SPEC® CINT2006 Result
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Fujitsu

PRIMERGY RX2530 M2, Intel Xeon E5-2683 v4, 2.10 GHz

SPECint®2006 = 63.0
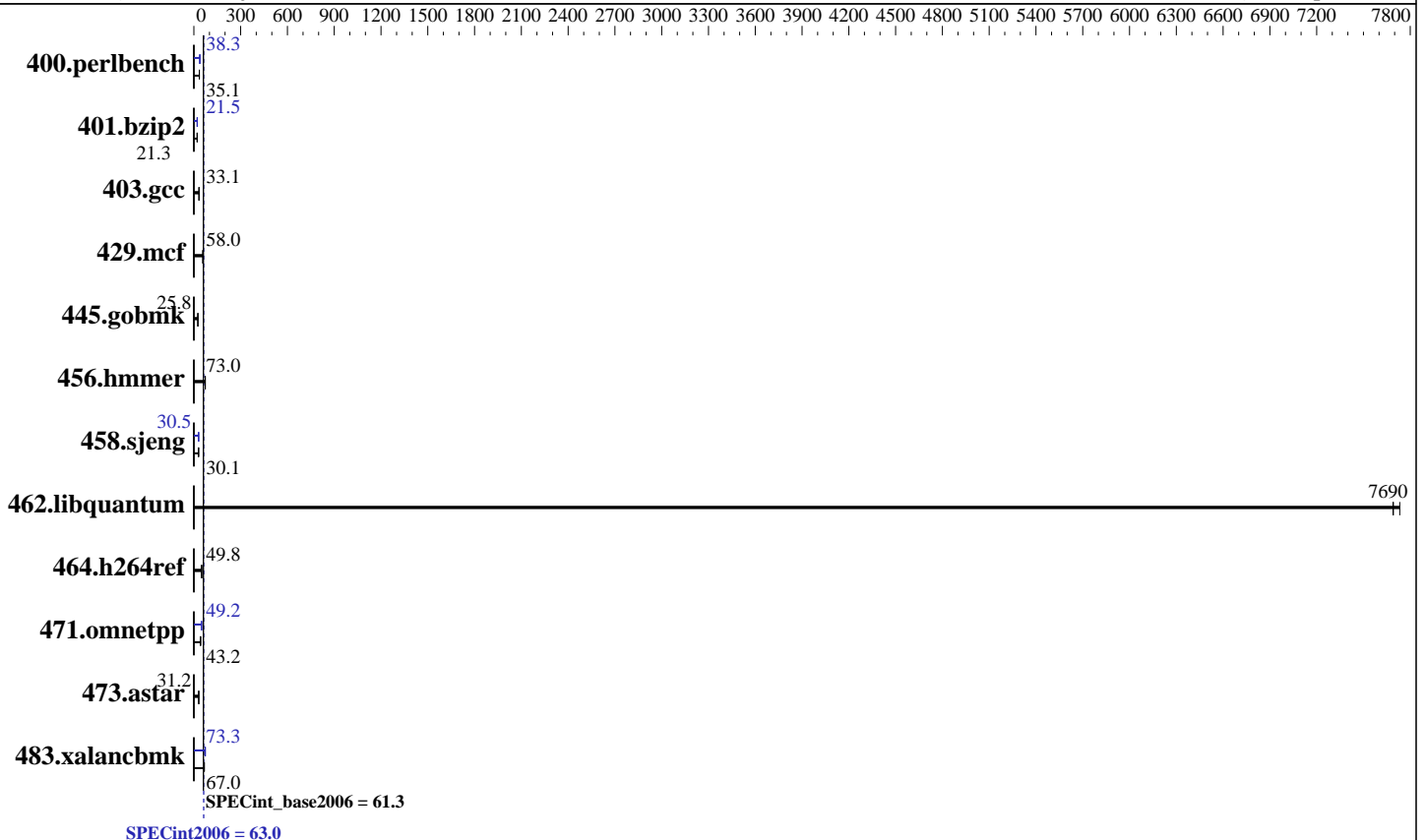
SPECint_base2006 = 61.3

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: May-2016
Hardware Availability: Apr-2016
Software Availability: Sep-2015

Benchmark	Value
400.perlbench	38.3 / 35.1
401.bzip2	21.5 / 21.3
403.gcc	33.1
429.mcf	58.0
445.gobmk	25.8
456.hmmer	73.0
458.sjeng	30.5 / 30.1
462.libquantum	7690
464.h264ref	49.8
471.omnetpp	49.2 / 43.2
473.astar	31.2
483.xalancbmk	73.3 / 67.0

SPECint_base2006 = 61.3

SPECint2006 = 63.0

Hardware

CPU Name:	Intel Xeon E5-2683 v4
CPU Characteristics:	Intel Turbo Boost Technology up to 3.00 GHz
CPU MHz:	2100
FPU:	Integrated
CPU(s) enabled:	32 cores, 2 chips, 16 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	40 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2400T-R)
Disk Subsystem:	1 x SATA, 1000 GB, 7200 RPM
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 12 SP1 (x86_64) Kernel 3.12.49-11-default
Compiler:	C/C++: Version 16.0.0.101 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 V10.2

