh -lsmartheap`

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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revB.20130719.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/Supermicro-Platform-Settings-V1.2-revB.20130719.xml

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

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