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Results Table

Benchmark	Base						Peak					
	Seconds	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
400.perlbench	279	35.0	279	35.1	**279**	**35.1**	255	38.4	**255**	**38.3**	257	38.0
401.bzip2	455	21.2	452	21.4	**454**	**21.3**	449	21.5	450	21.4	**450**	**21.5**
403.gcc	**243**	**33.1**	243	33.2	244	33.0	**243**	**33.1**	243	33.2	244	33.0
429.mcf	158	57.5	156	58.6	**157**	**58.0**	158	57.5	156	58.6	**157**	**58.0**
445.gobmk	406	25.9	**406**	**25.8**	406	25.8	406	25.9	**406**	**25.8**	406	25.8
456.hmmer	128	73.1	**128**	**73.0**	128	72.9	128	73.1	**128**	**73.0**	128	72.9
458.sjeng	401	30.1	**401**	**30.1**	402	30.1	397	30.5	**397**	**30.5**	397	30.5
462.libquantum	**2.69**	**7690**	2.69	7690	2.68	7730	**2.69**	**7690**	2.69	7690	2.68	7730
464.h264ref	443	49.9	**444**	**49.8**	444	49.8	443	49.9	**444**	**49.8**	444	49.8
471.omnetpp	144	43.3	148	42.2	**145**	**43.2**	**127**	**49.2**	127	49.1	126	49.7
473.astar	226	31.1	223	31.5	**225**	**31.2**	226	31.1	223	31.5	**225**	**31.2**
483.xalancbmk	**103**	**67.0**	106	65.0	103	67.1	94.1	73.4	**94.2**	**73.3**	94.5	73.0

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:
    Energy Performance = Performance
    Utilization Profile = Unbalanced
    QPI snoop mode: Home Directory Snoop with OSB
        COD Enable = Disabled, Early Snoop = Disabled, Home Snoop Dir OSB = Enabled
    CPU C1E Support = Disabled
    Sysinfo program /home/SPECcpu2006/config/sysinfo.rev6914
    $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
    running on RX2530M2 Tue May 17 13:25:17 2016

    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 E5-2683 v4 @ 2.10GHz
          2 "physical id"s (chips)
          64 "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 : 16
       siblings  : 32
       physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
    cache size : 40960 KB

  From /proc/meminfo
    MemTotal:       264322664 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB

  /usr/bin/lsb_release -d
    SUSE Linux Enterprise Server 12 SP1

  From /etc/*release* /etc/*version*
    SuSE-release:
       SUSE Linux Enterprise Server 12 (x86_64)
       VERSION = 12
       PATCHLEVEL = 1
       # This file is deprecated and will be removed in a future service pack or
       release.
       # Please check /etc/os-release for details about this release.
    os-release:
       NAME="SLES"
       VERSION="12-SP1"
       VERSION_ID="12.1"
       PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
       ID="sles"
       ANSI_COLOR="0;32"
       CPE_NAME="cpe:/o:suse:sles:12:sp1"

  uname -a:
    Linux RX2530M2 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
    (8d714a0) x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 May 17 13:24 last=5

  SPEC is set to: /home/SPECcpu2006
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sda3       xfs   890G   75G  816G   9% /home
  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 FUJITSU // American Megatrends Inc. V5.0.0.11 R1.6.0 for D3279-B1x
  03/11/2016
  Memory:
```
                          Continued on next page

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Platform Notes (Continued)

```
     16x Micron 36ASF2G72PZ-2G3A3 16 GB 2 rank 2400 MHz
     8x NO DIMM NO DIMM

  (End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/SPECcpu2006/libs/32:/home/SPECcpu2006/libs/64:/home/SPECcpu2006/sh"
OMP_NUM_THREADS = "32"

 Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB
 memory using RedHat EL 7.1
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/transparent_hugepage/enabled
 For information about Fujitsu please visit: http://www.fujitsu.com
```

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:
```
     -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32
```

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Test sponsor: Fujitsu	**Hardware Availability:** Apr-2016
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Base Optimization Flags (Continued)

C++ benchmarks:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs -L/sh -lsmartheap64
```

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/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
```

C++ benchmarks (except as noted below):
```
icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
```

```
473.astar: icpc -m64
```

Peak Portability Flags

```
400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
    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: -D_FILE_OFFSET_BITS=64
     473.astar: -DSPEC_CPU_LP64
 483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

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Peak Optimization Flags (Continued)

```
  400.perlbench: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
                 -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
                 -par-num-threads=1(pass 1) -prof-use(pass 2) -opt-prefetch
                 -ansi-alias

      401.bzip2: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
                 -ipo(pass 2) -O3(pass 2) -no-prec-div
                 -par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32
                 -opt-prefetch -ansi-alias

        403.gcc: basepeak = yes

        429.mcf: basepeak = yes

      445.gobmk: basepeak = yes

      456.hmmer: basepeak = yes

      458.sjeng: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
                 -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
                 -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4

  462.libquantum: basepeak = yes

     464.h264ref: basepeak = yes

C++ benchmarks:

     471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
                 -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
                 -par-num-threads=1(pass 1) -prof-use(pass 2)
                 -opt-ra-region-strategy=block            -ansi-alias
                 -Wl,-z,muldefs -L/sh -lsmartheap

      473.astar: basepeak = yes

  483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
                 -ansi-alias -Wl,-z,muldefs -L/sh -lsmartheap
```

Peak Other Flags

C benchmarks:

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

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The flags files that were used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-HSW-RevA.20160517.html

You can also download the XML flags sources by saving the following links:

http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-HSW-RevA.20160517.xml

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

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